

# **Kalgoorlie-Boulder Water Forum**

## **REPORT**

**Thursday 21 July 2005**



**Hosted by: Goldfields Esperance Development Commission (GEDC)**

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## AGENDA

- Open by Bill McKenzie - Chairman of the Goldfields Esperance Development Commission (GEDC)
  - Facilitator – Annaliese Walster – Acting Chief Executive Officer of the Goldfields Esperance Development Commission
- Presentations by;
  - Greg Watkinson – Acting Director References and Research for the Economic Regulation Authority (ERA)
  - Phil Endley – Project Manager for United Utilities Australia P/L (UUA)
  - Brian Martin – Senior Consultant for ACIL Tasman
- Panel Session – Questions and Issues
- Submission Information
- Summary/Close

## FORUM OPENED

Bill McKenzie - Chairman of the Goldfields Esperance Development Commission welcomed speakers, distinguished guests, ladies and gentlemen to the forum.

Bill McKenzie advised that notes will be made available by the GEDC to those that attended the Forum and declared the Forum officially open.

## PRESENTATIONS

**Greg Watkinson** – Acting Director References and Research  
Economic Regulation Authority (ERA)

Greg gave a general overview of the Economic Regulation Authority role.

ERA is involved with the licencing and regulation of gas, water, rail and electricity, which involves feasibility studies. The ERA has no political affiliations. ERA wishes to be open and transparent in their decision-making.

Greg referred to the “Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder Draft Report” and the Terms of Reference in the introductory part of his presentation. The report is a Draft only and therefore the ERA is open to discuss costing and methodology within the Draft Report.

**Phil Endley** – Project Manager  
United Utilities Australia Pty Ltd (UUA)

Phil Endley expressed that UUA felt that the Draft Report was not entirely correct with an apparent error in calculations within the Report.

Phil advised that the Desalination Project (EKP) provided strategic and economic development; it offered a diversification to water sources and was not subject to climate changes. The project had potential to supply water to the mining and agriculture industries as

well as sell water to the Water Corporation.

UUA were initially seeking a mandate from Government, asking that certain conditions be met in the development of this project in the pre feasibility stage to be able to demonstrate the demand for supplying water. No financial subsidy has been sought from the Government.

Phil stressed that UUA viewed this as a commercial project and would be rigorous in their exploration of the project.

**Brian Martin – Senior Consultant**  
**ACIL Tasman**

ACIL Tasman has been engaged by United Utilities; Brian explained that UUA are looking to achieve a commercially viable venture. Brian spoke of the \$55.9M net disbenefit as indicated by the assessment in the Draft Report and explained that other items (mining revenue, royalties, and flow on multipliers) require further assessment and that the net figure would end up being a positive figure.

Brian stressed that UUA are looking at the regional impact of extra mining activities, it has nothing to do with multipliers. UUA are estimating demand based on market research, they are not looking at Water Corporation customers or replacement of Paleo Channel customers in calculating extra benefits. They are looking at the extra sales to Nickel and Gold mines to enhance production.

One tonne of water enables \$34 of gold production. The water demand to produce ounces of gold is \$144M annual revenue, discounted at 6% x 2.2b gold and .4b nickel equals the net present value of \$2.6b. This is the increased economic value of increased mining activity over 50 years.

Mines will only proceed if they are going to be commercial and royalties on the above will amount to about \$60M. The Treasury effect is that not all of this will go to Treasury some goes to grants but all benefit in the community of Australia.

The measurable benefits are cost savings and savings to mining, Esperance economic development and the royalties. The shifting of the risk of project development occurs because of commercial practicality and UUA taking the risk.

## QUESTIONS AND ISSUES

### PANEL MEMBERS

- |                  |                                |
|------------------|--------------------------------|
| • Greg Watkinson | Economic Regulation Authority  |
| • Lloyd Werner   | Water Corporation              |
| • Phil Endley    | United Utilities Australia P/L |
| • Anthony Pivato | United Utilities Australia P/L |
| • Neil Palmer    | United Utilities Australia P/L |

*At the beginning of the Forum, those in attendance had been asked to write down questions that would be addressed to the Panel by the facilitator.*

- Q: Given changing rainfall trends has the Water Corporation, in this decision, considered the long term ability of Mundaring Weir to supply increasing water requirements of the current pipeline?
- A: Mundaring Weir is a part of the integrated water supply, so getting water into Mundaring and then into the Kalgoorlie pipeline is not considered an issue. Water Corporation will look to spending more money on Source Development Program (SDP), because of the drying climate. (Answered by Water Corporation)
- Q: There appears to be strong support for a 'canal' from the Kimberly to supplement Perth supply. Can this not be part of the overall solution for Perth?
- A: The canal is being independently investigated by Reg Appleyard. The canal is not currently recognized on the Water Corporation SDP. (Answered by Water Corporation)
- Q: What are the environmental issues with drawing water from the sea?
- A: Before this project gets approval to proceed at least a 12month environmental study will have take place – Drawing water from the sea is not really an issue – water being pumped back into the sea at a dilution ratio of 1:45 by a pipe. It is UUA's understanding that the currents and slope of the sea in the Bay of Isles and with the mixing characteristics of the defusing of sea and brine at right angles to drifting currents there will not be any by product settling on the bottom. (Answered by UUA)
- Q: Headworks Charges – What are they? How do they influence demand for new suppliers?
- A: Headworks charges apply if your usage is greater than 50kl a day, the charges are calculated based on costs for delivering the service to any particular location. In Kalgoorlie the cost of expanding the water supply to meet the increase in demand is \$14,600.00 per kl per day. A set of charges are relevant to a new customer requiring the service.  
In relationship to UUA's proposed project the operating cost would be \$3.00kl versus Goldfields Agriculture Water Supply (GAWS) charge of \$4.50kl. (Answered by Water Corporation)

UUA indicated that there would not necessarily be any charges for headworks. Being a private company they would negotiate all pricing arrangements with each individual customer. (Answered by UUA)

Q: ERA suggests private benefits are low – It looks like these have not fully been considered by UUA or ERA! What work needs to be done?

A: Until ERA receives in writing why the assumptions that the benefits are low in the Draft Report then nothing will change. (Answered by ERA)

Q: Does encouraging water-wise use of current rainfall (domestic level) have any impact on this?

A: Water Corporation has a variety of demand management measures in place. WC is using education campaign to encourage people to be water wise. Currently for domestic users to store water the costs involved in this exercise is greater than what the consumer pays at the present rate. Should the price of water go up dramatically then the option to put in larger storing capacity units and consider the use of grey water becomes an option for the consumer to consider.  
Drying climate may have a potential impact.

Water Corporation is working on a 3% growth in demand for water in Kalgoorlie-Boulder. (Answered by Water Corporation)

Q: Have environmental costs been taken into account? Eg: Using Perth's diminishing water resources versus energy costs of desalination?

A: The environmental costs have been taken into account in the UUA's proposal. (Answered by ERA)

Q: Cost of water into Mundaring. Explain the model and discuss – Differences in costs between

- Surface run off into dam
- Groundwater extraction
- Desalination plants

A: The model was to analyse the value of water and the usage charge. The model worked on addressing the future demand growth, and identifying sources of supply for demand for the next 100years. WC then identifies a situation where you have an increase in demand, then re do the analysis to find the higher level of demand over the next 100 years and determine what water resources are required. The key factor is to determine the most effective timing to bring on those water resources. The sources that go to make up that model are available on the internet for more detail.  
Surface water and ground water will always be climate dependant, and has potential to become a diminished source. Desalination is not climate dependent and has not got the limitation on quantity.

The costs of sources are going up because they are further away from Perth – It's usually the infrastructure from the source to the holding area that increases the cost.  
(Answered by Water Corporation)

Q: State Government seems to be working towards no control of utilities. Would this project not assist facilitation of these?

A: It is a fairly clear position that water will not be privatized. However, there is an appetite for public private participation and this would be a perfect example of a project if it is economically viable, then this project is a terrific way in which the private sector can participate in the water system and basically Government ownership and all the control of the delivery of water. (Answered by Water Corporation)

Q: What is significance of rejection by ERA?

A: Greg said that the project could proceed even if it was rejected by the ERA or could be revisited in the future. (Answered by ERA)

Phil objected strongly to Greg's comment, saying that UUA had already experienced damage from the Draft Report findings. The Government endorsement is very important to the Project. (Answered by UUA)

Q: Does the Chamber of Minerals and Energy (ERC) have a position on this project?

A: UUA have presented the project to Eastern Regional Council (ERC) of the Chamber of Minerals and Energy (CME). The CME is interested in water for industry needs and have done a report on use of water in the region. But most of their stakeholders are self sufficient. It was indicated that UUA and Water Corporation are both CME members. (Answered by Matthew Payne- CME)

Q: Do mining companies get charged more? How are mines charged?

A: State wide uniform charge for mining water, which is heavily subsidized. If they exceed the 50kl a day usage, there are charges that relate to specific costs and specific locations, different rates applies to different locations in the region. (Answered by Water Corporation)

UUA advised that there is a strong indication by mining companies to purchase the desalinated water. In the gold industry there would be costs savings and less impact on the environment through less use of chemicals. In some nickel projects that are due to start in the Goldfields it gives these mining companies an opportunity for savings in the processing of nickel. (Answered by UUA)

Q: What are the difficulties in estimating the avoided cost for mines changing to potable water (for process use)?

A: No simple answer to this question other to say every ore body is different every

minesite is different even within a large mine there are different courses of ore. The processes are adjusted to meet the requirements for the ore bodies and the quality of water this changes in response. UUA's indicates the water they would sell to mines would have an avoid cost value between \$2.50 to \$4.00. (Answered by UUA)

Q: What other studies have been done to evaluate other sources of potable water for Kalgoorlie (+ the mines)? Has specific consideration been given to the Officer and Eucla Basins?

A: Officer Basin

Big source of water, with various water quality issues also issues relating to flow etc, power issues – Capital cost well over \$400m; estimate a large number of bore fields would be required and the costs involved in operating the bore fields would be quite substantial.

Eucla Basin

More attractive option still no guarantee on water quality, would require some type of treatment, power is also an issue. (Answered by Brian Martin)

Phil said that UUA have done 18 studies to determine the best water options provisions for the region before settling on EKP. (Answered by UUA)

Q: Are we paying for Perth's desalination blowouts?

A: Even though there is a \$40M budget blowout. The estimated operating cost is 20% lower than what was indicated in the original budget. No significant change in the cost of water as it was originally. The pricing plan for the desalination plant came down by 0.2 of a percent. (Answered by Water Corporation)

If this had been the UUA project, the blow out would be covered by UUA.  
The taxpayer would not be responsible for funding blowouts. The risk is UUA's.

Q: Better quality water than Esperance?

Would there be any price difference?

A: Would be an improved quality, better than what Esperance has now for certain. (Answered by UUA)

Q: If desalinated water is made available to Esperance – would this allow for the removal of bore fields from Esperance lands, then this would allow the use of that land for residential use.

A: ERA could not really comment on the removal of the bore fields in their costings but had factored in the costs for treatment of water. (Answered by ERA)

A comment was made that through the removal of the bore fields a direct benefit could result through the use of the land for residential purposes.



- Q: Water restrictions – how much longer does Kalgoorlie have to stay on restrictions.  
A: Water restrictions are based on a political decision. (Answered by Water Corporation)
- Q: Equations in report - Consider this one  

$$\text{Cost of source water} + \text{Cost of pumping pipeline} + \text{Cost of Storage Kalgoorlie} + \text{Cost of reticulation in Kalgoorlie} - \text{revenue collected} - \text{Headworks paid} - \text{CSO (Water formula)}$$
  
ERA – What is the cost of the CSO?  
What is the cost of the source water?  
A: The CSO is \$33M and is costed as an average of water prices. The true cost to provide water to the region is actually higher. (Answered by Water Corporation)
- Q: Will the GAWS just be scrapped  
A: Uncertain but not so expensive to keep open. (Answered by Water Corporation)
- Q: What are the risks of just having Desalination as a water supply?  
A: Same as just as having GAWS.  
Water Corporation and UUA addressed this cooperatively saying that engineers would accommodate all possible risks through design and that minimal impact would be experienced if any by consumers. Storage arrangements are made to cover 8-10 days in Kalgoorlie by WC at present anyway. Maybe a few water restrictions ie don't use sprinklers.  
UUA will be a Modular plant and this makes it easy to fix problems.  
Risks adjust - Pipeline; in 2 years time can get switched from Mundaring if need to.  
(Answered by Water Corporation)

### **Additional points**

Cost benefit analysis should be based over a future period as per budgets and not just over an immediate period.

UUA asked for information to be provided to them about the Supply of Water and Agreements. They are trying to address figures that they have not yet seen. There was an agreement to resolve this issue. In relation to the following points;

- 77ml day GAWS W/C figure
- Notional cost of Water Corporation
- Future demand

The point of bringing in the additional competition into the water supply arena was raised.

## **SUBMISSION INFORMATION**

Greg Watkins advised that Forums will be held in Esperance and Kalgoorlie-Boulder (early August), but they would be different from the Forum held today. (21 July 2005). The Forums would be based on written information that is tabled and this information would be open for discussion. A transcription service will be provided to place the information provided at the Forum on ERA's website for people that have been unable to attend.

Methodology going on ERA Website by Friday for cost benefit analysis.

Submission can be submitted by email (must have name and organisation) hardcopy by mail. Be advised that whatever information ERA receives it will be placed on the ERA's website and therefore will be in the public domain. Unless you make a claim of confidentiality in which case you need to clearly identify what components of the submission are confidential it is suggested that confidential component is included as an attachment. It is at the ERA's discretion as to what will be kept confidential; if confidential information is in question then discussion would take place with the individual parties.

Submission close Friday 29 July 2005 – No late Submissions accepted.

ERA has a 6 week period to view the information before the final report is due.

## **CLOSING**

Annaliese thanked all those in attendance for taking the time to attend the Forum. Water in the Goldfields region is always going to be an ongoing issue. Annaliese also thanked staff members Sarah Fletcher and Bill Witham for all their work and effort in organizing the Forum.

## **APPENDIX 1**

## **GLOSSARY**

<b>CSO</b>	Community Service Obligation
<b>Draft Report</b>	Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder
<b>EKP</b>	Esperance-Kalgoorlie Pipeline
<b>ERA</b>	Economic Regulation Authority
<b>GAWS</b>	Goldfields and Agricultural Water Supply
<b>GL</b>	Gigalitres
<b>kL</b>	Kilolitres
<b>UUA</b>	United Utilities Australia Pty Ltd
<b>WC</b>	Water Corporation

## APPENDIX 2

## Attendee List

### Water Forum Kalgoorlie-Boulder July 21 2005

#### Organisations

#### Attended

Bill McKenzie	Chairman Goldfields Esperance Development Commission (GEDC)
Ursula Kretzer	Economic Regulation Authority
Greg Watkinson	Economic Regulation Authority
Lloyd Werner	Water Corporation
David Hughes-Owen	Water Corporation
Phil Endley	United Utilities Australia P/L
Antony Pivato	United Utilities Australia P/L
Neil Palmer	United Utilities Australia P/L
Stan Booth	United Utilities Australia P/L
Mike Andrews	United Utilities Australia P/L
John Halden	Halden Burns
David Kennedy	Ministers Office
Sylvia Clarke	CALM
Samantha Van Wyngaarden	Agriculture WA
Jim Addison	Agriculture WA
Peter Russell	CM Arid Environments
John Lambrecht	Goldfields Esperance Advisory Consultative Committee
Cr Gail Paterson	Shire of Coolgardie
Darren Wallace	City of Kalgoorlie Boulder
Cr Bill Mason	City of Kalgoorlie-Boulder
Ross Guyton	Department of Industry Resources
Brian Cameron	Goldfields St Ives
Martin Rimmer	OMG Cawse
Marg Mason	Nickel West
Matthew Payne	Chamber of Minerals and Energy
Annaliese Walster	A/CEO GEDC
Kerry Richards	GEDC
Sarah Fletcher	GEDC



Economic Regulation Authority  
ECONOMICS - INTEGRITY - TRANSPARENCY

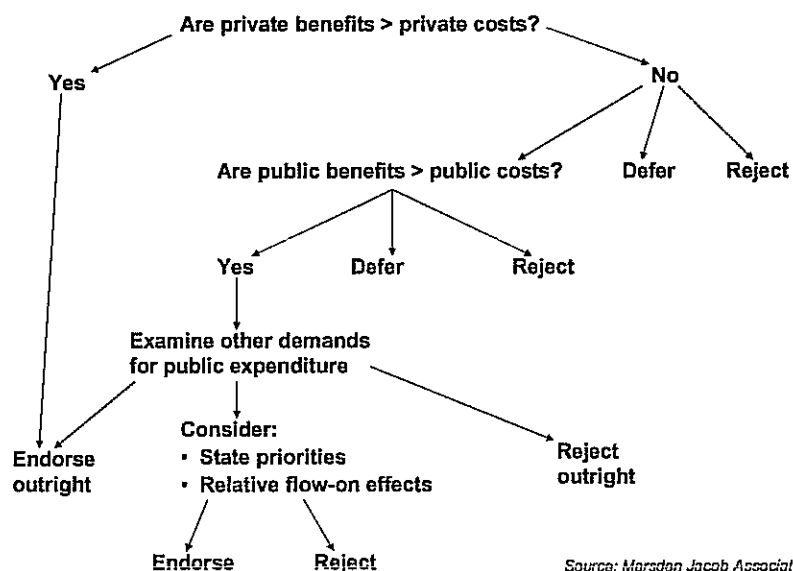
## Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder

**Greg Watkinson**

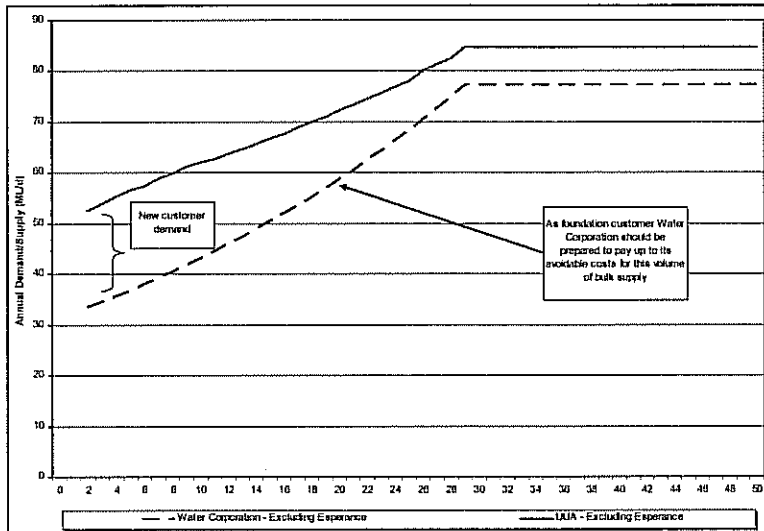
A/Director, References & Research  
Economic Regulation Authority

Presentation to Kalgoorlie-Boulder Water Forum  
21 July 2005

### Decision Tree for Analysis and Decisions in Major Investments



**EKP and GAWS demand/supplies, Years 2-50 (excluding Esperance)**



Source: Economic Regulation Authority, *Inquiry into the Cost of Supplying Potable Water to Kalgoorlie-Boulder*, Draft Report, 30 June 2005, p12

**Sensitivity of net benefits/costs to levels of initial demand  
(\$million, 6% discount rate)**

	Initial Demand	
	45 ML	60 ML
Avoided costs to Water Corporation	596.9	596.9
<b>Plus</b>		
Benefits to mines	132.1	262.8
<b>Less</b>		
Costs to UUA	871.7	915.7
<b>Net Project Benefit/Cost</b>	<b>-142.6</b>	<b>-55.9</b>

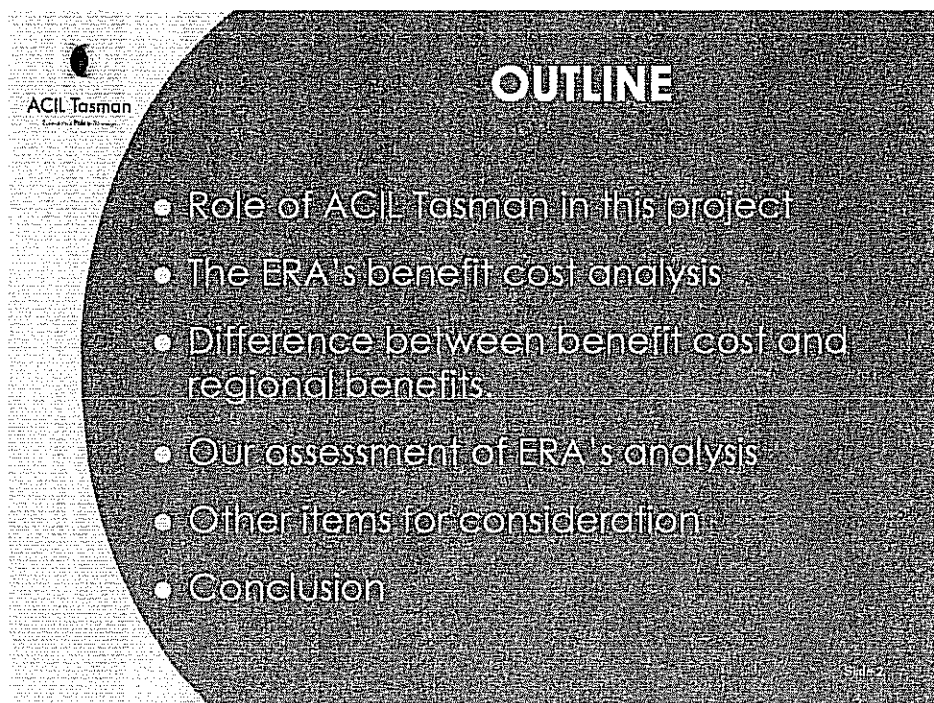
Note: rounding errors may occur.

Source: Economic Regulation Authority, *Inquiry into the Cost of Supplying Potable Water to Kalgoorlie-Boulder*, Draft Report, 30 June 2005, p34

**Benefits and costs of the EKP vs GAWS extension (60-100 ML/day, 6% discount rate)**

	SM	SM
<b>Avolded costs (benefits) of UUA proposal</b>		
Savings in Corporation Growth Expenditure		
Capital costs	254.6	
Operational costs	89.1	
Source water costs	56.3	
		399.9
Savings in Existing Water Corporation Supply Costs		
Source water costs	100.0	
Maintenance costs	16.1	
Pumping costs	50.5	
		166.7
Savings in Esperance Expenditure		
Capital costs	6.6	
Operational costs	7.0	
Water quality upgrade	16.7	
		30.3
<b>Benefits to mines</b>		<b>262.8</b>
<b>Total avoided costs (A +B)</b>		<b>859.8</b>
<b>Costs of UUA proposal</b>		
Capital costs	-446.9	
Operational costs	-454.3	
Water quality – GAWS	-14.5	
		-915.7
<b>Net benefit/(cost) (A+B-C)</b>		<b>-55.9</b>

Source: Economic Regulation Authority, *Inquiry into the Cost of Supplying Potable Water to Kalgoorlie-Boulder*, Draft Report, 30 June 2005, p31





## Results of Benefit / Cost analysis

- ERA assessment – net **disbenefit** from project \$55.9 million
- Our assessment – there is a sizable net benefit from the project
- Still a lot of analysis to do

Slide 4

## ACIL Tasman's Assessment

- Benefits to miners exceeds \$100 million
- Royalty benefits exceeds \$60 million
- Esperance benefit understated by \$16 million
- More work required on demand projections and how they will be met. This could yield further benefits.
- Why more work required?

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## Role of ACIL Tasman in this project

- A-T commissioned by UUA to provide advice in support of its bid for this project.
- A-T's advice remains of value only if it is objective and independent. Our continuing business requires that we provide advice that is professional and fearless.
- A-T has no financial interest in the outcome of the ERA process.

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## Figure 7.1 from ERA report

<b>Avoided costs (benefits) of UUA proposal</b>		
<b>Savings in Corporation Growth Expenditure</b>		
Capital costs	25.4	
Operational costs	98.1	
Source water costs	156.9	
		280.4
<b>Savings in Existing Water Corporation Supply costs</b>		
Source water costs	100	
Maintenance costs	11.1	
Pumping costs	6.0	
		117.1
<b>Savings in Expenditure Expenditure</b>		
Capital costs	8.6	
Operational costs	18.7	
Water quality upgrade	1.7	
		29.0
<b>Benefits to waterline</b>		289.5
<b>Total avoided costs (ABE)</b>		859.8
<b>Costs of UUA proposal</b>		
Capital costs	446.9	
Operational costs	69.3	
Water quality - GAWS	140.6	
		656.8
<b>Net benefit (cost) (A-B-C)</b>		203.0

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## Benefit cost and regional benefits

- Benefit cost analysis
- Regional benefits
- Budgetary (Treasury) benefits
- Take the example of the impact of increased mining activity.
- UUA has gathered information on prospective water demand for gold and nickel mining. Some of this is for increased production.
- **Regional perspective:** Gold production increases \$148 million per year.
- Nickel production increases \$30 million per year.
- From the regional perspective this generates income, employment spending and multiplier effects through the regional and wider economy.

Slide 7

## Cont.

- **Cost benefit perspective:** This increased mining production will only be achieved by increased expenditure. Production minus costs equals benefit.
- At a very minimum, this surplus must equal royalties paid – or the project is not viable. So royalties paid on the \$148 plus \$30 million will yield a community benefit of at least \$4.4 million a year.
- **From a Treasury perspective:** Some of the increased royalty stream will be lost through the mechanism of the Commonwealth Grants Commission.
- **In NPV terms, the increased mineral production yields:**
  - A regional impact over the life of the project of \$2.66 billion.
  - The benefit (in B/C framework) of the royalty stream is \$66.4 million ignoring jobs and flow through regional benefits.

Slide 8



## Project benefits

- Measurable benefits
  - Cost savings, Mining, Esperance, Royalties
- Benefits of shifting responsibility for risk from the taxpayer to the private sector
- Value of options kept open by the project
- Benefits of competition – benchmarking, competitive pressures on performance and service delivery

Slide 8

## Regional benefits of the project

- Expanded gold operations
- Expanded nickel operations
- Drought protection for farming
- Better water for communities along the pipeline
- Opportunities for new industry to be established in the area

Slide 10

## Conclusion

Our analysis indicates that further work will identify more benefits from this project

Slide 11