National Cycling Data and Analytics Platform
Cycling Infrastructure Scenario Builder

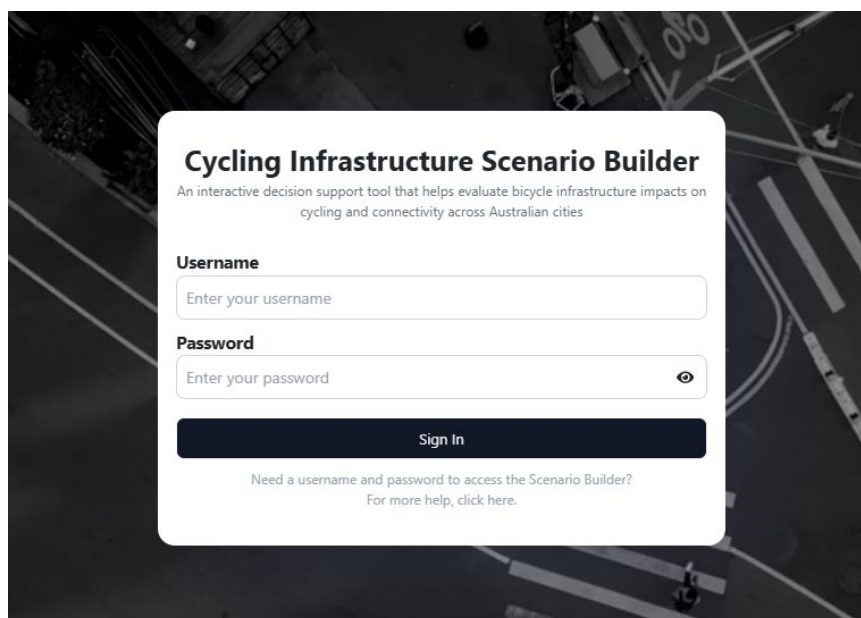Version 1.03

Quick Start Guide

December 2025

Welcome to this quick overview of the NCDAP Cycling Infrastructure Scenario Builder tool. This document provides information on the functions and capabilities of the tool.

Logging in

The tool can be reached via the website at www.ncdap.org/ The page for the Cycling Infrastructure Scenario Builder Tool has a link to the tool, as well as a form for requesting login credentials.

When you have your credentials, login using your username and password at https://bikeability-tool.ncdap.org/login

Note: Most layers in the tool include tool tips – click the layer name for more information.

Current Conditions tab

⚙ — **Settings: About, methodology, and logout**

Type to search for LGA / SA2 — Sydney ⌄ — **Select city; search for LGA or suburb**

Current Conditions | Create Changes — ◀ **Collapse sidebar**

▼ Imagery Options — **Choose background map image**

- ● Mapbox Light
- ○ Maptiler Light
- ○ Mapbox Dark
- ○ Open Layers
- ○ Satellite
- ○ Google Map

▼ Current cycling conditions

- ☐ Cycling metrics based on LGA for [commute ⌄] — **Cycling participation by trip purpose**
- ☐ Severe cycling crashes [Cluster] — **Bicycle crash data from state police records**

▼ Cycling and road infrastructure

- ☐ Road network [Show road slope] — **Show road network; toggle to show road slope**

- ▼ ☐ Existing cycling infrastructure — **Show existing bicycle infrastructure by type**
  - ☐ —— Separated / Protected
  - ☐ —— Quietway
  - ☐ —— Shared Path
  - ☐ —— Painted Bicycle Lane
  - ☐ —— Other bike infrastructure

- ☐ Cycleway network connectivity [100 Meters ⌄] — **Show sections of cycleway network that are connected to each other; dropdown selects gap tolerance**

▼ Population and job density

- ☐ Population density (by postcode) — **Population and jobs per square kilometer**
- ☐ Job density (by SA2)

▼ Points of interest

- ☐ ■ Parks (polygon)
- ☐ ● Service
- ☐ ● Transit — **Points of interest and potential trip destinations**
- ☐ ● Schools
- ☐ ● Shopping
- ☐ ■ University (polygon)

▼ BikeSpot 2023

- ☐ Positive Spots (Safe) — **Crowdsourced data on safe/unsafe locations; reports and data at bikespot.org**
- ☐ Negative Spots (Unsafe)

▼ Accessibility

- ☐ [Park ⌄] within catchment [5 mins ⌄] — **Relative density of nearby amenities**
- ☐ Mesh blocks with school connectivity (Primary) — **Shows residential areas that have safe connected bicycle infrastructure to their local area public school**
- ☐ Mesh blocks with school connectivity (Secondary)

Current zoom: 10.94 | ⟳ | ⇧ | ⤢ | [10 km]

- **Zoom factor; roads visible at zoom 14.5 and above**
- **Reset view**
- **Reset rotation; shift-click the map to rotate**
- **Toggle full screen view**
- **Graphic scale**

Create Changes tab 1

Testing infrastructure configurations is a three-step process: Selecting the roads where you want to add infrastructure, choosing the type of infrastructure to be added, and submitting your changes to model the predicted impacts.
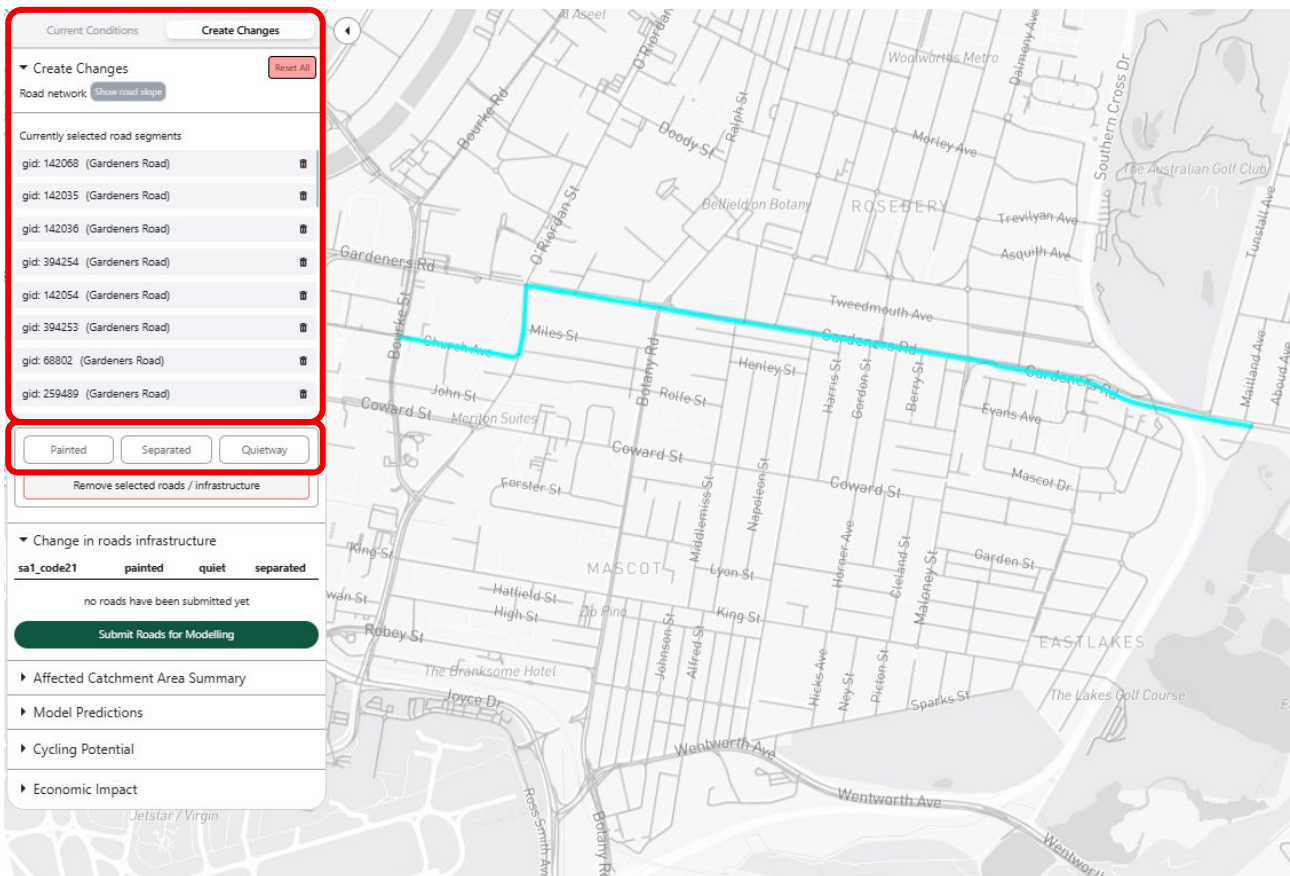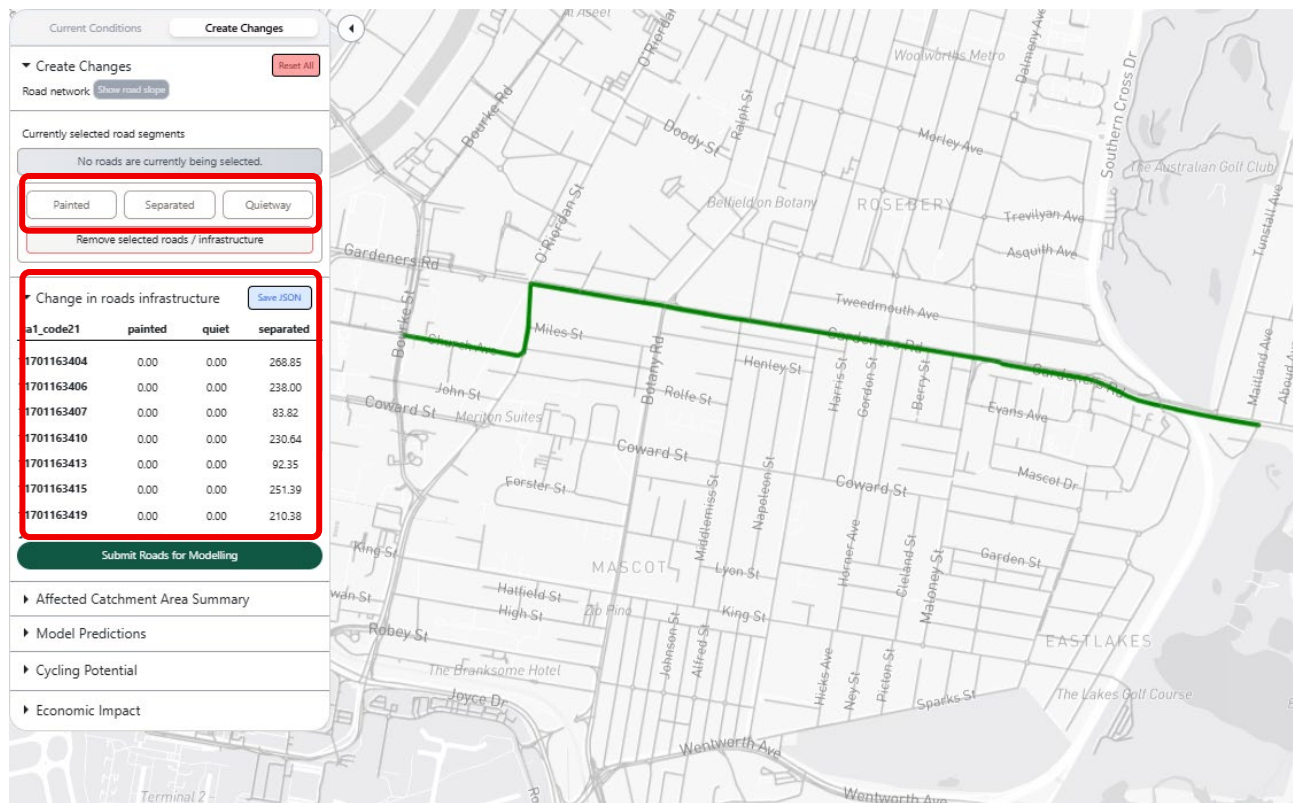

Step 1: Click with your mouse to select the road segments where you want to add bicycle infrastructure. Selected road segments show in light blue. Ensure that you are zoomed in far enough – the road network is only visible at zoom levels 14.5 and above.

Road segments can be deselected by clicking them again. All selected road segments can be deselected by clicking the "Remove selected roads / infrastructure" button.

Note that the tool assumes that all new cycleways will be 2-way. It is not necessary to select both sides of a street, even if it is a divided road.

Create Changes tab 2

Step 2: Choose infrastructure type to test. Currently the options are Painted bike lanes, separated / protected bike lanes, or quietways / safe active streets.

Selected road segments will change colour, and the segments will now show in the "Change in roads infrastructure" section.

Go back to Step 1 to add additional new infrastructure segments or go on to Step 3 to predict results.

Create Changes tab 3

Step 3: Submit roads for modelling. Click the green "Submit Roads for Modelling" button.

The tool will calculate population, jobs, and points of interest within 1.5 km of the new infrastructure.

The tool then calculates the predicted additional number of people riding for transport or recreation and exercise because of the new infrastructure, as well as the predicted number of new weekly cycling trips for transport or recreation and exercise.
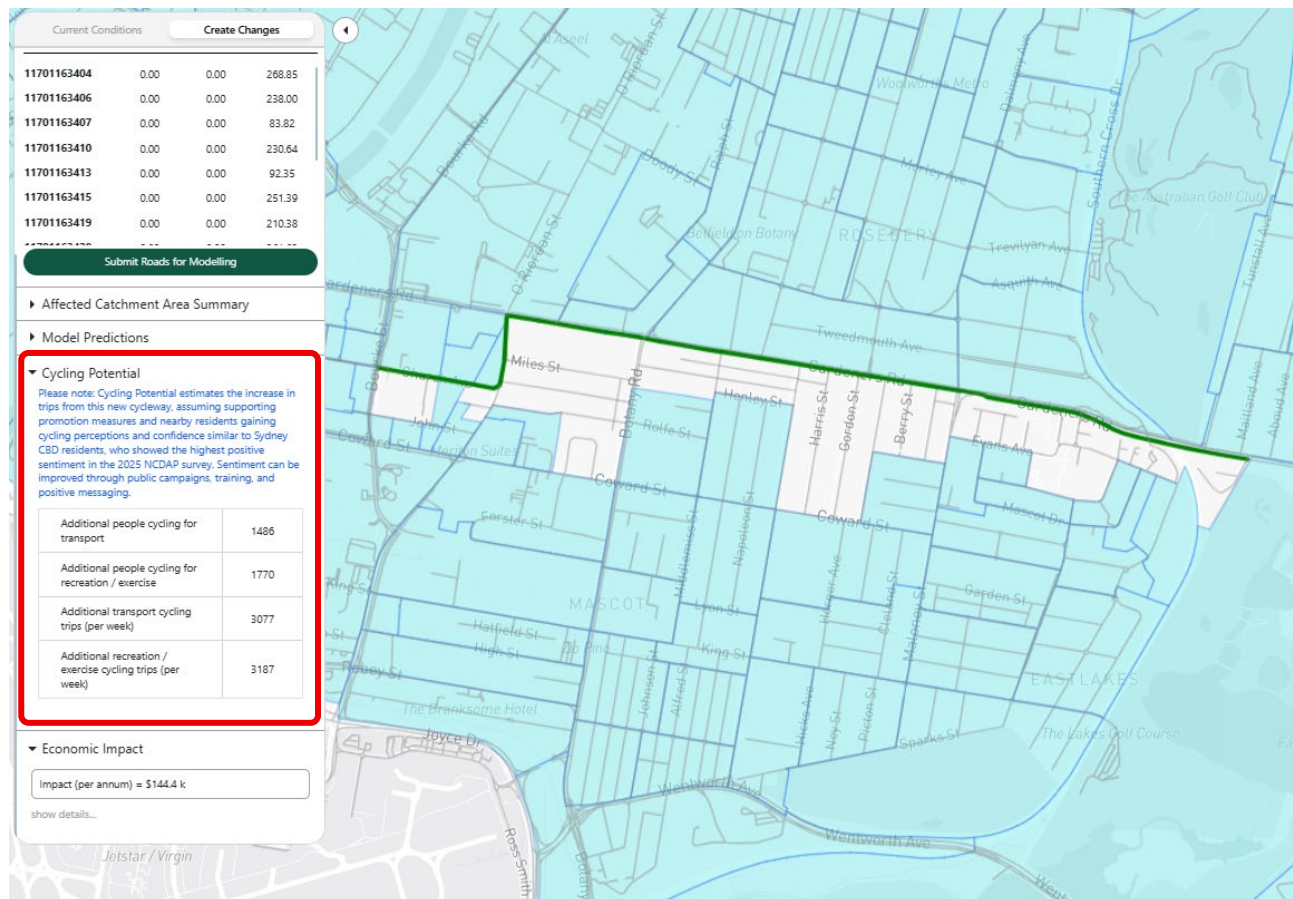
Create Changes tab 4

The tool also estimates the potential additional impact of the new infrastructure if there is also a change in the sentiment of people living within the catchment area of the cycleway. Our modelling indicates that when people have positive feelings about cycling, and when they feel confident in their abilities to ride, new infrastructure will result in much higher numbers of new cyclists and new trips.

For this Cycling Potential table, we assume that the people living in the catchment area have the same feelings about cycling and their cycling skills as people living in the City of Sydney. The City of Sydney showed the highest sentiment scores in our survey, which we attribute to the consistent pro-cycling public messaging from the government and leaders of the city, and the availability of free bicycle training courses for Sydney residents.

This suggests that cycleways in other parts of the study area could expect higher ridership if they combine new infrastructure with cycling-supportive programs.

Note that infrastructure scenarios that show zero values for Cycling Potential are located in areas with equivalently high cycling sentiment to the City of Sydney.

Create Changes tab 5

Finally, the tool estimates the annual economic impact of the new infrastructure, using a per-kilometre societal benefit of new transport cycling trips. This conservative value is based on literature that considered a range of social, economic, health and wellbeing impacts of additional cycling. Additional information on this calculation can be found by clicking the "show details…" text below the calculation.

Questions, issues, and suggestions for the tool can be sent to ncdap@unsw.edu.au.