

**POST PANDEMIC** // //  
// // **FUTURES SERIES**  
VOLUME II

# The Shared Path

How low-traffic areas in Aotearoa's cities can decarbonise transport, save lives, and create the connected urban communities we need in a post-pandemic future.



A RESEARCH PAPER BY  
**HOLLY WALKER**

# CONTENTS

3	ABOUT THE HELEN CLARK FOUNDATION
4	ABOUT THE POST-PANDEMIC FUTURES SERIES
4	ABOUT WSP NEW ZEALAND
5	ACKNOWLEDGEMENTS
6	INTRODUCTION
8	EXECUTIVE SUMMARY
10	<i>Summary of Recommendations</i>
12	PART 1: THE CASE FOR LOW-TRAFFIC STREETS AND NEIGHBOURHOODS
16	<i>Case study: Waltham Forest, London, UK</i>
20	<i>Q&amp;A with Melody Smith</i>
24	<i>Speed Matters / Fergus Tate</i>
28	<i>Q&amp;A with Aaron Hawkins</i>
30	PART 2: OVERCOMING OBSTACLES
34	<i>Case study: Te Ara Mua Future Streets, Māngere, South Auckland</i>
38	PART 3: PRINCIPLES AND ACTIONS FOR A LOW-TRAFFIC FUTURE
42	RECOMMENDATIONS
44	APPENDIX 1: THE TIKA TRANSITION TOOLBOX

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# ABOUT THE HELEN CLARK FOUNDATION

The Helen Clark Foundation is an independent public policy think tank based in Auckland, at the Auckland University of Technology. It is funded by members and donations. We advocate for ideas and encourage debate; we do not campaign for political parties or candidates. Launched in March 2019, the Foundation issues research and discussion papers on a broad range of economic, social, and environmental issues.

## Our philosophy

New problems confront our society and our environment, both in New Zealand and internationally. Unacceptable levels of inequality persist. Women's interests remain underrepresented. Through new technology we are more connected than ever, yet loneliness is increasing, and civic engagement is declining. Environmental neglect continues despite greater awareness. We aim to address these issues in a manner consistent with the values of former New Zealand Prime Minister Helen Clark, who serves as our patron.

## Our purpose

The Foundation publishes research that aims to contribute to a more just, sustainable and peaceful society. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them. We welcome your support: please see our website [helenclark.foundation](https://www.helenclark.foundation) for more information about getting involved.

## ABOUT WSP NEW ZEALAND

As one of the world's leading professional services firms, WSP provides strategic advisory, planning, design, engineering, and environmental solutions to public and private sector organisations, as well as offering project delivery and strategic advisory services. Our experts in Aotearoa New Zealand include advisory, planning, architecture, design, engineering, scientists, and environmental specialists. Leveraging our Future Ready® planning and design methodology, WSP use an evidence-based approach to helping clients see the future more clearly so we can take meaningful action and design for it today. With approximately 48,000 talented people globally, including 2,000 in Aotearoa New Zealand located across 40 regional offices, we are uniquely positioned to deliver future ready solutions, wherever our clients need us. See our website at [www.wsp.com/nz](http://www.wsp.com/nz).

## ABOUT THE POST-PANDEMIC FUTURES SERIES

The world has changed around us, and as we work to rebuild our society and economy, we need a bold new direction for Aotearoa New Zealand. A new direction that builds a truly resilient economy and a fair labour market. A new direction that embraces environmental sustainability and provides for a just transition. A new direction that nurtures an independent and vibrant Kiwi cultural and media landscape. And a new direction that focuses on the wellbeing of all in society.

To get there, we need to shine a light on new ideas, new policies, and new ways of doing things. And we need vigorous and constructive debate. At the Helen Clark Foundation, we will do what we can to contribute with our series on Aotearoa New Zealand's post-pandemic future. This is the second report in a series which will discuss policy challenges facing New Zealand due to the Covid-19 pandemic.

## ACKNOWLEDGEMENTS

Holly Walker

Deputy Director and WSP Fellow

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## INTRODUCTION

Before Covid-19, it was hard to imagine our urban streets and neighbourhoods without traffic.

Climate change campaigners and active transport advocates often invited us to imagine a future in which people, not cars, will dominate our streets: children playing with neighbours and kicking a ball in the street; families walking or cycling together, not in single file, but spread out across the width of the road; neighbours stopping to chat on their travels; birdsong audible from front yards and windows; people sleeping soundly, untroubled by traffic noise; and fresh, clean air, even in the densest urban neighbourhoods.

Before Covid-19, we might have agreed that yes, streets with very little traffic did sound nice, but privately dismissed the idea as unrealistic. More likely, we would have had trouble imagining streets like this at all.

But amid the stress, uncertainty, and disruption of the pandemic, the Level 4 lockdown changed how many people experienced their streets and neighbourhoods. Consider these responses to a survey conducted for Women in Urbanism Aotearoa by Auckland University researcher Dr Kirsty Wild during the second half of the Level 4 lockdown in April and May 2020:

*// My anxiety levels are lower. I feel like I can utilise my time outside with the children on walks or bikes without the ever present usual vigilant checking for cars. We are still careful but I feel a sense of freedom I haven't experienced before with three little boys racing off on bikes or wanting to run past driveways. //*

*// It is a bit easier to head out the door with my kids. Having lower traffic means less risk with multiple kids, one on a bike or scooter and the other in the pram. We are walking more for many reasons, but low traffic certainly encourages us to get out and explore as a family. //*

*// I live in a relatively low-income neighbourhood with lots of young families and elderly flatters. People are outside taking walks, scootering, learning to bike, chalking, gardening, and so on much more often. There's no worry that kids will run into the street and be hit by a car, and with so much time at home with their families, everyone really seemed to enjoy getting outside, walking in the street, and waving from a distance.<sup>1</sup> //*

<sup>1</sup> All quotes from Kirsty Wild, "Life in a Low-Traffic Neighbourhood: Community Experiences of Covid-19 Lockdown" (Auckland: Women in Urbanism Aotearoa, June 24, 2020), 12–13, <https://www.womeninurban.org.nz/lifeinalowtrafficeighbourhood>

It is important not to romanticise the lockdown experience. As the return of Tāmaki-makau-rau (Auckland) to Level 3 lockdown in August highlighted, lockdowns are stressful and disruptive, economically precarious and socially isolating; this report does not advocate a return to lockdown conditions, nor do we wish to valorise something that was damaging and distressing to so many.

Yet the lived experience of quieter streets during lockdown has led some people to ask: now that we have experienced low-traffic streets and neighbourhoods, and found that we like them, what can we do to keep them, without the need for lockdown conditions?<sup>2</sup>

This report, the second in the Helen Clark Foundation's Post-Pandemic Futures Series and in our partnership with WSP New Zealand, explores this question in depth. What are the climate, safety, and community benefits of lowering traffic volumes in our urban streets and neighbourhoods? What gets in the way of this happening? What is required to make low-traffic areas work? What equity implications

do we need to consider? How has Covid-19 shifted the imperatives for the future design of our streets and neighbourhoods? And what community, local government, and central government actions do we need to secure equitable, accessible low-traffic streets and neighbourhoods in Aotearoa's cities and towns?

Everybody should be able to get where they need to go comfortably, safely, affordably, and in good time. We should all be able to travel in ways that protect the climate, reduce road deaths and accidents, and foster connection and community. Lowering traffic volumes and reducing vehicle trips in Aotearoa's cities is an important tool that could help achieve Aotearoa's climate, road safety, and wellbeing commitments, but one that has been under-utilised to date. This report makes the case to rapidly accelerate the implementation of low-traffic streets and neighbourhoods in Aotearoa's cities as a step to reducing overall traffic volumes, and makes specific recommendations to enable this.

<sup>2</sup> Emma McInnes, "Enjoying the People-Friendly Streets of Lockdown? Let's Make Them Permanent," The Spinoff, April 16, 2020, <https://thespinoff.co.nz/society/16-04-2020/enjoying-the-people-friendly-streets-of-lockdown-lets-make-them-permanent/>

# EXECUTIVE SUMMARY

## The costs of too many cars

Aotearoa has one of the highest rates of car ownership in the OECD, and we spend the vast majority of our travel time in cars. But our collective reliance on cars comes at considerable cost. The transport sector accounts for almost a quarter of Aotearoa's total climate emissions, and more than half of these come from private vehicles. Road crashes also kill and injure thousands of people every year. On average, one person is killed on our roads every day, and another is injured every hour. Not only do high traffic volumes emit greenhouse gases and other pollutants, and cause avoidable deaths and injuries, excess traffic can also contribute to a lack of social connectedness in our cities and neighbourhoods, which is even more important in the post-pandemic context. For all of these reasons, Aotearoa would benefit from a substantial reduction in traffic volumes in our cities: fewer people driving fewer cars, less often.

## We need policies that can secure change at scale

Policy discussions about traffic reduction, when they happen at all, tend to frame the issue as one of personal choice, and leave it up to motivated individuals to pursue alternatives to driving if they feel strongly enough about it. But leaving it up to individuals to change their transport patterns in a social and physical environment that is often hostile to alternatives will never be enough to make traction on the important climate, road safety, and social wellbeing targets we have set for ourselves as a nation. Rather, we need to adopt policies that can secure the change required at scale, in ways that enhance people's daily lives and improve their transport experiences. Rapidly accelerating the implementation of low-traffic streets and neighbourhoods in Aotearoa's cities is one important way to do this.

## What is a low-traffic neighbourhood?

A low-traffic neighbourhood is a group of residential streets where through-traffic is discouraged. Instead, buses, trucks, and other vehicles driven by non-residents travelling through the neighbourhood stick to identified main roads which border the low-traffic area. People who live inside the low-traffic neighbourhood can drive directly to and from their homes, arrange deliveries, and be accessed by emergency services, but non-residential traffic is discouraged. There are a number of different ways

this can be achieved. Often it will involve the creative deployment of wider footpaths, bollards, planting, and traffic calming measures to slow traffic down, direct drivers onto main through roads, and encourage residents to make greater use of alternative modes such as walking, wheeling, or cycling for short local trips. For this to work, the low-traffic area needs to be quite small; ideally, residents should be able to walk or wheel from one side to the other in less than 15 minutes. This equates to roughly one square kilometre. Low-traffic neighbourhoods are also most effective if they are part of an integrated, city-wide plan and network of connected low-traffic areas, so that people can cross easily between neighbourhoods to access key destinations, and in order to keep main arterial routes safe for all.

## Benefits of low-traffic neighbourhoods

When well planned and executed, low-traffic streets and neighbourhoods can dramatically reduce traffic volumes, not only in the streets inside the low-traffic neighbourhood, but also in the surrounding residential area. Low-traffic neighbourhoods have also been shown to improve air quality, increase physical activity, benefit local business, and even increase life expectancy. Other benefits of

low-traffic neighbourhoods include reduced carbon emissions, increased road safety, and greater health, equity, and social connection. Part 1 of this report analyses the potential benefits of low-traffic interventions for Aotearoa, presents a case study from the UK, and explores the importance of active school travel in question and answer sections with Associate Professor Melody Smith from Auckland University and Dunedin Mayor Aaron Hawkins.

## Overcoming obstacles to greater use of low-traffic neighbourhoods

One of the chief barriers to the pursuit of low-traffic streets and neighbourhoods is political. Building a broad coalition of support behind low-traffic interventions is critical to their success, and this requires directly addressing a number of key concerns that can fuel opposition. These include: practical concerns about how low-traffic interventions will impact residents' daily lives; accessibility issues for disabled people; the fact that alternative transport options are often a low priority for communities, especially those facing multiple challenges; and business concerns. There are also regulatory and legislative barriers to a more rapid uptake of low-traffic neighbourhoods in

Aotearoa that could be remedied by the adoption of a specific regulatory tool to support them, as happens in the UK. Part 2 explores how some common obstacles to low-traffic neighbourhoods can be overcome in Aotearoa, and presents a case study from South Auckland.

## Principles for a low-traffic future

Part 3 presents four principles, distilled from the evidence in this report, that we believe should guide the large-scale design and implementation of low-traffic streets and neighbourhoods in Aotearoa's cities. These four principles are: be ambitious; make the process tika (right and just); plan large areas together; and engage and listen.

These are followed by sixteen recommended actions, which are divided into actions for communities who want to see low-traffic solutions in their area, actions for local government, actions for central government specifically to advance low-traffic interventions, and wider policy recommendations for central government.

# SUMMARY OF RECOMMENDATIONS

## 01

### Community actions

Demonstrating community support for low-traffic interventions can significantly improve their likelihood of being introduced, by reassuring decision-makers that the changes are understood and supported by residents.

We recommend that local communities who are keen to see low-traffic neighbourhoods in their area:

- Start local conversations
- Build coalitions of support
- Gather evidence and demonstrate demand to local and central government
- Use existing funds and schemes to demonstrate benefits

## 02

### Local government actions

Local authorities are the main decision-makers who can enable the large-scale planning, design, and implementation of low-traffic interventions around Aotearoa.

We recommend that local authorities:

- Develop city-wide transport emission reduction plans
- Conduct proactive local engagement
- Gather and publish information
- Provide training
- Create contestable local tactical urbanism funds
- Apply the principles of tika (right and just) transition

## 03

### Central government actions – specific to low-traffic neighbourhoods

While local authorities are best placed to make specific decisions about low-traffic interventions in their areas, central government can help by adopting enabling policy and legislative settings.

We recommend that central government:

- Make reducing vehicle kilometres travelled (VKT) a road safety priority
- Increase Innovating Streets funding
- Develop a specific legislative tool
- Review existing legislation

## 04

### Central government actions – wider policy considerations

The large-scale implementation of low-traffic neighbourhoods and interventions in Aotearoa's cities needs to take place as part of a larger strategy to decarbonise transport and encourage widespread transport mode shift. Wider policy changes will be required to achieve this.

We further recommend that the government:

- Adopt a strategy to decarbonise New Zealand's transport sector
- Increase investment in active transport infrastructure
- Adopt policies to incentivise alternatives to driving
- Consider further mandating flexible work arrangements

# PART 1: THE CASE FOR LOW-TRAFFIC STREETS AND NEIGHBOURHOODS

Aotearoa has one of the highest rates of car ownership in the OECD<sup>3</sup>, and we spend the vast majority (83 percent) of our travel time in cars.<sup>4</sup>

## Stuck in traffic: the costs of too many cars

Many people require a car for their jobs, and not having access to a car can be a significant barrier to accessing employment and healthcare, especially for young people and Māori.<sup>5</sup> When the alternatives to driving are inconvenient, inaccessible, or non-existent, driving is often the only practical option, and can sometimes be easier and more affordable than taking public transport, walking, or cycling. Some disabled people rely heavily on cars, whether self-driven or driven by others (though it should be noted that other disabled people are heavily reliant on public transport). For Māori, car use often reflects and upholds important cultural values such as whanaungatanga, and is often the only way to access sites of cultural significance like marae that are not located on public transport routes.<sup>6</sup> Cars are important to us, and we often view them as extensions of our homes, reflections of our personalities, enablers of our cultural values, or symbols of our freedom. In part, this is because we have grown up in a social and cultural environment that strongly normalises car use as our main mode of transport.<sup>7</sup>

<sup>3</sup> "Environmental Performance Reviews: New Zealand 2017 Highlights" (OECD, 2017), [https://www.oecd.org/environment/country-reviews/Highlights\\_OECD\\_EPR\\_NewZealand.pdf](https://www.oecd.org/environment/country-reviews/Highlights_OECD_EPR_NewZealand.pdf)

<sup>4</sup> "About Transport and Health," Environmental Health Indicators New Zealand, <https://ehinz.ac.nz/indicators/transport/about-transport-and-health/>

<sup>5</sup> Greer Hawley et al., "The Normative Influence of Adults on Youth Access: Challenges and Opportunities in the Context of Shifts Away from Car-Dependence," *Journal of Transport & Health* 16 (March 1, 2020); K. Raerino, Alex K. Macmillan, and Rhys G. Jones, "Indigenous Māori Perspectives on Urban Transport Patterns Linked to Health and Wellbeing," *Health & Place* 23 (September 1, 2013): 54–62.

<sup>6</sup> Raerino, Macmillan, and Jones, "Indigenous Māori Perspectives on Urban Transport Patterns Linked to Health and Wellbeing."

<sup>7</sup> Hazel Baslington, "Travel Socialization: A Social Theory of Travel Mode Behavior," *International Journal of Sustainable Transportation* 2, no. 2 (January 22, 2008): 91–114; Debbie Hopkins, Enrique García Bengoechea, and Sandra Mandic, "Adolescents and Their Aspirations for Private Car-Based Transport," *Transportation*, August 21, 2019.

But our collective reliance on cars comes at considerable cost. The transport sector accounts for almost a quarter of Aotearoa's total climate emissions, and more than half of these come from private vehicles. In our largest city, Tāmaki-makaurau (Auckland), 40 percent of emissions come from private cars.<sup>8</sup> Climate change poses a potent and existential threat to both Aotearoa and the world; the urgent need for substantial and rapid decarbonisation is well established, and the New Zealand Government has formally committed to making reductions by signing up to the Paris Agreement and passing the Climate Change Response (Zero Carbon) Amendment Act 2019.<sup>9</sup> Under that Act, we

have formally adopted the target of zero net emissions by 2050. We will not achieve this target without significantly reducing emissions from private vehicles.

Road traffic also kills and injures thousands of people every year. On average, one person is killed on our roads every day, and another is injured every hour.<sup>10</sup> The estimated social cost of these deaths and injuries was \$4.8 billion in 2018.<sup>11</sup> In 2019, 353 people were killed in road deaths and fatal crashes: 92 of these deaths occurred in urban areas, 31 were pedestrians, and 13 were cyclists. 27 were children under the age of 14,<sup>12</sup> making road violence one of the largest causes of death

for children and young people in Aotearoa.<sup>13</sup> All of these deaths were preventable.

The preventability of road traffic deaths and accidents was acknowledged by the New Zealand Government when it adopted its *Road to Zero* road safety strategy in 2019.<sup>14</sup> This sets the ambitious and ethical target of zero road deaths, and sets an interim goal of halving the number of fatalities on the roads in 10 years. The action plan accompanying the strategy focuses on infrastructure improvement, speed management, work-related road safety, road user choices, and system management,<sup>15</sup> but does not include reducing traffic volumes as a key road

<sup>8</sup> "Decarbonising for a Prosperous New Zealand," accessed August 18, 2020, <https://www.beca.com/ignite-your-thinking/ignite-your-thinking/may-2020/decarbonising-for-a-prosperous-new-zealand>

<sup>9</sup> "Climate Change Response (Zero Carbon) Amendment Act 2019," New Zealand Legislation, November 13, 2019.

<sup>10</sup> "Road to Zero: A New Road Safety Strategy for New Zealand," Ministry of Transport, <https://www.transport.govt.nz/multi-modal/keystrategiesandplans/road-safety-strategy/>

<sup>11</sup> "Social Cost of Road Crashes and Injuries," Ministry of Transport, <https://www.transport.govt.nz/mot-resources/road-safety-resources/roadcrashstatistics/social-cost-of-road-crashes-and-injuries/>

<sup>12</sup> "Annual Road Deaths 2019 (Provisional)," Ministry of Transport, <https://www.transport.govt.nz/mot-resources/road-safety-resources/road-deaths/annual-road-deaths-2019-provisional/>

<sup>13</sup> "14<sup>th</sup> Data Report: Te Pūrongo Raraunga 14, 2013-17" (Child and Youth Mortality Review Committee, June 2019), <https://www.hqsc.govt.nz/assets/CYMRC/Publications/CYMRC-14th-data-report-2013-17-final-June2019.pdf>

<sup>14</sup> "Road to Zero: A New Road Safety Strategy for New Zealand."

<sup>15</sup> "Road to Zero: Action Plan 2020-2022" (Ministry of Transport, 2019), [https://www.transport.govt.nz/assets/Import/Uploads/Our-Work/Documents/Road-to-Zero-Action-Plan\\_Final.pdf](https://www.transport.govt.nz/assets/Import/Uploads/Our-Work/Documents/Road-to-Zero-Action-Plan_Final.pdf)

safety measure. This is unfortunate, because the more we drive, the more we crash.<sup>16</sup> Meeting the goal of zero deaths on the road, or even meaningful progress towards it, will require policies to reduce traffic volumes and encourage the use of alternative modes of transport.

Not only do high traffic volumes emit greenhouse gases and other pollutants, and cause avoidable deaths and injuries, excess traffic can also contribute to a lack of social connectedness in our cities and neighbourhoods. Communities thrive when people know their neighbours and feel a sense of belonging and connection. The more dangerous people perceive their streets to be, including from high traffic volumes and speeds, the less likely they are to spend time outside and get to know their neighbours. By contrast, when streets are safe, open, and friendly to pedestrians and bicycles, people are much more likely to stop and chat, spend more time outside, and feel a sense of wellbeing and belonging.<sup>17</sup> Reducing traffic volumes and opening up our streets for people can enhance social wellbeing by providing opportunities to connect with others. It can also improve physical health by encouraging children to play outside and prompting more people to use active modes of transport.

Safe, outdoor opportunities for social connection and interaction have become even more important in the context of the Covid-19 pandemic and its isolating effects.

For all of these reasons, Aotearoa as a whole needs a substantial reduction in traffic volumes in our cities: fewer people driving fewer cars, less often. Policy discussions about traffic reduction, when they happen at all, tend to frame the issue as one of personal choice, and leave it up to motivated individuals to pursue alternatives to driving if they feel strongly enough about it. But leaving it up to individuals to change their transport patterns in a social and physical environment that is often hostile to alternatives will never be enough to make traction on the important climate, road safety, and social wellbeing targets we have set for ourselves as a nation. Rather, we need to adopt policies that can secure the change required at scale, in ways that enhance people's daily lives and improve their transport experiences. Rapidly accelerating the implementation of low-traffic streets and neighbourhoods in Aotearoa's cities is one important way to do this.

## What is a low-traffic neighbourhood?

A low-traffic neighbourhood is a group of residential streets where through-traffic is discouraged. Instead, buses, trucks, and other vehicles driven by non-residents travelling through the neighbourhood stick to identified main roads which border the low-traffic area. People who live inside the low-traffic neighbourhood can drive directly to and from their home, arrange deliveries, and be accessed by emergency services, but non-residential traffic is discouraged.<sup>18</sup> There are a number of different ways this can be achieved. Often it will involve the creative deployment of wider footpaths, bollards, planting, and traffic calming measures to slow traffic down, direct drivers onto main through roads, and encourage residents to make greater use of alternative modes such as walking, wheeling, or cycling for short local trips. For this to work, the low-traffic area needs to be quite small; ideally, residents should be able to walk or wheel from one side to the other in less than 15 minutes. This equates to roughly one square kilometre. Low-traffic neighbourhoods are also most effective if they are part of an integrated, city-wide plan and

network of connected low-traffic areas, so that people can cross easily between neighbourhoods to access key destinations, and in order to keep main arterial routes safe for all.<sup>19</sup>

A similar approach can also be adopted for non-residential areas, usually inner-city retail and hospitality precincts. The current proposal to pedestrianise parts of the 'Golden Mile' from Lambton Quay to Courtenay Place in Te Whanganui-a-Tara (Wellington) is an example of taking a low-traffic approach to a non-residential area,<sup>20</sup> as is the 'Access for Everyone: Te Āheinga mō te Katoa (A4E)' master plan for the city centre in Tāmaki-makau-rau (Auckland).<sup>21</sup>

When well planned and executed, low-traffic streets and neighbourhoods can dramatically reduce traffic volumes, not only in the streets inside the low-traffic neighbourhood, but also in the surrounding residential area.<sup>22</sup> This is known as "traffic evaporation": when large numbers of people switch to alternative modes such as walking and wheeling to make short journeys they previously would have undertaken by car (the school run, for example).<sup>23</sup> Low-traffic neighbourhoods have also been shown to improve air quality, increase physical activity, and benefit local business.<sup>24</sup>

A critical factor in the success of low-traffic neighbourhoods is the depth of community engagement in the design, execution, and evaluation of the changes. It is vital that local people are involved at every stage of the process, and that the measures adopted to create the low-traffic neighbourhood reflect local preferences, travel patterns, accessibility requirements, and cultural values.<sup>25</sup>



Andrews Avenue, Lower Hutt / Image credit: Hutt City Council

<sup>16</sup> "Qualitative and Quantitative Analysis of the New Zealand Road Toll: Final Report" (Deloitte, Ministry of Transport, March 14, 2017), <https://www.transport.govt.nz/assets/Uploads/Research/Documents/e60f942181/Deloitte-Analysis-of-NZ-Road-Toll-Report.pdf>

<sup>17</sup> Ade Kearns et al., "Lonesome Town? Is Loneliness Associated with the Residential Environment, Including Housing and Neighborhood Factors?," *Journal of Community Psychology* 43, no. 7 (September 2015): 849–67.

<sup>18</sup> "Low Traffic Neighbourhoods: An Introduction for Policy Makers" (Living Streets UK and London Cycling Campaign), <https://londonlivingstreets.files.wordpress.com/2018/09/lcc021-low-traffic-neighbourhoods-intro-v8.pdf>

<sup>19</sup> Heidi O'Callahan, "Auckland's Low Traffic Neighbourhood Plan," *Greater Auckland* (blog), March 15, 2020, <https://www.greatauckland.org.nz/2020/03/16/aucklands-low-traffic-neighbourhood-plan/>

<sup>20</sup> "Golden Mile Improvements," Let's Get Wellington Moving, <https://lgwm.nz/our-plan/our-projects/golden-mile/>

<sup>21</sup> Auckland Council, "Access for Everyone (A4E)," The Auckland City Masterplan, <https://aucklandccmp.co.nz/access-for-everyone-a4e/>

<sup>22</sup> "Comparison of Vehicle Numbers before and after the Scheme and during the Trial," Enjoy Waltham Forest, <https://enjoywalthamforest.co.uk/work-in-your-area/walthamstow-village/comparison-of-vehicle-numbers-before-and-after-the-scheme-and-during-the-trial/>

<sup>23</sup> Emma Griffin, "Evaporating Traffic? Impact of Low-Traffic Neighbourhoods on Main Roads," London Living Streets (blog), July 11, 2019, <https://londonlivingstreets.com/2019/07/11/evaporating-traffic-impact-of-low-traffic-neighbourhoods-on-main-roads/>

<sup>24</sup> "An Introductory Guide to Low Traffic Neighbourhood Design," Sustrans, <https://www.sustrans.org.uk/for-professionals/infrastructure/an-introductory-guide-to-low-traffic-neighbourhood-design/>

<sup>25</sup> George Weeks, "Mini-Hollands in Nieuw Zeeland – a Global Template?," Greater Auckland, July 25, 2019, <https://www.greatauckland.org.nz/2019/07/26/mini-hollands-in-nieuw-zeeland-a-global-template/>

## Case study: Waltham Forest, London, UK

In 2014, the London Borough of Waltham Forest received £27 million from Transport for London for the Enjoy Waltham Forest programme to ensure local streets were suitable for all users, whether walking, cycling, using public transport, or driving. This included the creation of several low-traffic areas within the Borough. The first of these, for Walthamstow Village, was completed in 2015. As of 2019, there were three low-traffic village schemes completed, with one more underway.<sup>26</sup>

The aims were to: 1) reduce the volume, speed, and noise of traffic outside people's homes; 2) improve road safety for all users; 3) make the area easier and safer for people who want to walk and cycle for local journeys; and 4) make the village areas more attractive for residents and visitors.

Following significant community consultation and engagement, as well as data collection to establish baseline traffic volumes, speeds, and road safety measures, a number of key changes were introduced. In the first six years, these have included:

- 26 km of new separated cycleways
- 62 new or upgraded pedestrian crossings
- The introduction of new traffic calming measures, including 51 new modal filters, as well as new one-way restrictions, and timed road closures to reduce traffic on residential streets
- The creation of 31 new public spaces known as "pocket parks"
- The planting of 700 new trees
- The creation of new cycle parking facilities

- Improving intersections to help traffic flow on main through routes
- Upgrading bus stops and improving their locations to make public transport more accessible.

A 2017 review of the Walthamstow Village scheme found that traffic volumes decreased significantly on the majority of roads inside the low-traffic area. On the average road, traffic volumes decreased by 44 percent, and on some roads by up to 90 percent. Average vehicle speeds also decreased. There were no collisions inside the low-traffic area in the first eleven months after its creation. Residents reported significant decreases in traffic noise and speed on their streets. They also reported walking on average 32 minutes more per week and cycling nine minutes more. Despite concerns expressed before the changes that diverting traffic onto main roads would slow buses down, this did not eventuate. Residents and visitors overwhelmingly reported that the attractiveness of the village had increased as a result of the changes.<sup>27</sup>

As the changes have taken root since the initial funding, they have extended to include not only technical changes to road layout and urban design, but also education and access schemes to encourage active travel. These include free cycle training and bike maintenance for all residents, community bike-share and cargo bike hire schemes, a contestable community walking and cycling fund, and temporary closures of school streets at the beginning and end of the school day to encourage active school travel.<sup>28</sup> Enjoy Waltham Forest is also focused on ensuring that disabled people can access and enjoy the benefits of the low-traffic neighbourhood. For example, since March 2018, it has operated an all ability cycling club, which uses trained instructors and various modified cycles – including relaxed tricycles, recumbents, wheelchair bikes, hand-cycles, and side-by-side bikes – to remove some of the barriers to cycling for disabled people in the area.<sup>29</sup>



Image credit: CK Travels / Shutterstock.com

Enjoy Waltham Forest's projects have won 25 awards for their excellence in architecture, design, cycling promotion, health promotion, and sustainability, and have been shortlisted for dozens more.<sup>30</sup> There is evidence that life-expectancy in the area has increased by up to nine months as a result of the residents' more active lifestyles.<sup>31</sup>

The success of projects like those in Waltham Forest have prompted more low-traffic neighbourhoods around the UK, especially following the challenges of Covid-19. Since May 2020, more than 200 low-traffic neighbourhood trials have been launched in more than 50 UK council jurisdictions as a result of £250 million of emergency "active travel" funding from central government.<sup>32</sup>

<sup>26</sup> "Enjoy Waltham Forest: Walking and Cycling Account 2019" (Enjoy Waltham Forest, 2019), <https://enjoywalthamforest.co.uk/wp-content/uploads/2020/05/Walking-and-Cycling-Account-2019.pdf>

<sup>27</sup> "Walthamstow Village Review" (London Borough of Waltham Forest: Enjoy Waltham Forest, 2017), <https://londonlivingstreets.files.wordpress.com/2019/07/2017-08-23-wv-report-final.pdf>

<sup>28</sup> "Enjoy Waltham Forest: Walking and Cycling Account 2019"; "School Streets," Enjoy Waltham Forest, <http://enjoywalthamforest.co.uk/schools/schoolstreets/>

<sup>29</sup> "Enjoy Waltham Forest: Walking and Cycling Account 2019."

<sup>30</sup> "Waltham Forest Council Awards," Waltham Forest Cycling Campaign, July 2019, <https://wfcycling.wordpress.com/waltham-forest-council-awards/>

<sup>31</sup> David Dajnak and Heather Walton, "Waltham Forest Study of Life Expectancy Benefits of Increased Physical Activity from Walking and Cycling" (King's College London, 2017).

<sup>32</sup> Natalie Berg, "Peak Car And The Hyper-Local Retail Opportunity," Forbes, October 1, 2020, <https://www.forbes.com/sites/natalieberg/2020/10/01/peak-car-and-the-hyper-local-retail-opportunity/>

## Why pursue low-traffic solutions?

### DECARBONISED TRANSPORT

As noted earlier, the transport sector accounts for almost a quarter of New Zealand's total climate emissions, and more than half of these come from private vehicles. In our largest city, Tāmaki-makau-rau (Auckland), 40 percent of emissions come from private cars.<sup>33</sup> Clearly, significantly reducing the volume of traffic on our roads would significantly reduce climate emissions. This needs to be included in a concerted strategy to rapidly decarbonise Aotearoa's entire transport sector as part of a comprehensive plan to achieve the Zero Carbon Act target of net zero emissions by 2050. To date, neither the Government nor the Climate Change Commission has produced detailed policy about how Aotearoa should decrease its transport emissions.

The urgent need for change cannot be overstated, despite the unexpected emissions reductions delivered by Covid-19 lockdowns around the world in the first half of 2020. Global carbon dioxide emissions were down by 5 percent in the first quarter of 2020 compared to the same quarter in 2019. This sounds significant until you note that a recent United Nations report projected that a 7.6 percent drop is required every year from 2020 to 2030 to be in line with the Paris Agreement.<sup>34</sup> During the Level 4 lockdown in Aotearoa, we

experienced the second biggest daily drop in carbon dioxide emissions of anywhere in the world, at 41 percent (second only to Luxembourg), perhaps due to the strictness of our Level 4 restrictions. Yet experts warn that the climate benefits of this temporary drop in emissions will be negligible if we do not adopt a "green" recovery.<sup>35</sup>

The Level 4 lockdown was an important illustration of the kinds of traffic volumes we could and should expect in the future. According to Professor Susan Krumdieck of the University of Canterbury, if we commit to driving 10 percent fewer kilometres a year every year, by 2040 we could expect similar traffic levels to those we experienced during the lockdown, as well as a 62 percent reduction in emissions from driving.<sup>36</sup> To do this, we need to reverse the trends that have seen transport emissions double in the last 30 years and congestion on arterial roads in Auckland increase by a third in just six years. The accident that damaged the Auckland Harbour Bridge in September 2020 highlighted how vulnerable our biggest city's transport system is to congestion; instead of looking for options to accommodate increasing volumes of car traffic on Auckland's roads, we should be looking at how to decrease car traffic.

Reducing private vehicle use is increasingly seen as a key plank of effective climate change policy. In May 2020, consultancy firm Beca produced *Decarbonising for a prosperous New Zealand*, which

outlined eight key transitions that would enable Aotearoa to shift to a low-emissions economy while creating jobs and responding to the challenges of Covid-19. The first of these calls for:

*“Strategic, climate resilient transport network planning that reduces private vehicle use; prioritised through land development that encourages public transport, walking and cycling and flexible transport corridor design.”*

Low-traffic streets and neighbourhoods are an important way to respond to this challenge, and they are effective at reducing traffic volumes. Guidance produced in the UK suggests that around 15 percent of traffic inside a low-traffic neighbourhood will disappear permanently as people adjust to the new settings and make different transport decisions.<sup>37</sup> This reduction comes mainly from people replacing short, local journeys that they previously took by car, such as dropping children at school or doing a quick run to the shops, with the now more convenient option of walking, wheeling, or cycling. To produce network-wide reductions in traffic volumes, low-traffic streets and neighbourhoods need to be planned and implemented at scale.

In the Tāmaki-makau-rau (Auckland) context, transport consultancy firm MRCagney's online Auckland Transport Emissions tool allows anyone to experiment with different policy options to get

an understanding of what will be required to meet Auckland's transport-related emissions reduction targets by 2030.<sup>38</sup> Auckland Council has signed up to a 50 percent reduction in emissions from all sources by 2030, from 2018 levels. In 2018, Auckland's transport emissions were 2.8 million tonnes. Left unchecked on their current trajectory, they will reach more than 3.5 million tonnes in 2030. To reach the council's target, Auckland's emissions need to fall below 1.4 million tonnes in the same timeframe. However, MRCagney suggests an even more ambitious target of below 840,000 tonnes to make up for the fact that agricultural emissions are unlikely to reduce by half in the next ten years. The tool suggests that meeting these targets will not happen without significant change in the way Aucklanders get around; even building six major new public transport projects, electrifying buses, increasing vehicle emissions standards and increasing the proportion of electric vehicles will have little impact on Auckland's transport-related emissions unless there is a major reduction in the number of cars on the road. As one article put it, we have "10 years to turn Auckland into Copenhagen," noting that "Auckland needs a total overhaul, adding thousands of kilometres of cycleways and bus lanes in the place of existing parking spots and passenger vehicle lanes, all while electrifying vast swathes of the city's passenger fleet," to have a hope of reaching the 2030 targets.<sup>39</sup> Copenhagen, the capital city of

Denmark, has been a global pioneer of the low-traffic approach, and is on track to become fully carbon neutral by 2025 following decades of dedicated policies to lower speed limits, build fully-separated cycling infrastructure, deploy traffic-calming measures in residential neighbourhoods, and promote shared-use of roads for pedestrians, cyclists, and drivers.

Low-traffic neighbourhoods will help to reduce transport-related carbon emissions in our cities, but they will not be enough on their own. Rather, they need to be situated as part of a national strategy to decarbonise the transport sector. Such a strategy should include substantially increased investment in active transport infrastructure and public transport. The UN Environment Programme recommends governments allocate 20 percent of their capital spend on transport to active modes,<sup>40</sup> a commitment recently adopted by the Irish Government.<sup>41</sup> This investment should be supported by national and local targets to increase the proportion of trips taken by modes other than cars. 'Turning the tide: from Cars to Active Transport', a blueprint for transport mode shift in Aotearoa developed by local and international experts in 2019,<sup>42</sup> recommended that we:

- double the proportion of walking trips to 25 percent of all trips by 2050
- double the proportion of cycling trips each decade to 15 percent of all trips by 2050

- double the proportion of trips by public transport each decade to 15 percent of all trips by 2050
- reduce the proportion of car trips from 84 percent in 2018 to 45 percent of all trips by 2050.

## Improved road safety

Unless we have been directly affected by an injury, near miss, or the loss of a loved one, the way we collectively talk about the annual "road toll" can start to feel like the cost of doing business; the "toll" we must "pay" in return for the use of our roads. But we should resist this kind of transactional thinking about people's lives and be much more ambitious about reducing deaths and injuries on our roads.

A recent, highly impactful road safety campaign video from Victoria, Australia, informs a man, ostensibly stopped at random, that there were 213 people killed on Victoria's roads in the previous year, and then asks him to name a more acceptable number. "70, maybe?" he offers uncertainly. A group of that size, led by his wife and children, then appears from around a nearby corner. "Actually, this is what 70 people looks like," the interviewer tells the man, who is visibly moved, exclaiming, "that's my family." "So, now what do you think would be a more acceptable number?" the interviewer asks again. "Zero. Zero," the man says, emphatically, wiping his eyes, before picking up and hugging his daughter.<sup>43</sup> — (continued on page 22)

<sup>33</sup> "Decarbonising for a Prosperous New Zealand."

<sup>34</sup> Rachel Skinner, "Sustainable Mobility Post Covid-19: Is Covid-19 Pushing the Need for Climate-Friendly Mobility?" (WSP, June 17, 2020), <https://www.wsp.com/en-NZ/insights/sustainable-mobility-post-covid-19>

<sup>35</sup> "Lockdown climate change benefits short-lived, unless 'green recoveries' follow," NZ Herald, <https://www.nzherald.co.nz/nz/covid-19-coronavirus-lockdown-climate-change-benefits-short-lived-unless-green-recoveries-follow/FS4XBL7IZA2IDK7HENNQL47FWM/>

<sup>36</sup> Eloise Gibson, "Life in Light Traffic: Engineering a Future Minus Cars," accessed July 1, 2020, <https://interactives.stuff.co.nz/2020/06/life-in-light-traffic/>

<sup>37</sup> "A Guide to Low Traffic Neighbourhoods" (Living Streets UK and London Cycling Campaign), <https://www.livingstreets.org.uk/media/3844/lcc021-low-traffic-neighbourhoods-detail-v9.pdf>

<sup>38</sup> "Auckland's Transport Emissions," MRCagney, <https://transport2030.org.nz/>

<sup>39</sup> Marc Daalder, "10 Years to Turn Auckland into Copenhagen," Newsroom, May 18, 2020, <https://www.newsroom.co.nz/page/10-years-to-turn-auckland-into-copenhagen>

<sup>40</sup> "Global Outlook on Walking and Cycling: Policies and Realities from around the World" (Nairobi: UN Environment, 2016).

<sup>41</sup> "Programme for Government: Our Shared Future" (Government of Ireland, 2020).

<sup>42</sup> Sandra Mandic et al., "Turning the Tide: From Cars to Active Transport" (Dunedin: University of Otago, April 2019).

<sup>43</sup> Transport Accident Commission Victoria, *There's No One Someone Won't Miss: Man on the Street - Towards Zero*, 2020, <https://www.youtube.com/watch?v=k2tOye9DKdQ>

# ACTIVE SCHOOL TRAVEL:

a Q&A with Associate Professor **Melody Smith**



*Associate Professor Melody Smith is Associate Head of Research in the School of Nursing, Faculty of Medical and Health Sciences at the University of Auckland. Her research focuses on neighbourhoods where children can be independently mobile, where people can get around safely by walking and cycling, and where social and physical wellbeing is prioritised and facilitated.*

## How well are we doing generally in Aotearoa at supporting tamariki to walk or wheel to school?

Unfortunately, we have low and declining levels of active travel to school in Aotearoa. Over the last two decades we've seen a near halving of the time children spend in active travel and a doubling in car trips to school. Depending on the data source we look at, we have anywhere between 24 - 45 percent of tamariki and rangatahi getting to school actively. Internationally, this places us below average. Active school travel is associated with improved health in children and shifting people out of cars is crucial to help reduce carbon dioxide emissions. We also know that travel behaviours can track over time, so supporting active modes in childhood is not only important for current human and planetary health, but can also have benefits into the future.

## Can you elaborate on the potential for active school travel to reduce carbon emissions?

Let's consider the potential reduction in traffic volumes from more families conducting the school-run without driving. If we take Tamaki-makau-rau (where one third of our nation's children live) as an example, Auckland Transport's 2020 Travelwise Survey of 94,679 school-aged children and youth shows that 44,345 (47 percent) of daily trips to school were made by car. Previous evidence suggests an average of 1.2 children are in vehicles arriving at schools in Auckland, and that approximately 42 percent of school run drives are 'cold-start' trips (i.e. car trips undertaken only for dropping children at school, without carrying on to work or elsewhere). If we apply all of these statistics and assume that these 'cold-start' school drop offs could be replaced by walking or cycling, there is the potential to remove 15,520 cars off the road during the morning rush hour, just based on this subset of Auckland schoolchildren.

## What are the main factors that prevent active school travel?

Distance to school has the greatest impact on whether children and young people are likely to get to school actively. We know that the optimal home to school distance "threshold" for cycling is likely to be much greater than for walking or other forms of wheeling, so supporting cycling is an important strategy to increase active school travel. This becomes even more important when we think about transitioning from primary to intermediate or secondary schools, where catchment areas (and therefore home to school distances) are significantly increased.

After distance, unsafe traffic environments are the greatest deterrent to kids getting to school actively. We see this irrespective of who we talk to. Parents' number one reported barrier to allowing their child to walk or wheel to school are concerns for their child's safety in terms of traffic speeds and volume, unsafe driver behaviours, unsafe (or lack of) crossings, and insufficient infrastructure for walking and wheeling. For schools, ensuring safety from traffic is paramount, and is a key driver of school travel policies and programmes. Children and young people themselves report concerns about safety from traffic when walking or biking.

## What else do children and young people tell us about how they like to get to and from school?

Children enjoy walking and wheeling to school and often these are their preferred modes of travel. Tamariki understand the benefits of active travel for their physical health, talking about it being good for their fitness and wellbeing. But they also raise important benefits in terms of social connections and connections with the environment. Children frequently report enjoying spending time with friends and whānau on the trip to school.

I think this is a really important finding for a couple of reasons. Firstly, this gives whānau a tool to connect with each other. In a time where it feels like kids are more connected to screens than with others, it's important to recognise that kids appreciate the time with people that active travel permits. The casual conversations that arise when whānau are able to be present and active together can open up dialogue that may not occur otherwise. Even when discussions don't occur, children report just enjoying spending time with their parents/caregivers. Tamariki also enjoy moments of joy, inspiration, and opportunities for playfulness when they are out and about in their environments. A "zebra" pedestrian crossing becomes a series of planks to jump in order to avoid swimming sharks below. Picking flowers, watching butterflies, bees and birds, and interacting with neighbours' pets along the school route provide important opportunities to interact with nature.

## What policy changes would you like to see to encourage more children and families to walk or wheel to school?

In a perfect world, there would be changes across a range of levels, from shifting social norms around driving and active travel to national policies that deliver healthy environmental design and programmes to support active travel modes. We have found that a comprehensive approach is necessary – strong community and school leadership and role modelling; active community cultures and collective social norms around active travel; social cohesion; and connected infrastructure that encourages safe driver behaviour, prioritises active modes, and provides safe spaces for walking and wheeling are all essential.



Image credit: WSP



Image credit: Patrick Morgan

The fact that no-one should be killed on the road was recognised by the New Zealand Government when it adopted its new *Road to Zero* road safety strategy in 2019. This strategy officially adopts the ambitious and ethical target of zero road deaths and sets an interim goal of halving the number of fatalities on the roads in 10 years. The action plan accompanying the strategy focuses on infrastructure improvement, speed management, work-related road safety, road user choices, and system management,<sup>44</sup> but does not include any actions designed to reduce the volume of traffic on our roads as a key road safety intervention.

The Road to Zero road safety strategy is Aotearoa's response to the global Vision Zero road safety movement, which has seen numerous countries and territories around the world adopt zero road death targets. Vision Zero originated in Sweden in 1997 with the founding principles that "it can never be ethically acceptable that people are killed

or seriously injured when moving within the road transport system."<sup>45</sup> It was revolutionary both for taking this ethics-based (rather than cost-benefit) approach to road safety, and for shifting the responsibility for road safety from individual road users, to transport system designers and decision-makers.

While no jurisdiction has yet achieved the zero road deaths goal, annual road deaths in Sweden have halved since Vision Zero was introduced. Last year in Oslo, the capital city of Norway, no pedestrians or cyclists were killed on the roads, and only one motorist died (by comparison, there were 41 road deaths in Auckland). This was achieved chiefly by low-traffic interventions, such as replacing on-street parking with bike lanes and footpaths, reducing speed limits, and introducing congestion charging for the inner city. 'Heart zones' were also drawn around many of Oslo's schools, including closing school streets to cars during school start and finish

times, to protect children walking and cycling to school.<sup>46</sup> Remarkably, no children under 15 died on the roads in 2019 anywhere in Norway – a country with a population of 5.3 million, a very similar population to that of New Zealand. 27 children under 15 died on the roads here last year. We need to do better.

Conventional road safety policy has not included reducing traffic volumes as a key safety measure, but the system-wide thinking of a Vision Zero approach provides an opportunity to change this. Modelling suggests there are considerable safety gains to be achieved by reducing traffic volumes. For example, a 2017 report by Deloitte for the Ministry of Transport found that a one percent increase in the number of kilometres travelled by vehicle (VKT) resulted in a 2.5 percent increase in crashes,<sup>47</sup> meaning not only do we crash more often the more we drive, but we do so at exponentially increasing rates. The report's authors speculated that this could be associated with

changes in the nature of travel, such as higher risk driver behaviour, but were unable to give a definitive explanation. Todd Litman, Director of the Victoria Transport Policy Initiative in Canada, offers a possible explanation for a similar phenomenon observed in North America. He notes that vehicle travel reductions provide disproportionately large crash reductions, because most crashes involve multiple vehicles. By driving 10 percent less, you not only reduce your own chance of being in a crash by 10 percent, you also reduce the risks to other road users by removing your vehicle from the mix.<sup>48</sup>

Experts are increasingly advocating for Vision Zero road safety strategies around the world to incorporate policies to reduce traffic volumes as part of the 'new paradigm' of road safety thinking.<sup>49</sup> The differences between the old and new paradigms can be summarised in the following table.<sup>50</sup>

The adoption of the *Road to Zero* strategy for Aotearoa brings us some way towards the new paradigm of road safety thinking, but we could go a lot further. For too long, the highly linked challenges of reducing transport-related carbon

emissions and reducing road deaths have been treated as separate policy issues. As the table below demonstrates, the two challenges in fact have many common solutions, including the large-scale design and implementation of low-traffic approaches.

	OLD PARADIGM	NEW PARADIGM
<b>Goal</b>	Make vehicle travel safer	Make transport systems safer
<b>Risk measurement</b>	Direct user risks, measured by distance	Total risks, including risks to other road users, measured by distance and per capita
<b>Solutions considered</b>	<ul style="list-style-type: none"> <li>Roadway and vehicle design improvements</li> <li>Graduated licenses</li> <li>Senior driver testing</li> <li>Seatbelt and helmet requirements</li> <li>Anti-impaired and distracted driving campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Walking, bicycling and public transit improvements</li> <li>Road, parking, fuel and insurance pricing reforms</li> <li>More connected and complete roadways</li> <li>Smart Growth development policies</li> <li>Transportation demand management programmes</li> </ul>
<b>Scope of measuring success</b>	Programme costs and traffic safety benefits	All economic, social and environmental impacts

<sup>44</sup> "Road to Zero: Action Plan 2020-2022."

<sup>45</sup> Claes Tingvall and Narelle Haworth, "Vision Zero - An Ethical Approach to Safety and Mobility," in *Accident Research Centre* (6th ITE International Conference Road Safety & Traffic Enforcement, Melbourne, 1999), <https://www.monash.edu/muarc/archive/our-publications/papers/visionzero>

<sup>46</sup> Alissa Walker, "How Oslo Virtually Eliminated Pedestrian and Cyclist Deaths," *Curbed*, January 3, 2020, <https://www.curbed.com/2020/1/3/21048066/oslo-vision-zero-pedestrian-cyclist-deaths>

<sup>47</sup> "Qualitative and Quantitative Analysis of the New Zealand Road Toll: Final Report."

<sup>48</sup> Todd Litman, "Vision Zero, Meet VMT Reductions," *Planetizen*, February 13, 2020, <https://www.planetizen.com/blogs/108401-vision-zero-meet-vmt-reductions>

<sup>49</sup> Kea Wilson, "Vision Zero Is Missing Something Big: Getting Cars Off the Road," *Streetsblog USA* (blog), February 21, 2020, <https://usa.streetsblog.org/2020/02/21/vision-zero-is-missing-something-big-getting-cars-off-the-road/>

<sup>50</sup> Adapted from Todd Litman, "A New Traffic Safety Paradigm" (Victoria Transport Policy Institute, June 5, 2020).



## SPEED MATTERS:

WSP Technical Director **Fergus Tate**  
on the need for lower speed limits

*WSP Technical Director Fergus Tate is widely acknowledged to be a leading expert in road safety in New Zealand. Here he outlines why lower speed limits are one of the key measures employed in low-traffic neighbourhoods.*

While some deliberate illegal actions occur, in the majority of cases crashes happen as a result of some form of mistake.

Driver mistakes include such things as observational errors, errors of judgement, lapses in concentration or being distracted. They can result in failure to see an approaching vehicle; misjudging the distance or speed of an approaching vehicle when entering an intersection or crossing the road; not reacting in time to an approaching curve or misjudging the negotiation speed; or being distracted, for example by a cell phone.

When these failures occur, the speed at which the vehicle is travelling has a major impact on whether the situation is recoverable, the crash likelihood and most importantly, on the outcome of any resulting crash.

The safest environment for all road users is when operating speeds are compatible with that environment. In a predominantly pedestrian area, speeds need to be matched to the needs of the pedestrian. As such, WSP advocates for the lowering of speed limits in urban areas and endorses the moves by Auckland Transport and Wellington City Council to reduce speeds from 50 to 40 - 30km/h in pedestrian areas.

There is proof that lowering the speed limit works. In 2009 the speed limit on Auckland's Ponsonby Road was changed from 50 km/h to 40km/h. The result was a reduction deaths and serious injury of over 50 percent over an eight-year average, while the rest of Auckland saw substantial increases.

There are other benefits to lowering speed limits, such as having a significant impact on the environment.

Cars emit fewer damaging pollutants at 30 km/h than they do at 50 km/h, especially nitrous oxide and particulate matter output from diesel vehicles. This is generally because traffic flow is smooth at this speed, meaning there is less braking and acceleration. Lower speeds to reduce carbon emissions were introduced in the Netherlands in March, and are under consideration in Germany for the same reason.

While some people may be resistant to the change, the benefits will far outweigh any perceived inconvenience. The city of Graz in Austria was the first European city to introduce reduced speeds to 30km/h on residential roads in 1992. This resulted in a 24 percent reduction in crashes and a significant increase in walking and cycling. Less quantifiable but equally important was that residents also felt the liveability of the city had been improved.

For experts that have spent their entire careers trying to reduce road deaths the record road toll recorded in Easter 2020 was the biggest "tell". While the country was under Level 4 lockdown zero road deaths were recorded over the Easter holiday period, and April 2020 as a whole was the lowest road toll month in the last 55 years, with nine deaths. In contrast, as people returned to the roads in greater numbers, May's road toll climbed far too quickly to 24.

## Greater health, equity, and wellbeing

The first of our Post-Pandemic Futures reports in partnership with WSP, Alone Together, looked at the heightened risks of loneliness in Aotearoa following Covid-19 and how public policy can create the conditions to enable social connection to thrive.<sup>51</sup> Even before Covid-19, loneliness posed a significant public health and wellbeing challenge, and the pandemic and associated lockdowns has exacerbated these risks. The report recommended six planks of an effective public policy response to loneliness, one of which was the need to create friendly streets and neighbourhoods. This recognises the fact that communities thrive when people know their neighbours and feel a sense of belonging and connection.

When people perceive their streets to be dangerous, including from high traffic volumes and speeds, they are more likely to make transport decisions that are detrimental to their social connectedness and health. For example, parents are less likely to allow their children to walk or wheel to school or play outside, meaning less exercise and fewer opportunities for children to develop independence and make friends in

the neighbourhood. By contrast, when streets are safe, open, and friendly to pedestrians and bicycles, people are much more likely to stop and chat, spend more time outside, and feel a sense of wellbeing and belonging.<sup>52</sup>

Our collective reliance on cars as the primary mode of transport also has significant negative health impacts, in addition to the preventable burden of deaths and injuries from road traffic accidents. Restricted physical activity contributes to high and growing levels of obesity, heart disease, diabetes and other illnesses.<sup>53</sup> By contrast, active travel (walking or cycling) is a significant contributor to overall physical activity levels, and has been found to decrease cardiovascular risk by 11 percent. Evidence also suggests increased attentiveness following physical activity, making an active morning commute potentially beneficial for adults and children alike.<sup>55</sup>

High traffic volumes damage our health by contributing to poor air quality. Although this is not often considered a significant issue in Aotearoa, in 2016, air pollution was associated with an estimated 1,277 premature deaths, 236 cardiac hospitalisations, 440 respiratory hospitalisations, and 1.49 million restricted activity days.<sup>56</sup> Excessive

noise from motorised traffic also contributes to poor health and can disturb sleep, cause cardiovascular and psychophysiological effects, reduce performance and provoke changes in social behaviour.

Not only can transport have significant impacts on our physical health, recent research about the relationship between transport and mental health commissioned by Waka Kotahi New Zealand Transport Agency concludes that aspects of Aotearoa's current transport system are also likely to be contributing to rising levels of psychological distress as a result of increased noise pollution and declining levels of active transport. The research found that the transport conditions and environments that are most protective of good mental health include high quality walking and wheeling environments that provide opportunities for gentle exercise and social interaction, low-stress traffic conditions, and low cost and accessible public transport systems. The report recommends improving neighbourhood walkability, reducing long commutes, increasing active commuting, and reducing the cost and improving the comfort of public transport as key ways to improve urban mental health in Aotearoa.<sup>58</sup>

<sup>51</sup> Holly Walker, "Alone Together: The Risks of Loneliness in Aotearoa New Zealand Following Covid-19 and How Public Policy Can Help," Post-Pandemic Futures Series (Auckland: The Helen Clark Foundation and WSP, June 24, 2020), <https://helenclark.foundation/wp-content/uploads/2020/06/alone-together-report-min.pdf>

<sup>52</sup> Kearns et al., "'Lonesome Town?': Zainab Ibrahim Abass, Fiona Andrews, and Richard Tucker, "Socializing in the Suburbs: Relationships between Neighbourhood Design and Social Interaction in Low-Density Housing Contexts," *Journal of Urban Design* 25, no. 1 (January 2, 2020): 108-33; En-Yi Lin et al., "Social and Built-Environment Factors Related to Children's Independent Mobility: The Importance of Neighbourhood Cohesion and Connectedness," *Health & Place* 46 (July 1, 2017): 107-13.

<sup>53</sup> Frank W. Booth, Christian K. Roberts, and Matthew J. Laye, "Lack of Exercise Is a Major Cause of Chronic Diseases," *Comprehensive Physiology* 2, no. 2 (April 2012): 1143-1211.

<sup>54</sup> "About Transport and Health."

<sup>55</sup> Tomporowski Pd, "Effects of Acute Bouts of Exercise on Cognition," *Acta Psychologica*, March 2003; Harold W. Kohl et al., *Physical Activity, Fitness, and Physical Education: Effects on Academic Performance, Educating the Student Body: Taking Physical Activity and Physical Education to School* (National Academies Press (US), 2013).

<sup>56</sup> "Health Effects of Air Pollution," Environmental Health Indicators New Zealand, <https://www.ehinz.ac.nz/indicators/air-quality/health-effects-of-air-pollution/>

<sup>57</sup> "Health Topics: Noise," World Health Organisation, <https://www.euro.who.int/en/health-topics/environment-and-health/noise>

<sup>58</sup> Kirsty Wild et al., "The Relationship between Transport and Mental Health in Aotearoa" (Auckland: NZ Transport Agency and the University of Auckland, September 2020).

As with so many negative health indicators, the adverse impacts of transport-related ill health are unequally distributed, and disproportionately affect those already at greater risk, including Māori and Pacific people, people in low-income households, and those living in 'high deprivation' areas.<sup>59</sup>

For example, the most deprived areas in New Zealand have the highest rates of traffic injury deaths, including pedestrian deaths. The large-scale design and implementation of low-traffic streets and neighbourhoods has the potential to improve physical and mental health, foster social connection, and reduce inequity.

## Current and future low-traffic interventions in Aotearoa

Since 2019, Waka Kotahi New Zealand Transport Agency has been partnering with councils around the country via the Innovating Streets Programme, a fund to which councils can apply for assistance to make temporary or semi-permanent physical changes to streets, test permanent changes and prototype new designs, and involve communities in actions that help them to re-imagine their streets and neighbourhoods.<sup>60</sup> In June 2020, the Government announced two additional rounds of funding for the Innovating Streets Programme to make it faster and easier to transition

streets to being safer and more liveable, and to specifically help councils respond to the challenges of Covid-19, such as widening footpaths to enable greater social distancing while encouraging safe outdoor physical activity.<sup>61</sup> Initiatives funded through the programme to date include projects to improve the safety of school streets in Auckland, creating temporary "play streets" for children in Auckland, New Plymouth, Lower Hutt, and Christchurch, and improvements to the Octagon in Dunedin.<sup>62</sup> Crucially, the fund has now approved the development of eight low-traffic neighbourhoods around the country in a mix of low and high income neighbourhoods, including three in Auckland in Maungakiekie, Eastview, and Papatoetoe West.<sup>63</sup>



'Here comes the sun' play street, Pt Chevalier, Auckland / Image credit: Bike Auckland



The Octagon, Dunedin / Image credit: Dunedin City Council



High Street, Auckland (before and after) / Image credit: Auckland Council

<sup>59</sup> Kylie Mason, "Transport and Health: How Transport Affects the Health of New Zealanders. Presentation to the Transport Knowledge Hub, 22 February 2018," <https://www.transport.govt.nz/assets/Uploads/Research/Documents/5c60bc0bfa/Transport-and-Health-how-transport-affects-the-hours-of-NZers.pdf>

<sup>60</sup> "About the Innovating Streets Programme," Waka Kotahi New Zealand Transport Agency, <https://www.nzta.govt.nz/roads-and-rail/innovating-streets/about/>

<sup>61</sup> "Innovating Streets COVID-19 Guidance," Waka Kotahi New Zealand Transport Agency, <https://www.nzta.govt.nz/roads-and-rail/innovating-streets/covid-19-guidance/>

<sup>62</sup> "Innovating Streets Case Studies," Waka Kotahi New Zealand Transport Agency, <https://www.nzta.govt.nz/roads-and-rail/innovating-streets/case-studies/>

<sup>63</sup> "Funding Confirmed for Projects to Bring Auckland Streets to Life," Auckland Council, August 28, 2020, <https://our.aucklandcouncil.govt.nz/articles/news/2020/08/funding-confirmed-for-projects-to-bring-auckland-streets-to-life/>

# SAFER SCHOOL STREETS IN MOSGIEL:

a Q&A with Dunedin Mayor **Aaron Hawkins**



*Aaron Hawkins is currently serving his first term as Mayor of Dunedin, after two terms as a city councillor. He thinks local government plays a vital role in supporting social and environmental wellbeing, particularly when it comes to supporting a just transition to a safer climate future, and he has focused on these issues since he was first elected to the Dunedin City Council in 2013. The Mosgiel Safer Streets project is low-traffic intervention to support safe active school travel in Mosgiel and Outram, supported by the Innovating Streets Programme and announced in June 2020.*

## Why did the Dunedin City Council (DCC) decide to prioritise improving the safety of school streets in Mosgiel and Outram specifically?

We prioritised improving the safety of school streets in Mosgiel and Outram for a number of reasons:

- There was strong support and buy-in from the Mosgiel-Taieri Community Board and Mosgiel and Outram schools. The project was initiated by the board to address safety concerns for schools in Mosgiel and Outram.
- There is great potential for active transport such as walking, cycling, and scooting due to the area's compact urban form, its flat topography, and because its schools are in the middle of a residential area.
- The schools support active transport. The two biggest primary schools are participating in DCC cycle skills training, are building Bikes in Schools tracks, and have several other means of encouraging active travel.
- Much of the existing infrastructure is outdated and does not provide any benefits for those choosing active forms of travel, especially young children and the elderly. Specifically, there was a lack of safe crossing points and cycle infrastructure. Compounding this, roads and intersections are wide and allow uninterrupted and fast vehicle travel.
- A relatively high number of children walk or wheel to school.
- High vehicle speeds and poor driver behaviour has been recorded outside schools.

## What role did community engagement with parents and children play in the decision? What were their main requests or concerns?

The Community Board approached the DCC with concerns about the safety of children and families travelling to and from school. They would like to see more children travelling to and from school by walking, cycling, and scooting to alleviate chaos at the school gates and to encourage healthy habits.

The DCC engaged the schools and the board through two workshops to scope the problems and solutions. Parents were engaged through a survey about safety concerns and barriers to active travel.

The trials are a way to engage with the wider community. They enable people to see what their streets could be like so they can give more informed feedback.

We'll use their feedback to help refine the design of this work and to attract funding for permanent improvements. It will also help us find out whether they support further changes.

## What kinds of interventions are planned?

We have installed trial crossing points and kerb buildouts at intersections near schools and at key locations on children's journeys. This will reduce the crossing distance, increase visibility and reduce vehicle speeds. Mid-block crossing points have been installed on busy main roads that children have to cross to get to school. Further, we are planning to trial a cycle/scooter lane on arterial roads and may close side roads to reduce traffic volumes in the area.

## Has the project faced any significant objection? How has this or will this be overcome?

As I write this, the project is open for feedback (until early November 2020). So far, support is coming from the schools, children, and parents who are walking their children to school.

Negative feedback is mostly coming from people driving. They are mainly confused about what we are trying to achieve and see this as a hazard and inconvenience to them. We are overcoming this with communication about the purpose of trials, the background story and the next steps. We are supported by the board and schools in doing this.

## How will you know if the project has been successful?

We are using a couple of measures to monitor and evaluate the project. We are collecting public feedback through a survey asking about perceived safety and appetite for further changes. Further, we are collecting vehicle speeds and volumes and observing traffic.

## What role has the central government's Innovating Streets funding played in this project?

90 percent of funding comes from Waka Kotahi NZTA's Innovating Streets for People Fund. Further, they provide support and enable networking with other councils in New Zealand who are currently doing similar projects.

## What other plans do you have in the works for opening up Dunedin's streets for people to enjoy more?

We are planning to introduce Safer Streets projects in several Dunedin suburbs to make the streets safer for communities and to encourage people to walk, cycle, and scoot more.

Some of our proposed improvements include better crossings, lower speed zones, roundabouts, new intersection layouts, cycle lanes, kerb buildouts and wider footpaths.

We also have another Innovating Streets project in Dunedin's tertiary area where we are working closely with the University and Polytechnic to transform streets to be more people-friendly and fun.

## PART 2: OVERCOMING OBSTACLES

One of the chief barriers to the pursuit of low-traffic streets and neighbourhoods is political. Building a broad coalition of support behind low-traffic interventions is critical to their success, and this requires directly addressing a number of key concerns than can fuel opposition.

### Practical concerns

Prior to the introduction of low-traffic interventions, residents often express concerns about the negative impact the changes may have on their daily lives. For example, people worry that their journey times by car or public transport will be increased, that their personal freedom will be restricted, or that they will not be able to find a car park. Local business owners often express concern that reduced traffic will result in reduced custom. Some disabled people fear having to travel longer distances to access public transport, or that the emphasis on alternative modes like walking and cycling will exclude them. For others, a perceived (or real) lack of practical alternatives to driving can make the introduction of low-traffic solutions feel like a shrinking, rather than an expansion of transport options.

Some of these concerns are valid, and some of them have been borne out overseas where low-traffic interventions have been poorly planned and implemented. The needs of disabled people, for example, have sometimes been overlooked internationally (see the next section on accessibility), and people are right to decry low-traffic interventions that are not also accompanied by investment in improving public transport. Aotearoa is in a good position to learn from these examples and plan well to minimise practical disruption to local residents as much as possible.

In most cases though, these concerns are unfounded. In Waltham Forest, no changes to bus journey times were recorded, despite through-traffic being diverted from residential streets onto the main arterial routes used by buses. When it becomes easier and more convenient to walk or wheel for short trips, traffic volumes reduce

overall, meaning for those who still do need to travel by car, the journey can actually be shorter and less congested. It is true that viewed simply through the lens of “how convenient is it to drive short distances,” low-traffic interventions involve some trade-offs, but this is by design: by slightly increasing the barriers to driving, the barriers to accessing alternative modes are lowered, and over time they become the more convenient, default option. Once new habits become established, people report feeling greater levels of happiness and satisfaction when they use active modes of transport – for example, cyclists are repeatedly found to be the “happiest commuters”, while people who spend long periods in cars tend not to enjoy their commuting experience.<sup>64</sup>

There is good evidence from the UK that low-traffic neighbourhoods are good for local businesses.<sup>65</sup> It suggests that people who walk and cycle take more trips to their local high street and spend 40 percent more there over the course of a month than people who drive. Improving walking and cycling infrastructure can boost retail sales by up to 30 percent, and cycle parking delivers five times the retail spend per square metre than car parking.<sup>66</sup> These effects have been experienced by many local retailers both in Aotearoa and internationally in the Covid-19 context, as residents working from home make more visits to the local shops for coffee, lunch, or to pick

up essential items.<sup>67</sup> Policies to encourage flexible work and embed new working from home patterns, in conjunction with the introduction of low-traffic neighbourhood interventions, have the potential to significantly boost custom for suburban small businesses. Alongside the benefits from customers using alternative transport modes, there are also potential benefits for staff and therefore the business, such as overall better health, less staff turnover, less presenteeism, and increased focus and attentiveness while at work.<sup>68</sup>

It is important that alongside the design and implementation of low-traffic interventions there is parallel investment in alternative modes of transport in the local area. This can include adding new bus stops and improving the attractiveness and safety of existing ones, increasing the frequency of public transport services, supporting bike safety and maintenance education programmes, and even developing bike-share or hire schemes that can be accessed by local residents. There is also potential for shared micro-mobility schemes like electric scooters to play an important role in low-traffic neighbourhoods in future. This is especially important in connecting people in the first and last parts of their journey (for example, between home and a bus or train station), though it is crucial that safe, separated pathways for these modes are part of the changes, to keep pedestrians safe.

Finally, “tactical urbanism” projects can be an important way to test and refine low-traffic interventions and reassure residents. Tactical urbanism is an approach to neighbourhood building that uses short-term, low-cost, and scalable interventions and policies to encourage long term change.<sup>69</sup> It can be used to make quick progress by testing and piloting projects to help demonstrate their value to the community. It can include interventions like temporarily widening footpaths to create more space for tables outside cafes and restaurants, temporary play spaces for children, creative road markings (such as Wellington’s now iconic rainbow crossing at the intersection of Cuba and Dixon Street), and pop-up bike lanes.

### Accessibility

In some international examples, low-traffic solutions have been implemented without adequate consideration of their impact on the rights, needs, and experiences of disabled residents, resulting in streets and neighbourhoods that were either inaccessible, or of mixed value to disabled people. For example, while lower-traffic volumes overall can improve safety for disabled residents, poorly located new modal filters in some locations have been documented as restricting access to disabled parking spaces, limiting space for wheelchair users to turn or safely mount the kerb, and disrupting tactile paving that helps vision-impaired

<sup>64</sup> Kirsty Wild and Alistair Woodward, “Why Are Cyclists the Happiest Commuters? Health, Pleasure and the e-Bike,” *Journal of Transport & Health* 14 (September 1, 2019).

<sup>65</sup> “Economic Benefits of Walking and Cycling,” *Transport for London*, <https://www.tfl.gov.uk/corporate/publications-and-reports/economic-benefits-of-walking-and-cycling>

<sup>66</sup> “Walking and Cycling Economic Benefits Summary Pack” (London: Transport for London), <https://tfl.gov.uk/cdn/static/cms/documents/walking-cycling-economic-benefits-summary-pack.pdf>

<sup>67</sup> Berg, “Peak Car And The Hyper-Local Retail Opportunity.”

<sup>68</sup> “Walking and Cycling Economic Benefits Summary Pack.”

<sup>69</sup> “Tactical Urbanism,” <http://tacticalurbanismguide.com/about/>

people navigate the urban landscape safely.<sup>70</sup> Disabled people have also raised legitimate concerns about low-traffic interventions increasing the distance they need to travel to access public transport, or increasing the journey times for themselves or their carers who can only rely on vehicles. Disabled residents are understandably frustrated when such issues arise, particularly when their experiences are then either co-opted by opponents of low-traffic neighbourhoods who otherwise show no interest in accessibility issues, or negated by active transport advocates who subsume their concerns in arguments about the greater good that the changes could bring. As Dr Amy Kavanagh, a visually impaired resident of a low-traffic neighbourhood in Ealing, UK, points out in a Twitter thread about her mixed experience with the changes in her area, “when we ask for accessible solutions work with us, we want safe walking & cycling too!”<sup>71</sup>

The mixed experiences of disabled people with some low-traffic interventions overseas highlights the critical importance of comprehensive, inclusive, community engagement and involvement in the design and implementation of low-traffic projects in Aotearoa. A deep understanding of who lives in the proposed low-traffic area, how they get around, what their accessibility needs are, and how they might be affected by the changes is essential to the success of these projects, as is the flexibility to act quickly to fix unforeseen accessibility issues as they arise. Many disabled people face significant barriers in their daily

journeys, including inaccessible public transport and poorly designed urban environments.<sup>72</sup> Executed well, low-traffic measures such as wider footpaths and separated cycleways have the potential to improve safety and access for disabled people, and indeed are among measures that disability advocates have been requesting for some time.<sup>73</sup> But, for these benefits to be realised, direct involvement of disabled residents in decisions about low-traffic interventions in their area is essential. There is an important opportunity here to align urban planning for a low-emissions future with the growing international movement for universal design and accessible cities.<sup>74</sup>

## Low-traffic = low priority

For some communities, especially those grappling with social and economic challenges such as low incomes, high unemployment, addiction, homelessness, mental ill-health, violence, and discrimination, low-traffic interventions can understandably seem like a low priority. It is all very well to build new bike lanes, but if local families are struggling to put food on the table or living in temporary accommodation, they cannot be expected to take much notice. Because low-traffic neighbourhoods tend to be associated with high-income, majority white, European cities, and championed by climate change and active transport advocates, who also tend to be white, there is also a risk that the promotion of low-traffic

interventions in diverse communities in Aotearoa will be experienced as an elitist imposition of Pākehā values on Māori, Pacific, and migrant communities. Different modes of transport hold different cultural values for different groups, and the barriers to accessing alternative modes vary significantly across cultural, ethnic, and income lines.

Low-traffic interventions should only ever increase the range of options available to residents to get to where they need to go comfortably safely, affordably, and in good time. In keeping with the principles of community development, low-traffic interventions should not be pursued in isolation from other priorities that the community identifies as important. The consultation process will bring these to light, and communities need to have faith that their genuine concerns about other issues will be heard and acted on. As the Te Ara Mua Future Streets example below illustrates, with time, genuine partnership, and deep community involvement, the barriers to engagement with low-traffic solutions in a diverse community can be reduced, and residents can begin to make connections between the proposed solutions and practical improvements in other aspects of their daily lives. However, as this example also illustrates, the complexity of the issues that communities are dealing with should not be underestimated. The horizon for change is long-term, the need for engagement is ongoing, and this requires significant, sustained investment.



<sup>70</sup> “Dr Amy Kavanagh on Twitter,” <https://twitter.com/BlondeHistorian/status/1301127119771176961>

<sup>71</sup> “Dr Amy Kavanagh on Twitter.”

<sup>72</sup> Jun Park and Subeh Chowdhury, “Investigating the Barriers in a Typical Journey by Public Transport Users with Disabilities,” *Journal of Transport & Health* 10 (September 1, 2018): 361–68.

<sup>73</sup> “Accessible Streets Submission” (Disabled Persons Assembly NZ, May 20, 2020), <http://www.dpa.org.nz/store/doc/DPA-Accessible-Streets-18.5.20.docx>

<sup>74</sup> “Cities for All: The Project Driving Global Urban Accessibility,” *Design and Build Review*, December 2018, [https://designbuild.nridigital.com/design\\_build\\_review\\_dec18/cities\\_for\\_all\\_the\\_project\\_driving\\_global\\_urban\\_accessibility](https://designbuild.nridigital.com/design_build_review_dec18/cities_for_all_the_project_driving_global_urban_accessibility)

## Case study: Te Ara Mua Future Streets, Māngere, South Auckland

Te Ara Mua translates from Te Reo Māori as the future path shaped by the past. Te Ara Mua Future Streets is a project designed to support safe walking and cycling and reflect indigenous history at the neighbourhood scale in Māngere, South Auckland. The project involved a collaboration between researchers, local community, and regional and national transport agencies to design, implement, and evaluate a neighbourhood-wide infrastructural intervention. While not technically a low-traffic neighbourhood, Te Ara Mua Future Streets is an example of many of the principles of low-traffic neighbourhood design in action, particularly its approach to deep community engagement. It also exemplifies some of the challenges that a low-traffic neighbourhood intervention must overcome to succeed.

Best practice evidence for safe street design, exploratory data collection, and significant consultation with community, local boards, mana whenua, and other stakeholders were drawn on to develop a set of aspirational design principles (see table below). These principles were applied in a number of ways, including installation or improvement of cycle lanes, pedestrian crossings, community walkways, bus stops, street lighting, installation of wayfinding signage and artwork, and native planting. However, budgetary constraints and statutory limitations meant some components were scaled back or were not always delivered in the desired way.

An internationally unique research design is being used to explore the impacts of Te Ara Mua Future Streets across a range of outcomes including travel patterns, physical activity and sitting time, social wellbeing, road traffic injuries, air quality, traffic speeds and volume, road user behaviours and interactions, and resident perceptions and experiences. From a research perspective, it is the only study of its type worldwide to include a socio-demographically matched control area, and to include multiple long-term follow-up measures (undertaken in 2014 and 2017, and planned for 2021 and 2023).

Early findings from the immediate follow-up survey suggest that in treated streets, significant reductions in traffic volume and speeds have occurred. Resident perceptions of safety and neighbourhood 'friendliness' for children's mobility have improved. Video footage data in key locations also indicate improvements in pedestrian safety, with reduced waiting times to cross, higher rates of 'complete' crossings, and higher rates of cars stopping for pedestrians. Sociocultural norms, safety concerns, and practical limitations were all identified as barriers to active travel to work on in future. Qualitative, video, and survey data all indicated improved accessibility and more trips for disabled people.



Image credit: Hamish Mackie

The study has not been without its challenges. Despite the intervention, early analysis of video footage data indicated walking had reduced in both the intervention and control area, although it appears walking rates reduced less in the area covered by Te Ara Mua Future Streets than in the control area. While this is obviously preferable, ideally the project would see increased levels of walking and other active modes. The project also faced challenges from community pushback from loss of parking spaces. Community workshops and the support of local leaders were vital to ensure translation of evidence and key messages to the community, providing opportunities to discuss and debate issues, and ultimately facilitating a shared understanding of the purpose of the changes. Negative social perceptions of cycling were also challenging. Again, local leadership combined with youth voices are helping to raise the profile of cycling and support its acceptability within the community.

DESIGN PRINCIPLE	EXAMPLES OF IMPLEMENTATION OF DESIGN PRINCIPLES IN TE ARA MUA FUTURE STREETS
Street/route hierarchy giving greater priority to pedestrians and cyclists	Installation of raised table pedestrian crossings and separated cycle lanes and widening of footpaths
People feel safe on routes	Infrastructural improvements for safer walking and cycling, installation of lighting in parks
Reduce traffic speed and make it more consistent	Installation of speed calming infrastructure, narrowing of vehicle carriageways
Improve people's ability to cross the road safely	Installation of raised table pedestrian crossings and new crossings based on desired lines
Schools and the mall are priority destinations for the walking and cycling network	Improved accessibility into the mall (e.g. by providing crossings through a large carpark), improvements to crossings and traffic calming infrastructure around schools
An arterial separated bike network is important	Installation of separated cycleways (initially only on collector roads)
Improvements reflect the identity of the local community	Planting of native plant species, painting of pathway in kōwhai (yellow) in reference to shark oil traditionally used by Māori, traditional Pou (carved poles), endemic plant species, and wayfinding to relevant landmarks



Image created by Lei Wen for Mackie Research

Te Ara Mua Future Streets intervention components

## Regulatory and legislative barriers

The legal framework governing council decision-making poses some challenges that can make the pursuit of low-traffic interventions particularly difficult. For example, common traffic-reducing measures deployed in low-traffic neighbourhoods such as new bollards, planters, or one-way restrictions, while still allowing cars to access the street, may legally be considered road closures because of the way they change how vehicles can navigate the street. While most of the Local Government Act 1974 has been repealed and replaced with the 2002 legislation, its requirements related to road closures are still in force. These requirements allow councils to impose only temporary road closures, thus restricting their ability to make low-traffic neighbourhoods permanent.

The 1974 provisions also impose particularly rigid notification and consultation requirements for the 'stopping of roads and temporary prohibition of traffic', including that roads may not be closed if doing so would 'impede traffic unreasonably,' which may have the effect of discouraging some councils from pursuing low-traffic streets and neighbourhoods in their areas.

In the UK, similar challenges have been overcome with the creation of a specific regulatory tool to encourage the development of low-traffic streets and neighbourhoods and other tactical urbanism projects. Experimental Traffic Orders enable councils to trial traffic changes for a period of 18 months, without the need for prior consultation; rather, the experiment itself is the consultation. For the first six months of the experimental order, suggested improvements and objections must be considered and changes

can be made; within eighteen months a decision must be made about whether the order becomes permanent. No decision means the rules revert to what they were previously.

Experimental Traffic Orders have the advantage of enabling nimble, innovative projects whose effects can be tested on the ground and adjusted in real time, rather than trying to anticipate all possible outcomes as part of the consent process. The fact that they allow change to proceed "without consultation" should not be interpreted as meaning that consultation does not occur or is not critical to the success of the projects; rather, ongoing consultation and engagement occurs throughout the life of the project and is part of the experimental process.



## PART 3: PRINCIPLES AND ACTIONS FOR A LOW-TRAFFIC FUTURE



In this section we present four principles, distilled from the evidence considered in this report, that we believe should guide the large-scale design and implementation of low-traffic streets and neighbourhoods in Aotearoa's cities.

These are followed by sixteen recommendations. The recommendations are divided into actions for communities who want to see low-traffic solutions in their area, actions for local government, actions for central government specifically to advance low-traffic solutions, and wider policy recommendations for central government.

### Be ambitious

The debate about climate change is over, as is the political debate about what our collective response as a nation should be. With near-unanimous support, Parliament passed the Zero Carbon Act in 2019 and has agreed that we need to reach net zero emissions by 2050. Likewise, we have set ourselves the bold and ethical target of reducing deaths on our roads to zero. Now that we have set these targets, we need to understand that reaching them requires something substantially different from the status quo. Our cities and towns will need to look and feel very different in the future; crucially, they will look and feel better. If we need reminding of this, we need only draw on the positive aspects of the lockdown that so many of us enjoyed – fresh air, quiet streets, safe outdoor spaces for children to play.

To achieve these goals, we need central and local governments to adopt regulations and policies that ensure change happens, and quickly. This includes a national strategy to decarbonise the transport sector, increased investment in active transport infrastructure, targets to increase the proportion of trips taken by walking, cycling, and public transport, and specific requirements for councils to adopt city-wide carbon reduction plans.

### Make the process tika (right and just)

As Associate Professor Maria Bargh (Te Arawa, Ngāti Awa) notes in *A Careful Revolution: Towards a Low-Emissions Future*, Aotearoa's necessary transition to a low-emissions future "will require trade-offs and, at best, some uncomfortable changes for individuals, households, communities, the private sector, and government."<sup>75</sup> This is also true of the development and implementation of low-traffic streets and neighbourhoods. When done well, low-traffic projects can have benefits for all, but if poorly planned and executed, there is potential for low-traffic neighbourhoods to inadvertently disadvantage some, including Māori. This should not be allowed to happen; as Bargh notes, "to be enduring for Aotearoa, the transition must be tika."<sup>76</sup>

In Te Ao Māori, tika relates to correctness, or 'that which is right and just.' By a tika transition, Bargh means applying a framework of tikanga Māori, Treaty of Waitangi obligations, and international law to decision-making and policy planning for Aotearoa's low-emissions future. Bargh sets out a *Tika Transition Toolbox* which identifies tika elements drawn from tikanga, the Treaty, and the UN Declaration on the Rights of Indigenous Peoples. It then provides a (non-exhaustive) list of questions alongside each that decision-makers can ask to ensure that the decisions they make to move Aotearoa towards a low-emissions future are tika. The *Tika Transition Toolbox* is useful in the context of planning and implementing low-traffic neighbourhoods and should be applied to all decision-making. It includes questions such as, "have marae been informed, educated, and mobilised?", "is Māori access to natural resources affected?", and "is

there evidence of Māori participation and trust in the process?". The *Tika Transition Toolbox* is reproduced with permission as Appendix 1.

### Plan large areas together

Low-traffic interventions work best when they are planned as part of a network, not operating in isolation. This is particularly important to ensure vehicle traffic is not simply displaced from one neighbourhood to the next without achieving meaningful traffic volume reductions. It is also important to coordinate between neighbourhoods to manage the flow of traffic and ensure safe walking and wheeling options and crossings on main arterial routes. Councils should therefore develop high-level plans to create multiple, interlinked, low-traffic areas in parallel, while keeping the specific form and process highly responsive to local needs.

<sup>75</sup> Maria Bargh, "A Tika Transition," in *A Careful Revolution: Towards a Low-Emissions Future*, ed. David Hall, BWB Texts (Wellington: Bridget Williams Books, 2019), 36.

<sup>76</sup> Bargh, 36.

## Engage and listen

If Aotearoa should take one thing away from international experience with low-traffic interventions, it is that best practice community engagement is vital to their success and longevity. Early, proactive, and deep engagement should be at the centre of every low-traffic neighbourhood project and proposal. This means starting with preliminary conversations to identify community views, attitudes, needs and concerns, and will require being open to hearing about and acting on community priorities beyond the immediate project. Engage with mana whenua from the earliest opportunity. Create opportunities to share preliminary designs and ideas with local people in the places where

they are, rather than putting things online and waiting for people to make submissions. Set up market stalls, knock on doors, and hang out in high foot traffic areas to ask questions and share concepts. Conduct proactive local engagement to find out how people feel about their local streets and neighbourhoods and test key concepts. Ensure local disabled people are heard, build support, and emphasise community-wide benefits. When a project is in the trial phase, be nimble and responsive to early concerns and be prepared to make changes and improvements over the life of the project. Be responsive to, and respectful of, local concerns.



# RECOMMENDATIONS

## 01

### Community actions

Demonstrating community support for low-traffic interventions can significantly improve their likelihood of being introduced, by reassuring decision-makers that the changes are understood and supported by residents.

We recommend that local communities who are keen to see low-traffic neighbourhoods in their area:

- Start local conversations: talk to neighbours and community members and ask if they are happy with the levels of traffic on local streets. Consider holding community hui or conducting surveys.
- Build coalitions of support: find others in the area who are interested in seeing lower traffic volumes. Work together to gather the information and build the support you need.
- Gather evidence and demonstrate demand to local and central government: gather information about traffic volumes, congestion, pollution, and residents' views in your area. Share this information with local and central government and ask them to make specific improvements.
- Use existing funds and schemes to demonstrate benefits: find out about funding for tactical urbanism projects in your area and pitch creative ideas for temporary low-traffic projects to your local authority.

## 02

### Local government actions

Local authorities are the main decision-makers who can enable the large-scale planning, design, and implementation of low-traffic interventions around Aotearoa.

We recommend that local authorities:

- Develop city-wide transport emission reduction plans that include specific targets for reducing vehicle kilometres travelled (VKT), increasing the proportion of local trips taken by active modes and public transport, and the creation of low-traffic environments. Incorporate these plans and targets into long-term plans and other instruments.
- Conduct proactive local engagement to find out how people feel about traffic volumes, road safety, and the attractiveness of their local streets and neighbourhoods.
- Gather and publish information about local car ownership, traffic volumes, congestion and pollution levels, and public transport use.
- Provide training for councillors and officials about low-traffic neighbourhoods, how they work, and how to successfully engage with local communities to plan and implement them.
- Create contestable local tactical urbanism funds to which residents can apply for specific short-term projects to test low-traffic interventions and demonstrate their benefits.
- Apply the principles of tika (right and just) transition to all proposals and decisions about low-traffic interventions.

## 03

### Central government actions – specific to low-traffic neighbourhoods

While local authorities are best placed to make specific decisions about low-traffic interventions in their areas, central government can help by adopting enabling policy and legislative settings.

We recommend that central government:

- Make reducing VKT a road safety priority. When the Road to Zero action plan is next updated, make reducing the number of kilometres travelled in vehicles (VKT) one of the focus areas, with specific targets and actions including the reduction of traffic in urban areas.
- Increase Innovating Streets funding with specific provision for permanent low-traffic neighbourhood projects.
- Develop a specific legislative tool to enable the creation of low-traffic neighbourhoods modelled on the UK's Experimental Traffic Orders, but adapted for the Aotearoa context.
- Review existing legislation, especially s342 and schedule 10 of the Local Government Act, and the definition of 'traffic', with a view to how they could more easily enable low-traffic interventions.

## 04

### Central government actions – wider policy considerations

The large-scale implementation of low-traffic neighbourhoods and interventions in Aotearoa's cities needs to take place as part of a wider strategy to decarbonise transport and encourage widespread transport mode shift. Wider policy changes will be required to achieve this.

We further recommend that the government:

- Adopt a strategy to decarbonise New Zealand's transport sector to meet climate change reduction targets, including requirements for councils to reduce VKT, increase the proportion of trips taken by active modes and public transport, and adopt city-specific transport emission reduction plans.
- Increase investment in active transport infrastructure to at least 20 percent of the total transport budget, as recommended by the UNEP.
- Adopt policies to incentivise alternatives to driving, for example making the fare subsidy structure for public transport more equitable, increasing subsidies and rebates for the purchase of bikes and e-bikes, and providing additional funding for active school travel initiatives such as walking school buses.
- Consider further mandating flexible work arrangements that can reduce the need for commuting.

# APPENDIX 1: THE TIKA TRANSITION TOOLBOX

**Note:** not all of these questions will be directly relevant to low-traffic interventions, but they are a useful guide for all central and local government decision-making. For more information, see *A Careful Revolution: Towards a Low-Emissions Future*, ed. David Hall, Bridget Williams Books, 2019.

TIKA ELEMENTS	QUESTIONS TO ASK (NOT AN EXHAUSTIVE LIST)
<b>TIKANGA</b>	
<b>Whanaungatanga</b>	<ul style="list-style-type: none"> <li>• Have relationships been nurtured and protected?</li> <li>• Have marae been informed, educated and mobilised?</li> <li>• Have the rights and interests of future generations been considered?</li> </ul>
<b>Kaitiakitanga</b>	<ul style="list-style-type: none"> <li>• Have negative impacts on the Māori role of kaitiaki been minimised or avoided?</li> <li>• Is Māori access to natural resources affected?</li> <li>• Can Māori continue to practice kaitiaki duties?</li> <li>• Will Māori sustainable development aims be impacted?</li> <li>• Have any transition proposals been checked against aspirations articulated in Iwi Environmental Management Plans?</li> <li>• Is the low-emissions transition consistent with Resource Management Act requirements to Māori as kaitiaki?</li> </ul>
<b>Utu</b>	<ul style="list-style-type: none"> <li>• Has balance been maintained?</li> <li>• What metrics are used to weigh costs and benefits?</li> <li>• Where a breach occurs, has the take-utu-ea mechanism been deployed to rebalance?</li> <li>• How are risks allocated? Who suffers most from externalities and their negative consequences (e.g., air pollution)?</li> <li>• How is compensation calculated or distributed?</li> </ul>
<b>Mana</b>	<ul style="list-style-type: none"> <li>• Has mana been considered?</li> <li>• Do transition proposals impact on Treaty settlement commitments?</li> <li>• Is any bias evident on the part of the decision-maker?</li> </ul>
<b>Tapu</b>	<ul style="list-style-type: none"> <li>• How are things valued?</li> <li>• Are Māori spiritual connections to taonga and place enhanced?</li> </ul>

## TE TIRITI O WAITANGI

<b>Partnership</b>	<ul style="list-style-type: none"> <li>• Do transition structures and institutions, such as a Climate Change Commission, follow a partnership model?</li> <li>• Is partnership an underpinning value to all transition work?</li> <li>• Are Māori able to be heard in the consultation?</li> <li>• Have sites of consultation been appropriate and has the frequency of consultation been sufficient? Was the form of consultation appropriate and sufficient?</li> <li>• Do Māori have Māori representation on the Boards, commissions and other decision-making panels, advisory boards and councils? Does this representation go beyond those who have whakapapa Māori or who have tikanga and mātauranga expertise, and involve representatives that represent Māori?</li> <li>• Has consultation occurred at an early stage?</li> <li>• Is there evidence of Māori participation and trust in the process?</li> </ul>
<b>Active protection</b>	<ul style="list-style-type: none"> <li>• Are Māori rights and interests actively protected?</li> <li>• Are existing Māori investments within Crown-stipulated frameworks, such as the Fisheries Quota Management System or Emissions Trading Scheme protected? How can these frameworks be amended to ensure active protection of Māori rights through transition?</li> <li>• Is information shared with the appropriate Māori entities?</li> <li>• Is information sufficient and adequate in form?</li> <li>• Is information provided in a timely manner and with appropriate timeframes to digest, discuss, analyse and receive advice on?</li> <li>• Is information objective?</li> <li>• Has mātauranga Māori been included?</li> <li>• Has local knowledge been included?</li> <li>• Has the local context of the community been accounted for?</li> </ul>
<b>Reciprocity</b>	<ul style="list-style-type: none"> <li>• How are the outcomes (costs/risks and benefits/opportunities) of the transition distributed?</li> <li>• Who benefits from subsidies? Who pays the investment costs? Who owns the energy infrastructure (renewable or otherwise)? Where is the infrastructure located? How are profits distributed? Who is responsible for action? How are developmental opportunities allocated? How much do people pay towards energy costs?</li> <li>• Do transition policies provide mutual benefits?</li> <li>• Have Māori been treated fairly in relations to others such as Crown-owned entities, and large non-Māori/non-New Zealand resident corporations?</li> <li>• Will there be disproportionate negative impacts on Māori land and natural resources?</li> </ul>

## UNDRIP

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- Article 3**
- Do Māori have representation?
  - Are Māori able to freely pursue their economic, social and cultural development?
- 
- Article 19**
- Have Māori had a genuine opportunity to say 'no' to transition proposals? Has free, prior and informed consent been sought from Māori representative institutions?
- 
- Article 29**
- Do assistance programmes assist Māori with the conservation and protection of their lands, territories and resources?
  - Are Māori able to protect the environment?
  - Are Māori able to productively use their lands, territories and resources?
  - Is funding assistance available to Māori for research, education and mobilisation of Māori communities for transition?
- 
- Article 32**
- Have negative impacts of transition on Māori individuals, households, communities and businesses been minimised, mitigated or removed?
  - Have Māori been integral to determining and developing priorities and strategies for transition?
  - Have current Māori land use priorities been considered in transition design, implementation and evaluation?
  - Have risk assessments taken account of specific and unique risks for Māori communities?
- 



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