



# Active Transport Economic Appraisal Tool

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# Social Cost-Benefit Analysis

- ...is a key decision-making tool for government - especially for transport
- ...is under-developed for micromobility projects
- ...is expensive and time consuming



# Economic Appraisal Tool

## Discount rate

Discounting allows for decisions to be made today about initiatives that have costs and benefits in the future. It is necessary because a dollar of benefit in the future is worth less than a dollar of benefit today.

Discounting future financial and economic benefits and costs of a project is used to derive key indicators such as net present value or benefit cost ratio.

There is a variety of views and approaches to selecting an appropriate social discount rate. In practice, it is typical to use the discount rate nominated by the funding jurisdiction.

Currently Infrastructure Australia guidance specifies a 7 per cent real discount rate with 4 per cent and 10 per cent used for sensitivity testing. Discount rate sensitivity testing can be done in the Sensitivity testing section of this tool.

See: [ATAP T2](#)

## Opening year demand

Number of users per period in the first year of operation

Bicycle	Pedestrian	e-Bike	e-Scooter
4500 - +	4000 - +	500 - +	1000 - +

Help

## Demand growth

Annual increase in users (%)

Bicycle	Pedestrian	e-Bike	e-Scooter
3.0 - +	3.0 - +	3.0 - +	3.0 - +

Help



# Economic Appraisal Tool

## Value of travel time

Travel time is generally a disincentive to travel for transport trips (journey to work or education, trips for shopping and other personal business, and on employers' business). This means that time savings are typically recognised as a benefit for active travel trips.

Travel time savings are calculated based on time savings per trip, the number of transport trips and the value of travel time unit values.

The default value of travel time adopted here is for private trips (i.e. transport trips other than those done at work). If trips as part of employment (e.g. bicycle couriers) represent a significant portion of demand, a higher value may be appropriate.

Source: [ATAP PV2](#).

## Value of travel time

Valuation of travel time per hour (\$)

17.40 - +

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## Health system costs

Healthcare cost avoided per km (\$)

Bicycle

0.56 - +

Pedestrian

1.13 - +

e-Bike

0.56 - +

e-Scooter

0.00 - +

Help

## Morbidity and mortality costs

Morbidity and mortality costs avoided (\$ per km)

Bicycle

1.03 - +

Pedestrian

2.10 - +

e-Bike

1.03 - +

e-Scooter

0.00 - +

Help

# Economic Appraisal Tool

## Net Present Value

The net present value (NPV) of an initiative is the difference between the discounted stream of benefits and the discounted stream of costs .

A positive NPV means that the initiative's benefits are larger than its costs (NPV = PV Benefits - PV Costs).

## Benefit-Cost Ratio

The benefit-cost Ratio (BCR) is the present value of benefits divided by the present value of costs. There are two alternate formulations of the BCR depending on how operating costs are treated:

BCR1 puts costs and (savings in costs) that impact on government budgets in the denominator and everything else in the numerator.

BCR2 puts costs that occur before completion of the initiative in the denominator and benefits and savings in costs that occur after completion of the initiative in the numerator.

A BCR greater than one implies a positive NPV.

See [ATAP T2](#)

Present Value of Benefits

\$29,017,702

Benefit Cost Ratio (BCR1)

2.58

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Present Value of Costs

\$11,227,767

Benefit Cost Ratio (BCR2)

2.78

Net Present Value

\$17,789,935

## Breakdown

Display

Charts

Tables

Measure to chart

Discounted Benefits

Bars

year

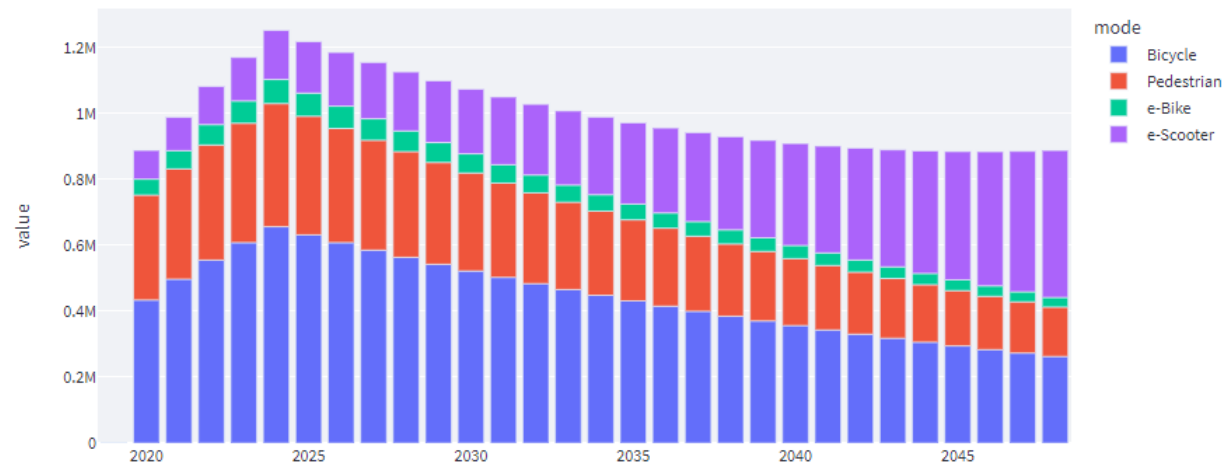
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Orientation

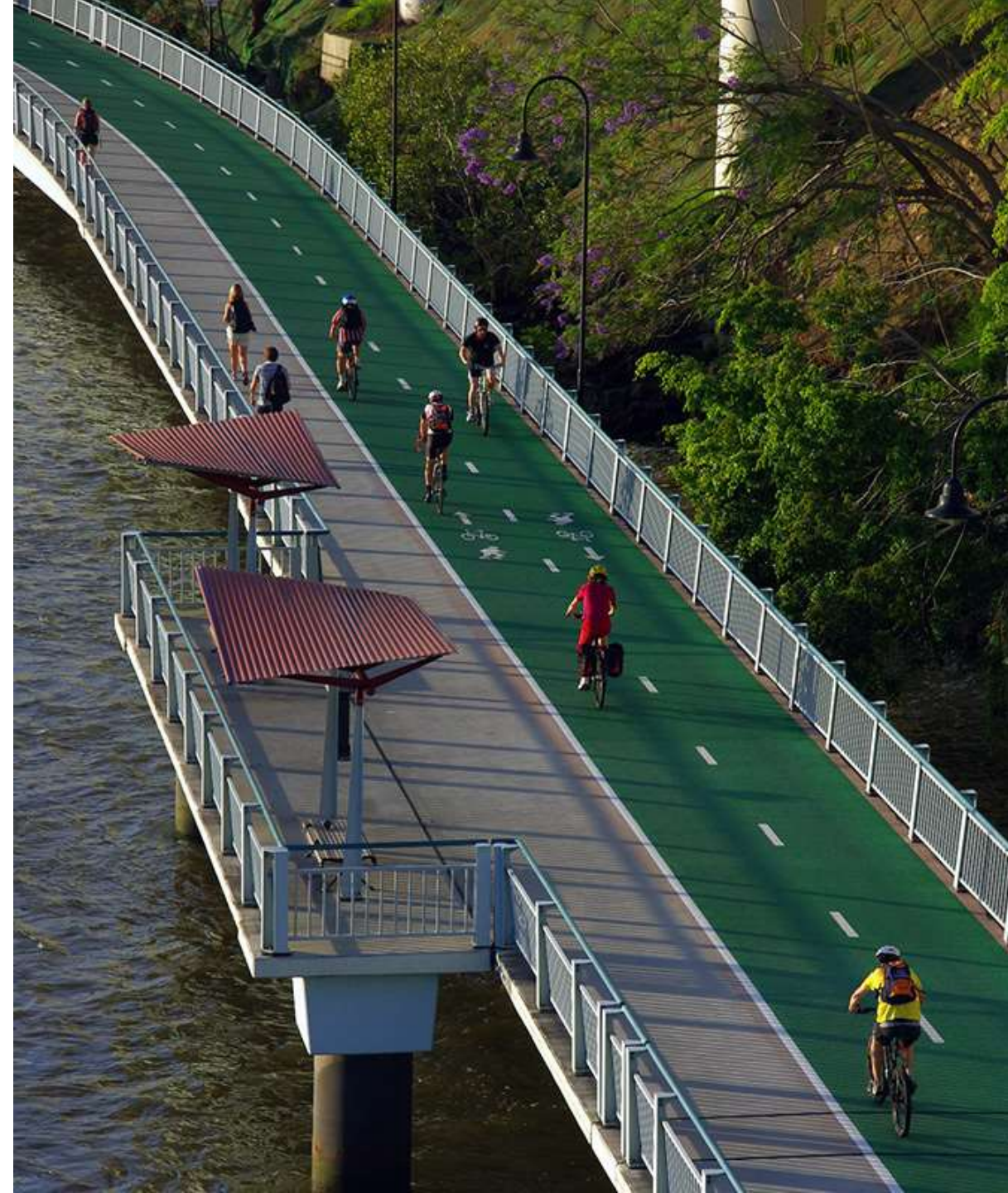
vertical

Discounted Benefits

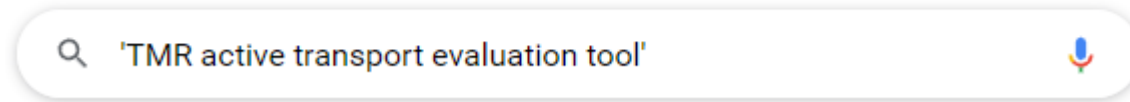


# Next steps

- Update benefit parameters to reflect latest research
  - Health benefits of active travel likely understated
  - No standard assumptions for e-bikes and e-scooters
- Investigate how better infrastructure improves user experience
- Improve demand estimation



# Accessing the tool



Email: [era-tpb@tmr.qld.gov.au](mailto:era-tpb@tmr.qld.gov.au)

# Thank you and stay connected



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