Australian Government
Department of Infrastructure and Transport

State Government Victoria
Department of Treasury and Finance

Towards agreed expectations

Tender strategies to improve Design and Construct infrastructure delivery outcomes

JUNE 2012

Copyright
© Commonwealth of Australia 201H
Published by Department of Infrastructure and Transport
www.infrastructure.gov.au

Towards agreed expectations: Tender strategies to improve Design & Construct infrastructure delivery outcomes
ISBN 978-1-921769-78-8
June 2012/INFRA1445
This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. Apart from any use as permitted under the Copyright Act 1968, all other rights are reserved. Requests and inquiries concerning reproduction and rights should be addressed to Department of Infrastructure, GPO Box 594, Canberra ACT. Ph: +61 2 6274 7111 or http://www.infrastructure.gov.au/utilities/contact.aspx.

Note:
Governments in each jurisdiction will have their own individual approved processes for capital project delivery, including policies (e.g. probity) and legislation. These overarching jurisdictional requirements are precedent to the practices covered in this document.

Acknowledgements:
This report is based on the many interviews, discussions and workshops that the Department of Treasury and Finance (Victoria) and the Department of Infrastructure and Transport (Australia) held with senior experienced practitioners. Their generous contribution of time, experience and insights is gratefully acknowledged, without which this report would not have been possible. The significant contribution from Sydney Water of their case study on the tender of the Sydney Desalination Plant, and their leadership in raising public sector capability, is recognised.

This report was prepared by the Victorian Department of Treasury & Finance with contributions from:

- Evans & Peck Pty Ltd, 555 Coronation Drive Toowong, Queensland 4066 (industry advice);
- Ann Dalton & Associates, 7/365 Queen Street, Melbourne 3000 (probity advice);
- Freehills, 101 Collins Street, Melbourne (legal advice);

and with general advice and direction from the Inter-Jurisdictional Alliancing Steering Committee.

Table of Contents

Executive Summary

An investigation was undertaken in the second half of 2011, on behalf of the Council of Australian Governments Infrastructure Working Group, into the Design & Construct (D&C) model in contracting for public infrastructure. This investigation was conducted through a qualitative research method using semi-structured interviews to gather experiences and insights from many practitioners in the public and private sectors (covering both client and supplier groups).

The investigation witnessed an impressive commitment from all practitioners to "get things right" for both the client and for the infrastructure industry more generally.

Practitioners reported many good outcomes using the traditional contracting model (D&C, Construct Only and others) and expressed confidence in its continued relevancy and importance in the delivery of both infrastructure and building assets. Whilst historically traditional contracting has been associated with stories of an adversarial and litigious environment, this was not confirmed as the current experience. The practitioners interviewed (including public officials) were generally satisfied with the outcome of their traditional contracts, although there were strong views that improvements could (and should) be made.

All practitioners recognised that the standard of tendering for D&C contracts was not uniform across agencies, both in the client's engagement of the market and in the tenderers' ability to respond, leading to some sub-optimal practices and dissatisfaction. The investigation found that a good characterisation of the root cause of dissatisfaction was the *expectation gap*[1] that results at contract execution.

Three key challenges were identified that could be satisfactorily addressed to close this expectation gap and to meet the challenge of delivering an optimal project outcome for both the client and the tenderer. These were:

- ***people capability**:* always necessary to achieve optimal outcomes;
- ***foundation success factors**:* these are matters that we should aim to get right every time, including such matters as quality tender documentation supporting the client's requirements, project definition, the tender selection criteria and its application during evaluations, adequate timelines, enabling probity etc (see Table 3, Chapter 4); and
- ***effective collaboration**:* to enable a full and mature understanding of the client's "request for tender" and the contractor's "tender response". There was a common view that the most effective solution for closing this expectation gap was the presence of a collaborative spirit in the tendering process, supported in particular by capable project leadership from all parties.

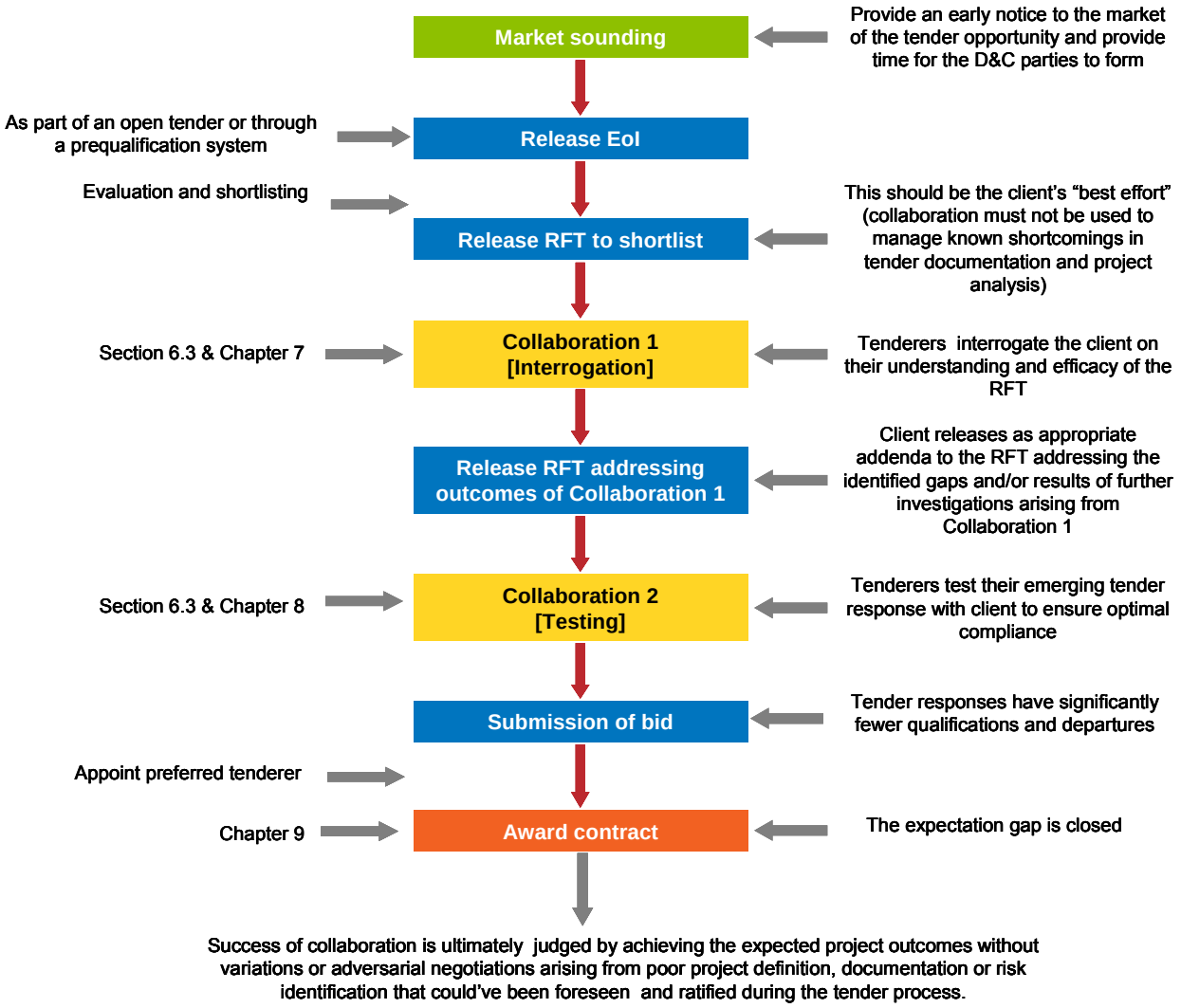
This report provides two options, which can be used together or separately, for the structured application of collaboration in D&C tender strategies. These options are presented in the report with enabling probity principles and the potential (positive) legal implications of using such collaborative processes. The following figure illustrates those two options.

This report presents issues and opportunities for improvement that the practitioners interviewed, and the authors, believe are achievable (and should be done); leading to improved productivity outcomes for all parties.

Finally, this investigation confirmed what many have already observed; that infrastructure and non residential building are two different sectors, each meriting its own specific focus. This report focuses on infrastructure, although many of its principles can be adapted for the building sector.

[1] The expectation gap was identified in terms of the supplier's understanding of the client's need versus the client's understanding of the supplier's offer.

Collaborative steps in the tender process



1. Introduction

This chapter sets out the purpose and scope of this report. The report identifies opportunities for improving tender strategies in D&C contracting for public infrastructure delivery.

Purpose

The Infrastructure Working Group of COAG requested the Victorian Department of Treasury and Finance and the Commonwealth Department of Infrastructure and Transport to investigate opportunities for improving the efficiency and effectiveness of market engagement and tendering strategies for Traditional Contracting, particularly D&C.

In conducting this investigatory work, the two departments needed to:

- be cognisant of the successful practices in public private partnerships, and in alliancing, that have been documented in agreed national policies and guidelines;
- identify current successful practices in D&C contracting;
- identify opportunities for improvement in D&C contracting;
- draft stand-alone guidelines (including good practice case material) that document identified options for improvements and efficiencies in market engagement and D&C tendering strategies; and
- consider and report separately on the merits of producing a set of national policies and guidelines (including refreshing and rationalising contract agreements) for Traditional Contracting.

This report identifies good tendering practices for practitioners to consider when planning their next project. The report considers the broad range of views provided in the data gathering interviews and workshops but is not a comprehensive survey and critique of all practices across Australian public sector agencies.

1.1 Scope of investigation

In scope

This report addresses the D&C tender process in the context of infrastructure projects. It focuses on the relationship between the client and supplier during the tender phase.

The investigation was further enriched by commentary and insights generously provided on other contracting models that can be also classified as Traditional Contracting (see Appendix C). These other models include:

- Construct Only (Lump Sum Construct and Schedule of Rates)
- Design Construct Maintain
- Target Estimate
- Cost Plus Contract
- Engineering, Procurement and Construction Management (EPCM[2]);

Whilst the investigation does not cover the business case, project planning, project delivery nor service and benefits delivery phases as described in Figure 1, it does reference these phases were relevant.

[2] In Australia, EPCM is used almost exclusively in the resources and process engineering sectors.

Out of scope

The investigation did not focus on the tendering activity in D&C prior to shortlisting (EOI release and shortlisting), as this stage has a number of approaches, including the use of pre-qualification panels and it is proposed to address this activity separately in future work.

This report does not consider non-residential building works, nor contracting models utilising the characteristics of alliances, including Early Contractor Involvement (ECI) or Managing Contractor (MC).

Non-residential building has significantly different characteristics from infrastructure and warrants its own specific focus, although this report may provide some useful practices for consideration when engaging in building works. This difference in non-residential building works was highlighted by the building practitioners interviewed, who supported this sector being excluded from this investigation. (See Appendix B for an overview of the differences between the delivery of infrastructure and building projects.)

Moreover, the scope of this investigation does not take into account the management of contracts. For example, it does not investigate the opportunities offered by collaboration and interactive processes post contract award (as is offered by NSW's GC21 contracts).

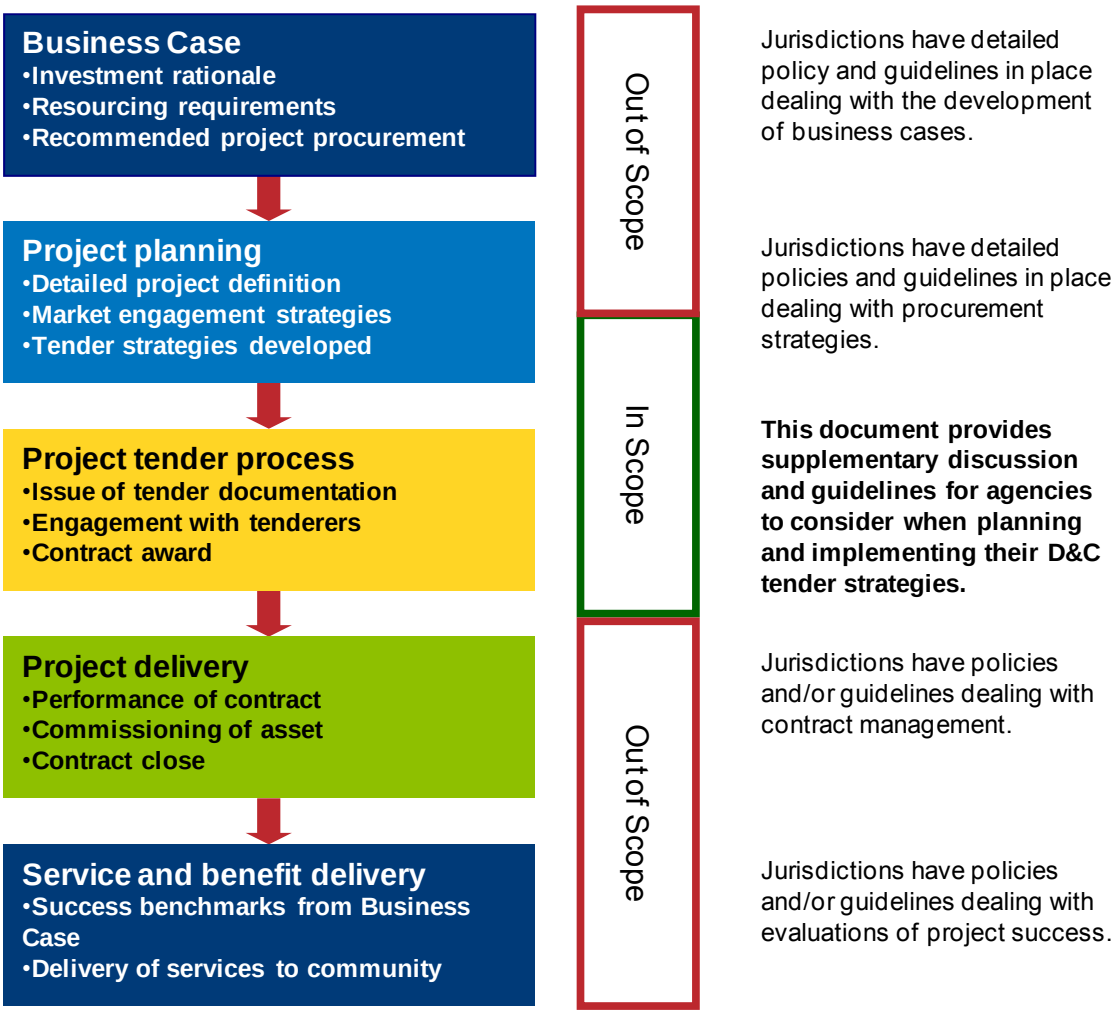
It is also understood that any effective tender strategy arises from good project planning that is integrated with procurement strategies and contract management. Whilst this report outlines some high level principles, it does not address details of investment rationale, procurement options analysis and selection etc as these areas are out of scope for this report. Figure 1 illustrates the scope of this investigation.

Finally, this report deals with the relationship between the client and tenderers during the tender phase[3]. It does not deal with the business relationship or the quality of the collaborative relationship between the bidding parties (eg between the consultant engineers, subcontractors and the construction firm).

It is recognised that in both the public and private sectors, a new type of project has emerged – the 'mega project'. These projects are typically defined as greater than $1B with high complexity including multi-discipline elements, significant impact on communities, environment, and budgets. Due to the uniqueness of these 'mega projects', the findings and recommendations, of this investigation cannot simply be scaled up, but may require different treatment requiring further investigation.

[3] This report does not deal with the reimbursement of bid costs. Whilst a number of industry practitioners made mention of this, it is a complex issue and informed consideration could not be accommodated in the scope of this investigation.

Figure 1: The scope of this investigation in context



In the course of investigations for this report, a number of opportunities have been identified where further guideline development would be of benefit, and which will promote, more generally, improvements in the productivity of infrastructure delivery through traditional contracting.

1.2 The research underpinning this report

This investigation was conducted through a qualitative research method using semi-structured interviews to gather experiences and insights from practitioners including:

- Over 50 meetings with senior practitioners in the delivery of infrastructure and building projects. These individuals came from selected organisations:
  - supplier groups – construction, engineering design and legal firms;
  - client groups – public sector agencies (and a few companies in the mining and process engineering sectors); and
  - central government departments - involved in developing state and national level policies and guidelines for the public sector practices
- Five large group workshops.
- Expert advisory services especially engaged for this investigation.

Appendix A lists the organisations interviewed and/or consulted.

1.3 Structure of this document

This document is structured as follows:

Chapter 2: Places traditional contracting in the context of the procurement process

Chapter 3: Outlines challenges and opportunities for improvements in Traditional Contracting today

Chapter 4 – 9: Explores possible solutions to address opportunities identified in Chapter 3

Appendices: Provide supporting information and a case study

This investigation is as an exercise in "continuous improvement". The message is not that all, or most, current practice in Traditional Contracting is problematic. Rather it recognises that there is an opportunity to promote the many examples of excellent practices identified to all practitioners involved in public infrastructure delivery.

2. Procurement models in context

This chapter places the investigation and this report in the wider context of procurement models used by the public sector to procure capital projects.

2.1 An element common to all procurement projects

At the most basic level, procurement is the payment of a monetary reward by a buyer to a supplier of assets and/or services. Typically the buyer-supplier relationship embodies a complexity of issues and commercial risks that reflects the complexity in the construction of assets to be delivered and the related project services that are contracted for supply.

Whilst many of the practitioners interviewed were generally satisfied with the performance and outcome of their traditional contracts, all felt that improvements could be made, and issues leading to dissatisfaction were discussed. Dissatisfaction, among contracting parties will result when, at contract award, there is effectively an unidentified *expectation gap*. This gap arises when the buyer's expectation of:

- what the asset/service to be supplied will be; including whole of life performance requirements;
- the level of accountability to be taken by the supplier;
- the cost of the supply; and
- the timing of the supply.

materially differs from the supplier's expectation of:

- what the asset/service to be provided will be;
- the level of accountability offered and accepted for the supply;
- the cost of the supply; and
- the timing of the supply.

There are different ways of describing this foundation problem; however, practitioners were comfortable in characterising it as an "expectation gap at contract award".

2.2 What distinguishes different procurement models?

"One of the best cases of collaborative contracting I have seen was in a lump sum contract…. When the organisation's leadership is collaborative then you don't need a collaborative methodology to be collaborative."

Andrew Hutchinson
Director, Alchimie
August 2011

The unique distinguishing characteristic of the different procurement models used for capital projects centres on the accountability for management of project risks. This is illustrated in Table 1.

Table 1: Distinguishing risk characteristics of procurement models

	Alliance	D&C (Traditional)	Public Private Partnerships
Risk profile	Not all risks can be dimensioned upfront and are best managed jointly	Clear and enforceable risk allocation	Clear and enforceable risk allocation
Who takes what risks	Risk exposure "shared" (the Government's financial exposure is uncapped; the private parties have capped exposure)	The contractor takes risks associated with design and construction and particularly the interface between design and construction	Consortium exposed substantially to risks of design, construction, capital assets ownership and service KPIs (& sometimes demand risk)
Who takes asset ownership risk	Following construction, the Government owns and operates the facility	Following construction, the Government owns and operates the facility	Government is purchasing services, not a capital asset, makes payments only upon delivery of services
"caption"	*risk sharing for procuring capital assets*	*risk transfer for procuring capital assets*	*risk transfer for procuring services*
	Risks are unknown & shared ⟷		Risks are well known & mostly transferred

The use of collaborative processes is not a unique distinguishing characteristic across procurement models. Collaboration can be used in any model as a means of ensuring the project and the risk allocation is efficiently and effectively identified, communicated and managed in accordance with the contract to be awarded. For example:

- **Alliancing:** Collaboration is structurally built into the tendering and project delivery processes as the contractual counterparties agree to risk sharing and to "no blame; no litigation"[4].
- **D&C:** The risk allocation is documented in the contract and normally a risk is not shared, hence delivery can proceed without formally including collaborative processes in the tendering and project delivery processes.
- **Public Private Partnerships:** The risk allocation of the project and service delivery phases needs to be fully articulated and modelled for there to be an efficient, effective and economical pricing of risk (often for a 25 year contract period). To ensure such optimal pricing of risk, the counter parties will normally have extensive interactions during the tendering process to ensure a common understanding of the risks.

[4] It should be noted that the Alliance contract model does not necessarily mean that, of itself, effective collaboration will take place. As one private sector practitioner (a senior experienced *Non-Owner Participants*) observed; "Many alliances do not have *Owner Representatives*, or if they do, they are not sufficiently senior to fully contribute as expected of them" [comment made at the AAA Convention, Brisbane, 20 October 2008].

At contract award, these different procurement models[5] are assumed to provide greater levels of certainty to the client as to their legal rights regarding such project outcomes as quality, cost and time outcomes. However, whether this certainty is real will be determined predominantly by the quality of the tender and legal documentation and by the commercial strategies the client uses in the tendering process.

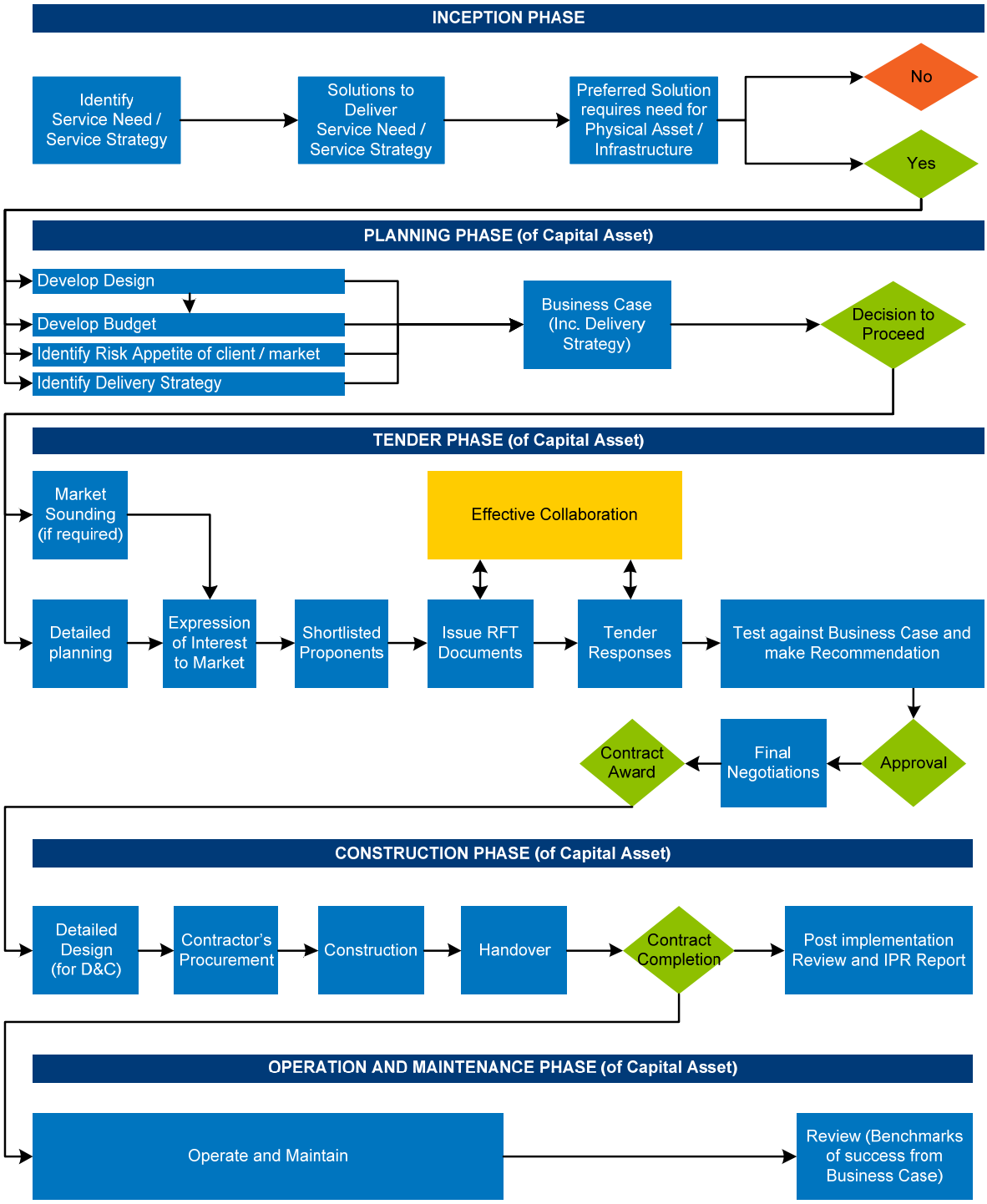
The expected certainty is more likely to be realised when the client's expectation of how and what the contract will deliver is fully aligned with the expectations of the supplier. It is less likely when there is a significant gap in expectations, irrespective of the procurement and contract model used. (Industry practitioners highlighted, for example, that a client's expectations of which risks "have been transferred" and indeed "are transferrable" are sometimes at odds with the expectations of industry.

2.3 Overview of 'Traditional' project cycle

Using D&C as the basis, Figure 3 illustrates the 5 key phases and supporting activities typically undertaken to deliver a project. Whilst this report focuses on the Tender Phase, it is important to recognise the linkage between earlier phases and their impact on later phases. These linkages are generally well covered already in the various jurisdictional policies and guidelines that have been published and are not revisited in this report.

[5] Each jurisdiction provides guidance on appropriate selection of the procurement model. The primary objective is to best enable management of the 'base cost', as well as the potential impacts of project risks, to the lowest cost for the required performance (ie value-for-money).

Figure 2: The project delivery cycle involving a typical D&C contract with effective collaboration[6]



2.4 Objectives of a buyer and a supplier

Through each of the project delivery phases, the buyer and supplier have, at times, differing objectives which must be considered in understanding likely problems and defining possible solutions. The primary objectives of the buyer and supplier through each project delivery phase of the D&C model are shown in Table 2 (see also Table 4, section 5.3 for further elaboration during the tender phase):

[6] Note that the Tender Phase can include a prequalification process in some jurisdictions

Table 2: Primary Objectives of the Buyer and Supplier during the Project Cycle

Phase	Buyer	Supplier
Inception	Identify resource and non resource solutions to meet the specific Service Need	N/A
Planning	Develop the design for the capital asset solution, including development of the Scope / Performance Specification Develop the budget to deliver the solution Agree the preferred delivery / procurement strategy to match the risk profile of the solution and buyer's appetite Produce and gain endorsement of the Business Case	Enhance project understanding including project drivers and constraints Understand and influence delivery strategy Produce a winning bid strategy Identify and develop relationships, including the client, possible vendors, possible partners (contractors, designers, etc)
Tender Phase	Produce EOI and RFT documents that clearly articulate and define the purpose of the project within the context of the Service Need. Enable better understanding of the project by suppliers to maximise the number of bids that are compliant and thereby provide for better competition Develop and implement a selection evaluation process so that a contract is awarded that provides certainty of outcome (in meeting the Service Need) at best value for money from the market Identify a preferred supplier that will provide greatest likelihood of the Business Case objectives being delivered at acceptable cost, time, risk, etc. Enhance reputation by demonstrating ability to run a professional procurement process that meets all probity requirements	Understand the purpose of the capital project and it's fit into the Service Need context Produce the 'winning offer' that provides value to the client, whilst delivering acceptable margin, risk and contract terms and conditions outcomes Minimise tender/bid costs Produce a clear delivery strategy which maximises opportunity and minimises risk post award Engage and influence key decision makers / stakeholders
Delivery	Capital project delivered to or below budget Capital project delivered early or on time Capital project delivered to prescribed quality (including safety, environment and community outcomes) so that Scope Statement / Performance Specification met Relationships with the market and stakeholders are enhanced, trust is built and supplier enhances reputation by doing what it said it would do Objectives set out in the business case met	Maximise profit Deliver project to prescribed quality (including safety, environment and community outcomes) so that Scope Statement / Performance Specification met Capitalise on opportunities and mitigate risks Enhance reputation with supplier and within the market (increase potential for repeat business) Enhanced relationships with supplier and stakeholders (including other suppliers)
Operate and Maintain	Achieve the Service Need	Meet warranty obligations

3. The Problem

This chapter provides an exploration of the root causes of issues that arise in D&C and suggests that it is poor practice, rather than the model itself, that contributes to dissatisfaction. The remaining chapters explore opportunities to improve some common poor practices.

3.1 "Misunderstood; not bad by nature"

Traditional contracting has been associated with stories of an adversarial and litigious environment. Such stories and assumptions continue to persist, in spite of the introduction of 'design and construct', which was to solve such issues experienced in 'construct-only' contracts.

Parties seeking commercial advantage

One story is that when a client selects a contractor based on deficient tender documentation and poorly communicated tender requirements, this will lead invariably to significant claims for contract variations and unproductive conflict.

Where the supplier is aware of the deficiencies, there is the potential for these to be exploited for either commercial gain or to simply achieve their benchmark corporate return. Where the supplier is not aware of the deficiency, the client may gain some commercial advantage. Either scenario can lead to claims for contract variations and unproductive conflict.

The parties don't know what they don't know

Whilst some of this may be correct historically, there was a strong message from practitioners interviewed that this story does not represent current practice. There are cases where parties don't know what they don't know. For example, a client may not recognise the consequential impacts of drafting specific RFT and contractual requirements. This lack of understanding will contribute significantly to an expectation gap and adversarial outcome.

"The client has the right to select a tenderer on lowest price; in which case the contractor has the right to provide compliance with the contract at the most economical cost. This right of the contractor, however, is not always understood by the client, and the client often has greater expectations."

Senior Executive, construction company
September 2011

Industry practitioners suggested that it is more likely that suppliers are not aware of all deficiencies in tender documentation, nor are they "all knowing" in relation to project risks. They may prepare a complying bid, perhaps with very limited interaction with the client, and then during the project delivery phase are genuinely surprised to find they have misunderstood the client requirements and/or the project delivery challenges.

It is worthwhile to reflect further on the influence of poor planning and poor communication of project objectives and scope as a cause of adversarial behaviours during the contract period. The *Guide for Leading Practice for Dispute Avoidance and Resolution* (published in 2009 by the Cooperative Research Centre for Construction Innovation) cites the following key factors as contributing to disputes:

- poor contract documentation and control;
- inadequate capabilities and skills;
- poor project planning, particularly with design errors or inappropriate design, unreasonable and ambiguous risk allocations, and unrealistic time and cost objectives for the project;

- scope changes due to client requests;
- unexpected site conditions or inadequate site investigations; and
- poor communication or management.

Arguably, these factors born out of poor planning and tender practices, combined with the inelasticity of the contract price, rather than the contract model itself, contribute more to the creation of negative project relationships.

In traditional contracting, the contract price is generally only varied once a formal case is made and accepted that the price variation has merit under the contract terms and conditions. Until there is a resolution, disagreements are often characterised as contractual disputes. This may result in a distorted perception of the number of genuine contractual disputes.

By way of contrast, alliance contracting has, by definition, no contractual disputes (the "no litigation" commitment by all parties being a fundamental condition of alliancing). Of course, in alliancing those same cost issues and pressures also result in additional client funding (alliancing allows for greater elasticity in contract pricing), and differences are resolved in ways that are not characterised as "adversarial".

"The problem with traditional contracting is not a pattern of disagreements that escalate into adversarial and litigious responses; rather it is that the client and supplier, for a variety of reasons (often to do with poor practices from both parties), find they are confused, having formed different expectations of each other, the meaning of the contracted arrangements and the impact of actual project risks. These differences are generally resolved in a way that not everyone is happy with; however, they are mostly resolved without a long term relationship breakdown.

Senior public official
November 2011

3.2 An "expectation gap" can be anticipated in most procurement processes

An expectation gap should be anticipated and considered normal. However, this gap can and should be bridged. The buyer and the supplier generally have very different corporate backgrounds and certainly competing objectives. As Figure 2 illustrates, part of the expectation gap arises from different forms of self-awareness on what we know and take for granted versus what other parties know or understand about another's requirements.

Figure 3: A Johari window of self-awareness and understanding[7]

The expectation gap is easily closed with good will

The expectation gap can be easily closed with good will and through collaborative discussions

I know what I know	**I know what I don't know**
I don't know what I know	**I don't know what I don't know**

The expectation gap can be readily closed with good will and through collaborative interrogation

The expectation gap can be closed with good will and through a thorough collaborative interrogation

[7] This particular Johari window is in use in the public domain but is not attributed to any individual or organisation.

It can be expected that self-awareness and understanding, to a greater or lesser extent, will follow this pattern for both the client and the tenderer, although in each case the subject content will differ (i.e. for one the focus is the project *required* for service delivery; for the other it is the project to be *constructed*).

3.3 Three key challenges

This investigation identified three key themes that were at the root cause of most problems. These themes overlap and present challenges must be satisfactorily addressed in the project life cycle to meet the challenge of delivering an optimal business outcome for both the client and the tenderer.

1. **Capability** – without it expect sub-optimal outcomes

   Many experienced practitioners interviewed highlighted that the capability of people (both from the client and the tendering parties) to undertake the project roles entrusted to them was the key to achieving the optimal outcome. There was a clear theme from practitioners that having the right capability, and having the time available for that capability to be applied, ensured:

   - well defined and analysed project requirements;
   - high quality tender documentation;
   - effective collaborative processes;
   - effective, well detailed but succinct tender selection criteria;
   - effective and streamlined tender evaluation processes; and
   - constructive negotiation and contract award processes.

   The issue of capability, for both the client and the contracting parties, is out of scope for this investigation[8].

2. **Foundation success factors** – what we should aim to get right every time

   The foundation factors that were identified as precursors to successful outcomes are detailed in Chapter 4, with a summary listed here:

   - use of the D&C method only in appropriate cases;
   - quality tender documentation to ensure the client's requirements are clearly articulated;
   - clearly defined project scope and performance standards;
   - appropriate tender selection criteria and process;
   - expert evaluation of each tender against the tender selection criteria;
   - appropriate ("small") size of the tender shortlist;
   - suitable timelines to enable high quality project planning; and
   - best practise ("enabling") probity requirements.

   Both clients and tenderers saw a failure to address these foundation success factors as creating difficulties and expectation gaps, leading to sub-optimal outcomes.

[8] The issue of capability is addressed in a separate document recommending further work; 'Opportunities for developing National Infrastructure Good Practice Principles & Practitioner Guidelines for Traditional Contracting', Draft, November 2011

3. **Effective collaboration** – understanding the tender and the tender response

Effective collaboration in tender strategies was considered by all practitioners as a first order issue (along with capability and the foundation success factors) to closing the expectation gap. Effective collaboration was considered to have, *for all parties involved*, the hallmarks of:

- active listening and timely informed responses;
- the involvement and commitment of senior people with the right capability and with decision making authority;
- timelines that enable considered analysis, orderly decision making processes and the cost effective use of people resources during the tender;
- working with integrity and a mutual respect of both individuals and corporate objectives; and
- placing a high value on the client/supplier relationship in the current tender and for other future work opportunities.

Industry practitioners expressed the view that a tender strategy should involve collaboration that goes beyond a "tick the box" process. The nature and application of effective collaboration is explored in more detail in Chapters 5 to 8.

Even experienced private sector clients with a high value project book are surprised to hear that bidders will add a premium to their contract price. Organisations that are a 'difficult to deal with client' will attract an additional special margin. This can be 20%, and in some cases even more.

Senior Specialist Consultant
September 2011

4. Opportunities for improvement – foundation factors

This chapter explores the foundation factors and related opportunities to improve tendering strategies, recognising that a key challenge is to ensure good practices are consistently applied by all agencies.

4.1 Introduction

This chapter discusses a range of factors raised in interviews both as problems to be addressed as well as opportunities for improvement. These factors provide the basic foundations for success and must be done well every time in order for the tender strategy to lead to a successful outcome.

Suggested opportunities for improvement, which pertain to the tender phase, are outlined in the following sections.

4.2 Foundation success factors

In this section, foundation factors that lead to successful outcomes are detailed. Surprisingly, there was a good deal of common ground among both clients and tenderers about these factors as well as the key issues that need to be addressed in the tender process. They saw a failure to address these foundation success factors as creating difficulties and expectation gaps, leading to sub-optimal outcomes. The views of the practitioners consulted have been paraphrased[9] and summarised in Table 3.

Table 3: Foundation success factors to be addressed in the tender process

	Foundation success factors	Comments from interviewees
1	Key to success is the people and the leadership that all parties (client and tenderer) bring to the project[10]. *(This has also been separately identified as a key challenge in section 3.3.)*	Leadership and capability from the client, designer and constructor are the key. Get this right and you will get the right behaviours and attitude; and at the end of day, the best project solution and price, and delivery in the shortest time period. A major problem arises in tendering and project delivery processes where there is a thin skill base in the client and in the parties tendering.
2	Good clients achieve good results. A high quality project definition will give tenderers confidence that they are dealing with a desirable client. This is a good beginning to effective collaboration, leading to better project outcomes with a minimum expectation gap. The foundation for good project definition commences in the planning process.	Clients don't always communicate what they are buying at the level of detail required of the tenderers; and even collaborative processes will not overcome the problem of a client that can't articulate what it wants. Frequently this arises from a deficient business case and pre-market planning, and a lack of project definition and risk profiling. Similarly, the procurement options analysis may be poorly informed. Contractors must not be used to fix poor project definition and poor documentation. Too often the

[9] Many practitioners interviewed expressed the same core insights in different terms and from different contexts/projects. Table 3 represents the Report author's considered view of how to summarise and present these insights that often came from many voices.

[10] A cautionary note was added to this view that winning a tender involves specialist skills, which are different from those required for a successful construction project. The people that the client sees during the tender process may not always be the same managers and technical experts that are seen "on site". The time lapse between submitting a tender response and the contract being awarded, with a waiting period of 6-8 weeks and sometimes even more, can be challenging for contractors being able to keep a high performing team together.

	Foundation success factors	Comments from interviewees
		expression “fit for purpose” is used to cover up gaps in project definition and for a contractor this could mean anything from what is in the tender specifications to world’s best practice. Unless this is properly explained it opens up an expectation gap. Scope creep comes from poor documentation.
3	It is of critical importance that the client provides tender documentation and briefings to tenderers that are specific, complete and accurate.	The quality of tender documentation is an issue. The common wisdom is that a client “not ready” is a client that should not proceed to tender. (However, tenderers are their “own worse enemy and we will chase any tender that is released”.) The better the documentation and communication of the client’s understanding of project risks and supply requirements, the better the project outcomes. Ambiguous contractual language, inappropriate risk transfer, time shifts the pain to a point where it will hurt the most – post contract award.
4	Time is required to nurture good project outcomes. The client needs time to plan properly. The better informed the client is the more the project is developed before tenders are called, the greater is the value the client can obtain from the competitive process (irrespective of the procurement model). Time is also required for the tenderers to undertake good design/planning for a better tender response.	Sometimes the most capable and the best informed of the tenderers will request an extension of time to the tender period. Such a request may be driven by the astute identification of project issues requiring further analysis; it does not necessarily mean just poor resourcing in the process by the tenderer. There are cases when the best qualified and informed tenderer will provide a tender response with qualifications. Sometimes, the absence of a tender qualification indicates a tenderer has not understood the project challenges. Time needs to be taken to understand the quality of qualifications.
5	Clients should be clear in their rationale for selecting the D&C model. D&C is well suited for clients seeking innovation in the design and delivery of their project. It should not be selected solely on the basis of wanting to transfer project risks. (Although, D&C can be very effective in managing the many project interfaces eg between design and construction). Where innovation is not a priority, the client should consider Construct Only. This will be much more efficient and eliminate the need for the industry (the shortlist) to produce three or more similar designs. The development of a project design in a D&C will provide an opportunity, other than price, for tenderers to distinguish themselves from others. However, highly prescriptive designs from clients promote a focus on price margins. Prescriptive designs provide less flexibility for innovation on construction methods, program scheduling etc. It is the combination of these factors which results in better project solutions and prices for the client.	If the client requires innovation, then it needs to give the tenderer space; not just flexibility over “light grey” vs “dark grey”. If a project is Construct Only then the client must fully define the project; and the tenderer works on its construction methodology, program scheduling etc to compete on the most economical price to achieve that project definition. A D&C tender should lead with a performance criteria so that in this model the tenderer can also compete meaningfully on design. On the other hand, in some D&C projects the client should consider providing up to (say) 30% of the project design (defining full functionality and the main scope elements); with the balance of the design being the area of competition by the tenderers. Such a 30% figure (or other) would specifically correspond to the design that all tenderers would need to do in common, and the ability to innovate beyond this level of design would be a differentiator. (This would be a significant saving to industry in bid costs.)

	Foundation success factors	Comments from interviewees
6	The optimum size of a shortlist is 2 or 3 – this will yield more competitive tenders than a shortlist of 4 or 5; or even more[11]. A shortlist of more than 2 or 3 may either cannibalise resources from other projects, or the tender will be resourced sub-optimally. The best tender outcome will come from smart and effective competition. The tenderers need to be confident that they have committed resources to a quality process where selection is based on merit; and there are good odds of winning.	Clients should ensure that the tenderers' costs are minimised. One way of doing this is through clarity of what needs to be included in the tender response; and clients should not request tender material that will not be used to make the selection decision. Tenderers should not be asked to make presentations when these do not directly contribute to the selection decision. Smaller shortlists will reduce costs for the industry and for a firm's portfolio of project opportunities. Collaboration is most effective when the tenderering parties are out of the "sale mode". This represents an extra level of commitment more likely to be seen in a quality tender process where there are reasonable odds for success. Clients should introduce a "pre-EOI" phase where they showcase the project and give the designers and the constructors an opportunity to form into the best fit bidding team (which includes arranging for the most capable people to be involved).
7	The client will optimise its opportunities for project success with an open and collaborative attitude to a tenderer's exploration and interrogation of the project objectives and tender requirements. Such an exchange and exploration with the tenderer will reduce the expectation gap. The client needs to be listening to the tenderers, whilst at the same time being authoritative (ie knowledgeable and capable) about the project outcome. (A rule of thumb is that in an effective collaboration process, a client will be able to respond immediately to an enquiry 80% of the time.) *(This foundation factor has also been separately identified as a key challenge in section 3.3.)*	Throughout the collaborative process, the tenderers need to have confidence in the experience, capability and decision making authority of the client's team. When a client provides a message of "no qualifications", "no contract departures", "no exemptions" etc., then tenderers are likely to conclude that the tender will be decided on price. This will open up expectation gaps. Collaboration doesn't work if the client remains silent on issues raised by tenderers or does not provide timely responses. The client should make sure final tender documentation either addresses feedback or provide an explanation of why changes have not been made. Clients should consider discussing upfront the rules and principles for making contract claims, and have these clearly articulated in the RFT.

[11] Where a prequalification system is in place, clients should still aim to use a short-list of 2-3

	Foundation success factors	Comments from interviewees
8	The client needs to provide full clarity on the tender selection criteria. If tenderers are to make a (significant) investment in a tender process, then they need to fully understand the criteria by which this investment will be judged. Tenderers want to know whether the lowest price for a complying tender is the "decider". Equally important is the quality of the evaluation process, and the involvement of senior capable people.	The client needs to be aware that the structure of its tender may have un-intended consequences of how the tenderers will (in turn) structure their tender. If tenderers are of the view that complying with the tender at the lowest cost will win, then that is exactly what the tenderer will provide. On the one hand, clients should not select the tenderer that "has made the biggest mistake"; and on the other hand, tenderers should not make tender offers that take advantage of the client's mistakes. Both of these behaviours widen the expectation gap leading to poor outcomes and poor relationships.
9	Effective and appropriate risk transfer requires effective communication of client requirements and expectations, and a thorough understanding of the tenderer's offer. A client attitude that encourages and supports/rewards identification of RFT gaps and issues (that may even "embarrass" the client) will reduce the expectation gap.	Clients need to fully dimension and communicate the details of a project risk, and not just name it, to get the best price for transferring that risk and to avoid later disputes. This will require extensive discussion between the parties. Transferring un-dimensioned (inappropriately investigated) risk is effectively asking tenderers to take a gamble, and if the gamble doesn't come off, then disputes are likely to follow. There was also a view from industry that sometimes legal advisers will default to attempting to transfer "inappropriate risks" to tenderers. The more engaged the tenderer is in the collaborative process, the lower the price of the tender and with fewer qualifications. However, if a client gets defensive then the tenderers will not became fully engaged.
10	An effective collaborative session will result in tenderers saving time that they would've otherwise lost in trying to understand tender documentation in isolation and in developing options to address inconclusive documentation. *(This has also been separately identified as a key challenge in section 3.3.)*	One productive hour with the client will save 4 or 5 hours (and may be more) for the tender team in developing the tender response. If inconsistencies in tender specifications are not dealt with before tender responses close, then they must be dealt with during tender evaluation. This is not an effective outcome for optimising good tender responses.
11	Being collaborative should be part of an organisation's culture; listening and acting on the other party's feedback should be a business-as-usual attitude. *(This has also been separately identified as a key challenge in section 3.3.)*	There are many examples of clients, whose projects are highly sought, investing a great deal of time engaging with industry outside project specific forums. With these clients, collaboration within a project is just an extension of what they do more generally; they are prepared to listen and respond to what they hear, although this does not mean they always agree with the views of industry and more specifically with tenderers on project issues.

	Foundation success factors	Comments from interviewees
12	Current market conditions, including the constrains of available people capabilities in consultant engineering and construction firms, are placing stress on project outcomes in those States experiencing a resources boom. This is seen in consultant engineering where there is insufficient capacity at the middle level to meet current demand for design services.	The business model used by consultant engineering firms (reimbursement of hourly rates and limited PI exposure) can be a source of tension with construction firms. The problem of capacity (and this business model) is seen in D&C delivery, and in other models, with issues of design management for direct costs and ensuring consistently cost effective designs.

The above factors and related issues span all phases of the project life cycle. Where these factors are relevant to the Tender Phase, they are in-scope for this investigation and are discussed further in subsequent sections.

4.3 Setting the context

In designing the tender strategy and processes and in setting expectations, it is important to understand and clearly state the primary purpose of the tender process. For example;

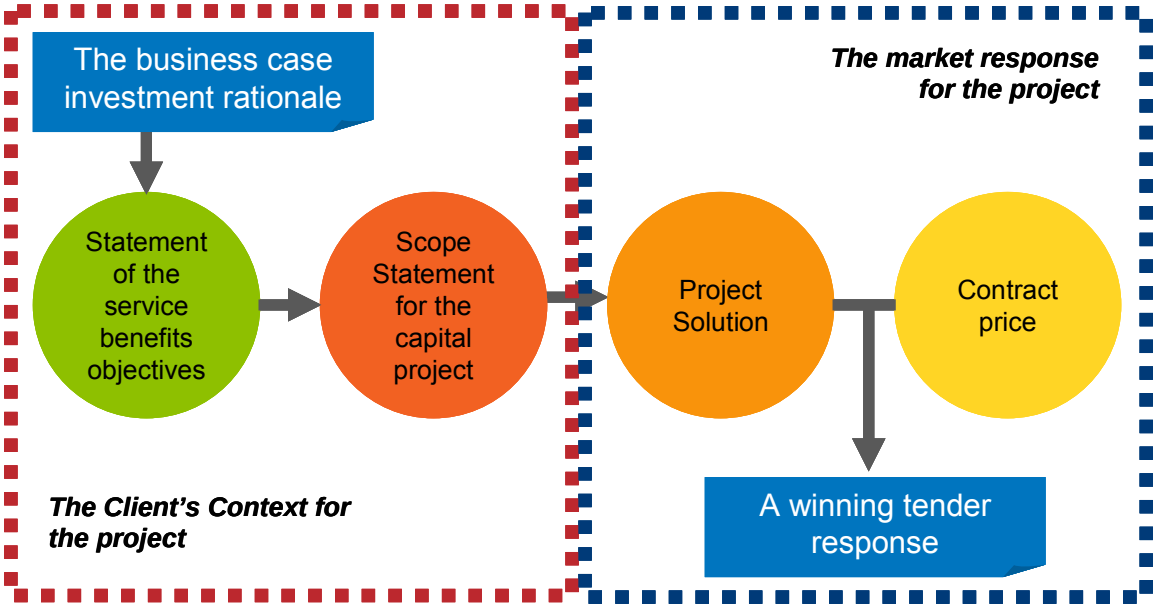
- is the primary purpose risk allocation?;
- is the emphasis on allowing the D&C relationship to work to the benefit of the client by removing the potential disconnect between 'D' (design) and 'C' (construct)?; or
- is the emphasis on maximising innovation in design and construction?

Being clear about these objectives and priorities and aligning the tender strategy and processes to these objectives will result in improved outcomes.

Communicating the business case rationale behind the investment decision to fund a capital project will assist bidders to understand the wider context of the project and the required project deliverables. This has added importance in a D&C project where detailed decisions on design solutions, catering to the client's required functional, utility and performance requirements, will lead to other decisions regarding risk management, construction methodologies and value management analysis. These activities can be greatly influenced by understanding the wider context. Figure 4 illustrates this context.

When a design decision is made, there is the potential for the Service Need to be impacted. This is less of an issue with a Construct Only model as the design provided to the tenderer should already address the Service Need. However, if the client does not clearly communicate the business case rationale (Service Need) to the tenderers, it could lead to detailed design decisions not meeting the Service Need.

Figure 4: Setting the context for an effective D&C tender process



4.4 Developing more effective tender documentation

The Australian Constructors Association in its 2001 paper, *D&C Projects: a model procurement process*, identified the following key points (paraphrased) for developing more effective D&C tender documents:

- The client should prepare clear, concise and well documented performance and technical criteria for the project. In addition, the client should also provide criteria and objectives for durability, community standards, environmental standards, design life and any other significant issues that need to be addressed. Furthermore, it is a clear prerequisite of a tenderer accepting a risk that there is sufficient information provided by the client of a suitably quality to enable it to understand and sensibly price that risk.
- The client should prepare the conditions of contract in a manner that clearly and appropriately allocate risks, avoids uncertainty, removes the potential for dispute, have clarity and allows flexibility to accommodate a likely range of events and circumstances.
- The tender process should allow resolution of general issues requiring clarification to all tenderers.
- If appropriate, workshops could be held with proponents to discuss particular issues of general interest such as geotechnical where the tenderers could ask the client's expert and agree on further geotechnical investigations to be carried out by the client.

These points remain current and should be a starting point for a client when preparing and undertaking its quality assurance process for the tender documentation.

4.5 Defining the project scope

Figure 5[12] illustrates how functional specifications and requirements should be developed by the client for inclusion in tender documentation. The principles behind this approach include[13]:

- first define the functional or performance requirements[14];

[12] , taken from *Guidance Note 5: Developing the TOC in Alliance Contracting* (Department of Infrastructure and Transport, June 2011)
[13] In addition to GN 5, insights have been paraphrased from HM Treasury Infrastructure UK – Infrastructure Cost Review Main and Technical Reports 2010.

- secondly, and only where necessary, provide progressively further detailed information about requirements;
- avoid over specification, the application of unnecessary high standards or specifications and usage of bespoke/"gold plated" solutions when off the shelf design is sufficient. Encourage more outcome based specifications and a greater consideration of value for money, delivering cost certainty and programme certainty;
- define the requirements clearly in output terms to allow the industry to design the most effective ways to meet the output requirements in more cost effective solutions;
- increase the use of standard solutions and designs, and the use off the shelf products where possible; and
- reduce the unintended potential of having "non-conforming bids" being submitted by bidders[15]. Similarly, the client must provide absolute clarity on how "alternative proposals" will be treated and evaluated.

In addition, the client should ensure it maintains consistent design oversight so that it is not exposed to unnecessary costs. Clients should have competent in-house technical capability to lead, discuss, challenge or interrogate technical issues and generally manage the relationship with the tenderer (including designers in the tender team).

Clients should be aware that short cuts, truncated project planning periods and poor tender documentation will result in time shifting issues and identifying of risks to when they are most costly to deal with[16].

"Ultimately the risks and trade offs made by clients during negotiations have to be considered in the context of its business. The senior representative must judge the sometimes conflicting views of its technical advisers and those of the contractor's and make the best decision for the business. Participating in negotiations on technical matters allows this decision to be made expeditiously. This is particularly the case when advisers may be risk averse to a different approach from the contractor that promises at least the same technical performance and functionality. Weighing these perceived risks with other trade offs and the strength of the commercial terms to hold the contractor to account will lead to the best decision for the business. "

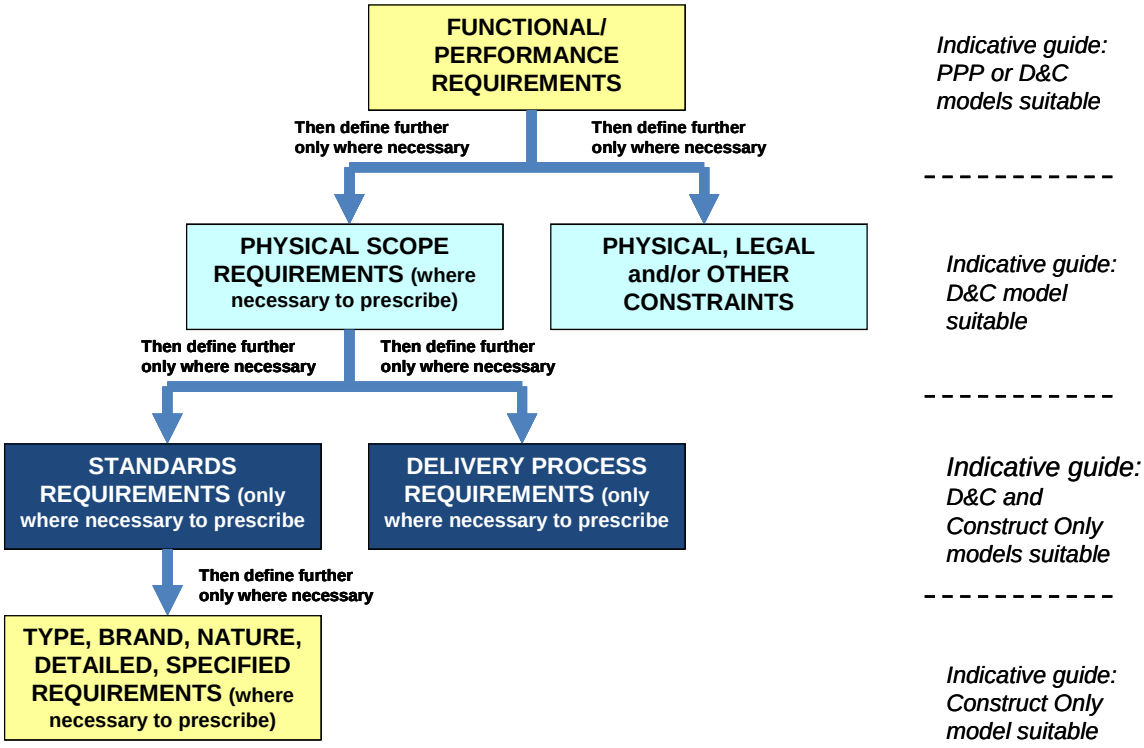
Ian Payne
GM, Asset Solutions, Sydney Water
September 2011

[14] Conducted in the planning phase but communicated in the tender documents in the tender phase and should include clear whole-of-life performance requirements

[15] Highly prescriptive and detailed specifications may generate a higher number of non-conforming bids if bidders propose different technology to deliver the Project or propose different approaches to the project design. As a good practice principle, the client should ensure that its tender documentation does not set an unduly low threshold criterion for "non-conforming" or "alternative" proposals. The client should avoid a situation where only a bid strictly addressing its documented concept design solution is considered as "conforming", unless there are compelling reasons for requiring such an inflexible approach.

[16] One common short cut identified by tenderers in this investigation was the use of "catch all" phases such as fit-for-purpose. Clients should exercise caution when using such phrases as they have the potential to cause uncertainty, disputes and cost pressures. They need to be clearly understood in the context they are used, such as the availability of well understood and accepted external standards and/or practices, and not made to cover issues of project definitions.

Figure 5: Different levels of definition for Functional/Performance Requirements in the tender specifications



"Projects are typically pretty simple…we have been building roads for a long time. It is just that we like to create a mystic around them to make us look good and for others [contractors] to make a lot more money."

Senior Executive, mining company
August 2011

4.6 Contracting for the procurement model selected

As part of project planning and the selection of the procurement model, the client must be very clear about the rationale for using a particular model and that rationale should in turn drive the specific structure of the market engagement strategy, including determining what will be prescribed or mandated, and what will be left to the market to innovate and compete on.

The client needs to select the right procurement model for its project and then be faithful to its key attributes, otherwise the tenderers may become unclear on what is expected of them. For D&C - tenderers must be allowed to compete on at least:

- design – there must be real flexibility allowed as outlined in Figure 5;
- construction methodology;
- program scheduling; and
- price.

On the other hand, for Construct Only, the tenderer must be allowed to compete on:

- construction methodology - based on the full project definition provided by the client;
- program scheduling; and
- price.

The client needs to respect these parameters otherwise the expectations of what constitutes a successful bid will be blurred and lead to poor tender outcomes. Conversely, the tenderers must be transparent in what the design means in respect to functional outcomes.

4.7 The Tender Selection Criteria and the evaluation of tenders

The Tender Selection Criteria and evaluation approach are critical to the success of the tender process. No matter how good the project definition is, if the "wrong" tenderer is selected, or the selection criteria are inappropriate, then achieving the desired project outcome will be high risk.

If tenderers are to make an (significant) investment in a tender process, then they need to fully understand the criteria by which this investment will be judged. Therefore, the tender documentation must clearly and fully state the selection criteria and how they will be evaluated.

Whilst tenderers do seek certainty and clarity in the tender selection criteria and evaluation process, there was a view from tenderers that these are at times obtuse. It was strongly held that the "goal posts" for winning a tender must be made clear and if not clear gaming will be inadvertently encouraged with the consequence of growing the expectation gap.

Moreover, the evaluation process is only effective if the evaluation panel has the appropriate capability to be able to undertake its role. Ideally the panel should be made up of a diverse but relevant range of people who can apply their experience to the process – with a combination of panel members drawn from both industry and government. This panel should be involved in pre-RFT 'peer review' of the evaluation approach, criteria and documentation. Whilst it is important to have appropriate senior technical expertise on the panel, it is equally important to have commercial ability. This range of expertise and balance will improve the quality of the evaluation process, tender documentation and evaluation outcomes.

Giving tenderers full confidence in the tender selection criteria and in the evaluation process will optimise the tender offers and ultimately the project outcomes. There was a widely held view that competent clients and evaluation panels attract competent contractors and optimal bids.

In formulating their tender selection criteria, clients need to be mindful of un-intended consequences. For example, requesting un-necessary or overly detailed designs that will not be used in evaluations will rise barriers for entry to smaller players that can't afford high bid costs.

Care should be taken when considering evaluating the collaborative effort as part of the tender selection criteria. Whilst it may encourage a greater effort from bidders, introducing an evaluative component also introduces the risk of making the process more regimented. This may "stifle" real challenge and "interrogation" from tenderers for fear that they will be penalised, thought less off and/or evaluated harshly for such contribution. It may be that the optimum way to encourage real effort in collaboration is to evaluate the result of the collaboration rather than the process itself, for example, "the tenderer demonstrated understanding of the project, including specific project risks and mitigation strategies for those risks". This would still be largely by way of their written tender, but would be developed and better understood by the tenderers through a good collaborative effort.

4.8 Project Risks vs "Poor Planning" Risks

As mentioned above, a source of contractual conflict arises when the client approaches the market with a poor or incomplete understanding of the project. Often such market engagement processes will have the added confusion of dressing up *poor planning risks* as *project risks*.

- **Project risks** are the risks associated with implementing the project, for example, a contaminated site, regulatory planning failure to grant a right of way, materials defect etc. These are the residual risks that projects are exposed to and which can be reasonably quantified and managed, either by transferring them to another party better able to manage and therefore price the risk; or by retaining the risk, which implies active management by the client to reduce or preferably remove the risk by taking mitigating actions.
- **Poor project planning risks** most often crystallise on projects when the project has not been properly defined and analysed. These risks are most often associated with flawed and truncated project planning, and typically see significant scope changes and other surprises during the tender process and/or post-contract award. Poor project planning risks in the worst case can be catastrophic, resulting in extensive delays and cost overruns in the thousands of percent.

Tenderers are experienced in, and generally have a good track record of, managing project risks. They are experienced in pricing into their tender responses the many project delivery risks that they are best placed to manage. On the other hand, poor planning risks, where Business Cases are rushed and capital works are poorly analysed and defined, may result in poor planning dressed up as project risks, and these will attract significant premiums when being priced and/or be a source of significant contractual claims.

One way in which the poor planning risk expresses itself, is the provision of data and information to tenderers, such as geotechnical investigations and reports, with disclaimers that effectively do not give such information any weight. This can encourage tenderers to (for example) discount such information and place exemptions in their tender response, undertake their own investigations (increasing bid costs) or take a gamble and factor in a high premium in their tender price. In interviews conducted for this report, clients were encouraged to be sensitive to the implications such disclaimers have on tenderers as they develop their tender response. One senior industry practitioner was of the strong view that consultants engaged to provide technical data must be held accountable by the client so that the contractors could readily rely on such information. Tenderers do seek certainty and clarity in the client's tender requirements and information.

"We need to fully dimension, explain and document a project risk, not just name it, to get the best price for transferring that risk; and later avoid disputes."

Ian Payne
GM, Asset Solutions, Sydney Water
September 2011

Clients should have a thorough understanding of the project risks, not only to communicate this information to tenderers and thereby improve the value of tender responses, but also to enable them to effectively interrogate tenderers on how they intend to manage these risks.

5. Opportunities for improvement – Collaboration

This chapter discusses the concept of collaboration in traditional contracting and its use for the benefit of both the client and the tenderer.

5.1 Collaboration and Interaction

From a strictly legal standpoint, there is not a material difference between the terms "collaboration" and "interaction". However, there is a practical difference in the way that these terms have been commonly understood, used and applied in the context of procurement processes. Generally, it could be said that 'collaborate' has a broader meaning than 'interact' (i.e. two parties can interact without collaborating but cannot collaborate without interacting).

The term collaboration is used in this report as meaning the client and the bidder having an open, honest, frank dialogue to understand the client's tender needs/wants on the one hand; and on the other to understand the bidders' potential supply offer. It is about the sharing of information/knowledge which historically resides or is kept by one of the parties. The sharing with the other is to "collaborate" to achieve a common goal; the goal being a "successful project", which normally has a different meaning to each party, but is one they are all pleased/proud to have delivered.

Collaboration in this context can mean that the client will provide guidance to the bidder on its emerging tender response. Moreover, the client may be put in a position of explaining, answering questions; thinking and responding about things it hadn't put its mind to but which the bidder feels is important for fully understanding what the client wants to procure. However, all this does not mean the client has ownership or takes a share of the risk of the tender offer informed by the collaborative process. The tenderer at all times owns the tender proposal, including post-contract award. This process should be mutually beneficial to both parties where everyone understands what is required.

Collaboration is not Partnering

Partnering in construction contracts was developed / employed in the 1990s as a means for establishing a more cooperative relationship between parties in "hard dollar" contracts . Typically it involved the development of a "Partnering Charter" which ran in parallel with the construction contract and provided guidelines on how the parties should conduct their relationship. The challenge with partnering was that it could lead to an expectation that when significant contractual issues arose, the parties would work cooperatively to resolve the matter (rather than reverting to the contract terms), even if it required commercial compromise by one of the parties.

Collaboration in the tender stage is not the same as partnering. For collaboration to be effective, the client and tenderer must at all times act in accordance with the rules of the tender process as defined in the RFT. Furthermore, each party must recognise and respect that once a contract is awarded the other party will want to, and is entitled to, satisfy their contract obligations in the manner which best suits them, whilst acting in a professional, diligent and reasonable manner at all times.

The contract is awarded on the basis that one offer was superior to all others. Changing contractual terms, conditions and price post award is problematic as it can invalidate the tender selection decision.

The process for procuring D&C contracts has traditionally been viewed as "interactive", but not necessarily "collaborative". For example, the project owner interacts with prospective contractors to provide technical information, discuss clarifications, and negotiate the terms and conditions. By contrast, the process for selecting and establishing Alliance Contracts has traditionally been viewed as "collaborative". For example, the owner and non-owner participants would actively co-operate

and work together as a team to build up and agree the alliance principles/objectives, project solution and commercial framework. That said, there are opportunities to incorporate more "collaboration" in the procurement of D&C contracts (and other "hard dollar" contracts), as procurement models continue to evolve; and indeed this has been reported by many agencies in various jurisdictions.

To be most effective, collaboration must commence early in the tender process and continue in the contract management phase. (A number of practitioners interviewed noted that it was a pity that the good collaboration experienced pre-contract award evaporated post-contract award, often as a result of different teams coming aboard.)

"One of the most collaborative projects I have been a part of was Sydney Water's Desalination plant that was delivered under a D&C contract."

Rob Monaci
General Manager, NSW/ACT Region
John Holland Group
September 2011

5.2 Cultural requirement for collaboration to work

The collaborative steps recommended for integrated into a typical D&C process, leading to better project definition, better tender documentation and better project outcomes, are shown in Figure 7, section 6.1.

However, practitioners recognise good collaboration results from the right leadership behaviours from all parties, and this is needed to achieve good tender process outcomes. In recognising that the expectation gap at contract award is the most significant driver of poor relationships, it is also recognised that the size of this gap has as much to do with the behaviours of the organisations and individuals involved as with the structure of the process. Ideally, the leadership on both the client and supplier side drive a culture where the intent is to participate in the tender process with integrity and open and frank dialogue to ensure that the expectation gap is as small as possible. This should be an environment where all questions (comfortable and uncomfortable) are welcomed and answered as fully and openly as possible. (It is better to be embarrassed during these discussions than to be embarrassed post contract award.)

If it becomes clear during this time that the client (or the tenderer) does not have appropriate capability to address the questions and ensure shared understanding, strong leadership is required to ensure that the right capability is brought in to achieve a good outcome.

5.3 Reducing the expectation gap

Collaboration is a first order issue for reducing the expectation gap and should be the norm in any form of contracting. It leads to a better alignment between what the client wants and what the market can deliver. Table 4 highlights the different viewpoints and expectations that parties in a tender process may bring to the collaborative dialogue. There is no presumption that any of these differing views or expectations are right or wrong, simply that they exist given the differing corporate environments and objectives. Once the differences are recognised (and respected) and worked through, a sensible commercial arrangement can be arrived at and agreed upon. Some of these differences can be subtle, however the implications can be significant.

Table 4: Different viewpoints and expectations

	Client (buyer)	Contractor (tenderer)
Overall contract outcome	Lowest price for the *required* performance of the asset/service	Lowest price for compliance with the *contracted* delivery of the asset/service
Objective from a collaborative step	To listen to bidders' issues and to respond as best as possible and in a timely manner to ensure the best tender offer from the tender process.	Identify opportunities and issues in the tender documentation that will limit downside exposure during delivery; and which may erode chances of winning the competitive process.
Attitude during collaborative step of interrogation	Being open and valuing comments and issues identified by the bidders. Welcoming a robust interrogation.	Probing and asking questions without reticence. Undertaking an informed interrogation.
Leadership style	Collaborative and works with integrity and has senior experience and capability	Collaborative and works with integrity and has senior experience and capability
Working in an open way	Will use best effort to research, analysis and document the client's objectives, project definition and tender documentation. Will be open and transparent on all project challenges, will not exploit the tenderer's position.	Will use expertise to assist the client fully definite and identify the challenges of the project. Will not use deficiencies in the client's understanding of the industry or its tender documentation as a business opportunity.
Attitude during the collaborative step of testing	Will respect each bidder's IP	Will test emerging tender responses to enable me to give the client a full tender response with no known "surprises" post contract award.
Attitude during negotiation	Working with integrity, develop a shared understanding of intent and resolution of outstanding issues to enable the right tender offer and pricing; and ensure no surprises	Working with integrity, develop a shared understanding of intent and resolution of outstanding issues to enable the right tender offer and pricing; and ensure no surprises
Attitude post-award	Contract management based on shared understanding of intent	Project delivery based on shared understanding of intent

5.4 The benefits of collaboration

"We have observed that with collaborative processes, the price band between the competing bidders is reduced. This indicates that both parties have a much better appreciation of the contract requirements and the associated project risks"

Bruce Gidley
Chief Operating Officer, VicRoads
September 2011

In a D&C tender process, collaboration should provide an opportunity for:

- shortlisted tenderers to question and clarify their understanding of the client‘s requirements;
- provision of advice/insight to the client where additional analysis or investigations will clarify or further dimension the project and the project risks;
- establishment of the potential for good commercial relationships that will maximise success for the project; and
- early identification and resolution of problems and risks with the tender request that are likely to be a source of stress or dispute post-contract award.

The benefits arising from this collaboration are to:

- avoid any significant additional costs, and even tender loss, for tenderers during the tender preparation period arising from an misunderstanding or misinterpretation of the client's requirements;
- assist the client to clarify and further dimension project risks to ensure these are optimally priced by tenderers;
- allow the Client to better evaluate the tender responses against its actual and accurate requirements;
- avoid deficient contract documentation to assist in reducing misunderstandings during the delivery of the Project, and subsequent potential disputes and contract variations;
- avoid conflicts arising from mis-communications and misunderstandings leading to loss of reputation and financial loss by both parties;
- promote and develop a working relationship prior to contract award and delivery; and
- establish effective competition during the collaborative process based on a quality tender request leaving no need for clients or tenderers to game or take a gamble.

“The more engaged the bidder is in the interactive process, the lower the price of the bid with fewer qualifications.”

Graham Watt
General Manager, NSW Public Works
September 2011

5.5 The risks of collaboration

There are some risks in conducting a collaborative process, if it is not conducted well. These include:

- **Tenderers do not see the benefit of tender phase collaboration:** Tenderers will ask the question “what’s in it for us?”. Clients must support and ultimately reward tenderers for identifying issues and gaps in the RFT, and by doing so the tenderer becomes more informed about the client’s requirements and expectations. This identification of issues and potential opportunities will then limit the successful tenderer’s downside exposure during delivery, however it could also erode their chances of winning the competitive process if this active identification of gaps and issues is not perceived positively by the client.
- **Collaboration perceived by the tenderers as fixing poor client documentation:** Tenderers may view collaboration as a means for clients to have their RFT documentation checked by the market for errors, ambiguities or just poor project definition. As a consequence, tenderers do not see the value of the collaboration phase and the objective is not met. Quality RFT documentation (focussed, robust and comprehensive) avoids this perception. The client should put in place quality assurance processes involving senior experienced capability.
- **Emphasis is taken away from production of quality RFTs**: Clients become less focused on documenting tender requirements as it is often much harder to give written requirements

in a clear unambiguous way, than to have a verbal conversation about them (in a workshop). This leads to the risk that tenderers are left with their own interpretation of what was said and agreed. Also, tenderers lose focus on the need to read and understand the tender documentation, as there is the opportunity to be briefed during collaboration workshops.

- **Tenderers fear losing the 'winning edge':** The upside of collaboration can be reduced by potentially stifling innovation (identifying and presenting value engineering or opportunities) during the tender development process because of the supplier's fear of giving away their winning edge. If suppliers have this concern, then they may not bring the best team into the collaboration process in the hope that later (during delivery if they win) their best team can challenge the agreed design with value engineering alternatives, planning and methodology considerations. This fear, if not managed at the outset, will increase the risk of clients missing out on the best teams tendering for their project.
- **Transfer of poor RFT documentation risk:** The collaboration process could be perceived as just a "tick the box" exercise that aims to reduce the opportunity for the Contractor to successfully claim well founded variations, arising from poor RFT documentation, during delivery.
- **Probity constraints are such that interaction is limited:** The rules and process followed by the collaboration phase needs to allow sufficient interaction to occur. (Capable probity advisers need to be engaged that are able to assist the client to structure as an "enabler" and not as a "barrier" to good collaboration. Probity should ensure equal opportunity and treatment for the tenderers, not identical dialogue.)
- **Insufficient time allowed in the Tender Phase:** For collaboration phases to be effective, sufficient time must be allowed in the totality of the tender phase. Projects which have had truncated planning and tender phases imposed on them (due to a number of reasons, e.g. urgent community need) are unlikely to gain the full benefit of a collaboration phase. If time is constrained during the collaboration phase, tenderers may not get to fully explore and test value engineering / opportunities, or identify issues and gaps. Similarly, clients may be constrained in the quantity and quality of their input[17].
- **Asymmetrical capabilities between clients and tenderers:** For effective collaboration, there needs to be symmetry in capability, experience and confidence between the client and tenderer teams and personnel. While clients will have an expectation that tenderers will explore the client's requirements, tenderers will equally expect clients to be open, timely in their responses and to support identification of issues, gaps or opportunities.
- **Perception that a 'collaborative contract' is being established:** It is possible that a perception is created that a "collaborative contract" is being established, with the result that during delivery either the contractor thinks there is an ongoing opportunity to seek revision of the client's requirements; and/or the client thinks it can make ongoing revisions to its requirements with minimal impact.
- **Inconsistency in Client Responses:** During interaction/collaboration workshops, client's representatives could give instructions about what they believe is required or expected by the client, which are not consistent with the client's requirements set out in the tender documentation. In addition, responses provided by client representatives in the workshops may not be consistent across all tenderers, resulting in some tenderers being disadvantaged or submission of non-complying tenders. The client must have processes in place to manage these issues, in particular allocating senior experienced people to the workshops.

[17] One industry practitioner expressed concerned regarding the available client resources and the logistics of conducting an effective collaboration process with a shortlist of more than two tender teams. The client should consider how best to manage this issue and ensure its objectives from the collaboration process are fully realised.

5.6 The appropriate application of probity

Effective collaboration results in the client and tenderer having a much better understanding of what each party requires and expects. It can also contribute to a stronger relationship for the project delivery phase with disputes resolved more easily and with less significant cost impacts. However, the over-zealous and uninformed application of probity rules can result in effective collaboration being ruled out unnecessarily.

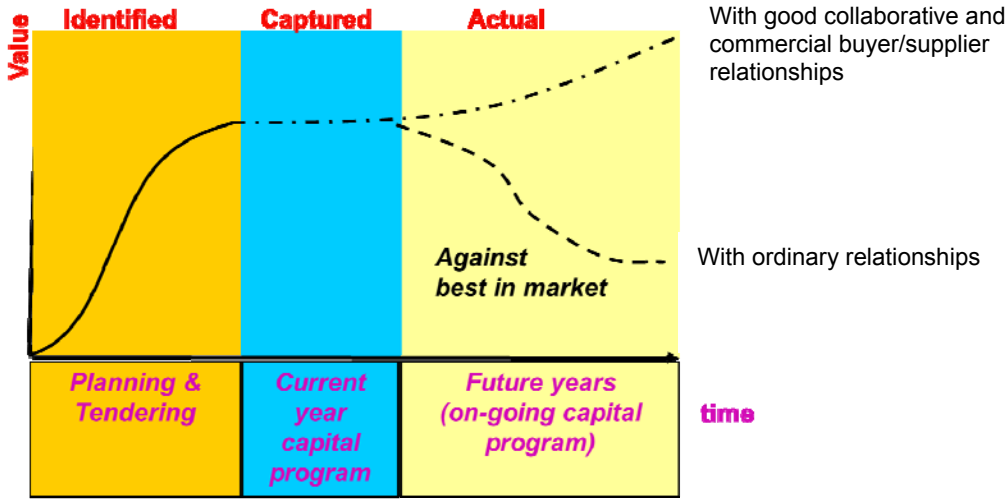
It is perceived by many practitioners, some expressing their views strongly, that in many tender processes, probity requirements are applied inappropriately and unnecessarily inhibit the tender process and ultimately the project outcome. Whilst it is of the utmost importance that probity requirements are met to ensure a contestable and competitive tender process that results in VfM[18] outcomes in the public interest, probity should ensure that effective collaboration can take place, not inhibit it. This issue is dealt with in Chapters 6, 7 and 8 by proposing a framework and set of "ground rules" that allow for effective collaboration to take place that satisfies probity requirements.

Clients should ensure that they engage probity practitioners who understand the nature of this more challenging probity environment and in particular that best practice probity principles can be adhered to whilst not detracting from the real benefits that can be achieved by projects which use collaboration. The key to achieving these overall outcomes is to apply a principled based probity approach rather than an unduly prescriptive regimen which is neither necessary nor founded on sound probity concepts.

5.7 Continuous Improvement

The concept of continuous improvement supports the view that the VfM outcome negotiated in the past, may not provide the optimal VfM outcome in the present. The commercial and engineering environment is not static; and the contracting program of repeat clients is successful if it can be demonstrated that there is tangible year-on-year continuous improvement on VfM outcomes. If continuous improvement is not achieved, but is at a standstill, then the client's VfM outcome is likely, by comparison to the best in the sector, erode over time (see Figure 6).

Figure 6: A big picture challenge for repeat clients and their repeat suppliers



[18] VfM denotes, broadly, a measure of benefits covering quality levels, performance standards, risk exposure, other policy or special interest measures (e.g. environmental impacts), balanced against price. Generally, value for money is assessed on a 'whole of life' or 'total cost of ownership' basis. It is the lowest cost for the client's required performance (which includes standards of quality, functionality, utility, timelines, whole-of-life requirements etc)

Achievement of continuous improvement is of particular relevance to repeat buyers (such as governments procuring infrastructure assets) and repeat suppliers (such as contractors and service providers contracting for the delivery of those infrastructure assets). Continuous improvement initiatives will include but will not be limited to:

- productivity gains;
- improved quality;
- improved and/or rationalised specifications;
- innovation; and
- lower outturn purchase costs for the client; and lower outturn supply costs for the supplier.

A repeat client should establish a proactive framework for tracking and reporting on continuous improvement outcomes achieved by its own initiatives and those of its suppliers. This can include:

- the client being a “customer of choice”;
- clients helping suppliers become more efficient, effective and economical in their competitive tender offers;
- suppliers helping clients become more efficient, effective and economical buyers;
- clients sharing information with other related client agencies;
- identifying appropriate metrics and tracking performance against industry best practice ;
- making the quality of the contractual relationship and project delivery outcomes a key tender selection criterion in all future tender activities (can also include an assessment of the supplier’s track record in continuous improvement); and
- setting up appropriate reporting and information sharing forums with suppliers to identify and pursue continuous improvement opportunities and innovations.

The long term commitment that repeat buyers and suppliers have to the quality of their relationship should be evidenced in continuous improvement achievements year on year.

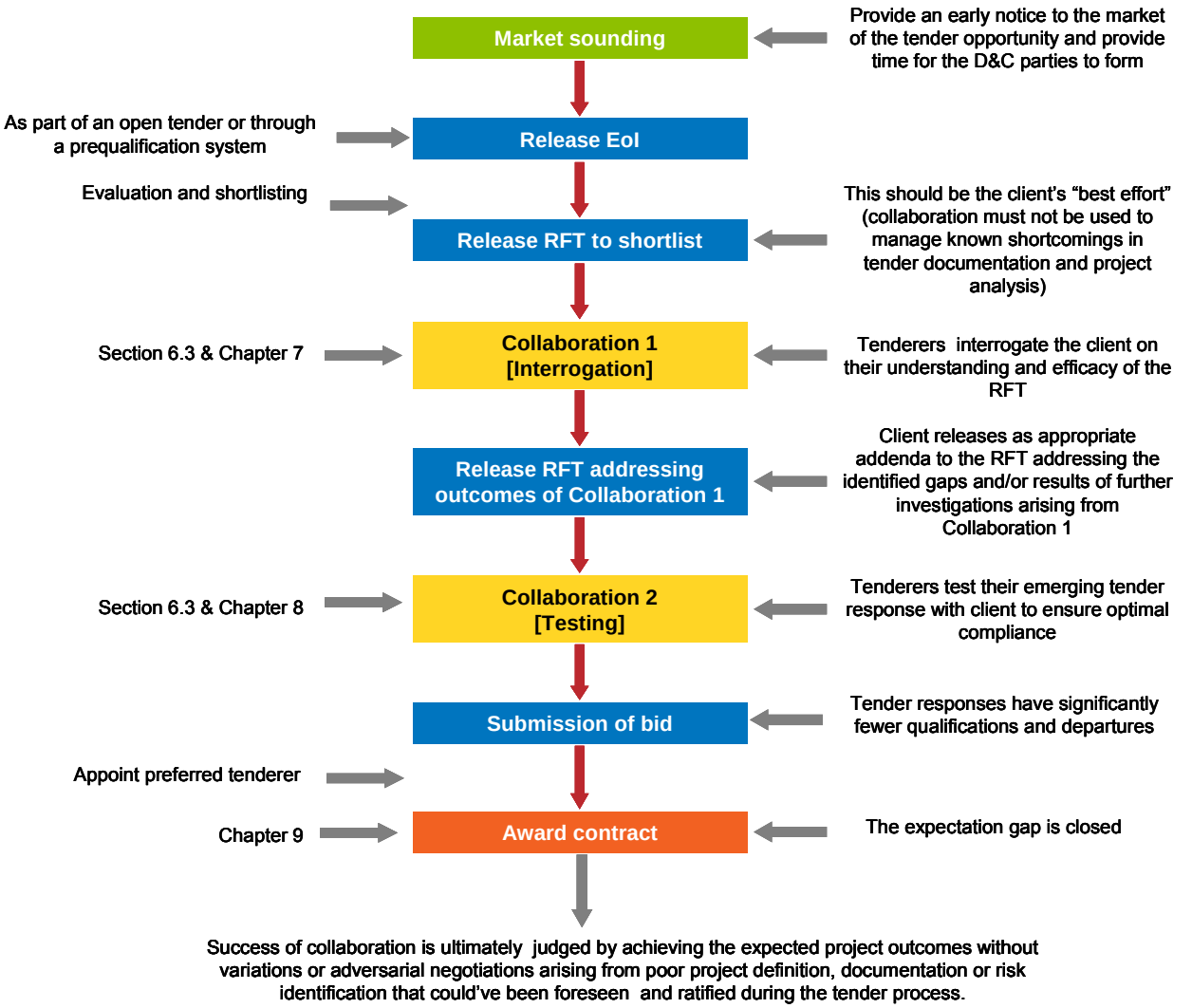
6. Collaboration options

This Chapter explores the introduction of collaborative steps in the standard D&C tender process to improve the quality of RFTs and reduce post contract award conflicts and claims for variations.

6.1 Introducing collaborative steps in the tender process

The collaborative steps that can be introduced in a D&C tender strategy are illustrated in Figure 7[19]. Chapters 7 and 8 provide a further description and potential structure of the two collaboration steps.

Figure 7: Collaborative steps in the tender process[20]



[19] "Mega" or highly complex projects may require additional steps and business rules than indicated in this report. This report provides a process of collaboration that is relatively straight forward with a minimum of complexity. It should be suitable for projects of low to medium complexity.

[20] Clients should note that collaboration sessions typically take days of preparation by the tenderer. For tenderers to feel justified in making this investment, the sessions need to be effective and make a difference and not just be a "nice to have".

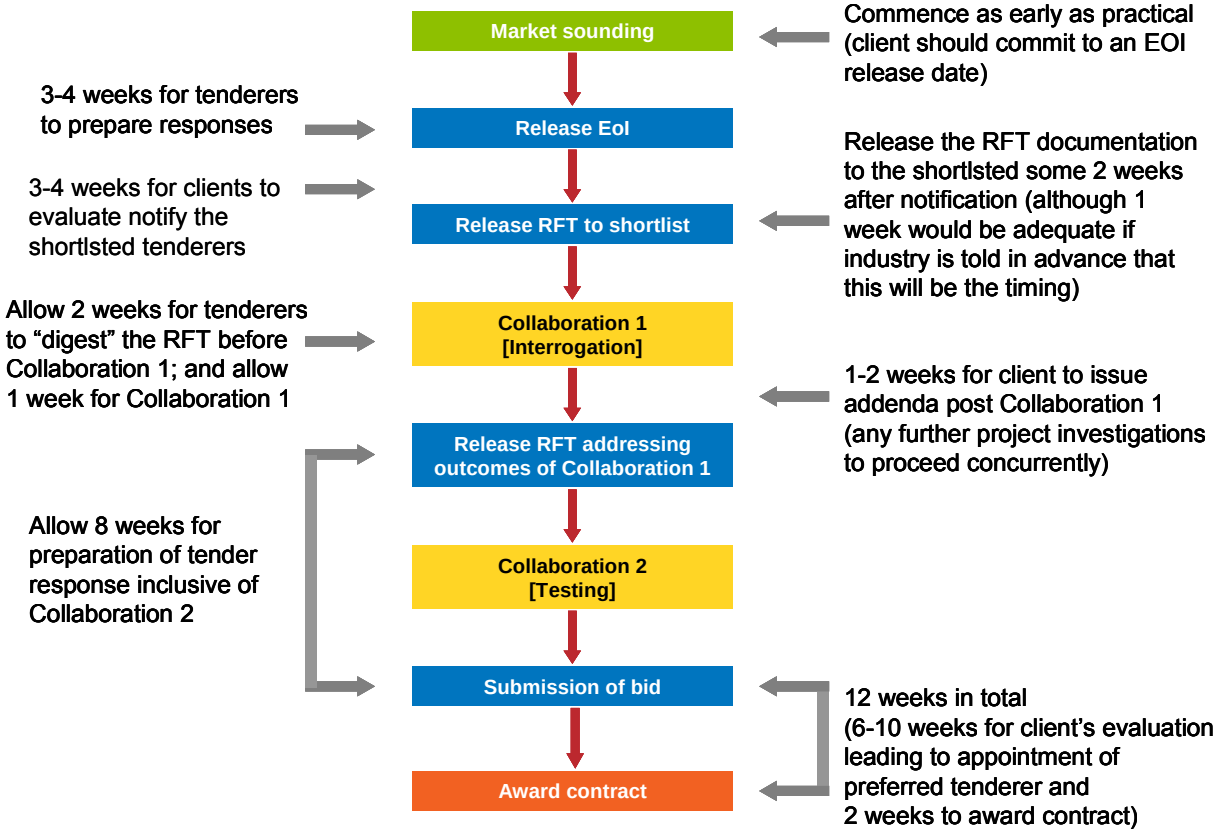
6.2 Timelines

Whilst there may be a perception that adding collaborative steps can extend the tender timeframes, this should be, even for a very complex project, minimal if the process is managed well. Ultimately the impact of collaboration is to reduce wastage of resources and to lower tender costs. The introduction of collaborative steps can achieve this by reducing the overall timeframe for the delivery of the service or asset by providing solid foundations for the tenderer and client to work together, establish clear expectations regarding what is to be delivered, and each having a clear understanding of the priorities that guide any decisions. Dispute resolution should be simplified and minimised.

More generally, clients will need to think carefully in relation to timelines pertaining to the tender period and the construction period. Tenderers need to carefully plan and work through their tender responses, and if successful, delivery during the construction phase will be dependent on supply chain issues that have optimal timelines. Constrained timelines may lead to sub-optimal results. Figure 8 provides an indicative timeline during the collaborative D&C tender process that was suggested in a workshop of tenderers (construction and design).

An important message from tenderers is that clients must communicate and then adhere to tender timelines. This has important implications in terms of managing the ongoing availability of the core team and the associated costs in doing so.

Figure 8: Indicative timelines (modelled on a $500M road D&C project)[21]



6.3 General ground rules that apply to *Collaboration 1* & *Collaboration 2*

As with all competitive processes, the client must ensure that it provides all tenderers with the same information to allow them to compete on an equal footing. Moreover, clarity of role and purpose is a very important probity principle in a tender process, because lack of clarity can lead to

[21] The actual timing adopted for a tender is reflective of a number of variable factors including construction value but also, inter alia, degree of complexity of design, etc. This is something that should be addressed during "market soundings".

misunderstandings by tenderers about what is happening in a process. This is particularly true of the collaboration meetings; it must be made very clear to all participants the purpose/objectives of the meetings and what the outcomes can be. Whilst probity risks are found in tender processes, particular care is required in all forms of collaboration, because of the increased risk of unequal treatment of tenderers[22].

To manage this heightened probity risk, information protocols must be put in place to ensure that the processes do deliver equality of treatment and that they are not inappropriately and/or inadvertently influenced outside of the confines of the tender selection process, and that one party's negotiating position or confidential information is not inadvertently put to the other party. Steps to promote quarantining of information between the two bidder teams include:

- **the client will have an appropriately qualified team**, including a senior manager with suitable corporate delegations, which will effectively collaborate with the tenderers collectively and on a separate basis;
- **the tenderer will have an appropriately qualified team**, including a senior manager with suitable corporate delegations, which will effectively collaborate with the owner collectively and on a separate basis;
- advising both the client and tender teams of their roles and intended processes that impact on each individual in the respective teams;
- ensuring the client team has a good understanding of its role. It should be clear that **members of the client team**[23]:
  - are there to provide information to assist the tenderer in the construction of the tender, however, at all times the tender remains the tenderer's;
  - cannot "cross the line" and become a member of the tender team, they must remain outside the tenderer's team;
  - they cannot have any "emotional ownership" of the tenderer's tender and an individual must not form a view as to who should win outside of the confines of the tender selection criteria and tender selection process;
  - take steps to ensure they do not inadvertently allow knowledge of one tenderer's solution to influence interaction with the other;
  - should mutually support each other in the maintenance of probity protocols;
  - understand the importance of separation/quarantining of documents and information from the shortlisted parties; and
  - implement administrative processes to aid quarantining of information (different filing cabinets/different coloured paper/having meetings on different but regular days/holding meetings in regular locations with each shortlisted party etc);
- a tender team needs to ensure they have a good understanding of their role. It should be clear that **members of the tender team**:
  - are there to seek information and guidance on alignment with the tender requirements to assist them in the construction of the tender, however, at all times the tender remains with them;
  - they should not attempt to create an "emotional" bond of their tender with members of the client's teams; and
  - the team members should mutually support each other in the maintenance of probity protocols.

Chapters 7 and 8 provide specific ground rules for Collaboration 1 and Collaboration 2 respectively.

[22] Equality of treatment means that all tenderers are offered the same opportunity, for example, "up to 4 half days workshop sessions", however, this does not necessarily mean that all tenderers must take up the same number of workshops.
[23] Normally the operational practice of these measures is assessed and checked by a Probity Adviser.

7. Ground rules for Collaboration 1 – Interrogation of client's requirements

This chapter outlines how the 'interrogation' stage in the tender process could work.

7.1 Why "interrogation"?

The aim of the Collaboration 1 (interrogation) step is for tenderers to comprehensively and robustly scrutinise the client's documented tender requirements and generally provide an opportunity so that tenderers understand what is required of them and the problems that may arise which have a tendency to erode the public value in the project, and frustrate the tenderer's corporate objectives.

7.2 How the Collaboration 1 (Interrogation) step would work

Figure 8 sets out how the Collaboration 1 (interrogation) step can be structured and implemented. The high level operating principles of the Collaboration 1 (interrogation) step are:

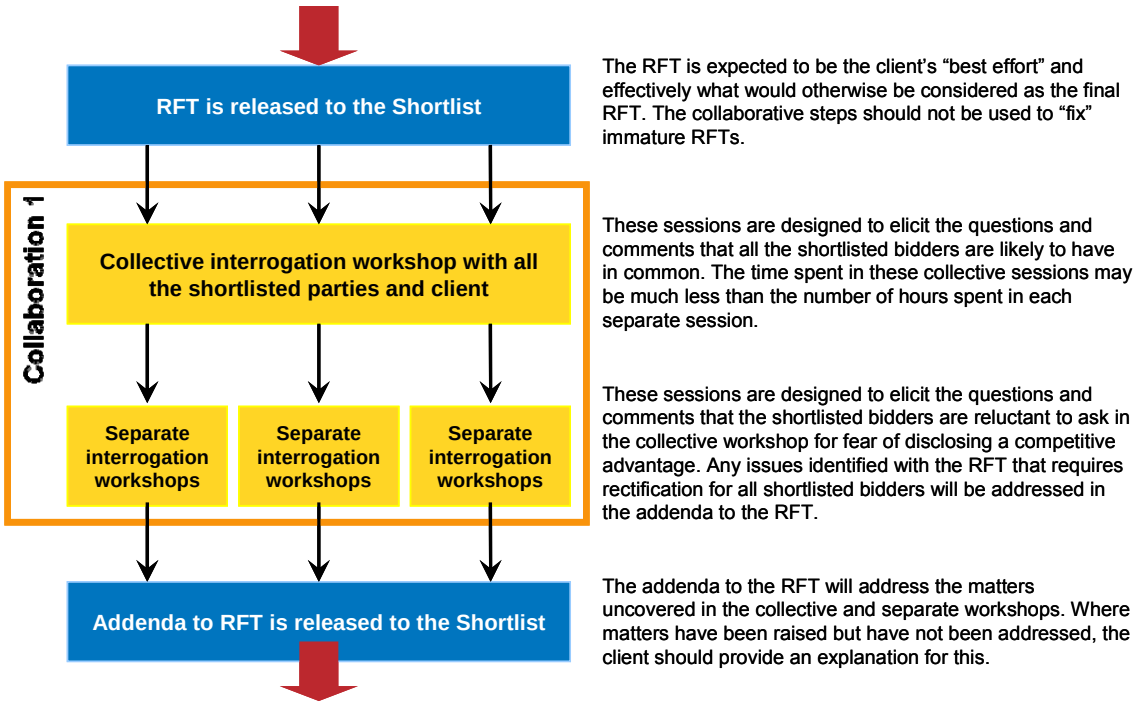
- the client releases to the shortlist a fully developed (its best effort at robust and comprehensive) RFT documentation;
- Collaboration 1 workshop structure to be finalised by the client understanding what works well for the tenderers;
- need to consider appropriate time separation (a day or two) between the collective group workshop(s) and the separate interrogation workshops to allow tenderers time to digest information and prepare adequately to maximise the time allowed for the separate workshops;
- all discussion is captured, verified by the client post-workshop on specific issues, and then issued back to tenderers; not to "bind" the client, in relation to representations etc, rather to serve as a record of the session for both parties to reflect on;
- a clear statement regarding the structure of the client team (who is involved, roles, responsibilities) and discussion on whether the same client team (preferred) or separate teams (with issues of consistency) are allocated to each tenderer. This would be influenced in part by availability and most effective use of skilled resources;
- establishment of what information is issued to all tenderers and what isn't:
  - a tenderer asking the client on clarification on his interpretation of a clause / scope item (i.e. a yes/no response) is for the use of that tenderer only (if other tenderers did not ask the question, they do not get that response)
  - where a tenderer has asked a question that highlights an error, ambiguity, contradiction, gap etc, that leads to a need for the RFT to be changed, then this addendum is to be issued to all tenderers
- The focus is on providing an opportunity for the tenderers to interrogate the client; not for the client to interrogate the tenderers (the collaborative step is not designed for clients to conduct an evaluation with the aim of eliminating a shortlisted tenderer).
- The focus is on communicating a full understanding of what the contractor needs to do and what the client is expecting will be functionally delivered rather than on preparing the project solution and the tender response. (There should be no collaboration on a project solution and indeed the tenderers should not offer one at this point.)

Once the collaboration sessions with the tenderers are completed, the client issues any necessary addenda to the RFT document. The addenda should address the matters raised by the tenderers and/or provides the rationale for matters raised by the tenderers but not addressed in the RFT.

Interrogation sessions can take place between the client's representatives in two settings:

- collectively in a group with all the shortlisted parties[24]; and/or
- separately with each of the shortlisted tenderers.

Figure 8: Collaboration 1 – Interrogation



This report recommends that both types of sessions are considered for use by the client. In the following sections, ground rules are proposed that can be applied generally for Collaboration 1; specifically for both the collective group; and for the one-on-one sessions.

7.3 Ground rules for Collaboration 1

The following ground rules are proposed for the consideration of clients (and tenderers) when setting the structure of these sessions:

General ground rules for establishing sessions

- Interrogation sessions should be structured and planned[25] before the tender process starts and the Client should prepare a probity plan that supports structured interrogation sessions. The terms and conditions of the tender process (as first documented at the EOI stage) should clearly articulate the conditions and protocols for the structured Interrogation process and set out the ground rules for all parties in a way that helps them make best use of these sessions. Shortlisted tenderers should notify the client in writing of their acceptance of the protocols and to participating in the interrogation process.

[24] It should be note that there was no universal agreement among all tenderers that a collective workshop would be effective. Collective workshops are of particular value for discussion of generic principles, eg rules of engagement, with one-on-one sessions being focussed on those matters that allow tenderers to differentiate themselves.
[25] For example, it may be planned that interrogation sessions that deal with technical issues, such as scope clarity, design issues, service delivery objectives and functionality requirements, stakeholder management etc are held before separate sessions organised on commercial clarification issues.

- It can be expected that tenderers will be motivated to participate in a robust, informed and relevant "interrogation" to do the right thing for their repeat client and optimise project delivery outcomes in a predictable manner. As noted previously, if a client elects to make these sessions part of the evaluation process, then care should be taken as to how these sessions are evaluated. By introducing evaluation here, the client may inadvertently inhibit the "interrogation" by the tenderer of (say) a poor RFT specification for fear of being penalised for being "too challenging". One suggestion to overcome this potential issue is to evaluate the participation of tenderers indirectly in their tender response by the depth (or lack of depth) of understanding demonstrated in project specific risks etc.
- The interrogation sessions are run for the benefit of the client in finalising appropriate RFT documentation and for the tenderer in not having to take "gambles" in preparing tender responses. Aside from obvious errors or omissions, the client does not need to provide advice during the structured interrogation sessions whether changes will be made to the RFT documentation.
- The outcome of these interrogation sessions is that the client utilises the interaction from all tenderers in all sessions for the purpose of improving the information provided in the RFT and thereby improving the clarity, quality and/or contents of the information issued to all shortlisted tenderers. The RFT, with any addenda, should then have a sufficient level of detail in describing the works, the desired outcomes and the functions to allow unambiguous interpretation for all tenderers. This will allow the shortlisted tenderers to respond efficiently and economically to the D&C procurement process.

Ground rules during the workshop sessions

- The structured interrogation sessions allow the shortlisted tenderers to interrogate the client about the RFT and to extract a full and relevant understanding of what the successful tenderer needs to deliver for the client and for the project to be considered a success. This may mean the shortlisted tenderer asks questions on those areas of the RFT that:
  - contain issues that have not been identified by the client;
  - are considered not important by the client but are, in the view of the tenderer, important to the actual project outcome;
  - have unclear or poorly expressed requirements and/or provisions;
  - contain mistakes, inconsistencies or are open to misinterpretation; and
  - etc
- Specifically, interrogation sessions allow tenderers to:
  - identify omissions or ambiguities in the Client's functional, performance, quality and design life requirements;
  - question errors and weaknesses in the documentation that need to be addressed;
  - recognise additional risks with the specification and performance requirements and better understand the Client's position in relation to risks;
  - consider interface issues particularly if the timing of one project creates timing pressures for other projects;
  - understand the statutory environmental and planning approval processes or other constraints on the design;
  - understand the status and position on community consultation;
  - review relevant information on site conditions and determine whether appropriate investigation into site conditions have been undertaken; and
  - constructability issues.
- The sessions also allow tenderers an opportunity to simply confirm (through questioning) their understanding of particular requirements.
- During the interrogation sessions, the client should be prepared to respond to direct questions on, inter alia, its master-plan, its operational philosophy and practices and how these impact on infrastructure function and design; and any other relevant matter of importance to the tenderer.
- The client's representatives should respond to questions in the context of the client's requirements and output specifications and should not reflect personal opinions. It is important to have the right people at the sessions. This group should also include as appropriate technical and operational managers.

- Whilst the client will need to respond to similar questions from tenderers in similar ways, they are not required to share questions and answers with tenderers that do not ask them. However, the client will use all the Q&As and dialogue arising in these iinterrogation sessions as necessary to address the “shortcomings” and finalise the addenda issued to all shortlisted tenderers.
- The client may nominate the maximum number of sessions it is prepared to hold separately with the shortlisted tenderers (this being dependant on the complexity of the project and quality of the tender documents), and in turn each tenderer will be able to determine how many of these sessions it needs.
- Whilst tenderers receive equal opportunity for participation in the interrogation sessions, the quality and number (up to the maximum) of sessions may vary depending on the nature (and number) of questions or issues raised by tenderers.
- Aside from a formal presentations that can be delivered to all the shortlisted tenderers collectively, in the separate iinterrogation sessions the client’s representatives should not provide unsolicited commentary or unsolicited explanatory dialogue, instead they should provide clear and direct responses to questions from the shortlisted tenderer. The questions do not need to be formal and tenderers should be able to ask follow up questions to further explore the client’s responses.
- If, during an interrogation session, the client provides a tenderer with clarity into how a part of the project brief should be interpreted, then this should be communicated to all tenderers through the RFT addenda. For example, if the client has stated in the RFT that noise should not exceed a particular threshold during normal working hours and the client then clarifies with a tenderer that those working hours are 8:00am to 6:30 pm, then this additional clarification should be communicated to all tenderers in the RFT addenda. The distinction is the provision of further information rather than prescribing the content of the bids.

What should be avoided during the workshop sessions

- The purpose is to provide clarity to tenderers; not to lead them to a particular tender solution. The aim is to facilitate a deeper understanding of the client’s functional requirements and expectations, and to assist tenderers to obtain a degree of confidence in regard to the directions they are taking in their proposals. The purpose is not for the client to prescribe or for the tenderer to seek comment on what may be the eventual content of their tender response.
- During an interrogation session, it is not appropriate for a tenderer to air ideas with respect to a particular position they may take with their tender response and for the client to provide scored or unscored feedback. Tenderers must also be aware that any matter raised in a Collaboration session may result in that matter being further addressed in addenda to the RFT at the discretion of the client (if the client feels this better explains, clarifies or corrects mistakes/errors/omissions in the RFT).
- These workshops are not negotiation sessions; and they are not an opportunity for tenderers to present project solutions or commercial positions with a view to understanding how the client would score these. For example, a tenderer is not allowed in Collaboration 1 to seek confirmation that its technical solution is consistent with the RFT requirements. However, this will be allowed in Collaboration 2.

8. Ground rules for Collaboration 2 – testing the tenderer's emerging tender response

In this chapter, the second stage of collaboration is explained in more detail.

8.1 Why "testing"?

The aim of the Collaboration 2 (testing) step is to give the tenderers an opportunity to test their emerging tender proposal with the client with the aim of each tenderer being in the position of confidently submitting a full and final tender capable of acceptance by the client.

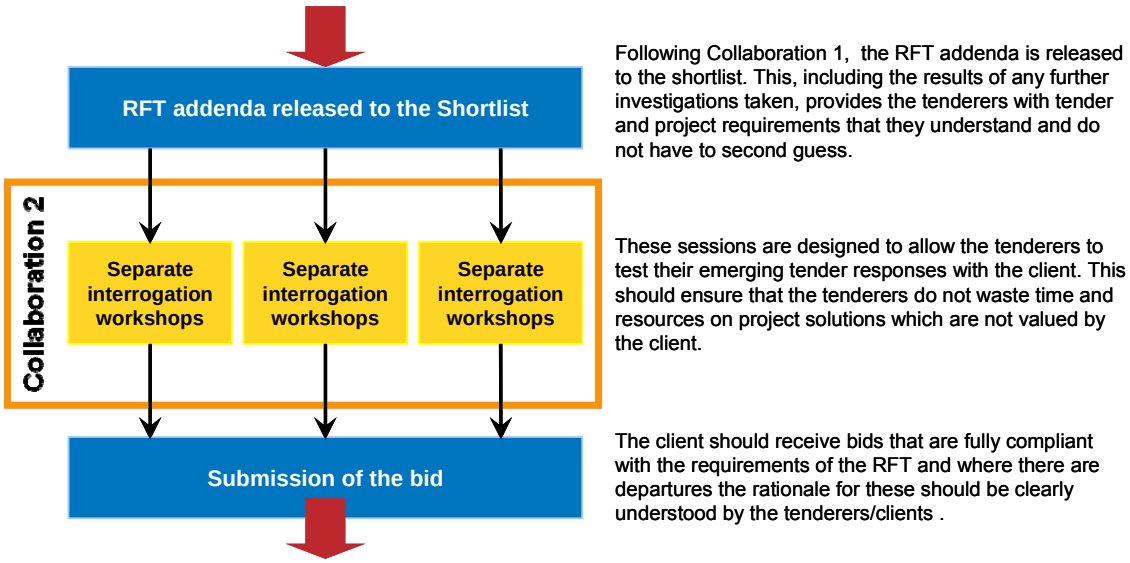
8.2 How the Collaboration 2 (testing) step would work

The high level operating principles of the Collaboration 2 (testing) step are:

- allowing tenderers to test with the client the tenderer's emerging tender response to the RFT;
- pricing is not discussed, although the full benefits, including financial, of new and innovative proposals can be discussed;
- strict probity protocols are of heightened importance in Collaboration 2, they need to be observed by the client to ensure that the competitive and confidential information (intellectual property) of each tenderer is kept confidential from other tenderers and handled within the client team on a needs to know basis;
- the client team needs to be very well prepared so as to avoid expressing personal opinion or views and the team members must be able to respond with confidence in relation to the emerging tender response;
- some questions may need to be taken on notice so as to ensure an accurate and useful response is given, however, the client's team should be suitably resourced so that most questions can be responded to immediately; and
- the collaboration session is not an evaluation of the tender response; this is an opportunity for tenderers to get relevant "feedback" and guidance on their potential proposals.

Figure 10 shows how the Collaboration 2 (testing) step can be structured and implemented.

Figure 10: Collaboration 2 – Testing



8.3 Ground rules for Collaboration 2

Collaboration 2, where a tenderer is testing its emerging project solution in confidential sessions with the client, requires a comprehensive and robust set of probity principles and specific ground rules. Governments require adherence to the highest ethical standards and conduct in procurement and commercial engagements. Government and public officials must be able to demonstrate high levels of integrity in tender processes with the following basic probity principles present[26]

- transparency and accountability;
- integrity;
- fairness;
- free from bias, free from conflict of interest;
- security of confidential information; and
- consistency and objectivity

Guided by these probity principles, the following ground rules should apply in this collaborative step:

- The Client team will collaborate separately with each tenderer to ensure that the tenderer:
  - fully understands the project requirements and deliverables described in the tender documentation; and
  - to guide them in their innovation and strategic thinking so that they align with the tender requirements in an efficient, effective and economical way.
- The client may be asked by the tenderer to comment on a number of project issues such as:
  - developing project design solutions;
  - elements of construction methodology;
  - stakeholder issues;
  - innovative and creative proposals;
  - assessing project risks; and
  - assessment of alternative and/or non-conforming bids
- Whilst the client may nominate the timeline and the maximum number of sessions it is prepared to hold separately with the shortlisted tenderers (this being dependant on the complexity of the project and quality of the tender documents), the individual tenderer will be able to determine how many of these sessions it needs.
- In all cases it should be clear to all parties that the client provides information and guidance to assist the tenderer in developing its tender response, however, at all times the tender remains with the tenderers.
- The tenderers will have their own technical experts to develop and inform their tender response. The role of the client is to guide the bidding team in the development of their tender by providing a technical sounding board and providing input to the tenderer's project team about the project's technical requirements.
- Clients may chose to provide tenderers with a written record of these sessions (to avoid "he said/she said" later), but care needs to be taken to ensure that these documents are not seen as an evaluation or endorsement of an emerging tender proposal. Further, if a record is created, care will need to be taken to protect the confidentiality of any commercial issues and ideas raised.

[26] Australian jurisdictions have also developed 'best practice guidelines' and other policy documents to assist government officials with various aspects of the tendering process. Additionally, the courts have considered a number of cases since 1997 which have provided guidance on many elements of government tendering processes. This report does not endeavour to provide a comprehensive overview of the selection process but focuses particularly on matters that pertain to this collaborative step. The full tender selection process and criteria need to be developed by the client, using the input of its Probity Adviser, to meet the unique requirements and profile of its project.

9. Implications for contractual undertakings

This chapter discusses the benefits of a collaborative process in the context of agreeing the legal risk allocation under a D&C contract.

9.1 Introduction

The standard D&C contracts issued by Standards Australia, commonly used by a number of public sector clients to deliver capital projects, set out a risk allocation that is not reflected in all D&C contracts used by other experienced public sector clients (as well as private sector project owners) to deliver similar projects. For example, under the standard AS 4902-2000 (or equivalent or predecessor Standards Australia contracts such as AS 4000-1997 or AS 2124-1992), the Contractor engaged to design and construct the capital project only provides certain general warranties in respect of its performance of the works under the contract.

By contrast, other forms of D&C contracts which are used to deliver project financed transactions, PPPs, or large-scale Government infrastructure projects (such as major rail, road and water projects), are typically required to contain more robust performance warranties. Similarly, the standard D&C contracts issued by Standards Australia set out a relatively broad regime for variations and extensions of time to be granted to the Contractor, whereas the more tailored forms of D&C Contracts typically set out a more limited regime for variations and extensions of time, with the tenderer being asked to assess and price the risk of delays and cost overruns.

The use of a collaborative process for D&C contracts as set out in this report provides an opportunity for both the client and the tenderer to gain a better understanding of what is expected to be delivered under the D&C Contract, and the risks associated with delivery of the project. The collaborative process is designed to allow the tenderer to appropriately assess, price and ultimately manage these project risks. Accordingly, clients should be able to negotiate terms and conditions for the D&C Contract which are more closely aligned with the risk profile that is accepted by Contractors under project financed transactions, or under D&C Contracts for larger-scale Government projects.

If the collaborative process is effective, then the successful tenderer should be comfortable to accept a general uplift in the contractual undertakings and warranties provided by “the Contractor”, and modifications to the standard risk profile of the client (ie “the Principal”), under Standards Australia’s D&C contracts. The collaborative process is intended to facilitate a full dimensioning of the project risks for both the client and tenderers, and should thereby enable any gap in expectations regarding the contractual risk allocation to be reduced. Given that Standards Australia’s D&C contracts are typically entered into in the absence of a collaborative process, this chapter discusses some of the terms and conditions of these contracts that could be revisited by the client, and subject to this general uplift.

9.2 Warranties

The outcome of the “Collaboration 1” process (refer to Chapter 7) should position the successful tenderer to provide further standard warranties that may be required by the client in respect of the Contractor’s performance under the D&C contract. Typically, the client should require the D&C contract to include express warranties that, when completed, the “Works” carried out by the Contractor (incorporating all design and construction deliverables) will:

- be complete in scope;
- satisfy all laws and statutory requirements;
- be fit for purpose as required by the client; and
- achieve the specified project objectives (to be defined with reference to the specific project).

The client should also consider whether to include additional clauses to support the client's reliance upon such warranties.

The following examples of enhanced warranties provided under D&C contracts reflect the typical amendments to Standards Australia's D&C Contracts which tend to be required by private sector clients or for larger-scale Government projects:

1. Warranties Unaffected

The Contractor acknowledges that the warranties in Clause **[insert]** remain unaffected notwithstanding any one or more of the following-

(a) any receipt or review of, or comment or direction by the Principal or the Superintendent on, any document;

(b) any variation under Clause **[insert]**; or

(c) any receipt, review, comment, rejection or expression of satisfaction or dissatisfaction by or on behalf of the Principal or the Superintendent whether under the Contract or otherwise with:

(i) any of the Contractor's selection of subcontractors;

(ii) any of the Contractor's materials, plant or equipment selections used in the Works; or

(iii) the execution of any work under the Contract.

2. Acknowledgment of reliance

The Contractor acknowledges that the Principal:

(a) has relied on each of the warranties, acknowledgments, agreements and representations given in Clauses **[insert]** and **[insert]**; and

(b) would not have entered into the Contract but for those warranties, acknowledgments, agreements and representations."

If the client and tenderers have worked diligently to make the collaborative process successful, the successful tenderer should be prepared to provide these standard warranties (among any other warranties that may be specific to the relevant "Works" and/or the project).

9.3 Key risk areas under D&C Contracts

Site Conditions

It is anticipated that during the "Collaboration 1" period (refer to Chapter 7), tenderers will have the opportunity to fully interrogate the client (including the information provided in the RFP documentation) in relation to site conditions.

Although it may be difficult for a tenderer to fully understand and price all site risks in the absence of any collaboration with the client, the collaborative approach to procurement should ensure that both the successful tenderer and client are adequately informed about the specific site risks, and consequently able to develop and implement strategies to manage and mitigate these. Subject to the specific circumstances and risks associated with the project, the parties should therefore be well positioned to negotiate and agree the following risk profile under the D&C Contract:

"The Contractor:

(a) acknowledges that it has had access to the Site, carried out its own inspections of the Site and the improvements on the Site and conducted its own enquiries in order to establish, understand and satisfy itself as to the nature and status of the Site and the improvements on the Site and all risks and contingencies associated with the Site and the improvements on the Site;

(b) accepts sole responsibility for and assume the risk of all increased costs, losses and expenses and delays arising out of the physical conditions and characteristics of the Site and its surroundings (and any indirect or consequential costs, losses, expenses and delays), including without limiting the generality of the foregoing, inclement weather, wind, water, atmospheric and sub-surface conditions and characteristics encountered in the execution of the Works; and

(c) agrees that the Contract Sum includes an allowance for all costs associated with the Contractor's risk and responsibilities related to the physical conditions and characteristics

of the Site, and the Contractor shall not be entitled to any Claim, extension of time or any other form of relief in respect of the risks and responsibilities."

The "Collaboration 1" and "Collaboration 2" processes (refer to Chapters 7 and 8) also provide an opportunity for the client and tenderers to identify any "unknown" project risk areas, and for each party to develop further clarity regarding its risk exposure. Where certain site risks are unable to be priced during the procurement phase, or it is determined that the project owner is better placed to bear the specific risk, appropriate mechanisms should be included in the D&C Contract to address this. In particular, it is normal practice for the D&C Contract to define "Excluded Site Conditions" for which the Contractor is not responsible. For example, the project owner may elect to bear risks associated with delays caused by pre-existing contamination, or discovery of artefacts, rather than have these risks built into the Contract Sum.

A collaborative approach provides an opportunity for the parties to jointly determine the best way to deal with these issues. The allocation of site risks under the D&C Contract should be established on a case-by-case basis for each project, and should be the subject of detailed open and transparent discussions during the collaborative process in order to agree a risk profile that provides the best value for money for the State.

Delay

The D&C contracts issued by Standards Australia give rise to broader entitlements to extensions of time for the Contractor than is typical for project financed, PPP and large-scale Government projects. When compared to the general entitlements under Australian Standards contracts, the D&C contracts for these projects usually incorporate a very restrictive regime for extensions of time and delay liquidated damages in order to provide the project owner (including the requirements of any financiers) with greater certainty in respect of the timeframe for delivery of the project.

However, the collaborative process should allow the tenderer to interrogate, identify and facilitate a better understanding of the client's requirements and expectations and assist tenderers to obtain a degree of confidence in regards to the directions they are adopting in their proposals for managing these delay risks that could potentially lead to time blowouts. Provided that the tenderer is able to understand the required scope of the project, design expectations, site conditions, stakeholder issues, environmental standards and other relevant project risks through the "Collaboration 1" discussions, the tenderer should be better able to assess its risk exposure and build this into its Contract Sum. The terms and conditions of the D&C contract should reflect this outcome.

Specifically, the D&C Contractor should be sufficiently informed to agree to bear:

" ... all risks of delay to the progress of "the Works" other than for the following causes:

- a strike, lockout, demarcation or industrial dispute which concurrently affects the Site and the building industry on a State-wide or nationwide basis and which is not specific to the Contractor, the Contractor's associates or the Site, occurring on or before the Date for Practical Completion which is beyond the reasonable control of the Contractor; and
- any of the following events whether occurring before, on or after the Date for Practical Completion —
  - (i) delays or disruption caused by—
    - the Principal;
    - the Superintendent; or
    - the Principal's or the Superintendent's employees, consultants, other contractors or agents;
  - (ii) a variation directed under Clause [**insert**], other than a variation due to any defective work by the Contractor;
  - (iii) a change in legislative requirements, where such change is not reasonably foreseeable by the Contractor at the execution date;
  - (iv) a breach of an express term of the Contract by the Principal; or
  - (v) suspension by the Superintendent under Clause [**insert**], provided that the suspension is not as a result of any act, default or omission by the Contractor.

Cost

Similarly, the D&C contracts issued by Standards Australia are typically structured to enable the Contractor to claim a broader scope of variations (which give rise to adjustments to the Contract Sum) than under the D&C contracts entered into for project financed, PPP and large-scale Government projects. Given that the collaborative process, set out in chapters 6, 7 and 8, should ensure that the Contractor is able to work-up its Contract Sum with a better understanding of the client's requirements and risks involved, the client should seek the inclusion of clauses which expressly limit the circumstances in which the Contractor may claim variations and be entitled to an adjustment to the Contract Sum.

Although the standard forms of D&C contracts used by public sector clients to deliver capital projects are usually 'fixed price' contracts, the tailored D&C contracts used for project financed, PPP or large-scale Government D&C Contracts typically include a specific clause which confirms that the Contract Sum is fixed, and identifies the few circumstances in which adjustments to the Contract Sum are permitted. For example, Contractors should accept the inclusion of the following clause in the relevant D&C Contract:

> "**No adjustment to Contract Sum**
>
> The Contractor acknowledges and agrees that:
>
> (a) the Contract Sum represents its full and complete payment and includes an allowance for:
>
> (i) all matters and things necessary for the performance and completion of the Works in accordance with the Contract; and
>
> (2) all of the Contractor's obligations under the Contract;
>
> (b) the Contractor is not entitled to any adjustment in the Contract Sum or to additional payment under the Contract or arising out of or in connection with the Works, except as expressly provided for in accordance with:
>
> (i) clause **[insert]** as a result of Variations directed by the Principal;
>
> (ii) clause **[insert]** for Delay Costs;
>
> (iii) clause **[insert]** for a change in legislative requirements, where such change is not reasonably foreseeable by the Contractor at the execution date;
>
> (iv) clause **[insert]** for "Excepted Risks"; and **[Note: "Excepted Risks would typically be defined to include uninsurable force majeure events such as war.]**
>
> (c) the Contract Sum and any rates, costs or prices included in the Contract are not subject to adjustment for rise and fall in respect of any site allowance or by reason of fluctuations in exchange rates or changes in the cost of labour, temporary works, materials and equipment, or for any other matter, even where there is an extension of time in accordance with the Contract."

It is also usual practice for the forms of D&C contract used for project financed, PPP and large-scale Government projects to address the risk of cost overruns by specifically limiting the circumstances in which Delay Costs are payable to the Contractor. On the basis that discussions during the "Collaborative 1 and 2" processes will ensure that successful tenderers are better able to understand and manage project risks during delivery, successful tenderer should be more comfortable to agree a similar form of D&C contract under which the client is only required to pay Delay Costs where an extension of time is granted for delay or disruption caused by an act of prevention or breach by the client or its agents (ie "the Principal" or "Superintendent") .

Please note that detailed explanation and analysis of these legal concepts is beyond the scope of this report.

Appendix A: Organisations consulted

State	Organisation	Form of consultation
Western Australia	Abigroup	Meeting
	Building Management and Works (Department of Treasury & Finance)	Meeting
	Construction Contractors Association of Western Australia	Meeting
	CSBP Limited	Meeting
	Evans & Peck	Meeting
	Freehills	Meeting
	Freemantle Port Authority	Meeting
	John Holland	Meeting
	Main Roads	Meeting
	North West Infrastructure	Meeting
	Office of Strategic Projects (Department of Treasury & Finance)	Meeting
	Public Transport Authority	Meeting
	Roy Hill Project	Meeting
	Thiess	Meeting
	Water Corporation	Meeting
Queensland	Clayton Utz	Meeting
	Department of Main Roads & Transport	Meeting x 2
	Department of Public Works	Meeting
	Evans & Peck	Meeting
	GHD	Meeting
	Queensland Civil Contractors Association	Meeting & Workshop
	Queensland Civil Contractors Association • Seymour Whyte • Abigroup • acciona • BGC Contracting • Fulton Hogan	Workshop
	Newcrest	Meeting
	Linkwater	Meeting
	Seymour Whyte	Meeting
	Thiess	Meeting
	Treasury	Meeting

NSW	AECOM	Meeting
	Baulderstone	Meeting
	BHP Billiton	Meeting
	Department of Finance & Services	Meeting
	Evans & Peck	Meeting
	John Holland	Meeting
	NSW Public Works	Meeting
	Road and Traffic Authority	Meeting
	Sydney Water	Meeting
	Transport Construction Authority	Meeting
	Treasury	Meeting
Commonwealth	Defence Support Group	Meeting
Victoria	Baulderstone (2) John Holland (1) Thiess (2) Parsons Brinckerhoff (2) McConnell Dowell (2) Leighton Contractors (2) Abigroup (2) GHD (1) SKM (1) Fulton Hogan (1) VicRoads (1)	Workshop x 2
	Clayton Utz	Meeting
	Independent Project Analysis Inc	Meeting
	Parsons Brinckerhoff	Meeting
	Cut and Fill	Meeting
	Leighton Contractors	Meeting
	John Holland	Meeting
	VicRoads' major suppliers[27]	Workshop x 2
	BMD	Meeting
	Baulderstone	Meeting
	Civil Contractors Federation of Victoria	Meeting
South Australia	SA Water	Meeting
	Department for Transport, Energy and Infrastructure	Meeting x 3
	Aurecon	Meeting
	GHD	Meeting
	Department of Treasury & Finance	Meeting

[27] These were workshops organised and managed by VicRoads on issues of interest to VicRoads, however, the focus of these workshops overlapped with this investigation. The invitation extended by VicRoads to Victorian DTF to participate is much appreciated.

Appendix B: A short comparison of infrastructure and building projects

Practitioners in the procurement of capital works understand that all capital projects are not the same. The procurement of civil infrastructure is very different from those of non residential building projects. There are fundamental differences in the required skill sets and the supply chain inputs and resources. The following table summarises some of the distinguishing characteristics.

Some distinguishing characteristics of building vs infrastructure projects

Buildings	Infrastructure
Both in public and private sectors Major and Minor organisations	Mainly public sector and in mining/energy Generally major organisations
Largely homogenous (many repeatable elements "has been done before" and can be easily benchmarked on cost)	Largely heterogeneous (generally 'not been done before' or critical elements are different. Difficult to benchmark on costs)
Extensive use of artificial materials (manufactured) which lends to predictability	Extensive use of naturally occurring materials which leads to increased unpredictability
Architects, Engineers involved in designed	Engineers mostly undertake design
Typically from the ground up – minimal interface with (unpredictable) natural environment	High interface with (unpredictable) natural environment
Relatively low risk profile of construction	Relatively high risk profile (because natural environment impacts and heterogeneity)
Low exposure to cost pressures, Fixed Price elements	High Exposure to cost pressures (eg Labour, Hydrocarbons)
Mostly located in major cities and towns (urban)	Found in both Urban / Remote Locations
Focus on stand-alone assets	Generally integrated in a network of other infrastructure assets
"Enabling business and social benefits"	**"Nation building"**

However, these differences are not always black and white. Many practitioners in the field would consider the construction of a major hospital, with its many specialised spaces and service requirements, more like an infrastructure asset than a building.

As a generalisation, a program of infrastructure projects tends to be of a higher cost and higher risk; requiring longer lead times and longer construction times. They are considered to be difficult to deliver consistently well (that is, on the "right" budget and on time).

Appendix C: Examples of traditional models

Design and Construct Contract

The features of the D&C[28] model, which have underpinned the discussions in the course of this investigation (and hence report scope), include:

- there is a clear and enforceable risk allocation against which bidders tender;
- a competitive tender process with the key tender criteria having the design for the project and the contract price;
- the D&C contractor takes risks associated with design and construction and particularly the interface between design and construction;
- at contract execution there is contract documentation for the agreed scope of works and associated services to be delivered; and the contract price;
- the contract price is normally in the form of a Lump Sum (sometimes called “hard dollar”); and
- following construction, the Government owns and operates the asset.

Positive features	Challenges
Allows for a competitive tendering process	Requires client to have a very clear project performance brief
Allows construction to commence before completion of all detailed design works	Performance brief requires time and skilled resources to be prepared well
Provides incentive for innovative design to the client’s benefit - up to the point of contract award	Does not allow the client to have direct control over the design
Transparency of process to the point of contract award	Creates incentive for minimalist design solutions in line with specified performance
Value for money can be demonstrated through the competitive tender process	Close management required to overcome the incentive the contractor has to adversely impact whole of life performance to the benefit of construction costs
Allows transfer of design risks, logistic risks and construction risk to the contractor	Can result in costly changes if the tender brief is not precise or is ambiguous
	Changes to scope or sequence of work can have costly impacts for the client
	Uncompetitive cost environment post award for client initiated design innovations which change the performance brief
	Contractor initiated innovation within specified performance parameters is to the benefit of the contractor;
	Contract environment can be adversarial

The following features should be considered in selecting a D&C strategy for a project:

- Positives for client:
  - Pressure on Designer to create a lower cost design solution
  - client transfers design risk to the Contractor as the single point of responsibility
  - Price tension outcome
  - Can divide work into packages including Early Works
  - client can clearly specify requirements in PS&TR

[28] See also Table 1, Section 2.3.

- Negatives for client:
    - client hands over control of design decisions to Contractor in accordance with PS&TR
    - Designer time is constrained which promotes errors and less focus on whole–of–life designs
- Risk profile implications:
    - Significant design risk sits with Contractor
    - Low amount of design information available for pricing, so contractor prices more risk
    - client can coordinate additional geotechnical information up front to support tenderers
- Cost implications:
    - Fixed price for fixed scope
    - Scope changes likely to be at considerable extra cost to client
- Programme implications
    - Shorter overall project period with design overlapping construction period
- Documentation requirements
    - Geotechnical report will require modification for D&C
    - Client's PS&TR

Lump Sum Construct (a "Construct Only" model; design by client)

This is a form of contract where the client is responsible for all the design and documentation. The works are then tendered through a competitive process and typically a contract (or contracts) of fixed time and fixed price is formed. The client is responsible for defining, designing and documenting the project before calling for competitive tenders. The project needs to be well documented and sufficiently skilled staff need to be directly engaged to ensure that design and commercial risks are minimised through the commercial negotiations.

Positive features	Challenges
Time and cost are fixed Competitive tendering process Low costs for tenderers to price Contractor takes the risk of the cost of the scope as designed by the client Allows client to manage cash flow more tightly Detailed specification prepared before construction Can be procured in a series of prioritised packages	Limits flexibility for innovation in relation to the scope without substantial cost consequences to the client, or through implementing a high number of smaller Lump Sum packages in order to allow outcome assessment, learning and innovation cycles into the design. High demand for client front end resources to plan, design and document which would be exacerbated for multiple packages. Design risk is retained by the client. Cost of design by client is generally higher than other procurement options. Cost risk transferred to the contractor from client. Contract environment is adversarial – potentially higher variation and time delay costs. Little incentive for innovative design. Contractor not involved in value engineering for the project. By definition, design then construct lump sum contracts generally provide inherently poor alignment of the respective interests between client and contractor. There is direct conflict between the objectives for the client and the Contractors. When the scope is not well defined or the scope is subject to change for reasons beyond the control of the Contractor, costs and time traditionally overrun. This is the main source of dispute in these forms of delivery.

Schedule of Rates (a “Construct Only” model; design by client)

Schedule of Rates is a contract where the client’s design and project works are well defined, for contractors to competitively price the works on a scheduled of rates basis. The client carries all quantity risk for the works. The Schedule of Rates becomes the critical tool for defining the scope as well as the payment for services rendered. The sequence and timing of the overall works needs to be logical in order to facilitate pricing and avoid any misinterpretation by the Contractor. Contractor prices are usually based on assumed quantities and sequences of work.

Positive features	Challenges
Time is fixed Client retains control of design Competitive tendering process Low costs for contractors in pricing the work Contractor takes the risk of the construction cost Suited to repetitive tasks	The agreed rates often do not reflect the actual work that is to be undertaken, requiring negotiation of new rates. This can often result in overall project cost increases and lead to non competitive pricing or disputes. The Contractor has an incentive to increase the scope as much as possible, which requires the client to provide resources to closely manage project scope. This approach requires a detailed measure of all works, which is resource intensive for the client and the contractor. The Schedule of Rates needs highly prescriptive and accurate item descriptions with a nominated method of measurement. Design risk is retained by the client. Cost of design by client is generally higher than other procurement options. Interface risk is retained by the client. Does not permit much flexibility for innovation in relation to the design without substantial cost consequences to the client. Normally requires boundaries to quantify overruns/underruns. Changes to the sequence of the works may lead to additional payments to the contractor. Changes to the quantities of work may lead to additional payments to the contractor. Changes to the geographic distribution of the work may lead to additional payments to the contractor.

Cost Plus

The Contractor and the client agree, at the time entering into the Contract, that the Contractor will perform the works, and that the client will pay for those works on the basis of the actual cost to the Contractor for completing the Works, plus an agreed fee or an agreed percentage mark up on the cost of the works. A Cost Plus approach is typically used when the nature of work and scope is not well defined or there is likely to be high uncertainty in the quantities of work.

Positive features	Challenges
Client can complete the design before commencing construction Client can 'project manage' the project Detailed specification prepared before construction Predefined return to the contractor Can be used as early works to establish target prices when work is otherwise uncertain, before moving to some other delivery method; Parts of works can be packaged and competitively tendered	The Contractor has limited incentive to innovate and reduce the cost of works. The work requires significant management resources from the client to control the scope. The interests of the client and contractor are poorly aligned as there is a disincentive for the contractor to deliver innovative practises or increase productivity rates. This can result in substantially over budget project costs, particularly for large-scale projects over long durations. Demonstration of VfM can be difficult if benchmark rates are not known.

EPCM (Engineering, Procurement, Construction Management)

The EPCM method involves appointment of an engineering service provider to perform the design, then manage procurement and provide construction management services.

Positive features	Challenges
Well suited to projects where design complexity is a significant driver of project success Often applied to process plant and resources projects	Not in common use for civil infrastructure type works Limited market – more suited to resource industry projects where the client buys a process Lesser constructability inputs in early phases Management of the delivery phase (logistics and construction coordination) not as strong as for other methods

Appendix D: Case Study - Sydney Water's Desal Project

NOTE:

This case study is presented as an example of best practice collaboration in a major D&C project.

It is not intended to be an exact illustration of all the collaboration processes outlined in this report.

COPYRIGHT NOTICE

Copyright in this document belongs to Sydney Water. Except as permitted under the Copyright Act 1968 (Cth), no part of this document may be copied, reproduced or extracted by any means (including electronic data storage) without the specific prior written permission of Sydney Water. Permission is given for the use of this document only for the purposes of preparing a Tender in accordance with this RFT.

Case Study

The tender for Sydney's Desalination Plant

14 November 2011

Contents

1. Sydney's Desalination Project

The NSW Government released the Metropolitan Water Plan in 2004. The plan adopted three solutions to: water recycling, improved water efficiency and measurers to increase the water supply, including desalination. Desalination had some appealing benefits as part of the solution. Large scale plants are proven technology, reliable and use a lot less power than in the past. They also do not rely on rainfall.

In 2004, the then NSW Premier, Bob Carr, announced that $4 million would be set aside for Sydney Water to study the feasibility of building a desalination plant in Sydney.

By mid-2005 the site for the plant at Kurnell had been chosen, as well as the reverse osmosis membrane technology to desalinate the seawater.

Sydney Water began environmental assessments under the State's new "critical infrastructure" planning Act. These included studies into marine life in the area of the proposed inlets and outlets as well as extensive testing of the seawater quality over two years.

With the level of Sydney's water storages at historic lows, the NSW Government announced in September 2005 that a desalination plant would be built. Expressions of interest were sought to select two consortiums with the expertise to build the plant. Eight groups expressed interest and in December 2005 two consortia were selected.

The weather in early 2006 was mixed. From late 2005 rain had begun to replenish storages. The first day of 2006 reached 44 degrees, the second highest on record. Heavy rain later in January 2006 improved water storages which led to the decision that the desalination plant be considered a contingency measure. Tenders were terminated and the tenderers offered ex gratia payments totalling $5.6 million. The project was deferred until storages fell to 30%. This level would provide sufficient water supplies for about two years, the minimum time needed to build a desalination plant.

Approvals and construction plans continued to be developed 'just in case'. So that the project could be quickly activate if a desalination plant was needed in the future Sydney Water developed a performance specification and functional description, a blueprint design, and a specification (Basis of Design). It also undertook pilot trials to test a range of processes to pre-treat the seawater before it entered the membranes, and to remediate the site.

By December 2006 dam storages fell to a level where the Board of Sydney Water recommended to the NSW Government that the desalination plant be built. This provided 26 months from award of contract to the plant producing its first water. Tenders were prepared for a 125ML/day desalination plant with an option to increase this capacity to 250ML/day. At this capacity, the plant would be the second largest in the world when it began operating.

2. Procurement strategies

Three pieces of infrastructure were critical to ensure water was produced and delivered into the existing major water supply tunnel network in the inner west of Sydney in the summer of 2009-10.

1. The desalination plant, together with two tunnels, each 2.5 kilometres long and 4 metres in diameter, to take seawater to the plant and deliver the concentrated seawater back to the ocean
2. An 18km long, generally 1.8m diameter pipeline from Kurnell to Erskineville, and
3. A wind farm to provide 140 megawatts of renewable energy to power the plant.

A different procurement method was used for each piece of infrastructure.

In the first round of procurement in late 2005, Sydney Water proposed to appoint one tenderer to join with it in an alliance contract to design and build both the plant and pipeline.

During 2006, this approach changed. The investigations undertaken during 2006 and the granting of planning approvals for the plant meant that the risks had reduced to a level that a competitive tender to design, build, operate and maintain (DBOM) the plant was feasible.

In December 2006 the Board of Sydney Water approved a DBOM contract for the desalination plant and an alliance contract for the pipeline.

The four consortia that had been shortlisted in 2005 typically included companies with expertise in designing and operating desalination plants. Some of these consortia, however, had disbanded. Sydney Water, therefore, approached the water companies in each of the previous shortlisted consortia to form consortia and express interest in the DBOM contract.

Two consorita were shortlisted to respond to the request for tenders (RFT) for the DBOM contract. They were the Blue Water Joint Venture comprising Veolia, John Holland and the *dmt* group comprising Degremont, Multiplex Engineering and Thiess.

This case study deals with the tender for the contract to design, build, operate and maintain the desalination plant.

3. The result

Two competitive tenders, with a net present value of around $1.2 billion[29], were received within 14 weeks of the issue of the request for tenders. These were evaluated and the following main contracts awarded within a further 7 weeks.

1. A $1 billion design and construct (D&C) contract to the Blue Water Joint Venture, comprising John Holland and Veolia Water Australia
2. An operations and maintenance (O&M) contract to Veolia Water Australia.

The two contracts to cover the design, construction, operation and maintenance of the plant responded to points raised in initial briefings with the shortlisted consortia. This structure recognises the reduced responsibilities of the constructor that occur after the plant has been successfully operated for ten years.

Water from the new plant was first supplied to customers in January 2010, meeting the NSW Government's commitment of the summer of 2009-10. The qualities of the water meet the contract specifications.

Blue Water's safety record exceeded Sydney Water's expectations.

Variations to the contract sum totalled around 0.3%.

The cost to Sydney Water to set up and manage the contracts through the end of commissioning of the plant was around $46 million. These costs included those of the Independent Verifier.

4. Factors for success

The project's urgency, together with its scale and complexity, dictated that success would be most assured if each participant in the project also achieved success. Only a "one team" approach would work. This required both the client and tenderers to be clear on the overriding objectives of the project. Importantly, in achieving these, each also had to understand the sometimes competing needs and inevitable constraints on the other.

Five factors supported this approach.

4.1 The team and the people

During the planning and tendering phases, Sydney Water formed an integrated project team comprising a number of discipline units, each led by a member of staff and supported by specialist advisers and some Sydney Water personnel. The structure of the Tender Evaluation Team is giving in Appendix 1.

The leaders of each discipline were chosen on their ability to focus on results, collaborate, their awareness of issues associated with the discipline and their commercial acumen.

The team was open to scrutiny and better ideas. The major deliverables produced by the team were independently reviewed to test their ideas and ensure best practice was used. This included the tender documents for the DBOM contract. These were reviewed by a panel of three specialists to ensure that the

29 This assumes that the plant would operate less than 100% of the time.

performance requirements for safety, environmental protection, water quality and schedule were practical, achievable and would ensure value for money. The requirements were modified after the review and provided to the tenderers, in advance of the tender being issued, for their comments.

4.2 Transparent and objective processes

A period of 7 months was provided to select tenderers, prepare tenders and for Sydney Water to evaluate the tenders. Achieving this tight timeline was due in part to the process and schedule being published at the very beginning, providing certainty to the tenderers of what they had to do, and by when. Sydney Water's own performance in meeting its milestones also assured tenderers that the schedule would be maintained and tender costs contained. Appendix 2 contains the tender process and schedule.

To assist tenderers to understand Sydney Water's intent and provide an opportunity to ask questions, eight interactive workshops were held during the tender period. Importantly, tenderers could test ideas with Sydney Water providing its view on the risk and/or opportunity that these might have on achieving the performance requirements. In taking this approach, Sydney Water was very careful not to mislead, or to divulge the tenderers' intellectual property. Appendix 2 contains the rules set by Sydney Water in conducting the workshops.

To remove some of the subjectivity in assessing tenders, those aspects of the tender that would normally be assessed under non-price criteria were first assessed quantitatively and the tender price adjusted accordingly. That is, the risks and opportunities were assessed to determine the likely cost or saving to Sydney Water. This potential was assessed both for likelihood and consequence. The resulting amount was applied to the tender price to arrive at an assessed tender price. This formed the basis of comparison between the tenderers. The selection criteria, weightings and process used to assess these costs is in Appendices 4 & 5.

This approach, which is used more often in assessing Public Private Partnerships, allowed a more objective and open assessment of risk items. Of around 30 significant risks on each tender that were initially assessed as needing an adjustment to the tender price, less than half of these resulted in an adjustment and for a relatively small sum.

4.3 Focus on performance and incentives

Clarity on the key result areas and the level of performance required were some of the keys to the success of the project and the D&C and O&M contracts. The key result areas were:

- safety
- water quality and reliability of the plant
- environment
- energy
- time.

The ability to measure performance objectively was critical to demonstrating that the level of performance was met. Accepted measures of performance, such as recognised national or international standards, reduced the contractors' exposure to arbitrary interpretation by the client or the independent verifier. Such standards, however, needed to be checked for their relevance to the particular circumstance, and where options were available, such as for a testing method, a specific option was identified.

Understanding the costs to consistently achieve a level of performance was necessary to avoid over-investment. For example, the contractor warranted performance at both 50th and 90th percentiles for the parameters that defined the quality of the water produced by the plant. Sydney Water accepted that performance 100% of the time, on some parameters, was not cost effective. Sydney Water also accepted the risk of the quality of the seawater being outside a specified range, as the likelihood of this occurring was rare and the cost to achieve performance at these extremes was excessive. If such a situation occurred, the contractor was required to use best endeavours to produce as much as possible at the required level of quality.

Financial incentives were provided where some key results were particularly important, in addition to applying damages if performance was not achieved. For this project, where achieving timelines was paramount, Sydney Water took the view that paying for superior performance (where it was of value) was a better incentive than threatening damages for under-performance. Examples of incentives – safety, schedule and water quality – are detailed below.

Safety incentives

Sydney Water's first priority is the safety of the public and all those who work on its projects. Sydney Water adopted a new measure, Recordable Safety Incident Frequency Rate (RSIFR) on this project. This measure broadened the performance measure on safety from lost time injuries to include reducing harm from medical injuries. Sydney Water provided an incentive of up to $10 million for superior performance and a further $2 million towards safety initiatives, such as behavioural safety training for subcontractors' supervisors.

Schedule incentives

Securing Sydney's water supply with an additional source of drinking water in the shortest possible time was a primary driver for the project. Significant financial costs could potentially be avoided by deferring the decision to go to tender as far as possible. The period of 26 months to design, construct and commission the first 125ML/day module was based on that for similar projects overseas and a risk based analysis of the schedule developed for Sydney's desalination plant.

An incentive of up to $10 million was provided if the drinking water was supplied up to 3 months early. In addition, Sydney Water paid up to $3 million to each tenderer to retain its design team and develop its tender design while the tender was evaluated and negotiated. This accelerated orders for critical equipment and allowed construction work to start 6 weeks after the contract was awarded.

Water quality incentives

The quality of the drinking water produced by the desalination plant was set to match the quality of the existing water supply so that the taste between the two supplies was indistinguishable. This enabled the new source of water to be introduced directly into the existing network without being pre-mixed with drinking water from the dams. This saved the considerable expense of facilities such as a large reservoir, and provided greater operational flexibility.

An ongoing incentive was provided to the contractor to propose new methods that Sydney Water will part-fund in return for a share in savings on operating costs.

To check that the performance levels were realistic, Sydney Water conducted independent reviews by international and local experts to ensure that the targets could be achieved and were cost-effective. In addition, the tenderers were explicitly asked to challenge the performance targets for the drinking water and raw seawater before Sydney Water finally set them.

In addition to setting performance levels, Sydney Water also mandated that particular functions be performed to achieve the required performance. For example, a process with two stages of reverse osmosis was stipulated to avoid tenderers attempting to achieve the required water quality with a single stage. This was done with caution as it did limit the tenderers' ability to take on risk to reduce costs and hence be more competitive. Sydney Water did so only when it knew that consistent performance could not otherwise be achieved.

Outside of the mandatory functions, tenderers were free to innovate to achieve the required performance. Once under contract, the contractor was also able to change its design as long as performance could still be met and the fundamental design philosophy did not change.

In the event of a significant change in the design, Sydney Water was entitled to share in any savings. Clients needed to take care in such circumstances not to reduce the contractor's responsibility for the performance of a new design because they receive a reward for accepting the change.

4.4 Removing uncertainty for tenderers

When developing the project, and before tenders were issued, Sydney Water focused on risks that the tenderers would have difficulty quantifying. Sensible clients do not expect tenderers to take a gamble on a significant risk.

In Sydney Water's experience of competitive tenders, tenderers may significantly discount the price of risks that are forced onto them as they seek to produce the best commercial offer. This is particularly the case where risks have a low probability of occurrence, though with a high consequence if they do.

The project was best served by fully dimensioning the risks, in terms of consequences and likelihood, as much as reasonably possible. Where this was not possible, whether due to a lack of time or significant cost, other mechanisms were provided to protect the tenderer in the event that the risk occurred.

The interactive workshops with tenderers allowed Sydney Water to be better informed on their perceptions of the risks. This allowed both parties to develop mechanisms that apportioned the risk more cost effectively.

As an example, two tunnels, each 2.5km long and 4 metres in diameter, were required to bring the seawater into the plant and discharge the residual concentrated seawater. The timing of this work was critical to allow the plant to produce water within 26 months. The likely paths of the tunnels passed through a number of fault zones in the predominantly sound sandstone. Extensive geotechnical investigations were carried out for the land-based sections of the tunnels, but doing such investigations offshore was impractical due to time and cost. To reduce the competitive pressure on both tenderers taking a different level of risk in their approach to construct the tunnels, Sydney Water instructed both tenderers to line the tunnels and use fully shielded tunnel boring machines. For a relatively low cost, Sydney Water significantly reduced the risks of poor ground conditions and removed the temptation for tenderers to take a gamble. Sydney Water also removed some of the uncertainty in the event of significant inflows of water at the face of the tunnel by bearing the risk of delay above a specified level of flow.

To reduce the uncertainty during the contract period in how the requirements of the contract would be interpreted an independent verifier (IV) and a dispute resolution board (DRB) were specified. These provided an independent and balanced view and overcame the potential for Sydney Water to rely on its intent rather than a dispassionate reading of the contract. Both proved a success with variations limited to 0.3% of the contract sum and no disputes. Appendix 6 contains the scope of services provided by the IV and DRB.

4.5 Governance

Involving the senior management of Sydney Water in regular progress meetings proved instrumental in enabling key decisions to be made quickly and for these key stakeholders to maintain confidence in the project team.

The Managing Director of Sydney Water held weekly meetings with the Divisional General Manager and Sydney Water's Desalination Project Director during the period the tender was prepared and negotiated. A paper was provided to the Board of Sydney Water each month to inform them of progress and how key risks were being managed. Where necessary, to ensure that the program for the tender was maintained, ad hoc meetings were held with the Managing Director to facilitate those decisions which had longer term impacts on the business or on other operating areas of Sydney Water.

In addition, a Project Control Group (PCG) provided other key stakeholders with monthly progress reports and allowed advice to be sought and matters involving other agencies to be expedited. The PCG was chaired by the Project Director and comprised the Managing Director, key Divisional General Managers and representatives from the NSW Co-ordinator General and NSW Treasury.

5. Acknowledgements & References

5.1 Acknowledgements

The success of the procurement was due to the following people and organisations, and also to the staff who comprised the evaluation teams from both Sydney Water and these organisations.

Sydney Water	**Advisers**
Kerry Schott, Managing Director	Peter Gemell, TEP Independent, Everything Infrastructure
Ron Quill, General Mgr., Asset Solutions	Paul Foxlee, TEP Commercial & Legal, KPMG
Eric de Rooy, TEP, Manager, Strategic Operations	John Gallagher, Legal adviser, PhillipsFox
Mike Watts, TEP Technical & Project Tech Mgr.	Alex Hartmann, Legal adviser, PhillipsFox
Susan Trousdale, Project Envir. & Approvals Mgr.	David Wunder, Technical advisers, GHD
Rory Brennan, Project Procurement Mgr.	Peter Eccelstone, Technical advisers, GHD
Murray Johnson, TEP Envir. & Community	Heinz Ludwig, Technical advisers Fitchner
Catherine Port, Project Tech & Commercial	John Barrow, TEP Project Mgt., InfraSol
Natalie Boyd, Project Community Relations	Mike McCloskey, Estimating, Aquenta Consulting

BlueWater	**dmt**
Alison Thompson, Bid Manager	David Ghannoum, Brookfield Multiplex
Peter McVean, Managing Director, Veolia Water Systems	Marc Simon, Managing Director, Degremont
Greg Taylor, General Manager Water, John Holland	Steve Willie, Thiess Contractors

5.2 References

A summary of the Desalination Plant contracts, their interrelationships and key terms are available at;
http://www.sydneywater.com.au/Water4Life/Desalination/documents/DesalPlantContract_Summary.pdf

The contract documents, with commercial-in-confidence information redacted, are available at:
http://www.sydneywater.com.au/water4life/Desalination/overalldocumentation.cfm

Ian Payne
(former) Project Director, Sydney's Desalination Project
Asset Solutions
Sydney Water

Appendix 1: Evaluation team – role – structure

Structure of Tender Evaluation Panel

Main Panel

Project Director (Chairperson)
Project Technical Manager
Independent Project Consultant (EI)
Sydney Water Operations Manager
Project Commercial Manager (KPMG)
Sydney Water Envir Manager

Probity Assurance

IAB Services Pty Ltd (2 people)

Secretary to Main Panel

Procurement Officer

Tender Evaluation Teams

1. Commercial / Legal

KPMG (Team leader)
PhillipsFox (Legal Other)SW
Risk Manager (Insurance)

Criteria 1 and 6
- Assessed Tender Cost
  - Whole of life cost (D&C + O&M)
  - Risk and Opportunities
  - Sensitivity Analysis
- Commercial Structures
  - Risk allocation / Financial strength
- Commercial deliverability
- Insurance

2. Technical

Project Technical Manager (Team Leader)
Project Process Team Leader
Project Process Consultant (Fitchner)Project
Civil/Mech/Elec Consult (GHD)

Criteria 1, 2, 3, 4 and 5
- Technical Requirements
  - Performance Requirements
  - Functional Requirements
  - Design Requirements
- O&M Performance Requirements
- Safety of Design to construct and Operate

3. Community / Environment

SW Environmental Mgr (Team Leader)
Project Community Relations Manager
Project Officer - Environment

Criteria 1, 2, 4 and 5
- Community Outcomes
- Environmental Outcomes

4. Project Management

Barrow & Associates (Team Leader)
Independent Project Consultant (EI)
Independent Project Consultant (EI)

Criteria 1, 2, 3, 4 and 5
- Project Schedule
- Methodology for D&C
  - Delivery strategies, plans, processes and business systems
  - Proposed resources
  - Management Plans
- Methodology for O&M
  - O&M strategies, processes, practices and business systems
  - Proposed resources
  - Management Plans
  - Safety System and Processes

Specialist Support Resources to the TEP

Team 1
Sydney Water (Legal
KPMG (Commercial)
PhillipsFox (Legal D&C and O&M)
Sydney Water Operations Contract Mgr
Sydney Water Insurance officer
Sydney Water Financial officer

Team 2
Fitchner (3 * process engineers)
GHD (2 process and geotech)
Sydney Water (3* specialists)

Team 3
Project Enviro & Approvals Mgr
Project Enviro Officer (2)
Project Community Rel. Mgr
GHD, Specialist Marine Consult.

Team 4
GHD (D &C methodology)
TBH - D&C Management Plan
TBH – Schedule Review
Consultant (O&M Methodology)Consultant (IV Mgt Plan)Sydney Water Ops Mgr (O&M methodology)
Sydney Water Ops officer (O&M methodology)
Sydney Water Safety Officer system)

Appendix 2: Tender process and schedule

The tender process comprised three stages, each with a defined outcome.

1. Expression of Interest (EOI) to preselect two tenderers
2. Request for Tenders (RFT) from the tenderers and receipt of competitive and conforming tenders
3. Evaluation, finalisation and contract execution

Further details of Stage 3 – Evaluation of the tenders and final scoring is given in Appendix 5.

The tender process started on 21 December 2006 and completed on 18 July 2007, a period of 7 months.

The broad steps within each stage are shown below.

Stage	Key milestones	Weeks to complete from issue of EOI
1. Expression of Interest		
	Issue of EOI	0
	Close of EOI	4
	Evaluate and select tenderers	6
2. Request for Tenders		
	Issue RFT	6
	Technical Workshop 1	7
	Commercial/Technical Workshop 2	10
	Meetings with Regulators	12
	Commercial/Technical Workshop 3	14
	Issue Final Technical Requirements and Project Documents	16
	Close Technical Tender	18
	Close Commercial Tender	20
3. Evaluate, Finalise and Execute Contract		
	Evaluate Tender	23
	Confirm Tenderers' offers	24
	Finalise negotiations & execute contract	27

Appendix 3: Interactive workshop

Interactive Workshops

Sydney Water conducted five interactive workshops with each tenderer during the tender period.

Three technical workshops and two commercial workshops were provided for discussion of technical, commercial, legal and other issues so that informed tenders were submitted. The workshop schedule provided one business day with each tenderer at each of the workshops.

The first workshop was a technical meeting at which Sydney Water explained its requirements and also the role and function of the reference design (Blueprint Design) and the technical specification (Basis of Design, Construction and Operation (BDCO)) in more detail. The tenderer presented and discussed its general design approach.

Two half-day workshops were held with the Department of Planning, the Department of Primary Industries and the Department of Environment and Conservation. These workshops provided the tenderer with an opportunity to hear from the regulator its requirements the management plans and work practices and procedures stipulated in the planning approvals.

Additional workshops were necessary to more fully explore the commercial conditions, particularly those related to insurance. Each tenderer could request a workshop or meeting, however, it was solely at Sydney Water's discretion to agree. At least 3 working days' notice had to be provided, unless mutually agreed between the parties. Tenderers were not to unreasonably refuse such a request.

Presentations and other material provided by tenderers at the workshops did not constitute a formal submission and may not have been taken into account in the evaluation of subsequent tenders.

Similarly, any views expressed at the meeting by Sydney Water were confirmed in minutes. As a result of the discussions any clarification of the tender documents was issued as addenda to both tenderers. However, particularly relating to commercial matters, where a tenderer provided an alternative and acceptable approach, that was acceptable, this was not communicated to the other tenderer.

Conduct of workshops

The following procedures applied for each of the workshops:

- workshops were held in accordance with a schedule determined by Sydney Water. The purpose, topics to be covered and maximum time allocation for each workshop was advised by Sydney Water
- each workshop was conducted in accordance with an agenda prepared by Sydney Water and distributed to tenderers prior to each workshop. Tenderers notified questions or specific discussion items/issues at least 24 hours prior to the workshop so that they could be taken into account when finalising the workshop agenda and to assist Sydney Water preparing appropriate feedback
- prior to a workshop, tenderers notified Sydney Water of the names, positions and roles of their representatives participating in the workshop. Tenderer representatives who attended workshops signed and delivered to Sydney Water the appropriate confidentiality deed
- as far as practicable, workshop agendas, presentation materials and other information provided by Sydney Water at workshops were the same for each tenderer
- each workshop was chaired by a Sydney Water representative whose decisions regarding the conduct of the workshop was final. Sydney Water engaged an independent facilitator for the workshops the first couple of workshops to set the rules for the workshops and ensure the agenda was completed within the allocated time. This also allowed Sydney Water's senior representative to participate in the discussions.
- the Probity Auditor attended all the workshops
- Sydney Water reserved the right to decline to provide particular information or discuss particular matters, and to terminate a workshop at any time

- Sydney Water recorded the decisions and actions from the workshops. Tenderer representatives were free to make their own notes of workshops
- Tenderers could decline the opportunity to meet with Sydney Water or agree to workshops of lesser duration; this did not occur, and
- Sydney Water reserved the right to hold additional workshops at its sole discretion.

Workshop conditions

Sydney Water could cancel, vary or replace the workshop at any time by issuing an addendum to the RFT. The content of workshops did not bind Sydney Water or modify the terms of the RFT unless set out in an addendum. It was the tenderer's responsibility to seek confirmation in writing from Sydney Water of any information on which the tenderer wished to rely in preparing its tender.

Post-submission discussions

In addition to the interactive workshops during the tender period, Sydney Water also conducted discussions and negotiations with each tenderer following evaluation of tenders. The period over which the discussions and negotiations was given in the timetable for the tender process. Discussions and negotiations were on an as required basis with each tenderer.

The discussions and negotiations were intended to provide primarily for discussion and negotiation of commercial and legal issues so that Sydney Water could be assured that it had sufficient information to enable an accurate evaluation of the tenders.

In addition the discussions were used to provide feedback from the regulating agencies on information the tenderers had prepared for the agencies. This primarily related to the architectural features of the largest building. Sydney Water negotiated with the tenderers any changes to its tender that resulted from this feedback.

Appendix 4: Selection criteria and weightings

Two sets of criteria were given:

Mandatory Criteria – the tender had to comply with these criteria or otherwise the tender could be rejected. These criteria were not scored.

Desirable Criteria – these criteria could be complied with to a lessor or greater degree. A score was given, using a pre-established guideline, to each sub-criterion. The sum of these scores where then used to determine the highest evaluated tender.

Mandatory Criteria

The Mandatory Criteria for the tender was the same as that for the EOI.

If any substantial or material changes occurred to the tenderer's response to the Mandatory Criteria in its EOI Submission the tenderer had to provide details of these changes with its tender and demonstrate why, in its view, any such changes did not materially affect its ability to continue to satisfy the Mandatory Criteria.

The Mandatory Criteria were:

M1. The tenderer must demonstrate the capability to deliver the project in line with the project schedule.

M2. At least one member of the tenderer must be part of the organisation invited by Sydney Water to submit an EOI.

M3. The tenderer member/s providing the project and/or construction management capabilities must:

have carried prime responsibility for those roles on a project with a value of at least $250 million in the last 5 years;

have a certified OHS Management System in accordance with the NSW Government Construction Agency Coordination Committee Guidelines Edition 4, or provide evidence that certification could be achieved prior to contract award;

have demonstrated satisfactory safety performance on similar projects;

have a certified Quality Management System to ISO 9001 2 000, and a certified Environmental Management System to ISO 14001 2004; and

have demonstrated experience in implementing these systems on more than one infrastructure project of similar nature with a value of at least $250 million in the last 5 years.

M4. Financial strength and capacity of:

the organisations (and any parent companies) nominated as operator, constructor and tunneller to undertake their assigned roles in this project; and the tenderer members.

Desirable Criteria

Subject to satisfying the mandatory criteria, each tender (whether a conforming or a variant) was assessed against the criteria (including sub-criteria) set out in the following table using the weightings indicated:

Request For Tender - Evaluation Criteria		
Criteria	**Description**	**Weightings**
1. Assessed tender costs	Whole of life costs: Risks and opportunities to Sydney Water Sensitivity analysis	70%
2. Ability of the proposal to meet or exceed Sydney Water's Requirements	What will be delivered: Technical Operations and maintenance Safety outcomes Community outcomes Environmental outcomes	5%
3. Ability to meet the Project Schedule	How the project will be delivered to meet the Project Schedule	10%
4. Methodology for design and construction	How and who will build the project components: Delivery strategies, plans, processes and business systems Proposed resources	5%
5. Methodology for operation and maintenance	How and who will operate and maintain the assets: Operation and maintenance strategies, processes, practices and business systems Proposed resources	5%
6. Legal / Commercial non-quantifiable factors	Commercial structures: Risk allocation/financial strength Commercial deliverability	5%

For each sub-criterion given under the Description, the relevant tender evaluation team developed two or more criterion to further evaluate against. These were also weighted, with these weightings generally varying from 0.3% to 1.0%

Appendix 5: Evaluation of Tenders

This section covers:

1. the sources of information used in the tender evaluation
2. the process for evaluating the tenders
3. evaluating the non-cost desirable criteria
4. evaluating the assessed tender price
5. overall assessment and ranking of tenderers

Information for evaluation

The evaluation of tenders was based primarily on:

- the information provided in the tenders;
- any further information submitted or provided by a tenderer pursuant to an express request by Sydney Water to do so; and
- any information received by Sydney Water from any source in respect of the tenderer or its tender.

Process for Evaluating Tenders

The tender process and structure for evaluating the tenders was documented, together with the selection criteria and weightings in a Tender Evaluation Plan. This Plan was approved by the Managing Director of Sydney Water before the request for tenders (RFT) was issued.

Stage 1 - Briefing of Tender the Evaluation Team

Team members and advisers were briefed on the Tender Evaluation Plan (TEP) and associated probity, security and confidentiality requirements.

The evaluation of each tender was undertaken by four Tender Evaluation Teams (Teams). Each focused on particular aspects of the Desirable Evaluation Criteria.

The Teams were coordinated by the TEP, to ensure effective communication between, including information that could affect each team's evaluation. The chair of the TEP had overall responsibility for the conduct of the evaluation and the recommendation on whether to award a contract and if so, to whom. All Teams were informed of the results of each tender's assessment against the tender compliance, mandatory criteria review and conforming tender review.

Each tender was lodged in two parts. The technical tender was submitted first, with the commercial tender two weeks later. This approach recognised that the technical aspects of the tender would normally be completed in advance of the final pricing and approval of the tender by the consortium. This allowed additional time for the technical tender to be assessed and clarifications sought immediately after the commercial tender was submitted.

The following process was applied to both the technical and commercial tenders.

Stage 2 - Receipt of Tenders

Tenders were received into the tender box, opened and recorded after the respective closing times by the Tender Board in accordance with Sydney Water's standard tender opening procedures.

Following this the tenders were made available to the TEP Chair for evaluation.

The secretariat to the TEP arranged secure storage within the tender evaluation office.

No late tenders were received. Such tenders would not be considered unless the TEP was satisfied that the integrity and competitiveness of the tender process was not compromised.

Stage 3 - Tender Compliance Review

Tenders were reviewed by the secretariat to the TEP to determine if they complied with the tender submission requirements specified in the RFT.

Depending on the nature and materiality of any deficiency identified, and at the TEP's discretion, tenderers were required or given an opportunity to correct such deficiency in accordance with the Tender Clarification, Revision and Confirmation Process.

Stage 4 - Mandatory Criteria Review

Tenders were reviewed by each Team to determine if they satisfied the mandatory criteria.

Any substantial or material change that occurred to a tenderer's response to these criteria in its EOI submission, the tenderer had to provide details of such change and demonstrate why, in its view, any such change did not materially affect its ability to continue to satisfy these criteria.

Stage 5 - Conforming Tender Review

Tenders were assessed to determine if they satisfied the requirements specified in the RFT. The TEP decided if a conforming tender warranted detailed evaluation.

Where a tender failed to satisfy any aspect of these requirements then, depending on the materiality of the deficiency identified, and at the TEP's discretion, the tenderer was given an opportunity to correct such deficiency.

Stage 6 - Variant Tender Review

In addition to a conforming tender, tenderers could submit one or more variant tenders in the pursuit of better value for money for Sydney Water. Tenderers were required to submit a full separate tender, including the relevant returnable schedules clearly marked as a variant tender.

Variant tenders were reviewed by the TEP and it decided if the tender warranted detailed evaluation.

In particular, the TEP had regard to:

- ability to satisfy the Mandatory Criteria, including material compliance with the performance requirements (Mandatory Criterion M5);
- the significance of any changes proposed to the design requirements or other requirements in terms of ability to achieve the project aim and objectives;
- tender pricing relative to that of the tenderer's conforming tender and the potential to provide significantly better value for money; and
- the significance of any changes proposed to the project documents.

Stage 7 - Detailed Evaluation of Tenders

Subject to successfully completing the above reviews each tender was assessed in detail against the Desirable Evaluation Criteria (including sub-criteria) using the associated weightings. Scoring guidelines were tailored by each Evaluation Team based on Tender Evaluation Scoring Model. Refer to Table 1.2.3.

This Model was developed by each Team into more specific scoring guidelines and included in the Tender Evaluation Plan before the RFT was issued.

Stage 8 - Tender Clarification, Revision and Confirmation Process

The Tender Clarification, Revision and Confirmation Process, was conducted fairly and equitably in accordance with a consistently applied process. Each tenderer was subject to the same requirements and had the same opportunity as is reasonably practicable to clarify and revise its tender. In the first instance a written request was made to explain how the risk (or opportunity) that the TEP had identified could be mitigated, or more assurance that the opportunity would be realised.

Stage 9 - Departures and qualifications

Where a proposed departure or qualification was accepted by the TEP, the tender pricing was adjusted. Refer to Section "Adjustments to the tender price" for details of how this was carried out. by the TEP. Where this was not reasonably possible to quantify the cost of the departure or qualification the score for the relevant non-cost desirable criterion was adjusted.

Stage 10 - Discussions and Negotiations

TEP conducted discussions and negotiations with each tenderer following initial evaluation of its tenders. These were intended to provide primarily for discussion and negotiation of commercial and legal issues so that the TEP could be assured that there was sufficient information to enable an accurate evaluation of the tenders.

Stage 11 - Reference Checks

During the EOI process reference checks were made on the consortium members of the two tenderers. Further reference checks were made by the TEP where:

- new projects were currently being undertaken or recently completed by tenderers and/or their members; and
- where a tenderer has disclosed a material change in its membership.

In accordance with the RFT, the TEP had the discretion to conduct independent investigations (including engaging private sector consultants) regarding a tenderer and the information contained in its tender without further reference to the tenderer. These included investigations into probity and security issues, commercial structure, business and credit history, prior contract compliance and performance and any criminal records or pending charges. They could also include interviews with any referees, other performance checks and research into activity that is or might reasonably be expected to be the subject of criminal or other regulatory investigation.

The TEP could take into account any matters revealed as a result of such investigation in evaluating Tenders. Sydney Water was under no obligation to provide Tenderers with details of the results of its investigations.

Stage 12 - Tender Confirmation and/or Revision

At the end of the evaluation tenderers were required to confirm their tender offers (including any clarifications and/or revisions requested by the TEP) so as to enable finalisation of tender evaluation. This was not an opportunity for tenderer's to reprice their tender. Changes to particular prices were limited to confirming prices already provided in the negotiations. The revised tenders were to be complete and able to be executed.

Revisions were submitted in the form of amendments to the relevant schedules and the project documents suitably marked up and annotated to indicate the exact nature of each revision, a reference to the meeting, request or other communication from the TEP on which the revision was based, and any cost, time or other implications. Tenderers were required to submit a concise summary list of amendments, including cross-references to the relevant schedules and project documents.

The revised tenders were lodged with the Tender Board by a specified closing time. Following recording of the revised tenders by the Tender Board, each relevant Tender Evaluation Team checked the revisions and finalised its evaluation.

Evaluating the Non-cost Desirable Criteria

The process and methods to evaluate the desirable criteria was designed to express, to the maximum extent possible, any non-conformances, departures, qualifications, risks, opportunities or other deficiencies or benefits evident in tenders as adjustments to the Assessed Tender Cost (refer Section 1.4).

Accordingly, the evaluation of tenders against the non-cost Desirable Criteria focused chiefly on the residual risks or opportunities of tender offers that, while not directly affecting the Assessed Tender Cost, were relevant to the tenderer's ability to achieve the Project Aim and Objectives and satisfy Sydney Water's requirements as specified in the project documents.

As each of the non-cost Desirable Criteria carried a weighting of only 5% (or 10% in the case of Project Schedule) these evaluations focused on those aspects of tenders that could materially impact the achievement of those goals and requirements.

The TEP and Evaluation Teams took care to ensure that any aspects of the evaluation that had been accounted for as part of the calculation of the Assessed Tender Cost (ie, through Pricing, Technical, Risk and Opportunity or Other Adjustments) were not duplicated in the scoring of Tenders against the non-cost Desirable Criteria.

In accordance with the Tender Evaluation Objective, the Tender Evaluation Scoring Model in Table 1.2.7 was designed to provide a basis for assessment and scoring of tenders that:

- aims to differentiate tenders having regard to their ability to achieve the Project Aim and Objectives and Sydney Water's and Other Requirements; and
- represents a consistent approach across all of the non-cost Desirable Criteria (although not every element will apply to every criterion).

Detailed evaluation reports were prepared by each Evaluation Team and endorsed by the TEP.

TABLE 1.2..1 TENDER EVALUATION SCORING MODEL	
Rating and Scoring Band	**Comparative Description**
Unsatisfactory 0 – 15	The Tender offer is unresponsive to and fails to meet the Project Aim, Project Objectives and/or Sydney Water's and Other Requirements (***the Requirements***). It has deficiencies of a serious, fundamental nature that have not been resolved through clarifications, tender revisions or negotiations, and which are unlikely to be resolved to Sydney Water's satisfaction. There is no reasonable prospect of the Project being delivered, operated and/or maintained in accordance with the Requirements and/or the Project Schedule. It involves an unacceptably high degree of technical and/or commercial risk.
Poor 16 – 30	Many aspects of the Tender offer are rated 'Satisfactory', however, it also has some aspects that are rated 'Unsatisfactory' that prevent it from being given an overall 'Satisfactory' rating. The aspects rated 'Unsatisfactory' could be resolved but are likely to involve undesirable compromises and/or high additional costs for Sydney Water. None of the key requirements is rated 'Unsatisfactory'.
Satisfactory 31 – 70	The Tender offer is responsive to the Project Aim and Objectives, is expected to readily satisfy all of the key elements of the Requirements and is potentially capable of meeting most, if not all, of the desirable elements. There are a number of deficiencies that remain unresolved, however, these are expected to be resolved during final contract negotiations and/or detailed design in order to make the offer fully satisfactory to Sydney Water. Resolution of these issues could involve minor compromises and/or modest additional cost for Sydney Water. The Project is clearly more likely than not to be delivered, operated and maintained in accordance with the Requirements. The Tender offer involves some technical risks but these are within the normal bounds for a project of this nature and are considered to be acceptable and/or manageable. It substantially complies with Sydney Water's proposed commercial risk allocation. No significant aspect of the Tender offer is rated 'Unsatisfactory'.
Superior 71 – 85	Many aspects of the Tender offer are rated 'Satisfactory' and there is only minimal concern about its ability to satisfy the Requirements. It also has some aspects that are rated 'Outstanding' that warrant recognition. No significant aspect of the Tender offer is rated less than 'Satisfactory'.
Outstanding 86 – 100	The Tender offer will clearly satisfy the Project Aim and Objectives and all of the Requirements. No material deficiencies have been identified in the Tender offer. It has a high degree of certainty of being delivered, operated and maintained in accordance with the Requirements. It involves minimal technical risk. It readily satisfies Sydney Water's proposed commercial risk allocation. It demonstrates 'best industry practice' for a project of this nature, cost and significance. It includes features that will provide additional value for money for Sydney Water, the Government and other Project stakeholders.

Evaluating the Assessed Tender Cost

To assess the tenderer's net present cost (NPC) to Sydney Water the tender was analysed in the following stages.

The tenderers were provided with a financial model that it had to complete. The model calculated the whole of life cost as an NPC to Sydney Water, including both capital and operating cost over the term of the contract. The discount rate was known to the tenderers.

The tenderers provide costs for 5 potential operating scenarios for the plant. These ranged between 100% operation to 30% operation of the plant over the contract period.

In assessing the NPC each scenario was weighted differently. The weightings were determined through a mathematical analysis of historic rainfall records and the consequent impact on water storage together with an estimate of the future water demand. These weightings where not provided to the tenderers to avoid tenderers tailoring their tender to a particular scenario.

Step 1 – Financial model review

Review of the financial model(s) NPC to confirm that the whole of life cost under each scenario is consistent with the underlying assumptions, the proposed O&M payment mechanism and other returnable schedules (e.g. D&C pricing schedule and O&M pricing schedule).

Step 2 – Technical adjustments

The whole of life costs were adjusted for technical risk and opportunities. Technical adjustments were made where the tenderer failed to meet the technical specifications and there was a consequent risk that the performance would not be achieved. An adjustment was made also where there was an inconsistency between the technical and price aspects of the proposal or where a technical adjustment was deemed necessary for other reasons.

Step 3 – Commercial adjustments

The whole of life costs were adjusted where there was a change from the proposed risk allocation, changes to the proposed contract terms or changes to the payment mechanism, etc.

Step 4 – Other adjustments

Other adjustments were made which had not been captured through either the technical or commercial adjustment process to ensure that each tender is evaluated consistently.

Step 5 – Calculation of the weighted average NPC and the evaluation criteria score

The whole of life costs provided by the tenderers, and all of the adjustments to the whole of life costs were undertaken in nominal terms. This stage involved converting the nominal whole of life costs to NPC terms, calculating the weighted average NPC and the conversion of the weighted average NPC into the evaluation criterion score. The adjusted NPC includes all adjustments (technical, commercial and other) and any other relevant whole of life project cost to Sydney Water (e.g. electricity costs).

Sydney Water discounted the adjusted whole of life nominal costs to calculate an NPC across each operating scenario. The NPC for each operating scenario was multiplied by its respective weighting to calculate a weighted average NPC, which was converted to an evaluation score out of 70% (the weighting for price). Sydney Water has also undertook a number of sensitivities to assess the impact of changes in key variables (e.g. operating scenarios, discount rates, etc).

Adjustments to the tender price

The adjustment quantification process was undertaken to ensure that the tenderers were compared on a like for like basis. Adjustments were required to reflect, amongst other things, the different technical solutions and risk allocations proposed. For example, following review of the tenders it was apparent that both tenderers altered Sydney Water's proposed risk allocation (e.g. as a consequence of the mark-ups made to the legal contracts or through proposed technical or commercial aspects of the tender, etc).

The following process was used to quantify the adjustments identified in stages 1 to 4:

- Identify those issues (if any) that require clarification from the Tenderer

- Issue clarification question if required. Sydney Water may not issue a clarification in respect of every adjustment
- Tenderers are to respond to clarification question, identifying where necessary potential cost impact and timing of the cost impacts
- Sydney Water will review the Tenderers responses including where appropriate their cost impact estimates and timing and amend as appropriate
- Sydney Water will quantify the adjustments (where practical using probability analysis i.e. best, most likely and worst case) and will identify the likely timing of the adjustment

The whole of life costs were adjusted for the adjustment's expected value (i.e. the mean value for the adjustments).

An adjustment quantification workshop was held involving representatives from each Tender Evaluation Team. The probity auditor and advisor were also in attendance.

Prior to the adjustment workshop each Tender Evaluation Team was requested to provide an overview of any potential adjustments that may be required. During the adjustment workshops the discussions focused on:

- whether an adjustment was necessary;
- an appropriate definition for each adjustment;
- the consequence of each adjustment; and
- the timing of when the adjustment was likely to materialise.

For each adjustment that was quantified, the following information was determined:

- the overall probability of occurrence;
- the best case, most likely and worst case cost impacts; and
- the best case, most likely and worst case probabilities of occurrence.

The value of the adjustment was stated in nominal terms and the timing of when the adjustment is the likely to materialise was identified. The expected value of each adjustment was calculated using Microsoft Excel. The expected value (i.e. the mean value) of each quantified adjustment was summed to determine the total level of the adjustments for each tenderer.

Overall Assessment and Ranking of Tenders

The overall assessment and ranking of Tenders was determined in accordance with the following process, which was applied after receipt and confirmation of Revised Tenders, as applicable.

Step 1: Assessed Tender Cost

The Assessed Tender Cost for each tender was calculated as indicated previously.

The tender with the lowest Assessed Tender Cost was assigned a normalised score of 100 points and the other tender was scored in the same proportion as the lowest Assessed Tender Cost bore to its Assessed Tender Costs. For example, if Tenderer A has the lowest Assessed Tender Cost, it would receive a score of 100 points and Tenderer B's score will be calculated as follows:

$$\text{Tenderer B's score} = 100 \times \frac{\text{Tenderer A's Assessed Tender Cost}}{\text{Tenderer B's Assessed Tender Cost}}$$

Step 2: Evaluation against the non-cost Desirable Criteria

Tenders were scored against each of the non-cost Desirable Criteria as indicated previously.

Scores were normalised for each of the criteria so that, in each case, the tender with the highest score received 100 points and the other tender scored in the same proportion as it scores bore to the highest score. For example, if Tenderer A has the highest score for one of the criteria, it will receive 100 points for that particular criterion and Tenderer B's score will be calculated as follows:

$$\text{Tenderer B's score} = 100 \times \frac{\text{Tenderer B's Score}}{\text{Tenderer A's Score}}$$

Step 3: Total Weighted Score

Tenders' normalised scores for each of the Evaluation Criteria were weighted in accordance with their individual weightings as set out in Table 1 above.

A Total Weighted Score was calculated for each Tender and the Tenders ranked accordingly.

Step 4: Sensitivity Analysis

The sensitivity of the Total Weighted Score calculation and ranking of tenders was tested against a number of variables, including weighting factors and any significant differences in scores for individual criterion.

Any lack of robustness indicated by the sensitivity analysis was carefully considered by the TEP to ensure that the ranking of tenders was justified in terms of the Evaluation Criteria, the Tenders received and any other relevant information taken into account as part of the evaluation of Tenders.

Step 5: Distinguishing Features Review

The TEP reviewed the evaluation of each tender to identify if there were any features that clearly distinguished one tender from the other, either positively or negatively. For example, in terms of Assessed Tender Cost, satisfaction of the performance requirements, design requirements and project schedule, risk allocation, and any unresolved matters.

Any material inconsistency between the outcome of this review and the ranking of tenders based on their Total Weighted Scores was carefully considered by the TEP to ensure that the ranking of tenders was justified in terms of the Evaluation Criteria, the content of the tenders received and any other relevant information taken into account as part of the evaluation of the tenders.

Step 6: Tie-breaking Analysis

In accordance with Sydney Water's procurement policy, if another Tender was within 3% of the Total Weighted Score of the first-ranked Tender, the Tenders were regarded as equally ranked in terms of the Evaluation Methodology of this Tender Evaluation Plan.

The TEP separately equally ranked Tenders based on an overall assessment of value for money demonstrated by the Tenders, including any significant benefits and risks associated with each Tender and the outcome of the review conducted during Step 5.

Step 7: Identification of Preferred Tenderer

The Preferred Tenderer was the tenderer whose tender best having regard to:

- Assessed Tender Cost, including sensitivity analysis
- Total Weighted Score, including sensitivity analysis
- Distinguishing features review; and
- Tie-breaking analysis.

Appendix 6: Independent Verifier (IV) and Dispute Resolution Board

Independent Verifier (IV)

The Contractor and Sydney Water engaged an Independent Verifier to:

1. independently verify in accordance with the processes employed by the Contractor in the design, construction, commissioning and validate that the works comply with the requirements of the D&C Contract, as set out in the Independent Verifier Deed and the Independent Verification Management Plan;
2. verify that work performed by the Contractor complies with the requirements of the D&C Contract; and
3. verify that the quality of the work performed by the Contractor and the durability of the Works complies with the requirements of the D&C Contract.

The Independent Verifier was obliged to act independently of the Contractor, Sydney Water and any subcontractors.

During the tender period, each tenderer independently sought proposals from organisations (or consortia) that had the resources, skills, expertise and experience to undertake the role of Independent Verifier. Each Tenderer evaluated the proposals received and shortlisted at least two parties as prospective Independent Verifiers. These proposals were submitted to Sydney Water before the close of tenders so that it could review (5 days) and either accept or reject the appointment. This allowed each tenderer to engage and have its IV prepare a detailed Independent Verification Management Plan which was incorporated in the tender. The Independent Verifier was not required to undertake any verification during the tender period.

In addition to the provisions under the D&C contract relating the to the IV, a separate Deed between the three parties set out the terms of the IV's appointment and its inspection, review and verification responsibilities during the term of the D&C contract.

SMEC Australia was appointed the IV, with KBR a subcontractor to SMEC.

Dispute Resolution Board (DRB)

The Dispute Resolution process under the D&C and the O&M contract provided, in the first instance, for a dispute to be resolve by the Senior Representatives of the Contractor and Sydney Water. In the event that this was unsuccessful, the dispute could be referred to the DRB by either party.

The responsibility of the DRB, as an independent body, was to assist in and facilitate the timely and equitable resolution of disputes between the parties, in an effort to avoid acrimony, construction delay, unnecessary costs and arbitration of disputes. The DRB's recommendations were to assist the parties resolve a dispute and became binding if neither party rejected the recommendations.

The DRB consisted of two independent members, the Contractor and Sydney Water nominating one each, and a third member agreed to by both the parties. The third member became the chairperson of the Board. Mr George Golvan QC was appointed as chairperson with Mr Graeme Peck and Mr Ronald Finlay as appointed as members.

The DRB met around once every two months and more frequently on a couple of occasions. At each meeting the Contractor and Sydney Water together presented on the status of the project and on matters of concern.