# RELATIONSHIP CONTRACTING

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## INTRODUCTION

This paper backgrounds Sydney Water, how and why it has developed its approach to relationship contracting—and alliance contracting in particular, discusses some of the legal issues that have arisen, provides a summary from the post-implementation review on one of Sydney Water's alliance projects and provides a summary of the findings of a recent evaluation of the effectiveness of alliance contracts in comparison with other forms of contract.

## SYDNEY WATER

Sydney Water is a statutory corporation, owned by the NSW Government. Sydney Water was established with three corporate objectives:

- protect public health;
- protect the environment in accordance with the principles of environmentally sustainable development; and
- be a successful business.

Sydney Water provides water and sewerage services to a population of more than 4 million people in over 1.5 million properties.

The greater Sydney region is served by 27 sewerage systems, 10 draining to coastal sewage treatment plants and 17 draining to inland sewage treatment plants. In total, Sydney Water operates 30 sewage treatment plants, 653 sewage pumping and ejector stations and more than 22,000 kilometres of sewers.

Sydney Water operates more than 20,000 kilometres of water mains, 264 reservoirs and 146 water-pumping stations. Water is treated at 10 filtration plants, 4 of which are owned and operated by private sector consortia. Sydney Water buys water for treatment from the Sydney Catchment Authority.

Sydney Water also operates a recycled water system that serves 13,000 homes in the outer western suburbs of Sydney.

## SYDNEY WATER AND RELATIONSHIP CONTRACTING

Sydney Water's implementation of relationship contracting has been focused in the area of design and construction of water and wastewater infrastructure. Sydney Water's capital investment programs have grown significantly since the late 1990's and are expected to remain at high levels for the medium term. It became increasingly obvious in the late 1990's that programs of this magnitude could not be reliably and efficiently delivered using the

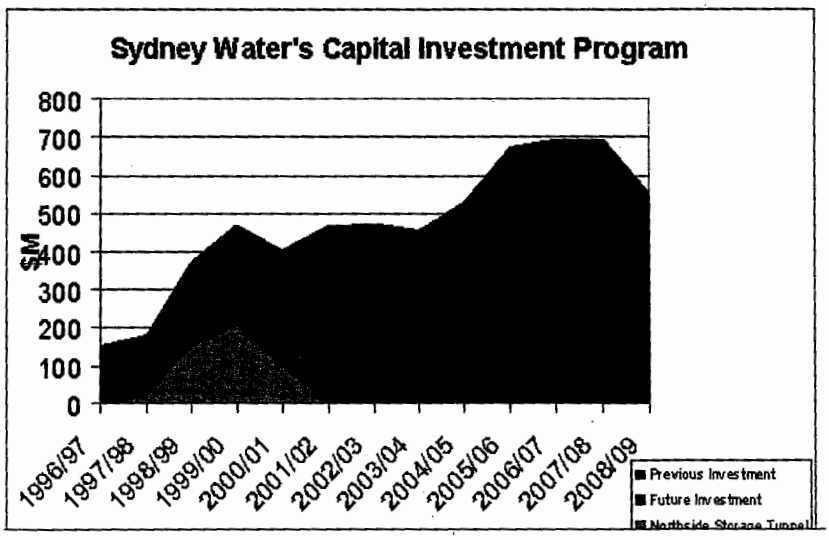


Diagram 1: Sydney Water's Capital Investment Program 1996–2009

approaches being used prior to that time. Diagram 1 depicts the growth of Sydney Water's capital investment programs over the last seven years and the next five years. The Northside Storage Tunnel project's share of that program is highlighted.

In order to deliver a growing capital investment program more effectively, Sydney Water adopted a new strategy in 2000. The strategy recognised the need for change and reflected the construction industry's vision of the way forward. Key aspects of the strategy were to work more in partnership with the private sector, to develop closer relationships and to use larger, longer-term contracts.

In 1999, the Australian Constructors Association committed to a more collaborative approach with clients in order to ensure a more sustainable future for its members. A key element of an improved business environment was its preference for working under relationship-based contracts where real collaboration was possible, costs reduced and risks shared.

The level of experience with alliancing and other collaborative approaches in the construction industry has increased markedly over the last five years to the extent that market leaders now target significant proportions of revenue from such contracts.

Sydney Water sought construction industry feedback on the implementation of its procurement strategy in 2002. The response commended the progress Sydney Water and other owners had made in applying collaborative approaches, but also noted that much of the public sector's capital programs were still being delivered as small projects and were characterised by adversarial relations. The industry highlighted that the time and costs involved in tendering multiple small projects were high and were eventually passed on to owners.

## What is relationship contracting?

The Australian Constructors Association[1] defined relationship contracting as a process to establish and manage the relationships between parties that aims to: remove barriers, encourage maximum contribution, and allow parties to achieve success.

Relationship contracting is one of the major themes in Sydney Water's implementation of its strategy for delivery of the capital investment program. In Sydney Water's terminology, relationship contracting can cover a spectrum of approaches that seek to implement some or all of the underlying principles. Sydney Water has recently adopted the GC21 form of contract as its default document for major capital works projects but has also applied other variations of collaborative contracts and has considerable experience with the application of partnering structures to traditional forms of contract. Alliance contracts, as established by Sydney Water are considered to be at the more collaborative end of the relationship-contracting spectrum.

Alliancing is a contract delivery strategy which aims to create mutually beneficial and co-operative relationships between the parties in order to produce the desired results. A fundamental premise underlying the approach is that superior results can be achieved when a team aligns on the objective and collaborates to ensure a good outcome. It endeavours to apply supportive commercial and legal conditions to maximise the likelihood that those aspects will not distract attention from the objective. Unlike traditional forms of contract where risk is usually allocated amongst the parties, under an alliance contract the partners usually take collective responsibility for all risks associated with the delivery of the contract and share the benefits or costs that eventuate.

There is a level of acceptance that, under certain circumstances, program outcomes are more likely to be achieved if the key participants assume collective responsibility for delivery under some form of collaborative arrangement. Circumstances that typically lead to a preference for a collaborative procurement strategy include:

- numerous complex and/or unpredictable risks;
- where co-ordination with operations is critical or interfaces are complex;
- difficult stakeholder issues or complex external threats;
- very tight timeframes;
- high likelihood of scope changes;
- a need for owner involvement or potential for value-adding by the owner during delivery; and
- threats and/or opportunities that are best managed collectively.

Faced with such circumstances, attempts to discretely allocate risks among the parties often give rise to higher costs and sometimes make the contract difficult to enforce legally and cause relationships to become adversarial—all of which threaten the success of the program.

## Features of Sydney Water's alliances

Sydney Water alliances have involved:

- integrated client/contractor delivery teams for major capital works projects;
- responsibility for virtually all project-related risk being shared; and
- using risk/reward or pain/gain mechanisms to support pursuit of common objectives and drive diligent management of risk.

## Overview of Sydney Water's major relationship contracts

Northside Storage Tunnel in 1997:

- $466M, alliance contract;
- objective of improving harbour water quality by eliminating more than 90% of stormwater-fuelled overflows from the sewerage system;
- 22km of tunnelling under Sydney Harbour and lower north shore residential areas;
- contract awarded in late 1997 without approved design and tunnel required to be operational prior to 2000 Olympics (a schedule that would not have been achievable under a traditional design and construct process).

SewerFix Pumping Stations Program in 2001:

- $240M, alliance contract;
- objective of eliminating dry-weather overflows from the sewerage system in line with EPA priorities and schedule;
- involved upgrading 220 sewage pumping stations in 3 years to reduce the likelihood of overflows (a significant increase in the then current rate of upgrade);

Priority Sewerage Program in 2002:

- $180M+, alliance contract;
- objective of improving water quality in rivers and streams and improving community health in outlying villages in the Sydney basin by replacing existing septic tanks with reticulated sewerage systems;
- 7 schemes/15 villages;
- seeks to provide services at reasonable costs, improve safety performance with a consistent approach, apply learnings from one scheme to the next, introduce innovative servicing solutions.

Bondi Reliability Improvement and Modernisation Program in 2003:

- $75M, alliance contract;
- objective of improving reliability and modernising operations at Bondi sewage treatment plant;
- involved application of multitude of design and trade disciplines (ranging from large scale underground tunnelling to electronic control systems) in a cramped, underground plant that operates around the clock and has only small windows of opportunity (that can open and close with little notice) where construction can be conducted.

South Western Suburbs Ocean Outfall Sewer in 2003:

- $40M+;
- objective of reducing the risk of overflows from the major sewer mains feeding the Malabar sewage treatment plant (running from Fairfield to the coast, including under Sydney Airport's main runways);
- involves rehabilitating concrete sewers, removing silt, controlling corrosion and odours and remediation of contaminated soil;
- not an alliance contract but does apply a risk/reward mechanism.

## WHY IS SYDNEY WATER USING NEW FORMS OF CONTRACT?

The majority of Sydney Water's capital program is and will continue to be delivered under lump-sum design and construct contracts. This approach has proven effective in achieving competitive prices when there is low risk and/or a high level of certainty over the environment in which the project will be delivered, e.g. planning approvals in place, reasonably known site conditions, approved concept design, assured cash flow. Problems typically arise in delivery under these types of contracts where tenderers have made inadequate provision for uncertainty in tender prices or where delivery is mismanaged. In such situations, contractors typically seek variations from clients in order to recover costs and margin. These situations often escalate to formal disputes and sometimes result in litigation.

Collaborative approaches, including alliance contracts, are being adopted by Sydney Water and other infrastructure owners where there is less certainty, short timeframes, opportunities for innovation and cost reduction over the life of the project and where the risks involved are more effectively managed through a risk-sharing rather than a risk allocation approach. Alliance contracts do not eliminate risk for contractor—they involve an up-front agreement to share responsibility for their management and the financial implications if the risks eventuate. Similarly, if opportunities are realised, the financial benefits are shared.

Other key reasons for using new forms of contract:

- seen as supporting and demonstrating the desire to work

more collaboratively with the private sector;

- projects that were urgent, complex and lacked definition could not be effectively delivered under traditional approaches—lack of time to define to a level where tenders could be called, lack of definition and complex problems meant risks were hard to assess and price;
- experience with traditional contracting approaches that significant cost premiums usually accompanied situations where Sydney Water required discretion in rate and nature of delivery after the contract was awarded;
- growing understanding that one approach or variations on one approach didn't fit all situations;
- experience with BOOT contracts on water filtration plants and sewerage schemes increased awareness of, and preparedness to investigate other procurement models;
- feedback from industry: a survey among industry participants in 2001 suggested that while Sydney Water had raised its profile amongst contractors, there was room for broader application of the principles underlying the 2000 strategy.

## LEGAL ISSUES THAT HAVE ARISEN WITH ALLIANCE CONTRACTS

The major issues that have arisen with alliance contracts relate to the effort required to understand the legal implications of the delivery approach and developing contract documents that accurately reflect the spirit and intent of the agreement. There have been few barriers to successfully negotiating contract documents that are acceptable to all parties and the relationships developed once the contracts are in place have facilitated agreement on amendments where necessary.

Notwithstanding that Sydney Water, contractors and the legal fraternity now have some experience with alliance contracts, there are a range of issues that continue to prove a challenge:

- convincing some lawyers that a collaborative approach to contracting will not involve overly high risk for their clients (on both owner and contractor sides);
- getting lawyers comfortable with the contractual implications of providing for risk-sharing rather than ensuring that risk is clearly allocated;
- reflecting the risk-sharing, collaborative nature of alliances in the contract document;
- Professional Indemnity Insurance:
  - would an individual participant's insurance respond in an alliance arrangement where loss is a result of poor advice or design, but where decisions are unanimous and there is an undertaking not to sue other participants other than for wilful default?
  - should the parties to an alliance indemnify each other?
  - should the alliance seek insurance?
  - should the contract be structured to ensure individual participants' insurance would respond?
- Works insurance and dealing with excesses and limits of cover:
  - should insurance premiums be treated as a project cost?
  - what should participants do if they feel Principal Controlled cover is inadequate?
  - is loss in excess of cover treated as a project cost, owner's cost or attributed to the most responsible party?
- Unanimous decision-making, no disputes:
  - what happens if a unanimous position can't be reached (circularity)?
  - is it critical to have a means of resolving disputes in the contract?, or
  - is it better to force unanimity by excluding a resolution process?

A range of conclusions has been reached in response to each of the above issues, however, they continue to be the source of contention. Discussion outside the pressure of contract negotiations may help to provide some principles that can be applied in future.

## PERFORMANCE COMPARED WITH OTHER FORMS OF CONTRACT

Only one of Sydney Water's alliance projects has been completed—the Northside Storage Tunnel. A comprehensive post-implementation review has been conducted, a summary of which follows. In addition, an evaluation of the effectiveness of all alliance projects in comparison with non-alliance projects has been conducted, but it reports largely on interim results rather than the final outcomes.

### Northside Storage Tunnel: Post Implementation Review (PIR)

The purpose of the Northside Storage Tunnel (NST) is to significantly reduce the frequency of the largest volume wet weather sewage overflows into Sydney Harbour. The NST is one of the 'early action' measures identified in the NSW Government's comprehensive $3 billion Waterways Package to clean up Sydney Harbour, and the bays, rivers and beaches of the State.

The NST contributes significantly to the Government's objective of substantially improving Sydney Harbour water quality.

In January 1998 the Board approved the award of a contract to a consortium comprising Transfield, Montgomery Watson and Connell Wagner for the design, construction and commissioning of the tunnel in an alliance with Sydney Water.

The NST project was extensive in scope, involved complex works and was constructed in the context of sensitive natural environment and community concern.

The challenge for the Alliance was to complete, within three years, the design and construction of a major asset for Sydney Water's wastewater system involving:

- 7 remote sites;
- 22 kilometres of tunnels, up to 6.6m in diameter;
- 3 kilometres of declines and caverns;
- 11 vertical shafts with a combined length of 1 kilometre;
- two large underground pumping stations (one located 100 metres below sea level);
- extensive mechanical and electrical equipment and control systems for hydraulic, ventilation and processing facilities; and
- the project was the subject of an environmental impact statement with 128 conditions of approval.

The main conclusions of the NST PIR were as follows:

- the alliance worked well to deliver the project outcomes on time and close to the final project budget—the tunnel was available for use in time for the Olympics;
- the NST was the first public sector alliance project in Australia—the project outcomes probably could not have been as successfully achieved by any other delivery method, given the short timeframe;
- the NST project demonstrated that public/private sector alliances can be successfully delivered and this provided a sound basis for the use of alliances to successfully deliver other substantial work programs for Sydney Water since 2000;
- the NST is meeting its intended outcomes by significantly reducing the frequency of the largest volume wet weather sewage overflows into Sydney Harbour and its catchment;
- performance of the NST since 2001 is showing that the NST will meet all Environmental Protection Agency licence requirements;
- the completion cost of $466 million represents an increase of only 3.3% over the final project budget;
- the alliance arrangements focused the whole delivery team (alliance partners and sub-alliances) on managing risk, achieving outcomes and containing costs;
- the alliance arrangements resulted in numerous innovations in design and delivery methods that improved outcomes, including savings in time and cost;
- the community consultation process won community support and avoided legal action to delay the project—there were, however, significant issues relating to community concerns about the location of the tunnel's ventilation stacks;
- the project emphasised the need for better awareness in Sydney Water of community issues and has resulted in early identification of community expectations and improved accountability and management

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of community consultation in subsequent projects;

- while the alliance's objective of the project being completed 'at a cost regarded, by industry standards, as providing exceptional value for money', was considered not met, significant construction-related insurance claims are being pursued which, if successful, would reduce the final cost to a level that would be considered 'exceptional value' especially given the difficulties faced;
- the alliance achieved Sydney Water's time objective of having the NST available by the Olympics and it is considered that no other project delivery method would have achieved this outcome at a cost close to budget; and
- the cost of Sydney Water's supervision of the project was substantially lower than for comparable projects delivered under more traditional contract conditions.

Significant lessons identified by the PIR included:

- the preliminary/planning cost estimate in early 1997 could not adequately take into account the complexity of the overall project and the physical, regulatory and social difficulties involved—the original basis and accuracy of these estimates should be communicated to stakeholders as should subsequent refinements of and changes to the estimates;
- some of the environmental benefits claimed for the NST could not be measured and while the broader environmental benefits to the community were of substantial value, they could not be quantified—it would be better for environmental impact statements to focus on the desired outcomes of projects rather than on detailed numerical outputs;
- in the early stages of the project, concerns arose among some key stakeholders as to how, under these new contracting arrangements, Sydney Water would ensure that it would remain in control of the project—stakeholders need help in understanding the governance arrangements that apply under alliance contracts;
- governance arrangements for alliances are improved by establishing a high-level link to executive management that is independent from the management of the alliance; and
- there is potential conflict if risk/reward models can lead to decisions being made such that the pursuit of one objective is not balanced against the impact on other objectives—however, the NST alliance demonstrated that moderators built into the risk/reward models can effectively prevent trade-offs of performance between objectives.

## Alliancing evaluation 2004

In 2003, Sydney Water engaged ARTD Management Consultants to conduct a comparative evaluation of the effectiveness of alliance and other forms of contracts used to deliver major water infrastructure projects.

The purpose of the evaluation was to:

- ascertain the benefits for Sydney Water from alliancing compared to more traditional contract delivery strategies;
- identify improvement opportunities for alliancing;
- identify any strategic implications for the use of alliance contracting in the future.

The evaluation was based on case studies of Sydney Water's four alliance contracts to date (Northside Storage Tunnel; SewerFix Pumping Station Program; Priority Sewerage Program; Bondi STP RIAMP) plus five more traditional contracts, drawing heavily on formal project documentation (Board papers, tender documentation and post-implementation reviews) and interviews with contract managers and clients.

Based on the experiences to date, there is evidence to demonstrate a number of clear benefits for Sydney Water from alliancing compared to more traditional contract delivery strategies—namely that alliancing:

- delivers reduced timeframes for the contract creation and procurement process allowing project commencement to be fast-tracked when deadlines are critical;
- provides greater flexibility to avoid delays (and probably additional costs) on projects where it is very difficult, prior to the contract award, to fully define the scope and risks of the work;
- provides greater flexibility to adjust the program of works or scope in response to Sydney Water constraints or changed priorities;
- supports Sydney Water's active involvement in all stages of projects in situations where post contract award innovation and risk management are critical;
- provide greater certainty that changes in contract scope can be accommodated at the actual direct cost rather than at inflated variation or penalty rates;
- requires a lower level of Sydney Water resources for contract management reflecting the fact that Sydney Water is part of the project team and uses the alliances resources to manage the project without the need for a separate supervisory and project management roles.

In addition, there is evidence of a number of other significant

achievements of alliancing to date, although it is not clear whether these achievements are causally related to the alliancing delivery strategy or simply the performance of the particular contract team selected for the work. More insights may emerge on the critical success factors for these achievements after post-implementation reviews are completed for the current alliance contracts. The achievements include:

- delivering large-scale, complex projects at outturn costs close to or under the Board approved budget;
- high levels of productivity which have been used to deliver an accelerated program of works;
- strong safety, environment and community performance;
- reduced level of disputation and litigation linked to the quality of the relationships between Sydney Water and the other contract parties;
- effective mechanisms for measuring and rewarding the achievement of the clearly defined benefits realisation criteria for the project;
- quality project management including sophisticated cost control and scheduling.

## Emerging issues for relationship contracting

The key issues in Sydney Water for relationship contracting, and alliancing in particular, are:

- value-for-money:
  - at tender and ongoing;
  - use of cost competition in the tendering process;
  - tendering profit and overhead rates;
  - demonstrating value-for-money in the absence of price competition;
  - the widespread perception that price competition ensures value-for-money;
  - convincing methodologies for demonstrating value-for-money;
  - is there a different value equation for projects delivered under relationship contracts.
- validating the risk profile for all parties to alliance contracts:
  - do alliance contracts present inherently higher or lower risk profiles than traditional contracts, if so does this have implications for the approaches for ensuring governance;
  - should different risk profiles be factored into negotiations on profit rates;
  - what basis is used to factor project-specific risk into profit negotiations;
  - how is the inherent and specific risk profile factored into negotiations on contingency provisions in cost targets;
- the legal or commercial implications of risk/reward mechanisms not having similar up- and down-sides:
  - can contractors reasonably be expected to accept a proposition that pain will be suffered for poor performance against some objectives, but there will be no gain for outstanding performance against those same objectives (e.g. there are areas where owners cannot tolerate poor performance (e.g. meeting EPA licence conditions, customer satisfaction), but there is no discernible benefit in going beyond a given performance hurdle).

## Where is Sydney Water heading with relationship contracting?

Sydney Water currently has 3 alliance contracts operating as discussed earlier: the SewerFix Pumping Stations Program, the Priority Sewerage Program and the Bondi RIAMP. Sydney Water's next alliance contract is likely to be for the Water and Sewer Mains Renewal Program. A request for interested parties to lodge proposals for that program is likely to be advertised within the next 2–3 months. Sydney Water will also be adopting other forms of relationship contracting over the coming years.

To put Sydney Water's reliance on relationship contracting into perspective, only 20–25% of Sydney Water's Capital Investment Program is currently planned to be delivered under alliance contracts over the next 5 years.

The bulk of Sydney Water's Capital Investment Program has been and will continue to be delivered under more traditional forms of contract. However, it is Sydney Water's intention that those traditional contracts will increasingly take on more collaborative practices and behaviours.

The profile of Sydney Water's Capital Investment Program will be changing over the coming years and will comprise projects that are less obvious targets for alliances. The program will have a heavy emphasis on renewal of the water and wastewater distribution and collection networks (i.e. pipes and pumps). These projects are generally less complex than treatment plant work, they are typically not time critical and are relatively easily defined. These attributes generally indicate that risks can be accurately assessed and allocated without great difficulty and that these projects can successfully be delivered under traditional contracts.

## CONCLUSION

Sydney Water has developed its approach to relationship contracting over the last four years with the objectives of improving the efficiency and reliability of capital program delivery. The developments reflect the need to deliver a larger capital investment program efficiently and reliably, the pursuit of savings from both capital and non-capital procurement and the need to provide assurance of good governance over procurement activities—all within acceptable risk boundaries. The relationship contracting strategy pursued to date is largely achieving the desired objectives.

## REFERENCE

1. Relationship Contracting: Optimising Project Outcomes, Australian Constructors Association 1999.

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Rory Brennan's paper was presented at the 'Construction Law Conference' convened by Carter Roth on Thursday 2nd of September 2004. Reprinted by permission.

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Diagram 2: Alliances and Sydney Water Capital Investment Program