Department of Water

Investigation of Management Frameworks and Options for the Proposed Collie Water Utility

Draft for discussion

October 2008
This report contains 48 pages
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Inherent Limitations

This report has been prepared as outlined in Section 2 of this report. The services provided in connection with this engagement comprise an advisory engagement, which is not subject to Australian Auditing Standards or Australian Standards on Review or Assurance Engagements, and consequently no opinions or conclusions intended to convey assurance have been expressed.

The findings in this report are based on a study which is largely qualitative in nature.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by, the Department of Water as part of the process.

KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

KPMG is under no obligation to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

The findings in this report have been formed on the above basis.

Third Party Reliance

This report is solely for the purpose set out in the Scope Section and for the Department of Water’s information. This report is not to be used for any other purpose or distributed to any other party without KPMG’s prior written consent.

This report has been prepared at the request of the Department of Water in accordance with the terms of KPMG’s engagement letter dated 23 June 2008. Other than our responsibility to the Department of Water, neither KPMG nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this report. Any reliance placed is that party’s sole responsibility.
1 Executive summary

The Department of Water (the Department) has, for several years, been examining ways to manage water resources in the Collie Basin more effectively. This has included examining:

- investments in water treatment and transfer infrastructure to enable more ‘fit-for-purpose’ use of water resources, to optimise the use of water for State interests; and

- how to deliver that infrastructure, including the possibility of establishing a Collie Water Utility (CWU).

The rationale for this project is that high-value groundwater is currently being used for low-value industrial purposes. This coincides with the under-utilisation of the significant water resources in Wellington Reservoir, the quality of which could be improved with more effective resource management.

The project has been conceived to occur in up to four stages. These stages would include a salinity reduction program to improve water quality in Wellington Reservoir and:

- improve environmental and irrigation outcomes (Stage 1);

- allow Wellington Reservoir to be used for industrial purposes (Stage 2) by increasing salinity recovery; and, perhaps,

- further increasing salinity recovery (Stage 3) to improve water quality further and, potentially, ultimately incorporating Wellington Reservoir into the IWSS (Stage 4).

Recognition of the number of stakeholders that could be affected, as well as the need to identify a party to operate the salinity recovery and related infrastructure, has lead to the CWU concept being identified as a means of delivering the project and providing an acceptable outcome for all parties.

KPMG has been engaged to:

- investigate the management framework and options that could be considered appropriate for the proposed CWU; and

- prepare a report detailing findings and making recommendations, primarily based on some meetings with key stakeholders.

To undertake this task we have met with each of the key stakeholders and the Department, and analysed the material and information provided to us on the project and relevant public material.

This report presents the results of our analysis.
Key findings

Our analysis suggests that, given the current situation and the incentives of the parties, Government is likely to have to take the initiative to progress this project and to enable the benefits to be realised.

The key reasons for this are that:

- the assignment framework places the obligation on the Government to make available the alternative source of supply, which would allow it determine how the mine de-water is used;

- currently the key stakeholders would appear to have insufficient incentives to address the issue; and

- even if a stakeholder were to take the initiative to progress the project, it is not obvious that they would be:

  - able to accept or adequately manage the water salinity risk in Wellington Reservoir (i.e. because it affected by a number of variables outside of their control) The key implication flowing from this is the Government may be best placed to bear and manage this risk; and

  - in a position to capture enough of the benefits to make it worthwhile on a private basis, at least without significant policy and/or regulatory changes (e.g. changes in the allocation of ‘excess’ water in Wellington Reservoir).

In our view, the key question is the degree to which Government should be involved in delivering the infrastructure (i.e. to what stage), rather than necessarily a choice between different management frameworks that might deliver the (whole) project. In other words, the key question is: how much does the Government need to do to create the conditions and incentives for other stakeholders to progress the project?

The key reasons for this are that:

- currently the key stakeholders would appear to have insufficient incentives to address the issue;

- getting a management framework in place that meets the needs of all parties is likely to be problematic and would require significant compromises on all sides, given the number and complexity of the constraints and issues that exist;

- it is unlikely that any proposal will succeed without the support, active participation and cooperation of the key stakeholders; and

- it seems unlikely that it will be possible to achieve the necessary level of participation and cooperation, given the conflicting interests of some key stakeholders, some of whom directly compete in downstream markets.
In these circumstances, it would be difficult for the Department to ‘second-guess’ the most workable solution and, having it act as a ‘middleman’ in the negotiations and developing the relevant commercial agreements, is unlikely to be successful.

Instead, we believe the Government should focus on providing the parties with the incentives (potentially both positive and negative) and flexibility to develop a commercial and practical solution. For example, with certain Government actions, it is possible that Harvey Water may have adequate incentives to lead the development of a solution perhaps in partnership with a couple of other key stakeholders.

An approach with this focus is more likely to lead to the effective, timely and efficient development of the project in a way that best manages the interests of all parties. It is therefore also to be most consistent with meeting the Department’s key requirements and evaluation criteria.

**Recommendations**

In light of the above, we recommend that:

- the Department develops a ‘statement of intent’ that, subject to the findings of a business case, confirms that the Department:
  - will proceed with the Wellington Reservoir salinity reduction project to provide an alternative supply of water to the generators of the appropriate water quality and reliability by [1 January 2012 (with the date to be confirmed by the business case analysis)]. This includes agreeing ‘access’ arrangements with Verve Energy for the saline pipe and Wesfarmers Premier Coal for the W5H mine void and land to operate the desalination plant;
  - will, subject to achieving these water quality and reliability objectives;
    - require the generators to cease using mine de-water and bore groundwater by the above date, as is consistent with the water assignment framework; and
    - obliging the Water Corporation to acquire this water at a yet to be determined price, but one consistent with its value in deferring the need for alternative supply augmentations. The generators could also be given a first right of refusal at this price, and it may also be feasible to auction some of the rights to this water.
  - the Department examines the ability to share in the increasing value of the Wellington Reservoir water as the salinity levels decrease by ensuring the owners of the current water rights (Harvey Water and potentially the electricity generators) either:
    - grant a proportion of their water allocation in Wellington Reservoir to the State which will auction these rights; or
- auction the rights to a proportion of their water allocation in Wellington Reservoir and provide the proceeds to the State (or otherwise use it to fund the construction of the infrastructure necessary to ensure it can be used by the generators and others);

- the Department will examine the need to facilitate the construction of a transfer pipeline to transport the mine de-water and bore groundwater (that is not purchased for local use) to the existing IWSS network, or auction the rights to this water for some other entity to make this investment, such that the transfer pipeline is in place by [2012]; and

- the Department will examine the need to facilitate the construction of a transfer pipeline and gain access to existing infrastructure, or provide the opportunity to some other entity (e.g. the regional stakeholders) to make this investment, such that the electricity generators and other industrial users are able to get access to Wellington Reservoir water by [2012].

These actions will:

- demonstrate to all stakeholders that the Government has an intent to proceed with the project and meet certain timelines, which will give stakeholders an incentive to start working out how they are going to adapt to the situation from [2012] onwards;

- provide the electricity generators with stronger incentives to address the issue, and Harvey Water with a stronger incentive to perhaps work with the electricity generators to develop a commercial solution;

- provide some funding for the project (including consideration of subsidy payments back to the electricity generators) from the sale of water rights to Wellington Reservoir, the mine de-water and possibly bore groundwater;

- provide all stakeholders with an opportunity to gain access to the unused water in Wellington Reservoir, and for that water to be used in its highest value use; and

- provide the Department with the flexibility to provide further assistance as required.

We are of the view that these recommendations are most likely to meet the Department’s key requirements and evaluation criteria. In particular, they should:

- allow the project to proceed in a timely manner, if the business case suggests that it should;

- provide water of the required quality and reliability;

- ensure fair and equitable access and pricing to all users;

- optimise the use of water in the Collie Basin;
• ensure the Collie electricity generators have the opportunity and incentive to progress the project as cost effectively as possible, thereby minimising the net impact on the cost of electricity;

• provide a viable long-term (but flexible) approach to managing water resources in the Collie Basin;

• optimise and incentivise the commercial opportunities and scope for operational efficiency and minimise the potential for market distortions;

• optimise allocation of commercial risks; and

• minimise political risk, by ensuring decisions on water use in the Collie Basin are made transparently and objectively.

Next steps
In order to implement these recommendations, the key next steps include:

• developing and maintaining a detailed, time-based project plan including a stakeholder engagement strategy for the project. This is important to provide greater certainty to stakeholders of the process going forward and to signal the Government’s commitment to the project. This would ultimately result in the development of a ‘statement of intent’ for the project, but this would only be finalised and published after undertaking the business case;

• developing a business case for the project that, amongst other things, would:
  - assess the economic viability of the project and /or the next stages of it to determine its costs and benefits. This is particularly important given we are recommending that government investment is required to progress the project;
  - examine the financial implications of the proposed approach for the various stakeholders, including developing more definitive estimates of project costs and benefits. This is particularly important to the structuring the detailed arrangements so that stakeholders objections may be minimised and the project progressed in a timely manner; and
  - examine the legal, regulatory, technical and operational issues that will need to be addressed in further detail, and the compatibility of the proposed approach with WA water industry reform.

The Government could be in a position to issue its statement of intent within a year, assuming the business case recommends that the project proceed and approvals are obtained. In the interim, the Department could use the findings and recommendations in this report to communicate with the key stakeholders, and to provide an indication of the
immediate next steps, as stakeholder assistance will be required to prepare the business case.
2 Introduction

The Department of Water (the Department) has, for several years, been examining ways to manage water resources in the Collie Basin more effectively. This has included examining:

• investments in water treatment and transfer infrastructure to enable more ‘fit-for-purpose’ use of water resources, to optimise the use of water for State interests; and

• how to deliver that infrastructure, including the possibility of establishing a ‘Collie Water Utility’ (CWU).

2.1 Scope

KPMG has been engaged to:

• Investigate the management framework and options that could be considered appropriate for the proposed CWU.

• Describe the aspects to consider for a joint venture. Provide a description, analysis and evaluation specifically of the joint venture option including, but not limited to, legal, capital, assets, cost sharing, profit sharing and operational considerations.

• Present findings on the management framework and options (particularly those relating to the above) to a meeting of key stakeholders and potential partners.

• Prepare a report detailing findings and making recommendations, based on the investigation and the results of the meeting in Task 3.

2.2 Approach

A preliminary confidential assessment in relation to Tasks 1 and 2 was provided to the Department on 14 July 2008.

After assessing the current situation and holding discussions with the Department, it was decided that KPMG would interview the key stakeholders to the project (i.e. those with assets, operations or water allocations that would be directly affected) on a one-on-one confidential basis. As a result, KPMG met with senior executives from:

• Griffin Power and Coal;

• Harvey Water;

• The Water Corporation;

• Verve Energy; and

• Wesfarmers Premier Coal.
These meetings were held in August 2008.

The purpose of the meetings was to obtain feedback from these stakeholders on their key issues and constraints in relation to the proposed CWU. KPMG did not table any of the proposed management frameworks and options that might deliver such an entity, but rather sought to get a better understanding of the views of key stakeholders. Section 4 summaries our key findings from those meetings.

In light of these meetings (and with a delay due to the State election and the associated ‘caretaker’ period), KPMG was instructed to finalise this report, detailing findings and recommendations on a preferred framework and option on the basis of the stakeholder meetings and analysis.

We understand that the Department may then use the outcomes of our work in subsequent consultations with stakeholders. This approach may have the advantage of allowing the next stage of work to focus on a more tangible proposal or ‘strawman’.

This report represents the outcomes of our analysis and completes Tasks 3 and 4 of the Scope of Work.

### 2.3 Outline of report

The remaining sections of this report are as follows:

- Section 3 provides a brief overview of the project;
- Section 4 summarises the key findings of our meetings with stakeholders;
- Section 5 outlines our approach to assessing the management frameworks and options;
- Section 6 outlines the key elements of the management frameworks and options considered and eliminates those not considered useful;
- Section 7 discusses the short-listed management frameworks in further detail; and
- Section 8 describes the key issues and proposed next steps to deal with them.
3 Project overview

3.1 Water supply and demand in the Collie Basin

The Collie Basin is a small sedimentary basin in the Collie River catchment, which also contains WA’s key coal reserves and electricity generating capacity. There are three key sources of water in the basin:

- **Groundwater** – The basin contains a 7,000 GL largely potable aquifer with recharge estimated at 20 GL/a. This water is accessed via groundwater bores and mine de-watering. The Upper Collie Water Management Plan seeks to limit the maximum total allocation for groundwater licences to 6.5 GL/a, and ensure no further commercial licences are issued. A significant quantity of groundwater is, however, also extracted by mine de-watering, and is used largely for cooling purposes at electricity generation plants. With the cessation of mine de-watering, the previously allocated mine de-water will then provide recharge to the aquifer.

- **Wellington Reservoir** – The reservoir has a capacity of 185 GL and an allocation limit of 85 GL/a. The East and South branches of the Collie River, from which there are also diversions, feed the reservoir. The allocation limit is currently allocated to:
  - Harvey Water (68 GL/a);
  - the power generators (5 GL/a); and
  - public water supply (12 GL/a).

  The water has a relatively high salt content (950 mg/l total dissolved solids - tds) making it of limited use to industry and of marginal use for irrigation purposes. A significant proportion of these allocations are, therefore, not currently used. The reservoir also has an unprotected catchment making it unsuitable for potable use without significant biological treatment and catchment protection.

- **Harris Reservoir** – The reservoir has a capacity of 72 GL. The Water Corporation currently has an allocation of 15 GL/a, which we understand is the allocation limit. The reservoir contains potable water and is connected into the IWSS, serving the towns of Collie and Allanson, and the Great Southern Towns Water Supply Scheme (GSWSS).

3.2 The assignment of water

The Department has developed a water-sharing framework to deal with the assignment of water in the basin, including the use of groundwater from mine de-watering. The Department has assigned water to the Griffin Group (Griffin) in line with the framework and is now finalising arrangements with Verve Energy (Verve).

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Under the arrangement with Griffin:

- **Bluewaters 1 Power Station** – will continue to use mine de-water abstracted under its groundwater licence from the Ewington mine, and has a priority assignment.

- **Bluewaters 2 Power Station** – will use water abstracted under licence with dependency on the Ewington mine de-watering strategy “until a water utility is in place to provide alternative supply of suitable quality.” The Rights in Water and Irrigation Act vests the rights to groundwater to the State and the Griffin Coal State Agreement vests surplus (mine de-water) groundwater to the State.

- **Bluewaters 3 and 4 Power Stations** – no proposal has been received, but the Department’s position is that “any proposal that states that the primary water supply will be mine de-water will not be supported by the Department”.

The Department intends to apply the same conditions to Verve, once a water utility is in place. Currently Verve and Griffin do not pay for the mine de-water they use (around 20 GL/a) beyond the cost of sourcing it.

We understand that both may be prepared to use fit-for-purpose water and accept the broad principle of making some payment where appropriate, subject to certain conditions in regard to:

- the security and reliability of supply;
- the quality of supply; and
- competitive neutrality.

The generators’ water demands are expected to grow rapidly over the medium term as is the demand from industry in the area more broadly.

### 3.3 The rationale for the project and the Collie Water Utility

The rationale for this project is that high-value groundwater is currently being used for low-value industrial purposes. This coincides with the under-utilisation of the significant water resources in Wellington Reservoir, the quality of which could be improved with more effective resource management.

The project has been conceived to occur in up to four stages. As shown in Appendix B, these stages would include a salinity reduction program to improve water quality in Wellington Reservoir and:

- improve environmental and irrigation outcomes (Stage 1);

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3 Ibid.
• allow Wellington Reservoir to be used for industrial purposes (Stage 2) by increasing salinity recovery; and, perhaps,

• further increasing salinity recovery (Stage 3) to improve water quality further and ultimately potentially incorporating Wellington Reservoir into the IWSS (Stage 4).

The project, to meet at least Stage 2, is also likely to involve:

• gaining access to Verve’s saline disposal pipeline to the coast;

• duplication of part of the Wellington-Collie pipeline owned by the Water Corporation to transfer Wellington Reservoir water to industrial users;

• gaining access to other parts of the Wellington-Collie pipeline and to the Collie to Muja (owned by Verve) pipeline; and, perhaps,

• constructing a groundwater pipeline from the Ewington borefield to Harris Reservoir. The Water Corporation has agreed with the concept of taking 6 GL/a to 10 GL/a into the IWSS (i.e. into Stirling Dam via the Harris Dam treatment plant)\(^4\); and

Appendix A provides a simplified map of the area together with the key stages of the project.

The project has the potential to produce a number of benefits, including:

• improving environmental outcomes in the region;

• increasing the value of water in Wellington Reservoir by enabling it to be used for industrial and higher-value irrigation purposes;

• encouraging further economic development by providing industry with competitively priced fit-for-purpose water in the Collie region and potentially the Kemerton industrial area;

• extracting a higher value for the potable groundwater resource, by using it in the IWSS; and

• retaining and enhancing the option of using Wellington Reservoir more for potable purposes.

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\(^4\) We understand from the Water Corporation that the original concept included a pipe to the Harris Dam with a capacity of up to 10 GL/a, but that initially only 6 GL/a would be taken. We understand that, after treatment, the water could be either stored in Harris Dam or transferred to Stirling Dam using an existing pipe (the Harris Dam Collector Main), and with some pumping, and natural water courses. The Water Corporation’s interest arose from recent drought conditions and prior to the commitment to the Southern Seawater Desalination Plant. The extra 6 GL/a would have alleviated the supply concerns that then existed. We also understand that there is a capacity constraint at the exit of Stirling Dam of around 5 GL/a, which limits the amount of water that it would be worthwhile transferring to Stirling Dam (absent major investment).
The project will, however, also involve significant cost (indicatively in excess of $100 million for all the capital expenditure above, including $45 million required for the Ewington borefield to Harris Reservoir pipeline).\(^5\) There will also be significant operating costs.

Moreover, the project will require the agreement and active participation of a number of parties, with relevant interests in the project, including:

- Griffin Power and Coal;
- Harvey Water;
- The Water Corporation;
- Verve Energy; and
- Wesfarmers Premier Coal.

All these parties own some relevant assets and/or have operations or water allocations that might be affected.

A number of other parties will also potentially be affected such as Worsley Alumina, the Shire of Collie, users in the Kemerton industrial area, and potential entrants to the area.

Recognition of the number of stakeholders that could be affected, as well as the need to identify a party to operate the salinity recovery and related infrastructure, has lead to the CWU concept being identified as a means of delivering the project and providing an acceptable outcome for all parties.

\(^5\) The Water Corporation was therefore at that time prepared to pay $45 million for 6 GL/a. This equates to a capital cost of $7.5 million per GL (or about $4.5 million per GL if 10 GL/a was taken). This water would be a ‘temporary’ albeit reasonably long term resource (i.e. it would continue only for as long as mine de-watering continued and produced water of a suitable quality, which we understand is expected to be 10-15 years but could be much longer). Check whether this was the situation at the time?
4 Findings from our meetings with key stakeholders

As Section 2 discusses, we held one-on-one meetings with:

- Griffin Power and Coal;
- Harvey Water;
- The Water Corporation;
- Verve Energy; and
- Wesfarmers Premier Coal.

The purpose of the meetings was to obtain feedback from these stakeholders on their key issues and constraints in relation to the proposed CWU. KPMG did not table any of the proposed management frameworks and options that might deliver such an entity, but rather sought to get a better understanding of the views of key stakeholders.

As the meetings were held in confidence, below we outline what we took from the meetings as a whole and do not attribute any views to particular parties.

The key themes to emerge from our meetings are as follows:

- There is broad awareness of the issue and the CWU concept, with some parties having considerable involvement in the project to date. There was also awareness of the Upper Collie water management plan and its likely implications.

- There is a considerable uncertainty amongst some parties in regard to what the next stages of the project might include (e.g. releasing water for potable use). This suggests there would be benefit in the Department developing a more structured approach to communicating with the key parties about the project.

- There is broad acceptance that there is merit in the CWU concept or, more accurately, in the underlying objectives. In other words, making better use of the water in Wellington Reservoir, improving environmental outcomes in the region and providing more certainty over available water resources in the region to assist with economic development.

- There is broad agreement that getting a management framework in place that meets the needs of all parties is likely to be problematic and would require compromises on all sides. Moreover, given their existing interests and constraints, it is unlikely that any proposal will succeed without the support and active participation of the key stakeholders.

- It is evident that while the parties can see merit in the underlying objectives, no party demonstrated a particularly strong imperative to drive the process (although we understand that at least one party floated a possible solution in the recent past).
addition, some parties appear to have strong views in regard to the strength of their bargaining position (e.g. because of assets they own or ‘rights’ they believe they possess) and their behaviour indicated that they would probably seek to exploit that position to ensure they got the best deal for themselves.

We also understand that more recently Griffin Energy has threatened to take legal action to challenge the assignment framework, and may still be in a position to do so if and when it is imposed (i.e. when a water utility is in place). This may be an effort by Griffin Energy to improve its negotiating position in relation to any changes that occur. If so, it provides a further practical illustration of the complexity of changing the current arrangements, because of the significant implications it may have for each of the parties, some of whom are in direct competition with each other (i.e. Griffin Energy and Verve Energy, and Griffin Coal and Wesfarmers Premier Coal). It may also imply that Griffin Energy perceives that its negotiating position is currently relatively weak and needs strengthening.

These key themes suggest that:

- The requirements and evaluation criteria outlined in our preliminary assessment remain broadly appropriate. However, our consultation with key stakeholders highlights the practical limitations imposed by the constraints that stakeholders believe will need to be met (or they would like to impose). In other words, these constraints are likely to have implications for the ease and speed of introducing some options, the optimal allocation of commercial risks and the potential for distortions.

- Meeting all the constraints of the parties is likely to be complex and difficult, but their active participation is essential.

- Putting aside the positive views expressed by most stakeholders about the merits of the underlying objectives, no party has a particularly strong incentive to drive the process forward (although that could change in future with expected economic developments).

- The key to the Department’s leverage (i.e. the water assignments to Griffin’s Bluewater Power Station 2 and the arrangements with Verve Energy), would appear to put the initiative for taking the first steps firmly in the Department’s court (i.e. to establish the infrastructure that can provide an alternative supply of water of suitable quality).

In other words, to progress the CWU concept, our meetings with key stakeholders suggests that:

- The Department is likely to have to take the initiative in relation to the first steps in the project.

- Those steps should probably focus on providing the parties with the incentives (potentially both positive and negative) and flexibility to develop a commercial and practical solution. This is because it will be both difficult for the Department to ‘second-guess’ the most workable solution and because such an approach should reduce the need for the Department to become unnecessarily engaged in between the negotiating parties.
The key uncertainty and question is, therefore, how much Government involvement is likely to be necessary to create these incentives and flexibility, such that the key stakeholders can respond appropriately. This is likely to involve making some reasonably ‘difficult’ decisions on key variables (e.g. the allocation of ‘unused’ water in Wellington Reservoir and access to key infrastructure that is currently owned by various parties).
5 Approach to assessing the options

To define and assess the management frameworks we have considered the key infrastructure elements, which will be required, and the Department’s key requirements and evaluation criteria.

5.1 Infrastructure elements

As set out in Section 3.3 and Appendix B, the project has been conceived to occur in up to four stages. Whilst each successive stage involves greater investment and results in improved water quality, they all require the same elements of infrastructure. Table 1 below sets out the key elements of the project, their purpose and the key beneficiaries.

Table 1: Summary of key project steps and beneficiaries

<table>
<thead>
<tr>
<th>Infrastructure elements</th>
<th>Purpose</th>
<th>Key beneficiaries</th>
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<tbody>
<tr>
<td>Buckingham diversion, connecting pipework, desalination plant and WSH mine void</td>
<td>Short-medium term:</td>
<td>• Harvey Water – given their current 68 GL/a water allocation from Wellington Reservoir.</td>
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<td></td>
<td>• improvement of water quality in Wellington Reservoir; and</td>
<td>• Power generators – 5 GL/a water allocation from Wellington Reservoir, and the State (12 GL/a).</td>
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<td></td>
<td>• improvement of environmental outcomes in region.</td>
<td>• The party(s) realising any gains from groundwater released into IWSS for potable purposes.</td>
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<td></td>
<td></td>
<td>• The environment.</td>
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<tr>
<td>Select tree planting within catchment area</td>
<td>Long term:</td>
<td>• Harvey Water – given their current allocation.</td>
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<td></td>
<td>• improvement of water quality in Wellington Reservoir; and</td>
<td>• Other parties with a water allocation from Wellington Reservoir.</td>
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<td></td>
<td>• improvement of environmental outcomes in region.</td>
<td>• The party(s) realising any gains from groundwater released into IWSS for potable purposes.</td>
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<td>• The environment.</td>
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<td>Transfer pipe network connecting the groundwater bores and mine de-watering network, industry and power generators, Wellington Reservoir and IWSS</td>
<td>Enable transfer of Wellington Reservoir and desalinated water to industry and power generators.</td>
<td>• Industry and power stations.</td>
</tr>
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<td></td>
<td>Enable transfer of ground water to IWSS.</td>
<td>• The party(s) realising any gains from groundwater released into IWSS for potable purposes.</td>
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<tr>
<td>Verve’s existing saline disposal pipeline and any additional saline disposal pipelines constructed</td>
<td>Release of concentrated industry and power station saline water to ocean.</td>
<td>• Verve</td>
</tr>
<tr>
<td></td>
<td>Release of concentrate from desalination plant.</td>
<td>• Other users able to negotiate access including the desalination plant owner/operator.</td>
</tr>
</tbody>
</table>
5.2 Requirements and evaluation criteria
Table 2 below sets out the Department’s key requirements for the CWU and the evaluation criteria by which the management frameworks may be short-listed for more detailed examination and value-for-money assessment.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i.e. what the frameworks must permit)</td>
<td>(i.e. how the frameworks will be assessed)</td>
</tr>
<tr>
<td>• Fair and equitable access and pricing to all users</td>
<td>• Long-term viability and/or sufficiently flexibility to adapt over time</td>
</tr>
<tr>
<td>• Optimises value from available water resources in Collie region</td>
<td>• Incentivise a whole-of-life approach to the project</td>
</tr>
<tr>
<td>• Minimal increase in net costs to Collie power generators</td>
<td>• Incentivise commercial opportunities and operational efficiency</td>
</tr>
<tr>
<td>• Addresses requirements for river diversion and treatment</td>
<td>• Ease and speed to implement the project</td>
</tr>
<tr>
<td>• Provides water to agreed security and reliability</td>
<td>• Optimise allocation of commercial risks</td>
</tr>
<tr>
<td>• Provides fit-for-purpose water for power generators and industry</td>
<td>• Minimise political risk</td>
</tr>
<tr>
<td></td>
<td>• Minimise potential market distortions</td>
</tr>
</tbody>
</table>

5.3 Assumptions and principles
In determining the management framework options, there are a few key assumptions and principles that have been adopted. These are discussed below.

5.3.1 Project viability
We understand that whilst the different potential project stages are technically viable, there remains further work to confirm the estimated costs, benefits and risks of the stages. For the purposes of the options considered in the next section, we have assumed that the risk-adjusted economic benefits sufficiently outweigh the costs and hence the options considered are viable. As highlighted in Section 8, such work would also include developing a more detailed understanding of the operational implications of the project.
5.3.2 **Accept risk of improving water quality whilst recouping costs from beneficiaries**

Should the project proceed, the current proposal for Government to fund the diversion and desalination plant ($50m capex up to Stage 2), including the associated pipe work, appears sensible. The reasons for government involvement include:

- attempt to transfer water-quality risk to the private sector is not likely to represent value for money;
- various stakeholders benefit from the project, including the environment;
- the realisation of the benefits is dependent on government decisions; and
- the project is unlikely to proceed without some government facilitation.

We see, however, an opportunity for the capital, operational and maintenance costs to be recouped in part, or in whole, from beneficiaries of any improvement in Wellington Reservoir water quality. Bearing in mind Harvey Water’s existing allocation, in preparing the management options we have assumed it is legally and politically viable for the Government to gain some or all of the benefit from the increasing value of the existing water allocations to Harvey Water (68 GL/a), power generators (5GL/a) and public water supply (12 GL/a). For example, the value recouped could either be determined by:

- the increased value of existing water rights; or
- the risk-adjusted cost of installing and operating the diversion and desalination scheme, and possibly other catchment-area initiatives.

In considering this and any starting negotiation position, it is worth remembering that:

- as a pre-condition to Harvey Water’s water trade of [17GL/a] to Water Corporation, the Government committed to improving the water quality in the Wellington Reservoir to [500mg/l] of total dissolved solids;
- the salinity action plan of 1996 commits the Government to recovering Wellington Reservoir salinity levels to [500mg/l] of total dissolved solids by 2015; and
- as a pre-condition to the damming of the Harris River, Section 46 (Ministerial Conditions) of the Environmental Protection Act requires that Wellington Reservoir be recovered to 500mg/l of total dissolved solids.

5.3.3 **Timing opportunities**

This report focuses largely on management framework options for establishing the CWU. There are, however, a number of decisions with respect to the management framework which are not only dependent upon the outcome of assessing the viability of different
project stages, but also which are not required for a considerable time. For example, stakeholders may not finalise any investment decision to build a transfer network until they see evidence of the expected water quality in the Wellington Reservoir. This, in turn, will not be until after Government approvals are gained, the diversion and desalination procured, installed and in operation for some time, and any water auction or sale process undertaken.

The [table/chart] below gives an indication of how water quality is forecast to improve over time with different amounts of river water diverted.

As a result, and given the value of retaining flexibility, there is a strong argument to prioritise management frameworks that are flexible. Furthermore, subject to the benefits of the proposed stage(s) being proved, the Department may decide to continue to taking the initiative for the next few steps in the project. This could incentivise other parties to develop their own commercial and practical solution in a timely manner, whilst their retaining some flexibility in the approach to the project.
6 Initial consideration of options

Set out below is a high-level description of the broad management frameworks considered. Further detail on the options, and their respective sub-option delivery approaches, is contained in the following pages.

Underlying each of the sub-options exist an array of procurement approaches that may be adopted. For example, a utility may elect to build and/or operate elements under design and construct, alliance, framework, franchise or more conventional contractual arrangements.

6.1 Option 1 (‘Do minimum’)

Under this option the Department would do the minimum required to transfer responsibility for addressing the water issues and opportunities back to the stakeholders in the region. Currently we see this as requiring the following.

- Wellington Reservoir water quality being improved through the installation of the Buckingham diversion, connecting pipework and desalination plant (including access to Premier Coal’s W5H mine void), and continued targeted planting within the catchment area for a longer-term solution. This step is important to address what are understood to be obligations to Harvey Water and to improve the chances of the reservoir water being used by industry and generators.

- Rights to the mine de-water and any available bore groundwater (i.e. within the currently prescribed 6.5 GL/a limit) being auctioned or sold. This will help address the requirement for fair and equitable access and pricing for all users, and optimise value from available water resources in the Collie region. If a significant element of these proceeds are passed back to the current power generators (which would be one of the elements within the detailed modelling required to assess the options), it may also achieve the requirement for only a minimal increase in net costs to the generators. Additionally, in designing the sale mechanism, it will be important to bear in mind the need to minimise risks to bidders seeking to match volume and duration of water rights against the useful life of pipe assets.

- Securing access to Verve’s saline disposal pipeline for the desalination plant, bearing in mind final flow requirements of any later stages. (Note: whilst not a requirement for these options, consideration should be given to whether there would be greater benefits to making Verve’s saline disposal pipeline open access. This may optimise the capacity (in terms of flow rates and total-dissolved-solids levels) of the pipework and assist with providing fair and equitable access and pricing for all users and optimise value from available water resources in the Collie region.)

- Any spare capacity on new or existing pipework from Wellington Reservoir (except that carrying potable water from Collie to Allanson) being subject to (open) access on a commercial basis. As above, open access is likely to be necessary to ensure no market distortions arise between existing players and potential new entrants.
• Water Corporation being obliged to purchase suitable mine de-water and bore groundwater at somewhere near the long-run marginal cost (refer Section 8), potentially net of new infrastructure costs. (Note: the purchase price could be lower if the Government wishes to realise profit, or reduce consumer price, through the Water Corporation). The obligation on Water Corporation to buy the water is expected to improve the ease, speed and cost to implement the project and hence increase participant interest.

6.2 Option 2 (‘Enabler’)

Under this option the Government would go beyond the ‘do minimum’ option by also facilitating the provision of significant elements of the transfer pipe network. This would serve to reduce set-up costs and stranded-asset risk for water users and/or infrastructure provider(s), and improve flexibility and well as the ease and speed to implement the project. Currently we see this as requiring one or both of the following.

• Water Corporation being obliged to purchase suitable water for the IWSS at (or potentially immediately adjacent) to the networks of mine de-water and groundwater bores. The purchase price would be near the Long-Run Marginal Cost (refer Section 8), net of new infrastructure costs (noting that purchase price could be lower if the Government wishes to realise profit, or reduce consumer price, through the Water Corporation). This would require the Government (through Water Corporation or some other entity) to take the demand risk on a pipeline connecting the IWSS to the networks.

• The Government (through Water Corporation or some other entity) taking demand risk on a transfer pipeline to carry Wellington Reservoir and desalinated water to the Collie basin industry and power stations requesting it.

6.3 Option 3 (‘Integrated utility’)

Under this option, one party would take on responsibility for both:

• the improvement of Wellington Reservoir water quality, through the installation of the Buckingham diversion, connecting pipework and desalination plant; and

• the pipe network required to connect the existing groundwater and mine de-watering network, industry and power generators, Wellington Reservoir and the IWSS.
### 6.4 Table 3: Description of delivery sub-options

<table>
<thead>
<tr>
<th>Option 1: ‘Do minimum’</th>
<th>Description</th>
<th>Addresses requirements?</th>
<th>Consider further?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common elements – transfer pipe network:</strong></td>
<td>• If economically viable, stakeholders and/or separate infrastructure provider(s) should build transfer pipework and deliver water from Wellington Reservoir and desalination plant to customers.</td>
<td>✓ Minimal input required by the Department and Government more broadly.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• If economically viable, stakeholders and/or separate infrastructure provider(s) should build the transfer pipework, and deliver and sell mine de-water and/or ground bore water to IWSS.</td>
<td>✓ Reduced risk of under-utilised Government assets (unless Water Corporation elects to be the regional developer) as this option doesn’t involve the Government funding and building the transfer pipe networks in region.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td><strong>Common elements – network operation:</strong></td>
<td>✓ If developed by private sector, new elements of transfer network may be off balance sheet.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Auctioning of ground and mine de-water rights by the Department</td>
<td>× Greater impediment to stakeholders (private and/or public) to maximise full value of existing water resources. This includes the challenge of purchasing a relatively known volume of water rights for a sufficiently long duration to justify the investment in long-life transfer pipework.</td>
<td>×</td>
</tr>
<tr>
<td></td>
<td>• Regulation of any pipework potentially by the Economic Regulation Authority (ERA).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Common elements – other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Responsibility for selective planting of trees in catchment area etc. to remain as is.</td>
<td>✓ Minimal input required by the Department and Government more broadly.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td><strong>1a Department Operator</strong></td>
<td>✓ Tempting to implement as Stage 1 funding already available and may speed improvement of Wellington Reservoir water quality.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Department establishes and runs the Buckingham diversion and desalination scheme.</td>
<td>× Due to limited DoW skills and access to recurrent funding this is unlikely to represent a long-term, scalable and viable approach to managing and operating the diversion and desalination. (Would involve the Department incurring c. $3M/a in operating costs in a non-core activity)</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>1b Harvey Water Operator</td>
<td>✓ Good alignment between natural incentive to improve water quality and role to improve water quality.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Having been initially funded by the Government, Harvey Water runs the Buckingham diversion and desalination scheme, being incentivised to perform through the benefits they gain (and share) with Harvey Water.</td>
<td>? Believe Harvey Water has the skills and size to undertake this role, but requires verification with Harvey Water.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option</td>
<td>Sub-option</td>
<td>Description</td>
<td>Addresses requirements?</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
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<td>-------------------------</td>
</tr>
</tbody>
</table>
| 1c     | Water Corporation Operator | Water Corporation establishes and runs the Buckingham diversion and desalination scheme. | ✓ Water Corporation has skills and access to recurrent funding  
✗ Water Corporation has historical lack of interest in taking on this role and perceived risk.  
✗ Water Corporation state their standards would require them to run desalination plant to much higher standards than required and hence would be inefficient  
🍄 Recommend re-raising with the Corporation once new CEO in place. | ✓ Yes |
| 1d     | Other Entity Owner | Other entity to establish and run the Buckingham diversion and desalination scheme (whether this entity be owned publicly, privately or as a joint venture of both public and private entities). | ✓ Whilst possible to structure so that other entity takes responsibility for diversion and desalination scheme, would expect to be more efficient if contracted under the Department or Water Corporation (which is already considered above).  
✗ Whilst could eventually outsource responsibility for diversion and desalination scheme to any eventual operator of the transfer pipework, would expect this to only occur after greater confidence has been gained by market in: (i) level of Government commitment; and (ii) resulting quality of water in Wellington Reservoir. | ✗ No, but may revisit once in operation. |

**Option 2: ‘Enabler’**

**Common elements – connections to transfer pipe network:**
- If economically viable, customers will connect to new Government-backed transfer pipeline from Wellington Reservoir and the desalination plant and contract to purchase water.
- If economically viable, Water Corporation (or maybe stakeholders and/or a separate entity) will purchase water rights through the auction (albeit with reduced competition) and connect existing groundwater networks (which link mine de-water and ground bores to power generators) to the new Government-backed transfer pipe connected to the

✓ Less impediment to stakeholder (private and/or public) ability to maximise full value of existing water resources.
✓ Permits shorter-term water auctions as Government takes stranded asset risk for transfer pipework.
✓ If works undertaken Water Corporation, they are skilled at procuring and installing transfer networks, proving retail function, preparing regulatory submission etc.
✗ Greater input required by Department and Government more broadly.
✗ Greater risk of Government ending up with under-utilised assets.
<table>
<thead>
<tr>
<th>Option</th>
<th>Sub-option</th>
<th>Description</th>
<th>Addresses requirements?</th>
<th>Consider further?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>Department Operator</td>
<td>As per 1a.</td>
<td>× As per 1a</td>
<td>× No</td>
</tr>
<tr>
<td>2b</td>
<td>Harvey Water Operator</td>
<td>As per 1b</td>
<td>✓ As per 1b; ? As per 1b.</td>
<td>✓ Yes</td>
</tr>
<tr>
<td>2c</td>
<td>Water Corporation Operator</td>
<td>As per 1c</td>
<td>✓ As per 1c. ✓ Reduces interfaces ✓ Provides a simple and flexible model × As per 1c. × May not provide strong commercial incentives ? As per 1c. ✓ Expect efficiencies with Water Corporation’s supply and operation of transfer pipework.</td>
<td>✓ Yes</td>
</tr>
<tr>
<td>2d</td>
<td>Other Entity Owner</td>
<td>As per 1d.</td>
<td>× As per 1d. × As per 1d.</td>
<td>× No, but may revisit once in operation.</td>
</tr>
<tr>
<td>Option 3: ‘Integrated utility’</td>
<td>Common elements – assets:</td>
<td>✓ Provides a holistic approach to all facets and may be closer to approach expected by stakeholders × Whilst may achieve same outcome as under Options 1 and 2, requires greater risk and involvement by the Department.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option</td>
<td>Sub-option</td>
<td>Description</td>
<td>Addresses requirements?</td>
<td>Consider further?</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td>desalination scheme, and the transfer pipe network. (Could add in ownership of Verve’s pipeline if useful)</td>
<td>× Expected timing mismatch between commencing diversion and desalination, and economic viability of shandying Wellington Reservoir water to free up ground water for IWSS – hence potentially inefficient to contract for both diversion/desalination and transfer pipeline at same time with same party.</td>
<td>× No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nominated entity may undertake operations in-house or outsource. Common elements – network operation:</td>
<td>× Few synergies between operation of: (i) diversion and desalination; and (ii) transfer network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Long-term sale or auction of ground and mine dewater rights by Department</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Regulation of any pipework to be through ERA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Common elements – other</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Responsibility for selective planting of trees in catchment area etc. to remain as is.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a</td>
<td>Department ownership</td>
<td>Department would take on the responsibility for the assets, delivering and selling water into the IWSS.</td>
<td>× As per 1a, due to limited DoW skills and access to recurrent funding this is unlikely to represent a long-term, scalable and viable approach to managing and operating the diversion, desalination and transfer pipework.</td>
<td>× No</td>
</tr>
<tr>
<td>3b</td>
<td>Harvey Water ownership</td>
<td>Harvey Water would take on the responsibility for the assets, delivering and selling water into the IWSS.</td>
<td>× Harvey Water is unlikely to have the skills, size or interest in forming a running an integrated water utility by itself. Would only expect them to possibly have an interest in the diversion and desalination elements, as per Option 1b.</td>
<td>× No</td>
</tr>
<tr>
<td>3c</td>
<td>Water Corporation ownership</td>
<td>Could be the same as 2c</td>
<td>✓ Water Corporation has skills and access to recurrent funding for the diversion and desalination. ✓ Water Corporation skilled at procuring and installing transfer network, providing retail function, preparing regulatory submissions, etc. ✓ Reduced interfaces. ✓ Provides a simple and flexible model. × Water Corporation state their standards would require them to run desalination plant to much higher standards than required and hence would be inefficient. × May not provide strong commercial incentives to maximise value for</td>
<td>✓ Yes</td>
</tr>
<tr>
<td>Option</td>
<td>Sub-option</td>
<td>Description</td>
<td>Addresses requirements?</td>
<td>Consider further?</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>3d</td>
<td>Publicly-owned statutory water utility</td>
<td>Would involve the creation of a new and separate statutory water utility (e.g. similar to Aqwest or Busselton Water) to take on the responsibility for the Buckingham diversion, desalination scheme, and transfer pipe network, delivering and selling water into the IWSS. Receives regulated return.</td>
<td>✓ Would provide greater long-term regional focus. ✓ Flexible to changes/evolution, provided receives Government support. ✗ Requires establishment (cost and time) of the new utility and full consideration of inherent risks (e.g. risks retained by Government). ✗ May not provide the best solution given the small number of customers. ✗ May not provide strong commercial incentives to maximise value for money and water resource use in the region.</td>
<td>Yes, but not highly ranked.</td>
</tr>
<tr>
<td>3e</td>
<td>Public-private joint-owned utility</td>
<td>Would involve the creation of a utility owned by a number of the public and private entities with vested interests in the use of the Collie region water assets. E.g. investors might include Mines, Generators, other industrial customers, Water Corporation and possibly Harvey Water. Management board established with each investor being represented. Chair appointed by unanimous decision and has casting vote. Either regulated or contracted return, or perhaps regulation of some key (monopoly) assets.</td>
<td>✓ Private-sector elements may be off Government’s balance sheet. ✓ Provides stakeholder forum and is closer to that understood to expected by some of the key stakeholders. ✓ May provide strong commercial incentives to maximise value for money and water resource use in the region. ✗ Whilst initially attractive, this option may be ineffective, challenging to establish and unattractive to private-sector investors unless they are likely to get preferential treatment – something that goes against the core requirement of fair and equitable access and pricing. (i.e. if carefully structured to ensure open access and fair pricing for all, there should be little incentive for private-sector parties to invest as they should prefer investing capital in their own business) ✗ Complexity may lead to reduced flexibility ✗ Risks becoming talking shop, impinging on timely and effective decision making (e.g. regarding necessary investment)</td>
<td>No</td>
</tr>
<tr>
<td>3f</td>
<td>Private utility owned by customers</td>
<td>As per Option 3e but with no public ownership. This model sees those who require the water developing their own solutions, but under a policy framework that delivers the Department’s requirements (e.g. equal treatment to customers that are not investors). If contracted return, potential for sharing of any</td>
<td>✓ Users will have strong incentive to look after themselves and will not be encumbered with Government agencies. ✓ Decreased Government risk ✓ Likely to create strong incentives to maximise return from ground and industrial water ✓ May be off Government’s balance sheet</td>
<td>Yes, but not highly ranked.</td>
</tr>
<tr>
<td>Option</td>
<td>Sub-option</td>
<td>Description</td>
<td>Addresses requirements?</td>
<td>Consider further?</td>
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<tr>
<td></td>
<td></td>
<td>super-profits.</td>
<td>× Reduced flexibility and needs careful structuring to ensure access and fair pricing, particularly for new entrants</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduced flexibility and needs careful structuring to ensure access and fair pricing, particularly for new entrants</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficult to obtain cost-effective transfer of performance risk for diversion and desalination.</td>
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<tr>
<td></td>
<td></td>
<td>Likely to reduce policy making flexibility, as investors will want a high degree of certainty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3g</td>
<td>Private utility owned by independent operators</td>
<td>• As per Option 3f but with independent owners/operators bidding for the right to own the assets and rights.</td>
<td>✓ Market-based approach which may speed the establishment process and improve equality of access.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Decreased Government risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Likely to create strong incentives to maximise return from ground and industrial water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ May be off Government’s balance sheet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>× Greater difficulty in negotiating off-take agreements with customers and hence may not be attractive to private sector investors with no leverage over users (i.e. unless users approach private-sector investors under either Options 1, 2 or 3d, 3e or 3f). This may result in higher transaction costs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>× Needs careful structuring to ensure open access and fair pricing for all parties</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>× Likely to reduce policy making flexibility, as investors will want a high degree of certainty</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>× Reduced flexibility – needs clear definition</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7 Further analysis and discussion of options

7.1 Potential scenarios

As discussed earlier, the viability and merit of options presented in Appendix B should be investigated prior to committing to an approach. For example, the table below sets out a simplistic summary of how the project is dependent upon the viability of different elements.

Table 4: Summary of the impacts of differing willingness to pay for water

<table>
<thead>
<tr>
<th>Industry and power generator willingness to pay more for mine de-water and ground bore water than anyone wanting to sell into IWSS</th>
<th>Willing to pay more</th>
<th>Not willing to pay more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry and power generator willingness to buy/transfer water from Wellington Reservoir</td>
<td>Confirms power and industry maximises water value.</td>
<td>Confirms project is viable</td>
</tr>
<tr>
<td>Willing to buy/transfer</td>
<td>Not viable – do not proceed with Stage 2 and re-examine Stage 1 viability.</td>
<td>Industry and power generators re-locate and/or review any subsidy arrangements / negotiations</td>
</tr>
<tr>
<td>Not willing to buy/transfer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.2 Analysis of options against the evaluation criteria

The table below reviews the options shortlisted in the previous section and examines them against the evaluation criteria set out in Section 5.2. The result of this is not very useful. This is primarily because attempting to second guess how the key stakeholders will respond when provided with the appropriate incentives and flexibility to develop a solution is difficult to do and, arguably, unnecessary. In our view, stakeholders are likely to develop a cost-effective approach to managing the key parts of the project, if they are provided with sufficient incentives. The key issue is whether those incentives are sufficient and appropriate. If they are not, then the project will probably lead to perverse outcomes.

The key policy challenge is to:

- establish the mechanisms to create those incentives; and
- testing the mechanisms to ensure they will lead to appropriate outcomes.
### 7.3 Table 5: Summary assessment of the management framework options

<table>
<thead>
<tr>
<th>Evaluation criteria</th>
<th>‘Do minimum’ options</th>
<th>‘Enabler’ options</th>
<th>‘Integrated utility’ options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1a Department operator</td>
<td>1b Harvey Water operator</td>
<td>1c Water Corp. operator</td>
</tr>
<tr>
<td></td>
<td>2b Harvey Water operator</td>
<td>2c* Water Corp. operator</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3c* Water Corp. ownership</td>
<td>3d Publicly-owned utility</td>
<td>3f Customer-owned utility</td>
</tr>
<tr>
<td>Long-term viability and/or sufficient flexibility</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Incentivise a whole-of-life approach to the project</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Incentivise commercial opportunities and operational</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>efficiency</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Ease and speed to implement the project</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Optimise allocation of commercial risks</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Minimise political risks</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Minimise potential market distortions</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

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7.4 Sharing of costs and revenues

When considering the financial implications for stakeholders, the modelling exercise would consider the optimal balance between the following costs and off-setting revenues.

Table 7: Summary of sources of costs and off-setting revenues

<table>
<thead>
<tr>
<th>Costs</th>
<th>Off-setting revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Capex and opex for diversion and desalination process (including access charges for saline disposal pipeline)</td>
<td>• Increase in value of Wellington Reservoir (net of any direct payments to existing holders of water rights)</td>
</tr>
<tr>
<td>• Ongoing planting in catchment area (although may or may not seek to recover this from revenue sources)</td>
<td>• Water auction proceeds (net of any compensation payments back to current users of ground water in order to have ‘minimal increase in net costs to Collie power’)</td>
</tr>
<tr>
<td>• Capex and opex for transfer pipelines</td>
<td>• Proceeds from sale of water from desalination plant</td>
</tr>
<tr>
<td>• Any access charges levied by land owners</td>
<td></td>
</tr>
</tbody>
</table>
8 Next steps

The analysis in the preceding sections suggests that a number of key issues will need to be addressed to progress the project. These key issues have implications for the next steps of the project. The most important of these involve:

- developing and maintaining a detailed, time-based project plan including a stakeholder engagement strategy for the project. This is important to provide greater certainty to stakeholders of the process going forward and to signal the Government’s commitment to the project. This would ultimately result in the development of a ‘statement of intent’ for the project, but this would only be finalised and published after undertaking the business case;

- developing a business case for the project that, amongst other things, would:
  
  - assess the economic viability of the project and/or the next stages of it to determine its costs and benefits. This is particularly important given we are recommending that government investment is required to progress the project;
  
  - examine the financial implications of the proposed approach for the various stakeholders, including developing more definitive estimates of project costs and benefits. This is particularly important to the structuring the detailed arrangements so that stakeholders objections may be minimised and the project progressed in a timely manner; and
  
  - examine the legal, regulatory, technical and operational issues that will need to be addressed in further detail, and the compatibility of the proposed approach with WA water industry reform.

The Government could be in a position to issue its statement of intent within a year, assuming the business case recommends that the project proceed and approvals are obtained. In the interim, the Department could use the findings and recommendations in this report to communicate with the key stakeholders, and to provide an indication of the immediate next steps, as stakeholder assistance will be required to prepare the business case.

The following sections provide more detail on some of the key steps in each of these processes.

8.1 Developing a project plan and stakeholder engagement strategy

A time-bound project plan will provide more discipline around the process and provide a clear signal to stakeholders that the project is proceeding, and to create an incentive for them to participate and respond in a timely fashion.

Given our findings, we believe it would be appropriate for the Department to undertake more analysis before engaging with stakeholders, at least in the context of presenting a formal
proposal or ‘strawman’. We also believe it is essential that the Department gives considerable thought to how it manages the process and the communication of that process.

Steps 8.2 to 8.5 would be undertaken prior to formally engaging with stakeholders.

8.2 Developing the business case for the project

The business case would follow the guidelines of the Department of Treasury and Finance and the Office of Strategic Projects. It would, therefore, have the following key sections.

<table>
<thead>
<tr>
<th>Executive Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project concept (statement of need)</td>
</tr>
<tr>
<td>Project concept (description of options)</td>
</tr>
<tr>
<td>Service impact statement</td>
</tr>
<tr>
<td>Financial justification statement</td>
</tr>
<tr>
<td>Indicative cost plan</td>
</tr>
<tr>
<td>Budgetary implications report</td>
</tr>
<tr>
<td>Economic evaluation statement</td>
</tr>
<tr>
<td>Social impact analysis</td>
</tr>
<tr>
<td>Agency recommendation</td>
</tr>
</tbody>
</table>

It would therefore be similar to a number of business cases that KPMG has recently assisted the Department in developing. These include business cases for:

- Water reform;
- Wide use of metering use;
- Developing the policy and planning function; and
- Establishing a water efficiency department.
8.2.1 Assessing the economic viability of the project

There is a need to update the cost-benefit analysis based on the new information available, and the proposed stages of the project.

This would involve assessing both:

- the economic rationale (or public policy case) for the project; and
- whether in practice the benefits are likely to outweigh the costs.

This is a significant project in its own right, but it is particularly important if significant further Government investment in the project is necessary (as we conclude, subject to this analysis). This is because this approach will mean that other Government stakeholders (most importantly the Department of Treasury and Finance) are likely to have greater involvement in the decision making process, and they will want to be convinced that the project represents sound public policy.

Appendix C provides an overview of what some the key issues are likely to be. It suggests that:

- there is merit in investigating the benefits of the project in further detail because they could be significant; and
- this is particularly true as they relate to its more advanced stages (i.e. where more water can be provided for higher value uses, such as drinking water).

8.3 Examining the financial implications for stakeholders in more detail

The financial implications for particular parties are a subset of the economic costs and benefits of the project. They are reflected in the direct and indirect costs and benefits that are incurred or accrue to particular parties (and include any transfers of wealth between them). These might be reflected in monetised costs and benefits, or risks, which may indirectly influence the financial position of the stakeholder.

In the first instance, assessing the financial viability of the project and/or the next stages is important to identify whether any party might be able to execute the project themselves. Within the context of our recommended approach, however, it is critical to:

- understand the likely financial implications for each stakeholder of any proposal and what that will mean for the position they are likely to take (i.e. what costs and risks will they incur over what timeframes and the benefits they will receive); and
- determine in more detail the proposal (i.e. how much the Government may have to do).
It will be necessary to model the impacts on the various stakeholders and undertake sensitivity analysis to develop a more detailed proposal and amend it in light of stakeholder consultation. It will be essential to have a more definitive cost estimates in order to do this.

It will also be necessary to model the financial impacts on the State, particularly if it is going to undertake a significant part of the investment (e.g. in terms of costs, recovery of any costs in fees, taxation implications, including any leakage between State and Federal taxes).

8.4 Examining the legal and regulatory issues in more detail

There will be a variety of legal and regulatory issues to address. For example:

- in light of the recent moves by Griffin Energy, it may be necessary to clarify what the relevant terms of the assignment framework mean (e.g. "until a water utility is in place to provide alternative supply of suitable quality"); and

- the current legislation does not allow for the Department to provide security or entitlements to third parties for groundwater or mine de-water. In other words, the benefits of selling this water to the Water Corporation cannot presently be captured by a third party. This may, however, change under the Water Reform Agenda.

There will be significant regulatory issues associated with determining, if and how, the costs associated with the infrastructure created is recovered from users. In particular:

- if the new infrastructure is subject to a formal economic regulation including access principles, or whether it is managed by contracts between the relevant parties; and

- if it is regulated, how the costs for using the relevant infrastructure are determined and reflected in usage charges to end users and who regulates the assets (e.g. is it the ERA).

8.5 Examining the implications of the water reform agenda

It will be important to examine the implications of the water reform agenda for the project because it is likely to have some impact on:

- how the project should be executed; and

- how and to the benefits accrue to the parties.

In short, the water reform agenda may substantially change some of ground rules on which the project is based.
To the extent the new Government is committed to water reform, the proposed approach to this project is going to need to be consistent with it wherever feasible (i.e. other government stakeholders will expect this).

In 2005 the Western Australian Government recognised that, in order to improve environmental and economic performance of water resource management, the institutional arrangements required reform.

Following the recommendations provided by the Independent Irrigation Review Committee and the review of the Western Australian water industry arrangements, the Government created the Department of Water with the specific task to drive the Water Reform Agenda.

This institutional arrangement underpins the Government’s commitment to a series of policy drivers of State and National significance. Following extensive community consultation, the Government has implemented major policy initiatives contained in the Government Response to the Blueprint for Water Reform (2007) and Western Australia’s Implementation Plan for the National Water Initiative (2007). To reinforce its commitment to Water Reform the Government has commenced strategic water planning with the introduction of the State Water Plan (2007). Together, these policies comprise a significant Water Reform framework and a clear timeframe for its implementation.

Consequently, over the next four years these policies and plans committed the previous Government to implementing a number of measures, including:

- **water resource investigations**: this is the basis on which to assess water resource availability and sustainable levels of extraction. This information underpins setting water sharing rules and allocations in statutory water management plans;

- **regional planning including statutory water management plans**: this is the primary means of delivering sustainable water resources management by setting environmental, economic and social objectives. Statutory water management plans establish the rules for water sharing into the future and, in particular, the amount of water available for extraction under different seasonal climate patterns. They are a prerequisite to the introduction of more secure water access entitlements and water trading;

- **improved management of water licensing**: this is necessary to increase service levels to users through on-line applications, changes to businesses processes and streamlining of approvals. This work will be prioritised to prepare for the introduction of water access entitlement regime;

- **water access entitlements**: this will replace an existing entitlement with a water access entitlement, separated from land, seasonally adjusted in areas where a consumptive pool is established in a statutory water management plan; and
• **further water trading:** – this will encourage users to buy and sell water and allow new development and industry to emerge in areas where water access entitlement arrangements exist.

At this stage, we understand that the extent of the new Government’s commitment to water reform is unknown. Assuming it continues the commitment to the water reform, the project and its development will need to be assessed in the context of the introduction of water access entitlements and water trading. This includes the extent to which there is a capacity to have a functioning water market in the Collie Basin, or the reasonable limits to the functioning of that market (e.g. at this point in time there is only one logical purchaser of potable water).

This may also change if the new Government accepts the ERA’s recommendation to create an Independent Procurement Entity.⁶ The ERA states that:

*The IPE model allows for greater competition in the identification of alternative options relative to the Corporation’s proposed model. This additional competition will ensure that all possible alternatives are considered and subsequently the least cost combination of options developed. Customers will experience benefits through reduced water bills.*⁷

In other words, in principle, any party could propose the Collie Basin groundwater option and the IPE would assess on its merits objectively and transparently (e.g. probably on the basis of Long Run Marginal Cost).

### 8.6 Operational and other issues

There are obviously a number of other issues critical to the project, not the least of which is the technical feasibility of a number of aspects of it. There are numerous practical operational issues that will need to be examined and addressed under the recommended approach (or any other approach to implementation).

Such work would involve gaining a detailed understanding of the impact of shandying Wellington Reservoir water on operating costs of industry and the power generators, and on the capacity of the saline disposal pipeline (including understanding the current access arrangements, efficiency and cost trade-off between increasing the total dissolved solids load in the pipeline versus constructing a new pipeline).

It would also involve establishing and defining all the interfaces between the provider of the new infrastructure and the commercial arrangements that manage the interaction of the parties and the allocation of risk at these interface points.

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⁷ ERA, Inquiry on Competition in the Water and Wastewater Services Sector: Final Report, 30 June 2008, page VI.
Appendix A: Project map
### Appendix B: Project stages

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$30M NAP State/Federal funded salinity recovery project ($15M + $15M)</td>
<td>$20M Federal Water Recovery Project ($10M currently on offer from C’wealth)</td>
<td>Funding to be determined</td>
<td>Funding to be determined</td>
</tr>
<tr>
<td>• 4.3 GL diversion to Western 05H mine void (available)</td>
<td>• 6 GL diversion</td>
<td>• Examine feasibility of increasing size of diversion and desalination (10 to 14 GL)</td>
<td>• Large scale development of water for IWSS</td>
</tr>
<tr>
<td>• 3.0 GL/a desalination plant</td>
<td>• 6 GL/a desalination plant</td>
<td>• Consider trade/efficiency measure to access additional 17 to 22 GL from irrigators</td>
<td>- Feasibility of large scale option with connection to IWSS</td>
</tr>
<tr>
<td>• 1 GL Muja Power Station desalination plant</td>
<td>• Wellington Reservoir connected to industrial area</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td>- Water quality protection treatment managed and plan</td>
</tr>
<tr>
<td>• Disposal via Verve’s pipeline to ocean</td>
<td>• Wellington Reservoir connected to industrial area</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td>- Examination of PPP options</td>
</tr>
<tr>
<td>• $2M for 1000ha of sawlogs and 500 ha of perennials in Collie East and Collie South</td>
<td>• Wellington Reservoir connected to industrial area</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome:</strong> Salinity reduction in Wellington reservoir</td>
<td>• Wellington Reservoir connected to industrial area</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td>• 100 to 200 mg/L drop in Wellington Reservoir, therefore better for irrigators</td>
<td>• 17 GL/a &quot;fit for purpose&quot; water (600-800mg/l) available for Collie industrial area from Wellington Reservoir</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td>• 3.0 GL/a desalinated water available - very fresh – for industrial purposes (cooling water for power stations)</td>
<td>• 6 GL/a desalinated water available - very fresh – for industrial purposes (cooling water for power stations)</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td>• Improvement in water quality to irrigators</td>
<td>• Foundation for Collie Water Utility</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td>• 3 to 5 GL of fresh mine dewater available to IWSS via Stirling Dam</td>
<td>• 6 to 10 GL of fresh mine dewater delivered to IWSS via Stirling Dam</td>
<td>• Establish water utility - infrastructure - commercial arrangements</td>
<td></td>
</tr>
<tr>
<td>Supports Recommendation 1, 3, 6, 9</td>
<td>Supports Recommendation 1, 3, 6, 7, 8</td>
<td>Supports Recommendation 1, 2, 3, 4, 5, 7, 8</td>
<td>Supports Recommendation 1, 2, 3, 4, 5, 6, 7, 8</td>
</tr>
</tbody>
</table>
Appendix C: Key components of the cost benefit analysis

C.1 The economic rationale for government involvement

The case for government involvement is likely to be based on the view that:

- there is some form of ‘market failure’ which means that it is difficult for private parties to manage the risks and capture the benefits of the project (i.e. there is limited financial incentive for them to pursue the project); and

- the economic benefits of the project are likely to outweigh the economic costs, including the cost of any intervention, (see Section 8.2.2. below)

For example, it appears to be the case that:

- the ability to generate the outcome (i.e. achieve the improvement in salinity that may create the economic benefit) is beyond the control of any private party because it is likely to be influenced by the actions of a number of parties. A private party is unlikely to be able to manage the risk of achieving the key outcome (i.e. managing the salinity risk at Wellington Reservoir). By contrast, the State is likely to be in a stronger position to manage the risk; and

- the benefits, assuming that they can be achieved, are likely to be split between a number of parties, including the environment. They will also be dependent on government decisions and / or constrained by existing regulation. For example, if the existing ‘rights’ to water were clearer and more readily tradeable, the problem of ensuring that the benefits accrue to the party making the investment would be lessened, but some problems would still remain (e.g. the environmental benefits accrue to the community and are difficult to quantify).  

A significant proportion of the initial benefit of Stage One, other things being equal, would flow to Harvey Water (given its allocation in Wellington Reservoir). It is, however, not obvious that Harvey Water would capture enough of the benefits to justify the investment, even assuming they have the financial capacity to undertake the project. In addition, Harvey Water is in a position to ‘free ride’ at the moment because it is not paying all the costs of improving the salinity in Wellington Reservoir, but as things stand, is likely to be the major beneficiary. Harvey Water, however, sees itself as a provider of fit-for-purpose water to end users, and so may well be prepared to take a larger role in the project at some stage.

The Water Corporation has expressed the view that there was in principle agreement that part of the consideration (around $15 million) paid by it for the Harvey Water – Water Corporation trade was to be used by Harvey Water on the Wellington Reservoir salinity reduction project. Need to confirm this?

8 In other words, in this case the ‘market failure’ is a function of the difficulty in creating adequate property rights and the associated externalities that are created. In this case, there may also be issues associated with the nature of the infrastructure that needs to be built to deliver the project (i.e. infrastructure that may be uneconomic to duplicate).
The Harvey Water – Water Corporation trade involved the latter paying $72 million towards piping the irrigation district to release 17.1 GL/a of permanent potable water. This represents a capital cost of $4.2 million per GL, before the Water Corporation’s costs. Based on data drawn from a recent ERA study, the all up cost to the Water Corporation would appear to have been more like $7.2 million per GL. This price is not similar to the implicit price the Water Corporation was proposing to pay for Collie Basin groundwater (see Section 3.3). It is, however, still well below the capital cost per GL of the Southern Seawater Desalination Plant, which is about $20 million per GL (i.e. $1,000 million for 50 GL/a of high security water).

It seems unlikely, therefore, that the project could proceed without at least some government facilitation. It also seems likely that there is a *prima facie* case for some form of government facilitation or investment.

### C.2 The economic costs and benefits of the project

The existence of ‘market failure’ is a necessary, but not sufficient, condition for government involvement. It is also necessary to be able to demonstrate that the economic benefits of the project are likely to outweigh the costs.

A more thorough examination of the economic costs and benefits of the project or its next stages is therefore required.

An examination of the economic costs and benefits of the project would focus on the costs and benefits from a societal perspective. In particular, it involves:

- identifying all the costs and benefits regardless of who they are incurred by or accrue to, and the nature of those costs (e.g. what drives the costs); and

- examining them to determine whether they can be:
  - monetised; and / or
  - quantified; or
  - described only in a qualitative way.

It also involves understanding the key risks associated with the project and the implications for the costs and benefits.

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9 This is before transfer and treatment costs which we understand the ERA put at $0.44/kl. It notes that this is well within the range of new source development costs for the IWSS. See Resource Economics Unit, Inquiry into Competition in the Water and Wastewater Services Sector: Water Trading Issues, Prepared for the Economic Regulation Authority, 30 October 2007.

10 The REU report reports a high cost of $0.75/kl, which suggests about 58% of the all up costs were incurred by the Water Corporation.

11 The latter does not appear to include pumping costs, however.
For example, the costs associated with the next stages of the project, as summarised in Section 3.3, are highly indicative at this stage. A more thorough analysis would involve:

- identifying all the types of costs that are likely to be incurred at each stage of the project, and describing their nature as suggested above;
- estimating their magnitude where they can be quantified; and
- identifying and examining the material risks associated with them (e.g. so that some sensitivity analysis can be conducted).

For this stage of the project, these costs probably do not need to be based on detailed engineering studies, rather on the sort of analysis that is typically associated with pre-feasibility studies (with the associated error margins). This is partly because the benefits are likely to be more difficult to quantify and inherently less certain (i.e. subject to similar or greater error margins). Nevertheless, the examination of costs needs to be comprehensive to ensure all possible costs are identified and addressed.

As far as we are aware, the benefits of the project have only been described in qualitative terms at this stage. A more thorough analysis of the benefits would involve a similar process to that outlined for the costs. In other words:

- identifying all the types of benefits that are likely to be generated at each stage of the project, and describing their nature as suggested above;
- estimating their magnitude where they can be quantified; and
- identifying and examining the material risks associated with them (e.g. so that some sensitivity analysis can be conducted).

Estimating the benefits, however, relies on making some important judgements regarding the market value the water of what the project will release.

The benefits are, for example, likely to include the value created by improving the quality of water in the Wellington Reservoir and the higher economic use to which it can be put. It is also likely to include environmental and public amenity benefits associated with reducing the salinity of the streamflows into (and out of) the Wellington Reservoir and the wider recreational uses it may enable the Reservoir to provide. It may also include the option value associated with putting the Wellington Reservoir into a stronger position to be made available for public supply use, if the need arises.

C.2.1 The value of Wellington water

By way of example, we are aware that the average price for temporary and permanent water traded in the North Collie region of Harvey Water’s irrigation area has averaged $8/ML and
$22/ML respectively over the last three years. This implies a value of the entire allocation of Wellington Reservoir of up to $1.9 million on a permanent basis. In practice, the value is likely to be lower than this because Harvey Water currently only uses about 54% of its allocation suggesting that the economic value of the water on a permanent basis is closer to $0.8 million.

Information on the price electricity generators are prepared to pay for water for cooling purposes and other industrial users are prepared to pay for a variety of different uses is, however, more scarce. Indeed, most electricity generators do not pay market prices for water. We are, however, aware of instances of electricity generators paying prices of around $500/ML on a temporary basis, and $3,000/ML on a permanent basis for a medium priority right.

In the Harvey region of Harvey Water’s irrigation area, we are also aware that the average price for temporary and permanent water traded has averaged $35/ML and $491/ML respectively over the last three years. This is for non-potable water with a salt content of around 200 mg/l tds, which is lower than that proposed for Wellington Reservoir.

On this basis, it seems reasonable to assume that industrial users would need to pay at least $500/ML on a permanent basis to access water supply. The available evidence suggests that there are a number of industries that would be prepared to pay at least this price for water.

On this basis, the value of the water in Wellington Reservoir would be $42.5M on a permanent basis. Again, this value implicitly assumes full and immediate utilisation which is unlikely to be the case, but the underlying estimate of value of the water may well be conservative.

C.2.2 The value of Collie Basin potable groundwater

In addition, if the project allows for the use of mine de-water for potable purposes, then additional value is likely to be created. The ERA has estimated the Long Run Marginal Cost of the Southern Seawater Desalination Plant at $1.70 per kl. This equates to a price of $1.7 million per GL/a, albeit for permanent water. In other words, at this price, this part of the

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12 This is up to the year ended 2006/07. The volumes traded are, however, very small, which is consistent with the absence of scarcity. We understand that in these circumstances, some trading (i.e. particularly for temporary water) occurs at reasonably ‘nominal’ values to recover some of the charges the irrigator would otherwise occur.
13 This is from confidential sources. There are also expectations in a number of cases of those temporary prices increasing considerably over the medium term. The quality of water in some of those cases differs from that which is likely to be provided in the Collie Region.
14 This is up to the year ended 2006/07. The volumes traded are very small, which is consistent with the absence of scarcity. We understand that in these circumstances, some trading occurs at reasonably ‘nominal’ values to recover some of the charges the irrigator would otherwise occur.
15 This is lower than the short term objective reduction in the salinity of Wellington Reservoir, which we understand is around 500 mg/l tds.
project could deliver up to about $17 million pre annum from the sale of potable Collie Basin groundwater.

Section 3.3 suggests that the capital cost is around $45 million, which prima facie suggests that this would represent a worthwhile investment (i.e. it would have a 2-3 year payback at least in capital cost terms).

This finding is also supported by the capital cost estimates of the relative supply options (i.e. around $7 million per GL for Collie Water compared to $20 million per GL for the Southern Seawater Desalination Plant).

More broadly, in relation to a desalination plant, the ERA states that:

…every year construction of the plant was postponed, customers would save approximately $50 to $100 million.18

If the project allows 10 GL/a to enter the potable system at least for the medium term (i.e. for as long as mine de-watering continues), this is about 2.8% of a total demand met by the Water Corporation (of around 355 GL), and about 20% of the additional capacity of the Southern Seawater Desalination Plant – circa 50 GL). This suggests that the Collie Basin groundwater could provide significant benefits by postponing (probably by at least one year) what would otherwise be the next augmentation to the potable system or allowing for the greater recharge of the Gngagara Mound. This is also consistent with the view implicit in the Water Corporation (at least previous) preparedness to purchase 6 GL/a (as Section 3.3 illustrates).

The Water Corporation now argues that the ‘window’ for the purchase of Collie Basin groundwater is now closed (i.e. it would have a lower value to it) because of the improved supply situation and the commitment to the Southern Seawater Desalination Plant.

This view, however, seems to be somewhat inconsistent with what has happened in recent times (i.e. how quickly new major resources have been required) and the estimate of LRMC for the system, which would presumably be even higher for the next major augmentation. In principle, it would also seem to be the case that the Southern Seawater Desalination Plant could still be deferred (e.g. with discussions regarding its location still continuing.19

C.3 Conclusion

These figures are indicative only but they suggest that:

- There is merit in investigating the benefits of the project in further detail because they could be significant; and

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18 ERA, Inquiry on Competition in the Water and Wastewater Services Sector: Final Report, 30 June 2008, page VI. The amount saved would depend on the cost of any alternative options developed. However, assuming a capital cost of $1 billion, a return on and off capital of 7 per cent and operating costs of approximately $30 million per year, the saving from deferral would be $100 million. Ibid., page 46.
• This is particularly true as they relates to its more advanced stages (i.e. where more water can be provided for higher value uses, such as drinking water).