

Technical note

Policy recommendations

in support of the Cycling and Micromobility Programme Business Case

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1 Introduction

This technical note summarises the development of the alternatives progressed as policy recommendations in support of the CAM-PBC investment objectives.

The CAM-PBC investment objectives are as follows:

- Contribute to reduction of deaths and serious injuries involving people using bikes and micromobility by 40% by 2031 (30%)
- Increase cycling and micromobility mode share by distance from 0.4% to 1.9%, contributing to the regional mode share aspiration of 7% by 2030 (30%)
- Increase the proportion of the population that can access key social opportunities within 15 minutes by safe cycling or micromobility to 40% by 2031 (30%)
- Increase the rate of delivery of safe cycling facilities on the Cycle and Micromobility Strategic Network by 15km per year by 2031 (10%)

In aiming to achieve the above investment objectives, the majority of the funding allocated to the CAM-PBC will be invested in the delivery of safe cycling facilities. The evidence suggests, however, that in order to maximise the benefits from the development of urban cycle networks, the infrastructure should be supported by a coordinated set of integrated, mutually supporting policies and programmes¹.

While the provision of safe and connected infrastructure alone can and does influence peoples travel choices, such interventions appear to be more effective when they form part of a comprehensive package of measures. By exploiting the synergies between different interventions, their impacts can be magnified².

Policy recommendations highlight where new policies could be created, or existing policies could be changed to support the CAM-PBC investment objectives. These include changes to planning and funding settings to help shape a supportive urban form or enable better cycling outcomes from other projects delivering street changes, changes to regulations to improve safety, and travel demand management techniques such as road pricing and parking restrictions. No funding is assigned to the pursuit of these changes, and for the majority of the recommendations the authority to implement the suggested change sits with external organisations. As such, the intention is that AT lobbies for the change through its existing channels.




¹ Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. *World Transport Policy Pract.*, 13 (3) (2007), pp. 8-57
² Pucher, J. and Buehler, R. (2008) Making Cycling Irresistible: Lessons from The Netherlands, Denmark and Germany. *Transport Reviews* 28(4): 495-528.
 J. Pucher, J. Dill, et al. Infrastructure, programs and policies to increase bicycling. *Preventive Medicine*, 50 (2010), pp. 5106-5125

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2 Policy longlist

The following section presents a longlist of policies that could support the investment objectives of the CAM-PBC. Where relevant, these have been brought forward from the Alternatives Assessment. Some have been further investigated / developed since that assessment was carried out and that is reflected in the proposal description.

These are based on tried and tested interventions that have proven to be successful locally and worldwide in encouraging cycling (and active travel more generally) and promoting cycle safety. Where appropriate, the expected benefits, disbenefits and uncertainties around each of the policy changes are explored, taking local context into account, and an estimate of the potential impact is included. Caution should be applied when inferring results from foreign case studies in the Auckland context, however. Further, the nature of these interventions generally being implemented as a part of a broader suite of measures means that it is difficult to isolate the impact of individual measures.

Legend	
Expected benefits / disbenefits / uncertainties	
✓	Supports investment objective
+	Relevant co-benefit
?	Significant uncertainty
X	Significant dis-benefit
Potential impact	
	High impact against investment objectives
	Medium impact against investment objectives
	Low impact against investment objectives

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Table 2-1 Policies – planning and funding

ID	Policy target area	Proposal	Expected benefits / disbenefits / uncertainties	Potential impact	Key parties
1	NLTF	Review and change funding settings that are reducing ability to deliver safe cycling facilities in a fast and effective manner. Identified focus areas include: <ul style="list-style-type: none"> Walking and cycling activity class. Streamline co-funding processes between different activity classes. Road to zero activity class. Low cost / low risk work category. Local road maintenance activity class. 	<ul style="list-style-type: none"> ✓ Positive impact on rate of delivery of safe cycling facilities. ✓ Positive impact on cycle mode share. ✓ Reduce DSIs involving people using bikes and micromobility. ? How to manage impact on other programmes / outcomes. 		WK
2	RMA reform	Support legislation changes that facilitate improved land-use transport integration / more compact development via a new Strategic Planning Act.	<ul style="list-style-type: none"> ✓ Increase the proportion of the population living within 15 minutes of key social opportunities by cycling or micromobility. ✓ Positive impact on cycle mode share. + Significantly reduce vehicle kilometres travelled across the region. + Co-benefits for walking outcomes ? Benefits from changes to spatial planning regulation will take a long time to be realised. 		Central Government
3	NPS-UD (2020) / Auckland Unitary Plan	Pursue good outcomes for cycling and micro-mobility from the suite of AUP plan changes that are being progressed to implement the NPS-UD (2020) specifically:	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. ✓ Increase the proportion of the population living within 15 minutes of key social opportunities by cycling or micromobility. 		AC

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		<ul style="list-style-type: none"> • More stringent parking restrictions in areas with high public transport availability. • Increase bike parking requirements in new developments. • Lower threshold for “end of trip facilities” in new developments. 			
4	Internal policies / processes	Continue internal work to review and refine AT organisational policies, processes, standards, and culture to ensure cross-organisational alignment with PBC investment objectives. E.g. review lighting standards to ensure lighting design benefits active modes users as well as lighting the carriageway.	<ul style="list-style-type: none"> ✓ Positive impact on rate of delivery of safe cycling facilities. ✓ Positive impact on cycle mode share. ✓ Reduce DSIs involving people using bikes and micromobility. + Co-benefits for walking outcomes 		AT

Table 2-2 Policies – normalising biking and micromobility

ID	Policy target area	Proposal	Expected benefits / disbenefits / uncertainties	Potential impact	Key parties
5	School trips	Support cycling initiatives in schools such as: School Travel Plans in all schools, Bikes in Schools (or similar programmes), introduce or increase cycle parking, bike training and education, facilities and treatments outside of the school gate to improve cycle and scooter safety and usage.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. ✓ Reduce DSIs involving people using bikes and micromobility. + Co-benefits for walking outcomes 		Central Government, Ministry of Education, Waka Kotahi, AC, AT
6	Out of school enrolments	Manage out of zone school enrolments more stringently to limit unnecessary school traffic and to support	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. 		Ministry of Education

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		sustainable local school travel.	+ Co-benefits for walking outcomes ? Uncertainty around impact on school operations.		
7	Cycle lane (and footpath) enforcement	Enforcement to keep facilities clear of obstruction (e.g. parked vehicles, bins).	✓ Positive impact on cycle mode share. ✓ Reduce DSIs involving people using bikes and micromobility. ? Uncertainty around ability to change via by-law.		AT, Police NZ

Table 2-3 Policies – improving safety for people on bikes and micromobility

ID	Policy target area	Proposal	Expected benefits / disbenefits / uncertainties	Potential impact	Key parties
8	Road rule changes	Road rules changes recommended by Cycling Safety Panel (e.g. automatic liability for hitting cyclists and allowing cyclists contraflow down one-way roads).	✓ Reduce DSIs involving people using bikes and micromobility.		Central Government, Waka Kotahi
9	Vehicle regulations	Investigate changes to vehicle regulations recommended by Cycling Safety Panel – e.g. Transport for London’s Direct Vision Standard and HGV Safety Permit regulation.	✓ Reduce DSIs involving people using bikes and micromobility. + Co-benefits for safety for all users on the transport network.		Central Government, Waka Kotahi
10	National safety	Advocate for Waka Kotahi to expand their mass marketing (supporting Road to Zero Programmes) to	✓ Reduce DSIs involving people using bikes and micromobility.		Waka Kotahi

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marketing	include targeted safety campaigns for people on bikes.			
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Table 2-4 Policies – influencing travel demand and transport choices

ID	Policy target area	Proposal	Expected benefits / disbenefits / uncertainties	Potential impact	Key parties
11	Road pricing	Congestion charging in areas with transport options. Allocating funding to investment in sustainable transport alternatives.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. ✓ Positive impact on rate of delivery of safe cycling facilities. + Co-benefits relating to public transport uptake. + Co-benefits relating to rate of delivery of public transport improvements. ? How to address equity concerns. 		Central Government
12	AT managed car parking: pricing and management	Increase the cost to park in areas with potential for high take up of bike trips.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. + Co-benefits relating to public transport uptake. ? How to address equity concerns. 		AT, AC
13	Prohibit new car parking buildings in specific areas.	Initially aimed at city and / or town centres where bike mode share is high or promoted (and good public transport options available).	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. + Co-benefits relating to public transport uptake. 		Central Government, AC
14	Vehicle taxes	Increase the cost of less sustainable vehicles and subsidise more sustainable modes.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. 		Central Government

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			<ul style="list-style-type: none"> + Co-benefits relating to public transport uptake. ? How to address equity concerns. 		
15	Fuel taxes, Road User Charges	Increase taxes on driving to generate additional revenue to fund cycling interventions.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. ✓ Positive impact on rate of delivery of safe cycling facilities. + Co-benefits relating to public transport uptake. ? How to address equity concerns. 		Central Government
16	Tax reform / workplace parking levies	Remove the ability for tax deductions for non-essential business vehicles and their running and maintenance costs. Implement city centre workplace parking levies.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. ✓ Positive impact on rate of delivery of safe cycling facilities. + Co-benefits relating to public transport uptake. 		Central Government, Inland Revenue
17	Subsidise bike access	Public subsidies for individuals and businesses to purchase bicycles / establish or operate bike sharing schemes.	<ul style="list-style-type: none"> ✓ Positive impact on cycle mode share. 		Central Government, AC, AT

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3 Policy recommendations

The policy recommendations that the CAM-PBC has identified as likely to contribute the most to Auckland achieving cycling and micromobility objectives are summarised in Table 3-1.

Many of these policy recommendations feature prominently in cities in the Netherlands, Denmark and Germany that have cycling levels that are among the highest in the world and cycling death and serious injury rates that are among the lowest.

Policy changes are not delivered by the CAM-PBC but are recognised as being critical to the success of achieving Vision Zero safety outcomes and Auckland’s cycling and micromobility mode share by distance goals to support a reduction in transport greenhouse gas emissions.

Table 3-1 Policy recommendations

Policy change	Potential Impact	Responsible party
Review and amend <u>funding</u> conditions (NLTF) including <u>intervention toolkit</u> for the walking and cycling activity class (streamlined investment pathway)	Delivery – quicker and more efficient delivery. Enable easier co-funding across activity classes and co-delivery opportunities	Waka Kotahi
Support RMA reform and NPS-UD for improved <u>land-use</u> transport integration and intensification	Mode change – making travel by bicycle and micromobility device easier. 1% mode share by distance for cycling estimated for CAM-PBC but varies considerably depending on level of change	Auckland Council and Central Government
Support cycling initiatives in <u>schools</u> such as: School Travel Plans in all schools, Bikes in Schools (or similar programmes), introduce or increase cycle parking, bike training and education, facilities and treatments outside of the school gate to improve cycle and scooter safety and usage.	Mode change - Strong evidence that cycling behaviour change programmes targeting schools have enduring influence	Ministry of Education, AC
Road rules changes recommended by Cycling Safety Panel (e.g. automatic liability for hitting people on bicycles and allowing people on bicycles contraflow down one-way roads).	Safety and mode share - Strong international evidence that road rules that specifically protect people on bicycles is an integral part of any policy package that seeks to deliver high bicycling mode share while reducing biking related DSIs	Central Government, Waka Kotahi
Investigate changes to <u>vehicle regulations</u> recommended by Cycling Safety Panel	Safety - Strong international evidence that trucks / HGVs are greatly over-represented in incidents resulting in fatalities of people on bicycles.	Central Government, MoT, Waka Kotahi
Advocate for Waka Kotahi to expand their <u>mass marketing</u> (supporting Road to Zero Programmes) to include	Safety	Waka Kotahi

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targeted safety campaigns for people on bicycles and encourage uptake of cycling and micromobility		
Increase <u>road user charges</u> for general traffic (e.g. congestion charging) and allocate revenue to funding sustainable transport improvements	Funding - Increased funding for cycling and micromobility improvements enabling more infrastructure and customer growth initiatives to be delivered. Mode change - Up to 1% mode share by distance increase for cycling based on international experience	Central Government
<u>Taxation</u> changes to disincentivise driving (e.g. introduce workplace parking levies, remove tax deductions for non-essential business vehicles) and incentivise cycling (e.g. removing fringe benefit tax for the purchase of bicycles)	Mode change – Strong international evidence that disincentives are an important part of intervention packages to achieve behaviour change. Funding – Where implemented overseas, workplace parking levies have generated significant funds that have then been invested in providing more sustainable transport choices.	Central Government, Inland Revenue
Public <u>subsidies</u> for individuals and businesses to purchase bicycles / establish or operate bicycles sharing schemes.	Mode change - Reduces cost of buying a bicycle or micromobility device, enabling more people to afford them. Potential for significant mode change based on international research and improved equity , especially if bicycles are free.	Central Government, AC, AT

AT internal policy recommendations

In addition to these external policy changes, AT will also need to review and refine internal organisational policies, processes and standards to ensure cross-organisational alignment with the CAM-PBC investment objectives (e.g. review policies around car restriction regulations and the design and delivery of Low Traffic Neighbourhoods). Some of this work is already underway, including an AT internal workstream that is proposing minimum standards for separated cycle facilities delivered through the CAM-PBC, which seeks to inform a programme level departure, to enable more road space reallocation to cycle and micromobility facilities.

Supporting other policies

There are policy changes currently being investigated as part of other workstreams that will also contribute to CAM-PBC objectives:

- Accessible streets regulatory package, delivered by Waka Kotahi, which has potential to improve safety, mode share and delivery rate for cycling and micromobility.

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- Re-shaping streets by Ministry of Transport, which makes recommendation that if delivered would improve delivery of cycling and micromobility investment.
- AT Parking Strategy refresh, which will improve road space reallocation opportunities.
- AT safe speeds programme, which supports safety objectives.
- Speed limit enforcement being delivered by NZ Police, which supports safety objectives.

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Appendix H-1 Evidence

ID	Policy area	target	Evidence for effectiveness against investment objectives:
Policy Recommendations – planning and funding			
1	NLTF		<ul style="list-style-type: none"> Waka Kotahi’s “Standard safety intervention toolkit” is used to help guide infrastructure investment decisions and contributes to embedding Vision Zero in the wider road safety sector. It also supports streamlined delivery of the Road to Zero Speed and Infrastructure programme for Waka Kotahi and local authorities: https://www.nzta.govt.nz/resources/standard-safety-intervention-toolkit/ Local road maintenance activity class (Waka Kotahi, NLTP 2021-2024): https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/202124-nltp/2021-24-nltp-activity-classes-and-work-categories/local-road-and-state-highway-maintenance/ WC 341: Low-cost, low-risk improvements (Waka Kotahi, NLTP 2021-2024) https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/202124-nltp/2021-24-nltp-activity-classes-and-work-categories/other-work-categories/wc-341-low-cost-low-risk-improvements/
2	RMA reform		<ul style="list-style-type: none"> “Overview of the resource management reforms”, Ministry for the Environment, New Zealand. https://environment.govt.nz/what-government-is-doing/key-initiatives/resource-management-system-reform/overview/ A literature review carried out by Waka Kotahi found that while the impacts of individual urban form attributes on transport outcomes are relatively modest, their cumulative impacts may be quite significant. By extension, urban form can have large impacts on the use of public transport and walking/cycling. Donovan, S. Munro, I (2013), Impact of urban form on transport and economic outcomes. NZ Transport Agency research report 513. A study by the Urban Land Institute (ULI) suggests a 20 to 40 percent reduction of vehicle miles travelled (VMT) can be achieved in a more compact development. The study found that residents of the most walkable neighbourhoods drive 26 percent less than those living in the developments of greater sprawl and estimates that a 30 percent reduction of VMT is a realistic assumption for a compact development. Ewing R., Bartholomew K., Winkelman S., Walters J., Chen D., 2008, “Growing Cooler: The Evidence on Urban Development and Climate Change”, Urban Land Institute. Frank and Pivo (1994) found that the type of transportation used is related to employee density per acre. At 20 to 30 employees per acre, 90 percent of the employees use SOV as the main source of transportation. At 50 to 75 employees per acre, 60 percent rely on SOVs. Once employment density reaches 125 employees per acre, the reliance on SOVs diminishes and 65 percent of employees rely on public transit, walking and cycling. Frank L. D., Pivo G., 1994, “Impacts of Mixed Use and Density on Utilization of Three Modes of Travel: Single-Occupant Vehicle, Transit, and Walking”, Transportation Research Record, Issue Number 1466.
3	NPS-UD (2020)		<ul style="list-style-type: none"> A study from Washington DC showed that the provision of bike parking and end of trip facilities (specifically showers and lockers) at workplaces

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		<p>were associated with a greater number of people cycling to work:</p> <p>Buehler, R. (2012). Determinants of bicycle commuting in the Washington, DC region: The role of bicycle parking, cyclist showers, and free car parking at work. Transportation research part D: Transport and Environment, 17(7), 525-531.</p> <p>https://www.pedbikeinfo.org/cms/downloads/DeterminantsofBicycleCommuting.pdf</p> <ul style="list-style-type: none"> Hunt and Abraham (2007) surveyed cyclists in Edmonton, Canada and found a statistically significant impact of secure parking at the destination, equivalent to a reduction of 27 minutes of in-route bicycling time. They estimated a much smaller, but statistically significant impact of shower facilities, equivalent to a reduction of 4 minutes of in-route bicycling time. <p>Hunt J.D., Abraham J.E. Influences on bicycle use. Transportation, 34 (2007), pp. 453-470</p>
4	"Re-shaping Streets"	<ul style="list-style-type: none"> The Ministry of Transport (MoT) has scoped a potential project called Reshaping Streets. This scoping focused on what central government could do (e.g. via rules, regulations or incentives) to accelerate widespread street changes to support public transport, active travel and placemaking. Of particular relevance to the CAM-PBC investment objectives, their scoping exercise includes reallocating street space to deliver: <ul style="list-style-type: none"> Separated bike / scooter lanes Low-traffic neighbourhoods Placemaking initiatives to create healthier and more vibrant streets which support active travel and urban intensification. <p>Their scoping involved interviews with people from other transport agencies, councils and community groups and were supplemented by additional research on what other cities or states are doing to accelerate these sort of street changes.</p> <p>Through their research, MoT identified the best opportunities to accelerate widespread street changes and grouped these opportunities into three priority areas:</p> <ul style="list-style-type: none"> Priority A: Enable quick, high-impact, low risk, low-cost street changes <p>"A proven way to deliver changes quickly is by supporting more tactical / innovative street changes that involve reallocating street space. This could be done through established mechanisms, and by making minor changes to existing settings. More substantial regulatory changes should also be considered in this area." p.21</p> Priority B: Change funding levels, settings and requirements to strongly incentivise street changes. <p>"Central government can use a "carrot" and "stick" approach to incentivise local government to make changes (e.g. by increasing the share of central government funding for some activities) and/or require local government to meet requirements /standards/targets to receive transport funding" p.22</p> Priority C: Maximise opportunities to improve streets during street renewals. <p>"There is a clear opportunity to "build back better" by upgrading streets (where appropriate) during the renewals process to improve streets for people walking, cycling/scooting and using public transport. This would deliver better value for money, as it would avoid the need to change</p>

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		<p>streets twice for renewals/upgrades. It would also build momentum for ongoing street improvements over time.” p.23</p> <p>Ministry of Transport (Te Manatu Waka) (May 2021) Reshaping streets – Scoping Summary <i>Investigating what central government could do to support public transport, active travel and placemaking by accelerating widespread street changes.</i></p>
Policy Recommendations – normalising biking and micromobility		
5	School traffic	<ul style="list-style-type: none"> A study by the University of Otago found that cycle training in schools significantly increased cycling-related knowledge of participants, from 21.5% ‘excellent’ knowledge pre-training, to 69.2% post-training (p. 10). Along with this increase in knowledge, the study found that participants were 41.8% ‘very confident’ cycling on the road pre-training, to 54.9% post-training (p. 13). https://www.otago.ac.nz/active-living-2017/otago664089.pdf Cycling education is mandatory in schools in Germany, the Netherlands, Denmark – countries where many cities have very high bicycle mode share. Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. <i>World Transp. Policy Pract.</i>, 13 (3) (2007), pp. 8-57 A major investment program to promote cycling in 12 English cities and towns between 2008 and 2011 provided the opportunity to study the bicycle use of residents and how that use was affected by the investment. Face-to-face interviews collected biographical information on travel behavior and life-change events during the investment period for 144 research participants and probed the reasons for changes in bicycle use. The analysis of the interview data showed how the nature of behavioural influences (in particular, life-change events and intrinsic motivations) varied over the life course. The research highlights that program designers should collaborate with other sectors and local organizations to access target groups and individuals at transition points, such as community support centres, workplaces, schools, settlement service agencies, local real estate offices and healthcare centres. K. Chatterjee, H. Sherwin, J. Jain. A conceptual model to explain turning points in travel behaviour: Application to bicycle use. Center for Transport & Society, Department of Planning and Architecture, University of the West of England (2011)
6	Out of school enrolments	<ul style="list-style-type: none"> A study from Dunedin shows that high school students who attend their closest school are more likely to cycle to school and less likely to travel via private vehicle, compared to students who travel to a school further away from their place of residence. The study also identified a link between the distance a student travels to school and the amount of physical activity they partake in during school commute times (as a result of a greater uptake of walking and cycling): Keall, M., Hopkins, D., Coppell, K., Sandretto, S., Bengoechea, E. G., Spence, J., Wilson, G., & Mandic, S. (2020). Implications of attending the closest school on adolescents’ physical activity and car travel in Dunedin, New Zealand. <i>Journal of Transport & Health</i>, 18, 100900. https://www.sciencedirect.com/science/article/abs/pii/S2214140520301043
7	Cycle lane (and footpath) enforcement	<ul style="list-style-type: none"> It is important from a safety and convenience perspective that cycle lanes are clear and un-obstructed. In Auckland, for enforcement purposes, cycle lanes are classified as Special Vehicle Lanes (i.e. the same as a bus or transit lane). Parking or travelling more than 70 metres in a cycle lane is an enforceable

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		<p>offense. There is no infringement category for encroaching on a cycle lane however. It is unclear whether a new by-law could be established to enforce cycle-lane encroachment as the change may need to be made at the national level via the Land Transport Act (1998).</p> <p>(discussion with AT enforcement team)</p>
8	Subsidise bike access	<ul style="list-style-type: none"> A study from Ireland shows the benefits of a scheme whereby employers purchase bicycles and cycling accessories for their employees and then deduct the costs from their employees' salaries over a 12 month period. As the deductions are based on the employees' pre-tax earnings, there are significant cost savings for the employee (up to 51%), with the scheme functioning as a tax-based subsidy. <p>The study shows that people who purchased bikes through the scheme use them regularly for both work-related and non-work-related trips:</p> <p>Caulfield, B., & Leahy, J. (2011). Learning to cycle again: examining the benefits of providing tax-free loans to purchase new bicycles. <i>Research in Transportation Business & Management</i>, 2, 42-47.</p> <p>http://www.cyclist.ie/wp-content/uploads/2014/09/CaulfieldLeahy_2011_tax_free_bikes_effects_rschr_busman.pdf</p>

Policy Recommendations - Improving safety for people on bikes and micromobility

10	Speed limit reductions	<ul style="list-style-type: none"> A study from London showed that lower speed limits resulted in a reduction in cyclist injuries. A reduction from 30mph (48kph) to 20mph (32kph) resulted in a 21% reduction in the risk of cyclist injuries: <p>Aldred, R., Goodman, A., Gulliver, J., & Woodcock, J. (2018). Cycling injury risk in London: A case-control study exploring the impact of cycle volumes, motor vehicle volumes, and road characteristics including speed limits. <i>Accident Analysis & Prevention</i>, 117, 75-84.</p> <p>https://www.sciencedirect.com/science/article/pii/S0001457518301076</p> <ul style="list-style-type: none"> In Berlin, the total number of bicycle trips almost quadrupled from 1975–2001 (275% increase); bicycle share increased from 5% of trips in 1990 to 10% in 2007; 38% decline in serious cycling injuries 1992–2006. 3,800 km of residential streets (72% of all roads) are traffic calmed at 30 km/hr or less, including many home zones with 7 km/hr limit. <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. <i>World Transp. Policy Pract.</i>, 13 (3) (2007), pp. 8-57</p> <ul style="list-style-type: none"> In Paris, the bicycle share of trips within City of Paris increased from 1% in 2001 to 2.5% in 2007. During this time they introduced 38 “quartiers verts” (green zones), extensive traffic-calmed areas of the city with speed limits of 30 km/hr or less, car-free zones, narrowed roadways and widened sidewalks, and six “civilized travel corridors” of restricted motor vehicle access. <p>City of Paris, Paris a velo: Le bon plan, La Mairie de Paris, France (2009) Accessible at: http://www.paris.fr/portail/deplacements/Portal.lut?page_id=2&document_type_id=2&document_id=66229&portlet_id=21994.</p> <ul style="list-style-type: none"> In Barcelona, bicycle mode share more than doubled in only two years: 0.75% of trips in 2005 to 1.76% in 2007. During this time they introduced four traffic calmed zones with 30 km/hr speed limits. <p>Romero C. Spicycles in Barcelona, PowerPoint Presentation by City of</p>
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		<p>Barcelona at the Spicycles Conference, Bucharest, Romania, December 2008 (2008). Accessible at: http://spicycles.velo.info/Portals/0/FinalReports/Barcelona_Final_Report.ppt</p> <ul style="list-style-type: none"> In Muenster, Germany, bicycle share of trips increased from 29% in 1982 to 35% in 2001; one serious injury per 1.03 million bicycle trips in 2001. During this time large car-free zones were established in the city centre; almost all residential streets traffic calmed at 30 km/hr, including home zones calmed to 7 km/hr; many contraflow streets created for cyclists. <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
11	Road rule changes	<ul style="list-style-type: none"> Dutch and German traffic laws protect cyclists and put the responsibility for an accident on the car driver. The only exception is when cyclists deliberately and flagrantly disobey traffic laws. <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
12	Vehicle regulations	<ul style="list-style-type: none"> A study from Toronto shows that a variety of vehicle regulations related to trucks have the potential to reduce cyclist deaths and serious injuries. <p>The study determined that mandatory side guards on trucks would likely have prevented 2 of the 4 deaths recorded during the study period and also prevented 14 serious injuries.</p> <p>Issues associated with trucks' blind spots were identified as a contributing factor to a significant proportion of serious incidents involving cyclists:</p> <p>Schuelke-Leech, B. A. (2019). An Investigation of Municipal Truck Size and Safety Guards on Vulnerable Road Users. https://www.toronto.ca/wp-content/uploads/2019/06/87df-TS_VZ_Schuelke-Leech_2019_Municipal_Truck-Safety....pdf</p> <ul style="list-style-type: none"> "In 2016, London mayor Sadiq Khan announced a proposal to make London's roads safer for pedestrians and cyclists by removing the most dangerous lorries from the capital's roads by 2020. Data shows that HGVs were involved in 22.5 per cent of pedestrian fatalities and 58 per cent of cyclist fatalities on London's roads in 2014 and 2015, despite only making up four per cent of the miles driven." <p>The regulation is now implemented: "TFL's Direct Vision Standard (DVS) and safety permit for heavy goods vehicles (HGVs) requires operators of lorries over 12 tonnes gross vehicle weight to obtain a safety permit before entering and operating in most of Greater London. Otherwise, you may receive a Penalty Charge Notice (PCN)."</p> <p>Vehicles with a poor safety rating need to be retrofit with "safe system measures" in order to receive a permit.</p> <p>"To improve indirect vision, and help drivers see near the vehicle: Class V and VI mirrors, A fully operational camera monitoring system, A sensor system with driver alerts.</p> <p>To warn road users of intended manoeuvres: An audible vehicle manoeuvring warning for left turns (or right turns if the vehicle is left-hand drive), Warning signage</p> <p>To minimise the physical impact of a hazard: Side-underrun protection"</p> <p>https://www.london.gov.uk/press-releases/mayoral/new-measures-to-rid-</p>

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		london-of-dangerous-lorries https://tfl.gov.uk/info-for/deliveries-in-london/delivering-safely/direct-vision-in-heavy-goods-vehicles
14	Road speed limit enforcement	<ul style="list-style-type: none"> In Berlin, the total number of bicycle trips almost quadrupled from 1975–2001 (275% increase); bicycle share increased from 5% of trips in 1990 to 10% in 2007; 38% decline in serious cycling injuries 1992–2006. 3,800 km of residential streets (72% of all roads) are traffic calmed at 30 km/hr or less, including many home zones with 7 km/hr limit. <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
15	Driver-cyclist interaction policing	<ul style="list-style-type: none"> In Muenster, Germany, bicycle share of trips increased from 29% in 1982 to 35% in 2001; one serious injury per 1.03 million bicycle trips in 2001. 2% of adult cyclists wear helmets. Traffic police employ a “dual strategy” strictly enforcing cycling regulation (people on bikes running red lights and stop signs etc.) as well as ticketing motorists who endanger people on bikes. <p>Similar approaches are employed in the cities of Berlin, Amsterdam, Groningen.</p> <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany. World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
16	Marketing	<ul style="list-style-type: none"> “Road to Zero is a new activity class in the 2021–24 National Land Transport Programme (NLTP). It is dedicated to investment in safe system responses to risk on our roads. We’ll be investing about \$197 million in national, regional and local road safety promotion and education campaigns supporting Road to Zero programmes. This includes a campaign to raise public awareness of Road to Zero.” <p>It is thought that this campaigning won’t include any initiatives targeting the safety of people on bikes or micromobility.</p> <p>https://www.nzta.govt.nz/planning-and-investment/national-land-transport-programme/2021-24-nltp/activity-classes/road-to-zero/</p>
Policy Recommendations - Influencing travel demand and transport choices		
20	Street and cycle facility design standards	<ul style="list-style-type: none"> The Transport Design Manual dictates how cycling facilities should be designed in Auckland. It is a “is a set of guides, codes and specifications that are specifically created for the Auckland region based on international best practice and robust common engineering theory: Any designs which are proposed that do not meet the standards require approval via the “departure from standards” process. <p>https://at.govt.nz/about-us/manuals-guidelines/transport-design-manual/</p>
22	Road pricing	<ul style="list-style-type: none"> A 2015 study looked at the impact of congestion charging on transport patterns in Stockholm, Sweden. Congestion charging (a cordon) was introduced fully from 2007. Over the course of a 7 year period (during which there was continued investment in cycling infrastructure in addition to the implementation of the congestion charge) bicycle mode share by distance across Stockholm County doubled from 2% to 4% (and from 10% to 19% for trips to / from the city centre). For the same period, car driver distance travelled decreased from 49% to 40% across the county and from 32% to 20% for trips to or from the city centre. It is important to note also, that an increasing share of all trips in the county constitutes entering or exiting the inner city. This occurred for all trip purposes, among

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		<p>residents of all areas of Stockholm County, on work days and weekends and despite the introduction of inner-city road congestion charges in 2006. Thus, the inner city became relatively more attractive for all kinds of activities than the rest of the county. This goes some way to dispel ideas that a congestion charge focused on Auckland city centre could adversely affect the vibrancy / economic activity of the district.</p> <p>Basitjan, A., & Börjesson, M. (2015). The city as a driver of gender equality new mobility patterns, cycling and: Travel behaviour trends in Stockholm 1985-2015. Centre for Transport Studies Stockholm. CTS Working Paper 2017:9. https://ideas.repec.org/p/hhs/ctswps/2017_009.html</p> <ul style="list-style-type: none"> In 2003 a congestion charge was introduced in London. It is applied in the inner city, delimited by the Inner Ring Road. When the charge was introduced, it was stipulated by law that the revenues be reinvested in measures to improve transport in London. Between 2003 and 2014, the scheme generated approximately 1.2 billion. Approximately 5% of the congestion charge revenue was invested in cycling. Traffic entering the original charging zone has remained stable at 27 per cent lower than pre-charging conditions in 2002. This means that nearly 80,000 fewer cars enter the original charging zone each day. Cycling levels in the Congestion Charging zone are also up by 66 per cent since the introduction of the scheme. <p>Haubold, H. (2016). European Cyclists Federation - Congestion Charges and Cycling. https://ecf.com/groups/congestion-charges-and-cycling</p>
23	AT managed car parking: pricing and management	<ul style="list-style-type: none"> A study from Washington DC showed that the provision of free car parking at workplaces was correlated with a 70% lower probability that an employee will cycle to work: <p>Buehler, R. (2012). Determinants of bicycle commuting in the Washington, DC region: The role of bicycle parking, cyclist showers, and free car parking at work. Transportation research part D: Transport and Environment, 17(7), 525-531. https://www.pedbikeinfo.org/cms/downloads/DeterminantsofBicycleCommuting.pdf</p> A study from Cambridge, UK also showed that the provision of free car parking at workplaces was associated with an increased use of private vehicles for commuting to work: <p>Carse, A., Goodman, A., Mackett, R. L., Panter, J., & Ogilvie, D. (2013). The factors influencing car use in a cycle-friendly city: the case of Cambridge. Journal of transport geography, 28, 67-74. https://www.sciencedirect.com/science/article/pii/S0966692312002670</p> Many European cities are deploying a range of innovative parking policies that seek to improve amenity values, through a reduction in car use, improvement in air pollution and better quality of urban life. In Paris, on-street parking supply was reduced by 9% and 95% of the remaining stock is paid parking. Along with other improvements, this has led to a 13% decrease in driving. <p>New Zealand Government (2019) The Congestion Question – Workstream 4 Complementary policy measures</p> In Copenhagen, Denmark, bicycle mode share increased from 25% of trips in 1998 to 38% in 2005 for 40+ age group; 70% increase in total bicycle trips 1970–2006 (36% of work trips in 2006); 60% decline in serious bicycling injuries 1995–2006. During this time, carparking provision has been significantly reduced in the city centre.

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		<p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
24	Prohibit new car parking buildings in specific areas	<ul style="list-style-type: none"> Many European cities are deploying a range of innovative parking policies that seek to improve amenity values, through a reduction in car use, improvement in air pollution and better quality of urban life. In Paris, on-street parking supply was reduced by 9% and 95% of the remaining stock is paid parking. Along with other improvements, this has led to a 13% decrease in driving. <p>(New Zealand Government (2019) The Congestion Question – Workstream 4 Complementary policy measures).</p> <ul style="list-style-type: none"> In Copenhagen, Denmark, bicycle mode share increased from 25% of trips in 1998 to 38% in 2005 for 40+ age group; 70% increase in total bicycle trips 1970–2006 (36% of work trips in 2006); 60% decline in serious bicycling injuries 1995–2006. During this time, carparking provision has been significantly reduced in the city centre. <p>Pucher J., Buehler R. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark, and Germany World Transp. Policy Pract., 13 (3) (2007), pp. 8-57</p>
25	Vehicle taxes	<ul style="list-style-type: none"> The much higher cost of car ownership and use in northern Europe (relative to the United States) encourages bicycling, especially when combined with limited car parking, car-free zones, comprehensive traffic calming, and lower overall speed limits, which reduce the overall convenience and attractiveness of car use. <p>Pucher J., Buehler R. Making cycling irresistible: Lessons from the Netherlands, Denmark, and Germany. Transport Reviews, 28 (4) (2008), pp. 495-528</p>
26	Fuel taxes, Road User Charges	<ul style="list-style-type: none"> A Regional Fuel Tax (RFT) was implemented in Auckland on 1 July 2018 to fund transport projects that would otherwise be delayed or not funded. <p>The RFT applies to petrol and diesel until 31 June 2028. The tax is a maximum of 10 cents per litre plus GST, a total of 11.5 cents per litre. It is paid by fuel distributors when they deliver fuel to service stations and commercial users inside the Auckland region.</p> <p>The projected revenue from the RFT is \$150 million per annum, or \$1.5 billion over the 10-year period, based on current and projected fuel usage adjusted for expected changes such as the take-up of electric vehicles. This leverages a further \$3.0 billion from other revenue sources such as development contributions and NZTA subsidies, meaning that the RFT enables a total of \$4.5 billion expenditure.</p> <p>https://at.govt.nz/about-us/our-role-organisation/corporate-plans-strategies/regional-fuel-tax/</p>
27	Tax reform	<ul style="list-style-type: none"> A Workplace Parking Levy (WPL) is a charge on employers who provide workplace parking, a type of congestion charging scheme that has been introduced in Nottingham. Nottingham City Council has introduced a WPL to tackle problems associated with traffic congestion, by both providing fundings for major transport infrastructure initiatives and by acting as an incentive for employers to manage their workplace parking provision. Money raised from the WPL has helped to fund NET Phase Two (the extensions to the existing tram system), which now carries more than 17m passengers a year, as well as the redevelopment of Nottingham Station. <p>https://www.nottinghamcity.gov.uk/information-for-residents/transport-parking-</p>

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