Lake Boga
Land and On-Water Management Plan

November 2011
Lake Boga is a safe, family friendly place highly valued by the community for its water based recreational activities, amenity and cultural heritage while also fulfilling its role as a water supply storage.
Lake Boga was identified by the Victorian State Government as a water body that could form part of the Victorian Mid Murray Storages (VMMS).

Recognising that Lake Boga had multiple Agencies managing parts of Lake Boga, the Government approved the creation of the Lake Boga Co-ordination Group (LBCG) to manage the transition of Lake Boga to become part of the VMMS. The LBCG is comprised of the Department of Sustainability and Environment (DSE), Goulburn-Murray Water (G-MW), North Central Catchment Management Authority (NCCMA) and Swan Hill Rural City Council (SHRCC).

As part of the transition, several actions were identified – including an annual operating plan, a flood routing plan and a Land and On-Water Management Plan.

The Lake Boga Land and On-Water Management Plan (‘the Plan’) provides a strategic approach to management of land and on-water issues at Lake Boga. The intent of the Plan is to better co-operatively manage the important values of the lake and its foreshore, including community awareness and involvement, recreation, public access and safe use, environmental and cultural heritage and public land management.

The Plan aims to identify and protect important values associated with the lake by outlining priority land and on-water management issues and identifying key actions to be implemented to address these issues. Most importantly, the Plan aims to increase communication, consistency, co-ordination and co-operation between agencies, stakeholder groups and the community to enhance the lake’s values and attributes. The Plan does not make recommendations on storage operational issues, including storage filling and releases, as those decisions are beyond the scope of this Plan.

Some recommendations and objectives of the Lake Boga Urban Design Framework and the Lake Boga District Community Plan are incorporated into or are complementary with this Plan.

The development of the Plan was overseen by the Lake Boga Co-ordination Group, but it is intended to be a community plan rather than a corporate plan. It was developed to assist the management of land and on-water issues, but it is also intended to be a key reference document and guide for lake users, other management agencies and the broader community. It is expected that the Plan will be an adaptive document that will be regularly reviewed and updated approximately every five years, with outcomes reported annually to stakeholders and the community.

LAKE OPERATIONS

The operation of Lake Boga as a storage is outside the scope of the Plan.

The primary purpose of the storage is to capture, store and release water to downstream communities and consumptive users. Storage operations such as water levels and release patterns are driven by this imperative. It is on this basis that Lake Boga was included in the Victorian Mid Murray Storages.

Accordingly, the Plan cannot make any specific decisions or recommendations regarding the management of water levels in Lake Boga. Operational issues including lake levels and the management of inflows to and releases from Lake Boga form part of the Victorian Mid Murray Storages operational plan.

However, no assurances can be given that the lake will receive water annually, particularly where a sequence of low rainfall years are experienced. In circumstances such as this, similar to recent years, it is possible the lake will fall well below 67.00 metres AHD or dry completely.
2 Context

2.1 AGENCY ROLES AND RESPONSIBILITIES
The roles and responsibilities of the parties in managing the lake and foreshore are:

- Goulburn-Murray Water manages the inflows and outflows of water into the lake in accordance with the Victorian Mid Murray Storages operational plan. G-MW is also the appointed land manager for most of the land at and below 70.00 metres Australian Height Datum (AHD) and in some instances 5 metres horizontally from the 70.00 AHD metre line.

- Swan Hill Rural City Council manages the majority of the foreshore and the infrastructure located on the foreshore. With the exception of the Murray Valley Highway, Council is responsible for the roads around Lake Boga. Under Schedule 97 of the Marine Act, 1988, SHRCC is the boating authority for Lake Boga.

- Department of Sustainability and Environment, Public Land Services, is the public land manager for Crown Land located above 70.00 metres AHD around the south east of the lake, extending from the Lakeside Drive and McCabe Road intersection to an area opposite 236 Murray Valley Highway.

- The North Central Catchment Management Authority has flood intelligence and flood planning responsibilities.

- The Lake Boga Co-ordination Group (LBCG) is comprised of four organisations – G-MW, SHRCC, DSE and the NCCMA. The role of the LBCG is the co-ordination of activities related to the management of Lake Boga, recognising that Lake Boga will be operated as a water storage.

A number of other agencies have some role in the management of land and on-water activities at Lake Boga. Current management roles and responsibilities are summarised in Appendix A.

2.2 OBJECTIVES
The objectives of this plan are to:

- Identify, protect and enhance important values associated with the lake.

- Identify key actions to be implemented to address identified issues.

- Engage the community through increased communication, consistency, co-ordination and co-operation between agencies, stakeholder groups and the community by improving the formal and informal processes in place to manage the lake and surrounding foreshore.

2.3 LAND STATUS
Most of the land at and below 70.00 metres Australian Height Datum (AHD) (and in some instances 5 metres horizontally from the 70.00 AHD metre line) at Lake Boga is managed by Goulburn-Murray Water. This land is Crown Land reserved for water supply purposes under the control and management of G-MW. Management of this land, including the granting of consents and licences, was previously the responsibility of the Department of Sustainability and Environment.

Other foreshore reserves are managed by Swan Hill Rural City Council and other Crown Lands are managed by DSE.

2.4 SCOPE OF PLAN
The geographic scope of this project is limited to the lake and the foreshore. Plans of the storage and surrounding areas are included in Appendix B and Appendix C respectively.

More specifically, the Plan focuses on the lake and areas where G-MW, SHRCC and DSE have direct responsibilities as public land managers of the lake and the foreshore.

2.5 STORAGE OPERATIONS
Throughout the development of this Plan, many stakeholders and community members commented on water levels and storage operational issues, in particular the desire to maintain higher water levels in the lake. The primary purpose of the storage is to capture, store and release water to downstream communities and consumptive users. Storage operations including water levels and release patterns are primarily driven by this imperative.

Accordingly, the Plan cannot make any specific decisions or recommendations regarding the management of water levels in Lake Boga. Operational issues including lake levels and the management of inflows to and releases from Lake Boga form part of the Victorian Mid Murray Storages operational plan.

For reference, a brief overview summary of storage operations is included in Appendix D.

2.6 LEGAL STATUS
The Plan will not impose any new legal or statutory requirements, but through influencing policy, may lead to future changes in legislation that will assist in meeting the objectives of the Plan.

The Plan does not override any of the provisions of the SHRCC Planning Scheme or any other legislation.

The Lake Boga Co-ordination Group has endorsed this plan and will support the responsible/lead agency to achieve the identified actions.
The Lake Boga Land and On-Water Management Plan aims to identify, protect and enhance important values associated with the lake by outlining priority land and on-water management issues and identifying key actions to be implemented during the next five years. Importantly, the Plan also aims to increase communication, consistency, co-ordination and co-operation between agencies, stakeholder groups and the community to protect the lake’s values and attributes.

The Lake Boga Land and On-Water Management Plan (the Plan) aims to achieve understanding and acceptance of management recommendations and responsibilities. Ongoing consultation, education and increased awareness will be critical to identifying and achieving goals set out in the Plan.

The development of the Plan has been supported and informed by a well planned and well delivered program of consultation and stakeholder engagement.

The community and stakeholder consultation aimed to:
- Provide a strategic approach to engaging communities and stakeholder groups to gain effective and targeted input into the development of the Plan.
- Develop a widely held vision for Lake Boga.
- Identify key issues.
- Provide ideas on how to address key issues in ways that maximise positive outcomes for all users.
- Gather views on recommended land and recreational use.
- Obtain feedback on the draft Plan.

Community engagement activities have included:
- A workshop with an Agency Advisory Group to verify the community and stakeholder engagement approach, identify key issues and possible solutions and provide input to a possible vision for the Lake.
- Facilitated focus groups were convened at stakeholder/community group meetings including focus group sessions with:
  > Lake Boga Inc.
  > Lake Boga based sporting clubs and Landcare Group.
  > One-on-one focused interviews with stakeholders, community representatives and landholders, either face to face or via telephone.
  > Eighteen active users of the Lake were engaged via an on-site ‘Have-a-Say’ session at the Lake Boga Catalina Museum in May to identify key issues and possible solutions and another twenty active users were engaged in a similar session in August.

Information gathered from the consultation program formed the basis for the development of the Plan.
4 Implementing the Plan

The Plan aims to secure a sustainable management regime for Lake Boga’s highly valued land and water attributes.

To achieve this, the plan will focus on enhancing key management outputs including:
- Management communication and co-ordination.
- Water quality and recreational water use.
- Public infrastructure.

The Plan will include a 5 year program of priority implementation works, and be guided by a long term vision.

The Plan will focus on priority actions and include annual reviews.

5 Vision for Lake Boga

During the consultation process, discussions were held regarding a vision for Lake Boga. A vision was developed based upon ideas and suggestions gained from the community engagement process.

The agreed long term vision for Lake Boga is:

Lake Boga is a safe, family friendly place highly valued by the community and visitors for its water based recreational activities, amenity and cultural heritage while also fulfilling its role as a water supply storage.
Lake users and the community have an interest in the management of Lake Boga and the recreational, environmental, social and economic issues associated with the lake and its surrounds. To ensure managers understand stakeholder and community issues and values, and to promote better understanding of the reasons for management policies to protect the lake and foreshore, the plan recommends the formation of a Community Reference Group.

6.1 LAKE BOGA COMMUNITY REFERENCE GROUP

It was evident from the community engagement process that many lake users and community members have a strong sense of ownership of Lake Boga. It is also apparent that some members of the community have differing values and ideas on how the lake should be managed. It is important that the community has the opportunity to be involved in decision-making processes that affect them and to participate in the development of trade-offs where competing interests arise.

The establishment of a Lake Boga Community Reference Group is proposed as an important step in engaging the community in the implementation of the Lake Boga Land and On-Water Management Plan.

The role of the Lake Boga Community Reference Group will be to:
- Provide advice to the Lake Boga Co-ordination Group on implementation of the Plan.
- Help prioritise implementation of actions outlined in the Plan.
- Advise on community engagement activities.
- Provide a clear mechanism for the community to clarify and communicate issues of concern to responsible agencies.
- Provide feedback to community interest groups.
- Monitor and evaluate the implementation of the Plan on an annual basis.
- Assist with a review of the Plan, approximately every five years.

The composition of the Lake Boga Community Reference Group was an issue where the community provided guidance to the LBCG. Three models were proposed and the LBCG sought community feedback on the models.

The community feedback was strongly in favour of using Lake Boga Inc as the Community Reference Group.
6.1 Lake Boga Community Reference Group cont.

Objectives

To better engage with the Lake Boga community.

Actions

1. Establish a Lake Boga Plan Community Reference Group to guide the implementation of the plan and provide a two way means of communication between SHRCC, G-MW, other management agencies, the local community and lake users.

Implementation: Roles and Responsibilities

The Lake Boga Co-ordination Group is responsible for this action.

6.2 DEVELOP AND IMPLEMENT COMMUNITY AWARENESS PROGRAMS

Local community members and visitors play an important role in the sustainable management of Lake Boga. The choices that people make while boating, camping or as property owners in the vicinity of the lake can potentially affect the health and long-term sustainability of Lake Boga.

Opportunities exist for awareness raising programs to show how different activities can impact on the lake, and to better inform people about lake management and the lake’s purpose. Lake users should be able to easily obtain information relating to regulations and policies that exist for Lake Boga. People should know who to talk to about issues relating to the lake and what role different agencies play in its management. It is also desirable that lake users understand that Lake Boga is a vital part of a much larger system relied upon by many downstream communities.

Through the on-going consultation process of the Lake Boga Land and On-water Management Plan, community members expressed interest in obtaining better information on a variety of issues. Education campaigns and provision of improved information materials will play an important role in raising community awareness. Various mechanisms can be used to increase education and awareness, including signage, websites, media and school programs.

Also identified through the consultation process was an interest expressed by some community members in taking a more ‘hands-on’ role in actively managing the lake. For example practical opportunities may exist for community involvement in activities such as re-vegetation, reserve beautification and weed control projects.

The consultation process saw a number of issues raised that are outside the scope of this plan. Those issues included items such as the Caravan Park redevelopment, Lake Boga township development issues, motel redevelopment or refurbishment, street lighting, footpaths and fountains. Those issues have been collated and forwarded to the relevant authorities.

Objectives

An informed and involved community working co-operatively with agencies to find shared solutions to the land and water management challenges faced at Lake Boga.

Actions

2. Develop improved public information on recreation, water quality issues and other land and water management issues, lake operations and water levels.

3. Develop an interactive website containing maps, plans, zones, Frequently Asked Questions sheets, management arrangements and by-laws that can be used as a one-stop shop for information about Lake Boga.

4. Consistent and informative signage at all access points.

Implementation: Roles and Responsibilities

Goulburn-Murray Water and Swan Hill Rural City Council are primarily responsible for coordinating these actions.
This Plan acknowledges that recreation and public access are an integral part of Lake Boga, but also recognises the potential for these activities to adversely impact on the lake's environmental attributes if poorly managed.

7.1 BOATING

Lake Boga is a popular water storage for power boating, waterskiing, sailing, canoeing/kayaking and increasingly the use of other personal watercraft such as jet skis.

Boating zones on the lake are gazetted by Marine Safety Victoria under Schedule 97 of the Marine Act, 1988. Under Schedule 97, SHRCC is the local boating authority and the Victorian Water Police takes an active role in the monitoring and enforcement of regulations. The Marine Act 1988 will be replaced by the Marine Safety Act 2010 later in 2011, when the Marine Safety Act 2010 will be enacted by Parliament.

The interaction of water users on the water has the potential to impact on the safety of lake users due to the diverse nature of the activities. For example speed boats have the potential to capsize smaller fishing boats that share the same vicinity.

Some users have noted concerns related to high speed activity close to shorelines in public areas frequented by swimmers and other water users. A review of boating zones is needed to ensure their continued suitability for the evolving activities that are undertaken on the lake.

Lake Boga remains useable for boating at 67.00 metres AHD, and with the recent return of water, is increasingly popular relative to many other traditional boating destinations. Some concerns were noted during the community consultation regarding the accessibility of the lake at the lower levels. All the boat ramps permit access to the lake at 67.00 metres AHD. The two boat ramps located at Willakool Drive and Jacaranda Crescent have very good access at this level.

The consultation process saw a number of comments in regard to the maintenance of water levels for boating and recreation. The inclusion of Lake Boga as a component of the Victorian Mid Murray Storages will mean that, under normal climatic conditions, Lake Boga will harvest and release water in most years and thus contain water above 67.00 metres AHD. However, no assurance can be given that the lake will receive water annually, particularly where a sequence of low rainfall years are experienced. In circumstances such as this, similar to recent years, it is possible the lake will fall well below 67.00 metres AHD or dry completely.

Objectives

A safe, accessible and well managed lake for boat operators and other water users.

Actions

5. Review boating zones to ensure suitability, reduce complexity and improve safety.

Implementation: Roles and Responsibilities

Swan Hill Rural City Council and Transport Safety Victoria are primarily responsible for coordinating these actions, with the assistance and involvement water users, clubs and other stakeholders.
7.2 FISHING

Lake Boga is a popular destination for recreational fishermen. The lake is home to populations of native fish species including Golden Perch and Murray Cod. Introduced species are also found in the lake including Redfin and European Carp.

Some lake users have reported concerns regarding European Carp populations in the lake. Carp not only compete with native fish species but can also have adverse impacts on water quality. Concerns with carp are not restricted to Lake Boga, but opportunities may exist to better understand, monitor and control carp populations in Lake Boga as a part of wider studies and research.

Lake Boga is currently stocked with Murray Cod by the Department of Primary Industries (Fisheries). Stocking occurs after an annual consultation process involving the Victorian recreational fishing peak body (VRFish), Catchment Management Authorities, Fisheries Victoria and other relevant stakeholders.

These stocking programs will continue to be supported to ensure that Lake Boga remains a sustainable, long term fishery. Improved monitoring and understanding of the fishery in Lake Boga would be useful to better inform fish stocking and management plans in coming years.

Objectives

To maintain and protect native fish populations within Lake Boga.

Actions

7. Develop a fish management plan incorporating stocking of native species, and monitoring of native and exotic species in consultation with other lake users and peak fishing organisations.

Implementation: Roles and Responsibilities

Department of Primary Industries (Fisheries) is primarily responsible for these actions, with support and advice from lake users, fishing representative organisations and Goulburn-Murray Water.
7.3 PUBLIC LAND, ACCESS AND SAFE USE

In addition to water based recreational activities, Lake Boga is a popular stop over location for motorists travelling on the Murray Valley Highway.

Swan Hill Rural City Council undertakes regular maintenance of public areas of foreshore where it is the designated Committee of Management. A public infrastructure/landscape master plan (Lake Boga Urban Design Framework) has been developed to assist in the prioritisation of capital investment and maintenance funding for public recreation areas and infrastructure.

Opportunities for public access to the lake environs vary. The lake bed areas and some foreshore areas are Crown Land reserved for water supply purposes under the control and management of Goulburn-Murray Water. Other foreshore reserves are managed by SHRCC and other Crown Lands are managed by the Department of Sustainability and Environment.

As public land, the community has the right to access this land for recreational purposes such as fishing, sightseeing and walking. Public access to Lake Boga should be improved provided it does not compromise public safety, water quality and the environment or the operations of the lake. The potential for a cycling/walking track development at the lake has been suggested to improve the public access potential of Lake Boga. This would only be considered where the access could be provided in a safe, controlled and regulated manner.

Objectives

Safe and improved access for recreational users, with an improved standard of public infrastructure and amenity.

Actions

8. Implement regular public safety and liability risk assessments of public reserve infrastructure.
9. Investigate the potential to establish a walking/bicycle path around the lake.
10. Establish collaborative agreements between key agencies for the co-ordinated management of access and safety on public reserve land.

Implementation: Roles and Responsibilities

Swan Hill Rural City Council is primarily responsible for co-ordinating these actions, in collaboration with Goulburn-Murray Water, Department of Sustainability and Environment and the local community.

7.4 TURTLE LAGOON

Turtle Lagoon is a community initiative that has the aim of creating an area of environmental value. The banks of Turtle Lagoon were damaged during the recent flood and the community consultation process saw several comments on the need to repair the banks.

Swan Hill Rural City Council does have budget to commence the repairs but the works are dependent on the lake level being low enough to allow the bank restoration work to occur.

Other suggestions included an improved walking track and access into Turtle lagoon and bird hides.

Objective:

Further develop Turtle Lagoon as an environmental asset to encourage visitation and access and as a haven for native fauna.

Action:

11. Undertake development works including bank stabilization when Lake water levels permit.

Implementation: Roles and Responsibilities

Swan Hill Rural City Council is primarily responsible for this action.
8.1 FLORA

Whilst there is some awareness of flora species endemic to the lake and immediate surrounds, there are opportunities to gain a better understanding by working with local environment groups to undertake detailed flora surveys.

A number of lake users commented on the willow trees that did exist and the smaller number that still exist at Lake Boga. Some of the community would like to see the willows re-established whilst others sought their removal and replacement with native species. Willow trees are a declared weed in Victoria and are listed as a Weed of National Significance by the Federal Government. Consequently the re-establishment of willows cannot be supported.

The existing aquatic vegetation, in particular the native *Phragmites australis*¹ (commonly known locally as cane grass), provides an important element of protection from erosion by breaking down the wave action that damages the foreshore and levees.

The control of *Phragmites australis* is discussed in the section relating to vegetation management. Re-establishment of native vegetation around the lake has a positive influence on water quality. Re-vegetation works on the lake perimeter lands should be encouraged and supported, where appropriate. Other options include working collaboratively with the NCCMA, the Lake Boga Landcare Group and other relevant agencies to investigate the funding of incentive schemes for re-vegetation works.

The Lake Boga Urban Design Framework, a document published by the Swan Hill Rural City Council which identifies key objectives and recommendations for the improved image and enhancement of Lake Boga's environment and facilities, recommended activities such as:

- Planting of indigenous shade trees and clumps of closely planted shrubs in foreshore areas.
- Revegetating conservation zones using a full suite of indigenous species in clumped plantings.
- Allow indigenous wetland/reedy species to colonise the shoreline to improve habitat and bank stabilisation.

The responsibility of the foreshore largely rests with Swan Hill Rural City Council whilst Goulburn-Murray Water is responsible for land at or below 70.00 metres AHD and, in some instances, 5 metres horizontally from the 70.00 AHD metre line.

**Objectives**

Improved protection and enhanced populations of native flora.

**Actions**

12. Endorse the recommendations of the Lake Boga Urban Design Framework for works on the reserves that protect biodiversity values and enhance visual amenity.

13. Support the activities, consistent with this Plan, of local interest groups and volunteers and assist them to seek external funding opportunities to better understand and improve native flora populations at Lake Boga.

**Implementation: Roles and Responsibilities**

Swan Hill Rural City Council is primarily responsible for coordinating these actions at Lake Boga, in collaboration with Goulburn-Murray Water and the North Central Catchment Management Authority, nearby landholders, environment groups and other stakeholders. Biodiversity improvement programs for the catchments, rivers and streams upstream of Lake Boga are primarily coordinated by the NCCMA.

¹ *Phragmites australis* is a native robust perennial which grows to 4 metres high with an extensive rhizome system. *Phragmites australis* is not a declared weed in Australia.
8.2 WATER QUALITY

Water quality within Lake Boga can be influenced by a number of activities including adjacent land use, storage activities, in-storage processes and the quality of inflows into the storage. Good water quality is critical for local and downstream communities that use this water for irrigation, domestic and stock, industry, agriculture, recreation and after proper treatment, human consumption.

As a bulk water supplier, Goulburn-Murray Water has obligations to identify and where possible, reduce risks to water quality, in accordance with the Safe Drinking Water Act (2003), aimed at protecting water quality intended for human consumption.

Recreational users may be impacted by the effects of poor water quality. Maintaining or improving water quality is important for the preservation and health of aquatic habitat and ecosystems in Lake Boga.

Much of Lake Boga’s catchment has been heavily modified through past agricultural practices. Water quality in the lake is not just influenced by Lake Boga’s catchment but also by water flowing in from the Little Murray River as well as the irrigation system (i.e. from Kangaroo & Racecourse Lakes, Kow Swamp and the Number 7 channel). Improved management of erosion and nutrient runoff from all catchments can benefit water quality in the lake. Stream rehabilitation programs and other projects coordinated by the Catchment Management Authorities, Landcare and environmental groups that seek to improve water quality issues are supported by this Plan.

Blue-green algae was often raised as a water quality issue through the public consultation phase of this plan. Blue-green algae is a reality of the environment that we live in and as such blooms will periodically occur.

Blue–green algae are naturally occurring bacteria that have the potential to be harmful as they can make people and animals sick. Low levels of blue-green algae are present in the water all the time and it is a natural occurrence for blue-green algae to rapidly increase in numbers. Lake Boga has a history of having high levels of blue-green algae during the warmer months.

There is currently a regular salinity and blue-green algae monitoring and reporting program at Lake Boga. The water bodies that supply water to Lake Boga are also monitored for salinity and blue-green algae (Kangaroo & Racecourse Lakes, Kow Swamp and the Number 7 channel). There are no other water quality parameters monitored at the Lake. It may be beneficial to investigate the need for such programs to help identify issues that may be affecting water quality.

Public awareness and attitudes to water quality issues can be enhanced through education programs. Emphasising the importance of water quality issues and improved community awareness programs are supported by this Plan. This is particularly important given that whilst blue-green algae is generally perceived to be a harmless by some members of the community, the algae can cause adverse reactions for sensitive members of the community who come into contact with the water. Additionally, regardless of individual sensitivities, should a toxic bloom occur serious symptoms can be experienced by all who directly ingest the water.

Objectives

Improved understanding of water quality in and catchment influence on Lake Boga.

Actions

14. Investigate the need for a water quality program that considers parameters other than Blue-Green Algae.
15. Develop a community education/awareness program for water quality issues.

Implementation: Roles and Responsibilities

Goulburn-Murray Water is primarily responsible for implementing these actions.
8.3 CULTURAL HERITAGE

Increased public awareness of the Aboriginal and European heritage has led to an obligation and responsibility for government agencies with land management activities and private landowners to protect this heritage.

The Swan Hill region, including Lake Boga, forms part of a Wadi Wadi, Wamba Wamba, Barapa Barapa Native Title Application under Commonwealth legislation.

In general terms, if a determination is made that Native Title exists on crown land, the exercise of Native Title rights is subject to pre-existing rights and interests. This means that existing land and water uses would, as a general rule, not be affected and any rights that may arise for the traditional owners would have to be exercised so that the pre-existing use is not affected.

The recognition of Native Title may give rise to some rights for negotiation/consultation if the land or water use is changed in the future. This right of negotiation/consultation may already exist given that the Swan Hill region, including Lake Boga, forms part of a Wadi Wadi, Wamba Wamba, Barapa Barapa Native Title Application under Commonwealth legislation.

The Swan Hill region, including Lake Boga, forms part of the Kerang Lakes wetlands, recognized for its significant cultural heritage. The Lake Boga Wetland Management Strategy (Water Ecoscience 1996) indicates that a survey of archaeological information for the Kerang Lakes Area identified “98 Aboriginal sites in the vicinity of Lake Boga, including burial sites, mounds (cooking and camping sites) and middens (concentrations of discarded freshwater mussel shell). Most of the recorded sites are located on the lake margins and to the south-east of the lake.” It is noted that the majority of this information has been collected in an ad-hoc fashion, and that a comprehensive survey may reveal a large number of unrecorded sites.

State and Commonwealth legislation provides specific protection for Aboriginal and non-Aboriginal heritage. In particular, the Aboriginal Heritage Act 2006 and associated Aboriginal Heritage Regulations 2007 protect Aboriginal heritage and provide a consistent approach to managing Aboriginal cultural heritage land use and development proposals. There are also other guidelines and regulations that set standards for identification, listing and conservation of heritage places. However, further to legislative requirements, there is a moral responsibility for government agencies and individuals to strive to preserve Australia’s cultural heritage for present and future generations.

The plan acknowledges that agencies are required to work collaboratively with key stakeholders including Registered Aboriginal Parties and other relevant agencies and stakeholders to improve understanding and protection of heritage items at Lake Boga.

8.3.2 European Heritage

The European heritage of Lake Boga reflects the usual pattern of settlement in the region during the 1800s, where settlers in the region took up land for farming. The Lake Boga Urban Design Framework also noted that Lake Boga was settled from the early 1850’s, firstly by pastoralists and the short-lived Moravian Mission on the banks of the lake, and later as a stopping point for coach routes. However, it was not until the 1890’s that the township itself was gazetted and began to develop with the establishment of churches, schools and the like. Considerable expansion occurred in the first two decades of the twentieth century. Between 1942 and 1947, the town became the site of a repair depot for Catalina Flying Boats, of which substantial evidence still remains.

The community highly values the Catalina Museum and other historical items such as the Cannie Ridge pumps, which are now sited adjacent to the caravan park for public display.

Objectives

To protect important cultural heritage at Lake Boga.

Actions

17. All agencies will continue to work collaboratively and with respect to protect areas of cultural heritage value.
18. All agencies will secure and commit to protect identified cultural heritage items.
19. The LBCG will commit to engage and consult with the local aboriginal community.

Implementation: Roles and Responsibilities

Goulburn-Murray Water and Swan Hill Rural City Council will coordinate these actions, in consultation with key stakeholders.
9.1 EROSION

An issue frequently raised during public consultation is erosion of the lake foreshore at full lake levels and erosion of the exposed lake bed during times of low water levels. A number of individuals also indicated a desire to undertake private erosion protection works.

Management of erosion of the lake bed is largely impracticable and is generally considered to be a low priority. A higher priority is management of foreshore erosion, particularly in areas where continued wave action could threaten public or private assets and property.

An Erosion Action Plan will be developed and progressively implemented to address these issues at Lake Boga. The Erosion Action Plan will include a summary of threats, mapping, recommended remediation technologies and prioritised public works program. It will also address the desire of individuals to undertake private works.

The Action Plan will acknowledge the land that is reserved for water supply purposes and will take into consideration funding constraints to prioritise future works programs.

Objectives
Proactive management of priority erosion threats around Lake Boga.

Actions

Implementation: Roles and Responsibilities
Goulburn-Murray Water is primarily responsible for this action, in partnership with Swan Hill Rural City Council.

Public Land Management

Public land at Lake Boga is managed by a number of agencies and is a valuable community asset. As responsible public land managers, agencies have an obligation to manage this land well for the broader public interest.

Examples of land management issues on and around the lake include management of erosion, pest plants and noxious weeds.
9.2 VEGETATION MANAGEMENT

A number of comments were received regarding the control of terrestrial and aquatic vegetation at Lake Boga. The comments focussed on the native *Phragmites australis* and to a lesser extent bamboo and noxious weeds establishing on the bed and foreshore of the lake. The spread of weeds from adjoining private properties also has the potential to negatively impact on the environment and amenity of the lake and the foreshore.

Opinions about the management of native vegetation are strongly held. The native Australian perennial *Phragmites australis* in particular generated substantial comment. Sections of the community see it negatively as a weed rather than positively as part of the natural environment and as a tool in controlling erosion.

Native aquatic vegetation provides habitat for fish and birds and also assists in the mitigation of erosion. The existence of native aquatic vegetation such as *Phragmites australis* does not adversely affect the operation of Lake Boga as a water storage and does not present a water storage management issue that impacts on Goulburn-Murray Water. As the growth of some of the native aquatic vegetation provides erosion protection, G-MW will not be undertaking actions to remove this vegetation.

The growth of *Phragmites australis* restricts public access to the lake in some locations that are seen as highly desirable for designated swimming areas. There will be a need to develop site specific strategies that will allow the management of *Phragmites australis* without adversely affecting the environment or foreshore erosion.

The Lake Boga Urban Design Framework identifies some actions to manage the *Phragmites australis* that, if implemented, may satisfy the community, Swan Hill Rural City Council and Goulburn-Murray Water.

Weed infestation mapping information will also be progressively developed to assist weed management efforts, particularly the noxious weeds on the foreshore as well as the noxious weeds that establish on the lake bed as the lake is drawn down in accordance with the VMMS operational plan.

**Objectives**

- Responsibly managed invasive vegetation species.
- Actions

  21. Develop detailed vegetation mapping information, and continue control programs for lake and foreshore areas.
  22. Develop an agreed weed control program.

**Implementation: Roles and Responsibilities**

Goulburn-Murray Water and Swan Hill Rural City Council are primarily responsible for this action for the lands that they manage at Lake Boga.
9.3 LAND TENURE

Most of the public land immediately surrounding the lake is managed by the Swan Hill Rural City Council and Goulburn-Murray Water.

The lake bed and some foreshore areas are Crown land reserved for Water Supply purposes over which G-MW has recently been appointed the Committee of Management under section 14(2) of the Crown Land (Reserves) Act 1978. Other foreshore reserves are managed by SHRCC as the designated Committee of Management and other Crown Lands are managed by Department of Sustainability and Environment. With the exception of the Murray Valley Highway, the roads around Lake Boga are the responsibility of SHRCC.

As the interface between public and private land is not always clearly delineated, some of the community have erected and/or built private infrastructure on public lands, including gardens, lawns, fences, bollards across roads, jetties, pergolas, sheds and retaining walls. This is not an issue confined to Lake Boga – it is an issue that confronts the community and agencies on a state wide basis.

The private infrastructure on public land raises a number of legal issues, particularly where people are injured whilst on or falling from the private infrastructure. Most of the private infrastructure on public land has been constructed without a Planning Permit from local government or without the appropriate licence from DSE. Furthermore, the construction of private infrastructure on public land restricts and restrains the right of the public to the access and use of the public land.

Clear delineation of property boundaries is an important aspect of responsible land management.

Objectives

Clearly delineate and communicate public land boundaries.

Actions

23. In consultation with adjacent landholders, progressively implement property boundary re-establishment surveys, incorporating line of sight markers.

24. Undertake investigations of existing private developments on Crown Land and have the developments appropriately recognised through licensing or removed.

25. Develop appropriate guidelines for private developments that may be licensed.

Implementation: Roles and Responsibilities

Goulburn-Murray Water, Department of Sustainability and Environment and Swan Hill Rural City Council will implement these actions.
10.1 DRYING LAKE

Much community comment focussed on the negative experiences suffered by the community when the lake dried out in 2007/08 until water returned to the lake in 2010. The comments particularly related to the fish deaths, insect invasions and the dust that blew off the dry lake bed. These issues will be a key focus of the drying lake contingency plan.

The inclusion of Lake Boga as a component of the Victorian Mid Murray Storages will mean that, under normal climatic conditions, Lake Boga will harvest and release water in most years and thus contain water above 67.00 metres AHD. However, no assurances can be given that the lake will receive water annually, particularly where a sequence of low rainfall years are experienced. In circumstances such as this, similar to recent years, it is possible the lake will fall well below 67.00 metres AHD or dry completely.

Goulburn-Murray Water will prepare a Drying Lake Contingency Plan in consultation with the other agencies that have an interest in or responsibilities associated with the lake. The contingency plan will form part of the VMMS operational plan rather than be a component of the Lake Boga Land and On-Water Management Plan.

Actions
26. Develop a Drying Lake Contingency Plan.

Implementation: Roles and Responsibilities

Goulburn-Murray Water is primarily responsible for this action, in partnership with Swan Hill Rural City Council and the Department of Primary Industries (Fisheries Victoria).

10.2 FLOODING

Flooding is a natural event that occurs from time to time. The inclusion of Lake Boga as part of the VMMS has altered the flood routing operations that occurred in the past. The VMMS operational plan requires a Flood Routing Plan to be created. This plan recognises that Lake Boga, Kangaroo Lake, Lake Charm and Kow Swamp are a linked system of storages that require an integrated Flood Routing Plan. The objective of the Flood Routing Plan is not to change/increase the flood risk, but rather to document and provide guidance on the methodology of routing the floods when they occur.

The Flood Routing Plan is expected to be completed in late 2011. The Flood Routing Plan is part of the VMMS operational plan and does not form part of the Lake Boga Land and On-Water Management Plan. Consequently this section is included for community information.
11 Appendices

11.1 APPENDIX A – AGENCY ROLES AND RESPONSIBILITIES FOR LAKE BOGA

Aboriginal Affairs Victoria
Aboriginal Affairs Victoria (AAV) is the Victorian Government’s central point of advice on all aspects of Aboriginal affairs in Victoria.

Environment Protection Authority Victoria
www.epa.vic.gov.au
EPA Victoria is a statutory authority established under the Environment Protection Act, 1970. It exists to ensure the protection of beneficial uses of air, water and land from the adverse impacts of waste and unwanted noise.

Fisheries Victoria
(Department of Primary Industries)
www.dpi.vic.gov.au
Fisheries Victoria is part of the Department of Primary Industries which promotes the sustainable development of primary industries within Victoria. Fisheries Victoria regulates recreational fishing compliance (licenses, size and bag limits) and managing fish habitat (e.g. timber removal) issues on lakebed areas.

Goulburn-Murray Water
www.g-mwater.com.au
G-MW maintains and manages the water supply operations of Lake Boga. G-MW manages the lake bed and some public foreshore land, co-ordinates the blue green algal monitoring and response program, and is responsible for licensing and approving structures on the Lake Boga foreshore.

Lower Murray Water
www.lmw.vic.gov.au
Lower Murray Water is responsible for urban water treatment and supply and wastewater management for the Lake Boga township. Lower Murray Water also provides advice and assistance to new developers, plumbing services and trade waste.

North Central Catchment Management Authority
www.nccma.vic.gov.au
The NCCMA is a statutory authority responsible for co-ordinating integrated catchment management and sustainable land and water use in northern Victoria. The North Central Catchment comprises the catchments of the Campaspe, Loddon, Avoca and Avon-Richardson rivers.

This is primarily achieved through the preparation, co-ordination and implementation of the North Central Regional Catchment Strategy, where the CMA has waterway management, flood intelligence and flood planning responsibilities.

Public Land Services (Department of Sustainability and Environment)
www.land.vic.gov.au
Public Land Services is the relevant unit within DSE responsible for the management of the Crown Land fronting Lake Boga as outlined in point 2.1 of this document.

Swan Hill Rural City Council
www.swanhill.vic.gov.au
Swan Hill Rural City Council is the local government authority with responsibility for statutory planning matters, environmental health matters, stormwater management, waste management services, management of public facilities and reserves, management of animals and local law enforcement. It also manages some foreshore land at Lake Boga.

Turtle Lagoon is a community initiative that has the aim of creating an area of environmental value.
11.2 APPENDIX B – MAP OF LAKE BOGA

11.3 APPENDIX C – MAP OF LAKE BOGA IN THE BROADER CATCHMENT
11.4 APPENDIX D – OPERATION OF LAKE BOGA


There is a requirement to harvest, store and release water using the VMMS to meet obligations under the Bulk Entitlement. The Bulk Entitlement requires G-MW to develop an annual operating plan for VMMS.

The annual operating plan outlines proposed operating levels for the storages in a given year and is guided by the seasonal conditions. But in general water is harvested into the VMMS from the Murray River and then released to benefit water users covered by the Murray Bulk Entitlement.

Lake Boga has a capacity of 37,794 ML at the full supply level of 69.50 metres AHD and a surface area of 940 ha.

Under normal operation, water levels in Lake Boga will between levels of 69.50 metres AHD and 67.22 metres AHD. At the level of 67.22 metres AHD, there is a depth of up to 2 metres of water in the deepest parts of the lake.

In years with average rainfall it is anticipated that lake levels will not drop below the 67.22 metres AHD. In general under the VMMS operation it is expected the Lake will have some water in it even in dry years. However, if a series of very dry years (years where water could not be harvested under VMMS) were to occur it is possible that lake could become dry through evaporation and leakage.

Although operation and lake levels will vary from season to season, in general water will be harvested into Lake Boga during the winter and spring months. Subject to sufficient water to harvest, the lake generally will be full around November to December.

Water will generally be released for entitlement holders and the environment during the summer months, normally from December to March. In general the water level will reduce over summer until it reaches the minimum operating level in April or May.

Water can be harvested from the Little Murray River provided river flows are sufficiently high enough to permit the harvesting to occur. At other times, the water will be harvested at Torrumbarry Weir and will be delivered to Lake Boga utilising the Torrumbarry Irrigation Area’s channel system.

The other source of water for Lake Boga is the flows emanating from the Avoca Marshes when the Marshes fill and spill following substantial flows on the Avoca River.

During Avoca flood events, water can overflow across Lakeside Drive at the north end of the Lake and into the Little Murray River. This occurs at a level of 70.03 metres AHD and at this level the Lake holds some 42,000 ML.

Lake Boga was the site of Australia’s largest inland flying boat repair centre used during the World War II.
### 11.5 APPENDIX E – SUMMARY OF ACTION ITEMS

<table>
<thead>
<tr>
<th>No.</th>
<th>Section</th>
<th>Action</th>
<th>Responsibility/Lead Agency</th>
<th>Proposed completion by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Community Awareness and Involvement</td>
<td>Establish a Lake Boga Plan Community Reference Group to guide the implementation of the plan and provide a two way means of communication between SHRCC, G-MW, other management agencies and the local community and lake users.</td>
<td>LBCG</td>
<td>October 2011</td>
</tr>
<tr>
<td>2.</td>
<td>Community Awareness and Involvement</td>
<td>Develop improved public information on recreation, water quality issues and other land and water management issues, lake operations and water levels.</td>
<td>G-MW</td>
<td>December 2011</td>
</tr>
<tr>
<td>3.</td>
<td>Community Awareness and Involvement</td>
<td>Develop an interactive website containing maps, plans, zones, FAQs, management arrangements and by-laws that can be used as a one-stop shop for information.</td>
<td>G-MW</td>
<td>October 2011</td>
</tr>
<tr>
<td>4.</td>
<td>Community Awareness and Involvement</td>
<td>Consistent and informative signage at all access points.</td>
<td>SHRCC</td>
<td>March 2012</td>
</tr>
<tr>
<td>7.</td>
<td>Recreation, Public Access and Safe use</td>
<td>Develop a fish management plan incorporating stocking of native species, and monitoring of native and exotic species in consultation with other lake users and peak fishing organisations.</td>
<td>Department of Primary Industries (Fisheries), fishing representatives and G-MW.</td>
<td>December 2012</td>
</tr>
<tr>
<td>8.</td>
<td>Recreation, Public Access and Safe use</td>
<td>Implement regular public safety and liability risk assessments of public reserve infrastructure.</td>
<td>SHRCC</td>
<td>Ongoing</td>
</tr>
<tr>
<td>9.</td>
<td>Recreation, Public Access and Safe use</td>
<td>Investigate potential to establish a walking/bicycle path around lake.</td>
<td>SHRCC</td>
<td>June 2012</td>
</tr>
<tr>
<td>10.</td>
<td>Recreation, Public Access and Safe use</td>
<td>Establish collaborative agreements between key agencies for the coordinated management of access and safety on public reserve land.</td>
<td>SHRCC, G-MW, DSE</td>
<td>June 2012</td>
</tr>
<tr>
<td>11.</td>
<td>Turtle Lagoon</td>
<td>Undertake development works including bank stabilization when Lake water levels permit.</td>
<td>SHRCC</td>
<td>June 2012</td>
</tr>
<tr>
<td>12.</td>
<td>Environment and Cultural Heritage</td>
<td>Endorse the recommendations of the Lake Boga Urban Design Framework for works on the reserves that protect biodiversity values and enhance visual amenity.</td>
<td>SHRCC, G-MW, NCCMA, DSE, Parks Victoria</td>
<td>Ongoing</td>
</tr>
<tr>
<td>13.</td>
<td>Environment and Cultural Heritage</td>
<td>Support the activities, consistent with this Plan, of local interest groups and volunteer individuals and assist them to seek external funding opportunities to better understand and improve native flora populations at Lake Boga.</td>
<td>SHRCC, G-MW, NCCMA, DSE, Parks Victoria</td>
<td>Ongoing</td>
</tr>
<tr>
<td>14.</td>
<td>Environment and Cultural Heritage</td>
<td>Investigate the need for a water quality program that considers parameters other than Blue-Green Algae.</td>
<td>G-MW</td>
<td>June 2013</td>
</tr>
<tr>
<td>15.</td>
<td>Environment and Cultural Heritage</td>
<td>Develop a community education/awareness program for water quality issues.</td>
<td>G-MW</td>
<td>June 2012</td>
</tr>
<tr>
<td>17.</td>
<td>Environment and Cultural Heritage</td>
<td>All agencies will continue to work collaboratively and with respect to protect areas of cultural heritage value.</td>
<td>G-MW &amp; SHRCC</td>
<td>Ongoing</td>
</tr>
<tr>
<td>18.</td>
<td>Environment and Cultural Heritage</td>
<td>All agencies will secure and commit to protect identified cultural heritage items.</td>
<td>G-MW &amp; SHRCC</td>
<td>Ongoing</td>
</tr>
<tr>
<td>19.</td>
<td>Environment and Cultural Heritage</td>
<td>The LBCG will commit to engage and consult with the local aboriginal community.</td>
<td>LBCG</td>
<td>Ongoing</td>
</tr>
<tr>
<td>21.</td>
<td>Public Land Management</td>
<td>Develop detailed weed infestation mapping information, and continue control programs for lake and foreshore areas.</td>
<td>G-MW &amp; SHRCC</td>
<td>March 2012</td>
</tr>
<tr>
<td>22.</td>
<td>Public Land Management</td>
<td>Develop an agreed weed control program.</td>
<td>G-MW &amp; SHRCC</td>
<td>June 2012</td>
</tr>
<tr>
<td>23.</td>
<td>Public Land Management</td>
<td>In consultation with adjacent landholders, progressively implement property boundary re-establishment surveys, incorporating line of sight markers.</td>
<td>G-MW &amp; SHRCC</td>
<td>December 2013</td>
</tr>
<tr>
<td>24.</td>
<td>Public Land Management</td>
<td>Undertake investigations of private developments onto Crown Land and have the developments appropriately recognised through licensing or removed.</td>
<td>G-MW, DSE &amp; SHRCC</td>
<td>March 2013</td>
</tr>
<tr>
<td>25.</td>
<td>Public Land Management</td>
<td>Develop appropriate guidelines for private developments that may be licensed.</td>
<td>G-MW, DSE &amp; SHRCC</td>
<td>June 2012</td>
</tr>
</tbody>
</table>
## 11.6 APPENDIX F – AGENCY QUICK REFERENCE GUIDE

### Agency Quick Reference Guide for Lake Boga Perimeter Land

<table>
<thead>
<tr>
<th>Issue</th>
<th>Foreshore &amp; Lake Bed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal cultural heritage</td>
<td>Aboriginal Affairs Victoria</td>
</tr>
<tr>
<td>Boating management – zones, buoys, signage</td>
<td>Swan Hill Rural City Council, Transport Safety Victoria</td>
</tr>
<tr>
<td>Boating management – policing and enforcement</td>
<td>Victoria Police (Water Police), Swan Hill Rural City Council, Transport Safety Victoria</td>
</tr>
<tr>
<td>Blue-green algae</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Camping</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Commercial operations, developments and events</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Lake Operations (lake level and storage releases)</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Environmental incident (pollution, spills, noise, reportable incidents etc)</td>
<td>Environment Protection Authority Victoria</td>
</tr>
<tr>
<td>Erosion (public foreshore land)</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Event licensing - on water</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Event licensing - on foreshore land</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Event Planning Approval</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Fishing information, stocking, licensing and enforcement</td>
<td>DPI Fisheries Victoria</td>
</tr>
<tr>
<td>Fish habitat management</td>
<td>DPI Fisheries Victoria, Goulburn-Murray Water</td>
</tr>
<tr>
<td>Fish deaths</td>
<td>EPA Victoria, Goulburn-Murray Water, DPI Fisheries</td>
</tr>
<tr>
<td>Flood warnings</td>
<td>Bureau of Meteorology</td>
</tr>
<tr>
<td>Flood/weather emergency (non life threatening)</td>
<td>Victoria State Emergency Service</td>
</tr>
<tr>
<td>Illegal activity &amp; anti-social behaviour</td>
<td>Victoria Police</td>
</tr>
<tr>
<td>Public reserves and facilities (e.g. boat ramps, toilets, play ground equipment, BBQs, roads, etc.)</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Rubbish &amp; litter</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Trees and foreshore (riparian) vegetation</td>
<td>Swan Hill Rural City Council, Goulburn-Murray Water, North Central Catchment Management Authority</td>
</tr>
<tr>
<td>Statutory Planning</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Tourist information (general)</td>
<td>Swan Hill Rural City Council</td>
</tr>
<tr>
<td>Water quality (blue-green algae)</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Water supply &amp; water quality (urban, potable drinking &amp; household use)</td>
<td>Lower Murray Water</td>
</tr>
<tr>
<td>Water supply (non-reclutated, non-potable stock and domestic licensing and use)</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Water supply (downstream releases)</td>
<td>Goulburn-Murray Water</td>
</tr>
<tr>
<td>Weed &amp; Vegetation Management (public land)</td>
<td>Swan Hill Rural City Council, Goulburn-Murray Water</td>
</tr>
</tbody>
</table>

## 11.7 APPENDIX G – GLOSSARY

**AHD** – Australian Height Datum.

Australian Height Datum - is roughly the height above sea level.

**Committee of Management** – a body appointed by the Minister for Environment and Climate Change to manage certain parcels of reserved Crown land, pursuant to the Crown Land (Reserves) Act 1978.

**Crown** – generally means the State or Federal Government.

**Crown land** – land that is vested in the Crown.


**Foreshore** – the Crown Land behind the bank of the lake.

**Lake Boga Urban Design Framework** – a document published by the Swan Hill Rural City Council which identifies key objectives and recommendations for the improved image and enhancement of Lake Boga’s environment and facilities, which includes the lake and foreshore, Marraboor Street and the Murray Valley Highway.

**Lake Boga District Community Plan** – a community plan, managed by Lake Boga Inc, which contains a number of projects identified by the community as being beneficial to the Lake Boga community.

**LBCG** – Lake Boga Co-ordination Group.

**Lake Boga Co-ordination Group** – recognising that Lake Boga had multiple Agencies managing parts of Lake Boga, the Government approved the creation of the Lake Boga Co-ordination Group (LBCG) to manage the transition of Lake Boga to become part of the VMMS. The LBCG is comprised of the Department of Sustainability and Environment, Goulburn-Murray Water, North Central Catchment Management Authority and Swan Hill Rural City Council.

**Mounds** – Aboriginal mounds are places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and sometimes burials. Aboriginal people often cooked their food in earth ovens. To do this, they heated stones or burnt clay lumps and placed them in a pit. The food – a kangaroo or tubers for example – was placed on top of the heat retainers and the pit was filled in. Once the food was cooked, it was removed, and all the cooking debris, such as stone, clay and ash, was swept out. Over time, the debris from cooking and other domestic activities combined with natural sediments to form a mound.

**Victorian Mid Murray Storages** – Kangaroo Lake, Kow Swamp, Lake Boga and Lake Charm form the Victorian Mid Murray Storages. The function of the VMMS is to capture surplus Victorian tributary flows and store and release the water over the summer months to downstream communities and consumptive users.

**VMMS** – Victorian Mid Murray Storages.
11.8 APPENDIX H – REFERENCES


Government of Victoria, Aboriginal Heritage Act 2006

Department of Planning and Community Development

framework-of-historical-themes/Case-Study-6


Lake Boga District Community Plan 2011 - 2013