# Encountering bikelash: Experiences and lessons from New Zealand communities

Adrian Field[a,b,*], Kirsty Wild[b], Alistair Woodward[b], Alexandra Macmillan[c], Hamish Mackie[d]

[a] Dovetail Consulting Ltd, PO Box 78 146, Grey Lynn, Auckland 1245, New Zealand
[b] University of Auckland, Private Bag 92019, Auckland 1142, New Zealand
[c] University of Otago, PO Box 56, Dunedin 9054, New Zealand
[d] Mackie Research and Consulting Ltd, PO Box 106525, Auckland 1143, New Zealand

ABSTRACT

The construction of bike lanes in communities is widely seen as an enabler of cycling, which in turn supports positive outcomes for population health, transport systems and the environment. Yet despite the evidence for their benefits, proposals to change roads to include space for cyclists frequently encounter 'bikelash', the organised opposition to bike lanes. This has had the effect of delaying, preventing and in some cases removing bike lanes in cities. Using case studies in three New Zealand cities, we explore the motivations for, experiences of, responses to, and learning from bikelash. The research is drawn from the narratives of protagonists in local bike lane controversies including community supporters and opponents, and council and transport agency planners. The research supports earlier findings of the role of retailer concerns and conservative dissent, and also highlights the importance of design and engagement in the process. More fundamentally however, bike lanes have a community-wide impact, and challenge existing modal hierarchies and patterns of movement. Their implementation reflects the underlying challenges of a socio-technical transition from automobile dominance towards other forms of transportation. Collectively, these issues make bike lanes vulnerable to community opposition and antipathy, and explain why these relatively minor environmental changes may be substantially more difficult to implement than other more routine road treatments. Countering bikelash requires an understanding of the roles of actors and coalitions at macro (national policy and regulation), meso (city and industry) and micro (community) scales in fostering bike lane development and countering opposition. For city planners, the challenge of bikelash requires committed leadership, design, planning, capacity-building and engagement that moves beyond business as usual processes, builds local coalitions, and aligns with community needs and aspirations for place-making.

## 1. Introduction

Cycling is well-established as an important contributor to the health of communities, and in urban environments bike lanes provide safe spaces that are valued particularly by new cyclists (Buehler and Pucher, 2012; Pucher et al., 2010; Smith et al., 2017).

Efforts to lift rates of cycling have been limited by the lack of appropriate cycling infrastructure (Macmillan and Woodcock, 2017) and urban residents commonly identify dedicated bike lanes as infrastructure that is most likely to encourage them to cycle (Fraser and Lock, 2011; Garrard et al., 2008).

At the same time, bike lane projects are often controversial. Active transport planners commonly report feeling 'surprised' and demoralised by the strength of opposition to many cycle lane projects (Duarte et al., 2014; Lubitow and Miller, 2013; Vreugdenhil and Williams, 2013), indicating that there is a need for greater understanding among practitioners of how to prevent and resolve these conflicts. These conflicts are also often cited as a cause of confusion and "cautious inaction" amongst city leaders presented with new bike lane proposals (Henderson 2013: 126), highlighting the critical role investigations of bikelash can play in supporting the future of active transport programmes.

Like most English-speaking countries, New Zealand is experiencing a revival in interest in the potential of cycling to provide healthier, more sustainable and socially-connected ways of moving through the city. This is occurring after a 30 year decline in cycling, from 8% of the population aged 5 years and over in 1989-90 to 3% in 2011–14, and more marked reduction in children aged 5-12 years (from 20% to 3% over the same period) (Ministry of Transport, 2015). In 2014, the central government introduced a new Urban Cycleways Programme (UCP), with $333 million committed to projects in the main urban centres between 2014 and 2018. This programme was both an opportunity and a challenge for local authorities, who, after a sustained period of underinvestment in cycling, found themselves tasked with rapidly developing the expertise and capacity required to successfully implement large-scale cycle lane projects in a compressed timeframe (CicloCivica Ltd, 2016).

A recent review of the UCP found that a lack of support and expertise to manage the community engagement aspects of these often-controversial and demand-leading projects (i.e. inducing demand for cycling rather than responding to a clear groundswell) was a particular area of concern amongst the active transport practitioners responsible for these projects. Several practitioners expressed concern that a number of "high profile PR disasters", had created a "negative local climate" that threatens future cycle lane projects (Ciclocivica, 2016:7). The report itself identifies "unmanaged bikelash" as a critical threat to sustaining community support for cycling projects in New Zealand (Ciclocivica, 2016:9).

This research explores the causes of and potential solutions to bikelash within a New Zealand context, with reflection on socio-technical transitions from automobile dependence. We believe these issues are relevant to car-dominant cities internationally where attempts are made to lift low levels of cycling. Through case studies in three communities, we provide in-depth empirical research on the causes, experiences and responses to bikelash. We ask: Why did bikelash occur and in particular, What issues appear to trigger conflicts? How do the different protagonists perceive the challenge of bike lanes? What impacts can result from bikelash? And what factors lead to conflicts intensifying, or ultimately help to resolve these disputes? We propose that bikelash has a particular intensity because of disruption to established transport patterns and mode hierarchies. What bike lanes stand for is important, as well as their function. For this reason established forms of public engagement concerning road changes may not be sufficient. Other, more deliberate and proactive approaches may be needed to contain bikelash, or at least ensure progress in cycling development.

In this article we detail the method employed; explore the context of bike lane resistance; discuss experiences and reflections of bikelash; and reflect on implications for policy and planning.

## 2. Method

In this research we explore bike lane conflict in three New Zealand communities, drawing on qualitative interviews with 12 stakeholders. Interviewees were selected for their involvement as supporters of bike lane development, opponents of these developments, or as city council or New Zealand Transport Agency planners involved in the design and construction of bike lanes.

Case study research methodology was employed, drawing on the approaches articulated by Simons (2009). Case studies offer an opportunity to explore and explain particular situations, events or intervention approaches, and to relate them to the considerations for a broader systems and policy (Simons, 2009; Yin, 1994). This is an approach that values multiple perspectives, in their real-life context, and acknowledges the complexity of the issues that are presented. It is an opportunity to explore contested viewpoints, and the process and dynamics of change (Simons, 2009).

Because this research is designed to increase understanding of an area of policy and community activity about which there is little existing knowledge, open-ended, semi-structured qualitative interviews were employed (Clifton and Handy, 2003). Interviews explored such issues as the reasons for individuals' involvement in the project, how the projects unfolded, the perspective people brought to the issue, the consultation processes of local councils for the project, impacts of opposition on bike lanes, and lessons for the future.

The sites, where opposition to bike lanes were experienced, were chosen for their geographic diversity, the variations in the nature of opposition, and the different outcomes that were evident.

Interviews were recorded and transcribed, and sent to all interviewees for checking. Thematic analysis methods (Braun and Clarke, 2006) were adopted to comprehensively and systematically explore and map out emerging themes from the discussions. This followed a process of familiarisation with the interview data; generating initial codes; searching for themes; reviewing and mapping themes; defining and naming themes; and reporting. NVivo was used to aid data management. The findings are reported thematically with excerpts from interview transcripts used to illustrate viewpoints. Quotes are identified as originating from either a community supporter of bike lanes (S), community opponent of bike lanes (O), or council/transport agency staff member (A). Numbers are added to codes (such as A1 or A2) to distinguish between different speakers. Quotes are generally used for illustrative purposes and not all participants were quoted. One participant was willing to participate and for general experiences to be reported, but not to be directly quoted.

**Table 1**
Interviewees by area and interest.

| Area | Interviewees | Coded as | Total interviewees |
| --- | --- | --- | --- |
| Island Bay | Cycle/community advocates supporting lanes (2) | S | 6 |
| | Community lane opponents (2) | O | |
| | Council/agency representatives (2) | A | |
| Devonport-Takapuna | Cycle/community advocate supporting lanes (1) | S | 2 |
| | Council/agency representative (1) | A | |
| South Dunedin | Cycle advocate opposing lanes (1) | O | 4 |
| | Community lane opponent (1) | O | |
| | Council/agency representatives (2) | A | |

Interviews were conducted face to face or via telephone, depending on availability; both formats engendered substantial discussion and almost all interviews lasted at least 60 minutes. All those approached about the study were able to choose not to participate; this was particularly relevant for council interviewees in this research, given the contentious nature of bike lanes in the three case studies. Table 1, below, specifies the number of interviewees, and the perspectives they were representing. In one area (Devonport), only the involvement of a supporter and a retired council staff member could be obtained, despite attempts to engage with opposing interests. In another (Dunedin), all community interviewees outside council were opposed to the lanes as implemented, including cycling interests.

Although the Devonport and South Dunedin examples had fewer interviewees participating than the Island Bay case studies, these have been included as 'mini-case studies' for the complementary insights they reveal on bikelash, which in turn have contributed to a deeper understanding of the issues, than would have been achieved from focusing on a single case study.

For contextual purposes, some news media articles were sourced, particularly where new developments at sites had occurred following completion of interviews; this was particularly relevant to the Island Bay case study.

## 3. Bike lane resistance

'Bikelash', or organised opposition to bike lanes, is a relatively recent and emerging area of study. Its presence has become increasingly noticed as cities have turned to cycling initiatives in response to the multiple challenges of growing populations, constrained vehicle capacity, inactive lifestyles, air pollution and climate change (Wild et al., 2017).

Some researchers, using theories of *socio-technical transitions,* have positioned bike lanes as part of a historical transition away from the dominance of the private automobile, towards other forms of transportation, which is occurring to varying degrees across many cities internationally (Cohen, 2012; Geels, 2005; Geels, 2012; Marletto, 2014). Socio-technical transitions theory understands transport systems as complex and multilevel blendings of elements that include technology, policy, markets, consumer practices, infrastructure, cultural meaning and scientific knowledge (Geels, 2012). This new transition away from automobile dominance to other transport systems, including mass rapid transit and active transport such as walking and cycling, along with new technologies such as electric vehicles and e-bikes, is understood as an evolutionary process that can take decades to unfold, is contested between multiple interests, and involves a wide range of actors and social groups at macro (governmental and societal), meso (service planners and providers) and micro (community advocates and entrepreneurs) scales (Cohen, 2012; Geels, 2012; Marletto, 2014).

Bike lanes fundamentally involve a reallocation of public space, by changing road layouts (often reducing automobile space in the process) to include bike lanes (Cohen, 2012), and from a sociotechnical orientation, mobilises actors including governmental institutions, planners and designers, and community advocates, to form coalitions at multiple levels. It is in this contested space that bikelash can emerge.

For some in the cycling field, bikelash is seen as a positive development, providing an indication that cycling is becoming a phenomenon large enough to be noticed (Goodyear, 2014). However, for many of those involved at the frontline of developing alternatives to automobile travel, bikelash can be a frustrating barrier to progress; at best slowing the development of transport alternatives, and at worst the cause of abandonment and removal of bike lanes in cities (Siemiatycki et al., 2016; Vreugdenhil and Williams, 2013; Walks, 2015).

It is important to note that while changes to the streetscape are commonly a source of irritation to motorists (Spotswood et al., 2015; Vivanco, 2013), seldom is this irritation sufficient to generate organised opposition. Our own review of the causes of bikelash in English-speaking countries concluded that political values, localised economic impacts, the quality of consultation processes, and the history of relationships between communities and local authorities all play important roles in community responses to cycle lane projects (Wild et al., 2017). In this review we traced challenges to the legitimacy of bike lanes to four groups: retailers, conservative voters, residents concerned about gentrification, and marginalised cyclists.

Retailers are often concerned about the economic consequences of a reduction in customer parking spaces (often over-estimating the economic effects) (Crane et al., 2016; Lee and March, 2010; McCormick, 2012), as well as drop off spaces for deliveries (Crane et al., 2016).

Conservative voters tend to be less enthusiastic about neighbourhood change in general; to be less committed to city-led planning projects in general; object especially to projects that have 'redistributive' elements (Graham et al., 2009; Lakoff, 2002); and exhibit a common conservative aversion to cycling as a symbol of 'liberal' social movements such as environmentalism (Sternbergh, 2011;

Walks et al., 2015; Welch and Clark, 2014). Conservative bike lane opponents have been labelled as a disproportionately powerful group of opponents, due to their wealth and readiness to litigate (Bruce, 2015; Henderson, 2013). Some writers, looking more broadly at land use in general, argue conservative opposition to change will often be vigorously argued for a range of expressed reasons, such as safety, the environment or traffic flows; but there exists an underlying real reason that is about opposition to change in the neighbourhood they feel they own (Saint et al., 2009).

Another group of opponents includes those who see bike lanes as a pathway to gentrification, and the further marginalisation of lower income and ethnically diverse communities (Lubitow et al., 2016). Although the relationship between gentrification and bike lanes is complex, both changes may occur simultaneously in a neighbourhood, prompting fears that the lanes will drive up property and rental costs and by weight of market forces, dislocate communities.

Cyclists who are excluded from bike lane planning processes, and feel marginalised as a result, are another group that may challenge bike lanes. Cyclist bikelash appears most likely to occur when riders' knowledge and experience of cycling in a community is ignored in ways that produce bike lanes that make cycling less safe (Duarte et al., 2014).

Strategies to reduce the impact of opposition include actively highlighting the positive economic aspects of bike lanes (McCormick, 2012); trialling temporary lanes that can be progressively refined in response to user experience (Sadik-Khan and Solomonow, 2016); promoting cycling as an everyday activity of local community members (especially to families) to appeal to conservative values and to counter ideas of outsiders (Snyder, 2014); active engagement and collaboration with civic leaders (Deixel, 2014; Snyder, 2014); active leadership at city and national levels on the issue (CicloCivica Ltd, 2016; Sadik-Khan and Solomonow, 2016); addressing issues in city planning that prevent marginalised communities from using bike lanes (Stehlin, 2015); engaging cyclists from marginalised groups in planning processes (Golub et al., 2016; Steinbach et al., 2011); and acknowledging and incorporating cyclists as technical experts in planning (Duarte et al., 2014; Wild et al., 2017).

We have used case study research from three New Zealand communities to explore how groups involved in conflicts understand the causes and solutions of bikelash. From a socio-technical transitions perspective, this research is important because it examines the experience and motivators of bikelash from the outlooks of the three key parties involved in a conflict: supporters, opponents and council planners; in so doing, it builds understanding of potential directions for future bike lane development.

We posit that bikelash is most likely to occur at the implementation phase, often apparently without warning and in spite of the depth of consultation that may have preceded lane works. In addition to the established drivers of opposition already noted, we propose that design can be both a driver in itself and a factor that is vulnerable to over-inflation. The quality, style and focus of engagement, rather than simply the extent of engagement, pose both challenges and opportunities for bike lane development.

## 4. Case study narratives

In this section, we explore the triggers, responses and impacts of the bikelash encounters in each site. All cases followed well-established council processes of notification, consultation, design, refinement of designs (with further community consultation), decision-making, and construction. In all three, opposition only became manifest as designs were well advanced and in two cases, following some construction. We describe here how bikelash unfolded at each site, followed by a synthesis of reflections by interviewees.

### 4.1. Island Bay

Island Bay is a suburb in the south of Wellington, with a population of some 8400. The area is mostly European (80%), with 8% Māori, 5% Pacific and the remainder other ethnicities, and the area has a relatively low deprivation profile (.id Ltd, 2018). The area is generally left-leaning, returning Labour Party candidates in general elections, and local councillors from the Green and Labour parties. A separated bike lane was developed over 2014–2016 over a two-kilometre stretch of the main road running through the suburb. This was intended to be the first development on a route from the southern suburbs to the city. The new lanes, placed between parked cars and the pavement on each side of the road, replaced an existing painted lane that ran between parked cars and traffic. The new lane was agreed by council by a bare one-vote majority and built despite opposition from some members of the community.

The new bike lanes created a level of disruption to established patterns of transport. This included moving a local bus stop, loss of some parking, and access issues. The timing of one aspect of development over the Christmas period was widely believed by opponents to have a negative impact on businesses.

As with other case studies, the design of the lanes was a touchpoint for dissent, and one on which supporters and opponents had some common ground. If undertaken cheaply or haphazardly, poorly developed bike lanes can create a sense of clutter and confusion.

*We had a beautiful big wide parade which people were proud of, now it's just a mine field. It's just visual clutter everywhere and two buses can no longer pass on the parade. (O4)*

*So, when you're travelling along there at night, you can kind of see these ghost road markings. They look really ugly and every time you're there, it's kind of rubbing salt in the wounds that Council doesn't care about this, they've done a crap job (S2)*

A perceived lack of meaningful consultation was raised by opponents, with a view that council staff had predetermined the outcome of the process.

*What was called 'consultation' which wasn't because it was already preordained what they were going to do. They would have an open little*

*forum where you could go and they would have all the designs of the new proposed cycleway. Anyone who didn't like it or raised a concern about it, Council staff would walk away and not answer their questions (O4)*

The Island Bay case study highlights a high degree of suspicion among both supporters and opponents of the political motivators for, and responses to, the bike lanes. The selection was seen by some opponents to be based on the preferences of the Wellington mayor, herself an Island Bay resident and keen cyclist. On the other hand, the emergence of two local city councillors in opposition to the bike lanes reinforced the positions of opponents to the bike lanes, and gave supporters a sense that they weren't getting a fair hearing locally.

A narrative also emerged that bike lane supporters were from outside the area, and their wishes had been imposed without recourse to the views of local residents. Bike lane advocates spoke of the effectiveness of marginalisation or 'otherness' with which opponents portrayed supporters as being, either as from outside the area or simply as bike 'advocates' or 'cyclists', who were somehow different to residents.

*The way the opposition has kind of engaged in the 'othering' of anyone who supports the cycleway. So, it's like we're not really residents of Island Bay, we're just consistently referred to as cyclists or cycle advocates (S3)*

Local voices in support of the lanes were backed by regional cycle advocates. However, this may have had the unintended effect of playing to the outsider positioning of bike lane opponents.

Opponents of the lane, through the local residents' association, conducted an opinion poll, which they claimed showed almost 90 percent of residents were opposed to the bike lanes. The residents' poll in Island Bay was challenged by lane supporters, for conflating the opposition to the lanes into one single category (rather than opposition in general, or to the specific design of the intervention), and for the voices that were excluded from the poll, particularly those of school children.

In response to community concerns, changes were made at regular intervals to the designs ahead of construction. These changes were not always well-received, where for supporters, the changes were thought to reduce the level of utility of the bike lanes; and for some opponents, anything other than abandonment was simply viewed as not listening to the community.

The strength of opposition and support created highly polarised camps. Supporters and opponents both spoke of being vilified for their positions. For council staff as well, the process was often highly stressful and well beyond that expected by the scale of construction. All council and community interviewees devoted considerable time to their roles, and there was a common theme that the project was very stressful and affected them personally.

Island Bay was notable because the scale of debate led to a major community redesign engagement process, in which both supporters and opponents of the lanes took part. This was intended as a visioning exercise in which the wider aspirations of the community could be reflected in a new set of designs. For opponents of bike lanes, there were high expectations of this process that the community would decide what would be the final design. Supporters of lanes were more cautious however.

The process led council to put forward four options, none of which included removal; this was a further cause of anger among opponents. Subsequent decisions of council, at the instigation of the mayor, led to a fifth option of kerbside designs being formally adopted by council in 2017. This was supported by almost all councillors, including a local councillor who had been in opposition through much of the process. For the supporters, this was a seen as a major victory, as it not only retained the lanes but extended them to include the shopping area (previously excluded). At the time of writing, completion of the new lanes was expected in 2019.

Speculation as to the reasons for the opposing local councillor switching to support for the lanes centred on his candidacy for the general election and a wish to put the bike lane issue to rest. In the 2017 general election, the councillor was elected as a Labour Party Member of Parliament, and a by-election was held to refill the council seat. The leader of the residents' association stood in the by-election, but finished third behind candidates from the Labour and Green parties. This still did not conclude the issue, as at the time of writing the residents association indicated it would seek a judicial review of the council's bike lane decision (Devlin, 2018).

### 4.2. Devonport-Takapuna

The Devonport lanes were developed from 2008 to 2010 under the previous North Shore City Council administration (before amalgamation into the single Auckland Council in 2010), connecting two suburbs, Devonport and Takapuna. The two areas are relatively wealthy, and had a combined population in 2006 of approximately 52,000. The area is 75% European, and a further 20% identify as Asian, and scores highly on a range of socio-economic markers (StatsNZ, 2018a, 2018b). In parliamentary elections, the area regularly returns National Party (conservative) candidates, but the area has a history of often returning a mixture of progressive and conservative candidates in local elections, where candidates often stand without party affiliations.

The bike lanes at the centre of this mini-case study were simple painted lanes running 5km along the main connecting road between the two suburbs. The design and development of the lanes proceeded relatively smoothly, and had reached an advanced stage before vocal but informal opposition emerged with regard to loss of parking and perceived impacts on traffic flow.

*We sort of thought we were there really, until the sort of penny dropped as to how it was going to affect traffic, and then sort of all hell broke loose, and there were a few people who really made it their mission in life to bring this thing down (A3)*

The installation of bike lanes was seen by opponents to lose an additional potential traffic lane; from the council's perspective, it was a case of the vehicle space being narrowed, as there was never the road space for an extra lane.

*Traffic was using what was marked as a single lane as an informal two lanes. There wasn't really room for two lanes as you went through there… Our argument always was, that we weren't actually taking any road space that wasn't there already. The opposition people said*

*you're taking a metre and a half on each side of the road, which should be used for traffic, and we said well it's not going to make any difference in terms of the capacity. (A3)*

The lanes did remove parking but this was not thought to be a substantial issue because the road was the main connector route between Devonport and Takapuna; it was however a common issue raised by opponents. The loss of parking was a particular issue for businesses, and this was factored into the designs so that the bike lane was interrupted at key shopping intersections.

*You can't just take the livelihoods involved in a commercial aspect of it, you couldn't take the parking out there (A3)*

But from cycle advocates' perspectives, this meant a loss of lanes "where they were most needed." (S1).

A further aspect of the development was the installation of a flush median (a strip in the centre of the road that provides a place for vehicles that are turning from or into side roads or driveways). This was seen by some as essential to enable emergency services and to allow turning without slowing traffic. This contributed to the narrowness of the vehicle lanes, but was overlooked by opponents.

*So, the road diet [reduction in the effective width of the road] occurred to create a flush median on the road so that people could pullover clear of the moving lane of traffic… Most people in the public would never know that was an issue that they actually did benefit from this project… [Without the flush median] it meant that ambulance and fire engines couldn't get to Devonport. (S1)*

The controversy lasted some two years before the lanes were completed. Throughout, the planning team continued to refine designs and engage with councillors and the (then) community board. Local cycling advocates became strongly involved to support their development. The scale of opposition was such that the then North Shore City Council was looking to back away from bike lanes altogether:

*The Council which at that time was proposing to completely delete its cycling budget, we had a very different political environment back then, the Council backed away from the project entirely, and there was a strong local petition to remove the cycle lanes because the cycle lanes were said to be causing traffic congestion. (S1)*

This case study also pointed to entrenched conservative opposition that will consistently oppose bike lanes regardless of the design. This emerges from a deep-seated suspicion of the civic role of council and a determination to oppose what can be seen as progressive change.

*They're a funny group the haters. They're sort of very right-wing people in Auckland who hate Auckland Council, hate public spending and they're kind of old guard. They have a very limited view of what the civic role of the Council is (S1)*

Despite opposition, the bike lane was implemented and at the time of writing, remains in place. Two key factors appear to have supported the lanes' construction and retention. One, in advance of construction, was a local intermediate school, with a high presence of cycling among its students, and providing safe routes to the school was influential in decision-making.

*Belmont Intermediate School and that at the time was far and away the biggest, they put cycle sheds back in the school and there was a huge percentage… it was bigger than anywhere else in New Zealand, so that was quite a driving influence (A3)*

The second factor was once construction was completed, council staff were able to use bus traffic data to point to negligible impact on bus speeds, and therefore wider traffic flows.

*We were fortunate in that the bus company had their facility where you knew where the bus was at any particular moment in time… We looked at bus travel times before we put it in, and then we looked at the bus travel times after we put it in, and we found out there was an insignificant change to that. That was huge, the opposing people just didn't want to acknowledge that at all. (A3)*

The experience did have longer-term impacts, in terms of a chilling effect on future lane developments by council, which backed away from one in a nearby suburb. Bike lane development in the wider area did not gain substantial momentum until the amalgamation under the single Auckland Council, and the injection of national-level funding to lane development.

## 4.3. South Dunedin

The South Dunedin Cycle Network project was intended as a connecting network of lanes through the southern area to the centre of the small city of Dunedin (population 120,000), through relatively low income and industrial areas, and was built between 2013 and 2016. The network was planned to be the first stage in a city-wide cycling infrastructure plan. A range of different kinds of infrastructure on local and main roads was constructed, followed by the partial removal of some infrastructure with "poor implementation" being given as the reason by the local council.

South Dunedin is an inner-city suburb with a population of some 2500 (Statistics New Zealand, 2018b), but is also a term used to describe a wider area, including several other surrounding suburbs (usually St Kilda, Forbury, Kensington, Musselburgh and Tahuna) with similar demographics and housing. These suburbs are characterised by relative poverty, including some of the city's neighbourhoods with the highest area-level socio-economic deprivation and a high proportion of people living in low-cost, poor quality private rental housing. Because the area is relatively flat reclaimed land, with low cost housing, the area has a higher than Dunedin average proportion of older people (nearly a third) and Māori (13% in the suburb of South Dunedin). However, like the rest of Dunedin, the population is dominated by people of NZ European ethnicities (over 80%). The area is politically left leaning, returning

a Labour candidate in the last three elections and voting for Labour local body politicians.

The principal factor that united opposition from multiple interests, including cyclists was the quality of the design and construction. Examples included the circuitous route the lanes took through back streets; the lack of consideration for routes that offered greater cycling uptake; and confusing layout where some construction appeared half-finished.

*[Council decided] we're just going to close off half the road. Now this is really confusing for people, you turn onto the street and you see this empty street (O3)*

*The traffic volumes are super low, we would rather focus on few routes and do them to a much higher standard (O3)*

*Some of these quiet street routes were really zigzaggy, and avoided the main streets (O3)*

Perceptions of safety were also raised as design flaws. For example, a proposal to create a shared space with pedestrians was widely opposed because of the heavy pedestrian traffic on the street.

Loss of access for traffic, such as heavy trucks or delivery drivers, was raised by some opponents, particularly for its commercial impacts, and fears about access by emergency services.

*[We] got involved because the land owners were starting to push back and say "I couldn't get heavy trucks in", and the residents couldn't get in, and there was this half-finished project (O1)*

A factor behind these design shortfalls was seen to be a lack of design capacity within council, acknowledged by both community and council/agency interviewees. At the same time, some opponents criticised external consultants for the perceived commercial imperatives that drive their work, and for the perceived lack of local knowledge to offer robust design solutions.

*I think they need to really train up their in-house expertise to begin with, they need to reduce their reliance on these consultants (O3)*

Compounding the design flaws was a sense that these were developed in isolation from community input, even though statutory processes of consultation with communities were followed. Some initial construction took place, but the scale of opposition from multiple parts of the community, including cycling advocates, led to removal and/or retrofitting of some bike lanes (Borley, 2015) and a redesign process from 2016.

### 4.4. Reflections from participants

Table 2 below sets out the key oppositional issues raised in each of the case studies. Each site had its own issues, with disruption and change in different forms (such as parking, access and perceptions of traffic flow) being the most common issues raised. Design flaws were also commonly discussed across at least two sites and perceived safety issues. It suggests that an aversion to change is a key underlying factor, around which other issues, such as real or perceived design flaws, safety issues and consultative processes are often argued. The sections below draw out the reflections from participants on learning from the bike lane developments. (Table 2).

#### 4.4.1. Building resilience

Participant feedback indicates that bike lanes are qualitatively different to usual public works, and therefore, standard engagement and decision-making practices may not be fit for purpose. A clear theme from all stakeholders was the value of building resilience in the overall process, so that when opposition does arise, it is less disruptive and appropriate responses can be navigated more easily. Features of building resilience include constructive dialogue with communities from the outset, in a way that enables people to have a clear sense of the problems and the options available; and parallel to this, regular engagement of decision-makers in the design and construction process, aiming to achieve agreement on the nature of the issue and the feasible options.

Ownership by senior leaders of the challenges are further components of building resilience. In at least two case studies, council leadership took ownership of the issue at a senior level and were prepared to revisit processes and designs that better met the needs of the community.

At the local level, there was seen to be value in dialogue with likely local users of the bike lanes in the early stage designs to understand the user experience. In the process, this can build valuable coalitions for taking the works programme forward.

**Table 2**

Summary of key oppositional issues raised in case studies.

| Island Bay | Devonport-Takapuna | South Dunedin |
|---|---|---|
| Disruption to established patterns (e.g. loss of parking, bus stop shifts) | Disruption to established patterns (e.g. loss of parking) | Design flaws |
| Access to shops and services | Impacts on traffic flow | Route selection |
| Design flaws | Conservative opposition to change | Access to shops and services |
| | | Safety perceptions |
| Safety perceptions | | Consultative process |
| Consultative process | | |
| Perceived imposition from outside interests | | |
| Impacts on traffic flow | | |

Ensuring that support from local members of the community is broadcast effectively is important. Input from young people and families, especially, strengthens the case of bike lanes.

*Get some local voices in there… Your mums, your business owners, people who live in the suburb, so councillors can see a demonstrated support from local people so it's harder to paint this as "the suburb doesn't want it." (S2)*

For local advocates, having a social media and internet presence is a useful focal point for discussion and activity, and sends an important public signal that there are rallying points, for both support and opposition.

### 4.4.2. Quality design

Some participants pointed to the importance of good design, that is based on best practice and which enhances the overall amenity value. In particular, they argued, route selection, and the design of interventions, should be based on need, rather than the ease of construction. The selection of routes in two of the case studies was apparently influenced by the desire for 'quick wins' rather than suitability, such as the best design, servicing the largest populations and maximising future cycling uptake. The case for bike lanes is stronger if proposals fit with high-impact routes that create clear and legible cycling connections (such as key arterials or routes to school). Safety was flagged as a salient issue in all case studies; proposals carry more weight if routes and designs maximise safety benefits for all users, and if there is clear evidence of injury risks and gains in safety.

A related issue was the relative infancy of bike lane design guidance in New Zealand; this meant that designers had to draw on overseas ideas and apply them in a local context. National-level guidance was first made available in 2016 in draft form, well after the three projects were initiated (New Zealand Transport Agency, 2016).

### 4.4.3. Bike lanes or street transformation?

In light of the bikelash experience, some agency and council interviewees asked whether bike lanes should be positioned in the public eye solely as bike lanes, or if they should be framed as part of a larger package of street and network improvements. The second option is appealing because it may be easier to argue the benefits to the community through a range of amenity values. The 'big picture' view emphasises network choice, and the attendant benefits of reduced travel time for those that use vehicles.

However, the marketing of 'street upgrades' contingent on the promise of amenity value, network choice and travel times has some risks. This approach may raise expectations that are not satisfied by the final product; as this research has shown, communities are quick to see when an offering is below standard. The ability to deliver on the promise of streetscape transformation is highly budget dependent.

*Ultimately and looking at best practice around the world, the level of investment in the infrastructure to create those separated bike lanes comes with a rethink and a redo of how you do your storm water, where you'd put tree planting, overhead cables etc, etc. It becomes a full street transformation. The budget and the timing did not allow that end outcome (A4)*

## 5. Discussion

Bike lanes mean re-prioritising road hierarchies. Bike lanes acknowledge the needs of cyclists, but in a limited space this often means there is less room for other road users or, at least, other road users feel that there is less room. Consequently, a long-established order of urban planning that prioritises motor vehicles is challenged. As such, bike lanes are not business as usual interventions, but a socio-technical disruption; they bring together a range of policy, regulatory and design elements that confront existing power dynamics and values, and in turn mobilise a range of competing interests.

Bike lanes have community-wide impacts that are felt more widely than many conventional road works. They are often constructed when the number of cyclists on local routes is small, and in the anticipation of cyclists' arrival once lanes have been installed. As these factors come together, what at the outset was commonly seen as a straightforward construction project assumes substantial community importance and becomes a lightning rod for opposition that is often far more intense than with other local road works. As shown in this research, regardless of the final outcome of any particular bike lane development, the level of opposition can sometimes create wariness towards future lane construction.

This research echoes many of the findings to date in the literature, by highlighting the conservative values that can underpin resistance to change, although they are often not the only factor motivating opposition. Opposition is often expressed in terms of the loss of parking and disruption; the concern of impact on businesses; and to some extent, the concerns of marginalised cyclists. These case studies did not follow a gentrification theme, but they do indicate a sense of resentment towards perceived outsiders who disrupt existing patterns.

The research also provides an important insight around the importance of design as a factor that is vulnerable to over-inflation by opponents, but also a key risk in itself. How lanes are designed, and the quality of the overall streetscape that is left in their wake, can make a big difference to how a community responds. Our findings suggest that the quality of overall street design, as much as the functionality of the changes, are critical considerations. If the result is a functional set of bike lanes that are unsightly and devalue the amenity value of the urban environment, residents are more likely to resent the intrusion.

We believe it is important to acknowledge what bike lanes mean to the politics of the road. This is a social challenge as much as a technical puzzle, and therefore requires a multi-level strategy that mobilises actors and coalitions at the macro (national governmental and policy), meso (city planning, design/construction and regional advocacy), and micro (community) scales, to build resilience and legitimacy at different stages of bike lane planning and development.

**Table 3**

Multi-level framework for building bike lane support.

| Actors | Concept | Planning/design | Construction | Use |
|---|---|---|---|---|
| Macro (national policy and advocacy) | Supportive policy, regulatory, funding and business case settings<br>Social marketing to build social licence<br><br>Monitoring frameworks | National design guidance | Reinforcement of key messages | Monitoring uptake and safety<br>Organisational incentives for biking to work<br>Showcasing success |
| Meso (city, regional advocacy and industry) | Identifying key areas of bike lane need<br>Aligning bike lane priorities with wider street upgrade programmes and budgets<br><br>Engaging leadership (elected and organisational)<br>Building capacity in staff to respond to common objections | Engaging with communities on key issues and enablers for lanes<br><br>Iterative design and testing in situ<br><br>Building local coalitions | Mobilising council leadership to support development<br><br>Leadership support to frontline teams<br>Engaging construction teams as partners in community liaison | Maintenance of facilities<br><br>Monitoring uptake and safety<br>Showcasing success<br>Organisational incentives for biking to work |
| Micro (community advocacy) | Advocating for need | Participating in design and planning processes<br>Identifying and engaging with local allies (e.g. businesses, schools, families)<br>Activating traditional and social media | Maintaining dialogue on need and ongoing improvements<br>Communicating whole-of-community benefits | Showcasing community benefits |

National governments can build strategy and policy, funding and business case frameworks to support bike infrastructure; and instigate actions/campaigns that support a social licence for cycling and associated facilities (CicloCivica Ltd, 2016). The latter would have an important role in building a national 'why' platform for bike lanes, rather than moving simply to 'how' they can be developed, and in so doing build wider acceptance that supports the activities at city levels.

City level actors can work at both the regional/city level and community levels, alongside potential allies within communities, commerce and industry to build the case for cycling; test and adapting lane designs within communities to meet practical concerns; equip council staff and leadership with evidence, tools and responses for dealing with common objections; support frontline staff in the process; and showcase completed lanes with their local uptake and benefits. These require a level of capacity building in engaging with the media, communicating data and evidence, and working with communities in ways that extend well beyond the technical specifications of the planned works, but in the value of the interventions themselves.

For community level actors, actions can include mobilising local voices of support, particularly families and children; participating in planning processes; and maintaining a focus on the benefits for the community at large. These themes are developed further in Table 3, with reference to key stages of bike lane development.

If bike lanes are not simply a business as usual intervention, then the process of engaging with communities on bike lanes should similarly be explored from outside a business as usual approach. This means highlighting the wider community, economic and business impacts, alongside building local coalitions to give support to the process. We note that cities in other countries employ design, testing and adaptation of temporary bike lanes in situ. This approach has not been followed in New Zealand, due to concerns about risk and the cost of 'double handing' of design and construction. However, a nimble, light-handed iterative process may provide opportunities to refine designs with direct community involvement, and build familiarity and comfort in the community with road changes, leading eventually to better-accepted and more-effective bike lanes.

This research also highlights the contested nature of evidence and the limits of evidence itself in swaying opinion and decision-making. At the same time, there is an apparent theme of entrenched opposition to bike lanes in any form and regardless of the strength of public engagement or design. This stems from deeply held values about minimising the role of central and local government, the primacy of the private automobile, and aversion to socially progressive policy and planning. Therefore, alongside high-quality street design, there is a need to proactively challenge the over-inflation that occurs by some interest groups. The international literature and our earlier research indicates that countering this requires a proactive media strategy to counter opposition narratives, and to appeal to a broad set of community values that are less open to disagreement (Wild et al., 2017). Tackling directly these values and aspirations may help build legitimacy for bike lanes as a valid part of community infrastructure. Examples of a values-oriented approach include emphasising the transport choices that lanes provide, the benefits to business, the safety of young children getting to school, and the contribution to the vitality of the community. An approach that looks to align with the wider aspirations of the community, highlights the overall benefits to the community, and actively enlists local input to the designs, may be less likely to provoke local opposition.

This study has outlined possible routes for successful development and communication of bike lanes in the future. An important vein of future research will be exploration of how such approaches have succeeded with the 'middle ground' of community members who are uncommitted, or can be persuaded in either support or opposition to future bike lane development.

# 6. Conclusions

Bike lanes pose unique socio-technical challenges to local planners – it should be no surprise that these initiatives are frequently more difficult to implement than standard road treatments. Community opposition may delay or prevent implementation, but ultimately, bikelash does not necessarily mean defeat. Carefully planned and tailored engagement, robust design, judicious use of data to answer speculation, attention to wider street network benefits, and active leadership, are tools that may be employed to achieve road improvements for all users.

The physical, social and political disruptions caused by introduction of bike lanes mean that opposition is inevitable, particularly in places where these facilities are most needed (i.e. cities in which cycling is uncommon). On the basis of the case studies presented, we argue that actions are needed at national, city and community levels to reduce the intensity and impact of bikelash. Since bike lanes disrupt established modalities and hierarchies, it is likely that a focus solely on local-level community engagement processes in transport authorities will be insufficient.

## Conflict of interest

The authors report that they have no conflicts of interest.

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