NZTA research summary October 2024

How on-street parking affects our road safety

Is on-street parking reducing our travel options and risking our safety?

In the last 100 years much has changed about New Zealand roads and how they're used. Many urban streets have been designed for driving and parking private vehicles. This affects a street's look and feel and people's experiences when travelling by other modes such as walking or cycling.

On-street parking has a role in some street environments, but it can also pose risks to people's safety. Making it safe is challenging when road space is limited and where housing doesn't provide on-site parking.

To encourage a variety of safe travel modes, we need to allocate limited road space differently. Sometimes on-street parking is removed when other uses take priority (which may have been flagged in a parking management policy or strategy). However, if the public resists these changes and on-street parking is kept or not ideal, it may reduce road users' safety. Likewise, if a parking management policy or strategy determines that parking is to be provided, then its design needs to consider safety outcomes.

NZ TRANSPORT AGENCY WAKA KOTAHI
Te Kāwanatanga o Aotearoa New Zealand Government

Why do we need this research?

This study addresses our need for more specific and complete data on how on-street parking affects people's safety and choice of modes, and how to improve them. In addition to considering deaths and serious injuries (DSIs), the research also recognised that minor injuries and perceived safety and inconvenience issues (eg, a parked car blocking a footpath) can discourage people from choosing other modes.

How was the research done?

The researchers reviewed New Zealand and international research on the links between safety, multiple travel modes and parking, and noted safer approaches. They also reviewed Crash Analysis System (CAS) data focused on DSIs.

Then they looked at the benefits and burdens of different parking layouts on New Zealand streets, possible improvements, and ways to reduce risk. They also provided real-life case studies of how road space was allocated and how it affected road design and safety outcomes.

What did the research find?

CAS data show 14,030 crashes involving parked or parking cars between 2017 and 2021.

- This is 7.7% of all reported urban crashes and 2.5% of all DSIs during these five years. The parking-related DSIs included nine fatal crashes and 286 serious injury crashes.
- Most DSI parking crashes were vehicle (including motorcycles and bicycles) crashes with parked cars. Many were from loss of control, difficulty seeing (sunstrike or fog), or distracted driving. Some were from the driver becoming unwell or falling asleep.
- Vulnerable road users (pedestrians, cyclists and motorcyclists) had almost half of all DSIs from parking-related crashes, with cyclist DSIs the highest.
- Bus-related crashes usually involved parked buses rather than parked cars.

Changing how streets are managed and designed could help to prevent DSIs caused by:

- car doors opening into cyclist paths (a key risk for cyclists)
- cyclists hitting parked cars
- pedestrians crossing the road from the driver's left side and getting hit because visibility is obscured by parked cars.

Safety isn't the only thing that affects people's choice of mode.

- Illegal parking near or on cycle lanes and footpaths can discourage people (particularly those with mobility impairments) from using them.
- Cyclists feel less safe riding where there are parked cars, even if there's a cycle lane. This can discourage people from cycling.
- On-street parking may prevent buses from pulling into a stop parallel with the kerb. The increased gap between the bus door and footpath makes it harder for passengers to enter and exit the bus safely.

Street design for safety and mode choices

There are various ways to provide parking within a street. Each has benefits and burdens, depending on the context. Parking layout decisions need to consider:

- the role of the street
- speed management
- traffic characteristics
- space available
- external factors.

Good street design and safe and appropriate speed limits can reduce crashes and the severity of injuries. The researchers' findings support this and show that safe and appropriate speed limits can also improve the safety of on-street parking.

In several case studies the initial designs removed some on-street parking for cycling space, but business owners worried about how it might reduce their business. Usually some of the parking spaces were then added back in, potentially reducing road-user safety.

It's common for stakeholders to influence road safety and mode choice. No matter how much information decision makers have, the design can be overridden by others – even despite road safety audits raising serious or significant safety issues.

Changes to law could give authorities more control over what's approved for construction. All street design projects should use the Safe System audit, which shows up any serious parking-related safety issues. Authorities can refer to the audit if stakeholders lobby for an unsafe design. And all involved should take the findings seriously, particularly the decision makers.

Recommendations

The researchers recommend changes to regulations, driver behaviour, safety campaigns, design guidance and crash data collection. This will help address parking-related safety issues and give more choice of transport modes. The recommendations include:

- investigating a potential legal requirement for a Safe System audit of proposed road designs
- increasing fines for illegal parking that decreases safety, to influence drivers' decisions about how and where to park
- improving visibility by reviewing the legal distance for parking either side of intersections, driveways and pedestrian crossings
- updating the range of guidance publications to reflect this study's findings on parking design and safety outcomes for all road users
- requiring district plans and codes of practice to ensure new roads consider enough space for all modes, including parking (if provided)
- promoting left-hand ('Dutch Reach') opening of the driver's door (already in the Road Code), through publicity campaigns, and adding it to the defensive driving course and driver licensing process
- ensuring that awareness of car door opening risks, and the safest position when riding in cycle lanes and shared traffic lanes, are included in cycle skills training
- informing transport practitioners, urban and street designers, and landscape architects of this research and the design recommendations, as updating legal requirements and guidance documents will take time
- ensuring CAS data fields record the type of vehicle, which could influence the crash cause
- separating ACC claims data between on-street and off-street parking-related accidents (currently there is no separation).

RR 711: The road safety and multi-modal impacts of on-street parking, NZ Transport Agency Waka Kotahi research report. Available at **www.nzta.govt.nz/resources/research/reports/711**