

The history of Sydney Water

Sydney's water supply and wastewater treatment

Since the earliest days of European settlement, providing adequate water and sewerage services for Sydney's population has been a constant challenge. Sydney Water and its predecessor, the Metropolitan Water Sewerage and Drainage Board, has had a rich and colourful history. This history reflects the development and growth of Sydney itself.

Over the past 200 years, Sydney's unreliable rainfall has led to the development of one of the largest per capita water supplies in the world. A truly reliable water supply was not achieved until the early 1960s after constructing Warragamba Dam.

By the end of the 20th Century, despite more efficient water use, Sydney once again faced the prospect of a water shortage due to population growth and unreliable rainfall patterns.

In response to this, the NSW Government, including Sydney Water, started an ambitious program to secure Sydney's water supplies. A mix of options has been being used including water from our dams, desalination, wastewater recycling and water efficiency.

Timeline

1700s

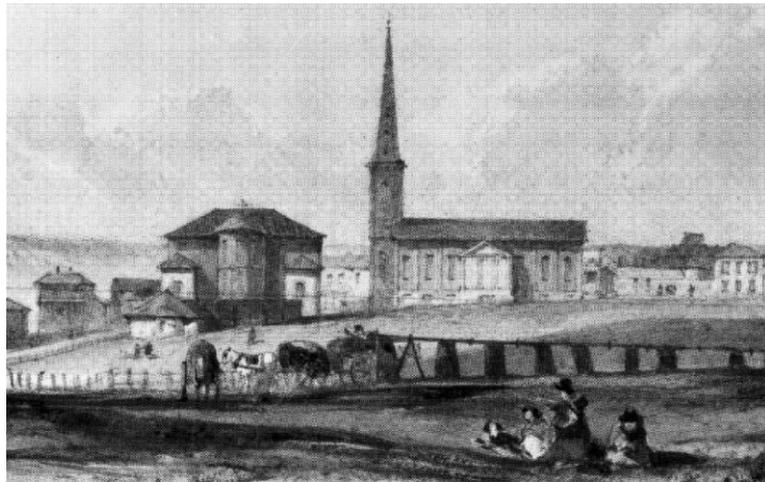
1788 – 1826 Sydney was chosen as the location for the first European settlement in Australia, in part due to its outstanding harbour and the availability of fresh water from the Tank Stream. The Tank Stream remained Sydney's main water source for 40 years. However, pollution rapidly became a problem.



A painting by J. Skinner Prout of the Tank Stream in the 1840s

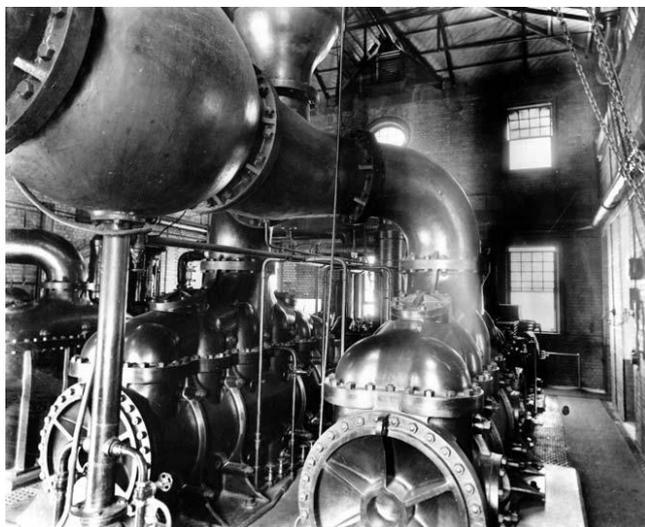
1800s

- 1880 Legislation was passed under Sir Henry Parkes, as Premier, which constitutes the Board of Water Supply and Sewerage.
- 1826 The Tank Stream was abandoned as a water supply because of pollution from rubbish, sewage and runoff from local businesses like piggeries.
- 1837 – 1858 Busby's Bore was constructed to pipe water from Lachlan Swamps (now Centennial Park). This was the colony's first major public engineering project. Water was pumped to Hyde Park where it was transferred to water carts for distribution to homes and businesses.



J. Skinner Prout's painting of the Hyde Park outlet of Busby's Bore, where water carts were filled

- 1857 The Sydney City Council approved five main sewage outfalls to discharge into Sydney Harbour. The Bennelong Point Sewerage System became Sydney's first planned system to dispose of the city's sewage. This was before one year before the construction of the modern sewerage system in London, after the 'Great Stink'. This greatly improved the public health and living standards of the community.
- 1859 – 1895 Water was pumped from Botany Swamps to Crown Street Reservoir. Today, Crown Street is the oldest water supply reservoir still in service.



Water pumps at Crown Street Pumping Station. Installed in 1889 and still pumping to Centennial Park today!

- 1875 At this time, the Sewerage and Health Board recommended sewage be discharged to Botany Bay and to the ocean at Bondi.
- 1885 – 1886 The Hudson Brother's Emergency Scheme was created. This scheme delivered water to Botany Swamps from the incomplete Nepean Scheme. This was a temporary measure and was completed in six months. It successfully addressed water shortages until the Nepean Scheme was finished in 1888.
- 1886 Sydney's first sewage reuse scheme begins which involved disposing wastewater at the Botany Sewage Farm.
- 1888 The Board of Water Supply and Sewerage was created. This was Sydney's first water and sewerage authority which would later become Sydney Water.
- Lieutenant Colonel T Rowe was appointed as the first President of the Board of Water Supply and Sewerage.
- The Nepean Scheme successfully linked the Nepean, Cataract, Cordeaux and Avon Rivers to deliver water to Sydney through the Upper and Lower Canals.

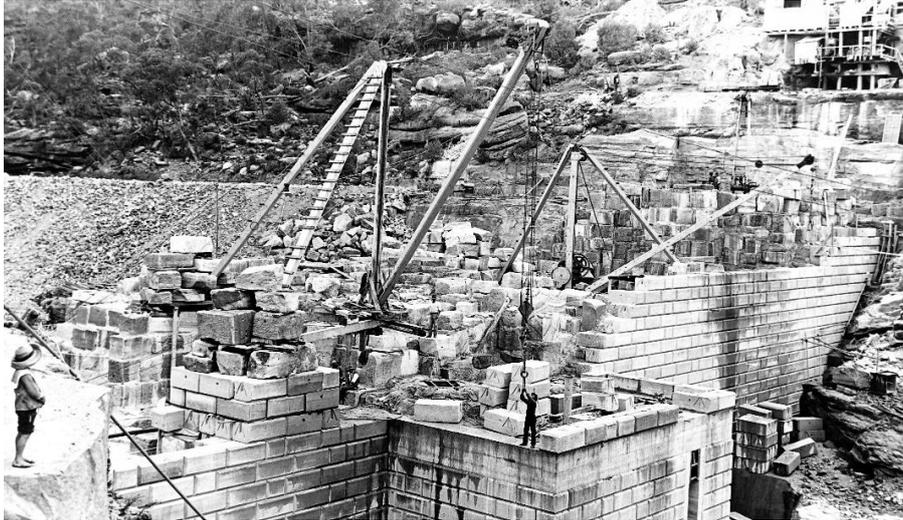


Members of the first Board of Water Supply and Sewerage

- 1892 The Board was renamed the Metropolitan Board of Water Supply and Sewerage.
- 1894 The Board took over maintenance of major stormwater channels in Sydney.
- 1898 The first sections of the Western and Southern Sewerage System delivered sewage to Botany Sewage Farm.
- 1899 The first sections of the Northern Sewerage System delivered wastewater to Folly Point treatment works.

1900s

- 1903 Wollongong water supply was connected.
- 1907 Construction of Cataract Dam began. It was completed in 1915.



Construction of Cataract Dam in 1905

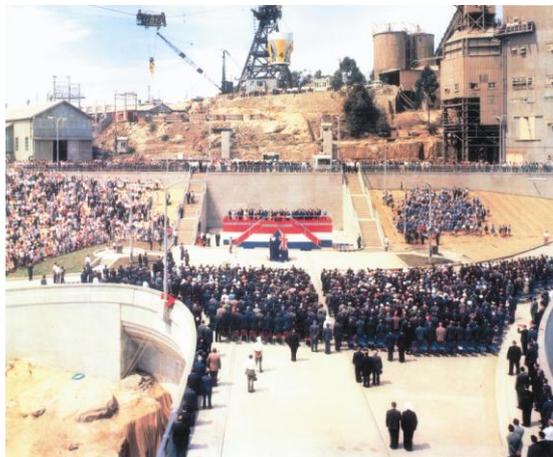
- 1916 Southern and Western Suburbs Ocean Outfall Sewer (S&WSOOS) No.1 was completed to Malabar.
- 1917 Former Board Secretary Major General William Holmes was killed on the Western Front. Major General Holmes was Board Secretary when he was first commissioned to lead an expeditionary force to occupy German-controlled New Guinea in 1915. He subsequently led the 5th Infantry Brigade at Gallipoli and France. His name is commemorated in General Holmes Drive near Sydney Airport.
- 1916 – 1930 Northern Suburbs Ocean Outfall Sewer (NSOOS) was constructed.
- 1918 Construction began on Cordeaux Dam. Public Works Department designer, E.M. de Burgh, was inspired by the Egyptian architectural style to design the last parts of the dam, making it one of the most beautiful dams in Sydney. It was completed in 1926.



Completed Cordeaux Dam

- 1921 Construction began on Avon Dam. It was completed in 1927
- 1922 E.M. de Burgh, also applied his Egyptian architectural influence to the design of the Middle Harbour Syphon. This inverted syphon was built to allow sewage pipes to pass under waterways without the need to dig a tunnel.

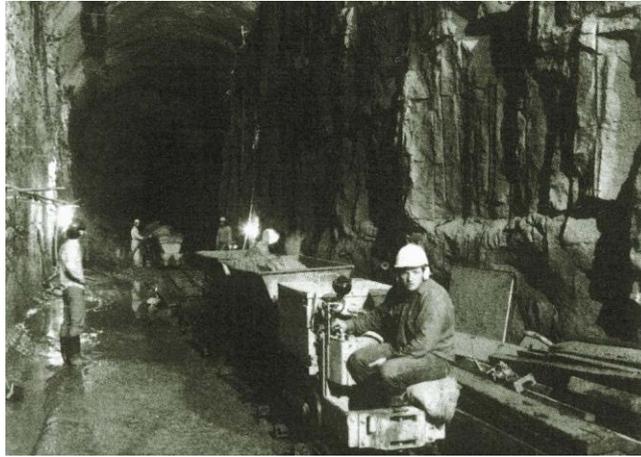
- 1924 The Board was renamed the Metropolitan Water, Sewerage and Drainage Board and gained control of its own finances for the first time.
- 1925 Construction began on Nepean Dam. It was completed in 1935.
- 1927 Construction began on Woronora Dam. It was completed in 1941.
- 1929 The first sections of the Wollongong Sewerage Scheme were completed.
- 1934 – 1942 Sydney experienced one of its most severe and extended droughts. The Great Drought, as it came to be known, lasted eight years and almost caused the complete failure of water supplies in Sydney. At its worst, dam levels fell to 12.5%. Drastic restrictions were imposed, including mandatory one third cuts to brewery productions. Fortunately, rain fell in all catchments in 1942.
- 1936 – 1941 Southern & Western Suburbs Ocean Outfall Sewer No. 2 is constructed.
- 1936 – 1953 Bondi Sewage Treatment Plant (STP) was constructed.
- 1938 The first inland sewerage schemes were built at Fairfield, Camden and Campbelltown.
- 1940 In response to the Great Drought, the Warragamba Emergency Scheme was commissioned.
- 1940 The Board moves into a new head office at the corner of Pitt Street and Wilmott Lane. This would later become the low-rise section of Sydney Water's (now former) head office on the corner of Bathurst and Pitt Streets.
- 1946 – 1960 Warragamba Dam was constructed. To this day, Warragamba is one of the largest domestic water supplies in the world. It covers an area of up to 75 square kilometres and holds 2, 031 billion litres of water – four times the volume of Sydney Harbour.



The crowd gathers for the official opening of Warragamba Dam in 1960

- 1957 Avon Dam water was diverted to supply the Illawarra.
- 1958 Port Kembla Sewerage Scheme was commissioned.
- 1959 Cronulla Sewerage System was commissioned. Work commenced on Sydney's largest sewage treatment plant at Malabar.
- 1961 The Board installed its first mainframe computer system – the IBM 1401 – mostly to handle billing and general accounting.
- 1966 The high-rise section of Sydney Water's former head office on the corner of Pitt and Bathurst Streets was completed.
- 1967 The NSW Parliament votes to add fluoride to water supplies.

- 1971 – 1977 The Shoalhaven Scheme is constructed (Tallowa Dam, Fitzroy Falls Reservoir, Wingecarribee Dam).
- 1972 Construction of North Head Sewage (wastewater) Treatment Plant began. It was completed in 1984



Building the pumping chamber for North Head STP in 1972.

- 1980 Blue Mountains water supply scheme was taken over by the Board.
- 1984 – 1990 Deepwater ocean outfalls were constructed at Bondi, North Head and Malabar Wastewater (Sewage) Treatment Plants. The outfalls dispersed the primary treated effluent about four kilometres offshore, considerably improving water quality at Sydney's beaches.
- 1987 The Metropolitan Water, Sewerage and Drainage Board was reconstituted as the Sydney Water Board.
- 1990 The Steamwatch Program began and involved community members monitoring water quality of local creeks and rivers throughout greater Sydney, the Blue Mountains and the Illawarra.
- 1991 Demand management programs were developed to reduce water demand and improve water efficiency to respond to drought.
- 1994 The Board was corporatised and renamed Sydney Water Corporation.
- 1996 Prospect Water Filtration Plant was completed. It is the largest of the privately built, owned and operated plants. Today, 90% of Sydney's water is treated in privately owned water filtration plants. Sydney Water contracts these plants to treat and filter drinking water.
- Construction began on the Northside Storage Tunnel, a massive 20 kilometre, 500 million litre chamber designed to protect Sydney Harbour from pollution from wet weather sewer overflows. The tunnel captures overflows and stores them temporarily until they can be properly treated and disposed.
- The project was fast tracked to ensure its completion before the 2000 Sydney Olympic Games. Together with other pollution reduction initiatives by local councils and programs such as Clean Up Australia, the tunnel has helped improve water quality in Sydney Harbour. This brought back visiting whales, dolphins, and the famous Sydney rock oyster.
- 1999 The Sydney Catchment Authority (SCA) was established to manage Sydney's dams and catchment areas. SCA sells raw water to Sydney Water who treat and deliver it to customers across Sydney, the Blue Mountains and the Illawarra.

2000s and beyond

- 2001 Sydney Water's Every Drop Counts Business Program was started. This demand management program helps the largest business and industrial customers to identify and implement water efficiency initiatives.

- 2001 – 2002 The Rouse Hill Recycled Water Scheme begins delivering recycled water to local residents via dual reticulation (separate pipes). The scheme remains the largest residential dual reticulation recycling scheme of its kind in the world.
- 2002 Low rainfall over the preceding two years saw dam levels fall to below 60%, beginning one of the worst periods of drought in more than 100 years. Voluntary water restrictions were introduced in October and became mandatory in 2003.
- 2004 The NSW Government released its Metropolitan Water Plan, which proposed a range of measures to diversify water supplies, improve efficiency and further reduce demand for water. The Plan included large expansion in wastewater recycling schemes, demand management (including major on-going investments in leak reduction) and proposed the construction of a desalination plant if dam levels fell to around 30%.
- 2005 Planning begins for construction of a desalination plant to ensure that preliminary approvals and design work can be completed in time if drought conditions continue. Construction began



Aerial photo of the Sydney Desalination Plant

- 2007 The NSW Government introduced the Water Industry Competition Act. This opened the way for the private sector to compete with Sydney Water to provide water and wastewater services.
- Work begins on Sydney Water's new environmentally sustainable head office at One Smith Street, Parramatta.
- Construction begins on the Sydney Desalination plant.
- In the late 1990s, Sydney Water commenced a program of renewable energy generation using biogas produced at its wastewater treatment plants. Since that time additional generation has been installed and Sydney Water's hydroelectric generators and biogas cogeneration renewable energy plants are now supplying around 20% of Sydney Water's energy needs. This did not include the energy needed to power the desalination plant, which would be generated 100% from wind power.
- 2009 The Minister for Water awards the first ever private water license to Veolia, for a major wastewater recycling project at Smithfield/Camellia.
- About 1,400 staff formerly based in the CBD, West Ryde, Guildford and other worksites relocate to the new head office at One Smith Street Parramatta. Work also begins on a new headquarters for operational staff at Potts Hill.



A fresh new start in a sustainable new building!

- 2010 Opened the Sydney Desalination Plant at Kurnell in a 45 hectare site which includes a 15 hectare environmental conservation area. The plant supplies drinking water to mix with treated water from our dams to about 1.5 million people.
- The St Marys Advanced Water Recycling Plant began to supply 18 billion litres of high quality recycled water a year to the Hawkesbury-Nepean River. This project means that extra water can be held back in Warragamba Dam for drinking water and Sydney Water is doing even more to look after the health of the Hawkesbury-Nepean River.
- 2011 Opened the state-of-the-art Water Recycling Education Centre for universities, technical and further education (TAFE) colleges and high schools, professional groups and community groups to explain the role of water recycling in securing Sydney's water supply.
- Began operating the Prospect Hydroelectric Plant which produces enough energy to meet five per cent of Sydney Water's energy needs (same amount of electricity used by about 1,500 homes a year).
- Sydney Water embraces social media by launching a Facebook page and Twitter presence.- This opened up new communications channels with our customers and stakeholders.
- 2012 Sydney Water sets up a long term lease of the Sydney Desalination Plant Pty Limited (SDP). This brings money back to the NSW Government which can be used for other projects across NSW.