# Victoria's Northern Water Infrastructure Prospectus

*Continuing to deliver the Basin Plan*

VICTORIA State Government | Environment, Land, Water and Planning

*Cover images: SRW modernisation pipes.*



## Accessibility

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# Content



# Introduction

Victoria's agriculture sector makes an important contribution to the Australian economy. In 2016-17, Victoria's food and fibre export was worth $12.8 billion, the highest of any state or territory. Water is vital for agriculture and related industries, which supports jobs and growth, and Victorian families, communities and regions.

In 2016–17, Victoria accounted for:

- 79 per cent of Australia's dairy exports,
- 55 per cent of wool exports,
- 46 per cent of horticultural exports and
- 38 per cent of prepared food exports[1].

This prospectus provides irrigation and stock and domestic (S&D) infrastructure investment opportunities for the Commonwealth Government which have wide ranging project benefits, including water recovery.

## Purpose

The purpose of this prospectus is to meet Victoria's commitment at the Murray-Darling Basin Ministerial Council meeting on 8 June 2018 to identify up to 9 GL of water savings projects for Commonwealth Government investment.

These projects are consistent with the Ministerial agreement at that meeting that the first priority for recovery of the additional 450 GL of water (known as efficiency measures) is the recovery of water without negative socio-economic impacts that ensure the benefits of the environmental works and measures projects (known as supply measures) are fully recognised. The Murray Darling Basin Authority estimated this volume is 62 GL.

This prospectus delivers on Victoria's commitment to provide water saving projects to the Commonwealth which have neutral or positive impacts and are focused on channel upgrading, improved system viability and pipelining for stock and domestic supplies. These projects come at different levels of readiness and community consultation.


1 Department of Economic Development, Jobs, Transport & resources (DEDJTR), Fibre Export Performance Report 2016-17



The Victorian Government looks forward to working with the Commonwealth in securing funding to deliver water saving projects that have neutral or positive socio-economic outcomes.

## Victoria's approach to water recovery

The Victorian Government is committed to water savings for the Basin. Victoria signed up for a Basin Plan that works for everyone — for the whole Basin community, for all water users including farmers and regional communities, and the environment. This means it is more than just recovering a fixed volume of water.

Victoria's focus is on positive project benefits rather than solely on dollar per ML of water saved — reducing ongoing financial liabilities, dealing with stranded assets, achieving environmental enhancements and community benefits.

Victoria is working hard at putting forward projects that deliver strong social, economic and environmental outcomes. Projects that produce water savings and have positive socio-economic impacts.

Victoria has favoured investing in recovering water for the environment by investing in modernising the irrigation network. The GMW Connections and Sunraysia Modernisation Projects are good examples where investment in infrastructure for public and economic benefit can recover water and minimise the social and economic costs to those water dependent communities.

## Opportunities across northern Victoria

Victoria is continuing to investigate new projects to recover water for the environment and improve environment outcomes while avoiding adverse social and economic impacts, which is consistent with the requirements of the Basin Plan.

The Victorian Department of Environment, Land, Water and Planning (DELWP) has been working closely with its Water Corporations and Catchment Management Authorities to identify where remaining water savings opportunities exist in the bulk water delivery and irrigation distribution systems of northern Victoria.

This work has identified a broad range of potential future projects with varying water savings, costs, uncertainties, socio-economic considerations and readiness.

The potential projects have been categorised into two groupings.

### Tier 1 – Priority Projects

The priority projects have had some form of preliminary assessment or work undertaken and are considered to be of medium to high confidence, with neutral to positive socio-economic impacts.

The projects include:

- Goulburn Murray Water — Mitiamo Domestic and Stock Pipeline
- Goulburn Murray Water — Shepparton East Channel Modernisation
- Goulburn Murray Water — Channel Conversion to Stock and Domestic.

### Tier 2 – Concept Projects

These are potential water savings projects that require further development to a business case stage before a decision can be made on their implementation.

The projects have been assessed as having technical merit with neutral or positive socio-economic impacts, but further work is required to estimate with a higher level of confidence the benefits and costs of these projects and the volume of water recovery.

The projects include:

- Sunraysia Private Diverters — Channel Upgrades
- Lower Murray Water (LMW) — Replacement of Ageing Pipelines and Channels
- Goulburn Murray Water — Wakiti Water Loss Recovery project.

## Location

All proposed projects are located within two of Victoria's larger irrigation districts in Goulburn Murray Water and Lower Murray Water. Below is a map that provides the approximate location of each of the water recovery projects.

# Investment opportunities

The regulated water supply systems in northern Victoria are large-scale, integrated systems that interconnect multiple catchments. The region has a vital network of rivers, wetlands and floodplains providing homes for a diversity of plants and animals.

This is Victoria's 'food bowl', contributing significantly to the nation's prosperity through the production of food and fibre.

The main irrigation districts in northern Victoria are the Goulburn-Murray Irrigation District (GMID) and the Sunraysia Irrigation District. They service the majority of irrigation enterprises in northern Victoria.

The GMID is the largest irrigation district in the Murray Darling Basin servicing over 14,000 customers. Water is sourced from the Murray, Goulburn, Campaspe and Loddon Rivers and the supply network is managed and operated by Goulburn Murray Water (GMW), a Victorian Government statutory water corporation.

The GMID generates approximately $5.9 billion worth of dairy, fruit, vegetables, meat and cereals. One in three jobs are either on farms, farm services or in food processing.

The Sunraysia Irrigation District services some 5,000 customers in the four management areas of Merbein, Red Cliffs, Robinvale and Mildura. Water is sourced from the River Murray and the supply network is managed and operated by Lower Murray Water (LMW), a Victorian Government statutory water corporation.

The Gross Regional Product (GRP) of the region is $2.8 billion which is largely generated from irrigated horticulture, food processing industries, manufacturing, logistics, services and agriculture.

The regional population is around 75,000 people. The region produces 20% of Australia's total wine grape crush, 29% of citrus production, 70% of table grape production and almost 100% of Australia's dried vine fruit production.

Each of the Tier 1 and Tier 2 projects are from the GMID and Sunraysia Irrigation Areas and are described in more detail below, along with the opportunities and benefits that will be realised from the infrastructure investment.

### Tier 1 – Priority projects

Two of the listed priority projects will require $100,000 in funding to finalise the project business cases. The current proposed investment opportunity to the Commonwealth is $66 million for 6.2GL of water recovery.

Two of the three Tier 1 (priority projects) could be funding ready within six weeks.

*GMID Modernisation pipes.*

**Table 1: Tier 1 – Priority projects**

| Projects | Water recovery | Business case finalisation | Total capital cost | Commonwealth funding sought | Timeframe | Socio-economic impact |
|---|---|---|---|---|---|---|
| Mitiamo Domestic & Stock Pipeline | 1 GL | $0 | $29m | $14.5m | 2 yrs | Positive |
| Shepparton East Channel Modernisation | 1.2 GL | $30k | $11.5m | $11.5m | 1 yr | Positive |
| Channel Conversion to S&D | 4 GL | $70k | $40m | $40m | 2 yrs | Neutral |
| **TOTAL** | **6.2 GL** | **$100k** | | **$66m** | | |

The Mitiamo Domestic and Stock Pipeline has a finalised detailed business case. The Victorian Government has committed $10.2 million, the proposed funding from the landowners is $4.3 million and $14.5 million is sought from the Commonwealth.

The Shepparton East Channel Modernisation Project has a draft preliminary business case and will require an additional $30,000 to finalise the business case including high-level consultation with stakeholder and customers on the proposed solution. This could be completed within six weeks of funding approval.

The GMID channel conversion to stock and domestic requires a business case to be developed from scratch, however this could occur quickly as all available information is accessible through the GMW Connections Project. The estimated cost to prepare this business case is $70,000 and could be completed within three months of funding approval.

## Tier 2 – Concept Projects

The total estimated cost to develop the projects to business case stage is $950,000. Current concept level estimates suggest water recovery of 4.1 to 8.15 GL.

The finalised business cases will provide preliminary level assessment of capital costs, water recovery quantities, assessment of socio-economic impact and level of customer acceptance for the project.

The completion of the business cases would be considered a hold-point and the Commonwealth can decide whether it wishes to proceed with implementation funding of the projects.

It is proposed that project delivery would be under the existing Victorian-Commonwealth governance arrangements for water recovery projects. Victoria would have a funding agreement with the Commonwealth setting out the project milestones, and the state would have an agreement with the delivery partner, which would be a statutory water corporation.

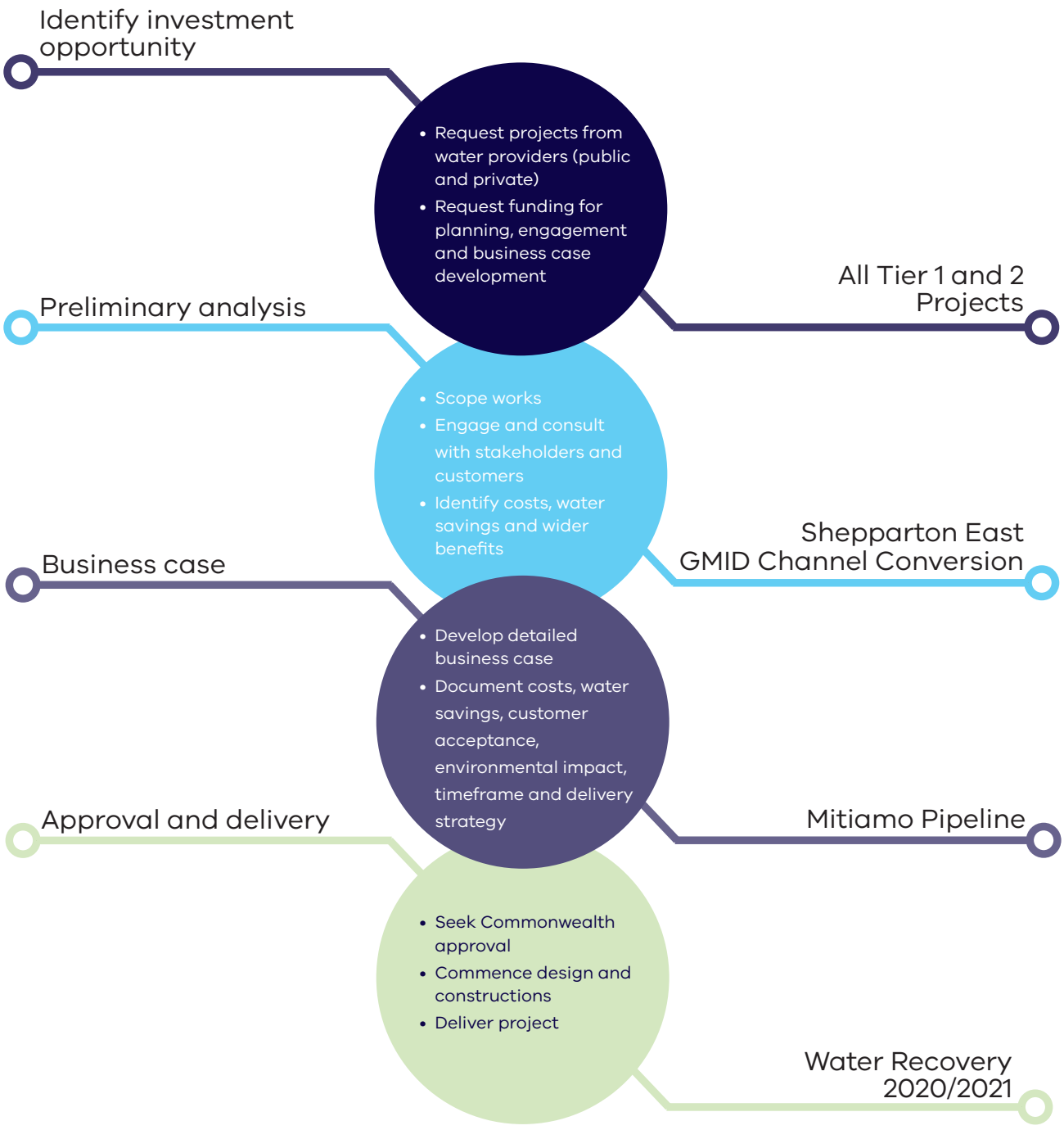
**Table 2: Tier 2 – Concept projects**

| Projects | Water recovery range | Total estimated capital cost | Commonwealth funding sought | Business case Timeframe | Socio-economic impact |
|---|---|---|---|---|---|
| Sunraysia Private Diverters Channel Upgrades | 1.2 to 4.3 GL | TBC* | $350k | 6 mths | Positive |
| Replacement of Ageing Spur Pipelines & Channels in LMW Irrigation Districts | < 2 GL | TBC* | $500k | 6 mths | Neutral |
| Wakiti Water Recovery Project | 0.9 to 1.85 | TBC* | $100k | 3 mths | Neutral |
| **TOTAL** | **4.1 to 8.15 GL** | **TBC*** | **$950k** | | |

** Subject to outcomes of business case development.*

## Project status

Both priority and concept projects are at varying level of readiness. All projects listed within the prospectus have been identified as realistic investment opportunities. Two of the Tier 1 projects are at preliminary analysis stage and one is funding ready with a detailed business case completed.



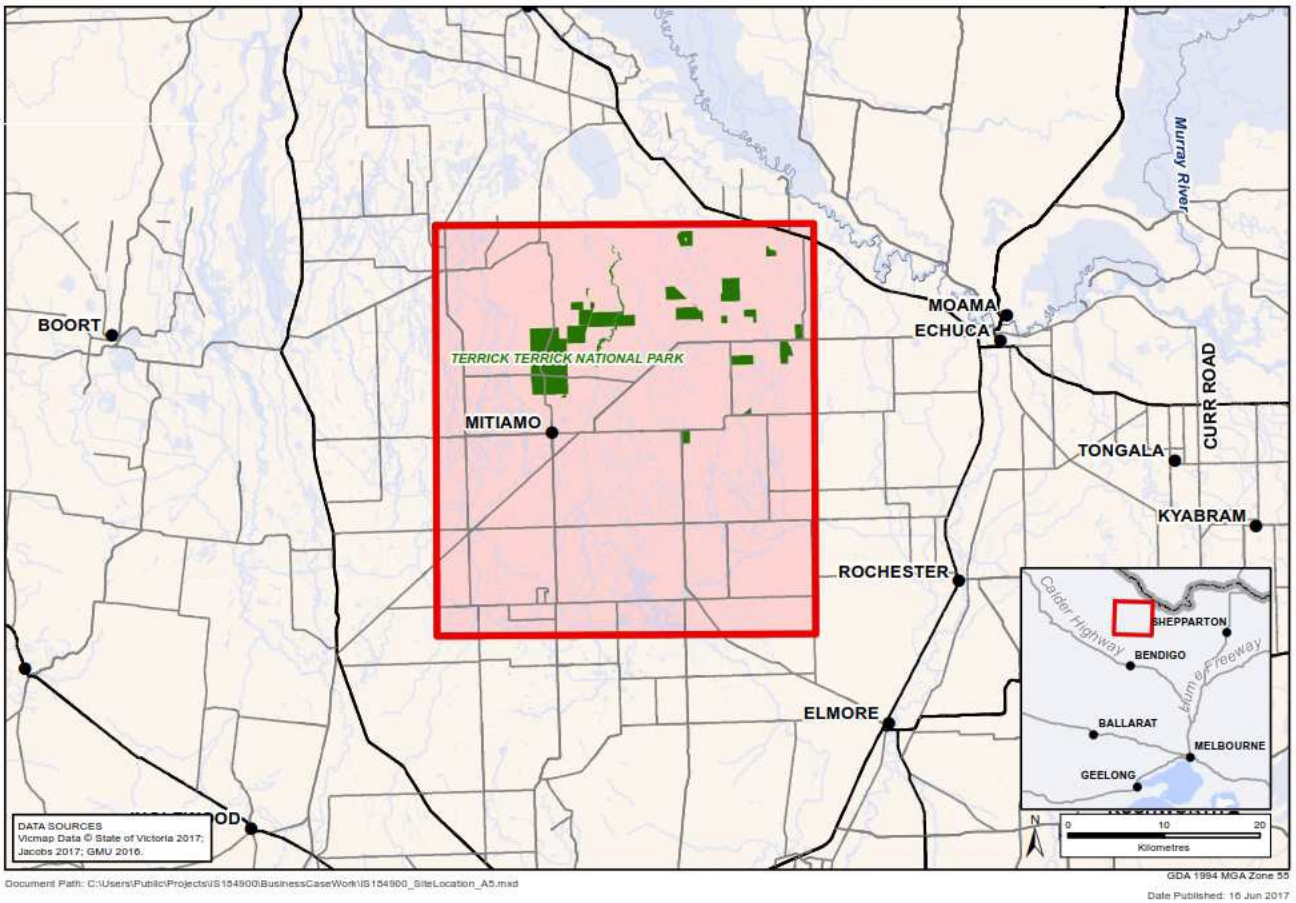
# Investment projects

# Tier 1 - Priority projects

## Mitiamo Domestic and Stock Pipeline

The Mitiamo project area (75,000 ha) is located north of Bendigo and south west of Echuca near Mitiamo, Tennyson and Dingee townships in north central Victoria (refer to map).

Water is currently delivered to some properties in this region for domestic and stock purposes through a network of open channels and dam storages. The current system is extremely inefficient with significant water losses through seepage and evaporation. Over 80% of water supplied to the channels is lost before use, and only two-thirds of the project area is currently serviced.




*Willang Yarn balancing storage (dam). Courtesy SRW.*

The potential for productive agriculture and expansion of intensive agricultural industries is currently constrained by the availability, reliability, and quality of domestic and stock water. The Mitiamo township is also significantly affected by poor water quality resulting in regular high cost water cartage from Echuca to replace or augment supplies. Environmental management and firefighting capacity are both limited by the current supply arrangement. Addressing these problems will produce significant benefit to the local and broader community.

The reticulated water supply would provide:

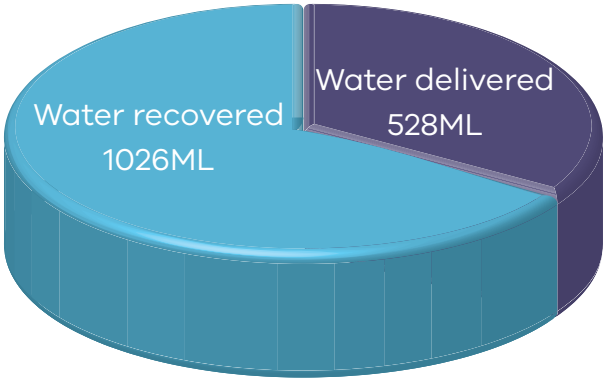
- A far superior service and better quality water
- Increased productivity in both currently unserved and serviced areas, while reducing a range of costs to both farmers and the township associated with water cartage and poor water quality
- Improved community resilience and liveability
- Improved terrestrial biodiversity of Terrick Terrick National Park.

There are a number of existing poultry and piggery enterprises within the north-central Victorian region and the pipeline would create a reliable and clean water source for these industries.

The project aligns well with a number of government initiatives and their desired outcomes, which include the "National Water Initiative", "Water for Victoria" and "Victorian Food and Fibre Strategy".

The community and stakeholders have long supported an upgrade and extension of the existing stock and domestic system to an efficient and reliable piped water delivery system.

This detailed business case estimates a total cost of $29 million ($14.5 million sought from the Commonwealth) to plan, design, engage and build a reticulated water pipeline supply for the Mitiamo region. The pipeline would service the whole 75,000 hectare area with approximately 528 ML of piped domestic and stock water per year, reducing water losses by approximately 1,026 ML per year.



It is proposed that the Mitiamo Stock and Domestic Pipeline project be delivered through GMW.

GMW through the Connections Project has experience in delivering these pipeline constructions. For example, it successfully delivered the Cosgrove stock and domestic pipeline (10,000 ha) servicing in the order of 600 customers on time and under budget, through a design and construct contract.

A construction timeline for the Mitiamo Stock and Domestic Pipeline has been developed that schedules the project to commence in November 2018 with the construction works to be completed in October 2020.

*"Water is absolutely critical to our economy, environment and our communities. A healthy environment and safe, affordable and reliable water services are essential for people, jobs and a thriving community".*[2]

2 Victorian Government (2016), Water Plan "Water for Victoria", page 6.

## Shepparton East Channel Modernisation

The Shepparton East project area is located immediately east of the City of Shepparton. The project area forms part of the larger Shepparton Irrigation Area (SIA), one of the six major irrigation areas in the GMID (refer to map).

Shepparton East is characterised by intensively developed irrigated horticulture benefiting from Class A irrigation soils, a climate highly suited to fruit production and in close proximity to farm labour and a transport hub in the City of Shepparton[3]. Approximately 70% of the area is planted to permanent tree crops – principally pears, apples, stone fruit and vegetables.

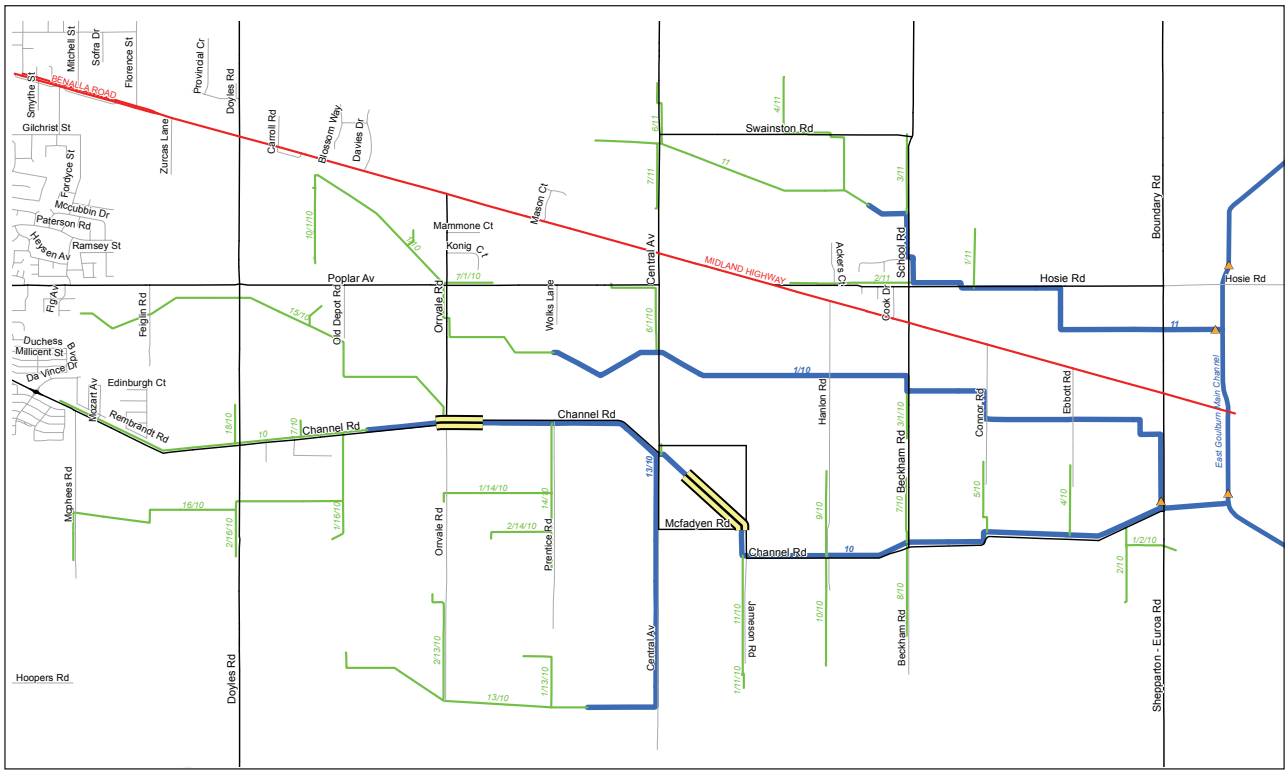
3 Greater Shepparton Planning Scheme, December 2017

*Modernised irrigation structure that measures and regulates flows in channel system. Courtesy GMW Connections.*

The Shepparton East project area is defined as the No 10 and No 11 secondary channels and related spur channels and pipelines (see figure over). The water delivery system in Shepparton East contains 49 km of channel and pipeline, 96 regulators and supplies 298 customers (Water Use Licences) through 547 outlets.

A draft business case details the scope, cost, benefits and approach to delivery of the Shepparton East Project — a project to modernise the remaining un-modernised sections of the GMW water delivery system in Shepparton East.

## Shepparton East - Channel System (Existing Automated Channels blue)



*Manual drop bar regulator*

*Irrigation dethridge wheel*

The non-backbone channels in Shepparton East are the only part of the SIA that is unmodernised. Thus landowners in the area are precluded from the opportunities to increase on-farm productivity that arise from a modernised water delivery system. Additionally, within the un-modernised sections of Shepparton East, GMW continues to operate a high loss delivery system with legacy irrigation meters and manually operated regulators.

Modernisation of the Shepparton Irrigation area has increased system efficiency from 70% to 85%. In this regard, RMCG in their analysis of future horticulture in the GMID found that:

> *"There will be an increased intensity of production, with investment in more sophisticated watering systems to support heightened density of plantings. This approach will be reflected in a raised return per hectare as these improved technologies are adopted, which will also see irrigation demand rise in terms of ML/ha planted. That, in turn, will require best practice levels of service in irrigation delivery at the farm gate.*
>
> *A secure and reliable water supply is essential to the development of horticulture in the region. High capital investment and sophisticated production systems mean that businesses in the sector will expect water to be available on demand and throughout the year.[4]"*

A scope of works for the Shepparton East Project has been developed based on the standard Connections Project modernisation approach applied elsewhere in the GMID. The works proposed include the automation of 19 km of channel, and the upgrade and rationalisation of 223 meter outlets.

*Automated regulator*

The total estimated cost of completing the modernisation works in the Shepparton East Project is $11.5 million including risk contingencies. An amount of 1.2 GL of water savings is forecast to be generated by the works.

In addition to water savings, the benefits generated by the Shepparton East Project include improvements in the service standards to GMW customers in Shepparton East and a reduction in GMW whole-of-life and operating costs.

It is proposed that the Shepparton East Project will be delivered under the established Connections Project governance framework with the Project Control Group (PCG) having overarching accountability for the governance of the project.

A construction timeline for Shepparton East Project works has been developed that schedules the project to commence in November 2018 with the construction works to be completed in the winter works period (May-Sept) of 2019.

4 RMCG (2016) GMID Irrigation Sector Analysis, consultant report prepared for GMW, March.

## Channel Conversion to Stock and Domestic

In 2010, the Victorian and Commonwealth Government's approved $1.059 billion of funding to deliver Stage 2 of the GMW Connections Project was the most significant investment in modernising irrigation infrastructure in Australia.

The project focussed on removing the public non-backbone channels and reconnecting non-backbone customers to the modernised backbone through privately or customer owned infrastructure. It is expected to generate water savings of 204GL and was largely funded by the Commonwealth Government.

Once completed, the Connections Project will have significantly reduced GMW's channel footprint by approximately 30 per cent, or 1,752 km of channel length. When the GMW Connections Project is completed there will still be in the order of 1,400 km of 'non-backbone' channels in the GMID that will be retained in their current form.

GMW's fundamental ongoing challenge is to find a financially sustainable pathway to finance the costs associated with replacing, maintaining and operating a modernised system in the face of reduced future water availability and the current GMID footprint.

The prospectus provides GMW with an opportunity to further reduce GMW's infrastructure footprint now and in the longer term. This view is supported by RMCG's *GMID Sustainable Footprint*[5] report which recommended that GMW undertake further detailed analysis into strategic areas such as differing service levels, under-utilisation and sizing of current channels and outlets and co-contribution opportunities between GMW and other funders.

These strategic areas include further rationalising channels to minimise the number of spur channels (using less than 50ML/year) to reduce longer term asset replacement costs for GMW. The target is lands that are no longer being irrigated and only require a future domestic and stock supply.

The Channel Conversion to Stock and Domestic project scope includes approximately 105 km of retained channels that will not be treated by the Connections Project where there is no or little irrigation demand on the channel (average annual channel use for the last five years of less than 50 ML/year). The channels are surplus to the Connections scope to achieve its 204 GL water savings.

Identifying works to be undertaken involves a preliminary investigation of each individual channel section to consider the scope and level of works required to meet the project objectives.

For this business case, the project team will need to assess solutions for each of the under-utilised channels. The scoping will be undertaken in consultation with operational staff from GMW and involve the following steps:

- compilation of a database of GMW assets, customer water use, landowner and water savings information for each of the sections of channels
- an initial workshop with area staff to work through potential rationalisation solutions for each channel section taking into account local area knowledge in relation to asset conditions, operational issues, land use trends and knowledge of landowner irrigation practices
- development of preliminary designs to estimate cost and water savings for each channel section.

The intent of the project is to decommission the 105km of existing under-utilised channel and replace with alternate private or GMW shared stock and domestic connection with a water recovery estimate of approximately 4GL.

The channels to be decommissioned under this proposal are spread across the GMID in the Shepparton, Central Goulburn, Rochester, Loddon Valley, Murray Valley and Torrumbarry irrigation areas.

Future prices for GMID irrigators will be more sustainable if the asset base can be significantly reduced. This project will reduce GMW future business costs and support the longer term viability of the Victorian and Commonwealth investments in irrigation system modernisation.

It is proposed that the Channel Conversion to Stock and Domestic will be delivered under the established Connections Project governance framework with the PCG having overarching accountability for the governance of the project.

A construction timeline for the works is tentative and assumes business case development completed and approved in July 2019 and design, consultation and construction completed by the end of the winter works period (May-Sept) of 2020.

5 RMCG, GMID Sustainable Footprint, Report, 17 July 2017.

# Tier 2 - Concept Projects

*Private diverter channel*

## Sunraysia Private Diverters - Channel Upgrades

There are 16 private earthen channels in the Sunraysia region that supply irrigation developments. These channels and associated works located on Crown land are aged and owner maintained and operated by the relevant licensed users. Water is diverted from the River Murray by pump and delivered to points of use some distance from the river. The total length of these channels is about 39 km.

The channel upgrades will provide water savings and reduce the impact that irrigation infrastructure has on salinity levels in the region and the export of salt from the region.

In most cases, losses are borne by the end users and covered either by allocations received by the users from entitlement or by allocation trade. Measurement points vary between primary extraction points either at the river, along the channel system, or in some cases, there may be no meters at the offtake so losses are unknown. All channels incur significant seepage and evaporation losses and for those with no metered accounting at the river, the losses in these channels are treated as river losses and borne by Victoria and New South Wales.

A draft report by GHD estimated the losses of up to 4.3 GL per year from the private diverter channels.

The proposal is to install more accurate measurement points and either pipeline, plastic line and/or re-profile these existing earthen private channels to reduce seepage and evaporation losses.

In addition to the water savings, the reduced seepage losses will have regional salinity benefits.

Pipelining of channels will:

- remove barriers to flood movement across the flood plain
- reduce the habitat provided to pest plants and animals
- remove the impact of channel overflow on adjoining Crown land
- significantly improve the visual amenity of the flood plain
- in certain locations, create an opportunity to incorporate outlets and utilise the renewed infrastructure to deliver environmental water to adjacent wetlands.

An assessment of the evaporation and seepage losses from the Sunraysia Private Diverters Channels estimated that the losses potential range from a low of 1.2 GL to a high of 4.3 GL.

These losses are currently accounted as part of the River Murray losses, so any reduction in losses would lead to efficient river operation and the water savings from the reduction in river losses would be converted into new water shares.


## Lower Murray Water (LMW) - Replacement of Ageing Pipelines and Channels

In the Sunraysia Irrigation area, infrastructure is predominantly pipelines and lined main channels. Major upgrades to a pressured supply have occurred in Robinvale and the Sunraysia Modernisation Project Stage 1 (SMP1) has created a more efficient irrigation network across the Mildura, Merbein and Red Cliffs districts. The project has:

- upgraded key pump stations across the three districts
- replaced approximately 24 km of the main open channels with trunk pipelines which supply the old spur network of pipes
- installed channel automation in 20 km of open channels, including 19 regulating structures.

In total, approximately 9GL of water is still lost per annum from LMW's Irrigation Districts. LMW estimates that up to 5GL of the 9GL is lost through ageing infrastructure (spur pipelines and channels).

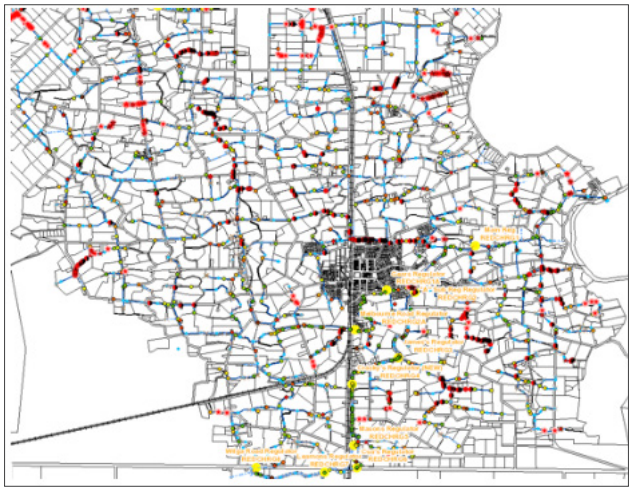
The proposal is to implement a replacement program that targets existing high loss spur pipelines and open channels to reduce seepage and evaporation losses. LMW estimates that up to 2GL of water savings could be cost-effectively achieved through a targeted replacement program.

The project benefits would include:

- 365 day access to irrigation water, providing greater reliability and water availability
- improved water quality leading to reduce on-farm filtration costs
- greater operational flexibility to improve service delivery to irrigation customers
- 2GL of water recovery to the environment

There are 284 kilometres of spur pipelines of which most are beyond their life expectancy. The "heat map" provides a visual representation of pipes with a history of leak maintenance. The project would target the worst pipeline sections for optimal and cost effective water recovery.

*Leaky pipeline*

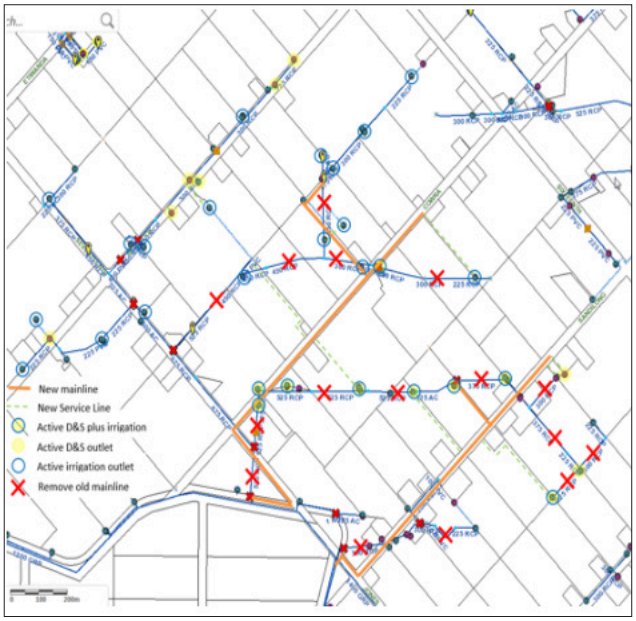


*History of leak maintenance*

In addition to reducing water loss, the project will also rationalise pipeline layout by re-routing pipeline alignment; look to reduce the number of outlets; and explore property amalgamations which will benefit LMW's 5000 customers through reduced footprint and infrastructure costs.

The sketch over is an example of how these multiple benefits may be achieved by optimising the location and replacement of pipeline and outlets in one area of a network.

- Existing spur pipeline
  - 4200m long
  - 2900m diagonally traverses properties which has a high incidence of leaks
  - 37 outlets
- Replacement pipeline
  - 3100m long
  - 2600m relocated to road reserve instead of across properties.
  - 20 outlets (17 less)
  - Network hydraulics improved by moving demand upstream.




*Optimised pipeline network*

Most of the spur network is located within the high salinity impact zone so there will be an additional benefit of reducing the amount of salt load into the Murray River. Preliminary assessment indicates a 'significant effect[6]' of up to 0.6EC (based on 2GL water loss reductions) is anticipated. A potential credit claim on the Salinity Register could be explored through a detailed salinity impact assessment.

## Wargan Channel upgrade

The Wargan Channel runs west from the end of the Merbein high pressure SMP pipeline to supply irrigators growing table grapes and fodder. The first section of the Wargan Channel is being upgraded as part of the SMP2 project, which is co-funded from both the Commonwealth National Water Infrastructure Development Fund and local irrigators. However, the remaining 10.4km of Wargan Channel past Meridian Road is an unlined, earthen channel. Preliminary pondage testing undertaken by GHD in June 2017[7] estimated seepage and leakage losses of 360ML per annum.

6 (a) a change in average daily salinity at Morgan which the Authority estimates will be at least 0.1 E.C. within 100 years after the estimate is made; or (b) a salinity impact which the Authority estimates will be significant (Schedule B, Murray-Darling Basin Agreement).

7 Channel seepage loss; GHD, 15 June 2017. Report prepared for Lower Murray Water Agreement).

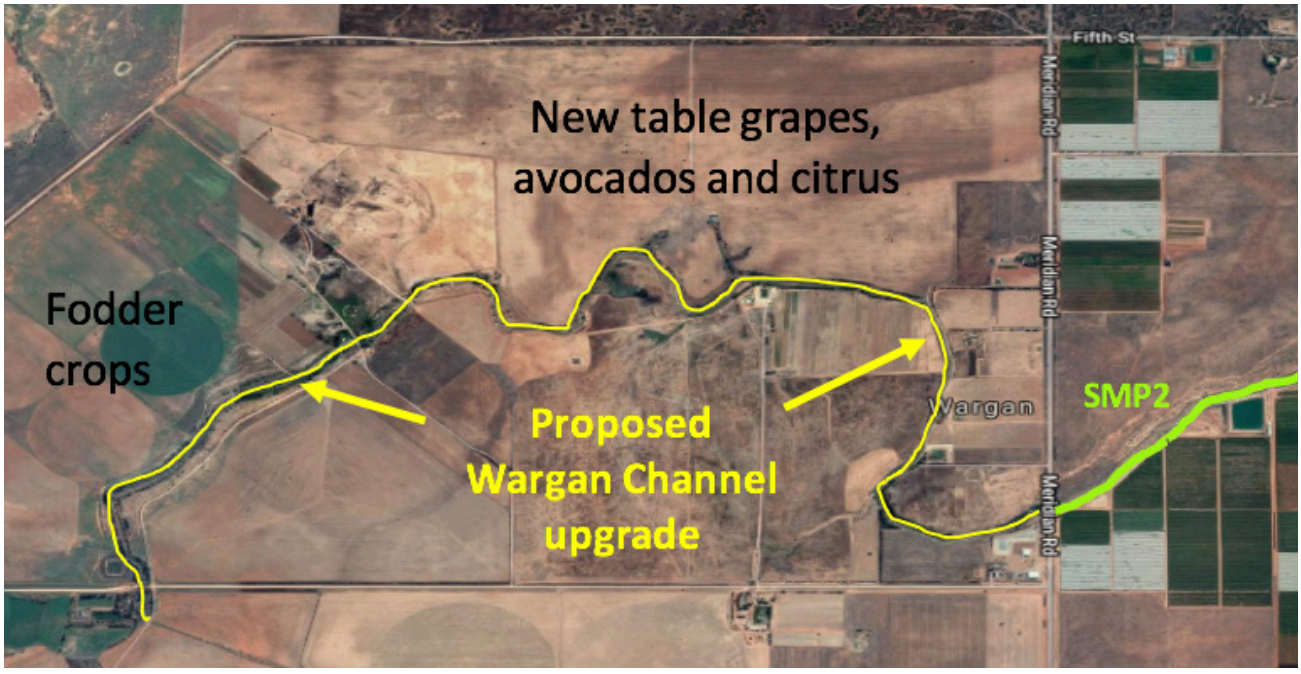


The water losses are accounted for within the LMW Loss Entitlement. In addition to reducing water losses, lining of the remaining channel will reduce seepage and rising salt in the land adjacent to the channel.

The first stage of the upgrade will require completion of a detailed business case for the spur pipeline line network and channel upgrade at an estimated cost of $500,000. The business case would include consultation with irrigators, confirmation of the water loss savings, assessment of the salinity reduction and benefits and optimisation and design of the works for $300,000. An additional $200,000 will also be required for equipment to verify and validate the water loss savings. The business case can be completed within six months of funding approval allowing works to commence in winter 2020. It is expected that works will be completed over two winter periods (2020/21).

It is proposed that the project will be delivered under the existing SMP2 governance framework with primary responsibility to the LMW Board.

**Proposed channel upgrade and existing condition of the Wargan Channel**




## Goulburn Murray Water – Wakiti Water Loss Recovery project

Wakiti Creek is a flood anabranch of the Goulburn River located near Kotupna in northern Victoria. The creek fills with water during flood events on the lower Goulburn River; and from water pumped into the upper end from a pump station to supply irrigation and stock and domestic water to members of the Wakiti Irrigators Co-Operative.

The Wakiti Irrigators Co-Operative Society (WICS), established in the 1950s, holds a loss entitlement of 1,850ML.

The loss entitlement covers losses such as evaporation, and seepage that are incurred in delivering water allocations to individuals who extract water from the Wakiti Creek.

Low water allocations in the millennium drought not only made irrigation from the Wakiti Lagoon unviable, but also threatened the provision of domestic and stock water. The WICS resolved their domestic and stock risk by constructing a piped supply.

The loss licence provides the WICS with the ability to maintain water in the creek when water from natural flow events dries up and as such the full volume is not needed to be pumped every year. The long term utilisation is about 50 percent but the utilisation is increasing as high flow events in the lower Goulburn River decrease and natural flow events in Wakiti Creek are less frequent and smaller. Water savings will be independently audited to ensure there are no third party impacts to other water users, along with an environmental impact assessment.

The loss entitlement is not specified in GMW's Goulburn System Bulk Entitlement (BE), but is part of the overall obligation on GMW to meet passing flows at Goulburn Weir and at McCoys Bridge to supply all water orders and meet all losses downstream of Goulburn Weir.

The irrigation properties vary in size from 64 ha to 598 ha and are predominantly irrigated pastures and lucerne. There is one dairy property and some opportunistic cereal (e.g. wheat, barley) cropping. Irrigated improved pastures and lucerne are commonly used for grazing of beef cattle and first cross lamb production with some lucerne also cut for hay. Depending on water availability, enterprises may include pastures, lucerne or cropping and may be either irrigated or dryland.

*Wakiti Pump Station*

Trading of water has become more frequent during recent years due to the high water price (for temporary trades) and a realisation that potentially higher returns can be made through selling water rather than irrigating pastures or crops.

The WICS was also considered by the Connections Project as a potential water savings project, but this did not proceed because the Wakiti licences were outside the GMID and therefore outside the Connections project remit.

The WICS members have a long history of engagement with prospective water saving projects and have now been advised of this water recovery opportunity.

The loss licence was issued in 2007 and had a 30 June 2018 expiry date. The licence has subsequently been re-issued for period of two years to allow discussions to commence on possible alternatives.

The expectation of the WICS is that they be presented a draft proposal in the near future. They would then determine the interest of members as to whether to proceed or not, and in the course of this consider the future of irrigation of the properties served from the Wakiti Lagoon.

The WICS has requested that this process is expedited so that there is no lingering doubt about the future of these farms. GMW has advised WICS that its licence would be renewed in the event that there is a lack of interest or willingness to proceed with the project.

Project options that suit Victoria's Basin Plan water recovery target objectives for the WICS may include the recovery of the loss licence.

The business case would consider options of providing an alternative connection and the acquisition of the loss licence in order to convert to water shares to support the water recovery program, and dry the irrigators off voluntarily. The process to convert the licence to a new water production would need to be examined and an appropriate conversion determined.

The expected outcome of the conversion is in the range from 0.9 to 1.85 GL.

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