

# Remutaka Railway (former), Kaitoke to Cross Creek Engineering Heritage Register report

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Last amended 11 December 2025



Figure 1: The Royal Train ascending the Rimutaka Incline during the Duke of Gloucester's tour in 1934. Note the placement of the special Fell locomotives along the train. Mahara Upper Hutt Community Archive, <https://uhcl.recollect.co.nz/nodes/view/17101> Original from New Zealand Rail (NZR) Publicity Department Collection.

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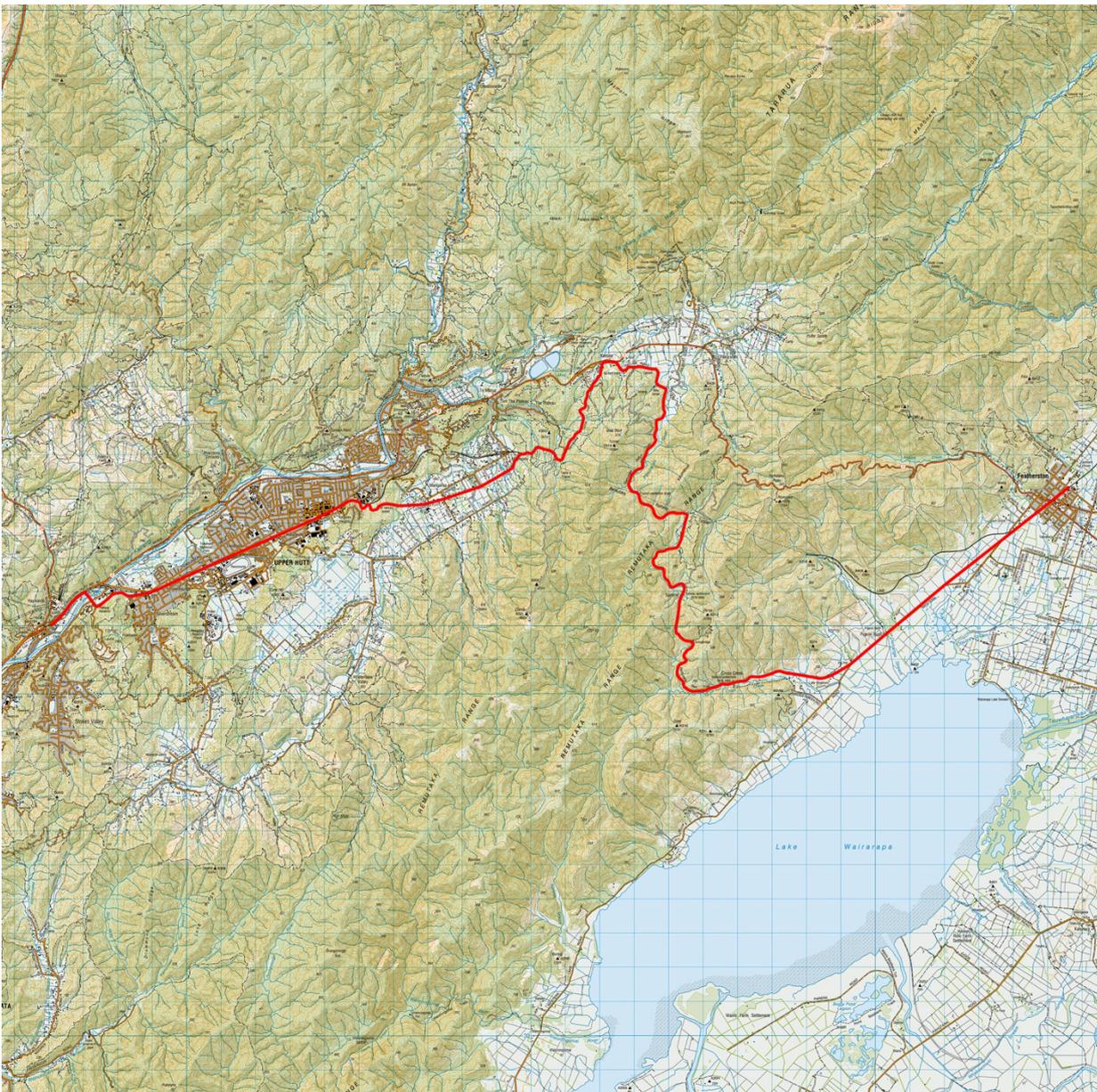
## General information

**Name:** Remutaka Railway (former), Kaitoke (Upper Hutt) to Cross Creek (Wairarapa)

**Location:** Kaitoke, Upper Hutt to Cross Creek, Wairarapa  
Wellington region

**Legal description:** Private land on the Wairarapa side of Cross Creek: Sec 119 Blk V, Wairarapa SD, 10.3584, SO 23442, State Forest NZ Gazette 1960, p.973. Cross Creek DOC land up to Summit Tunnel: Sec 116, Western Lake District, 76.3844, SO 23447, State Forest NZ Gazette 1958, p.1415. Wellington Regional Council: Pt Lot DP 47840, 6829.4907, (RT 47C/376), Pākuratahi State Forest. Private land bordering State Highway 2 Pt Sec 29, Pākuratahi District, 14.0294, SO 15791 Lot 1, DP 67970, 1.0000 Lot 2, DP 87891, 0.4890.

**Access information:** The route of the former Remutaka Railway forms a 17km walking and cycling track, accessed from Kaitoke on the Upper Hutt side, or at Cross Creek on the Wairarapa side. From Upper Hutt, the access point is 9km north of Upper Hutt on State Highway 2, in the Pākuratahi Forest Park. From Featherston, the entrance is at the end of Cross Creek Road, which is accessed from Western Lake Road.



*Figure 2: The line of the historic rail formation, built in the 1870s, from Manor Park (Lower Hutt) to Featherston. This report discusses the section from Kaitoke to Cross Creek.*

**City/District Council:** Upper Hutt City Council and South Wairarapa District Council

**Date registered:** xxx

**Other Engineering New Zealand recognition:** Engineering New Zealand recognised the engineering heritage value of the Remutaka Railway with a plaque unveiled on 18 October 2003.

**Other heritage recognition:**

- Heritage New Zealand, New Zealand Heritage List/Rārangī Kōrero: Remutaka Incline Rail Trail Heritage Area (2002). The extent of registration by Heritage New Zealand is the former rail track indicated on the map in the Registration Report, and land 20m on either side of the track including the structures marked on the map. The route is 17km in length (15km of old rail formations and 2km of access track from Cross Creek to the public car park). The listed section stretches from near the original Kaitoke Station over the Remutaka Range to the former Cross Creek Station. The route follows the old rail corridor which was initially on Crown land. A feature of the railway is the number of culverts and tunnels cut to control flooding on the track.
- Local Authority District Plan:
  - Listed on the **Upper Hutt District Plan** as heritage features are the following structures:
    - Pakuratahi Rail Tunnel
    - Pakuratahi River Bridge: wooden truss bridge with steel bracing
    - Ladle Bend Bridge: cement block and wooden construction
    - Remutaka Railway Summit Tunnel
    - Remutaka Railway – original line. Cutting, embankments and retaining walls: seven large cuttings, concrete culvert under road/track, concrete wall and several embankments still clearly evident. Remnants of 64 embankments and 65 cuttings made by original contractor W F Oakes, between 1874 and 1878.
    - Summit rail yard and station remnants: remnants of rail yards and station including remains of houses (chimney bases), signal box, coal or water tank foundations, ash pit and remains of locomotives on a gravel bed nearby.
  - Heritage Buildings and items listed on the **proposed Wairarapa Combined District Plan**:
    - No longer in their original positions on the Incline route: two houses (11 and 13 Fox Street, Featherston) are listed as heritage items on the proposed Wairarapa Combined District Plan. These cottages were relocated from the former railway settlement of Cross Creek at the foot of the Rimutaka Incline.
    - Fell locomotive H199: at the Fell Locomotive Museum, corner of Fitzherbert & Lyon Streets, Featherston.
- The whole of the railway formation from Manor Park (Lower Hutt) to Featherston is recorded in the New Zealand Archaeological Association site recording scheme as **S26/13**. In addition, 12 individual sites that are associated with the area covered in this report from Kaitoke to Cross Creek are recorded in the New Zealand Archaeological Association Site Records:  
S27/32 (tunnel), S27/33 (Bridge), S27/34 (Bridge), S27/35 (Tunnel and former settlement area), S27/36 (Tunnel), S27/37 (Water intake shaft), S27/38 (Tunnel), S27/39 (kiln), S27/40 (Workers' shelter), S27/41 (Railway workshop and settlement), S27/46 (Abutments and spans), S27/53 (Chimney).

# Description

## Summary

The mountainous rail route which traversed the rugged terrain over the Remutaka Range from Kaitoke (near Upper Hutt) to Cross Creek (near Featherston), was a pivotal component of New Zealand's early rail infrastructure. This railway – which incorporated the Rimutaka Incline – connected Wellington and the Wairarapa (and then Hawke's Bay from 1897), and was part of a functioning mainline, linking the capital and its regional hinterlands for 77 years, from 1878 to 1955.<sup>1</sup>

The railway from Kaitoke to Cross Creek was characterised by challenging engineering features, including tunnels, bridges, cuttings, sharp curves and particularly steep gradients. On the eastern side of the range, the only practical route was much steeper than conventional railways could accommodate. To overcome this problem, the famous Rimutaka Incline section of the line was built with a Fell centre-rail system. This necessitated the use of specially designed Fell locomotives, brake vans and complex train configurations. It was the only Fell system in the world to serve for a significant amount of time, making the railway internationally significant.

The railway followed the route first surveyed by engineer John Rochfort in 1870–71. Work began in 1872, funded by the New Zealand government as part of Premier Julius Vogel's bold railway construction programme. Construction from Kaitoke to Cross Creek began in 1874 and the Incline section was constructed between 1875 and 1878. The line reached Featherston in 1878 and was extended to Masterton in 1880.

The line linked the capital with the rural and forested areas of the Wairarapa and economically benefitted both localities. Given the poor road access, the railway was the main form of transport for both passengers and goods across the Range for much of its operation, ensuring it was a well-known part of the country's rail network.

The line, operated by the New Zealand Railways Department (NZR), had significant technical demands. Purpose-built railway settlements and stations were required at either end of the Incline (at Summit and Cross Creek) to house staff who managed the Incline. These two communities give the Incline further social significance.

The special "H" class Fell locomotives used on the Incline were among the longest-serving steam locomotives in New Zealand history, adding to the Incline's enduring technological and historical significance. Although passengers were largely transported on specially designed railcars from 1936, the Fell locomotives continued to be used for freight until the line closed in 1955, when a tunnel between Upper Hutt and Featherston opened. A steam-operated 'Wairarapa Mail' train continued until 1948.

The route is now a popular walking and cycling track. While most of the material from the line and associated sites was removed in the 1950s, structures and sites that remain include the site of former railway settlements, stations and sidings, and a number of tunnels, bridges and embankments. A heritage museum in Featherston honours the Incline and the Fell locomotives.

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<sup>1</sup> Throughout the life of the route, and for many years afterwards, the name of the range was spelt Rimutaka, and most of the sources referenced here used that name. Its name was officially changed in 2017 to Remutaka by the NZ Geographic Board. The name Remutaka Range has been used throughout this report, but the Incline's name had been preserved as Rimutaka Incline as the name was not officially changed.

## Historical narrative

The first public rail network built in New Zealand was constructed in the South Island in the 1860s. The end of the New Zealand Wars, and Premier Julius Vogel's ambitious public works programme, funded from money borrowed from overseas, meant work could begin in earnest on railways in the North Island in the early 1870s. Vogel's Railways Act 1870 facilitated construction of a number of new routes. Engineer [John Carruthers](#) (1836–1914) was appointed as New Zealand's Engineer-in-Chief by Vogel during his trip to England to raise the money for the work. Carruthers arrived in New Zealand in 1871 and took control of the massive programme of railway survey and construction. A decade later, there were 366 miles (589km) of railway in the North Island. Work began on the North Island main trunk line between Wellington and Auckland in 1885.<sup>2</sup>

The Wellington to Wairarapa rail line was funded by the government as part of this programme. Noted engineer and surveyor [John Rochfort](#) (1832-1893) first surveyed a route for the railway between 1870–71.<sup>3</sup> Rochfort found a number of alternative routes, but the steepness on the eastern side of the summit of the range in particular proved a very difficult dilemma. Some of Rochfort's proposals for the route would have necessitated numerous tunnels, embankments, steep grades and sharp curves – all considered too expensive. Carruthers, balancing his budget between railway projects around the country, said these proposals would have been “an unnecessary extravagance”.<sup>4</sup>

Instead, a route was chosen across the Range which avoided much tunnelling, but nevertheless still required steep embankments, some tunnelling, and the exceptionally steep line down the eastern side, which became known as the Rimutaka Incline. Construction work began in 1872. The route was built in stages, in a series of contracts between the government and different railway engineers. Work began on the section from Wellington to Lower Hutt in August 1872 and this section opened in April 1874. Work on the Lower Hutt to Upper Hutt section began in 1874 and was completed in 1876. The line finally reached Pakuratahi (now known as Kaitoke) Station in December 1877, after passing through some of the most difficult and steep terrain on the route.<sup>5</sup>

The next part of the line, from Kaitoke to Cross Creek, was constructed in a series of concurrent contracts and the line finally made its way across the Remutaka Range to Featherston in September 1878. The route was extended from Featherston to Masterton in 1880, and was linked at Woodville with the line between Palmerston North and Napier in 1897. Because the government gave its backing to the Wairarapa route, it allowed the privately held Wellington and Manawatu Railway Company to develop an alternative route north from Wellington along the Kāpiti Coast to the Manawatū. This line opened in 1886, and the company owned and maintained it until 1908. This meant that the Wellington-Wairarapa route was the only government route out of Wellington until 1908, when the government finally bought out the private company and became the owner of both lines.

## Design and construction

Kaitoke Station, a single platform station, goods shed and a station master's house, was built by contractor W. H. Ridler when the work on the line from Upper Hutt to Pakuratahi was nearing completion. The line as far as Kaitoke Station was opened on 28 December 1877 by the Governor. For a time, passengers and goods crossing the Remutaka Range would transfer to horse coaches here. The station was much less busy after the rest of the line opened in 1878, but remained a welcome refreshment stop for passengers after climbing the steep hill from the Hutt, until 1952.<sup>6</sup>

There were three contracts for the construction of the line between Kaitoke and Cross Creek, let to three different contractors. These were worked on concurrently between 1874 and 1878 and were opened at the same time. By completing sections concurrently, project managers had hoped to save time. However, the need to

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<sup>2</sup> Neil Atkinson, *Trainland: how railways made New Zealand*, Auckland: Random House, 2007, 25; Neill Atkinson, 'Railways', Te Ara – the Encyclopedia of New Zealand, 2010, <https://teara.govt.nz/en/railways> (accessed 18 August 2025). George Mullenger, 'Carruthers, John', Dictionary of New Zealand Biography, first published in 1993. Te Ara - the Encyclopedia of New Zealand, <https://teara.govt.nz/en/biographies/2c11/carruthers-john> (accessed 18 August 2025).

<sup>3</sup> The main reference for this report is the very comprehensive history: Norman Cameron, *Rimutaka Railway*, (Wellington: New Zealand Railway and Locomotive Society, 2006).

<sup>4</sup> 'Report on Railways', *Appendix to the Journals of the House of Representatives*, 1871 Session I, E-02a, 2.

<sup>5</sup> Cameron, *Rimutaka Railway*, 24; 'The Masterton Railway', *Evening Post*, 19 August 1872, 2.

<sup>6</sup> Cameron, *Rimutaka Railway*, 25-26.

carry materials to site rather than being able to transport them via previously completed sections of rail, meant that the intended time savings didn't eventuate.

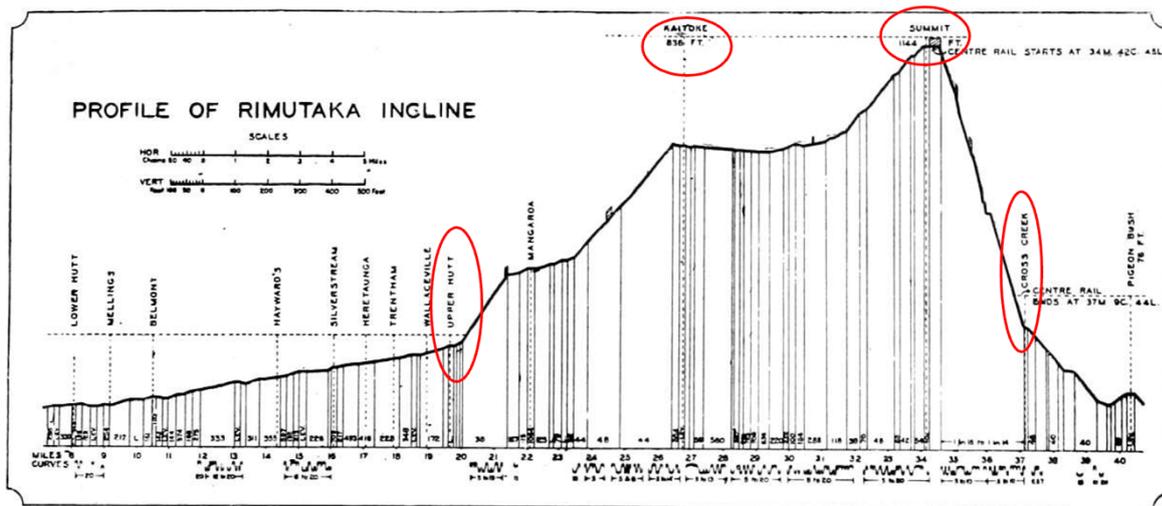


Figure 3. Profile of the rail route from Lower Hutt to Pigeon Bush (just southwest of Featherston). Circled are Upper Hutt, Kaitoke, Summit and Cross Creek. The area covered by this report is the area from Kaitoke to Cross Creek. This includes both a regular railway, and the Rimutaka Incline – from Summit to Cross Creek. The profile marks where the ‘centre rail’ (ie the extra rail for the Fell engines) stops and starts at Summit and Cross Creek. Taken from N Blake, ‘A Remarkable Railway’, *New Zealand Railways Magazine*, Vol 1, Issue 2, June 1926, 7-8.

### The Pakuratahi Contract

The first of these contracts, the **Pakuratahi Contract**, was from just after Kaitoke Station to just before Summit, the highest point on the railway (1141 feet above sea level), and was allocated to William Oakes. Many changes were needed during the construction of this section, which was around six miles long and largely followed the curves of the Pākuratahi River, and Oakes found ways to make cuttings instead of a number of planned tunnels. The route included two bridges (a truss bridge and the Ladle Bend Creek Bridge), one tunnel (Pakuratahi), embankments and numerous cuttings into steep gorge hillsides. Parts of the route were very steep, with a grade of 1 in 39–40. Because Oakes was unable to source bricks from Wellington, he made his own pressed concrete and cement sand blocks on site for the Pakuratahi Tunnel lining. The lower sides of the tunnel were coated in poured concrete and the arch lined with the cement blocks. This was a very early use of concrete blocks in New Zealand.<sup>7</sup>

Maintaining the 200-strong workforce – who camped in the bush – was made difficult by challenging, wet conditions. One particular group of Chinese workers were praised for the quality of their work by both Oakes and a visiting journalist in 1876. Oakes’ contract was inaccessible by road, and no one could be enticed to open a store at the site, forcing him to take on the role himself and sell food to his workers. Such were his labour problems that he advertised for 200 men, guaranteeing 12 months of work, in February 1877. Despite his efforts, Oakes had to hand his contract over to his guarantor a few months later, resulting in much legal wrangling. The contract was finally completed in February 1878.<sup>8</sup>

### The Summit Contract

The following section, the **Summit Contract**, was built by Collie, Scott and Wilkinson. It was short, but difficult, as it included the Summit Tunnel (the longest of the project’s tunnels at 576 metres, also known as the Rimutaka Tunnel), and concluded just after the tunnel. It was only one mile, plus the Summit rail yard cut into the hillside. A second small tunnel became necessary, to divert a stream that landed at the Cross Creek portal. Access and conditions were extremely difficult, with the closest road access two miles away, terrible weather, and dangerous rock conditions in the tunnel. Government and public perception that the project was slow to

<sup>7</sup> Ian Bowman, *Rimutaka Structures Incline Conservation Plan, 1999*, unpublished report, copy held by Heritage New Zealand Pouhere Taonga, 13-14. This is thought to have predated the first concrete block houses in New Zealand by more than 25 years.

<sup>8</sup> Cameron, 26-31; ‘The Wellington and Masterton Railway’, *New Zealand Mail*, 9 December 1876, 16.

progress, brought about widespread criticism. The contract finished behind schedule, taking three and a half years to complete. The Public Works Department lined the tunnel with bricks once this section of the line was completed and bricks could be brought by rail from Wellington.<sup>9</sup>

## The Incline Contract

The final contract, the **Incline Contract**, was allocated to railway engineer Charles McKirdy. Charles McKirdy (d.1914) was a leading Wellington contractor. He also constructed the quarantine buildings on Matiu/Somes Island and was a member of the Wellington City Council in the 1870s.<sup>10</sup> McKirdy had already built much of the line up to Upper Hutt, as well as the part of the line from just north of Upper Hutt to just after Kaitoke Station.

The Incline Contract was an eight-mile section which began after the Summit Tunnel. It included the Rimutaka Incline, the tunnel known as Horseshoe Gully Tunnel, later known as Siberia, the 354-foot-long Horseshoe embankment (on a five-chain radius curve), Price's Tunnel (321 feet long), a tunnel to divert water, the yard at Cross Creek, the station at Pigeon Bush, and the remainder of the route down to Featherston.<sup>11</sup>

The Rimutaka Incline traversed 869 vertical feet in three miles. The average gradient of the Incline was unusually steep at 1 in 15 – much too steep for conventional locomotives. To manage this, four H-class 'Fell' locomotives were imported from England specifically to operate on this section (and two more were added later from Glasgow). These engines employed a centre-rail system, patented by English engineer John Barraclough Fell in 1863. The Fell system was first implemented on the Mont Cenis Railway, a 77km route traversing the Alps between France and Italy, which operated from June 1868 until October 1871. It was also adopted for use on Brazil's Cantagallo Railway, where it remained in use until 1883 when conventional locomotives were modified to navigate the steep gradients. Its centre rail remained in use for braking descending trains until 1965.

McKirdy began work in October 1875. The Public Works Department were responsible for laying the track from Upper Hutt, which reached Summit in 1878. This made McKirdy's work easier, as materials could be easily transported from Wellington. One of the Fell engines was brought out of storage and used to lay the tracks on the Incline. This took around eight weeks. At Cross Creek, the future station and railway settlement at the foot of the Incline, McKirdy built a yard, including a special safety siding into which an out-of-control train could divert in an emergency – a safety redundancy that was never used. Once the work reached Cross Creek, the rest of the contract proceeded rapidly, and reached Featherston in August 1878.

In July 1876, it was reported McKirdy had 200 men working on the Incline Section, and a further 300 on his other contracts on the line. Like Oakes, he opened a store to sell products to his workforce.<sup>12</sup> In May 1876, he advertised a tender for the supply of 300,000 bricks for the Incline Section. The following year it was reported that McKirdy was making the bricks from clay found near the worksite – although it is possible this didn't go ahead, as the Public Works Department lined the tunnels as noted above.<sup>13</sup>

A journalist visited the various work camps during construction in December 1876, and made particular note of the work ethic and camaraderie of a group of Italian workers:

*[They were working] in a manner that would shame most British workmen. I visited their camp, and was received with the greatest kindness. They had formed amongst them a brass band of eighteen performers, whose playing would not disgrace an operatic or military band. They visited Greytown, and the townspeople there having made a collection offered it to them. Their leader added £1 to the £7 collected, and handed the whole to the local hospital. They are remarkable not only for musical harmony, but for that of companionship.<sup>14</sup>*

Working on these three railway contracts was a miserable experience for workers, especially during the winters. The bush was constantly damp, and winters were bitterly cold. For at least part of the contract, men worked

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<sup>9</sup> Cameron, *Rimutaka Railway*, 31-37.

<sup>10</sup> The train station on the Silver Stream Heritage Railway line is now named McKirdy, after Charles McKirdy, as he built the line that is now used for that heritage line.

<sup>11</sup> Cameron, *Rimutaka Railway*, 37-47.

<sup>12</sup> *Wairarapa Standard*, 4 July 1876, 2; *Evening Post*, 20 July 1876, 2.

<sup>13</sup> *Wairarapa Standard*, 6 May 1876, 2; *New Zealand Times*, 27 February 1877, 2.

<sup>14</sup> *New Zealand Mail*, 9 December 1876, 16.

through the night. A special 'Sick and Accident Committee' was set up amongst McKirdy's men working on the Incline to help those who were injured at work. When one worker was blinded in an explosion his fellow workers gathered funds to pay for him to be shifted from Masterton to Wellington Hospital for treatment, in the hope his sight could be restored. They also paid for a doctor to visit the camp every fortnight.<sup>15</sup>

At least three men died during the construction of the Incline. Daniel McCallum and Joseph Marshall, both Featherston men, were killed when the interior of Price's Tunnel collapsed in early 1877. The resultant investigation found that the technique used for lining the tunnel was faulty, and that McKirdy's engineer had previously informed Price (the sub-contractor responsible for the tunnel) of the danger.<sup>16</sup> Another worker was killed during the lining of the Summit Tunnel with bricks, and another lost his eyesight.<sup>17</sup>

## Opening

In October 1878, almost exactly three years after McKirdy was awarded the Incline contract, the entire railway was officially opened by the Governor at a ceremony in Featherston. This ceremony was delayed by four days when the train from Wellington carrying the Governor, and others who had wanted to take part in the ceremony, had to turn back after leaving Kaitoke due to landslips up the line. The return of the train along the same line it had departed on raised concerns about the danger of having no telegraph line along the route. Until it returned to Upper Hutt, there was no way to alert the network of an unscheduled train on the line. Likewise, there was no way of telling those waiting at Featherston that the Governor and his train would not be arriving for the celebrations.

With the trip to Featherston delayed, Wellington celebrated the event first, with a special fete day in the city, with parades and a sports day, rockets let off from Mount Victoria and a special grand dinner and ball held at the Opera House. One of the city's hotels, Barrett's Hotel, was decorated with a sign showing Wellington and Wairarapa linked together with an iron chain.

The Governor's excursion to Featherston over the Incline was successfully reattempted four days later on 16 October 1878. The Governor arrived in Featherston with 150 other Wellingtonians to a rapturous welcome. The train also brought the cannons of the Naval Volunteers, which were put in a nearby paddock to be set off later in the ceremony. The *New Zealand Mail's* reporting of the events took up almost two pages of the newspaper.<sup>18</sup>

## Operation and modification of the line

The Incline was the steepest railway in New Zealand and had special technical demands such as constrained engine loads and train speeds. The route remained largely the same throughout its 77 years of operation. Coming from Wellington, the route used regular locomotives for most of the journey. The grade was steep from Upper Hutt onwards. Passengers were allowed an eight-minute stop at the refreshment rooms at Kaitoke Station. The route then followed alongside the Pākuratahi River up to Summit. This part of the route had steep gradients and some of the tightest curves on New Zealand's railway system, which severely restricted engine loads and train speeds.

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<sup>15</sup> *Wairarapa Standard*, 23 December 1876, 2.

<sup>16</sup> *Wairarapa Standard*, 27 February 1877, 2.

<sup>17</sup> Cameron, *Rimutaka Railway*, 37.

<sup>18</sup> 'The Railway demonstration', *New Zealand Mail*, 19 October 1878, 19.



*Figure 4: Kaitoke Station, before 1901. At the platform is the northbound Wellington-Napier 'Mail' train, and next to it is the morning Masterton-Wellington train, headed by a Wb-class locomotive. The station later had a verandah and a signal box added. Photographer: Albert Percy Godber. Ref: APG-0006-1/2-G, A P Godber Collection. Alexander Turnbull Library. <https://natlib.govt.nz/records/22497747>*

At Summit Station, trains would be marshalled for the descent of the Incline, including Fell locomotives and brake vans, distributed among the passenger and freight carriages in order to tackle the steep 4.8km section between Summit and Cross Creek – the Rimutaka Incline. The Fell locomotives, which generally only travelled between these two stations, were equipped with an auxiliary steam engine. This powered four horizontally aligned wheels designed to grip either side of a centrally positioned, double-headed rail. This centre rail was mounted on pedestals between the standard running rails. The grip wheels on the engines provided the additional traction on the centre rail, and the brake blocks on engines and Fell brake vans provided additional braking. Four of these specialised tank locomotives were constructed for the Incline in 1875 by the Avonside Engine Company (Bristol, England), with two more added in 1886 built by Neilson and Company (Glasgow). These locomotives were originally named after mountains (with the first known as 'Mont Cenis' after the first Fell operated line, between France and Italy) and later known as the H-class, numbered H199 to H204 after 1890. Over the years the locomotives underwent many modifications.



Figure 5: Fell engine at the Incline, ca 1890. Note the raised centre rail. Burton Brothers. Alexander Turnbull Library. Ref: PAColl-7581-31 /[records/22877321](#)



Figure 6: H class Fell locomotive (H203 or H204) built by Neilson and Company in 1886. Fell locomotives had two engines – one drove the horizontal wheels that gripped the Fell centre rail, and the other, ‘outside engine’, drove the wheels that ran on the rails. This photo shows a close-up view of the Joy radial valve gear that drove the outside engine. Photographer: Albert Percy Godber. Alexander Turnbull Library, Ref: APG-0377-1/2-G. /[records/22824090](#)



*Figure 7: Underside of a Fell van, showing the horizontally aligned grip wheels. New Zealand Rail (NZR) Publicity Department Collection, negative number: B6327. Archives New Zealand.*

Fell engines formed the core motive power on the Incline, although standard adhesion locomotives, which did not engage with the centre rail, were occasionally used in the early 20th century. Each Fell locomotive was rated to haul up to 66 tonnes on the Incline's 1 in 15 gradient. There were very specific instructions for the operation of the trains and the way in which the trains were marshalled, depending on their weight and what they were transporting.<sup>19</sup> The maximum permitted goods train load of 264 tonnes required the use of four locomotives, distributed along the length of the train to ensure even traction.

In the early years, the passenger carriages were marshalled in front of the engines and propelled, rather than hauled, up the incline, in order to minimise smoke in the carriages. However, after a derailment in 1880 resulting in three deaths and other serious injuries, one engine was always ahead of the carriages.

To ensure safety when descending the incline, powerful handbrakes bore directly against the central rail, and specially designed Fell brake vans were employed as a further safety measure. A fully loaded descending goods train of 254 tonnes required five brake vans, each manned by a trained guard.

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<sup>19</sup> Cameron, *Rimutaka Railway*, 80-81.



Figure 8: Interior of a Fell van, showing the hand and central rail grip brakes. Photographer: Albert Percy Godber. Alexander Turnbull Library. Ref: APG-0049-1/2-G. [/records/22834928](#)



Figure 9: Railwayman, Clive Barry in the brake carriage, ca 1950s. The rail line, with centre rail, is visible through the open carriage door. Wairarapa Archive. Ref: 17-152/1-29. <https://masterton.spydus.co.nz/cgi-bin/spydus.exe/ENQ/OPAC/ARCENQ?SETLVL=&RNI=5106205>

At the foot of the Incline was Cross Creek, where trains were marshalled, shunted, serviced and stabled in what was a large and involved operation. From there, the route was of relatively easier gradients to Featherston and beyond.

The railway operated six days a week, at first with three trains passing both ways each day, and later up to six times a day. Speed limits varied, but for most of its life the limits were fixed at six miles per hour ascending the Incline and 10 miles per hour descending.<sup>20</sup> The climb up 'The Hill' between Cross Creek and Summit, took around 45–50 minutes.

There were a few other engines used to supplement the six Fell locomotives over the years, including E66, a one-off tank engine made in the Petone workshops, which became too hot in the cab and was unpopular with drivers. It was designed by G A Pearson and was known as 'Pearson's Dream'.<sup>21</sup> In his 2006 book about the history of the Incline, Norman Cameron, concluded that although the hard-working Fell engines required a great deal of maintenance, and were therefore very costly to run, they were the only successful engines ever used on the line.<sup>22</sup>

Use of the route increased sharply when the railway was connected with the Napier-New Plymouth route in 1897 at Woodville.<sup>23</sup> Traffic also increased during the First and Second World Wars. During the First World War, some troops marched between Trentham and Featherston Military Camp, while others were transported by train. During the Second World War, the cartage of some Wairarapa goods, especially frozen meat and wool, was diverted through Palmerston North to relieve the heavy pressure on the Incline. Throughout World War II, Featherston Military Camp was not used for military soldiers, but as New Zealand's only prisoner of war camp.<sup>24</sup>

As train technology and equipment developed, any new railway standing instructions for the operation of North Island trains often had to make exceptions for the Incline. A number of wagons were not permitted to be used on the route: if the sides and roof were too high, they would catch the wind, and if the floor of the wagons was too low, they would not clear the centre rail. Wagons that were not permitted on the Incline were painted with a red mark.<sup>25</sup> Occasionally the route was used for passenger or goods trains that would normally travel through the Manawatū, where there had been slips or flooding.<sup>26</sup>

The railway's long operational history was marked by a strong safety record, although a fatal passenger accident occurred on 11 September 1880 at the Horseshoe Gully ('Siberia') embankment. Strong winds derailed two passenger carriages and two goods wagons, which tumbled down the embankment, resulting in the deaths of three children and serious injuries to five adults.<sup>27</sup> The three children were buried together at Featherston Cemetery. The confused early reporting stated incorrectly that the whole train had fallen off the tracks. It was noted at the time that the Fell engine's grip wheels and brakes remained anchored to the middle rail, which saved the rest of the passengers, as if they had failed, the entire train would have plummeted. The guard in charge of the brake van uncoupled his van and returned to Cross Creek to seek assistance, as there were no communications in the area.<sup>28</sup>

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<sup>20</sup> Cameron, *Rimutaka Railway*, 80.

<sup>21</sup> For the other engines used on the route, see Cameron, *Rimutaka Railway*, 81-82; 'Rimutaka Incline', film by Davis Sims (1991), NZ On Screen, <https://www.nzonscreen.com/title/rimutaka-incline-1991/overview>

<sup>22</sup> Cameron, *Rimutaka Railway*, 84.

<sup>23</sup> Cameron, *Rimutaka Railway*, 81.

<sup>24</sup> Cameron, *Rimutaka Railway*, 84.

<sup>25</sup> 'Rolling stock prohibited from crossing Rimutaka incline', 1890-1941, R13258064, Archives New Zealand, Wellington.

<sup>26</sup> Cameron, *Rimutaka Railway*, 76.

<sup>27</sup> 'The Fatal Railway Accident: Full Particulars', *Evening Post*, 13 September 1880, 2; Cameron, *Rimutaka Railway*, 94.

<sup>28</sup> 'The Fatal Railway Accident: Full Particulars', *Evening Post*, 13 September 1880, 2.

To avoid any reoccurrence, heavy nine-foot high vertical windbreak barriers (nearly the height of the trains) were built along both sides of the embankment at this point. Similar windbreaks were built at Pigeon Bush after a similar non-fatal incident there in 1888. New instructions were also issued about how the trains were to be marshalled, with a complex set of rules for every possible permutation and direction of travel.<sup>29</sup> In 1886, a train on the Incline began to slip backwards after the centre driving wheels failed. After it came to rest inside the Siberia Tunnel, some passengers panicked and exited the train into the smoke-filled tunnel, but no injuries were reported.<sup>30</sup>



*Figure 10: Fell engine and train exiting Siberia Tunnel and passing the windbreaks, ca.1910. Photographer: Albert Percy Godber. Alexander Turnbull Library, Ref: APG-0153-1/2-G. [/records/22300820](#)*

In 1889, a bell was mounted in the Summit Tunnel to alert the drivers and Fell brake-van guards when the train was soon to begin or finish its journey on the centre rail. The wheels of each vehicle on a train depressed a lever beside the rail which then rang the bell. Ascending trains would ungrasp the rail, and descending trains would apply the brake blocks.<sup>31</sup>

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<sup>29</sup> Cameron, *Rimutaka Railway*, 68-70.

<sup>30</sup> Cameron, *Rimutaka Railway*, 95.

<sup>31</sup> 'Rimutaka Incline', 1888-1907, NZ Railways file, R10559994, Archives New Zealand, Wellington. This bell is now at the Fell Locomotive Museum in Featherston.

An important alteration to the Fell system over the years was the introduction of the Westinghouse brake system in 1903, which provided consistent braking on a train.<sup>32</sup> In 1905, an Incline guard reflected on the impact of the Westinghouse brake and how much more difficult the work had been prior to its installation:

It has changed the working of the hill a great deal and made downright hard work fairly easy. Years ago only a very strong man could stand the strain and worry... Sometimes the train would get out of control for a while, and it was a case of jamming [sic] the wheels hard down, sweating, cursing, praying flying along as though to certain death. Well, now, you know why we appreciate the Westinghouse brake.<sup>33</sup>

He also mentioned that the old system sometimes stopped the train too early, while it was still in the tunnel, requiring workers to go into the tunnel to lift the brakes:

You can guess what a nice job it was, squeezing along between the walls of the tunnel and the waggons [sic], in a choking heated atmosphere, over our boot tops in water, lifting the brakes to get a start.<sup>34</sup>

In the 1930s, petrol driven railcars, known as 'Tin Hares', were introduced between Wellington, Masterton, Woodville and Palmerston North, making passenger trips more efficient and faster. Designed and constructed at the Hutt Workshops, these vehicles entered service in 1936. They were raised on larger than normal wheels to make space for the centre rail on the Incline. Their engine was mounted under the floor of the passenger compartment with enough clearance for the centre rail. They were essentially a bus on rails. They were engineered for both speed on level ground and to be able to handle the steep gradients. They had three brake systems, including a Westinghouse brake system and a special hydraulic pressure centre-rail grip to slow descent down the Incline. Although on the Incline itself they were not significantly faster, on the route as a whole they significantly reduced travel times. There was also no need to change between Fell engines and ordinary locomotives.<sup>35</sup> This made day trips to Wellington possible for Wairarapa residents for the first time. Tin Hares were only ever used for passengers – Fell engines continued to be used for freight – and they remained in service until the Incline closed in 1955.

## Objectors to the Incline

Despite the excitement of the opening, the line had its naysayers from the outset. Some correspondents to the newspaper timed runs between Wellington and Featherston and complained that the trip took too long, and that the allowable tonnage of goods on the Incline was too low. Some said the engineers of the railway were already secretly claiming that the Incline had been a mistake.<sup>36</sup> One journalist, dispatched to report on the working of the Incline, soon after completion complained that "the train comes down no faster than a man can walk – at any rate a man can easily overtake the train by running a little".<sup>37</sup> Many Wellington and Wairarapa business people also complained in the early days that the number of goods trains, particularly those that could take the backlog of timber waiting to be shipped to the capital, was much too low.<sup>38</sup>

The people of the Wairarapa and the business community in Wellington occasionally objected to the service provided by the railway line, and the Incline in particular. Consideration was made on occasion to change the route. J H Dobson completed surveys for an alternative route for the Public Works Department in 1898 and concluded a five-mile tunnel from Mangaroa to Cross Creek was the best option. As a result, a so-called 'Rimutaka Deviation' was seriously discussed, but no action came of it.<sup>39</sup> In 1914, Prime Minister William Massey indicated an interest in revisiting the path of the route, but World War I halted discussions. In August 1920, a huge deputation came from the Wairarapa on a special train and marched to parliament from the Wellington railway station, led by a Wairarapa brass band. The *Dominion* reported hundreds of people in attendance, representing 43 Wairarapa and Wellington local, public and business organisations. They met with

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<sup>32</sup> Cameron, *Rimutaka Railway*, 81.

<sup>33</sup> Quoted in 'The Contributor on the Rimutakas: Working the Incline at Night', *New Zealand Mail*, 25 October 1905, 22.

<sup>34</sup> Ibid.

<sup>35</sup> Cameron, *Rimutaka Railway*, 85; Bowman, 20. A test of these new rail cars is described in 'Over the Rimutakas', *Levin Daily Chronicle*, 13 March 1934, 8. See also 'Ease of Control', *Wairarapa Daily Times*, 8 June 1936, 8.

<sup>36</sup> 'The Wairarapa-Wellington Railway', *Wairarapa Standard*, 30 November 1878, 2.

<sup>37</sup> 'Railway brakes', *Wairarapa Standard*, 28 November 1878, 2.

<sup>38</sup> 'The deficiency of rolling stock on the Featherston Railway', *New Zealand Times*, 8 November 1878, 5.

<sup>39</sup> Cameron, *Rimutaka Railway*, 96.

Massey and the Minister of Public Works, Joseph Coates. The delegation told the Minister they had come to Wellington on the 50th anniversary, to the day, of the turning of the first sod on the railway on 19 August 1870. They had, in fact, misremembered, and were two years early for the milestone. Their grievance was that for fifty years they had been “unhappily wedded to this railway” and now “wanted a divorce.”<sup>40</sup>

One of the speakers from the delegation was reported as saying to the Prime Minister:

The incline stood condemned, the system had outlived its usefulness, and the plant was worn out and would have to be renewed. The amount of coal consumed to draw 300 tons over the incline was equal to the amount of coal required to draw the same load all the rest of the journey from Masterton to Wellington. The distance from Featherston to Wellington was only 45 miles, and the time occupied on the journey by the fastest trains was two hours and a half. In no other part of the country was such a long time taken to cover a like distance.<sup>41</sup>

The Wairarapa people urged the necessity for having a line which could link their entire region to Wellington in two hours, and that this would unlock huge new areas for settlement. Wellington businessmen also spoke, including the Chair of the Harbour Board, J G Harkness, who was reported to have said “that a mistake had been made in the beginning with the construction of the line, and he thought that the time had come for the correction of that mistake. The district and the city had in all the intervening years suffered irreparable damage and loss.”<sup>42</sup>

This resulted in an engineering study by [F W Furkert](#) in 1921–22, but the 1930s Depression and World War II put paid to any action. Meanwhile, the Fell engines and the line were in a bad state of repair.<sup>43</sup> Complaints continued but no changes to the line were made until 1955, when the Rimutaka (now Remutaka) Tunnel was opened.

### The end of the line

Despite its engineering ingenuity, the Rimutaka Incline proved expensive to operate and maintain, and the time the journey took made it unpopular. It was ultimately superseded in 1955 by the construction of a tunnel through the Remutaka Range. The Remutaka Tunnel was constructed between 1949 and 1955 by San Francisco company Morrison Knudsen; the track and signalling were installed by New Zealand Railways. Travelling through – rather than over – the Remutaka Range meant heavier loads and faster travel times were possible.

When the time came to close the Incline in 1955, New Zealand Railways ran a number of excursion trains, with the last timed to bring passengers back to Wellington from the Carterton Show on 29 October 1955. The trains were packed. On board were also most of the inhabitants of Cross Creek, who disembarked at Summit and returned back down the Incline for the last time. There was also a gathering of current and former residents of Summit and Cross Creek.<sup>44</sup>

In the months that followed, the Fell locomotives assisted in the work to dismantle the line – as historian of the railway, Norman Cameron noted, locomotive H199, which had helped lay the tracks was also used to dismantle them. Most of the track was lifted and removed by March 1956. All structures at Summit and Cross Creek – including residential and operational buildings – were rapidly dismantled, auctioned, relocated or demolished, leaving minimal physical trace of the communities that had existed for 77 years.<sup>45</sup>

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<sup>40</sup> ‘The Wairarapa Gate. Railway Deviation’, *Dominion*, 20 August 1920, 8. A photograph of the very large delegation, outside parliament, is held in the Masterton District Library collection, Ref no: 15-70.

<sup>41</sup> ‘The Wairarapa Gate. Railway Deviation’, *Dominion*, 20 August 1920, 8.

<sup>42</sup> *Ibid.*

<sup>43</sup> Cameron, *Rimutaka Railway*, 96.

<sup>44</sup> Cameron, *Rimutaka Railway*, 99-99.

<sup>45</sup> For an extended discussion of the process of the dismantling the railway, and what remained as at 2003, see Graeme Jupp, ‘From Railway to Rail Trail’, *New Zealand Railway Observer*, Oct-Nov 2003, No. 261, pp114-119. See also Cameron, *Rimutaka Railway*, 100–101.

## Social narrative

### Living and working on the railway

The physical isolation of the Cross Creek and Summit settlements on the railway created a close-knit community. Cross Creek was the primary settlement and home to up to 120 residents at its peak. There was a school, social hall, tennis court, brass band and library, fortnightly dances, and concerts. There was a series of railway houses for married couples and a boarding house for single men.<sup>46</sup> In November 1907, funds raised by a series of concerts in the village were used to treat all of the students at Cross Creek school to an excursion to Wellington and the new Wonderland in Miramar – Wellington’s first amusement park.<sup>47</sup> On Saturday afternoons, at the end of the working week, an engine with a guard’s van attached would journey to Featherston with the railway families onboard, letting the shoppers off at the Fitzherbert Street rail crossing while railwaymen made their way to the Empire Hotel, next to Featherston Station.<sup>48</sup>

The Fell locomotives were maintained by fitters in a small workshop in Cross Creek and housed in the engine shed (as were other locomotives working in the southern Wairarapa). A new engine shed was built there in 1899.<sup>49</sup> There were stories of railway workers being sent to Cross Creek as some sort of punishment, but many families lived there for 20 years, and some returned to live there after a time away.

The shunting and marshalling of trains at Cross Creek and Summit was hard and time-consuming work. The amount of coal required for the Incline journey and the smoke in the tunnels made the work extremely dirty. The trip through the Incline’s tunnels was particularly unpleasant and uncomfortable, particularly in windy conditions. A letter in 1897 from a group of drivers, fitters and guards based at Cross Creek to the Minister of Railways, said that drivers on the Incline “have more than double the work of any driver in the Colony” in caring for the engines both during and after the trip; and that the heat of the tunnels “is extreme, especially in summer weather, being at times unbearable”. The letter recalled that some enginemen have almost suffocated in the tunnels. It also argued that the guards had to pay “unceasing vigilance”, and that the work of the fitters was “of a filthy, dirty, nature and repairs often have to be done on a hot engine”.<sup>50</sup> The firemen tried to make the smoke more manageable by timing the last input of coal to allow the smoke to clear before entering a tunnel. Bill Olsen, a fireman on the Fell engines, recalled the terrible situation faced by the livestock going through the tunnels in the heat and smoke.<sup>51</sup> In response, New Zealand Railways gave the drivers a respirator to help deal with the smoke.<sup>52</sup>

Olsen, one of the last men to work on the trains on the Incline, was filmed on a journey of a Fell locomotive not long before it closed. In his interview he described the experience of going through the Summit Tunnel:

You didn't dare leave any bare skin exposed. Exhaust steam would come in under the door and in any cranny that it could. And we just suffered it out until we were through the tunnel.<sup>53</sup>

Since there were only six Fell engines, and at least one was usually away at the Hutt workshops being overhauled, the work keeping the others running was of utmost importance. In 1902, a letter from a NZ Railways traffic controller complained that too many of the engines were away being fitted, putting enormous strain on the remaining engines and the staff running them, necessitating many night journeys for the staff and hundreds of tons of goods having to be left overnight at Cross Creek and Featherston.<sup>54</sup> A later fitter, who lived and worked at Cross Creek and maintained the trains, Graham Murrell, recalled “you had a loyalty to the work, and to try and keep the thing running. You took a pride in your job. They [the engines] all had to be ready at the right time – if they wanted ‘four up’ or ‘five up’, you had to have five engines in running order, you sometimes worked night and

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<sup>46</sup> Cameron, 87-88; *Wairarapa Daily Times*, 28 August 1903, 2.

<sup>47</sup> ‘Cross Creek’, *Wairarapa Daily Times*, 23 November 1908, 5.

<sup>48</sup> James Larsen, ‘Old Fella’, *New Zealand Memories*, Issue 26, Oct/Nov 2000, 29-31.

<sup>49</sup> Cameron, *Rimutaka Railway*, 80.

<sup>50</sup> Letter from ten railway staff to Minister of Railways, 8 Nov 1891, ‘Rimutaka Incline Guards’, 1898-1952 NZ Railways file, R10463284, Archives New Zealand, Wellington.

<sup>51</sup> ‘Rimutaka Incline’, film by Davis Sims (1991), NZ On Screen, <https://www.nzonscreen.com/title/rimutaka-incline-1991/overview>

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> ‘Rimutaka Incline’, 1888-1907, NZ Railways file, R10559994, Archives New Zealand, Wellington.

day”.<sup>55</sup> The drivers adopted particular engines they liked to work with, and the engines were perceived to have particular personalities. Some drivers were unpopular with the fitters as they damaged the engines by going too fast up or down the hill.<sup>56</sup>



*Figure 11: Summit between 1880 and 1890, showing a S class steam locomotive ‘mixed train’ with wagons carrying timber and passengers, about to leave for Wellington, and another train (obscured) being prepared to descend the Incline. Railway workers, including guards J Turner and M Cronin, stand alongside. Note the small number of railway cottages lining the tracks. Photograph taken by William Williams. Ref: 1/1-025480-G, Alexander Turnbull Library, Wellington. <https://natlib.govt.nz/records/22699373>*

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<sup>55</sup> ‘Rimutaka Incline’, film by Davis Sims (1991), NZ On Screen, <https://www.nzonscreen.com/title/rimutaka-incline-1991/overview>

<sup>56</sup> Oral history interviews used in ‘Rimutaka Incline’, film by Davis Sims (1991), NZ On Screen, <https://www.nzonscreen.com/title/rimutaka-incline-1991/overview>



Figure 12: Cross Creek, 1880s. Photograph by Burton Brothers. Te Papa, Ref: C.014769.  
<https://collections.tepapa.govt.nz/object/17955>

Summit accommodated a small number of railway families – only five cottages – and was not accessible by road. It was exposed to prevailing winds and sometimes snow. It did not have a station building but had a series of sidings used to reconfigure the trains, a signal box, water tank and, after 1943, a turntable to turn locomotives.<sup>57</sup> Tales were told of families from Summit being transported to Cross Creek to play cards or for a dance on a Saturday night.<sup>58</sup>

Such were the technical and safety issues of working the Incline, that those working on the railway, including guards, were paid more than other rail workers. At some point in the 1890s, this additional payment was done away with, but was reinstated after a submission to the Minister of Railways in 1897 from a group of drivers, fitters and guards based at Cross Creek, describing their difficult working conditions.<sup>59</sup> This payment was again removed during the Depression of the 1930s despite strong objections from the railway unions at the time.<sup>60</sup>

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<sup>57</sup> Bowman, 20; Cameron, *Rimutaka Railway*, 87.

<sup>58</sup> Cameron, *Rimutaka Railway*, 87; Oral history interviews used in 'Rimutaka Incline', film by Davis Sims (1991), NZ On Screen, <https://www.nzonscreen.com/title/rimutaka-incline-1991/overview>

<sup>59</sup> Letter from ten railway staff to Minister of Railways, 8 Nov 1891, 'Rimutaka Incline Guards', 1898-1952 NZ Railways file, R10463284, Archives New Zealand, Wellington.

<sup>60</sup> 'Rimutaka Incline Guards', 1898-1952 NZ Railways file, R10463284, Archives New Zealand, Wellington.

## Public interest and recognition

Beyond its practical functions, the Rimutaka Incline held symbolic importance in New Zealand's national narrative. It was widely recognised as a feat of engineering, widely photographed and covered in the press. This perception was reinforced by its inclusion in several royal tours in the 1920s and 1930s, and during the visit of Queen Elizabeth II and Prince Philip in 1954, not long before the line closed. Prior to the Queen's visit, a test run found her Royal Saloon carriage came into contact with a tunnel wall – but adjustments to the track were made in time for the journey.<sup>61</sup> A newspaper charting her visit noted that the children of Cross Creek were most fortunate, as during the stop at Cross Creek “no security barriers prevented them from clustering around the Royal coach at the end of the train, while the locomotives were changed. For fully 10 minutes they had the Queen and the Duke to themselves”.<sup>62</sup> These visits had further cemented the railway's place in national consciousness and cultural memory.

The publication of *A Line of Railway* by Norman Cameron in 1976 saw a resurgence of interest in the railway. In 1983, discussions between the Wellington Regional Council and regional environmental and recreational groups resulted in an agreement to develop a public walkway along the former railway route. As a result, since November 1987 the railway formation between Kaitoke and the former Cross Creek settlement has served as the Remutaka Rail Trail. It is widely used by walkers, runners and cyclists and provides public access to transmission infrastructure and surrounding forest areas. The route attracts approximately 30,000 recreational users annually and is part of the Ngā Haerenga New Zealand Cycle Trails Great Rides network.

In the early 2000s, the idea of installing a steam train from Maymorn (Upper Hutt) to Summit was mooted by the Rimutaka Incline Railway Heritage Trust. However, the proposal met with objections as it would disrupt the recreational use of the area and damage the historic rail formation.<sup>63</sup>

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<sup>61</sup> <https://www.rimutaka-incline-railway.org.nz/route/fell-incline>

<sup>62</sup> *Press*, 16 January 1954, 6.

<sup>63</sup> Various documents on Heritage New Zealand File, 'Rimutaka Incline', Ref: 12021-042.

## Physical narrative

After the Remutaka Tunnel opened in 1955 and the original rail route closed, the land that had been railway land on the western side of the route (from Kaitoke to the Summit Tunnel) was largely vested in the Wellington City and Suburban Water Supply Board. The Board was disestablished in 1973 and replaced by the Wellington Regional Water Board, whose functions were then folded into the new Wellington Regional Council (now Greater Wellington Regional Council) in 1980. The land is now managed as part of the Regional Council's Pākuratahi Forest, which occupies 8,000ha on the western side of the Remutaka Range. The land from Summit to Cross Creek was vested in the New Zealand Forest Service. The New Zealand Forest Service was abolished in 1987 and much of its land and environmental functions were absorbed by the newly formed Department of Conservation (DOC), who have administered the land from Summit to Cross Creek since. Other parts of the old rail route from Upper Hutt, including a short section of the formation at Kaitoke, is now in private ownership as farms and residential property. Some land at Kaitoke was lost to a road realignment of State Highway 2 in the early 2000s. The remainder of the line on the Wairarapa side, from Cross Creek to where it joins the modern railway line after exiting the tunnel, has been incorporated into farms.

The Wellington Regional Council and the Forest Service came together with recreational groups in the early 1980s to develop 17km of the former route into a public walkway. What was then known as the Rimutaka Incline Walkway opened in 1987, encompassing four tunnels and a number of bridges. It is now known as the Remutaka Rail Trail and can be accessed from either Kaitoke on the Upper Hutt side, or at Cross Creek on the Wairarapa side.

Since the 1980s, new additions and public amenities have been sensitively added to the route to make the rail trail more accessible for visitors – including footbridges rebuilt across the existing bridge abutments. A major addition was a 90-metre pedestrian swing bridge at Siberia, built in 2021 by DOC, which allows visitors to cross the stream without travelling to the valley floor. Visitor information has been added at various points, a camping area with toilets has been developed near the rail formation at Ladle Bend, and a shelter and toilets have been built at Summit. Additionally, a small shelter in the style of a railway station, and a camp site and toilet have been developed at Cross Creek. Local community groups, the regional council and the Department of Conservation have been involved in tree planting efforts and the funding and building of new visitor infrastructure along the route.<sup>64</sup> A number of community events have taken place on the rail trail, including a celebration in 2002 of the registration (now known as listing) of the route by the Historic Places Trust (now Heritage New Zealand Pouhere Taonga).<sup>65</sup>

## What remains

After the line was closed in 1955, the railway track, houses and rail sheds were rapidly dismantled. However, the route is still very much in evidence in the landscape. The remains of the formation of the line includes 65 cuttings, 64 embankments, retaining walls and culverts. Many of these cuttings, which are still in near original condition, are narrow and steep-sided. The bridges were retained to allow access for forestry purposes. The Rail Trail is now largely formed on the remnant earthwork formations of the railway.

There are a number of remaining structures, features and sites, all originally built in 1874–1878. Several are recorded as archaeological sites by the New Zealand Archaeological Association Site Recording Scheme.<sup>66</sup> The whole of the railway formation from Manor Park (Lower Hutt) to Featherston is recorded in the New Zealand Archaeological Association site recording scheme as S26/13. In addition, 12 individual sites are recorded which are associated with the area covered in this report from Kaitoke to Cross Creek.

- Sites of stations and settlement:
  - The site of Kaitoke Station, at the end of Station Drive (a private road) (NZAA 26/38).
  - The remains of Summit settlement and station, including the remains of houses and rail yard, engine inspection pits and relocated remnants of locomotives (NZAA S27/35).

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<sup>64</sup> 'Call for new lease of life for summit rail', *Wairarapa News*, 10 July 2002.

<sup>65</sup> 'The Rimutaka Rail Trail', *Fell Locomotive Museum News*, October 2002, 4-10.

<sup>66</sup> For information on some of the remaining structures, see Victoria Grouden, 'Rimutaka Rail Trail, Pākuratahi Forest, Upper Hutt', Archaeological assessment report, Capital Heritage Ltd (2014); see also the NZAA Site Recording Scheme files for each site.

- The site of the former Cross Creek railway settlement and sidings (NZAA S27/41), including the base of the turntable, the beginning of the centre rail, and drop and inspection pits, and concrete floor of the engine shed.
- Four rail tunnels:
  - Pakuratahi Rail Tunnel: 90 metres long, lined with poured concrete at the base and concrete blocks above (NZAA S27/32).
  - Summit Tunnel: 576 metres long, lined by brick (NZAA S27/35).
  - Horseshoe Gully/Siberia Tunnel: 108 metres long (NZAA/36).
  - Price's Tunnel: 98 metres long (NZAA/38).
- Three historic bridges:
  - Pakuratahi River Bridge: a timber truss bridge with a 24-metre span (NZAA S27/33).
  - Ladle Bend Creek Bridge: a timber bridge with dressed stone abutments, restored with new wooden decking in 2002 (NZAA S27/34).
  - The concrete abutments of a former railway bridge at Munitions Bend, which has had a modern bridge placed over the top of the historic abutments (NZAA/46).
- Other remaining infrastructure:
  - The concrete water intake tower shaft at Siberia, a very rare example in New Zealand (NZAA/37).
  - The remains of a brick kiln, southwest of Cross Creek Road (NZAA/39).
  - The remains of a railway workers' shelter (NZAA/40).

There are other remaining sites associated with the larger history of the route, including the Mangaroa Tunnel near Maymorn Station, Upper Hutt (NZAA S27/51). Although no longer in their original positions, two houses from Cross Creek are now in Fox Street, Featherston.<sup>67</sup>

Because infrastructure was no longer being maintained, a major washout occurred in 1965 during a storm due to a blocked concrete water intake at Siberia (NZAA/37). The embankment collapsed, leaving the shaft exposed. This is the largest significant alteration to the formation since the tracks and settlements were removed. As noted above, some of the rail formation at Kaitoke was lost to a road realignment of State Highway 2 in the early 2000s.

Five of the six Fell locomotives were taken to Silverstream, Upper Hutt and broken up for scrap. The last remaining Fell locomotive, H199, was presented to the Borough of Featherston in 1855, and placed in a park in 1958, maintained by members of the New Zealand Railway and Locomotive Society until 1974. It was then restored and in 1984 the Fell Locomotive Museum opened in Lyon Street, Featherston, with H199 as its main exhibit. The museum also displays a Fell brake van, a crucial part of the successful operation of the Fell system. At one point, there were seven brake vans in operation; two built in England and the remainder in Petone. The van held by the museum was built in Petone and used on the West Coast of the South Island for a time. It was exhibited by the Museum of Transport and Technology (MOTAT) in Auckland for some time, before returning to the Wairarapa (although still owned by MOTAT).

Preservation of the railway route, the council's use of the surrounding Pākuratahi Forest land as a plantation forest and as a water supply catchment, and the diverse aspirations of different users of the area have occasionally come into conflict. In the early 2000s, the Historic Places Trust (now Heritage New Zealand Pouhere Taonga) became concerned that ongoing forestry work in the Pākuratahi Forest was damaging aspects of the railway formation and associated structures at the rail trail, and other parts of the railway in the Remutaka Range. Likewise, a proposal in the 2000s and early 2010s to re-establish the steam railway from Kaitoke to Summit on the existing historic rail formation met with opposition from the council and recreational users of the route.<sup>68</sup>

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<sup>67</sup> These are listed as heritage items on the draft Wairarapa Combined District Plan (proposed at the time of writing, 2025). There are likely to be other such cottages in the Wairarapa.

<sup>68</sup> 'Preservation vs recreation use', *Hutt News*, 14 April 2005; 'Debate over bid for steam trains on hill', *Wairarapa Times Age*, 30 Nov 2011; 'Rimutaka Incline train plan opposed by council', *Dominion Post*, 14 February 2012; plus documents on Heritage New Zealand File, 'Rimutaka Incline', Ref: 12021-042.

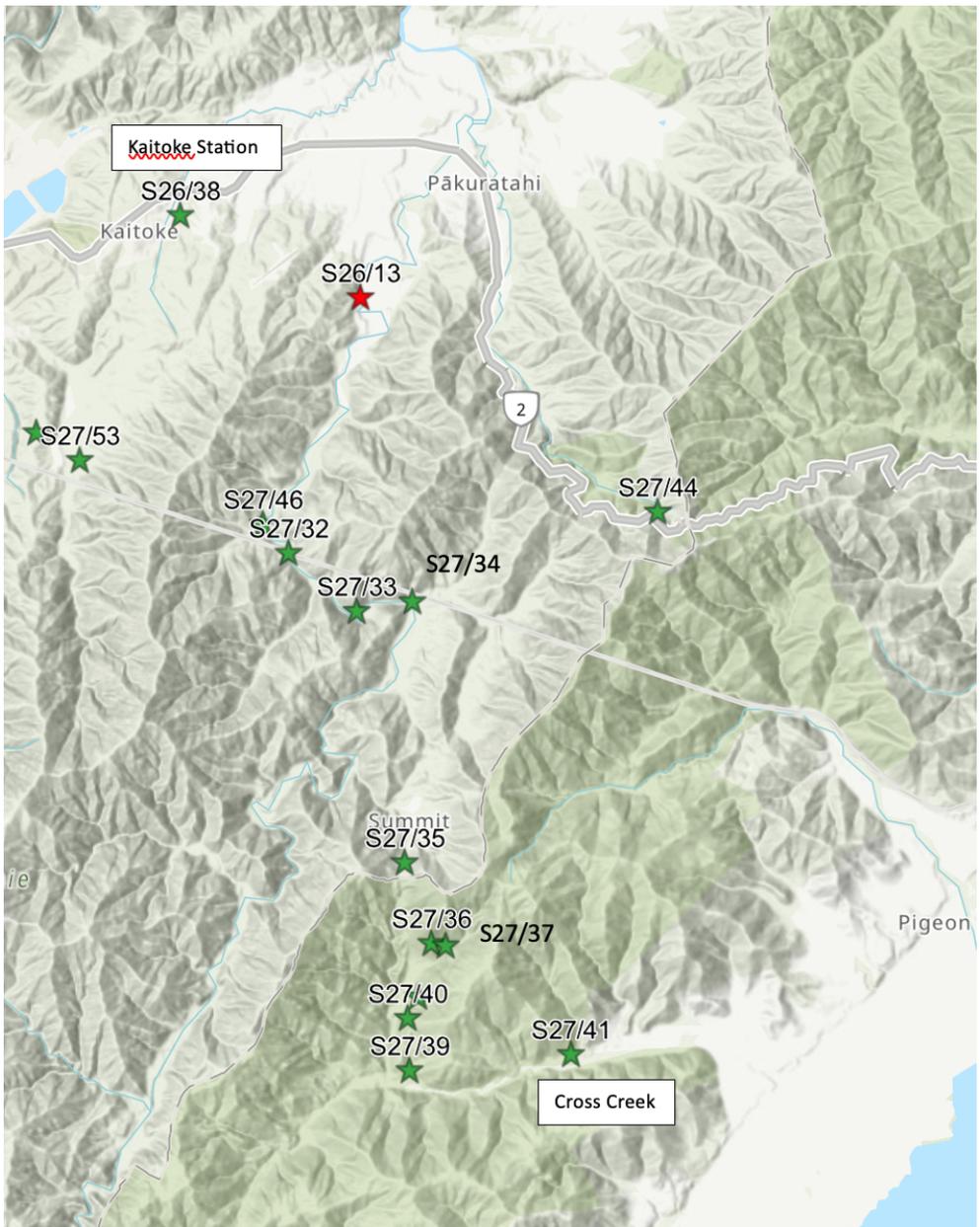


Figure 13: New Zealand Archaeological Sites mentioned in the report, between Kaitoke and Cross Creek. Refer also to Figure 2, showing the route of the railway formation, listed by the New Zealand Archaeological Association as site S26/13.

## Key physical dates

<b>1870–71</b>	Route surveyed by John Rochfort
<b>1872, August</b>	Construction began on the railway from Wellington to Masterton.
<b>1874, April</b>	Wellington to Lower Hutt section opened to traffic.
<b>1876, February</b>	Lower Hutt to Upper Hutt section opened to traffic (stations remained under construction).
<b>1877, December</b>	Upper Hutt to Pakuratahi Station (later Kaitoke) section opened. This was the railhead until the section from Kaitoke to Featherston opened in October 1878.
<b>1874–78</b>	Three contracts are completed over the Remutaka Range: Pakuratahi contract, Summit contract and Incline contract, completing rail connection between Wellington and Featherston.
<b>1878, October</b>	Route opened to the public.
<b>1880, 11 September</b>	Siberia Gully derailment. Windbreaks constructed.
<b>1888</b>	Windbreaks constructed at Pigeon Bush after a train overturns.
<b>1899</b>	New locomotive depot established at Cross Creek.
<b>1936 onwards</b>	Fell engines are supplemented then replaced by railcars for passengers. Fell engine use reduced to freight-only except for special occasion passenger trains. The steam-hauled 'Wairarapa Mail' ran until 1948.
<b>1951–55</b>	Rimutaka Tunnel constructed by San Francisco company Morrison Knudsen and new line laid by NZ Railways. Downer & Co. also assisted in the tunnel's construction.
<b>1955</b>	Special events to mark closure of the Incline and the opening of the new tunnel. H199 donated to the Borough of Featherston and stored at Hutt workshops. The other Fell engines were scrapped at Silverstream in 1957.
<b>1956, March</b>	Most of the old track had been lifted from Summit to Cross Creek and Pigeon Bush using Fell engines. Most other structures removed.
<b>1958</b>	Fell engine H199 moved to a park in Featherston and maintained by members of the New Zealand Railway and Locomotive Society until 1980.
<b>1965</b>	The embankment at Siberia collapsed during a severe storm, reshaping the course of the Cross Creek Creek and uncovering the remains of the intake shaft leading to the Incline water tunnel.

- 1980** Friends of the Fell Society formed at Featherston.
- 1984** Fell Locomotive Museum in Featherston opened, displaying H199 and other material.
- 1987** Rimutaka Incline Walkway (now usually known as the 'Remutaka Rail Trail') opened.
- 2002** 'Remutaka Incline Rail Trail' listed by Pouhere Taonga Heritage New Zealand, List No. 7511.
- 2003** The Institution of Professional engineers, New Zealand (IPENZ), now Engineering New Zealand recognised the engineering heritage value of the Remutaka Railway with a plaque.
- 2021** Department of Conservation build a 90-metre pedestrian swing bridge at Siberia.

## Assessment of significance

The Remutaka Railway (former) between Kaitoke and Cross Creek possesses considerable regional, national and international engineering significance.

A notable feature of the Remutaka Railway (former) is the Rimutaka Incline, which remained in operation for 77 years, making it the world's longest-running example of a railway using the Fell system. The Rimutaka Incline is internationally recognised for its pioneering and sustained application of the Fell mountain railway system, a technology that proved critical to the successful operation of a railway across the steep gradients of the Remutaka Range. Without the implementation of this system, railway transit over such challenging topography would not have been feasible.

Technological innovation extended beyond the incline and specialist locomotives. The Remutaka Railway (former), with its sharp curves, cuttings, embankments, tunnels, bridges and other engineering features, demonstrate the creative use of engineering interventions to solve the challenges posed by the Remutaka Range's challenging terrain. They represent a significant engineering and human effort, and demonstrated a high degree of technical accomplishment when first built in the 1870s.

The development of this railway route was pivotal in the history of both Wellington and the Wairarapa. Although the route from Kaitoke to Cross Creek has now been closed for many decades, it still holds an important place in many New Zealanders' understanding of their country's transportation and engineering heritage – particularly the Incline.

Therefore, the railway route between Kaitoke and Cross Creek, including the Rimutaka Incline, has outstanding significance and is of sufficient engineering heritage value to merit inclusion on the Engineering New Zealand Engineering Heritage Register.

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