

A photograph of railway workers in high-visibility orange and yellow clothing and white hard hats working on a railway track. One worker in the foreground is using a power tool on the tracks. The background shows other workers and the track stretching into the distance. The image has a semi-transparent dark overlay.

KiwiRail research opportunities

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The value of rail to NZ

Moving passengers and freight by rail contributes significantly to the New Zealand economy.

The total economic value of rail is:

**\$1.70B-
\$2.14B**
EVERY YEAR



Total value is derived from:

\$997M
reduced congestion

\$322M
reduced air pollution

\$216M
reduced fuel use

\$180M
reduced greenhouse gas emissions

\$105M
reduced road maintenance

\$96M
improved safety outcomes

Source: KiwiRail Statement of Intent

\$997M
reduced
congestion

This is the modelled impact of shifting existing rail trips (congestion cost if these trips were made by road) What about potential to grow rail trips in future, freight/ metro/ intercity rail?

\$322M
reduced
air pollution

Do we adequately reflect where air pollution is caused, relative to vulnerable populations?

\$216M
reduced
fuel use

What are the relative costs and benefits of electrifying rail vs road transport?

\$180M
reduced
greenhouse gas
emissions

This value likely underestimates the role of rail in meeting greenhouse targets
How do we value embedded carbon, and what is a basis for comparing embedded carbon across transport modes?

\$105M
reduced road
maintenance

\$105m is 9% of road maintenance spend (\$2,061 billion in 2020/21). But rail already carries 16% of freight?

\$96M
improved safety
outcomes

We need more robust deterioration models, for both rail and roads, under heavy freight loads.

Reduce road trauma by shifting people and freight away from roads



How do we value urban space?

Network vulnerability to natural hazards



Time to rebuild after a disaster?



Rural/natural space?

Māori community outcomes?

