

# Dunedin Central City Schools Cluster - A Precinct approach to Safety

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# Motivation

- Road safety risk assessment
  - Desktop comparison of all NZ schools
- Dunedin central cluster (2700 pupils):
  - St Joseph's Cath. Sch: **High risk**
  - Arthur Street School: **High risk**
  - Otago Girls High: **Medium-High risk**
  - Kavanagh College: **Medium-High risk**
  - Otago Boys High: **Medium-High risk**
- Ongoing concerns voiced by schools
- High parking demands
  - Schools, residents and commuters

## Safer Schools Assessments (Stage 3) South Island

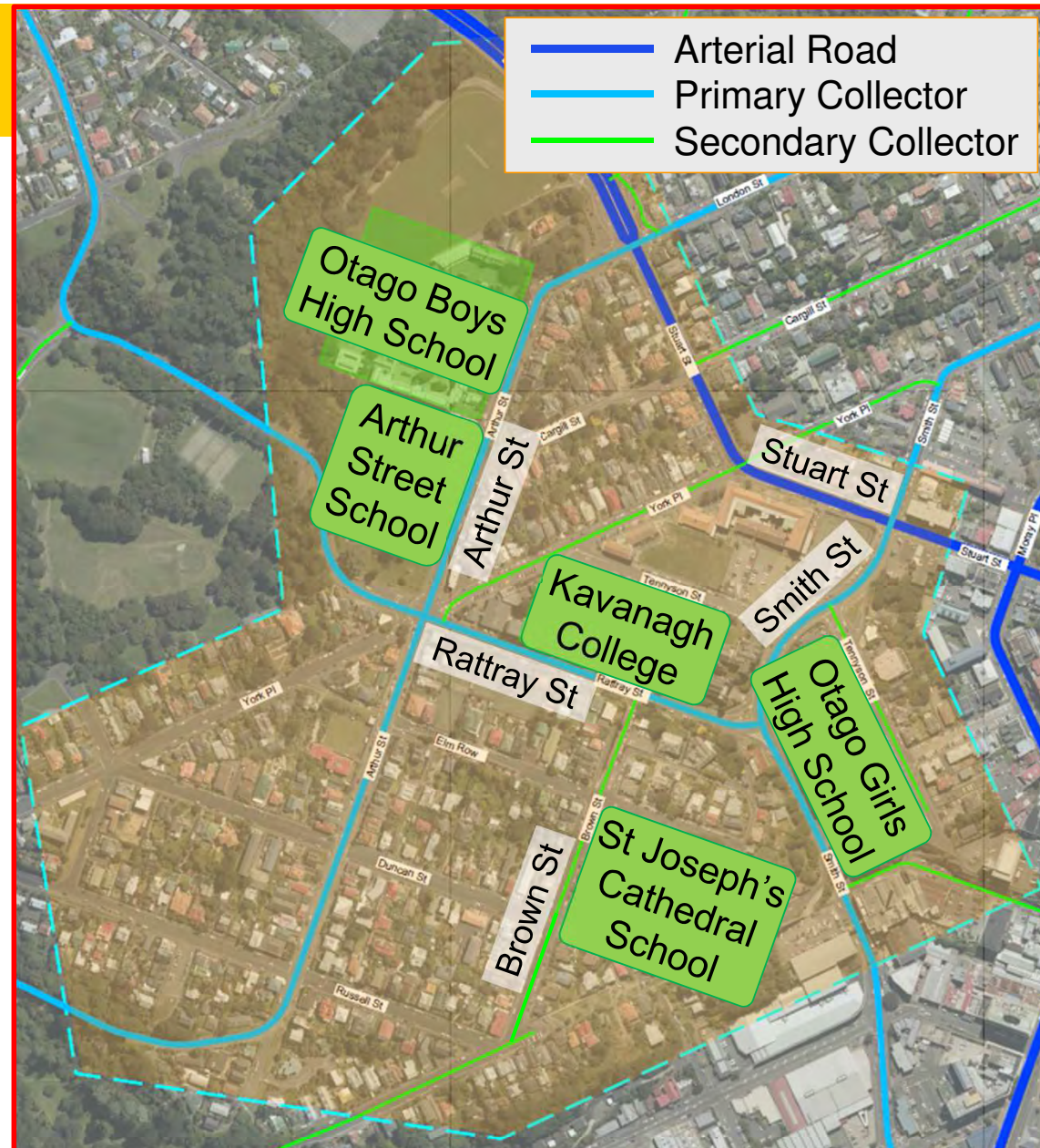
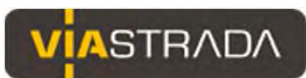
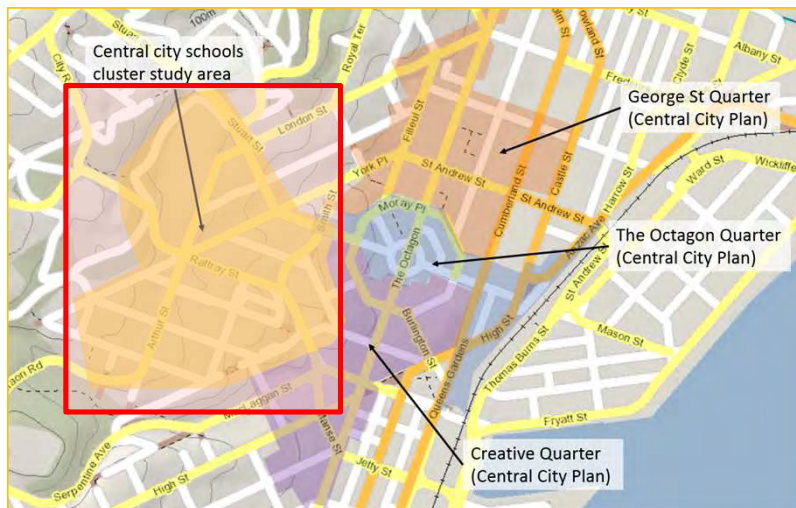


August 2016  
DRAFT REPORT



# Background

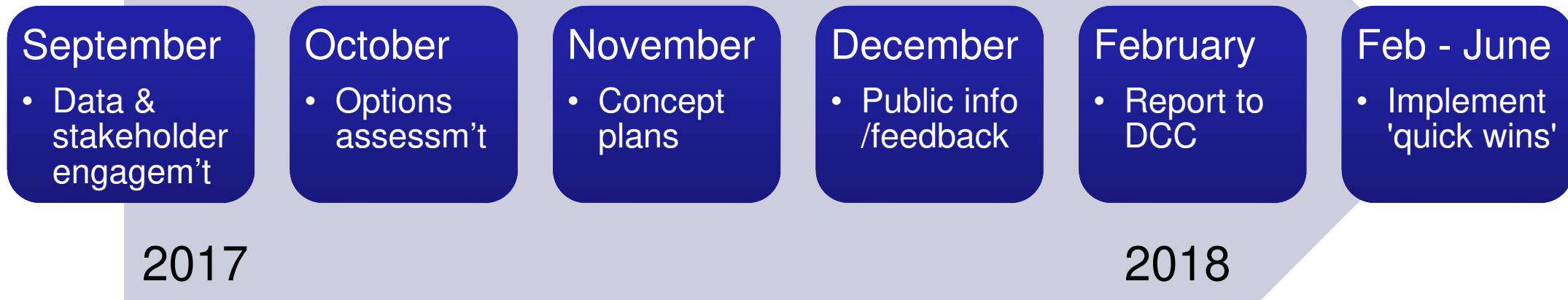
- Dunedin City Council commissioned ViaStrada & DCM Urban to “develop an area-wide approach to addressing road safety and parking issues around five central city schools”



# Project process

- Objectives:

- *Aim 1: determine the road safety (and other) issues*
- *Aim 2: develop a range of pragmatic concept designs*





# Fieldwork/Data Collection

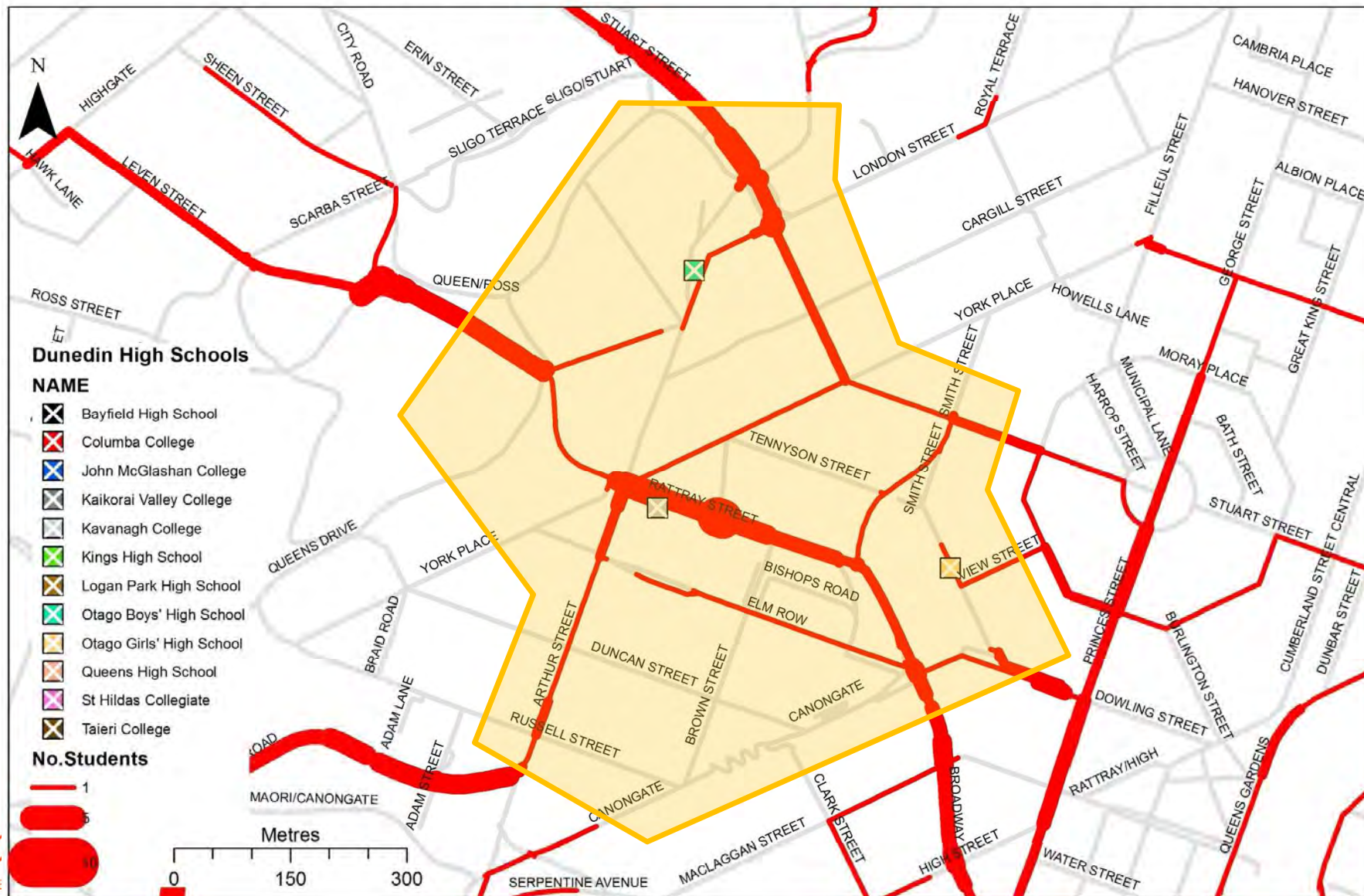
- Background info
  - Crashes / Road risk ratings
  - Otago Uni BEATS study
  - DCC Parking study
  - ORC school bus routes
- Field data
  - Speed/volume surveys
  - Parking occupancy
  - School student surveys
- Site visits
  - Photos/videos
  - Traffic observations
  - School principal discussions
  - Other stakeholder interviews (Police, parking unit, bus company)



# BEATS Study

Built Environment and Active Transport to School

## Routes rated as unsafe by students from drawn map: Centre City




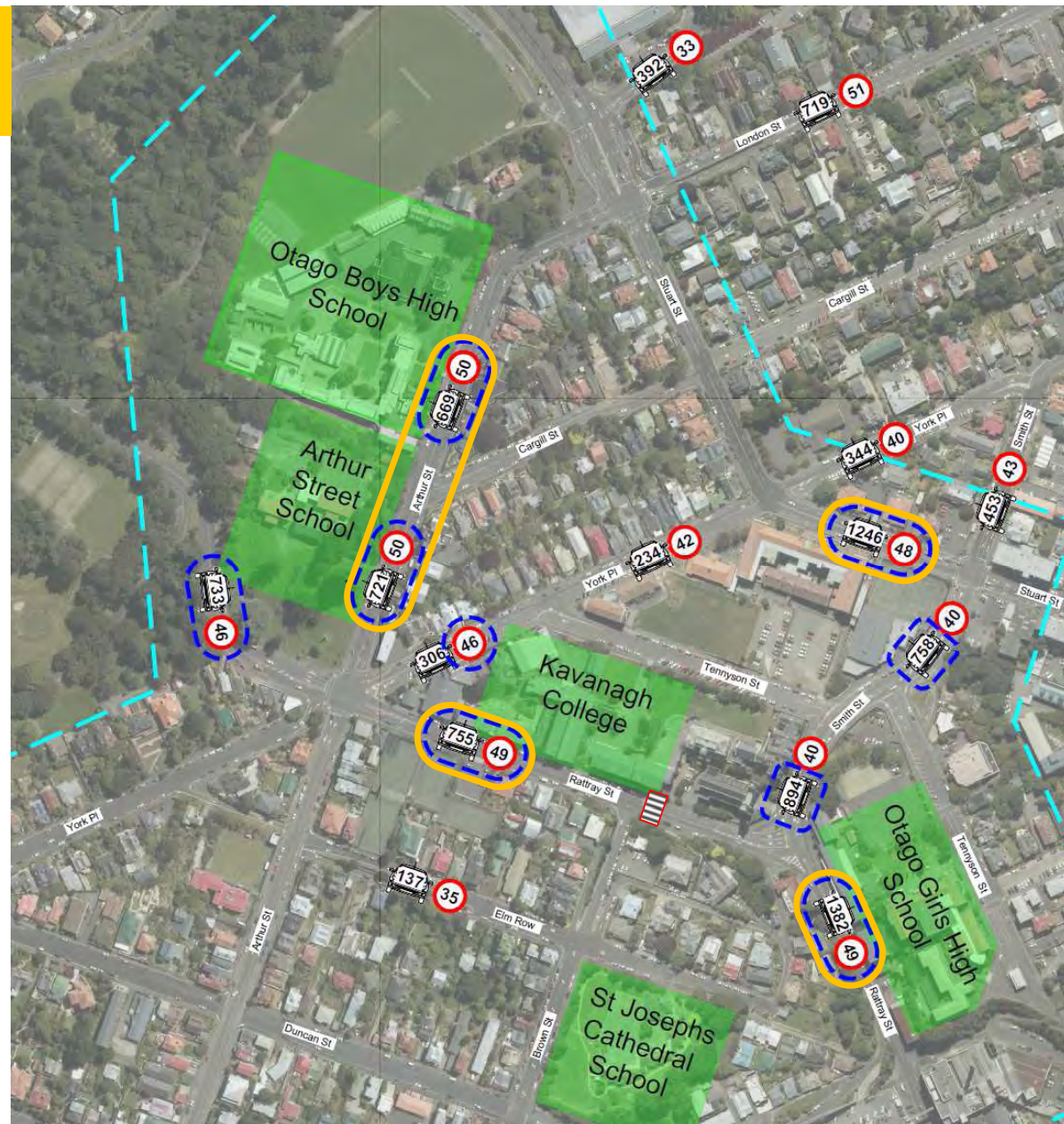
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# Speed & volumes

- 85<sup>th</sup> percentile AM/PM
- $V_{85\%} > 48 \text{ km/h}$ : 
- High speed on key through routes
  - Arthur, Stuart, Rattray
  - Combined with high pedestrian numbers
- Difficulty stopping safely
  - e.g. Rattray St zebra crossing downhill





# Student Survey

- Data from 4 schools (Arthur St, OGH, St. Josephs, Kavanagh)
- Coded by issue
  - H (hit by car) and X (crash driving) fortunately not significant

## Codes to use on the map:

- C – I have problems **crossing the road** here
- H – I have been **hit by a car** while travelling here
- N – I have had a **near-miss with a car** here
- P – I have problems **finding a parking spot** here
- S – I am **concerned about my safety** here
- T – I am usually delayed by **traffic/queues** here
- X – I have had a **crash/collision driving** here
- O – I have some **other issue** here (explain overleaf)

## Dunedin Central City Schools Cluster – Road Safety Study Survey

### Instructions for pupils and their parents/caregivers:

We are interested in your travel route to/from school only **within** the study area shown.

- Please indicate your **usual** route to school on the map – **mark with a pen a line on the map showing the route**
- Please indicate (using the codes to the right) where you have any issues – **write the letters directly onto the map**

I usually travel to school by: (circle main option below):

CAR / TAXI / BUS / BIKE / WALK / SKATE / SCOOT

I sometimes travel to school by: (circle other options if need be)

CAR / TAXI / BUS / BIKE / WALK / SKATE / SCOOT

### Codes to use on the map:

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- O – I have some **other issue** here (explain overleaf)

Please circle your school below:

- Otago Boys High School
- Otago Girls High School
- Kavanagh College
- Arthur Street School
- St Joseph's Cathedral School

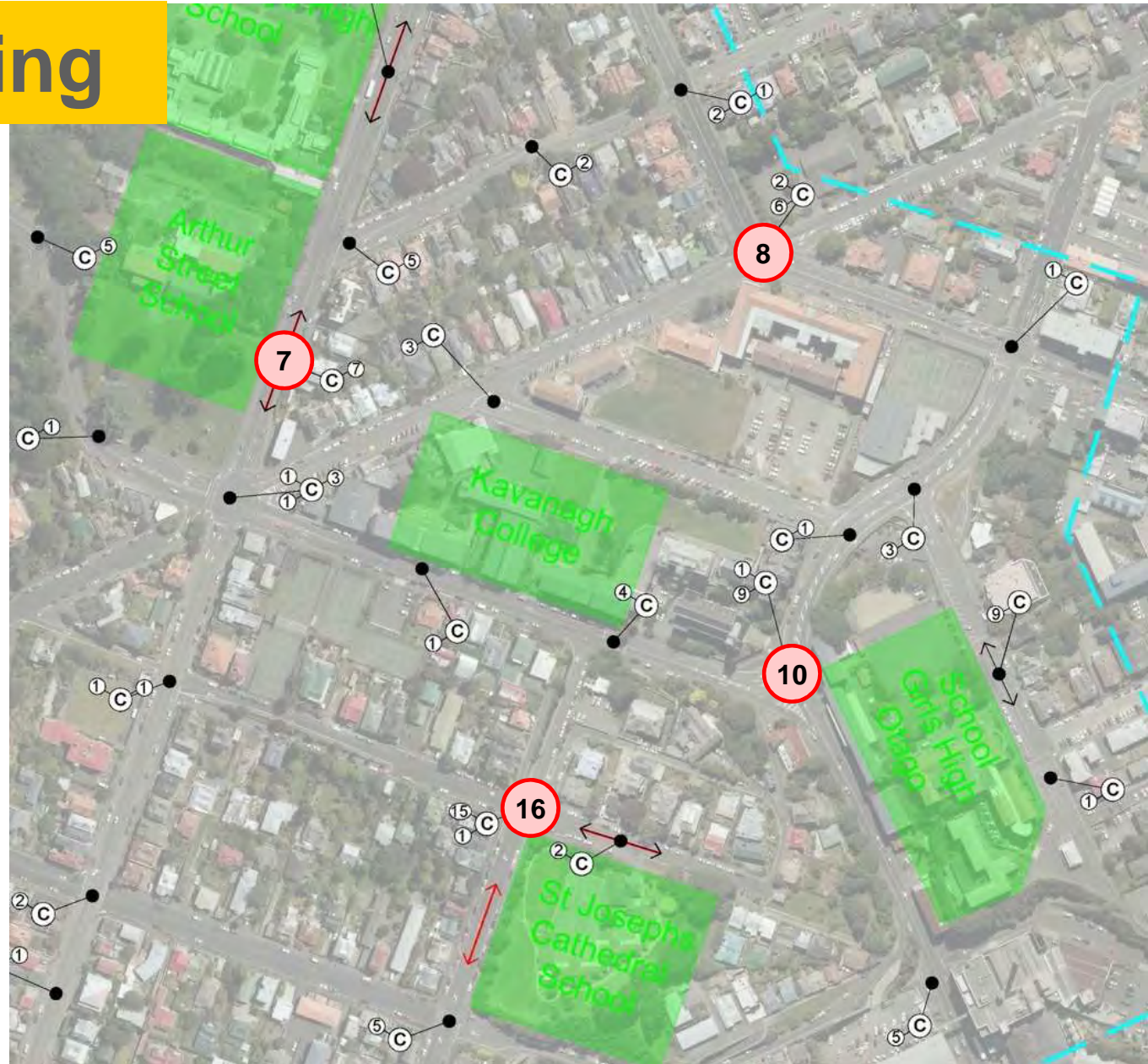
Please circle your school below:

Please return this to your school by Fri 1<sup>st</sup> Sep – Thank you!



# C: Problems crossing

- Most difficult intersections:
  - Rattray / Smith
  - Stuart / York
  - Elm / Brown
- Most difficult midblocks:
  - Arthur (N of Rattray)



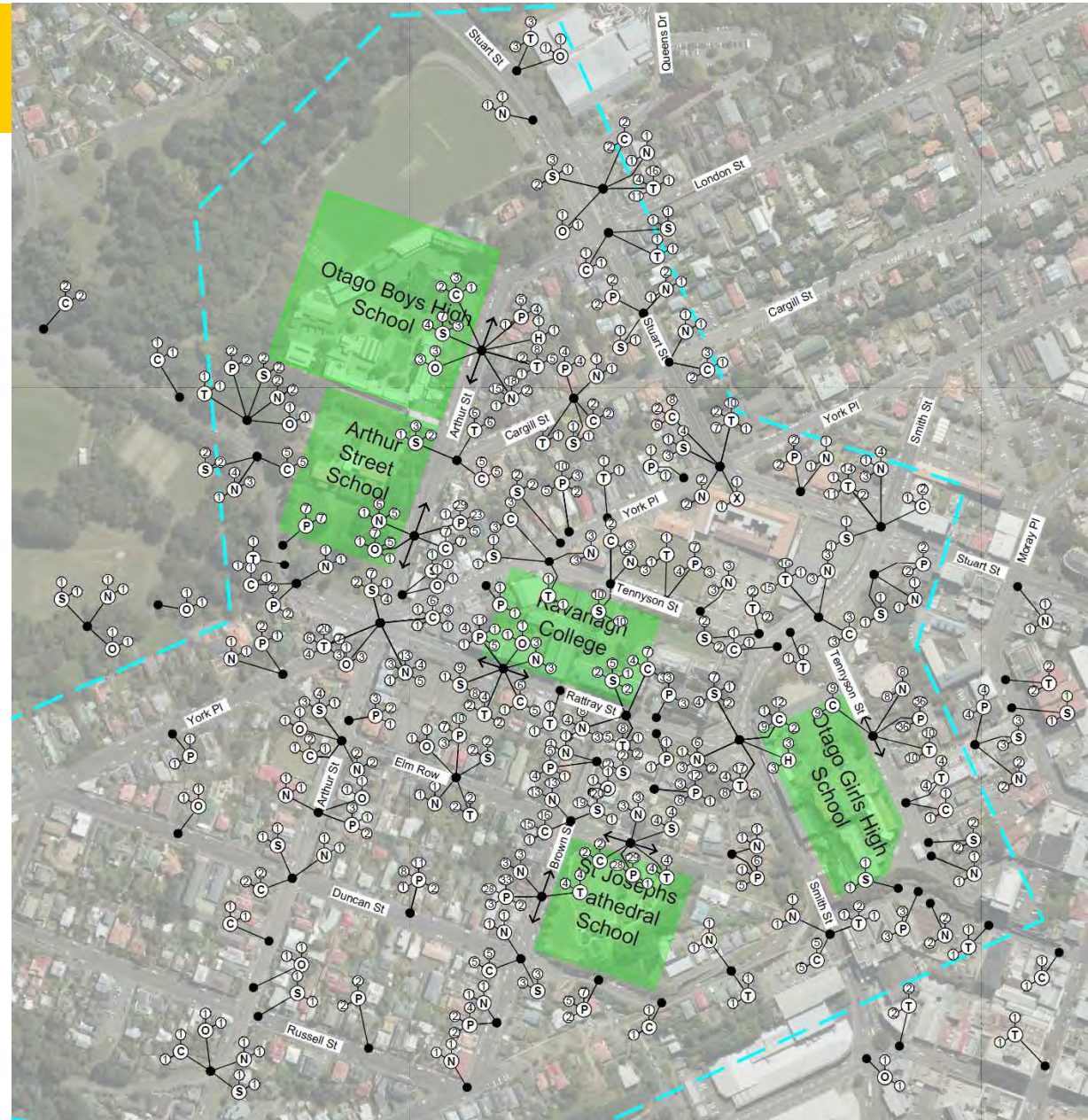


# Combined picture

- Able to be split by:
  - Problem type
  - School respondents

## Codes to use on the map:

- C – I have problems *crossing the road* here
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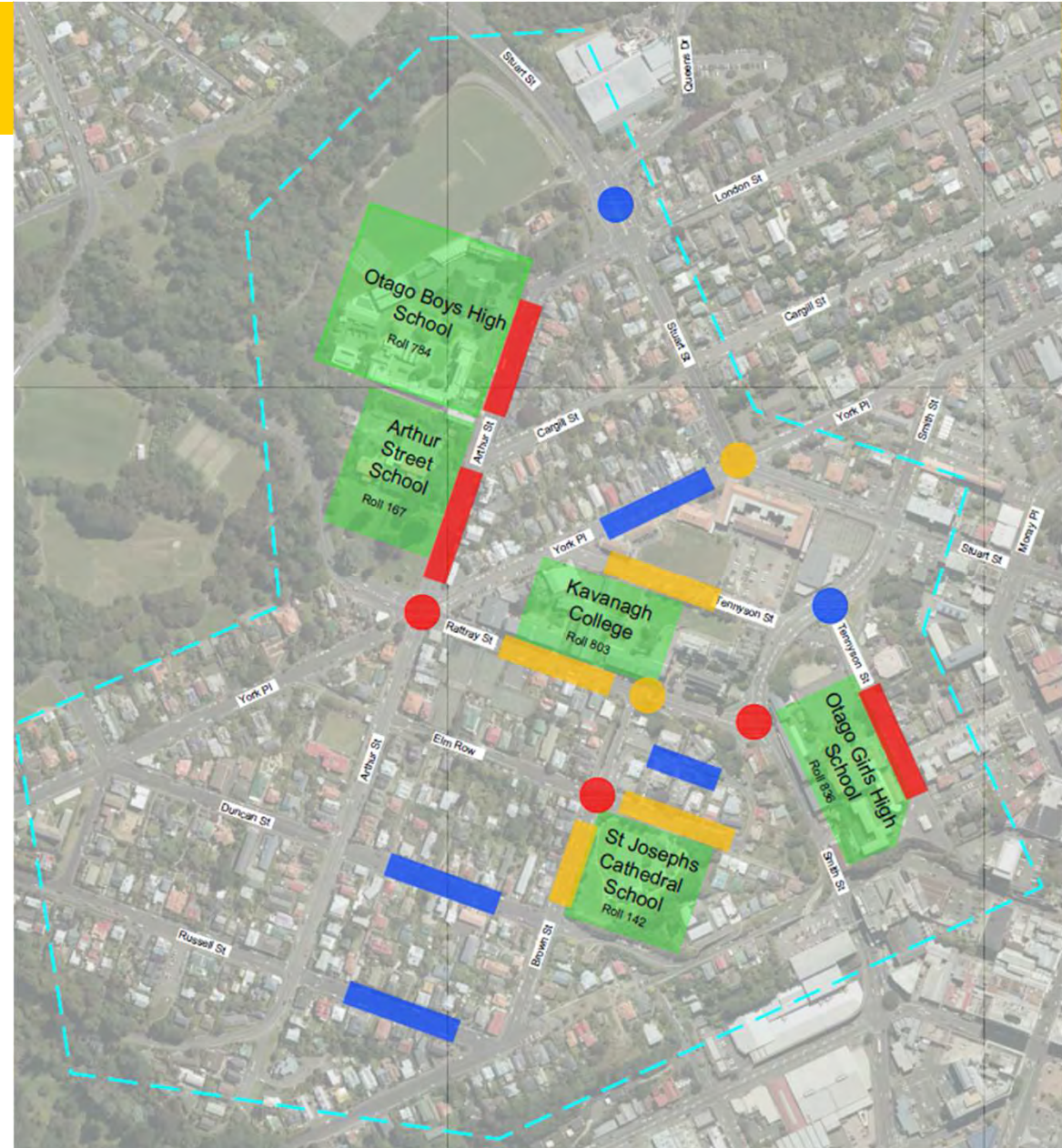


# Combined picture

- Certain sites and corridors
  - Prioritise treatments first

## CODE LEGEND

Street	Intersection	
		Highest number of issues
		2nd highest number of issues
		3rd highest number of issues



# Typical issues – crossings

- Informal crossing observed at desire lines e.g. Smith St
- Long waits across Stuart St
- Lack of crossings along Arthur St
- Poor sight lines near Elm/Brown





# Typical issues – parking

- Manage existing parking location/timing
- Improve parent behaviour at pick-up/drop-off
- Support Active Trpt to reduce parking demand












# Toolkit of potential options

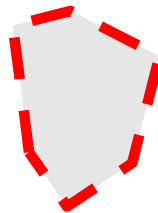
★★★★	★★★	★★	★
Very Good	Good	Neutral	Poor

Category	Treatment	Parking availability	Congestion	Pedestrian crossings	Safer traffic speeds	Encourage active modes	Traffic safety	Timeframe (years)
Manage parking	Angle parking (parking precinct)	★★★★	★	★★	★★★★	★	★★	2
	On-street durations, prices, quantity, locations	★★★★	★★	★★	★★	★★★★	★★	2
	Off-street e.g. commuter parking buildings	★★★★	★★★★	★★	★★	★★	★★	5
	Frog parking / increased enforcement	★★★★	★★	★★	★★	★★	★★	1
	Reduce parking demand (TDM)	★★	★★★★	★★	★★	★★	★★	2
	Static variable parking times (P5 + P240)	★★★★	★★	★★	★★	★★	★★	1
	Dynamic electronic parking times	★★★★	★★	★★	★★	★★	★★	5
	Parking rationalisation	★★	★★★★	★★	★★	★★	★★	2
	Parking relocation (e.g. PUDOS on arterials)	★★★★	★★	★★	★★	★★	★★	2
Access management	1 way streets	★★★★	★★★★	★★★★	★★	★★★★	★★★★	5
	Intersection controls/design e.g. close legs / turn bans	★★	★★★★	★★★★	★★	★★★★	★★★★	3
Pedestrian crossings	Grade separations - short term	★★	★★	★★★★	★★	★★	★★	1
	Grade separations - long term	★★	★★	★★★★	★★	★★★★	★★	5
	High-friction pavement surface	★★	★★	★★★★	★★	★★★★	★★	1
	Hold rails	★★	★★	★★★★	★★	★★	★★	1
Pedestrian crossings and local area traffic management (LATM)	Raised platforms	★★	★★	★★★★	★★★★	★★★★	★★★★	2
	Central refuge islands / median islands	★	★★	★★★★	★★★★	★★★★	★★★★	2
	Kerb buildouts	★	★★	★★★★	★★★★	★★★★	★★★★	2
	Courtesy crossings coloured/textured surface	★★	★★	★★★★	★★★★	★★★★	★★★★	2
	Formal zebra crossing markings	★★	★★	★★★★	★★	★★★★	★★★★	1
	Formal zebra crossing markings at all intersections	★★	★★	★★★★	★★	★★★★	★★★★	5
Streetscape	Area precinct signs	★★	★★	★★	★★	★★	★★	1
	40 km/h area permanent signs & precinct thresholds	★★	★★	★★★★	★★★★	★★★★	★★★★	1
	40 km/h area part-time speed signs	★★	★★	★★★★	★★★★	★★★★	★★★★	1
	Streetscape enhancement/traffic calming	★	★★	★★★★	★★★★	★★★★	★★★★	3
Access management	Part-time road closure	★	★	★★★★	★★	★★★★	★★★★	3
	Shared space streetscape design	★	★	★★★★	★★★★	★★★★	★★★★	3
Soft programmes	School travel planning & promotion	★★	★★	★★	★★	★★★★	★★★★	1
	School project / vision e.g. sustainability	★★★★	★★	★★	★★★★	★★★★	★★★★	2
Road space allocation	Improved cycleways	★	★★	★★	★★	★★★★	★★★★	4
Traffic safety	High-friction pavement surface	★★	★★	★★	★★	★★★★	★★★★	1
Maintenance	Winter maintenance of footpaths	★★	★★	★★★★	★★	★★★★	★★★★	1



# Proposed Treatments

- 'Precinct' approach for combined school area
- Gateway treatments 
- New crossing points 
- Upgrade existing crossings 
- Intersection improvements 
- Parking streets 
- Lower speed limit  



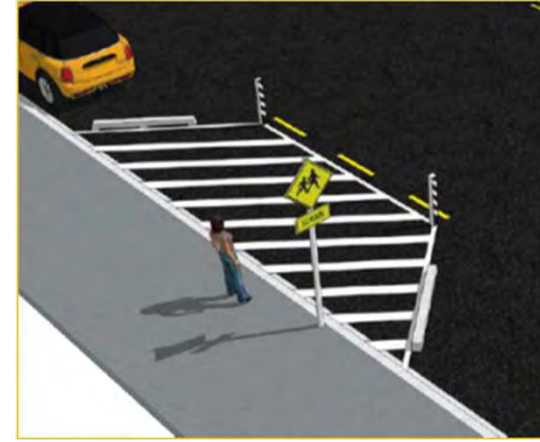
# Levels of treatment





# Timing of options

- Year 0-1 (2018)
  - 'Quick wins' and 'Trials' in current financial year
- Year 1-3 (2018-2021)
  - Formalising 'Trials' and improving crossing points

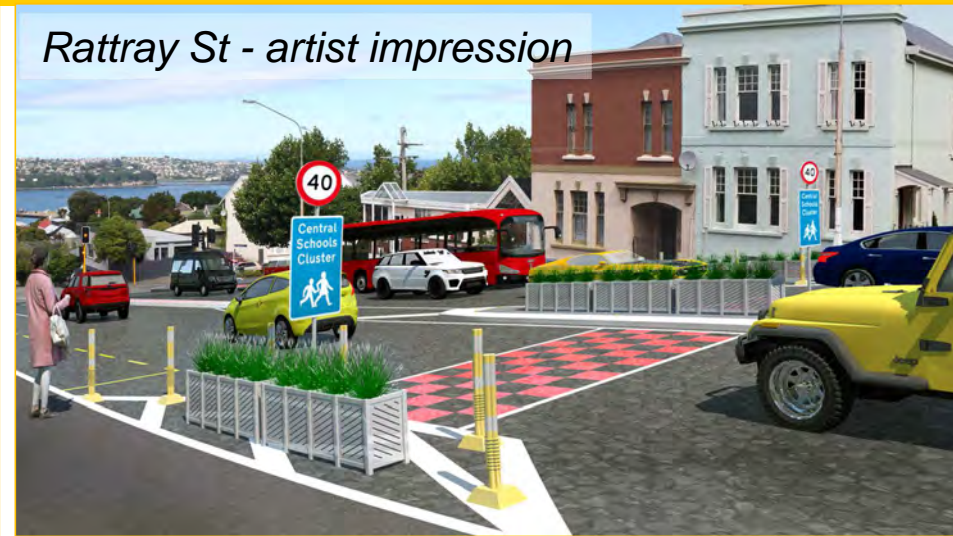


# Quick wins & Trials – “paint, planters & posts”

*Brown/Elm roundabout - installed*



*Rattray St - artist impression*



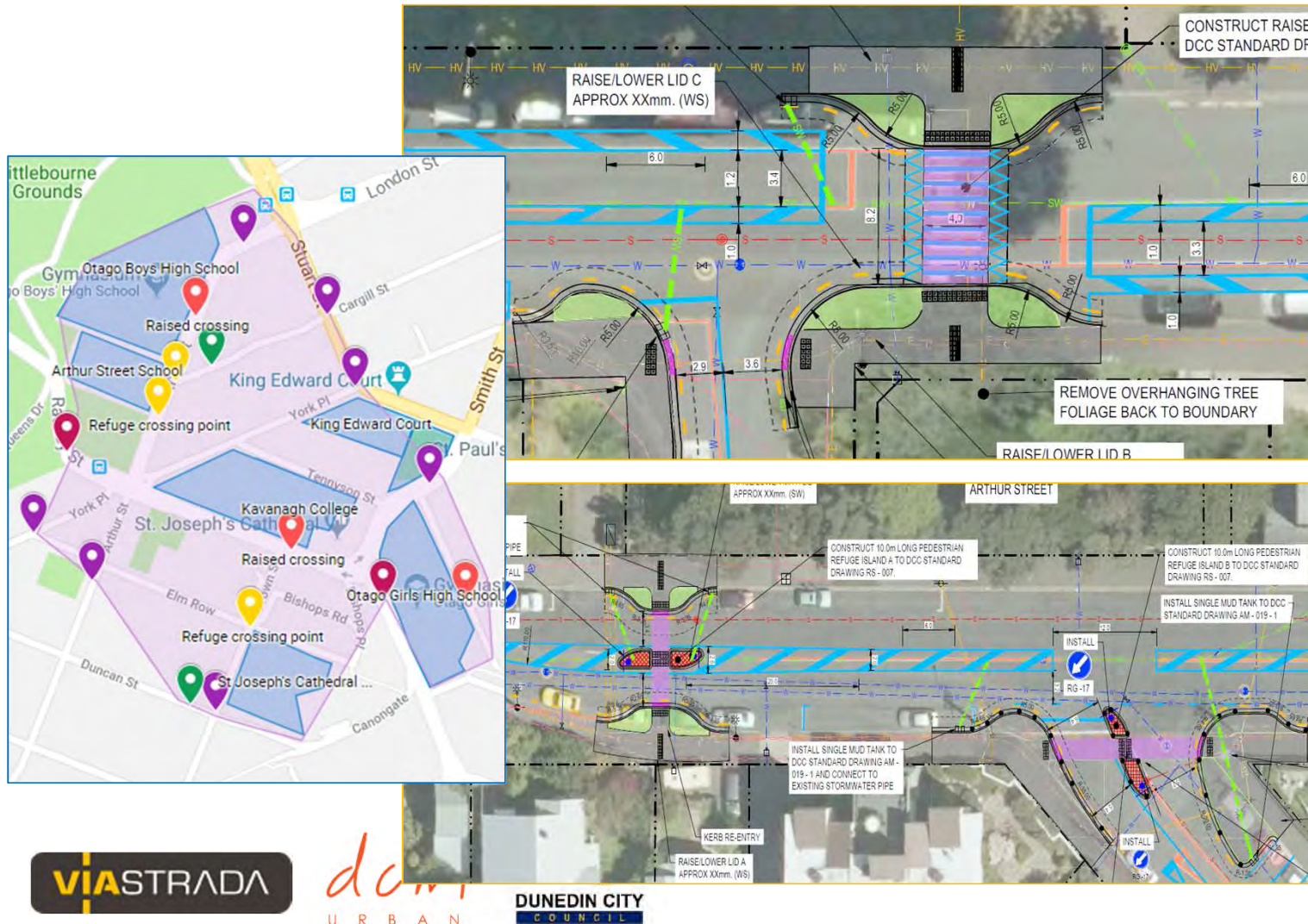
*Smith St gateway - installed*



# Quick wins/Trials - Consultation/Feedback

- Generally positive
  - Some initial confusion over red crossing surfacing
  - +ve feedback re. gateways and treating as a precinct
- By trialling options the public are more aware of what we're doing and why
  - They realise it's not permanent if not successful
- Schools and students very supportive
- Currently in the process of Speed Limit bylaw amendment
  - Change to 40kmh school zone
- Comments on speed include:
  - Extending school zone
  - Lower school speed to 30kmh
  - Make the speed restriction permanent
- Street speeds monitored
  - ~1-2km/h mean spd drop so far



# Medium Term

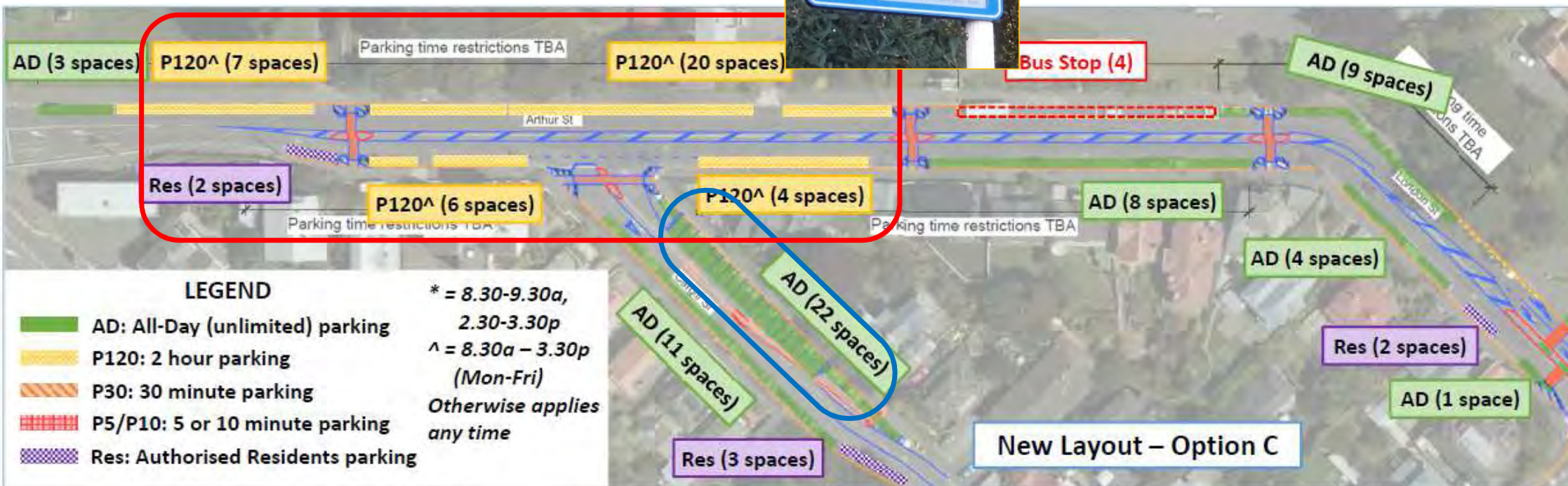


- Detailed design completed (16 sites)
  - Includes gateways, raised ped'n xings, and narrowing of intersections
  - Variable speed signs to be installed at all gateways (with speed radar)
- Initially use standard 40kmh school zone
  - Trial 30kmh zone?



# Parking reconfiguration

- 90° parking to create more spaces 
- More focus on short-term school parking (up to 120 mins) 
- Dynamic parking signs?



# Conclusions

- A precinct approach can provide benefits to a whole area
  - More logical than treating schools individually
  - Easier to consult with stakeholders in one go (same messages)
- Final implementation will take time
  - Consultation/process for permanent/variable lower speed limit
  - Consultation/Implementing new parking layouts/restrictions
- ‘Quick win’ treatments provide some immediate relief
  - Already some speed reductions (~1-2km/h mean speed drop)
  - Good feedback from schools (*and little adverse press*)



# Thank you – Questions?

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