



NATIONAL TRUST

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Victorian Heritage Database place details - 1/1/2014
Darbyshire Hill No.1 & No. 2 Bridges



Location:

Wodonga-Cudgewa Railway, midway between Bullioh & Darbyshire, BULLIOH, TOWONG SHIRE

Heritage Inventory (HI) Number:

Listing Authority: HI
Extent of Registration:

Statement of Significance:

Darbyshire Hill Nos. 1 and 2 Bridges are single-track rail bridges of three-storey pier design and combine standard fifteen feet timber-beam approach spans with twenty feet rolled-steel-joist spans over the main channels. The timber piers on these bridges are fitted with rare double-longitudinal walings.

No. 2: timber and steel composite rail bridge 96.6 metres (317 feet) long, with unusually tall 4 pile timber piers (max. height, 21.3 metres, 79 feet), six timber-beam approach spans each of fifteen feet (4.6 metres), eleven rolled-steel-joist spans each of twenty feet (6.1 metres), and a straight deck of standard transverse-timber design. This bridge, 21.3 metres high, is the tallest railway bridge of timber and steel joist construction to survive in Victoria.

No. 1 timber and steel composite rail bridge 65.48 metres (215 feet) long, with unusually tall 4 pile timber piers (max. height, 16.45 metres, 54 feet), and a curving transverse-timber deck. This bridge has five timber-beam spans each of standard fifteen feet (4.6 metre) Victorian Railways design, and seven rolled-steel-joist spans each of twenty feet (6.1 metres).

Darbyshire Hill Nos.1 and 2 Bridges were built in 1916 as part of the Wodonga-Cudgewa railway. The line was closed in 1981.

Darbyshire Hill Nos. 1 and 2 Bridges are significant for technical, historic and aesthetic reasons at State level.

Darbyshire Hill Nos.1 and 2 Bridges are of technical significance as a major engineering feature of the steepest and most twisty section of line on the Victorian Railways system. They were first built in 1916 as all-timber-beam bridges on very tall four-pile timber piers, on a line mainly intended to carry mountain cattle towards metropolitan markets. After World War 2 this railway was the main supply line for the massive infrastructure works of the Snowy Mountains Hydro-electric Scheme. The original timber superstructure design was then modified by substitution of steel-joists for timber beams on twenty feet (6.1 metres) spans, to meet increased load demands. This timber-steel joist composition is very unusual.

Darbyshire Hill Nos.1 and 2 Bridges are of historic significance as part of the Wodonga-Cudgewa line, which was the main supply rail line during the construction of the Snowy Mountains Hydro-electric Scheme. These are the tallest bridges surviving on this line.

Darbyshire Hill No. 2 Bridge is of historic significance as the tallest railway bridge (70 feet, 21.3 metres) of composite timber and steel construction to survive in Victoria.

Darbyshire Hill Nos.1 and 2 Bridges are aesthetically significant because of the unusual height of their three-storey timber trestles, and provide a striking spectacle, visible from the Murray Valley Highway against the backdrop of the Koetong Hills. The bridges are on the developing (as of 2011) High Country Rail Trail.

Classified: 10/11/1998

History

The initial short section of the Wodonga-Cudgewa line, between Wodonga and Tallangatta, had been constructed just prior to the collapse of railway construction due to the 1890s Depression. This short section of line was authorized under the so-called Octopus Acts in December 1884, and constructed between 1889 and 1891, the final stretch from Bolga to Tallangatta being officially opened on 24 July 1891.[1]E. Barker and Co. were the successful tenderers for the Wodonga-Tallangatta Railway on 11 February 1887, with a price of 47, 553 pounds.[2]When the State's finances again began to look respectable in the first decade of the twentieth century, agitation for an extension of this line through the upper Murray River valley began.

By March 1910 the Parliamentary Standing Committee on Railways was taking evidence at Albury, relative to the proposed extension. Citizens of Albury were not concerned which side of the Murray River the railway went, and indicated that if an extension on the Victorian side proved too expensive, they would try to persuade the NSW Government to allow the Victorian Railways to build a line on the north side of the river as far as Hawksview. Citizens of Wodonga on the Victorian side of the main Murray River crossing appeared more lukewarm, with one spokesman indicating that they did not expect any great commercial pay-off from an Upper Murray railway.[3]

The official 'Report from the Parliamentary Standing Committee on Railways on the Upper Murray District Connecting Railway' was ordered to be published on 11 July, 1911.[4] The initial main request from the area had been for 82 miles of line running directly up the Murray Valley from Tallangatta via Bethanga, Talgarno, Bungil, Thologolong, Burrowye, Jingellic, Walwa, Tintaldra and Towong to Corryong. The official committee was not prepared to take this proposal seriously, because then-current plans to create a 'Cumberoona Reservoir'

near Talgarno would involve submerging the river flats up to Thologolong, and there was some risk of later weir extensions. To take this route through higher adjacent country would involve great expense in making cuttings through granite, and, with the flood-plain under water. Revenue potential would be much diminished. The Victorian Railways Engineer-in-chief, Kernot, therefore favoured an alternative Tallangatta-Cudgewa-Corryong route, to serve a broader area and larger population.

Two main alternative routes were compared for the Tallangatta-Cudgewa section. One of these ran up the fertile valley of Tallangatta Creek for about 20 miles to Cravensville, whence the line would have to pass through 2, 700 feet of tunnel to enter the valley of Cudgewa Creek, which it would then follow to Cudgewa. This route would open up much Crown land for settlement, and tap high quality mill timber en-route, but it was six miles longer than the alternative offered and with its formidable tunnel it would cost 20, 000 pounds more.

The shorter alternative route was that which was eventually adopted. It passed from Tallangatta eastwards for eighteen miles up the hills to Koetong, thence downhill through Berringama to Wabba and Cudgewa 43 miles distant from Tallangatta. The line was originally intended to continue on from Cudgewa over relatively flat and fertile country to Corryong and Towong, the latter proposed terminus being 15 miles beyond Cudgewa. The total distance of line would be nearly 59 miles, at an estimated cost of 325, 000 pounds. That estimate was based on slow and tortuous grades with very tight curves, the proposed ruling grade being 1 in 30 and the tightest turns having a radius of approximately five-chains. The Railway Commissioners opposed Kernot's 5 chain curves, and required that the minimum radius of curves be expanded to 8 chains, thus increasing the cost estimate. The annual loss on this proposed line was estimated at approximately 7, 370 pounds, which was a daunting sum for that era.

Advocates of the Cravensville route objected that for most of the distance between Tallangatta and Cudgewa, this Koetong route passed over timbered hills with soils of poor agricultural potential, and possessing eucalypt species with little milling value. Despite problems associated with this hilly route, it was preferred to the longer and more expensive Cravensville route dependent upon its big tunnel. It was felt to be unfair to impose the continued future freight expense associated with longer distance, upon upper Murray settlers. One major factor in favour of the Koetong route was the road link between Koetong and Burrowye, which brought a significant section of the upper Murray Valley within fifteen miles of a railhead.

Much of the anticipated freight was livestock, it being initially estimated that 10,000 cattle, 20, 000 sheep and about 600 horses had travelled down the Murray Valley during 1908. A Cudgewa terminus was expected to cater for 800 trucks of livestock annually. Because most timber along the line was not commercially valuable, only about 2000 tons per annum was anticipated, compared to an estimated 2, 500 tons of agricultural produce. The expected 325 tons of wool per year was outweighed by an anticipated 400 tons of rabbits and 700 tons of dairy produce. Inward supplies to upper Murray rail sidings were estimated at 5, 300 tons. The rolling stock to carry this limited freight was estimated to cost approximately 11, 417 pounds. When the final decision on the line was made, the terminus was Cudgewa rather than Corryong or Towong.

The main beneficiaries from the proposed line would be pastoralists whose fat livestock had historically lost their prime condition on a long and hilly tramp to Tallangatta railhead. Because they stood to gain so much, pastoralists along the route of the line were required to hand over the necessary land for a permanent-way, free of charge to the Government, as well as commit themselves to paying rates to finance a commitment of 3, 600 pounds per annum to counter the expected annual deficit on the line.

However, it was felt to be unfair to tax Victorian pastoralists too heavily for a railway that would be used advantageously by many NSW pastoralists. One incentive for building this line was to attract NSW commerce into Victoria, so the State Government was asked to bear half the annual running deficit[5]. By the time that the decision to construct a line to Cudgewa was made, the Victorian Government had adopted its 'Developmental Railways' policy, which allowed for consideration of railway projects that required subsidization in the short term in the expectation of later profits when the surrounding countryside had been developed for agricultural pursuits.[6]

The Tallangatta and Cudgewa Railway Construction Act no. 2414 was passed by Parliament in December 1912.[7] By August 1913 a survey for this line had been completed, the necessary formalities for the constitution of a trust to acquire the necessary land were well advanced, and the new trust was expected to hold its inaugural meeting in September.[8]

In December 1914, with works well under way on the first few miles out of Tallangatta, a deputation from Corryong sought to persuade Sir Alexander Peacock that a short and easy extension from Cudgewa to Corryong would tap a fertile district that would otherwise be linked to NSW commerce.[9] However, with the intervention of war factors after 1914, getting the line finished even as far as Cudgewa took much longer than

had been anticipated, and further extension was impracticable. In January 1915 the Argus had reported that the line was expected to be completed by April 1916, but in fact the official opening did not occur till May of 1921.[10] In June 1916 residents of the upper Murray region were grateful that the line was operational as far as Shelley, which had the distinction of being Victoria's highest railway station.[11] Those East Gippslanders who had complained loudly and bitterly about slow progress on the Orbost line in the same era, had been relatively fortunate to have their line operating by 1916.

An official deputation headed by Premier Watt had arrived at Tallangatta in January 1914, to turn the first sod on the 42 mile project then estimated to cost 290,448 pounds.[12] The Premier performed an easy task, but workers on the line forming cuttings through solid granite under the supervision of engineer McCurdie knew a different experience. They lived in tents along the line with their families, toiling through the heat of summer and the snows and freezing winds of winter on the hills of the upper Murray. By late 1914 about one thousand men toiled on this construction project, while many of their erstwhile friends were about to experience military reality at Gallipoli. Horses in drays toiled alongside men with wheelbarrows, as the timber was felled and the stumps were painfully grubbed to extend a fifteen feet swathe through virgin bush. By October 1915 trains ran to and from Koetong.[13]

In July 1916 work was proceeding slowly on the final 20-mile section of line between Shelley and Cudgewa, and it was anticipated that funds to complete the line 'would be forthcoming before long'. It was a difficult period of acute labour shortages and rising costs as young Australians were pressured to volunteer for military service in Europe. In terms of new Victorian railways it was nonetheless a record year, with more new railways opened in the twelve months prior to June 1916 than in any year since 1890, and up to 3,000 men engaged in line construction.[14] One ten-mile section between Shelley and Beetomba was opened to traffic in April 1918, but work on the final ten-mile section of the line seems to have stalled, and Premier Lawson did not arrive to perform the official opening until 5 May 1921. Mrs T. B. Waters, a resident of the district for 75 years, cut the ribbon at the ceremony, and the local children rejoiced in their first (free) train ride. From that date a full rail service would link Cudgewa with Melbourne, with trains leaving Melbourne for Cudgewa at 6-15 a.m. on Tuesdays, Thursdays and Saturdays, and return trains from Cudgewa to Melbourne departing at 6 a.m. on Mondays, Wednesdays and Fridays.[15]

Even while the line was being completed to Cudgewa, and politicians debated whether to extend the line on to Tintaldra or Towong to tap NSW trade, the earliest section of line between Wodonga and Tallangatta was under threat. With major new weir works being planned in 1921, an eight or nine mile deviation would be required to avoid flooding of the line. A major relocation project associated with the Hume Dam saw the earlier section of line relocated some one and a half miles to the south on rising ground.

In the years of post-war reconstruction after World War 2, another series of major works would occur along the Cudgewa line. It was then decided to use the ageing railway as a major supply line for the great Snowy Mountains construction project, and this meant moving equipment of a size and weight that the line's original designers had never foreseen. Early two-pile timber piers were converted to four-pile piers along the flatter sections of line, and many narrow cuttings through granite country required widening, although the equipment available was fortunately much superior to the picks and shovels and wheelbarrows of earlier teams of toilers. The tall old timber trestles around Koetong that had carried so many head of mountain cattle towards lowland abattoirs creaked and trembled under heavy loads of machinery and cement. Many a European migrant would be fascinated by the strange experience of traveling this hilly line whose original proposers had contemplated 'magnificent scenery' luring tourists from afar on this 'shorter and easier route to Mt Kosciusko'. [16]

Bridge maintenance men of that time still tell stories of the pandemonium caused when trucks heavy laden with cement broke free from trains bound for Shelley, to 'bolt' with terrifying momentum back down the steep twisting tracks of the Koetong hills. Other stories tell of local children sabotaging the line by misusing greasing devices fitted to steep twisting sections of line, for the fun of seeing steam locomotives spinning their great steel wheels helplessly on the gradient. The slow twisting haul up to Victoria's highest railway station at Shelley provided an unusual experience for engine drivers, and the return trip with loaded cattle trucks down the gradient and over tall timber-trestle bridges required great caution and speed control. In descending less than eight miles between Darbyshire and Bullioh, over a section of line with several significant big timber-trestle bridges (including the tallest on this railway) the heavily-laden trains lost 992 feet (302 metres) in altitude.[17]

The old branch line had played a crucial role in the construction of two big irrigation-construction projects: the Hume Weir and the Snowy Scheme. The last regular goods train traveled this line on 21 April 1978, and the section between Bandiana and Cudgewa was officially closed on 1 March 1981 after locals lost a protracted three-year battle with rail authorities to keep their trains running.[18] The short remaining section of the line,

between Bandiana and Wodonga, was finally closed down in 1995. Although the tallest of the surviving trestle bridges on the historic Wodonga Cudgewa Railway are not easily accessible to the public, being surrounded by private land, they are situated on a proposed hiking trail and distantly visible from the Murray Valley Highway.[19] Constructed high over rocky valleys, they have known human tragedy, at least one bridge-maintenance worker having slipped to an instant death while working on the tall timber trestles.

History of Place

Darbyshire Hill Nos. 1 and 2 bridges were constructed in 1916. . They were first built as all-timber-beam bridges on very tall four-pile timber piers, and mainly intended to carry mountain cattle towards metropolitan markets. However, the original timber superstructure design was modified by substitution of steel-joists for timber beams on twenty feet spans, to meet increased post-World-War 2 loads when this railway was the main supply line for the massive national infrastructure works of the Snowy Mountains Hydro-electric Scheme. Although 'lowlands' sections of this railway have been totally rebuilt or substantially modified to meet changing geographic and traffic conditions associated with enlargement of the Hume Weir and with construction of infrastructure for the Snowy Mountains Scheme, the timber piers of Darbyshire Hill Nos. 1 and 2 bridges remain unmodified from 1916.

[1]Victoria, Year Book, 1887-8, pp. 136-7; Victoria, Legislative Assembly, Votes and Proceedings, 1922, vol. 2, p. 666 (dates of opening of various sections).

[2]Victoria, Legislative Assembly, Votes and Proceedings, 1887, vol. 3, p.38 of Victorian Railways Annual Report.

[3]Argus, 3 March 1910, p. 4.

[4]Victoria, Legislative Assembly, Votes and Proceedings, 1911, vol. 1, pp. 767-775; see also Argus, 12 July 1911, p. 15.

[5]ibid.

[6]Argus, 11 Dec. 1911, p. 6, leading article.

[7]L. Holmes, The Branch Line, p. 43.

[8]Argus, 11 Aug. 1913, p. 15.

[9]Argus, 18 Dec. 1914, p. 7.

[10]Argus, 8 Jan. 1915, p. 6; 4 May 1921, p. 10.

[11]Argus, 6 May 1921, p. 7.

[12]L. Holmes, The Branch Line, p. 44.

[13]ibid., p. 46.

[14]Argus, 4 July 1916, p. 8.

[15]Argus, 4 May 1921, p. 10; 6 May 1921, p. 7.

[16]Victoria, Legislative Assembly, Votes and Proceedings, 1911, vol. 1, p. 771.

[17]L. Holmes, The Branch Line, p. 58.

[18]ibid., p. 102.

[19] See 'Draft Shire of Towong Rail Trail Plan Tallangatta to Cudgewa', Shire of Towong, 1996.

Description

Description

No. 2: One single-track timber and steel composite rail bridge 96.6 metres (317 feet) long, with unusually tall 4 pile timber piers (max. height, 21.3 metres, 79 feet), six timber-beam approach spans each of fifteen feet (4.6 metres), eleven rolled-steel-joist spans each of twenty feet (6.1 metres), and a straight deck of standard transverse-timber design.

No. 1: One single-track timber and steel composite rail bridge 65.48 metres (215 feet) long, with unusually tall 4 pile timber piers (max. height, 16.45 metres, 54 feet), and a curving transverse-timber deck. This latter bridge has five timber-beam spans each of standard fifteen feet (4.6 metre) Victorian Railways design, and seven rolled-steel-joist spans each of twenty feet (6.1 metres).

The timber piers on these bridges are fitted with rare double-longitudinal walings.

These two bridges of very similar but unusual design are situated within one kilometre of each other, immediately west of what is known as 'the horseshoe curve' which takes the rail line south under the Murray Valley Highway. They are the most impressive of a significant series of timber and timber-composite bridges in

the general vicinity of Koetong

Context

Darbyshire Hill Nos. 1 and 2 bridges cross steep valleys with intermittently-flowing creeks on the southern side of the Koetong Hills. This section of hills has been cleared, and the farmlands between the bridge and the Murray Valley Highway are clear and open, allowing distant viewing of the structures by passing motorists. The bridge decks provide magnificent platforms from which to view the farmlands and adjacent timbered hills. These bridges are on railway reserve and a proposed rail trail, but surrounded by private land. The nearest public access point is several kilometres south-east, where the railway passes under the Murray Valley Highway.

Intactness

Main frames are sound, but timber decking becoming dangerous.

Assessment against Criteria

Importance to the course, or pattern, of Victoria's cultural history.

Darbyshire Hill Nos. 1 and 2 Bridges are of historic significance as part of the Wodonga-Cudgewa rail line, which was the main supply line during the construction of the Snowy Mountains Hydro-electric Scheme.

Possession of uncommon, rare or endangered aspects of Victoria's cultural history

Potential to yield information that will contribute to an understanding of Victoria's cultural history

Importance in demonstrating the principal characteristics of a class of cultural places or objects

Darbyshire Hill Nos. 1 and 2 Bridges are the tallest bridges surviving on the Wodonga-Cudgewa line. They very unusually combine standard fifteen feet timber-beam approach spans with twenty feet rolled-steel-joist spans over the main channels, modified from all-timber post World War II. The three-storey 4 pile piers are unmodified.

Importance in exhibiting particular aesthetic characteristics

Darbyshire Hill Nos. 1 and 2 Bridges have unusually high three storey timber trestles, and provide a striking spectacle, visible from the Murray Valley Highway. The bridges are on the developing (as of 2011) High Country Rail Trail.

Importance in demonstrating a high degree of creative or technical achievement at a particular period

Darbyshire Hill No. 2 Bridge is the tallest railway bridge (70 feet, 21.3 metres) of composite timber and steel construction to survive in Victoria. Over the 12.8 km section of the line between Darbyshire and Bullioh, the altitude changes by 992 feet (302 metres). This section has several significant big timber-trestle bridges. rail bridges, no longer in use; on route of a proposed rail trail

Intact

Heritage Study	
Year Construction Started	
Architect / Designer	
Architectural Style	

Heritage Act Categories	
Municipality	["TOWONG SHIRE"]
Other names	
History	