Ouyen Inc.

Ouyen Recreational Lake Business Case

Final Report

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Consultants for Business, Communities & Environment

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Executive Summary

About this proposal

This proposal provides a Business Case for a project to construct a recreational lake in Ouyen. Ouyen Inc. is the recognised peak group of the Ouyen community. In accordance with their business plan prioritisation framework developed in 2011, a recreational lake for Ouyen was identified as a project of substance worth pursuing. An Ouyen Lake Working Group was formed in early 2013 as a sub committee of Ouyen Inc. The Ouyen Lake project aims to construct a recreational lake in close proximity to the Ouyen township.

There is strong community support for the project demonstrated by up to 400 people attending a public meeting at Blackburn Park, Ouyen in April 2013 and over 300 respondents to a recent survey on the benefits and use of a proposed lake.

Summary of business case

The project will provide the community with a recreational water facility that will provide social, environmental and economic benefits well into the future. The Ouyen community is facing demographic pressures as the population ages and younger community members leave the area for larger centres. Social data shows that average incomes are low compared to the state average, but that social capital and a sense of community is high. A community lake is a perfect recreational asset for such a community, providing opportunities for all members of the community to access regardless of income, and supporting the social cohesion that is the community's strength.

The strong public support for a community lake is demonstrated in surveys and the extent of volunteer and pro-bono contributions to the project, as well as the support of local institutions such as MRCC and GWMWater. In addition to providing much needed water-based natural recreation opportunities to the community, a community lake will foster social engagement and support a healthy and active community, in line with key objectives of the Victorian Government to this end.

Due process has been undertaken to produce this Business Case, including a strategic assessment of options and a rigorous and defendable cost benefit analysis (CBA). The CBA compared the total capital and operating costs of the project with identified recreational benefits of the lake going forward, using conservative assumptions and a rigorous methodology. Exploration of these full costs and quantifiable benefits shows that the significant front end capital costs of implementing the project puts the lake out of reach of the local community.

However, an assessment of the full costs and quantifiable benefits (recreational and avoided water treatment only) of the funding request of $1.4M from the Regional Growth Fund, *Putting Locals First* program shows a net benefit of $352,422 over 30 years, with a benefit-cost ratio of 1.26. This shows the efficiency and effectiveness of the Victorian Government funding request (taking into account all in-kind volunteer and otherwise provided contributions) and shows the community's resolve to maintain this prized asset over time.

The risk assessment shows that the capital works have low risk of failure, as GWMWater and MRCC are skilled and trusted operators.

1 Introduction

1.1 Project background

This proposal provides a Business Case for a project to construct a recreational lake in Ouyen. Ouyen Inc. has engaged RM Consulting Group (RMCG) to develop the case. Following Victorian council amalgamations in the mid 1990s Ouyen Inc. became a recognised peak group of the new municipality; Mildura Rural City Council (MRCC). Its strong volunteer base and inclusiveness forms the core of Ouyen Inc.

A 2010 review of Ouyen Inc's performance and profile signified outstanding community support. Ouyen Inc. holds public meetings each month where the community has an opportunity to raise concerns and have input into local development projects for the group to investigate and prioritise. In accordance with their business plan prioritisation framework[1], a recreational lake for Ouyen was identified as a project of substance worth pursuing. An Ouyen Lake Working Group was formed in early 2013 as a sub committee of Ouyen Inc. The Ouyen Lake project aims to construct a recreational lake in close proximity to the Ouyen township.

There is strong community support for the project demonstrated by up to 400 people attending a public meeting at Blackburn Park, Ouyen in April 2013 and over 300 respondents to a survey on the benefits and use of a proposed lake conducted during October 2013.

Previously the Timberoo Lake Reserve, near Walpeup, provided a valuable and nearby recreational water resource, but this lake ceased being filled following the construction of the Northern Mallee Pipeline in 2000. This lake provided social, sporting, recreational and environmental benefits to the surrounding community. The community's enthusiasm to develop the Ouyen Lake project has grown with the knowledge of the advantages that these types of facilities have provided in other regional towns supplied with water from savings resulting from Grampians Wimmera Mallee Water's (GWMWater's) stock and domestic pipeline.

The purpose of this report is to:

- Define the problem, assess a range of alternatives and identify a preferred option
- Describe the potential for the construction and operation of a recreational lake at Ouyen, utilising the decommissioned GWMWater reservoir site (the preferred option)
- Develop a Business Case for the delivery of the Ouyen Lake project that will guide decision making and provide accountability and justification for the project[2]

The success of the Business Case will depend on being able to demonstrate that the proposal is well founded, it has financial viability, the support of the Ouyen community, and meets the requirements of wider stakeholders. These stakeholders include the MRCC, GWMWater, the Department of Environment and Primary Industries (DEPI) and the Mallee Catchment Management Authority (CMA).

[1] Ouyen Inc. Business and Strategic Plan 2011 – 2015; p. 17
[2] In accordance with the Victorian Government Department of Treasury and Finance's Investment Lifecycle Guidelines 2008 (updated 2010)

1.2 Business Case objectives and outcomes

The primary objective of the Business Case is to assure decision makers and funding bodies that the proposed project will have value and that the Ouyen community (represented by a subcommittee of Ouyen Inc.) and other contributing stakeholders have the capability to deliver the benefits.

The Business Case provides information and analysis on the following elements:

- An assessment of alternative lake sites and selection of a preferred site
- Concept designs that describe the proposal including water supply and delivery arrangements with GWMWater
- An economic, financial, social and environmental analysis of the preferred site
- A risk evaluation including governance and control

The outcome is a Business Case that thoroughly explores the costs and benefits of the project and fully sets out the case for investment. The Business Case also provides confidence that the project can be delivered and maintained as planned.

1.3 Problem definition and need

Economic and social development challenges

Ouyen is performing well, relative to many other small towns in the Mallee, however, there are limited recreation and social opportunities for its community members due to its geographical remoteness. At the same time, Ouyen is a transitioning town[3] with a declining population (reducing by around 30% over the previous two decades[4]) in conjunction with a shift in demographic profile; where the population has aged substantially over this period. Reasons for this decline include farm consolidation in conjunction with the adoption of larger equipment and GPS-enabled technology and a move away from livestock into direct drilled more intensive cropping systems. Larger more mechanised cropping farms require less labour and there is a general move by the current generation of regional youth to seek employment opportunities elsewhere; outside of agriculture. Closing the Mallee Research Station has also negatively impacted employment opportunities in the Walpeup and Ouyen communities.

Ouyen Inc. has been instrumental in maintaining a positive outlook during this period of social adjustment. This peak community organisation is making a sizable contribution to the social capital of the district and its energy and strength is having a positive impact on the community. Investment in this project will provide a much needed stimulus to assist Ouyen reconcile into a smaller yet still vibrant community.

Ouyen is well positioned on the intersection of the Calder and Mallee Highways (Sydney-Adelaide and Melbourne northwards destinations) to attract travellers and potentially overnight stays at the proposed lake site.

Disadvantage and lack of water based recreation opportunities

Fundamental social indicators identify mixed blessings for the Ouyen community. Low-income families are more highly represented in Ouyen and the Mallee Track compared with

[3] Transitioning Towns Toolbox (RDA 2013)
[4] ABS 2006 Census of Population and Housing

other geographical areas within the municipality, and regional Victoria as a whole[5]. Similarly, high-income families are poorly represented with in Ouyen (17%) and in the Mallee Track (10%) compared with 26% in regional Victoria as a whole. On the other hand these areas have the lowest unemployment rate in the municipality, of around 2%[6].

On other social indicators the Ouyen community is doing well. For example, Ouyen has well supported health and education services, and children have low accident rates and high rates of immunisation compared with the rest of the municipality. Volunteering rates amongst Ouyen (42%) and Mallee Track[7] (47%) communities are the highest in the municipality indicating a high level of social cohesion in these more isolated areas. There are, however, high rates of lone person households, which could mean a greater potential for feelings of isolation amongst these community members.

Travel distances to use water-based facilities other than the Ouyen pool are high. Distances are in the order of 90 km to visit Lake Lascelles in Hopetoun, 50 km to visit the Hattah Lakes National Park and 100 km to the River Murray.

Investment in this project will go some way toward countering the disadvantages of low incomes and loss of youth while capitalising on the generosity of spirit of community members demonstrated by their deep volunteering ethos.

More equitable access to recreational water

Levies for recreational water use are imposed on all water users in both pipeline systems (Northern and Wimmera/Mallee) however at the present time there are no recreational lakes in the northern Mallee. This compares with more than ten already functioning recreational lakes in the southern Mallee and Wimmera region. The Ouyen and broader community believe that there needs to be more equitable access to recreational water.

There have been ongoing attempts over many years to maintain and re-instate water into the nearby Timberoo Reserve as a recreational water body. The lake has not been filled since 2000 and was declared unviable due to its distance from the upgraded water supply infrastructure. This has meant that the local community is now focused on finding an alternative to the Timberoo Reserve in closer proximity to the Ouyen township and piped water supply infrastructure.

Remarkable community support

There is strong community support for the project demonstrated by high attendance of a public meeting on the lake proposal in early 2013.

A community survey was conducted during October 2013 to obtain the community's views on the proposal for a recreational lake and to determine how much the community would value having this asset in their town and whether they would be willing to contribute to the ongoing maintenance of the lake's facilities into the future. Over 300 surveys were returned (a response rate of around 25 per cent of all households) indicating a high level of support for the project and a strong willingness to pay towards its upkeep. More detailed analysis of the survey results are provided in the consultation and cost benefit analysis sections.

[5] 32% of families were reported to be low income in Ouyen and 39% in Mallee Track compared with 27% for regional Victoria as a whole
[6] Social Indicators 2006 (MRCC 2008)
[7] Mallee Track refers to the health and community service network servicing Ouyen.

Victorian government policy context

A key objective of the Victorian Coalition Government is to develop healthy and active communities. This proposal aligns with these objectives by providing local contribution and access to a quality community facility where local people can congregate and participate in recreational and social activities[8]. The proposed lake will provide increased social and recreational activities for all members of the community, particularly much needed summer activity choices for young people. It will also stimulate the local economy and generate employment during construction and ongoing volunteer opportunities. With the town working hard to maintain services due to population decline and accompanying social adjustment, the lake will improve the liveability of Ouyen and better engage community members, young and old. Lake Lascelles at Hopetoun demonstrates the economic and social benefits that are likely to be derived from a similar lake at Ouyen.

Case study: Lake Lascelles

ECONOMIC & SOCIAL BENEFITS TO HOPETOUN

THE HOPETOUN COMMUNITY

The Hopetoun community comprises around 600 people and thanks to their enormous spirit and volunteering effort, Lake Lascelles is an important recreational, social and economic asset for their town.

The channel system has been made redundant and virtually all of the dams have dried up, so this is the only surface water in the district that we can get to now.

Situated in close proximity to the township, the lake receives an annual water share (250 ML/year) from GWMWater's Recreational Lakes allocation to keep the water levels topped up. A local committee of management administers the volunteering input, user group and maintenance activities conducted on the lake reserve. The lake is host to walkers, swimmers, boating (including a ski club), bird watchers and fisherman.

The Shire of Yarriambiack provides annual grants funding to the lake committee that contributes to the operating and maintenance costs of the reserve. There are also various accommodation options available on the reserve. These generate a further income stream.

IMPACT OF THE LAKE

The lake committee operates a financially viable community asset that has a substantial annual turnover and volunteering contribution. The Mallee Bush Retreat provides a range of accommodation choices including heritage style and affordable cabins, and powered tent sites for travellers, tourists visiting the nearby national parks, and locals.

It's made a huge difference to the town. On a nice weekend there could be more than 100 people down at the lake on a weekend.

After the usually hot and dry harvest period, locals enjoy this valuable recreational and social asset. A further advantage of Lake Lascelles is its close proximity to the Hopetoun township which means people can walk to the lake and it also affords easy access to perform the many volunteering jobs to ensure that the facilities are properly maintained for all to enjoy.

Source: chair Lake Lascelles Committee, http://www.hopetounvictoria.com.au

[8] 2014-15 Community Facility Funding Program, Department of Planning and Community Development, Victoria.

2 Strategic assessment of options

2.1 Options assessment

The Ouyen Lake Working Group (comprising nine community members) initiated a stage 1 options assessment that involved early filtering of alternative sites for a recreational lake. Assistance was provided from several key agency stakeholders (including MRCC, GWMWater and DEPI) in assessing the benefits and costs of a range of sites. The alternative lake sites investigated by the Working Group included:

- **Option 1 – GWMWater redundant reservoirs.** The site is located on the north western edge of the Ouyen township on crown land adjoining the golf and tennis clubs.
- **Option 2 – Existing Timberoo Lake Reserve (near Walpeup).** Reinstating water into the reserve is an option that has been extensively investigated since 2000, following the implementation of the Northern Mallee pipeline project.
- **Option 3 – Gypsum pits south of Ouyen.** A site that captures storm water, however, with several challenging issues in relation to native vegetation, water supply and vehicle access.
- **Option 4 – Private farmland site north east of Ouyen.** The site is a natural swale/depression area of dryland farming land with good access to the Northern Mallee pipeline.

Criteria for options assessment

Each of the sites were assessed according to the following main criteria:

- Land tenure
- Water supply factors (distance to pipeline infrastructure)
- Geotechnical and environmental considerations
- Vehicle and people access
- Aesthetics and community support

Following a data collection phase on the attributes of each site, and consultation with relevant agency stakeholders, sites were scored and ranked according to criteria outlined in Table 2-1 (over page).

Non preferred options

Option 2 (reinstating a lake at the Timberoo Reserve, near Walpeup) had been investigated previously. The lake has been dry since 2000 since the implementation of Stage 4 of the Northern Mallee Pipeline project. While the Walpeup Lake committee has been active in seeking opportunities to reinstate water into their lake for the past decade, earlier investigations[9] concluded that the continuation of the reserve supporting a permanent water body was unworkable.

[9] Investigation into the social and environmental effects of a changed water supply at Walpeup Lake (AWT 1999)

Substantial site limitations were found following a desktop assessment of options 3 (gypsum pits) and 4 (farmland). High capital costs (due to a lack of infrastructure and geotechnical survey information) and difficulties with access are prominent negatives for both sites. Option 3 has the advantage of capturing town storm water, however, it has significant native vegetation/planning issues and poor vehicle and water supply access. Option 4 is a constructed lake into a natural swale area of cropping land, and while it has good access to the Northern Mallee pipeline, it would require extensive geotechnical survey and require a great deal of other infrastructure development. Taking productive farmland out of use and being private land also disadvantage the site.

Table 2-1: Options assessment – benefit ranking

	Land tenure	Non water infrastructure costs	Environmental benefits	Distance from existing infrastructure	Water supply infrastructure development	Geotechnical - water holding capacity	Safety	Road and people access	Aesthetics	Community support	Ranking
Option 1	H	M	H	H	H	M	M	H	H	H	27
Option 2	H	L	H	L	L	H	M	M	H	H	22
Option 3	M	H	M	M	L	M	M	M	M	L	17
Option 4	L	H	L	M	M	M	M	L	L	L	15
Opportunity Benefit Ranking (High (H)=3, Medium (M)=2, Low (L)=1)											

2.2 Preferred Option 1 – former reservoir site

The former GWMWater reservoir site is the preferred option for a number of reasons:

- The existing reservoir structure provides the foundations for the shape and size of the lake
- Initial geotechnical surveys indicate soils suitable for compaction and water holding
- Quality vehicle access via a sealed road (North West Rd)
- Ready access to existing electricity infrastructure (adjoining the property)
- Good connection with existing and planned walking tracks (a recent council grant has been received to provide walking tracks in the general area in consultation with Mallee Landcare).
- Its close proximity (walking distance) to Ouyen township and existing golfing and tennis facilities

Option 1 provides existing embankments and some fencing, established non-remnant trees and access via a sealed road. The existing layout will provide for a body of water

approximately 14 hectares in area. The site has low impact on existing vegetation and there are established shade trees that will provide a relaxing environment for recreation and social activities.

Additional earthworks work will be required to secure and water proof the bank. A recent geotechnical assessment[10] has indicated that the site is suitable for the reintroduction of water. The former reservoir site has much potential due to there being some existing infrastructure, including good access, and support from GWMWater to take over the management of their site. The preferred site will place the lake within walking distance of the centre of Ouyen which has advantages for the health and well being in the community. The Ouyen P-12 College (in its letter outlining strong support for this proposal) cites the outdoor educational value that a lake would bring in relation to outdoor studies and access to more varied recreation activities such as canoeing and rowing. Some of the success of Lake Lascelles in Hopetoun can be attributed to its close proximity to the town.

Conclusion

The former reservoir site represents the greatest net benefit to the community taking into account ecological, social and economic/financial considerations. Strong community support was communicated for the former reservoir site as the preferred site at a public meeting held at Blackburn Park, Ouyen on 8 April 2013. A decision was taken at an Ouyen Lake Working Group meeting, held on 24 July 2013 to proceed to the development of a Business Case for their preferred option.

2.3 Technical feasibility of preferred option

2.3.1 Lake construction

Significant earthworks will be required to construct a suitably sized and shaped lake with adequate water holding capacities. The lake will be constructed within the land area comprising the now redundant reservoir structures, which have the following existing capacities: No 1: 39.1 ML (middle), No 2: 111.5 ML (south), No 3: 150.5 ML (north).

The site is undulating with a mix of disturbed and undisturbed soils, introduced grasses and native shrub cover. Quaternary sediments comprising sands, silts and clays is the dominant geology.

Previous geotechnical investigations at the site included five bore holes and the results indicated that the natural soil profile consists of silty Clay and sandy SILT underlain by a heavier silty CLAY material. Free groundwater was not encountered within the depths drilled during the investigation. The investigation concluded that:

- *the site derived CLAY soils are generally suitable for use in the construction of the recreational lake, however, the upper soils in the vicinity of Bore Hole 5* [south eastern corner] *are likely to be more permeable and should not be used in lining the lake (Civiltest Pty. Ltd. 2012).*

The dimensions of the constructed lake site are estimated to be 700 metres in length and between 100 and 200 metres width, with a maximum depth of five metres. The lake when

[10] A report on the geotechnical investigation for proposed Ouyen recreational lake, Civil Test Pty. Ltd. (2012)

full would cover an area of approximately 140,000 square metres or 14 hectares. It would vary in size as it lowers and fills, with an average size of 11 ha.

Figure 2-1 provides an outline of the lake dimensions and the extent of earthworks required to shape and form the lake. Figure 2-2 provides an indication of the current site conditions.

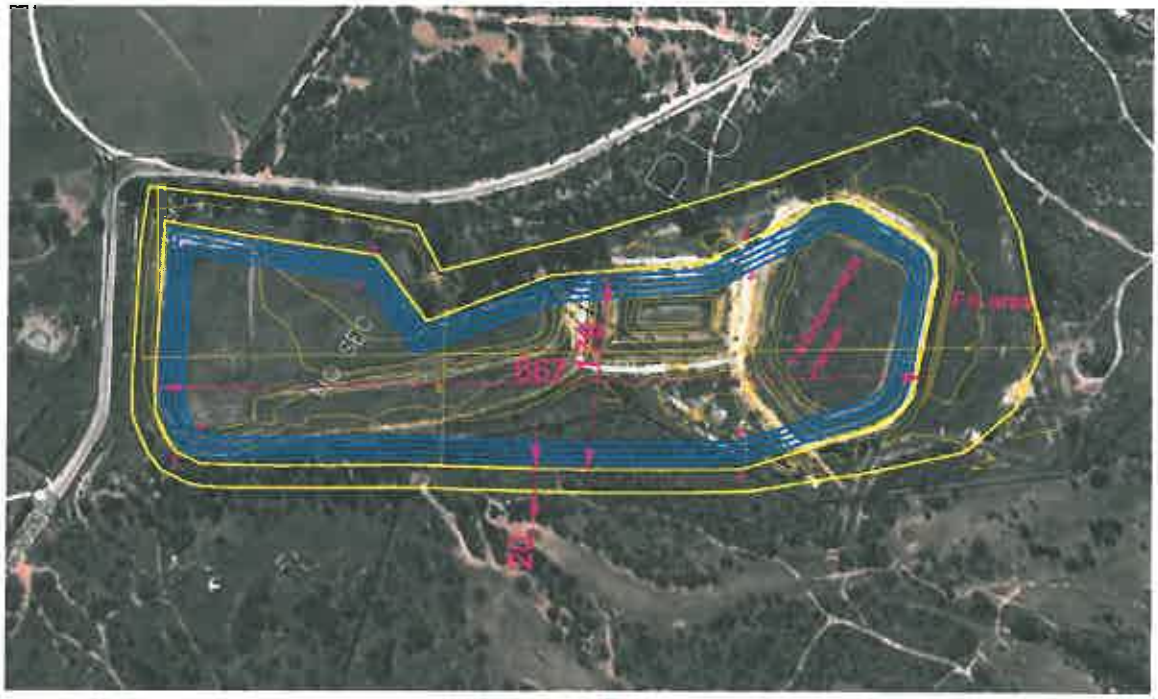

Figure 2-1: Earthworks site plan[11]

Figure 2-2: (a) Existing shade trees (planted) and access road; (b) lake floor area to be shaped and formed

[11] Source: Garraway Engineering, Mildura, estimate 180,000 m^3 cut and 53,000 m^3 fill

2.3.2 Water supply

Water requirements

It is expected that the construction will create one reservoir of approximately 500 ML in capacity requiring an annual top up of approximately 280 ML per year. The annual top up requirements are based on evaporation and seepage rate estimates provided by GWMWater, according to the following assumptions:

- Pan evaporation rate is estimated at 1.8 metres per year
- The seepage rate is estimated at 0.7 metres per year
- Total evaporation and seepage losses are estimated to be 275,000 m^3 or approximately 280 ML[12]

This could be a conservative (high) estimate of requirements, as it would appear not to allow for rainfall, but on the other hand evaporation and seepage losses can be difficult to predict and will vary from year to year.

Pipeline infrastructure

There are two options being considered for provision of the pipeline infrastructure to supply water. One is to use existing Northern Mallee pipeline pumping facilities and install a pipeline from the existing water treatment plant where untreated water would be pumped along the shortest possible route. A second option is a gravity fed direct off-take from the existing pipeline, which may require pressure sustaining valves and other works. GWMWater has provided indicative costing of the two options for the benefit cost analysis[13].

GWMWater prefers the pressurised option subject to further design and assessment of its feasibility. Additional community benefits of this option will arise due to a reduced volume of treated water being used to irrigate ovals / lawns.

An aerial plan showing the planned route for each of the two pipeline options is shown in Appendix 1.

[12] Calculated as 2.5 metres losses x 110,000 square metres surface area (on average)
[13] Ouyen Recreational Lake proposal: Water Supply Assessment (GWMWater November 2013)

3 Stakeholder engagement

For the Business Case to be successful it has to meet the expectations and requirements of key stakeholders. The Business Case needs to provide confidence to decision makers that the Ouyen community is:[14]

1. Selecting the right investment option; and
2. Can deliver the proposal as planned

Support from a wide range of stakeholders has already been provided toward building the business case. Table 3-1 provides a list of stakeholders that have been involved in building the Business Case and would be active in the delivery of the project, if funding were secured.

Table 3-1: Main stakeholders and roles and responsibilities

Stakeholder	Role	Responsibility
Ouyen Lake Working group (Ouyen Inc.)	Project management Delivery of the project	– provide overall project direction – supervise earthworks
MRCC	Support with maintenance of assets Funding applicant	– including access roads, footpaths and amenities areas – to the Victorian Government
GWMWater	Provision of pipeline infrastructure Securing recreational water allocation	– planning, design and construction of pipeline – delivering water to the lake
DEPI	Transition of land title from GWMWater to the committee of management	– organising titles for transfer

3.1 Community support

The Ouyen community is enthusiastically committed to this project. The proposal for a recreational lake is viewed as a vital community asset that will play an important role in maintaining the social and economic integrity of the township and surrounding areas. Up to 400 people attended a public meeting at Blackburn Park, Ouyen in April 2013, to discuss the preferred site and to affirm their support to Ouyen Inc. to pursue this project.

A community survey was conducted during October 2013 to obtain the community's views on the proposal and to determine how much the community would value having this asset in their town and whether they would be willing to contribute to the ongoing maintenance of the lake's facilities into the future. Over 300 surveys were returned (a response rate of around 25 per cent of all households) indicating a high level of interest and support and a strong willingness to pay towards its upkeep. More detailed analysis of the survey results are provided in the benefit cost analysis section of the Business Case.

Ouyen Inc. has a proven capability and capacity to deliver high quality projects for the Ouyen community. 25 letters of support have been provided to Working Group from business and community group representatives. A list of these is shown in Appendix 2.

[14] DTF (2010) Investment Lifecycle and High Value/High Risk Guidelines: Prove.

3.2 Agency stakeholder support

Several government authorities have assisted with providing information to build the Business Case and have indicated their support for the project:

- GWMWater, MRCC, DEPI and the Mallee CMA

Copies of support letters from regional agencies with natural resource management responsibilities are shown in Appendix 3.

GWMWater

GWMWater manages the land and they have provided in principle support to the following actions:

- Transfer of the land to an appropriate committee of management for the use of recreational purposes
- Make available a recreational water allocation to fill and maintain supply to the lake in accordance with their Recreational Lakes Supply Plan
- Facilitate pipeline infrastructure to the lake site
- Facilitate the process of securing water for the site

Confirmation of GWMWater backing for the proposal is expected to be forthcoming upon completion of a successful Business Case.

MRCC

MRCC have provided support to the development of the business case through assisting with the execution of a community benefits survey during October 2013. MRCC have indicated that they will further support with preparing applications to suitable State Government funding bodies. It is anticipated that MRCC will provide in-kind and grants funding that will contribute towards ongoing maintenance of recreational assets at the site. Confirmation of MRCC backing for the proposal is expected to be forthcoming upon completion of a successful Business Case.

DEPI

DEPI has provided in principle support to the proposal to develop the area as a recreational lake deeming this to be a positive re-use of public land degraded by a previous use. This support is subject to the following[15]:

- Support from MRCC including rezoning if necessary
- Appropriate re-reservation of the land and the establishment of a formal land management arrangement – either by MRCC or by an incorporated local body or group.
- GWMWater's acceptance that should the proposal not proceed it retains the responsibility for appropriate rehabilitation of the site

Mallee CMA

The Mallee CMA has provided a letter to the Ouyen Lake Working Group outlining its support of the lake development.

[15] Letter from DEPI to the chair Ouyen Lake Working group, dated 25 July 2013.

4 Cost benefit assessment

4.1 Social benefits community survey

The primary means of data collection on the benefits of the recreational lake was a survey of householders within the Ouyen and surrounding communities, conducted during October 2013.

4.1.1 Background and response rate

A survey was mailed to 1,300 householders canvassing their opinions on the proposal itself, their proposed use of a recreational lake and their willingness to contribute (financially) toward its upkeep.

Nearly one quarter of all households responded (24%) to the survey with a higher response rate from the Ouyen community (28%). A total of 309 surveys were received. The response rate from the Ouyen community versus the surrounding areas is shown in Table 4-1.

Table 4-1: Survey response rate

	Total households	Ouyen (within 25 km)	Other than Ouyen	Totals
Households surveyed	1300	689	611	1300
Respondents	309	191	118	309
Proportion of responses	-	62%	38%	100%
Overall response rate	24%	28%	19%	

A summary of the number of respondents and their geographical location (by postcode) is provided in Table 4-2. The results indicate that interest in the lake proposal extends across the entire central Mallee region. Overall, almost 60% of responses were received from Ouyen households and just less than 40% from surrounding smaller communities.

Respondents were from as far away as Murrayville (100 km) to the west and from the surrounding districts of Walpeup, Speed, and Tempy (within 40 km Ouyen), and Patchewollock, Underbool and Nandaly (within 65 km of Ouyen).

Table 4-2: Respondents by location

Postcode	Location	Respondents	Percentage
3488	Speed	**16**	**5%**
3489	Tempy	**10**	**3%**
3490	Ouyen	**191**	**62%**
3491	Patchewollock	**20**	**6%**
3507	Walpeup	**28**	**9%**
3509	Underbool	**14**	**5%**
3512	Murrayville	**11**	**4%**
3533	Nandaly	**3**	**1%**
No response	-	**16**	**5%**
	Total	309	100%

Respondents to the survey represented a mix of ages comparable to the age profile of the Ouyen community. They were, however, skewed toward older members of the community. 65% of respondents were over the age of 45 years compared with 50% of the population being over the age of 45 years[16]. This is expected given the survey was directed to the householder and it is likely that more senior members of the household completed the survey (rather children, including teenagers). The majority of respondents (over 70%) are long time residents of more than 20 years and their general comments indicate that they have a high regard for their local community.

4.1.2 Main survey findings

The survey responses were analysed according to several segments: the total sample, by age category and by location i.e. Ouyen postcode (within 20 km of the township) and all other postcodes.

Use of local recreational and natural water assets

Respondents were asked how often they had visited a range of water based recreational and natural assets in their region in the past 12 months. A summary of responses follows:

- Almost 40% of respondents had not visited Hattah Lakes (50 km) in the past year and a similar number had visited only once or twice. Only around 10% had visited more often than this.
- The Murray River (100 km) is the most frequented water body with just over a half of all respondents visiting more than once or twice and 35% more than 10 times.
- About one third of respondents had visited Lake Lascelles in Hopetoun (90 km) once or twice in the past 12 months.
- The majority of respondents (67%) had not visited Green Lake (100 km?) at all in the past 12 months.
- The Ouyen pool was not visited at all by about one third of respondents, however, about 60% had visited more than once or twice and 15% more than 20 times. The younger age group frequented the pool considerably more often than older age groups i.e. 35% of respondents less than 45 years had visited the pool more than 20 times in the past year.

These findings indicate that large travel distances are a barrier to people visiting these areas for recreation. Respondents' intended use of the proposed Ouyen lake is considerably higher, as illustrated by the following results.

Intended use of the lake

Respondents indicated that they would visit a lake in Ouyen more frequently during the warmer months (late Spring through to early Autumn) than the remainder of the year, as shown in Table 4-7: Summer visitation (four months) and Table 4-8: Rest of year visitation (8 months) in the following section (4.3.2).

Respondents within the Ouyen area also indicated a significantly greater projected use of the lake, as illustrated in Figure 4-1. Over one third of Ouyen respondents reported that they would visit the lake at least two or three times each week during the warmer months.

[16] 2006 ABS Census, Mildura Social Indicators report, MRCC (2008)

Respondents also indicated that they would tend to visit the lake on weekends rather than during the week.

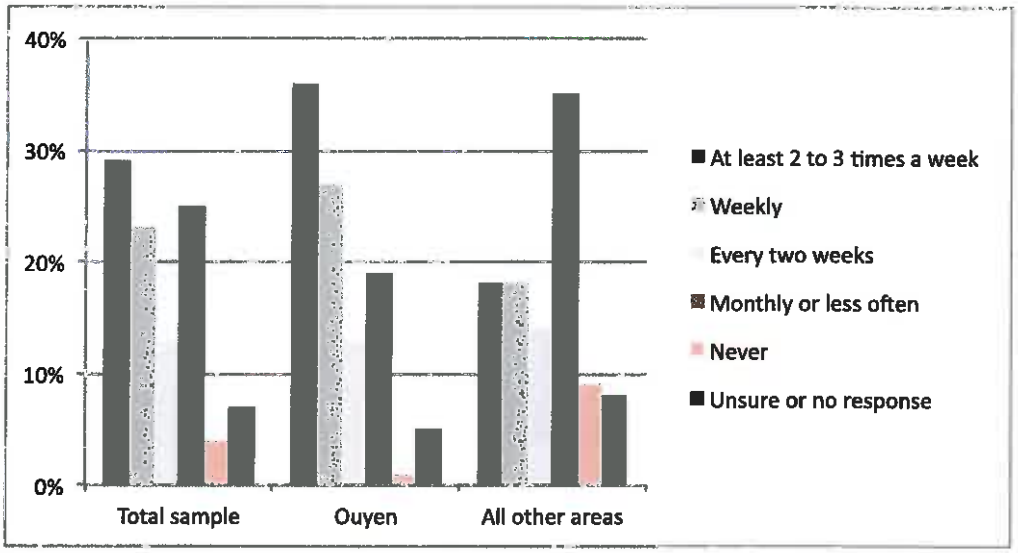

Figure 4-1: Summer time intended usage rates – Ouyen and surrounding areas

Overall, respondents had a stronger preference for passive lakeside activities including picnics/playground, relaxing, walking and meeting people, as shown in

Figure 4-2. This was followed by swimming, fishing and yabbying activities.

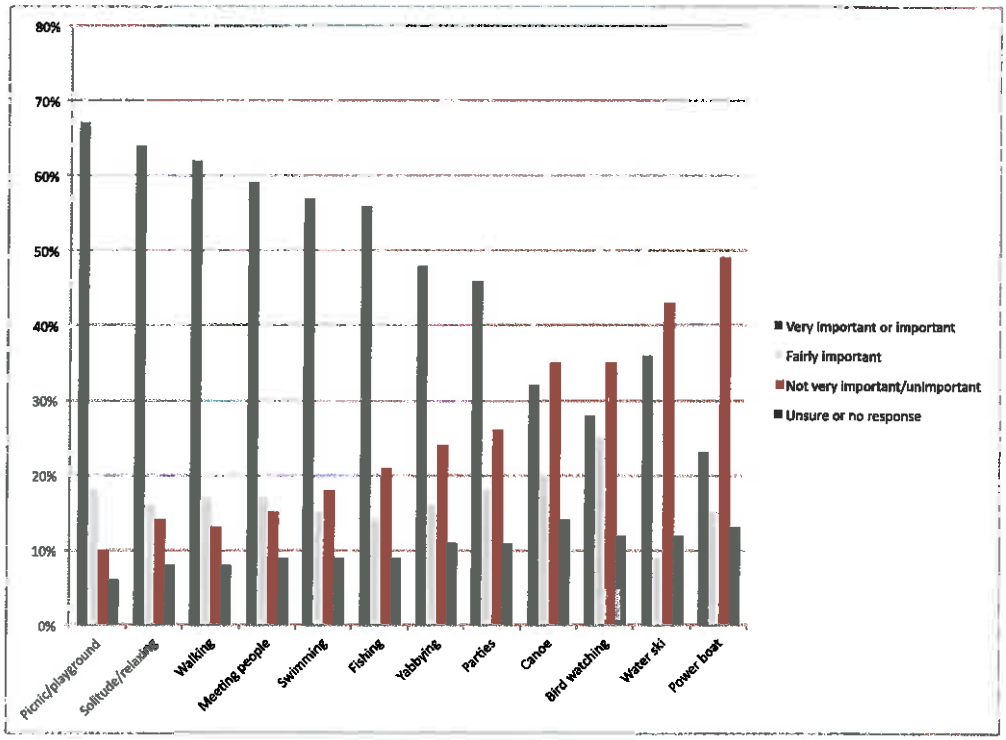

Figure 4-2: Importance of recreational and social activities – total sample

The younger age group (aged less than 45 years) had a higher preference for water skiing, swimming, picnic/playground, parties and meeting people, as shown in Figure 4-3. This is as expected given that these are highly social activities. This younger age group also indicated that they would tend to visit the lake with others (multiple numbers of friends and family), rather than alone.

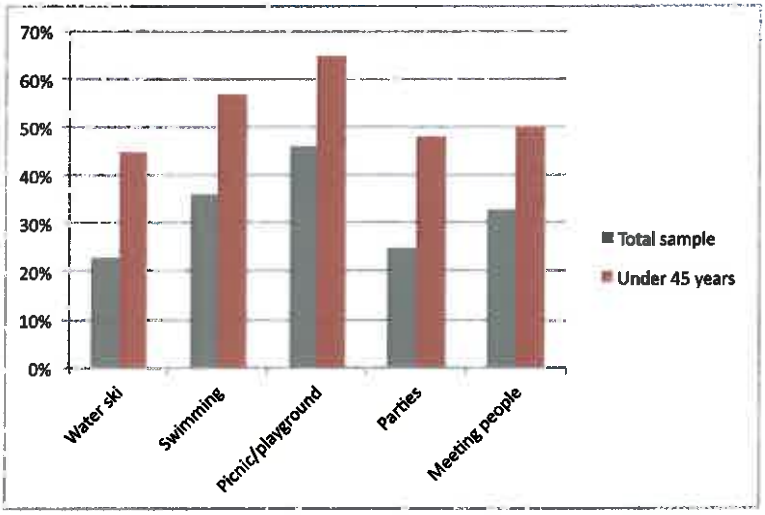

Figure 4-3: Relative importance of recreational and social activities – Under 45 versus total sample

Value of the lake as a community asset

Over 50% of the Ouyen respondents reported that they were a member of a local club or community group and would expect to use the lake as a group. These can be broadly categorised as angling and boating clubs, football and netball clubs, tennis clubs, other sporting groups, community service clubs, church groups, walking groups, and other (non sporting) groups such as childcare and gardening groups.

Respondents were asked to respond to a series of statements about the proposed lake as a community asset. Their responses are summarised in Figure 4-4.

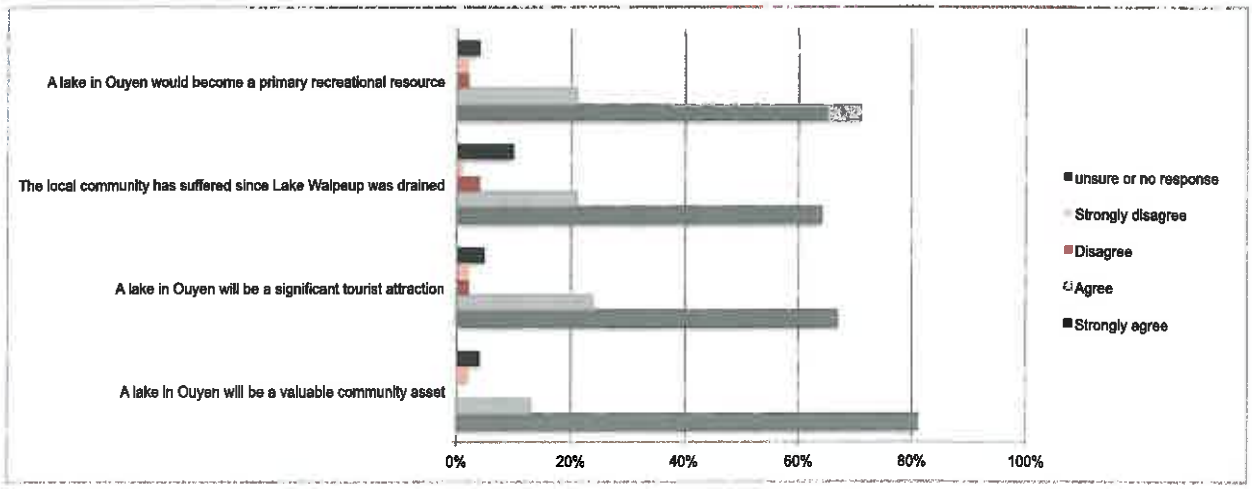

Figure 4-4: The proposed lake as a community asset – total sample

There was strong agreement that a lake in Ouyen would be a valuable community asset (81%); that it would be a significant tourist attraction (67%); and would become a primary recreational resource (71%). Around two thirds of respondents also strongly agreed that the local community had suffered since the loss of the lake at the Timberoo Reserve.

Willingness to pay for lake's upkeep

Respondents were asked if they would be willing to contribute toward the ongoing costs to maintain these assets, and keep the lake topped up. The survey question included a hypothetical but credible payment vehicle (in this case though household rates and bills) so that respondents would answer candidly. The purpose of this question was to determine how much the community valued the asset (rather than a means of exacting or justifying a direct financial contribution from the community through higher rates and bills).

There was a strong willingness to pay amongst survey respondents, as shown in Figure 4-5, indicating that the community would value this type of asset very highly. Over 60% of all respondents indicated that they would be willing to contribute towards the lake upkeep. The older and middle aged groups were willing to pay the most i.e. > 50% were willing to pay more than $30 per year. Significantly, the majority of those willing to contribute nominated the highest payment level. This strongly suggests that they would be willing to pay more than what they were asked. Figure 4-6 illustrates that the Ouyen community were wiling to pay more than those from surrounding communities. This is expected given that the Ouyen respondents indicated that they intend to visit the lake more often.

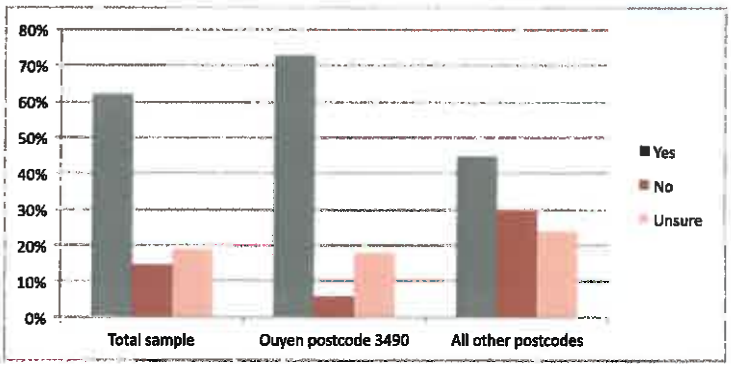

Figure 4-5: The proposed lake as a community asset – total sample

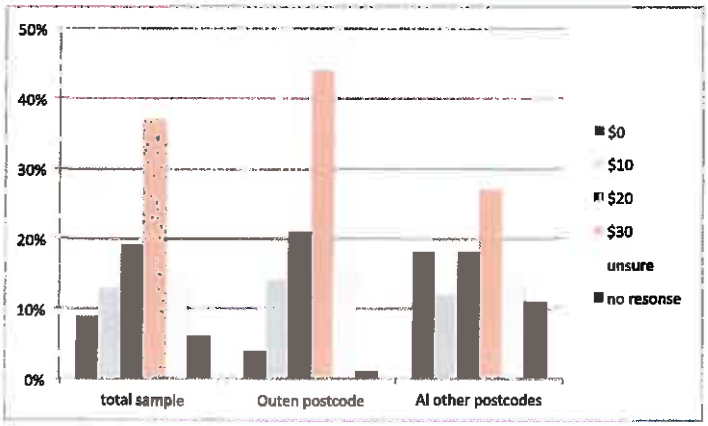

Figure 4-6: The proposed lake as a community asset – total sample

4.2 Environmental considerations

4.2.1 Site conditions

The lake site is public land managed by GWMWater and is in a vastly modified condition due to being host to the town's water supply reservoirs prior to the implementation of the Northern Mallee pipeline project. The water supply reserve (Parish of Ouyen, allotments 29BP000991, 29CP000992) covers an area of 30 hectares. It is currently zoned PUZ1 for services and utilities.

There are two distinct geomorphological units in close proximity to the site[17]. The lake site is part of a relatively prominent (geologically) stranded ridgeline. The dominant landform is comprised of linear calcareous (east-west) dunes above an area of groundwater discharge around one km to the south west, where salts and gypsum have accumulated in saline depressions. The soils at the site are highly disturbed. The dominant soil group is Calcarosols, which are readily farmed Mallee sands, in contrast to wet Hydrosol clays in the low-lying areas south west of the site.

4.2.2 Environmental assessment

The native vegetation community in a particular location largely defines the terrestrial habitat of a site[18]. There is little intact remnant vegetation remaining other than some small patches of scattered shrubland. The remainder constitutes mostly disturbed soils with a mixture of native and exotic grass cover. There are several clumps of planted Eucalypt trees that would be retained as shade trees for visitors to the lake.

The expected pre-settlement Ecological Vegetation Communities (EVCs) in relation to the lake site and surrounding areas are shown in Appendix 5. Remnants of the EVCs represented in close proximity to the site include:[19]

- Semi arid (and Parilla) Woodland – comprising non Eucalypt woodland on lightly textured surface soils (loamy sands or sandy loams), supporting mostly Belah, Buloke, and Slender Cypress Pine spp (remnants occur on adjacent golf course).
- Woorinen Sands Mallee – comprising mostly Mallee shrubland of Dumosa, Slender leaf and Grey Mallee on medium textured soils (remnants occur on adjacent golf course and roadsides).
- Samphire Shrubland to the south west of the site – comprising low succulent chenopods in the natural groundwater discharge areas.

A list of bird and other animal species that frequent the general area is also provided[20] (Appendix 6). At the moment the site is degraded and highly disturbed so there would be limited native species using it. Over time it could be expected that with the addition of water and more tree and shrub planting (of indigenous species) some of these species from surrounding remnant vegetation patches will also use the site from time.

[17] Geomorphological units, Mallee Catchment Management Region, DPI (2008)
[18] Mallee Regional Catchment Strategy 2013 - 19
[19] Mallee Ecological Vegetation Classes, Public consultation draft (RCS)
[20] List complied by Bev Bingley

Salinity levels in the lake will rise because the lake is terminal without an outfall. The salinity level will stabilise at a level that is dependent on the balance between water inputs and outputs through seepage. This is not expected to reach levels that threaten recreation or environmental beneficial use. However, if salinity levels began to show an increasing trend then it would be possible to mitigate this by irrigating neighbouring areas to ensure more dilution. This would require more water inputs but would provide additional benefits.

Additions of water and salts to groundwater from seepage are not expected to pose any significant risk to regional groundwater resources given the lake is underlain by the highly saline Parilla sand aquifer that discharges at the surface naturally, south west of the site. The risk of more localised salinity impacts on neighbouring properties should be similar to when the site was used as water storages.

4.3 Economic framework

An economic framework has been developed to assess the benefits and costs of the project to society. Two scenarios have been developed:

1. All costs and benefits to society: this includes all costs and benefits associated with the project, including in-kind contributions, leveraged investment and the funding sought from the Victorian Governments Regional Growth Fund, *Putting Locals First* program;
2. The cost-effectiveness of requested funding: this explores the value generated solely from the requested funding (i.e. excluding expenditures that are provided in-kind by community members, MRCC and GWMWater) to demonstrate the cost-effectiveness of funding from the funding body.

Given that the asset being created in this project will have a long asset lifetime, a project timeframe of 30 years has been chosen. A discount rate of 6% has been selected to discount all values to present day terms. Sensitivity of the analysis to timeframe and discount rate is also explored.

4.3.1 Project costs

Table 4-3 summarises the total capital costs associated with the project, and their year of investment. These capital costs relate to the earthworks required to form the lake, the capital cost of the pipework to deliver water, the cost of accessing a secure water share, and the cost of recreational assets planned for the site. Local suppliers and professionals working in MRCC and GWMWater have provided estimates (rather than quotes) for all capital items. The assumptions used in estimating these costs are shown in Appendix 4.

Table 4-3: Project capital costs

Year 1	**Earthworks**	
	Lake construction	$640,000
	Construction project management	$160,000
	Water and associated infrastructure	
	Pressurised pipe	$280,000
	Securing 280 ML entitlement/share	$448,000
	Once off to fill lake - additional 220 ML	$18,000
Year 1	**Recreational assets**	
	Toilets/amenity block	$150,000
	Gravel road - around the lake	$50,000
	Power to site	$25,000
	Lighting (solar x 5)	$37,000
	Footpaths – around the lake	$85,000
	Boat ramp	$8,000
	BBQ area x 1	$30,000
	Bin holders x 2	$1,000
	Fencing perimeter	$14,000
Year 2	Playground	$80,000
	Park benches x 4	$10,000
	Trees/garden	$40,000
	Pump shed/watering system	$60,000
	BBQ area x 2	$60,000
	Bin holders x 4	$2,000
	Further lighting (solar x 10)	$70,000
	Yabbies/fish stocking	$3,000
	Signage	$10,000
	Lawn Mower	$5,000
Year 3	Lookout tower	$28,000
	Park benches x 10	$28,000
	Fountains x 2	$2,000
	Bike racks x 3	$2,000
	Pipe bollards around grass area	$30,000
	Total capital costs	**$2,376,000**

In addition to these capital costs, annual operating costs will be incurred to maintain the assets over time. These operating costs relate to grounds maintenance, asset maintenance, fish stocking, utilities and administrative costs – they are summarised in Tabie 4-4.

Table 4-4: Project operating and maintenance costs

Grounds maintenance	Lawn mowing	$1,000
	Amenities cleaning	$2,000
	BBQ area	$1,000
Asset maintenance	Footpath maintenance	$4,250
	Unsealed roads maintenance	$2,500
Other	Fish stocking	$3,000
Utilities	Electricity	$2,000
	Water - delivery charge	$5,600
	Pumping costs	$10,000
Administrative	Insurance/third party/PL	$3,000
	Lake committee admin	$650
Total operating and maintenance costs		**$35,000**

Importantly, these operating and maintenance costs will not be the subject of this request for funding. They will be incurred by the local community through their rates and bills, via MRCC and GWMWater, and through fund raising and volunteering.

The final cost item covers costs associated with environmental and Native Title approvals, which are not expected to be significant (Table 4-5).

Table 4-5: Other costs

Environmental and Native Title approvals	$20,000
Total Other Costs	**$20,000**

4.3.2 Project benefits – recreational benefits and the Travel Cost Method, and avoided water treatment costs

We limit our assessment of benefits to two specific items:

- The value of recreational use; and
- Avoided treatment costs for water demand that is currently supplied by potable supplies, which will switch to raw water accessed from the new pressurised pipe

Assessing and quantifying the full range of economic benefits associated with the lake is challenged by the fact that the lake will be a community asset and so no significant revenue stream will arise from the asset.

Instead, the full range of benefits derived from the project are essentially social in nature. They relate to the value placed by the local community on having a recreational lake to visit and use. These benefits include the recreational and social capital benefits of a community lake, and extend to the public health benefits of a more active and engaged community.

A number of economic methods exist to quantify these types of benefits that are not revealed in market prices. We focus on the recreational benefits of the lake, given this can be expected to be the largest of the social values that the lake creates.

Because a payment is not received for visiting the lake, the Travel Cost Method (TCM) is used to estimate the value of recreational use, based on the cost incurred by visitors in visiting the lake (based on time and money spent). That cost reflects the 'willingness to pay' and is a reflection of the recreational value of the lake.

TCM is considered the best available economic tool for estimating the recreational value produced by different types of assets, as it is based on actual visitation activity and is thus considered more accurate than survey-based methods.

A number of TCM estimates have been undertaken for different recreational assets around the world, with published studies undertaken in the Victorian context in 1999 and 2000.[21] These studies produced value estimates of between $2.86 and $3 per visit in 1999 and 2000 dollar terms (see Table 4-6).

Table 4-6: Recreational value of park visitation ($/visit)

Value estimates	Year	2013
$2.91	1999	$4.39
$2.86	1999	$4.32
$3	2000	$4.53
Average		**$4.41**

Provided in 2013 dollars, these produce an average value for park recreation of $4.41 per visit. We apply this value for recreational use of parks to the expected visitation of the lake based on the community survey outlined in the earlier Section 1.

4.3.3 Benefit estimation – recreational value

Respondents were asked about their expected use of the lake if it were available. Respondents from 309 households provided responses for both summer and non-summer use (it was expected that recreational use would be higher in Summer months). Table 4-7 and Table 4-8 summarise the survey results.

Table 4-7: Summer visitation (four months)

Respondent households	309		
	Trips/household	% respondents	Household trips
No response	0	3%	0
Daily	120	7%	2,596
Two to three times a week	42.5	22%	2,889
Weekly	17	23%	1,208
Every two weeks	8.5	13%	341
Monthly	4	11%	136
Two or three times a year	1	9%	28
Yearly	0.5	5%	8
Never	0	4%	0
Unsure	0	4%	0
Total household trips			**7,206**

[21] http://ageconsearch.umn.edu/bitstream/124541/2/Read.pdf
http://cmsdata.iucn.org/downloads/12_rapid_appraisal_of_nutrient_management.pdf

As can be seen in the tables, summer visitation (an estimated 7,206 visits) is estimated to be somewhat higher than visitation in the rest of the year (an estimated 6,832), which aligns with expectations.

Table 4-8: Rest of year visitation (8 months)

Respondent households	**309**		
	Trips/household	% respondents	Household trips
No response	0	7%	0
Daily	245	3%	2,271
Two to three times a week	87.5	8%	2,163
Weekly	35	11%	1,190
Every two weeks	17.5	11%	595
Monthly	8	21%	519
Two or three times a year	2	14%	87
Yearly	0.5	5%	8
Never	0	10%	0
Unsure	0	9%	0
Total household trips			**6,832**

The total number of household trips for summer and the rest of the year were multiplied by the recreational value of a visit ($4.41 per visit), and then divided by the total sample size (309 households) to produce an average recreational value per household for both summer ($103 per household) and non-summer ($98 per household) periods. This is a total annual value per household of $200.48.

Importantly, extending this household value to the rest of the community is complicated by the fact that the survey is not representative of the entire community. It can be expected that those who responded to the survey may be more interested in the lake than the remainder of the community. As such, extending the average value from the survey to the entire community would exaggerate the recreational value (self-selection bias).

Morrison (2000)[22] undertook follow-up discussions with non-respondents from a similar study and found that 30 per cent of non-respondents were likely to have a value equal to respondents, with the remainder holding no value for the change.

Extending this approach to the 76% of survey non-respondents produces a total number of 630 households in the Ouyen community (48% of households) that hold average recreational values for the lake (Table 4-9).

Table 4-9: Total households and average lake values

Total visitation Summer	7,206
Total visitation rest of year	6,832
Value per visit	$4.41
Average value per household	$200.48
Total households in scope	630
Total recreational value of lake	**$126,241**

[22] Morrison, M. (2000). Aggregation Biases in Stated Preference Studies, *Australian Economic Papers*, 39(2): 215-230.

Applying the average recreational value to the 630 households produces a recreational value of $126,241 per year for the lake.

It is the intention of the Working Group that over time there would be provision made for camping/over night stays at the lake and these would be more highly valued than day trips. These overnight stay use values would be in addition to the above analysis of benefits.

4.3.4 Benefit estimation – avoided treatment costs

The pressurised pipeline planned to supply the Ouyen Lake will produce ancillary benefits to other water users that are currently supplied with treated potable water for irrigation purposes.

A school oval and associated grounds and the Ouyen tennis courts, currently supplied with treated potable water, have been identified as being located along the pressurised pipeline route. The project would enable the substitution of treated water for rural water and bring considerable benefits (assuming an annual irrigation rate of 12 ML/ha).

Table 4-10: Value of avoided treatment costs ($/year)[23]

Water user	Cost of potable water	Cost of rural water	Cost savings
School oval	$14,175	$8,359	$5,816
Tennis courts	$2,931	$1,720	$1,211
Total	**$17,106**	**$10,078**	**$7,028**

Substituting rural water for treated potable water will produce cost savings due to avoided treatment costs (reflected in tariffs). These annual cost savings of $7,028 per year are outlined in Table 4-10.

4.4 Cost-benefit analysis results

The costs and benefits of both scenarios were assessed over a 30 year timeframe with a 6% discount rate.

Scenario 1 looks at the entire costs and benefits of the project, regardless of who pays costs, and whether they are donated or otherwise 'in-kind'.

Table 4-11 summarises these results. Net costs exceed net benefits of the project by $0.954m, producing a benefit-cost ratio of 0.64.

[23] Potable tariffs: $977/ML (0-5ML/year); $1210/ML (5-10ML/year); $1620/ML (>10ML/year)
Rural water tariffs: $573/ML (0-5ML/year); $716/ML (5-10ML/year); $955/ML (>10ML/year)

Table 4-11: Benefit-cost analysis results, total costs and benefits, 30 years, 6% discount rate

	Present Value
Benefits	
Recreational value	$1,639,328
Avoided treatment costs	$91,258
Total benefits	**$1,730,586**
Costs	
Capital expenditures	$2,214,014
Operating expenditures	$451,829
Other costs	$18,829
Total costs	**$2,684,711**
Net cash flow	**-$954,125**
Benefit Cost Ratio	**0.64**

What Table 4-11 demonstrates is that the significant capital costs of establishing the project are what is preventing the local community from funding the project themselves, hence the need for project funding.

However, Table 4-12 shows the cost-effectiveness of the project from the funding body's perspective. This analysis removes all of the cost items that will be funded by the local community, provided in-kind or by the water provider (GWMWater). These items relate to the cost of water supply, and operations and maintenance costs of the asset on an on-going basis. This further analysis reflects the cost-effectiveness of the requested funding.

The funding requested from the Regional Growth Fund, *Putting Locals First* program, is in the order of $1.4M.

Table 4-12: Benefit-cost analysis results, requested funding only, 30 years, 6% discount rate

	Present Value
Benefits	
Recreational value	$1,639,328
Avoided treatment costs	$91,258
Total benefits	**$1,730,586**
Costs	
Capital expenditures	$1,359,297
Operating expenditures	$0
Other costs	$18,868
Total costs	**$1,378,165**
Net cash flow	**$352,422**
Benefit Cost Ratio	**1.26**

As can be seen in Table 4-12 the benefits of the investment itself exceed the funding costs, producing a net benefit of $352,422 over 30 years, or a benefit cost ratio of 1.26. This means for every dollar invested, a benefit of $1.26 is produced, reflecting a strong value proposition for funding.

4.4.1 Sensitivity assessment

This benefit cost assessment is predicated on a number of key assumptions, including discount rate (6%) and project lifetime (30 years). Project costs are conservative quotes that are not expected to vary.

Table 4-13 Sensitivity assessment of benefit cost ratio to discount rate and project timeframe, total project costs and benefits

	4%	6%	8%
20 years	0.64	0.55	0.48
30 years	0.77	**0.64**	0.55
50 years	0.92	0.72	0.59

Table 4-13 shows the benefit cost ratios (BCR) of the total project costs and benefits, with sensitivity assessments of 4-8% and timeframes of 20, 30 and 50 years. This shows BCRs ranging from a low of 0.48 to a high of 0.92.

Table 4-14: Sensitivity assessment of discount rate and project timeframe, requested funding only

	4%	6%	8%
20 years	1.23	1.05	0.9
30 years	1.57	**1.26**	1.03
50 years	1.95	1.44	1.12

A similar approach is undertaken in Table 4-14 for requested funding only. All BCRs are positive except for the shortest timeframe and highest discount rate, with BCRs extending as high as 1.95. This reflects the expected positive returns from the project funding.

4.4.2 Summary and discussion

The proposed lake will add considerable recreational and avoided water treatment benefits to the Ouyen community, estimated at $1.7m over 30 years.

The considerable capital costs of establishing the project currently prevent the local community from undertaking the project themselves. As such, when all costs and (readily quantifiable) benefits of the project are included in analysis, a benefit cost ratio of 0.64 is produced.

However, when the cost-effectiveness of the proposed funding is considered, with all in-kind, volunteer and otherwise provided contributions are excluded from the analysis, a net benefit of $352,422 is produced (and a benefit cost ratio of 1.26).

This presents a solid funding proposition to the Victorian Governments Regional Growth Fund, *Putting Locals First* program.

Additional non quantifiable benefits

There is a range of additional benefits of the proposal that are no readily quantifiable and not included in the benefit cost analysis. These include:

- Additional values held for the lake by members of the community that don't intend to actively use it. For example, several survey respondents opted to contribute to lake up-keep but noted that they don't intend to use it themselves. Several elderly survey respondents expressed this 'non-use' value for the lake.
- A range of flow-on health benefits can be expected due to the impact on physical activity amongst community members.
- Additional commerce in the local businesses from out of town visitors to the lake, as exemplified by the Hopetoun case study.
- Additional benefits from camping/over night stays that would generate higher use values for the lake. These values would be in addition to the day trips benefits already calculated in the benefit cost analysis.
- MRCC has a need for a large amount of clean fill to cap a land fill; if economic quantities of fill were generated from the project this would have value to Council.
- There will be environmental benefits accruing from establishing a permanent water body for wild life, birds and macro invertebrates.

5 Governance and risk management

The final section of the Business Case sets out the arrangements to minimise risk to funding bodies and other parties from the proposed lake development.

5.1 Governance and control

It is intended that a recreational lake in Ouyen be a community asset that will be managed by local people as part of an incorporated body of management. In addition to the community, the project involves two major stakeholders, MRCC and GWMWater, each of whom would exercise authority and control over key steps in project delivery.

a) Mildura Rural City Council

MRCC plays a central role in ensuring the success of the overall project:

- They will act as sponsors for the project within funding applications and once the funding is secured have some role in project management.
- For example they could hold and account for any public funds as an intermediary between the funding agency and Ouyen Inc,

b) Grampian Wimmera Mallee Water

GWMWater would play a core role in building the proposed pipeline that would enable delivery of water to the lake site:

- They will initiate the construction of the pipeline.
- They will manage the water supply for the precinct.

5.2 Risk management and control

A risk assessment was completed as part of the Business Case development, in line with the approach set out in AS/NZS ISO 31000:2009.

5.2.1 Risk identification

The first stage was to identify the key potential risks. This process identified three main risk areas:

- Project delivery risk
- Community acceptance
- Governance issues

5.2.2 Risk assessment

In each case the risks were analysed to assess both:

- The likelihood of the risk eventuating
- The consequence of that occurrence

This then allows construction of a risk matrix, as shown in Figure 5-1.

Likelihood	Consequence/Impact		
	Minor	Moderate	Major
Very Likely	Medium	High	Extreme
Likely	Low	Medium	High
Unlikely	Low	Low	Medium

Figure 5-1: Risk Matrix

5.2.3 Project delivery risks

Project delivery risks involve risks around the lake design, construction and management.

The proposed project involves extensive earthworks to shape and form the lake. The primary risk is that poor quality soils are insufficiently compacted and there are unmanageable seepage rates from the lake.

GWMWater has extensive professional experience in the design and construction of this form of infrastructure and will have a prominent role here. The preliminary design and costing include realistic assumptions about the quality of the soils and their water holding capacities (based on geotechnical investigations).

It is judged that:

- The risk is unlikely to occur
- (However if it does occur) the consequence will be major

The overall assessment for project delivery risk is therefore deemed to be MEDIUM i.e. in accordance with the risk matrix (Figure 5-1: Risk Matrix) low likelihood with a major consequence.

Management controls will be put in place to minimise this risk e.g. professional project management of earthworks during lake construction (included in the budget) and further technical input from GWMWater.

GWMWater will also be responsible for any cost overruns associated with the pipeline works as part of their facilitation of the pipeline construction.

5.2.4 Community acceptance

The success of the recreational lake facility depends on community support. Ouyen Inc. has a proven capability and capacity to deliver high quality projects for the Ouyen community. 25 letters of intent to support the proposal have been provided to the Working Group from business and community group representatives (as listed in Appendix 2).

Given this approach the risk of community opposition is judged to be of:

- Low likelihood to occur – because Ouyen Inc. has taken a proactive approach to managing this risk through extensive community engagement.
- Minor consequence – would be a small proportion of the community because there is strong evidence to suggest that the extent of local and regional support is high.

The overall assessment for community acceptance risk is therefore deemed to be LOW i.e. a low likelihood with a minor consequence.

5.2.5 Governance issues

There is a potential risk that the roll-out and continued effective maintenance and management of the lake's facilities is undermined by lack of governance.

- The likelihood of the risk occurring is deemed to be low as the project roll-out will be overseen by Ouyen Inc. in collaboration with the MRCC. Once the pipeline to the lake is constructed, pipeline operating and maintenance will be managed as part of GWMWater's established infrastructure. The gravel access road and footpaths would be maintained by MRCC. It is anticipated that in-kind, volunteer and otherwise provided contributions will be made by the community to help with the maintenance of other recreational assets associated with the lake reserve. The water authority, the Shire Council and Ouyen Inc. all have a strong commitment to proper governance.
- The consequence of failure would be moderate.

The overall assessment for governance risk is therefore deemed to be LOW i.e. a low likelihood with a moderate consequence.

5.3 Summary of project risks

The risks associated with the delivery of the project are judged to be low and the controls in place to manage any risks that eventuate are judged to be moderately high. In particular, the good track record of Ouyen Inc. in delivering successful community projects and their strong collaboration with GWMWater and MRCC, should ensure confidence about the proper execution of the works and the proper handling and accounting for public funds.

6 Summary of Ouyen Lake Business Case

The project will provide the community with a recreational water facility that will provide social, environmental and economic benefits well into the future.

The Ouyen community is facing demographic pressures as the population ages and younger community members leave the area for larger centres. Social data shows that average incomes are low compared to the state average, but that social capital and a sense of community is high.

A community lake is a perfect recreational asset for such a community, providing opportunities for all members of the community to access regardless of income, and supporting the social cohesion that is the community's strength.

The strong public support for a community lake is demonstrated in surveys and the extent of volunteer and pro-bono contributions to the project, as well as the support of local institutions such as MRCC and GWMWater.

In addition to providing much needed water-based natural recreation opportunities to the community, a community lake will foster social engagement and support a healthy and active community, in line with key objectives of the Victorian Government to this end.

Due process has been undertaken to produce this Business Case, including a strategic assessment of options and a rigorous and defendable cost benefit analysis (CBA).

The CBA compared the total capital and operating costs of the project with identified recreational benefits of the lake going forward, using conservative assumptions and a rigorous methodology. Exploration of these full costs and quantifiable benefits shows that the significant front end capital costs of implementing the project puts the lake out of reach of the local community.

However, an assessment of the full costs and quantifiable benefits (recreational and avoided water treatment only) of the funding request of $1.4M from the Regional Growth Fund, *Putting Locals First* program shows a net benefit of $352,422 over 30 years, with a benefit-cost ratio of 1.26. This shows the efficiency and effectiveness of the Victorian Government funding request (taking into account all in-kind volunteer and otherwise provided contributions) and shows the community's resolve to maintain this prized asset over time.

The quantified recreational benefits are a conservative assessment of the benefits because the analysis does not include the potential for overnight visitors who will have a much higher benefit value per visit. Over time there would be provision made for camping/over night stays at the lake and these would be more highly valued than day trips.

In addition to the quantified recreational and avoided water treatment benefits, a number of additional benefits to the community exist, including public health benefits and a potential boost to commercial activity for local businesses.

The risk assessment shows that the capital works have low risk of failure, as GWMWater and MRCC are skilled and trusted operators.

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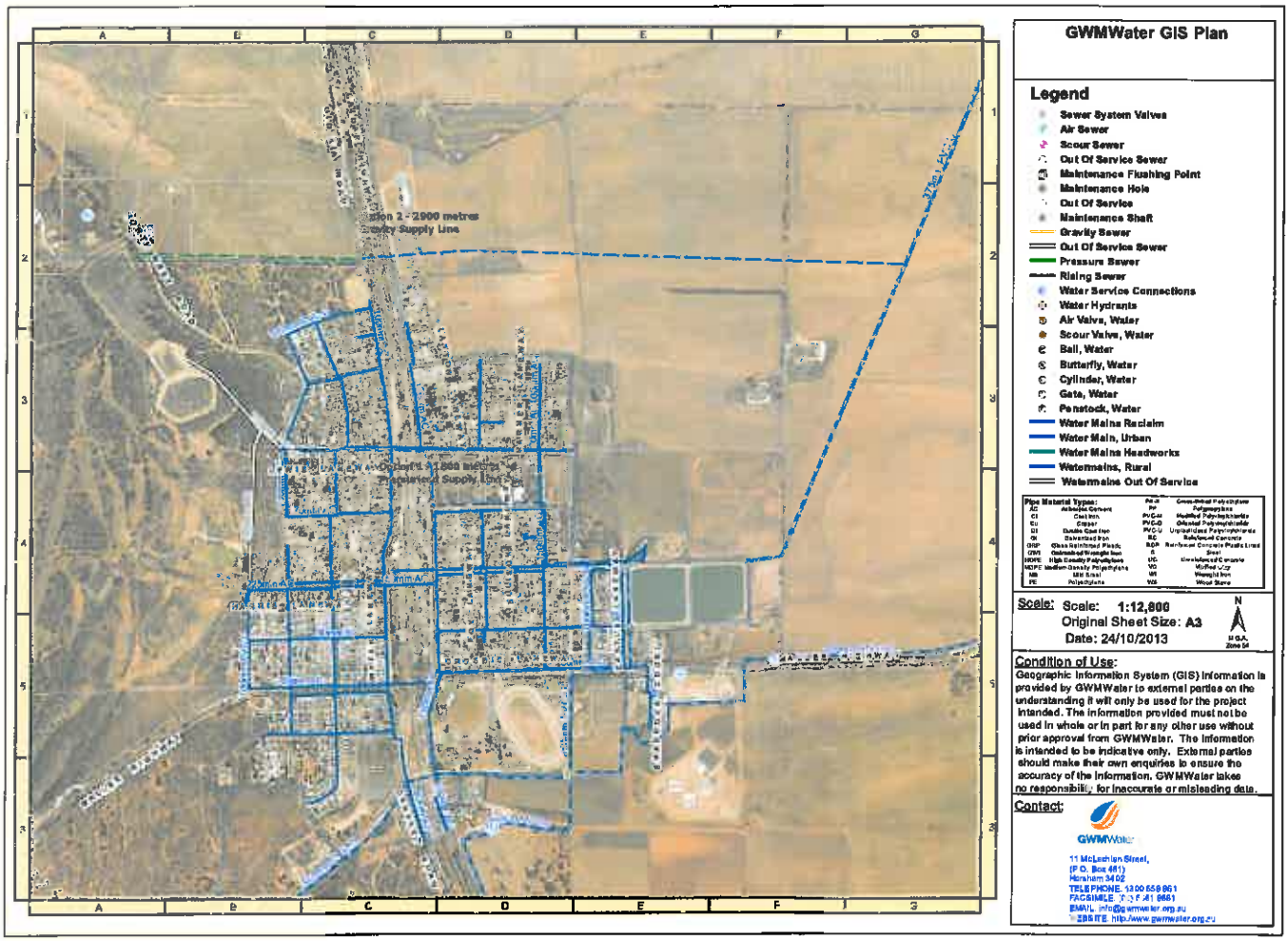
Appendix 1: Pipeline options for delivery of lake water



GWMWater GIS Plan

Legend

- Sewer System Valves
- Air Sewer
- Scour Sewer
- Out Of Service Sewer
- Maintenance Flushing Point
- Maintenance Hole
- Out Of Service
- Maintenance Shaft
- Gravity Sewer
- Out Of Service Sewer
- Pressure Sewer
- Rising Sewer
- Water Service Connections
- Water Hydrants
- Air Valve, Water
- Scour Valve, Water
- Ball, Water
- Butterfly, Water
- Cylinder, Water
- Gate, Water
- Penstock, Water
- Water Mains Reclaim
- Water Main, Urban
- Water Mains Headworks
- Watermains, Rural
- Watermains Out Of Service

Pipe Material Types:			
AC	Asbestos Cement	PP	Polypropylene
CI	Cast Iron	PVC-M	Modified Polyvinylchloride
Cu	Copper	PVC-O	Oriented Polyvinylchloride
DI	Ductile Cast Iron	PVC-U	Unplasticised Polyvinylchloride
GI	Galvanised Iron	RC	Reinforced Concrete
GRP	Glass Reinforced Plastic	RCP	Reinforced Concrete Plastic Lined
GW	Galvanised Wrought Iron	S	Steel
HDPE	High Density Polyethylene	VC	Unreinforced Concrete
MDPE	Medium Density Polyethylene	VO	Vitrified Clay
MS	Mild Steel	WI	Wrought Iron
PE	Polyethylene	WS	Wood Stave

Scale: Scale: 1:12,800
Original Sheet Size: A3
Date: 24/10/2013

N
MGA, Zone 54

Condition of Use:

Geographic Information System (GIS) information is provided by GWMWater to external parties on the understanding it will only be used for the project intended. The information provided must not be used in whole or in part for any other use without prior approval from GWMWater. The information is intended to be indicative only. External parties should make their own enquiries to ensure the accuracy of the information. GWMWater takes no responsibility for inaccurate or misleading data.

Contact:

GWMWater

11 McLachlan Street,
(P.O. Box 461)
Horsham 3402
TELEPHONE 1300 659 961
FACSIMILE [illegible] 8661
EMAIL info@gwmwater.org.au
WEBSITE http://www.gwmwater.org.au

Appendix 2: Listing of support letters from community stakeholders

Organisation	Location	Name
Assorted:		
Ouyen P-12 College	Ouyen	Leanne Dawes - Principal
Victoria Police	Mildura	Simon Clemence - Inspector
Ouyen Fire Brigade	Ouyen	Trevor Mills - Captain
Ouyen Service Providers	Ouyen	Tony Cua - Chairperson
Healthy Together	Mildura	Andrea Sloane - Manager
MADEC Employment and Training	Ouyen	Cassey Gloster
Local businesses:		
Ouyen and District Plumbing Service	Ouyen	Noela Barker - Director
Pengelly Plumbing	Ouyen	Nathan Pengelly - Owner
Ouyen Steel	Ouyen	Ryan Grayling - Owner
Fairy Dell Café	Ouyen	S. Mitchell - Owner
Country Clothing and Furniture	Ouyen	Joanne & Ben Hogan - Owners
North West Butchers	Ouyen	Nathan Grayling
Local sporting clubs:		
Ouyen United Football and Netball Club	Ouyen	Tony Cua - President
Walpeup Underbool Football Netball Club Inc	Walpeup	Anthony Keely - President
Ouyen Bowls Club	Ouyen	Geoff Hahnel - Secretary
Ouyen Lawn Tennis Club	Ouyen	Melanie Shaddock - Secretary
Local clubs:		
Speed Lions Club	Tempy	Kevin Emonson - Secretary
Ouyen Lions Club	Ouyen	Colin Willox - Secretary
Ouyen Senior Citizens Club	Ouyen	K. Manley - President
Walpeup and District Development Committee	Walpeup	Jean Cooke - Secretary
Country Women's Association of Victoria	Ouyen	Gwen John - Secretary
Patchewollock Progress Association	Patchewollock	Janine Yetman - President

Appendix 3: Letters of support from agency stakeholders

Department of Environment and Primary Industries

Cnr Koorlong Ave &
Eleventh St., Irymple
PO Box 905, Mildura, 3502
DX217502
Telephone: (03) 5051 4500
Facsimile: (03) 5051 4534
www.depi.vic.gov.au
ABN: 90 719 052 204

Your Ref:
Our Ref: P000992

25 July 2013

Deane Munro
Co-chair, Lake Working Group
PO Box 168
OUYEN 3490

Dear Deane

OUYEN WATER SUPPLY RESERVE – LAKE DEVELOPMENT PROPOSAL

Thank you for your letter received today concerning a proposal to redevelop the former Ouyen water storages site to a recreational lake.

I have attached some plans of the general area for your reference. Plan 1 shows the part of allotment 29B that any Native Title interest has been determined to have been extinguished coloured red. Extinguishment also applies to all of the small Allotment 29C to the north. The balance of land within allotment 29B does not have such extinguishment and the use of that land for your project would be subject to an Indigenous Land Use Agreement being entered into with the Native Title claimants. That process is quite complex and lengthy and you may require some legal advice on that matter.

This Department supports in principle your group's proposal to develop the available area as a recreational lake as it is a positive re-use of public land degraded by previous use and will provide an asset to the residents of the community, subject to the following:

- Support from the Mildura Rural City Council including rezoning if deemed necessary
- Appropriate re-reservation of the land under the provisions of the Crown Land (Reserves) Act 1978 by this Department (at the appropriate time) and the establishment of a formal land management arrangement either by or via the Mildura Rural City Council, or by a separate local body or group.
- Grampians Wimmera Mallee Water's acceptance that, should the proposal not proceed, it will still be responsible for appropriate rehabilitation works at the site.

The other plans attached are as follows:

- Plan 2: Boundary of the existing Water Supply Reserve shown bordered blue
- Plan 3: Current zoning of the area – note the subject site is zoned PUZ1, Services and Utilities
- Plan 4: Boundary of the existing recreation reserve under Mildura RCC management (allotment 29A) bordered blue over 2012 aerial imagery

- Plan 5: Survey plan of Allotment 29A.

If you have any questions I can be contacted at this office on 5051 4347.

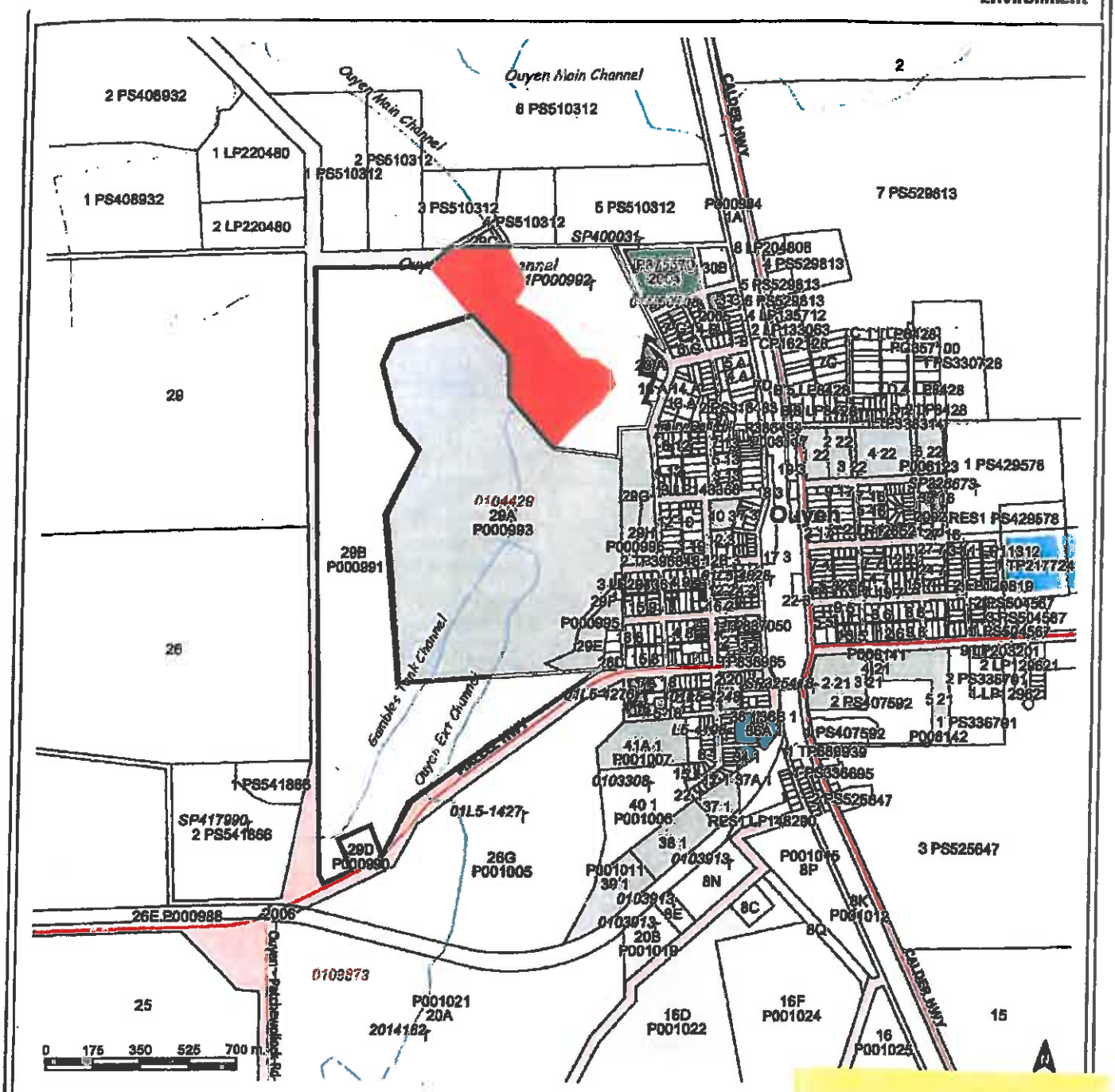
Yours sincerely

Les Trollope
Senior Property Officer
Public Land
Les.Trollope@depi.vic.gov.au

PLAN 1

Parcel P000991

Department of Sustainability and Environment



Legend

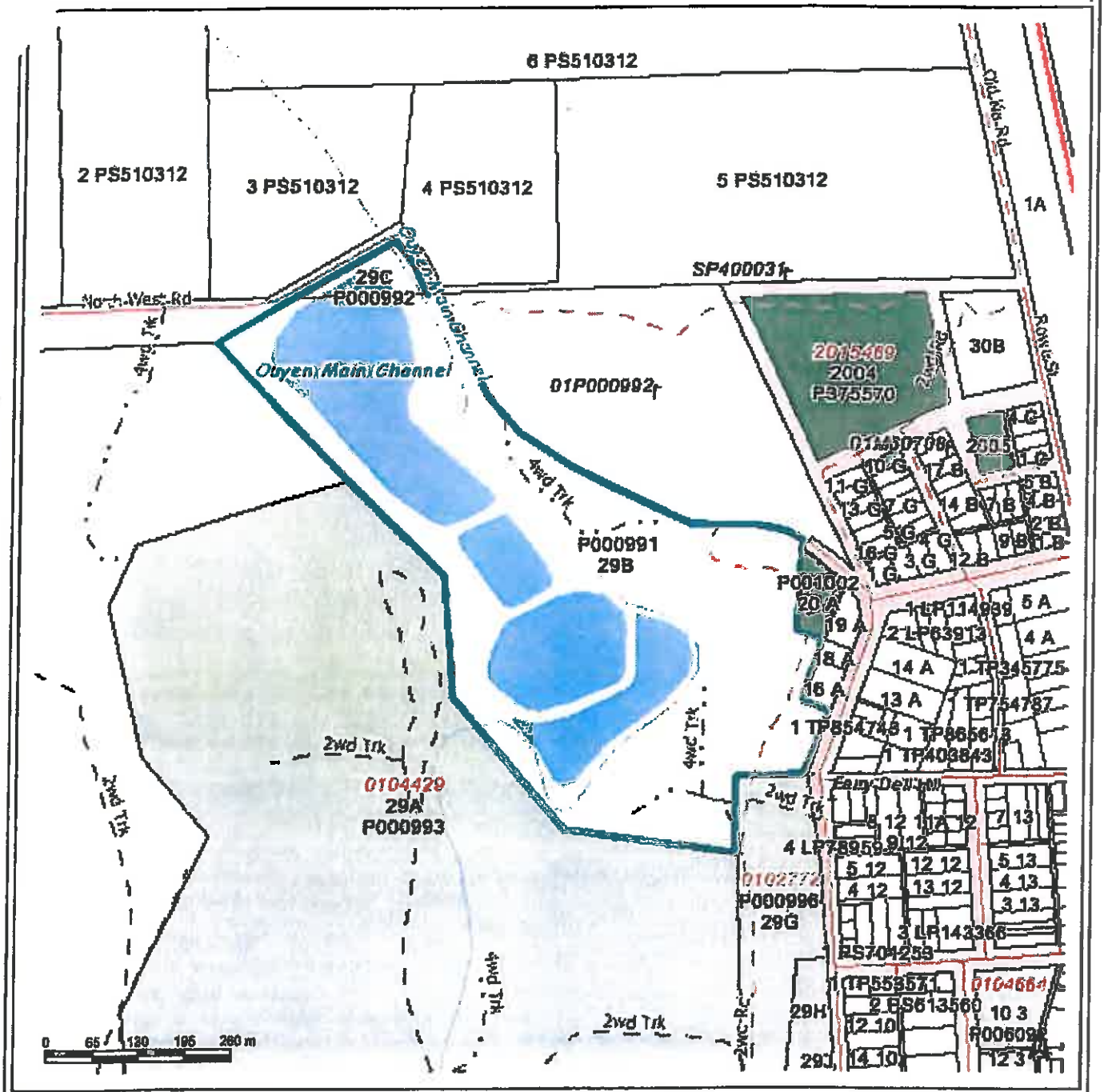
Locality Map

Crown Land Manager A4 Portrait

PLAN 2

rtmental Water Reserve - Parish of Ouyen

Department of Sustainability and Environment



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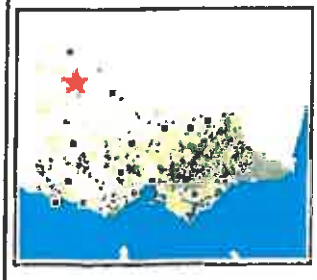


Locality Map

GDA

Victoria

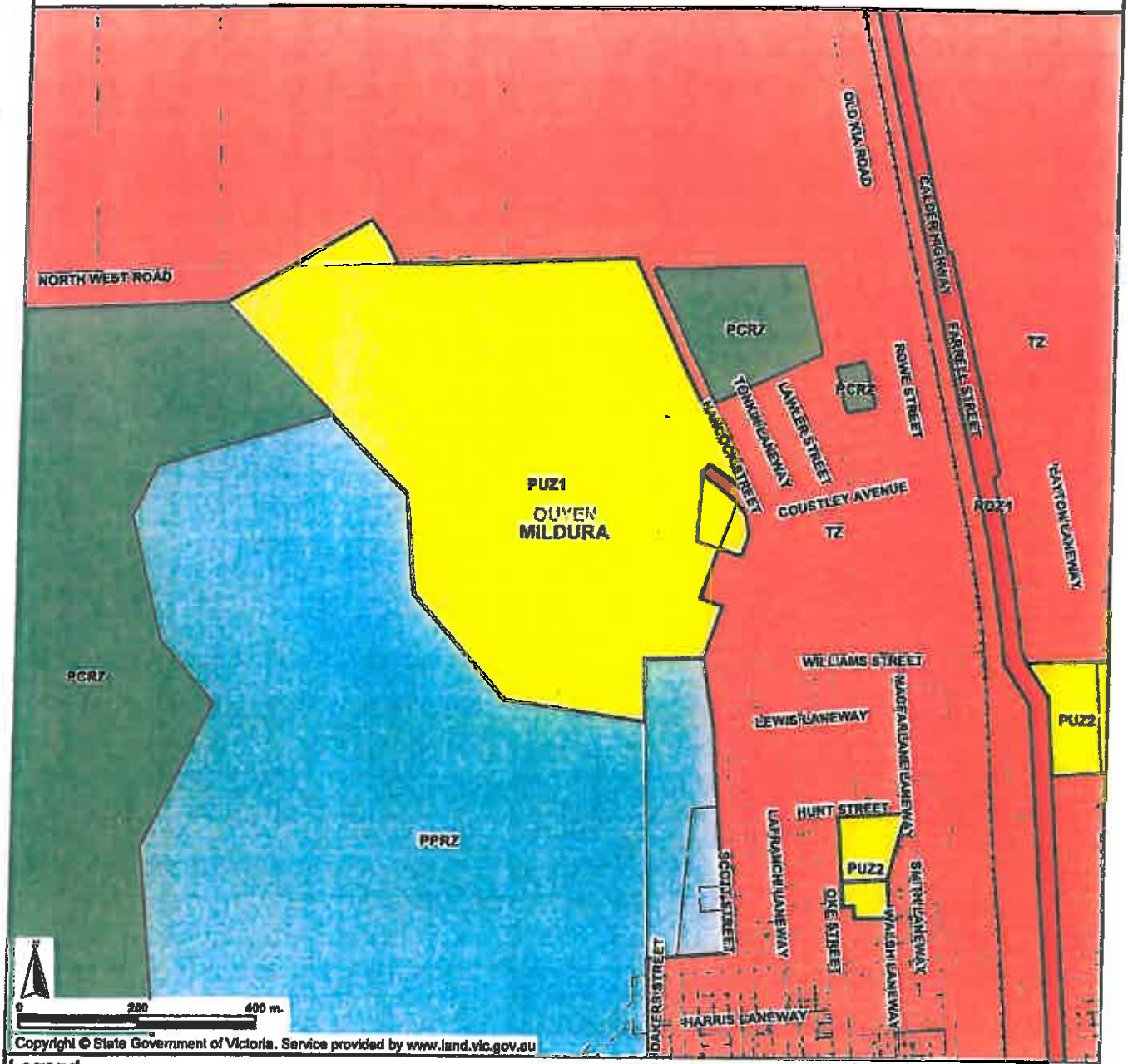
Crown Land Manager A4 Portrait

Produced on Thu Oct 18 09:23:44 EST 2012

PLAN 3

Planning Map
Former Ouyen Water Supply site

Department of Planning and Community Development



Legend

Major Town
Major Road, Road
Road name
Railway, Tramway
Property/Parcel, Selected
Address, Lot, Crown Allotment
River, Stream, Coastline
Waterbody
Locality
Locality Name
Local Government Area
Local Government Name
Urban Growth Boundary (UGB)
Area outside the UGB
In adoption Area
Land added to UGB since 2005
Boundary of Searched Suburb

ZONES

ACZ - Activity Centre
B1Z - Business 1
B2Z - Business 2
B3Z - Business 3
B4Z - Business 4
B5Z - Business 5
CA - Commonwealth Land (not in scheme)
CCZ - Capital City
CDZ - Comprehensive Development
DZ - Dockland
ERZ - Environmental Rural
FZ - Farming
GWAZ - Green Wedge A
GWZ - Green Wedge
IN1Z - Industrial 1
IN2Z - Industrial 2
IN3Z - Industrial 3
LDRZ - Low Density Residential
MUZ - Mixed Use
PCRZ - Public Conservation & Resource
PDZ - Priority Development
PPRZ - Public Park & Recreation
PUZ1 - Public Use - Service & Utility
PUZ2 - Public Use - Education
PUZ3 - Public Use - Health Community
PUZ4 - Public Use - Transport
PUZ5 - Public Use - Cemetery/Crematorium
PUZ6 - Public Use - Local Government
PUZ7 - Public Use - Other Public Use
R1Z - Residential 1
R2Z - Residential 2
R3Z - Residential 3
RAZ - Rural Activity
RCZ - Rural Conservation
RDZ1 - Road - Category 1
RDZ2 - Road - Category 2
RLZ - Rural Living
RUZ - Rural
SUZ - Special Use
TZ - Township
UFZ - Urban Floodway
UGZ - Urban Growth

OVERLAYS

Airport Environs
City Link Project
Development Contributions Plan
Design & Development
Design & Development Part
Development Plan
Environmental Audit
Erosion Management
Environmental Significance
Floodway
Heritage
Incorporated Plan
Land Subject to Inundation
Melbourne Airport Environs 1
Melbourne Airport Environs 2
Neighbourhood Character
Public Acquisition
Restructure
Road Closure
Special Building
Significant Landscape
Salinity Management
State Resource
Vegetation Protection
Wildfire Management

Map Centre - VicRoads 540 F7
Map Scale 1:9,604
October 4, 2011 3:47:11 PM

Victoria

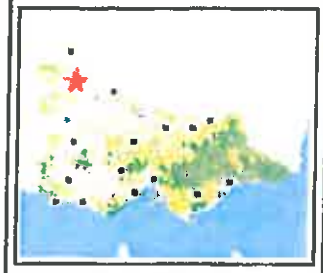
PLAN 4

0104429 Recreation Reserve, Ouyen (2012 aerial)

Department of Environment and Primary Industries

Legend

Map Scale 1:7,500



Locality Map

GDA

Crown Land Manager A4 Portrait

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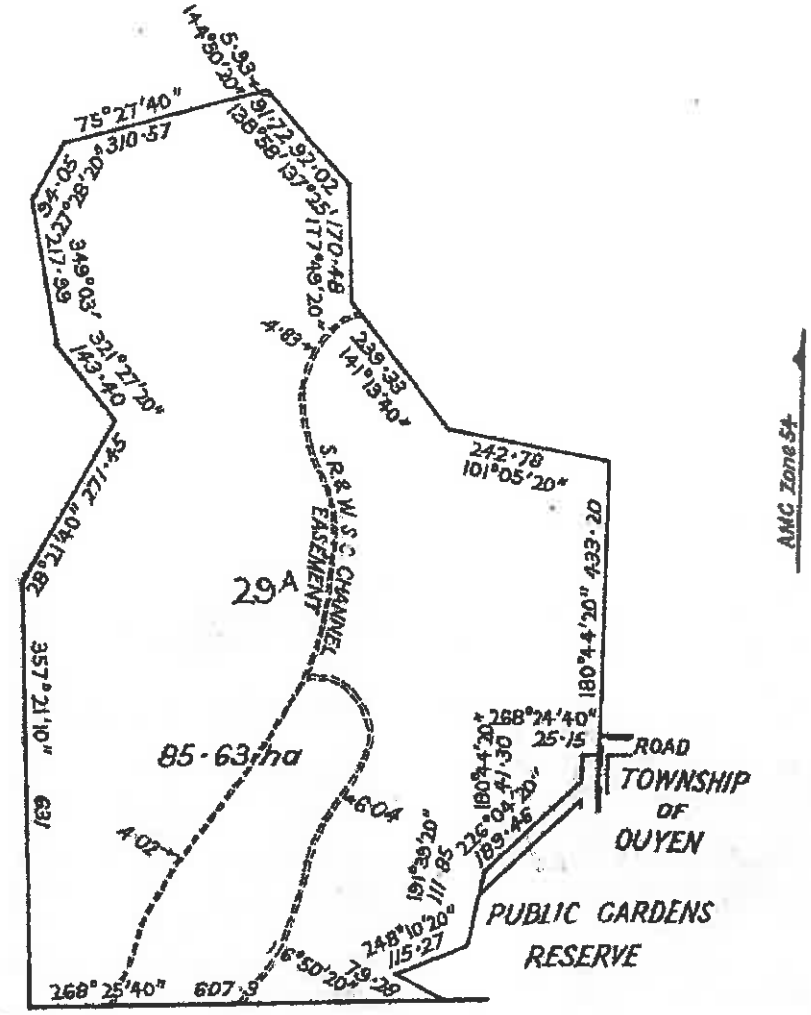
PLAN 5

101151



200 100 0 200 400 600

SCALE OF METRES

PARISH OF OUYEN
COUNTY OF KARKAROOC

Corr. No. M37222	C.P. 101151
Prepared from fieldnotes by B. Vardy L.S dated 12.12.73 & LP144A	
Examined L.C. Howard 21.3.1975	
Charted	Subtract 0°44'20" for 0.226

F.H.O. Edwards
ACTING
SURVEYOR-GENERAL
10. 10. 75

Our Ref: JC:LM//2012723/CEO16

Monday, April 8, 2013.

Deane Munro
Walpeup Lake Committee
73 Ritchie St
OUYEN VIC 3490

Dear Deane

OUYEN LAKE DEVELOPMENT

The Mallee Catchment Management Authority (CMA) supports the Walpeup Lake Committee in its efforts and associated funding applications to progress the Ouyen Lake development.

The Authority recognises the important work both the Walpeup Lake Committee and the local community have invested in the proposed development of the decommissioned reservoir north of the township of Ouyen.

The commitment shown to this project illustrates your community's resilience and continuing desire to provide a valuable boost to the region's social fabric and economy by creating recreational and employment opportunities, enhancing Ouyen's livability and supporting the health and wellbeing of residents.

Should you have any queries in relation to this matter, please contact the Coordinator Catchment Information and Communication, Lauren Murphy, on ☎ 5051 4377 or 0427 501 513.

Yours sincerely

J Collins

Jenny Collins
Chief Executive Officer

J:\mallee cma\Executive\CEO Committees\CEO16 Confidential Correspondence\Drafts\DRAFT_ WalpeupLakeCommittee_050413.docx

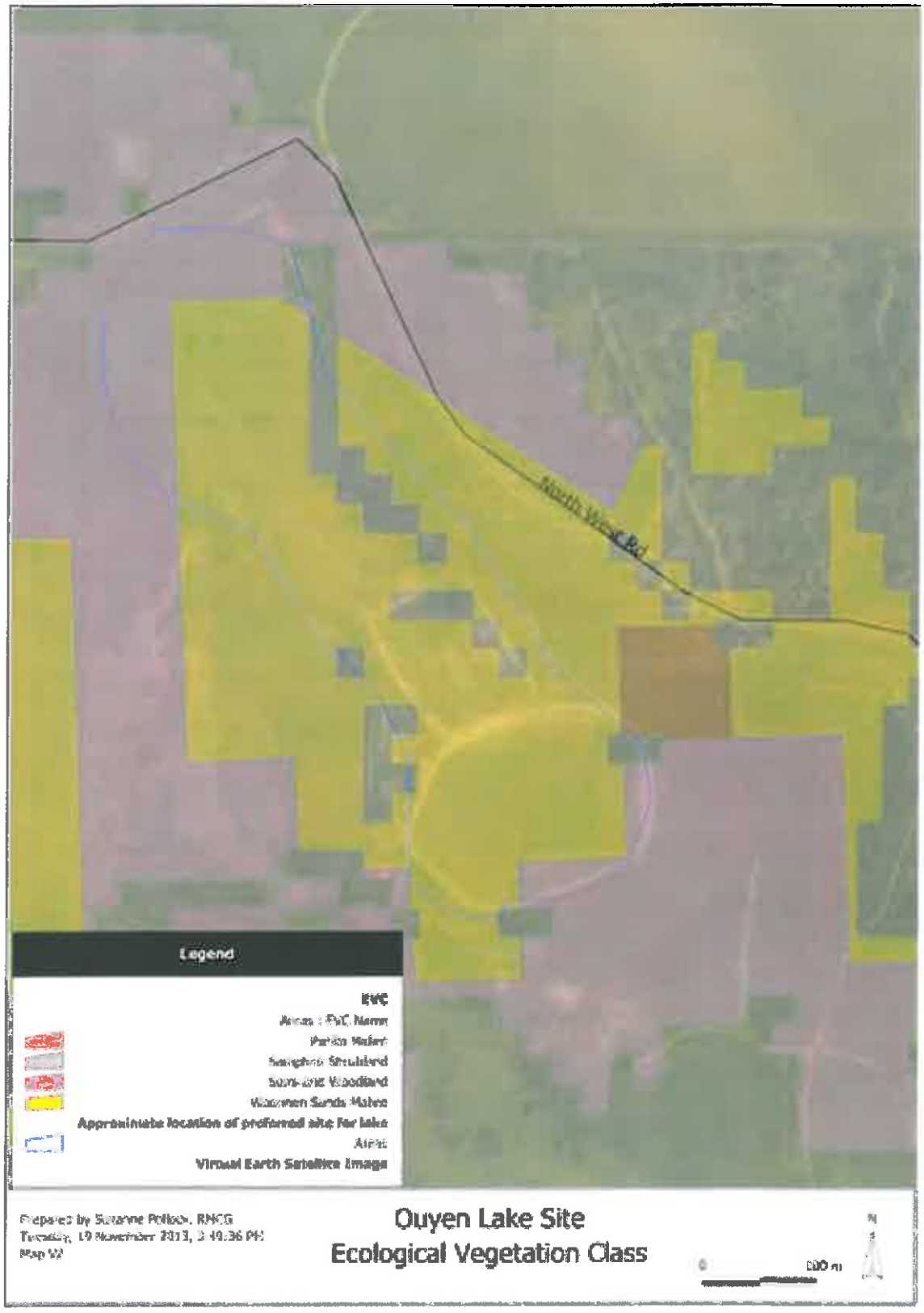
mallee catchment management authority

Cnr Eleventh Street & Koorlong Avenue IRYMPLE Vic 3498 PO Box 5017 MILDURA Vic 3502 DX217502
Telephone: 03 5051 4377 Facsimile: 03 5051 4379 ABN 27 811 602 364

Appendix 4: Project cost assumptions

ITEM	Cost	Assumptions	Source: quotes/estimates
CAPITAL EXPENDITURES			
Earthworks	$800,000	180,000 m3 cut 53,000 m3 fill	Local supplier
Water			
Option 1 Pressurised pipe	$280,000	1,800 m @ $120/m; plus pump station	GWMWater
Securing 280 ML entitlement/share	$448,000	$1,600/ML	Average market value
Once off to fill lake - additional 220 ML	$18,000	$80/ML	5% of capital value
Recreational assets	various		MRCC & local suppliers
			Local suppliers
OPERATING PER YEAR			
Footpath repair/maintenance	$4,250	3.1 km (5% of value/year) = $1,370/KM	MRCC
Unsealed roads maintenance	$2,500	2.5 km (5% of value per year) = $1,000/KM	MRCC
Water - delivery charge	$5,600	280 ML @ $20/ML	GWMWater
Pumping costs	$10,000	280 ML @ $36/ML	GWMWater
OTHER COSTS			
Avoided water treatment costs			GWMWater
	Treated potable water		
	ML	$/ML	Total $
School oval (12 ML irrigation/yr)	5	$977	$4,885
1 ha @ 12 ML/ha	5	$1,210	$6,050
12 ML/ha	2	$1,620	$3,240
		subtotal	$14,175
Tennis courts (3 ML irrigation/yr) 0.25 ha @ 12 ML/ha	3	$977	$2,931
		Total $/Yr	**$17,106**
	Rural water		
	ML	$/ML	Total $
School oval (12 ML irrigation/yr)	5	$573	$2,866
1 ha @ 12 ML/ha	5	$716	$3,582
	2	**$955**	$1,911
		subtotal	$8,359
Tennis courts (3 ML irrigation/yr) 0.25 ha @ 12 ML/ha	3	$573	$1,720
		Total $/Yr	**$10,078**

Appendix 5: EVC map – pre settlement lake site vegetation



Appendix 6: List of known birds and other fauna in lake site surrounds

Birds

Magpie
Black-face Cuckoo shrike
Willie Wagtail
Crow
Magpie-lark {Mud-lark}
Black-face Woodswallow
White-browed Woodswallow
Restless Flycatcher
Grey Thrush
White-browed Babbler
White-plumed Honeyeater
Yellow-plumed Honeyeater Singing Honeyeater
Spiny-cheeked Honeyeater
Red Wattle Bird
Yellow-rumped Thornbill
Mistletoebird
Variegated Fairy-wren
Varied Sittella
Rainbow Bee-eater
Sacred Kingfisher
Kookaburra
Welcome Swallow
Australian owlet Nightjar
Barn Owl
Brown Owl
Red-rumped Parrot
Cockatiel
Mulga Parrot
Budgerigar
Regent Parrot {During summer months}
Major Mitchell's {Pink Cockatoo}
Sulphur-crested Cockatoo
Bronzewing pigeon
Diamond Dove
Nankeen Kestrel
Brown Falcon
Square-tail Kite
Black-shouldered Kite
Lapwing Plover
Little Egret
Wood Duck
White-browed Babbler
White-wing Chough
Pied Butcher Bird
Grey Butcher Bird
Brown Tree-creeper
Sparrow Hawk
Crested Pigeon
Red Capped Robin
Ring-Neck Parrot
Pallid Cuckoo
Wedge-Tail Eagle
Masked Plover
Swamp Harrier
Crested Pigeon
Galah
Weebill
Quail

Lizards and mammals

Echidna
Sand monitor
Bats
Brush-tail Possum Grey
Kangaroo Shingle-back
Lizard Legless Lizard
Knob-tail Gecko
Skinks
Brown Snake