



HERITAGE ASSESSMENT SERIES 4

Otago Central Rail Trail

Heritage assessment

Paul Mahoney



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Conservation
Te Papa Atawhai

Peer review statement

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Abbreviations used in this report

NZR: New Zealand Railways, a government department.
OCR: Otago Central Railway in its operating days to 1990.
OVRT: Otago Central Rail Trail from Middlemarch to Clyde, established post-1990.
TGR: Taieri Gorge Railway from Wingatui Junction to Middlemarch, established post-1990.
AMIS: Asset Management Information System

This report on the heritage of the Otago Central Rail Trail is dedicated to two Dunedin people who really made a difference to saving this heritage: George Emerson and Robin Thomas.

Cover: Poolburn Viaduct, Otago Central Rail Trail, in the 1990s, when the trail was first being developed. This image clearly illustrates the main heritage themes examined in the report: sheep farming and rail, particularly the bridges and culverts with their extensive stone work.
Photo: DOC.

The *Heritage Assessment Series* presents research funded by the New Zealand Department of Conservation (DOC). A heritage assessment is the key document used by DOC to identify the heritage values and significance of a place and, in turn, determine its management. Heritage assessments are prepared, and peer-reviewed, by heritage specialists. As they have been commissioned on an individual basis, there will be some variation in the structure of the reports that appear in the series.

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Otago Central Rail Trail

Heritage assessment

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Abstract

This report assesses the heritage values of the 150 km long Otago Central Rail Trail. The challenge was to identify a substantive heritage value of the Trail that is unequalled by comparable sites elsewhere in New Zealand. A key issue was that although the Trail is very strong on rail heritage, it no longer features either rails or trains, and so it can't be rated the best New Zealand site for rail heritage. The result of the assessment is that the Trail offers New Zealand's best opportunity to experience our living heritage of traditional sheep farming communities. Sheep farming has long been a vital component of our economy. Another strength of this value is that while it is founded in the past, it flourishes today, and it can evolve into the future. It is a living cultural heritage value. Vitally, the tourism business generated by the Trail sustains this value. This heritage value provides a strategic lead for future heritage management along the Trail. The heritage of the Trail includes the farm buildings, farm practices and farm landscapes. It also includes the small towns that, unlike elsewhere, still function with their general stores and pubs. Many buildings are now rejuvenated to offer accommodation. The Trail itself, with its wonderful rail heritage, is the 150 km thread that binds together this outstanding Central Otago cultural heritage landscape.

Keywords: Otago Central Rail Trail, heritage assessment, living cultural heritage, sheep farming heritage, railway heritage, rail trails, sustainable heritage management, country towns, New Zealand

Summary

Story pyramid: The Otago Central Rail Trail (OCRT), from Middlemarch to Clyde, is the Department of Conservation's (DOC's) Icon site for the living heritage of sheep farming communities. New Zealand has few branded living heritage sites, and so this brand is a unique selling point. This living heritage will continue to evolve with changing economics and technology, but the success of the brand makes it feasible to preserve and enjoy some of the best places that are linked to the past.

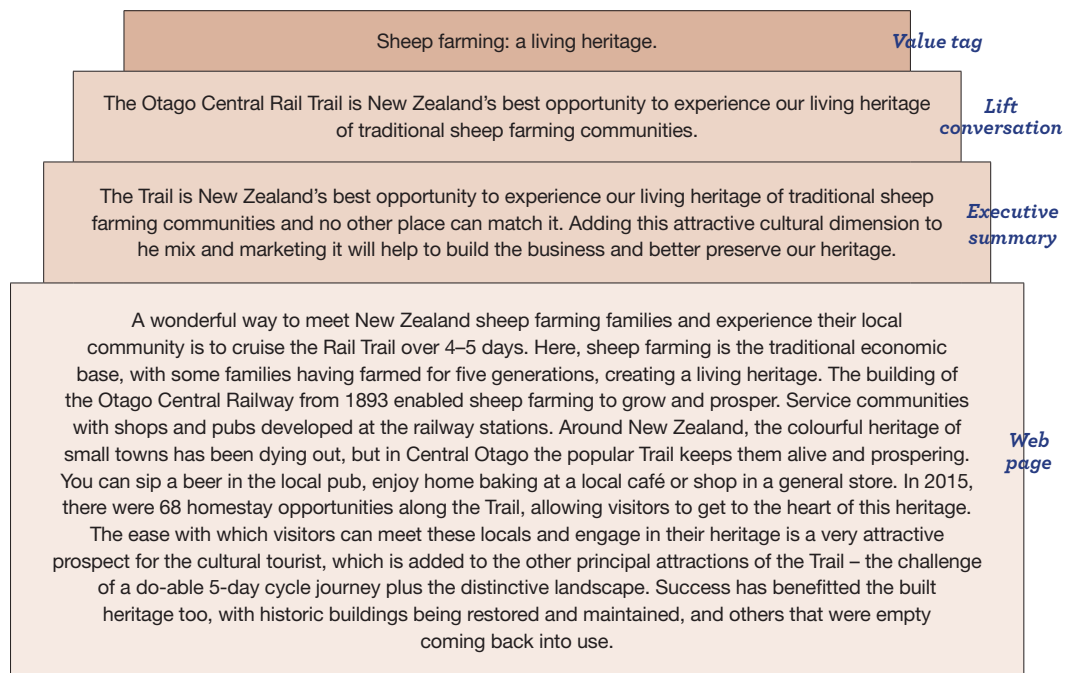


Figure 1. The struggle. The grade of Tiger Hill, rising 1 metre in every 50 travelled and extending for 5 kilometres, was a great struggle for trains on the Otago Central Railway. This train in 1964 would be well over the limit for one locomotive, except that half the wagons are returning empty. The month is May so the empty wagons have likely brought in coal in anticipation of winter. The 12 specialised wagons that are loaded – 10 with sheep and 2 with fruit – reflect the nature of the Central Otago local economy. Being so late in the season, these loadings are light. The key ingredients of this historic scene are the physical challenge of the long hill climb and the dramatic sheep-farmed landscape. Today, these same two values are still the key appeal for trail cyclists, who may also anticipate the hospitality that awaits them down the other side at Omakau. *Photo: George Emerson.*

Why not an Icon for rail heritage? Because the adjoining Taieri Gorge Railway that runs trains daily up an exceptionally scenic gorge is New Zealand's outstanding rail heritage site.



Figure 2. Upper Taieri Gorge, 1968. Photo: G. Emerson.



Figure 3. Manuherikia #2 bridge, 1958. Photo: D. Cross.



Figure 4. Rough Ridge Easter, 1961. *Photo: G. Emerson.*



Figure 5. Ida Valley, 1965. *Photo: D. Turner.*

Process summary

The two leading values that inspire visitors to ride the OCRT are:

- A readily do-able 5-day, 150-km cycle challenge
- Outstanding landscapes with many refreshment breaks

However, these appealing values are not *heritage* values and the purpose of this report is to find the *leading heritage values*. Therefore, the following three heritage values were assessed:

The concept of a living cultural heritage value, which includes meeting the locals, is relatively novel for New Zealand and may benefit from further refinement. Appendix 1 presents the detailed working of these three assessments.

VALUE OPTIONS	STRENGTH OF VALUE RELATIVE TO OTHER COMPARABLE NEW ZEALAND SITES
A leading New Zealand railway heritage site.	The adjoining 70 km Taieri Gorge Railway is the strongest contender for this title, as well as others that still have tracks and trains.
A unique, extensive assemblage of early railway bridges and culverts.	Proposed by Hamel (1996) and Storm (2008); this is valid, but is not, on its own, a heritage value that will inspire many people.
New Zealand's best opportunity to experience our living heritage of traditional sheep farming communities.	This is based on the concept of living cultural heritage, which involves a tradition of sheep farming, and has led to the preservation and prosperity of the small country towns en-route.

1. Site overview

AMIS site name: Otago Central Rail Trail

This assessment includes all actively conserved heritage assets on the Trail, including the following, which were scheduled in AMIS at 26 June 2015:

PLACE ID	EQUIPMENT	EQUIPMENT DESCRIPTION	OBJECT TYPE	EQUIPMENT CATEGORY DESCRIPTION	HISTORIC MANAGEMENT
A-HS-38-1000010387	100059393	Poolburn Viaduct	Vehicle Bridge – steel	Structures	Actively conserved
A-HS-38-1000010387	100061846	Wedderburn – Railway Station	Building – Government	Buildings	Actively conserved
A-HS-38-1000010387	100062150	Wedderburn Goods Shed	Building – Government	Buildings	Actively conserved
A-HS-38-1000010387	100065848	Prices Creek (Hyde) Railway Tunnel	Earthworks/ Mining	Earthworks	Actively conserved
A-HS-38-1000010387	100065849	Poolburn Gorge No. 1 Tunnel (#12)	Earthworks/ Mining	Earthworks	Actively conserved
A-HS-38-1000010387	100065850	Poolburn Gorge No. 2 Tunnel (#13)	Earthworks/ Mining	Earthworks	Actively conserved
A-HS-38-1000010387	100066358	Clyde Railhead to Tabert St – Otago Cent	Walking Track	Tracks	Actively conserved

Land status: Otago Central Rail Trail Recreation Reserve.

Management: Managed by the Department of Conservation (DOC); in 2015, the responsible regional office is Dunedin and the responsible district office is Alexandra.

Key fact: The Otago Central Railway (OCR) played a support role to sheep farming. Although it is now closed, the 150-year tradition of sheep farming continues.

The OCR, from Wingatui to Clyde, operated from 1891 to 1990, with the section to Cromwell closing in 1980. After the OCR closed, it was broken up into essentially the Taieri Gorge Railway (TGR) and the Otago Central Rail Trail (OCRT), which meet at Middlemarch.

Railway historian Jack Mahoney crafted the following summary of the OCR in his 1982 book on the history of passenger trains in New Zealand:

The Otago Central is a railway of precipitous and rocky gorges with associated grades, curves, cuttings, tunnels and viaducts. There are open plains and gaunt sweeping landscapes. It eludes any ready categorisation. Its length (236 km), its major engineering works, and the wide territory it served, belong more to the provincial mainline. But the sparseness of the population of the countryside, the smallness of the towns served, (in 1939 Cromwell's population was 730 and Alexandra's 870), and the line's modest volumes of traffic make it more akin to a branch line operation. Even the NZR couldn't decide, referring to it in timetables as both the Otago Central Railway and Otago Central Branch. As a branch line it was by far the longest in NZ.

2. Setting

The OCR extended from Wingatui Junction near Dunedin to Cromwell, a total length of 236.45 km (Fig. 6). It was opened in stages over 22 years from 1889 to 1921. Plans to extend the railway to serve Wanaka and Queenstown never materialised. It operated for 101 years as a single railway entity, carrying passengers and freight (principally sheep, wool and fruit). Traffic declined from the 1970s and the railway closed beyond Clyde in 1980 and beyond Middlemarch on 30 April 1990 because road transport was more economical for the low traffic on offer.

Today, the route comprises five distinct broad segments, in which the degree of heritage survival varies greatly:

1. Wingatui Junction to North Taieri, 4 km: owned by KiwiRail; operated by them on a daily basis; no heritage value.
2. North Taieri to Middlemarch, 59 km: owned by Dunedin City Council; operated by Dunedin Railways on a daily basis; heritage strongly retained.
3. Middlemarch to Clyde, 150 km: owned by DOC; operated on a daily basis as the OCRT; much heritage lost. (Note: The value of heritage along this section is the focus of this report.)
4. Clyde, 2 km: formation lost to subdivision but station yard intact.
5. Clyde to Cromwell, 20 km: route submerged under a hydro lake; all heritage lost.

A historian would treat the entire 236-kilometre-long railway as an entity, and this approach has a place in the assessment of its heritage value. However, the focus of this heritage report is the 150-km section extending from Middlemarch to Clyde, which includes the following heritage and cultural statistics:

- 150 km of railway route and formation.
- 10 towns and localities: Middlemarch, Hyde, Ranfurly, Wedderburn, Oturehua, Lauder, Omakau, Chatto Creek, Alexandra and Clyde ... all with at least a pub!
- 20 railway station sites, including 5 station buildings and 3 goods sheds.
- 97 bridges, 3 tunnels and 450+ culverts.
- 99-year operating history, 1891-1990.
- 220 employees at the peak and 56 railway houses.
- Traffic produced by the district and carried to market included 40 million sheep (1891-1973), along with wool and fruit.

The railway traverses one of the most beautiful and distinctive grassland landscapes in New Zealand, which is almost in its entirety farmed for sheep.

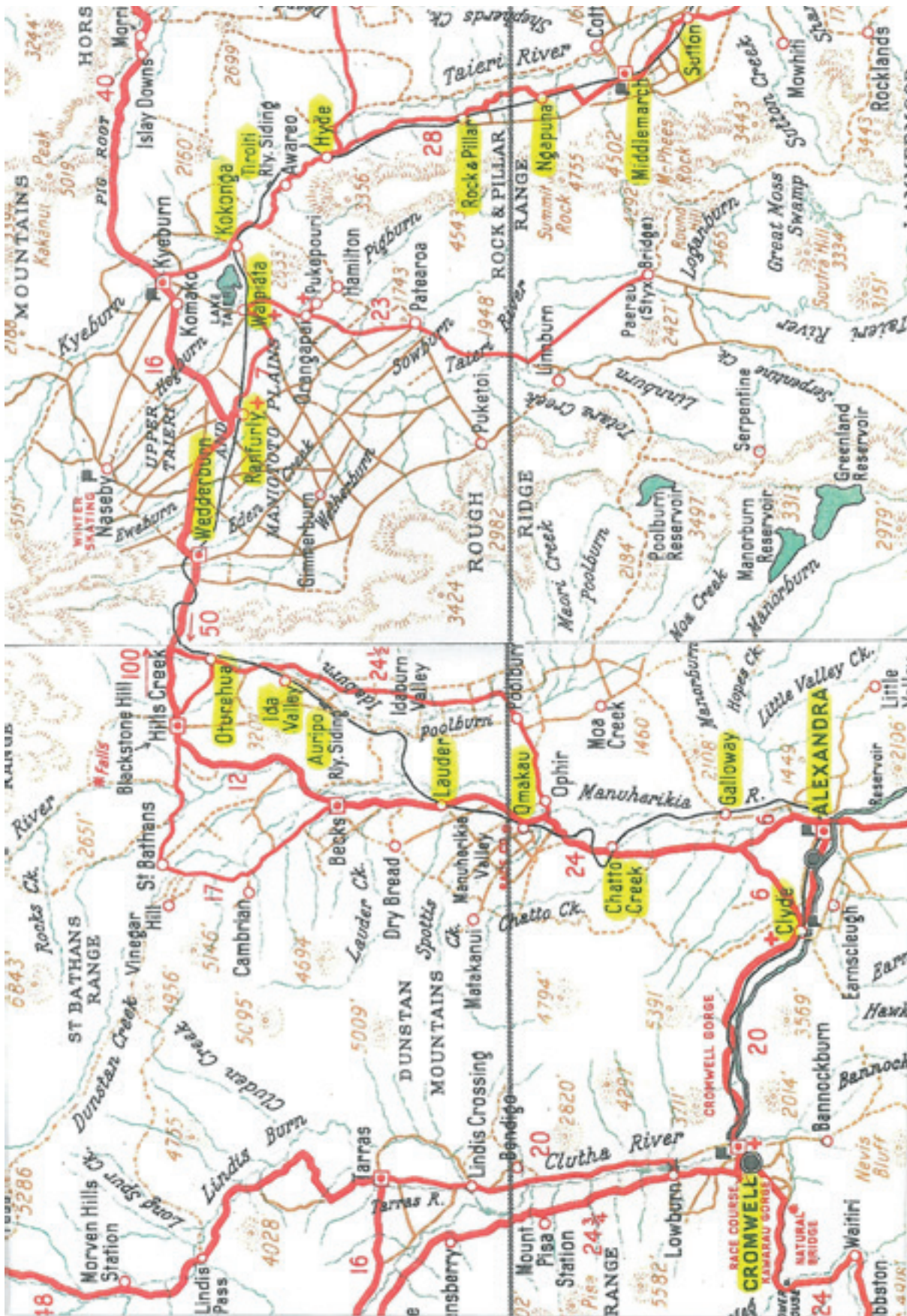


Figure 6. A 1954 map depicting the Otago Central Railway route from Sutton to Clyde in its heyday. It shows all the railway stations (highlighted in yellow) in relation to the supporting road network. The red roads were main roads and the brown secondary. The four areas of easy farming country are depicted: the Strath Taieri, Maniototo Plains, Idaburn Valley and Manuharikia Valley. Hospitals are shown at Clyde and Ranfurly, a racecourse at Omakau, and winter skating at Naseby. Source: Shell Road Maps of New Zealand 1954; Palmer & Mahood Ltd, Wellington.

3. History

While this section is largely based on the published history of the region (Dangerfield 1995), it introduces some new contextual insights into the core role of the railway in relation to sheep farming.

3.1 Reason for the railway

The historic significance of the OCR is directly linked to the reason why the railway was built on this route in preference to six hotly contested alternative routes – sheep.

The first railway in New Zealand opened in 1863. Soon, four railways were under construction using three different track gauges! This untenable situation was an example of why a strong central government should replace seven independent provinces, which soon happened. A unified central government railway construction programme then commenced in 1870.

The national vision and promise was a network to all districts, stimulating farming and industrial prosperity. Because of the high cost of building railways, the initial construction focused on the most cost-effective lines. It made sense to build the first railways through easy terrain that was already farmed. Consequently, a Christchurch to Dunedin railway opened in 1878, which was joined to Invercargill in 1879, while an Auckland to Wellington railway through uninhabited heavy bush took another 30 years.

Throughout New Zealand, each district campaigned vigorously for a railway as a return on their tax money paid to central government. Consequently, railway construction was commenced in many locations – 27 to be exact! The construction pattern was a mix of trunk railways parallel to the coast and railways at right angles to the coast linking ports with hinterlands.

The allure of the Otago goldfields helped spur two port-to-hinterland railways. A Dunedin to Lawrence railway opened in 1877 – one of the steepest in the country – beyond which a road provided passenger access over 2 bone-shaking days to Alexandra, Cromwell and Clyde, and wagons of freight took many days longer. However, the most cost-effective route to the goldfields was north from Invercargill over easy farming country. In 1878, a railway opened to Kingston on Lake Wakatipu, with the final pitch to the goldfields travelled by lake steamer and road. Thus, core Otago goldfield access was in place in 1878, the same year as the Christchurch to Invercargill link¹.

The opening of the railway from Dunedin to Lawrence in April 1877 enlivened debate about a railway to Central Otago with an objective of Cromwell. In those railway-competitive times, Invercargill, Palmerston and Oamaru also fought to be the start point of this link. In July 1877, the District Engineer, W.N. Blair, submitted a detailed and lengthy report setting out his comparative assessment of seven competing routes. On the basis of directness and cost, Blair favoured the OCR route.

In August 1877, a parliamentary select committee considered the seven routes and found in favour of the OCR. The main factor in support of this route was ... sheep:

This route commands the largest quantity of Crown Lands, presents the fewest engineering difficulties and is the most direct route from Dunedin. It would open up 1.2 million acres of Crown Lands directly and gives access to 1.1 million acres beyond.

¹ There is a road history link here to another DOC heritage site, the Kawarau suspension bridge, built 1897–80. With the completion of the railway to Kingston in 1878 and lake steamer access to Frankton, road access to the goldfields became more feasible and a priority for the County Council, hence this bridge.

The two Crown Lands references refer to land that is predominantly most suited to sheep farming. Following the select committee recommendation, expenditure on the construction of the OCR was authorised by the Railways Construction Act 1878, on a route via the Strath Taieri to Lake Wanaka. At that time, completion to Wanaka was envisaged for 1884.

In conclusion, while accessing the wealth of the goldfields was part of the equation supporting construction of a railway to Central Otago, gold was risky and not sustainable, and so was not in itself sufficient inducement. Instead, the critical influencing factor was the immense potential of a more permanent wealth – ‘white gold ... sheep!

3.2 Construction history

The survey of the OCR was completed in 1878 and the first sod was turned in 1879. The final section to Cromwell was officially handed over in 1921, a span of 43 years. So why did this take so long? It was inevitable that investment and progress would be particularly slow in the 1880s because New Zealand was in a financial recession and did not recover until the late 1890s – and during that period, progress was slow or abandoned completely in other parts of New Zealand. After the line opened to Middlemarch in 1891, progress was steady but slow for the next 16 years, opening to Clyde in 1907 – this progress averaged just 9 kilometres per year. In a wider context, many other railways were being built in New Zealand at this time, and the focus was on the North Island Main Trunk, which was completed in 1908. The extension of the OCR to Cromwell, which opened in 1921, was an afterthought and any aspiration to continue to Wanaka faded away.



Figure 7. Tunnel techniques. A great image from c. 1895 showing 18 men working on tunnel construction. Tunnel portals like this were typically brick-lined for stability. If the rock deeper inside was unstable, they were lined throughout. An arched wooden formwork (not seen here) was used to form the bricks into a curve and hold them in place until the mortar set and they became interlocked. The formwork was then progressively moved along. As seen here, stones were then stacked on top of the brick lining to fill in the void between the bricks and the rock face. Bricks for these Otago Central Railway tunnels were made at Outram and transporting them to the remote tunnel sites was a logistical challenge that may have involved boats and pack horses. This is the 122-metre-long Duck Point Tunnel #4 near Parera in the Taieri Gorge. The chap with the waistcoat is possibly one of the Gore brothers (contractors). *Photo: F.A. Coxhead, courtesy of Hocken Library.*

3.3 Chronology of construction

The story of the construction is set out in Dangerfield & Emerson (1995) and so will not be repeated here. Successive stages of planning, construction and closure were:

- 1873 1 January: Dunedin's first railway opens to Port Chalmers.
- 1877 September: OCR recommended as optimum route from seven options, just 4 years after first railway opens.
- 1878 10 July: Invercargill to Kingston railway opens, serving the goldfields.
- 1878 OCR investment authorised in Railways Construction Act 1878.
- 1878 OCR survey completed.
- 1878 7 September: Dunedin to Christchurch railway completed.
- 1879 22 January: Dunedin to Invercargill railway completed.
- 1879 First section (10.7 km) let to Daniel McKenzie.
- 1879 7 June: OCR first sod ceremony, just 6 years after first railway opens.
- 1880 Effects of New Zealand economic depression take hold.
- 1891 28 April: Middlemarch section (64 km) officially opened; first useful section, 18 years after first railway opens.
- 1894 12 July: Hyde section (90 km) opened.
- 1897 1 October: Kokonga section (106 km) opened.
- 1898 1 December: Ranfurly section (124 km) opened.
- 1900 1 June: Wedderburn section (137 km) opened.
- 1901 2 December: Ida Valley section (157 km) opened.
- 1904 1 September: Omakau section (179 km) opened.
- 1906 30 July: Chatto Creek section (190 km) opened.
- 1906 18 December: Alexandra section (207 km) opened.
- 1907 2 April: Clyde section (216 km) opened, 34 years after first railway opens and 16 years since railway reached Middlemarch.
- 1921 11 July: Cromwell section (236 km) opened.
- 1943 4 June: Hyde rail disaster; 21 killed, 47 injured.
- 1980 13 April: Clyde to Cromwell closes; Clyde freight centre opens.
- 1990 Middlemarch to Clyde closes after 99 years of service.

3.4 Technical history of OCR bridges

No masonry arch bridges were built on the OCR or on any other railway in New Zealand, despite their use in Europe. In the USA, they had been found to be too costly and slow to build relative to beam and truss bridges, and this practice was carried through to New Zealand. Storm (2008: 7 & 19) provided an insightful summary of the development of railway bridge design in New Zealand relative to the OCR. In the 15 years of initial rushed railway construction from 1870 to 1884, a good number of long and sometimes high bridges were built in various parts of the country, perhaps as many as 800 in total. All of these bridges followed the standard practice of using the timber trestle supporting timber beams or trusses, as this was the lowest-initial-cost design available. At least six viaducts had been built, all following the cost-effective concept of the lofty timber trestle, developed in the USA.

The Government's commitment to build the OCR must have recognised the need for intensive and significant bridging. The eventual total was 97 bridges required over 236 km, almost averaging one bridge every 2 km. Just 12 km out from the start of the railway, the design and

construction of the massive Wingatui Viaduct was one of the biggest challenges engineers would meet. This viaduct broke new ground in using a new structural material, wrought iron, for the first time in a New Zealand bridge. (The Waimakariri Gorge bridge, which opened in 1884, was designed in the USA.) The Wingatui Viaduct design was intended as the model for the large viaducts that would be built elsewhere in New Zealand, particularly along the North Island Main Trunk. Wrought iron would be adopted for many bridges on the OCR, while the timber trestle and beams would also continue to feature in the design mix. The use of structural stone in bridge and culvert construction in New Zealand met its zenith on the OCR.

Extensive use was made of stone on the bridges and culverts along the OCR, and its consistent high quality and quantity is unsurpassed elsewhere in New Zealand. While such stonework is not uncommon on railways in other countries, the quality exhibited on the OCR matches good masonry found elsewhere. This view has been expressed by several OCR authors and was supported by Dunedin stonemason Marcus Wainwright. In the founding decades of the New Zealand railways system, structural stonework was used elsewhere, but not nearly so extensively and grandly as on the OCR – in fact, much of the North Island was devoid of quality building stone, which precluded its use. During that period, wood was invariably used throughout the country and this transitioned to concrete from the early 1900s.

Technically, the stonework on the OCR was cut and laid in a style known as ‘brought to course’. Back in 1996, Hamel relied on Dunedin railway historian Jim Dangerfield for much unpublished information on the Polish, German and Italian stonemasons (Fig. 8) who had emigrated to the goldfields and then worked on the line after the easily won gold ran out (Hamel 1996: 21).



Figure 8. Forgotten craftsmen. The exceptional quality of the stone work on structures along the Otago Central Rail Trail is one of its outstanding features and is an element of the visitor experience. Railway historian Jim Dangerfield summarised the little we know about the creators: ‘As far as we know the builders were Polish, German and Italian stonemasons who had immigrated to the goldfields. After the easily won gold ran out in the 1880s, they reverted to their old trade and were employed on the railway. Most of the railway was built under a cooperative contract system of workers appointing their own foreman who received instructions from the Railways engineer. One must assume it was the engineer who decided that the stone masonry should be brought to course.’ This group is working at an outcrop cutting stone for the Poolburn Viaduct. A priority future history research project is to help give these nameless workers an identity and bring their story to life. *Photo: Emerson collection.*

More recently, Storm (2008) has added an insightful new dimension to the ‘use of stone’ scenario, although this still needs to be supported by evidence from primary sources:

The fact that the first major bridge, the Wingatui viaduct, used concrete for the two smaller piers (and wrought iron for all five taller other piers) is perhaps due to the fact that the stonemason’s skills were untested at that point, and wrought iron and concrete were the wonder materials of the 1880s. However in the end only two viaducts were built with iron piers (Wingatui and Flat Stream) and all the other Taieri Gorge bridges were completed in stone masonry.

Once on the Strath Taieri Plain, there was ample opportunity again to use standard wooden trestle construction. However I can only assume that the (local) mason’s skills were highly regarded by this stage and probably proving to be very cost effective ... and so stone masonry continued to be the preferred construction medium. (Stone 2008: 18 & 20)

The attractive, consistent stonework on the OCR is a key element of its heritage value. For visitors today, it is a distinctive visual feature, rarely seen elsewhere in New Zealand. The background story of the OCR stone could be better brought to life for visitors: understanding the engineer’s decision to use stone so extensively and to such high quality, together with the identity and lives of the skilled craftsmen that built these structures. Therefore, the story behind this outstanding legacy deserves further research (section 9.1, action point 8).

As for bridge spans, when the OCR opened from 1889, relatively small locomotives were used, allowing the bridge spans to be lightweight. At the time, achieving the lowest possible initial cost was a vital consideration. For example, the popular Ub class locomotives of 1897 weighed only 36 tons (Fig. 9). As a consequence, over the first four decades, trains on the OCR were slow to climb gradients and small in size. Inevitably, faster more powerful locomotives were required. These would ultimately be the Ab class locomotives weighing 53 tons. This 50% weight increase required the bridge strength to be upgraded in the 1930s, producing the modified bridges seen today. For example, steel beams replaced some pairs of wooden beams or, alternatively, a third wooden beam was set between the existing pair of wooden beams. Notably, the stone piers and abutments were already strong enough as originally built.

3.5 Sheep traffic

The traffic operation and wealth of the OCR can be summarised in one word – sheep! The railway tapped a hinterland that was predominantly used for sheep farming. Many of the passengers that rode the railway were sheep farmers, shepherds or shearers, and their families. Sheep farming was the economic base of the dozen service towns that sprang up along the railway and businesses in these towns had sheep farmers as customers. The railway workers that operated the trains or maintained the infrastructure serviced a railway that predominately carried sheep and wool, in that order. The sheep were bound for the Burnside freezing work; the wool to the wool scours, woollen mills and wool stores around Dunedin; and most of the meat and wool was destined for export, ‘the backbone of the economy’.

In 1922, New Zealand Railways (NZR) owned 13374 goods wagons. Numerically, the biggest single class was a general type that could be used for a wide range of traffic. Designated L class, these ‘highsiders’ or open wagons were low cost, simple and rugged. They were used to carry the wool clip out on the OCR, with the stacked bales protected from the weather by grey canvas NZR tarpaulins.

NZR deployed a range of specialised wagon classes to carry goods that could not be handled by the utilitarian L class. By far the most numerous specialised wagons were the J class used to carry sheep, which were called ‘deckers’ because they had double decks (Fig. 10). These wagons have a distinctive look and were a predominant type found on trains on the OCR. Similar-looking single-deck class H wagons were used for cattle.



Figure 9. Economic operation of the Otago Central Railway was bedevilled by small steam locomotives and short trains. From 1910 to 1940, the principal locomotive class was the 36-ton Ub, capable of hauling only 160 tons. This train of 12 wagons included 5 stock wagons at the front. Even the ultimate step-up to the 53-ton Ab class allowed only 240-ton trains – trains needed to be twice that size to be profitable. Taken in May 1937 on the graceful curved Flat Stream Viaduct in the dramatic Taieri Gorge. *Photo: Stan Rockliff, J.D. Mahoney collection.*



Figure 10. Omakau sheep, February 1960. All the planning of a chess move was required to position deckers for loading at Omakau during the height of the season. A locomotive was stationed there to assist with the requisite shunting and to take a daily train originating there. The J class wagons nearest the camera held 60 sheep, while the newer Jc class held 80. *Photo: New Zealand Railways.*

NZR built and maintained stockyards at around 1000 stations throughout New Zealand. The yards could handle sheep, cattle and pig traffic (Fig. 11). To help keep stock in good condition, drinking troughs were typically provided. These were often supplied via a tank with water



Figure 11. Omakau sheep, February 1960. Omakau was so cold that its goods shed was the only one in New Zealand to have a fireplace and chimney. *Photo courtesy of New Zealand Railways.*

collected off the goods shed roof. Stockyards had loading ramps that matched the levels of the floors of the J and H class stock wagons. At stations with a large stock traffic, a dedicated siding was provided to serve the stockyards.

All 18 stations on the OCR had stockyards, some of which were relatively large. For many decades, Omakau loaded out one of the largest numbers of sheep annually of any railway station in New Zealand – the traffic was so great that the season peak special sheep trains ran daily just from this station (Figs 10 & 11). To support this intensive traffic, Omakau station facilities included a locomotive shed and turning triangle, and a locomotive crew was based there seasonally. The sheep fame of Omakau was such that NZR sent their photographer there during the 1960 busy season and a film documentary was made in 1962.

3.6 Other goods traffic

Although sheep predominated, other goods traffic made a significant contribution to the wealth generated by the OCR, and this is briefly covered below. No study has been published on the goods traffic and trends on the OCR, but very good data are available.

Gold mining continued into the 1950s, with huge dredges typifying the final phase. The dredges turned over ground that may have already been worked two or three times before – this was viable with their specialised gold recovery technology and economies of scale. Typically, the components for the huge dredges were manufactured in Dunedin, railed up on the OCR and assembled on site, providing a valuable source of traffic.

Fruit grown in Alexandra and beyond also became a valuable source of traffic. Railways went to great lengths to provide a speedy delivery of fruit to the Dunedin market, later adding a guaranteed connection express service to Christchurch and, with the advent of the rail ferries, on to Wellington and Auckland. The specialist X and Z classes of ventilated wagons were used for this traffic.

Lime and fertiliser were an important inwards bulk traffic that enabled farmers to sustain more productive pasture. They were carried in the generalist L class open wagons, protected by tarpaulins.

Several other interesting types of traffic also existed, although their logistical detail is not well understood:

- Quantities of basalt stones to construct the grand Dunedin Railway Station were loaded at the specially provided Taieri Lake siding 1904–05.
- Rabbits were a serious pest to be controlled, which led to a significant traffic in carcasses and skins.
- Coal was mined along the line, which was found to be unsuitable for use in the NZR steam locomotives, but may have been railed elsewhere.
- Farm windmills must have been railed in component form from Hayes at Oturehua.
- China clay mined at Hyde was of such quality that it ended up being railed to the North Island via rail ferry; this was the very last regular traffic on the line.

In the last decade (1980–90), hydro construction materials such as cement and steel became an important inwards traffic, and because of the volume involved was the traffic that kept the line open. Completion of the Clyde Dam spelled the end of the OCR.

3.7 Passenger services

Passenger train services operated for 87 years from 1889 to 1976 (Figs 12 & 13). They evolved through six phases, with the changes reflecting the struggle to cost-effectively serve the small population of this region:

1. 1889–1900: mixed trains only.
2. 1900–1914: dedicated passenger trains.
3. 1914–1935: mixed trains (with summer season passenger train from 1925).
4. 1935–1951: dedicated passenger trains – four special modern carriages built 1939, service reduced to 3 days a week in 1945.
5. 1951–1956: mixed trains only.
6. 1956–1976: railcar service to Alexandra with connecting bus to Wanaka.



Figure 12. Ranfurly passenger train, 1949. The up and down passenger trains crossed here daily, and lunch was served in the refreshment rooms. *Photo: J.D. Mahoney collection.*



Figure 13. Matarae Siding, c. 1948. The passenger train crosses a freight train and the locomotive crews change.
Photo: J.D. Mahoney collection.

Passenger train historian Jack Mahoney rode the OCR in 1938 and 1939. He rated the 1939 upgraded service train as the historical peak of service for the railway. Trains operated both ways daily, each including two purpose-built modern carriages. Reflecting the cultural circumstances of the era, on each train one new carriage was first class and the other was second class with more cramped seats and less leg room. Each carriage had a central partition to provide separate sections for smoking and non-smoking. These carriages were equipped with a steam heating system to provide comfort in winter conditions, which regularly dropped below freezing.

For Jack, his passenger journeys over the OCR in the 1930s remained a lifelong favourite. Reflecting in the 1980s, he recalled the experience:

The gorges, the sweeping landscapes, the swarms of rabbits in the cuttings, the poplars, the lonely stations, the day long drumming of the locomotive exhaust were all memorable, but I think the midday crossing of the east and west bound trains at Ranfurly was the highlight. This featured a stop for refreshments, an episode that crystallised all the informality and charm of an up country railway operation: the unexpected small town bustle, the mingling of passengers with locals out to meet or greet or just to look, the feeling of expectancy as the haunting whistle of the approaching other train drifted upwind over the plain. Ranfurly must be a much less exciting place nowadays at midday.

For six decades, the tourism and excursion potential of the OCR was limited by a ban on running trains at night in the Taieri Gorge. A major turnaround occurred in 1959, when the first 'Alexandra Blossom Festival' excursion train was run. It was so popular that it became an annual event. When NZR gave up on excursion trains, a Dunedin trust was set up to buy the carriages and continue to run them. The excursion era was important in the history of the OCR because it demonstrated the demand for tourist trains and created the skills base to run them locally. This eventually led to the retention of the railway to Middlemarch in 1990 when the rest of the line closed.

3.8 Closure

George Emerson noted one particular irony in the closure of the OCR:

This route to Otago Central was chosen after lengthy and often acrimonious debates, from a total of seven proposed in 1877. The line was frequently criticised for running through 64 km of rugged unproductive country before it reached any significant areas of productive land. Ironically it is those 64 km that have survived as a tourist attraction since road transportation took over the original functions of the railway. (Dangerfield & Emerson 1995: 7)

In 1907, more than 600 people celebrated the official opening of the OCR section to Clyde. However, in 1990, when the special last train departed Clyde, few locals turned out and its passage down the line went largely unnoticed. One local quipped that 70 years earlier nobody had turned out to farewell the last horse and cart either.

One facet that doomed the line (and is not mentioned in the published historic record) is the tunnels in the Taieri Gorge. These were built to a narrow profile and included some sharp bends. Even in the heyday of the OCR, they precluded powerful steam locomotives and longer modern carriages that could damage and even jam in them. From 1967, the core New Zealand railway system was upgraded nationwide to take wider and longer locomotives and wagons, spurred on by the advent of International Standards Organization (ISO) containers. By 1990, very little railway rolling stock remained that could fit up the OCR, and so there was no prospect of the OCR handling container or log traffic. George Emerson felt that without the tunnel constraint, it may have been possible to retain the line as far as Ranfurly.

4. Physical heritage

Key insight: In terms of rail infrastructure heritage, there is nothing as original, complete, or extensive remaining anywhere else in New Zealand.

4.1 OCRT physical heritage inclusions

In a heritage assessment, the purpose of the physical description is to clarify which physical heritage elements are included in the scope of the report and their location.

The OCRT legal corridor covers a very large area and includes over 500 physical assets. Best practice for assessing the heritage value of such a large area is to include adjoining heritage places that are directly related, which inevitably includes a range of ownerships. A similar approach is taken for best practice biodiversity heritage inventory or recreation opportunity assessments.

The cut-off rules for the inclusion of heritage places adjacent to the OCRT legal corridor in this assessment were:

1. Adjacent to the OCRT legal corridor; *and*
2. Has a direct railway history; *and*
3. Has a strong visual relationship; *and*
4. Is potentially a core part of the OCRT heritage experience; *and*
5. Can potentially benefit from communication of its heritage value.

This report does not, therefore, include all of the heritage places that are found in the towns and on the farms along the OCRT route. For example, it does not include some of the wonderful pubs and local shops that have been brought back to life socially and economically by the business generated by the OCRT. Such a district inventory is the realm of Central Otago local government and Heritage New Zealand, and is worth doing on a business basis to strengthen the cultural tourism brand along the OCRT route, and to encourage the retention of distinctiveness and authenticity by private owners (see section 9.1, points 10 & 11). The components of OCRT physical heritage that are included in this report are shown in Table 1.

Table 1. Otago Central Rail Trail (OCRT) physical heritage components included in this report.

PHYSICAL HERITAGE COMPONENTS	OWNERSHIP AND REASON FOR INCLUSION
Middlemarch Railway Station precinct.	Owned by Dunedin City. Included because it is managed as a heritage precinct and is a core element of the OCRT heritage experience.
All heritage on the land that legally forms the OCRT corridor, extending 150 km from Middlemarch to Clyde.	Managed by the Department of Conservation.
Key heritage buildings adjacent to the OCRT corridor that have a direct link with railway history and retain a strong visual relationship.	Included to communicate their high heritage value so that this can be factored into decisions on their future management: 1. Hyde crash memorial 2. Hyde Railway Station precinct 3. Centennial Milk Bar, Ranfurly 4. Hayes Engineering Works, Oturehua 5. Ida Valley Hotel 6. Former railway houses.
Key (but not all) surviving railway buildings currently located away from the OCRT.	Included to communicate their high heritage value so that this can be factored into decisions on their future management: 1. Oturehua station building & goods shed.
Clyde Railway Station precinct.	Owned by Central Otago District Council. Included because it is managed as heritage and is potentially a core part of the OCRT heritage experience.

4.2 OCRT legal corridor

It is a challenge to describe the physical heritage of this 150-km section of the former OCR that includes, for example, 19 station sites and 36 bridges over 450 culverts, as well as a range of remnants, including distinctive railway gates and humble track gang huts.

Therefore, the approach adopted for this report was to:

1. Provide a brief overview.
2. Refer to significant existing sources.
3. Recommend tasks to create an improved description.

A framework for railway station heritage of the OCRT is shown in Table 2.

4.3 Interim inventory documents

(See the bibliography for the full references to these documents.)

4.3.1 Broad descriptions

Hamel 1996: Inventory overview.

Storm 2008: Bridges.

4.3.2 Detailed descriptions

New Zealand Railways 1889: Chainage register.

Petchey 1994: Middlemarch to Daisybank.

Hamel 1995a: Daisybank to Clyde.

Anon. (Sutton?) 2005: Culvert inventory.

4.3.3 Inventory requirements

For a summary of the physical description of the railway as built, the reader is referred to Dangerfield & Emerson (1995). This includes a description of the stations, a schedule of bridges

Table 2. Railway station heritage framework: Otago Central Rail Trail (OCRT).

HERITAGE ELEMENT	RAILWAY ROLES	HERITAGE 2015
Station precincts Mahoney 1991.	<i>Core elements:</i> Station buildings Goods sheds Stockyards Loading banks Sidings Signals Locomotive servicing	Built = 19 Surviving = 2 • Middlemarch* • Hyde
Station buildings Heritage reference study: Mahoney 1990.	<i>Typical roles:</i> Passengers Ticket sales Mail Newspapers Parcels Milk Horses Postal services Administration Tablet machines Signal operation	Built = 20 Surviving = 6 • Middlemarch* • Ngapuna • Hyde • Wedderburn* • Galloway • Clyde* Plus Ida Valley and Lauder survive off site
Goods sheds Heritage reference study: Mahoney 2010.	<i>Typical roles:</i> Perishable freight Valuable freight Beer kegs Fruit Butter and cheese.	Built = 16 Surviving = 4 • Middlemarch* • Ranfurly • Wedderburn • Omakau Plus Waipiata survives off site
Stockyards No reference study.	<i>Typical roles:</i> Sheep Cattle Pigs	Built = 18 Surviving = 0
Loading banks No reference study.	<i>Typical roles:</i> Wool bales Machinery	Built = 18 Surviving = 15
Sidings No reference study.	<i>Typical roles:</i> Lime Fertiliser Coal	Built = 19 Surviving = 2 • Middlemarch* • Hyde

* Exceptional heritage value.

of over 3 m span, and tunnels. More detail is provided in archives such as the chainage register and asset schedules in the working timetables.

For a physical description of the heritage that survives today, and its condition and integrity, the reader is referred to Hamel (1996) and Storm (2008).

Improved schedules of assets should be prepared to:

1. Understand the heritage
2. Manage the heritage value of the assets

Railway stations served a vital role in the railway system. They were the customer interface, the origin of business, the operations hubs, and a principal public experience of the railways. Some stations also had an operational role: administration, train crossing (single track lines), train safety, signals, locomotive servicing and depot, and track and bridge maintenance. Table 2 reflects a framework for railway station heritage (Mahoney 1991) and schedules what station heritage survived in 2015 and so, by omission, also shows what has been lost.

5. Cultural connections

Key insight: Everyone that cycles the OCRT just loves it!

Dunedin and Central Otago citizens campaigned strongly from 1877 to have the OCR built. For 30 years (from 1891 to 1921), they welcomed it rousing with huge crowds attending opening celebrations at stations along the line (Fig. 14). By contrast, 100 years later when the OCR closed in 1990, it went down very quietly. If it was not for the OCRT, very little railway heritage would now survive beyond Middlemarch, based on the fate of other closed railways.

It was initially Dunedin interests, rather than local interests, that from 1976 saved the Taieri Gorge Railway (TGR) and from 1990 saved the OCRT. In fact, in 1990 there was considerable influential local opposition to the OCRT to be overcome. This situation is typical, however. For example, in Napier, it was newcomers that first advocated for the value of Art Deco, while old-time residents could not wait to demolish the ghastly stuff and modernise. If it was not for the OCRT, the settlements along the line would now be badly impacted, even derelict. However, as it has come to pass, both Art Deco and the OCRT have become inspiring New Zealand success stories.

Since the 1960s, the nature of country communities throughout New Zealand has continued to radically change from their traditional past. Accelerating this change, and symbolic of it, is the impact of neo-liberal economic policies from 1985, which led to many long-established government services being altered: closed, downsized, centralised or privatised. The impact of this has hastened the economic death of the New Zealand small country town, with its community infrastructure going into spectacular decline, leading to the loss of jobs, schools, post offices, shops and pubs.

Sheep farming communities such as those along the OCRT were amongst the worst impacted. From the late 1970s, New Zealand sheep farmers struggled with low meat and wool prices, which reduced the community income. This setback led to the combining of farms, reduced numbers of farm workers and redundant buildings. Consequently, when a heritage inventory was conducted along the OCRT in 1986, the district seemed to outsiders to be in an advanced stage of decline, with a predominance of empty and neglected buildings.



Figure 14. There were plenty of cultural connections in 1905 when the whole district turned out to celebrate the railway opening to Omakau. *Photo: J.D. Mahoney collection.*

Cultural success indicators

Taiari Gorge Railway:

- New Zealand's longest and most popular heritage train ride, attracting many international tourists.
- In 2014, operated c. 450 passenger services and carried c. 58 000 passengers.

Otago Central Rail Trail:

- New Zealand's first and most successful cycleway, and the inspiration for all that have followed.
- In 2014, c. 18 000 visitors cycled the OCRT.
- A New Zealand Automobile Association survey of 32 000 New Zealanders in 2007 rated the OCRT as the heritage site that New Zealanders most aspire to visit.

The advent of the OCRT from 1992 and its highly successful tourism happened only just in time to turn around the fortunes of the traditional heritage of the sheep farming communities along the trail. Because of the OCRT, this heritage has survived, and indeed flourishes, and now forms the basis of its tourism appeal. Home stay accommodation along the OCRT has become a point of difference offered by many sheep farmers that has helped turn around the viability of their farms. The country towns along the OCRT and their small businesses have survived the worst, to the extent that some buildings that were once empty have come back into use. Buildings are now being maintained and restored in a manner that puts pride and prosperity back into the district.

For the locals, the OCRT has a high cultural value. Research by Otago University has highlighted three key components:

1. The annual economic benefit, which is estimated at \$14 million.
2. The creation of local jobs, which has rejuvenated their community and attracted their children back home to live and work.
3. The feeling of pride for locals to live in a district that is so attractive and vibrant that others ('even Aucklanders') choose it as their holiday destination.

For the visitors, the core appeal of the OCRT is also made up of three key components²:

1. The opportunity to participate in a do-able, healthy, challenging 5-day cycle ride.
2. The beautiful distinctive landscape.
3. The chance to meet the locals in a traditional sheep farming community.

² Anecdotal evidence based on the author's on-site interviews with around 50 OCRT users and business owners, 2014-15. When asked 'what do you think of the Trail?', not one person was not having a really good time!

6. Contextual analysis

Four potential lead heritage values were identified for the contextual analysis. These were analysed in a standard way (Appendix 1), which resulted in only one value standing out in a national context (Table 3):

The OCRT is New Zealand’s best site for engaging in the living heritage of sheep farming communities

The national context of New Zealand’s sheep farming heritage is as follows:

- Farming and farm exports have long constituted ‘the backbone’ of the New Zealand economy and continue to do so.
- Sheep farming, principally for the production of meat and wool, is a major component of the New Zealand farming sector.
- Sheep farming is a predominant New Zealand land use and entire districts, including Central Otago, were almost exclusively given over to this.
- Over a 180-year period encompassing eight generations, a New Zealand living tradition of sheep farming communities has evolved.
- The related sheep farming living heritage includes the sheep farmers and their farm practices, the sheep farms and their facilities, the supporting service townships and their inhabitants, and the vital transport routes that connect all of this to product processing industries and markets.
- Since the 1960s, New Zealand sheep farming heritage has experienced a range of pressures, including economic and technological factors.
- As a result of these pressures, farms have consolidated, smaller towns have vanished and larger towns have downsized.
- By contrast, this trend has been minimised in Central Otago as a result of the economic and social benefits derived the OCRT, which has helped support the remaining farms and has also allowed the infrastructure to be sustained.
- As a consequence, the OCRT provides New Zealand’s best opportunity to experience the living heritage of traditional sheep farming communities – which is the lead heritage value.
- The OCRT route is the vital tourist communication thread that links all of the components of this heritage.

Table 3. Potential lead heritage values and assessments for the Otago Central Rail Trail (OCRT).

POTENTIAL LEAD VALUE	VALUE ASSESSMENT
1. The OCRT is an outstanding assemblage of railway civil engineering heritage (R. Storm & J. Hamel).	True, but the OCRT heritage is representative rather than outstanding, and this value does not have a high public appeal nor does it rate as outstanding engineering. ☒
2. The OCRT is New Zealand’s best site for engaging in the living heritage of sheep farming communities.	True because of the unique experience on offer, which was developed just before the smaller communities might have otherwise collapsed and ended the opportunity. ☒
3. The OCRT is a key site for New Zealand railway heritage (as might be perceived from its name).	Not true. Many other railway heritage sites rate higher, including the exceptional Middlemarch Railway Station precinct. ☒
4. The OCRT is the heritage site that New Zealanders most aspire to visit.	True according to a 2008 Automobile Association survey. However, this is not a value in itself, but is made up of three contributory attractions: the cycling challenge, the distinctive landscape and the locals, which is value 2 (above). ☒

- New Zealanders and international tourists are well aware that one of the attractions of the New Zealand countryside is its 37 million sheep (down from the 84 million peak in 1980).
- It is therefore possible that the marketing of the trail experience could be expanded to include sheep farming heritage, together with the opportunity to meet sheep farming families.
- This also suggests that improved interpretive materials should be developed to support visitor engagement with this heritage story.

Summary:

- Sheep farming heritage is important.
- The widest heritage context is entire traditional sheep farming districts and their communities.
- In this context, the OCRT offers New Zealand's best sheep farming community heritage experience.
- This vibrant model is economically and socially sustainable.

Evidence for this value

There is wide evidence for the tourist interest in sheep, including:

- The enduring predominance of sheep in the mix of souvenirs and postcards.
- The enduring success of Rotorua's Agrodome and Queenstown's Walter Peak.
- The response of people when you say you are from New Zealand.
- The enduring popularity of the television programme *Country Calendar*.
- The fact that a search for 'sheep farming experiences' on Google gets over 200 results.

In 2015, an assessment was published on the success of *Country Calendar*³, which first aired in 1966 and is still the third most popular programme on national television 49 years later in 2015.

This stated that:

If you look at the percentage of people who live in towns, statistics show New Zealand is one of the two most urbanised countries in the world. (The other is Australia.) Germany has more rural folk per capita than we do. But most New Zealanders still have a deep emotional connection with the land - and that's the key to the programme's enduring popularity. Most of us live in town, but we still have country cousins - or we wish we did. Getting up-close with people who make their living from the land triggers something deep in our psyche. Rural folk may be few in number - but what an extraordinary bunch they are. Another part of New Zealanders' love affair with things rural stems from the landscape itself. Our crews come back with stunning footage - shot, not in national parks or famous scenic spots, but in farmers' paddocks as they go about their daily lives.

³ Dominion Post, 10 April 2015. This was written by Julian O'Brien, the producer, who is likely to understand this because the programme continues to flourish under his direction.

7. Assessment of significance

This topic requires a contextual introduction. At present, sheep farming heritage is not seen as a compelling reason to visit the OCRT. Rather, visitors seem motivated by the challenge of a do-able cycling journey through a distinctive landscape. This section moves beyond that scenario and looks at the main *heritage* values of the OCRT and considers which of these may have the greatest value to visitors. Making this link is important because, as will be demonstrated, value to visitors is the most compelling reason to preserve the heritage of the OCRT itself.

The heritage along the OCRT is assessed within a national and regional framework, with its significance very much depending on the collective relationship between the elements:

1. Regional significance: How strongly does each element contribute to the heritage value of the OCRT? Note: Some elements may singularly have an additional national level of significance.
2. National significance: Which elements in their own right are outstanding examples of important classes of heritage in a New Zealand context?

7.1 Historic significance

In terms of railway history, the OCR does not stand out nationally any more than any other district railway in New Zealand. However, its history is distinguished by its difficulty of construction, its length, its operating challenges and its struggle for viability. Regionally, the OCR made a major contribution to economic development, carrying passengers and freight, and as a major employer. Its principal purpose and major traffic was sheep and wool (Fig. 15), and this is its historic strong point. This is not unique, however – for example, the North Canterbury branch lines to Parnassus and Waiau have a comparable history.



Figure 15. Omakau overview. This scene demonstrates the scale of sheep traffic at Omakau. In January 1968, this seasonal traffic is at its peak, with over 40 sheep wagons being loaded. At Omakau station, the purpose of most of these sidings is to facilitate this traffic. The traditional stockyard sidings are on the upper right. An additional sheep loading siding on the left was installed in the mid-1950s to allow direct loading from road vehicles. In the days of steam locomotives, 40 wagons would constitute a whole train that originated most days in the peak season from Omakau. This busy scene would soon be history – just 5 years later in 1973, railways would cease hauling stock. *Photo: George Emerson.*

7.2 Physical significance

In terms of railway civil engineering heritage in New Zealand, there is nothing nationally outstanding along the OCRT. The Poolburn Gorge section is the most challenging, but it does not match the spectacular Taieri Gorge section on the same railway, which is still in daily use. The main engineering heritage value of the OCRT encompasses these elements:

1. A substantial 150-km length of 'railway civil engineering heritage' survives through a variety of terrains.
2. High authenticity and integrity value for the structures: bridges, tunnels, culverts and formation (but no railway tracks).
3. Representative of typical rather than notable engineering.

There is not a high public interest in 'railway civil engineering heritage' in its own right. However, the railway fabric does make a substantial contribution to the distinctiveness and authenticity of the OCRT visitor experience.

7.3 Cultural significance

One issue is that the OCRT may be being limited by locals not yet fully appreciating how the heritage they are successfully keeping alive is diminished elsewhere and is greatly valued by many New Zealanders. What exactly does the OCRT most strongly stand for? What is its best brand? What is its strongest offering? How could it be a cultural site?

One OCRT brand is as 'New Zealand's first cycleway'. However, the 'first' later becomes something to avoid, old hat – who now has a Nokia mobile phone? And if the OCRT identity is 'a cycleway', then it is just one of an ever-growing number and is also disadvantaged by its remote location. Therefore, the OCRT needs a more attractive and specific differentiation – which fortunately it already has.

This report argues that the OCRT offers a unique and powerful New Zealand cultural experience. The OCRT is certainly not primarily about experiencing rail heritage; the TGR holds the ace on that brand. OCRT visitors cycle through a magnificent landscape of sheep farms, sip coffees and beers in sheep farmers' towns, enjoy country hospitality staying in sheep farmers' homes, and can even venture out with them onto their farms. Sheep farming is as old as New Zealand European history and it captures the public imagination, as evidenced by *Country Calendar*, which is New Zealand's longest running and most popular local television programme.

No other New Zealand cycleway or farming district can compete with this attractive and authentic OCRT cultural offering. Consequently, the strongest possible OCRT brand is this:

The OCRT delightfully preserves the on-going living cultural heritage of traditional New Zealand sheep farming communities.

The railway heritage dimension plays a support role, just as the operating railway always did back in its heyday. It is the vital thread that binds the whole district enabling the entire wonderful experience.

7.4 Other significant heritage

This section covers four specific high-value heritage sites at Middlemarch, Wedderburn, Otirehua and Clyde on the OCRT. It should be noted that:

- The OCRT significance statements still apply to these sites.
- These sites contribute strongly to the significance of the OCRT.

The significance of these sites was identified in a national study (Mahoney 1990), which covered the heritage of 1200 wooden railway station buildings in New Zealand built 1871–1945. The value framework in this study related to preserving the best surviving examples of standard designs of railway station buildings: seven designs in the Vogel design era to 1900 and five in the following Troup design era. The study recommended a top 10 ‘must keep’ nationally significant station buildings, another 34 ‘should keep’ station buildings and six station precincts. Three of the station buildings in the top 10 were along the OCRT: Middlemarch (also a precinct), Wedderburn and Oturehua. The findings of this study remain largely applicable in 2015, but have been updated to include Clyde. Therefore, the high-level assessments from that report are provided below, which are of sufficient detail for management decisions to be made.

7.4.1 Middlemarch: railway station heritage precinct

A railway heritage concept of exceptional value is the complete railway station heritage precinct. Mahoney (1990) identified six surviving precincts that represent c. 1000 such precincts that once formed the economic and social core of the railway system beyond the cities. All six precincts warrant preservation and Middlemarch is among them, rating amongst the best and seeming to have the best prospects.

Significance statement: The Middlemarch railway station heritage precinct rates amongst New Zealand’s best, representing the economic and social core of the railway system beyond the cities. The Middlemarch precinct includes the following elements:

1. Station building
2. Goods shed
3. Railway sidings
4. Loading bank
5. Semaphore signals
6. Turntable
7. Station master’s house

Significance statement: The Middlemarch railway station building rates as New Zealand’s only surviving example of the Vogel class 3, which was once a very popular design for medium towns, with c. 60 built nationwide.

A key lost element is the stockyards, which were removed c. 1976. A related heritage element is the main street opposite the station.

Currently, this precinct has no Heritage NZ rating, but it should be Category 1 (see section 9.1, points 10 & 11).

7.4.2 Wedderburn railway station building and goods shed

Significance statement: The Wedderburn railway station building rates as New Zealand’s only surviving example of the Vogel class 5, which was once a very popular design for small towns, with c. 300 built nationwide.

The Wedderburn railway goods shed featured in one of Graham Sydney’s most famous paintings, giving it a cultural value. The scene could be more fully recreated by relaying a section of track.

Currently, this site has no Heritage NZ rating, but it should be Category 1.

7.4.3 Oturehua railway station building

Significance statement: The Oturehua railway station building rates as New Zealand’s best surviving example of the Troup type A, which was once a very popular design for small towns, with c. 100 built nationwide. Its current whereabouts is unknown but, if it exists, its exceptional value warrants its return to the site.

The returned station building would warrant a Category 1 Heritage NZ rating.

7.4.4 Clyde railway station building

This building was given a low rating in Mahoney (1990) because it was abandoned and the OCRT was not mooted. However, its rating has since been updated to reflect the changed circumstances.

Significance statement: The Clyde railway station building rates amongst New Zealand's best surviving examples of the Troup type B, which was once a very popular design for medium towns, with c. 70 built nationwide.

Currently, this site has no Heritage NZ rating, but likely warrants one.

7.4.5 Management policies

The following management policies are sufficient to provide broad guidance for heritage at Middlemarch, Wedderburn, Oturehua and Clyde:

1. The value of these buildings is not compromised by modification.
2. The loss of their existing fabric is to be avoided.
3. Alterations and adaptations must be reversible.
4. A sustainable future use is vital.

7.4.6 Adaptive re-use of heritage buildings

A policy is in place of not allowing commercial development on the Trail. From a heritage perspective, this policy has led to the revitalisation of existing buildings in communities along the Trail – both commercial buildings and houses – and saved endangered small town heritage. On balance it seems important that this policy continues. The only down side of this policy relates to potentially restricting the sustainable use of authentic railway buildings on the Trail. The management of such buildings, when they have very high heritage value, can still be considered on merit as an exception to the policy.

7.4.7 Other heritage buildings and sites

The significance of the following buildings and sites that are on or adjacent to the OCRT could be revisited in due course, especially when decisions are due to be made that impact on their fabric:

1. Hyde Crash Memorial, 1943.
2. Hyde Railway Station precinct.
3. Centennial Milk Bar, Ranfurly.
4. Hayes Engineering Works. Oturehua (exceptionally well managed).
5. Ida Valley Hotel.
6. Former railway houses (DOC: Waipiata and Omakau).

7.4.8 Heritage gaps

There are two key heritage gaps in relation to the key heritage value:

1. Stockyards, particularly at Middlemarch or Omakau.
2. Examples of sheep and wool wagons, classes J and L.

7.5 Icon site assessment

Across New Zealand DOC has identified and developed 20 historic Icon sites as the best heritage sites in their category. Table 4 is the Icon site assessment for the OCRT.

Table 4. Icon site assessment for the OCRT.

ICON SITE CRITERIA	ASSESSMENT
1. Provides a story of kiwi identity that captures the public imagination.	<i>The story of kiwi identity:</i> The living heritage of traditional New Zealand sheep farming communities. <i>Ability to capture imagination:</i> Demonstrated by the on-going popularity of books, television, souvenirs and other attractions themed on this topic
2. Provides a wow visitor experience that is recommended to others	Proven by its consistent success: <ul style="list-style-type: none"> • A 5-day experience that attracts 18000 visitors annually, grown from a zero start in 1994 • The good feedback from participants interviewed

8. Comparative analysis

A comparative analysis is the best method to select the best heritage site for a particular value. The method compares the strongest candidate sites to reveal the best of the best (Table 5).

The lead heritage value of the OCRT is this: *The best opportunity to experience New Zealand’s traditional sheep farming communities.* This is the value for which candidate sites are compared. The contributing attributes for this value are these key opportunities for the visitor:

- Encounter rural community members.
- Stay on sheep farms and experience farm practices.
- Encounter small towns.
- Immersive landscape experience.

The comparison of sites is simplified because no other candidate can match the OCRT for strength of this value because of two irreversible pragmatic factors:

1. In 2008, DOC undertook a national study of other potential rail trails. These trails could potentially share this value, but it was concluded that no comparable opportunities exist because all of the railway corridor land has already been sold off and the logistics of repossessing it are too daunting.
2. Even if a potential rail trail was found, such as from Nelson to Glenhope, the small town infrastructure along the route will have already declined to the point that it has largely been lost. By contrast, the OCRT began 25 years earlier, when the small town infrastructure still survived in that district, making it possible to retain it.

Table 5. Comparative analysis: traditional sheep farming communities.

STRONGEST COMPARABLE SITES	VALUE COMPARISON
Agrodome, Rotorua	Shearing only; no landscape, farmers or small towns.
Molesworth Station drive, Marlborough	No sheep or small towns.
Nelson to Glenhope cycleway (scenario)	Too few small towns survive for this to be a comparable success.
Walter Peak Station, near Queenstown	Offers sheep dogs and shearing; a strong rival, but is possibly an alternative shorter experience.
Individual sheep farm homestay (scenario)	Few small towns survive, so scenario is possible but cannot deliver the same depth of experience.

Note: A more detailed table could be prepared to score the primary attributes using the River Values Assessment System (RIVAS) method, which would then be summed (Mahoney 2015).

9. Management implications

9.1 DOC-led research and development

1. Consult with stakeholders on this heritage assessment: Heritage New Zealand Dunedin; OCRT Trust; Taieri Gorge Railway.
2. Work with OCRT Trust to investigate, refine and implement a marketing approach based on living heritage.
3. Update the Otago Conservation Management Strategy when due to reflect the living heritage Icon value.
4. Implement the storage and retrieval of existing OCRT heritage management documentation, including images.
5. Improve the inventory of bridges, culverts and gates, providing identities based on distances from the 1907 chainage register and a definitive image of each, with the intention of adding to DOC's Asset Management Information System (AMIS).
6. Develop AMIS prescriptions and costings for all heritage assets on the OCRT.
7. Seek the restoration and relocation of the best railway gates by volunteers.
8. Research the archival records on the rationale for the use of stone and bring to life the skilled stonemasons that worked on the line.
9. Scope an oral history of sheep farmers and railway employees, and seek community leadership and external funding for this.

9.2 Heritage policies

1. Develop a policy for the relocation of buildings and the construction of replicas. This report touches on the value of two such actions: the relocation of Oturehua Station and the possible replication of a stockyard loading ramp at Middlemarch or Omakau.
2. Develop a generic conservation policy for all bridges, culverts and gates, noting that more specific detail may be required for larger bridges.

9.3 Bring heritage to life

1. Develop an enthralling sheep farming history DVD (akin to Country Calendar), using amazing 1950s heritage footage plus some modern interviews in colour arising from the oral history project; this DVD would then be shown to guests along the OCRT in the lounges of sheep farmers' homes.
2. Following this, develop a similar railway heritage DVD related to the OCR, with emphasis on sheep traffic, social history and popular excursion trains.
3. Identify, develop and promote key photo points, such as:
 - Panoramic views that can include people in the foreground.
 - The Graham Sydney be-in-the-painting shot.
 - Improved photo points at the start and finish of the OCRT.

9.4 Hyde railway accident

The following management policies should be put in place:

1. Mark the actual site of the accident.

2. Interpret the tragedy of the accident.
3. Signpost the accident memorial cairn.

Comment: A shortcoming of the memorial cairn is that it is located 500 m away from the accident site. This made safety sense when the railway was operating up to 1990. However, with the railway now closed and the route in public use, commemoration could be shifted to the accident site. This work could be tied in with marking the 75th commemoration in 2018. (See Appendix 2 for further details.)

9.5 Anniversaries

Anniversaries can provide an opportunity for community engagement and public events:

- 2017 125 years since the OCR opened to Middlemarch.
- 2018 June 4: 75 years since the Hyde railway accident.
- 2021 100 years since the OCR opened to Clyde.
- 2023 125 years since the OCR opened to Ranfurly.

10.6 Actions led by others

1. Undertake a comprehensive inventory of heritage considered to be tributary to the OCRT (e.g. might later include Naseby, St Bathans, Ophir, and Clyde).
2. From the inventory, seek registration of key places under the Heritage NZ Act, and listing under the Resource Management Act.
3. A community-lead oral history of sheep farmers and railway employees.



Figure 15. Tiny Tiroti Station. In 1968, this only had a shelter shed station and a sheep loading ramp. Today, it is a busy spot where the road joins the Otago Central Rail Trail. *Photo: George Emerson*

10. Annotated bibliography

10.1 Historical sources

Board of Enquiry 1943: Hyde railway accident. New Zealand Government.

Conly, G.; Stewart, G. 1986: New Zealand tragedies on the track. Grantham, Wellington. 182 p.

This book includes an account of the 1943 Hyde accident (pp. 103-105). Interestingly, it does not name the locomotive driver, reflecting small community sensitivities and controversies that still remained 43 years after the event. An alternative angle was that due to war pressures of fewer staff and more traffic, staff were stressed from overwork and track maintenance standards were reduced.

Dangerfield, J.; Emerson, G. 1995: Over the garden wall. Otago Railway & Locomotive Society, Dunedin. 120 p.

This is the only published history of this railway. It is moderately comprehensive and reliable, but is aimed at the railfan audience, and so is strongest on civil engineering, stations and locomotives.

Mahoney, J.D. 1982: Kings of the iron road. Dunmore, Palmerston North. 148 p.

This book covers the history of passenger train services in New Zealand from 1870 to 1970, including the OCR (pp. 131-134), and provides a valuable national context for New Zealand passenger train services.

Reid, R. C. 2002: One more mile on the NZR. Junction Press, Dunedin. 128 p.

This book is the well-crafted personal reminiscences of an engine driver (born 1925) who grew up as the son of a ganger in Ida Valley (p. 12), worked as a locomotive trainee in Clyde (pp. 47-50) and then drove trains on the OCR until retirement in 1982 (pp. 76-86, 88-91).

10.2 Fabric sources

New Zealand Railways. 1889: Chainage register: Otago Central Railway. New Zealand Railways, Dunedin.

Every NZR railway line maintained a 'chainage register' as the basis of an on-going civil engineering asset inventory and management. This was prepared by NZR once construction of the line was completed and was taken over from the Public Works Department, superseding the construction plans. The register recorded on a linear distance scale the as-built location of distance marker posts, railway station complexes, railway houses, signals, bridges, culverts, drains, tunnels, fences, gates, road crossings, farm crossings, curves, curve data posts, cuttings, embankments, gangers' sheds and many other details. A copy of the OCR register was used as the base maps for the 1994 and 1995 archaeological survey reports.

New Zealand Railways. 1894-1990: Bridge inspection files. New Zealand Railways, Dunedin. Foolsap, 68 volumes.

Once a bridge was built, it was assigned an asset number and a card was set up to record it as-a built form as a guide for inspection, repairs and maintenance. These are held in the DOC Alexandra office.

New Zealand Railways. 1894-1990: Tunnel inspection files. New Zealand Railways, Dunedin. Foolsap, 3 volumes.

Once a tunnel was built, it was assigned an asset number and a card was set up to record it as-a built form as a guide for inspection, repairs and maintenance. These are held in the DOC Alexandra office.

New Zealand Railways. 1894–1990: Bridge design cards. New Zealand Railways, Dunedin. 68 cards.

Noted but not seen.

New Zealand Railways technical publications (copies held by P. Mahoney):

- Gradient diagrams, 1935
- Working timetables, 1893–1990
- Public timetables, 1893–1976
- Engineers structures handbook, 1914
- Circular memorandums, 1894–1990

Other New Zealand Railways plans that may survive in archives include:

- Bridges and culverts
- Buildings and structures: stations, goods sheds, stockyards, loading banks, etc.
- Station yard track layouts
- Deviations

Public Works Department. 1892–1907: Railway construction plans. Public Works Department, Dunedin. Large format, 93 sheets.

These were the original survey plans that were used to define the final location of the railway, to acquire the land and to call tenders for construction in the period 1892–1907. Copies of these in A3 format are held at the DOC Alexandra office.

Public Works Department. 1896–1907: Appendices to the Journals of the House of Representatives. Public Works Department, Wellington. Foolscap, 10 volumes.

The annual report of the Public Works Department chronicles progress on the planning and construction of this section of the OCR from 1896 to 1907. It is, of course, tailored to present the Minister and Department in the best possible light, and so the discerning researcher will have to delve deeper and dirtier to unearth some of the real issues that arose. These volumes are available online.

10.3 DOC management documents

Department of Conservation. 1994: Otago Central Rail Trail: Interim Policies and Development Plan. Department of Conservation, Dunedin. 16 p.

This published public report encompasses the initial approach regarding legal requirements, land administration, asset security, immediate management considerations, trail development, communications, interpretation, concessions, volunteers, administration and work scoping. No management sign-off is indicated in this report, but the introduction states that it 'sets out the management directions and interim policies of the rail trail'.

Department of Conservation. 2005: Culvert inventory, Otago Central Rail Trail, Daisybank–Clyde. Department of Conservation, Alexandra. 28 p.

This report identifies 324 culverts in a spreadsheet, and locates them by grid reference.

Hamel, J. 1994: Otago Central Rail Trail: an archaeological assessment. Department of Conservation, Alexandra. 40 p.

This sets out the rationale for the proposed 1995 archaeological assessment project and provides some base information but no new research. It also includes a summary of data from the NZR bridge inspection files on all bridges.

Hamel, J. 1995a: Otago Central Rail Trail: an archaeological assessment: annotated mileage sheets Daisybank to Clyde. Department of Conservation, Alexandra. 100 p.

This report uses photocopies of the NZR mileage sheets (actually the chainage register) as the base document to record what heritage remained in 1995. Indexed photo records were also taken.

Hamel, J. 1995b: Otago Central Rail Trail: an archaeological assessment second part. Department of Conservation, Alexandra. 40 p.

This report is a summary of the 1995 assessment field work. It includes a Cadastral index (6 map sheets) of the mileage register of the OCRT; images of a range of bridges and the distinctive stonework style (8 pages); and brief descriptions of surviving stations and bridges (23 pages).

Hamel, J. 1996: Archaeological assessment of the Otago Central Rail Trail. Department of Conservation, Wellington. 34 p.

This report is the published summary of the previous three reports. It contains additional overview information on culverts (pp. 13-18), and track gang sheds, gates and bridges (pp. 18-25).

Petchey, P. 1994: Otago Central Rail Trail: an archaeological assessment: annotated mileage sheets Middlemarch to Daisybank. Department of Conservation, Alexandra.

This report uses photocopies of the NZR mileage sheets (officially the chainage register) as the base document to record what heritage remained in 1995. Indexed photo records were also taken.

Storm, R. H. 2008: Bridges of the Otago Central Rail Trail. Department of Conservation, Alexandra. 70 p.

This report is of particular value because it is authored by a railways civil engineer. It covers all 51 bridges on the OCRT (numbers 37 to 86, with two later bridges). It also includes tunnels, culverts, cuttings, embankments, retaining walls and turntables. It provides a great overview that can contribute to the assessment of heritage significance.

10.4 Wider heritage management

Mahoney, P. J. 1990: New Zealand railway stations: a heritage in timber and tin. International Council on Monuments and Sites (ICOMOS) New Zealand, Auckland. 24 p.

This report covers the heritage of 1200 wooden railway station buildings in New Zealand and recommends a top 10 'must keep' nationally significant station buildings, another 34 'should keep' station buildings, and six station precincts. Three station buildings along the OCRT were in the top 10: Middlemarch (also a precinct), Wedderburn and Otirehua. Its findings remain largely applicable today.

Mahoney, P. J. 1991: Managing railway heritage in New Zealand. International Council on Monuments and Sites (ICOMOS) Australia. 12 p.

This report sets out a framework for the assessment of railway heritage as a complete entity under four broad headings: locomotives; rolling stock, routes and stations. Using this framework, the TGR is considered the most outstanding railway heritage site in New Zealand.

Mahoney, P. J. 2015: Pick the best. The International Committee for the Conservation of the Industrial Heritage (TICCIH), France. 18 p.

This report sets out a systematic comparative method for assessing heritage values, derived from the RiVAS methodology developed by Lincoln University, 2008-2015. It is used as the basis for the comparative analysis applied in this report, although only a simplified version is required. It is also the source of the story pyramid tool.

Appendix 1

Icon value scenarios

This section provides additional detail for those interested in how heritage values are assessed. It presents the workings of four scenarios that were considered to identify the strongest Icon value for the Otago Central Rail Trail (OCRT):

1. Railway infrastructure heritage
2. Sheep farming communities
3. Railway heritage
4. New Zealand's most popular heritage site

It was concluded that scenario 2 has the strongest potential to capture the public imagination, and so this is adopted as the Icon value in sections 6 and 7.5.

HERITAGE VALUE 1: RAILWAY INFRASTRUCTURE HERITAGE
<p>The value: A significant assemblage of railway civil engineering infrastructure exhibited over a length of railway (Robert Storm; Jill Hamel)</p>
<p>The big idea: Railway civil engineering infrastructure with no tracks or trains</p>
<p>Pick the best: The OCRT is widely regarded as New Zealand's best site for this value (e.g. Hamel & Storm) This value occurs nowhere else and is essentially regional</p>
<p>Who would this inspire? The interest base for this craft skills and technology heritage is only 20% of that for rail heritage. At 20,000 visitors per annum (vpa), this equates to:</p> <ul style="list-style-type: none"> • Specific visitors 0.2% = 40 pa • Interest by visitors 6% = 1200 pa

HERITAGE VALUE 2: SHEEP FARMING COMMUNITIES
<p>The value: The OCRT is New Zealand's best site for engaging in sheep farming heritage. Sheep farming is big in New Zealand, numbering 80 million sheep in 1970 and 32 million sheep in 2015. There is strong evidence that sheep farming is a core value for the Otago Central Railway (OCR). The government funding that enabled the OCR to be built was allocated for the principal purpose of enabling sheep farming over 1.1 million ha of the Strath Taieri and Maniototo districts. A parliamentary select committee in 1877 considered seven competing route options to Hawea, but this route was selected over the other six contenders for that reason. For many decades, Omakau on the OCR loaded out the largest number of sheep annually of any railway station in New Zealand. The traffic was so great that the season peak special sheep trains ran just from Omakau. To support this intensive traffic, Omakau station facilities included a locomotive shed and a locomotive turning triangle, and a locomotive crew was also based there seasonally. The sheep fame of Omakau was such that New Zealand Railways sent their photographer there in 1960 and a film documentary was made in 1962. The OCRT has five attributes contributing to this value:</p> <ul style="list-style-type: none"> • Today's sheep farming landscape • Local sheep farming towns • The ability to meet/stay with sheep farmers and spend hours out on their farm • Experience shearing • Experience mustering
<p>The big idea: Sheep farming has long been a dominant land use and a major segment of the economy, and there is a relatively high awareness and interest in it amongst New Zealanders, as evidenced by:</p> <ul style="list-style-type: none"> • The popularity of the television programme <i>Country Calendar</i> • Books • Tourist attractions

HERITAGE VALUE 2: SHEEP FARMING COMMUNITIES

Pick the best:

Comparative analysis: Representative contenders (4):

- Agrodome, Rotorua: no landscape or farmers
- Molesworth Station drive: no sheep
- OCRT: immersive in landscape, encounter rural community, stay on a sheep farm
- Walter Peak Station, near Queenstown: offers sheep dogs and shearing; a strong rival, or possibly complementary

HERITAGE VALUE 3: RAILWAY HERITAGE

The value:

The OCRT is a key site for New Zealand railway heritage. Claimants include:

- Storm (2008: 7): *The fact that this line is of a significant length, took so long to build, and has survived so long virtually unaltered provides a unique window through which to view some early phases of railway engineering development.*
- Hamel (1996: 20): *Without doubt the bridges and numerous masonry culverts are the most interesting historic features of the rail trail. Nowhere else in NZ can one see such lovely stone work on a railway?*

The big idea:

The national heritage of New Zealand's railway system.

Railway construction into every region of New Zealand was a major government investment in 1871–1945, and the operating railways played a key economic and social role as a national land transport system, particularly up until the 1970s. At its peak, New Zealand Rail had 1200 stations in all regions from Kaikohe to Bluff and employed 27 000 staff. The low-cost transport offered by railways enabled the growth of many primary and secondary industries throughout New Zealand.

The high number of heritage assets surviving on the OCRT and the way in which they interweave with the farming landscape and the towns mean that the OCRT strongly represents this big idea.

Pick the best:

Comparative analysis methodology from Hughey 2012 using Multiple Criteria Analysis. A framework for railway heritage value was presented to the International Council on Monuments and Sites (ICOMOS) by Paul Mahoney in 1991 and remains the only such tested model. It had four key elements: route, track, stations and trains.

A comparative analysis was conducted for these four key elements at four representative top contenders using a Multiple Criteria Analysis (see Hughey 2012):

- OCRT: route 3; no track 0; a few stations 1; no trains 0; good engagement 2; total = 6
- Taieri Gorge Railway (TGR): route 3; track 3; a few stations 2; trains 3; max engagement 3; total = 14
- Hawkes Bay Railway (HBR): route modified 2; track modified 2; a few stations 3; trains 2; low engagement 1; total = 10
- Glenbrook Vintage Railway: route 2; track modified 2; no stations 0; trains 2; good engagement 3; total = 9

This showed that the TGR stands out as New Zealand's most outstanding rail heritage site because:

- It has 60 km of railway route negotiating one of New Zealand's most spectacular gorge settings, and featuring two viaducts, 16 major bridges and 10 tunnels
- Track is still in place, including at three stations: Hindon, Pukerangi and Middlemarch
- Station facilities have largely survived at Pukerangi and Middlemarch, with the exception of the stockyards
- Passenger trains still operate daily providing a high level of public engagement

In some qualities, the 150-km OCRT compares to the TGR; however, it has no track, no trains, and significant missing elements.

HBR best represents heritage on the operating railway system because it has the highest intensity of heritage preservation in New Zealand. However, it has no passenger trains and visitors are largely excluded.

So is the OCRT still nationally significant rail heritage? The OCRT rates lower than the TGR and a spectacular line that is 60 km long is sufficient to represent this heritage. In addition, funding the permanent retention of this 60 km is a huge challenge, so an additional 150 km would make this significantly more difficult.

This suggests the following railway heritage scenario for the OCRT:

- Maintain the heritage bridges and culverts as vital assets that enable the OCRT function
- Maintain their heritage character, as it contributes to a distinctive OCRT visitor experience
- Conserve those outstanding rail heritage assets that are rated as nationally significant

Other heritage considerations include:

- The OCRT has a much wider range of bridge types than the TGR
- The wood trestle bridges are individually outstanding as the best of their type

Who would be inspired?

Less than 1% of annual visitors likely go to the OCRT specifically for rail heritage (= 200 vpa). However, 30% of visitors engage positively with the rail heritage (= 6000 vpa).

HERITAGE VALUE 4: NEW ZEALAND'S MOST POPULAR HERITAGE SITE

The value:

The OCRT is the heritage site that New Zealanders most aspire to visit. Origin: New Zealand Automobile Association (AA) 'NZ 101 must-do survey 2007'.

The big idea:

Identifying the places you most like to visit on a New Zealand holiday if time and money were not a constraint.

Pick the best:

In 2007, the OCRT was voted sixth after five national park destinations. It was easily the highest ranked cultural tourism site, way ahead of Waitangi.

This was the first such AA survey and it triggered online voting from 32 000 New Zealanders. The process was an acceptable blend of business promotion by the Regional Tourism Offices, who nominated the eligible sites, and public voting on these. In subsequent surveys, the AA changed the process, making it less objective; however, the OCRT still retained this very high rating under the revised system.

References

Mahoney, P.J. 1991: Managing railway heritage in New Zealand. International Council on Monuments and Sites (ICOMOS) Australia. 12 p.

Hamel, J. 1996: Archaeological assessment of the Otago Central Rail Trail. Department of Conservation, Wellington. 34 p.

Storm, R.H. 2008: Bridges of the Otago Central Rail Trail, Department of Conservation DOC, Alexandra. 70 p., A4.

Appendix 2

Hyde rail disaster, 1943

A2.1 History

Date: 4 June 1943, 1.45 pm. Photos of the carnage (Fig. A2.1) reflect the Board of Enquiry report, which stated that ‘no previous railway accident in the country has resulted in such a mass of distorted and wrecked rolling stock.’ The toll was 21 killed and 47 injured, more than half of the 113 passengers aboard. The train of seven carriages bound for Dunedin was rounding a very sharp curve (183 m radius, 9.9 chains) in a deep cutting. Speed on this curve was limited to 48 kph but the enquiry estimated that the locomotive was likely travelling at over 100 kph. As a result, the underframe of one carriage was twisted into the form of the letter S indicating the force of the impact. The confined space within the cutting concentrated the wreckage, and magnified the death and damage. The engine driver faced a court trial and was found guilty of manslaughter.



Figure A2.1. The carnage and high death toll of 23 was caused by the location within a cutting, which confined the carriages and caused them to crush up behind the locomotive. *Photo: J.D. Mahoney collection.*

A2.2 Railway crashes: comparative analysis

What is amazing is that in the first 80 years of railways in New Zealand from 1863 to 1943, there was only one bad crash with 17 fatalities, which occurred at Ongarue in 1923 – and this was caused by a landslide, not human error. Table A2.1 sets out in date order the ten most fatal railway accidents in New Zealand up to the Tangiwai disaster in 1953 (Conly 1991).

This table shows that historically the Hyde accident is nationally significant, as it:

- Was only New Zealand’s second major train accident in the first 80 years of operations
- Claimed the highest number of New Zealand fatalities up to that time
- Still ranks second only to Tangiwai to this day, based on fatalities

Table A2.1. Comparison of all rail crashes to 1954, highlighting the three worst.

LOCATION AND YEAR	DEATHS	CIRCUMSTANCES OF ACCIDENT
Rimutaka Incline, 1880	3	Wind blew the carriage off the track; this was the first major train accident in New Zealand since operation began in 1863.
Rakaia, 1899	4	A combination of circumstances: high speed, poor brakes, poor train control systems. A scary near miss of major carnage that transformed railway safety.
Whangamarino, 1914	3	A combination of circumstances: malfunction of semaphore signal and failure of signalman to double check.
Mataroa, 1918	2	A landslide blocked the track and a passenger train ran into it.
Ongarue, 1923 ¹	17	A landslide blocked the track and a passenger train ran into it. This was the first major New Zealand accident (based on fatalities).
Opapa, 1925	2	Passenger train travelling at excessive speed derailed on curve.
Ratana, 1938	6	Passenger train travelling at excessive speed derailed on curve.
Hyde, 1943 ²	23	Passenger train travelling at excessive speed derailed on curve; driving under the influence of alcohol also implied.
Haywards, 1943	3	Engine derailed due to bogie design shortcomings and track irregularities.
Seddon, 1948	6	Passenger train travelling at excessive speed derailed on curve.
Tangiwai, 1953 ³	151	Lahar washed out the bridge causing an express passenger train travelling at speed to plunge into the river.

A2.3 Significance statements

Context: In rail operations, there is a constant potential for the large-scale loss of human life, and so safety is a vital consideration. Railways invest in a wide range of on-going safety initiatives, including staff driver training; fail-safe systems for train braking, train signalling and the safe working of trains; and regimes for asset inspection and maintenance. At Hyde, the engine driver was held responsible for driving at an unsafe speed.

Historic value: In 1943, the toll of 21 dead and 41 injured made this the worst railway accident to have happened in New Zealand, and even today it is exceeded only by the 1953 Tangiwai disaster.

Fabric value: The deep sides and sharp curve of Straw cutting, the setting for this tragedy, remain unchanged today.

Cultural value: The accident site where 21 passengers died is a place of special remembrance, as too is the memorial cairn.

Significance summary: At the time of the accident in 1943, the Hyde train crash was New Zealand’s most deadly: 21 dead and 46 injured. Even today, it rates second only to the Tangiwai disaster. Blame went on the driver who rounded a sharp curve at an estimated 100 kph – twice the maximum permitted speed.

A2.4 References

Board of Enquiry 1943: Hyde railway accident. New Zealand Government.

Conly, G.; Stewart, G. 1986: New Zealand tragedies on the track. Grantham, Wellington. 182 p.