Our Ref: FOL/6495 – DOC23/27175

11 May 2023

Essential Services Commission
By email
water@esc.vic.gov.au

Goulburn Valley Water's Response to Essential Services Commission's Draft Decision - April 2023

The Essential Services Commission (ESC) published their draft determination to GVW's 2023-28 Pricing Submission on 12th April 2023. This is GVW's response to the findings contained in the draft determination.

GVW recognises and respects ESC's role in ensuring customers of water corporations in Victoria receive great outcomes from their water and wastewater service provider, and subscribes to the importance of the PREMO framework in driving these outcomes.

GVW acknowledges and recognises that there have been material changes in the economic environment since engaging with its customers in preparing and submitting our pricing proposal which has informed GVW response to the draft determination.

Cost of living pressures (including escalating interest rates and inflation) have become acute, particularly in the many lower socio-economic areas of GVW's service area. This has been exacerbated by the flooding event in the Goulburn Valley region in October 2022, very shortly after the submission, which significantly impacted many customers across the region and has taken up much of GVW's focus in the following months. The La Nina has compounded the financial impact on the business with a 22/23 forecasted loss of $14 million.

We appreciated the ESC giving GVW time to regroup before commencing the pricing submission review process and recognise that this has had some impact on the draft decision.

The draft decision has approved many elements of GVW's pricing proposal and there are some areas which the ESC have not agreed to. This response focuses on the areas which were not agreed and where additional information was requested.

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GVW has responded to the draft determination and has in some cases made material changes to its proposals in favour of the customer. In summary these are:

- Adopting an increased operating efficiency rate per annum of 1 per cent (increase from 0.4%).
- Proposing a "pass-through" tariff mechanism which will allow time to provide assurance over the prudency and efficiency of the customer willingness to pay investment ($7m).
- Reducing the capital expenditure for the Shepparton Corporate Office to $6.5 million (from $13.8M) to only include the fit-out costs and seeking a "true up" in PP6 once the lease versus capital options have been decided.
- Several other changes have been made as requested by ESC in favour of GVW's customers.

GVW will continue to have amongst the lowest prices in Australia and the second lowest cost to serve (operating costs per megalitre) in Victoria through to 2027-2028 at the same time as delivering the outcomes our customers have asked for.

GVW requests that the ESC reconsider its PREMO rating of GVW's pricing submission from "Standard" to "Advanced" given the proposals in favour of customers outlined in this response.

Yours sincerely,

Dr. Steve Capewell
Managing Director

Contents

Outcomes (ESC determination 3.2)

ESC Position Summary

Standard Outcomes Reporting Template to complete and submit with its response to this draft decision.

GVW Response

Completed Standard Outcomes Reporting Template, see Attachment A – Standard outcomes reporting

Guaranteed Service Levels (ESC determination 3.4)

GVW response summary

GVW accepts ESC's draft determination

ESC Position Summary

Does not accept proposed rebate amount for the mandatory Guaranteed Service Level

GVW Response

GVW will increase the proposed mandatory service level from $100 to $300.

Revenue requirement (ESC determination 4)

GVW response summary

GVW has responded to the ESC's draft determination and has made a number of alternative proposals. We have also updated the Cost of Debt and Inflation as requested by the ESC. The resulting revenue requirement is $439.29 million.

ESC Position Summary

Reduce the proposed revenue requirement from $445.8 million to $419.9 million (reduction of $25.9m or 5.8%)

GVW response

The table below summarises the revenue requirement resulting from the proposals made by GVW in this response as well as the changes to Cost of Debt and Inflation which were requested by the ESC after the Draft Determination.

Table 1: Summary of changes as a result of this submission

Building Block	2023-24	2024-25	2025-26	2026-27	2027-28	Total ($M)
Operating expenditure	56.84	57.28	57.83	59.82	58.53	290.31
Return on assets	12.95	13.75	15.05	16.29	17.47	75.51
Regulatory depreciation of assets	10.82	11.85	13.78	15.74	16.69	68.88
Adjustments from last period	-	-	-	-	-	-
Non-prescribed revenue offset of revenue requirement	-	-	-	-	-	-
Tax liability	0.77	0.73	0.87	1.07	1.15	4.59
Total revenue requirement	**81.38**	**83.61**	**87.53**	**92.93**	**93.85**	**439.29**

See Financial Model at Attachment B for further details.

Operating expenditure

Baseline controllable operating expenditure (ESC determination 4.1.1.1)

GVW response summary

GVW's baseline controllable operating expenditure has been influenced by decisions in the PP4 submission to collect revenue less than required, the ambitious efficiency factor and other unforeseen impacts of climate change, the pandemic and regulatory changes.

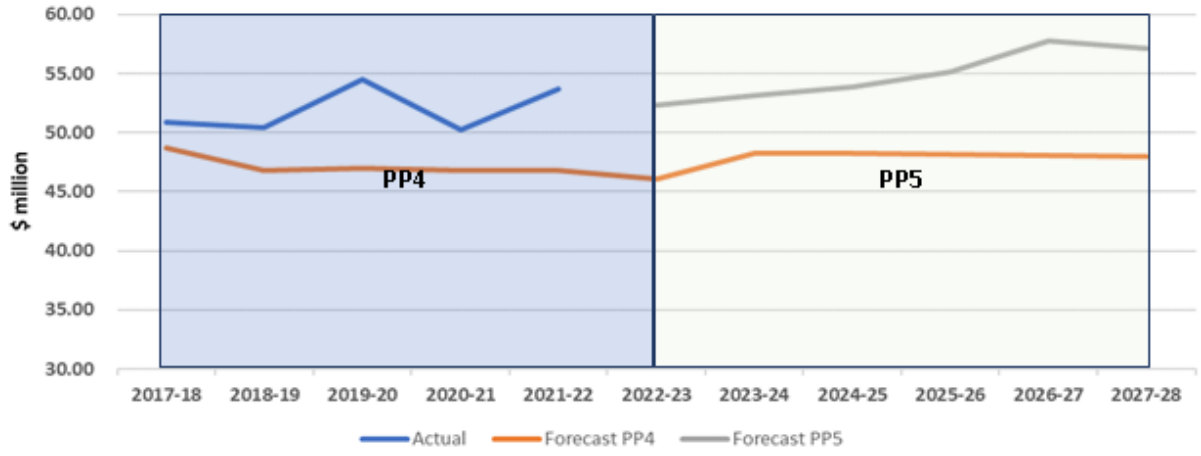
ESC Position Summary

ESC does not accept the **baseline operating expenditure** on the basis that the explanation provided by GVW does not adequately explain the increase of 11 per cent on Pricing Period 4 (PP4) forecast baseline operating expenditure (p24)

GVW response

GVW is starting Pricing Period 5, $5.3 million or 11 per cent higher than the forecasted starting point from the PP4 modelling. There are several factors that are contributing to this increase. Figure 1 shows the PP4 forecast expenditure for PP4 and PP5, the actual expenditure for PP4 and the PP5 forecast expenditure.

Figure 1: Controllable operating expenditure ($1/1/23)



The factors influencing the higher PP5 operating expenditure starting point include:

- When setting the PP4 benchmark GVW chose to collect revenue that was less than the revenue requirement for this period. This was done so GVW could pass back the profits from Price Period 3 to its customers. To achieve this the PP4 submission modelling for controllable operating expenditure was artificially reduced to ensure the revenue collected was the same as the revenue requirement. This created an ambitious benchmark that GVW was unable to achieve. The benefit to customers was approximately $2.3 million per annum.

- GVW accepted an ambitious efficiency target for PP4 of 3.1% or approximately $1.5m per annum. GVW's actual efficiency achieved was minimal to zero and the result of this is contributing to a higher start point for PP5.
- During the period of 2019/20 to 2021/22 in PP4, there was an unprecedented global pandemic (COVID-19) which had profound impacts on supply chains and economies globally. GVW experienced permanent increase in several inputs including chemicals, materials, fleet running costs and other input costs.
- The impacts of climate change and the higher frequency of weather events is also putting additional pressure on supply chains and increasing GVW's costs bases. In addition to this GVW has a requirement to achieve a scope 2 net zero emissions by 2025 and achieve a mandated total net zero emission by the end of financial year 2034/35.
- Over the course of PP5 there have been a number of changes with the safety and OH&S environment that has required GVW to lift its investment in these areas. This includes Implementation of the Victorian Workplace Manslaughter Laws in July 2020 and harmonisation of the OHS Regulations 2017, which included updated Compliance Codes to ensure workplace compliance.

  As a result of these changes GVW has seen a permanent uplift in insurance and the effort required to review its OHS management systems, policies, procedures, training and resources to ensure compliance has increased. Additional investment was also made to increase capability across the business to ensure continuous improvement in an increasingly complex risk and compliance environment.
- GVW has also seen an increases in labour costs over PP4 which are contributing to our higher PP5 start point. This includes an addition 8 FTE above the PP4 forecast growth in employees, the Enterprise Agreement being approved following the PP4 decision that led to salaries escalating at 3.1% when our approved PP4 cost base was deescalating. In addition to this the Super Guarantee percentage have been escalating by 0.5% per annum since June 2021.

Maintenance reduction (ESC determination 4.1.1)

GVW response summary

Maintenance costs – GVW has supplied additional information to support our original submission for baseline maintenance costs and to clarify the additional $1 million was actual expenditure and not a non-recurring cost.

ESC Position Summary

Removal from baseline of **maintenance costs** ($5.04m) (p23).

GVW response

The $1.0 million per annum reduction in maintenance expenditure under controllable expenditure recommended by the ESC consultant will adversely impact on GVW's ability for service delivery (operations) to be able to operate and undertake maintenance. This will result in adverse customer outcomes.

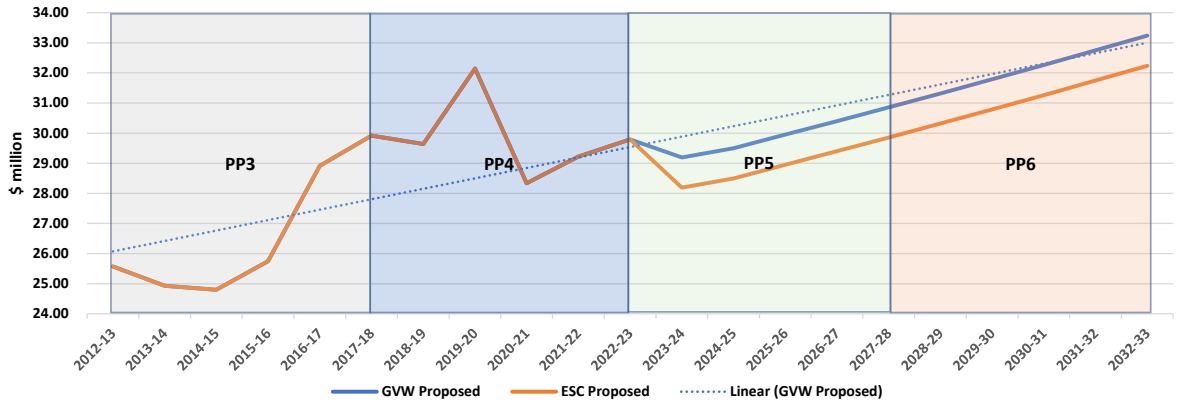
The $1.0 million increase in operating expenditure in 2021-22 identified by the expenditure consultant as being associated with delayed operating expenditure and therefore a non-recurring cost, was a misunderstanding of the additional information provided to the consultant.

This increase was included in the corporate plan to realign it to a level that reflected actual expenditure. The actual baseline controllable operating expenditure budgeted in the pricing submission was based on actual expenditure across recent years.

The average spend in 1/1/23$ for PP4 for service delivery was $29.8 million per annum compared to $30.0 million proposed for the next pricing period.

Figure 2 shows the pricing submission service delivery operating expenditure is below the long term trend prior to any further reduction as proposed in the ESC draft decision.

Figure 2: Service delivery operating expenditure pricing submission 3, 4 and forecast 5 and 6



A further reduction of $1.0 million in the maintenance allowance would substantially impact our maintenance program and will have consequential impacts on customer outcomes. This reduction would likely be achieved through reduced major maintenance expenditure or reduction in employees.

A reduction in major maintenance would require reductions in civil, building and preventative maintenance and prevent efficiency initiatives being developed and implemented. Labour would be limited to a focus on reactive maintenance. Opportunities to complete preventative maintenance would be reduced leading to asset deterioration and longer term increases in replacement costs and increased frequency of incidents, impacting on customer bills in future pricing periods.

There is limited opportunity to reduce operational staff. For example, GVW has 26 water treatment operators responsible for ensuring compliance with the Australian Drinking Water Guidelines at 37 water treatment plants over a dispersed region. In addition to this GVW has 15 operators servicing 26 waste management facilities responsible for compliance with EPA guidelines over a dispersed region.

Growth in water and wastewater services in conjunction with a reduction in maintenance and employees would increase the likelihood of reduced service standards and potentially impact on security and reliability of operations and employee wellbeing.

Employee number variation from PP4 forecast (ESC determination 4.1.1.1)

GVW response summary

GVW created 26.6 new positions during PP4. At the time of the 2021/22 baseline only 18 of these positions had been filled - explaining the difference in FTE numbers between the advice provided to the consultant and in the financial models for the 2018 and 2023 price reviews.

ESC Position Summary

Employee growth was above forecast in PP4 requires justification.

GVW response

During PP4 GVW employed 18 FTE, this is 9 FTE more than the additional 9 FTE forecast in the PP4 submission, see

Table 2.

Table 2: FTE numbers actual and forecast in 2016-17 compared to 2021-22

	2016-17	2021-22	variance
Actual FTE	211	228	18
Planned FTE	211	220	9
Variance			9

Note: the above information is sourced from the expenditure detail tab in the PP4 and PP5 models.

Over the course of PP4, GVW underwent several restructures as it planned for the retirement of its Managing Director and then reset its operating model and corporate strategy under the new Managing Director.

GVW had previously supplied the ESC with a list of all new positions created (26.6 FTE) because of the restructure and in response to new regulatory compliance obligations. The restructure created an additional 21 FTE positions and to meet our regulatory compliance obligations 5.6 FTE, see Table . At the time of the 2021/22 baseline only 18 of these positions had been filled leaving 9 FTE vacant.

Table 3: New regulatory compliance obligation positions created during PP4

New Roles	FTE	Obligations
Team Leader Procurement	1.00	Compliance with the Victorian Government Procurement Board obligations and associated legislation
Energy & Carbon Officer	0.6	Compliance with increased focus on achieving net zero
Legal and Property Advisor	1.00	With increasing complexity around land and property legal matters GVW has decided to stop outsourcing its advice and stand up a new role to deal with these matters.
Manager - Compliance	1.00	New role to ensure GVW has an appropriate approach to maintain compliance with the Financial Management Compliance Framework and associated Government oversight.
Risk Systems Administration Officer	1.00	New role to support Risk compliance and monitoring.
Information Security Officer	1.00	With increased risk around IT security and not being able to obtain appropriate insurance in this space GVW has established this role as part of its digital strategy

Efficiency improvements and growth rate (ESC determination 4.1.1.2)

GVW response summary

GVW commits to increasing its efficiency improvement rate to 1% per annum for pricing period 5 consistent with the recommendation of the ESC's draft decision and their recognition of the PP4 efficiency factor of 3.1 per cent, well above the rate adopted by other water utilities.

ESC Position Summary

GVW will need to increase its **efficiency improvement** rate from 0.4% to 1% per annum.

GVW response

GVW agrees to raise the efficiency target.

GVW appreciates that the ESC recognises that based on Bureau of Meteorology National Water Performance Report 2020-21, that our 'cost to serve' (on a per megalitre basis) compares favourably to other water utilities and that our typical bills are among the lowest in Australia.

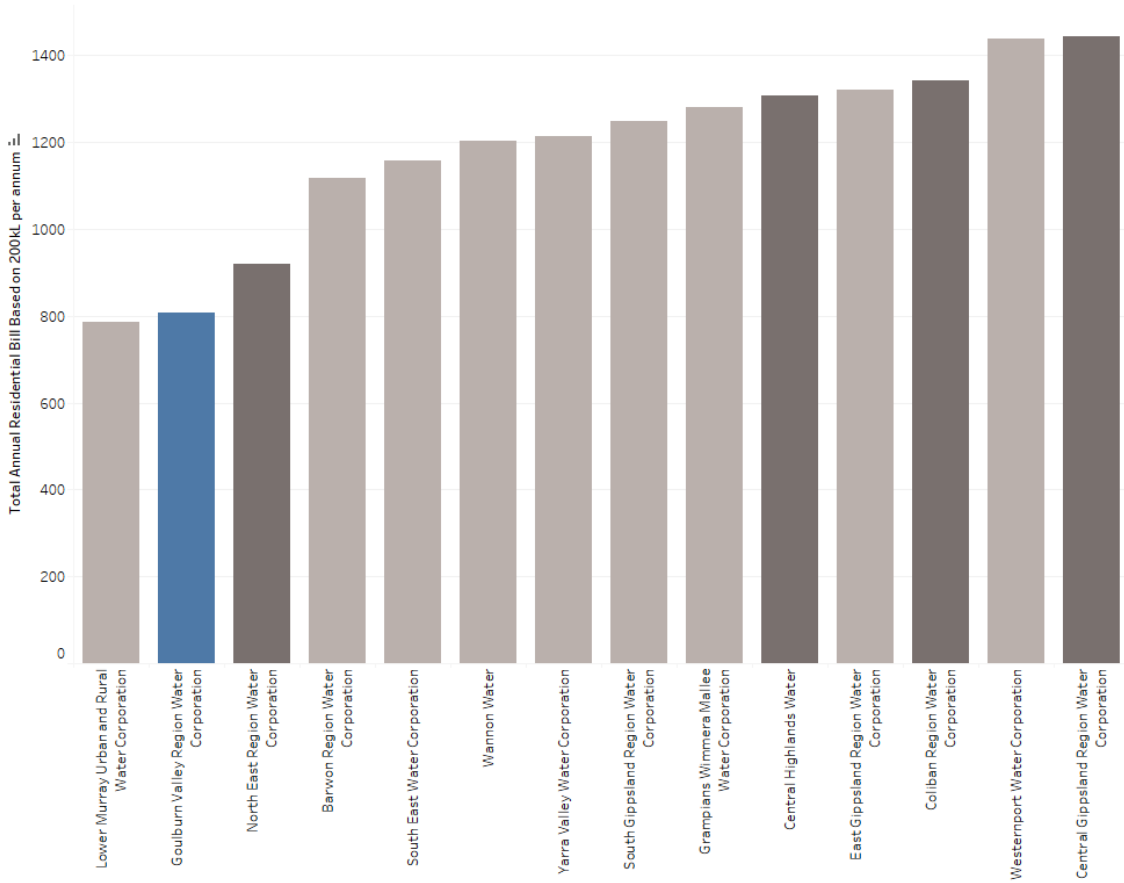
The most recent Bureau of Meteorology National Water Performance Report 2021-22 shows that GVW's residential water bill remains in the lowest 10 per cent of water utilities in Australia, the second lowest utility bill in Victoria, and cheapest of our comparable peers based on size by at least 12 per cent in Victoria, see Figure 3.

GVW was unable to achieve the PP4 efficiency, see Baseline controllable operating expenditure

GVW appreciated the ESC recognition that our efficiency factor of 3.1 per cent during PP4 was well above the rates adopted by other water utilities. Consistent with the ESC draft decision GVW is proposing to adopt a 1 per cent efficiency rate for PP5 an increase of 0.6 per cent.

The efficiency factor of 1 per cent has been incorporated into our revised financial model, see Attachment B – Financial Model.

Figure 3: Water utility - Total annual residential bill based on 200 kL per annum (2021-22)



Cost adjustment – Supporting Customers Who Need Our Help Program (ESC determination 4.1.1.3)

GVW response summary

The requested details for the programs, including **specific initiatives, outcomes and investment** for the Supporting Customers Who Need Our Help Program have been provided which demonstrate what this program will deliver for GVW customers.

ESC Position Summary

Adoption of $2 million customer willingness to pay investment - GVW is required to confirm and justify the annual amounts to be allocated to the Customers Who Need Our Help Program, the key initiatives or projects the funding is intended to support, and the outcomes that will be delivered by the initiatives (p27).

GVW response

GVW's commitment to the willingness to pay programs reflects GVW listening to its customers who want it to show leadership on issues that are important.

GVW appreciates the ESC's recognition that the $2 million over PP5 in additional support is needed for people struggling with changes in circumstances or who are enduring challenges.

Justification for investment

Customers and stakeholders recommended increasing GVW's level of service to support customers who need help.

GVW received feedback from residential and business customers, stakeholders and support agencies on the need to provide additional support for customers experiencing hardship.

The Deliberative Forum Customer Panel agreed that GVW should support customers who need help. The Panel prioritised projects and ideas they believed would support these customers. They also provided further guidance to GVW which have informed the following set of principles to identify and design five initiatives from the priority list:

1. That the proposed initiative has clear support from customers
2. That the proposed initiative can demonstrate alignment to multiple customer, community and ministerial priorities
3. That the initiative has clear outcomes that can be measured and reported
4. That the initiative provides benefits for customers across our region and to GVW
5. That the initiative is clearly targeted to support customers who need our help.

Initiatives and customer stewardship

GVW have designed the following five initiatives in detail (see "canvases" following), including outcomes and expenditure:

Initiative 1: Water Efficiency Partnerships

Initiative 2: Customer Leak Repairs

Initiative 3: Customer Monthly Billing

Initiative 4: Supporting Capacity Building in Our Youth

Initiative 5: New Arrivals Support Program

Each of the initiative detailed designs is presented in Attachment C - Supporting Customers Who Need Our Help Program Initiatives.

The initiatives will be presented to the Annual Performance Forum (PP4 customer stewardship group) on 25 June 2023 for endorsement.

Program progress updates will be presented to the Customer Accountability Panel throughout PP5, to ensure that it is on track and reflects outcomes that are valued by GVW's customers. This engagement will ensure that GVW are transparent and accountable for the $2 million investment recommended by the Customer Panel.

Total program expenditure

The proposed expenditure of the Supporting Customers Who Need Our Help Program over PP5 is summarised in 4.

Table 4 Total program budget over PP5

Year 1	Year 2	Year 3	Year 4	Year 5	Total
$420,000	$500,000	$394,000	$334,000	$319,000	$1,967,000

Cost adjustment – Regional Leadership and Carbon Abatement with Local Benefits Programs Program (ESC determination 4.1.1.3)

GVW response summary

The Regional Leadership and Carbon Abatement with Local Benefits Programs will be further developed through a co-design process with detailed designs built for specific initiatives, including outcomes and investment. The initiatives will be endorsed by the Customer Accountability Panel to ensure that their delivery is prudent and efficient. GVW proposes to fund these programs through a pass-through cost recovery mechanism.

ESC Position Summary

Removal of some cost adjustment - **customer willingness to pay investments** ($7m) due to lack of evidence of prudency and efficiency (p27)

GVW response

GVW's commitment to these willingness to pay programs reflects GVW listening to its customers who want it to show leadership on issues that are important.

GVW appreciates the ESC recognising that the projects reflect customer priorities and the opportunity to further demonstrate prudency and efficiency for the investment recommended by GVW's customers.

GVW have consulted with the ESC and have not gone further in providing specific initiative detail at this stage as the pricing submission proposal is to co-design these initiatives with GVW's customers. Instead, GVW have focussed on ensuring a clear process which provides for prudency and efficiency.

GVW understands that this is a different way of designing and delivering projects and reflects the challenge of working within the PREMO framework. To overcome these challenges, GVW propose to continue directly engaging with the ESC as initiatives are designed to ensure prudency and efficiency.

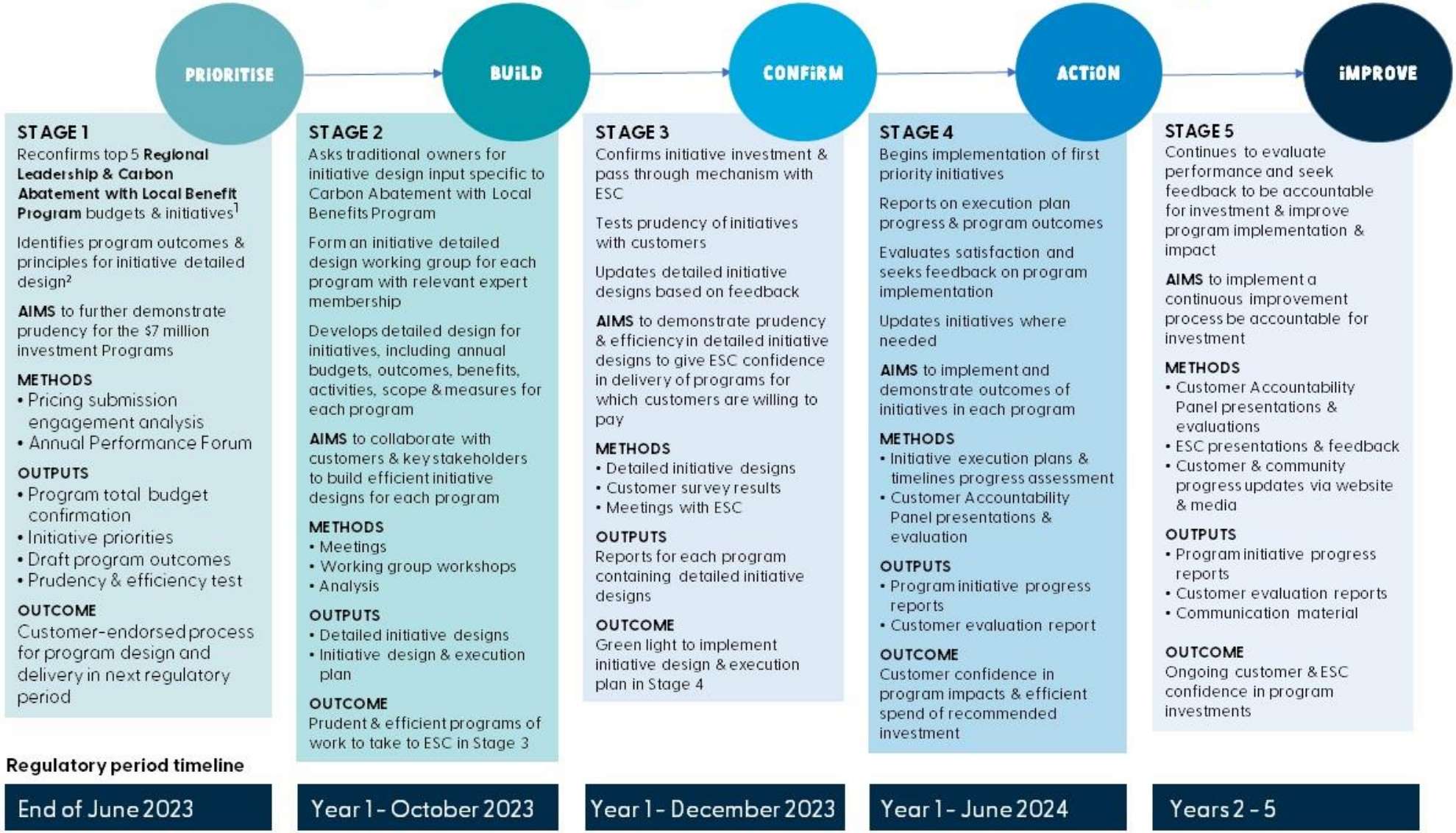
GVW proposes a pass through mechanism for the customer willingness-to-pay investments ($7m) as detailed at Attachment H. The Customer Willingness-to-pay additions are anticipated to add approximately $22 to a typical customer bill in the last 3 years of the pricing period in order to cover the $7 million investment.

The actual expenditure on the co-designed initiatives will be based on the feedback from customers.

GVW have proposed a comprehensive five-stage process that describes how it will co-design both the Regional Leadership and Carbon Abatement with Local Benefits Programs in a way that clearly demonstrates prudency and efficiency and ensures it is accountable to customers for the investment recommended by the Customer Panel.

The process is outlined on the following page:

Customer willingness to pay programs - $7 million investment planning process



Self-generating electricity costs (ESC determination 4.1.1.3)

GVW response summary

Self-generated electricity has been accounted for in the model as revenue of $4.98 million in 'other revenue' rather than a reduction in operational expenses. It results in a 0.43% (excluding inflation) reduction in customer bills.

ESC Position Summary

GVW to provide ESC with evidence of where **self-generated electricity** from the new solar arrays has been taken into account (p28).

GVW response

The electricity generated from the new solar arrays during PP5 has been accounted for in the financial model as 'Other revenue' rather than a reduction in operational expenditure. This is due to the solar arrays not being "behind the meter". The arrays are in a different location to usage and therefore electricity generated will need to be put into the grid which will generate revenue.

The new solar arrays will generate renewable energy certificates which will be used to offset GVW's electricity emissions at usage sites and meet the regulated renewable energy target.

The total revenue from self-generating electricity is forecast to be $4.98 million for the three years from 2025-26 to 2027-28 which is accounted for in financial model (RevenuePriceCap_F0 row 54).

The above approach was outlined in the business case for the project which was provided to ESC's expenditure review consultant.

Environmental contribution costs (ESC determination 4.1.2)

GVW response summary

Environmental contribution – GVW accepts the adjustment of $1.58m

ESC Position Summary

Reduction in **environmental contribution** due to incorrect application of inflation ($1.58m) (p28)

Bulk water charges (ESC determination 4.1.2)

GVW response summary

Bulk water charges have been updated as directed with information in relation to Goulburn Murray

ESC Position Summary

GVW is required to respond to the Draft Decision by:

- Providing the list of bulk water tariffs charged by Goulburn-Murray Water for the period 2021-22
- Updating its forecast bulk charges for the period 2022-23 to 2027-28 by using the Commission approved prices for Goulburn Murray Water in 2022-23
- Maintaining the forecast bulk charges at a flat rate in real terms (using a price path of 0% and not applying CPI) during the next regulatory period
- Submitting an updated financial model which takes into account these changes

GVW response

- The bulk water tariff charged by Goulburn Murray Water for the period 2021-22 are provided in Attachment D – Bulk water charges.
- The financial model has been updated to reflect the Goulburn-Murray Water Bulk Charges for 2022-23, Attachment B – Financial Model
- Adopted maintaining the forecast bulk charges at a flat rate in real terms (using a price path of 0 per cent and not applying CPI) during PP5.

Capital expenditure

Reduce proposed forecast capital expenditure from $245.01 million to $227.456 million (reduction of $17.6 or 7.2%)

This is a result of:

- Removal of the Shepparton Corporate Office
- Reduction in the Water Mains Replacement Program

See GVW position in the following sections.

Corporate office upgrade (ESC determination 4.2.2)

> **GVW response summary**
>
> GVW is seeking reinstatement of the capital costs for office fit out and services of $6.5 million which is common to both options under consideration. A "true up" will be sought in PP6 for other costs associated with the office.

ESC Position Summary

Removal of the **Shepparton Corporate Office** due to lack of certainty around leasing/capitalisation options ($13.8m) (p33)

GVW response

The GVW office accommodation in Shepparton was developed approximately 30 years ago and has not had any substantial refurbishment or modernisation over this period.

The corporate office upgrade would consolidate office-based staff in a single corporate office. Currently they are spread across two sites:

- Approximately 100 staff are based in the Fryers Street head office in the Shepparton Central Business District (CBD).
- Approximately 40 office staff are based at the Shepparton Operations Centre (SOC) approximately 2 kilometres east of the CBD. SOC is an operational site and depot in addition to an office site.

The office accommodation requires significant works to address compliance issues, modernise the facilities and provide improved amenity for GVW staff, visitors and customers. There are currently a number of building code compliance issues that any major refurbishment would trigger being addressed.

GVW acknowledges that there is currently uncertainty in relation to the final option which will be selected for the project. The final option will either be upgrading the Fryers Street office (capex) or leasing of a new site (lower capex plus opex). Selection of a final option is expected early in 2023/24.

The deferment of this project until the next pricing period and continuing to accept the building compliance issues, current lack of amenity and outdated working environment is not considered to be an acceptable outcome for GVW staff, visitors or customers.

GVW is therefore proposing to commence work in PP5. We will proposes retaining $6.5 million of capex in PP5 for office fit-out and services that are common either to the

capital expenditure (upgrade Fryers Street) or operating expenditure (lease new building) options.

- If the final option is capex, seek the true up of costs for PP6
- If the final option is opex:
    - Seek that the additional annual opex (expected to be in the order of $1.0 million per year) be added to GVW's baseline opex for PP6.
    - The unfunded PP5 opex (likely $2 million -$3 million) be "trued up" in PP6, taking into account any offsetting funding from the potential sale of the current building.

The $6.5 million of capex for office fit-out and services is based on the identified rate of $2,500m^2 from the project business case which was provided to ESC's expenditure review consultant. This document can be provided to ESC upon request.

Capital costs for PP5 were originally proposed to be incurred in 2023/24 and 2024/25. To further reduce the impact of project costs on PP5, GVW is proposing a later start date with the $6.5 million of requested costs for office fit-out and services to be scheduled across 2024/25 and 2025/26.

The following table summarises the project capex that will be reflected in GVW's revised financial template.

Table 5: Office Project Capex in revied financial template

Year	2023/24	2024/25	2025/26	2026/27	2027/28	PP5 Total
Capital Expenditure Proposed ($m)	-	$3.25m	$3.25m	-	-	$6.50m

Water mains replacement program (ESC determination 4.2.2)

GVW response summary

GVW proposes reinstatement of the full PP5 submission capital expenditure.

Supporting evidence is provided on the increased capital expenditure based on recent tenders and costs associated with additional railway crossing works.

ESC Position Summary

Reduction in the **Water Mains Replacement** program from $2.75 million to $2.0 million per annum ($3.75m) in line with the consultant's advice and a low-cost scenario.

GVW response

Water main renewal expenditure in the order of $2.0 million to $2.5 million per year on average has enabled overall water main failure rates to remain within the target of 18 per 100km in recent years.

However aging asbestos cement mains are failing at a much higher rate of 36 per 100km. Approximately 40% of GVW customers are potentially impacted by this higher rate of failures.

The water main renewal program predominantly targets replacement of the asbestos cement assets which are failing at the higher rate.

The submitted PP5 expenditure of $2.75 million per year was based on:

- Continuing to achieve the overall water main failure rate target of 18 per 100km.
- Continuing to target asbestos cement main replacements and limit the increasing failure rate in this cohort of assets.
- A number of high priority renewals under railway crossings being identified which incur significantly higher costs per metre of replacement than experienced on projects in recent years.

What's the impact of a $2.0 million water main replacement program

A water main replacement program of $2 million per annum will put at risk the achievement of a target failure rate of 18 per 100 km. Over PP5, GVW will be facing multiple pressures on its program that include:

- Forecast 90 per cent of all failures being aging AC mains that represent 40 per cent of our network, with an average failure rate of 36 per 100 km.
- $4.8 million required for water main replacements beneath high-risk railway line assets (about 50 per cent of the draft decision proposed budget of $2.0 million). These works are at significantly more expensive than standard water mains replacement.
- New contract rates commencing July 2023 that are 40 per cent higher than the previous contract.

The following summarises these factors influencing the program expenditure and further detail is provided in Attachment E – Water main replacement program

Increased contract rates

A 3-year contract for water main renewals has recently been finalised. It was expected that costs for the next contract would increase based on significant movements that have occurred to prices since the previous contract was awarded. A likely increase in rates was highlighted in GVW's previous response to questions from ESC's expenditure review consultant.

A recent tender for a new 3 year contract for water main renewals has seen submitted prices being in the order of 40 per cent above the previous contract.

The outcome from the higher contract prices will be reduced length of water main replacements that can be completed from the renewal program budget.

If the 40% increase was applied to the draft decision recommendation of $2.0m of funding per year, a budget of $2.8 million per year would be required which is similar to the original submitted budget of $2.75 million per year.

Railway crossing projects

There are 9 water main replacement projects identified beneath high-risk railway line assets planned to be completed during PP5 with a total estimated replacement cost of $4.8 million.

These are a priority to ensure replacement occurs prior to failure occurring and causing significant economic and reputation impacts.

The identified railway crossing replacement projects are estimated to cost on average $1,950 per metre compared to $500 to $800 per metre for standard replacement projects in recent years. The higher-than-average costs are due to the additional preconstruction and site investigation works and the approvals and site safety requirements.

Due to increasing contract prices and a number of higher than average cost projects being required in the next 5 years, GVW is seeking the full funding of $2.75 million per year for water main renewals to maintain failure rates within the target level.

Closing Regulatory Asset Base (RAB) (ESC determination 4.3.1)

GVW response summary

GVW accepts the closing RAB of $470.4 as at 30 June 2022 due to the treatment of **SaaS** as capital rather than operating expenditure.

ESC Position Summary

ESC does not accept GVWs closing RAB of $467.1 and instead is adopting $470.4 as at 30 June 2022. The variance relates to an adjustment for the treatment of **Software as a Service (SaaS)** as capital rather than operating expenditure for the purposes of the RAB. (p36)

GVW response

GVW notes that this treatment has been taken in favour of keeping customer prices low. It is not in line with current Australian Accounting Standards which require SaaS to be treated as operating expenditure.

Customer Contributions (ESC determination 4.3.2.1)

GVW response summary

GVW seeks to retain the proposed methodology and charges for NCCs.

ESC Position Summary

ESC does not accept GVW's forecast for revenue from customer contributions (NCCs).

GVW response

GVW has provided further information in relation to new customer contributions in Attachment G – New customer contributions.

Return on Equity (ESC determination 4.4.2)

GVW response summary

GVW is seeking to reinstate the advanced PREMO rating and consequential return on equity of 4.5 per cent

ESC Position Summary

ESC does not accept GVW's proposed return on equity of 4.5 per cent and instead adopts a rate of 3.9 per cent in line with a PREMO rating of Standard (p40).

GVW response

See PREMO rating.

Regulatory Depreciation (ESC determination 4.5)

GVW response summary

The regulatory depreciation has been updated in the financial model.

ESC Position Summary

ESC does not accept GVW's forecast regulatory depreciation (p41).

GVW response

Regulatory depreciation is a derivative of the RAB , Capital expenditure and customer contributions (Attachment G – New customer contributions) and has been addressed in these respective sections.

The regulatory depreciation has been updated in the financial model, see Attachment B – Financial Model.

Tax Allowance (ESC determination 4.3)

GVW response summary

Tax allowance is a derivative of profit in the ESC financial model. GVW will update the model for all changes and will amend the tax allowance as appropriate.

ESC Position Summary

ESC does not accept GVW's proposed forecast tax allowance (p41).

GVW response

Attachment B – Financial Model

Demand tariffs and prices

Demand (ESC determination 5.1)

GVW response summary

Retaining the regional connection growth rate of 1.5 per cent adopted in the pricing submission remains valid.

ESC Position Summary

ESC accepts GVW's demand forecast. Demonstrate how Victorian Government population and dwelling growth estimates have been considered.

GVW response

The growth rates developed for the 2022 GVW Urban Water Strategy have been used for this pricing submission. The growth rates were developed based on an assessment of a range of data sources including the 2019 Victoria in Future Small Area (VIFSA) district occupied private dwellings and average household size forecasts, and the observed growth in connections in the centres serviced by GVW over the previous two UWS (2012–2016 and 2017-2022).

The VIFSA districts cover a broader area than the centres serviced by GVW. For this reason the VIFSA forecasts cannot be used as the sole source of data to establish growth rates for GVW serviced towns. This is demonstrated by the VIFSA districts for the larger centres serviced by GVW shown in Table 5. For example, the VIFSA district is the same for Kilmore and Broadford.

Kilmore is known to be growing at a higher growth rate than Broadford. This demonstrates the variability in connection growth that can be experienced within a VIFSA area.

The GVW observed growth in connections in Kilmore is substantially higher than in Broadford. In this instance adopting a growth rate for Broadford based on an assessment of historic growth in connections is more reflective of the potential future growth than the VIFSA forecast.

Table 5: Centres and the associated VIFSA districts.

Centre	VIFSA	LGA
Kilmore	Kilmore-Wallan District	Mitchell Shire
Broadford	Kilmore-Wallan District	Mitchell Shire
Mansfield	Mansfield Shire	Mansfield Shire
Shepparton	Shepparton Town	Greater Shepparton City Council
Seymour	Seymour District	Mitchell Shire
Numurkah	Cobram-Numurkah District	Moira Shire

The updated VIFSA forecast have been assessed against the forecast growth rates for major centres serviced by GVW. Across the region there is not a substantial change in the forecast growth in dwellings and average household size.

Based on this assessment the updated VIFSA forecast does not warrant any change to GVW growth rates used in developing the pricing submission.

Prices (ESC determination 5.3.2)

GVW response summary

GVW has considered the impact of the inflation environment on customer prices and bills. GVW will apply the CPI to customer tariffs in a manner consistent with previous practice.

GVW has updated the Financial Model at Attachment B and the resulting price path and customer bills have been provided at Attachment I

GVW has updated inflation and cost of debt assumptions as directed by the ESC on 3 May 2023. The increase in the cost of debt assumption from 3.75 per cent to 6.76 per cent has increased the real price path by 1.35 per cent.

ESC Position Summary

We are seeking further information from GVW on how it intends to address the impacts of **relatively high inflation** on its proposed prices (p45).

GVW response

GVW has considered the impact of the inflation environment on customer prices and bills. GVW will apply the CPI to customer tariffs in a manner consistent with previous practice.

Our ability to assist customers in need will be substantially bolstered by the $2.0 million in the customer willingness to pay projects.

We consider that the CPI (7%) approximately reflects the increase in our operating and capital expenditure programs in the following ways:

- Capital expenditure - Much of our capital program ($245m) was costed in late 2021 – early 2022. There has been considerable upward volatility in input costs since that time. Since that time, Australian Bureau of Statistic “Other & Civil” index indicates an increase of 9.2 per cent in construction costs.
- Operating expenditure – some areas of our operating expenditure ($290m) have increased above the CPI since the 2021/22 baseline (chemicals, insurance, maintenance, digital) some below (mainly labour costs).
- On balance, taking into account the impact across the capital and operating expenditure programs, GVW considers that our costs have escalated at least in line with the proposed CPI.

Unique Service - digital meter charge (ESC determination 5.3.4)

GVW response summary

GVW acknowledges that digital meters are a recently implemented initiative and the identification and realisation of benefits is at an early stage.

There are however a number of benefits that can be identified from GVW's experience to date which are highlighted in this response.

GVW is seeking for ESC to consider the benefits highlighted and review the draft decision position on a digital meter charge.

ESC Position Summary

The ESC's draft decision is to not accept GVW's proposed tariff for **digital meters** because, as yet, it is unclear how the digital meter charge reduces peak demand or benefits customers.

ESC requested that GVW identify the benefits of digital meters to customers, including identifying any peak demand reduction (p47).

GVW response

GVW has installed 11,893 digital meters during PP4 across growth towns including Kilmore, Broadford, Kialla, and Mansfield as well as Woods Point and Barmah.

New customers purchase a water meter at the time of connection of their property. Future replacement of the water meter (typically around 15 years) is funded by GVW.

The current GVW tariffs only have provision for mechanical meters. A new tariff has been proposed for digital meters that reflects the cost of purchase and installation.

The new digital meter charge for new connections in growth centres (Kilmore, Broadford, Kialla and Mansfield) is proposed at a cost of $326 per connection to cover the cost of their purchase and installation. GVW will fund the future replacement of the digital water meters (typically around 15 years).

The benefit of the digital meters for customers include:

- Special meter reads not required for changes in property ownership ($55 saving).
- The ability for GVW to notify customers of leaks or abnormal water use to assist in minimising their water use.
- Options for more regular billing.

Since the installation of these meters GVW has been able to assist customers to identify and rectify leaks within their properties associated with irrigation systems, failed solar hot water services and other within-premises failures.

For example, on the 4 April 2023, a total of 949 customers were identified with leaks estimated to total 261 megalitres or $294,000 if not rectified for a year.

Case studies where customer leaks have been addressed include:

- At one single family residence a gradual leak which suddenly became a large leak (suspected pipe cracking followed by pipe burst) was identified via the digital metering data. This leak rapidly reached 100,000 L/day which began to incur $113 per day in additional water usage fees before it was addressed by the property owner.
- A property with a constant volume of 36 litres per hour running through the meter was found to have a large leak in the sprinkler system, saving the customer $120 per billing cycle.
- An unoccupied commercial property with a constant volume of 187 litres per hour running through the meter was found to have a broken service pipe that was running directly into a stormwater drain, saving the customer over $600 per billing cycle.
- A property with a constant volume of over 400 litres hour was found to have a failed evaporative air conditioner pipe running into the air conditioner drainpipe and into the stormwater. Saving the customer $1,300 per billing cycle.
- A commercial property with a constant volume of over 600 litres per hour was found to have a failed sprinkler underground connection. Saving the customer $2,000 per billing cycle.

GVW bills on a 4 monthly basis. The ability to notify customers of leaks greatly assists in reducing their water bills especially when there have been multiple instances of leaks being more than fifty percent of their daily water use.

During the next pricing period additional insights will be made available to customers to monitor their water use.

GVW is developing a customer portal that will be released for use by digital meter customers during the first half of the pricing submission period. The portal will provide water use data in hourly time steps to enable customers to monitor and improve their understanding of when they have periods of large water use. Improving their awareness of the activities that are their largest water uses.

Digital meter Peak Day Demand Benefit

Digital meters contribute to improving our knowledge of our systems and forecasting future peak day demands. Preliminary analysis indicates customer side leakage management can contribute to overall system flow rates of up to 5 litres per second in growth towns.

This equates to between 2 to 7 per cent of peak day demands. Minimising residential leaks in the growth centres could assist in delaying future infrastructure upgrades creating a bill saving to customers.

For further information on the benefits of digital meters, see Attachment F – Digital meter benefits

New Customer Contributions (ESC determination 5.4)

GVW response summary

GVW seek to retain the AIC methodology on the basis that it addresses the WIRO framework and that is it is simple for customers to understand. Further justification and information requested by the ESC has been provided.

ESC Position Summary

ESC's draft decision is to not accept GVW's proposed standard new customer contribution or negotiated **new customer contribution framework** (p47) as it has not provided adequate information or justification to provide assurance that the new methodology proposed, Average Incremental Cost (AIC), complies with the ESC's guidance requirements.

GVW response

For further information see Attachment G – New customer contributions

Adjusting prices (ESC determination 5.5)

GVW response summary

GVW is proposing a price adjustment mechanism which:

- will apply the CPI to customer tariffs in a manner consistent with previous practice, see Prices.
- Provides for a "pass-through" mechanism to incorporate changes in the **cost of debt** using the same methodology as used in the current price determination.
- Provides for a "pass-through" mechanism in later years of the pricing period once prudency and efficiency has been established for the **customer willingness-to-pay** investments ($7 million).

ESC Position Summary

ESC is seeking confirmation that the adjustment mechanism specified in GVW's current price determination will be maintained on the basis that these have been previously approved.

GVW response

GVW will apply both CPI and cost of debt in a manner consistent with previous practice and as outlined in previous pricing determinations.

In addition, GVW proposes a pass through mechanism for the customer willingness-to-pay investments ($7m) as detailed at Attachment H. The Customer Willingness-to-pay additions are anticipated to add approximately $22 to a typical customer bill in the last 3 years of the pricing period in order to cover the $7 million investment.

PREMO rating (ESC determination 7.1)

GVW response summary

GVW requests a reconsideration of the draft assessment of "Standard" PREMO rating for the pricing submission. This is because GVW is a leader in the sector for efficiency and affordable customer bills. In addition GVW has made several proposals in this response to the draft decision in favour of our customers.

ESC Position Summary

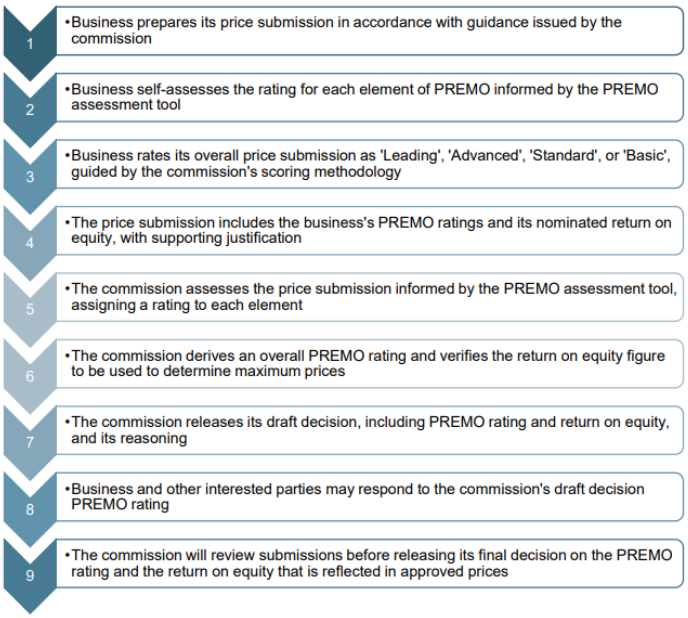
The ESC's draft decision was to adjust the overall PREMO rating for GVW's pricing submission from "Advanced" to "Standard". This was as a result of:

- **Management** being downgraded from "Advanced" to "Basic" because the efficiency improvement rate was below the average of water businesses in the current review (around 1.3 per cent) at 0.4 per cent and there were some elements of the submission which required further evidence and justification to ensure prudency and efficiency.
- **Risk** being downgraded from Advanced to Standard because, compared to other businesses, GVW had not taken on greater risk or demonstrated greater accountability for performance.

GVW response

In accordance with the ESC Guidance document step 9 (see Figure A below), GVW requests that the ESC reviews GVW's submission, including the proposals outlined in this response.

Figure A Process for rating a price submission



Management rating

GVW's pricing submission demonstrated a high level of efficiency compared to other water corporations. This has been further enhanced by the proposals outlined in this response.

Benchmarking of the 2023 pricing submissions shows that GVW will have:

- Average 5 year controllable operating expenses per megalitre for PP5 which is 49.7 per cent lower than the average of regional water utilities. Operating expenditure per megalitre is the appropriate efficiency benchmark for GVW given the number of large industrial customers connections.
- Average 5 year controllable operating expenditure per connection is 6.2 per cent lower than other regional water utilities.
- Amongst the lowest prices in Victoria (and Australia) per 200kl bill.

Based on the above GVW considers it is at, or very close to the "efficiency frontier" even without including the increased efficiencies (from 0.4% to 1%) included in this proposal.

GVW has provided the information requested by the ESC to ensure the prudency and efficiency of all proposals in our pricing submission.

Risk rating

GVW considered that its pricing submission already met the "advanced" criteria but in addition to the pricing submission proposals, this response increases GVW risk taking on behalf of its customers, including:

- Increasing its operating costs annual efficiency from 0.4 per cent to 1 per cent per annum.
- Reducing the Corporate Building capital costs to only those related to the fit-out (from $13.8m to $6.5m).
- Removing the Customer WTP investments ($7m) and passing these costs through later in the pricing period once customers have been involved in ensuring the prudency and efficiency of the projects.

Attachment A – Standard outcomes reporting

Goulburn Valley Water – Outcomes – 2023-2028

In this document, the water business provides a summary report of its actual performance against each of its outcome commitments for the 2023-2024 reporting year. The business has given itself a “traffic light” rating (green = met target, red = not met, yellow = close or largely met) for its performance on each measure, outcome and an overall rating. The business has provided its own comments about its performance on each outcome and overall.

Summary table

Outcome	23-24	24-25	25-26	26-27	27-28	Overall for the period to date
1. We will provide reliable water and wastewater services customers can trust						
2. We will lead action and partner with our communities to grow the region						
3. We will care for the environment and adapt to a future impacted by climate variability						
4. We will deliver respectful and responsive customer service, balancing affordability, value for money and fairness						
Overall for reporting year						

Business comments

Outcome 1: We will provide reliable water and wastewater services customers can trust

Outputs or Measures	Unit		22-23	23-24	24-25	25-26	26-27	27-28
a Boil Water Notices delivered to the community caused by a fault in our system	Number	Target	-	0	0	0	0	0
		Actual						
b Widespread taste and odour events defined as reportable in the Safe Drinking Water Act	Number	Target	-	0	0	0	0	0
		Actual						
c Safe Drinking Water Act non-compliances (water sampling and audit)	Number	Target	-	0	0	0	0	0
		Actual						
d Sewer blockages responded to within one hour from when a customer notifies us or we become aware	Percentage	Target	-	100%	100%	100%	100%	100%
		Actual						
e Planned and unplanned water supply interruptions restored within five hours	Percentage	Target	98%	95%	95%	95%	95%	95%
		Actual						
f Water pressure improvement projects completed over the price plan	Number of projects completed	Target	-	N/A	N/A	1	3	5
		Actual						

How is GVW tracking for Outcome 1 in the regulatory period so far?

Business comment

Outcome 2: We will lead action and partner with our communities to grow the region

Output	Unit		22-23	23-24	24-25	25-26	26-27	27-28
a Customers who think we support the community (yes response) in GVW annual customer survey	Percentage of responses	Target	N/A	70%	70%	70%	70%	70%
		Actual						
b Customers who believe we deliver value to the region (yes response) in GVW annual customer survey	Percentage of responses	Target	N/A	70%	70%	70%	70%	70%
		Actual						

How is GVW tracking for Outcome 2 in the regulatory period so far?

Business comment

Outcome 3: We will care for the environment and adapt to a future impacted by climate variability

Output or Measure	Unit		22-23	23-24	24-25	25-26	26-27	27-28
a Net carbon emissions (on track to net zero by 2035)	Tonnes CO_2e	Target	48,167	44,794	37,416	33,674	29,933	26,191
		Actual						
b Sewer spills caused by a fault in our system contained within five hours	Percentage	Target	100%	100%	100%	100%	100%	100%
		Actual						
c Actions progressing or delivered on time as identified in Country Plans or with Traditional Owner Group partners	Percentage	Target	-	N/A	70%	70%	70%	70%
		Actual						
d Urban Water Strategy actions progressing or delivered on time	Percentage	Target	-	80%	80%	80%	80%	80%
		Actual						

How is GVW tracking for Outcome 3 in the regulatory period so far?

Business comment

Outcome 4: We will deliver respectful and responsive customer service, balancing affordability, value for money and fairness

Output or measure	Unit		22-23	23-24	24-25	25-26	26-27	27-28
a Customer Accountability Panel members satisfied with our Price Plan performance (yes response) in GVW annual evaluation	Percentage of responses	Target	-	90%	90%	90%	90%	90%
		Actual						
b Billing and account complaints received from customers	Number per 1000 customers	Target	1.3	1.0	1.0	1.0	1.0	1.0
		Actual						
c Customers who believe we provide value for money (yes response) in GVW annual customer survey	Percentage of responses	Target	-	70%	70%	70%	70%	70%
		Actual						
d Customers aware of information from us on how to save water (yes response) in GVW annual customer survey	Percentage of responses	Target	-	55%	57%	60%	63%	66%
		Actual						

How is GVW tracking for Outcome 4 in the regulatory period so far?

Business comment

Attachment B – Financial Model

The updated financial model has been attached with this response as a separate document.

The ESC provided a model which was updated for its draft decision on 17 April 2023. The amendments made to the provided model are detailed in the table below. They have also been highlighted in teal in the model for ease of use.

Worksheet	Row/Column Reference	Details
KeyAssumptionsPriceControl_FO	Row23 ColAB	Cost of debt updated as directed by the ESC from 3.7533% to 6.7608% on 3 May 2023
KeyAssumptionsPriceControl_FO	Row44 ColAC	Forecast inflation updated as directed by the ESC from from 3% to 3.5%
KeyAssumptionsPriceControl_FO	Row64 ColAD	Updated ESC Assessment of Submission to Advanced. Refer PREMO rating
Opex_FO	Row46 ColAA	Reinstated $1m "Once-off maintenance". Refer Maintenance reduction
Opex_FO	Row11 ColAH:AL	Adjust cost efficiency to 1% in PP6 from 0%
Opex_Breakdown	Row49 ColAB:AL	Updated to reconcile to Opex_FO
Opex_Breakdown	Row55 ColAC:AL	Updated to reconcile to Opex_FO
Opex_Breakdown	Row56 ColAC:AL	Updated to reconcile to Opex_FO
Opex_Breakdown	Row60 ColAB:AL	Updated to reconcile to Opex_FO
Opex_Breakdown	Row66 ColAC:AL	Updated to reconcile to Opex_FO
Opex_Breakdown	Row107:108 ColAC:AL	Updated for ESC instruction for DHS and EPA amounts
Opex_Breakdown	Row138 ColAC:AL	Updated for ESC instruction to update Bulkwater entitlements

Capex_FO input	Row49:50 ColL:M and S:T	Update to include Corporate Office Fitout Asset lives (regulatory and tax) and $6.5m fit out costs Refer Corporate Office Upgrade
Capex_FO input	Row62 ColQ:U	Reinstate Water Mains Replacement Refer Water mains replacement program
RevenuePriceCap_FO		Updated all tariffs for new price paths so that NPV Net Prescribed Revenue equals the NPV Revenue Requirement for PP5 and PP6.

Attachment C - Supporting Customers Who Need Our Help Program Initiatives

PROGRAM SUPPORTING CUSTOMERS WHO NEED OUR HELP

INITIATIVE WATER EFFICIENCY PARTNERSHIPS

EXECUTIVE LEAD: Emma Youill, General Manager Customers and Growth

KEY STAKEHOLDERS: ESC, Customer Accountability Panel, local government, support agencies

DATE: 12 May 2023

VERSION: 001

OVERVIEW

We undertook extensive engagement with customers and stakeholders across our region to seek input on their priorities for GVW to invest in and deliver over the price period 2023-2028.

Customers recommended GVW provide increased investment for:
- Supporting customers in need: $2M
- Regional Leadership: $4M
- Carbon abatement with local benefits: $3M

Our customers prioritised initiatives to deliver increased support for GVW customers in need. Every customers may benefit from this support, but particularly people struggling with changes in circumstances or who are enduring challenges.

Customers gave strong guidance to GVW to partner with support agencies in assisting customers to save water and reduce bills. They also directed us to provide long-term support rather than short-term financial assistance.

The Customer Panel prioritised this initiative to be delivered over the 2023-28 regulatory period.

BENEFITS ALIGNMENT

CUSTOMER
- ☑ Support customers who need our help
- ☐ Regional leadership
- ☐ Carbon Abatement with local benefits

MINISTERIAL EXPECTATIONS (LOE)
- ☑ 1 Climate Change
- ☑ 2 Customer and Community Outcomes
- ☑ 3 Water for Aboriginal Values
- ☑ 4 Resilient and Liveable Cities and Towns
- ☐ 5 Recognise Recreational values
- ☐ 6 Leadership and Culture
- ☐ 7 Financial Sustainability

ESC
- ☑ Getting to Fair Strategy

KEY ACTIVITIES

Activity	23/24	24/25	25/26	26/27	27/28
Identify and engage partners					
Develop learning modules and materials					
Develop high water usage calculator and audit tool					
Develop and roll out water efficiency incentive program					

HIGH LEVEL COSTS – 5 YEAR PERIOD

Activity	23/24	24/25	25/26	26/27	27/28	TOTAL
GVW internal resourcing	$50K	$50K	$25K	$25K	$25K	**$175K**
External resourcing	$25K	$25K	$0K	$0K	$0K	**$50K**
Materials and design	$80K	$80K	$40K	$40K	$40K	**$260K**
Water efficiency incentive funding	$40K	$80K	$80K	$80K	$80K	**$360K**
TOTAL	**$195K**	**$235K**	**$145K**	**$145K**	**$145K**	**$865K**

OUTCOMES AND BENEFITS

By developing and implementing Water Efficiency Partnerships with regional support agencies, GVW can provide practical support and education that enables customers who need help to become more water efficient, which will:

Outcome	Benefit to customers	Benefit to GVW
Reduce water usage charges for supported customers	Reduced bill costs (LOE 2) Less reliance on bill relief payments (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Improve water resilience and literacy that supports customers and broader community in periods of climate-related water scarcity	Water savings (LOE 1,2,3,4)	Higher customer perceptions of value for money, leading to greater acceptance of investment to increase supply reliability
Broaden and strengthen community engagement and leadership across the region and more effective partnerships that deliver support with greater efficiency	Increased access to agency support (LOE 2,3,7)	Support delivery efficiencies – staff costs

KEY CONSIDERATIONS

Consideration	Actions
Initiative must ensure CALD and diverse community accessibility to materials and assistance is considered and appropriately supported	Engage with multicultural support agencies and groups to design and deliver education materials and support
Wherever possible, initiative should leverage existing successful water efficiency rules, materials and approaches	Include Target Your Water Use directions in all materials, as well as other government and industry water saving programs
Initiative should ensure that access to support is available across all local government areas	Ensure local government staff are involved in initiative development and that tools are promoted across all local government areas
Wherever possible, materials and tools (excluding financial support) should be made available to all customers to provide opportunity for expanded benefits	Promote the program and materials on GVW and partner websites, social media, through community groups and leaders and face to face outlets to increase reach

SCOPE

In scope:
- Engage with and develop partnerships with regional support agencies that work with people who need help across the Goulburn Valley Water service area
- Develop accessible, practical and appropriately targeted water efficiency learning materials that will enable support partners to provide advice to customers that will improve water efficiency and usage, resulting in decreased water usage charges
- Develop tools that will support agencies and customers to identify areas of high-water usage in customer homes and businesses
- Partner with support agencies to identify and provide incentives to eligible customers that will improve water efficiency and reduce bills
- Develop measures and provide regular reports on initiative outputs and outcomes

Out of scope:
- Direct financial payment to customers or direct bill/debt relief
- Direct funding to support agencies

PROGRAM SUPPORTING CUSTOMERS WHO NEED OUR HELP

INITIATIVE 2 CUSTOMER LEAK REPAIR

EXECUTIVE LEAD: Emma Youill, General Manager Customers and Growth

KEY STAKEHOLDERS: ESC, Customer Accountability Panel, local government, support agencies

DATE: 12 May 2023

ITERATION: 001

OVERVIEW

We undertook extensive engagement with customers and stakeholders across our region to seek input on their priorities for GVW to invest in and deliver over the price period 2023-2028.

Customers recommended GVW provide increased investment for:

- Supporting customers in need: $2M
- Regional Leadership: $4M
- Local benefits of carbon abatement: $3M

Our customers prioritised initiatives to deliver increased support for GVW customers in need. Every customers may benefit from this support, but particularly people struggling with changes in circumstances or who are enduring challenges.

Strong guidance was provided for GVW to identify and fix leakages for customers unable to afford repairs – saving water and reducing bills for impacted customers. They also directed us to provide long-term support rather than short-term direct financial assistance for bills.

The Customer Panel prioritised this initiative to be delivered over the 2023-28 regulatory period.

BENEFITS ALIGNMENT

CUSTOMER

- ☑ Support customers who need help
- ☐ Regional leadership
- ☐ Carbon Abatement with local benefits

MINISTERIAL EXPECTATIONS (LOE)

- ☑ 1 Climate Change
- ☑ 2 Customer and Community Outcomes
- ☑ 3 Water for Aboriginal Values
- ☑ 4 Resilient and Liveable Cities and Towns
- ☐ 5 Recognise Recreational values
- ☐ 6 Leadership and Culture
- ☐ 7 Financial Sustainability

ESC

- ☑ Getting to Fair Strategy

KEY ACTIVITIES

Activity	23/24	24/25	25/26	26/27	27/28
Develop customer eligibility policies and internal processes					
Engage operational partners to complete leakage repairs					
Implement reporting and analytics to proactively identify eligible customer leaks					
Develop materials and guidance for customers and support agencies					
Develop and deliver regular reporting of scheme outcomes					

OUTCOMES AND BENEFITS

By developing and introducing a scheme that will fix customer site leakages for those unable to afford repairs we will:

Outcome	Benefit to customers	Benefit to GVW
Reduce water usage charges for supported customers	Reduced bill costs (LOE 2) Less reliance on bill relief payments (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Eliminate or reduce repair costs for eligible customers	Less reliance on bill relief payments (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Reduce water wastage, supporting improved community resilience in times of water scarcity	Water savings (LOE 1,2,3, 4)	Support delivery efficiencies – staff costs

HIGH LEVEL COSTS – 5 YEAR PERIOD

Activity	23/24	24/25	25/26	26/27	27/28	TOTAL
Internal resourcing	$20K	$20K	$10K	$10K	$10K	**$70K**
External resourcing	$25K	$25K	$0K	$0K	$0K	**$50K**
Materials and design	$10K	$10K	$2K	$2K	$2K	**$28K**
Leakage repair funding (based on 40-80 repairs per annum)	$40K	$80K	$80K	$80K	$80K	**$360K**
TOTAL	**$95K**	**$165K**	**$92K**	**$92K**	**$92K**	**$536K**

SCOPE

In scope:

- Develop policy for identifying customers eligible to receive leakage repair support
- Identify and engage operational partners to complete leakage repair works
- Develop reports and analytics to proactively identify leakages impacting eligible customers
- Develop accessible materials and guidance for customers and support agencies ensuring knowledge and access to scheme is promoted
- Create Community Housing Retrofit Program
- Develop measures and provide regular reports on scheme outcomes

Out of scope:

- Direct financial payment to customers or bill/debt relief.
- Direct funding to support agencies

KEY CONSIDERATIONS

Consideration	Actions
Program must ensure CALD and diverse community accessibility to materials and assistance are considered and appropriately supported	Engage with multicultural support agencies and groups to design and deliver education materials and support
Program must give consideration to how we identify customer side leakages where an intelligent meter has not been installed	Undertake analysis based on prior bills and field inspections to enable identification of leaks on sites where intelligent meters not installed
Program should ensure that access to support is available across all local government areas	Engage all LGA's in region, and consider separate funding allocations for each LGA's to ensure delivery is equitable
Where possible engage with locally based businesses to maximise regional benefits of program	Develop procurement strategy that prioritises local businesses, while ensuring competitive pricing and alignment to procurement rules and obligations

PROGRAM SUPPORTING CUSTOMERS WHO NEED OUR HELP

INITIATIVE 3 CUSTOMER MONTHLY BILLING

EXECUTIVE LEAD: Emma Youill, General Manager Customer and Growth

KEY STAKEHOLDERS: ESC, Customer Accountability Panel, local government, support agencies

DATE: 12 May 2023

ITERATION: 001

OVERVIEW

GVW undertook extensive engagement with customers and stakeholders across our region to seek input on their priorities for GVW to invest in and deliver over the price period 2023-2028.

Customers recommended GVW provide increased investment for:

- Supporting customers in need: $2M
- Regional Leadership: $4M
- Carbon abatement with local benefits: $3M

Our customers prioritised initiatives to deliver increased support for customers in need. Every customer may benefit from this support, but particularly people struggling with changes in circumstances or who are enduring challenges.

Support for adopting more flexible billing was identified as an enabler for helping customers better manage their budgets, reduce bill shock and enable faster response to increases in water usage. 17% of GVW's customers – that have an intelligent meter installed - would be eligible to transition to monthly billing.

The Customer Panel prioritised this initiative to be delivered over the 2023-28 regulatory period.

BENEFITS ALIGNMENT

CUSTOMER

- ☑ Support customers who need help
- ☐ Regional leadership
- ☐ Carbon Abatement with local benefits

MINISTERIAL EXPECTATIONS (LOE)

- ☑ 1 Climate Change
- ☑ 2 Customer and Community Outcomes
- ☑ 3 Water for Aboriginal Values
- ☑ 4 Resilient and Liveable Cities and Towns
- ☐ 5 Recognise Recreational values
- ☐ 6 Leadership and Culture
- ☐ 7 Financial Sustainability

ESC

- ☑ Getting to Fair Strategy

KEY ACTIVITIES

Activity	23/24	24/25	25/26	26/27	27/28
Develop customer eligibility and approach					
Develop processes and make systems and supplier changes					
Develop communications and materials					
Develop and deliver regular reporting of scheme outputs and outcomes					

OUTCOMES AND BENEFITS

By developing a capability for customers to move from three bills per year to monthly billing, we will:

Outcome	Benefit to customers	Benefit to GVW
Better support customers to manage their budgets	Reduced bill costs (LOE 2) Less reliance on bill relief payments (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Reduce instances of "bill shock"	Affordability of GVW bills (LOE 2)	Debt avoidance Fewer bill shock customer complaints
Enable customer to more quickly identify changes in usage that is leading to higher than expected bills	Reduced bill costs (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Reduce water wastage, supporting improved community resilience in times of water scarcity	Water savings (LOE 1, 2, 3, 4)	Support delivery efficiencies – staff costs

HIGH LEVEL COSTS – 5 YEAR PERIOD

Activity	23/24	24/25	25/26	26/27	27/28	TOTAL
Internal resourcing	$50K	$20K	$10K	$10K	$10K	$100K
External resourcing/supplier	$50K	$10K	$10K	$10K	$10K	$90K
Materials and design	$5K	$5K	$2K	$2K	$2K	$16K
Ongoing additional supplier costs for support	$5K	$5K	$5K	$5K	$5K	$25K
TOTAL	**$110K**	**$40K**	**$27K**	**$27K**	**$27K**	**$231K**

SCOPE

In scope:

- Develop criteria and an approach for enabling customers to transition to monthly billing
- Develop processes and changes in internal systems and billing outsource partners required to enable
- Develop materials and communications to inform customers and support agencies of this option
- Assess opportunity to install intelligent meters upon request from customers to enable monthly billing
- Develop measures and regular reports on scheme outputs and outcomes

Out of scope:

- Direct financial payment to customers or financial bill/debt relief.
- Payment for installation of intelligent meters (subject to decision on approach to supporting requests)

KEY CONSIDERATIONS

Consideration	Actions
Program must ensure CALD and diverse community accessibility to materials and assistance are considered and appropriately supported	Engage with multicultural support agencies and groups to design and deliver education materials and support
While not in scope of project to install new intelligent meters to support, program should assess customer demand and assess if customer benefits exceed cost to install additional communications and metering infrastructure	During program life, capture demand and outcomes as input into business case for future expansion of intelligent meters
Program will consider if mandatory move to e-billing be a criteria to support monthly billing to minimize ongoing operating costs associated with paper bills	Conduct a cost assessment if paper bills were retained for monthly billed customers
Program should consider if we can create a way for customers who could benefit from monthly bills to make this transition where an intelligent meter has not been installed	Undertake analysis based on prior bills and complaints to enable identification of eligible customers and efficiency of a more regular manual meter read process

PROGRAM SUPPORTING CUSTOMERS WHO NEED OUR HELP

INITIATIVE 4 SUPPORTING CAPACITY BUILDING IN OUR YOUTH

EXECUTIVE LEAD: Emma Youill, Manager Customers and Growth

KEY STAKEHOLDERS: ESC, Customer Accountability Panel, local government, support agencies

DATE: 12 May 2023

ITERATION: 001

OVERVIEW

We undertook extensive engagement with customers and stakeholders across our region to seek input on their priorities for GVW to invest in and deliver over the price period 2023-2028.

Customers recommended GVW provide increased investment for:

- Supporting customers in need: $2M
- Regional Leadership: $4M
- Local benefits of carbon abatement: $3M

Our customers prioritised initiatives to deliver increased support for customers most in need. Every customers may benefit from this support, but particularly people struggling with changes in circumstances or who are enduring challenges.

There was endorsement for GVW to provide additional support for vulnerable families through scholarships and other educational support for students in our most in need communities who can be marginalised because of their circumstances.

This initiative was prioritised by the Customer Panel as a project to be delivered over the regulatory period.

BENEFITS ALIGNMENT

CUSTOMER

- ☑ Support customers who need help
- ☑ Regional leadership
- ☐ Carbon Abatement with local benefits

MINISTERIAL EXPECTATIONS (LOE)

- ☐ 1 Climate Change
- ☑ 2 Customer and Community Outcomes
- ☑ 3 Water for Aboriginal Values
- ☐ 4 Resilient and Liveable Cities and Towns
- ☐ 5 Recognise Recreational values
- ☑ 6 Leadership and Culture
- ☐ 7 Financial Sustainability

ESC

- ☑ Getting to Fair Strategy

KEY ACTIVITIES

Activity	23/24	24/25	25/26	26/27	27/28
Develop customer eligibility policies and funds allocation model					
Development of traineeship program					
Identify and engage scholarship partners					
Identify and engage leadership development partners					
Develop and deliver regular reporting of scheme outcomes					

HIGH LEVEL COSTS – 5 YEAR PERIOD

Activity	23/24	24/25	25/26	26/27	27/28	TOTAL
GVW internal resourcing - support	$0K	$50K	$10K	$10K	$10K	**$80K**
Funding to scholarship program	$0	$0	$10K	$10K	$10K	**$30K**
Traineeship program (3 positions annually)	$0	$0	$10K	$10K	$10K	**$30K**
TOTAL						**$140K**

OUTCOMES AND BENEFITS

By developing and introducing a program of support for marginalised students that would improve educational outcomes, this will

Outcome	Benefit to customers	Benefit to GVW
Reduce financial burden associated with educational expenses for in need families within our region	Less reliance on bill relief payments (LOE 2)	Debt avoidance Support delivery efficiencies – staff costs
Support improved community outcomes and local leaders of the future	Employment opportunities for local young people (LOE 2,3,6)	Increased workplace diversity through recruitment of local young leaders
Promote GVW as a regional leader caring for the community	Leadership opportunities for local young people (LOE 2,3)	Increased customer perceptions scores of GVW's community reputation, increasing support for GVW investment decisions

KEY CONSIDERATIONS

Consideration	Actions
Program must ensure CALD and diverse community accessibility to materials and assistance are considered and appropriately supported.	Engage with multicultural support agencies and groups to design and deliver education materials and support
Program should ensure that access to support is available across all GVW local government areas, targeting customers with greatest need	Engage all LGA's in GVW region, and consider separate funding allocation to ensure delivery is equitable
Program should consider prioritising improved outcomes for Traditional Owner and CALD students	Engage with First Nations and multicultural support agencies and groups

SCOPE

In scope:

- Development of eligibility policies
- Development of equitable regional funds allocation model
- Development of traineeship program to support at risk, marginalised and/or in need young people to develop a career in the water industry (Technical apprenticeship, Administration traineeship, Indigenous traineeships, Multicultural traineeships)
- Partnership with local groups (for example Greater Shepparton Foundation and Shepparton Lighthouse Project) to fund scholarships to support young people transition from secondary education to post secondary education
- Fund youth leadership place, for example Young Rural Leaders Program, "You Thrive Victoria" or "Robinson Family scholarship"
- Create measures an report regularly on scheme outputs and outcomes

Out of scope:

- Direct financial payment to schools, customers or students

PROGRAM SUPPORTING CUSTOMERS WHO NEED OUR HELP

INITIATIVE 5 NEW ARRIVALS SUPPORT PROGRAM

EXEC LEAD: Emma Youill, General Manager Customer and Growth

KEY STAKEHOLDERS: ESC, Customer Accountability Panel, support agencies, local government, schools

DATE: 12 May 2023

ITERATION: 001

OVERVIEW

We undertook extensive engagement with customers and stakeholders across our region to seek input on their priorities for GVW to invest in and deliver over the price period 2023-2028.

Customers recommended GVW provide increased investment for:
- Supporting customers in need: $2M
- Regional Leadership: $4M
- Carbon abatement with local benefits: $3M

Our customers prioritised initiatives to deliver increased support for customers in need. Every customers may benefit from this support, but particularly people struggling with changes in circumstances or who are enduring challenges.

There was strong support from real estate and support agencies for engaging more with "New Arrival" customers and communities as a way of improving access to water literacy materials, financial counselling and to develop culturally appropriate materials and pathways to support these customers.

This initiative was prioritised by the Customer Panel as a project to be delivered over the regulatory period.

BENEFITS ALIGNMENT

CUSTOMER
- ☑ Support customers who need help
- ☑ Regional leadership
- ☐ Carbon abatement with local benefits

MINISTERIAL EXPECTATIONS (LOE)
- ☐ 1 Climate change
- ☑ 2 Customer and community outcomes
- ☑ 3 Water for Aboriginal values
- ☐ 4 Resilient and liveable cities and towns
- ☐ 5 Recognise Recreational values
- ☐ 6 Leadership and culture
- ☐ 7 Financial sustainability

ESC
- ☑ Getting to Fair Strategy

KEY ACTIVITIES

Activity	23/24	24/25	25/26	26/27	27/28
Identify and engage financial counselling providers					
Development and/or sourcing of water literacy materials					
Development and/or sourcing of "Choose Tap" materials					
Upgrade of permanent hydration station signage					
Develop and deliver regular reporting of scheme outcomes					

HIGH LEVEL COSTS – 5 YEAR PERIOD

Activity	23/24	24/25	25/26	26/27	27/28	TOTAL
Internal resourcing	$10K	$0K	$30K	$10K	$10K	**$60K**
Financial counselling funding	$10K	$10K	$10K	$10K	$10K	**$50K**
Materials development	$0K	$0K	$50K	$10K	$5K	**$65K**
Hydration station signage upgrades	$0K	$0K	$10K	$10K	$0K	**$20K**
TOTAL						**$195K**

OUTCOMES AND BENEFITS

By redesigning and making information more accessible to new arrivals and diverse communities, we will:

Outcome	Benefit to customers	Benefit to GVW
Increase availability of financial counselling support for diverse communities	Reduced bill costs (LOE 2) Less reliance on bill relief payments (LOE 2)	Reduced bad debt levels Support delivery efficiencies – staff costs
Support improved community outcomes and support local leaders of the future	Create employment opportunities for local people (LOE 2,3,6)	Increase diversity through recruitment of talented local young leaders
Promoted GVW as a local leader caring for the community	Increased leadership opportunities for local young people LOE 2,3)	Increased customer perceptions scores of GVW's community reputation, increasing support for GVW investment decisions

KEY CONSIDERATIONS

Consideration	Action
Program must ensure CALD and diverse communities' accessibility to materials and assistance are considered and appropriately supported.	Partner with multicultural support agencies and groups to design and deliver education materials and support specific to needs
Wherever possible, program should leverage existing culturally diverse water efficiency materials and approaches	Identify and adapt existing education material to meet project needs
Program should ensure that access to support is available across all GVW local government areas	Engage all LGA's in GVW region, and consider separate funding allocation for LGA's to ensure delivery is equitable.
Wherever possible, materials and tools (excluding financial support) should be made available to all customer groups to provide opportunity for expanded benefits	Promoting the program and materials on GVW and partner websites, social media, through community groups and leaders and face to face outlets to increase reach.

SCOPE

In scope:
- Engaging with financial counselling services that work with target customer cohorts
- Development and/or sourcing of existing culturally appropriate water literacy materials
- Development and/or sourcing of culturally appropriate "Choose Tap" materials
- Upgrade of hydration station signage to include multiple languages or imagery
- Development of measures and regular project reporting on outputs and outcomes

Out of scope:
- Direct financial payment to customers or students

Attachment D – Bulk water charges

Location	System	2022/23 ML's	Bulk Water $ / ML	Bulk Water Rebate $ / ML	Regional Urban Storage Ancillary Fee$ / ML	Distribution Access Fee ML / DAY	Distribution Access Fee $ / ML / Day	Other Charges	TOTAL
Katamatite	BEE016332 Katamatite	84	9.72	0.00	10.00	0.84	2,547.00		3,795.96
Nathalia	BEE016333 Nathalia	652	9.72	0.00	10.00	6.52	2,547.00		29,463.88
Numurkah	BEE016334 Numurkah & Wunghnu	1,206	9.72	0.00	10.00	12.06	2,547.00		54,499.14
Picola	BEE016335 Picola	44	9.72	0.00	10.00	0.44	2,547.00		1,988.36
Barmah	BEE016349 Barmah	82	9.72	0.00	10.00	-	-		1,617.04
Cobram	BEE070736 Cobram	3,525	9.72	0.00	10.00	-	-		69,513.00
Colbinabbi	BEE071129 Goulburn Channel	89	8.21	0.00	10.00	0.89	2,547.00		3,887.52
Corop	BEE071129 Goulburn Channel	44	8.21	0.00	10.00	0.44	2,547.00		1,921.92
Dookie	BEE071129 Goulburn Channel	160	8.21	0.00	10.00	1.60	2,547.00		6,988.80
Girgarre	BEE071129 Goulburn Channel	100	8.21	0.00	10.00	1.00	2,547.00		4,368.00
Katandra	BEE071129 Goulburn Channel	64	8.21	0.00	10.00	0.64	2,547.00		2,795.52
Kyabram	BEE071129 Goulburn Channel	2,000	8.21	0.00	10.00	20.00	2,547.00		87,360.00
Rushworth	BEE071129 Goulburn Channel	530	8.21	0.00	10.00	5.30	2,547.00		23,150.40
Stanhope	BEE071129 Goulburn Channel	200	8.21	0.00	10.00	2.00	2,547.00		8,736.00
Tatura	BEE071129 Goulburn Channel	2,600	8.21	0.00	10.00	26.00	2,547.00		113,568.00
Tongala	BEE071129 Goulburn Channel	1,404	8.21	0.00	10.00	14.04	2,547.00		61,326.72
Alexandra	BEE071130 Goulburn River & Eildon	931	8.21	0.00	10.00	-	-		16,953.51
Bonnie	BEE071130 Goulburn River & Eildon	112	8.21	0.00	10.00	-	-		2,039.52
Eildon	BEE071130 Goulburn River & Eildon	471	8.21	0.00	10.00	-	-		8,576.91
Nagambie	BEE071130 Goulburn River & Eildon	825	8.21	0.00	10.00	-	-		15,023.25
Seymour	BEE071130 Goulburn River & Eildon	5,340	8.21	0.00	10.00	-	-		97,241.40
Shepparton	BEE071131 Goulburn River & Eildon	17,970	8.21	0.00	10.00	-	-		327,233.70
Murchison	BEE071131 Goulburn River & Eildon	350	8.21	0.00	10.00	-	-		6,373.50
Mooroopna	BEE071131 Goulburn River & Eildon	300	8.21	0.00	10.00	-	-		5,463.00
	Other Charges								
	Delivery Charges (final accrual)							31,000.0	31,000.00
	Balancing 20/21 Delivery Charges							(99.30)	(99.30)
	Above Entitlement Storage Fee -							6,438.63	6,438.63
	Above Entitlement Storage Fee -							10,191.2	10,191.26

	Above Entitlement Storage Fee -							22,822.8	22,822.82
	Goulburn Weir entitlement							981.52	981.52
	Bore Water charges							1,380.41	1,380.41
	Fixed Charge Kirwin's Bridge							1,394.37	1,394.37
	Licence 65B Moora Rd Rushworth							700.00	700.00
	Credit card charges - transfer fees							526.70	526.70
	Groundwater charges - Strathmerton /							460.17	460.17
	Grand Total								**1,018,672.**

Attachment E – Water main replacement program

This attachment provides additional contextual information on the required annual capital expenditure for the water main replacement program. The three influencing factors are:

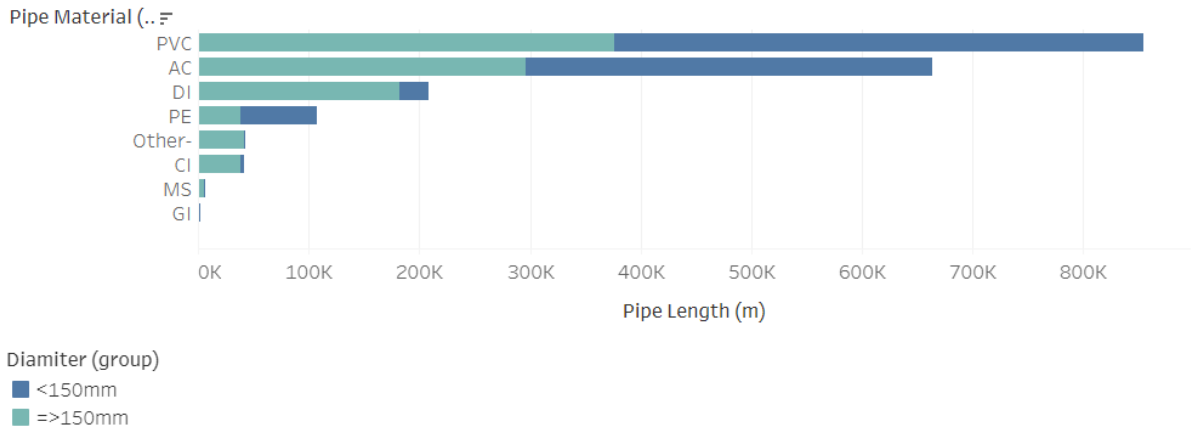
1) The significant portion of Water Mains that are asbestos cement (AC) pipe which incur higher failure rates than the current target.
2) The necessity to prioritise funding for high-risk assets such as water mains in the vicinity of rail crossings which impact on the traditional cyclic implementation of the replacement program. The railway crossing – water main related assets incur a higher unit replacement cost.
3) A recent approach to market has improved GVW's understanding of the level of escalation in construction costs, with a minimum 40% increase confirmed. This will have a significant impact on the length of water main than can be replaced.

AC main failure rate

ESC's response to GVW's submission highlighted that failure rates meet the current target of 18 failures per 100 km, being one of the key objectives in formulating the water main program.

It is important to note that the water main renewal program typically targets the replacement of aging AC pipe which make up 40% of the water main network, see Figure 4

Figure 4 - Water Mains Length by Diameter and Material



GVW's maintenance records confirm that 90 per cent of all water main failures occur in AC pipe and at rates higher than 18 /100km for AC water mains. Repeated and ongoing failures are common and have a significant impact on those customers who are serviced by these asset types.

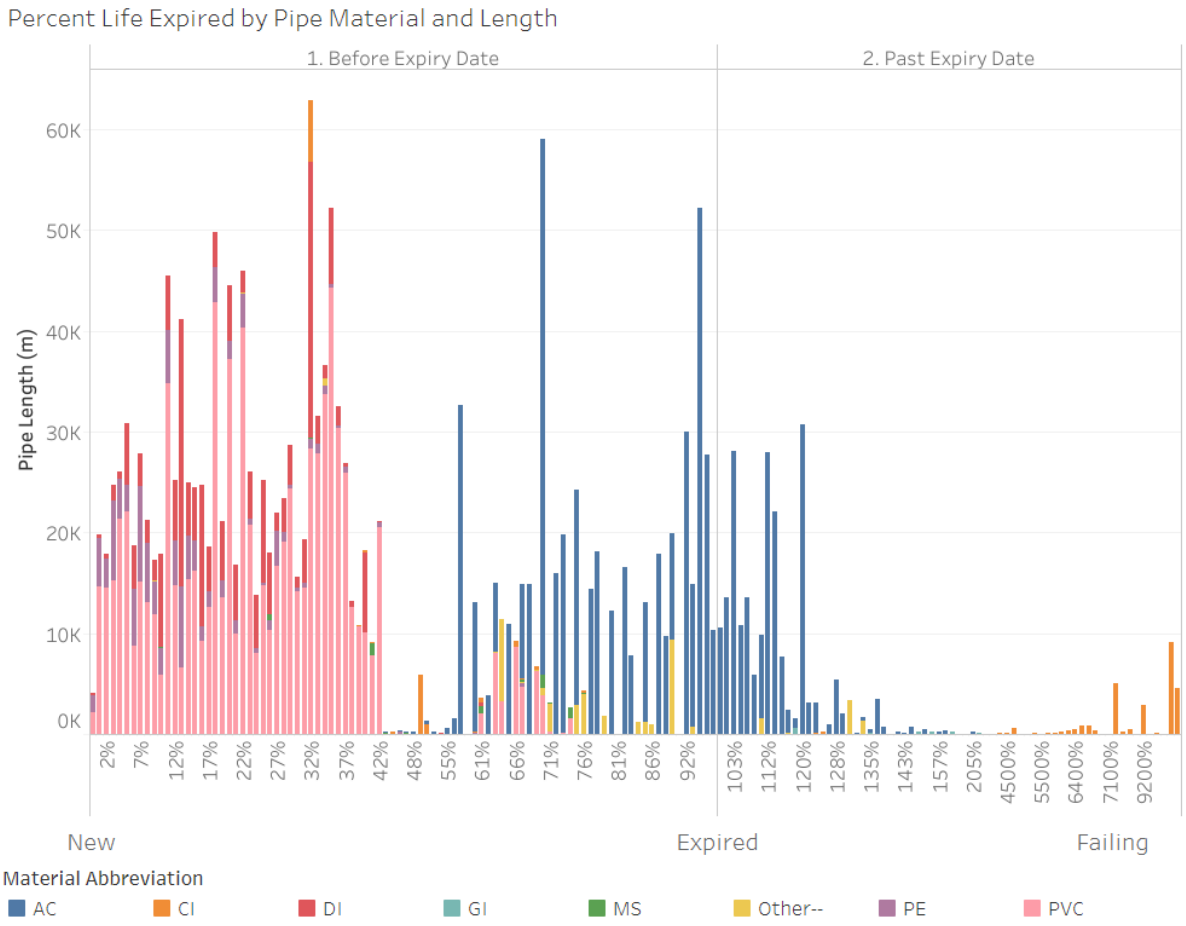
Performance of the AC mains in GVW's current modelling tool – PARMS are based on an 80-year design life attributed to AC pipe. A recent review of studies carried out on AC pipe throughout Australia, UK, Canada and New Zealand indicates that an 80-year life overestimates AC pipe expected life and a 60-year life is more realistic.

Studies completed by various governments have been referenced in this response to support the revised 60-year life for AC material pipe. Refer to **Appendix B for** a detailed analysis of the useful life of AC Water Main.

GVW has modelled the impact of changing the design life for AC pipes to 60-years. When a 60-year life is adopted for AC pipe, there is an increase in failure rates corresponding to the reduction in the remaining life. This is reflected in and correlates with GVW's maintenance data with most of the water main failures occurring on aging AC Water mains at a rate much higher than 18 failures/100km.

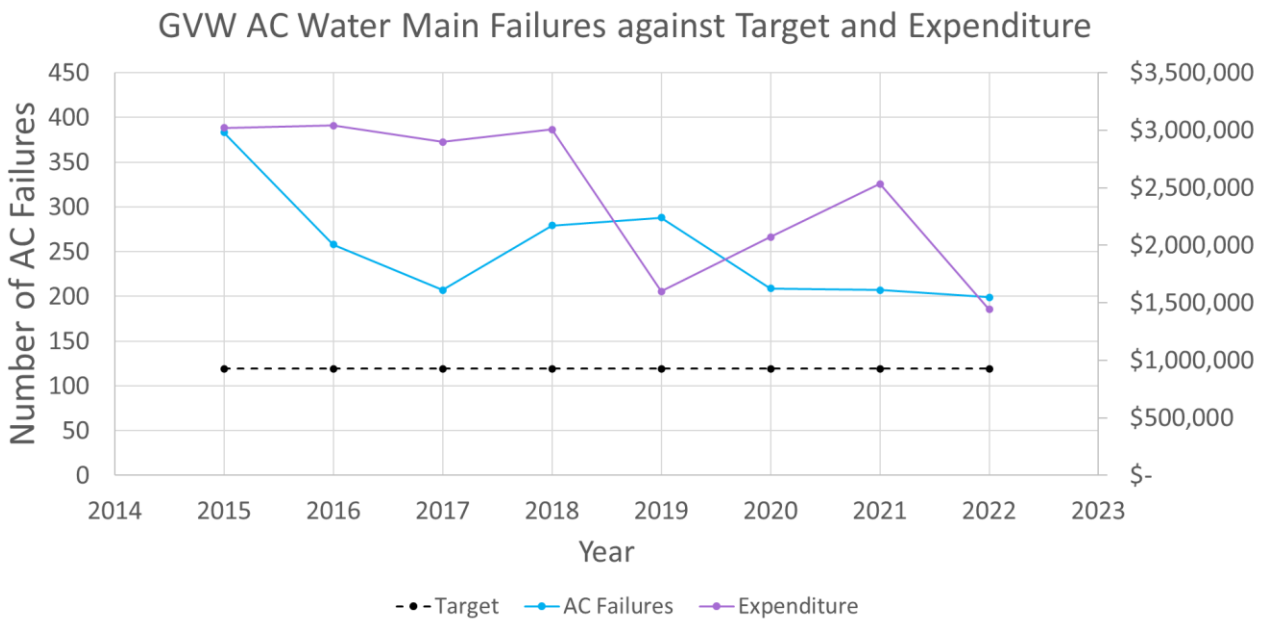
More than 50 per cent of GVW AC water mains have reached 95 per cent of the nominal useful life based on a 60 year life, see Figure 5

Figure 5- Percentage of Life used - AC pipe (60 years)



The current failure rates on AC pipe indicate they are already at a 5-year average of 36 failures per 100 km, see Figure 8.

Figure 6: AC main failure rates and expenditure

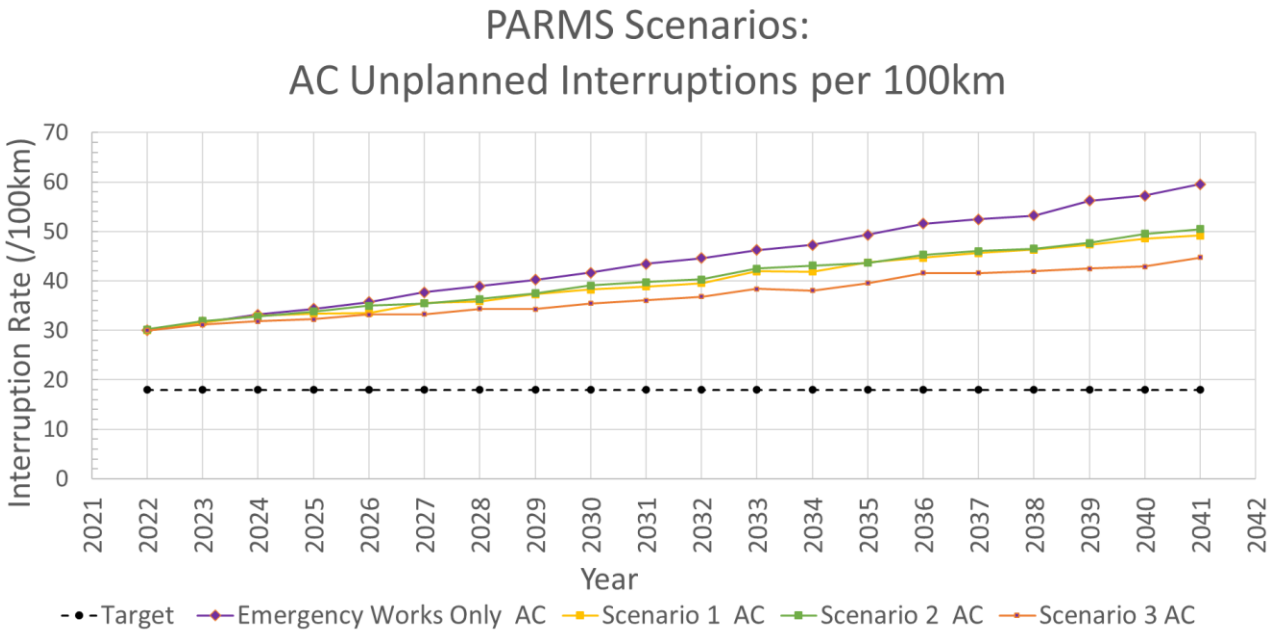


GVW has tested the PARMS model for a 60-year AC pipe life, considering four scenarios:

- Emergency works funding only (Scenario 1 funding with <$2M per year available for AC-pipes). This scenario is based on directing program expenditure to railway crossing works and less mains will be replaced due to contract cost increases.
- Scenario 1 - $2M per year.
- Scenario 2 - $2.75M per year
- Scenario 3 - $5.8M per year

The analysis identifies that failure rates for AC pipe will continue to rise beyond 36 failure per 100 km with a replacement budget of $2 million per annum.

Figure 7: AC unplanned interruptions per 100 km



High risks assets – railway crossings

As previously advised in GVW's response to questions raised during the preparation of the expenditure review report, over the next 5 years GVW will need to undertake works at higher risk locations such as under railway crossings. These are more complex and expensive to undertake than standard main replacements to meet the requirements of agencies associated with the management of these lands including VicTrack and VicRoads.

Additional activities are required for water mains near or under railway crossings, compared to typical water mains in an urban environment. This includes: -

- Geotechnical Investigation
- Feature Survey
- Additional Detailed Design and Drafting
- Structural Review & Computation Report
- Design Compliance Review
- VicTrack Approval
- Rail Safety Plan & Hazard Assessment
- Rail Safety Protection
- Track Monitoring Service

Table 6 identifies the priority sections where railway related water main assets are in poor condition with limited remaining life and a higher risk of failure due to the presence of cyclic loading conditions from goods and passenger trains.

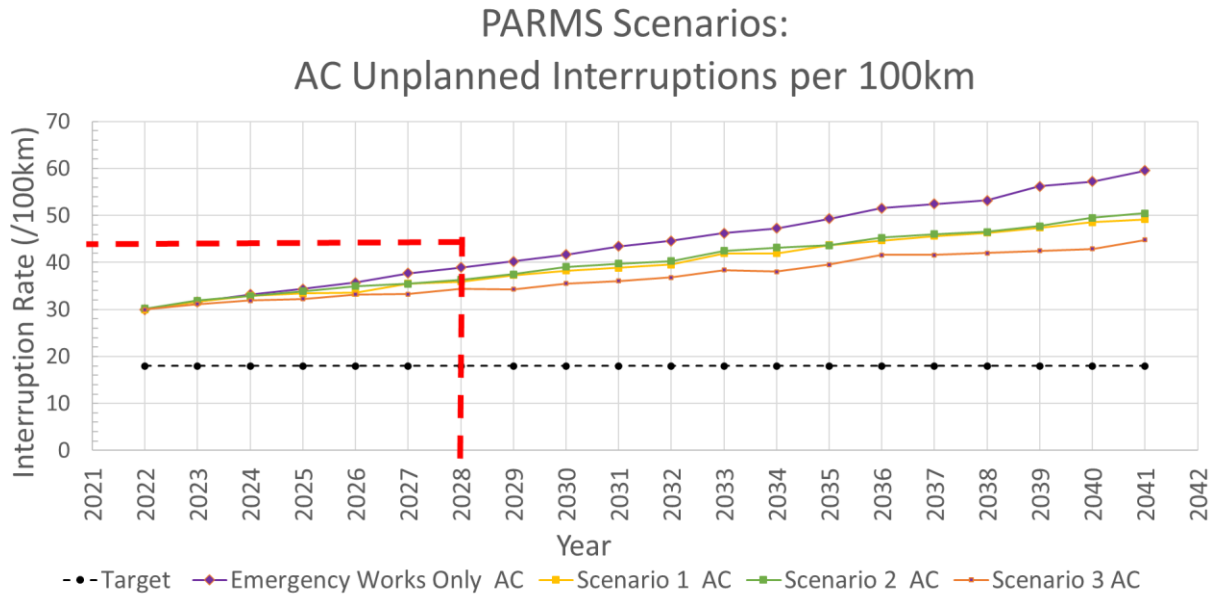
Table 6: High risk assets

Large complex projects	Updated est cost ('000)	Length (m)	$('000)/km
Exhibition street, Numurkah Rail Crossing	182	30	6,067
Hogan Street, Tatura Rail Crossing	200	30	7,000
Goulburn Street, Nagambie Rail Crossing	182	200	910
Coxon Avenue, Numurkah Rail Crossing	350	300	1,167
Murray Valley Hwy (Bridge Crossing), Nathalia	420	130	3,231
Ross Street, Tatura Rail Crossing	182	30	6,067
Baird Street, Violet Town (creek crossing)	252	286	881
Longwood	1,680	1,200	1,400
Fourth St, Eildon	1,354	255	5,309
Total	4,802	2,461	1,951

Adoption of a $2 million per year program provides insufficient funding to enable the replacement of the AC water mains and those underlying railway assets. To achieve this would require the reallocation of funds to complete these works.

Remaining funding will be set aside for 'emergency work' only. Under that scenario AC main failures are expected to increase from 30 to 39 per 100 km within the next 5 years impacting approximately 40% of GVW's customers, see Figure 8.

Figure 8: AC unplanned interruptions per 100 km (emergency works)



Higher unit rate

In January 2023, GVW went to public tender for the water main replacement program seeking appropriate experienced and competent contractors to carry out its construction activities for a 3-year period. A likely increase in rates was highlighted in GVW's previous response to questions which has now been confirmed. The unit rates received in March 2023 for various components (labour, materials, etc) have increased significantly. The new rates are expected to take effect from July 2023.

To illustrate the impact of this increase and comparing the data from the rates in the previous contract, the following items are to be noted:-

- Increase of labour daily cost by 9% for a 2-man crew,
    - increase of labour daily cost by 15% for a 4-man crew,
- materials cost and other services have increased by 50% to 90%.

GVW has included a breakdown of the rates in Appendix A from the recent tender for an example 150 mm diameter water main replacement. A comparison is shown between rates in the previous 3-year contract and the tendered rates received. The impact on the overall budget required to deliver the same amount of main replacements is shown at the bottom of the comparison. An increase in the order of 40% is required to maintain the same length of water main replacement when compared to the previous contract rates.

Table 7 below illustrates the budgetary impact these new rates will have on GVW's Water Main program:

Table 7: Impact of contract rate increase

Original - submission	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Scenario 1 ('000)	2,000	2,000	2,000	2,000	2,000	10,000
Scenario 2 ('000)	2,750	2,750	2,750	2,750	2,750	13,750
Adjusted new rates by	40%					
Scenario 1 ('000)	2,800	2,800	2,800	2,800	2,800	14,000
Scenario 2 ('000)	3,850	3,850	3,850	3,850	3,850	19,250

Even if the budget as nominated in Scenario 2 (original) - ($2.75M/year or $13.75M) is adopted, the higher unit rates will reduce the amount of main that can be replaced in comparison to what was originally planned under Scenario 2.

Under Scenario 2 (adjusted) – $3.85M/year or $19.25M over the next 5 years. GVW could address both the risks associated with railway crossings and continue to invest in replacing AC water mains and limit the increase in failure rates.

Appendix A

Chapel Street Nathalia Water Main Replacement

Tenderers Rates

EXAMPLE PROJECT 150mm (180mm HDPE)

				Tender 1			Tender 2			Tender 3			2022-2023	
Item	Description	Qty.	Unit	Rate	%- Unit Increase	Total	Unit	% - Unit Increase	Total	Unit	% - Unit Increase	Total	Unit	Total
1	**Trenchless replacement** of water main by directional drilling on new alignment including supply & installation of **PE100** PN16 pipe, excavation and backfilling of entry & exit pits up to 1.20 metres deep, and management and disposal of slurry.													
1.2	**New main located within area with imported backfill (footpaths, roads etc)**													
1.2.3	180mm nominal	440	lin metre	$395	49%	$ 173,800	$271.83	2%	$119,605	$667.00	151%	$293,480	$265.54	$116,839
7	Supply & installation of property service connection including connection to existing service up to 1.0 metre away including, excavation, backfilling of pits, and disposal of excess spoil													
7.2	**Main located within area with imported backfill (footpaths, roads etc)**													
7.2.1	less than or equal to 40mm nominal	22	each	$1,150	104%	$ 25,300	$3,629.21	545%	$79,843	$3,983.00	608%	$87,626	$562.37	$12,372
8	Extension / renewal of property service pipeline greater than 1.0 metre away including, supply & installation of pipe & fittings, excavation and backfilling of trench and disposal of excess spoil													
8.2	**Services located within area with imported backfill (footpaths, roads etc)**													
8.2.1	less than or equal to 40mm	44	lin metre	$159	70%	$ 6,996	$828.72	784%	$36,464	$424.31	353%	$18,670	$93.72	$4,124
9	**Testing & commissioning of pipeline**													
9.1	Swab, flush and disinfect main and undertake water quality testing in accordance with GVW standards including appropriate disposal of testing water if required.	3	each	$3,855	4%	$ 11,565	$5,500.00	49%	$16,500	$6,064.00	64%	$18,192	$3,694.85	$11,085
10	**Additional extra over costs**													
10.5	Other authorities permit fees (Vicroads, Victrack/Vicrail, Utility Supervision Fee etc) -	1	Cost + %	$1,000	0%	$ 1,000	$1,000.00	0%	$1,000	$1,000.00	0%	$1,000	$1,000.00	$1,000
10.7	Pressure Testing (hydro static) of all pipe work in accordance with Water Authority standards including appropriate disposal of testing water if required.	3	each	$1,485	88%	$ 4,455	$1,200.00	52%	$3,600	$3,105.00	292%	$9,315	$791.75	$2,375
10.10	AC pipe removal and disposal	15	lin metre	$708.00	495%	$ 10,620	$320.00	169%	$4,800	$350.00	194%	$5,250	$119.00	$1,785
11	**Investigation and Design**													
11.1	**Investigation and design, including all investigations, Preliminary and 'As Constructed' Design Cost**													
11.1.1	Rate for Minimum Fixed Length of Design - 150m	1	each	$9,150	120%	$ 9,150	$4,800.00	15%	$4,800	$36,618.00	779%	$36,618	$4,164.13	$4,164
11.1.2	Rate for Additional Length of Design over 150m	290	lin metre	$10.50	-62%	$ 3,045	$12.50	-55%	$3,625	$214.00	671%	$62,060	$27.76	$8,051
12	Supply & Installation of sluice valve (socketed or flanged) including, excavation and backfilling of pits, disposal of excess spoil and photo before backfilling													

12.1	**As part of construction of new main**													
12.1.2	100mm nominal (125mm PE)	3	each	$1,235	21%	$ 3,705	$1,626.60	59%	$4,880	$1,770.00		$5,310	$1,022.83	$3,069
12.1.3	150mm nominal (180mm PE)	6	each	$1,645	1%	$ 9,870	$2,018.76	24%	$12,113	$1,974.00		$11,844	$1,624.32	$9,746
13	Supply & Installation of below ground hydrant including, excavation and backfilling of pits, disposal of excess spoil and photo before backfilling													
13.1	**As part of construction of new main**													
13.1.1	100mm nominal (125mm PE)	1	each	$1,245	14%	$ 1,245	$1,847.98	69%	$1,848	$1,894.00	73%	$1,894	$1,093.08	$1,093
13.1.2	150mm nominal (180mm PE)	4	each	$1,495	7%	$ 5,980	$2,161.65	55%	$8,647	$2,077.00	49%	$8,308	$1,397.82	$5,591
14	**Traffic Management** **Weekday Rates Mon - Fri 06:00-18:00**													
14.2	2 person 8 hours	20	per d	$1,088.00	9%	$ 21,760	$970.00	-3%	$19,400	$1,445.00	44%	$28,900	$1,000.25	$20,005
14.4	4 person 8 hours	20	per d	$2,176.00	15%	$ 43,520	$1,940.00	2%	$38,800	$2,997.00	58%	$59,940	$1,900.21	$38,004
P5	**Additional Cost for Supply and Installation of DICL Pipe**													
P5.2	150mm nominal	12	lin metre	$343	18%	$ 4,116	$701.50	141%	$8,418	$165.00	-43%	$1,980	$290.77	$3,489
P6	**Additional Cost from Tenderers Submissions**													
P6.1	Tender 4 Site Setup (Nothern District)	1	each			$ -			$0	$5,500.00		$5,500		$0
P6.2	Tender 4 Site Setup (Central District)		each			$ -			$0	$2,750.00		$0		$0
P6.3	Tender 4 Site Setup (South West District)		each			$ -			$0	$11,000.00		$0		$0
P6.4	Tender 4 Site Setup (South East District)		each			$ -			$0	$8,250.00		$0		$0
P6.5	Tender 4 mains cut in (Site Specific and not included in rates)	1	each			$ -			$0	$15,000.00		$15,000		$0
				Total		**$ 336,127**	**Total**		**$364,341**	**Total**		**$670,887**	**Total**	**$242,793**

Analysis	**Initial**	**Adjusted**	**Adjusted**	**Adjusted**
Works Program - Scenario 1	**2,000**	2,769	3,001	5,526
Works Program - Scenario 2	**2,750**	3,807	4,127	7,599
Percentage increase		38%	50%	176%

Appendix B – AC Water Main Analysis

1. Purpose

The purpose of this analysis is to summarise the current industry data and peer reviewed literature on expected nominal lives of Asbestos Cement Pipes used for potable water.

2. Context for Goulburn Valley Water

Goulburn Valley Water currently has approximately 670 kilometres of Asbestos Cement Pipe across its water networks.

GVW has predominantly small diameter AC pipe with around 90% of these pipelines are 100 or 150 diameter pipe. All of these pipes are at least 40 years old as AC pipes were not installed after the mid-1980's.

3. Summary of Findings

AC Pipes were envisaged as long lasting when they were first installed, but this is proving not to be the case and many water corporations in Australia, New Zealand, the UK, Canada, and the USA are reviewing their AC Pipes and revising expected service lives and capital expenditure models (UKWIR, 2020. Aust Gov ASEA, 2022, WaterNZ, 2022).

Past assumptions proposing nominal lives of 60 -75 years or even 80 years and beyond, are not realistic for most AC pipe diameters. There is a large and growing body of evidence that indicates smaller pipe diameters (i.e. less than 300 mm) fail earlier and at higher rates than larger diameter, thicker walled pipes. This failure rate seems to increase dramatically between the age of 45 - 60 years.

Current information suggests that pipe diameter and pipe wall thickness is a very important factor in pipe deterioration, along with operating pressure of the pipe. But environmental and other factors also play an important role in AC pipe deterioration and failure rates, so the more information that is available, even including pipe sampling, can enhance lifetime prediction accuracy.

On the basis of the literature and information reviewed, for smaller diameter AC pipes such as DN100 and DN150, a nominal lifetime prediction within the range of 45 - 65 years is likely to be reasonable. This range could be refined considering operating pressures and other factors, as well as reviewing any available data on actual failure rates.

4. Background

There are approximately 40,000 kilometres of asbestos cement water mains in Australia. AC pipes were first used in Australia in 1926, with the practice peaking between 1957 and 1966, and finally ending in the 1980s (Aust Gov Asbestos Safety and Eradication Agency,2022).

AC Pipes were envisaged as long lasting when they were first installed, but this is proving not to be the case and many water corporations in Australia, New Zealand, the UK, Canada, and the USA are reviewing their AC Pipes and revising expected service lives and capital expenditure models (UKWIR, 2020. Aust Gov ASEA, 2022, WaterNZ, 2022).

AC Pipes can have a life expectancy of 60-75 years (Aust Gov ASEA, 2022). However, this estimation is broadly across all pipe diameter sizes. There is a growing body of information, data and modelling that supports a reduced nominal life for asbestos cement pipes used in potable water transmission, particularly for smaller diameter pipes and for pipes that are nearing 50 years in service. Small diameter pipes are thinner walled and in general deteriorate more quickly.

Other factors influencing deterioration rate of AC pipes include environmental factors such as the pH and aggressiveness of water, soil conditions, installation technique, and pipe class and pipe wall thickness (WaterNZ, 2017).

Figure 9 below illustrates the typical failure sequence of AC pipe which is from internal and external deterioration of the cement in the pipe wall. As the pipe wall deteriorates common failure mechanisms include failure of the pipe barrel, or failure of the joints and collars.

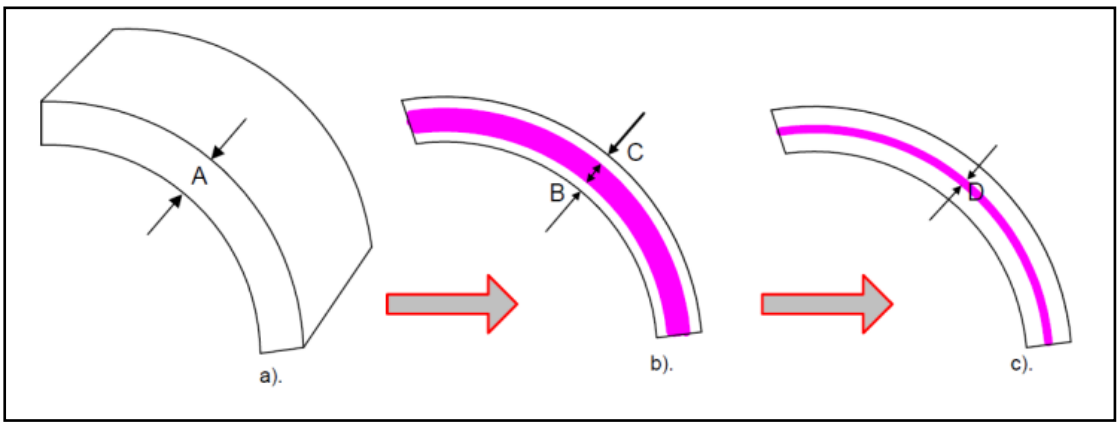


Figure 9 Failure Sequence for AC Pipes (WaterNZ, 2017)

Figure 2 Presents the AC Pipe Classes and nominal diameters used for Potable Water in Australia and nominal pipe wall thickness. For example, a 100 mm diameter pipe has a nominal wall thickness of 10-15 mm whereas a 450 mm diameter pipe has wall thickness between 17-38 mm (depending on pipe class)

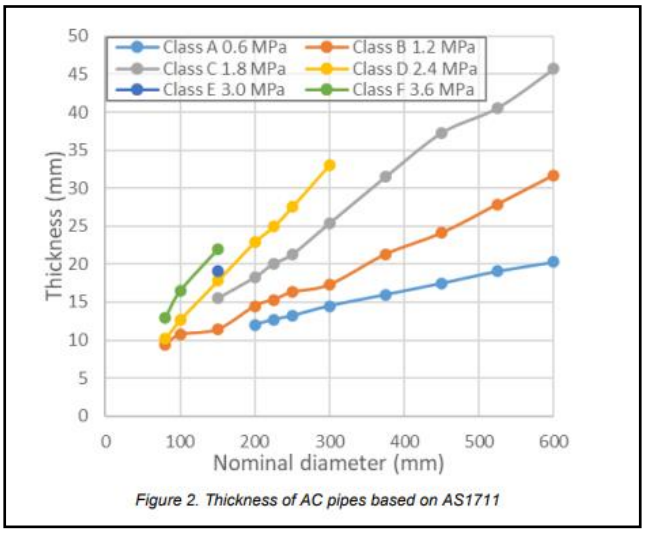


Figure 10 Pipe Wall Thickness for Potable Water Pipe Classes for a Range of Diameters (Monash University, 2021)

There are also safety risks around managing, containing and appropriate disposal of asbestos cement pipes, particularly after failure (Aust Gov ASEA, 2020). This is the subject of ongoing work, in light of the majority of AC pipes in Australia that are nearing their useful lives and needing to be removed or managed (Aust Gov Asbestos Safety and Eradication Agency,2022).

5. Literature Review

a. UK and Australia

UK Water Industry Research (UKWIR) completed a recent study, in collaboration with the Water Services Association of Australia (WSAA), on AC Water Mains Deterioration and Failure Prediction Models (UKWIR, 2020). The project developed a failure prediction model using UK AC pipe datasets, and also reviewed Australian AC Pipe data provided through WSAA.

A literature search for information on failure of AC Mains was undertaken, with key factors and level of influence presented in Figure 11. In addition to important factors like water chemistry, pipe diameters (and wall thickness) are important with the smaller diameter pipes having much higher failure rates per 1000km of pipeline per year.

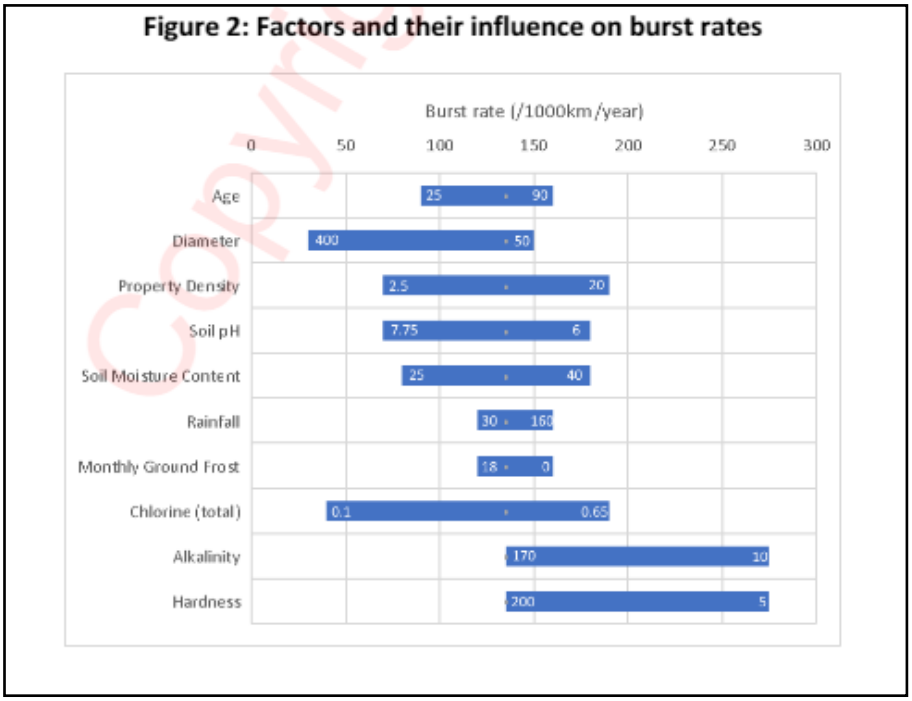


Figure 11 factors that Influence AC Pipe Burst Rates (UKWIR, 2020)

he Australian dataset showed lower average failure rates per km than the UK dataset which was thought to be a combination of AC pipes installed for a longer time and higher average pipe age, difference in the way failures are recorded, and variability in environmental factors.

However, the Australian data followed a similar trend of higher failure rate with decreasing pipe size as predicted by the model and seen in UK data.

Figure 45: Observed and modelled burst rate from model application to Australian dataset

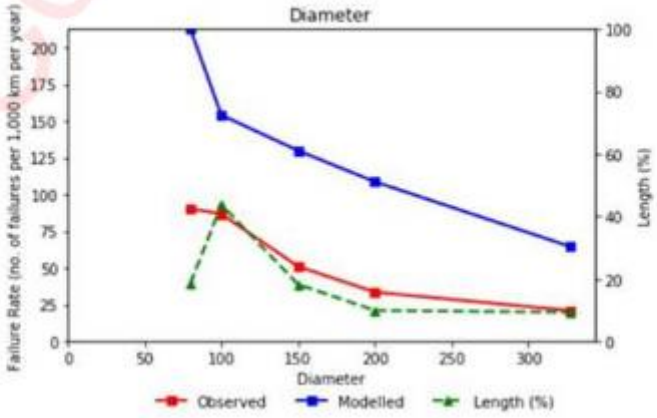


Figure 12 Observed and Modelled Burst Rate (UKWIR, 2020)

As presented in Figure 13, a large increase in failure rate after age 45 years was seen in Australian data (this was not reflected in UK data). This may be due to a larger number of smaller pipeline diameters in the Australian data. The Australian data shows a failure rate increasing from 70 bursts per 1000 km at age 50 to 120 burst/1000 km at age 60.

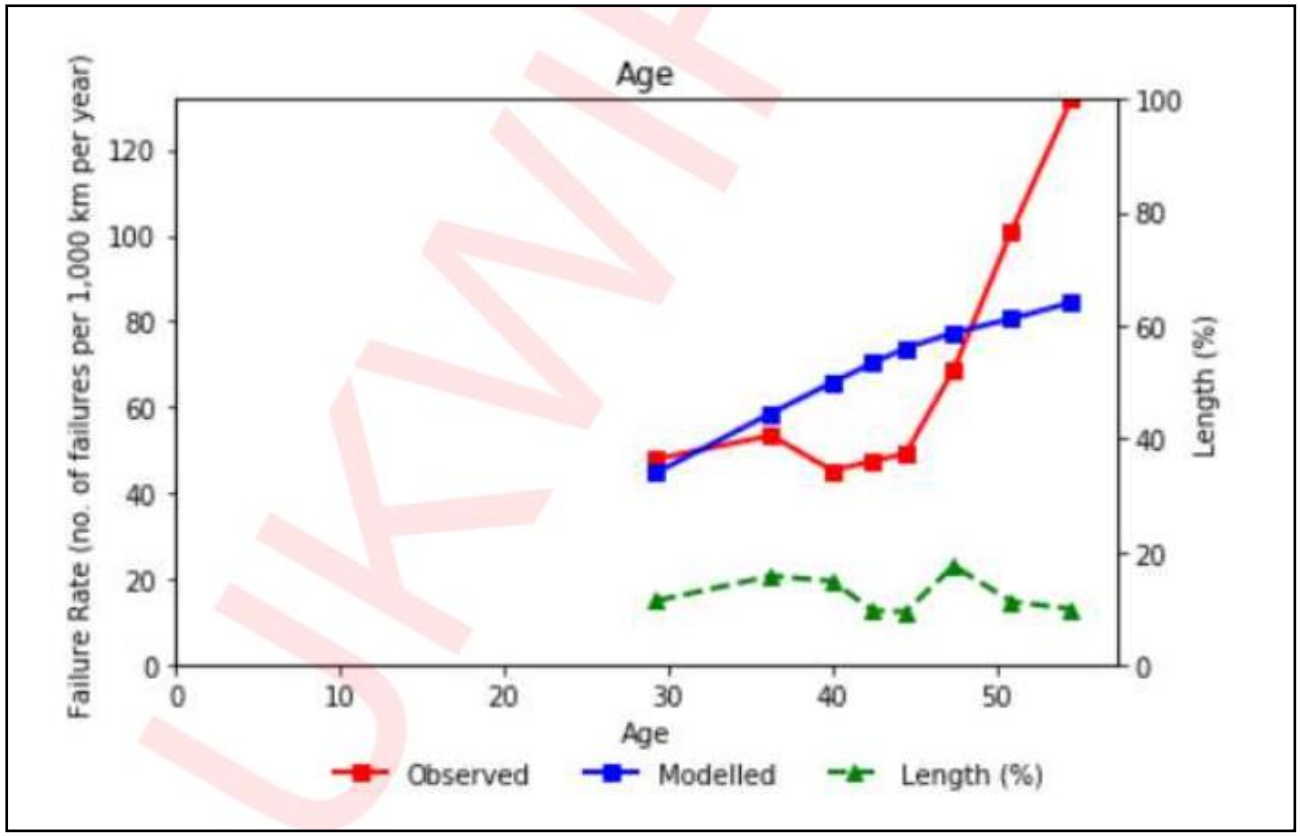


Figure 13 Failure Rate versus Age (UKWIR, 2020)

There was also more observable deterioration in the Australian dataset than in the UK data.

b. Australia

There is currently other work underway with WSAA including a five-stage project that looks at how to assess AC mains and predict remaining life. The first stage is a deterioration model that uses current utility data.

c. New Zealand

Comprehensive work has been undertaken in New Zealand to provide guidelines on prediction of remaining useful life of AC Pipes across different classes, diameters and operating pressures.

- Water New Zealand. Good Practice Guide National Asbestos Cement Pressure Pipe Manual *Volume One User Guide* Second Edition February 2017
- Water New Zealand. Good Practice Guide National Asbestos Cement Pressure Pipe Manual *Volume Two Technical/Supporting Data* Second Edition February 2021

These publications are widely cited in other AC Pipe literature published in Australia, the UK and elsewhere.

These manuals draw on a comprehensive database of AC pipe condition assessment samples with work commenced by Water New Zealand and continued by Opus Consultants from 2003. Since 2003, condition assessment of 879 AC samples has been undertaken which supports the lifetime prediction modelling provided in these recently published guidance manuals.

The manuals provide a tiered approach to predicting AC pipe life from desktop only through to incorporating condition information where available, for a higher level of accuracy.

Figure 14 and Figure 15 were used to undertake a desktop assessment for both DN100 and DN150 pipes as these diameters make up the majority of AC Pipes in GVW's networks. Operating pressures of 40 and 90 m were used to develop a range of expected predicted lives. These operating pressures were selected as they cover the typical range that may be seen for AC pipes in GVW's networks.

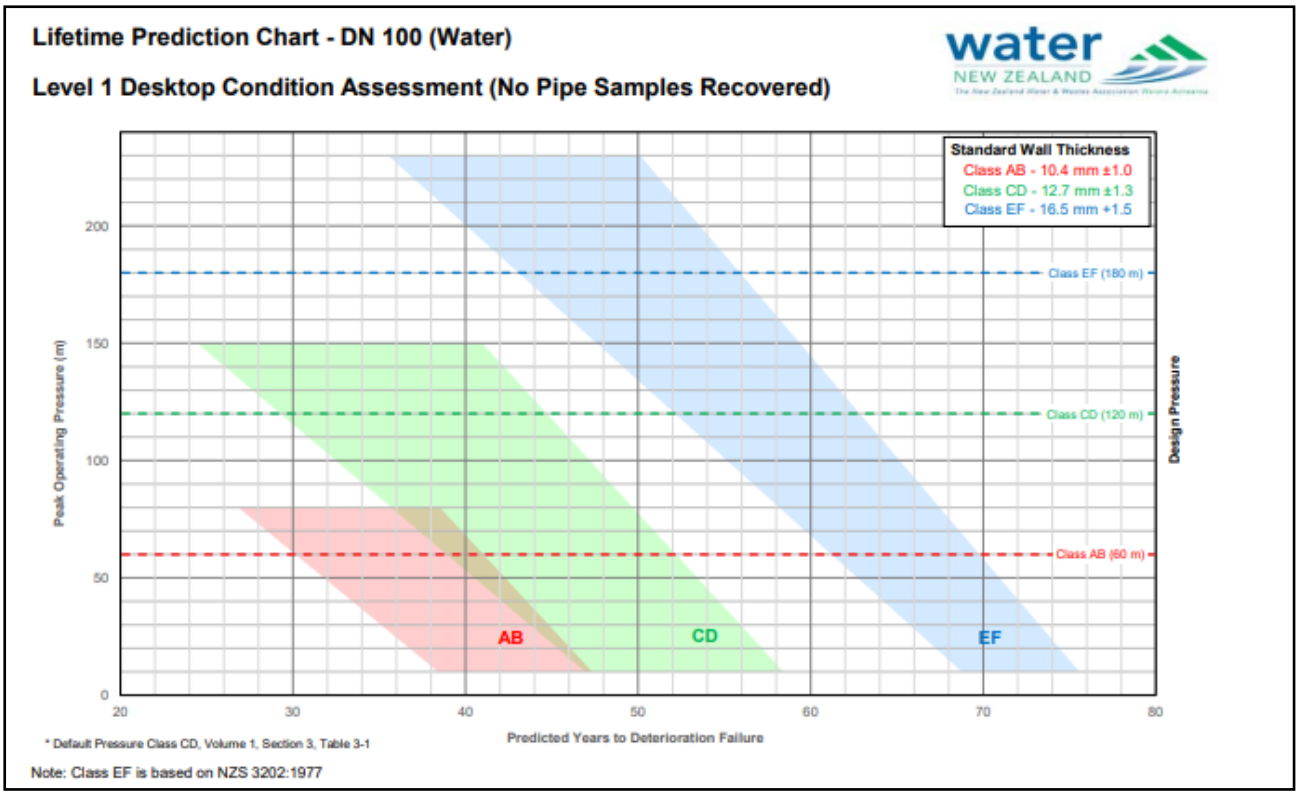


Figure 14 lifetime Prediction Chart for Dn-100 AC Water Pipe (Water NZ, 2021)

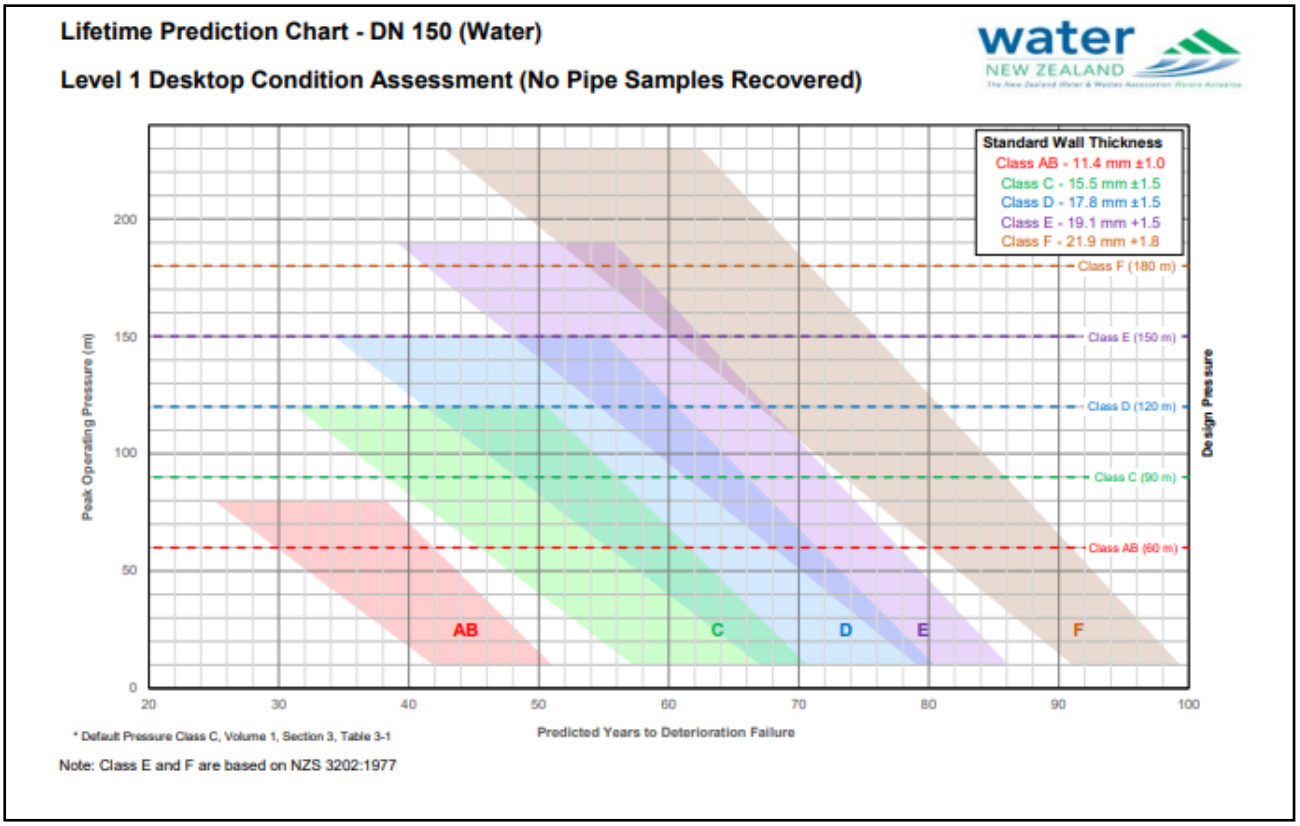


Figure 15 Lifetime Prediction Chart for DN-150 AC Water Pipe (Water NZ, 2021)

Error! Reference source not found. and 2 below was produced from the lifetime p rediction charts above. The percentage of GVW's AC pipes into classes A,B, C and D is unknown. However, the expected AC pipe life across all of these pipe classes for DN100 and DN150, range from 33 - 74 years at operating pressure of 40 m and 27 – 66 years at an operating pressure of 80-90 m.

Table 8 Predicted Years to Failure for DN100 and DN150 AC Pipes for Pipe Classes, Operating Pressure 40m

Pipe Diameter	Class	Operating Pressure (m)	Predicted years to Failure*
DN100	A, B	40	33 - 43
	CD	40	42 - 55
DN150	A, B	40	34 - 46
	C	40	50 - 66
	D	40	60 - 74

**Note: Predicted years to failure is "from installation".*

Table 9 Predicted Years to Failure for DN100 and DN150 AC Pipes for Pipe Classes, Operating Pressure 80 - 90m

Pipe Diameter	Class	Operating Pressure (m)	Predicted years to Failure*
DN100	A, B	80	27 - 39
	CD	90	34 - 48
DN150	A, B	80	27 - 38
	C	90	38 - 56
	D	90	48 - 66

**Note: Predicted years to failure is "from installation".*

References

Australian Government Asbestos Safety and Eradication Agency. Asbestos-Cement Water and Sewer Pipe Management **Case Studies**. January 2022

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Manual *Volume One User Guide* Second Edition February 2017

Water New Zealand. Good Practice Guide National Asbestos Cement Pressure Pipe

Manual *Volume Two Technical/Supporting Data* Second Edition February 2021

Attachment F – Digital meter benefits

The benefits to customers of Intelligent Meters and broader benefits to GVW in support of demand reduction are described and supported by current data, examples and case studies in the following sections.

Note that GVW is using the term Intelligent Meters to describe Digital Meters.

A Net Present Value (NPV) Analysis for customer costs for an Intelligent Meter in comparison to a Mechanical Meter was undertaken. The NPV Analysis suggested that Intelligent meters are less expensive than Mechanical Meters based on average expected annual cost savings to the customer from leakage reduction.

Background and Current Status

Intelligent Water Meters were installed in 2020-2021 across growth towns including Kilmore, Broadford, Kialla, and Mansfield as well as Woods Point and Barmah.

The installations have been completed, and the fleet of intelligent meters are working well and providing continuous monitoring data performing consistently at a high reliability of 99%.

The Intelligent Meter fleet has a total of 11,893 meters across six towns as presented in Table .

Table 10 Intelligent Meter Fleet and Distribution

Town	Intelligent Meters	Analogue Meters (or digital that are manually read)	% of Meters Fleet that are Intelligent Meters
Kilmore / Clonbinane	3897	217	94%
Broadford / Wandong	2636	55	98%
Kialla	2728	430	84%
Mansfield	2396	81	97%
Woods Point	79	0	100%
Barmah	157	0	100%

The intelligent metering data has been integrated into customer billing, and a customer portal is being developed where customers will be able to track and monitor their water usage down to hourly intervals.

GVW collects current and historical data from the meters that is used to identify suspected leaks, to notify and educate customers about the leak issues.

There are further opportunities being progressed to integrate the intelligent metering data with other parts of the business including in planning and in asset management for optimising water networks and network demand. This includes data processing, extraction into suitable reporting formats and integration with other business systems, as well as business process changes

Benefits and Cost Savings to Customers

Intelligent metering provides a range of benefits and potential cost savings to customers. These benefits are summarised in Table 1 and described in more detail below.

Table 1 Intelligent Meter Benefits and Cost Savings to the Customer

Potential Benefit	Cost Savings and Value to Customer
Elimination of Special Manual Meter Reading Costs for Change in Tenancy or Property Ownership	$54.95/read (GVW's Tariff Schedule 2022-2023)
Direct Leakage Cost Savings	Average $20/annum of all customers with intelligent metered customers. For the ~1000 customers with leakage annual savings range from $40 - $36,000 per annum
Volumetric Sewer Cost Savings	Average $51.49/annum across all non-residential customers. For the ~81 non- residential customers with water leakage, annual savings due to volumetric sewerage charges (based on water usage) range from $40-$26,000 per annum.
Rapid Leak Detection and Notification to Customer	This supports and enables rapid customer response to leakage and rectification and limit loss/costs.
Education and Information about Leakage	This supports and enables rapid customer response to leakage and rectification and limit loss/costs.
Intelligent Metering Data in Customer Portal (Developed and in testing phase) with detailed water usage data across different timescales.	This supports and enables rapid customer response to leakage and rectification and limit loss/costs. It may also enable customers taking more interest in and control of their general water usage and costs.

<u>Elimination of Manual Meter Read Costs</u>

Intelligent meters eliminate the need for and cost to customer of $54.95 for special manual meter reads when owners or tenancies change in towns with intelligent meters.

<u>Direct Leakage Costs Savings</u>

Preliminary analysis of customer leaks across the metered growth towns over several discrete timeframes indicates significant opportunities for leakage cost savings for customers.

At present of the 11,893 intelligent metered connections, there are approximately 949 leaks with a total cost to customers of $294,000 per annum in water usage costs, if those leaks were to remain unresolved. The number, size of leak and cost to customers of the leaks are presented by town in Table 2. Customers are being notified and leaks addressed in priority order.

Table 2 Annual leak Loss and Costs to Customers in Intelligent Metering Towns

Town	No. of Leaks	Total Annual Customer Leak Loss (ML)	Total Annual Cost to Customers of Leaks
Barmah	11	0.8	$ 950
Broadford	163	29.1	$ 32,864
Heathcote Junction and Wandong	69	17.8	$ 20,075
Kialla	255	45.1	$ 50,919
Kilmore	265	136.8	$ 154,223
Mansfield	180	29.8	$ 33,656
Woods Point	6	1.3	$ 1,425
Grand Total	**949**	**260.6**	**$ 294,113**

Note: Data is from April 4, 2023.

Table 3 presents the leakage data according to leak sizes. Most leaks fall below 5,000 L/d where customers would be paying between $40 to $800 more per year on their water usage bills. These are the leaks that may not have previously been easily identified through manual meter billing cycles, without the real time data analytics capability and leak alerts notification that are available from intelligent metering. Yet leaks of this size range incur a significant cost to the affected customers, a cost that could potentially be avoided or minimised.

Table 3 Annual Leak Loss and Costs to Customers Across the Range of Leak Sizes Observed

Leak size	No. of Customer Connections for Leaks of this size	Total Daily Volume Leaks (KL) of this Leak Size	Total Annual Volume Leaks (ML) of this Leak Size	Total Annual Cost of Leaks	Average Additional Cost That Customers with Leaks of this Size are paying per annum
<100L/d	319	30	11	$ 12,314	$ 39
100-500 L/d	388	110	40	$ 45,416	$ 117
500/1000L/d	119	88	32	$ 36,348	$ 305

1000-5000 L/d	111	217	79	$ 89,446	$ 806
5000-10,000 L/d	9	64	23	$ 26,410	$ 2,934
10,000 -50,000 L/d	1	11	4	$ 4,633	$ 4,633
50,000 -100,000 L/d	2	194	71	$ 79,547	$ 39,773
Totals	**949**	**714**	**261**	**$ 294,113**	

Note: Data is from April 4, 2023.

Volumetric Sewer Cost Savings

The leakage at non-residential properties may be entering the sewer network (for example through a leaking cistern) and it remains appropriate that customers are billed for this under the volumetric sewer charge.

Non-residential customers that use more than 180 KL of water per annum (493 L./day) pay additional volumetric sewerage charges. Non-residential customers include schools, hospitals, businesses, hotels, caravan parks, sporting clubs and other facilities. The volumetric sewerage cost is calculated 1.5596 x discharge factor (ranging from 0.25-0.95). These non-residential customers are generally paying both excess water and excess sewer charges because of the leakage. Hence there is both a water and sewer charge cost benefit to customers in identifying leaks through intelligent metering so that they can be addressed.

For the dataset examined, of 949 leaks, 81 are non-residential customers. These non-residential customers are paying $62,400/annum in leakage related volumetric sewerage charges. This is an average of $771 extra per non-residential customer with a leak. Additional cost averaged across all non-residential customers, is additional $51.49/annum.

Rapid Leak Detection and Notification

A leak would be identified by the intelligent metering analytics available to GVW within 3 days of reaching a minimum threshold for leak detection, at which point a leak alarm will be triggered. This means that leaks can be identified and dealt with an extremely short time frame. Large or sudden leaks (e.g., pipe bursts) would be identified as a" damage" alert within 12 hours.

In the past when using mechanical meters, customers and GVW may not notice a leak at all and only begin to realise there may be a leak after several, higher than average 4-month billing cycles.

Intelligent metering customers are currently notified of the leak via a phone call. An SMS mass notification system is under development to be able to notify customers more rapidly especially for the large number of smaller leaks – which are not insignificant from a cost to customer perspective as highlighted by the data in the previous section.

Education and Information about Leakage

Intelligent metering and the real time data and new knowledge about potential leaks is a learning curve for many of our customers. Intelligent metering customers are often surprised to learn that they have a suspected leak, or they remain unconvinced that there is an actual leak, especially if it is not clearly visible. Our customer service team have provided information over the phone and in person on site to support customers to identify and rectify their leak.

Examples include:

- Discussing the size and nature of the leak and providing insights that they can share with their plumber to find and rectify the leak.
- Providing guidance to customers on how to check if their toilet or evaporative air conditioner is leaking and what the typical mechanisms of failure may be, such as a broken valve.
- Attending site to temporarily swap out an intelligent meter for a mechanical one to confirm that the large leak detected by the intelligent meter was real.

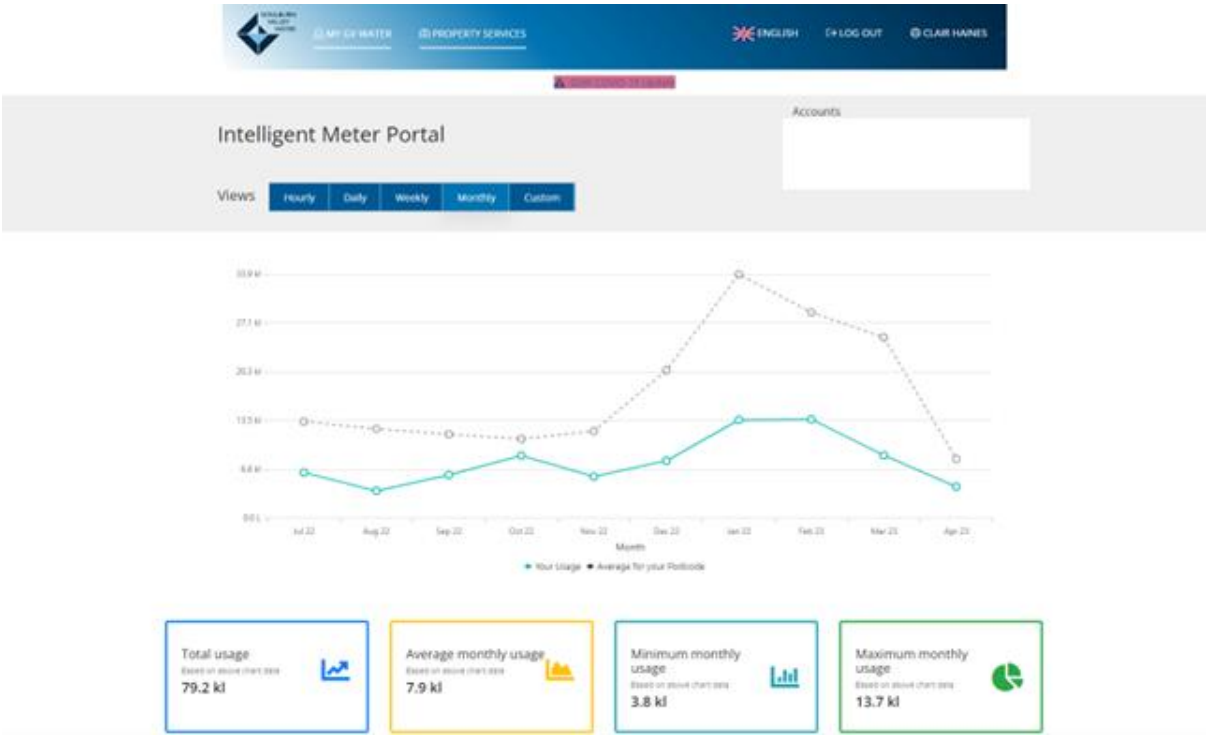
Education and support of all GVW customers is important however there is an additional opportunity to add value for intelligent metering customers because of the data that is available.

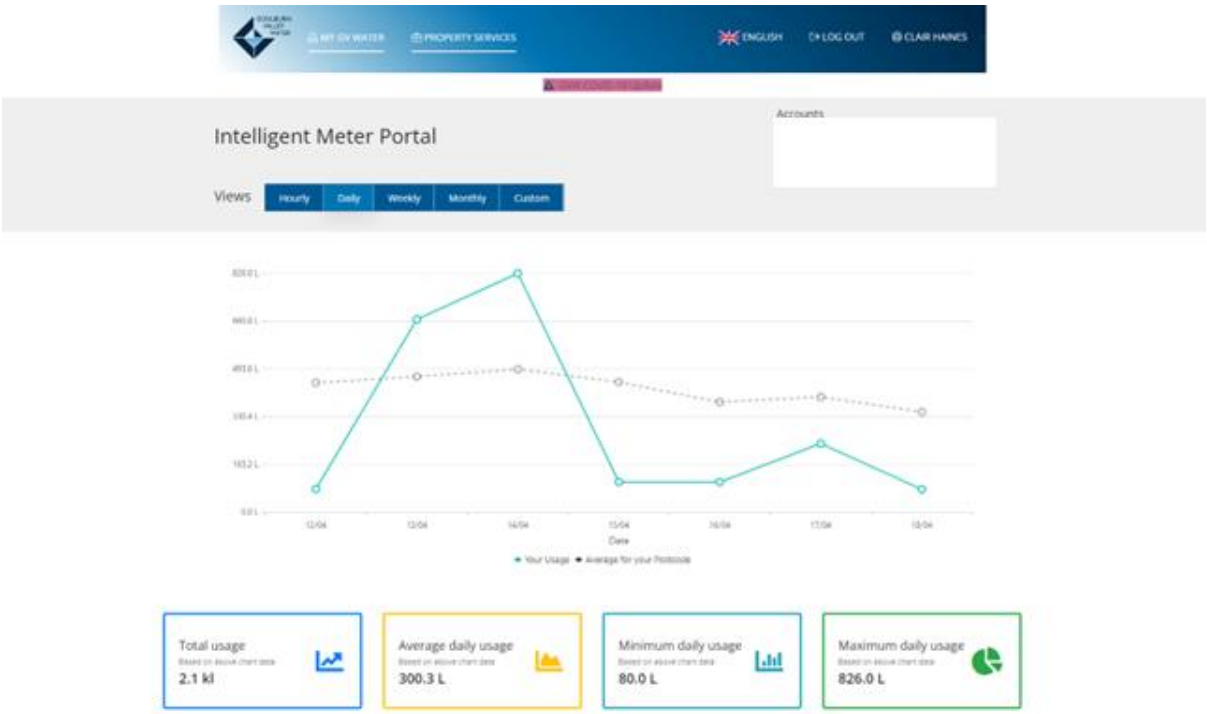
Intelligent Metering Data in Customer Portal

Customers will also have direct access to metering data on the MYGV Water portal when the testing phase has been completed.

Customers with Intelligent Meters can track and monitor their water usage including hourly, daily, monthly and annual trends which can help them identify or verify a possible leak in a short timeframe. Figure 16 shows screenshots from the customer portal for a customer with an intelligent meter in Kilmore.

Figure 16: Examples of customer portal insights from digital meters





NPV Analysis

An NPV Analysis was completed for mechanical meters versus intelligent meters where the meter cost is proposed to be incurred by the customer. The current purchase prices for new meters are: Mechanical Meters $183; and Intelligent meters $326, see Table 4.

The NPV analysis for residential customers showed that intelligent meters have an NPV Cost of $129 versus mechanical meters at $183, with the higher capital cost of intelligent meters offset by average annual leak savings. Details of the NPV analysis and assumptions are presented in

The NPV analysis non-residential customers, who also pay volumetric sewerage charges based on water usage volumes, the NPV analysis showed that intelligent meters have an NPV cost of -$371, or in other words the benefits fully offset the costs. This occurs within 3-years rather than the minimum expected life of 15 years, see Table 4.

Table 4 NPV Summary

Option	Description	22/23 Capex Exp	NPV (6%,15 years)
0	Mechanical Meters - Option 0	$183	$183
1	Intelligent Meters - Option 1 -Residential Customers	$326	$129
2	Intelligent Meters-Option 2-Non- residential customers	$326	-$371

Table 5 NPV analysis and assumptions

Mechanical or Intelligent Meters Option Selection																	
Mechanical Meters - Option 0			**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**	**Yr 11**	**Yr 12**	**Yr 13**	**Yr 14**	**Yr 15**
Discount Rate		6%															
Capex	$	183															
Mechanical Meter Purchase	$	183															
OPEX - manual meter read per annum	$	-															
Leak saving estimate	$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nett Cost -NPV	$	183															
Intelligent Meters - Option 1			**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**	**Yr 11**	**Yr 12**	**Yr 13**	**Yr 14**	**Yr 15**
Discount Rate		6%															
Capex	$	326															
Mechanical Meter Purchase	$	326															
OPEX - manual meter read per annum	$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leak saving estimate	-$	197	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20
Nett Cost -NPV	$	129															
Intelligent Meters - Option 2 -Non-residential Customers			**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**	**Yr 6**	**Yr 7**	**Yr 8**	**Yr 9**	**Yr 10**	**Yr 11**	**Yr 12**	**Yr 13**	**Yr 14**	**Yr 15**
Discount Rate		6%															
Capex	$	326															
Mechanical Meter Purchase	$	326															
OPEX - manual meter read per annum	$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leak saving estimate	-$	197	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20	- 20
Sewerage charge savings	-$	500	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52	- 52
Nett Cost -NPV	$	(371)															

Assumptions

1. The current purchase prices for new meters (proposed to be incurred by the customer) are: Mechanical Meters $183; and Intelligent meters $326.
2. Discount rate of 6%
3. Payback period of 15 years (Intelligent Meter nominal life). Note that future replacement of the meter after 15 years is funded by GVW.
4. Expected leak savings annually was calculated based on actual total leakage volume and cost to customers across metered towns (data from April 4, 2023) and then divided by the total number of metered locations. This produced an average annual leak savings of $20 per metered location. Around 10% of metered locations show some form of leakage at any given time and their actual leakage costs range from a minimum of $40 per annum for small leaks i.e., less than 96 litres per day, up to $36,000 per annum for very large leaks, see Table 3.
5. The total volume and profile of leaks will remain consistent, for the purpose of this calculation. More data will be collected over a longer timeframe to understand how leakage profiles may change over time, and with increased rectification of leaks.

Benefits to GVW and GVW Customers over the Long Term

Intelligent meters can provide a range of other benefits to GVW and ultimately to GVW's customers through greater efficiency and optimisation of the current and future water supply and network.

The key benefits are around how water savings from leak losses and are summarised in Table 6 and presented in more detail in this section.

Table 6 Intelligent Meter Benefits and Cost Savings to GVW and GVW Customers Over the Long Term

Benefit	Cost Savings to GVW and GVW Customers over the longer term
Review potential deferment of growth capacity upgrades where customer leakage volumes are large and can be rectified.	**Water** Preliminary analysis indicates customer side leakage in range of 2-20% of Revenue Water. Preliminary analysis indicates customer side leakage management can contribute to overall system flow rates of up to 5L/s in growth towns. Preliminary analysis indicates leaks could contribute to in the range of 2-7% of Peak Day Demand (PDD). These preliminary findings indicate strong potential to look at customer leak reduction as a factor in optimising growth capacity upgrades. **Sewer** Water usage volumetric data informs sewerage treatment planning and upgrades, whether the leakage is lost to the environment or returns to the sewer e.g., a leaking cistern or tap. The scale of leakage volumes identified via intelligent metering, as described in the sections above, is important, and could potentially influence sewer planning and sewerage treatment capacity planning. These preliminary findings indicate strong potential to look at customer leak reduction as a factor in optimising water and sewer growth capacity upgrades.
Reduce water production costs associated with leakage (includes chemicals, pumping and energy)	Preliminary analysis indicates around 260 ML/annum customer leakage loss across metered towns (IM Data April 4, 2023) Assuming $450/ML production costs Meters: The potential magnitude of cost savings = 260ML/annum *$450/ML = $117,000 per annum Further treatment-related cost savings from rectifying water leakage is anticipated for wastewater treatment. Additional work around water balance and the water leakage portion that actually goes to the waste management facility for treatment, versus leakage to the environment, is needed.

Table 7 presents preliminary analysis of number and size of leaks across intelligent metering towns as well as leak size relative to water production and revenue water for those towns. Preliminary analysis indicates customer side leakage equivalent to 2-20% of Revenue Water (percentage can be variable depending on system size and influence of 1 or 2 small leaks).

Table 7 Contribution of Customer Leaks Relative to Total Water Production and Revenue Water Across Towns with Intelligent Metering

Town	No. of Leaks	Total Annual Customer Leak Loss (ML)	WTP Production ML/annum	Revenue Water ML/annum	NRW (ML/annum)	NRW %	Customer Leaks as a % of Revenue Water
Barmah	11	0.8	48.4	44.7	3.7	8%	2%
Broadford	163	29.1	501.6	514.2	33.6	7%	6%
Kialla	255	17.8	TBD	TBD	TBD	TBD	TBD
Kilmore, Heathcote Junction and Wandong	334	154.5	978.8	946.2	32.6	3%	16%
Mansfield	180	29.8	589.0	548.1	40.9	7%	5%
Woods Point	6	1.3	7.1	6.2	0.9	13%	20%

Preliminary analysis indicates leaks could contribute the range of 2-7% of Peak Day Demand (PDD), see Table 8. This level analysis should be considered as high-level order of magnitude. It compares metering data from a fixed point in time (April 4, 2023) with PDD recorded at different dates for each town (typically a peak day in January 2021). There are many other variables including that PDD can vary by relatively large amounts from year to year.

Detailed analysis using more comprehensive metering data and similar timescales would need to be undertaken to confirm how customer leaks (and rectification) will impact planning and growth projections and asset capacity upgrades.

Table 8 Contribution of Customer Leaks Relative to PDD

Town	No. of Leaks	Customer Leak Loss ML/day (2023)	PDD ML/Day (2020-2021)	Customer Leakage as % PDD	Average Continual Flow attributable to leakage L/s
Barmah	11	0.002	0.382	1%	0.03
Broadford	163	0.080	3.700	2%	0.92
Kialla	255	0.123	TBD	TBD	
Kilmore, Heathcote Junction and Wandong	334	0.423	5.785	7%	4.90
Mansfield	180	0.082	4.597	2%	0.94
Woods Point	6	0.003	0.005	69%	0.04

Notes:

1) PDD based on data from 2021-2022

2) PDD not available for Kialla as it is part of the Shepparton system – this will be calculated from network monitoring data as part of an ongoing and more detailed benefits analysis

3) Leak volume calculated for April 4, 2023, not on peak day for each system

4) Woods Point had an unusually low PDD in 2021-2022 (50% of what it was the previous year). This was the main reason for an unusually high result of leak as a percentage of PDD. Also the number and size of leaks 1 major and 5 moderate leaks across 79 customers at Woods Point skews the results. Once the major leak is rectified in the near future, the customer leakage as percentage of PDD should see a large reduction.

5) Average Continual Flow attributable to leakage provides a good indication of potential to reduce system demand including peak day and peak flow. However, the profile of Continual Flow attributable to leakage changes throughout the day and is influenced to some extent by usage patterns. This could be analysed in more detail in future from metering data once the data processing and reporting capability and further developed.

1. Our proposal

During the current regulatory period, Goulburn Valley Water, as part of a larger regional water industry group, worked with VicWater to review the appropriateness of the current approach to forecasting new customer contributions (NCCs). This review adopted a principled, evidenced, transparent and consultative reform process.

The overarching objective of the review was to consider NCC approaches that not only manage the uncertainty surrounding future growth, but also to establish a pricing methodology that best meets the WIRO and ESC's principles and is consistent with customer expectations. The output of this review was a strong case to a change the methodology for forecasting standard NCCs from the current net cashflow approach to an average incremental cost (AIC) approach.

The AIC approach calculates NCCs as the net present value of the optimal costs of servicing connections growth on a per lot basis. The advantage of an AIC approach relative to the current approach is that it is:

More transparent, the calculation is simpler and more intuitive than the net cashflow calculation which incorporates an estimation of forward revenues and expenditures over extremely long-time horizons.

Better placed to provide developers incentives for efficient timing decisions by adopting a forward-looking approach to cost and excluding sunk assets.

Better able to address risks associated with uncertainty around the long-term profile of development in our region.

Better meets the WIRO regulatory principles regarding efficiency and, understandability.

Our proposed NCCs are outlined in table 19.

Table 19. Proposed NCCs

$2022-23	2023-28
Water (per lot)	3,700.00
Sewer (per lot)	1,700.00

2. FTI review

As part of the 2023 Price Review the ESC engaged FTI to review Goulburn Valley Water's proposed NCC forecasts. Subsequent to the Draft Decision, on 28 April the ESC provided Goulburn Valley Water with preliminary observations from FTI. These preliminary observations were followed by a Draft Report that was provided to GVW on 8 May 2023.

FTI has made the following preliminary observations:

- Observations on methodology:
    - Our general approach is conservative, however FTI found the allocation methodology is lacking detail.
    - FTI noted that no historical capital expenditure (sunk costs) are included in the NCC models.

We note that the AIC approach we are proposing is forward looking and excludes sunk assets on the basis that they distort the ability of NCCs to provide developers with efficiency signals about the timing of their development.

- Further observations:
    - The methodology for how capital contributions is included in NCCs has not been articulated in any policy documents.
    - Projects that are triggered by growth but provide shared benefit for new and existing customers are allocated a percentage of the capital cost based on the number of new connections as a proportion of total customers. FTI noted that while this approach is easily calculated, an assessment to determine the actual incremental increase in cost of any upgrade has not been made.

We are proposing a simple approach to allocating growth capital expenditure that utilises the existing ESC regulatory framework and reflects what we believe is an appropriate balance between the costs associated with a more detailed forensic allocation at the individual project and program levels and the benefits that Goulburn Valley Water and its customers would derive from such an approach.

In its Draft Report FTI provided confidence ratings based on an assessment of the capital expenditure included in the calculation of our proposed NCCs. FTI's Draft Report makes the following key findings that potentially impact on our proposal:

- Section 3.3.1 of the draft report rates our proposed NCC growth capital expenditure as "medium confidence". The stated rationale for the rating is that FTI could not reconcile our proposed growth only allocated capex with the growth capex proposed in the financial template and that FTI considered the documentation provided by us in support of the price submission and in responses to FTI was "limited".
- Section 3.3.2 of the draft report rates our proposed capacity-based allocation approach for shared growth capex as "low confidence".

2.1 Our response to FTI's reconciliation rating

The FTI Draft Report does not outline the calculations underlying their assertion that the proposed NCC growth capital expenditure does not align with the growth expenditure outlined in the financial template. We note that were not able to reproduce the $84.6 million quoted in the Draft Report as our proposed growth capex. Our total proposed

growth capex for PS5 and PS6 is $159.5 million. This number is reported in capex tables from row 41 to row 412 in the "Capex_FO" Input sheet in the financial template.

We believe this reconciliation is a relatively straight forward process if FTI follows the outline of the allocation process we provided on 27 March 2023 that provides a detailed decision tree that when combined with the connections numbers and the AIC models provided, is more than sufficient to allow FTI to replicate the following reconciliation (see table 20).

Table 20. Reconciliation of NCC growth and financial template growth

Source	Capex $m
ESC financial template gross proposed growth capex	159.5
NCC proposed growth capex reconciliation	
NCC growth solely attributed to new customers	12.9
Shared NCC growth attributed to new customers	52.1
Shared NCC growth attributed to existing customers	94.5
Total	159.5

2.2 Our response to FTI's rating of our capex allocator

The allocator is the tool we are proposing to adopt to allocate shared growth capex between existing customers and new customers. The FTI Draft Report does not provide sufficient information for us to understand the basis for FTI's rating. We have sought clarification from the ESC on what FTI's criteria for reasonable is. The ESC's response on 11 May was:

- In a situation where there is more than one driver of capital expenditure, one method to estimate this incremental cost is to estimate what the cost would be with and without any new customers, with the difference between the two estimates being attributable to the new customers, and therefore being the incremental cost.
- The ESC also noted that FTI had not taken into consideration practicality in its ratings on that basis that 'practicality' wasn't put to FTI.

It would appear based on the ESC's response that the rating is based purely on the criteria that the allocation method does not provide a technically accurate estimation of incremental cost based on the difference between forecast capex inclusive of growth and forecast capex exclusive of growth.

We note that FTI's assessment criteria references the reasonableness of the approach, however it is not clear how FTI's rating takes into consideration:

- Practicality – that the approach was reasonably doable given businesses current capital planning resources and capabilities and the nature of the capital

expenditures themselves. And importantly that the approach is suitable within the context of its application for a pricing outcome for NCCs.

- Compliant – that the approach aligns with the ESC's interpretation of its incremental cost principles as evidenced over the 2018 and 2013 price reviews. We note that the current ESC guidance for NCCs does not require businesses to estimate incremental growth capex by undertaking comparative assessments of growth and non-growth capital planning, and that we are not aware of a previous ESC decision that required businesses to define incremental capital expenditure in this manner.

We consider estimating incremental cost based on the difference between forecast capex inclusive of growth and forecast capex exclusive of growth as an unsuitable approach to adopt for pricing purposes. Given growth is a secondary driver for a number of compliance and improvement proposed capital expenditure that are excluded from our proposed NCC expenditure, satisfaction of this criterion requires the reforecasting of a number of projects within our capital program (it would only exclude those renewals and improvement expenditures that did not have secondary growth drivers) or potentially our entire capital program. The administrative cost associated with undertaking this analysis would outweigh the benefits of any application of the principle of incremental cost within a pricing context. This is true for forecasting incremental capital under both the existing net cashflow approach or our proposed AIC approach.

Undertaking this analysis to justify our adoption of a simple proxy-based allocator would also undermine any savings we would achieve from our proposed proxy based allocator and would be inappropriate within the context of price setting

We have proposed a relatively simple approach to allocating growth capital across new and existing customers based on the primary drivers for capital expenditure. The approach provides a reasonable accounting of growth-related costs and recognises that both new and existing customers are often beneficiaries of growth-related capital projects and programs. The rationale for our proposed allocation approach is outlined in section 4.1 of this response.

2.3 Our response to FTI's commentary on the lack of documentation

In relation to FTI's observations regarding the lack of formal documentation of our allocation methodology, it is important to recognise that that the allocation method is not an established method and has been developed as part of our proposed AIC based NCC approach. Given we coordinated the timing of the development of our proposed NCC framework with the 2023 Price Review, we do not believe it would be appropriate to dedicate resources to further develop such documentation until the ESC has formally approved our proposed AIC NCC approach.

3. ESC's draft decision

The ESC's draft determination provides a qualified acceptance of the AIC method. The ESC considers the methodology capable of meeting its NCC pricing principles and the

relevant requirements of the Water Act 1989. The draft decision does not reference the ESC's position in relation to our proposal meeting the principles outlined in the WIRO.

While the Draft Decision includes a qualified acceptance of the AIC methodology, the ESC has not accepted our proposed NCCs on the basis that we have not provided sufficient information to support our proposed application of AIC NCCs.

The ESC's reasons are outlined below:

- Fair and reasonable costs –Goulburn Valley Water has not provided sufficient information to enable the ESC to be satisfied that it has implemented AIC according to the Water Act Section 268(3).
- Incremental infrastructure and associated costs – The ESC's preliminary view is that Goulburn Valley Water's proposed standard NCCs do not meet the pricing principle that NCCs have regard to the incremental infrastructure and associated costs. The Draft Decision states that the ESC has found our approach to the allocation of growth capital expenditure to be unclear and not well documented. The Draft Decision does not outline how the proposed allocations do not meet the pricing principles for incremental costs.
- Incremental future revenues – The Draft Decision states that AIC NCCs can indirectly meet the NCC pricing principle for incremental revenue if the NCCs include new customers in the demand forecasts in the business's pricing model. The ESC considers this principle to be met if the numbers in the ESC's pricing model reconcile with the NCC model.
- Double counting of capital expenditure - The ESC stated it has not been able to confirm that our allocation of growth capital expenditure does not result in double counting.
- Avoidable cost – The Draft Decision accepts that our proposed NCCs reflect the average incremental costs associated with our allocation of growth costs and that subsequently the NCCs may comply with the pricing principle of being greater than avoidable cost. However, the ESC noted that it cannot verify that the assets included in the pricing model reconcile with those in the NCC model and is concerned there may be potential double counting. Therefore, the Draft Decision concludes that our proposed NCCs do not meet the avoidable cost pricing principle.
- Customer engagement – The ESC Draft Decision states that Goulburn Valley Water has not provided sufficient transparency to stakeholders to allow them to provide meaningful comments on the proposed AIC methodology.

In response to the Draft Decision, the ESC is seeking for Goulburn Valley Water to:

- Provide further information on how we have allocated capital expenditure to NCCs.
- Alternatively, in response to the draft decision, Goulburn Valley Water can recalculate its NCCs using the current methodology.

4. GVW response

This response provides further supporting information for our approach to allocating growth-related capital, restates the engagement on AIC methodology that we undertook with developers (noting that the ESC has not requested further engagement information) and provides a succinct overview of the reconciliation of NCC model data inputs and our submitted ESC pricing model and addresses the issue of potential double counting.

4.1 Allocating growth related capital expenditure

We have proposed a relatively simple approach to allocating growth capital across new and existing customers based on the primary drivers for capital expenditure. The approach provides a reasonable account for growth related costs and recognises that both new and existing customers are often beneficiaries of growth-related capital projects and programs. The rationale for our proposed allocation approach is:

- The approach is relatively simple to understand and communicate to our customer base, developers and our broader stakeholders.
- The approach utilises the ESC's established regulatory accounting framework, with a minimal level of adjustment to the established regulatory capital expenditure cost categories to account for existing customers who benefit from growth expenditure.
- The approach is objective and based on observable data which provides both Goulburn Valley Water and the ESC a readily measurable criteria for allocation.
- The approach provides an adequate approximation of growth related expenditure.

On the 27th March Goulburn Valley Water provided FTI with a response to an information request on our allocation proposal that set out the principles for our allocation approach:

- For projects that service an individual growth area only, 100% of the capital cost is included in the NCC model. This is generally for water and sewer network upgrades in individual development areas.
- For projects that are triggered by growth but provide shared benefit for new and existing customers, a percentage of the capital cost is included in the NCC model based on the number of existing and new connections serviced by the project or program. For example, a Water Treatment Plant capacity upgrade, while triggered by growth, will provide benefit for both new and existing customers.

GVW response to FTI's information request included the following worked examples:

- Broadford to Kilmore Pipeline
- Broadford Water Treatment Plant Upgrade
- Water Main South of Raftery Road
- WMF Winter Storage and Irrigation Augmentation
- Kilmore South Trunk Sewer

Each of these worked examples are categorised as growth under the ESC's existing regulatory accounting framework. The examples provide a broad overview across both water and sewerage services and across both network and treatment assets. Each of the examples was allocated based on capacity share between new and existing customers.

The alternative to our proposed approach would be to allocate our entire capital expenditure program based on project and program specific allocators. This approach would require Goulburn Valley Water to individually assess each project and project that has multiple or secondary drivers, which include growth, with project or program specific allocators. Such an approach would be overly complex, requiring the application of a range of different allocation criteria depending on the nature of the individual project or program. This approach would also potentially introduce a level of subjectivity into our allocation that we do not consider appropriate.

We note that the complexity of this alternative approach would severely constrain our ability to consult effectively with developers and with our customers. We do not believe the benefits associated with this alternative approach would outweigh the administrative costs of implementing it. This is particularly true for many of the relatively minor projects or programs that we deliver.

4.2 Customer engagement

Goulburn Valley Water engaged directly with the development industry through an online forum on 18 August 2022. All known contacts from the local development industry were invited to attend with a total of 24 representatives attending.

The forum was presented with our proposed changes to our NCC approach and what those changes meant for NCC charges for PP5. Feedback provided at the session related to transparency in relation to what NCC charges pay for and the need for a transition period for projects where agreements are based on the existing charge.

An online survey was distributed to the full invite list at the completion of the forum. The outcomes of both the forum and survey were taken into consideration by Goulburn Valley Water in the finalisation of our proposal for the ESC.

We note that the broader VicWater NCC regional water industry review, a consultation workshop was held with the UDIA. The outcomes of this workshop were reflected in the recommendations from the VicWater NCC review.

4.3 Reconciling the NCC model with the ESC financial template

In its Draft Decision the ESC made several observations that it could not reconcile the NCC model with Goulburn Valley Water's financial template. The two areas the ESC's focuses on are the treatment of growth capex and NCC revenue.

4.3.1 Reconciling growth capex

The growth capex outlined in the financial template's Capex_FO input sheet varies materially from the growth capex incorporated into the NCC model. This variation is due solely to the allocation method outlined in section 4.1. It is important to note that

consistent with the recognition of existing customer beneficiaries and the resulting partial allocation of growth capex, the proposed template capex exceeds the growth capex in the NCC model (see table 21).

It is also important to note that our treatment of growth capex eliminates the possibility of double counting. The NCC growth forecasts are derived directly from the template growth program, they are not developed separately. Subsequently, each allocation between existing and new customer capacity aggregates to 100 percent of the specific capex project or program being allocated. In addition, the template model ensures that the capital being rolled into our regulatory asset base is net of NCC revenue.

Table 21: Reconciliation of NCC growth capex

$22-23 million	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
ESC template growth capex										
Water	$4.4	$8.4	$8.2	$9.2	$5.7	$20.8	$22.3	$12.6	$4.4	$8.4
Sewer	$10.9	$5.6	$1.9	$1.1	$3.5	$2.6	$1.9	$5.9	$10.9	$5.6
Total	$15.3	$14.0	$10.1	$10.3	$9.1	$23.4	$24.2	$18.5	$15.3	$14.0
NCC model capex										
Water	$1.4	$2.6	$3.5	$4.3	$2.1	$10.6	$11.5	$5.5	$1.4	$2.6
Sewer	$6.2	$1.4	$0.3	$0.2	$1.3	$0.0	$0.4	$0.5	$6.2	$1.4
Total	$7.6	$4.0	$3.7	$4.5	$3.4	$10.6	$11.9	$6.0	$7.6	$4.0
Variance										
Water	$2.9	$5.8	$4.7	$4.9	$3.5	$10.2	$10.8	$7.1	$2.9	$5.8
Sewer	$4.7	$4.2	$1.7	$0.9	$2.2	$2.6	$1.5	$5.4	$4.7	$4.2
Total	$7.6	$10.0	$6.4	$5.8	$5.7	$12.8	$12.3	$12.5	$7.6	$10.0
Note: Variance is calculated as ESC template forecast growth capex less proposed NCC growth capex.										

4.3.2 Reconciling NCC revenue

The NCC revenue outlined in financial template' s Capex_FO input sheet does not align with our NCC model. We acknowledge that the NCC revenues generated by our proposed NCCs are insufficiently reported in the financial template. In order to address this issue GVW response to the Draft Decision includes revised NCC revenues that reflect the proposed NCCs and the new customer connection forecasts in the NCC model.

Table 22: Reconciliation of NCC revenues

$22-23 million	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Proposed template NCC revenue										
Water	$3.42	$3.50	$3.58	$3.66	$3.75	$3.84	$3.94	$4.07	$4.17	$4.27
Sewer	$1.49	$1.53	$1.56	$1.60	$1.64	$1.68	$1.72	$1.78	$1.82	$1.86
Total	$4.91	$5.02	$5.14	$5.26	$5.39	$5.52	$5.66	$5.85	$5.99	$6.14
NCC model revenue										
Water	$3.45	$3.53	$3.61	$3.70	$3.79	$3.88	$3.97	$4.07	$4.17	$4.27
Sewer	$1.51	$1.54	$1.58	$1.62	$1.65	$1.69	$1.73	$1.78	$1.82	$1.86
Total	$4.96	$5.07	$5.19	$5.31	$5.44	$5.57	$5.70	$5.85	$5.99	$6.14
Variance	$0.05	$0.04	$0.05	$0.05	$0.05	$0.05	$0.05	$0.00	$0.00	$0.00
Note: NCCs have been rounded to the nearest $100, this generates a small variance on the revenues generated by the NCC model itself which does not include rounding. Variance is calculated as NCC model revenue less proposed template NCC revenue.										

The connections underlying both the NCC model revenue and the NCC calculation are outlined in table 22.

Table 23: NCC new connections

Connection	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Water	933	953	976	999	1,024	1,048	1,073	1,100	1,127	1,155
Sewer	887	906	928	950	973	996	1,020	1,045	1,070	1,097

5. Freezing NCCs for the 2023 regulatory period

On Monday 8 May the ESC notified us that in the absence of what it considers to be a compliant proposal, its intention is to determine our current new customer contributions plus CPI from 1 July 2023. In effect the ESC has notified us that its intention if it does not approve our AIC NCCs is to freeze our NCCs at our current rates and escalate them annually by CPI.

We do not believe that this is an appropriate option for the ESC to consider. Freezing our NCCs at their 2018 determined rates for the following reasons:

- NCCs that were forecast in 2018 do not reflect the material changes in our growth capital expenditure profile that have occurred since 2018 or our latest capital expenditure forecasts for the 2023 regulatory period. 2018 determined NCC will also not reflect the changes we have experienced in actual connection growth over the current regulatory period or that forecast for the 2023 regulatory period.

- Freezing NCCs at current rates with CPI escalation will, by definition, impose on GVW and our customer base a schedule of standard NCCs that do not comply with the ESC's NCC pricing principles regarding incremental cost and revenue (all of which have changed since 2018) or avoidable and standalone costs (which have also changed since 2018). We note that outdated and non-cost reflective NCCs will also not meet the WIRO principles for efficiency. Determining NCCs at rates that were approved in 2018 will in effect result in the ESC imposing NCCs on GVW that do not meet the same criteria on which the ESC will have based its decision to not approve our proposed NCCs.

In the event that the ESC does not approve our AIC based NCCs, GVW recommends ESC undertake a review process for the NCC calculation approach early in the PP5 period. Based on the outcomes of this review process, GVW should then be given the opportunity to revise NCC charges if applicable and apply the revised charges for the later years of PP5.

Attachment H - GVW proposed pass through mechanism

Schedule 5

If in any ***regulatory year*** Condition A and/or Condition B applies, the formula set out in clause 2.3(b) is not applicable to the extent it relates to the prices outlined in Schedule 5A. These prices are set out in items 1.1 to 1.5 of Schedule 2.

Instead the prices above will be adjusted in accordance with the formulas (as applicable) provided below, with effect from the beginning of each subsequent ***regulatory year*** in the ***regulatory period.***

Goulburn Valley Water must comply with any guidance issued by the commission from time to time which relate to the setting of prices for ***prescribed services*** to which Schedule 2 and 4 relates.

Schedule 5A – Adjustment to prices

	Condition A (Annual cost of debt update)	Condition B (Willingness to pay cost update)
1.1 Water Tariff – Service Charge (per annum)	X	X
1.2 Water Tariff – Usage Charge (per kL)	X	X
1.3 Sewerage Tariff – Service Charge (per annum)	X	X
1.4 Sewerage Tariff – Volumetric Charge for non-residential customers (per kL)	X	X
1.5 Trade Waste Charges	X	X

Schedule 5B – Prices

Condition A to Formula 4 remain the same.

Condition B – Willingness to pay cost update

Condition B will apply when ***Goulburn Valley Water*** has spent up a positive amount of money on the willingness to pay activities outlined in its price submission in any given year. The adjustment is calculated in formula 5.

The maximum additional amount recoverable in any given year is outlined in Table 1.

The willingness to pay cost update will be apportioned across the tariffs listed in Schedule 5A.

Formula 5: Willingness to pay adjustment.

$$WTP_t^j = WTP_{t-1}^{total} \times \left(\frac{CPI_t}{CPI_{base}}\right) \times \frac{\alpha_t^j \times q_{j,t}^{\det}}{\sum_{j=1,n}^{t=t}\left(\alpha_t^j \times q_{j,t}^{\det}\right)} \times \frac{1}{q_{j,t}^{\det}}$$

WTP_t^j	Is the willingness to pay cost adjustment applied proportionally to tariff j, based on tariff j's relative share of total revenues as outlined in formula 5. Total revenues refer to the sum of all revenue received across the tariffs listed in Schedule 5A to which the cost of debt adjustment will apply.
WTP_{t-1}^{total}	Is the minimum between total cost of the willingness to pay forecast to spend and the determined value specified in Table X in ***regulatory year*** 't-1', where $WTP_{t-1}^{total} = \min\left(WTP_{t-1}^{forecast}, WTP_{t-1}^{\det}\right)$
$WTP_{t-1}^{forecast}$	Is the total cost ***Goulburn Valley Water*** has spent and is forecast to spend in ***regulatory year*** 't-1'. This forecast will be based on the most up to date actual costs and forecast at time of tariff approvals.
CPI_t	Is the Consumer Price Index: All Groups Index for the Eight Capital Cities as published by the Australian Bureau of Statistics (6401.0 - Table 8) for the March Quarter immediately preceding the start of the relevant ***regulatory year***
CPI_{base}	Is the Consumer Price Index: All Groups Index for the Eight Capital Cities as published by the Australian Bureau of Statistics (6401.0 - Table 8) for the March Quarter in year 2022 equals to 123.9
α_t^j	Is the price for tariff j at ***regulatory year*** 't' before the cost of debt and willingness to pay adjustment has been applied where $\alpha_t^j = p_{t-1}^j \times \frac{CPI_t}{CPI_{t-1}} \times \left(1 + PPM_t^j\right)$
p_{t-1}^j	Is the price for tariff j at ***regulatory year*** 't-1'
$q_{j,t}^{\det}$	Is the determination quantity for tariff j at ***regulatory year*** 't'
$\sum_{j=1,n}^{t=t}\left(\alpha_t^j \times q_{j,t}^{\det}\right)$	Is the sum of all revenue received across the tariffs listed in Schedule 5A to which the willingness to pay adjustment applies

Table 9 Maximum additional willingness to pay cost recoverable through Formula 5 ($m, real 1 January 2023)

2023-24	2024-25	2025-26	2026-27	2027-28
0	1.75	1.75	1.75	1.75

Formula 5 outlines the process for calculating the adjustment to prices outlined in Schedule 5A to reflect the prior years spent on willingness to pay activities up to a maximum as specified in Table 1. This is done in two steps.

The first step is to calculate the change in the revenue requirement by the operating expenditure spent up to the maximum specified in Table 1 by the inflation from the base year to *regulatory year* 't'.

The second step is to apply the change in the revenue requirement proportionally to tariff j, based on tariff j's relative share of total revenues. Total revenues are defined as the sum of all revenues received across the tariffs listed in Schedule 5A to which the willingness to pay adjustment will apply.

Formula 6: Schedule 5A tariffs

$$p_t^j = p_{t-1}^j \times \left(\frac{CPI_t}{CPI_{t-1}}\right) \times \left(1 + PPM_t^j\right) + CDA_t^j + WTP_t^j$$

Where

p_t^j	Is the price for tariff j at ***regulatory year*** 't' that accounts for the cost of debt adjustment and willingness to pay adjustment. The cost of debt adjustment and willingness to pay adjustment will apply to the tariffs listed in Schedule 5A
p_{t-1}^j	Is the price for tariff j at ***regulatory year*** 't-1'
CPI_t	Is the Consumer Price Index: All Groups Index for the Eight Capital Cities as published by the Australian Bureau of Statistics (6401.0 - Table 8) for the March Quarter immediately preceding the start of the relevant ***regulatory year***
PPM_t^j	The prescribed price movement for the price component for tariff j in ***regulatory year*** 't' as per the determination
CDA_t^j	Is the trailing average cost of debt adjustment applied proportionally to tariff j, based on tariff j's relative share of total revenues as outlined in formula 4 [As per the 2018 Determination]. Total revenues refer to the sum of all revenue received across the tariffs listed in Schedule 5A to which the cost of debt adjustment will apply.
WTP_t^j	Is the willingness to pay cost adjustment applied proportionally to tariff j, based on tariff j's relative share of total revenues as outlined in formula 5. Total revenues refer to the sum of all revenue received across the tariffs listed in Schedule 5A to which the cost of debt adjustment will apply.

Attachment I - Price Path and Customer Bills

						Price path		1.33%	1.33%	1.77%	1.77%	1.77%	3.00%	3.00%	3.00%	3.00%	3.00%
						Inflation		3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Annual Bill (MOD$)			**4th Reg Period (current)**					**5th Reg Period (proposed)**					**6th Reg Period (forecast)**				
Customer Group	**water (kl**	**Sewer (kl**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**
Residential Typical (owner occupier)	260		948	907	896	874	890	933	979	1,031	1,086	1,144	1,219	1,300	1,386	1,477	1,575
Residential Typical(tenant)	260		335	302	298	291	296	310	325	342	361	380	405	432	460	491	523
Water Corporations Benchmark	200		849	837	826	806	822	862	904	952	1,003	1,056	1,126	1,200	1,279	1,364	1,454
Non-residential (small)	108	102	905	892	881	859	876	918	963	1,015	1,069	1,126	1,200	1,279	1,364	1,454	1,550
Non-residential (medium)	603	491	2,108	2,079	2,053	2,003	2,041	2,140	2,245	2,365	2,491	2,623	2,797	2,981	3,178	3,388	3,612
Non-residential (large)	3,875	2,545	9,239	9,111	8,996	8,778	8,943	9,379	9,837	10,361	10,914	11,495	12,255	13,064	13,928	14,848	15,829
	conversion to 1/1/23$		0.91	0.92	0.94	0.95	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41
Annual Bill (1/1/23$)			**4th Reg Period (current)**					**5th Reg Period (proposed)**					**6th Reg Period (forecast)**				
Customer Group	**water (kl**	**Sewer (kl**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**	**2031-32**	**2032-33**
Residential Typical (owner occupier)	260		1,044	985	952	919	890	902	914	930	946	963	992	1,022	1,052	1,084	1,116
Residential Typical(tenant)	260		368	328	317	306	296	300	304	309	314	320	329	339	350	360	371
Water Corporations Benchmark (kl)	200		934	909	878	847	822	832	844	858	874	889	916	943	972	1,001	1,031
Non-residential (small)	108	102	995	969	936	903	876	887	899	915	931	948	976	1,005	1,036	1,067	1,099
Non-residential (medium)	603	491	2,320	2,258	2,181	2,105	2,041	2,068	2,096	2,133	2,170	2,209	2,275	2,343	2,414	2,486	2,561
Non-residential (large)	3,875	2,545	10,166	9,893	9,559	9,225	8,943	9,062	9,183	9,345	9,511	9,679	9,969	10,269	10,577	10,894	11,221
Note that the above does not include major industrial customers																	