Protected Bicycle Intersections

TAC vicroads VICTORIA State Government

TOWARDS ZERO

TOWARDS ZERO AND THE SAFE SYSTEM

- The key principles underpinning and driving a Safe System approach are that:
    - People make mistakes
    - People have a limited tolerance to injuries
    - Safety is a shared responsibility
- The Towards Zero Action Plan is a $1.7 billion investments from the State Government
- Goal: 20% reduction in deaths and 15% reduction in serious injuries by 2020.

Safe System Philosophy

$100M SAFER CYCLIST AND PEDESTRIAN FUND

Cyclists and pedestrians are our most vulnerable road users.

The $100M SCPF is a component of the State Government's $1.7 billion investment.

$47M dedicated to 9 bicycle projects in both metro and rural regions.

Key Objectives:

- Make pedestrians and cyclists safer
- Improve connections
- Grow rates of cycling and walking
- Reduce congestion
- Encourage healthier lifestyles

TREATMENT PHILOSOPHY

Priority

- Cyclists to have priority at crossing points

Protection

- Protection through space or time

Best practice approach

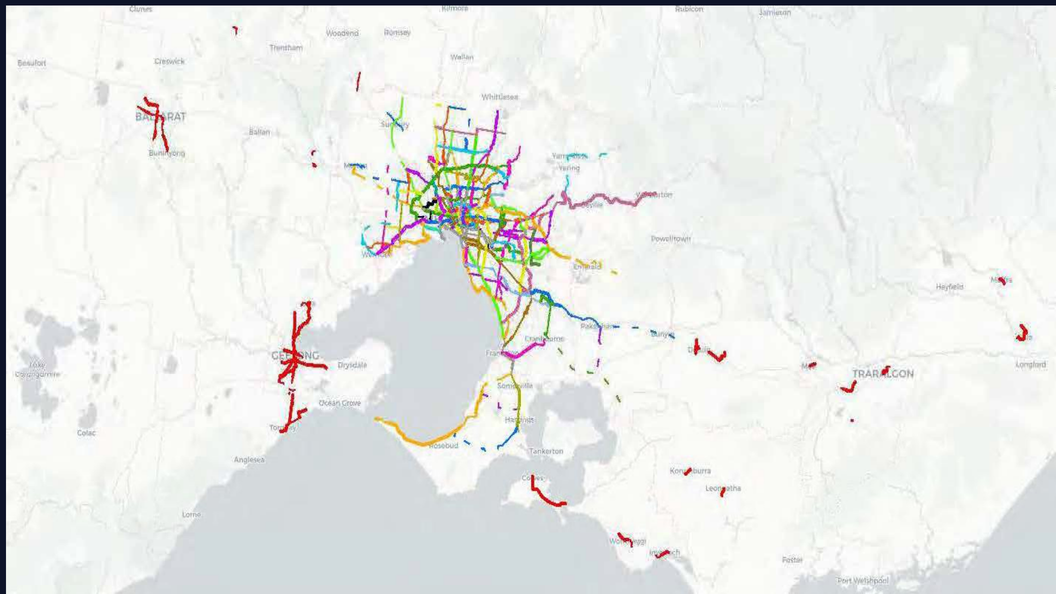
- New off-road cycling and shared use paths
- Cycling trail/path improvements
- Protected cycling intersections
- Protected kerbside lanes
- Bicycle Streets - traffic calming and lower speed limits

Supporting treatments

- Improved navigation and delineation

STRATEGIC CYCLING CORRIDORS (SCCs)

- SSRIP aims to improve the safety on key SCCs
- SCCs are a subset of the Principle Bicycle Network (PBN)
- SCCs are the arterials of the bicycle network

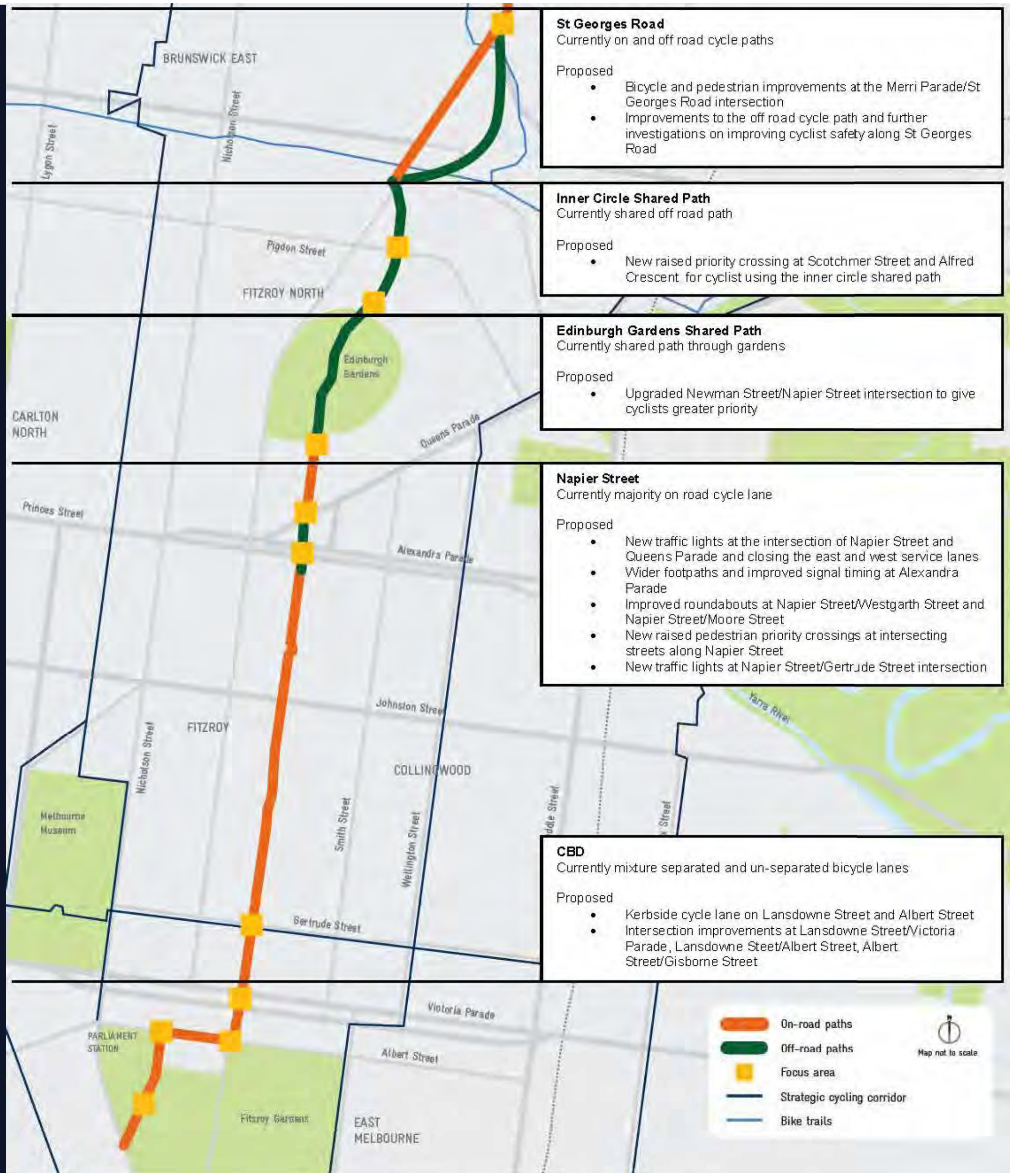


Existing SCCs in Melbourne

PRESTON TO CBD SCC

Project overview

- Almost 60% of corridor crashes involved cyclists (9-year data)
- Will improve the existing SCC connecting the inner-northern suburbs with the CBD
- The route is 4.6km in total
- Three distinct project sections
- Trialing a 'protected intersection' within the CBD section



Albert Street/Lansdowne Street Protected Intersection

PROTECTED INTERSECTION

What is it and why are we doing it?

Features:

- Provides physical protection to cyclists
- Reduces the risk of left/right turns for cyclists
- Improve separation between cyclists/vehicles
- Improve the transition of cyclists through the intersection

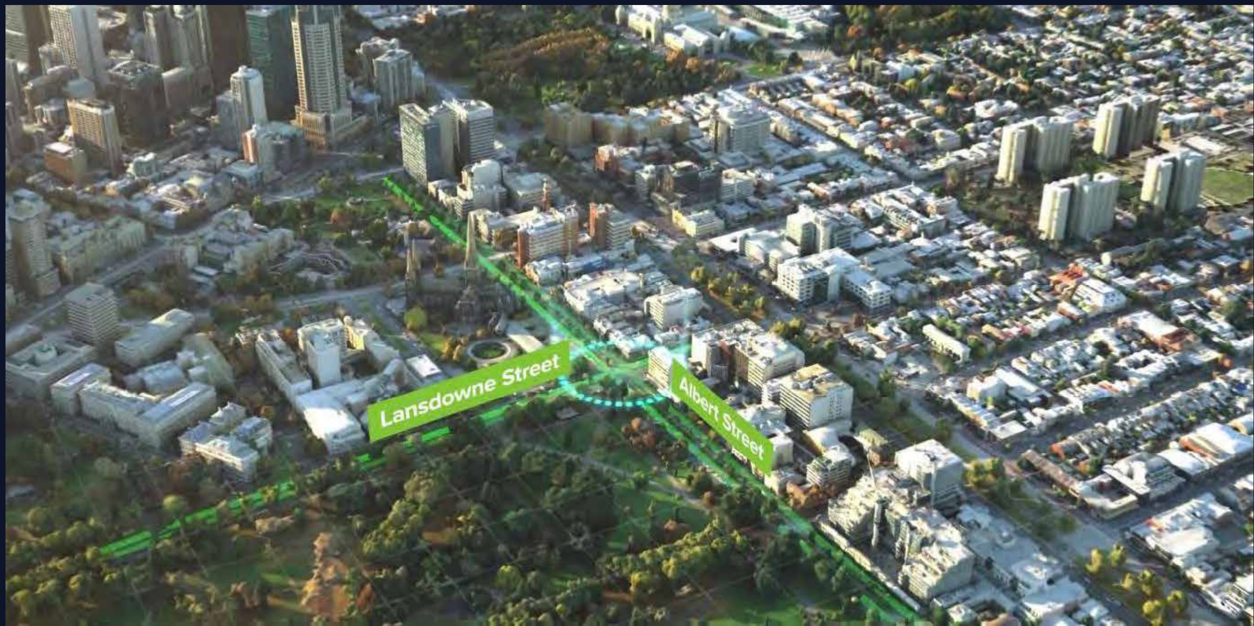
PROTECTED INTERSECTION

Site selection

- Two sites were initially proposed as trial sites:

  1. Albert St/Gisborne St INT

  2. Albert St/Lansdowne St INT



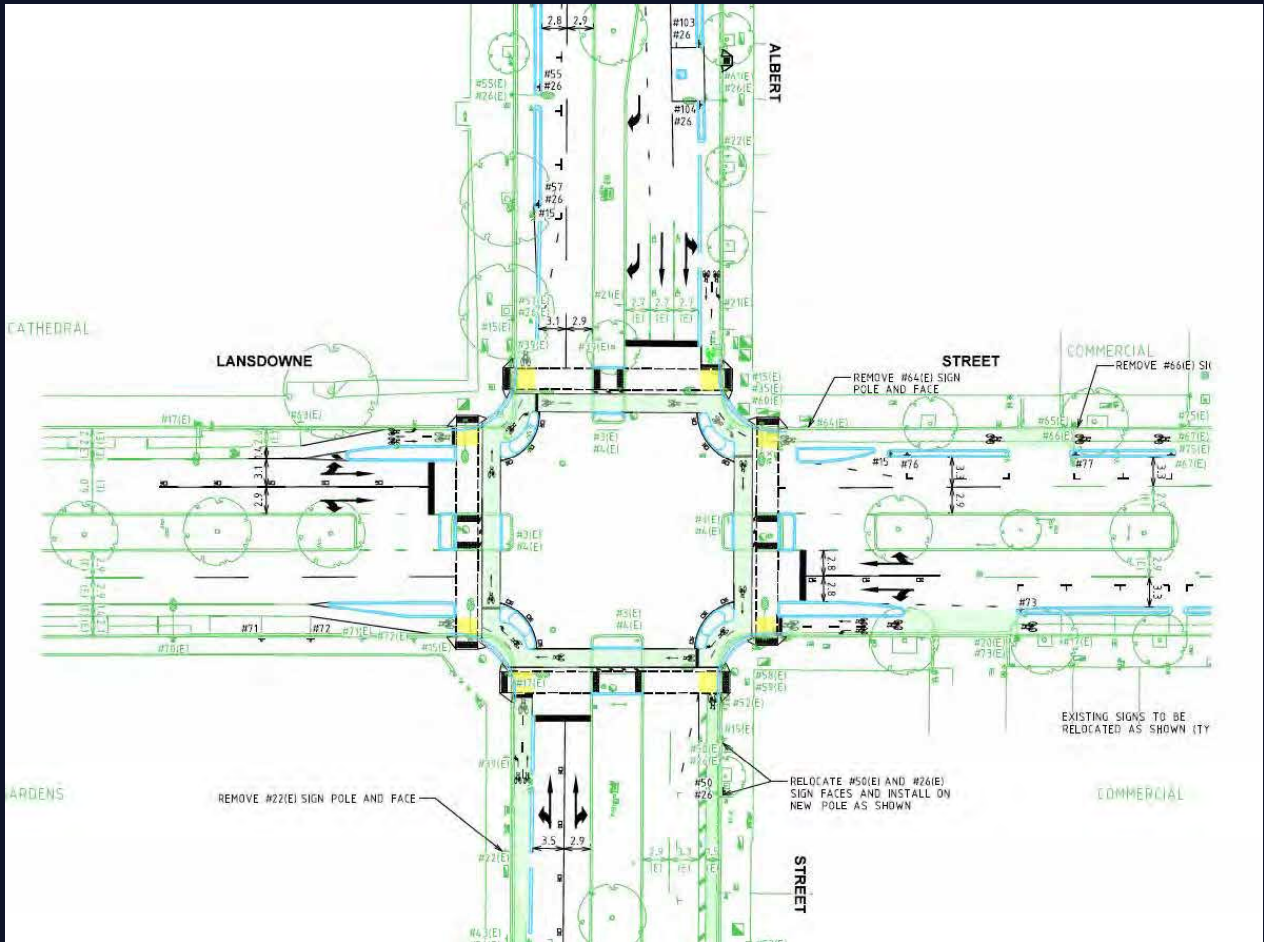
ALBERT ST/LANSDOWNE ST INTERSECTION

Existing issues

- Left-turning conflicts
- Exposure of cyclists transitioning through the intersection
- Insufficient ‘head-start’ times

ALBERT ST/LANSDOWNE ST INTERSECTION

Proposed Design



- Offset of pedestrian/cycling crossings
- Kerb separated bicycle lanes
- Kerb separator islands within the INT
- Pedestrian/cyclist early 'head start'
- Right-turn storage bays for cyclists
- Improved signage and delineation

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Offset of pedestrian and cyclists crossings

- Improve sight lines for vehicles to pedestrian and cyclists

Setback of bicycle lanes and pedestrian crosswalks from their desire lines

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Protected bicycle lanes

- Dedicated left-turn lanes on all approaches will be removed
- Provide protection for cyclists approaching the intersection

Protected bicycle lanes adjacent to a shared through and left-turn lane

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Kerb separator islands within the intersection

- Kerb separator islands provide protection for cyclists left/right turning cyclists
- Slow turning vehicles so they are perpendicular with the pedestrian/cyclist crossings

Kerb separator islands provide vehicles with increase reaction time

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Pedestrian and cyclist early 'head start'

- Traffic signals programmed to give pedestrian/cyclists a 3 to 4 second early 'head start'
- Will help cyclists transitioning through the intersection
- Will help clear cyclists queued waiting to turn right

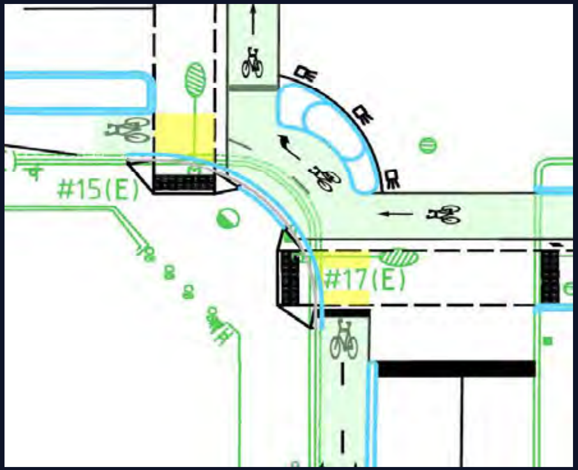
Pedestrian/cyclist early 'head start'

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Storage bays for right-turning cyclists

- Cyclists to store behind the kerb separator islands to undertake a right-turn
- Storage area for right-turning cyclists so they do not conflict with through-bound cyclists



Right-turn storage for bicycles

Cyclist undertaking a hook-turn

ALBERT ST/LANSDOWNE ST PROTECTED INTERSECTION

Design Elements

Improved signage and delineation

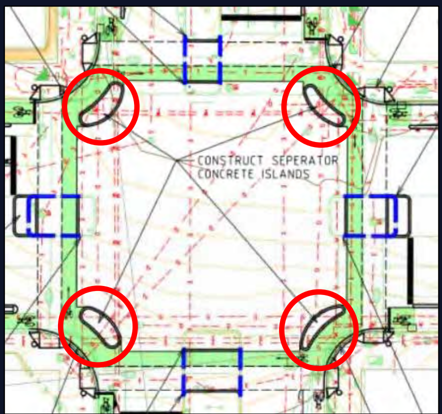
- Buffer between the pedestrian crosswalk and bicycle lane
- Bicycle lane within the intersection marked green
- Pavement symbols and line marking to guide cyclists

ROAD SAFETY AUDIT (RSA)

RSA

Detailed design road safety audit conducted to:

- Identify issues affecting road user safety
- Risk rating – based on likelihood and consequence of a crash occurring
- Alter design to increase safety
- Safer solution for all road users

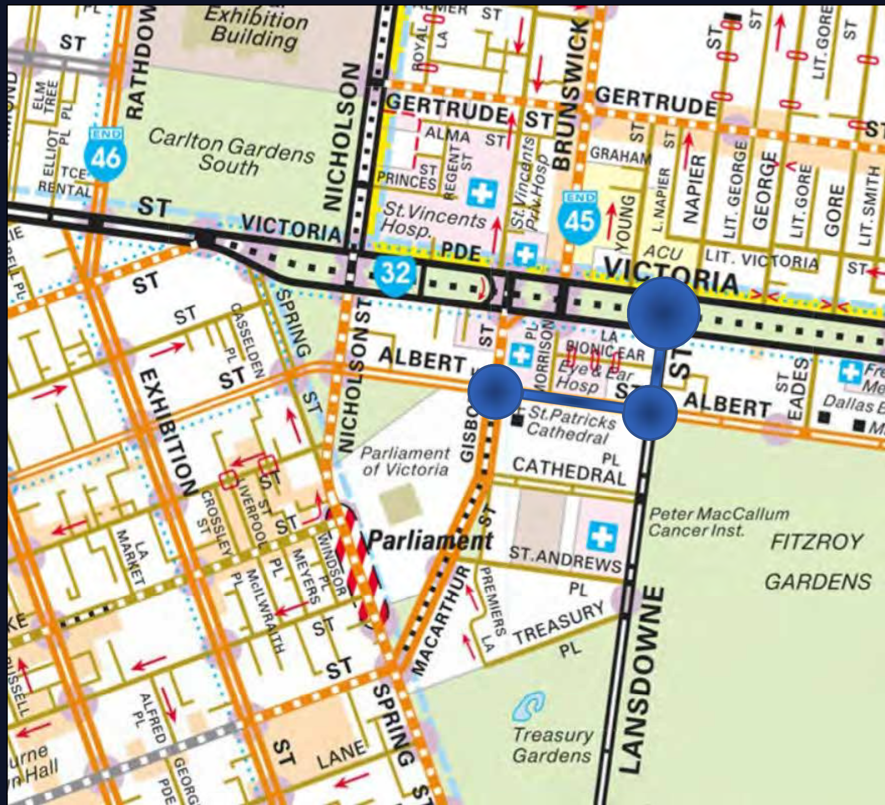


ROAD SAFETY AUDIT

RSA

The road safety audit findings covered:

- General topics – existing conditions
- Intersections
- Signs and line marking
- Cross-sections
- Night conditions



ROAD SAFETY AUDIT

RSA

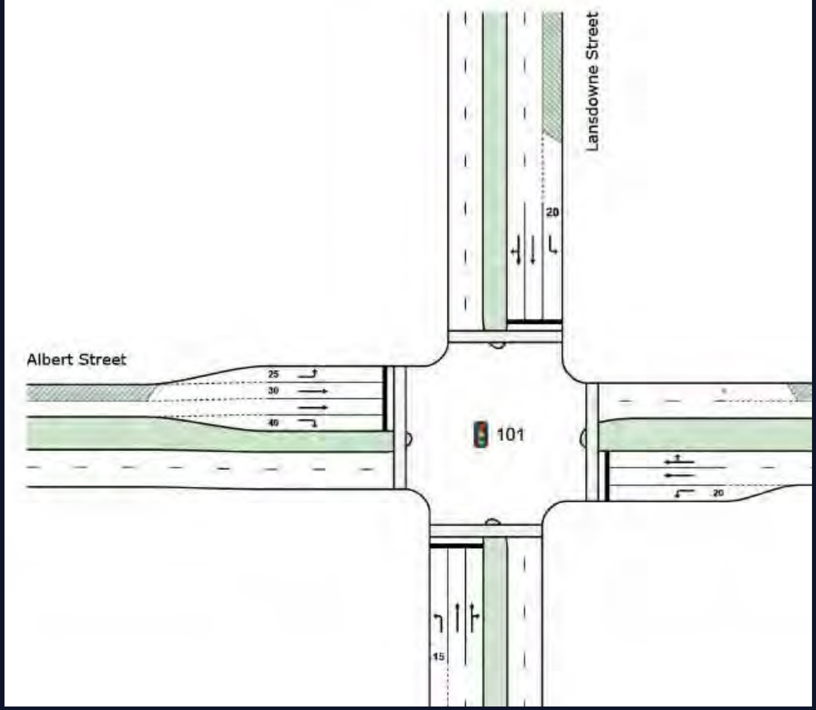
Some key findings and recommendations:

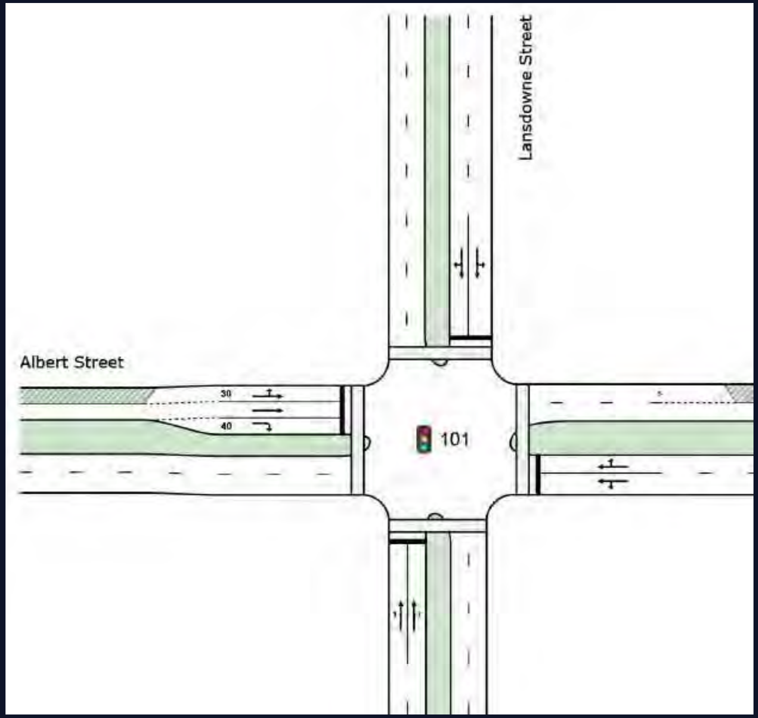
- Kerb separator islands – risk of being struck or avoided
- Bicycle hook-turns – placement may increase cyclist vulnerability
- Delineation for cyclists through intersections
- Need for green pavement markings at conflict points
- Narrow traffic lanes

INTERSECTION OPERATION

Traffic analysis

- Traffic impacts analysed in SIDRA
- Existing versus proposed conditions assessed
- Removal of left turn lanes
- Shared left / through lanes on Albert and Lansdowne Streets





PROGRESS

Project Milestones

- Concept design – February 2018
- Preliminary design – May 2018
- Human Factors workshop – May 2018
- Presentation to Council– August 2018
- Council, TfV, SSRIP design workshop – August 2018
- Live demonstration/proof of design – September 2018
- Detailed design finalised – November 2018
- Approval from City of Melbourne – November 2018
- Project out to tender – November 2018
- Tender award – February 2019

SAFER ROADS SAVE LIVES.