



Preliminary Business Case

Water Storages at Mount Cottrell

Capital Investments Team

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Table of Contents

Part 1. Executive Summary	4
Part 2. Problem	5
2.1 Definition of the Problem	5
2.2 Evidence of the Problem	5
2.3 Timing Considerations	6
Part 3. Benefits	7
3.1 Benefits to be Delivered	7
3.2 Evidence of Benefit Delivery	8
Part 4. Strategic Response	10
4.1 Strategic Interventions Considered	10
4.2 Strategic Options considered and Strategic Response	12
Part 5. Options Analysis	13
5.1 Description of Project Options considered	13
5.2 Alternate Tank Locations	15
5.3 Site Options for Storage at Mount Cottrell	16
5.4 Stakeholder identification and consultation	18
5.5 Social Impact Assessment	19
5.6 Environmental Impact Analysis	19
5.7 Cultural Heritage Analysis	20
5.8 Financial Analysis	20
5.9 Risk	20
Part 6. Recommendations	22
6.1 Details of Recommended Solution	22

List of Tables

Table 1: Cost Comparison of Tank Site Options	16
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List of Figures

Figure 1: Western Water Growth Areas showing Surbiton Park Class A Supply Area	6
Figure 2: Site at Mount Cottrell above the 170m Contour	17
Figure 3: The preferred site at 1665-1715 Mount Cottrell Road	22

Attachments

- A. Melton Class A Recycled Water Strategy
- B. Economic assessment of Class A and dual pipe supply to selected Melton growth areas
- C. Statutory Planning Report (Glossop Town Planning, December 2012)
- D. Visual Impact Assessment Report (Hansen, June 2013)
- E. Environmental Assessments (Tree Wishes, November 2011 and May 2012)
- F. Cultural Heritage Assessments (Tree Wishes, June 2009 and November 2010)

Part 1. Executive Summary

The critical issue that Western Water is facing is growth in population coupled with very little local supply options, and therefore a potential increase in reliance on the Melbourne Water supply.

The unprecedented growth within the Melton area, is a result of expansion to the Urban Growth Boundary as part of the Victorian State Government's Melbourne 2030: a Planning Update – Melbourne @ 5 Million strategy. The expansion of the growth area, particularly within Melton where growth could result in up to 85,000 new residential lots. This growth provides the following challenges to Western Water:

- Ensuring that water supplies can meet the anticipated demand created by the growth.
- Providing security of drinking water supply (both within the region and as augmented by connection to Melbourne Water), by considering a greater use of alternate water sources to managing precious drinking (potable) water supplies.
- Providing the most economic supply option.

On 1st July 2013, Water Minister Peter Walsh released "Melbourne's Water Future", a draft whole-of-water-cycle strategy for Melbourne. The draft strategy states that homes and businesses in new suburbs will increasingly be connected to a third/purple pipeline supplying Class A recycled water for toilet flushing and outdoor use. The draft strategy is consistent with the Government's Living Melbourne, Living Victoria (LMLV) Policy (which include the objectives of "driving generational change in how Melbourne uses rainwater, stormwater and recycled water").

Western Water commissioned Marsden Jacob Associates (MJA) in 2013 to prepare a report on the economics of providing Class A to properties in selected growth areas of Melton. The findings of this report confirmed that provision of dual reticulation (potable water and Class A recycled water) provided a lower present cost option to conventional potable supply only option, for these growth areas.

Through the next regulatory period (2013-2018), Western Water has committed to supplying Class A recycled water to the Growth Areas Authority (GAA) Precinct Structure Plan (PSP) areas of Toolern & Rockbank North with Class A recycled water.

In 2012, Western Water engaged MWH to develop a Class A Recycled Water Strategy for Melton. The primary focus of that study was to outline the recycled water infrastructure to supply Class A to growth areas within Melton. A key component of the Class A Recycled Water Strategy for Melton, is the need for an elevated storage.

A detailed multi-criteria options assessment has confirmed that the preferred option for a Class A recycled water storage, is a 29ML storage tank at Mount Cottrell.

Part 2. Problem

2.1 Definition of the Problem

The critical issue that Western Water is facing is growth in population coupled with very little local supply options, and therefore a potential increase in reliance on the Melbourne Water supply.

The unprecedented growth within the Melton area, is a result of expansion to the Urban Growth Boundary as part of the Victorian State Government's Melbourne 2030: a Planning Update – Melbourne @ 5 Million strategy. The expansion to the growth area, particularly within Melton where growth could result in up to 85,000 new residential lots. This growth provides the following challenges to Western Water:

- Ensuring that water supplies can meet the anticipated demand created by the growth.
- Providing security of drinking water supply (both within the region and as augmented by connection to Melbourne Water), by considering a greater use of alternate water sources to managing precious drinking (potable) water supplies.
- Providing the most economic supply option.

2.2 Evidence of the Problem

Melton is currently supplied with potable water via two sources; firstly, Merrimu Reservoir, and secondly by connection to the Melbourne Water system.

The Merrimu Reservoir has a capacity of 32GL, and supplies potable water to the townships of Melton and Bacchus Marsh. Southern Rural Water also holds an entitlement from this reservoir, for the Werribee and Bacchus Marsh Irrigation Districts. Western Water's bulk entitlement for water from Merrimu is currently 19.5GL/annum. The existing Water Filtration Plant (WFP) treating water from the reservoir to supply the Melton and Bacchus Marsh townships has a capacity of 30ML/day.

Over the past decade, the region has experienced record low rainfall, which has resulted in extremely low storage levels within Merrimu Reservoir, leaving the Melton system solely reliant on Melbourne Water supplies. A combination of water restrictions, water saving campaigns and capital investment to augment water supplies from Melbourne Water has allowed Western Water to meet the demand, which even during summer periods, was well below the anticipated peak demands for the system. Although over the past 2 years, greater than average rainfall has seen Western Water's local reservoir storage levels rise above 80% capacity, the impacts of drought on local water supplies remain relevant. The unpredictability of climate conditions and hence unreliability of local water storages has prompted Western Water to seek alternate water supply sources, including Class A recycled water and stormwater harvesting in accordance with Victoria State Government Policy.

The existing water supply system into Melton is able to supply a maximum of 70ML/day (with 30ML/day being contributed to by Merrimu WFP). The estimated unrestricted peak water

demand for the Melton systems are currently greater than 50 ML/day, however are forecast to ultimately increase to more than 200 ML/day.

Augmentation of the source supply, likely by a second Melbourne Water connection, is inevitable when demand exceeds capacity in the future. Alternative water supplies, such as recycled water or stormwater can reduce the demand on the potable water system and form a vital part of the integrated water cycle management.

In December 2012, Western Water engaged MWH Australia Pty Ltd (MWH) to undertake a review of all servicing options to cater for growth adjacent to Melton which is included in Attachment A. The Strategy also includes an assessment of various options to deliver Class A recycled water to the growth area. The Options Assessment is included in Appendix A of Attachment A.

2.3 Timing Considerations

Through the next regulatory period (2013-2018), Western Water has committed to supplying Class A recycled water to the Growth Areas Authority (GAA) Precinct Structure Plan (PSP) areas of Toolern & Rockbank North with Class A recycled water. The growth areas within these PSPs had commenced uptake in 2012, and are expected to ultimately yield up to approximately 56,000 new residential lots, with up to approximately 6,800 residential lots to be developed between 2012 and 2018.

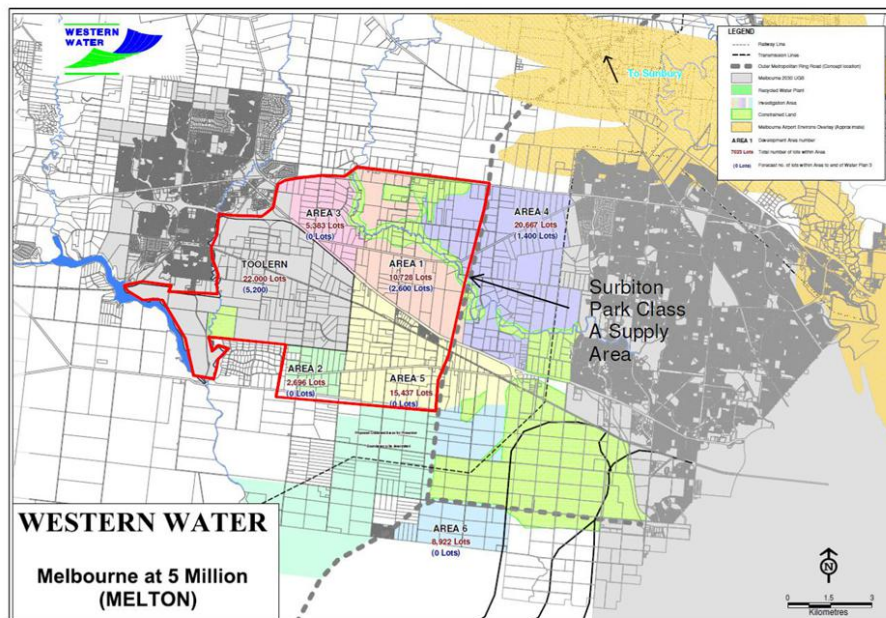


Figure 1: Western Water Growth Areas showing Surbiton Park Class A Supply Area

Part 3. Benefits

3.1 Benefits to be Delivered

Western Water has adopted the aspirational target to achieve 100% recycling of all treated effluent at their sewage treatment plants. Provision of alternative water supplies, including Class A, is incorporated in the Government's Living Melbourne, Living Victoria (LMLV) Policy. Specifically the Policy includes the objectives of "driving generational change in how Melbourne uses rainwater, stormwater and recycled water".

The provision of using alternative water supplies, including Class A recycled water, provides the following benefits:

Benefits to Western Water's operations

- Consistent with Obligations, Regulations and Government Policy.
- Reduces demand and peak flows of drinking water networks and associated costs.
- Year round recycled water demand, such as toilet flushing, can reduce the cost of winter storages to be built by Western Water to meet Victorian EPA requirements.
- Additional revenue to be realised through the sale of Class A recycled water.
- Reduced expenditure on disposing of waste effluent elsewhere.

Benefits to Customers

- Supplying Class A recycled water to customers, is expected to reduce potable demand by up to 50%.
- Alternative water supplies (such as recycled water) can 'improve the liveability of our urban areas and reduce negative impacts on the environment' (LMLV Implementation Plan, 2012).
- Recycled water provides a cost effective option for achieving the Victorian Governments 6 Star Standard for new residential building.
- Class A recycled water and support, enhance and attract industries within the region.
- Creates an opportunity to provide reliable water supply for irrigation of public open spaces, improving community liveability and minimise the impact of a heat island effect during times of drought.
- Creates an opportunity to provide reliable water supply for agricultural and industrial investments, improving regional productivity.
- A dual reticulation option (potable water supply/Class A recycled water supply) is more economic (has a lower present value cost) as compared to a conventional potable water supply option.

Benefits to Stakeholders

- An opportunity for the region to support residential, commercial, industrial and agricultural growth within a region, typically limited by relatively low rainfall.
- Working towards a collaborative approach with Government, Melbourne Water, Council, GAA and EPA to provide an environmental, social and financial sustainable resource.

3.1.1 Economic Assessment of Class A dual pipe to Melton Growth Areas

Western Water commissioned Marsden Jacob Associates (MJA) in 2013 to prepare a report on the economics of providing Class A to properties in selected growth areas of Melton. MJA prepared a report (February 2013) and associated modelling that builds on work undertaken by MJA in 2011 as part of Western Water's Growth Strategy. A copy of the MJA report is included in Attachment B.

The economic model developed for Melton utilises a standard cost benefit framework whereby the costs of dual reticulation (viz. provision of Class A supply together with conventional potable supply) are compared against the costs of the conventional solution which is the supply of conventional potable water and sewerage infrastructure to the new developments.

The main findings from the base case analysis include:

- the Dual Reticulation Class A option has a lower present value cost or PVC (\$888.2 million) compared to the Conventional Supply option (\$935.7 million) – a saving of around \$47.5 million;
- the higher costs associated with the dual supply (including cost of distribution, reticulation, meters and plumbing infrastructure and connection fees and compliance costs are offset by the avoided cost of rainwater tanks, savings in potable water infrastructure and reduced cost of bulk water purchases from Melbourne Water; and
- the results can be considered to be conservative because:
 - the modelling assumed a constant real price for water sourced from Melbourne Water. It is understood, for example, that triggering operational supply from the Wonthaggi desalination plant would result in a real price increase.
 - the assumption that Class A treatment is common to both options whereas the more likely situation being that there would be additional costs over and above that allowed for Class A under the Conventional Supply option due to increased sewerage treatment and disposal costs.
 - any variation in demand will most likely occur through an increase in outside usage e.g., for garden watering, which would further increase the differential in favour of the Dual Reticulation Class A option.

3.2 Evidence of Benefit Delivery

Western Water has committed to monitor the performance of the Class A recycled water, against the envisaged benefits of these schemes as stated in Section 3.1.

Western Water has committed in the current Water Plan (2013-2018) to invest over \$4M in Supervisory Control and Data Acquisition (SCADA) related infrastructure. This infrastructure relates to monitoring and systems to capture and analyse system information. The monitoring of the system will provide data to confirm the impact of Class A recycled water in the reduction of potable water usage.

3.2.1 Reduction in Potable Water consumption through use of Class A recycled water

Western Water currently produces Class A recycled water at the Melton Recycled Water Plant (RWP) and supplies to the township of Eynesbury and, more recently, Toolern. Although these townships are in the early stages of development, Class A recycled water usage has reduced residential potable water consumption in Eynesbury by approximately 49.2% in FY2012/13, which approaches the target of 50% reduction in potable water consumption.

Part 4. Strategic Response

4.1 Strategic Interventions Considered

4.1.1 Government Policy

On 1st July 2013, Water Minister Peter Walsh released "Melbourne's Water Future", a draft whole-of-water-cycle strategy for Melbourne. The draft strategy states that homes and businesses in new suburbs will increasingly be connected to a third/purple pipeline supplying Class A recycled water for toilet flushing and outdoor use.

Western Water's recycled water strategy and the provision of Class A recycled water from Melton is consistent with Government policy by encouraging greater use of recycled water within the urban environment.

4.1.2 Water Supply Demand Strategy

Western Water's Water Supply Demand Strategy (WSDS) incorporates Class A recycled water supply to the Melton growth areas. This Strategy has been subject to public consultation and approved by the Western Water Board and Department of Sustainability and Environment (DSE).

4.1.3 Community Consultation

Public consultation undertaken to inform Water Plan 2013-2018 investments indicate that support for recycled water investment continues. During this consultation, customers were asked to assign a value to their support for recycled water investments. A contribution of approximately \$15 per bill was indicated (up to \$45 extra per annum), if cost recovery cannot be achieved within the Water Plan period. This level of support was derived from over 500 responses based feedback from deliberative forums, on-line forums, Customer Advisory Groups and Customer Reference Groups.

4.1.4 Western Water Growth Strategy

Western Water's Growth Strategy (2011), endorsed by Board, supports a catchment by catchment roll out of Class A recycled water in new growth areas, as an alternative to importing additional water from Melbourne Water. To date, Western Water has rolled out a Class A recycled water supply to Eynesbury and Toolern and have committed to supplying the Rockbank Precinct with Class A recycled water. These Class A recycled water supply areas have been selected based on locality and distance to the source water which is the key driver of costs (i.e. investing in Class A recycled water infrastructure close to the RWP).

Western Water has not committed to Class A supply for further developments during the 2013-2018 Water Plan, so that the rate of growth and ongoing viability of the Class A recycled water supply can be further evaluated using the committed examples, prior to a decision to supply these further areas is made. In developing the growth strategy, higher

cost supply areas are not proposed to be supplied with Class A recycled water (e.g. developments east of the outer metropolitan ring road).

Growth areas, particularly around the Western Water – City West Water boundaries provide for potential sharing of Class A recycled water and sewerage infrastructure based on the most efficient supply option available to customers. These options are described in the ‘Strategic Hydraulic Infrastructure Framework for Servicing the Melbourne Urban Growth Boundary (West)’ (SKM, 2011).

Western Water has also developed an optimisation model for determining the preferred bulk water supply options. This ensures bulk water supply costs are optimised over the period of the Water Plan. Fundamental to the optimisation model is the use of locally sourced water and inclusion of Class A recycled water substituting 50% of drinking water supplies (for non-potable uses) in the growth areas that Western Water has committed to supply.

4.1.5 Precinct Strategies

The Precinct Structure Plans for the new growth areas of Toolern and Rockbank have been approved by government through the Growth Areas Authority and incorporate a 50% target of lower drinking water consumption. This will be achieved predominantly by the supply of Class A recycled water to these Precincts.

If Class A recycled water is not provided, developers would need to identify and fund other measures to achieve this target.

Key stakeholders involved in the development of this aspect of the Precinct Structure Plans included developers, Melbourne Water, Melton City Council and DSE.

4.1.6 6-Star Building Standards

Under the 6 Star Standards, new buildings are required to demonstrate compliance and performance with the Building Commission Victoria Residential Sustainability Measures. New Buildings must require either a rainwater tank (receiving rainfall from a minimum catchment area of 50 square metres and having a minimum capacity of 2,000 litres connected to all toilets in the building for the purpose of sanitary flushing) or a solar water heater system. Under this Standard, dual water reticulation and water recycling systems connected to toilet flushing systems can be provided as an alternative to a rainwater tank. Under this scenario, the recycled water must be supplied by the Responsible Water Authority.

Class A recycled water supply to the growth areas of Eynesbury, Toolern and Rockbank will assist customers to meet their 6 Star Building Standards.

If Class A recycled water is not provided, customers would need to invest in alternative measures.

During planning for Eynesbury, the developers investigated a range of sustainable water supply measures to meet the (then) 5 Star Building Standards, including the installation of rainwater tanks. A recycled water supply was considered by the developers to be the most cost effective and sustainable measure for customers to meet the minimum star ratings for

new homes. This is particularly as a result of the very low rainfall levels within the localised region.

4.2 Strategic Options considered and Strategic Response

4.2.1 Melton Class A Recycled Water Strategy

In 2012, Western Water engaged MWH to develop a Class A Recycled Water Strategy for Melton (Attachment A). The primary focus of that study was to outline the recycled water infrastructure to supply Class A to growth areas within Melton.

A key component of the Class A Recycled Water Strategy for Melton, is the need for an elevated storage. The options considered for the storage are considered in Part 5.

Part 5. Options Analysis

5.1 Description of Project Options considered

5.1.1 Options for Storage and Security of Supply for Class A Recycled Water

The Melton Class A Recycled Water Strategy (MWH, Attachment A) outlines the recycled water infrastructure to supply Class A to growth areas within Melton. The outcome of the study outlined the main servicing requirements and infrastructure; with an elevated storage tank being critical to supply.

In 2013, Western Water engaged MWH to undertake a detailed Options Assessment to confirm whether elevated storage tanks are the preferred option to provide storage and security of supply for the Class A system. The Options Assessment outlines the assessment and recommended option for delivering Class A recycled water to customers, and is included as an appendix to the Melton Class A Recycled Water Strategy.

The options considered to provide storage and security of supply for the Class A system were:

- Base Case - Mt Cottrell 29ML storage tank with a top water level (TWL) of 182m (top of tank structure at 184m).
 - CAPEX \$74.3 million
 - OPEX \$1.08 million
 - Estimated net present cost \$63.6 million
- Option 1 - Direct supply to the Class A supply network from a pump station located at Surbiton Park RWP (no storage).
 - CAPEX \$73.25 million
 - OPEX \$3.7 million
 - Estimated net present cost \$83.12 million
- Option 2 - Mt Cottrell 29ML storage tank with a TWL of 157m (top of tank structure at 159m).
 - CAPEX \$87.62 million
 - OPEX \$1.38 million
 - Estimated net present cost \$72.22 million
- Option 3 – 29 No. Elevated storages (“golf-ball” type storages), each tank with a maximum capacity of 1ML and minimum elevation of 25m to meet the minimum pressure requirements and to account for friction losses throughout the network.
 - CAPEX \$398.55 million
 - OPEX \$7.18 million
 - Estimated net present cost \$321.39 million

5.1.1.1 Comparison of Options

The three alternative options were compared against the base case option, based on a multi-criteria assessment. The criteria used for the assessment was as follows:

- Capital cost.
- Operation and maintenance cost.
- Net present cost.
- Operability.
- Risk to security of supply.
- Environmental impact (GHGs and Site footprint).
- Social impacts (aesthetics).

Options 1 and 2

Option 1 and 2 require significant booster pumping facilities to cater for the supply area (100% booster pumping for Option 1 and approximately 40% booster pumping for Option 2).

For small scale supply areas (either potable or recycled water) it can be feasible to supply under booster pump conditions. For Option 1, to operate the proposed pump station (flow range of 0-2895l/s required) and to ultimately supply more than 50,000 lots with recycled water, the pump station would require multiple pumps (potentially up to 10 pumps working in series) and will require extremely complex controls. This option also puts sole reliance of supply of the network on mechanical and electrical infrastructure. From an engineering and operational perspective this option is not considered feasible. This is due to the difficulty in being able to control the pressures throughout the network effectively, whilst meeting demands. Without some operational/network storage, the system would require substantial pressure vessel storage, surge control and variable speed drives for all pumps to maintain pressures. The option would also be operator intensive when compared to other options, with constant monitoring required to ensure demands are being met.

Similarly, although Option 2 is comparable to the Base Case in both capital cost (higher than Base Case by \$13.3 million) and net present cost (higher than Base Case by \$8.6 million), this option presents unacceptable risks to the operation of the Class A system. Due to the lower elevation of the storages under this option, there is 100% reliance on booster pump stations to provide sufficient pressures for over 40% of the supply area. This option therefore presents an unacceptable level of risk to the supply system, as per Option 1.

Options 3

Apart from having significantly greater capital and operational costs as compared to all other options, Option 3 also has significant operational constraints and risks. These are:

- 100% reliance on the pump station at the Class A plant, in the absence of an elevated storage, to supply recycled water to each of the 29 elevated storages.
- Similar to Options 1 and 2, the reliance on the pump station at the Class A plant to supply all flows at a range of likely demands, is considered not feasible.
- Smaller elevated storages results in less storage contingency to supply zones.

- Increased occupational health and safety risk in management of the 29 elevated storages (maintenance works will involve working from heights).
- Use of 29 elevated storages effectively creates 29 supply zones, which will result in increased operational complexity.
- 100% reliance on 29 lift pump stations to transfer Class A recycled water into each elevated storage. If a lift pump station fails, there is no easily accessible alternate supply.
- Operation of 29 lift pump stations has increased power usage and greenhouse gas production, with corresponding environmental impacts.
- To site the 29 elevated storages and lift pump stations, land would need to be allocated for these assets, within developed areas.

5.1.1.2 Preferred Storage Option

The multi-criteria options assessment has confirmed that the base case option (29ML storage tank with a top water level of 182m) is the preferred option. The base case option also provides the lowest capital cost and net present cost of all options.

5.2 Alternate Tank Locations

Upon confirmation that a storage tank is the preferred option, an assessment was carried out to determine the preferred site for the storage tank. The only sites within the area that can provide the required minimum elevation include:

- Mt Cottrell.
- Mt Kororoit.
- Minns Road (existing water tank site).
- Mt Holden (maximum TWL of 165m is achievable) – however potential shared site with City West Water/Melbourne Water.

5.2.1 Mt Holden Tank Site

The Mt Holden site is proposed as a future potable water storage site as part of the Western Corridor Strategy - which is a joint Melbourne Water, City West Water and Western Water strategy for supplying water to the growth corridor to Melbourne's west. Although the use of this site is not planned until year 2020, the site is likely to ultimately have up to 60ML of potable water storage.

In addition, Western Water understands that the Mt Holden site is being considered by City West Water as a Class A storage site for recycled water produced at the proposed Ravenhall RWP facility. The Class A produced by this plant is expected to supply recycled water into the growth areas to the east of the Outer Metropolitan Ring Road, to be serviced by City West Water. It has been suggested that a shared storage facility for Class A could be considered. Although in the early concept phases, it is Western Water's understanding that the Class A scheme from Ravenhall RWP would not be implemented until after 2020, with no works scheduled in the upcoming regulatory period (Water Plan 2013-2018).

A shared storage facility at Mt Holden provides the following challenges:

- **Size of site:** With the proposed 60ML of potable water storage, and 15ML of Class A storage to cater for the Ravenhall RWP, and 29ML storage to cater for Surbiton Park RWP, the total storage at Mt Holden would be over 100ML. It is uncertain whether the site could cater for the footprint of water storage site of this size.
- **Class A Water Quality:** Class A recycled water is treated sewage effluent that is reused for domestic and commercial purposes. There are stringent quality parameters that need to be met to ensure the health and safety of the community receiving the recycled water. The responsibility for implementing quality assurance with producing Class A recycled water rests solely with the water authority. Breaches in recycled water quality can result in prosecution from the EPA and/or Department of Health. A combined storage facility from two RWPs complicates the quality aspect of each system. Should one of the sources fail a quality parameter, this would put both systems at risk.

5.2.2 Assessment of Alternate Tank Sites

The four tank site options are comparable in terms of operational risks, environmental and social impacts. Therefore these options were compared based on the cost only (i.e. capital, operating and NPC).

Table 1: Cost Comparison of Tank Site Options

Option – Tank Location	Estimated Capital Cost (\$)	Estimated Total Operation & Maintenance Cost (\$/yr)	Estimated NPC (\$)
Mt Cottrell (base case)	\$74,300,000	\$1,080,000	\$63,600,000
Mt Kororoit	\$104,330,000	\$1,220,000	\$82,250,000
Minns Rd	\$112,130,000	\$1,350,000	\$85,330,000
Mt Holden	\$138,550,000	\$1,610,000	\$122,370,000

From this cost analysis a tank located at Mt Cottrell has the lowest NPC. This option is also recommended from an operational point of view, given the large pumping distance required to pump recycled water to a tank at Minns Rd, Mt Kororoit or Mt Holden, as well as additional large trunk mains required.

In addition, there is increased operational risk and uncertainty around the operation of the system with a tank situated at Minns Rd, Mt Kororoit or Mt Holden when compared to Mt Cottrell. This is due to the large distance between Surbiton Park RWP and the proposed tank sites, which requires the pump station to transfer water through the network to the tank.

5.3 Site Options for Storage at Mount Cottrell

An area of approximately 5 hectares, located above the 170m contour would be sufficient to accommodate the size of tank infrastructure required (29ML) to allow a top water level within the tank of 182m. Land above the 170m contour at Mount Cottrell is either privately owned or owned by Melton City Council.

The land sites above the 170m contour are shown in Figure 2 below:

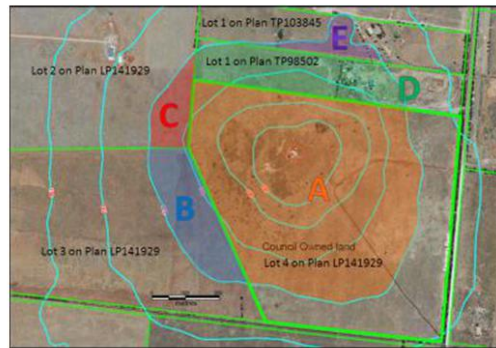


Figure 2: Site at Mount Cottrell above the 170m Contour

With reference to this Figure 2, Site A is owned by Council and comprises the greatest proportion of land above the 170m contour, including the summit of Mount Cottrell. Sites B, C, D and E are all privately owned.

The landowner consultation process has identified the following:

- Site A: Melton City Council has advised that the land is currently used as an offset for native vegetation and contains highly significant grassland communities. Council has advised that it does not support this site as an option for a recycled water storage. As a consequence, Site A was removed from further consideration.
- Site B: This site is privately owned. The landowner has advised that they are agreeable to the potential siting of a tank at the required elevation on the property, subject to agreement of land purchase terms;
- Site C: This site is privately owned. The landowner has stated that he would not accept a recycled water storage on the property. As a consequence, Site C was removed from further consideration.
- Site D: This site is privately owned. The landowner has advised that they are agreeable to the potential siting of a tank at the required elevation on the property, subject to agreement of land purchase terms;

Therefore, based on landowner consultation, only Sites B and D were taken forward for further consideration.

- Site B 1665-1715 Mount Cottrell Road, Mount Cottrell (Lot 3 on Plan LP 141929) – privately owned.
- Site D 211-229 Faulkners Road, Mount Cottrell (Lot 1 on Plan TP98502) – privately owned.

5.3.1 Assessment of Preferred Site at Mount Cottrell

A further multiple-criterion assessment was carried out by Glossop Town Planning (December 2012, included in Attachment C) to determine the preferred site based on the following:

- Environmental (Tank site and Pipelines to the site from Surbiton Park RWP).
- Visual Impact.
- Cultural Heritage value of the land.
- Other Stakeholder input.
- Road access to the tank site.
- Access to power supply to the site.
- Suitability of an unimpeded communication link (radio path) between the tank site and the Class A Recycled Water Plant at Surbiton Park RWP.

The assessment concluded that the preferred site at Mount Cottrell was "Site B" 1665-1715 Mount Cottrell Road, Mount Cottrell (Lot 3 on Plan LP 141929).

The following sections of this report, include details on the following key activities which are required to determine the preferred site at Mount Cottrell:

- Stakeholder Consultation.
- Visual Impact Assessment.
- Environmental (Biodiversity) Impact Assessment.
- Cultural Heritage Assessment.

5.4 Stakeholder identification and consultation

The Consultation Plan, which was endorsed at Western Water's March 2010 Board meeting, proposed two phases:

- Phase 1 – Broad scale consultation with residents, Environment Groups and Council to gain feedback regarding the suitability of Mt Cottrell for the siting of recycled water storage tank(s). The outcomes would help identify issues which will be used to develop options for the storage site.
- Phase 2 – Targeted consultation to confirm the acceptance of the proposed option, and detailed discussions with the landowners with regard to potential land acquisition.

5.4.1 Phase 1 Community Consultation

As part of Phase 1 of the consultation, a letter drop was carried out to the immediate residents surrounding Mt Cottrell, as well as an information session held at Surbiton Park RWP.

The key outcome from Phase 1 of the process is that there was support for Class A recycled water as a sustainable alternative to potable water, and no objections received for the siting of tanks at Mt Cottrell. In addition, two private landowners expressed interest in selling a part of their land for the purposes of the tanks. The two private landowners have suggested parcels of their land which are topographically suitable for the purposes of the tanks.

The two privately owned land sites are part of 1665-1715 Mt Cottrell Road and part of 221-229 Faulkners Road. These two sites are topographically suitable, and have been assessed together in a multiple-criteria technical assessment.

5.4.2 Phase 2 Community Consultation

Phase 2 of the community consultation process has been completed, with confirmation that both private landowners are still interested in a potential sale of part of their land.

5.4.3 Other Stakeholder Consultation

In parallel with the community consultation process, Western Water has carried out on-going consultation with interested stakeholders to advise on various stages of the project.

- Melton City Council: Liaison with Council has been carried out from the commencement of the project. Council owns the land containing the summit of Mt Cottrell, and is the planning authority. Council has provided guidance on the requirements for key studies associated with the project, including environmental (flora and fauna), cultural heritage and visual impact assessment of the sites. The Council supports the project, being aware of its overall community benefit.
- Pinkerton Landcare and Environment Group (PLEG). The PLEG has been consulted during the development of the project to-date. The PLEG supports the project, being aware of its overall community benefit.

5.5 Social Impact Assessment

5.5.1 Visual Impact Assessment

Western Water has engaged the services of a specialist expert, Hansen Partnership Pty Ltd (Hansen), to undertake a visual impact assessment of the proposed storages.

To assess the visual impacts of the proposed storages, Hansen prepared photomontages to obtain a realistic impression of the proposed works. A series of criteria for assessing the visual impact were defined, which also assisted in determining view locations. Ten view locations were identified and agreed with Council.

The visual impact assessment has confirmed that the site at 1665-1715 Mt Cottrell Road is the preferred option with respect to minimising visual impact.

With regard to the site at 1665-1715 Mt Cottrell Road, the assessment concluded that the visual impact (on publicly accessible areas likely to result in views from the development) of the proposed water storage facility on Mount Cottrell is acceptable. A copy of Hansen's Visual Impact Assessment report is included as Attachment D.

5.6 Environmental Impact Analysis

Western Water has engaged the services of specialist environmental consultants "Tree Wishes Land Care Advice" to carry out all environmental assessments to assess the two privately owned land sites. The detailed assessments are included in Attachment E.

The proposed site on 1665-1715 Mt Cottrell Road carries no likely impact on native vegetation communities. Therefore, this site presents the best option with regard to avoiding native vegetation impact. The quality of the vegetation at this site will be increased by the

landscaping associated with this project, effectively extending the habitat provided at Mt Cottrell.

The second site at 221-229 Faulkners Road contains patches of mixed quality (high and low) native vegetation which is a potential habitat for the Golden Sun Moth and other threatened native fauna.

In addition, the pipeline route from Surbiton Park to the site at 1665-1715 Mt Cottrell Road presents the least environmental impact, as compared with a pipeline to the 221-229 Faulkners Road site.

The findings of this assessment were presented to Council at a meeting held on 13 December 2011. At officer level, the Council endorsed the findings of the study, which is that the preferred site for the storage tanks from a biodiversity perspective is at 1665-1715 Mt Cottrell Road.

5.7 Cultural Heritage Analysis

Western Water has engaged the services of a specialist Cultural Heritage consultant "Dr. Tim Stone" to carry out cultural heritage assessments for the two privately owned land sites at Mount Cottrell. The detailed assessments are included in Attachment F.

5.8 Financial Analysis

As stated in Section 3.1.1, the dual reticulation option (potable water/Class A recycled water) has a lower present value cost or PVC (\$888.2 million) compared to the Conventional Supply option (\$935.7 million), resulting in a saving of around \$47.5 million.

The preferred Class A supply option (as stated in Section 5.2.2) which includes a 29ML storage at Mount Cottrell. This option presents the lowest cost to community as it has the lowest capital, operational and net present cost.

5.9 Risk

Mt Cottrell presents the preferred site from both a technical and financial perspective, in addition to being acceptable from environmental, cultural heritage and visual impact.

If a site is not secured then a sub-optimal solution may result. The following key risks remain:

- Statutory Planning Process

In order to proceed with the compulsory acquisition process, a Public Acquisition Overlay (PAO) is required. An amendment to the Melton Planning Scheme is required to apply this PAO to the land. In addition, Western Water will require the land to be rezoned from Green Wedge to Public Use Zone 1.

Western Water has worked closely with Melton City Council in the development of the justification for the project since 2009. Specialist consultants have been engaged to carry out all assessments on the project. Glossop Town planning has been engaged to carry out the Planning Scheme Amendment and Land re-zoning process.

- Community Stakeholder Engagement.

Upon selection of the preferred site, Western Water carried out further communications with the community and interested stakeholders to advise the outcome of the site selection.

- Melton City Council: Presentations to Council have been made at officer level and Councillor level.
- The private land owners for the two short-listed sites: Correspondence was provided to these landowners to advise the outcome of the site selection. Meetings were held with the landowner of the preferred site, to discuss the statutory planning and land acquisition process.
- The community in the area surrounding Mt Cottrell: A letter drop was carried out to present the outcome of the site selection to the community.
- Pinkerton Landcare and Environment Group (PLEG). The PLEG has been consulted during the development of the project to-date, as well as presented with the outcome of the site selection process. The PLEG is a supporter of the project, being aware of its overall community benefit.

- Land acquisition process.

Formal acquisition of the land can present risks which will be mitigated by adhering to the formal processes, and seeking specialist advice as required.

Part 6. Recommendations

6.1 Details of Recommended Solution

- 29ML of storage with top water level of 182m located at Mt Cottrell has the lowest net present cost and the least risk due to less reliance on pumping stations to supply the network.
- The preferred site at Mt Cottrell is 1665-1715 Mount Cottrell Road (Lot 3 on Plan LP 141929). The site area required is approximately 5 hectares.

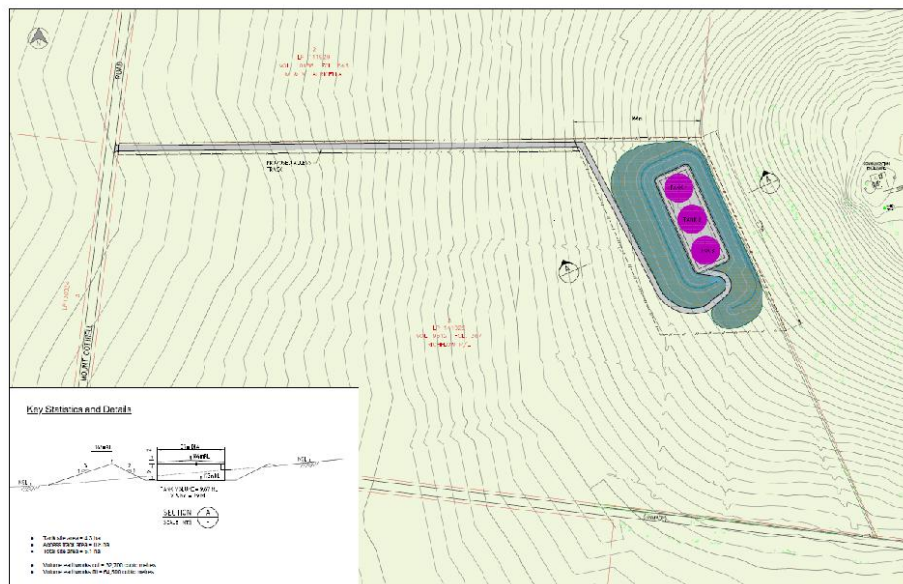


Figure 3: The preferred site at 1665-1715 Mount Cottrell Road

- 29ML of storage is required to cater for ultimate growth. A total of three (3) storage tanks, each of approximately 9.67ML (total volume of 29ML), will be provided to cater for the rate of growth.

Attachment A

Melton Class A Recycled Water Strategy

Attachment B

Economic assessment of Class A and dual
pipe supply to selected Melton growth areas

Attachment C

Statutory Planning Report (Glossop Town
Planning, December 2012)

Attachment D

Visual Impact Assessment Report (Hansen,
June 2013)

Attachment E

Environmental Assessments (Tree Wishes,
November 2011 and May 2012)

Attachment F

Cultural Heritage Assessments (Tree Wishes,
June 2009 and November 2010)