Te Kaunihera-ā-Rohe o Ngāmotu
NEW PLYMOUTH DISTRICT COUNCIL
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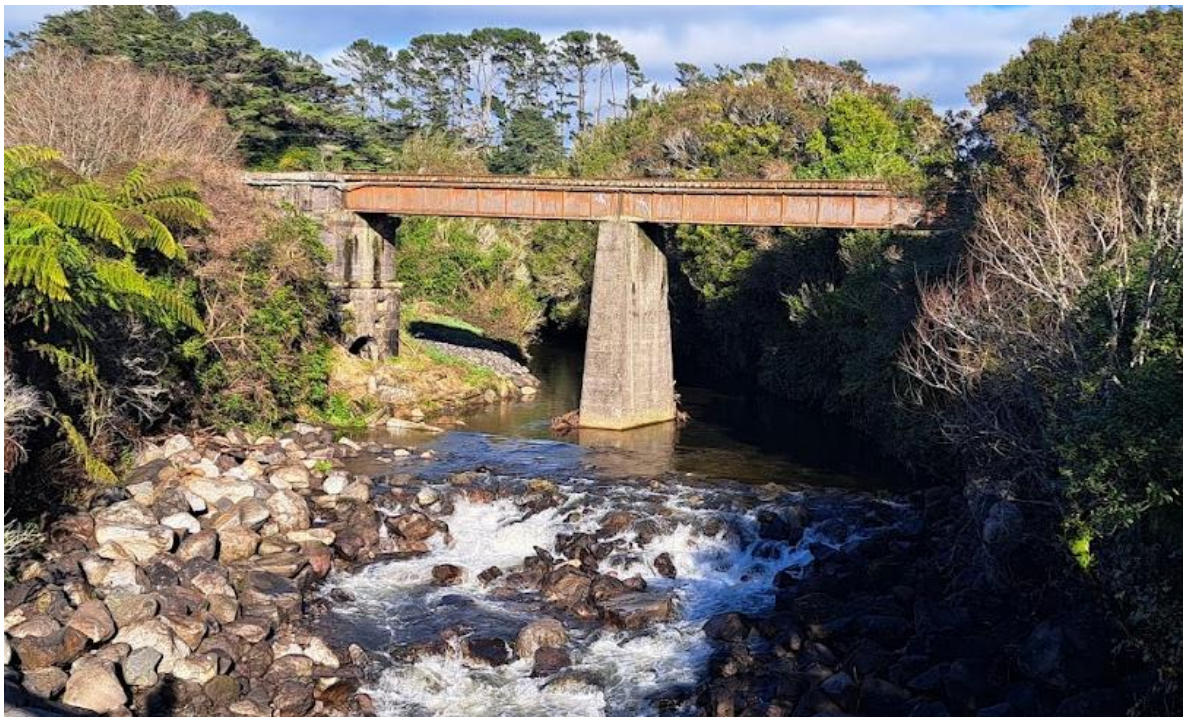
Heritage Buildings and Items Report

Site ID	144
Name	Waipuku Stream Rail Bridge
Address	Marton-New Plymouth Line (Waipuku Stream)



Statement of Significance

Waipuku Stream Rail Bridge is New Zealand rail infrastructure of the highest heritage significance. It is possibly the oldest working rail bridge left in regular use in New Zealand. It is a direct link with colonial treasurer Julius Vogel's huge public works and assisted immigration scheme, approved in 1870 and intended to spur growth and development. It demonstrates stonemasonry of the highest quality, which has proved its worth by surviving intact to this day. Although the original bridge abutments were augmented with concrete and the former timber truss replaced by steel girders, that work was done in 1911 and little has changed since.

The bridge has had a largely uneventful history, but in 1966 it was the scene of one of the most shocking and bizarre events in New Zealand rail history – an attempt to blow up the bridge. Although it was intended to be a prank, the fact that no-one died was entirely fortuitous.

Although the bridge is a fundamentally utilitarian structure, it has been designed and constructed in an aesthetically pleasing manner. The combination of the vaulted stonework forms of the abutments, and contrasting textures and shadow lines creates considerable visual interest.

Heritage Buildings and Items Report

Legal Information and Heritage Status

Legal Description	[Neither the railway corridor nor the river has a title associated with them]
Heritage New Zealand Pouhere Taonga List Number	878
Heritage New Zealand Pouhere Taonga Category	2

Construction Information

Date of Construction	1878-79
Principal Materials	Stone, concrete, steel and timber
Construction Professionals	John Carruthers, Dictionary of Biography: https://teara.govt.nz/en/biographies/2c11/carruthers-john [retrieved 8 July 1879] David Glendinning, principal contractor (1833-1896) Alexander MacDonald, contractor

History

The Waipuku Stream Rail Bridge was originally constructed in 1878-79 and is one of New Zealand's oldest railway bridges; possibly the oldest still in use.

Aotearoa/New Zealand's early progress as a colony was significantly hampered by the lack of connection between its major centres, which was mainly confined to coastal shipping and rudimentary roads. They key to unlocking the country's potential was via the construction of a network of railways, but the anticipated cost was enormous. Julius Vogel, colonial treasurer in the Fox government, elected in 1869, proposed borrowing huge sums from the London money markets and funding an ambitious programme of public works and assisted immigration, with the influx of workers required to help build the railways and other infrastructure. His policies were adopted in 1870. The sum borrowed reached £21 million by 1881.[1]

One of the routes planned was between Marton and New Plymouth, to connect Taranaki and Whanganui with the lower North Island and facilitate settlement within Taranaki. A railway through Taranaki had been mooted as early as the 1860s, but it was not until 1872 that surveying commenced in earnest. Work north from Marton began in 1874, while work south started in 1876, after construction of a line between New Plymouth and Waitara was completed. The line south branched from Sentry Hill and opened as far as Inglewood in November 1877.[2] The railway opened through to Stratford in December 1879.[3] Much of the construction took place through heavily forested areas that were waiting on the railway to help open them up. Amongst many waterways and other obstacles, the surveyed route on this line crossed the narrow, steep-sided Waipuku Stream, 6.5 kilometres south of Inglewood.

[1] 'The Vogel Era', https://nzhistory.govt.nz/politics/the-vogel-era/vogels-vision [retrieved 7 July 2024]
[2] Yonge, John 1993, *New Zealand Railway and Tramway Atlas*, Fourth Edition, Quail Map Company, Exeter p.10
[3] Ibid.

Heritage Buildings and Items Report

Tenders for the bridge across the stream were called in May 1878[4] by Public Works Department's Engineer-in-Chief John Carruthers (1836-1914). As Engineer-in-Chief, Carruthers would have signed off the plans. The successful contractor was David Glendinning (1833-1896) of Auckland, whose estimate of £1,998 was significantly lower than any other tenderer.[5] The contract was signed on 16 July 1878.[6] Glendinning built several other bridges on the line at about the same time, so he may have been helped by already having an operation on the ground. Both Glendinning and his stonemason, Alexander MacDonald, were lavishly praised in the *Taranaki Herald* for their work.[7] Glendinning built bridges in many parts of New Zealand, including the Hawkes Bay, where he finished his working career.[8]

MacDonald began work on the stone abutments in early 1879.[9] It is not known where the basalt came from, but there were several quarries in the region operating at the time. The deck was originally supported by a 24.4 metre long timber truss that was slotted into the stone abutments. The contract was completed on 2 May 1879, two months late.[10]

The bridge survived as built until 1911 when the New Zealand Railways decided to replace the timber truss by augmenting the two abutments with concrete, constructing an intermediate concrete pier and spanning the gap with two 12.2m riveted steel girders.[11] It is not known who designed these changes or undertook the work.

The bridge has had a mostly uneventful history, punctuated by the odd extraordinary occurrence. An extremely dry summer in 1885-86 led to damaging bush fires in many parts of the country. Dramatic conflagrations around Stratford in early January 1886 threatened farms and buildings.[12] The situation was so fraught that guards were stationed at the Waipuku Stream Rail Bridge to protect it.[13] In 1935, multiple floods washed out bridges and realigned rivers all over Taranaki. At Waipuku, a flood in February 1935 took the water nearly four metres above its usual height, but both the rail and road bridges held firm. Nevertheless, the embankment supporting the railway just before the stream 'was … carried away, leaving rails and sleepers suspended over 15 feet above the creek. A temporary bridge was thrown across the Waipuku by Stratford county workmen.'[14]

Perhaps the most extraordinary event in the bridge's history was the attempt to sabotage it. On the night of Saturday 19 February 1966, two young men from Stratford used gelignite to blow up the bridge. The blast, which was heard in Stratford, 'ripped out a section of the bridge'.[15] Remarkably, a railcar crossing the bridge, which was intended to be used to trigger the detonator, did not derail.

> The gelignite was set about six feet from the end of the bridge which the rail-car approached. It was exploded under the front bogies and blew out a section over two feet long in the track. The 65-tonne rail-car leaped over the gap and was brought to a halt about 200 yards along the track. "How it wasn't derailed we'll never know," said the driver, Mr Keith Morris…'[16]

[4] *New Zealand Times*, 8 June 1878, p.2
[5] *Taranaki Herald*, 18 July 1878, p.2
[6] *Appendices to the Journals of the House of Representatives*, 1879-1, E-01 Public Works Statement
[7] *Taranaki Herald*, 28 December 1878, p.2
[8] *Waipawa Mail*, 25 January 1896, p.2
[9] Ibid.
[10] *Appendices to the Journals of the House of Representatives*, 1879-1, E-01 Public Works Statement
[11] Summary Report Waipuku Stream Bridge, Tariki (List No.878), HNZPT quoting Thornton, Geoffrey 2001, *Bridging the Gap: Early New Zealand bridges, 1830–1939*, Reed, Auckland, p.55.
[12] Arnold, Rollo 1994, *New Zealand's Burning — The Settlers' World in the Mid-1880s*, Victoria University Press, Wellington pp.15-16
[13] *Marlborough Express*, 26 January 1886, p.2
[14] *Taranaki Daily News*, 23 February 1935, p.9
[15] *Press*, 21 February 1966, p.1
[16] Ibid.

Heritage Buildings and Items Report

The culprits were quickly arrested, convicted and sent to jail, although they maintained that they were not intending to harm anyone.[17] The bridge was repaired and services resumed.

The railcars operated until 1977, when Wellington to New Plymouth services were cancelled, largely ending passenger trains on this line, although a carriage train ran through to Taumaranui until 1983.[18] The bridge remains in regular use to this day for freight traffic and also serves the occasional rail excursion.

A substantial concrete weir and apron was built downstream of the bridge, either in concert with the 1911 pier work or after the 1935 flooding, to protect the pier and abutments from scouring. There is also concrete edging at the foot of the true right abutment that may have been built to protect from flooding. The weir face was backfilled in 2022 with rock to create a fish ladder.

Reference Sources See footnotes.

Description

The Waipuku Stream Rail Bridge spans a deep and steep sided stream gully on the east side of Taranaki maunga, a short distance upstream of a modern road bridge. In form, it is a simple linear structure that consists of two stone abutments, a central concrete pier, and paired steel girders carrying the rail deck over the waterway. The two main spans are around 12m each, and the rail deck is roughly 12m above the water at the centre of the bridge.

The elegant design and fine quality of the stonework abutments distinguishes the bridge from its later railway peers, which invariably have abutments formed in plain mass concrete. The two abutments are elaborate vaulted structures, each consisting of a substantial main pier at the edge of the stream backed by two short segmental-arched approach spans that take up the slope of the gully on either side. The stonework is of first-class quality, laid in neat ashlar courses. The body masonry is made of rock-faced stone with precise mortar joints; by contrast, the voussoirs of the arches, copings and other projecting features are formed with stones with worked margins.

The main pier has a longitudinal vault run through the base; above this the structure is augmented with a substantial block of neat board-formed concrete, cast against the original stonework and corbelled out to carry the paired rivetted steel girders of the main spans. Four deep pockets in the base of this pier show where heavy timber diagonal braces once slotted in to support the original timber truss span. The combination of the vaulted forms, contrasting textures and shadow lines creates considerable visual interest in the stonework.

The central pier, a simple tapered prism of finely-made board-formed concrete, stands in the middle of the stream atop a broad concrete apron that led out to a weir downstream (the weir was recently filled in, but some of the apron is still visible). Some remnant concrete edging can be seen on the true right of the stream.

The steel girders have a strongly rhythmic pattern of stiffening ribs along their length and are cross braced under the railway ties and irons, which confers further visual interest to the structure. A hand-painted note on the south end of the west beam records the last re-paint of the steelwork, ‘2 red lead, 2 grey, 4-78’.

[17] *Press*, 24 February 1966, p.7
[18] Yonge, p.10

Heritage Buildings and Items Report

Assessment

Historical	The Waipuku Stream Rail Bridge is nationally significant as an early example of rail infrastructure; it might be the oldest railway bridge still in regular use in New Zealand. It stands as a rare vestige of the first tranche of national railway construction ushered in by Julius Vogel's hugely ambitious public works and immigration scheme. Apart from the periods when it has been under repair, it has been in constant use on the Marton to New Plymouth line, supporting the movement of people although, since, 1983, freight only. It is associated with its designer, PWD engineer-in-chief John Carruthers and its builder, David Glendinning. The bridge was also the scene of one of the most bizarre but terrifying examples of wanton vandalism in the country's history when, in 1966, the deck was partially blown up.	✓✓
Importance to Community	The bridge is part of a freight-only railway line that still connects New Plymouth with the lower North Island. It therefore remains part of a vital transport link, even though the bridge itself has a relatively low public profile.	✓
Architecture and Technology	Although the bridge is a fundamentally utilitarian structure, it has been designed and constructed in an aesthetically appealing manner. The combination of the vaulted forms of the stonework abutments, contrasting textures and shadow lines creates considerable visual interest.	✓✓
Setting and Context	The immediate setting of the bridge is largely unchanged from the time of its construction.	✓
Archaeology	The bridge is an archaeological site as defined by the Heritage New Zealand Pouhere Taonga Act 2014. It is highly likely that information about the construction and use of the bridge would be uncovered by archaeological techniques.	✓
Representativeness, Rarity and Integrity	As one of the oldest railway bridges in New Zealand, Waipuku Stream Rail Bridge is very rare. It is not the only bridge from that period still standing but it might be the only one still in use. It is not in original condition; the timber truss that carried the line across the river has been replaced and concrete now augments the abutments, but the abutments themselves – arched and constructed of stone – are still entirely intact. The upgrade of the bridge's supporting structure is itself well over a century old.	✓✓
Meets threshold for listing	(three or more ticks, or two ticks in one criterion)	✓