



HERITAGE NEW ZEALAND  
POUHERE TAONGA

## New Zealand Heritage List/Rārangi Kōrero – Report for a Historic Place **Mangaweka Cantilever Bridge, MANGAWEKA (List No. 9746, Category 2)**

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Mangaweka Cantilever Bridge, Mangaweka (Joanna Barnes-Wylie, Heritage New Zealand, 29 April 2022)

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### *Disclaimer*

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## EXECUTIVE SUMMARY

### *Purpose of this report*

The purpose of this report is to provide evidence to support the inclusion of Mangaweka Cantilever Bridge in the New Zealand Heritage List/Rāangi Kōrero as a Category 2 historic place.

### *Summary*

Mangaweka Cantilever Bridge, completed in 1904, spans the Rangitikei River and connects the Manawatu and Rangitikei districts. The bridge sits within, and complements, a dramatic natural environment. The bridge has historical significance for its association with the Public Works Department, which led its design and construction, and the highly respected engineering firm J and A Anderson Ltd. It has local historical significance for its association with the settlement and development of farming and forestry in the central Manawatu-Whanganui Region. The bridge's social significance is demonstrated by the strong community support for the retention of the bridge when it was threatened with demolition after its closure in 2016. The Mangaweka Cantilever Bridge has technological value for being an important example of a design that was rarely adopted in the New Zealand context. It is notable for being the first and only steel cantilever road bridge constructed in New Zealand, and only one of three known and extant cantilever bridges.

Mōkai Pātea in the central North Island extends from the Desert Road in the north to just south of Rātā near Marton, eastwards to the Ngaruroro River and the summit of the Ruahine ranges and ends just west of State Highway 1 and Taihape. The people of Mōkai Pātea arrived over a period of seven generations, with Ngāti Hauiti holding the western and southern parts of the Mōkai Pātea rohe from the time of Hauiti to the mid-nineteenth century. Pākehā settlement began with the arrangement of leases with private runholders in the 1860s and was progressed through the Crown's purchase of land and the development of infrastructure, including the North Island Main Trunk railway. Increased settlement highlighted the need for safe river crossings and, following years of requests from residents, Mangaweka Cantilever Bridge was built on the site of earlier crossings.

In a flood-prone area, the bridge's cantilever design avoided midstream piers. Two concrete piers, built for a never-completed cylinder bridge, were extended to facilitate the design. The single-lane bridge is approximately 141 metres in length. It has a timber deck and a three-span steel truss design. The bridge is set lower down from the surrounding hills and provides a vantage point from which to appreciate the natural landscape.

Despite plans for an official opening close to the time of completion, it wasn't until 111 years later that one was held. Although receiving repairs over the decades, the form and design of the bridge is largely unchanged from the time it was completed. In 2016, however, a routine inspection of the bridge revealed significant structural deterioration and it was deemed unable to meet modern traffic demands. A new bridge was built 30 metres to the south and Mangaweka Cantilever Bridge was reopened as a pedestrian and cycling bridge. It continues to be of value to those engaging in tourism and recreational activities in the region.

## **1. IDENTIFICATION<sup>1</sup>**

### **1.1. Name of Place**

#### *Name*

Mangaweka Cantilever Bridge<sup>2</sup>

#### *Other Names*

Awahuri-Mangaweka via Kimbolton highway bridge; Ruahine Road Bridge; Mangaweka Bridge; Mangaweka Road Bridge, Old Mangaweka Bridge; Rangitikei Road Bridge

### **1.2. Location Information**

#### *Address*

Ruahine Road  
MANGAWEKA

#### *Additional Location Information*

E1840362.12m; N5589685.45m (NZTM)

Mangaweka Cantilever Bridge is designated Bridge No. S250B by Manawatū District Council, and Bridge No. 69 by Rangitīkei District Council.

#### *Local Authority*

Manawatū District Council, Rangitīkei District Council

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<sup>1</sup> This section is supplemented by visual aids in Appendix 1 of the report.

<sup>2</sup> This bridge has been commonly known as the Mangaweka Bridge, amongst other names, but a replacement road bridge of this name was officially opened in 2022. The name Mangaweka Cantilever Bridge is more specific and serves to differentiate this particular bridge from both the new bridge and the Mangaweka rail bridge.

### 1.3. Legal Description

Legal Road, Wellington Land District.

Mangaweka Cantilever Bridge has no specific legal description. It is contained within legal road reserve.<sup>3</sup>

### 1.4. Extent of List Entry

Extent includes part of the land known as Legal Road, Wellington Land District, and the structure known as Mangaweka Cantilever Bridge including its abutments. Extent does not include the river recording apparatus that is attached to the bridge. (Refer to [map in Appendix 1](#) of the List entry report for further information).

### 1.5. Eligibility

There is sufficient information included in this report to identify this place. This place is physically eligible for consideration as a historic place. It consists of land, an archaeological site, and a structure that is fixed to land which lies within the territorial limits of New Zealand.

### 1.6. Existing Heritage Recognition

*Local Authority and Regional Authority Plan Scheduling*

NOT SCHEDULED in Rangitikei District Plan, Operative 2013

NOT SCHEDULED in Manawatu District Plan, Operative 1 December 2002

Rangitikei River from The Narrows to downstream of Mangaweka is scheduled in the Rangitikei District Plan, Operative 2013, Schedule C4, Area 7, Outstanding Landscapes and Natural Features.

*New Zealand Archaeological Association Site Recording Scheme*

This place or sites within this place have been recorded by the New Zealand Archaeological Association. The reference is – NZAA Site Number: T22/27

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<sup>3</sup> This is the status at the time of writing this report because the cancelling of the road is not complete; pers. comm. Rangitikei District Council, 9 June 2023.



## 2. SUPPORTING INFORMATION

### 2.1. Historical Information

#### *Mōkai Pātea*<sup>4</sup>

Mōkai Pātea in the central North Island extends from the Desert Road in the north to just south of Rātā near Marton, eastwards to the Ngaruroro River and the summit of the Ruahine ranges, and ends just west of State Highway 1 and Taihape.<sup>5</sup> The four iwi of the Mōkai Pātea rohe are Ngāi Te Ohuake, Ngāti Hauiti, Ngāti Whitikaupeka and Ngāti Tamakōpiri, and all descend from the common founding ancestor, celebrated explorer Tamatea Pōtai Whenua of the Takitimu waka.<sup>6</sup> Tamakōpiri was the son of Tamatea Pōkai Whenua and his wife Taanewhare; Te Ohuake descended from Kahungunu, son of Tamatea Pōkai Whenua and his wife Iwipūpū; and Hauiti and Whitikaupeka were cousins and the great-grandsons of Punua who descended from Ruaehu, son of Tamatea Pōkai Whenua and his wife Kahukare.<sup>7</sup>

Tamatea Pōkai Whenua had journeyed into Mōkai Pātea, exploring much of the area accompanied by his son Kahungunu, where he named a number of places and left several mōkai (pets) as an indication of his mana and claiming of the land.<sup>8</sup> The bestowing of names and leaving of mōkai provided a take (claim) under which his descendants could return and

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<sup>4</sup> This section draws upon the research and writing of Joanna Barnes-Wylie for a report on Taihape Grandstand, List Number 9843, Historic Place Category 2, 2022, <https://www.heritage.org.nz/list-details/9843/Taihape%20Memorial%20Park%20Grandstand>.

<sup>5</sup> Stuff, 'Mōkai Pātea trust takes steps towards Titiri settlement', 24 March 2021, [Mōkai Pātea trust takes steps towards Titiri settlement | Stuff.co.nz](https://www.stuff.co.nz/mokai-patea-trust-takes-steps-towards-titiri-settlement), accessed 18 August 2022. See map 'Mōkai Pātea Nui Tonu Area of Interest', Mōkai Pātea Waitangi Claims Trust, [appendix c- mkai ptea nui tonu area of interest.pdf \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/appendix-c-mkai-ptea-nui-tonu-area-of-interest.pdf), accessed 18 August 2022.

<sup>6</sup> See 'Mōkai Pātea Nui Tonu Whakapapa Lines', Mōkai Pātea Waitangi Claims Trust, [lw19269 - Mokai Patea whakapapa.xls - Compatibility Mode \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/lw19269-Mokai-Patea-whakapapa.xls-Compatibility-Mode), accessed 30 August 2022.

<sup>7</sup> Mōkai Pātea Nui Tonu Whakapapa Lines'; Tony Walz, 'Tribal Landscape Overview', Wai 2180 Taihape Hearing District, 2013, pp.73, 78-90, available from Mōkai Pātea Waitangi Claims Trust, [Mokai Patea | Documents | Representing the four iwi of Mōkai Pātea \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/documents-representing-the-four-iwi-of-mokai-patea), accessed 18 August 2022; 'Mōkai Pātea Waitangi Claims Trust Newsletter', Edition 3, August 2013, Mōkai Pātea Waitangi Claims Trust, [mpwctpanuiaugust2013.pdf \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/mpwctpanuiaugust2013.pdf), accessed 18 August 2022; 'Ngāti Tamakōpiri', Mōkai Pātea Waitangi Claims Trust, [Mōkai Pātea | About | Claims settlement for iwi against the Crown \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/mokai-patea-about-claims-settlement-for-iwi-against-the-crown), accessed 18 August 2022; 'Ngāti Hauiti', Mōkai Pātea Waitangi Claims Trust, [Mōkai Pātea | About | Claims settlement for iwi against the Crown \(mokaipateaclaims.maori.nz\)](https://www.mokaipateaclaims.maori.nz/mokai-patea-about-claims-settlement-for-iwi-against-the-crown), accessed 18 August 2022.

<sup>8</sup> Tony Walz, 2013, pp.59-60; 'Ngāti Tamakōpiri'; Terry Steedman, Part I of 'Chapter 1 Te Awarua-Rui-o-Puanga' in Denis Robertson, 1894 – 1994 "...Give me Taihape on a Saturday Night", Heritage Press, Waikanae, 1995, p.26; Bruce Stirling and Evald Subasic, 'Taihape: Rangitikei ki Rangipo Inquiry District', Technical Research Scoping Report, 2010, p.13, available from Mōkai Pātea Waitangi Claims Trust, <https://www.mokaipateaclaims.maori.nz/wp-content/uploads/2018/03/taihapescopingfinalstirling2.pdf>, accessed 18 August 2022.

the people of Mōkai Pātea arrived over a period of seven generations, driving out the original Ngāti Hotu people, about whom little is known.<sup>9</sup>

Hauiti was the son of Whakaruruhau of Te Hika ā Kahukare. Other significant Ngāti Hauiti tupuna include Topia Turoa, who was born near the Mangawharariki Stream which joins the Rangitīkei River a short distance upstream from the current location of Mangaweka Cantilever Bridge, and Matangi who came to the Manawatu from the Wairarapa, exploring the area in pursuit of flocks of kōkō and named places including Otamakapua, which lies east of the Rangitīkei River.<sup>10</sup>

Ngāti Hauiti held the western and southern parts of the Mōkai Pātea rohe from the time of Hauiti to the mid-nineteenth century.<sup>11</sup> One of the Ngāti Hauiti settlements on the eastern bank of the Rangitīkei River was known as Pouna, situated about 350 metres north of where the Mangaweka Cantilever Bridge is now located.<sup>12</sup> From Pouna an overland track, which formed part of the Otara-Taupō-Pātea overland route, passed in a north and north-easterly direction towards another settlement at Hawanga.<sup>13</sup>

### *Rangitīkei River*

The Rangitīkei River also has historical, cultural, spiritual, and traditional significance outside of the Mōkai Pātea rohe. It has long provided a means of communication and trade, for instance its route through the central North Island was used a number of times by taua (raids) and heke (migrations) during the Musket Wars of the 1820s and 1830s.<sup>14</sup> The river forms part of the boundary of the Rangitāne o Manawatū rohe and is at the heart of the traditional lands of Ngāti Apa.<sup>15</sup>

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<sup>9</sup> Walz, 2013, pp.59-60; Stirling and Subasic, 2010, p.13; 'Mōkai Pātea Waitangi Claims Trust Newsletter', Edition 3, August 2013; Steedman in Robertson, 1995, p.16. Very little is known about Ngāti Hotu – some state that they were associated with the Tainui waka and named after Hotonui, a descendant of Hoturua - see Walz, 2013, pp.55, 57; Steedman in Robertson, 1995, p.16.

<sup>10</sup> Communication Robert Martin to Jim Mestyanek, 7 September 2017, cited in Andy Dodd, Subsurface Ltd, 'Mangaweka Bridge: Archaeological assessment,' 2017, p.10; Shilpy Arora, "Ancestors guide design of Mangaweka Bridge pou," Manawatū Standard, 23 May 2022.

<sup>11</sup> Ngāti Hauiti History, <http://www.ngatihauiti.iwi.nz/ng257ti-hauiti-history.html>, accessed 4 July 2023.

<sup>12</sup> Dodd, pp.24, 38.

<sup>13</sup> Ibid, p.10.

<sup>14</sup> Ibid.

<sup>15</sup> Rangitāne o Manawatū, 'Rangitikei River', <https://www.romst.co.nz/rangitikei-river.html>, accessed 9 October 2023; Grant Huwyler, 'Ngāti Apa identity', Te Ara - the Encyclopedia of New Zealand, <http://www.TeAra.govt.nz/en/photograph/4255/the-rangitikei-river>, accessed 10 October 2023.

### *The Arrival of Pākehā*

The people of Mōkai Pātea had certainly felt the impact of Pākehā by the mid-1860s, but there were essentially no Pākehā residing in their rohe at that time, and tangata whenua there 'remained largely unknown to the outside world'.<sup>16</sup> That soon changed following the arrangement of leases with private runholders in the 1860s in the northern part of the rohe.<sup>17</sup> In 1868 brothers Captain Azim and William John Birch were the first Pākehā to settle in Mōkai Pātea after negotiating with Ngāti Whitikaupeka to lease a sheep run on the Orumatua-Kaimanawa block, northeast of Moawhango.<sup>18</sup>

Other early runholders followed but transportation of wool was an issue with no road or rail access.<sup>19</sup> In 1883 the 'Gentle Annie' road from Napier finally connected to Moawhango, which went on to become the 'business centre' of inland Pātea, and access was also improving in the southern part of Mōkai Pātea.<sup>20</sup> A bridle track was cut along the survey line of the Main Trunk Railway in the mid-1880s and by 1888 the railhead had reached Kaikarangi, just north of Hunterville.<sup>21</sup>

### *The Awarua and Otamakapua Blocks: Crown Acquisition*

Crown purchase of Māori land in the Rangitīkei was driven by the construction of the North Island Main Trunk Railway Line, the completion of which relied upon the acquisition of land from Māori. By the end of the nineteenth century, land on either side of the Rangitīkei River had been brought before the Native Land Court. The two blocks of land that are of particular significance to this report are the Awarua Block and the Otamakapua Block. The Rangitīkei River formed a boundary between these two blocks.

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<sup>16</sup> Walz, 2013, pp.406, 408; Stirling and Subasic, 2010, p.25.

<sup>17</sup> Walz, 2013, p.408; Stirling and Subasic, 2010, p.82.

<sup>18</sup> Karen Astwood, 'Birch Homestead', List Number 2736, Historic Place Category 1, *Heritage New Zealand Pouhere Taonga*, 2013, <https://www.heritage.org.nz/the-list/details/2736>, accessed 19 August 2022; R.A.L. Batley, 'Part II The Coming of the Paheka' in 'Chapter 1 Te Awarua-Rui-o-Puanga', Robertson, 1995, p.19. For further detail about the Birch brothers' 1868 lease, see Martin Fisher and Bruce Stirling, *Sub-district block study – Northern aspect*, Taihape Inquiry District: Technical Research Programme, 2012, <http://www.nhnp.nz/images/custom/research-documents/taihapenorthernblocks.pdf>, accessed 19 August 2022.

<sup>19</sup> Anne Potaka and Jackie Eustace, 'Chapter 2 Establishment' in Robertson, 1995, p.24.

<sup>20</sup> Batley in Robertson, 1995, p.21; Potaka and Eustace in Robertson, 1995, p.24.

<sup>21</sup> Batley in Robertson, 1995, p.21; Potaka and Eustace in Robertson, 1995, p.24.



On the western side of the river, the Awarua Block (*circa* 256,000 acres) was at the heart of Mōkai Pātea and encompassed the land between Mangaweka and Moawhango.<sup>22</sup> This land is of deep significance to the people of Mōkai Pātea, being where their settlement was concentrated, and the Awarua Block has been described as ‘rohe pōtae’.<sup>23</sup> It was also of immense importance to the Crown as the proposed route of the Main Trunk Railway passed directly through the western part of the block.<sup>24</sup> The block had ‘a turbulent and protracted history in the Native Land Court’ – the title was first investigated in 1886 and the block was vested in 437 Māori owners, descendants of Ohuake, Hinemanu, Hauti, Whitikaupeka and Tamakōpiri.<sup>25</sup> Partition hearings were undertaken during 1890-1891 and the Awarua block was partitioned into nine smaller blocks, with the township of Mangaweka later established on part of block Awarua 4B.<sup>26</sup>

On the eastern side of the river, the Otamakapua Block (*circa* 147,000 acres when first surveyed) was one of the first major land blocks to be purchased in the Taihape District by the Crown and was the subject of Native Land Court hearings from 1870-1894.<sup>27</sup> Most of the Otamakapua Block had been sold into Crown ownership by 1884.<sup>28</sup>

#### *Mangaweka – From Three Log Whare to a Prosperous Township*

By 1891, a road extending north from the railhead at Hunterville, turned into a bridle track just south of Taihape, known as Ross’s track. The government erected shelters along this road and the third of these was originally called Three Log Whare. Three Log Road connected the town to the river crossing and it was renamed Mangawharariki Road in 1904.<sup>29</sup> The settlement became known as Mangaweka in 1894, by which time it boasted a store, post office, school, hall, and a number of businesses. By the turn of the century, the population had reached almost 1000 people.<sup>30</sup>

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<sup>22</sup> Potaka and Eustace in Robertson, 1995, p.25; Evald Subasic and Bruce Stirling, *Sub-District Block Study – Central Aspect*, Taihape Enquiry District, 2012, p.69, available from *Mōkai Pātea Waitangi Claims Trust*, <https://mokaipateaclaims.maori.nz/documents/>, accessed 21 August 2022.

<sup>23</sup> Subasic and Stirling, 2012, p.69; Stirling and Subasic, 2010, p.82.

<sup>24</sup> Subasic and Stirling, 2012, pp.69-70.

<sup>25</sup> Ibid, pp.70-71.

<sup>26</sup> ML 1331.

<sup>27</sup> Stirling and Subasic, 2010, pp.57, 183.

<sup>28</sup> Stirling and Subasic, 2010, pp.60-61.

<sup>29</sup> New Zealand Gazette, 1904, p.1109. See Figure 1.

<sup>30</sup> *The Cyclopedia of New Zealand, Volume 1: Wellington Provincial District*, Cyclopedia Company Ltd, Wellington, 1897.

The early prosperity of Mangaweka was fuelled by the settlement being the point of supply for both railway workers and the increasing number of settlers establishing farms in an area that had previously been covered by native bush.<sup>31</sup> Following the completion of the Makohine viaduct, the railway line was open to Mangaweka by November 1902 and reached Taihape by 1904.<sup>32</sup>

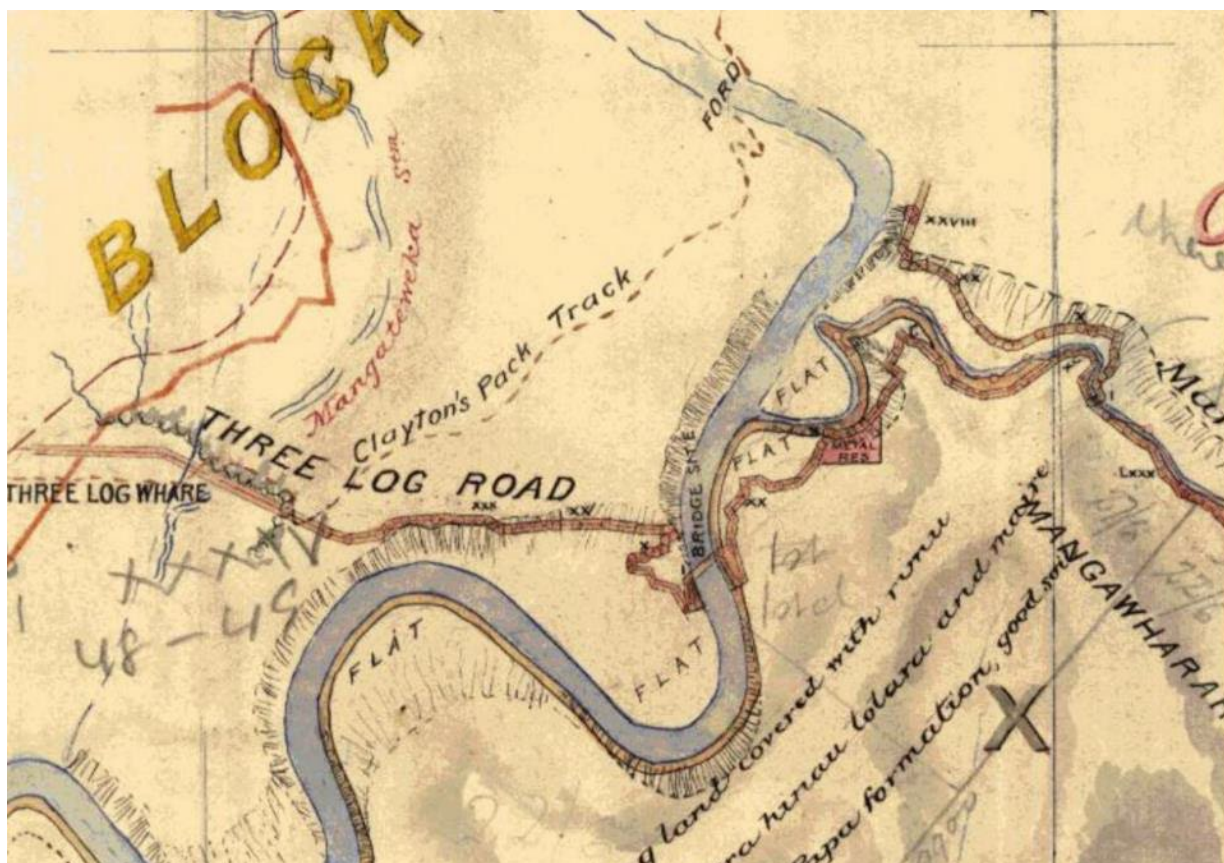


Figure 1: Detail of SO13472, Otamakopua-Rangitikei Block, 1893 (with later annotations) showing the proposed site of a bridge. Source: Bowman and Burr, p.6.

### *Development of crossings over the Rangitikei River near Mangaweka*

The development of transportation was crucial for Pākeha settlement around the Rangitikei River, as it was in many areas of New Zealand. The construction of bridges was fuelled by the development of roads and railway lines, and by the risk unsafe river crossings posed to lives and livelihoods.<sup>33</sup> Around 1894, a farming settlement was established at Kawhatau Valley, on

<sup>31</sup> *Mangaweka and district's first 100 years*, Mangaweka, 1985, p.5.

<sup>32</sup> Karen Astwood, 'Registration Report for a Historic Area: North Island Main Trunk Historic Area,' Vol. 1, Heritage New Zealand Pouhere Taonga, 2009, pp.8, 20.

<sup>33</sup> Bowman and Burr, p.34.

the eastern side of the Rangitikei River.<sup>34</sup> The first settlers reached the valley via Kimbolton, cleared land for their houses and, once Kawhatau Valley Road was built, established several timber mills.<sup>35</sup> The river could be forded at several locations including upstream in the vicinity of the NIMT railway bridge and downstream at the base of the cliff, nearer Mangaweka township.<sup>36</sup> A ferry crossing was provided by Thomas Scott and a wire cage (1896) suspended on a wire cable also provided transport over the river, at a location that is downstream from the present site of Mangaweka Cantilever Bridge.<sup>37</sup>

Soon after settlements were established, residents began lobbying the government for a bridge crossing and in 1895 funds were allocated for this purpose.<sup>38</sup> The contract for two bridges was given to the road surveyor, G T Murray.<sup>39</sup> The first bridge to be constructed was a temporary low-level pine bridge, completed 1897, which sat just above the normal water level of the river to allow for flood waters to pass over the top. It was frequently affected by rapidly rising floodwaters, however, which would render the crossing unsafe or unusable; at one time residents could not safely cross the bridge for a week.<sup>40</sup> By this time, the Kawhatau Valley was an established settlement and boasted two schools, but the river crossings did not allow for safe and regular transport of residents or produce.<sup>41</sup>

Work on a permanent bridge was undertaken concurrently with the low-level one and it was partially completed when severe flooding in mid-April 1897 caused the river to rise 32 feet (9.75 metres) above its usual level, reaching the tops of the new concrete piers.<sup>42</sup> This event led to the abandonment of the bridge design, which comprised two spans and a cylindrical midstream pier, in favour of a cantilever design.<sup>43</sup>

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<sup>34</sup> Ibid, p.27.

<sup>35</sup> *Mangaweka and district's*, p.11.

<sup>36</sup> SO 13729. Associated with Clayton's Pack Track, see Figure 1.

<sup>37</sup> The cage was washed away during the flood of April 1897, but was reinstated; Rangitikei District Council, History, <https://www.rangitikei.govt.nz/district/about-rangitikei/history>, accessed 8 April 2022; Bowman and Burr, p.27; Feilding Star, 'Ohingaiti notes,' 25 November 1896, p.2; Feilding Star, 'The recent floods,' 22 April 1897, p.2; Dodd, p.14.

<sup>38</sup> Bowman and Burr, p.27.

<sup>39</sup> Dodd, p.15.

<sup>40</sup> Bowman and Burr, p.27; Wanganui Chronicle, 'A Mangaweka grievance,' 17 April 1902, p.2; *Mangaweka and district's*, p.27.

<sup>41</sup> *Mangaweka and district's*, p.21.

<sup>42</sup> Bowman and Burr, p.8. This flood caused 'widespread damage to the Rangitikei lowlands and destroyed nearly all the bridges over the river,' *Mangaweka and district's*, p.21.

<sup>43</sup> *Mangaweka and district's first 100 years*, p.21; Bowman and Burr, p.27.

Construction of the new bridge, however, was delayed and although the low-level bridge was repaired after the 1897 flood, it was washed out again in July 1898 and 1902.<sup>44</sup> When the low-level bridge was washed away in 1902, the mills at Kawhatau were closed and employees paid off.<sup>45</sup> This situation resulted in years of frustration for residents. In 1898 they urged the government to attend 'to the urgent necessity that exists for erecting a permanent bridge', on the grounds that: a bridge had been promised three or four years earlier and concrete piers were nearly completed, the dangerous crossing of the river had placed settlers in the Kawhatau valley at a financial disadvantage and led to the loss of life, and that the low-level bridge was occasionally 'submerged and of no use.'<sup>46</sup> In mid-1900 a deputation asked for the construction of the bridge to 'be pushed on as expeditiously as possible', pointing to the dangers of the low-level bridge and the loss of many horses.<sup>47</sup> Tenders were called for by the Lands and Survey Department in April 1900 but when the Minister of Public Works, the Hon W Hall-Jones, visited the site of the low-level bridge two years later, on the day of the official opening of the Makohine viaduct, he was confronted with a delegation enquiring about the government's failure to fulfil its pledge to build a permanent bridge, despite eight years of promises.<sup>48</sup>

#### *Construction of the Mangaweka Cantilever Bridge*

On 27 October 1902, the Public Works Department again called for tenders for the construction of the bridge to the specifications of plans drafted in 1899.<sup>49</sup> The site for the new bridge was to be that of the low-level bridge and the never-completed cylinder bridge.<sup>50</sup> The design had been prepared by the Public Works Department, the government agency charged with the design and construction of New Zealand's infrastructure from its inception in 1876 to its demise in the late 1980s. Many of the department's engineers and architects

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<sup>44</sup> Mangaweka and district's first 100 years, no page; Bowman and Burr, p.27.

<sup>45</sup> 'The Kawhatau Valley', *Feilding Star*, Volume XXV, Issue 210, 23 February 1904, p.2.

<sup>46</sup> Wanganui Chronicle, 'Mangaweka Bridge,' Vol. XLIII, Issue 15000, 29 September 1898, p.3.

<sup>47</sup> Feilding Star, 'The Mangaweka Bridge,' Vol. XXI, Issue 309, 28 June 1900, p.2. In 1903 heavy rains flooded the river, leading to the loss of a mob of sheep that was being driven over the bridge, Wanganui Chronicle, 'Mangaweka news,' Volume XXXVII, Issue 11990, 8 July 1903, p.2; and in 1903 a large quantity of logs and rubbish was piled on the bridge by 'a large fresh in the river', damaging the bridge to the extent it could not be used, Wanganui Chronicle, Vol. XXXVII, Issue 12156, 4 March 1904, p.2, <https://paperspast.natlib.govt.nz/newspapers/WC19040304.2.3>.

<sup>48</sup> Wanganui Chronicle, 'General news,' Issue 15000, 18 April 1900, p.1; Wanganui Chronicle, 'A Mangaweka grievance,' 17 April 1902, p.2; New Zealand Times, 'Public works,' Volume LXXII, Issue 4647, 28 April 1902, p.5; Star (Christchurch), 'Makohine Viaduct,' Issue 7430, 17 June 1902, p.3; Feilding Star, 'The Minister for Public Works,' Volume XXIII, Issue 1469, 20 June 1902, p.2.

<sup>49</sup> Mangaweka Road Bridge Contract, Archives New Zealand, Item Code: R21092013, Record No.: 18543.

<sup>50</sup> *Mangaweka and district's*, p.27.

were regarded as leaders in their fields.<sup>51</sup> A cantilever design with a central span that sat higher above the river was favoured because of the magnitude of the 1897 flood, because it would allow 'sufficient clearance for similar floods'.<sup>52</sup>

On 15 December 1902, J & A Anderson Ltd of Christchurch accepted the contract for the bridge's construction.<sup>53</sup> The firm capitalised on Julius Vogel's scheme for expanding the railway and infrastructure and developed a strong reputation for building road and rail bridges, and for constructing complicated and difficult engineering structures in challenging locations.<sup>54</sup> Their engineering projects included railway and road bridges, gold dredges, coastal steamers, hydroelectric works and the Farewell Spit lighthouse. The founder of the firm, John Anderson (1820-1897), was not only a highly respected engineer but also served the community as Christchurch's second mayor. He was also a director of a number of companies.<sup>55</sup> Two of his sons, John and Andrew, joined the firm in the 1870s and they led it to a 'pre-eminent position among New Zealand construction companies' after his retirement in 1881.<sup>56</sup>

A camp was established to accommodate workers during the different phases of construction of a bridge near Mangaweka between 1897 and 1904.<sup>57</sup> Such camps were necessary for the construction of infrastructure in remote areas. J & A Anderson Ltd's camp was located on reserve land currently occupied by a campground on the western side of the Rangitīkei River, downstream of the bridge site.<sup>58</sup>

The two concrete piers that had already been constructed on either side of the river were extended in height to fit the new design. Outer piers of a simpler design were constructed further up the banks.<sup>59</sup> Concrete abutments, set about 10 metres outside the inner piers, had

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<sup>51</sup> Bowman and Burr, p.44.

<sup>52</sup> Geoffrey Thornton, *Bridging the gap: Early bridges in New Zealand 1830-1939*, Auckland, 2001, p.225; *Mangaweka and district's*, p.21.

<sup>53</sup> Mangaweka Road Bridge Contract, Archives New Zealand, Item Code: R21092013, Record No.: 18543.

<sup>54</sup> Peter Lowe, 'Anderson, John', Dictionary of New Zealand Biography, first published in 1990, *Te Ara - the Encyclopedia of New Zealand*, <https://teara.govt.nz/en/biographies/1a6/anderson-john> (accessed 20 June 2023).

<sup>55</sup> Bowman and Burr, pp.43-44.

<sup>56</sup> Lowe.

<sup>57</sup> Dodd, p.33.

<sup>58</sup> Ibid, pp.36, 46.

<sup>59</sup> Ibid, p.16.

been produced by Luke & Co's foundry at Te Aro, Wellington, for the earlier cylinder bridge.<sup>60</sup> New abutments were constructed at the crest of the terrace, and cutwaters were added to the upstream side of the inner piers.<sup>61</sup>

Concrete has been used in New Zealand for bridge piers since the 1850s, but the cantilever design was not commonly used in this country. In fact the Mangaweka Cantilever Bridge was to be the only steel cantilever road bridge ever built here and one of only three known extant cantilever bridges or viaducts in the country, the others being: Waiau Ferry Bridge (1887) in North Canterbury, 'probably one of the most handsome bridges of its kind in New Zealand', opened with a large gathering, and the Makohine Viaduct (1902), just south of Mangaweka, which has been described as a 'dramatic example of the cantilever'.<sup>62</sup> The fact that the Mangaweka Cantilever Bridge was the last of these to be built and has not received any especial praise suggests it did not particularly influence construction and design techniques in New Zealand. Mangaweka Cantilever Bridge was built with a central span of 242 feet and the trusses were manufactured by J & A Anderson.<sup>63</sup> Mr Reaney was the District Engineer and the bridge was erected under the supervision of Mr H J Hayns of Palmerston North.<sup>64</sup>

#### *A Community and Tourist Icon*

The long-awaited bridge was completed in August 1904. There is no record of the bridge being formally opened, although an event had been planned for 12 September 1904 with the Hon Mr Hall-Jones, Minister of Public Works, in attendance, when a parliamentary delegation was to be in the area for the completion of the Main Trunk line.<sup>65</sup> Neither event took place though and when the Main Trunk line was finally opened in November that year, an event for the Mangaweka Cantilever Bridge was not included in the celebrations and there is no record of an opening taking place until a much belated official opening was held on 7 March 2015, complete with a procession of vintage motor vehicles and horses, attendees in period costume and a brass band.<sup>66</sup>

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<sup>60</sup> New Zealand Times, 28 December 1896, p.2.

<sup>61</sup> Dodd, p.16.

<sup>62</sup> Andersons Limited, *Andersons Limited: Manufacturing Engineers and Iron and Steel Merchants, Established 1850*, Christchurch, Whitcombe & Tombs, 1925, p.28; Thornton, pp.225-226; Bowman and Burr, pp.39.

<sup>63</sup> Dodd, p.16.

<sup>64</sup> Feilding Star, 'Local and general news,' Volume XXVI, Issue 58, 29 August 1904, p.2.

<sup>65</sup> Pelorus Guardian and Miners' Advocate, 'Main Trunk Railway,' Volume 15, Issue 71, 6 September 1904, p.5.

<sup>66</sup> Manawatu Standard, 'Railway celebration,' Vol. XL, Issue 7960, 17 November 1904, p.8; [Mangaweka](#)



That such an event was held 111 years after the bridge was completed, shows the significance and value of this bridge within its community. Without the bridge, the Pākehā settlement and economic development of this part of the country would have been seriously impeded. The challenges surrounding the settlement and development of the area, and in obtaining adequate means of transportation and communication, had no doubt helped solidify the bridge as a key local amenity and a source of pride.

The near absence of newspaper articles about the bridge after its completion contrasts with its newsworthiness during the decades preceding its construction. Perhaps this is the result of the structure being quietly successful in meeting its community's needs. The high use of the bridge is evidenced by the need for the deck timber to be replaced just nine years after the bridge was completed, due to the totara having 'been almost cut in two by the heavy traffic.'<sup>67</sup> Just a decade later, in early 1923, the Rangitikei County Council found further repairs to the decking were required.<sup>68</sup> In the mid-1930s the bridge was repainted.<sup>69</sup> When the bridge was assessed in July 1947, it was found to be in good condition, with just the troughs and lower chord needing to be cleaned out and painted, and some running planks replaced.<sup>70</sup> More significant work was undertaken in the 1950s, including the installation of a water level recorder tower alongside the bridge in 1953.<sup>71</sup>

By the late twentieth century, the townships and industries the bridge serviced had altered considerably. When Mangaweka reached its centenary, for instance, it was 'no longer the bustling hub of the farming community' and had 'a slowly dwindling business community'.<sup>72</sup> Mangaweka Cantilever Bridge remained in use as a road bridge until 2016, when it was closed due to decreased weight capacity. Further investigation found that one of the bridge's piers was scour-prone and various courses of action were considered, including demolition.<sup>73</sup>

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[Bridge - MANAWATU'S IRON GATES EXPERIENCE](#), accessed 9 May 2023.

<sup>67</sup> *Wanganui Chronicle*, 'Repairing the Mangaweka Bridge,' 4 March 1913, p.6.

<sup>68</sup> Bridge over Rangitikei River at Mangaweka, Ref: RDC 00046: 1: 38, Archives Central, Feilding, cited in Bowman and Burr, p.22.

<sup>69</sup> Bowman and Burr, p.22.

<sup>70</sup> Rangitikei Bridge Book, A/2012/1: 160 – Bridge No. 69, Archives Central, Feilding, cited in Bowman and Burr, p.23.

<sup>71</sup> Bowman and Burr, pp.23-24.

<sup>72</sup> *Mangaweka and district's*, p.100.

<sup>73</sup> Sam Kilmister, 'Historic 115-year-old Mangaweka Bridge will not be demolished,' *Manawātū Standard*, 1 October 2019, [Historic 115-year-old Mangaweka Bridge will not be demolished | Stuff.co.nz](#); Paul Mitchell, 'Mangaweka bridge thrown lifeline with new trust,' *Manawātū Standard*, 29 January 2021.

Following ‘overwhelming support’ from Rangitikei and Manawātū ratepayers during public consultation in 2019, the two regional councils responsible for the bridge opted to repair it to serve as a pedestrian and cycle bridge.<sup>74</sup> The form and design of Mangaweka Cantilever Bridge is largely unchanged from the time it was completed.

The councils retained ownership of Mangaweka Cantilever Bridge, while responsibility for its preservation, maintenance and management was vested in the Manawatu Heritage Incorporation.<sup>75</sup> The bridge currently forms a celebrated part of Manawatu’s Iron Gates Experience; the Manawatu ‘Country Road’ Scenic Route; and the Rangitikei Cycleway. It also serves as a viewing platform in an area frequented by people camping, rafting, kayaking, and fishing.

A replacement road bridge was constructed 2021-2022. Its official opening on 20 May 2022 provided an opportunity for the community to come together to celebrate the new bridge and demonstrate community attachment to Mangaweka Cantilever Bridge. Artist Maihi Potaka was commissioned to design a pou to stand beside the new bridge, and he described his design as symbolising ‘an age-old relationship between the people of the two districts’. His pou acknowledges the legacies of two tūpuna of Ngāti Hauiti: Matangi and Tamatea Pōkai Whenua.<sup>76</sup>

#### *Associated List Entries*

N/A

## **2.2. Physical Information**

### *Current Description*

Mangaweka Cantilever Bridge spans the Rangitikei River about 1.5 kilometres east of the township of Mangaweka, set lower down from the surrounding hills at the valley edge. The boundary between the Manawatu and Rangitikei districts runs along the river, therefore the bridge straddles these two districts. The bridge forms part of the Ruahine Road road reserve and is approximately 30m north of the new Mangaweka Bridge (2022).<sup>77</sup> The bridge sits

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<sup>74</sup> Mitchell.

<sup>75</sup> Manawatu District Council, ‘Mangaweka Bridge.’

<sup>76</sup> Shilpy Arora, ‘Ancestors guide design of Mangaweka Bridge pou,’ *Manawātū Standard*, 23 May 2022.

<sup>77</sup> This is the status at the time of writing this report because the cancelling of the road is not complete; pers. comm. Rangitikei District Council, 9 June 2023.

within an area recognised for its outstanding landscape and natural features and provides a vantage point from which to appreciate the natural landscape, in particular the distinctive papa cliffs and the Rangitikei River.<sup>78</sup> The dramatic and remarkable landscape is due to the scale of the steep river incision, which is enhanced by its stark contrast with the surrounding pastoral land and the meandering river.

Extreme flooding events that occurred after the Kawhatau settlement was established led to the recognition that the bridge's design should reflect the natural geography of the area and that the bridge should sit above the highest flood level.<sup>79</sup> The Public Works Department's structural design avoided midstream piers.<sup>80</sup> Instead, two concrete piers (1895) from the abandoned cylinder bridge became components of the new bridge by being extended to approximately twice their height in order to facilitate the cantilever design.<sup>81</sup> These solid concrete piers sit on each riverbank, with a clear span between them of 73.8 metres; they directly support the trusses.<sup>82</sup>

The single lane bridge is approximately 141 metres in length (464 feet) with a timber deck that is 3.6 metres wide between kerbs.<sup>83</sup> It has a three-span riveted steel cantilever truss design. Rigid arms (21.9 metres) extend from each bank, supporting a central suspended camelback span that is 73.8 metres and has a polygonal top chord of five slopes.<sup>84</sup> All three sections are Howe trusses, identified by the arrangement and geometry of the individual component members.<sup>85</sup> They are 'through trusses' – the deck is suspended between the trusses so that bridge users pass through the trusses, which sit either side of the deck.<sup>86</sup> There is a short end span (21.9 metres) at either end of the bridge and these two spans do not have truss support.<sup>87</sup>

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<sup>78</sup> Rangitikei River from The Narrows to downstream of Mangaweka is listed on the Rangitikei District Plan, Operative 2013, Schedule C4, Area 7, Outstanding Landscapes and Natural Features.

<sup>79</sup> Bowman and Burr, p.47.

<sup>80</sup> Thornton, p.225.

<sup>81</sup> Dodd, pp.30, 35, 37.

<sup>82</sup> Thornton, p.226.

<sup>83</sup> Thornton, p.226; Feilding Star, 'Local and general news,' Volume XXVI, Issue 58, 29 August 1904, p.2, <https://paperspast.natlib.govt.nz/newspapers/FS19040829.2.6>.

<sup>84</sup> Bowman and Burr, p.32; Thornton, p.226. Refer to plans in Appendix 2.

<sup>85</sup> Bowman and Burr, p.32.

<sup>86</sup> Ibid, p.33.

<sup>87</sup> Thornton, p.226.

### *Construction Professionals*

Public Works Department (Designer)

J and A Anderson (Engineers)<sup>88</sup>

### *Construction Materials*

Concrete, cement, steel, iron, timber (tōtara and heart rimu)

### *Key Physical Dates*

1897	Concrete piers constructed for a two-span bridge that was not completed
1903-1904	Mangaweka Cantilever Bridge constructed using existing concrete piers (1897)
1913	Repairs to the bridge deck, replacing totara with heart rimu bedded in tarmacadam <sup>89</sup>
1957	Deck of the bridge completely replaced <sup>90</sup>
1961	Repairs to pier E <sup>91</sup>
1960s-1980s	Timber stringer layout changed <sup>92</sup>
1971	Renewal of bridge's landspan deck and new land abutments on piles <sup>93</sup>
1980	Timber deck replaced <sup>94</sup>
1981-1999	Renewal of holding down bolts and repair of crack in pier A <sup>95</sup>
2000	Installation of running boards <sup>96</sup>
2016	Replacement of timber deck sections 7 metres from each end, stringer and corbel; addition of a handrail <sup>97</sup>

### *Uses*

Transport – Bridge/Viaduct

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<sup>88</sup> Lowe.

<sup>89</sup> Wanganui Chronicle, 'Repairing the Mangaweka Bridge,' 4 March 1913, p.6.

<sup>90</sup> Bowman and Burr, p.28.

<sup>91</sup> Ibid.

<sup>92</sup> Manawatu District Council, 'Mangaweka Bridge: Engineering Maintenance Plan,' 8 July 2022, p.3.

<sup>93</sup> Ibid, p.3.

<sup>94</sup> Ibid, p.4.

<sup>95</sup> Bowman and Burr, p.28.

<sup>96</sup> Ibid.

<sup>97</sup> Rangitikei District Council, 'Mangaweka Bridge Re-opening,' 20 October 2016, [News: Oct 2016 - Mangaweka Bridge Re-opening: Rangitikei District Council](#); Manawatu District Council, 'Mangaweka Bridge,' p.4; pers. comm. 10 July 2023 from John Jones of Manawatu District Council confirmed a hand rail was added as part of the new bridge replacement project, and that no strengthening work has been undertaken since 2016.

### 2.3. Chattels

There are no chattels included in this List entry.

### 2.4. Sources

#### *Sources Available and Accessed*

Much information about the history of Mangaweka Cantilever Bridge and the circumstances leading up to its construction is available in newspaper records. The bridge is mentioned in local histories, which provides good contextual information especially about Pākeha settlement and the importance of the bridge to local communities. It is also included in Geoffrey Thornton's publication on early New Zealand bridges. Much of the literature covers the need for the bridge and the lead up to its construction, rather than the use of the bridge. Original drawings for the bridge provide valuable information on its design and construction. Two particularly significant sources are a heritage assessment by Ian Bowman and Val Burr (2015) and an archaeological assessment by Andy Dodd (2017). These two reports draw upon the above-mentioned sources, supplemented by other published and archival sources including local body records, a Dictionary of New Zealand Biography entry for the engineer John Anderson, and newspaper articles from the 2010s.

#### *Further Reading*

Bowman, Ian, and Val Burr, 'Heritage assessment, Mangaweka Bridge, Mangaweka,' May 2015

Dodd, Andy, Subsurface Ltd, 'Mangaweka Bridge: Archaeological Assessment,' 2017

Laurenson, S G, *Rangitikei, the day of striding out*, Palmerston North, 1979

*Mangaweka and district's first 100 years*, Mangaweka, 1985

Thornton, Geoffrey, *Bridging the gap: Early bridges in New Zealand 1830-1939*, Auckland, 2001

### **3. SIGNIFICANCE ASSESSMENT<sup>98</sup>**

#### **3.1. Section 66 (1) Assessment**

This place has been assessed for, and found to possess aesthetic, archaeological, historical, social, and technological significance or value. It is considered that this place qualifies as part of New Zealand's historic and cultural heritage.

##### **Aesthetic Significance or Value**

Mangaweka Cantilever Bridge is of aesthetic significance because its cantilever design and siting complement the natural beauty of the area, which is recognised as an outstanding landscape. The bridge's setting forms a dramatic natural environment, and the cantilever design eliminates the need for midstream piers, allowing for the uninterrupted flow of the significant Rangitikei River. The height of the bridge does not compete with the backdrop of sandstone cliffs, instead its form echoes the topography of its setting, providing a sense of visual harmony. The symmetrical open truss design provides a sense of elegant strength in the bridge structure, which is largely unchanged since it was first constructed. The bridge's aesthetic values elevate it above its utilitarian function and allow it to contribute to the overall environment.

##### **Archaeological Significance or Value**

Remains of the earlier bridges that spanned the Rangitikei River on and close to the site of the Mangaweka Cantilever Bridge have the potential to provide an improved understanding of technologies used in late nineteenth-century methods of transportation and communication. These structures are not well represented in historical documents, therefore the remains of the cage bridge (1896), timber low-level bridge (1897), and the central pier foundation and abutments from the never-completed cylinder bridge may provide information about attempts to develop a safe means of traversing the river. Elements of the Mangaweka Cantilever Bridge can also be considered to have archaeological value.

##### **Historical Significance or Value**

Mangaweka Cantilever Bridge has historical significance for being New Zealand's first and only steel cantilever road bridge, and one of only three known extant cantilever bridges and viaducts in the country. Furthermore, it is a representative example of a common set of

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<sup>98</sup> For the relevant sections of the Heritage New Zealand Pouhere Taonga Act 2014 see Appendix 4: Significance Assessment Information.



circumstances in New Zealand: a high number of waterways, the resulting need for safe means of traversing them, and the ways in which successful structures noticeably altered the circumstances of individuals and communities. The bridge has high historic value for its associations with the highly respected engineering firm J and A Anderson Ltd, which was contracted to undertake the construction of the bridge, and the Public Works Department, which led the design and construction of New Zealand's infrastructure from 1878 for over one hundred years, with many of their engineers being regarded as leaders in their field. These connections with excellence enhance the value of the bridge.

The bridge has special local historical significance for its association with the settlement and development of farming and forestry in the central Manawatu-Whanganui Region. It is particularly associated with the Kawhatau settlement, a programme typical of those established by the government to settle the lower central North Island, and the success of which was reliant upon the ability to safely traverse the Rangitīkei River. These connections with the themes of Pākehā settlement and its associated infrastructure development enhance its importance.

#### Social Significance or Value

The absence of an official opening of Mangaweka Cantilever Bridge had long been lamented by the local community and on 7 March 2015 a much belated opening was held. Celebrations involved around 300 attendees, some dressed in period costume, and a procession of vintage vehicles. The bridge's social significance is further demonstrated by the strong community support for the retention of the bridge when it was threatened with demolition. The latter saw the formation of Mangaweka Bridge Trust to preserve the bridge and promote its tourism potential. Mangaweka Cantilever Bridge currently forms a celebrated part of the Manawatu 'Country Road' Scenic Route; Rangitīkei Cycleway; and Manawatu's Iron Gates Experience, thereby contributing to the sense of local pride and the economy. The bridge continues to provide a strong link between the Manawatu and Rangitīkei districts. It is a dominant element in both the townscape and landscape and is a communal structure by its very purpose and ownership.

#### Technological Significance or Value

Mangaweka Cantilever Bridge has technological significance as the first and only steel cantilever road bridge built in New Zealand, and one of just three known examples of cantilever bridges or viaducts that were built in the country. At a time when timber truss

design was most often applied in New Zealand, the Mangaweka Cantilever Bridge has technological value for being an important example of a design that was rarely adopted in the New Zealand context, possibly for the complexity of construction. The choice of this design demonstrates innovation in bridge building and the acknowledgement of the need to address a particular issue at this location. Designed to span the river with no midstream piers, the bridge addressed issues faced by earlier bridge crossings that were frequently affected by flooding. Despite some instances of repair, the technological value of this form of bridge and the material is demonstrated by the fact that it is the oldest extant and longest bridge built in the Manawatu and Rangitikei districts.

### **3.2. Section 66 (3) Assessment**

This place was assessed against the Section 66(3) criteria and found to qualify under the following criteria: a, b, e, g, j. The assessment concludes that this place should be listed as a Category 2 historic place.

- (a) The extent to which the place reflects important or representative aspects of New Zealand history

The building of bridges was one of the primary concerns of early communities because of the challenge of safely crossing New Zealand's many waterways. The earlier methods of crossing the Rangitikei River, including a low-level bridge, proved unreliable and to be only temporary solutions. Mangaweka Cantilever Bridge, by contrast, was built in durable materials including concrete and steel, and was designed to span the river with no midstream piers.

The bridge is intimately linked with the settlement and development of farming and forestry of the central Manawatu-Whanganui Region. The Kawhatau Settlement, which the bridge served, was typical of government programmes to settle and develop the lower central North Island.

- (b) The association of the place with events, persons, or ideas of importance in New Zealand history

Mangaweka Cantilever Bridge has significance for its association with nationally significant organisations the Public Works Department, which designed the bridge, and engineers J & A Anderson of Christchurch, who were contracted to construct it. The Public Works Department carried out extensive infrastructure development to assist with economic

development and significant immigration schemes. J & A Anderson were responsible for the construction of the Waiau Ferry Bridge in 1887, which was the country's first cantilever bridge. Their ability to successfully complete rare, unique and complex structures, allowed them to prosper from periods of government-led railway and infrastructure expansion.

(e) The community association with, or public esteem for the place

As an impressive and essential local infrastructure asset, Mangaweka Cantilever Bridge has been an important landmark in the Manawatu and Rangitikei districts since 1904. There is a high level of community association with this structure following on from the significant public esteem that was demonstrated through action taken to preserve and restore the bridge when it was threatened with demolition; at its opening, which was held on 7 March 2015 to rectify the absence of an opening when the bridge was first completed; and further celebrations when the new road bridge was officially opened on 20 May 2022. Additionally, the bridge continues to serve the community, currently as a pedestrian and cycle bridge, and is identified as an attraction on several tourist routes.

(g) The technical accomplishment, value, or design of the place

Despite several instances of repair, Mangaweka Cantilever Bridge is a technically accomplished early 1900s structure that has value for its relatively little-altered design. It remains very close to its original form. The truss, spans, deck, and piers were constructed using commonly used materials, but employed in a highly functional and aesthetic way to ensure longevity. That so few cantilever bridges were constructed in New Zealand suggests the engineering requirements for this bridge type were complex and therefore only used in rare circumstances.

(j) The importance of identifying rare types of historic places

Bridge building was of high importance in developing communities and for public safety, but of the considerable number that were built in New Zealand, Mangaweka Cantilever Bridge was the only steel cantilever road bridge. Only three cantilever bridges are extant in this country, making it a much less commonly used bridge type. The Mangaweka Cantilever Bridge therefore holds considerable significance for providing a rare opportunity to study the application of this bridge design and construction in New Zealand. That the bridge has retained much of its original form increases its value in this regard.

### *Summary of Significance or Values*

Mangaweka Cantilever Bridge is of considerable heritage significance to New Zealand. It is a significant landmark within the Manawatu and Rangitikei districts, being strongly linked to the history of that area's development. The bridge is of importance in terms of its design, and for its association with the Public Works Department and engineers J & A Anderson. The latter's success with other bridge building contracts such as Waiau Ferry Bridge, a Heritage New Zealand Pouhere Taonga Historic Place Category 1, led them to become known nationwide for sound engineering design and construction.

Mangaweka Cantilever Bridge is the only steel cantilever road bridge to be constructed in New Zealand and has been held in high esteem by the community since its completion. When threatened with demolition, strong efforts were made to not only preserve but also restore the bridge so it could still perform at least part of its original function. Its history has been celebrated by a belated opening ceremony and a commitment to increasing the awareness of the significance and history of the structure.

## 4. APPENDICES

### 4.1. Appendix 1: Visual Identification Aids

#### *Location Maps*

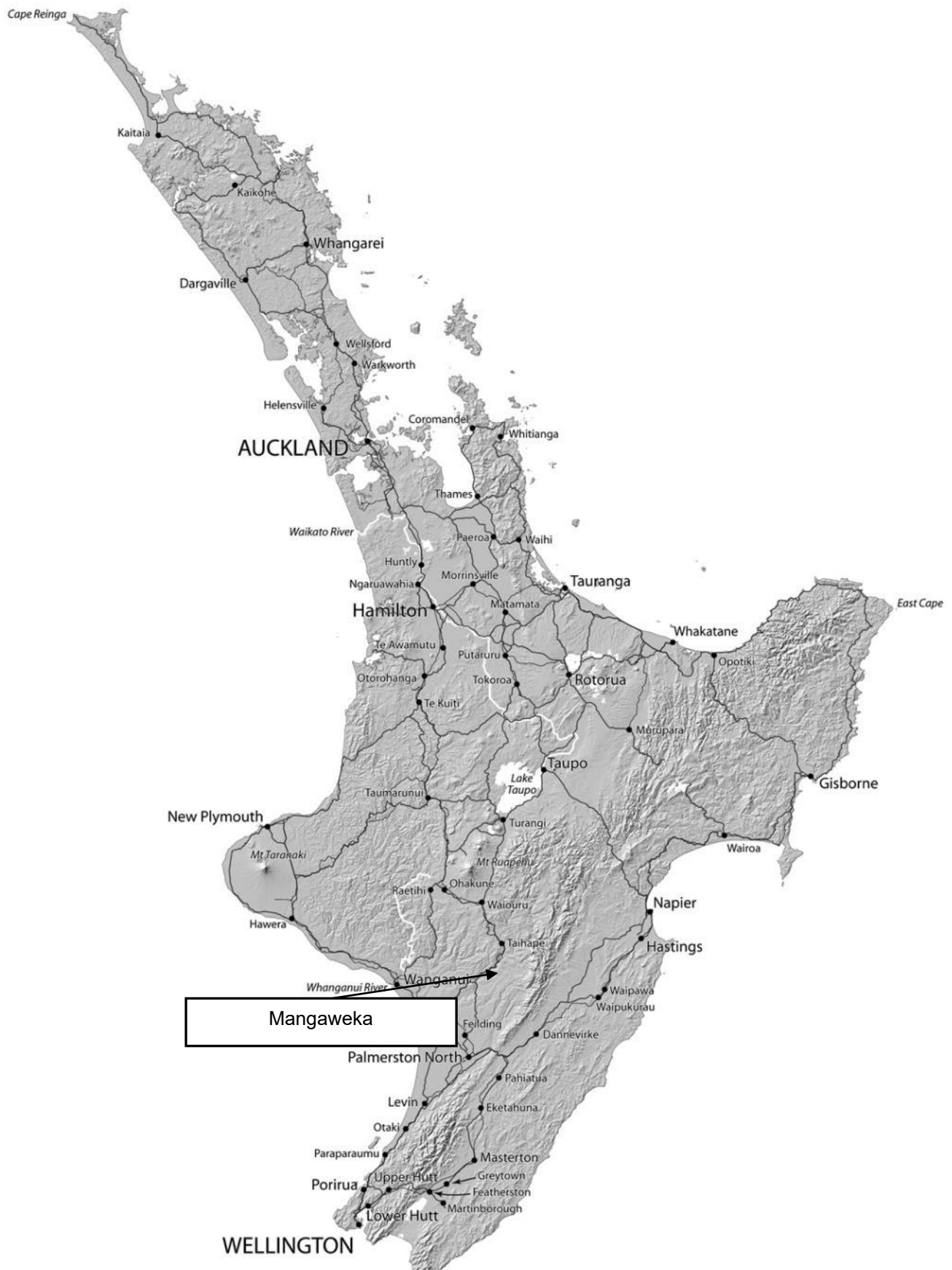




Figure 2: Mangaweka Cantilever Bridge, marked by a blue arrow, spanning the Rangitikei River.

*[Image: Landonline]*



### Map of Extent

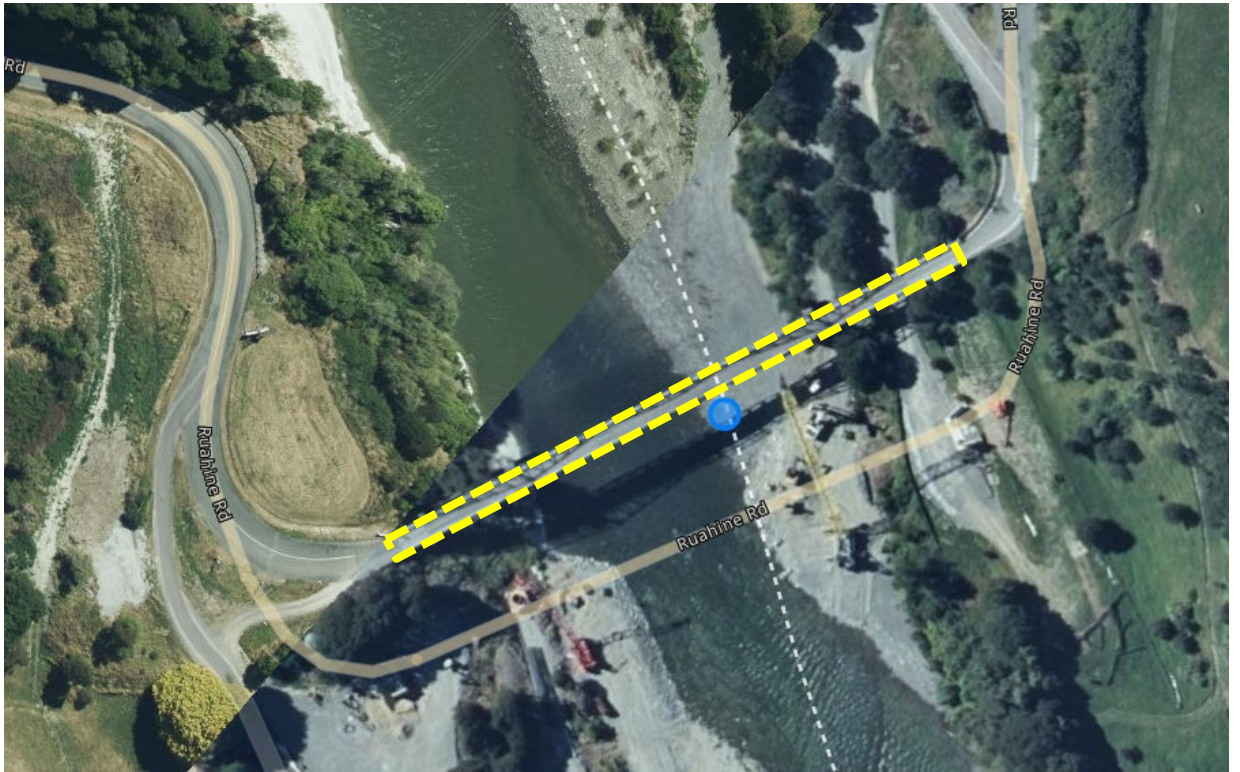


Figure 3: Mangaweka Cantilever Bridge is part of a Manawatu District Council and Rangitikei District Council Legal Road, Wellington Land District. Extent includes part of the land known as Legal Road, Wellington Land District, and the structure known as Mangaweka Cantilever Bridge including its abutments.

*[Image: Heritage New Zealand Pātaka database]*

### Current Identifier

N/A

## 4.2. Appendix 2: Visual Aids to Historical Information

### Historical Plans

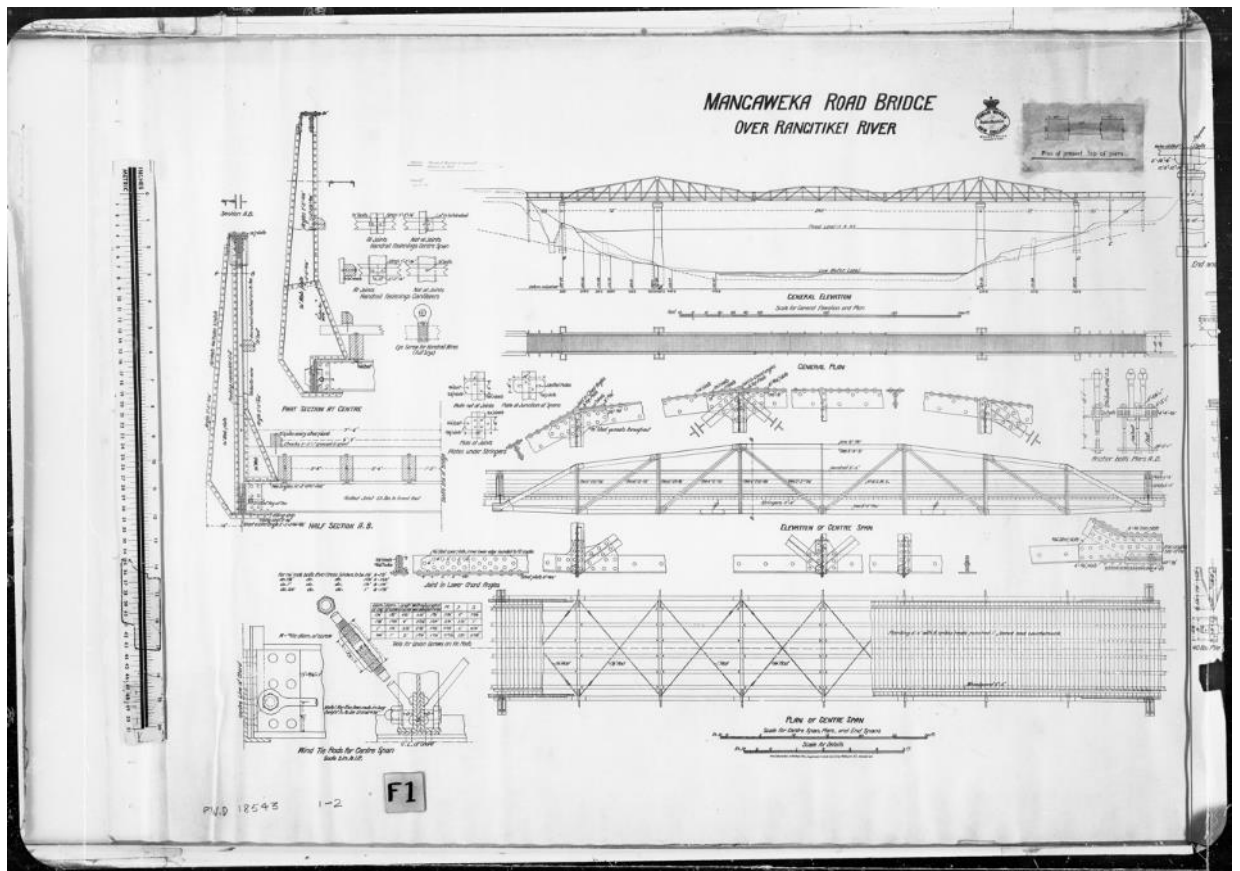


Figure 4: Mangaweka Road Bridge, over Rangitikei River, No. 1 general plan and elevation plan and details of centre and end spans. E Jackson, Specification 18543, PWD 18543, 1899, Code R25281077, Box 11, Part 1, Archives New Zealand

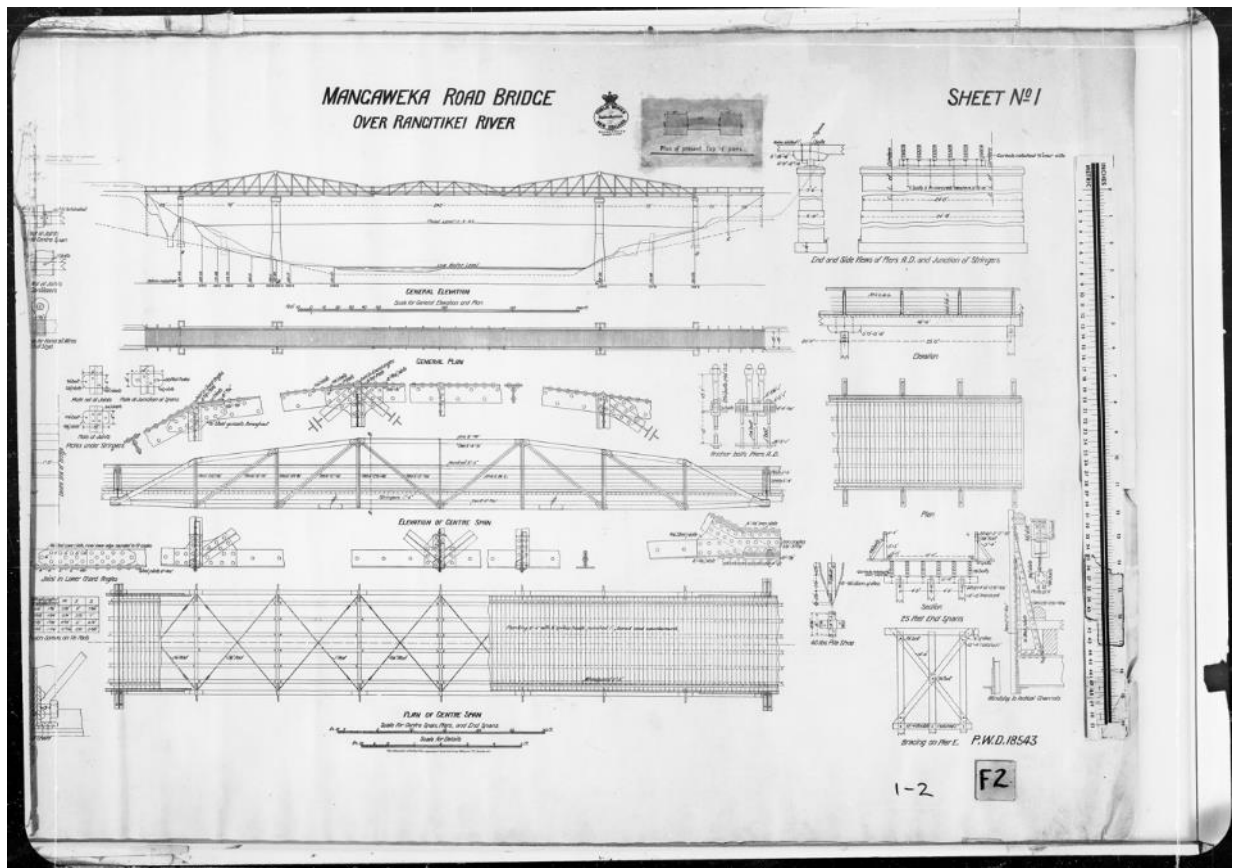


Figure 5: Mangaweka Road Bridge, over Rangitikei River, No. 2 plan and elevation and details of cantilevers, Mangaweka. E Jackson, Specification 18543, PWD 18543, 1899, Code R25281081, Box 11, Part 2, Archives New Zealand



*Historical Photographs*

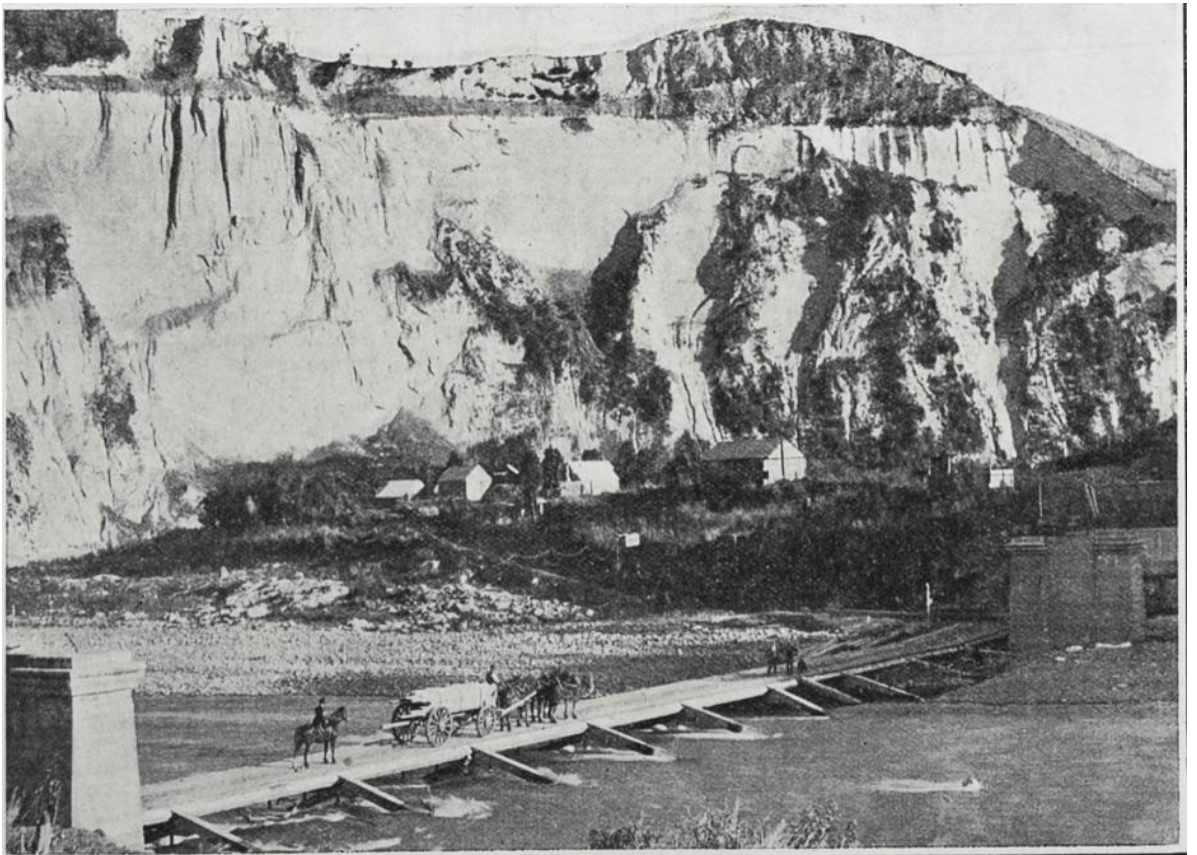


Figure 6: Low level bridge over the Rangitikei River near Mangaweka, with workers' camp, prior to the extension of the concrete piers in 1904. *Auckland Weekly News*, ca January 1905, p.3, Auckland Libraries Heritage Collections, AWNS-19050119-03-03

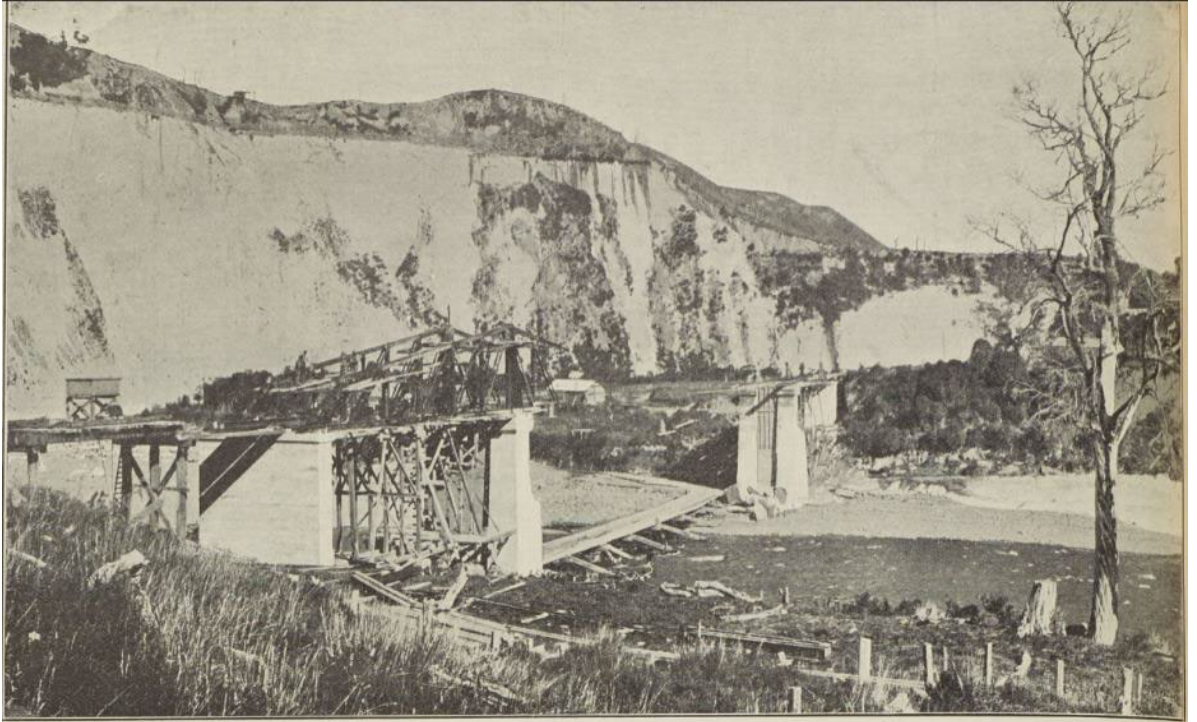


Figure 7: Low level bridge and the new cantilever bridge under construction, ca June 1904.

*Auckland Weekly News*, Auckland Libraries Heritage Collection, AWNS-19040602-04-01

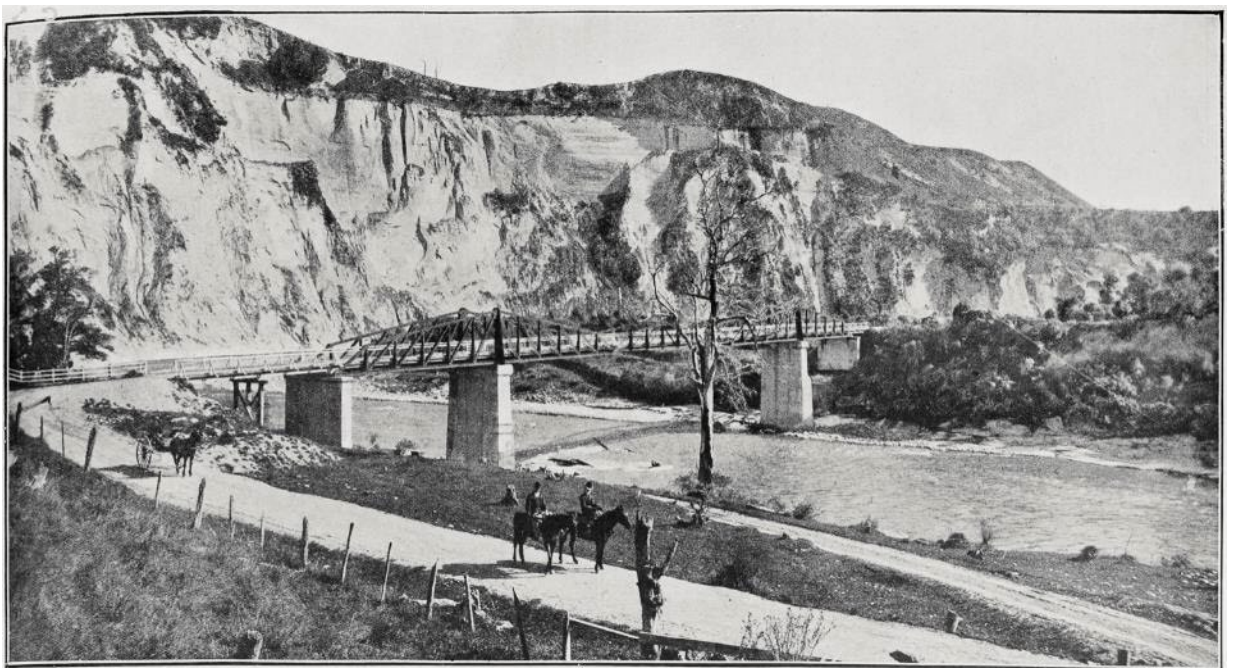


Figure 8: Mangaweka Cantilever Bridge and pathways completed, ca 1909. *Auckland Weekly*

*News*, Auckland Libraries Heritage Collections, AWNS-19091104-11-01





Figure 9: Official opening of Mangaweka Cantilever Bridge, 7 March 2015. Manawatu's Iron Gates Experience.<sup>99</sup>

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<sup>99</sup> Mangaweka Bridge - MANAWATU'S IRON GATES EXPERIENCE, accessed 19 June 2023





Figure 10: Pedestrians crossing the Mangaweka Cantilever Bridge, after the official opening, 7 March 2015. Manawatu's Iron Gates Experience.<sup>100</sup>

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<sup>100</sup> Mangaweka Bridge - MANAWATU'S IRON GATES EXPERIENCE, accessed 19 June 2023

#### 4.3. Appendix 3: Visual Aids to Physical Information

##### *Current Photographs of Place*

(All photographs taken by Joanna Barnes-Wylie, Heritage New Zealand, 29 April 2022)



Figure 11: Pier on the western bank of the Rangitīkei River





Figure 12: Pier on the eastern bank of the Rangitikei River



Figure 13: Abutment on the eastern bank of the Rangitikei River





Figure 14: Underside of the deck of Mangaweka Cantilever Bridge

#### 4.4. Appendix 4: Significance Assessment Information

Part 4 of the Heritage New Zealand Pouhere Taonga Act 2014

*Chattels or object or class of chattels or objects (Section 65(6))*

Under Section 65(6) of the Heritage New Zealand Pouhere Taonga Act 2014, an entry on the New Zealand Heritage List/Rārangi Kōrero relating to a historic place may include any chattel or object or class of chattels or objects –

- a) Situated in or on that place; and
- b) Considered by Heritage New Zealand Pouhere Taonga to contribute to the significance of that place; and
- c) Proposed by Heritage New Zealand Pouhere Taonga for inclusion on the New Zealand Heritage List/Rārangi Kōrero.

*Significance or value (Section 66(1))*

Under Section 66(1) of the Heritage New Zealand Pouhere Taonga Act 2014, Heritage New Zealand Pouhere Taonga may enter any historic place or historic area on the New Zealand Heritage List/Rārangi Kōrero if the place possesses aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, technological, or traditional significance or value.

*Category of historic place (Section 66(3))*

Under Section 66(3) of the Heritage New Zealand Pouhere Taonga Act 2014, Heritage New Zealand Pouhere Taonga may assign Category 1 status or Category 2 status to any historic place, having regard to any of the following criteria:

- a) The extent to which the place reflects important or representative aspects of New Zealand history
- b) The association of the place with events, persons, or ideas of importance in New Zealand history
- c) The potential of the place to provide knowledge of New Zealand history
- d) The importance of the place to tangata whenua
- e) The community association with, or public esteem for, the place
- f) The potential of the place for public education
- g) The technical accomplishment, value, or design of the place
- h) The symbolic or commemorative value of the place
- i) The importance of identifying historic places known to date from an early period of New Zealand settlement
- j) The importance of identifying rare types of historic places
- k) The extent to which the place forms part of a wider historical and cultural area

Additional criteria may be prescribed in regulations made under this Act for the purpose of assigning Category 1 or Category 2 status to a historic place, provided they are not inconsistent with the criteria set out in subsection (3)

Additional criteria may be prescribed in regulations made under this Act for entering historic places or historic areas of interest to Māori, wāhi tūpuna, wāhi tapu, or wāhi tapu areas on the New Zealand Heritage List/Rārangi Kōrero, provided they are not inconsistent with the criteria set out in subsection (3) or (5) or in regulations made under subsection (4).

NOTE: Category 1 historic places are ‘places of special or outstanding historical or cultural heritage significance or value.’ Category 2 historic places are ‘places of historical or cultural heritage significance or value.’