


## Heritage Inventory Sheet

<b>Item Name</b>	Prospect Reservoir and Surrounding Area		
<b>Recommended Name</b>	Prospect Reservoir and Surrounding Area (part only)		
<b>Site Image</b>	No image available of the curtilage related specifically to Cumberland.		
			
	Prospect Reservoir (Source: NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir)		
<b>Address</b>	I Picrite Close, Prospect NSW 2148		
<b>Lot/Section/DP</b>	Part 304	-	1122291
<b>Draft Cumberland LEP ID</b>	I10370		
<b>Former LEP ID</b>	I10370 and A8 (Holroyd LEP)		
<b>Heritage Conservation Area</b>	Not included		
<b>Date Updated</b>	March 2020		
<b>Significance Level</b>	STATE		
<b>Site Type</b>	Level 1	Complex/Group	
	Level 2	Utilities - Water	

## Curtilage Map

The Cumberland Council LGA includes one small portion of the whole Prospect Reservoir State Heritage Register item.



## Statement of Significance

Prospect Reservoir is historically significant at the state level as it is a central element of the Sydney water supply system. As a part of the Upper Nepean Scheme, the Reservoir has continued to supply water to Sydney for over 120 years, and generally still operates in the same way as it was originally constructed. That it has continued to be used since its construction reflects the inventive and progressive way in which the reservoir was designed and built, and this contributes to its significance greatly.

The Reservoir reflects three significant changes in municipal life during the late 19th century; the development of water and general public utility services; the importance of ensuring an adequate and dependable centralised water supply; and the collective bureaucratic response to the delivery of capital works of this nature.

Built between 1882 and 1888, it was an outstanding achievement in civil engineering technology at the time, using innovative design and construction methods. It has a high level of historical engineering significance.

Prospect Reservoir is strongly associated with the Harbours and Rivers Branch of the NSW Public Works Department, particularly Edward Orpen Moriarty, Head of the branch at the time of the Reservoir's construction, and later with the Board of Water Supply and Sewerage (later the Metropolitan Water and Sewerage Board) and most recently, with the Sydney Catchment Authority.

The Reservoir area is aesthetically significant, as a picturesque site with a large expanse of water, parklands, landscaping and bush. The place is valuable for its recreational amenity for passive recreation, punctuating the monotony of the surrounding urban landscape. It has been used for recreation by the community for generations.

It continues to regulate the release of water from Prospect Reservoir to the Lower Canal and the Sydney Distribution system.

The place also contains examples of functional colonial architecture.

The listing includes Prospect Reservoir, landscape elements and all associated structures, including pumping stations, to the property boundary. The environs of the reservoir and hence this listing also include a wide range of items, which relate to later amplification of water supply. These include examples of 1920s and 30s pumping stations, a residence, and the 72" (1,800 mm) main, constructed between the Upper Canal and Pipe Head in 1937. Later items associated with the Warragamba Supply Scheme and more modern developments include several more recent pumping stations, screening and boosting plants on the eastern and southern sides of the Reservoir, and the 84 inch (2,100 mm) water main from Prospect, to Pipe Head, completed in 1958.

Criteria Assessment	
a) Historic	<p>Prospect Reservoir is historically significant at the state level as it is a central element of the Sydney water supply system. As a part of the Upper Nepean Scheme, the Reservoir has continued to supply water to Sydney for over 120 years, and generally still operates in the same way as it was originally constructed. That it has continued to be used since its construction reflects the inventive and progressive way in which the reservoir was designed and built, and this contributes to its significance greatly.</p> <p>The Reservoir reflects three significant changes in municipal life during the late 19th century; the development of water and general public utility services; the importance of ensuring an adequate and dependable centralised water supply; and the collective bureaucratic response to the delivery of capital works of this nature.</p>
b) Associative	<p>Prospect Reservoir is strongly associated with the Harbours and Rivers Branch of the NSW Public Works Department, particularly Edward Orpen Moriarty, Head of the branch at the time of the Reservoir's construction, and later with the Board of Water Supply and Sewerage (later the Metropolitan Water and Sewerage Board) and most recently, with the Sydney Catchment Authority.</p>
c) Aesthetic/Technical	<p>The Reservoir area is aesthetically significant, as a picturesque site with a large expanse of water, parklands, landscaping and bush. The place is valuable for its recreational amenity for passive recreation, punctuating the monotony of the surrounding urban landscape. It has been used for recreation by the community for generations.</p>
d) Social	<p>The item does not meet this criterion.</p>
e) Scientific	<p>Built between 1882 and 1888, it was an outstanding achievement in civil engineering technology at the time, using innovative design and construction methods. It has a high level of historical engineering significance.</p>
f) Rarity	<p>This item is assessed as historically rare state-wide.</p>
g) Representativeness	<p>The item does not meet this criterion.</p>

## Physical Description

The portion of Prospect Reservoir which sits within the Cumberland Council Local Government Area is a heavily vegetated hill on the eastern side of the reservoir. The area is not accessible by road and is fenced off from the public.

The following physical description for the bushland surrounding the reservoir has been quoted from the NSW Office of Environment and Heritage State Heritage Register listing sheet for 'Prospect Reservoir and Surrounding Area'.

*The bushland surrounding Prospect Reservoir is classified as Cumberland Plain Woodland (CPW). Less than 13% of CPW remains and a high proportion of this figure is heavily degraded through weed invasion, rubbish dumping, illegal vehicle use and overgrazing. In the protected catchment these degrading influences are largely absent and this is reflected in the excellent bushland condition.*

*Cumberland Plain Woodland is listed at state and federal levels as an endangered ecological community. Legislation at both levels provides a framework for the protection of ecological communities under threat.*

*Bushland condition is best in the northern section and decreases in the southern areas. A rapid flora survey of Prospect Reservoir (approximately 1km North from spoil site) revealed over fifty native species.*

*Prospect Reservoir is an important refuge for many fauna species in Western Sydney. Mammals such as wombats, echidnas and eastern grey kangaroos are listed as recent sightings in the National Park species atlas. Importantly, over 12 species of bats (including threatened species) have been recorded within the vicinity of the reservoir.*

*The bushland near the filtration plant is less diverse and more degraded than in the immediately adjacent Sydney Catchment Authority land. A similar but much more restricted suite of native species can be found there. Exotic species including *Chloris gayana* (Rhodes grass), *Setaria gracilis* (pigeon grass) and *Eragrostis curvula* (African love grass) dominate. These species are indicators of significant soil disturbance. The vegetation condition varies from a young eucalypt canopy with a low diversity understorey to eucalypt regrowth in a largely exotic pasture. Other areas are exotic pastures with no native element present.*

*Despite the lower quality of bushland this site still has significant ecological importance. If rehabilitated, it would significantly improve ecological connectivity, especially between Prospect Reservoir and the riparian vegetation along Eastern Creek.*

As the site was inaccessible, a condition grading has not been provided.

Condition	Good	Fair	Poor
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## Alterations and Additions

- N/A

As the site was inaccessible, an integrity grading has not been provided.

Integrity	High	Moderate	Low
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\* element detracts from the overall cultural significance of the place

## Historical Notes

Construction years	1888
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The following history has been quoted from the NSW Office of Environment and Heritage State Heritage Register listing sheet for 'Prospect Reservoir and Surrounding Area'.

*In 1867, the Governor of NSW appointed a Commission to recommend a scheme for Sydney's water supply, and by 1869 it was recommended that construction commence on the Upper Nepean Scheme. This consisted of two diversion weirs, located at Pheasant's Nest and Broughton's Pass, in the Upper Nepean River catchment, with water feeding into a series of tunnels, canals and aqueducts known as the Upper Canal. It was intended that water be fed by gravity from the catchment into a reservoir at Prospect. This scheme was to be Sydney's fourth water supply system, following the Tank Stream, Busby's Bore and the Botany (Lachlan) Swamps.*

*Designed and constructed by the Public Works Department of NSW, Prospect Reservoir was built during the 1880s and completed in 1888. Credit for the Upper Nepean Scheme is largely given to Edward Orpen Moriarty, the Engineer in Chief of the Harbours and Rivers Branch of the Public Works Department from 1858-88 (B Cubed Sustainability, 2005, 7).*

*The quintessential feature of the scheme was the diversion of the Nepean River below its junction with the Avon and Cordeaux Rivers. The Peasant's Nest weir, near the township of Wilton, diverts the water through a 7km long tunnel to the Cataract River at Broughton's Pass, near the township of Appin, where a similar weir diverts the flow of the four rivers through a 58km system of tunnels, aqueducts and open channels to Prospect Creek upon which the earthen dam wall is located. When it was completed in 1888, Prospect reservoir provided the storage component of the scheme, as the weirs did not have the capacity to store water.*

*Between 1893 and 1916, extensive remedial works were carried out in order to correct slumps in the upstream face.*

*With completion of Warragamba Dam in 1960, Prospect Reservoir continued to play an important role in storing Sydney's water. A second pipeline linking Warragamba and Prospect was completed in 1966, significantly increasing the volume of water that could be transferred during peak demand periods. In 1979-80, a major strengthening programme on the reservoir wall was completed by increasing the volume of its downstream side. The upstream face was strengthened in 1997 (Sydney Water Corporation) (Caitlin Allen, Dept. of Commerce/Heritage Group, 2006).*

*With the commissioning of the Prospect Water Filtration Plant in 1996, raw water transferred from Warragamba and the Upper Nepean Dams was sent directly to the treatment facility, by-passing the Reservoir. However the filtration plant can draw water directly from the Reservoir if needed. This is one of the largest such facilities in the world and it has changed the role of the Reservoir to that of a service reservoir and large off-line settling basin for the Warragamba & Upper Canal systems in the event of a water quality problem, covering daily fluctuations of demand in the distribution system. Since its construction, parts of the area surrounding the reservoir have formerly been used for passive community recreation, and consequently the Water Board provided numerous parks and picnic facilities, primarily on its eastern side (B Cubed Sustainability, 2007,3)*

*From 2006 a new raw water pumping station and associated infrastructure were built on the reservoir's south-eastern side, including pipeline, power supply and access road.*

*It was formerly the major distribution reservoir for Sydney's main water supply system until the commissioning of the Prospect Water Filtration Plant in 1996. The reservoir's role has since been changed to that of an off-line storage service reservoir, which covers daily fluctuations of demand in the distribution system. The reservoir can now be drawn on when needed to supplement the Warragamba Pipeline and Upper Canal inflows into the Filtration Plant. It remains an essential component of Sydney's water supply system and therefore is critical Government infrastructure.*

Scour/Outlet System:

Prior to construction of the Prospect Water Filtration PLant, the water supply was delivered to the Lower Canal via the scour/outlet system, which consists of a number of components (including submerged inlet pipelines, outlet tower with access walkway, lower valve house with outlet to the Lower Canal, scour pipelines, various control and guard valves, brick-lined interconnecting tunnel between outlet valve and lower valve house, with ventilation shaft and access shaft/manhole, discharge pipelines under the Sydney Water Corporation-owned picnic area and an outlet structure.

The Outlet Tower is a small octagonal brick structure standing in the Reservoir waters with access by a small riveted iron footbridge. The tower extends below water with three main platforms accessed by ladders. The interconnecting tunnel is routed in a large U running from the Outlet Tower, into the hillside, then curving back to skirt the end of the Reservoir wall.

The Lower Valve House is similar in style to the Outlet Tower and originally controlled water entering the Lower Canal. The Lower Canal was decommissioned in the 1980s, but the original equipment in the Lower Valve House remains largely intact. The tunnel extends a short distance beyond the Lower Valve House.

The Scour/Outlet system originally terminated at the end of the tunnel, with a simple brick headwall with wing-walls and iron grill gate. In the late 1970s the scour system was extended with twin concrete pipes and a new outlet structure constructed closer to Prospect Creek. At that time the area downstream and east of the Reservoir wall was re-shaped to form a public picnic area, burying the end of the tunnel and new concrete pipes.

Since decommissioning of the Lower Canal, the sole purpose of the Scour/Outlet system is to allow scouring or draining of the Reservoir. This is critical to ensure dam safety and consequently the system must be adequately maintained. The primary control valves were imported from England in 1887 and are believed to be the last remaining examples of their type in the world. They are in poor condition and at high risk of failure if operated to drain the Reservoir. They are beyond their operational life and cannot be refurbished. Consequently, SCA can no longer test the system as required or safely dewater the Reservoir under emergency conditions (SCA, 2009, 1).

Recommendations				
Heritage Management		Existing Built and Landscape Elements		Future Development and Planning
1. Maintain this item's heritage listing on the LEP.	X	6. Original fabric is highly significant and should be maintained.	X	12. Alterations and additions should respond to the existing pattern of development, with careful consideration of the setting (form, scale, bulk, setback and height).
2. Maintain this item's listing as part of the Heritage Conservation Area.		7. Unsympathetic alterations that detract from the cultural significance of the item should be removed.		13. New alterations and additions should respect the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).
3. Consider delisting as an individual item from the LEP.		8. Maintain heritage landscape elements and schemes.	X	14. Future uses for this item should be compatible with its historical functions/associations.

<p><b>4.</b> Consider additional research to nominate this item for the State Heritage Register.</p>	<p><b>9.</b> Maintain the existing setting of the heritage item, informed by the historic pattern of neighbouring development (form, scale, bulk, setback and height).</p>	
<p><b>5.</b> The heritage curtilage for this item should be revised/reduced.</p>	<p><b>10.</b> Maintain the historic aesthetic/character of the item and area (e.g. paint scheme, materiality, style, landscape elements).</p>	
	<p><b>11.</b> The condition of this item is poor. Condition and maintenance should be monitored.</p>	

Other recommendations and/or comments:

- For the purposes of consolidation and consistency, and because the two items directly relate to one another, items I01370 and A8 should be amalgamated to form one item on the Cumberland LEP. This item should be given the LEP ID I01370 in line with the State Heritage Register listing ID which can cover any relevant built, landscape and archaeological values.
- The curtilage for the Cumberland LEP will not require a revised curtilage as only a portion is located in the Cumberland LGA and this is already accurately captured in the LEP.



### Listings

Heritage Listing	Listing Title	Listing Number
Heritage Act – State Heritage Register	Prospect Reservoir and Surrounding Area	I01370
Local Environmental Plan	Prospect Reservoir and Surrounding Area	I01370
Heritage Study	Prospect Reservoir and Surrounding Area	I01370
National Trust Australia Register	Sydney Water Supply Prospect Reservoir	No ID number

### Previous Studies

Type	Author	Year	Title
Heritage Study	Extent Heritage Pty Ltd	2019	Cumberland LGA Heritage Study
Heritage Study	Graham Brooks & Associates	1998	Holroyd Heritage Study
Heritage Study	Neustein & Associates	1992	Holroyd Heritage Study

### Other References

- NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir and Surrounding Area, <https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=5045336>

### Limitations

- Access to all heritage items was limited to a visual inspection from the public domain. The interiors of buildings and inaccessible areas such as rear gardens were not assessed as part of this heritage study.
- Condition and site modification assessment was limited to a visual inspection undertaken from the public domain.
- Unless additional research was required, historical research for all heritage items was based on an assessment of previous LGA heritage studies, the Thematic History (prepared by Extent Heritage, 2019) and existing information in former heritage listing sheets.

### Additional Images



Entrance to Prospect Reservoir.



View along Picrite Close, towards entrance to Prospect Reservoir.





Lower Valve House and Receiving Basin on the Lower Canal (Source: NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir)



Pipelines (Source: NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir)



By-Wash Channel (Source: NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir)



Upper Canal near its entry to Prospect Reservoir (Source: NSW Office of Environment and Heritage, State Heritage Register listing sheet for Prospect Reservoir)