DUNEDIN CITY COUNCIL
Kaunihera-a-rohe o Otepoti

50 The Octagon, PO Box 5045, Moray Place
Dunedin 9058, New Zealand
Telephone: 03 477 4000, Fax: 03 474 3594
Email: dcc@dcc.govt.nz
www.dunedin.govt.nz

Proposed Trial of Sharrow Markings

Application form

March 2014

Outline of Issues

Introduction

Dunedin City Council (DCC) is implementing a Strategic Cycle Network for central Dunedin. Cycle routes in South Dunedin have been prioritised. The currently planned network consists of shared paths, separated bicycle facilities, on-road cycle lanes and Quiet Streets. DCC is seeking appropriate additional treatment to support and encourage safer cycling on Dunedin's roads.

Proposed traffic control device

The traffic control device proposed for trial is the shared lane marking generally referred to in New Zealand and internationally as a 'sharrow marking'.

The purpose of a sharrow marking is to indicate a shared lane environment for cyclists and motorists. Sharrow markings offer the unique potential to encourage cyclists to 'own the lane' and travel within the general traffic lane. Sharrow markings also help to position cyclists on the street, clear of hazards such as car doors, kerb build outs and storm water grates (see Appendix).

Sharrow markings offer the added advantage of informing drivers that cyclists are likely to be travelling on the route and reminding them to act accordingly.

Photomontage of Proposed Sharrow Marking
(source: Trial of Sharrow Markings application report, Auckland Transport (2013)

Problem to overcome

Road safety is a major challenge in Dunedin. Urban cycling infrastructure is currently very limited in the city and cycling is not always seen as a legitimate part of the integrated network. This affects the quality and quantity of cycling in Dunedin.

Dunedin is over-represented in road safety risk statistics. For overall road safety risk, NZTA's Communities at Risk Register (C@R) ranks Dunedin as having seventh highest risk out of New Zealand's 67 TAs and unitary authorities in 2013. Dunedin's overall risk level is the highest of all the major urban centres in New Zealand.

Communities at Risk Register Dunedin's national risk ranking in 2013	
Safer Journeys area of concern	***Dunedin's risk ranking out of the 67 TAs and unitary councils in New Zealand***
Intersections	Highest risk
Young drivers	2nd highest risk
Older road users	3rd highest risk
Motorcyclists	3rd highest risk
Pedestrians	3rd highest risk
Cyclists	5th highest risk
OVERALL RISK RANKING	7th highest of 67

Table 1. Dunedin's risk ranking for each Safer Journeys areas of concern, relative to the rest of New Zealand.

Sharrow marking would provide an additional 'tool' to help in the design of cycle infrastructure, increasing the visibility to motorists that the carriageway is a valid place for cyclists to travel, improving safety and potentially helping cyclists feel they belong on the network.

Proposed trial locations

There are five trial sites being proposed for the sharrow marking trial in Dunedin (see Appendix).

Sites 1 – 3: South Dunedin Cycle Network

The South Dunedin Quiet Street sites have been selected to help understand the benefits of sharrow markings in low traffic residential environments independent of and alongside traffic calming measures.

Quiet Streets are a key part of the South Dunedin Cycle Network, with the prospect of sharrow markings providing a valuable addition to the infrastructure offer - communicating that a Quiet Street is a different, shared environment and helping with wayfinding through the South Dunedin Cycle Network.

Site 1	New Street	proposed Quiet Street within South Dunedin Cycle Network	alongside traffic calming
Site 2	Bellona Street	proposed Quiet Street within South Dunedin Cycle Network	alongside traffic calming
Site 3	Tedder Street	proposed Quiet Street within South Dunedin Cycle Network	alongside traffic calming

Sites 4 & 5: George Street and King Edward Street

The George Street and King Edward Street sites have been selected to help understand the benefits of sharrow markings in a slow traffic commercial environment.

The proposed trial sites are known cycle routes and will be formalised into Dunedin's Strategic Cycle Network.

Time frames

Sharrow markings will be installed at the trial sites for six months. Subject to acceptance of this application, sharrow markings are proposed to be implemented at the trial sites in May 2014, with assessment undertaken in November 2014. Cycle counts and road user assessments will be undertaken on commencement of the trial and throughout the trial period.

Trial Phase	Time frame
NZTA Traffic Control Device Steering Group signs off trial	12th March
Consultation/education with interested parties	April to May
Cycle and road user counts/assessment	April to May
Install sharrow markings and commence trial	May
Cycle and road user counts/assessment	June
Implement Quiet Street traffic calming measures (site 1 and 2)	June - September
Cycle and road user counts/assessment	November
Report trial results	December

This time frame aligns with the Auckland trial, with results supporting an application for rule change in the 2015 Rules programme.

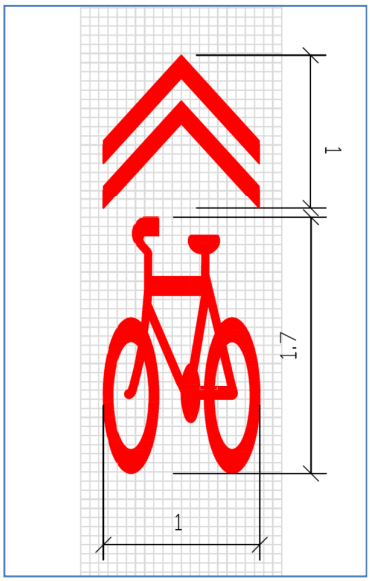
Development background

This trial has been developed to align with the Auckland trial. Implementation of the first stage of Dunedin's Strategic Cycle Network presents an opportunity to trial sharrow markings on a 'clean slate'. The South Dunedin Cycle Network is the first stage of a Strategic Cycle Network for central Dunedin. The currently planned network consists of shared paths, separated bicycle facilities, on-road cycle lanes and Quiet Streets. Quiet Streets include traffic calming measures such as narrowing of the entry/exits of streets, speed platforms, midblock chicanes and/or one-way slow points.

Technical analysis

The proposed sharrow marking is illustrated. No options or variation have been considered to ensure results of this trial support the Auckland sharrow and lane marking trial.

The sharrow marking is a cycle symbol with two chevrons located above it. A stencil for the cycle symbol is already available and used in Dunedin and nationally. The symbol is easy to identify and scalable to suit different environments. The only material that is required for the sharrow marking is skid resistant paint used for existing cycle lane symbols.



Proposed Sharrow Marking (source: Auckland Transport)

Impacts and risks

Sharrow markings may not be immediately understood by road users. They could create some confusion amongst vehicle drivers and/or cyclists as to the meaning of the symbol. It is possible that some vehicle drivers and/or cyclists could confuse the sharrow marking symbol with a cycle lane symbol which could cause confusion about required road user behaviour.

There may also be a potential issue with cyclists 'owning the road' more, as is expected with the implementation of sharrow markings. Sharrow markings may draw a cyclist more to the centre of a general traffic lane than is warranted at a given time. This issue is considered a possible problem of perception rather than resulting in safety concerns.

Education and information will include a press release, information on Dunedin City Council's website, and a 'Whats Happening on Your Street?' information sheet delivered to surrounding streets, Q&As to the call centres of Dunedin's Road Controlling Authorities.

Education and information will be coordinated through the Council's Community Safety Advisors.

Are sharrow markings a potential solution to the identified problem?

Research indicates that shared lane markings result in giving cyclists more 'operating' space. Sharrow markings are a potential solution to the problem of creating a shared lane environment for cyclists and motorists.

Addressing relevant issues

It is considered that the recommended modified cycle lane symbol will be sufficient to address legality issues that could arise in relation to use of the existing symbol in sharrow lane markings (in reference to the Land Transport Act 1998).

Safety and efficiency gains

Effect on road users

The proposed sharrow marking could raise uncertainty for vehicle drivers with regards to the legal status of the road. A lack of clarity about meaning should not negatively affect drivers, and assuming sharrow markings are implemented in New Zealand, appropriate education would be recommended.

Safety for cyclists could be affected if a cyclist was to mistake a sharrow marking for a cycle lane marking and assume that the indicated space is for cyclists only. Research undertaken amongst cyclists in Australia suggested this was not the case with only a small percentage of surveyed cyclists mistaking a sharrow marking for a cycle lane marking. A potential lack of understanding of sharrow markings reiterates the need for education.

Consultation

No consultation has been undertaken to date. Subject to acceptance of this application by NZTA, consultation and promotion of the sharrow marking trial will take place with interested parties, including:

- Road user groups and advocacy groups, for example, Automobile Association, SPOKES

- Otago Regional Council
- NZTA
- Schools in close proximity to a trial site
- Bus companies
- The New Zealand Police, specifically, School Community Officers (previously called Police Education Officers)

Consultation will be coordinated through the Council's Community Safety Advisors.

Proposed assessment

To determine the performance of sharrow markings, the trial will be assessed after implementation to understand:

- Change in cyclist behaviour (lateral positioning)
- Change in cyclist numbers
- Interaction between cyclist and vehicles in a lane sharing environment.

Assessment will be through interviews with interested parties (above), vehicle speed information captured via tube counts installed at each trial location, observations at the sites eg by way of videoing to determine the relative location of cyclists to sharrow markings and vehicles, questionnaires with cyclist and other road users and online feedback surveys.

Appendix - Proposed Sites

Site 1 – New Street, South Dunedin

Key Characteristics

Criteria	**Criteria Assessment**
Road Type	Local
Extent of trial site	Between Prince Albert Street and Queens Drive (438m)
Surrounding land use	Residential
Cycle Network Status	Proposed "Quiet Street" within South Dunedin Cycle Network
Traffic calming measures (implementation June to Sept)	Changed intersection priority, raised table top at intersections, chicane system, coloured pavement marking, parking on one side staggered block by block
Average Annual Daily Traffic Volume	823
Typical Cross section (approx.)	6.9 m average corridor width kerb to kerb
Cycle Counts	To be confirmed with trial commencement (see timetable)

Site 2 – Bellona Street, South Dunedin

Key Characteristics

Criteria	**Criteria Assessment**
Road Type	Local
Extent of trial site	Between Moreau Street and Prince Albert Street (588 m)
Surrounding land use	Residential
Cycle Network Status	Proposed "Quiet Street" within South Dunedin Cycle Network
Traffic Calming Measures (implementation June to Sept)	Raised speed thresholds, changed intersection priority, raised table top at intersections, build outs, coloured pavement marking
Average Annual Daily Traffic Volume	187
Typical Cross section (approx.)	10.8m average corridor width kerb to kerb unrestricted parking on both sides
Cycle Counts	To be confirmed with trial commencement (see timetable)

Site 3 – Tedder Street, South Dunedin

Key Characteristics

Criteria	**Criteria Assessment**
Road Type	Local
Extent of trial site	Between Bayview Road and Queens Drive (583 m)
Surrounding land use	Residential
Cycle Network Status	Proposed "Quiet Street" within South Dunedin Cycle Network
Traffic calming measures (implementation June to Sept)	Raised speed threshold, changed intersection priority, raised table top at intersections
Average Annual Daily Traffic Volume	555
Typical Cross section (approx.)	7.2 m average corridor width kerb to kerb unrestricted parking on both sides
Cycle Counts	To be confirmed with trial commencement (see timetable)

Site 4 – George Street, Dunedin

Key Characteristics

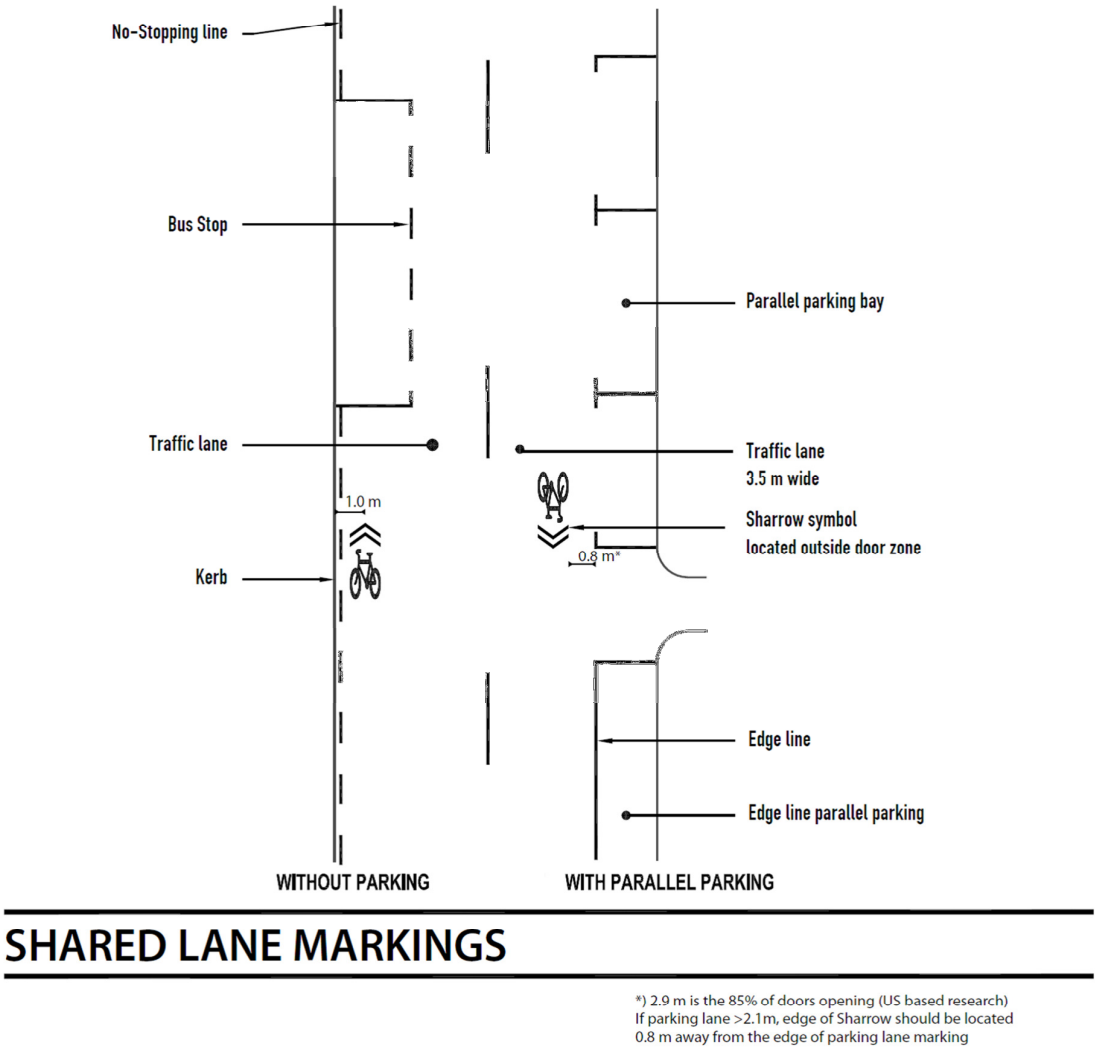
Criteria	**Criteria Assessment**
Road Type	District
Extent of trial site	Between Moray Place and Albany Street (806 m)
Surrounding land use	Commercial /Retail
Cycle Network Status	Nil
Average Annual Daily Traffic Volume	11,300
Typical Cross section (approx.)	12.7 m average corridor width kerb to kerb, metered parking on both sides, bus stops
Traffic Calming Measures	30 kph speed limit, traffic signals, build-outs
Cycle Counts	To be confirmed with trial commencement (see timetable)

Site 5 – King Edward Street, South Dunedin

Key Characteristics

Criteria	**Criteria Assessment**
Road Type	District
Extent of trial site	Between Hillside Road and Macandrew Road (length 402 m)
Surrounding land use	Commercial /Retail
Cycle Network Status	Nil
Average Annual Daily Traffic Volume	11,000
Typical Cross section (approx.)	13.2 m average corridor width kerb to kerb, metered parking on both sides, bus stops
Traffic Calming Measures	30 kph 'by design', narrowed carriageway, build-outs, raised table top, traffic signals
Cycle Counts	To be confirmed with trial commencement (see timetable)

Appendix – Indicative Carriageway Position



source: MOTSAM