


17th NSW Engineers & Operators
Regional Conference

Sharing Knowledge

Achieving Capex Efficiency to Deliver More with Less

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Challenges Facing Australian Water Sector 2010-2013

2010-2013 State of Water Industry Reports

- 1 Ensuring water supplies are secure**
- 2 Maintain and augment infrastructure**
- 3 Mitigating extreme weather event impacts**

<p>AWA / Deloitte State of the Water Sector 2010-2015 Preliminary Report</p> 	<p>AWA / Deloitte State of the Water Sector 2011 The view from the top</p> 	<p>AWA / Deloitte State of the Water Sector Report 2012</p> 	<p>AWA / Deloitte State of the Water Sector Report 2013</p> 
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Challenges Facing Australian Water Sector Now

2014 & 2015 state of water industry report

- 1 Improving operational efficiency
- 2 Maintaining and augmenting infrastructure
- 3 Sustainable water management

AWA/Deloitte
State of the Water Sector
Report 2014



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State of the
Water Sector
Report
2015

How to drive efficiency

Figure 18: What areas do you think the industry could improve to assist in driving efficiency?



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State of the
Water Sector
Report
2015

Deloitte.

Asset Management in SWC & Water Main Strategy

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Asset management in Sydney Water



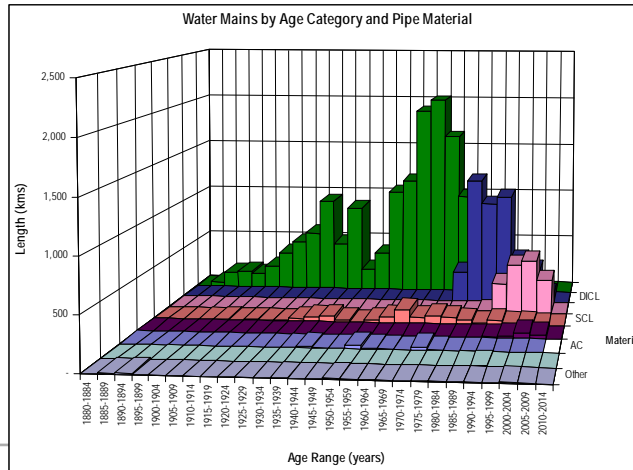
*“A **business discipline** for managing the **life cycle of assets** to achieve a desired **level of service** and **financial return** within an **acceptable risk framework**”*

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Water Main Asset Profile

- Critical water main – 5000 km
- Reticulation – 16000 km

**Total – 21000 km
with replacement
value @ \$15 billion**



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Reticulation Water Mains

- 💧 Smaller diameter water main
- 💧 Low risk when they fail
- 💧 Plan to repair strategy
- 💧 Financial decision – failure history



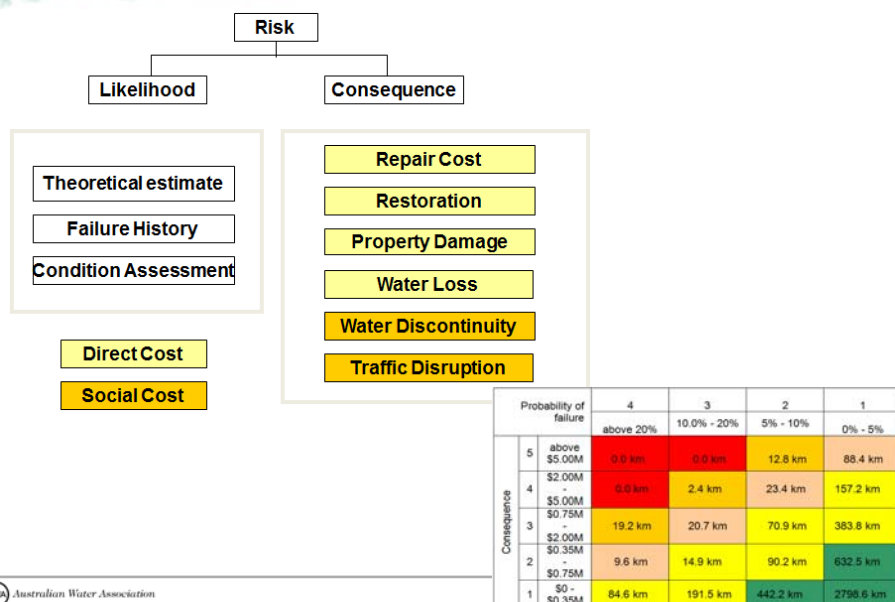
Critical Water Mains are:

- 💧 High consequence when they fail
- 💧 Water main diameter 300mm +
- 💧 Proactive approach – prevent fail
- 💧 Provide effective management if they fail
- 💧 Risk management strategy



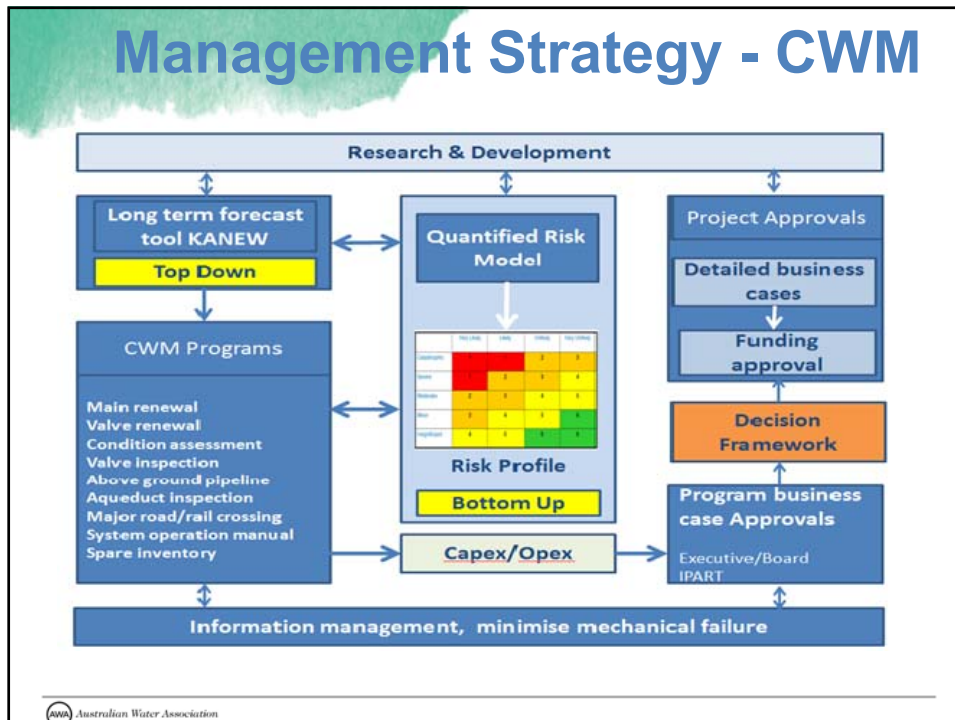
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Risk Based Approach



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Management Strategy - CWM



Improved strategies - Reticulation

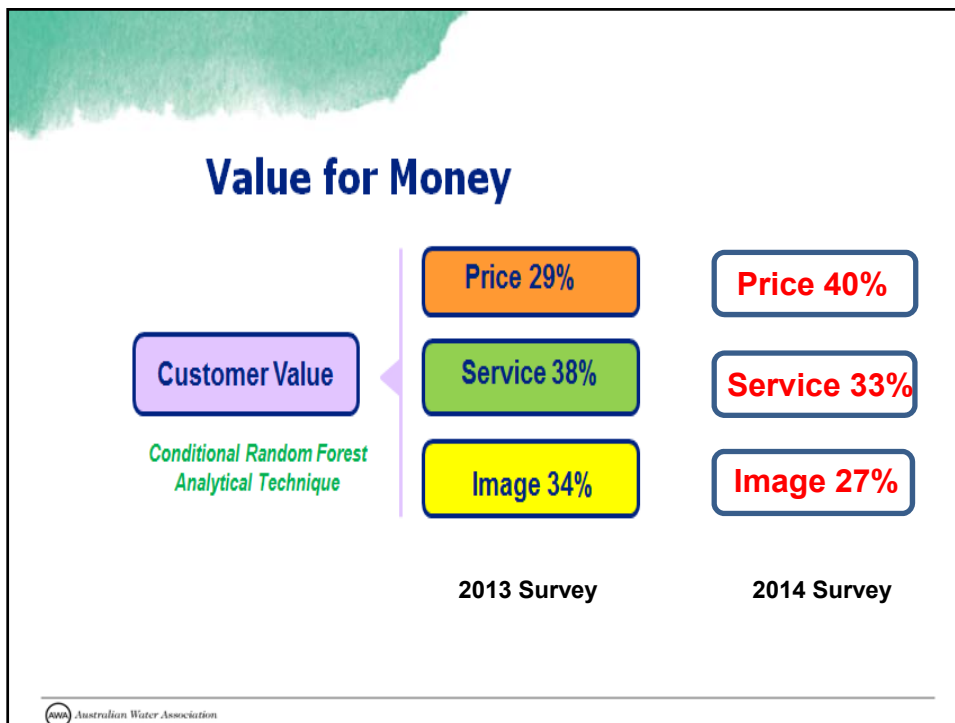
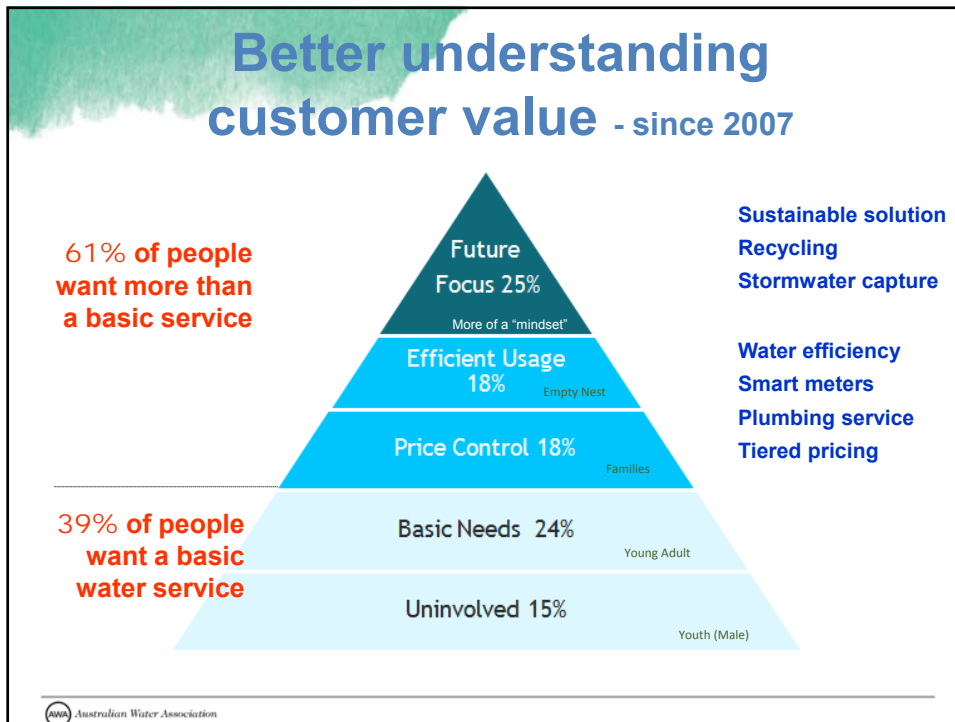
- 💧 More accurate cost benefit analysis (NPV & costing)
- 💧 Shutdown block analysis & asset
- 💧 Increase identification frequency
- 💧 Better scoping & streamline process
- 💧 Balancing cost, service and risk

Improved strategies - Critical

- ◆ Quantified risk assessment
- ◆ Improved condition assessment process
- ◆ Higher risk appetite – improved understanding of failure
- ◆ Better targeting of renewals
- ◆ Improved planning process - system integrated planning

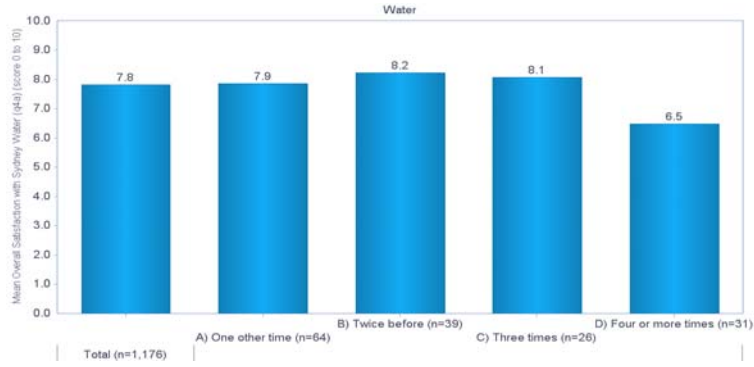
Example 1:

**Balance risk, cost & service
in water main renewals**



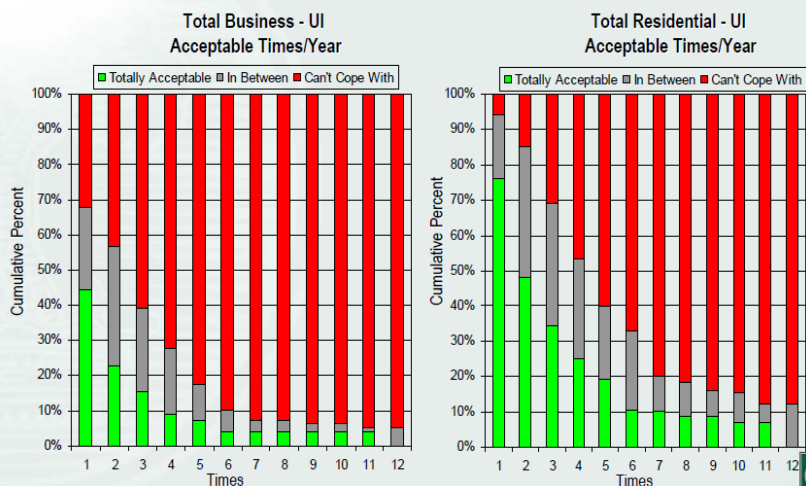
Repeats impact on satisfaction

To the best of your knowledge, how many times has this problem previously occurred? AND Overall satisfaction with Sydney Water

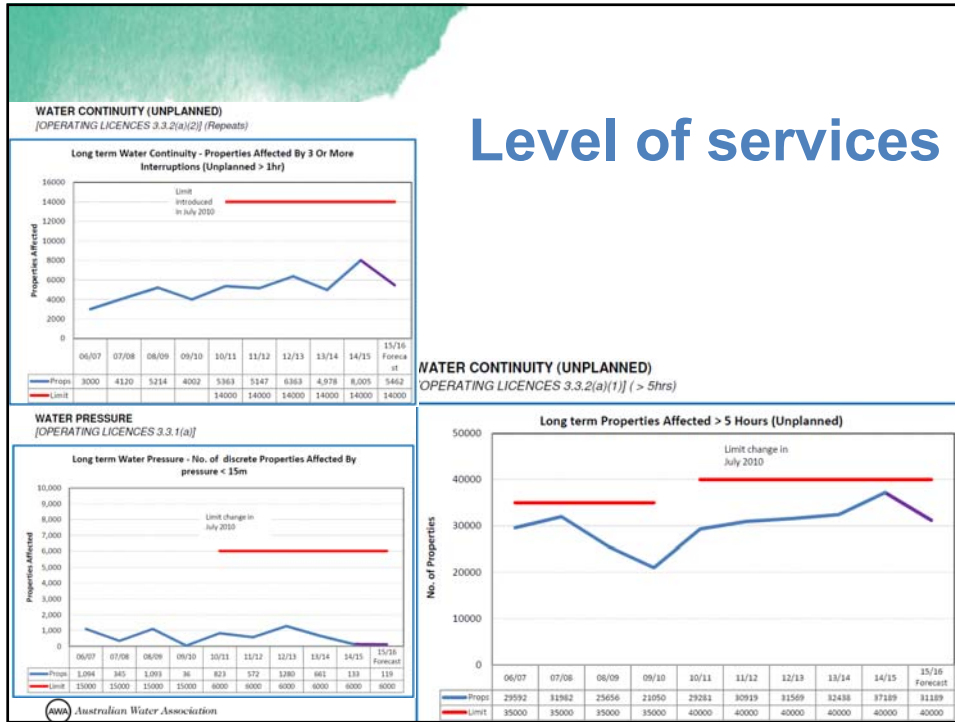


Source: Service Faults Tracking 2007

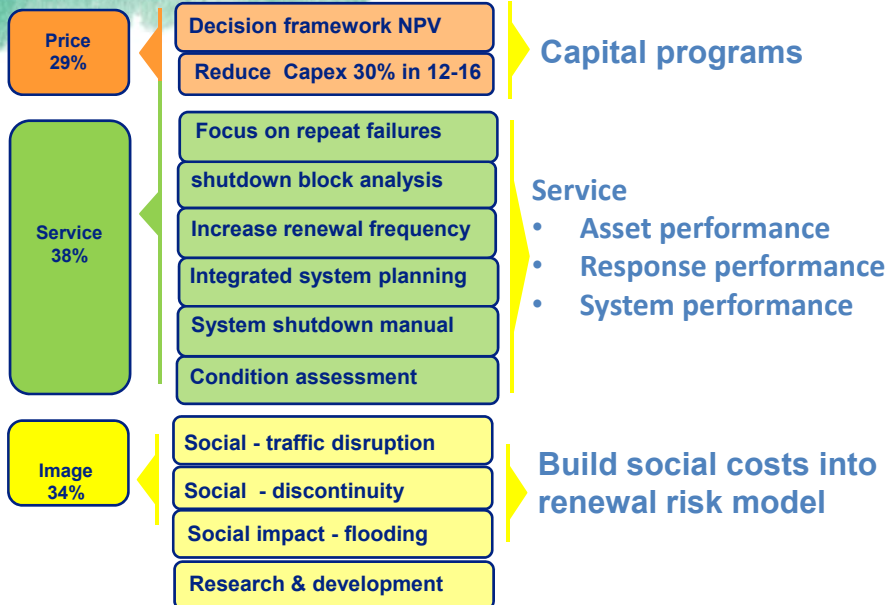
Tolerance on unplanned water interruption

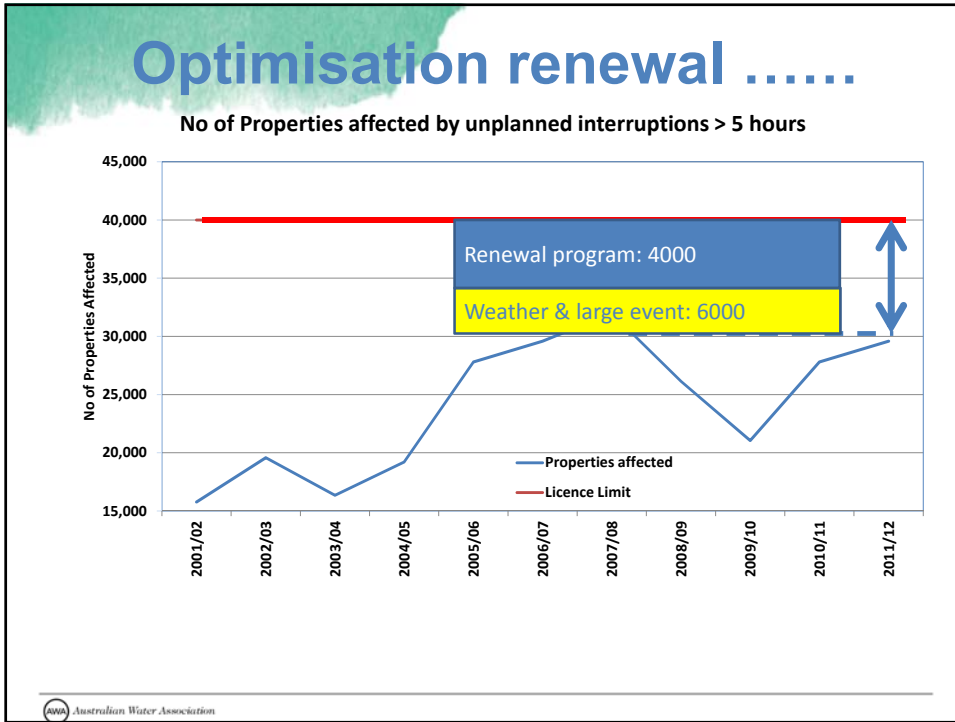


Level of services



Build value into decision making

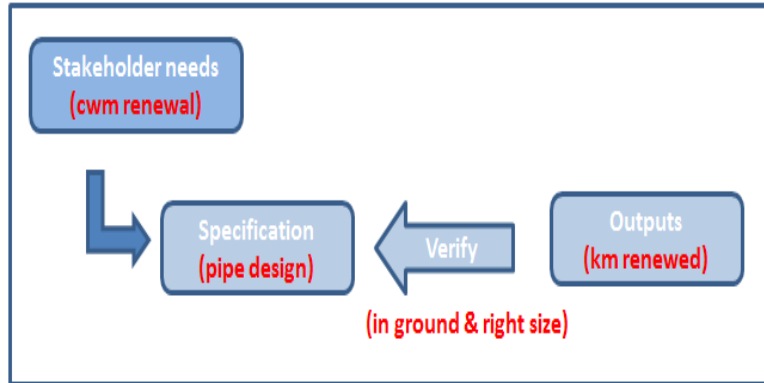




Example 2: Optimising critical water main renewals through system integrated planning

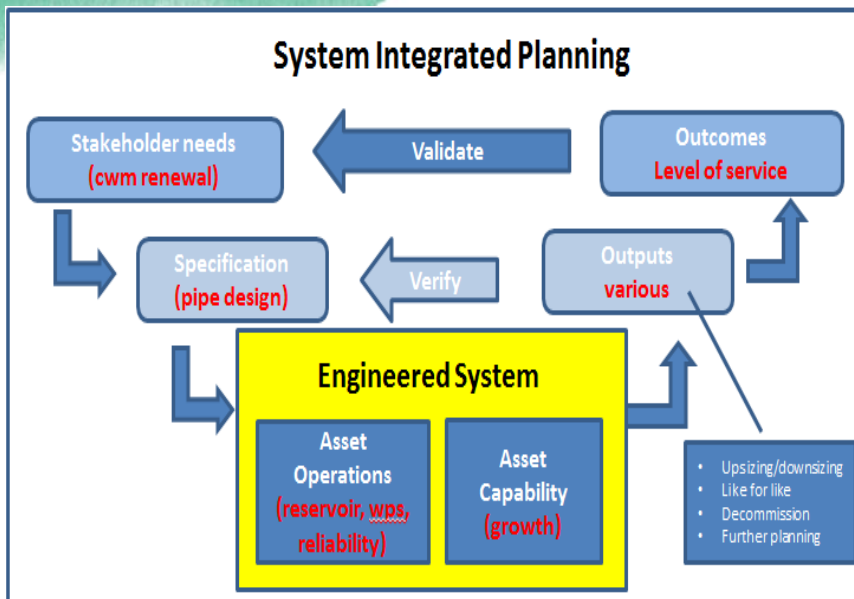
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Previous Renewal Process




Water mains, reservoirs & wps are renewed on each individual program driver – lack of coordination and systematic approach

System Integrated Planning



Rookwood Rd – Optimised solution



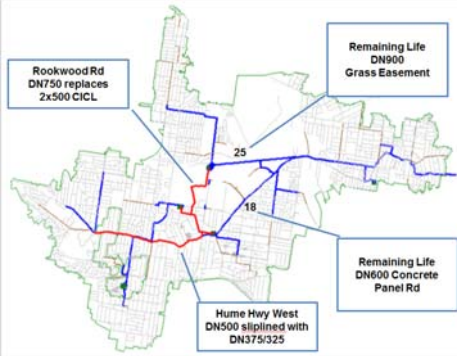
Optimised solution

- Reduced capital investment
- Improved system pressure performance
- Increased capacity – 3rd pump can run
- Able to access Birrongo reserve storage
- Good fit with future plan
- Improved operational flexibility

Total potential saving - \$20m

Existing situations:

- Renewal – multiple DN500
- mains are in poor condition
- Growth – more storage required
- System – poor balance between Bankstown and Birrongo reservoirs



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Moore Park Rd – Decommission

Initial study:

Revised study:

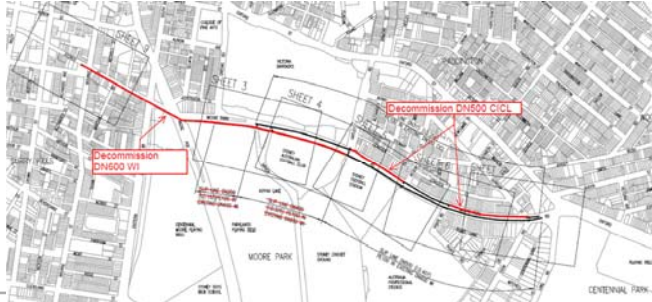
Final recommendation after challenging :

All the four options were economically evaluated and compared against the “Like for like” Option. Based on hydraulic performance and economic evaluation, Like for Like Option is recommended as the preferred option. This option has the CAPEX of \$13.87 million.

The recommended option has an estimated direct cost of \$3.5 million. Refer to Table E1 below for a breakdown. Refer to Section 7.3 for overall strategy and costs.

Option 1d	As per Option 1, with an additional 100m of sliplining of the DN500 main to maintain existing secondary connection to the Lang Rd pocket	12-15m : 217 5-12m : 232 <5m : 0	\$1.79
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Option 1d is nominated as the recommended option



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What has been achieved.....

- 💧 Improved customer satisfaction
- 💧 Maintain assets & system performances
- 💧 Greater understanding of risk & transparent decision making
- 💧 Improved system planning process
- 💧 Improved system reliability
- 💧 Over 30% reduction in water main renewal programs

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Value for Money

Satisfaction with Value for Money

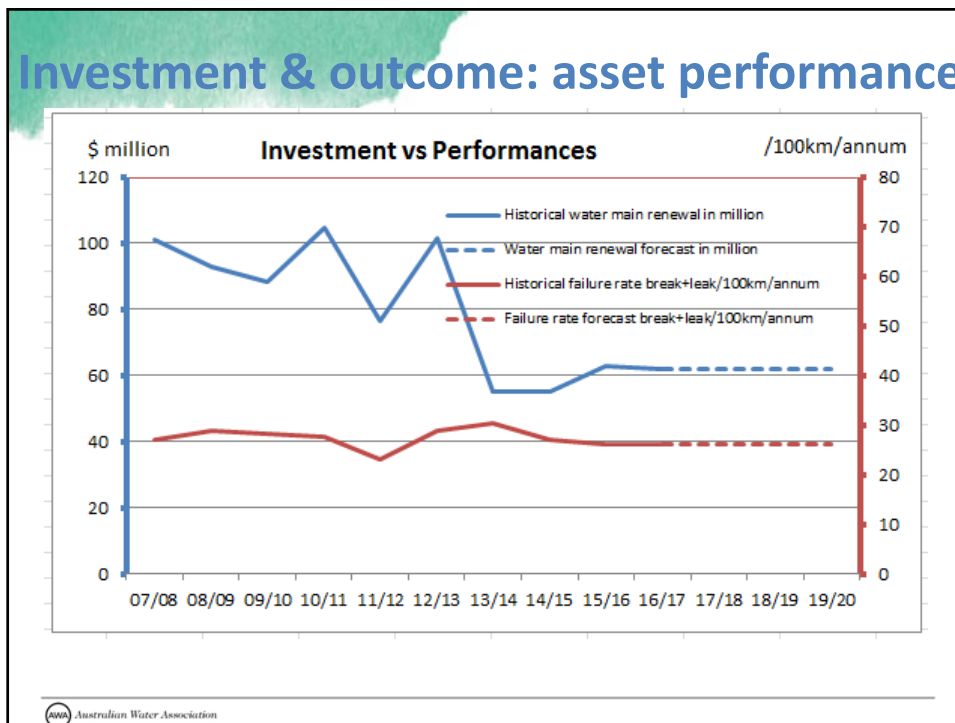
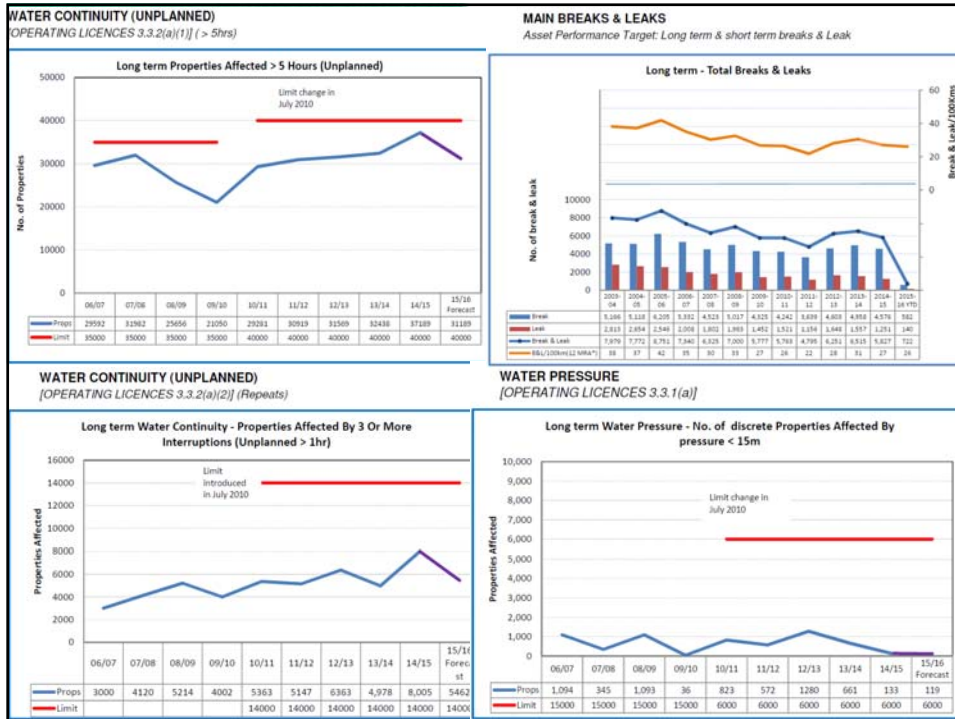
Across all customers, the overall perceived **VALUE FOR MONEY** delivered by Sydney Water in 2014 has increased significantly from 2013. This is primarily driven by a significant increase in satisfaction amongst **No Recent Contact** customers, amongst whom satisfaction has increased from 6.7 to 7.0 out of 10.

Meanwhile, we see a slight non-significant decline in satisfaction amongst Service Faults customers, while General Enquiries customers remain steady.

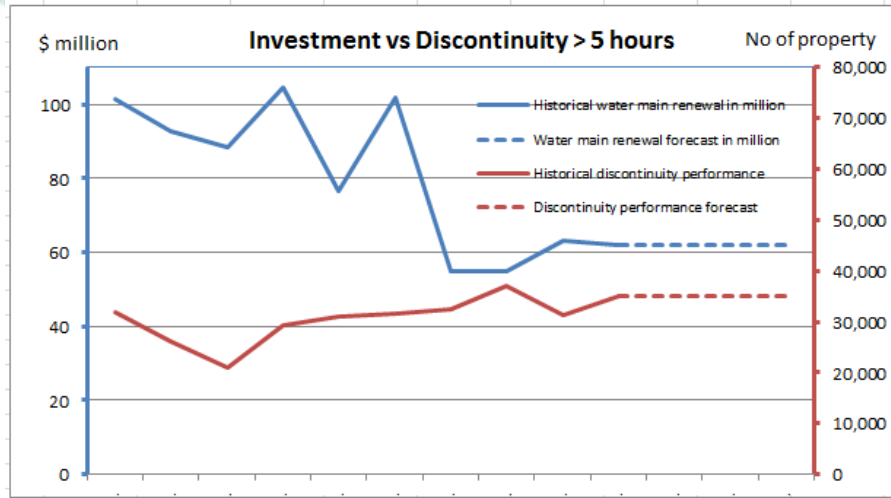
The increase in perceived value across all respondents is very good news for Sydney Water as delivering excellent value is a key strategic imperative for the organisation.



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Investment vs outcome: system performance



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Looking forward.....

- 💧 Better understand customer expectations
- 💧 Better understand assets conditions
- 💧 Improve efficiency through improving AM practices
- 💧 Improve knowledge of critical pipe failure through R&D

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Thank you

Further information

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