MOORABOOL SMALL TOWNS SERVICING ANALYSIS

MOORABOOL SHIRE COUNCIL

JUNE 2016

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ENGAGEMENT

Moorabool Shire Council (**Council**) engaged Urban Enterprise and TGM to provide specialist civil engineering and costing services to address service provision into the towns of Dunnstown (sewer and water), Bungaree (sewer), Wallace (sewer) and Myrniong (sewer). This report has been prepared by Urban Enterprise in June 2016, with technical input from TGM.

PREVIOUS REPORTS

AECOM prepared a Small Towns Services Study for Moorabool Shire, which assessed options and prepared costs estimates for a range of sewer, water and gas infrastructure to be connected to the towns of Bungaree, Wallace and Dunnstown. The study did not consider sewer options for Myrniong or Dunnstown.

This project has reviewed the options and costs included in the AECOM report and finalised the preferred options for the towns, along with establishing and costing preferred options for connecting Dunnstown and Myrniong to sewer.

Urban Enterprise prepared the Moorabool West Small Towns Residential Assessment in 2014, which assessed the residential market demand in the small towns of Western Moorabool, namely Bungaree, Wallace, and Dunnstown (the assessment did not consider Myrniong).

The Assessment provided two growth scenarios that assumed the subject towns are provided enhanced infrastructure (reticulated sewerage in Bungaree and Wallace and reticulated water in Dunnstown), with a total of between 12 and 25 new dwellings per annum across the three towns combined.

These growth scenarios have been used and adapted for the purposes of this report, having regard to infrastructure and timing considerations. This report proceeds on the broad view that the towns each contain some capacity for minor infill within the town (development of vacant lots and small subdivisions on existing larger lots), as well as incremental development of land at the town boundaries by developers later in the planning horizon (subject to strategic planning support and rezoning).

INFRASTRUCTURE PROJECTS AND COSTS

Table S1 identifies the specific infrastructure projects that are within the scope of this project. Each project has been considered independently, with the exception of the Bungaree and Wallace sewer projects which have been considered as a combined project due to the opportunity to construct trunk sewer infrastructure in a staged manner.

It is noted that although the main project drivers for Wallace, Bungaree and Dunnstown are listed as urban / economic growth, there may also be environmental and public health issues associated with the septic tanks in these towns that have not been reported to Council.

TABLE S1: INFRASTRUCTURE SCOPE BY TOWN

Town	Sewer	Water	Concept	Costing	Water Authority	Main project drivers
Wallace	Yes	-	AECOM	AECOM	Central Highlands Water	Urban / economic growth
Bungaree	Yes	-	AECOM	AECOM	Central Highlands Water	Urban / economic growth
Dunnstown	Yes	Yes	TGM	TGM	Central Highlands Water	Urban Growth, service improvement
Myrniong	Yes	-	TGM	TGM	Western Water	Environmental and public health

Source: Urban Enterprise, 2016.

In order to refine previous concepts prepared and to establish concept options for Myrniong and Dunnstown (sewer), consultation was undertaken with Central Highlands Water, Western Water, Southern Rural Water and Council engineers. Based on this consultation, Table S2 shows a summary of the concept options and costs that were carried forward for assessment.

Full cost details are provided in **Appendix A**, and concept designs are included in **Appendix C** for Myrniong and Dunnstown.

TABLE S2: CONCEPT OPTIONS AND COSTS

Town	Project	CAPEX	OPEX	Source
Bungaree/Wallace	Sewer - Stage 1 – Pressure (TGM)	$5,075,000	$20,000	TGM
	Sewer Stage 1 – Gravity (AECOM)	$6,773,642	$77,047	AECOM
Dunnstown	Sewer – Gravity to Ballarat	$2,769,299	$20,000	TGM
	Sewer – Pressure to Ballarat	$2,915,604	$20,000	TGM
	Water	$1,739,000	$70,200	AECOM
Myrniong	Sewer - Gravity to Bacchus Marsh	$4,616,059	$20,000	TGM
	Sewer - Pressure to Bacchus Marsh	$5,323,114	$20,000	TGM

Source: AECOM, 2014, TGM, 2016.

Of the options shown in Table 2, the following are preferred based on advice from the relevant water authorities and selection of lower cost outcomes to minimise the funding burden on property owners:

- Bungaree / Wallace: Bungaree only as Stage 1, both pressure and gravity options carried forward for analysis;
- Dunnstown: Gravity sewer, transfer to Ballarat;
- Myrniong: Gravity sewer, transfer to Bacchus Marsh.

For Myrniong, the option of a separate treatment plant was considered and costed, however this option is not preferred by Western Water and the ultimate capital cost is expected to be in the order of $500,000 higher than transferring to Bacchus Marsh. Therefore, only the treatment option of transferring to Bacchus Marsh has been carried forward for assessment.

It is noted that the cost of the Bungaree works is higher than the Myrniong works, despite the Myrniong works requiring a significantly longer pipeline. This is due to the Bungaree trunk infrastructure being sized to also cater for future connection to Wallace, along with allowing for storage as the system to which it is delivered in Ballarat has limited capacity. It is assumed that the Bacchus Marsh system would not require as significant storage to handle flows from Myrniong.

CASE STUDIES

Case studies were identified where small towns in Victoria have been recently sewered in order to review potential funding and financing models. Case studies in the Rural City of Wangaratta, South Gippsland Shire, Wellington Shire and Golden Plains were reviewed and water authority and council personnel were consulted.

The key case study findings are:

- Many recent sewer projects were made supported by State government funding under the Country Towns Water Supply and Sewerage Program, which is no longer in effect;
- Most case studies were driven by environmental and/or public health issues and objectives;
- A key success factor is the level of support from the community and property owners – as such the upfront fees must be struck at a level that is reasonable;

- Only Snake Valley and Alberton schemes were completed outside the previous CTWSS program. The Alberton scheme has resulted in high costs for connection ($9,200 per lot) and required majority support from landowners to proceed. Both Alberton and Snake Valley were successful in attracting State or Federal funding.

The key success factors derived from the case studies are as follows:

1. Schemes should achieve cost recovery within the life of the infrastructure (nominally 30 years). This will require positive cash flow within the early stages of the scheme;
2. Schemes should have broad community support and strike an upfront contribution that is attractive to and feasibly paid by property owners;
3. Development of land outside the core township areas should contribute a higher rate per property to pay for the extension of services.

FUNDING OPTIONS

Through consultation with water authorities, the Essential Services Commission and State government agencies, funding options for the infrastructure were investigated. In the past, State government funding programs have been available to deliver sewer infrastructure to small towns such as the Country Towns Water Supply and Sewerage (CTWSS) program. The program was closed in 2013, and there is no current State government funding stream dedicated towards small town sewerage schemes.

Despite the availability of broad State funding for regional projects through Regional Development Victoria (RDV), given the absence of a dedicated funding stream Council should proceed on the basis that it is unlikely under current circumstances that the projects will receive State government funding.

In the absence of state funding support, the most likely implementation mechanism is inclusion of the projects in the relevant Water authority's 5 year water plan. This is more likely if there is broad community support, if there is an environmental or public health issue that the project will address, and/or if a funding contribution can be secured from a private developer.

If the projects are not able to be financed by the relevant water authority, the alternatives are to seek to introduce a special rates scheme (such as in Alberton), or seek federal and state funding and contribute Council funds to reduce the cost to landowners (such as Snake Valley). However, the costs to property owners of a special rates scheme are prohibitive, in excess of $25,000 per property.

It is considered imperative that water authority financing is part of the funding mix for the projects, requiring inclusion of the relevant projects in the Central Highlands Water and Western Water 5 year plans for capital works.

POTENTIAL FUNDING SCHEMES AND COSTS

Water authorities have the ability to finance infrastructure programs and recoup capital costs and interest payments through upfront and ongoing revenue from existing and future property owners.

A financial assessment of each project has been prepared with a starting point of full cost recovery. That is, it is assumed that over the minimum life of the infrastructure (30 years), all costs associated with the project will be recouped by landowner payments, including capital expenditure, operational expenditure and interest on borrowings. Under this model it is assumed that no external funding (eg. Council, State or Federal government) is available, but that the water authority will finance the scheme through borrowings.

It has also been assumed that there will be additional dwellings / lots created during the 30 year timeframe under each of the scenarios previously outlined, and that the connection fees paid by these new lots would contribute to the overall funding of the project. That is, the full cost of the project is not solely borne by existing property owners, but is spread across existing and future property owners.

The infrastructure funded by these schemes would service all existing township lots and allow for infill development of new dwellings within the existing zoned land. Any trunk extension works beyond the concepts shown in this report (for example, as required to serve a new growth area) would need to be borne by a developer.

As shown in Table S3, per lot upfront costs for all options are above $5,000 except the Bungaree sewer project under the high dwelling growth scenario (TGM cost estimate, $2,600 per lot) and the Dunnstown sewer project under the higher dwelling growth scenario ($4,500 per lot under the gravity option). $5,000 per lot is used as an indicative maximum that property owners are likely to accept as a viable scheme. In most cases, an upfront fee of less than $2,000 per lot would be preferred, however the high cost of extending trunk infrastructure to the towns, and the small existing number of dwellings, means that none of the schemes achieve a 30 year costs recovery with an upfront cost of less than $2,000 per property.

TABLE S3: SUMMARY OF FINANCIAL ASSESSMENTS

Town	Project	Capital Cost	Existing Dwellings	new Dw. P.a.	Dwellings at Year 30	Upfront cost per lot (30 yr cost recovery)
Bungaree	Stage 1 -AECOM	-$6,773,642	141	10	441	$16,100
			141	15	591	$10,300
	Stage 1 - TGM	-$5,075,000	141	10	441	$6,400
			141	15	591	$2,600
Dunnstown	Gravity	-$2,769,299	68	5	218	$9,700
			68	8	308	$4,500
	Pressure	-$2,915,604	68	5	218	$10,700
			68	8	308	$5,300
	Water	-$1,739,000	68	5	218	$18,600
			68	8	308	$13,300
Myrniong	Gravity	-$4,616,059	94	5	244	$17,300
			94	8	334	$11,100
	Pressure	-$5,323,114	94	5	244	$21,500
			94	8	334	$14,400

Source: Urban Enterprise, 2016. Note: all assessments include relevant operating costs.

EXTERNAL FUNDING

The availability of external funding will increase the likelihood of projects being successfully included in the water plans, especially for projects that are based primarily on growth potential such as the Bungaree / Wallace Stage 1 project. External funding should be considered where that funding will be consequential in supporting the viability of the project for the main delivery agency (water authority) and the community (existing property owners).

A development partnership between Council, Central Highlands Water and a developer could lead to sufficient critical mass of dwellings over the medium term to make Stage 1 of the Bungaree / Wallace sewer project viable. An important assumption underpinning the financial modelling is that landowners / developers will pay for any further extensions to trunk infrastructure, thereby creating new lots and realising the population and dwelling growth projections that are embedded in the modelling (as was embedded in the Wangaratta small towns sewer funding schemes).

It is important that the timing of any infrastructure investment is aligned with timing of demand accumulation in the west of the Shire, and that one preferred location for growth is selected to maximise growth rates in that location. Based on previous work undertaken by Urban

Enterprise, Bungaree is considered the most attractive prospect for a developer given the ready access via the Western Freeway, proximity to Ballarat and the availability of local recreation and community services.

Council could seek to broker a partnership between a developer and Central Highlands Water to bring sewerage infrastructure to Bungaree, thereby reducing the upfront connection costs for existing properties, reducing the level of debt that Central Highlands Water are required to take on to deliver the project, reducing the risk to Central Highlands Water of slow development rates, and providing strategic planning support for a key medium term growth opportunity in the west of the Shire. This opportunity may also exist for Myrniong, given proximity to Melbourne and Bacchus Marsh and ready access from the Western Freeway.

CONCLUSIONS

The substantial upfront costs of the proposed projects and the absence of a formal State government funding program are significant impediments to the feasibility of the projects. The funding burden falls on individual property owners and the relevant water authorities, resulting in high upfront costs to property owners and a risk that water authorities will not include the projects in the capital works plans due to insufficient project need or return.

Under current circumstances, it is highly unlikely that the projects could be delivered without external sources of funding, given the high per property costs. The key hurdle is therefore inclusion of the projects in the water authority plans for the next 5 years.

Inclusion in the plans will be more likely for Myrniong, if evidence of broad failing septic tanks across a full year can be confirmed with Western Water. If Myrniong is not deemed to have sufficient environmental and public health drivers for the project, the per property costs would be prohibitive to the scheme's viability.

The towns of Wallace and Bungaree should be considered together in terms of servicing. The extension of a trunk sewer from Ballarat is required, meaning that Bungaree would be the most efficient first stage of infrastructure investment. There is unlikely to be sufficient demand to support two growth areas concurrently developed (eg. Wallace and Bungaree). It is concluded that, subject to community support, attraction of a key developer, appropriate strategic planning support and approval by Central Highlands Water to take on the project as debt, Bungaree is the most likely project to proceed on the basis of future residential and economic growth potential.

NEXT STEPS

The following next steps are recommended to progress the projects:

- Full seasonal testing of septics for Myrniong and confirmation with Western Water of the need to intervene on environmental and public health grounds;
- Consult existing property owners regarding need and willingness to pay for improved service infrastructure, and whether there are any environmental or public health issues with septic tanks in the towns of Bungaree, Wallace or Dunnstown that require investigation;
- Ensure relevant communities and property owners are aware of the consultation process for the 5 Year Plans for Central Highlands Water and Western Water to enable projects with community support to be put forward for inclusion;
- Discuss findings and proposed financial models with Central Highlands Water and Western Water;
- Consider the findings of this report when preparing strategic planning for the western part of the Shire, in particular to identify a suitable development parcel in Bungaree (and potentially Myrniong).

1. INTRODUCTION

1.1. PROJECT INTRODUCTION

Moorabool Shire Council (**Council**) engaged Urban Enterprise and TGM to provide specialist civil engineering and costing services to address service provision into the towns of Dunnstown (sewer and water), Bungaree (sewer), Wallace (sewer) and Myrniong (sewer).

This report has been prepared by Urban Enterprise in May 2016, with technical input from TGM.

1.2. PROJECT AIMS AND OBJECTIVES

The study is designed to inform preparation of a Small Town and Settlement Clusters Strategy (**STS**), in particular issues and opportunities to connect the selected towns to reticulated sewer and water infrastructure, the likely costs for installation and maintenance, and whether appropriate funding models can support these initiatives. The funding models will give Council greater clarity on the necessary scale of development needed to underpin a future business case for each town. The following tasks are outlined in the project brief:

- A concept sewer design for Dunnstown;
- A concept package plant solution for Myrniong;
- A realistic funding model for sewering Wallace and Bungaree based on previous work;
- A realistic funding model for sewering and water provision of Dunnstown; and
- A realistic funding model for sewering Myrniong.

1.3. METHOD

This report has been prepared using the following method and information sources:

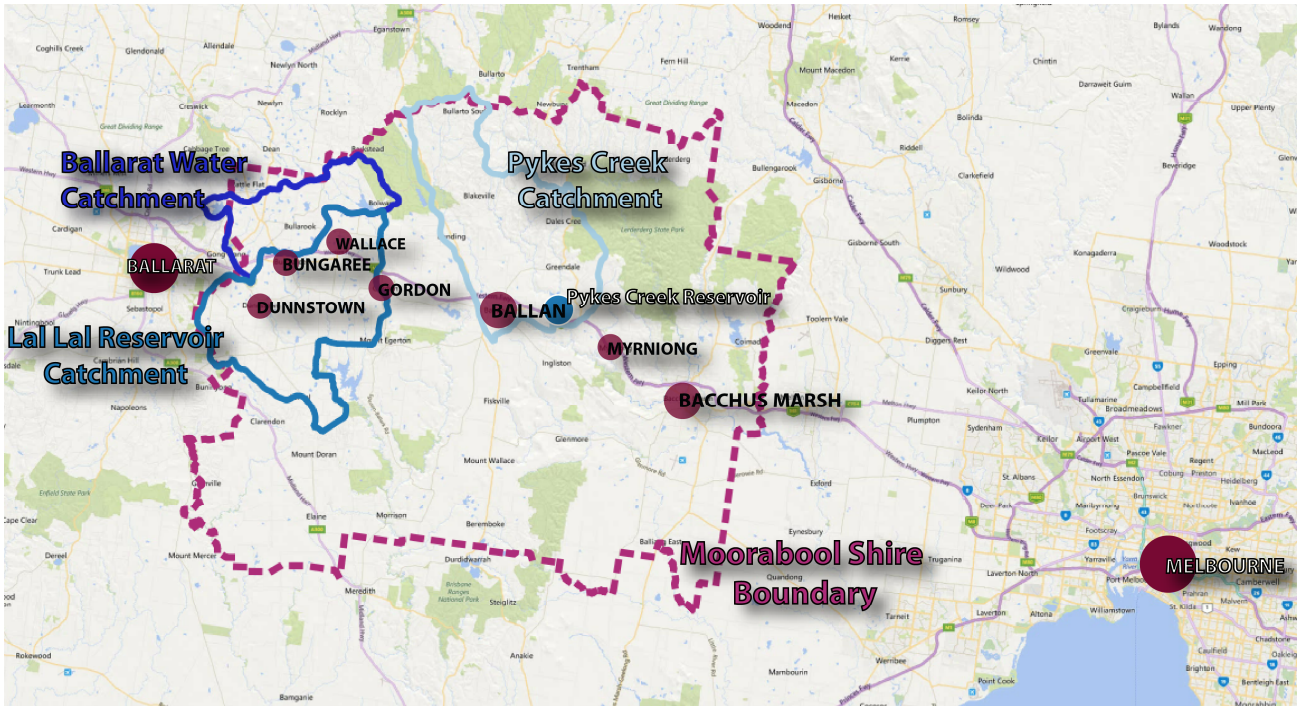
- Review of previous studies relevant to the towns;
- Consultation with relevant agencies, including Central Highlands Water (CHW), Western Water, Southern Rural Water, Moorabool Shire Council officers (engineering and Strategic and Sustainable Development);
- Identify and discuss relevant case studies for service infrastructure provision, including discussions with relevant Councils and water authorities;
- Identify and discuss Essential Services Commission guidelines and policies;
- Identify and discuss State government funding opportunities; and
- Prepare a report outlining preferred concepts and funding models for each proposed service infrastructure opportunity.

1.4. LOCATION OF TOWNS AND KEY INFRASTRUCTURE

Figure 1 provides an overview of the location of the subject towns, along with other key towns and key service infrastructure assets in the region.

The cluster of towns of Dunnstown, Bungaree and Wallace have an economic and infrastructure relationship with Ballarat to the west, whereas Myrniong has an economic and infrastructure relationship with Bacchus March to the east.

FIGURE 1 LOCATION OF SUBJECT TOWNS AND SERVICE INFRASTRUCTURE



Source: Urban Enterprise,

1.5. REPORT STRUCTURE

The report includes the following sections:

Section 2: Previous Studies;

Section 3: Service infrastructure concept options and costs;

Section 4: Small Town Service Infrastructure Case Studies;

Section 5: Potential Funding Models;

Section 6: Financial assessment of concept options; and

Section 7: Conclusions and Next Steps.

2. PREVIOUS STUDIES

2.1. INTRODUCTION

Two key reports have been prepared to inform this work as follows:

- Small Towns Services Study, AECOM, 2014; and
- Moorabool West Small Towns Residential Assessment, Urban Enterprise (2014).

2.2. SMALL TOWNS SERVICES STUDY

AECOM prepared a Small Towns Services Study for Moorabool Shire, which assessed options and prepared costs estimates for a range of sewer, water and gas infrastructure to be connected to the towns of Bungaree, Wallace and Dunnstown.

The report recommended the following:

- Stage 1 of the project would include connection of Bungaree and Wallace (or Bungaree only) to reticulated gravity sewerage, with a Stage 1 cost of between $12m and $18m (NPV, including CAPEX and OPEX over a 30 year period). The study went on to provide a capital cost estimate of $6.77m for a lower capacity gravity collection system to Bungaree only (1,000 population);
- Water connection to Dunnstown via a gravity transfer main from the existing tank at Mahers Road is the preferred option, costing in the order of $2.7m (NPV, CAPEX and OPEX).

The study did not consider sewer options for Myrniong or Dunnstown.

This project has reviewed the options and costs included in the AECOM report and finalised the preferred options for the towns, along with establishing and costing preferred options for connecting Dunnstown and Myrniong to sewer.

2.3. MOORABOOL WEST SMALL TOWNS RESIDENTIAL ASSESSMENT

The *Small Town Settlement Clusters Strategy* determines the future role Moorabool towns in respect to population growth potential. The Strategy is a key element of Council's Moorabool 2041; a broad strategic planning project to guide to development of the Shire to 2041.

The Moorabool West Small Towns Residential Assessment (2014) prepared by Urban Enterprise assesses the residential market demand in the small towns of Western Moorabool, namely Bungaree, Wallace, and Dunnstown (the assessment did not consider Myrniong). The following key findings of the report are relevant to this study:

- The West Moorabool region experienced minimal population growth of only 0.25% per annum between 2001 and 2011, but the regions surrounding West Moorabool have experienced significant growth between 2001 and 2011; Ballarat (1.48%p.a.), Ballan Region (1.57%p.a.), and Bacchus Marsh (2.01%p.a.);
- West Moorabool has strong economic links with Ballarat, with a large proportion of the working population commuting to Ballarat. Future employment growth in Ballarat may be a key driver of residential demand within the subject towns;
- Property prices in Moorabool Shire have grown at a similar rate to the regional average, however, Ballan and the neighbouring Golden Plains Shire have shown relatively strong price growth indicating demand for housing outside the main towns in the region;
- There has been very limited building activity within the three subject towns, primarily due to their location in a declared water catchment and lack of sewerage infrastructure; and
- Based on the towns' characteristics and location, the key markets for residential demand will be commuters to Ballarat (and to a lesser extent Melbourne), residents and families seeking greater lifestyle options, and retirees.

GROWTH SCENARIOS

The Assessment provided three projected growth scenarios. Scenario A was based on the assumption that no significant utility upgrades are provided, and Scenario B and C assumed the subject towns are provided enhanced infrastructure (reticulated sewerage in Bungaree and Wallace, reticulated water in Dunnstown). The growth scenarios assumed the completion of infrastructure works by 2020, simultaneous sewer connection to Wallace and Bungaree, and use a development horizon of 20 years. The number of dwellings per annum relates to the total across the three towns. Given the close proximity of the towns to each other and shared attributes the following growth scenarios apply to all three towns combined:

- **Scenario A (2 additional dwellings per annum):** This growth rate represents the expected growth if no enhanced utility infrastructure is provided. The dwelling growth rate is sourced from Forecast ID projections for Rural West region which were calculated on the basis of no new significant utility upgrades;
- **Scenario B (12 additional dwellings per annum):** This growth rate represents what is currently being experienced in Gordon and Smythesdale since the installation of reticulated sewerage. However, as it has been only 18 months since the sewerage schemes were installed, dwelling growth may increase in the coming years. This is considered a baseline rate of growth for the subject towns;
- **Scenario C (25 additional dwellings per annum):** This represents the rate of growth experienced in Ballan over the past decade. Growth rates in the subject towns would not be expected to exceed that experienced in Ballan which is an established township with existing services, retail provision, local employment and is identified as strategic growth town in regional policy. This rate of growth is considered to provide a guide as to the upper limit of demand for the subject towns.

For the purposes of this report, Scenario B and C have been carried forward as indicative rates of dwelling growth for the towns – further discussion of potential growth rates is included in Section 6.

CAPACITY FOR GROWTH

A brief review of the capacity of land to accommodate additional dwellings if service infrastructure is provided was undertaken to inform this study. The findings are as follows, based on a desktop review of property layouts, zones and aerial photography:

- Myrniong currently contains land in the Township Zone and Rural Living Zone. There are a small number of vacant lots in each zone, and a small number of larger lots that could be subdivided if sewerage infrastructure is made available. Overall, there would only be limited opportunity for subdivision under current zones, and additional land may need to be rezoned to accommodate moderate growth levels;
- Dunnstown has a number of vacant lots and large underutilised lots in the existing Township Zone. These lots could be readily subdivided for additional dwellings if sewerage and water infrastructure are available, accommodating significant growth;
- Bungaree has land in the Township Zone suitable for broadhectare subdivision if sewerage infrastructure was available, along with some smaller lots that could be developed and/or subdivided. Further opportunities appear to exist for urban growth by including nearby parcels in an appropriate urban zone to accommodate growth if deemed appropriate through strategic planning;
- Wallace has only limited vacant lots in the current Township and Rural Living Zones, however there is a large parcel of land in the RLZ potentially suitable for future rezoning and development. Given sewerage infrastructure would need to be extended to Bungaree first, Wallace is generally considered as a 'Stage 2' growth opportunity in this report, given that considerable time will be required before Stage 1 infrastructure could be provided to Bungaree, and subsequently residential demand absorbed in that town.

This report proceeds on the broad view that the towns each contain some capacity for minor infill within the town (development of vacant lots and small subdivisions on existing larger lots), as well as incremental development of land at the town boundaries by developers later in the planning horizon (subject to strategic planning support and rezoning).

3. SERVICE INFRASTRUCTURE CONCEPTS

3.1. INTRODUCTION

This section provides technical and cost information for the projects, drawing on previous studies, consultation with Council and water authorities, and analysis by TGM engineers.

3.2. INFRASTRUCTURE SCOPE

Table 1 identifies the specific infrastructure projects within the scope of this project, including the relevant water authority and project drivers. Each project has been considered independently, with the exception of the Bungaree and Wallace sewer projects which have been considered as a combined project due to the opportunity to construct trunk sewer infrastructure in a staged manner.

Table 1 also shows the extent of new information provided by this project by way of new concepts and costings prepared by TGM.

It is noted that although the main project drivers for Wallace, Bungaree and Dunnstown are listed as urban / economic growth, there may also be environmental and public health issues associated with the septic tanks in these towns that have not been reported to Council.

TABLE 1 INFRASTRUCTURE SCOPE BY TOWN

Town	Sewer	Water	Concept	Costing	Water Authority	Main project drivers
Wallace	Yes	-	AECOM	AECOM	Central Highlands Water	Urban / economic growth
Bungaree	Yes	-	AECOM	AECOM	Central Highlands Water	Urban / economic growth
Dunnstown	Yes	Yes	TGM	TGM	Central Highlands Water	Urban Growth, service improvement
Myrniong	Yes	-	TGM	TGM	Western Water	Environmental and public health

Source: Urban Enterprise, 2016.

3.3. WALLACE, BUNGAREE AND DUNNSTOWN

The towns of Wallace, Bungaree and Dunnstown are all within the area controlled by Central Highlands Water. The following information was concluded from two meetings held with representatives from Central Highlands Water, including Mahinda Jayasooria, Stephen Carter and Paul Clark.

WATER SUPPLY

There is an existing water supply to Bungaree and Wallace that would need upgrading if there was significant development. The current water supply system lends itself to incremental upgrades that would keep up with demand.

There is no town water supply currently in Dunnstown. A water supply could be made available to Dunnstown from the Warrenheip area as set out in the AECOM report.

SEWERAGE

Sewerage for Bungaree, Wallace and Dunnstown would connect to the current Ballarat System near the existing Melbourne Road Sewer pump station (as per the AECOM report). There is limited capacity in the Ballarat East sewerage system with several bottlenecks that will be potential limits to sewerage capacity.

The medium term strategy to alleviate the bottlenecks is to provide storage for peak sewer flows. There is some storage proposed for the 2018/23 regulatory period. If sewerage flows were to be received from Bungaree, Wallace or Dunnstown it would impact the size and location of the proposed storages.

The longer term sewerage servicing strategy is to upgrade and extend the trunk sewer network to the Warrenheip area.

Although the towns are within a declared water catchment, this would not preclude future connection of sewerage infrastructure to the towns.

FUNDING AND TRIGGERS

Central Highlands Water advised that there is no specific framework within which they would make decisions regarding the assessment of a new sewerage connection, other than the overarching decision framework of their 5 year capital works plan. The 5 year plan is to be reviewed through community consultation in late 2016 and early 2017, providing the opportunity for communities and other stakeholders to put forward projects for inclusion in the plan.

3.3.1. AECOM STUDY

The AECOM assessment of sewerage infrastructure to the towns of Bungaree and Wallace was based on assumptions of strong population growth / residential demand. The report was prepared in 2014.

The 2014 Urban Enterprise report into potential residential demand in the towns if each are connected to reticulated sewer found the assumptions underpinning the AECOM report to be very high. As a result, planning for sewerage infrastructure to accommodate a population across the two towns of 6,000 people resulted in larger trunk infrastructure costs than is actually required for the short to medium term (and for the life of the infrastructure that would be required).

TGM estimates that, based on the cost estimates in the AECOM report, a Stage 1 scheme consisting of sewerage to Bungaree only could consist of a transfer pumping system and main at an estimated cost of $2,094,000 and a reticulation system at an estimated cost of $2,981,000. This would result in a total capital cost of $5,075,000, a cost saving in the order of $1.6m compared with the recommended AECOM stage 1 capital costs of $6.77m.

It should be noted that the TGM cost estimate assumes development at a lower density than standard residential densities, in order to reflect the likely short to medium term demand for larger lots in Bungaree. Residential densities in the order of 6 - 8 dwellings per hectare have been assumed in the TGM concept (i.e. providing for lots in the order of 1,000 sqm). The AECOM report does not appear to provide details on the assumed residential development density.

TGM also considers the operating costs in the AECOM report ($77,000 per annum) are overestimated, with a more realistic cost in the order of $20,000 per annum (see sub-section on operating costs below).

This reduced capital and operating costs increase the potential for the existing township of Bungaree to be sewered, and any further development areas (urban growth) would pay for extension of trunk infrastructure to that development on a cost recovery basis. The financial impacts of these changes are considered in later sections of this report.

OPERATING COSTS

TGM has reviewed the operating costs (OPEX) included in the AECOM report, and concluded that these appear to be overestimated, noting that it is not clear whether treatment costs are included. Central Highlands Water advised that they had not reviewed the detailed costings in the AECOM report.

TGM's comments on operating costs are as follows:

- It appears a figure of $3.80 per month has been applied by AECOM to the reticulation cost resulting in OPEX of $31,000 per annum. It is considered that a more realistic figure would be $10,000 per annum for a relatively new system, based on 2 infrastructure issues per year at $5,000 per call out;
- The operation and maintenance of the pump station and power is listed in the AECOM report at $4,100 per annum. This is considered to be a potential underestimate, given similar sized pump stations would cost approximately $6-10,000 per annum to maintain, and CHW charge $5,098 per annum for a typical developer pump station; and
- The AECOM report estimates that operation of the rising main will cost $37,360 per annum. TGM considers that OPEX during the design life of a rising main would be negligible.

As a result, OPEX of $20,000 per annum has been adopted for the assessment of all TGM concept designs within the scope of this report.

3.4. MYRNIONG AND DUNNSTOWN

The following information was concluded from a meeting held with Edward Smith (Southern Rural Water) and Shane Cowie (Western Water), and discussions with Council officers.

3.4.1. REGIONAL WATER SUPPLY

There is a limited special bulk entitlement to supply water from Pykes Creek Reservoir. The entitlement is sufficient for the current level of development, however growth in the town would require the purchase of bulk entitlements from existing irrigators. The most likely scenario would be irrigators in Bacchus Marsh swapping the entitlements for water from Pykes Creek for Class A or Class C recycled water from either Melton or Bacchus Marsh.

3.4.2. MYRNIONG SEWERAGE

Council advised that some properties in Myrniong have failing septic tanks, including:

- The primary school has been failing for many years, and significant work has recently been carried out to try to solve the problem;
- Two other properties have been discharging into the gutter or river, and Council is working with the owners of these properties to resolve the issue; and
- Most of the lots in Myrniong are too small to retain the effluent on site and are either discharging into the street or Myrniong Creek.

Currently the information on wastewater contamination of drains and waterways is limited and if a sewerage system for Myrniong was to be funded on environmental or public health grounds, more extensive sampling would need to be undertaken.

Western Water has a general preference for conventional gravity sewerage systems, in the case of Myrniong the topography and current density allow for such a system. There may be a possibility of alternative collection systems such as pressure sewers in the lower density and more difficult to service areas by creating a hybrid system.

Discharge of wastewater to the waterway or to a reservoir is problematic. The most likely discharge scenario for treatment is either discharge to land, or pump back to Bacchus Marsh where there is capacity and a program of upgrades to allow for more capacity. The nearest area of land that is currently irrigated that would have the potential to utilise treated wastewater is close to Bacchus Marsh.

3.4.3. SEWERAGE INFRASTRUCTURE OPTIONS

The following options for collection systems and treatment systems were considered by TGM for installing sewerage infrastructure to Myrniong and Dunnstown.

COLLECTION SYSTEMS

Two options were considered for sewerage collection systems in Dunnstown and Myrniong:

- Conventional gravity systems; and
- Pressure sewers.

Both types of systems are used extensively by Water authorities and have nationally recognised standards for design and construction. Conventional gravity sewer systems generally prove to be most economical when providing sewerage to moderately sized townships with medium to higher housing densities. These systems have been in use since the introduction of reticulated sewerage systems.

Pressure sewer systems are generally utilised for lower density developments and areas that are either very steep or extremely flat where conventional gravity systems are not practical. The systems consist of small pump stations on each allotment connected to small pressure mains in the road reserve. Generally the pump stations are owned and operated by the landowner, however an allowance of $8,000 per pump station has been included in the costs estimates to compare the systems on an equitable basis.

During the consultation with the Water Authorities, Western Water favoured a conventional gravity system for Myrniong due to the reasonably high density of the existing development and the topography of the land draining to a single point. Central Highlands Water favoured a pressure sewer system for Dunnstown due to the lower expected densities and having enough experience to be comfortable with such systems. Further detailed analysis and consultation with the Water authorities could result in systems that are a hybrid of the two systems, particularly for Myrniong which has a high density core with adjacent lower density development.

TREATMENT SYSTEMS

Myrniong

Costs for a stand-alone treatment plant were considered for Myrniong as well as a transfer pipeline back to Bacchus Marsh.

The costs for a standalone treatment plant include the purchase of sufficient land for land disposal of the effluent and assumes that construction of an irrigation system would be required. Discussions with Southern Rural Water indicated that there were no irrigators of sufficient size that were close enough to Myrniong.

The transfer pipeline was included after discussions with Western Water, Southern Rural Water and developing the cost estimates for a treatment plant. Costs include the construction of a pump station and transfer main to the existing sewerage network in Bacchus Marsh.

Dunnstown

Due to the proximity of Dunnstown to Ballarat, a transfer pump and pipeline to the Ballarat sewerage network was the only option considered for Dunnstown.

3.5. CONCEPT OPTIONS AND COSTS

Based on the consultation undertaken and a review of the AECOM report, concept options and costs have been prepared. **Table 2** shows a summary of these preferred concept options and costs that are carried forward for assessment in this report.

Full cost details are provided in **Appendix A**, and concept designs are included in **Appendix C** for Myrniong and Dunnstown.

TABLE 2 CONCEPT OPTIONS AND COSTS

Town	Project	CAPEX	OPEX	Source
Bungaree/Wallace	Sewer - Stage 1 – Pressure (TGM)	$5,075,000	$20,000	TGM
	Sewer Stage 1 – Gravity (AECOM)	$6,773,642	$77,047	AECOM
Dunnstown	Sewer – Gravity to Ballarat	$2,769,299	$20,000	TGM
	Sewer – Pressure to Ballarat	$2,915,604	$20,000	TGM
	Water	$1,739,000	$70,200	AECOM
Myrniong	Sewer - Gravity to Bacchus Marsh	$4,616,059	$20,000	TGM
	Sewer - Pressure to Bacchus Marsh	$5,323,114	$20,000	TGM

Source: AECOM, 2014, TGM, 2016.

Of the options shown in Table 2, the following are preferred based on advice from the relevant water authorities and selection of lower cost outcomes to minimise the funding burden on property owners:

- Bungaree / Wallace: Bungaree only as Stage 1, both pressure and gravity options carried forward for analysis;
- Dunnstown: Gravity sewer, transfer to Ballarat;
- Myrniong: Gravity sewer, transfer to Bacchus Marsh.

For Myrniong, the option of a separate treatment plant was considered and costed, however this option is not preferred by Western Water and the ultimate capital cost is expected to be in the order of $500,000 higher than transferring to Bacchus Marsh. Therefore, only the treatment option of transferring to Bacchus Marsh has been carried forward for assessment.

It is noted that the cost of the Bungaree works is higher than the Myrniong works, despite the Myrniong works requiring a significantly longer pipeline. This is due to the Bungaree trunk infrastructure being sized to also cater for future connection to Wallace, along with allowing for storage as the system to which it is delivered in Ballarat has limited capacity. It is assumed that the Bacchus Marsh system would not require as significant storage to handle flows from Myrniong.

4. SMALL TOWN CASE STUDIES

4.1. INTRODUCTION

This section provides a summary of relevant case studies of small towns in Victoria that have recently been connected to reticulated sewerage infrastructure.

The case study details were compiled through a review of publicly available information, supplemented by discussions with Council officers and staff of the relevant water authority. It is noted that many of the case studies identified were partly funded through the former Country Towns Water Supply and Sewerage Program which is no longer in effect.

4.2. CITY OF WANGARATTA SMALL TOWN SEWAGE SCHEME

Small Town Sewage Scheme (Oxley, Glenrowan & Milawa)

Project details: Modified Conventional Sewerage System.

Project drivers: Environmental and public health.

Timing of delivery: Declared at January 2014.

Upfront costs to landowners: Country Towns Water Supply and Sewerage Program; upfront fee of $800 per residential customers.

The sewage scheme included the three largest towns in the City of Wangaratta (outside of the Wangaratta) and was completed in 2014. The sewerage scheme provided Milawa, Glenrowan and Oxley with an improved and reliable wastewater system and treatment of effluent through a modified conventional sewer system. The implementation of a sewer scheme in the towns addressed onsite wastewater management issues, reduces the impact on the stormwater system servicing the townships and minimises the risks to public health and the environment.

The three towns had been earmarked for sewage infrastructure for a number of years. The scheme was supported by a business case and a survey of residents. The project was driven by North-East Water. Council did not provide any funding or resources for the scheme, but provided assistance and oversight over the implementation of the project. Funding assistance was provided by the State Government through the Country Towns Water Supply and Sewerage Program.

Business Case

A detailed business case was developed to support the scheme for endorsement from board of NE Water and DSE funding approval. Due to confidentiality concerns, the full business case was not made available to Urban Enterprise for review, however the following details were provided:

The key considerations for the business case included:

- Environmental and social outcomes;
- Demonstrated community support utilising a community survey; and
- Financial principles (compelling case for investment).

The capital cost of the scheme is shown in Table 3.

TABLE 3 WANGARATTA SMALL TOWN SCHEME – CAPITAL COSTS

	Concept Design	Functional Design	Implementation	Total
Glenrowan Wastewater	$25,000	$140,000	$785,000	$950,000
Oxley Wastewater	$25,000	$140,000	$310,000	$475,000
Milawa Wastewater	$25,000	$40,000	$400,000	$465,000

Source: North East Water.

Funding for the capital cost was sourced from the following:

- State Government funding through the Country Towns Water Supply and Sewerage Program contributed approximately 10-20% of the total cost;
- Residents were charged a compulsory upfront contribution of $800 (capped by the ESC);
- The remaining cost was borne by North East Water as debt (approximately 70-80% of total).

In addition, residents were charged an annual fee of approximately $570. The key factor to determine the viability of the scheme was ensuring that the annual revenue was equal to or exceeded the direct operational costs of the scheme (including interest payments on the loan) over time an operating surplus would be achieved within 20 years. That is, the scheme was reliant on population growth to generate increased revenue over time. The population assumptions for the town are shown in Table 4.

TABLE 4 WANGARATTA SMALL TOWNS POPULATION GROWTH ASSUMPTIONS

	Existing Population	Projected Population 2034
Glenrowan Wastewater	250	500
Oxley Wastewater	200	450
Milawa Wastewater	200	300

Source: North East Water.

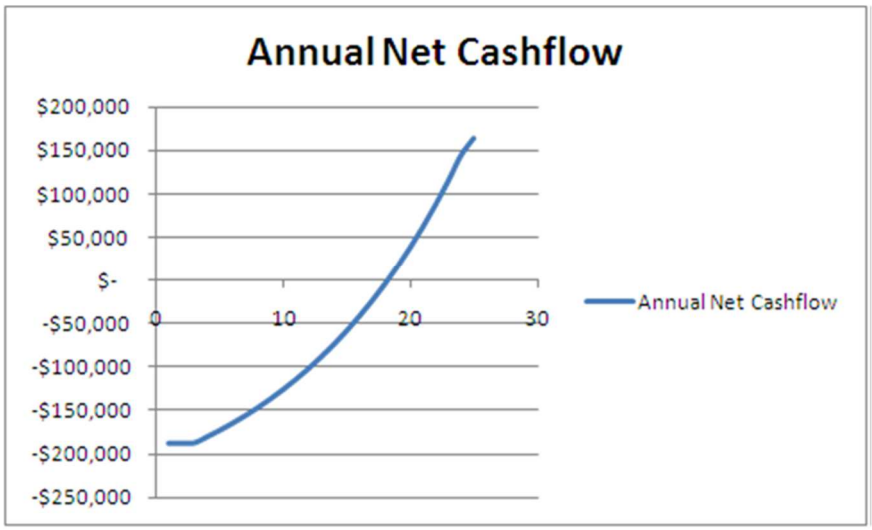
ESKDALE SEWERAGE SCHEME

The Eskdale Sewerage Scheme was proposed but not pursued by North East Water following review of the potential cash flow for the investment. There was demonstrated community support for the project, and environmental and health drivers for the project including public health risks (sullage in drains, effluent run-off), environmental risks (groundwater, surface water) and amenity (visual, odour, ponding).

The stated business case hurdle was for annual revenue to equal or exceed direct operational costs of the scheme, thereby generating an operating surplus within 20 years of commencement. Once costed, there was less than 50% community support for the scheme, primarily due to the cost of on-site works. There was also insufficient external funding to make the reticulated sewerage scheme cash flow positive within 20 years.

An example of a positive cash flow is shown in Figure 2.

FIGURE 2 SEWAGE SCHEME CASHFLOW (EXAMPLE)



Source: North East Water.

4.3. SOUTH GIPPSLAND WATER

LOCH, NYORA & POOWONG

The towns of Loch, Nyora and Poowong in the north-west section of South Gippsland have recently been connected to reticulated sewer. The concept option selected was a pressure sewer system, with wastewater transferred under agreement to South East Water's Lang Lang Water Recycling Plant for treatment and re-use. The project driver is to address existing public health and environment issues from aging, failing and poorly maintained septic systems.

The project cost was originally identified as $29m, but was subsequently revised downwards to $20m following review by the ESC. The program was funded with assistance from the State government under the Country Towns Water Supply and Sewerage Program.

All properties within the Service Area pay an $800 Scheme Contribution for connection. Further properties within a 'Voluntary Service Area' could opt to connect at a cost of $5,000 prior to 30 June 2015, or a higher rate after 30 June 2015 in excess of $10,000 based on the applicable New Customer Contribution and On-property Costs.

South Gippsland Water have reported that as of March 2016, more than 155 properties had already been connected to the scheme, with an average of 12-15 property connections per week continuing to project completion.

ALBERTON

The town of Alberton has recently been connected to reticulated sewerage via a pressure system. The Alberton Sewerage Scheme is a community funded Sewerage Scheme, initiated by landowners in the town and supported by Council and South Gippsland Water.

A State Government Grant for $1m was received, with the balance of the cost (approximately a further $1m) to be funded by landowners of Alberton, with properties that fall within the Scheme Boundary being required to pay a mandatory Contribution of **$9,200 per occupied lot** or $4,600 per vacant lot. Payment can be made as a lump sum or via a repayment plan over a period up to 20 years at an interest rate of 5.725% per annum.

Alberton is an example of a user pays scheme that does not impact on the broader water charges across all customers in the region.

4.4. SNAKE VALLEY

Snake Valley, a small township in Pyrenees Shire, was connected to sewer infrastructure following an extended period of planning and lobbying by Council. Council co-funded the scheme with a federal funding contribution, providing pressurised sewer to 150 existing properties and with capacity to accommodate a further 50 properties.

The $2.5m scheme was constructed by Council using State and Federal funding co-contributions, and the scheme assets were gifted to Central Highlands Water. Individual lot owners are not required to contribute towards to cost of infrastructure because the scheme is based on discharge pressure pumps being fitted to existing septic tanks, with a rebate offered to owners by Council for the costs to do so.

Snake Valley is one of the few examples of a scheme that has been constructed outside a formal State government funding stream for sewerage infrastructure, and also the only scheme identified that was driven by residential growth opportunities as well as environmental grounds.

4.5. FINDINGS AND IMPLICATIONS

The following key findings from the case studies are drawn:

- Many recent sewer projects were made supported by State government funding under the Country Towns Water Supply and Sewerage Program, which is no longer in effect;
- Most case studies were driven by environmental and/or public health issues and objectives;
- A key success factor is the level of support from the community and property owners – as such the upfront fees must be struck at a level that is reasonable;
- Only Snake Valley and Alberton schemes were completed outside the previous CTWSS program. The Alberton scheme has resulted in high costs for connection ($9,200 per lot) and required majority support from landowners to proceed. Both Alberton and Snake Valley were successful in attracting State or Federal funding.

The key success factors derived from the case studies are as follows:

4. Schemes should achieve cost recovery within the life of the infrastructure (nominally 30 years). This will require positive cash flow within the early stages of the scheme;
5. Schemes should have broad community support and strike an upfront contribution that is attractive to and feasibly paid by property owners;
6. Development of land outside the core township areas should contribute a higher rate per property to pay for the extension of services.

The following section provides a review of current funding options.

5. FUNDING OPTIONS

5.1. INTRODUCTION

This section provides an outline and discussion of the potential funding options available to deliver the projects.

5.2. STATE GOVERNMENT FUNDING

There is no current State government funding stream dedicated towards small town sewerage schemes.

In the past, specific funding opportunities have been available for connecting small towns to reticulated sewerage systems, such as the Country Towns Water Supply and Sewerage (CTWSS) program. This program was closed in 2013. The program aimed to provide safe and reliable water supply and sewerage services to small country towns across Victoria, and was administered by the Department of Sustainability and Environment (DSE).

A major element of the CTWSS Program was "Investment in Priority Projects - Providing solutions for towns with existing critical human health and environmental issues". A total of $42 million was available to improve services to rural towns with existing public health and environmental issues including $2.3 million available to fund the development of domestic wastewater management plans.

It is understood that the State and Federal governments have at times selectively provided funding towards specific schemes (such as Snake Valley), however this is not through any formalised program and funding has typically been granted to areas of specific health or environmental risks.

Consultation with Regional Development Victoria (RDV) and the Department of Environment, Land, Water and Planning (DELWP) confirmed that there are no alternative funding streams currently available for which sewerage schemes could be reasonably included in their scope.

The only clear opportunity identified under current circumstances are where sewerage programs unlock economic growth by supporting a major business or employment area and therefore qualifies for funding under the Regional Infrastructure Fund (RIF). The RIF aims to harness key regional strengths to improve regional Victoria's productivity and liveability. It will invest in major infrastructure projects that create or enhance the conditions for economic growth, and build diversified and sustainable regional economies that are resilient to change.

RDV advised that they would only be in a position to contribute towards a small town sewerage project where it would assist the development or expansion of industrial estates or businesses that might connect into a reticulated scheme once the water authority had constructed it. Any application would be assessed by RDV based on economic outcomes and jobs created.

It is noted that the connection to sewer infrastructure would significantly increase the attractiveness of the towns to business uses, and would therefore be likely to support ongoing economic activity and employment. For example, Wallace is connected to reticulated gas, and has a key employment site identified at the former Butter Factory which could be reused for industrial or commercial uses. An existing concrete business and potential new associated businesses in Bungaree could benefit from the infrastructure, and sewer infrastructure would also make the towns of Dunnstown, Bungaree, Wallace and Myrniong more attractive to potential tourism and produce businesses and retailers, especially where the infrastructure improves local amenity and leads to an increase in residential and town centre investment.

Despite the availability of broad State funding for regional projects, given the absence of a dedicated funding stream Council should proceed on the basis that it is unlikely under current circumstances that the projects will receive State government funding.

5.3. FEDERAL GOVERNMENT

It is understood that Council, as part of the broader Central Highlands Regional Investment Plan, is lobbying for federal funding for service infrastructure for the subject towns. Given the lack of State funding programs available for residential service infrastructure, attracting federal funding is an important avenue to explore for Councils investigating opportunities for sewer infrastructure to small towns.

5.4. DEVELOPMENT CONTRIBUTIONS

Under the Planning and Environment Act and DCP Guidelines, development contributions plans (DCPs) cannot fund hydraulic infrastructure, such as sewer and water networks. However, major trunk infrastructure is typically funded by a mix of contributions across government, agencies and the private sector.

In the case of an extension of the sewer trunk from Ballarat to Bungaree and Wallace, a key opportunity will be to identify first stage 'developable areas' or development fronts that may be attractive to a developer, which will in turn increase the number of lots which will contribute to the funding of the infrastructure.

Depending on the capital costs, a developer may also pay for sewerage infrastructure to up-front and recoup the outlay over time from lot owners. In any case, the provision of reticulated sewer infrastructure to any of the subject towns will immediately increase the number of lots that can be serviced and therefore result in an increase in new supply to the residential market and a commensurate increase in new dwellings constructed. The additional new lots to be connected to sewer (and water in Dunnstown) should be factored into any financial model of the potential return on the infrastructure investment.

5.5. COUNCIL FUNDING

Based on a review of case studies, it is rare for Council's to contribute funds towards capital investment in service infrastructure. Snake Valley was the only case study review where the Council made a funding contribution, although all other schemes were successful in obtaining State government funding (typically 10-20% of capital cost) to address issues associated with failing septics.

The balance of capital and operating costs is generally funded by the relevant water authority and subsequently recouped over time from developers and lot owners. Council could play a role in providing 'top-up' funding to ensure that a catalyst services project can be commenced, however it is considered that Council's most effective role in the process will be to establish the strategic planning framework and broker development partnerships whereby the private sector co-funds a particular sewer project.

5.6. WATER AUTHORITIES

Water authorities fund capital works and operational expenditure through a combination of service charges applied to all water and sewer customers in the relevant area, and new customer contributions paid by developers to extend trunk infrastructure to new growth areas. The costs of the capital works plan for each water authority are spread across all customers, resulting in an annual charge which requires approval by the Essential Services Commission (ESC) at the start of each 5 year period. The incremental increases to the annual charges are also set at the beginning of the period.

Any new capital works proposed need to be included in the 5 year plan and ratified by the ESC, including the impact of apportioning costs across all customers and/or charging upfront connection costs to properties within a new service area. Given the need to keep costs to customers at a minimum, not all proposed infrastructure projects are included within each 5 year plan.

Central Highlands Water (CHW) advised that there is no specific framework within which they would make decisions regarding the assessment of a new sewerage connection, other than the overarching decision framework of the CHW Water Plan (often referred to as the *5 year plan*). The current 5 year plan (the 2013 – 18 Water Plan) expires on 30 June 2018.

CHW advised that the current Water Plan is to be reviewed through community consultation in late 2016 and early 2017, informing preparation of a new 5 year plan to cover the period 2018 – 2023. This process will provide the opportunity for communities and other stakeholders to put forward projects for inclusion in the plan.

Water authorities are the key funding agency that will drive funding and delivery of a new sewerage scheme. The alignment of the scheme with the 5 year plan will be of critical importance to the subject towns. It should be noted that each water authority will balance the expected outcomes and returns on investment of all potential projects across the customer areas before selecting the range of projects to be included in the plan. Areas where significant urban growth is planned are likely to have less 'room to move' with their infrastructure planning budgets due to the high financial impact of new infrastructure requirements. For example, Western Water is responsible for managing sewer and water infrastructure in the Sunbury growth area, a major metropolitan scale growth front that will require significant ongoing infrastructure investment. Similarly, Central Highlands Water is managing sewer and water infrastructure in the Ballarat West Growth Area.

In the past, water authorities have essentially been forced to implement small town sewer schemes with limited regard for the financial implications, for example through the Country Towns Water Supply and Sewerage Program. In the absence of such formal programs, water authorities are less likely to fund sewerage schemes for small towns, given the lower demand, slower development rates and higher risks.

Water authorities are more likely to consider including an infrastructure proposal in the 5 year plan if it is demonstrated that the proposal is feasible and will generate either a positive operating cash flow within 20 years (including interest payments on borrowings), or full cost recovery over a 30 year timeframe.

If the total funding required from a water authority can be reduced by way of external funding (either through public funds or a contribution from a developer), water authorities are more likely to include the project in the forward capital works plan and take on the required debt.

5.7. THE ROLE OF THE ESSENTIAL SERVICES COMMISSION

The Essential Services Commission (ESC) regulates prices for consumers to connect to and pay ongoing contributions to sewer and water systems. In previous schemes (eg. Country Towns Water Supply and Sewerage program), up front customer contributions were limited to $800 per lot by the ESC. Ongoing contributions (annual) are also limited by the ESC for each water period, currently in the order of $730 per property per annum in the Central Highlands Water area.

The ESC advised that they currently regulate water and sewer prices on a case by case basis. Any significant increase in costs from one 5 year water plan period to the next, or any sewer connection cost that is significantly higher for a specific township compared with other parts of the water area, would be likely to be rejected by the ESC.

An example of ESC regulation of a specific sewerage scheme was in the Nyora Loch Poowong Scheme, where the ESC directed South Gippsland Water to identify options for a lower cost scheme than the original $28m proposal, resulting in a $20m scheme being partly funded by the State as part of the CTWSS program.

5.8. FUNDING MODELS

The most relevant funding models available to implement the proposed projects are summarised in Table 5, based on discussions with water authorities and the ESC.

TABLE 5 FUNDING MODELS

No.	Model	Description	Relevant Projects
1	Water Authority - Capital Works Plan	Scheme funded and constructed by water authority as part of the 5 year Capital Works Plan, with standard or negotiated new customer contributions applicable.	Myrniong sewer (Western Water); other sewer projects (if systematic environmental and health risks are identified)
2	Water Authority – Differential	Scheme co-funded by landowners, water authority and potentially government co-contributions or private sector.	All other projects
3	User Pays (Special Rate)	Scheme constructed by water authority but fully funded by landowners with finance offered by water authority (potential Council contribution).	All other projects (however unlikely to be viable).

Source: Urban Enterprise, 2016.

If it is demonstrated through further testing that a broad cross section of the Myrniong township septic tanks are failing and leading to negative environmental and public health outcomes, the Myrniong sewer project would be a candidate for inclusion in the new Western Water 5 year plan.

Although the other projects are currently driven by a range of other factors, including residential growth opportunity, economic growth potential and service improvements to the existing communities, there may also be unreported environmental and public health issues in these towns. If any systematic issues are identified in these towns over a period of time, these infrastructure works could also be put forward to Central Highlands Water as priority candidates to be funded in the 5 year plan.

If no such issues exist, additional funding could be sought from a developer to co-fund upfront trunk infrastructure delivery. The financial assessments of each project in the following section investigate the scale of funding that may be required.

6. FINANCIAL ASSESSMENT

6.1. INTRODUCTION

This section provides a high level financial assessment for each project based on the information available to date in order to form a view on the feasibility of each project, and the scale of potential funding contributions from each relevant sector. It should be noted that these financial assessments are preliminary only, and a more detailed assessment would be required prior to commencing a project.

6.2. ASSUMPTIONS

The financial assessments necessarily rely on a number of assumptions regarding development rates, expenditure and revenue over time as follows.

DEVELOPMENT RATES

Previous work prepared by Urban Enterprise in 2014 found that if enhanced infrastructure is provided in Wallace, Bungaree and Dunnstown, it is estimated that future growth could be in the order of 12-25 dwellings per annum across the three towns. This estimate was based on recent experience in nearby towns such as Gordon, Ballan and Smythesdale, although it is noted that these towns are somewhat larger in terms of population and dwellings than the subject towns, and therefore the three towns have been considered as a single cluster or market.

The Urban Enterprise report found that Wallace and Bungaree are well positioned to accommodate residential demand for lifestyle lots and township lots, given the proximity to the Western Highway, employment in Ballarat, and the strong local community services and facilities.

It is possible that stronger growth may occur in the medium term if development conditions are favourable in a single location within the cluster. For example, if strategic planning identifies and rezones an appropriate urban growth opportunity in Bungaree, the first stage of sewer infrastructure could be constructed to enable this development to proceed at a strong growth rate.[1] However, the potential for higher growth rates are unknown at this stage and therefore accelerated growth scenarios are not included in this assessment.

For the purpose of this report, the following scenarios have been adopted:

- Moderate Growth: 10 dwellings per annum in Bungaree; 5 dwellings per annum in Dunnstown;
- High Growth: 15 dwellings per annum in Bungaree; 8 dwellings per annum in Dunnstown;

The moderate to high growth scenarios would equate to a total dwelling growth of between 300 and 450 dwellings over a 30 year period in Bungaree, supporting population growth of between 750 and 1,125 (at 2.5 persons per household). This aligns broadly with Stage 1 of the AECOM study which plans for approximately 1,000 population to be accommodated by early sewerage works.

Given the current availability of land in competing towns such as Gordon, Ballan and Smythesdale, it is considered that high growth may not be achieved in the short term, and that it may take 5 to 10 years before there is a sufficient accumulation of demand for a substantial development in the towns. In any case, the necessary strategic planning and infrastructure planning will require at least 5 years, and probably up to 10 years before a site is development ready.

The current scale of the Myrniong township is relatively similar to Dunnstown, and in the absence of any detailed analysis of residential growth potential, a potential growth rate of between 5 and 8 dwellings per annum has been adopted for the town. Myrniong has the advantage of being closer to Melbourne and Bacchus Marsh, and therefore could be more attractive to people commuting to work in Melbourne. Dwelling growth rates at the upper end of this range are therefore considered feasible.

[1] Planning for any future rezoning should be undertaken concurrent with discussions with potential developers and Central Highlands Water – see section 6.4 for further discussion on this opportunity.

INFRASTRUCTURE ASSUMPTIONS

The following infrastructure assumptions have been applied to the financial assessments:

- All existing properties will be required to connect to a new sewer or water system within 12 months of completion;
- All new properties created / dwellings constructed will be required to connect to the new scheme;
- Developers of any major urban expansions around the townships would be required to fund any necessary trunk extensions, which would add to the per lot cost for new dwellings over and above those calculated in the assessments;
- Central Highlands Water would be responsible for the ongoing investment in sewer capacity at the eastern edge of Ballarat to accommodate additional volumes from Dunnstown and Bungaree. Works are already planned for the current water period – it is assumed that these works would continue for the next period to align with any commitment to introduce sewerage infrastructure to the subject towns; and
- Sewer and water infrastructure will have a minimum economic life of 30 years (to align with ESC guidance on assessing infrastructure pricing).

FINANCIAL ASSUMPTIONS

The following financial assumptions have been applied to the financial assessments:

- An interest rate for water authority borrowings of 5% per annum;
- Cost escalation: 2% per annum; and
- Annual sewer service charges at 2015/16 Central Highlands Water rates, escalated at a long term CPI rate of 2%.

6.3. FINANCIAL MODEL RESULTS

USER PAYS / SPECIAL RATES SCHEME

If the projects are not able to be financed by the relevant water authority, the alternatives are to seek to introduce a special rates scheme (such as in Alberton), or seek federal and state funding and contribute Council funds to reduce the cost to landowners (such as Snake Valley).

However, the costs to property owners of a special rates scheme are prohibitive, in excess of $25,000 per property. Even if Council co-funded the scheme (or attracted external funding) at 50% of the capital costs, the individual property costs would be very high, with all schemes in excess of $12,000 per property as shown in Table 6.

Therefore, it is considered imperative that water authority financing is part of the funding mix for the projects, requiring inclusion of the relevant projects in the Central Highlands Water and Western Water 5 year plans for capital works.

TABLE 6 PROPERTY COSTS WITHOUT WATER AUTHORITY FINANCING

Town	Project	Capital Cost	Existing Dwellings	Capital Cost per property	Council / Government Subsidy @ 50%	Subsidised Capital Cost per property
Bungaree	Stage 1	$6,773,642	141	$48,040	$3,386,821	$24,020
Dunnstown	Gravity	$2,769,299	68	$40,725	$1,384,650	$20,362
	Pressure	$2,915,604	68	$42,877	$1,457,802	$21,438
	Water	$1,739,000	68	$25,574	$869,500	$12,787
Myrniong	Gravity	$4,616,059	94	$49,107	$2,308,030	$24,554
	Pressure	$5,323,114	94	$56,629	$2,661,557	$28,314

Source: Urban Enterprise, 2016.

WATER AUTHORITY FINANCING

Water authorities have the ability to finance infrastructure programs and recoup capital costs and interest payments through upfront charges and ongoing revenue from existing and future property owners.

A financial assessment of each project has been prepared with a starting point of full cost recovery. That is, it is assumed that over the minimum life of the infrastructure (30 years), all costs associated with the project will be recouped by landowner payments, including capital expenditure, operational expenditure and interest on borrowings. Under this model it is assumed that no external funding (eg. Council, State or Federal government) is available, but that the water authority will finance the scheme through borrowings.

It has also been assumed that there will be additional dwellings / lots created during the 30 year timeframe under each of the scenarios previously outlined, and that the connection fees paid by these new lots would contribute to the overall funding of the project. That is, the full cost of the project is not solely borne by existing property owners, but is spread across existing and future property owners.

The infrastructure funded by these schemes would service all existing township lots and allow for infill development of new dwellings within the existing zoned land. Any trunk extension works beyond the concepts shown in this report (for example, as required to serve a new growth area) would need to be borne by a developer.

A summary of the findings of the preliminary financial assessment for each project is shown in Table 7, with detailed assessments shown in Appendix D.

TABLE 7 SUMMARY OF FINANCIAL ASSESSMENTS

Town	Project	Capital Cost	Existing Dwellings	new Dw. P.a.	Dwellings at Year 30	Upfront cost per lot (30 yr cost recovery)
Bungaree	Stage 1 -AECOM	-$6,773,642	141	10	441	$16,100
			141	15	591	$10,300
	Stage 1 - TGM	-$5,075,000	141	10	441	$6,400
			141	15	591	$2,600
Dunnstown	Gravity	-$2,769,299	68	5	218	$9,700
			68	8	308	$4,500
	Pressure	-$2,915,604	68	5	218	$10,700
			68	8	308	$5,300
	Water	-$1,739,000	68	5	218	$18,600
			68	8	308	$13,300
Myrniong	Gravity	-$4,616,059	94	5	244	$17,300
			94	8	334	$11,100
	Pressure	-$5,323,114	94	5	244	$21,500
			94	8	334	$14,400

Source: Urban Enterprise, 2016. Note: all assessments include relevant operating costs.

6.4. IMPLICATIONS

The table shows that per lot upfront costs for all options are above $5,000 except the Bungaree sewer project under the high dwelling growth scenario (TGM cost estimate, $2,600 per lot) and the Dunnstown sewer project under the higher dwelling growth scenario ($4,500 per lot under the gravity option). However, it is unlikely that these growth rates could be achieved concurrently under current market conditions given the close proximity of the towns.

$5,000 per lot is used as an indicative maximum that property owners are likely to accept as a viable scheme, taking into account the need for on property costs in addition to these costs, and that a higher fee will apply to new properties built in growth areas outside the area to be serviced under these concept designs.

In most cases, an upfront fee of less than $2,000 per lot would be preferred, however the high cost of extending trunk infrastructure to the towns, and the small existing number of dwellings, means that none of the schemes achieve a 30 year costs recovery with an upfront cost of less than $2,000 per property.

EXTERNAL FUNDING

The availability of external funding will increase the likelihood of projects being successfully included in the water plans, especially for projects that are based on growth potential such as the Bungaree / Wallace Stage 1 project. External funding should be considered where that funding will be consequential in supporting the viability of the project for the main delivery agency (water authority) and the community (existing property owners).

Given the high capital costs and a lack of a clear government funding program, an innovative approach would be required to proceed with the projects. It is considered that a development partnership between Council, Central Highlands Water and a developer could lead to sufficient critical mass of dwellings over the medium term to make Stage 1 of the Bungaree / Wallace sewer project viable.

An important assumption underpinning the financial modelling is that landowners / developers will pay for any further extensions to trunk infrastructure, thereby creating new lots and realising the population and dwelling growth projections that are embedded in the modelling (as was embedded in the Wangaratta small towns sewer funding schemes).

In the west of the Shire, it is considered that demand for dwellings in Bungaree, Wallace and Dunnstown will be relatively transferrable. That is, if new developments were to take place concurrently, there would be a high degree of competition between the towns as each would be competing to attract the same buyers and market segments. For this reason, it is important that the timing of any infrastructure investment is aligned with timing of demand accumulation in this area, and that one preferred location for growth is selected to maximise growth rates in that location.

Based on previous work undertaken by Urban Enterprise, Bungaree is considered the most attractive prospect for a developer given the ready access via the Western Freeway, proximity to Ballarat and the availability of local recreation and community services. Residential development in Bungaree is considered a viable proposition over the medium term as Ballarat continues to improve its role in the region and increases and diversifies employment opportunities. Over the short term, other towns recently sewered will complete their short term development opportunities, and Melbourne will continue to become 'closer' through infrastructure improvements and the westerly expansion of the urban growth areas.

Council could seek to broker a partnership between a developer and Central Highlands Water to bring sewerage infrastructure to Bungaree, thereby reducing the upfront connection costs for existing properties, reducing the level of debt that Central Highlands Water are required to take on to deliver the project, reducing the risk to Central Highlands Water of slow development rates, and providing strategic planning support for a key medium term growth opportunity in the west of the Shire. Planning for any future growth and rezoning in the Bungaree area should

be undertaken in partnership with Central Highlands Water to identify a suitable parcel, interested developer and practical model for delivery and funding of sewer infrastructure.

This opportunity may also exist for Myrniong, given proximity to Melbourne and Bacchus Marsh and ready access from the Western Freeway. A further opportunity may exist to co-ordinate funding of the sewer infrastructure to the Underbank development to the north-west of Bacchus Marsh, given that the sewer main to Myrniong would pass through this proposed development. This opportunity should be investigated early in the process of infrastructure planning for Underbank through discussions with Western Water regarding the size, capacity and timing of works and opportunities to align with a future connection to Myrniong. Although a shared funding arrangement may be difficult to agree on if timing and levels of certainty differ between the two projects, there may be opportunities to ensure a design is implemented which enables cost-effective extension to Myrniong in the future.

7. CONCLUSIONS AND NEXT STEPS

7.1. CONCLUSIONS

The substantial upfront costs of the proposed projects and the absence of a formal State government funding program are significant impediments to the feasibility of the projects. The funding burden falls on individual property owners and the relevant water authorities, resulting in high upfront costs to property owners and a risk that water authorities will not include the projects in the capital works plans due to insufficient project need or return.

Under current circumstances, it is highly unlikely that the projects could be delivered without external sources of funding, given the high per property costs. The key hurdle is therefore inclusion of the projects in the water authority plans for the next 5 years.

Inclusion in the plans will be more likely for Myrniong, if evidence of broad failing septic tanks across a full year can be confirmed with Western Water. If Myrniong is not deemed to have sufficient environmental and public health drivers for the project, the per property costs would be prohibitive to the scheme's viability. Although there is currently limited water supply to Myrniong, there is the option to purchase bulk entitlements for current irrigators, and Western Water also has alternative supplies available with a need to dispose of to land. If the township is expanded in the future, Western Water would be in a position to manage water supply as part of their usual business planning.

The towns of Wallace and Bungaree should be considered together in terms of servicing. The extension of a trunk sewer from Ballarat is required, meaning that Bungaree would be the most efficient first stage of infrastructure investment. There is unlikely to be sufficient demand to support two growth areas concurrently developed (eg. Wallace and Bungaree). It is concluded that, subject to community support, attraction of a key developer, appropriate strategic planning support and approval by Central Highlands Water to take on the project as debt, Bungaree is the most likely project to proceed on the basis of future residential and economic growth potential.

7.2. NEXT STEPS

The following next steps are recommended to progress the projects:

- Full seasonal testing of septics for Myrniong and confirmation with Western Water of the need to intervene on environmental and public health grounds;
- Consult existing property owners regarding need and willingness to pay for improved service infrastructure, and whether there are any environmental or public health issues with septic tanks in the towns of Bungaree, Wallace or Dunnstown that require investigation;
- Ensure small town communities and property owners are aware of the consultation process for the 5 Year Plans for Central Highlands Water and Western Water to enable projects with community support to be put forward for inclusion;
- Discuss findings and proposed financial models with Central Highlands Water and Western Water;
- Consider the findings of this report when preparing strategic planning for the western part of the Shire, in particular to identify a suitable development parcel in Bungaree (and potentially Myrniong).

APPENDIX A TGM COST ESTIMATES

MYRNIONG GRAVITY SEWER COLLECTION

Item	Rates and Quantities	Cost
Sewers	4750m @$170/m	$807,500
Manholes	23 @$4,000	$92,000
Maintenance Shafts	4 @$2,800	$8,000
Property Connections	94 @ $900	$86,500
Crushed Rock Backfill	562 m3 @$85	$47,727
Testing and commissioning		$50,000
Sub-Total		$1,091,727
Contingency 20%		$218,345
Planning 5%		$54,586
Design and Project management 15%		$163,759
Total Project		$1,528,417
GST 10%		$152,417
Total inc. GST		**$1,681,259**

MYRNIONG PRESSURE SEWER COLLECTION

Item	Rates and Quantities	Cost
Sewers	5041 @$130/m	$655,330
Property Connections	94 @ $2,000	$188,000
Crushed Rock Backfill	292 m3 @$85	$24,820
Testing and commissioning		$50,000
On-site pumps	94 @ $8,000	$752,000
Sub-Total		$1,670,150
Contingency 20%		$334,030
Planning 5%		$83,507
Design and Project management 5%		$83,507
Total Project		$2,171,195
GST 10%		$217,195
Total inc. GST		**$2,388,314**

MYRNIONG TRANSFER TO BACCHUS MARSH (PREFERRED TREATMENT OPTION)

Item	Rates and Quantities	Cost
Sewers	10,600m @$150/m	$1,590,000
Pump Station		$250,000
Odour Management		$100,000
Sub-Total		$1,940,000
Contingency 20%		$388,000
Cultural Heritage		$50,000
Design and Project management 15%		$290,000
Total Project		$2,668,000
GST 10%		$266,800
Total inc. GST		**$2,934,800**

MYRNIONG SEPARATE TREATMENT PLANT (NOT PREFFERED)

Item	Rates and Quantities	Cost
Land Purchase	25Ha @$20,000/Ha	$500,000
Packaged treatment Plant		$400,000
Storage Basin		$600,000
Irrigation Equipment		$300,000
Transfer Pump		$50,000
Transfer Pipeline		$100,000
Hydro geotechnical Study		$50,000
Sub Total		$2,000,000
Contingency 30%		$600,000
Re-Zoning		$50,000
Design and Project management 25%		$500,000
Total Project		$3,150,000
GST 10%		$315,000
Total inc. GST		**$3,465,000**

DUNNSTOWN GRAVITY SEWER COLLECTION

Item	Rates and Quantities	Cost
Sewers	4315m @$170/m	$733,550
Manholes	17 @$4,000	$68,000
Maintenance Shafts	19 @$2,800	$38,000
Property Connections	61 @ $900	$54,900
Crushed Rock Backfill	510 m3 @$85	$43,350
Rail Crossing		$80,000
Testing and commissioning		$50,000
Sub-Total		$1,067,800
Contingency 20%		$213,560
Planning 5%		$53,390
Design and Project management 15%		$160,170
Total Project		$1,494,920
GST 10%		$149,492
Total inc. GST		**$1,644,412**

DUNNSTOWN PRESSURE SEWER COLLECTION

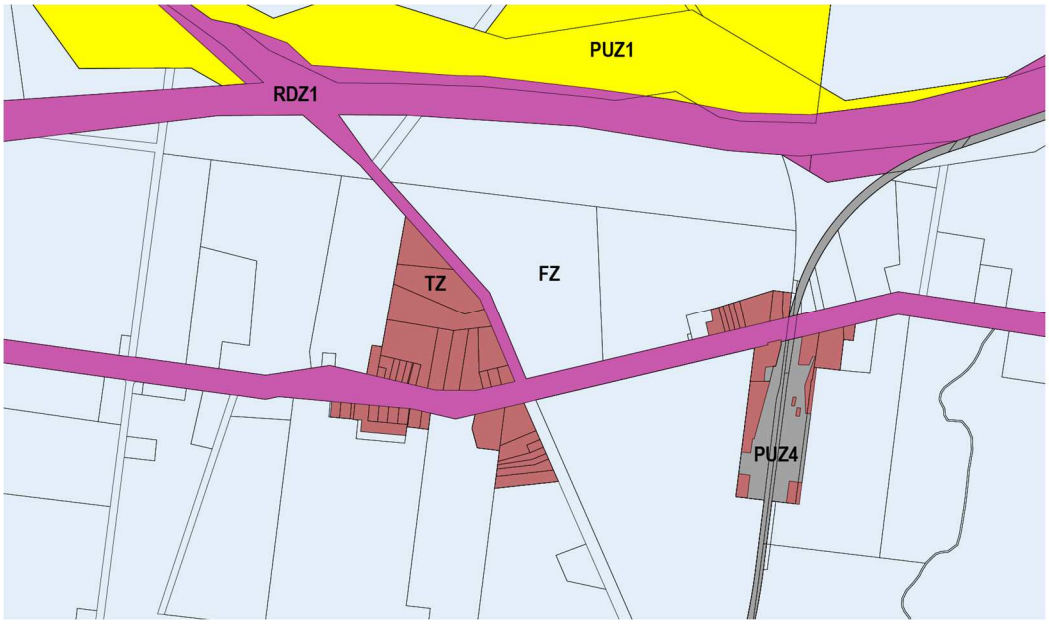
Item	Rates and Quantities	Cost
Sewers	4515 @$130/m	$586,950
Property Connections	61 @ $2,000	$122,000
Crushed Rock Backfill	180 m3 @$85	$15,300
Testing and commissioning		$40,000
On-site pumps	61 @ $8,000	$488,000
Sub-Total		$1,252,250
Contingency 20%		$250,450
Planning 5%		$62,612
Design and Project management 5%		$62,612
Total Project		$1,627,925
GST 10%		$162,792
Total inc. GST		**$1,790,717**

DUNNSTOWN TRANSFER TO BALLARAT

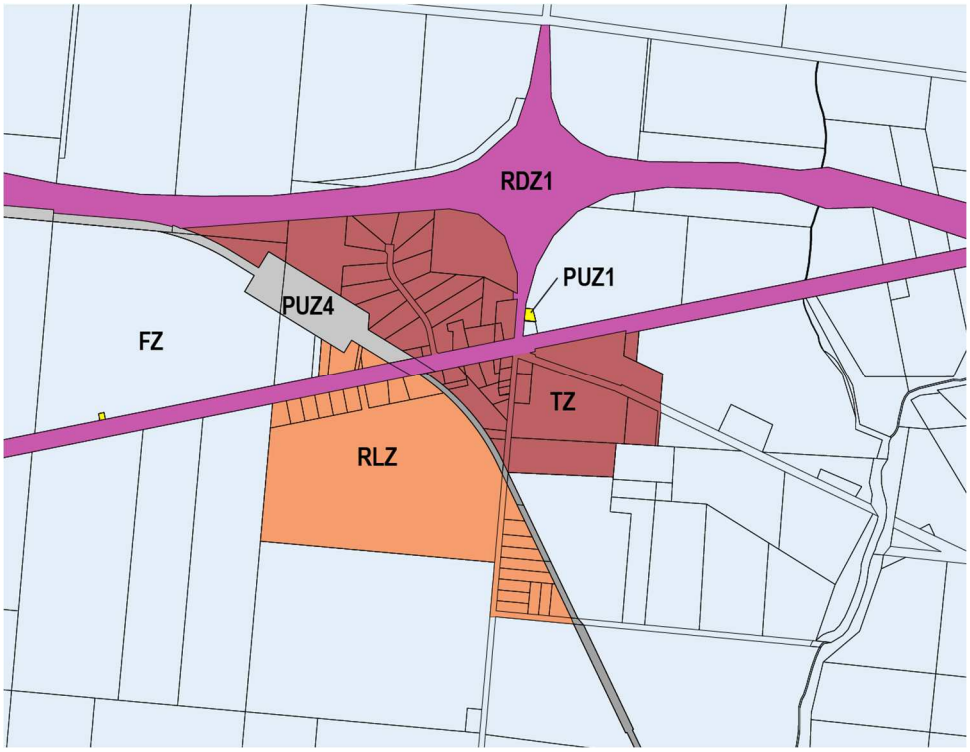
Item	Rates and Quantities	Cost
Sewers	3,050m @$150/m	$457,500
Pump Station		$200,000
Odour Management		$100,000
Sub-Total		$757,500
Contingency 20%		$151,500
Design and Project management 15%		$113,625
Total Project		$1,022,625
GST 10%		$102,265
Total inc. GST		**$1,124,887**

APPENDIX B ZONE MAPS

BUNGAREE

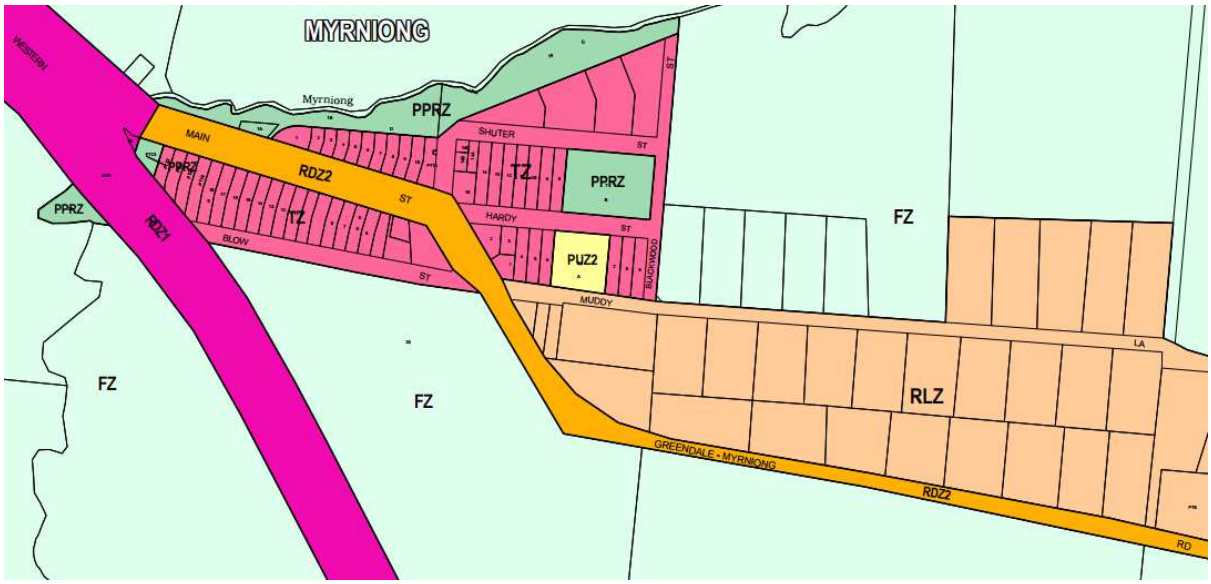


WALLACE



DUNNSTOWN

MYRNIONG



APPENDIX C CONCEPT DESIGNS

APPENDIX D FINANCIAL ASSESSMENTS

Bungaree - AECOM - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	10
Upfront fee for 30 year cost recovery	$ 16,100
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 6,773,642
OPEX	-$ 77,047
Cost Escalation rate	2.0%
Loan Principal	-6,773,642
Loan term	30
Interest rate	5%
CPI	2.0%

Results	Cost	Scenario	New Dw p.a.	30 yr recovery Upfront fee
AECOM Cost	-$ 6,773,642	Moderate	10	**$16,100**
		High	15	**$10,300**

Yr 30 Cum.
$ 77,266

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	141	151	161	171	181	191	201	211	221	231	241	251	261	271	281	291	301	311	321	331	341	351	361	371	381	391	401	411	421	431	441
Existing	0	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Bungaree	$ -	$ 2,431,100	$ 273,588.62	$ 283,446	$ 293,652	$ 304,218	$ 315,153	$ 326,468	$ 338,174	$ 350,283	$ 362,805	$ 375,751	$ 389,136	$ 402,969	$ 417,265	$ 432,035	$ 447,294	$ 463,055	$ 479,332	$ 496,139	$ 513,491	$ 531,404	$ 549,891	$ 568,970	$ 588,657	$ 608,967	$ 629,920	$ 651,531	$ 673,819	$ 696,802	$ 720,499
Total Revenue		**$ 2,431,100**	**$ 273,589**	**$ 283,446**	**$ 293,652**	**$ 304,218**	**$ 315,153**	**$ 326,468**	**$ 338,174**	**$ 350,283**	**$ 362,805**	**$ 375,751**	**$ 389,136**	**$ 402,969**	**$ 417,265**	**$ 432,035**	**$ 447,294**	**$ 463,055**	**$ 479,332**	**$ 496,139**	**$ 513,491**	**$ 531,404**	**$ 549,891**	**$ 568,970**	**$ 588,657**	**$ 608,967**	**$ 629,920**	**$ 651,531**	**$ 673,819**	**$ 696,802**	**$ 720,499**
COSTS																															
Capital Expenditure	-$ 6,773,642	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 77,047	-$ 78,588	-$ 80,160	-$ 81,763	-$ 83,398	-$ 85,066	-$ 86,767	-$ 88,503	-$ 90,273	-$ 92,078	-$ 93,920	-$ 95,798	-$ 97,714	-$ 99,669	-$ 101,662	-$ 103,695	-$ 105,769	-$ 107,884	-$ 110,042	-$ 112,243	-$ 114,488	-$ 116,778	-$ 119,113	-$ 121,495	-$ 123,925	-$ 126,404	-$ 128,932	-$ 131,510	-$ 134,141	-$ 136,824
Debt servicing		-$ 338,682.10	-$ 237,914	-$ 240,059	-$ 241,898	-$ 243,398	-$ 244,527	-$ 245,249	-$ 245,527	-$ 245,319	-$ 244,585	-$ 243,278	-$ 241,350	-$ 238,751	-$ 235,426	-$ 231,317	-$ 226,364	-$ 220,502	-$ 213,663	-$ 205,774	-$ 196,758	-$ 186,533	-$ 175,014	-$ 162,109	-$ 147,722	-$ 131,750	-$ 114,085	-$ 94,614	-$ 73,215	-$ 49,760	-$ 24,115
Total Expenses	**-$ 6,773,642**	**-$ 415,729**	**-$ 316,501**	**-$ 320,219**	**-$ 323,661**	**-$ 326,796**	**-$ 329,593**	**-$ 332,017**	**-$ 334,029**	**-$ 335,592**	**-$ 336,663**	**-$ 337,198**	**-$ 337,148**	**-$ 336,465**	**-$ 335,094**	**-$ 332,979**	**-$ 330,059**	**-$ 326,271**	**-$ 321,548**	**-$ 315,816**	**-$ 309,001**	**-$ 301,021**	**-$ 291,792**	**-$ 281,222**	**-$ 269,217**	**-$ 255,675**	**-$ 240,489**	**-$ 223,546**	**-$ 204,725**	**-$ 183,901**	**-$ 160,938**
NET CASH FLOW	**-$ 6,773,642**	**$ 2,015,371**	**-$ 42,913**	**-$ 36,773**	**-$ 30,009**	**-$ 22,579**	**-$ 14,440**	**-$ 5,549**	**$ 4,145**	**$ 14,690**	**$ 26,141**	**$ 38,554**	**$ 51,987**	**$ 66,504**	**$ 82,171**	**$ 99,057**	**$ 117,235**	**$ 136,784**	**$ 157,785**	**$ 180,323**	**$ 204,491**	**$ 230,382**	**$ 258,099**	**$ 287,748**	**$ 319,439**	**$ 353,292**	**$ 389,431**	**$ 427,985**	**$ 469,094**	**$ 512,901**	**$ 559,561**
CUMULATIVE CASH FLOW	**-$ 6,773,642**	**-$ 4,758,271**	**-$ 4,801,184**	**-$ 4,837,957**	**-$ 4,867,966**	**-$ 4,890,545**	**-$ 4,904,985**	**-$ 4,910,534**	**-$ 4,906,389**	**-$ 4,891,698**	**-$ 4,865,557**	**-$ 4,827,003**	**-$ 4,775,016**	**-$ 4,708,512**	**-$ 4,626,341**	**-$ 4,527,285**	**-$ 4,410,050**	**-$ 4,273,266**	**-$ 4,115,481**	**-$ 3,935,158**	**-$ 3,730,667**	**-$ 3,500,285**	**-$ 3,242,185**	**-$ 2,954,437**	**-$ 2,634,998**	**-$ 2,281,706**	**-$ 1,892,275**	**-$ 1,464,290**	**-$ 995,196**	**-$ 482,295**	**$ 77,266**

Bungaree - AECOM - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	15
Upfront fee for 30 year cost recovery	$ 10,300
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 6,773,642
OPEX	-$ 77,047
Cost Escalation rate	2.0%
Loan Principal	-6,773,642
Loan term	30
Interest rate	5%
CPI	2.0%

Results	Cost	Scenario	New Dw p.a.	30 yr recovery Upfront fee
AECOM Cost	-$ 6,773,642	Moderate	10	**$16,100**
		High	15	**$10,300**

Yr 30 Cum.
$ 58,374

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	141	156	171	186	201	216	231	246	261	276	291	306	321	336	351	366	381	396	411	426	441	456	471	486	501	516	531	546	561	576	591
Existing	0	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Bungaree	$ -	$ 1,606,800	$ 270,816.72	$ 284,551	$ 298,788	$ 313,543	$ 328,830	$ 344,665	$ 361,064	$ 378,042	$ 395,617	$ 413,806	$ 432,625	$ 452,094	$ 472,230	$ 493,053	$ 514,582	$ 536,836	$ 559,836	$ 583,604	$ 608,160	$ 633,526	$ 659,726	$ 686,782	$ 714,719	$ 743,560	$ 773,330	$ 804,056	$ 835,763	$ 868,478	$ 902,230
Total Revenue		**$ 1,606,800**	**$ 270,817**	**$ 284,551**	**$ 298,788**	**$ 313,543**	**$ 328,830**	**$ 344,665**	**$ 361,064**	**$ 378,042**	**$ 395,617**	**$ 413,806**	**$ 432,625**	**$ 452,094**	**$ 472,230**	**$ 493,053**	**$ 514,582**	**$ 536,836**	**$ 559,836**	**$ 583,604**	**$ 608,160**	**$ 633,526**	**$ 659,726**	**$ 686,782**	**$ 714,719**	**$ 743,560**	**$ 773,330**	**$ 804,056**	**$ 835,763**	**$ 868,478**	**$ 902,230**
COSTS																															
Capital Expenditure	-$ 6,773,642	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 77,047	-$ 78,588	-$ 80,160	-$ 81,763	-$ 83,398	-$ 85,066	-$ 86,767	-$ 88,503	-$ 90,273	-$ 92,078	-$ 93,920	-$ 95,798	-$ 97,714	-$ 99,669	-$ 101,662	-$ 103,695	-$ 105,769	-$ 107,884	-$ 110,042	-$ 112,243	-$ 114,488	-$ 116,778	-$ 119,113	-$ 121,495	-$ 123,925	-$ 126,404	-$ 128,932	-$ 131,510	-$ 134,141	-$ 136,824
Debt servicing		-$ 338,682.10	-$ 279,129	-$ 283,474	-$ 287,428	-$ 290,948	-$ 293,988	-$ 296,499	-$ 298,429	-$ 299,723	-$ 300,320	-$ 300,159	-$ 299,173	-$ 297,290	-$ 294,436	-$ 290,530	-$ 285,486	-$ 279,216	-$ 271,624	-$ 262,608	-$ 252,060	-$ 239,867	-$ 225,908	-$ 210,056	-$ 192,176	-$ 172,123	-$ 149,748	-$ 124,889	-$ 97,377	-$ 67,033	-$ 33,668
Total Expenses	**-$ 6,773,642**	**-$ 415,729**	**-$ 357,716**	**-$ 363,633**	**-$ 369,191**	**-$ 374,346**	**-$ 379,054**	**-$ 383,267**	**-$ 386,932**	**-$ 389,995**	**-$ 392,399**	**-$ 394,079**	**-$ 394,971**	**-$ 395,005**	**-$ 394,104**	**-$ 392,191**	**-$ 389,182**	**-$ 384,985**	**-$ 379,508**	**-$ 372,650**	**-$ 364,303**	**-$ 354,355**	**-$ 342,686**	**-$ 329,170**	**-$ 313,671**	**-$ 296,049**	**-$ 276,152**	**-$ 253,821**	**-$ 228,888**	**-$ 201,174**	**-$ 170,492**
NET CASH FLOW	**-$ 6,773,642**	**$ 1,191,071**	**-$ 86,900**	**-$ 79,082**	**-$ 70,402**	**-$ 60,803**	**-$ 50,224**	**-$ 38,602**	**-$ 25,868**	**-$ 11,953**	**$ 3,218**	**$ 19,726**	**$ 37,654**	**$ 57,090**	**$ 78,126**	**$ 100,862**	**$ 125,400**	**$ 151,850**	**$ 180,328**	**$ 210,954**	**$ 243,857**	**$ 279,172**	**$ 317,040**	**$ 357,613**	**$ 401,048**	**$ 447,511**	**$ 497,178**	**$ 550,235**	**$ 606,875**	**$ 667,304**	**$ 731,738**
CUMULATIVE CASH FLOW	**-$ 6,773,642**	**-$ 5,582,571**	**-$ 5,669,471**	**-$ 5,748,553**	**-$ 5,818,955**	**-$ 5,879,758**	**-$ 5,929,983**	**-$ 5,968,584**	**-$ 5,994,453**	**-$ 6,006,406**	**-$ 6,003,188**	**-$ 5,983,461**	**-$ 5,945,807**	**-$ 5,888,717**	**-$ 5,810,591**	**-$ 5,709,730**	**-$ 5,584,329**	**-$ 5,432,479**	**-$ 5,252,151**	**-$ 5,041,197**	**-$ 4,797,340**	**-$ 4,518,169**	**-$ 4,201,128**	**-$ 3,843,515**	**-$ 3,442,468**	**-$ 2,994,957**	**-$ 2,497,779**	**-$ 1,947,544**	**-$ 1,340,669**	**-$ 673,364**	**$ 58,374**

Bungaree - TGM Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	10
Upfront fee for 30 year cost recovery	$ 6,400
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 5,075,000
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-5,075,000
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM Cost	-$ 5,075,000	Moderate	10	**$6,400**
		High	15	**$2,600**

Yr 30 Cum.
$ 118,529

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	141	151	161	171	181	191	201	211	221	231	241	251	261	271	281	291	301	311	321	331	341	351	361	371	381	391	401	411	421	431	441
Existing	0	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Bungaree	$ -	$ 966,400	$ 176,588.62	$ 186,445.72	$ 196,652	$ 207,218	$ 218,153	$ 229,468	$ 241,174	$ 253,283	$ 265,805	$ 278,751	$ 292,136	$ 305,969	$ 320,265	$ 335,035	$ 350,294	$ 366,055	$ 382,332	$ 399,139	$ 416,491	$ 434,404	$ 452,891	$ 471,970	$ 491,657	$ 511,967	$ 532,920	$ 554,531	$ 576,819	$ 599,802	$ 623,499
Total Revenue		**$ 966,400**	**$ 176,589**	**$ 186,446**	**$ 196,652**	**$ 207,218**	**$ 218,153**	**$ 229,468**	**$ 241,174**	**$ 253,283**	**$ 265,805**	**$ 278,751**	**$ 292,136**	**$ 305,969**	**$ 320,265**	**$ 335,035**	**$ 350,294**	**$ 366,055**	**$ 382,332**	**$ 399,139**	**$ 416,491**	**$ 434,404**	**$ 452,891**	**$ 471,970**	**$ 491,657**	**$ 511,967**	**$ 532,920**	**$ 554,531**	**$ 576,819**	**$ 599,802**	**$ 623,499**
COSTS																															
Capital Expenditure	-$ 5,075,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 253,750.00	-$ 219,118	-$ 222,264	-$ 225,095	-$ 227,579	-$ 229,679	-$ 231,359	-$ 232,580	-$ 233,299	-$ 233,472	-$ 233,050	-$ 231,984	-$ 230,220	-$ 227,701	-$ 224,366	-$ 220,152	-$ 214,991	-$ 208,810	-$ 201,534	-$ 193,082	-$ 183,369	-$ 172,303	-$ 159,789	-$ 145,726	-$ 130,007	-$ 112,517	-$ 93,138	-$ 71,741	-$ 48,194	-$ 22,355
Total Expenses	**-$ 5,075,000**	**-$ 273,750**	**-$ 239,518**	**-$ 243,072**	**-$ 246,319**	**-$ 249,227**	**-$ 251,761**	**-$ 253,883**	**-$ 255,554**	**-$ 256,732**	**-$ 257,374**	**-$ 257,430**	**-$ 256,852**	**-$ 255,585**	**-$ 253,573**	**-$ 250,756**	**-$ 247,069**	**-$ 242,447**	**-$ 236,815**	**-$ 230,099**	**-$ 222,219**	**-$ 213,088**	**-$ 202,616**	**-$ 190,709**	**-$ 177,264**	**-$ 162,175**	**-$ 145,329**	**-$ 126,606**	**-$ 105,879**	**-$ 83,015**	**-$ 57,872**
NET CASH FLOW	**-$ 5,075,000**	**$ 692,650**	**-$ 62,929**	**-$ 56,626**	**-$ 49,667**	**-$ 42,010**	**-$ 33,608**	**-$ 24,415**	**-$ 14,380**	**-$ 3,450**	**$ 8,431**	**$ 21,321**	**$ 35,284**	**$ 50,384**	**$ 66,692**	**$ 84,280**	**$ 103,225**	**$ 123,609**	**$ 145,517**	**$ 169,040**	**$ 194,273**	**$ 221,316**	**$ 250,275**	**$ 281,261**	**$ 314,392**	**$ 349,792**	**$ 387,590**	**$ 427,925**	**$ 470,940**	**$ 516,787**	**$ 565,628**
CUMULATIVE CASH FLOW	**-$ 5,075,000**	**-$ 4,382,350**	**-$ 4,445,279**	**-$ 4,501,905**	**-$ 4,551,572**	**-$ 4,593,582**	**-$ 4,627,190**	**-$ 4,651,604**	**-$ 4,665,984**	**-$ 4,669,434**	**-$ 4,661,003**	**-$ 4,639,681**	**-$ 4,604,397**	**-$ 4,554,013**	**-$ 4,487,321**	**-$ 4,403,041**	**-$ 4,299,816**	**-$ 4,176,207**	**-$ 4,030,690**	**-$ 3,861,650**	**-$ 3,667,377**	**-$ 3,446,061**	**-$ 3,195,786**	**-$ 2,914,525**	**-$ 2,600,133**	**-$ 2,250,341**	**-$ 1,862,750**	**-$ 1,434,825**	**-$ 963,886**	**-$ 447,099**	**$ 118,529**

Bungaree - TGM High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	15
Upfront fee for 30 year cost recovery	$ 2,600
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 5,075,000
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-5,075,000
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM Cost	-$ 5,075,000	Moderate	10	**$6,400**
		High	15	**$2,600**

Yr 30 Cum.
$ 31,268

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	141	156	171	186	201	216	231	246	261	276	291	306	321	336	351	366	381	396	411	426	441	456	471	486	501	516	531	546	561	576	591
Existing	0	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Bungaree	$ -	$ 405,600	$ 155,316.72	$ 169,051.04	$ 183,288	$ 198,043	$ 213,330	$ 229,165	$ 245,564	$ 262,542	$ 280,117	$ 298,306	$ 317,125	$ 336,594	$ 356,730	$ 377,553	$ 399,082	$ 421,336	$ 444,336	$ 468,104	$ 492,660	$ 518,026	$ 544,226	$ 571,282	$ 599,219	$ 628,060	$ 657,830	$ 688,556	$ 720,263	$ 752,978	$ 786,730
Total Revenue		**$ 405,600**	**$ 155,317**	**$ 169,051**	**$ 183,288**	**$ 198,043**	**$ 213,330**	**$ 229,165**	**$ 245,564**	**$ 262,542**	**$ 280,117**	**$ 298,306**	**$ 317,125**	**$ 336,594**	**$ 356,730**	**$ 377,553**	**$ 399,082**	**$ 421,336**	**$ 444,336**	**$ 468,104**	**$ 492,660**	**$ 518,026**	**$ 544,226**	**$ 571,282**	**$ 599,219**	**$ 628,060**	**$ 657,830**	**$ 688,556**	**$ 720,263**	**$ 752,978**	**$ 786,730**
COSTS																															
Capital Expenditure	-$ 5,075,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 253,750.00	-$ 247,158	-$ 252,770	-$ 257,996	-$ 262,792	-$ 267,112	-$ 270,906	-$ 274,119	-$ 276,695	-$ 278,575	-$ 279,692	-$ 279,981	-$ 279,367	-$ 277,774	-$ 275,120	-$ 271,317	-$ 266,275	-$ 259,895	-$ 252,073	-$ 242,700	-$ 231,659	-$ 218,826	-$ 204,072	-$ 187,257	-$ 168,236	-$ 146,853	-$ 122,945	-$ 96,338	-$ 66,849	-$ 34,283
Total Expenses	**-$ 5,075,000**	**-$ 273,750**	**-$ 267,558**	**-$ 273,578**	**-$ 279,220**	**-$ 284,441**	**-$ 289,194**	**-$ 293,429**	**-$ 297,092**	**-$ 300,128**	**-$ 302,476**	**-$ 304,072**	**-$ 304,848**	**-$ 304,732**	**-$ 303,646**	**-$ 301,509**	**-$ 298,235**	**-$ 293,731**	**-$ 287,900**	**-$ 280,638**	**-$ 271,836**	**-$ 261,377**	**-$ 249,139**	**-$ 234,991**	**-$ 218,795**	**-$ 200,405**	**-$ 179,665**	**-$ 156,413**	**-$ 130,476**	**-$ 101,669**	**-$ 69,800**
NET CASH FLOW	**-$ 5,075,000**	**$ 131,850**	**-$ 112,241**	**-$ 104,526**	**-$ 95,932**	**-$ 86,398**	**-$ 75,864**	**-$ 64,264**	**-$ 51,529**	**-$ 37,586**	**-$ 22,359**	**-$ 5,767**	**$ 12,277**	**$ 31,862**	**$ 53,085**	**$ 76,044**	**$ 100,847**	**$ 127,605**	**$ 156,437**	**$ 187,466**	**$ 220,824**	**$ 256,649**	**$ 295,087**	**$ 336,291**	**$ 380,424**	**$ 427,655**	**$ 478,165**	**$ 532,142**	**$ 589,787**	**$ 651,309**	**$ 716,930**
CUMULATIVE CASH FLOW	**-$ 5,075,000**	**-$ 4,943,150**	**-$ 5,055,391**	**-$ 5,159,917**	**-$ 5,255,849**	**-$ 5,342,247**	**-$ 5,418,111**	**-$ 5,482,375**	**-$ 5,533,904**	**-$ 5,571,491**	**-$ 5,593,850**	**-$ 5,599,617**	**-$ 5,587,339**	**-$ 5,555,477**	**-$ 5,502,393**	**-$ 5,426,349**	**-$ 5,325,502**	**-$ 5,197,896**	**-$ 5,041,460**	**-$ 4,853,994**	**-$ 4,633,170**	**-$ 4,376,521**	**-$ 4,081,435**	**-$ 3,745,144**	**-$ 3,364,720**	**-$ 2,937,065**	**-$ 2,458,901**	**-$ 1,926,758**	**-$ 1,336,971**	**-$ 685,662**	**$ 31,268**

Dunnstown - Gravity - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	5
Upfront fee for 30 year cost recovery	$ 9,700
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 2,769,299
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-2,769,299
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 2,769,299	Moderate	5	**$9,700**
		High	8	**$4,500**

Yr 30 Cum.
$ 29,212

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	73	78	83	88	93	98	103	108	113	118	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	218
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 708,100	$ 102,930.26	$ 107,822	$ 112,887	$ 118,131	$ 123,559	$ 129,176	$ 134,988	$ 141,000	$ 147,218	$ 153,648	$ 160,296	$ 167,167	$ 174,268	$ 181,606	$ 189,188	$ 197,019	$ 205,107	$ 213,460	$ 222,083	$ 230,986	$ 240,176	$ 249,660	$ 259,447	$ 269,544	$ 279,962	$ 290,707	$ 301,790	$ 313,219	$ 325,004
Total Revenue		**$ 708,100**	**$ 102,930**	**$ 107,822**	**$ 112,887**	**$ 118,131**	**$ 123,559**	**$ 129,176**	**$ 134,988**	**$ 141,000**	**$ 147,218**	**$ 153,648**	**$ 160,296**	**$ 167,167**	**$ 174,268**	**$ 181,606**	**$ 189,188**	**$ 197,019**	**$ 205,107**	**$ 213,460**	**$ 222,083**	**$ 230,986**	**$ 240,176**	**$ 249,660**	**$ 259,447**	**$ 269,544**	**$ 279,962**	**$ 290,707**	**$ 301,790**	**$ 313,219**	**$ 325,004**
COSTS																															
Capital Expenditure	-$ 2,769,299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 138,464.95	-$ 110,983	-$ 112,406	-$ 113,675	-$ 114,776	-$ 115,691	-$ 116,401	-$ 116,889	-$ 117,133	-$ 117,111	-$ 116,801	-$ 116,177	-$ 115,215	-$ 113,885	-$ 112,160	-$ 110,007	-$ 107,394	-$ 104,285	-$ 100,645	-$ 96,432	-$ 91,606	-$ 86,123	-$ 79,936	-$ 72,996	-$ 65,250	-$ 56,644	-$ 47,119	-$ 36,613	-$ 25,061	-$ 12,394
Total Expenses	**-$ 2,769,299**	**-$ 158,465**	**-$ 131,383**	**-$ 133,214**	**-$ 134,900**	**-$ 136,425**	**-$ 137,772**	**-$ 138,925**	**-$ 139,863**	**-$ 140,566**	**-$ 141,013**	**-$ 141,181**	**-$ 141,045**	**-$ 140,580**	**-$ 139,758**	**-$ 138,549**	**-$ 136,924**	**-$ 134,850**	**-$ 132,290**	**-$ 129,209**	**-$ 125,568**	**-$ 121,325**	**-$ 116,437**	**-$ 110,856**	**-$ 104,534**	**-$ 97,419**	**-$ 89,456**	**-$ 80,587**	**-$ 70,751**	**-$ 59,881**	**-$ 47,911**
NET CASH FLOW	**-$ 2,769,299**	**$ 549,635**	**-$ 28,453**	**-$ 25,392**	**-$ 22,013**	**-$ 18,294**	**-$ 14,214**	**-$ 9,749**	**-$ 4,875**	**$ 434**	**$ 6,205**	**$ 12,467**	**$ 19,251**	**$ 26,587**	**$ 34,511**	**$ 43,057**	**$ 52,263**	**$ 62,169**	**$ 72,817**	**$ 84,250**	**$ 96,515**	**$ 109,661**	**$ 123,739**	**$ 138,804**	**$ 154,912**	**$ 172,125**	**$ 190,505**	**$ 210,120**	**$ 231,039**	**$ 253,338**	**$ 277,093**
CUMULATIVE CASH FLOW	**-$ 2,769,299**	**-$ 2,219,664**	**-$ 2,248,117**	**-$ 2,273,509**	**-$ 2,295,522**	**-$ 2,313,816**	**-$ 2,328,030**	**-$ 2,337,779**	**-$ 2,342,653**	**-$ 2,342,219**	**-$ 2,336,014**	**-$ 2,323,546**	**-$ 2,304,295**	**-$ 2,277,708**	**-$ 2,243,197**	**-$ 2,200,140**	**-$ 2,147,877**	**-$ 2,085,708**	**-$ 2,012,891**	**-$ 1,928,641**	**-$ 1,832,125**	**-$ 1,722,464**	**-$ 1,598,725**	**-$ 1,459,921**	**-$ 1,305,009**	**-$ 1,132,884**	**-$ 942,378**	**-$ 732,259**	**-$ 501,219**	**-$ 247,881**	**$ 29,212**

Dunnstown - Gravity - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	8
Upfront fee for 30 year cost recovery	$ 4,500
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 2,769,299
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-2,769,299
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 2,769,299	Moderate	5	**$9,700**
		High	8	**$4,500**

Yr 30 Cum.
$ 10,742

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	76	84	92	100	108	116	124	132	140	148	156	164	172	180	188	196	204	212	220	228	236	244	252	260	268	276	284	292	300	308
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 342,000	$ 92,667.12	$ 99,885	$ 107,368	$ 115,126	$ 123,165	$ 131,494	$ 140,121	$ 149,056	$ 158,306	$ 167,881	$ 177,789	$ 188,042	$ 198,648	$ 209,617	$ 220,960	$ 232,687	$ 244,810	$ 257,338	$ 270,284	$ 283,660	$ 297,477	$ 311,747	$ 326,484	$ 341,700	$ 357,408	$ 373,622	$ 390,356	$ 407,625	$ 425,443
Total Revenue		**$ 342,000**	**$ 92,667**	**$ 99,885**	**$ 107,368**	**$ 115,126**	**$ 123,165**	**$ 131,494**	**$ 140,121**	**$ 149,056**	**$ 158,306**	**$ 167,881**	**$ 177,789**	**$ 188,042**	**$ 198,648**	**$ 209,617**	**$ 220,960**	**$ 232,687**	**$ 244,810**	**$ 257,338**	**$ 270,284**	**$ 283,660**	**$ 297,477**	**$ 311,747**	**$ 326,484**	**$ 341,700**	**$ 357,408**	**$ 373,622**	**$ 390,356**	**$ 407,625**	**$ 425,443**
COSTS																															
Capital Expenditure	-$ 2,769,299	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 138,464.95	-$ 129,288	-$ 132,139	-$ 134,792	-$ 137,225	-$ 139,412	-$ 141,329	-$ 142,946	-$ 144,236	-$ 145,167	-$ 145,705	-$ 145,816	-$ 145,460	-$ 144,599	-$ 143,191	-$ 141,189	-$ 138,546	-$ 135,212	-$ 131,132	-$ 126,250	-$ 120,505	-$ 113,833	-$ 106,167	-$ 97,434	-$ 87,558	-$ 76,460	-$ 64,053	-$ 50,248	-$ 34,949	-$ 18,056
Total Expenses	**-$ 2,769,299**	**-$ 158,465**	**-$ 149,688**	**-$ 152,947**	**-$ 156,017**	**-$ 158,873**	**-$ 161,494**	**-$ 163,852**	**-$ 165,920**	**-$ 167,670**	**-$ 169,069**	**-$ 170,085**	**-$ 170,683**	**-$ 170,825**	**-$ 170,471**	**-$ 169,580**	**-$ 168,106**	**-$ 166,002**	**-$ 163,217**	**-$ 159,697**	**-$ 155,386**	**-$ 150,224**	**-$ 144,147**	**-$ 137,086**	**-$ 128,972**	**-$ 119,727**	**-$ 109,272**	**-$ 97,521**	**-$ 84,385**	**-$ 69,770**	**-$ 53,573**
NET CASH FLOW	**-$ 2,769,299**	**$ 183,535**	**-$ 57,021**	**-$ 53,063**	**-$ 48,648**	**-$ 43,748**	**-$ 38,329**	**-$ 32,358**	**-$ 25,799**	**-$ 18,614**	**-$ 10,763**	**-$ 2,205**	**$ 7,106**	**$ 17,217**	**$ 28,176**	**$ 40,037**	**$ 52,854**	**$ 66,686**	**$ 81,593**	**$ 97,641**	**$ 114,898**	**$ 133,436**	**$ 153,330**	**$ 174,661**	**$ 197,512**	**$ 221,973**	**$ 248,136**	**$ 276,101**	**$ 305,971**	**$ 337,855**	**$ 371,869**
CUMULATIVE CASH FLOW	**-$ 2,769,299**	**-$ 2,585,764**	**-$ 2,642,785**	**-$ 2,695,848**	**-$ 2,744,496**	**-$ 2,788,243**	**-$ 2,826,572**	**-$ 2,858,930**	**-$ 2,884,729**	**-$ 2,903,343**	**-$ 2,914,106**	**-$ 2,916,310**	**-$ 2,909,204**	**-$ 2,891,987**	**-$ 2,863,811**	**-$ 2,823,774**	**-$ 2,770,920**	**-$ 2,704,235**	**-$ 2,622,641**	**-$ 2,525,000**	**-$ 2,410,102**	**-$ 2,276,666**	**-$ 2,123,336**	**-$ 1,948,676**	**-$ 1,751,164**	**-$ 1,529,191**	**-$ 1,281,055**	**-$ 1,004,954**	**-$ 698,983**	**-$ 361,127**	**$ 10,742**

Dunnstown - Pressure - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	5
Upfront fee for 30 year cost recovery	$ 10,700
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 2,915,604
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-2,915,604
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 2,915,604	Moderate	5	**$10,700**
		High	8	**$5,300**

Yr 30 Cum.
$ 8,982

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	73	78	83	88	93	98	103	108	113	118	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	218
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 781,100	$ 107,930.26	$ 112,822	$ 117,887	$ 123,131	$ 128,559	$ 134,176	$ 139,988	$ 146,000	$ 152,218	$ 158,648	$ 165,296	$ 172,167	$ 179,268	$ 186,606	$ 194,188	$ 202,019	$ 210,107	$ 218,460	$ 227,083	$ 235,986	$ 245,176	$ 254,660	$ 264,447	$ 274,544	$ 284,962	$ 295,707	$ 306,790	$ 318,219	$ 330,004
Total Revenue		**$ 781,100**	**$ 107,930**	**$ 112,822**	**$ 117,887**	**$ 123,131**	**$ 128,559**	**$ 134,176**	**$ 139,988**	**$ 146,000**	**$ 152,218**	**$ 158,648**	**$ 165,296**	**$ 172,167**	**$ 179,268**	**$ 186,606**	**$ 194,188**	**$ 202,019**	**$ 210,107**	**$ 218,460**	**$ 227,083**	**$ 235,986**	**$ 245,176**	**$ 254,660**	**$ 264,447**	**$ 274,544**	**$ 284,962**	**$ 295,707**	**$ 306,790**	**$ 318,219**	**$ 330,004**
COSTS																															
Capital Expenditure	-$ 2,915,604	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 145,780.20	-$ 115,014	-$ 116,388	-$ 117,607	-$ 118,654	-$ 119,513	-$ 120,165	-$ 120,590	-$ 120,769	-$ 120,679	-$ 120,297	-$ 119,599	-$ 118,557	-$ 117,145	-$ 115,333	-$ 113,088	-$ 110,379	-$ 107,170	-$ 103,424	-$ 99,100	-$ 94,158	-$ 88,552	-$ 82,237	-$ 75,162	-$ 67,274	-$ 58,519	-$ 48,838	-$ 38,168	-$ 26,443	-$ 13,596
Total Expenses	**-$ 2,915,604**	**-$ 165,780**	**-$ 135,414**	**-$ 137,196**	**-$ 138,831**	**-$ 140,303**	**-$ 141,595**	**-$ 142,688**	**-$ 143,564**	**-$ 144,202**	**-$ 144,581**	**-$ 144,677**	**-$ 144,466**	**-$ 143,922**	**-$ 143,017**	**-$ 141,722**	**-$ 140,006**	**-$ 137,835**	**-$ 135,175**	**-$ 131,989**	**-$ 128,236**	**-$ 123,877**	**-$ 118,866**	**-$ 113,156**	**-$ 106,700**	**-$ 99,443**	**-$ 91,331**	**-$ 82,306**	**-$ 72,305**	**-$ 61,264**	**-$ 49,112**
NET CASH FLOW	**-$ 2,915,604**	**$ 615,320**	**-$ 27,484**	**-$ 24,375**	**-$ 20,945**	**-$ 17,172**	**-$ 13,036**	**-$ 8,512**	**-$ 3,576**	**$ 1,798**	**$ 7,637**	**$ 13,971**	**$ 20,829**	**$ 28,245**	**$ 36,251**	**$ 44,884**	**$ 54,182**	**$ 64,184**	**$ 74,932**	**$ 86,471**	**$ 98,847**	**$ 112,110**	**$ 126,310**	**$ 141,503**	**$ 157,747**	**$ 175,101**	**$ 193,630**	**$ 213,401**	**$ 234,485**	**$ 256,955**	**$ 280,892**
CUMULATIVE CASH FLOW	**-$ 2,915,604**	**-$ 2,300,284**	**-$ 2,327,768**	**-$ 2,352,143**	**-$ 2,373,088**	**-$ 2,390,260**	**-$ 2,403,296**	**-$ 2,411,808**	**-$ 2,415,384**	**-$ 2,413,586**	**-$ 2,405,949**	**-$ 2,391,979**	**-$ 2,371,149**	**-$ 2,342,905**	**-$ 2,306,654**	**-$ 2,261,770**	**-$ 2,207,588**	**-$ 2,143,404**	**-$ 2,068,472**	**-$ 1,982,001**	**-$ 1,883,154**	**-$ 1,771,044**	**-$ 1,644,734**	**-$ 1,503,231**	**-$ 1,345,484**	**-$ 1,170,382**	**-$ 976,752**	**-$ 763,351**	**-$ 528,866**	**-$ 271,910**	**$ 8,982**

Dunnstown - Pressure - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	8
Upfront fee for 30 year cost recovery	$ 5,300
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 2,915,604
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-2,915,604
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 2,915,604	Moderate	5	**$10,700**
		High	8	**$5,300**

Yr 30 Cum.
$ 27,547

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	76	84	92	100	108	116	124	132	140	148	156	164	172	180	188	196	204	212	220	228	236	244	252	260	268	276	284	292	300	308
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 402,800	$ 99,067.12	$ 106,285	$ 113,768	$ 121,526	$ 129,565	$ 137,894	$ 146,521	$ 155,456	$ 164,706	$ 174,281	$ 184,189	$ 194,442	$ 205,048	$ 216,017	$ 227,360	$ 239,087	$ 251,210	$ 263,738	$ 276,684	$ 290,060	$ 303,877	$ 318,147	$ 332,884	$ 348,100	$ 363,808	$ 380,022	$ 396,756	$ 414,025	$ 431,843
Total Revenue		**$ 402,800**	**$ 99,067**	**$ 106,285**	**$ 113,768**	**$ 121,526**	**$ 129,565**	**$ 137,894**	**$ 146,521**	**$ 155,456**	**$ 164,706**	**$ 174,281**	**$ 184,189**	**$ 194,442**	**$ 205,048**	**$ 216,017**	**$ 227,360**	**$ 239,087**	**$ 251,210**	**$ 263,738**	**$ 276,684**	**$ 290,060**	**$ 303,877**	**$ 318,147**	**$ 332,884**	**$ 348,100**	**$ 363,808**	**$ 380,022**	**$ 396,756**	**$ 414,025**	**$ 431,843**
COSTS																															
Capital Expenditure	-$ 2,915,604	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 145,780.20	-$ 133,929	-$ 136,692	-$ 139,253	-$ 141,589	-$ 143,674	-$ 145,484	-$ 146,989	-$ 148,161	-$ 148,968	-$ 149,377	-$ 149,350	-$ 148,852	-$ 147,840	-$ 146,274	-$ 144,106	-$ 141,289	-$ 137,772	-$ 133,500	-$ 128,417	-$ 122,460	-$ 115,566	-$ 107,666	-$ 98,688	-$ 88,555	-$ 77,187	-$ 64,496	-$ 50,393	-$ 34,782	-$ 17,561
Total Expenses	**-$ 2,915,604**	**-$ 165,780**	**-$ 154,329**	**-$ 157,500**	**-$ 160,477**	**-$ 163,237**	**-$ 165,756**	**-$ 168,007**	**-$ 169,963**	**-$ 171,595**	**-$ 172,870**	**-$ 173,756**	**-$ 174,218**	**-$ 174,217**	**-$ 173,713**	**-$ 172,663**	**-$ 171,023**	**-$ 168,745**	**-$ 165,777**	**-$ 162,065**	**-$ 157,553**	**-$ 152,179**	**-$ 145,880**	**-$ 138,586**	**-$ 130,226**	**-$ 120,724**	**-$ 109,999**	**-$ 97,965**	**-$ 84,531**	**-$ 69,603**	**-$ 53,078**
NET CASH FLOW	**-$ 2,915,604**	**$ 237,020**	**-$ 55,262**	**-$ 51,216**	**-$ 46,709**	**-$ 41,711**	**-$ 36,191**	**-$ 30,113**	**-$ 23,442**	**-$ 16,139**	**-$ 8,164**	**$ 524**	**$ 9,972**	**$ 20,225**	**$ 31,335**	**$ 43,354**	**$ 56,337**	**$ 70,342**	**$ 85,433**	**$ 101,673**	**$ 119,131**	**$ 137,881**	**$ 157,997**	**$ 179,561**	**$ 202,658**	**$ 227,375**	**$ 253,809**	**$ 282,058**	**$ 312,225**	**$ 344,423**	**$ 378,765**
CUMULATIVE CASH FLOW	**-$ 2,915,604**	**-$ 2,678,584**	**-$ 2,733,846**	**-$ 2,785,062**	**-$ 2,831,771**	**-$ 2,873,482**	**-$ 2,909,673**	**-$ 2,939,786**	**-$ 2,963,227**	**-$ 2,979,366**	**-$ 2,987,530**	**-$ 2,987,006**	**-$ 2,977,035**	**-$ 2,956,809**	**-$ 2,925,474**	**-$ 2,882,120**	**-$ 2,825,784**	**-$ 2,755,442**	**-$ 2,670,009**	**-$ 2,568,336**	**-$ 2,449,205**	**-$ 2,311,324**	**-$ 2,153,327**	**-$ 1,973,766**	**-$ 1,771,108**	**-$ 1,543,733**	**-$ 1,289,924**	**-$ 1,007,866**	**-$ 695,641**	**-$ 351,218**	**$ 27,547**

Dunnstown - Water - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	5
Upfront fee for 30 year cost recovery	$ 18,600
Annual Service Fee (2016)	$ 195
Completion of works	End Year 0
CAPEX	-$ 1,739,000
OPEX	-$ 70,200
Cost Escalation rate	2.0%
Loan Principal	-1,739,000
Loan term	30
Interest rate	5%
CPI	2.0%

Results	Cost	Scenario	New Dw p.a.	30 yr recovery Upfront fee
AECOM	-$ 1,739,000	Moderate	5	**$18,600**
		High	8	**$13,300**

Yr 30 Cum.
$ 57,495

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	73	78	83	88	93	98	103	108	113	118	123	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	213	218
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Annual cost		$ 195	$ 199	$ 203	$ 207	$ 211	$ 215	$ 220	$ 224	$ 228	$ 233	$ 238	$ 242	$ 247	$ 252	$ 257	$ 262	$ 268	$ 273	$ 279	$ 284	$ 290	$ 296	$ 301	$ 307	$ 314	$ 320	$ 326	$ 333	$ 339	$ 346

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 1,357,800	$ 107,519.70	$ 108,824	$ 110,176	$ 111,575	$ 113,023	$ 114,521	$ 116,071	$ 117,675	$ 119,334	$ 121,049	$ 122,822	$ 124,655	$ 126,550	$ 128,507	$ 130,530	$ 132,619	$ 134,776	$ 137,004	$ 139,305	$ 141,680	$ 144,131	$ 146,661	$ 149,272	$ 151,965	$ 154,744	$ 157,611	$ 160,567	$ 163,616	$ 166,760
Total Revenue		**$ 1,357,800**	**$ 107,520**	**$ 108,824**	**$ 110,176**	**$ 111,575**	**$ 113,023**	**$ 114,521**	**$ 116,071**	**$ 117,675**	**$ 119,334**	**$ 121,049**	**$ 122,822**	**$ 124,655**	**$ 126,550**	**$ 128,507**	**$ 130,530**	**$ 132,619**	**$ 134,776**	**$ 137,004**	**$ 139,305**	**$ 141,680**	**$ 144,131**	**$ 146,661**	**$ 149,272**	**$ 151,965**	**$ 154,744**	**$ 157,611**	**$ 160,567**	**$ 163,616**	**$ 166,760**
COSTS																															
Capital Expenditure	-$ 1,739,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 70,200	-$ 71,604	-$ 73,036	-$ 74,497	-$ 75,987	-$ 77,506	-$ 79,057	-$ 80,638	-$ 82,250	-$ 83,895	-$ 85,573	-$ 87,285	-$ 89,031	-$ 90,811	-$ 92,627	-$ 94,480	-$ 96,370	-$ 98,297	-$ 100,263	-$ 102,268	-$ 104,314	-$ 106,400	-$ 108,528	-$ 110,698	-$ 112,912	-$ 115,171	-$ 117,474	-$ 119,823	-$ 122,220	-$ 124,664
Debt servicing		-$ 86,950.00	-$ 26,918	-$ 26,468	-$ 26,002	-$ 25,518	-$ 25,014	-$ 24,489	-$ 23,940	-$ 23,366	-$ 22,763	-$ 22,129	-$ 21,462	-$ 20,758	-$ 20,014	-$ 19,228	-$ 18,396	-$ 17,513	-$ 16,576	-$ 15,581	-$ 14,523	-$ 13,397	-$ 12,199	-$ 10,922	-$ 9,562	-$ 8,111	-$ 6,564	-$ 4,914	-$ 3,152	-$ 1,273	$ 733
Total Expenses	**-$ 1,739,000**	**-$ 157,150**	**-$ 98,522**	**-$ 99,504**	**-$ 100,498**	**-$ 101,504**	**-$ 102,521**	**-$ 103,546**	**-$ 104,578**	**-$ 105,616**	**-$ 106,658**	**-$ 107,702**	**-$ 108,746**	**-$ 109,788**	**-$ 110,826**	**-$ 111,856**	**-$ 112,876**	**-$ 113,883**	**-$ 114,873**	**-$ 115,844**	**-$ 116,791**	**-$ 117,711**	**-$ 118,599**	**-$ 119,450**	**-$ 120,260**	**-$ 121,023**	**-$ 121,735**	**-$ 122,388**	**-$ 122,976**	**-$ 123,493**	**-$ 123,931**
NET CASH FLOW	**-$ 1,739,000**	**$ 1,200,650**	**$ 8,998**	**$ 9,321**	**$ 9,677**	**$ 10,070**	**$ 10,502**	**$ 10,975**	**$ 11,493**	**$ 12,059**	**$ 12,676**	**$ 13,347**	**$ 14,076**	**$ 14,867**	**$ 15,724**	**$ 16,652**	**$ 17,654**	**$ 18,736**	**$ 19,903**	**$ 21,160**	**$ 22,514**	**$ 23,969**	**$ 25,532**	**$ 27,211**	**$ 29,012**	**$ 30,942**	**$ 33,010**	**$ 35,223**	**$ 37,591**	**$ 40,123**	**$ 42,829**
CUMULATIVE CASH FLOW	**-$ 1,739,000**	**-$ 538,350**	**-$ 529,352**	**-$ 520,031**	**-$ 510,354**	**-$ 500,284**	**-$ 489,782**	**-$ 478,806**	**-$ 467,313**	**-$ 455,254**	**-$ 442,578**	**-$ 429,232**	**-$ 415,156**	**-$ 400,289**	**-$ 384,565**	**-$ 367,913**	**-$ 350,259**	**-$ 331,523**	**-$ 311,620**	**-$ 290,460**	**-$ 267,946**	**-$ 243,978**	**-$ 218,445**	**-$ 191,234**	**-$ 162,223**	**-$ 131,281**	**-$ 98,271**	**-$ 63,048**	**-$ 25,457**	**$ 14,667**	**$ 57,495**

Dunnstown - Water - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	8
Upfront fee for 30 year cost recovery	$ 13,300
Annual Service Fee (2016)	$ 195
Completion of works	End Year 0
CAPEX	-$ 1,739,000
OPEX	-$ 70,200
Cost Escalation rate	2.0%
Loan Principal	-1,739,000
Loan term	30
Interest rate	5%
CPI	2.0%

Results	Cost	Scenario	New Dw p.a.	30 yr recovery Upfront fee
AECOM	-$ 1,739,000	Moderate	5	**$18,600**
		High	8	**$13,300**

Yr 30 Cum.
$ 69,189

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings	68	76	84	92	100	108	116	124	132	140	148	156	164	172	180	188	196	204	212	220	228	236	244	252	260	268	276	284	292	300	308
Existing	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Annual cost		$ 195	$ 199	$ 203	$ 207	$ 211	$ 215	$ 220	$ 224	$ 228	$ 233	$ 238	$ 242	$ 247	$ 252	$ 257	$ 262	$ 268	$ 273	$ 279	$ 284	$ 290	$ 296	$ 301	$ 307	$ 314	$ 320	$ 326	$ 333	$ 339	$ 346

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Dunnstown	$ -	$ 1,010,800	$ 121,516.40	$ 123,442	$ 125,438	$ 127,507	$ 129,652	$ 131,874	$ 134,175	$ 136,559	$ 139,026	$ 141,580	$ 144,223	$ 146,958	$ 149,788	$ 152,714	$ 155,740	$ 158,868	$ 162,102	$ 165,444	$ 168,897	$ 172,465	$ 176,151	$ 179,958	$ 183,889	$ 187,948	$ 192,138	$ 196,463	$ 200,927	$ 205,534	$ 210,287
Total Revenue		**$ 1,010,800**	**$ 121,516**	**$ 123,442**	**$ 125,438**	**$ 127,507**	**$ 129,652**	**$ 131,874**	**$ 134,175**	**$ 136,559**	**$ 139,026**	**$ 141,580**	**$ 144,223**	**$ 146,958**	**$ 149,788**	**$ 152,714**	**$ 155,740**	**$ 158,868**	**$ 162,102**	**$ 165,444**	**$ 168,897**	**$ 172,465**	**$ 176,151**	**$ 179,958**	**$ 183,889**	**$ 187,948**	**$ 192,138**	**$ 196,463**	**$ 200,927**	**$ 205,534**	**$ 210,287**
COSTS																															
Capital Expenditure	-$ 1,739,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 70,200	-$ 71,604	-$ 73,036	-$ 74,497	-$ 75,987	-$ 77,506	-$ 79,057	-$ 80,638	-$ 82,250	-$ 83,895	-$ 85,573	-$ 87,285	-$ 89,031	-$ 90,811	-$ 92,627	-$ 94,480	-$ 96,370	-$ 98,297	-$ 100,263	-$ 102,268	-$ 104,314	-$ 106,400	-$ 108,528	-$ 110,698	-$ 112,912	-$ 115,171	-$ 117,474	-$ 119,823	-$ 122,220	-$ 124,664
Debt servicing		-$ 86,950.00	-$ 44,268	-$ 43,985	-$ 43,664	-$ 43,300	-$ 42,889	-$ 42,427	-$ 41,907	-$ 41,326	-$ 40,676	-$ 39,954	-$ 39,151	-$ 38,262	-$ 37,278	-$ 36,193	-$ 34,999	-$ 33,686	-$ 32,245	-$ 30,667	-$ 28,941	-$ 27,057	-$ 25,002	-$ 22,765	-$ 20,332	-$ 17,689	-$ 14,821	-$ 11,714	-$ 8,350	-$ 4,713	-$ 783
Total Expenses	**-$ 1,739,000**	**-$ 157,150**	**-$ 115,872**	**-$ 117,021**	**-$ 118,161**	**-$ 119,287**	**-$ 120,396**	**-$ 121,483**	**-$ 122,545**	**-$ 123,576**	**-$ 124,572**	**-$ 125,527**	**-$ 126,436**	**-$ 127,292**	**-$ 128,090**	**-$ 128,821**	**-$ 129,479**	**-$ 130,055**	**-$ 130,542**	**-$ 130,930**	**-$ 131,210**	**-$ 131,371**	**-$ 131,402**	**-$ 131,293**	**-$ 131,030**	**-$ 130,601**	**-$ 129,992**	**-$ 129,188**	**-$ 128,174**	**-$ 126,933**	**-$ 125,447**
NET CASH FLOW	**-$ 1,739,000**	**$ 853,650**	**$ 5,645**	**$ 6,420**	**$ 7,277**	**$ 8,220**	**$ 9,256**	**$ 10,391**	**$ 11,630**	**$ 12,983**	**$ 14,454**	**$ 16,053**	**$ 17,788**	**$ 19,666**	**$ 21,698**	**$ 23,893**	**$ 26,261**	**$ 28,813**	**$ 31,560**	**$ 34,514**	**$ 37,688**	**$ 41,095**	**$ 44,749**	**$ 48,665**	**$ 52,859**	**$ 57,347**	**$ 62,146**	**$ 67,275**	**$ 72,754**	**$ 78,601**	**$ 84,840**
CUMULATIVE CASH FLOW	**-$ 1,739,000**	**-$ 885,350**	**-$ 879,705**	**-$ 873,285**	**-$ 866,008**	**-$ 857,787**	**-$ 848,531**	**-$ 838,141**	**-$ 826,510**	**-$ 813,528**	**-$ 799,073**	**-$ 783,020**	**-$ 765,233**	**-$ 745,567**	**-$ 723,869**	**-$ 699,976**	**-$ 673,715**	**-$ 644,902**	**-$ 613,343**	**-$ 578,829**	**-$ 541,142**	**-$ 500,047**	**-$ 455,298**	**-$ 406,633**	**-$ 353,774**	**-$ 296,428**	**-$ 234,281**	**-$ 167,006**	**-$ 94,252**	**-$ 15,651**	**$ 69,189**

Myrniong - Gravity - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	5
Upfront fee for 30 year cost recovery	$ 17,300
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 4,616,059
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-4,616,059
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 4,616,059	Moderate	5	**$17,300**
		High	8	**$11,100**

Yr 30 Cum.
$ 63,260

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	94	99	104	109	114	119	124	129	134	139	144	149	154	159	164	169	174	179	184	189	194	199	204	209	214	219	224	229	234	239	244
Existing	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	$ -	$ 1,712,700	$ 160,316.38	$ 165,595	$ 171,056	$ 176,703	$ 182,543	$ 188,580	$ 194,820	$ 201,269	$ 207,932	$ 214,816	$ 221,927	$ 229,271	$ 236,855	$ 244,684	$ 252,767	$ 261,110	$ 269,720	$ 278,605	$ 287,772	$ 297,228	$ 306,982	$ 317,043	$ 327,417	$ 338,114	$ 349,143	$ 360,512	$ 372,231	$ 384,309	$ 396,756
Total Revenue		**$ 1,712,700**	**$ 160,316**	**$ 165,595**	**$ 171,056**	**$ 176,703**	**$ 182,543**	**$ 188,580**	**$ 194,820**	**$ 201,269**	**$ 207,932**	**$ 214,816**	**$ 221,927**	**$ 229,271**	**$ 236,855**	**$ 244,684**	**$ 252,767**	**$ 261,110**	**$ 269,720**	**$ 278,605**	**$ 287,772**	**$ 297,228**	**$ 306,982**	**$ 317,043**	**$ 327,417**	**$ 338,114**	**$ 349,143**	**$ 360,512**	**$ 372,231**	**$ 384,309**	**$ 396,756**
COSTS																															
Capital Expenditure	-$ 4,616,059	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 230,802.95	-$ 157,708	-$ 158,598	-$ 159,288	-$ 159,761	-$ 159,996	-$ 159,973	-$ 159,669	-$ 159,060	-$ 158,121	-$ 156,826	-$ 155,145	-$ 153,050	-$ 150,507	-$ 147,483	-$ 143,942	-$ 139,847	-$ 135,157	-$ 129,829	-$ 123,818	-$ 117,077	-$ 109,556	-$ 101,200	-$ 91,954	-$ 81,758	-$ 70,548	-$ 58,259	-$ 44,820	-$ 30,156	-$ 14,189
Total Expenses	**-$ 4,616,059**	**-$ 250,803**	**-$ 178,108**	**-$ 179,406**	**-$ 180,512**	**-$ 181,410**	**-$ 182,078**	**-$ 182,496**	**-$ 182,643**	**-$ 182,493**	**-$ 182,023**	**-$ 181,206**	**-$ 180,013**	**-$ 178,414**	**-$ 176,379**	**-$ 173,873**	**-$ 170,860**	**-$ 167,303**	**-$ 163,161**	**-$ 158,394**	**-$ 152,954**	**-$ 146,796**	**-$ 139,869**	**-$ 132,120**	**-$ 123,492**	**-$ 113,926**	**-$ 103,360**	**-$ 91,727**	**-$ 78,958**	**-$ 64,977**	**-$ 49,706**
NET CASH FLOW	**-$ 4,616,059**	**$ 1,461,897**	**-$ 17,792**	**-$ 13,810**	**-$ 9,456**	**-$ 4,706**	**$ 465**	**$ 6,084**	**$ 12,177**	**$ 18,775**	**$ 25,909**	**$ 33,611**	**$ 41,914**	**$ 50,857**	**$ 60,476**	**$ 70,812**	**$ 81,907**	**$ 93,807**	**$ 106,559**	**$ 120,211**	**$ 134,817**	**$ 150,432**	**$ 167,113**	**$ 184,923**	**$ 203,925**	**$ 224,188**	**$ 245,783**	**$ 268,785**	**$ 293,274**	**$ 319,333**	**$ 347,050**
CUMULATIVE CASH FLOW	**-$ 4,616,059**	**-$ 3,154,162**	**-$ 3,171,954**	**-$ 3,185,764**	**-$ 3,195,220**	**-$ 3,199,927**	**-$ 3,199,462**	**-$ 3,193,378**	**-$ 3,181,201**	**-$ 3,162,425**	**-$ 3,136,516**	**-$ 3,102,906**	**-$ 3,060,991**	**-$ 3,010,135**	**-$ 2,949,659**	**-$ 2,878,847**	**-$ 2,796,940**	**-$ 2,703,132**	**-$ 2,596,574**	**-$ 2,476,362**	**-$ 2,341,545**	**-$ 2,191,113**	**-$ 2,024,000**	**-$ 1,839,077**	**-$ 1,635,151**	**-$ 1,410,963**	**-$ 1,165,181**	**-$ 896,396**	**-$ 603,122**	**-$ 283,790**	**$ 63,260**

Myrniong - Gravity - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	8
Upfront fee for 30 year cost recovery	$ 11,100
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 4,616,059
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-4,616,059
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 4,616,059	Moderate	5	**$17,300**
		High	8	**$11,100**

Yr 30 Cum.
$ 84,667

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	94	102	110	118	126	134	142	150	158	166	174	182	190	198	206	214	222	230	238	246	254	262	270	278	286	294	302	310	318	326	334
Existing	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	$ -	$ 1,132,200	$ 164,853.24	$ 172,459	$ 180,338	$ 188,498	$ 196,949	$ 205,698	$ 214,753	$ 224,124	$ 233,820	$ 243,849	$ 254,221	$ 264,946	$ 276,034	$ 287,495	$ 299,340	$ 311,578	$ 324,223	$ 337,283	$ 350,773	$ 364,702	$ 379,083	$ 393,930	$ 409,254	$ 425,070	$ 441,389	$ 458,227	$ 475,598	$ 493,515	$ 511,994
Total Revenue		**$ 1,132,200**	**$ 164,853**	**$ 172,459**	**$ 180,338**	**$ 188,498**	**$ 196,949**	**$ 205,698**	**$ 214,753**	**$ 224,124**	**$ 233,820**	**$ 243,849**	**$ 254,221**	**$ 264,946**	**$ 276,034**	**$ 287,495**	**$ 299,340**	**$ 311,578**	**$ 324,223**	**$ 337,283**	**$ 350,773**	**$ 364,702**	**$ 379,083**	**$ 393,930**	**$ 409,254**	**$ 425,070**	**$ 441,389**	**$ 458,227**	**$ 475,598**	**$ 493,515**	**$ 511,994**
COSTS																															
Capital Expenditure	-$ 4,616,059	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 230,802.95	-$ 186,733	-$ 188,847	-$ 190,707	-$ 192,287	-$ 193,558	-$ 194,493	-$ 195,059	-$ 195,223	-$ 194,949	-$ 194,201	-$ 192,938	-$ 191,117	-$ 188,694	-$ 185,620	-$ 181,846	-$ 177,317	-$ 171,977	-$ 165,765	-$ 158,617	-$ 150,466	-$ 141,240	-$ 130,864	-$ 119,256	-$ 106,333	-$ 92,005	-$ 76,177	-$ 58,747	-$ 39,612	-$ 18,658
Total Expenses	**-$ 4,616,059**	**-$ 250,803**	**-$ 207,133**	**-$ 209,655**	**-$ 211,931**	**-$ 213,935**	**-$ 215,640**	**-$ 217,016**	**-$ 218,033**	**-$ 218,656**	**-$ 218,851**	**-$ 218,581**	**-$ 217,805**	**-$ 216,482**	**-$ 214,566**	**-$ 212,010**	**-$ 208,763**	**-$ 204,773**	**-$ 199,982**	**-$ 194,330**	**-$ 187,753**	**-$ 180,185**	**-$ 171,554**	**-$ 161,783**	**-$ 150,794**	**-$ 138,502**	**-$ 124,817**	**-$ 109,645**	**-$ 92,885**	**-$ 74,432**	**-$ 54,175**
NET CASH FLOW	**-$ 4,616,059**	**$ 881,397**	**-$ 42,280**	**-$ 37,197**	**-$ 31,593**	**-$ 25,437**	**-$ 18,691**	**-$ 11,318**	**-$ 3,279**	**$ 5,468**	**$ 14,968**	**$ 25,268**	**$ 36,416**	**$ 48,464**	**$ 61,468**	**$ 75,485**	**$ 90,576**	**$ 106,806**	**$ 124,241**	**$ 142,954**	**$ 163,019**	**$ 184,517**	**$ 207,530**	**$ 232,147**	**$ 258,460**	**$ 286,567**	**$ 316,572**	**$ 348,582**	**$ 382,712**	**$ 419,083**	**$ 457,820**
CUMULATIVE CASH FLOW	**-$ 4,616,059**	**-$ 3,734,662**	**-$ 3,776,942**	**-$ 3,814,138**	**-$ 3,845,732**	**-$ 3,871,168**	**-$ 3,889,859**	**-$ 3,901,178**	**-$ 3,904,457**	**-$ 3,898,989**	**-$ 3,884,020**	**-$ 3,858,752**	**-$ 3,822,336**	**-$ 3,773,872**	**-$ 3,712,404**	**-$ 3,636,918**	**-$ 3,546,342**	**-$ 3,439,537**	**-$ 3,315,296**	**-$ 3,172,342**	**-$ 3,009,323**	**-$ 2,824,806**	**-$ 2,617,276**	**-$ 2,385,129**	**-$ 2,126,670**	**-$ 1,840,102**	**-$ 1,523,530**	**-$ 1,174,948**	**-$ 792,236**	**-$ 373,153**	**$ 84,667**

Myrniong - Pressure - Moderate

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	5
Upfront fee for 30 year cost recovery	$ 21,500
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 5,323,114
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-5,323,114
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 5,323,114	Moderate	5	**$21,500**
		High	8	**$14,400**

Yr 30 Cum.
$ 27,675

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	94	99	104	109	114	119	124	129	134	139	144	149	154	159	164	169	174	179	184	189	194	199	204	209	214	219	224	229	234	239	244
Existing	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	$ -	$ 2,128,500	$ 181,316.38	$ 186,595	$ 192,056	$ 197,703	$ 203,543	$ 209,580	$ 215,820	$ 222,269	$ 228,932	$ 235,816	$ 242,927	$ 250,271	$ 257,855	$ 265,684	$ 273,767	$ 282,110	$ 290,720	$ 299,605	$ 308,772	$ 318,228	$ 327,982	$ 338,043	$ 348,417	$ 359,114	$ 370,143	$ 381,512	$ 393,231	$ 405,309	$ 417,756
Total Revenue		**$ 2,128,500**	**$ 181,316**	**$ 186,595**	**$ 192,056**	**$ 197,703**	**$ 203,543**	**$ 209,580**	**$ 215,820**	**$ 222,269**	**$ 228,932**	**$ 235,816**	**$ 242,927**	**$ 250,271**	**$ 257,855**	**$ 265,684**	**$ 273,767**	**$ 282,110**	**$ 290,720**	**$ 299,605**	**$ 308,772**	**$ 318,228**	**$ 327,982**	**$ 338,043**	**$ 348,417**	**$ 359,114**	**$ 370,143**	**$ 381,512**	**$ 393,231**	**$ 405,309**	**$ 417,756**
COSTS																															
Capital Expenditure	-$ 5,323,114	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 266,155.70	-$ 207,023	-$ 208,832	-$ 210,371	-$ 211,614	-$ 212,532	-$ 213,095	-$ 213,271	-$ 213,026	-$ 212,323	-$ 211,123	-$ 209,386	-$ 207,067	-$ 204,122	-$ 200,500	-$ 196,149	-$ 191,016	-$ 185,040	-$ 178,161	-$ 170,314	-$ 161,427	-$ 151,430	-$ 140,243	-$ 127,784	-$ 113,968	-$ 98,701	-$ 81,887	-$ 63,424	-$ 43,202	-$ 21,107
Total Expenses	**-$ 5,323,114**	**-$ 286,156**	**-$ 194,438**	**-$ 195,503**	**-$ 196,364**	**-$ 197,004**	**-$ 197,402**	**-$ 197,537**	**-$ 197,385**	**-$ 196,923**	**-$ 196,124**	**-$ 194,962**	**-$ 193,406**	**-$ 191,428**	**-$ 188,993**	**-$ 186,067**	**-$ 182,614**	**-$ 178,595**	**-$ 173,968**	**-$ 168,691**	**-$ 162,716**	**-$ 155,996**	**-$ 148,479**	**-$ 140,110**	**-$ 130,832**	**-$ 120,583**	**-$ 109,300**	**-$ 96,914**	**-$ 83,354**	**-$ 68,543**	**-$ 52,401**
NET CASH FLOW	**-$ 5,323,114**	**$ 1,842,344**	**-$ 13,122**	**-$ 8,907**	**-$ 4,308**	**$ 699**	**$ 6,141**	**$ 12,043**	**$ 18,435**	**$ 25,346**	**$ 32,808**	**$ 40,855**	**$ 49,521**	**$ 58,843**	**$ 68,862**	**$ 79,617**	**$ 91,153**	**$ 103,515**	**$ 116,752**	**$ 130,914**	**$ 146,055**	**$ 162,232**	**$ 179,503**	**$ 197,932**	**$ 217,585**	**$ 238,531**	**$ 260,843**	**$ 284,598**	**$ 309,877**	**$ 336,766**	**$ 365,355**
CUMULATIVE CASH FLOW	**-$ 5,323,114**	**-$ 3,480,770**	**-$ 3,493,892**	**-$ 3,502,799**	**-$ 3,507,107**	**-$ 3,506,408**	**-$ 3,500,267**	**-$ 3,488,224**	**-$ 3,469,789**	**-$ 3,444,442**	**-$ 3,411,634**	**-$ 3,370,780**	**-$ 3,321,259**	**-$ 3,262,416**	**-$ 3,193,554**	**-$ 3,113,937**	**-$ 3,022,784**	**-$ 2,919,269**	**-$ 2,802,517**	**-$ 2,671,603**	**-$ 2,525,548**	**-$ 2,363,316**	**-$ 2,183,812**	**-$ 1,985,880**	**-$ 1,768,295**	**-$ 1,529,764**	**-$ 1,268,921**	**-$ 984,324**	**-$ 674,446**	**-$ 337,680**	**$ 27,675**

Myrniong - Pressure - High

ASSUMPTIONS	
Dwelling Growth p.a. Year 1 - Year 30	8
Upfront fee for 30 year cost recovery	$ 14,400
Annual Service Fee (2016)	$ 731
Completion of works	End Year 0
CAPEX	-$ 5,323,114
OPEX	-$ 20,000
Cost Escalation rate	2.0%
Loan Principal	-5,323,114
Loan term	30
Interest rate	5%
CPI	2.0%

30 yr recovery

Results	Cost	Scenario	New Dw p.a.	Upfront fee
TGM	-$ 5,323,114	Moderate	5	**$21,500**
		High	8	**$14,400**

Yr 30 Cum.
$ 59,627

DWELLINGS	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total dwellings Bungaree	94	102	110	118	126	134	142	150	158	166	174	182	190	198	206	214	222	230	238	246	254	262	270	278	286	294	302	310	318	326	334
Existing	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New	0	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Annual cost		$ 731	$ 746	$ 761	$ 776	$ 791	$ 807	$ 823	$ 840	$ 856	$ 874	$ 891	$ 909	$ 927	$ 946	$ 965	$ 984	$ 1,004	$ 1,024	$ 1,044	$ 1,065	$ 1,086	$ 1,108	$ 1,130	$ 1,153	$ 1,176	$ 1,199	$ 1,223	$ 1,248	$ 1,273	$ 1,298

REVENUE	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	$ -	$ 1,468,800	$ 191,253.24	$ 198,859	$ 206,738	$ 214,898	$ 223,349	$ 232,098	$ 241,153	$ 250,524	$ 260,220	$ 270,249	$ 280,621	$ 291,346	$ 302,434	$ 313,895	$ 325,740	$ 337,978	$ 350,623	$ 363,683	$ 377,173	$ 391,102	$ 405,483	$ 420,330	$ 435,654	$ 451,470	$ 467,789	$ 484,627	$ 501,998	$ 519,915	$ 538,394
Total Revenue		**$ 1,468,800**	**$ 191,253**	**$ 198,859**	**$ 206,738**	**$ 214,898**	**$ 223,349**	**$ 232,098**	**$ 241,153**	**$ 250,524**	**$ 260,220**	**$ 270,249**	**$ 280,621**	**$ 291,346**	**$ 302,434**	**$ 313,895**	**$ 325,740**	**$ 337,978**	**$ 350,623**	**$ 363,683**	**$ 377,173**	**$ 391,102**	**$ 405,483**	**$ 420,330**	**$ 435,654**	**$ 451,470**	**$ 467,789**	**$ 484,627**	**$ 501,998**	**$ 519,915**	**$ 538,394**
COSTS																															
Capital Expenditure	-$ 5,323,114	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Operational Expenditure		-$ 20,000	-$ 20,400	-$ 20,808	-$ 21,224	-$ 21,649	-$ 22,082	-$ 22,523	-$ 22,974	-$ 23,433	-$ 23,902	-$ 24,380	-$ 24,867	-$ 25,365	-$ 25,872	-$ 26,390	-$ 26,917	-$ 27,456	-$ 28,005	-$ 28,565	-$ 29,136	-$ 29,719	-$ 30,313	-$ 30,920	-$ 31,538	-$ 32,169	-$ 32,812	-$ 33,468	-$ 34,138	-$ 34,820	-$ 35,517
Debt servicing		-$ 266,155.70	-$ 207,023	-$ 208,832	-$ 210,371	-$ 211,614	-$ 212,532	-$ 213,095	-$ 213,271	-$ 213,026	-$ 212,323	-$ 211,123	-$ 209,386	-$ 207,067	-$ 204,122	-$ 200,500	-$ 196,149	-$ 191,016	-$ 185,040	-$ 178,161	-$ 170,314	-$ 161,427	-$ 151,430	-$ 140,243	-$ 127,784	-$ 113,968	-$ 98,701	-$ 81,887	-$ 63,424	-$ 43,202	-$ 21,107
Total Expenses	**-$ 5,323,114**	**-$ 286,156**	**-$ 227,423**	**-$ 229,640**	**-$ 231,595**	**-$ 233,263**	**-$ 234,614**	**-$ 235,619**	**-$ 236,245**	**-$ 236,459**	**-$ 236,225**	**-$ 235,503**	**-$ 234,253**	**-$ 232,432**	**-$ 229,994**	**-$ 226,889**	**-$ 223,067**	**-$ 218,471**	**-$ 213,045**	**-$ 206,726**	**-$ 199,450**	**-$ 191,146**	**-$ 181,743**	**-$ 171,162**	**-$ 159,322**	**-$ 146,136**	**-$ 131,513**	**-$ 115,356**	**-$ 97,561**	**-$ 78,022**	**-$ 56,624**
NET CASH FLOW	**-$ 5,323,114**	**$ 1,182,644**	**-$ 36,170**	**-$ 30,781**	**-$ 24,858**	**-$ 18,364**	**-$ 11,265**	**-$ 3,521**	**$ 4,908**	**$ 14,065**	**$ 23,995**	**$ 34,746**	**$ 46,368**	**$ 58,914**	**$ 72,440**	**$ 87,006**	**$ 102,673**	**$ 119,507**	**$ 137,577**	**$ 156,957**	**$ 177,723**	**$ 199,955**	**$ 223,740**	**$ 249,168**	**$ 276,332**	**$ 305,333**	**$ 336,276**	**$ 369,272**	**$ 404,436**	**$ 441,893**	**$ 481,770**
CUMULATIVE CASH FLOW	**-$ 5,323,114**	**-$ 4,140,470**	**-$ 4,176,640**	**-$ 4,207,421**	**-$ 4,232,279**	**-$ 4,250,643**	**-$ 4,261,908**	**-$ 4,265,428**	**-$ 4,260,520**	**-$ 4,246,455**	**-$ 4,222,460**	**-$ 4,187,714**	**-$ 4,141,346**	**-$ 4,082,432**	**-$ 4,009,992**	**-$ 3,922,986**	**-$ 3,820,313**	**-$ 3,700,806**	**-$ 3,563,229**	**-$ 3,406,272**	**-$ 3,228,549**	**-$ 3,028,594**	**-$ 2,804,853**	**-$ 2,555,685**	**-$ 2,279,353**	**-$ 1,974,020**	**-$ 1,637,744**	**-$ 1,268,472**	**-$ 864,036**	**-$ 422,144**	**$ 59,627**

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