HERITAGE COUNCIL OF WESTERN AUSTRALIA

REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November 1996 have been used to determine the cultural heritage significance of the place.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.7.3.1 Building and maintaining railways

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 202 Rail and light rail transport

11. 1 AESTHETIC VALUE*

Railway Water Tower, Cunderdin is highly valued by the Cunderdin community as an identifiable built representation of the significant railway presence that was part of the town from the 1890s to the 1960s. (Criterion 1.1)

Railway Water Tower, Cunderdin has a landmark setting in the Cunderdin town. It is dominant in the vista along Great Eastern Highway, and from the main commercial centre on the north side of the railway line. It is integral within, and contributes to the townscape and character of Cunderdin. (Criterion 1.2)

Together with the adjacent Goldfields Pipleline No. 3 Pump Station Museum, *Railway Water Tower, Cunderdin* forms a unique cultural environment informing of two major engineering feats: the railway in 1892, and the water pipeline in 1901. (Criterion 1.4)

11. 2 HISTORIC VALUE

Railway Water Tower, Cunderdin illustrates the importance of the railway system in the development of the agricultural areas and their supporting townships. (Criterion 2.1)

Railway Water Tower, Cunderdin and the associated railway dam are examples of a water supply system fashioned to fit prevailing conditions and environment. They illustrate the difficulties of providing steam-powered rail transport over long distances in Western Australia. (Criterion 2.2)

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* For consistency, all references to architectural style are taken from Apperly, R., Irving, R. and Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture: Styles and terms from 1788 to the present*, Angus & Robertson, North Ryde, 1989.

Railway Water Tower, Cunderdin was an integral part of the Goldfields Pipeline and the Eastern Goldfields railway, which together made Cunderdin a viable settlement and initated wheat-farming in the area. The 1906 construction of the place paralleled the gazetting of the township. (Criterion 2.2)

11. 3 SCIENTIFIC VALUE

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11. 4 SOCIAL VALUE

Railway Water Tower, Cunderdin is highly valued by the Cunderdin community. The conservation work carried out on the place in 1994 testifies to this. (Criterion 4.1)

Railway Water Tower, Cunderdin contributes significantly to the local community and the wider district's sense of place. The railway was the reason for the birth of the town and the growth of the district. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12. 1 RARITY

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12. 2 REPRESENTATIVENESS

Railway Water Tower, Cunderdin is the only remaining element that represents the Cunderdin railway station. It was built to a standard WAGR design, and the square cast iron tank is typical of the tanks constructed on the main railway lines. (Criterion 6.1)

12. 3 CONDITION

Railway Water Tower, Cunderdin is in fair to good condition

12. 4 INTEGRITY

Railway Water Tower, Cunderdin operated continuously as a railway facility until the 1950s when diesel trains were introduced on the line. It is unlikely that the place could function for the purpose of water storage, and therefore has a low degree of integrity.

12. 5 AUTHENTICITY

The place shows minimal evidence of changes to the fabric except for the replacement and upgrade of some structural members. Despite that, the place has a high degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Laura Gray, Conservation Consultant.

A curtilage, comprising a section of the railway reserve approximately 90 metres in length and bounded by Great Eastern Highway on the north side and Forrest Street on the south side, has been proposed as shown on the accompanying site plan.

13. 1 DOCUMENTARY EVIDENCE

Railway Water Tower, Cunderdin is a standard 25,000 gallon (113 kl) square cast iron water tank on a fifty foot (15m) timber pole stand constructed in 1906 by the West Australian Government Railways (WAGR).[1] The water tower was built to provide water for the steam engines on the Eastern Goldfields railway, following the completion of the goldfields pipeline.

The discovery of gold at Southern Cross and the subsequent declaration of the area as the Yilgarn goldfield in 1888, prompted the State Government to commence construction of a railway to service the area. The line, initially known as the Yilgarn and later the Eastern Goldfields railway, began at Northam.[2] The line to Southern Cross was opened on 1 July 1894, by which time the Coolgardie, and then Kalgoorlie gold finds had been made. The railway line was immediately extended through to Kalgoorlie, with branches constructed to other goldfield centres such as Menzies and Kanowna.[3]

One of the major issues for the goldmining districts and the railways, which supported them, was the supply of water. Large amounts of good quality water were required for mining operations, the operation of railway steam engines, and for the use of the population. Water storage dams, often called 'tanks', were constructed by the Mines Department and by railway contractors. The dams were fed from large catchment areas, often utilising the natural landforms of the area.[4]

One such dam was established at Cunderdin, on the Eastern Goldfields line between Northam and Southern Cross. It had a capacity of 12,200,000 gallons.[5] The dam was built by railway contractor Joseph McDowell, as part of the construction of the line. The catchment for the Cunderdin railway dam was an extensive granite cap. A low wall of granite slabs directed the water into a tunnel, which led to the dam. The tunnel, part of which passed through solid granite, was large enough for a man to stand upright. Chinese labour is claimed to have been used to construct it.[6] A two-room stone cottage, later used as a golf-buggy storeroom by local golfers, is believed to have been occupied by the dam caretaker and his family.[7]

Water from the Cunderdin dam was fed by pipe to the railway siding, about three-quarters of a mile (1.2 kms) to the north.[8] The water was fed from the dam by gravity, which was probably why a tower and tank were not

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1 The date of construction has been taken from Philippa Uhe's *Survey of Railway Heritage in Western Australia*, National Trust (WA), March 1994. No information regarding construction was found in WAGR or PWD annual reports, or in the *West Australian Government Gazette*, however 1906 is believed to be more accurate than the 1892 date stated on the sign which has been attached to the tower by the Cunderdin historical society.

2 The name 'Yilgarn Railway' was replaced with 'Eastern Goldfields Railway' in 1899-1900 (WAGR Annual Report, 1900, p. 2).

3 Gunzberg, Adrian & Austin, Jeff *Rails Through the Bush*, Light Railway Research Society of Australia, Melbourne, 1997, p. 206.

4 West Australian Government Railways & Tramways Annual Report, 1905/06, p. 74.

5 West Australian Government Railways & Tramways Annual Report, 1900, *Votes and Proceedings of Parliament*, Paper No. 35, p. 57.

6 Stokes, Joseph Placid, *Cunderdin-Meckering: A wheatlands history*, Shire of Cunderdin, 1992, pp. 43-45; Gunzberg, Adrian & Austin, Jeff, op cit, p. 227.

7 Stokes, Joseph Placid, op cit, pp. 43-45.

8 ibid; Gunzberg, Adrian & Austin, Jeff, op cit, p. 227.

required when the railway line was initially constructed.[9] A standpipe and hose would have been sufficient to provide water to the railway engines.

The need for a reliable and sufficient supply of water for the Eastern Goldfields resulted in a proposal to supply water by pipeline from the coast. Although the scheme was considered extravagant and impracticable by its critics, largely because of its scale, the technology to construct such a pipeline was already available. The scheme entailed the construction of a reservoir on the Helena River at Mundaring, a 329 mile (530 km) pipeline, and eight pumping stations to move five million gallons of water a day uphill to Coolgardie. Work began on the project on 18 February 1898.[10]

The pipeline followed the railway line to Coolgardie for most of its length, as the railway was the only way of transporting the sections of pipe as well as the pumping machinery, building materials, labour, etc. Cunderdin was chosen as the site of the No. 3 pumping station, and the railway dam was enlarged to hold 25 million gallons. The pumping station was constructed on the south side of the railway line. The water from Mundaring Weir reached Cunderdin dam on 22 April 1902. On 3 May, the water was turned on at a standpipe at the Cunderdin railway reserve in the presence of the Premier. On 24 January 1903, the water was officially turned on at Coolgardie and Kalgoorlie.[11]

The construction of the pipeline, while providing water for the goldfields districts, also opened up the country along its length for agriculture. Although land in the Cunderdin district had been taken up for wheat farming following construction of the railway line, Cunderdin did not become a viable settlement until the pipeline was opened. Neighbouring settlements at Meckering and Tammin were gazetted as townsites in 1887 and 1889 respectively, but the townsite of Cunderdin was not gazetted until 1906.[12] It would be no coincidence that *Railway Water Tower, Cunderdin* was also constructed in that year, though which event influenced the other is not clear.[13] What is certain is that the selection of Cunderdin as the site of the No. 3 pumping station was the catalyst for the development of the town, initially populated by pipeline and railway staff. A map of the Cunderdin railway and water reserves (1910-1953) shows a number of railway employee residences, including a barracks, a residence for the Goldfields pipeline engineers, and other quarters. *Railway Water Tower, Cunderdin* is shown situated close to the railway line, on the south side.[14] The place was constructed from a standard WAGR plan for a 25,000 gallon (113 kl) tank on a fifty foot (15 m) stand.[15]

Railway Water Tower, Cunderdin supplied water to the steam engines on the Eastern Goldfields line until the introduction of diesel engines in the 1950s. Sixty-nine diesel engines were acquired by WAGR between 1953 and 1956

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9 West Australian Government Railways & Tramways Annual Report, 1900, op cit, p. 57.

10 *Goldfields Water Supply Scheme Heritage Project*, National Trust, 1999, pp. 11-28.

11 ibid.

12 Stokes, Joseph Placid, op cit, p. 4.

13 Date of construction is taken from Uhe, Phillipa 'Survey of Railway Heritage in Western Australia', National Trust, June 1994, Section E1-2. **Note:** No tenders have been located for construction of the place.

14 Plan, Cunderdin Railway station & Water supply, 1910-1953, SRO ACC 1642/45. No other WAGR files on Cunderdin were located at the SRO.

15 WAGR standard drawings, EEL 12763, 50 ft tank stand for a 25,000 gallon C[ast] I[ron] tank; EEL 2873, engine water tank 25,000 gallons.

and put into service on the major country routes.[16] In the 1960s, the issue of rail gauge standardisation was finally addressed. At Parkeston, 4 kms east of Kalgoorlie, the Western Australian narrow gauge line met the standard gauge line from the east, and freight and passengers had to transfer. Construction of the standard gauge line from Perth to Kalgoorlie began in 1962, and the first standard gauge train ran from Merredin to Fremantle in November 1966.[17]

The new line was constructed to the north of Cunderdin railway yard. The narrow gauge line and the buildings relating to it were redundant once the standard gauge line reached Kalgoorlie in 1968. They were gradually removed until the only structure remaining was *Railway Water Tower, Cunderdin*.

In 1994, some conservation work was carried out on *Railway Water Tower, Cunderdin*, jointly funded by the Western Australian Heritage Commission ($16,000) and the Shire of Cunderdin ($5,288) under the National Estate Program. The work entailed repair and replacement of timbers, and removal of 'dangerous appurtenances, ie, ladder and pipe'.[18]

While *Railway Water Tower, Cunderdin* is not part of the National Trust's Golden Pipeline Project, that being restricted to the actual pipeline and the pumping stations, the place and the associated railway dam are considered part of the related history of water supply in the area.[19] In 2001, *Railway Water Tower, Cunderdin* is unused and empty.

13. 2 PHYSICAL EVIDENCE

Railway Water Tower, Cunderdin is located within the road reserve on the south side of Great Eastern Highway, in the Cunderdin townsite. There is no physical association with the existing railway line that is located some distance on the north side of the townsite. *Railway Water Tower, Cunderdin* is situated between Great Eastern Highway on the north and Forrest Street on the south. Adjacent on Forrest Street are public toilets, and only 50 metres further east on the same side is the Goldfields Pipeline No. 3 Pumping Station Museum with its dominant chimneystack. The commercial centre of Cunderdin town is located on the north side of Great Eastern Highway, on Main Street which runs parallel to the highway. *Railway Water Tower, Cunderdin* is a significant element within the Cunderdin town, being the only structure located on the highway verge within the commercial centre of town.

The site is gravelled. It is slightly sloping down to the Great Eastern Highway verge on the north side. There are several native tree plantings in the vicinity.

The railway water tower and tank was built c.1906 to a standard WAGR design. The square cast iron tank is typical of the tanks constructed on the main railway lines.

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16 Higham, G. J. *One Hundred Years of Railways in Western Australia, 1871-1971*, Australian Railways Historical Society, WA Division, 1971, p. 15.

17 WAGR, *A Brief History*, 1975, pp. 7-8.

18 McDowell Affleck Pty Ltd *Conservation of Railway Water Tower Cunderdin*, Final report, [1994]. (Photographic report and one page description of work carried out).

19 Information provided by the National Trust.

The tank is supported by a square grid of four bush timber posts along each edge, comprising four rows of four posts. The posts are original. Some have iron braces around the circumference on the lower section of the tower. The posts are weathered and some have termite damage, although it appears to be superficial. The posts are notched around the outer perimeter suggesting there may have previously been a horizontal beam around the outer perimeter of the stand. A post near the ladder on the north side is notched at regular intervals up the post, suggested some previous association with a ladder. The posts are supported by bed logs of sawn timber on concrete foundations. The bed logs comprise two square milled timbers bolted together at regular intervals along the length. The timber posts are notched into the bed logs. Each of the bed logs and footings extend the length of four posts aligned north south. Several of the bed logs show evidence of termite damage and weathering on the outer edges. The footings are at ground level on the south side, and revealed on the north side due to the slight slope of the site. The formed concrete foundations are recent fabric. Milled timber cross bracing on the stand is not original fabric.

The tank platform comprises a series of milled timber bearers aligned north south, corresponding with the bed logs below, supporting sets of double joists, on which the tank is located.

On the north side, a sign has been bolted to the timber bracing. It reads as follows:

Government Railways of W.A.
Water tower
Erected circa 1892
Water gravitated from the
Rock catchment and reservoir
(Cunderdin Hill) into this
water tank to supply the
railway steam engines.
Cunderdin Historical Society

The square tank comprises a number of cast iron panels welded together. The corners are rounded. A central steel water pipe is still in place between the tank and ground level, and the remains of an iron water pipe are evident under the centre of the tank, at the top of the stand. The ladder is in place on the upper sections of the tower but has been removed from the lower section.

13. 3 COMPARATIVE INFORMATION

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13. 4 REFERENCES

McDowell Affleck Pty Ltd, *Conservation of Railway Water Tower Cunderdin*, Final report, [1994]. Photographic report and one page description of work carried out.

13. 5 FURTHER RESEARCH

Further research is required to confirm the construction date. No tenders for railway towers were located in the Government Gazette between 1892 and 1910, and nothing relating to specific constructions was found in Railway Dept or PWD annual reports for the period.

Railway Water Tower, Cunderdin could be considered in conjunction with the railway dam as part of a group.

Railway Water Tower, Cunderdin is one of only two remaining water towers on the Northam-Kalgoorlie section of the former Eastern Goldfields line. The other is at Merredin, and is also associated with a railway dam. (*Merredin Railway Station Group*, HCWA No. 1577/3641). The Merredin tank is claimed to have a capacity of 40,000 gallons, but this may not be accurate. Later research indicates that the railway tanks were the one size at 25,000 gallons, although the stands varied between 13 feet (4 metres, 9 posts), 40 feet (12 metres, 9 posts) and fifty feet (15 metres, 12 posts). The different heights appear to have been a matter of engineering requirements.

Further research is required on alterations/maintenance to the tank. Has the original cast iron feed pipe been replaced with a steel pipe. If so, was this a common alteration to all the railway tanks? Further research is also required on whether this tank was roofed.