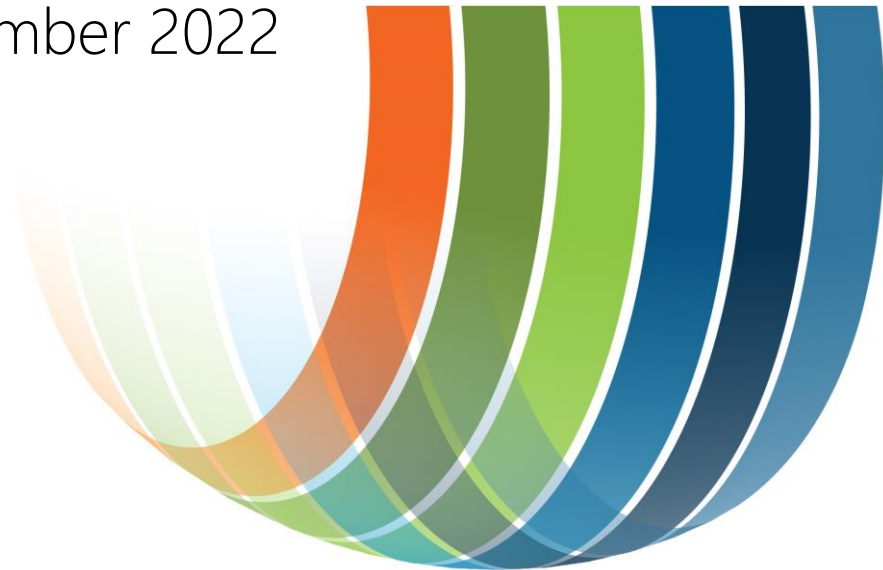


Analysing trends in road transport funding for Local Government New Zealand

November 2022



Infometrics

Economics put simply

Authorship

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Executive Summary

Local Government New Zealand (LGNZ) has engaged Infometrics to analyse road transport funding across New Zealand over time.

This analysis serves as background and a foundation of information for LGNZ to utilise and draw on for discussions around road transport funding levels and areas of focus.

Our analysis uses publicly available data from Waka Kotahi (Waka Kotahi) NZ Transport Agency to analyse actual (nominal) road transport funding. We also use additional data from Waka Kotahi, and data from Stats NZ, to analyse road transport funding trends in relation to increased road use, and changes in construction costs.

Key Findings

- Combined road improvements and maintenance spending rose 3.5%pa on average over the five years to 2021.
- Total transport funding across the system rose 5.8%pa on average.
- Road funding comprised 70% of total funding in 2021, down from a high of 83% in 2014, and below the 78% average of the last ten years.
- Vehicle Kilometres Travelled shows road use rose from 43 billion kilometres in 2017 to 49 billion kilometres in 2021, an annual average increase of 2.6%pa.
- Road construction costs over the five years to 2021 rose 1.1%pa on average, but with recent strong inflation, the five-year moving average increased to 3.5%pa over the 2018-2022 period.
- Once road use was considered, road funding per kilometre travelled rose 0.8%pa on average over the five years to 2021, slower than the 3.5%pa average increase in nominal roading funding.
- Once road use and construction costs were considered, cost-adjusted road funding per kilometre travelled **fell** 0.3%pa on average over the five years to 2021, slower than the 3.5%pa average increase in nominal roading funding.

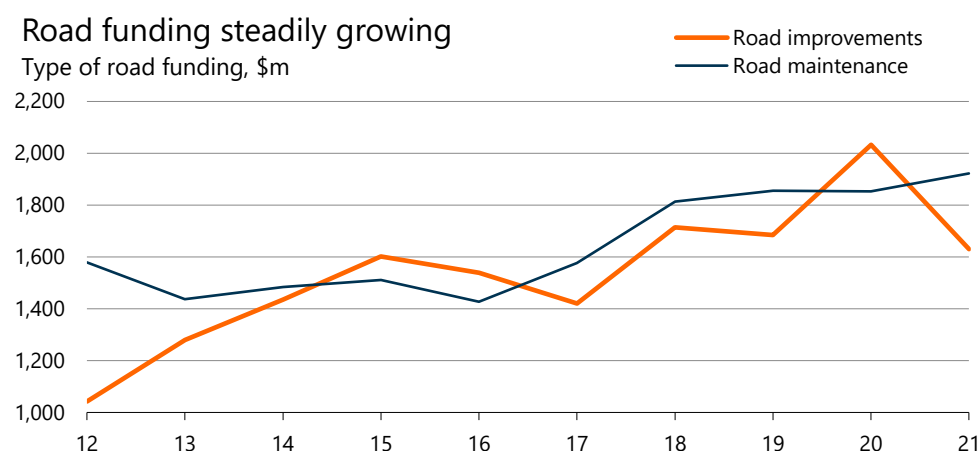
Road transport funding

This analysis uses publicly available data from Waka Kotahi on road transport funding by expenditure type. Given the focus on road transport funding, we have examined the “Road improvements” and “Road maintenance” expenditure types.

Road transport funding has generally grown

Funding for road improvements and road maintenance has generally grown over the last decade, as illustrated in Graph 1.

Graph 1



Funding for road improvements reached \$2.0b in the year ended June 2020, up from \$1.7b in 2018 and 2019. In the June 2021 year, funding fell to \$1.6b, reflecting the hit to spending able to be done due to COVID-19 restrictions. Over the last five years, funding for road improvements has grown 2.8%pa on average. Road improvement funding grew most strongly in the years ending June 2018 and 2020, with both years seeing funding increase 21%pa. Funding in 2021, due to COVID-19, declined 20%pa.

Funding for road maintenance totalled \$1.9b in the June 2021 year, up approximately \$50m on the previous two years and equating to a 3.7% increase. Road maintenance funding grew an average of 4.0%pa over the last five years, with particularly strong growth seen in the years ending June 2017 and 2018, where funding increased 10% and 15%pa respectively.

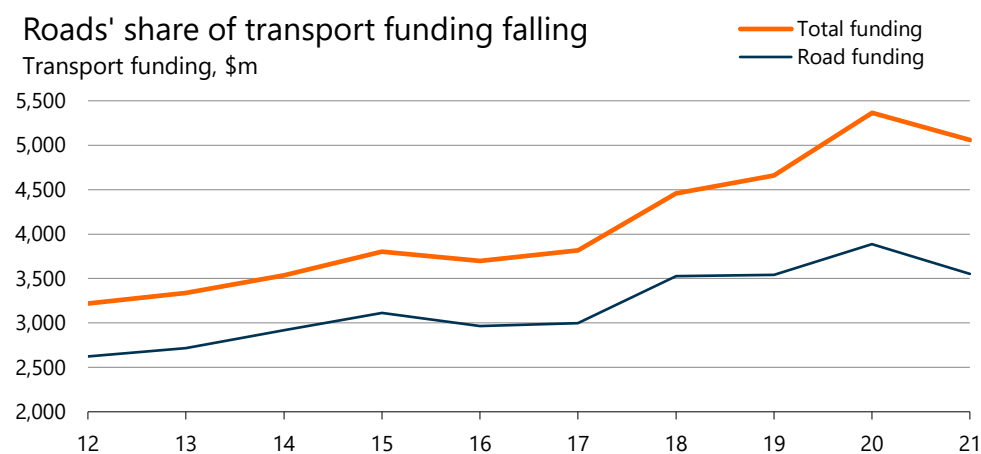
Combined, road improvements and maintenance spending rose 3.5%pa on average over the five years to 2021. In comparison, total transport funding across the system rose 5.8%pa on average.

Share of transport funding dedicated to roads

Graph 2 shows that although road transport funding might have increased, the share of funding for other transport initiatives and projects has grown more important in recent

years. As a result, the gap between total funding and funding for roads has widened over the last five years.

Graph 2



In the last decade (to 2021), funding for the improvement or maintenance of roads has averaged 78% of total transport funding, with a high of 83% in 2014. But the share of total funding dedicated to road improvements and maintenance has declined sharply over the last three years and was 70% of the total in the June 2021 year – the lowest level over the last decade.

Funding for road improvement and maintenance still receives the largest share of overall transport funding, being 32% and 38% of total funding in 2021 respectively.

In 2017, road improvements and maintenance received 37% and 41% of all funding, and public transport was only allocated 17% of the total funds. In 2021, the share of funding for roading had fallen (as outlined above), with public transport funding increased to 22% of all funding.

Growth in overall transport funding has increasingly occurred in non-road focused areas. Over the last five years (to 2021):

- Funding for road improvements and road maintenance rose 15% and 22%, which translates to an additional \$209m and \$345m respectively.
- Funding for road safety grew 49%, which meant an additional \$21m.
- Funding for public transport rose 75%, meaning an additional \$475m.
- Funding for walking and cycling was 237% higher, which equated to an additional \$179m.

Road use changes

This analysis uses publicly available data from Waka Kotahi on road use, as measured by Vehicle Kilometres Travelled (VKTs). In general, higher levels of road use require higher levels of investment to maintain roads to the same standard (as wear and tear is higher).

Higher road use should also generate more income over time for transport funding as more road use requires more fuel or driving – both key elements of New Zealand’s road funding user-pays system. However, increases in fuel efficiency over time, and the impact of non-contributing electric vehicles, have been seen to change the relationship between road use and income in New Zealand.

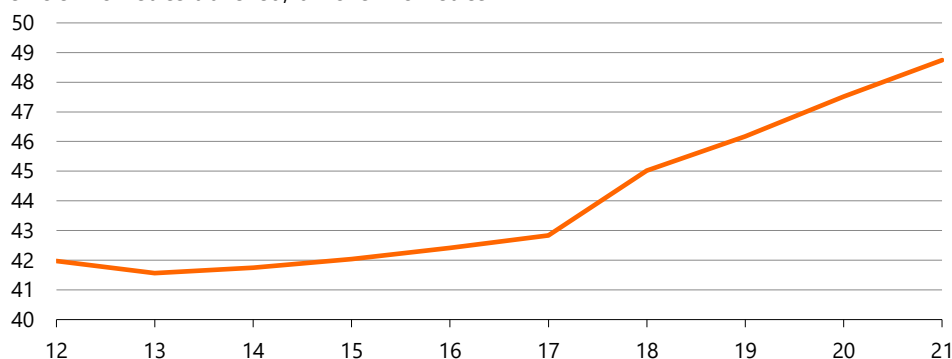
Steady rise in road use in recent years

In the aftermath of the Global Financial Crisis (GFC), road use remained static until around 2013. Road use then grew steadily between 2014 and 2021 at an average of 2.0%pa. As Graph 3 outlines, the growth in vehicle distance travelled on New Zealand roads rose from 43 billion kilometres in 2017 to 49 billion kilometres in 2021, an annual average increase of 2.6%pa.

Graph 3

Road use rose steadily over the last five years

Vehicle kilometres travelled, billions kilometres



Increased use will cause more wear and tear on roads, resulting in more maintenance work. Additionally, although greater distances travelled could be a result of the same number of vehicles travelling further over a year, the increase in New Zealand’s transport fleet means that the increase in road use is also due to more vehicles being on the road, suggesting more improvements may be needed to accommodate a larger volume of vehicles.

Road use has risen more for heavy vehicles than for light vehicles. Despite overall VKTs rising just under 13% between 2012 and 2021, light vehicle VKTs rose 10%, with heavy vehicles rising 16% over the same period. Light vehicles still account for the vast amount of VKTs, with nearly 90% of attributable VKTs in 2021 being for light vehicles. However, stronger growth in heavy vehicles means that heavy vehicle use now accounts for 10.5% of total VKTs, up from 10% in 2012, with likely larger contributions to wear and tear.

Road construction costs

Over time, the cost of delivering services changes. At present, the high inflation environment has drawn attention to increasing prices. But even in periods of lower inflation, cost increases over time means that higher funding is needed to deliver the same result as before.

This section examines the Stats NZ “transport ways” component of the Capital Goods Price Index (CGPI), which measures the cost of delivering capital goods and investments.

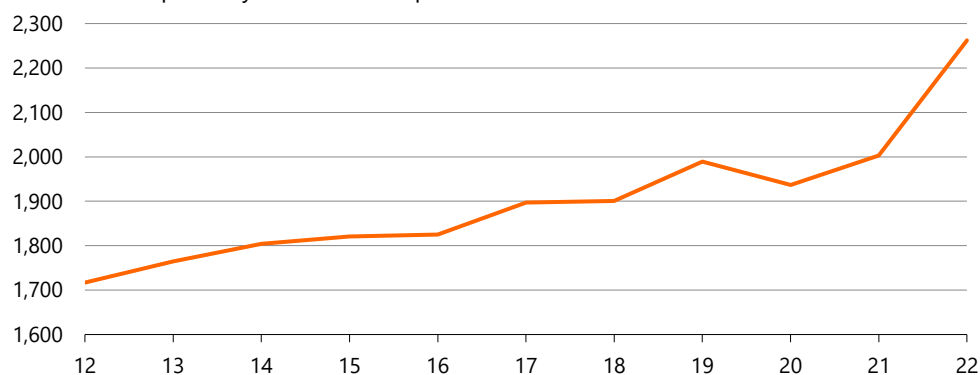
Road construction costs rise over time

As Graph 4 illustrates, the cost to deliver transport investment (which includes, and is dominated by, road) has risen over the last decade.

Graph 4

Road construction costs took off last year

StatsNZ transport ways cost index, Sep-99 = 1,000



In the last five years (2018 to 2022), transport ways costs have increased by an average of 3.5%pa, driven by cost increases skyrocketing to 13%pa in the year ended June 2022. However, strong cost growth was also seen in 2017, 2019, and 2021, when upwards pressure on costs resulted in increases of 3.9%, 4.6%, and 3.4%pa.

For the five years to 2021, and so excluding the recent considerable rise in cost pressures, transport ways costs increased by an average of 1.1%pa.

In total, road construction costs in 2021 were 5.6% higher than in 2017, meaning that to deliver the same level of construction in 2021 as in 2017 would have required an additional 5.6% of funding for the same result.

Funding adjusted for increases in road use and construction costs

This section examines the changes in road-based funding, once increases in road use and construction costs are accounted for. Higher use and higher costs both require more funding than before to achieve the same result as in an earlier period.

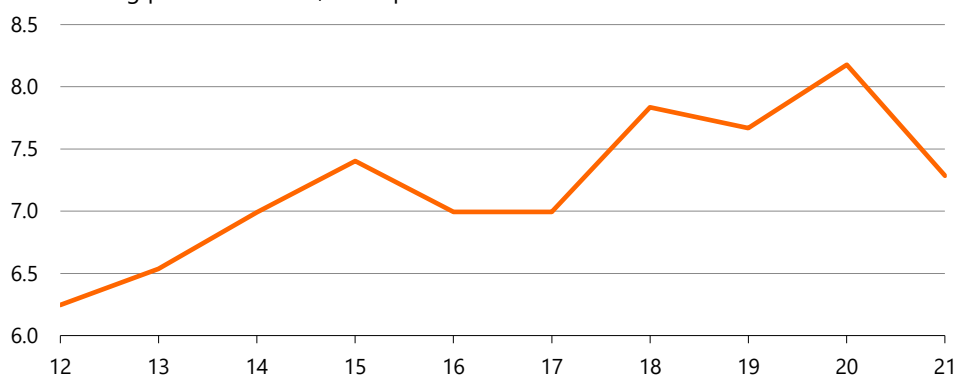
Funding adjusted for road use still rising, but was weaker in 2021

Road-based funding has generally increased over the last decade, but the use of roads has also increased. Adjusted for road use levels, road funding has still risen, but at a slower pace. The fall in road funding in 2021 occurred even as road use rose, causing road funding adjusted for use fell in 2021, as Graph 5 shows.

Graph 5

Funding weaker in 2020/21 once road use considered

Road funding per km travelled, cents per km



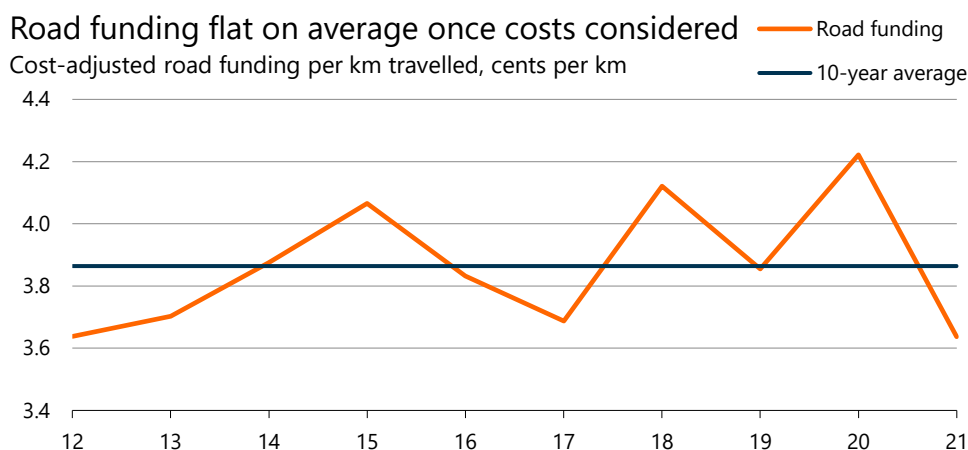
Over the year to June 2020, road funding totalled \$3.9b and roads were used to travel 48 billion kilometres. Taken together, funding per kilometre travelled hit a decade high of 8.2c/km. The following year (2021), funding fell to \$3.6b, and use increased to 49 billion kilometres. These changes meant funding per kilometre fell 11% to 7.3c/km, the lowest level since 2017.

Graph 5 shows that, once accounting for road use, funding fell in 2021, but generally over the last decade, funding for road improvement and maintenance has trended upwards. However, the growth, once accounting for road use, was slower than the growth in nominal spending. Over the four years to 2020, road funding rose 6.7%pa on average, compared to an average increase of 4.0%pa once road use was considered. Over the five years to 2021 (noting that funding fell in 2021), road funding rose 3.5%pa on average, compared to a 0.8%pa increase once road use was considered.

Considering road use and construction costs

Having adjusted road funding to account for how much roads are used, we then further adjusted funding to account for the cost of road construction. Higher road use and higher construction costs mean that road funding is generally flat once these factors are considered. In Graph 6, we consider how the level of funding per kilometre travelled has changed once construction cost changes are considered.

Graph 6



Costs fell 2.6%pa in the year ended June 2020, which increased the growth in funding per kilometre travelled in real terms as the same funding could be used to purchase more actual roading. Cost-adjusted road funding per kilometre travelled increased from 3.7c/km in 2019 to 4.3c/km in 2020. In 2021, costs grew 3.4%pa, and real funding per kilometre fell to 3.3c/km.

In nominal terms, between June 2020 and June 2021, funding for roads decreased by \$335m, a decline of 8.6%. Once road use is considered, funding for roads fell by 89c per kilometre travelled, a fall of 11%. Finally, once we account for growing costs in 2021, funding for roads fell by 58c per kilometre travelled, a decline of 14%pa.

Less funding growth weaker once constructions costs and road use considered

Looking over the year five years to 2021, cost-adjusted road funding per kilometre travelled has been bouncing around the 10-year average of 3.86c/km, with a five-year average of 3.90c/km. On average of the five years to 2021, cost-adjusted road funding per kilometre **fell** 0.3%pa, compared to the average 3.5%pa rise in nominal road funding. This result means that, although the dollar value of road funding has risen over the last five years, once road use and construction costs are taken into account, funding has effectively been flat.

The 2021 year can distort the picture. Looking on average across the four-year period to 2020, cost-adjusted road funding per kilometre has increased 3.4%pa, compared to nominal funding increasing by 6.7%pa on average. Roothing funding has increased, but by a lower level than the nominal spending figure would show.