

ROAD INFRASTRUCTURE
MANAGEMENT FORUM

Our Carbon Equation



Building a net-zero economy

The New Zealand Infrastructure Strategy
Rautaki Hanganga o Aotearoa
2022 – 2052

Nadine Dodge

Te Waihangā The NZ Infrastructure Commission



in association with



Rautaki Hanganga o Aotearoa: A strategy for



**Net-zero
carbon emissions**



**Flourishing
towns and
regions**



**Attractive and
inclusive cities**

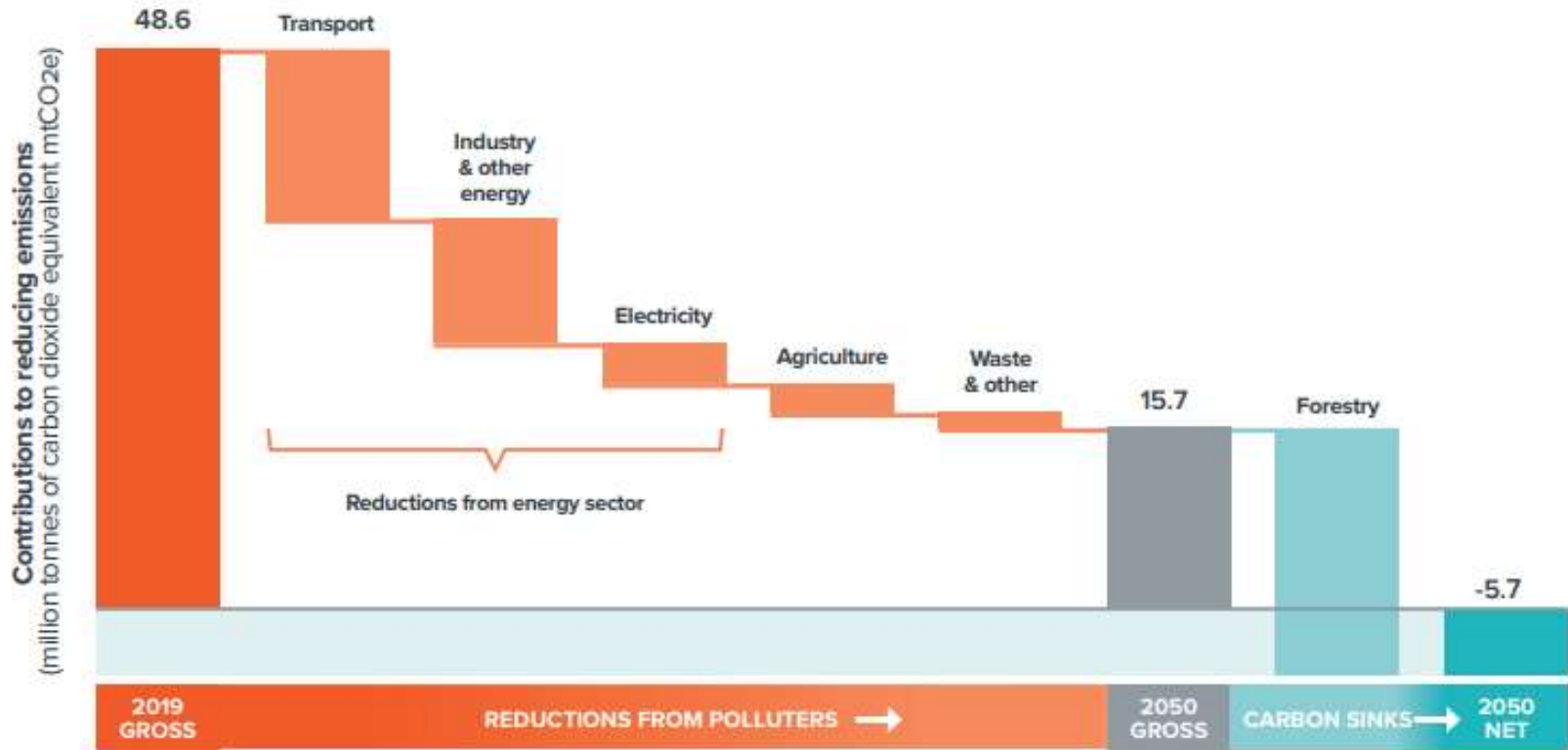


**A circular
economy**



**Resilience to
shocks and
stresses**

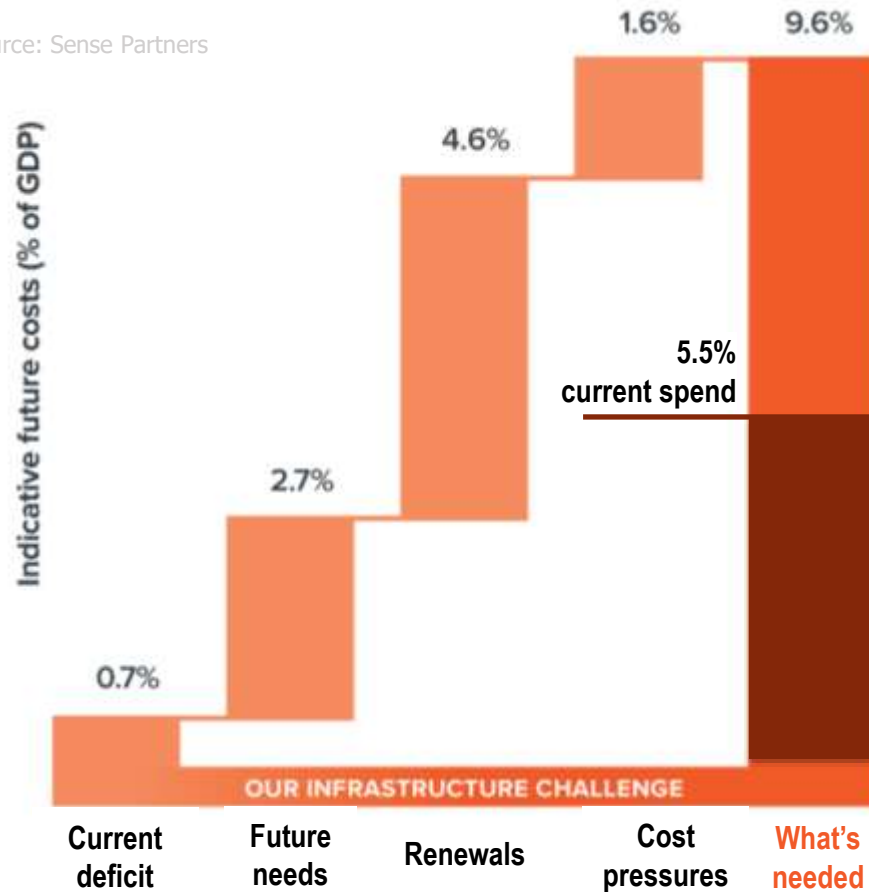
Transport is key to emissions reductions



Climate Commission demonstration path

The infrastructure challenge

Source: Sense Partners



We would need to double spending to build our way out of our infrastructure challenges

Lift the performance of infrastructure



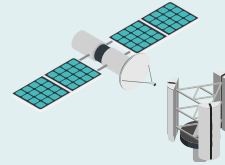
**Better
decision making**



**Improve funding
and financing**



**An enabling
planning
and consenting
framework**



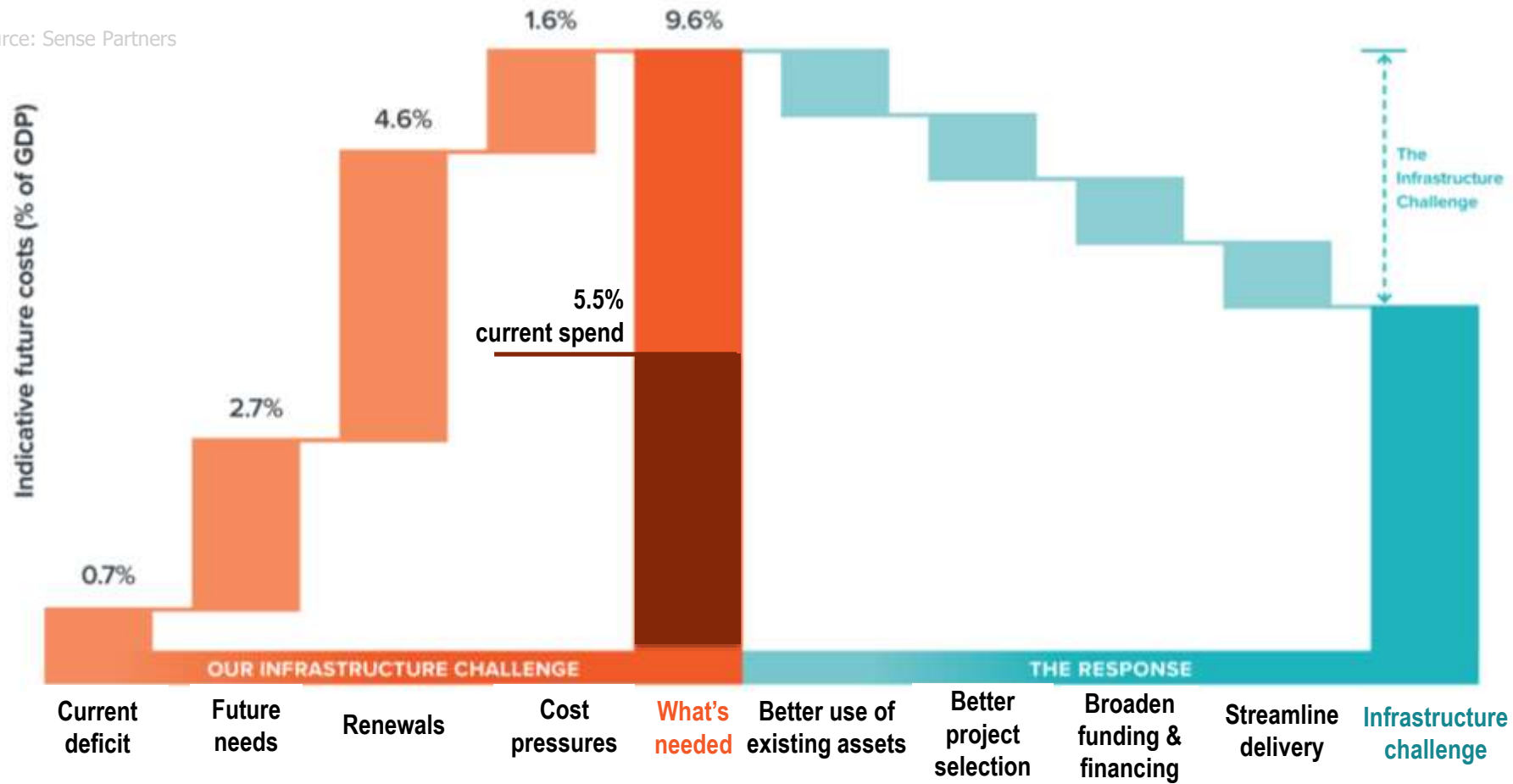
**Accelerate
technology use**



**Build workforce
capability and
capacity**

The infrastructure challenge

Source: Sense Partners



What can transport asset managers do to help?



Effective planning



Good asset management optimises our investments

Streamline delivery



By incorporating future needs into renewals

Best use of existing system



Reuse existing infrastructure rather than building new

Reduce emissions



By using a whole of life approach

At the heart of good decision making is good asset management



Decision-making hierarchy

Careful new investment

Investment in new infrastructure should be affordable and realistic, ensuring long-term value for money.

Best use of existing system

Improving current infrastructure can help provide a better service.

Managing demand

Reducing the demand for infrastructure can mean it performs better and reduces the need to build new infrastructure.

Effective planning

Early planning can make the most of opportunities to combine infrastructure needs with the way land will be used. It should also factor in future infrastructure needs as possible.

Streamline delivery by incorporating future needs into renewal projects

Campbell St, Whanganui (2015)



Streamline delivery by incorporating future needs into renewal projects



Campbell St, Whanganui (2019)

Streamline delivery: Cambridge MA

ORDINANCE NO. 1406

FINAL PUBLICATION NO. 3490. FIRST PUBLICATION IN THE CHRONICLE ON

CITY OF CAMBRIDGE

In the Year Two Thousand and Nineteen

AN ORDINANCE

In amendment to an Ordinance entitled "The Municipal Code of the C

That the Municipal Code of the City of Cambridge be amended by adding in Titl
"Streets, Sidewalks and Public Places" a new Chapter 12.22 entitled "Cycling Sa
reads as follows:

Chapter 12.22 **Cycling Safety Ordinance**

Section 12.22.010 **Short Title**

This Chapter may be cited as the "Cycling Safety Ordinance" of the City of Cam

Cycle safety ordinance makes it a requirement to build bike lanes during renewals.



Streamline delivery: Cambridge MA

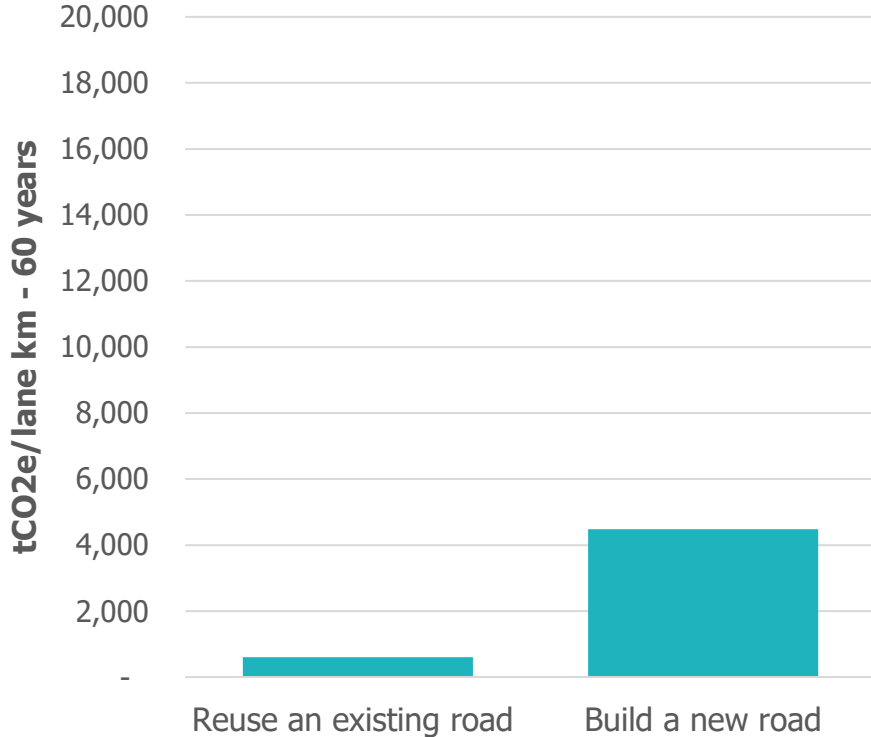
Reduces cost of delivery
Optimises workforce capacity
Reduces carbon impacts



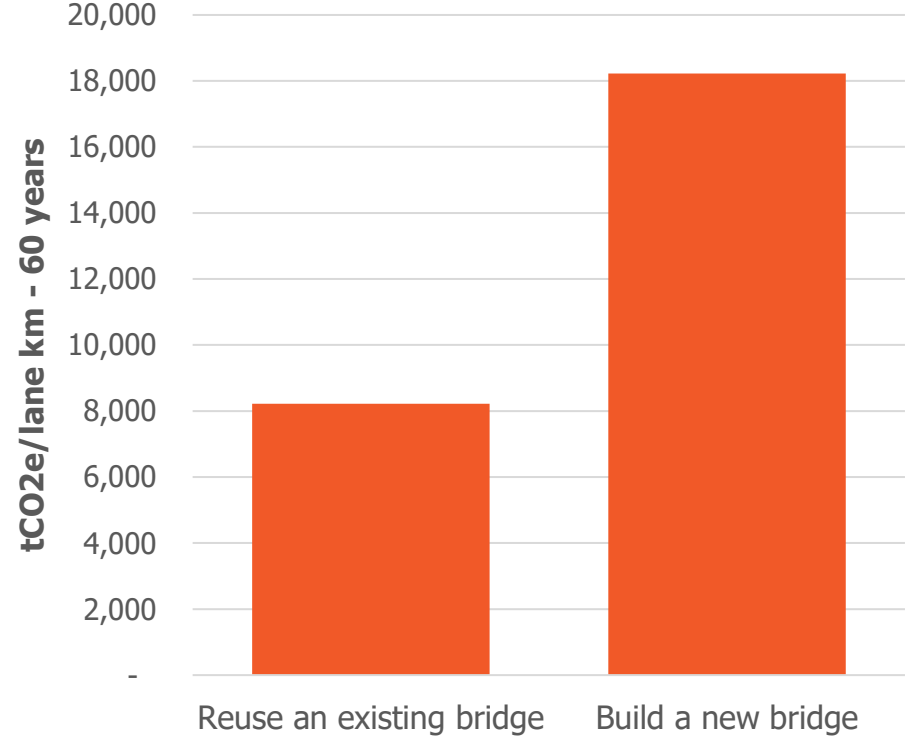
Western Avenue Cycle Track, Cambridge MA

Best use of existing system

Road project



Bridge project



Best use of existing system



Kilbirnie Drainage Reserve, Wellington (2009)

Best use of existing system



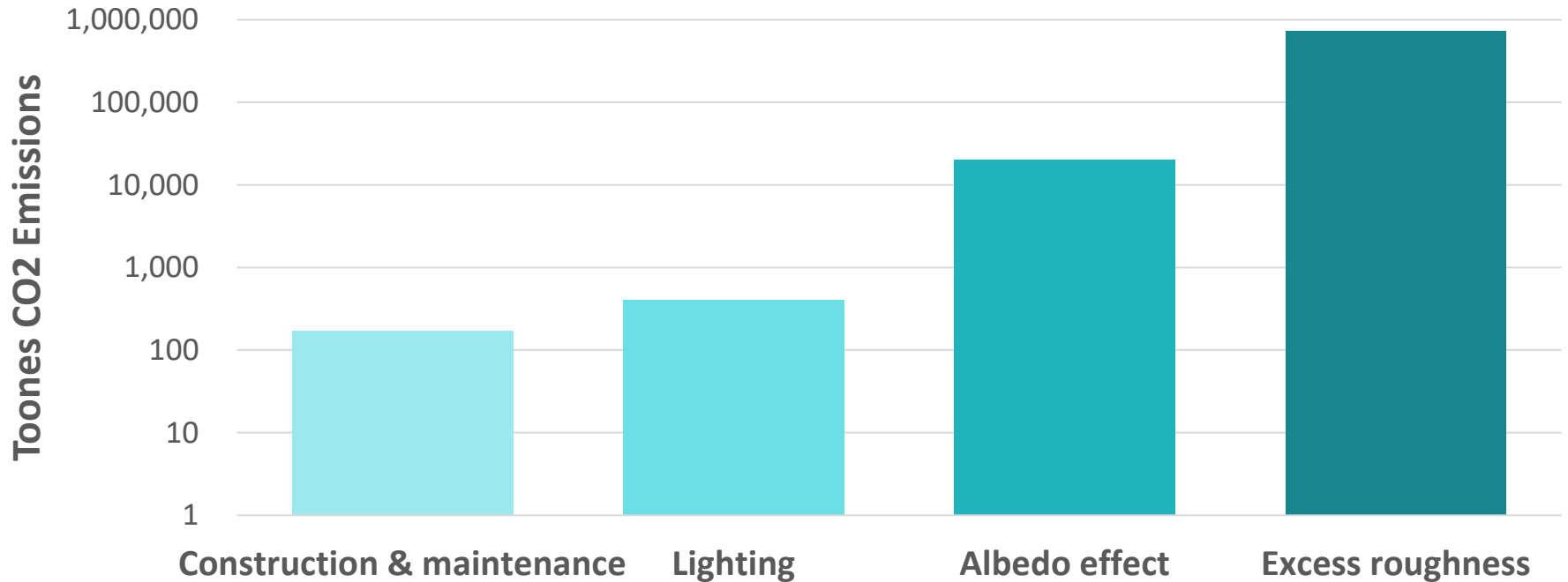
Leonie Gill Pathway, Wellington (2015)

Best use of existing system



Whole of life approach to emissions

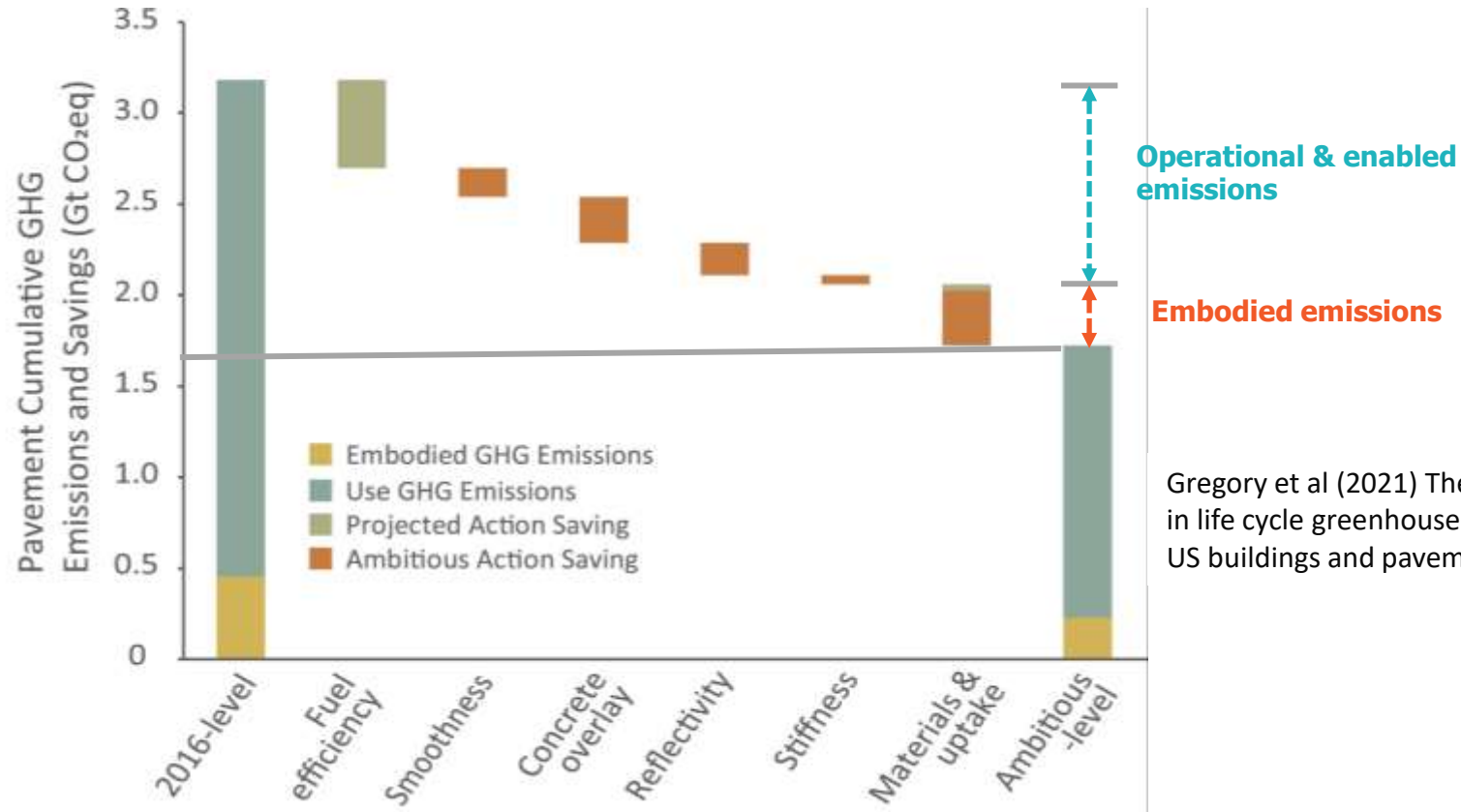
50-year emissions – 1 km of highway in Norway



Barbieri et al (2021) Assessment of carbon dioxide emissions during production, construction and use stages of asphalt pavements

Whole of life approach to emissions

Potential 2016–2050 emission reductions, USA



Gregory et al (2021) The role of concrete in life cycle greenhouse gas emissions of US buildings and pavements

Summing it all up

We face historic challenges – an infrastructure deficit and a need to meet deep carbon reduction goals.

Asset managers play a key role in addressing these challenges.

Te Waihanga welcomes feedback on the strategic barriers to achieving these outcomes.

Thank you for your time

Nadine Dodge
Senior Economist, Te Waihanga
28 July 2022

nadine.dodge@tewaihanga.govt.nz