

*Zeibots, Dr Michelle E., **Scheurer, Dr Jan, *Partridge, Ms Emma, *Mason, Ms Leah
*Institute for Sustainable Futures (ISF), University of Technology, Sydney.
** Curtin University Sustainability Policy (CUSP) Institute, Perth.

PO Box 123
Broadway NSW 2007
t. +61 2 9514 4950
f. +61 2 9514
michelle.e.zeibots@uts.edu.au

Sustainability and Alliancing: a case study of new governance practices that emerged from the Roe 7 Highway in Perth

Abstract: This paper examines the governance contribution that an Alliance-based project management framework made to improvements of the design and construction details of the Roe 7 Highway in Perth, Western Australia. It focuses on changes to the design that were initiated by the community and made possible by the flexibility of the Alliance framework. The paper uses material drawn from interviews of professionals and community representatives involved in the Roe 7 project to tell the story of how the changes initiated by the community reduced some environmental impacts from the project. The governance issues at play in the Roe 7 example are articulated, and used to speculate on how frameworks like Alliancing might also be used to foster greater collaboration between government agencies and the community during the planning and pre-construction phases of difficult projects where fostering more sustainable outcomes is desired.

Introduction

It is widely believed that sustainable outcomes cannot be achieved by technological changes alone and that the way decision-making and governance processes are structured is just as critical to realising sustainability in practice. This is because significant change to human systems is usually complex, having social and economic dimensions that can change the optimal use and implementation of infrastructures and technologies in unexpected ways. Governance structures that recognise and accommodate this reduce the risk of mistakes and play an important role in optimisation.

More specifically, appropriate governance and project management frameworks are able to capture the complex social factors essential to achieving sustainability through:

- Accessing local knowledge and incorporating it into projects through meaningful community engagement (Healey 1998, p. 1539).
- Influencing bureaucratic cultures and standardised practice by being flexible and responsive to local conditions and the knowledge gained from working differently (Healey 1998, p. 1535; Evans, Guy and Marvin 1999, p. 112–113).
- Redefining the approach to a problem where appropriate, such as demand management rather than increases to supply (Evans, Guy and Marvin 1999, p. 106).

This paper investigates a transport infrastructure project — the Roe 7 Highway in Perth, Western Australia — where the governance framework enabled these first two factors to influence and change the project design and implementation. The project management framework that enabled this to happen is called *Alliancing*. As will be shown in the account of the project, local people would have liked to have had more say in the project definition. We

speculate on how the project may have panned out if the Alliance framework had also been used to plan for the project in addition to implementation that addresses the third point raised above.

The first part of the paper provides a brief overview of Alliance frameworks and how they differ from conventional Design & Construct frameworks. The second part of the paper provides an overview of the Roe 7 project and the methodology we have used to examine the governance processes responsible for its implementation. This is followed by a series of accounts from the community and professionals working on Roe 7, which describe how several significant changes were made to the project. The final section describes how the governance features evident in the Roe 7 case could be further developed and extended to include the pre-planning phase of projects to enhance sustainability.

Part I: background on Alliance project management frameworks

Alliancing is a form of contractual arrangement involving creation of a unique legal entity — an *Alliance* — to deliver a project. The Alliance comprises individuals from parent organisations such as government departments and private industry partners. As an Alliance, the project team is able to avoid the adversarial behaviour that often occurs on projects undertaken within conventional Design & Construct contractual frameworks (Whitely 2004, p. 2). This is because all of the Alliance partners share in the risks and benefits of the project, overcoming the conflict that arises when different parties try to shed risks onto each other. An Alliance is based on the principles of trust, equity, respect and no blame (Whitely 2004, p. 3).

Beginning work within an Alliance framework requires development of a purpose-built value set that works to guide many of the decisions of the Alliance team. The parameters used to form such a value set can be significantly different to the time and cost parameters that usually drive infrastructure construction projects (Zeibots, Partridge and Scheurer 2008, p. 10).

From a governance perspective, Alliance frameworks offer far more than just a way of reducing and sharing project risks. The inherent flexibility of Alliances can also facilitate greater community engagement during the project design and construction process. This is because of the greater scope to introduce changes to the design and construction methods during the project. Flexibility is useful when a project is confronted by unknown factors. This can include issues raised by the community, and as will be shown in the case of Roe 7, responding to such changes can bring about significant benefits.

Governance and management frameworks that enable change have been referred to as forms of *adaptive leadership* (Uhl-Bien, Marion and McKelvey 2007, p. 306–307). Adaptive leadership refers to processes and personnel that explicitly understand the need to be flexible, innovative, collaborative, and most importantly, listen and respond to community values and insights when attempting to solve problems. The principles of adaptive leadership sit at the forefront of the governance platforms needed to achieve sustainable outcomes in the design and delivery of infrastructure projects.

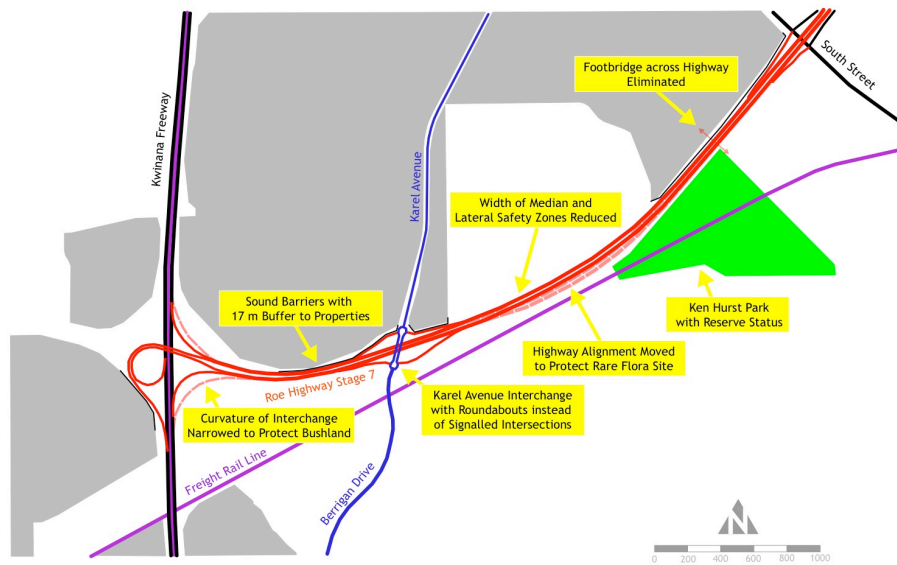
The next section will provide some general background on the Roe 7 project and also specify the methodology we used to explore the governance processes used to design and implement the project.

Part II: Roe 7 project context and post-implementation assessment methodology

Roe 7 is a section of orbital highway located to the south-east of Perth's CBD, linking the existing Roe Highway to the Kwinana Freeway. The Kwinana Freeway is a radial road that links the CBD to Perth's industrial and outer lying residential suburbs to the south.

The Roe 7 alignment passes through a corridor reservation that is home to endangered species of native flora and fauna — *caladenia huegelii*, or Gand Spider Orchid, and *Calyptorhynchus latirostris* or Carnaby’s Black-Cockatoo. The habitat is protected under state and federal legislation. It’s protection presented the greatest legislative obstacle to construction of the Roe 7 Highway.

Figure 1 Examples of adaptive changes on Roe 7



Residential homes are located along most of the Roe 7 alignment, shown as the grey areas in Figure 1. Ameliorating impacts on homes and neighbourhood amenity from road traffic noise, was also a significant environmental problem.

Methodology

Two methods were used to collect data on the Roe 7 governance processes. The first was generation of a timeline of events, showing the sequence of key decisions affecting the project. The second was a series of open-ended interviews of individuals involved in the project, which provided a range of different perspectives and accounts of the significance of different events surrounding key decisions.

In order for those who were interviewed to feel comfortable and speak freely, the identity of interviewees has been kept confidential. It is for this reason that interviewees are referred to using a system of numbers. A total of 12 individuals were interviewed as part of our assessment. Interviewees #1 to #5 are people who worked on Roe 7 in a professional capacity, as a member of the Roe 7 Alliance or officer from a government agency with administrative responsibilities, or both. Interviewees #6 to #12 are individuals who represent various community interests, including residents whose properties are directly affected by the road, individuals interested in environmental conservation and indigenous heritage issues.

We have chosen to broadly identify people in this way — *implementers* and *recipients* — as we feel this information is vital to understanding the values and motivation for involvement in the project which is useful when interpreting the comments made by various interviewees.

Part III: lessons from Roe 7 and adaptive leadership in practice

This section examines three cases where changes were made to the Roe 7 design details. These changes achieved better operational and environmental outcomes and reduced

construction costs. In each case, community representatives initiated the changes, and as will be seen, there was some initial resistance to these from engineers working on the project.

Changes to Karel Avenue interchange

Historically, highway interchanges in Perth have included signalised intersections at cross roads in accordance with Main Roads Western Australia (MRWA) design standards. The volume of traffic moving through such intersections requires lane space for queuing and turning and would have resulted in a five-lane overbridge at Karel Avenue. The community were concerned that a capacity increase on this scale would create more traffic and impact on local amenity. There were also objections to the time delays for local residents using the intersection. As an engineer working on Roe 7 recalled:

‘One of the Community Representative Group [members] wanted a roundabout put in at the [Karel Avenue] interchange. The concept design was [for] a set of lights, and he kept saying look I hate standing at a set of lights when they’re red and there is no one around. If you put in a roundabout, I won’t have to do that. I said [it won’t fit] it’s going to take too much land, and I thought my decision was right. ... [T]o his credit he persevered, and I said look just to keep you quiet I’m going to have a look at the site. When I had a look, it was obvious [a roundabout] was the right decision’ (Interviewee # 1).

Another engineer working on the project recalls the benefits of the change:

‘By making it two roundabouts, with a two-lane bridge, it sent a signal — this is not a through road. So the community got a better outcome, drivers got a better outcome and the state got a better outcome, because instead of paying for a five-lane bridge, they got a two-lane bridge which was a huge saving’ (Interviewee #4).

Another interviewee working in a professional capacity recalls:

‘That same issue [of building a roundabout instead of traffic signals] was raised at Roe Highway Stage 6 and was knocked back by Main Roads. In this case, Main Roads approved it. That’s the first time it was done’ (Interviewee #3).

This observation — that the community in previously similar situations had sought similar changes — raises the important question of why the bid for change was successful in the case of Roe 7 but not in previous projects. There appear to be two important elements at play. First, the creation of a separate entity with a purpose-built value set distinguishes it from its parent agency, providing a degree of *distance* that enables Alliance members to try new ideas. Second, the working knowledge, which professionals have of the parent agency’s culture, means they are able to negotiate more successfully for change than individuals from the community.

Modifications to design and construction standards to minimise bushland clearing

The Roe 7 road reserve had a total land area of 130.6 hectares. The 4.5 kms of four-lane highway and associated intersections have a surface area of 17.2 hectares. Initially, 53.9 ha of vegetation were going to be cleared for the project (MRWA 2004, piii). A host of modifications reduced vegetation clearance by 12 per cent — or 6.6 hectares, reducing the cleared area to 47.3 ha.

It is important to stress that many interviewees viewed the destruction of bushland as highly negative and an act that should not have occurred. The supportive statements contained in this section relate to the process of community engagement and not necessarily the decision to build the road. As one interviewee with conservation interests stated:

‘It’s a bit hard to say from a conservation point of view that there were a lot of positives. I suppose we were able to [...] set up a dialogue between the conservation people and the Alliance people, [but] the environment was the loser in the end’ (Interviewee #11).

With this qualification in mind, one community representative found that being responsible for reducing the amount of bushland clearing gave many people a great sense of achievement:

‘It was all very satisfying to see it all come together and know that we had been responsible for saving something like 6.6 hectares of bushland that would have just gone under the bulldozer’ (Interviewee #7).

Achieving the reduction in the area cleared required several significant changes to standard road design and construction standards. As with the previous example, the measures undertaken to reduce clearing were adopted as a direct result of engagement with the community:

‘[W]e had local expertise, we knew this bit of bushland, we knew the area, we have crawled over every inch of it for the last 20 years, so for them to come in and bulldoze their way through with no consideration to local feelings would have been wrong’ (Interviewee #7).

This example highlights two important aspects of community engagement, which are the expertise and insights that local people bring to a project and the emotional motivation to change standard practice when something of value is at risk. The role that *emotions* play in decision-making is often downplayed. In our assessment, emotions are powerful motivators that can lead to actions that enhance outcomes. The ability of the Roe 7 Alliance to generate the necessary *distance* from its parent agency enabled professional personnel to develop a closer relationship with the community and empathise with their values. As one interviewee commented in relation to one design issue:

‘...we were really pleased that after arguing constantly for months, the designer eventually conceded that knocking it [the bushland] down grieved him. He didn’t want to do it and he understood the argument, so the clearing didn’t happen’ (Interviewee #7).

The following reflections show how the dynamics between the governance elements identified in the previous sections and the emotional motivations were played out to achieve better outcomes.

Narrowing of the median and installation of safety barriers

The Public Environmental Review for Roe 7 anticipated reducing the median to 10.5 metres near populations of declared rare fauna (MRWA 2004, piii). During the community engagement process, this was further reduced to 6.5 metres, aided by installation of median safety barriers. One interviewee describes the sustained pressure from environmentalists on the designer, along with his willingness to revise the design, not once but twice, to achieve the reduction in clearing:

‘Some really good things came out of us pushing for them to reduce the median right down the length of the road. We argued that if at the beginning of Roe Highway [...] there is [...] a concrete barrier in the centre [...] why can’t you do the same thing past Ken Hurst Park, which would reduce the clearing of the bushland? [The median] was originally to be something like [...] 14 or 16 metres across [...] we said that was excessive, so they squeeze it down to 10.5. We pushed them again, and said if you can do it to 10.5, why [not] further and we got them down to about 6 or 6.5’ (Interviewee #7).

Changes to road geometry at interchanges

Permanent speed reductions enabled narrowing the curvature of turning lanes at the Kwinana Freeway interchange, reduced the area of isolated bushland. Again, the suggestion to reduce the speed limit to allow for a tighter corner to reduce bushland clearing came from the community:

‘[W]e even altered the curvature of the access off Kwinana [...] so we retained more bushland. They were going to run it right through the middle of the bushland on that corner and we got them to [...] tighten up the corner [...] they reduced the speed so it wasn’t an issue. So we [...] saved more bushland, and that wouldn’t have happened if we weren’t there saying why can’t you do this?’ (Interviewee #7).

Reduction in width of lateral safety margin through installation of a cyclone fence

To comply with road safety and visibility objectives, vegetation is usually cleared along a nine-metre verge from the edge of the road pavement. A significant number of banksia trees would have been lost if this had been done for Roe 7. Instead, a cyclone wire fence was built closer to the road edge. This protects motorists and preserves bushland behind the fence. As the following interviewee recalled, while it took much discussion, this solution provided a better outcome:

‘[We] explain[ed] the need to not clear nine metres back from the shoulder of the road through sensitive bushland area. They came on board with that and we were really pleased that after arguing constantly for months about this, the designer eventually conceded that [...] knocking it down the ... something like 300 to 400 metres ... grieved him. He didn’t want to have to do it and he saw and understood the argument, so the clearing didn’t happen and we have a safety fence along the edge — and there is literally no clearing at all for that length of bushland, so that’s a real win (Interviewee #7).

It appears however that *standard approaches* are difficult to challenge, and it took a significant level of outside pressure and persistence to ensure that the innovative solution was implemented:

‘Halfway through the project, Main Roads had adopted a principle from AustRoads that says you need nine metres clearance at the sides of roads. We’d already built this nice cyclone fence, [that] minimised the vegetation that had to be cleared [...] and then they said, we’ve got a problem, we want nine metre clear zones. Sometimes the fence was only five metres from the side of the road, so they wanted to clear five metres on the other side of the fence to fit this AustRoads design [standard]. I said you are crazy! So we go out on site again. Well this is totally stupid, what about your steel posts and your cyclone fence? Surely that’s a hazard to drivers given your design rule. [T]he posts on that are made to be what they call frangible and they are only 75 mm. And we said yeah, but you’ve got a high-tensile wire to hang the cyclone mesh on, you’ve got three strands, that’s a structure and more dangerous than the grass trees [...] You can’t convince me a car is going to run off the road, hit that fence and go through and kill himself because of the banksias. It was a ridiculous argument [...] Of course the design engineer is scratching his head and saying, OK I see your point and of course it never got done’ (Interviewee #8).

Another interviewee described how this approach represented a cost saving for the Alliance:

‘We have proven to them that if there is low bush, scrub and density it will actually stop a car from travelling further than if you clear it completely so you have to think about it a bit differently. And if you leave the bushland there, you’ll stop the weed invasion, so you cut down your [maintenance] costs’ (Interviewee #7).

Adapting design standards

Several of the engineers working on Roe 7 explained that having input from external stakeholders enabled a deeper learning, causing them to reflect on MRWAs design philosophy and standards. Their work for the Roe 7 Alliance enabled them to articulate some of the aspects of adaptation they were engaging in with the community.

In practice, design standards for infrastructures like roads have two aspects to them. The first is what can be called the *intent* or design goal of the standard. For example, the goal of a design standard might be to make the road safer for drivers, reduce accidents and the severity of injuries. The second is the set of prescriptions or design standards set to realise that intent in practice. For example, specifications as to how wide the cleared verge needs to be between the roadside curb and surrounding bushland.

If the intent of a design standard is understood and maintained, but the prescriptions changed — or adapted — to suit local conditions, it becomes easier to accommodate multiple objectives. But this can only happen if aspects of the governance framework accommodate such practices. The following interviewee describes how the Alliancing process differs from the normal approach MRWA takes, and how this enabled the team to focus on the intent of various existing standards:

‘Standards are written for a state-wide road infrastructure, but when you apply it to [a] particular location, maybe it’s not necessarily the best that can be achieved. Maybe if we examine the intent behind the standards and apply it to this particular location [...] there is a better way, or a faster way, or a cheaper way and that can be explored’
(Interviewee #4).

As the following interviewee recalled, Alliancing allowed the standards to be challenged, and enabled the team to take a creative approach to modifying design standards to better meet objectives — in this case minimising the area of bushland that needed to be cleared:

‘The plans were drawn up to Main Roads’ standards and the question was asked why do the standards have to be so broad? Why can’t they be flexible? So the Alliance said we’ll speak to Main Roads and see if they are prepared to modify those standards. In the following meeting they came back and said ‘Yep!’ Allowed us to narrow the median down. You just need to drive along Roe Highway and you can see the change in standard. It’s not negative, but I think Main Roads has been a bit more flexible and that probably wouldn’t have happened if Main Roads were solely running the project’
(Interviewee #3).

By the end of the project, the view of many professionals was changed by their experience of working within the Roe 7 Alliance:

‘That was the revelation — challenging the standards — so I am quite comfortable now that I can challenge any standard, because I can go back to the basics of what is this standard trying to achieve which we normally don’t discuss in any other form of contract. Mind boggling!’ (Interviewee #1).

Part IV: General governance implications for sustainable infrastructure delivery

Problems involving the development of sustainable infrastructures are often defined as *wicked problems* (APSC 2007). This means they are messy and can be approached in many different ways and solved by a variety of different solutions with varying degrees of success.

Achieving sustainable outcomes in practice is often difficult and requires satisfying multiple objectives. From a governance perspective, it also means responsibility for such problems may cut across the boundaries of two or more government agencies. Finding governance

frameworks that enable practitioners from different agencies with different working cultures to work together is an important part of achieving sustainability.

There are three aspects relating to this relationship that we feel are useful to be aware of when considering ways to improve collaborative government in areas where change through adaptive leadership and community engagement is required. The first relates to how constructive change can be achieved in a way that enables local and specific aspects of a problem to be solved while at the same time maintaining the safety and security that general standards developed by government agencies provide for the community. The second examines the relationship between adaptive individuals and the parent agency or organisation from which individual professionals may come from. The third area of consideration relates to the potential for individuals from different government agencies to form Alliances as a way of enhancing collaborative approaches to service provision.

Achieving constructive change through collaborative governance

In the examples discussed previously, it was shown that a tension exists between the community — who want changes for a wide range of reasons — and Main Roads who want to ensure that particular standards and practices are maintained. Between these two groups of people is the Alliance with its purpose-built value set and Key Performance Indicators (KPIs). If the Alliance is succeeding in terms of its commitment to community engagement and the team is operating at a high level of technical expertise, the impetus for change should eventually overcome any initial resistance. Being in an Alliance should provide *space* for new ideas and innovations to be generated and articulated because Alliance members are located away from the parent agency both administratively and physically. Once these have a more solid and robust form, members from the Alliance are then able to approach the parent agency and advocate and frame arguments for change in a way that members from the community are probably unable to because they do not have the close working knowledge of the responsible agency. This means that in a cultural sense, Alliance members become both outsiders and insiders to the parent agency.

Adaptive individuals working within an Alliance are to a large degree products of the organisational culture of their parent agency and so will to some degree be resistant to change in much the same way that approaching personnel from the organization directly might prove. This is why community members had to be very persistent when attempting to have the Alliance change design details to suite their needs. This provides an initial check on changes that could prove problematic. A second check occurs when Alliance members approach the parent agency to request permission to deviate from standard procedures. This raises the important issue of the nature of the relationship between Alliance members and personnel working for the parent organization.

Relationships between adaptive individuals and parent agencies

An important aspect of Alliancing and adaptive leadership is the relationship between adaptive individuals working within an Alliance or other form of adaptive framework and the parent agency that is nominally responsible for the project.

During the course of our research we speculated on the degree to which an Alliance framework could have been used to bring together different government agencies that need to collaborate in order to solve difficult problems. Or in other words, we asked the question could Alliancing, and other similar adaptive frameworks, be used to facilitate whole-of-government approaches to achieving sustainable transport development?

This speculation raised the issue of different work and organisational cultures within different government departments and the degree to which these differences might be a cause of conflict, or alternately, a potential benefit when trying to solve complex problems.

To crystallise these thoughts, we tried to think of the different government agencies as being characterised by different *working cultures* or *working paradigms*. In our view, these different working paradigms occur because of the different type of services each agency provides to the community, and the different approaches each have adopted to solve problems successfully.

In the area of urban land-use and transport provision, we thought that there are probably three generally different types of working paradigm at play. These correspond to the different government agencies responsible for providing these infrastructure services. The characteristics of each of these working paradigms and the reasons for why they occur are listed in Figure 2.

Figure 2 Working paradigms within West Australian government agencies

<p style="text-align: center;">Enquiry Pradigm</p> <p>Focus</p> <ul style="list-style-type: none"> • broad • whole system, urban region <p>Problem types fuzzy and complex</p> <p>Brief general direction</p>	<p style="text-align: center;">Customer Service Pradigm</p> <p>Focus</p> <ul style="list-style-type: none"> • narrow • public transport delivery <p>Problem types dependent</p> <p>Brief implemantation</p>	<p style="text-align: center;">Project Management Pradigm</p> <p>Focus</p> <ul style="list-style-type: none"> • narrow • road constrction and network management <p>Problem types well defined</p> <p>Brief implementation</p>
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We think that one of the reasons why collaborative approaches to governance is potentially very valuable is because there is an opportunity to bring together individuals from the different working culture backgrounds that characterise each of these paradigms. Alliances that comprise individuals from different government agencies could be one way to provide a viable framework in which collaborative inter-agency work could be undertaken.

This view occurred to us when assessing the impacts that Roe 7 had on the surrounding road network. In brief, the opening of Roe 7 gave rise to a high degree of traffic reassignment from a parallel arterial road — South Street — that has been designated as an *activity corridor* in Network City¹. The reduction in private motor vehicle traffic on South Street created opportunities to facilitate other modes like walking, cycling and public transport as well as changes to general amenity. The community engagement and construction works that would be associated with such a change are significantly different to the construction of a new highway section through a road reserve like Roe 7. In particular, close collaboration with local government and other state agencies like the Public Transport Authority (PTA) is needed. However given the magnitude of the change, and the degree of discussion that did

¹ Network City is the current strategic plan for Perth and Peel. The strategy classifies major arterial roads as either *activity corridors* or *transport corridors*. The former are intended to provide connection between activity centres that provide excellent, high frequency public transport to support the land uses that will occur along the activity corridors and at the activity centres. Activity corridors are not designed to be high-speed through traffic routes. The later are intended to provide routes for higher speed through-traffic — in particular truck routes, express bus services — and are the routes that traffic will take for inter-suburban travel.

take place around what consequent changes should occur to South Street, it seemed to us that associated construction works on South Street could have been done as part of the Roe 7 project. In which case, membership of the Roe 7 Alliance would have needed to be extended to personnel from other government agencies. Under these conditions, far greater collaboration on a wide range of fronts would have been able to occur and the services delivered to the community more quickly and at a lower cost.

We raised this possibility at a group presentation to MRWA staff and other professionals who had worked on or associated with the Roe 7 project. There were many contributions to the idea that came from this group. Some of the key points that were raised included:

- *The potential to reduce costs of smaller scale construction works.* The costs associated with assigning construction teams already assembled for a large project to perform minor works is small and would be relatively easy to do.
- *The associated works and consequent community services would have been provided more quickly.* As with large-scale projects like urban motorways, smaller scale works are often undertaken in stages. By contrast, the usefulness of a small section of bicycle path is low and the time period over which small sections can be provided is relatively long despite the relatively low cost of such infrastructures. This undermines the quality of service provision in these areas.
- *Special services common to large-scale projects could have been extended to smaller scale works.* An outstanding feature of the Roe 7 project is its use of public art. Smaller scale infrastructures do not normally receive such treatments but there is the possibility of doing so if these are incorporated into a larger scale project. This has highly positive implications for enhancing urban amenity.

If such a framework had been used, and personnel from agencies like the Department for Planning and Infrastructure, Western Australia and the PTA had been included in an Alliance with an extended brief, these individuals would have been given the opportunity to work within a construction environment with a very specific focus and thereby influence decisions more directly. For individuals that usually work within an enquiry paradigm — as suggested in Figure 2 — being able to work as part of a team responsible for implementation and thereby influence it more directly holds out a potential to bring actual outcomes more into line with planning aspirations for a multiplicity of different reasons. Similarly, for construction engineers who usually work within a project management paradigm, to experience directly the very broad nature of the problems and uncertainties that planners working within an enquiry paradigm have to address, would have the effect of generating greater empathy between different professionals, but also potentially open up new possibilities for the development and innovation of new design details. This is because working together in the same workplace automatically generates relationships that currently do not exist within the structure of government.

By bringing development directors — enquiry paradigm practitioners — and development implementers — project management paradigm practitioners — into the same team to work together in the same place and away from their parent organizations, has the potential, in our view, to create a wide range of highly positive and innovative outcomes in relation to community service provision.

In relation to a possibility such as this — a collaborative Alliance between different government agencies — we would add that perhaps the most difficult aspect of collaborative government aspirations is finding practical and appropriate ways that bring it about. We feel

that the combination of adaptive leadership practices and general discipline that is a product of the project management paradigm from which Alliancing comes, could be a key way in which to orchestrate and structure such collaborative initiatives. It is an exciting prospect:

‘[T]he institutional arrangements, I believe, is one of the best legacies [of Roe7]. We are now starting to implement that [...] across the portfolio [Department of Planning and Infrastructure, WA, MRWA and Public Transport Authority, WA], in the first planning infrastructure Alliance for Stirling City Centre. I think one of the brake throughs, for me, has been a legacy of improving institutional arrangements around planning’ (Interviewee # 5).

Conclusions

This paper has shown that constructive changes to infrastructure projects can emerge from community engagement if the governance framework enables this to happen. In seeking to investigate some of the potential governance issues arising from the use of Alliancing we have found that adaptive frameworks can potentially offer ways facilitate greater collaboration between government agencies while also enhancing community engagement. Such approaches are likely to form a significant part of sustainability programs given the complex nature of the problems that sustainability policies seek to address.

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