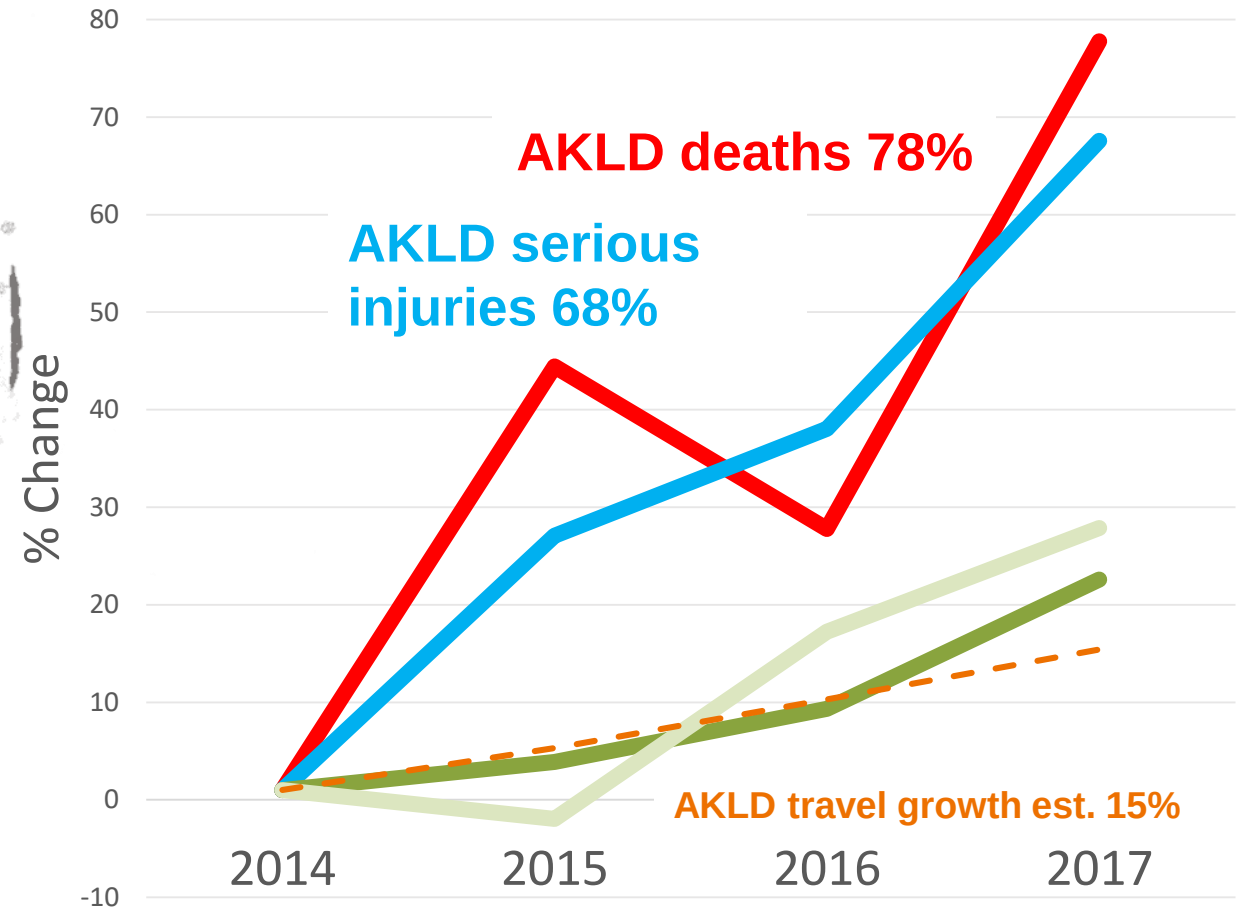
Stantec

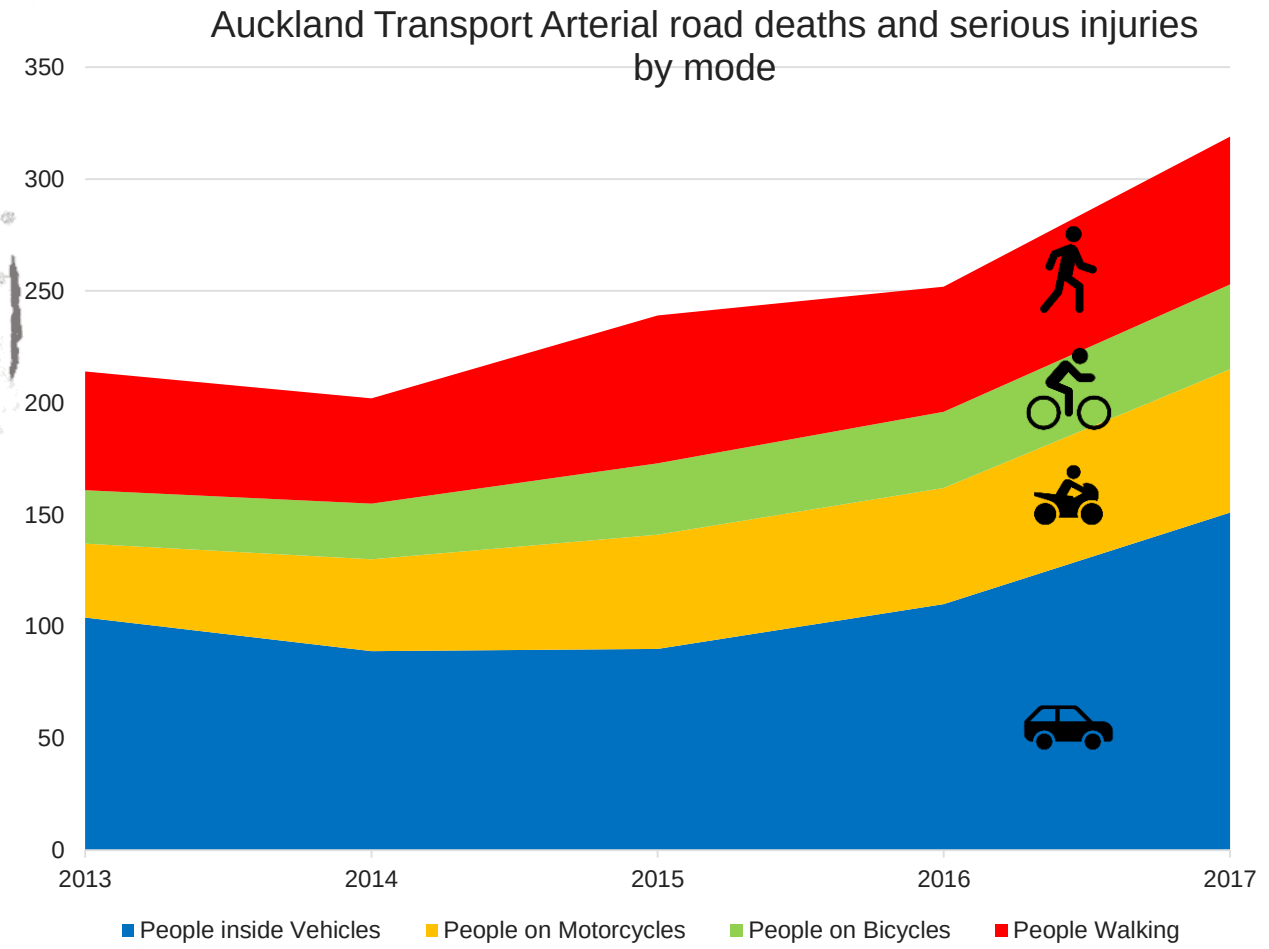
Safe Streets

CRAF / MUAF

Auckland faces a Road Safety Crisis



Arterial road deaths and serious injuries have increased for people walking and motorcycling

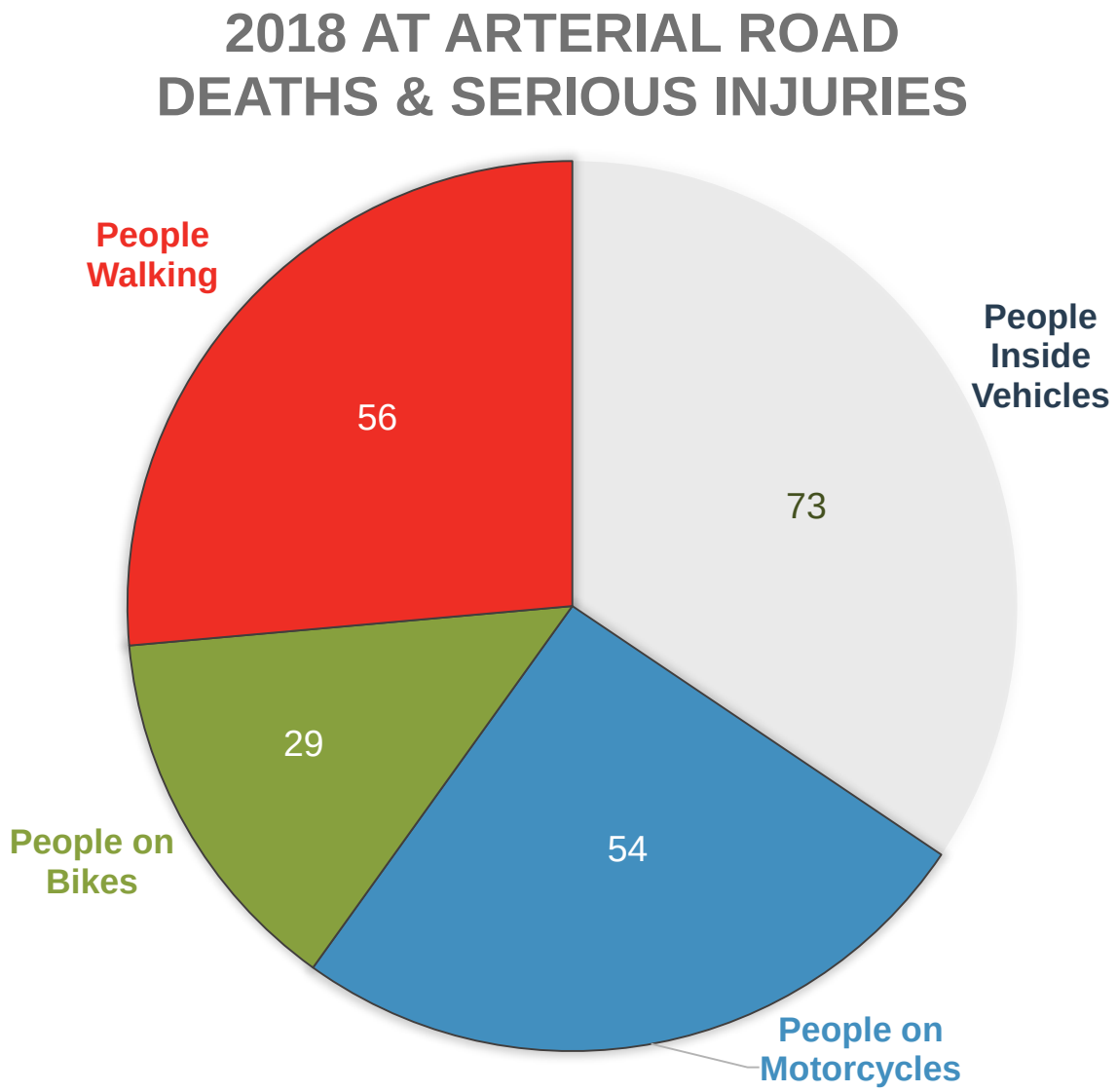


66%

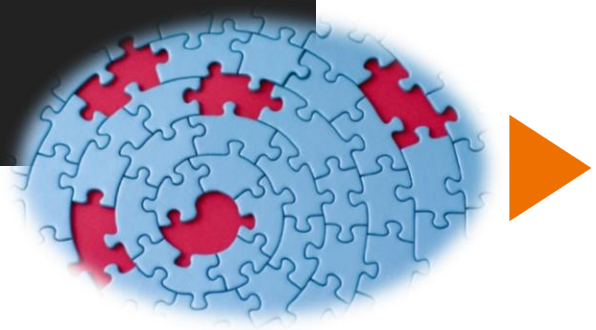
Walking, Cycling & Motorcycle

Difficult to predict VRU DSI on arterials with so many Unknowns??

- Number of people trips
- Movements & causation
- Sample size & clustering
- Under-reporting
- Reporting bias
- Repressed demand
- Land use etc

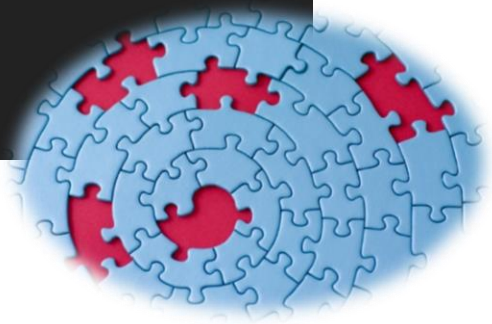


Process

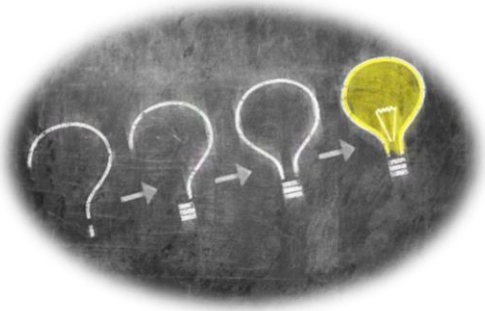


Current Tools &
Process

Process

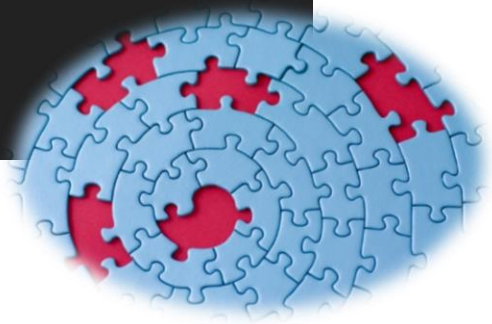


Current Tools & Process



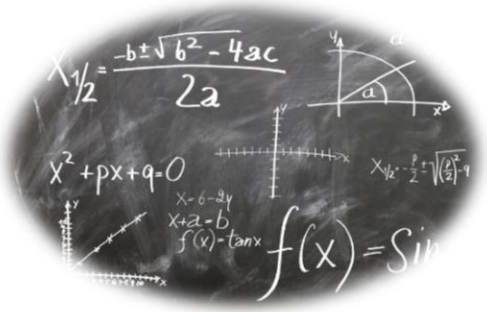
Brainstorm Needs

Process



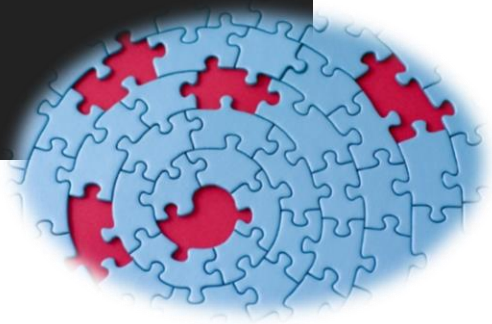
Current Tools & Process

Brainstorm Needs



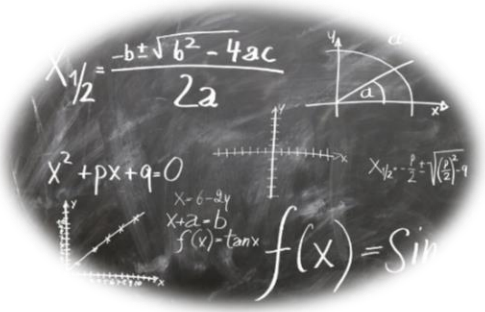
Develop Process

Process



Current Tools & Process

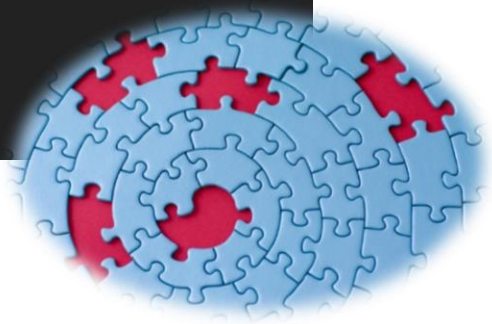
Brainstorm Needs



Develop Process

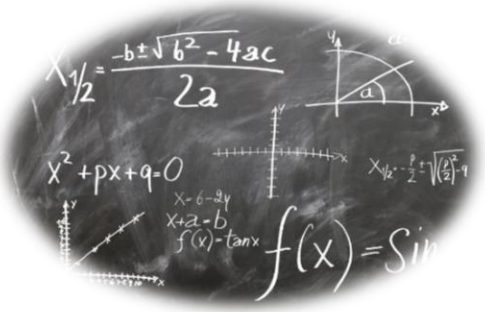
Test / Refine / Deploy

Process



Current Tools & Process

Brainstorm Needs



Develop Process

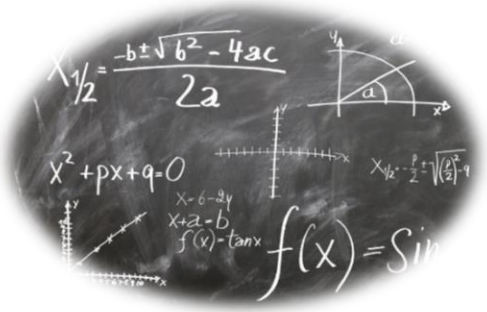
Test / Refine / Deploy

Peer Training

Process

Current Tools & Process

Brainstorm Needs



Develop Process

Test / Refine / Deploy

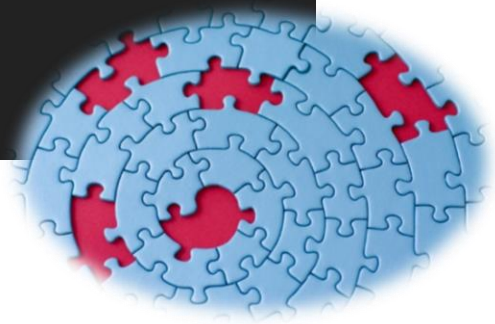
Peer Training

Field Evaluation

Refine Process

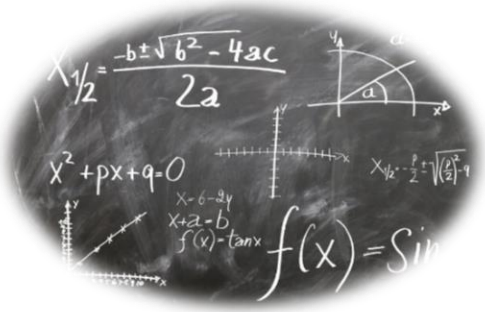
Results & Tools

Process



Current Tools & Process

Brainstorm Needs

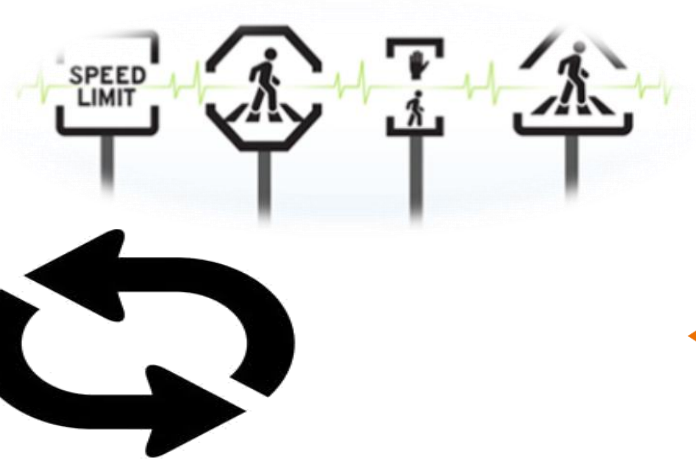


Develop Process

Test / Refine / Deploy

Develop Countermeasures

Results & Tools



Field Evaluation
Refine Process

Peer Training

MUAF

Multi-User Assessment Framework

AT Safe System Corridor Assessment

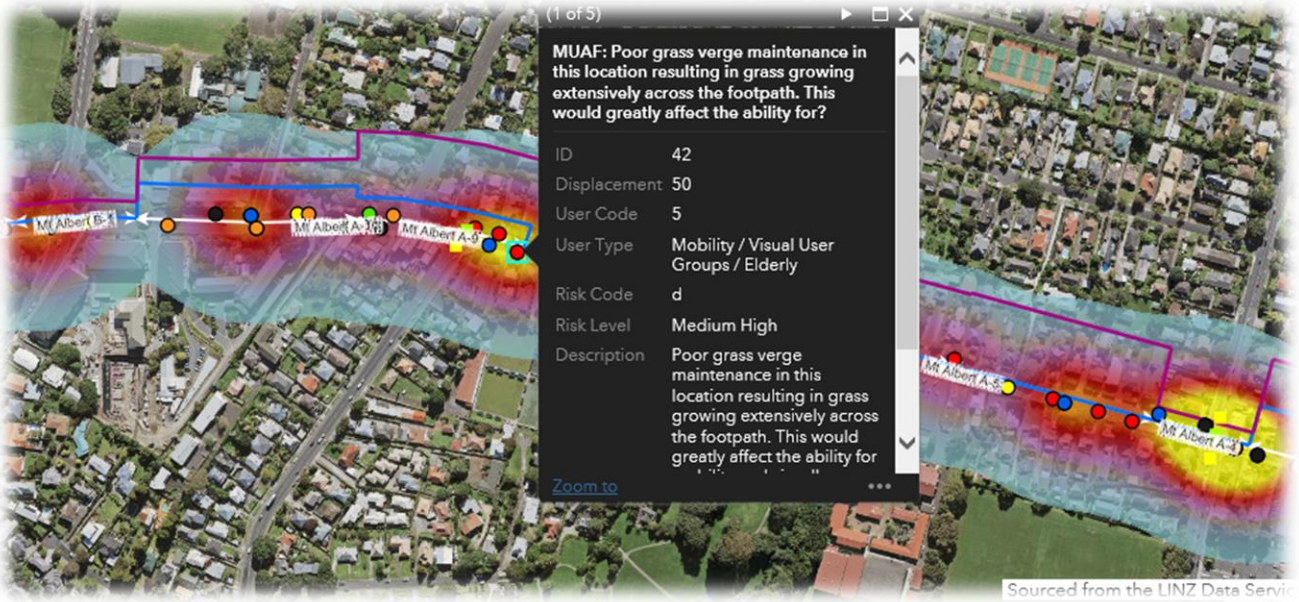
Route Inspection Framework

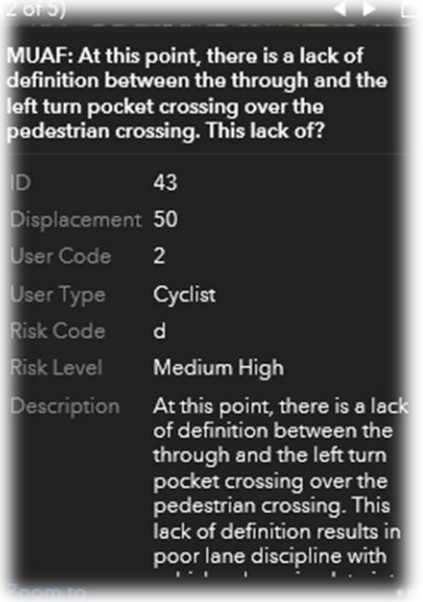
Road Name	RP (Start)	RP (end)	Side of Road

Description of Problem

	User Type
1	Pedestrian
2	Cyclist
3	Pedestrian / Cyclist Mix
4	Ped / Cycle + School
5	Mobility / Visual User Groups / Elderly

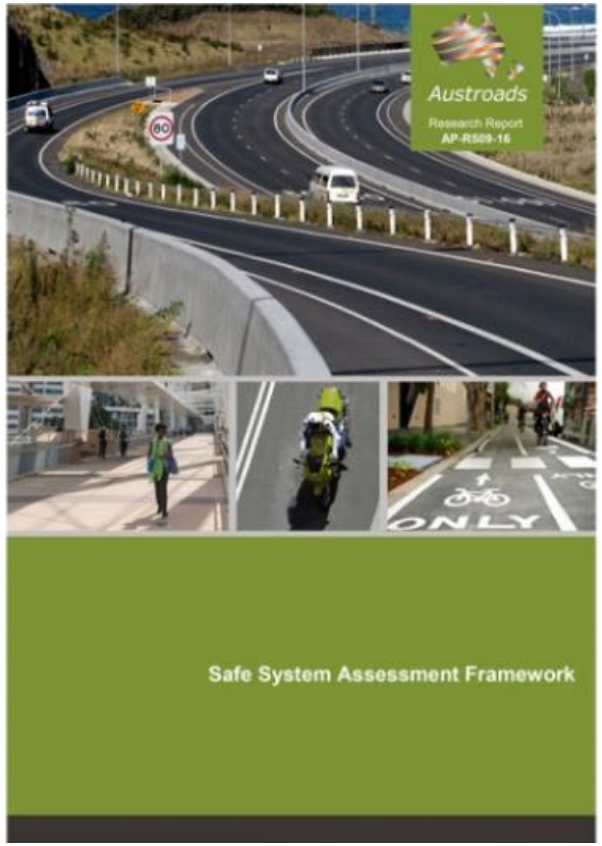
	Risk Level
A	Low
B	Low / Medium
C	Medium
D	Medium / High
E	High
F	Extreme





CRAF

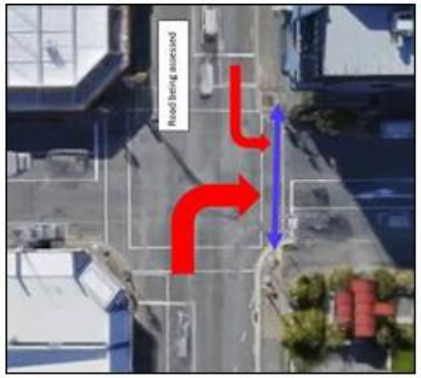
Crash Risk Assessment Framework



Volume bands	1 Low	2 Med-Low	3 Med	4 Med-High	5 High
Traffic Volume	up to15,000	15,000 to 25,000	25,000 to 30,000	30,000 to 40,000	Over 40,000
Side-road/Access Vol (per 100m)	<100	100 to 300	300 to 3000	3000 to 15000	Over 15000
Pedestrian Vol (Across & Along)					
Cycle Volume (2 way)					
Motorcycle Volume (2 way)					

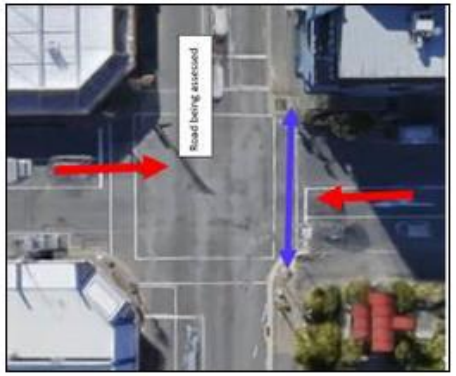
Cycle vs Vehicle Volume

	Low cycle Volume <100	100 to 200	200 to 500	500 to 1,000	High cycle Volume >1,000	High Risk Cyclist
< 15,000	1	1	2	3	3	4
15,000 - 25,000	1	2	2	3	4	5
25,000 - 30,000	2	2	3	4	4	5
30,000 - 40,000	2	3	3	4	5	5
40,000 plus	3	3	4	5	5	5

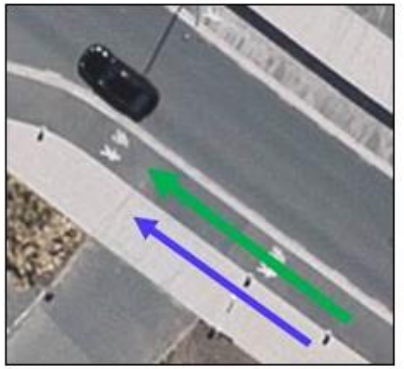


P1 Intersection (Vehicle Turning)

P2 Mid-block/90-degree movement

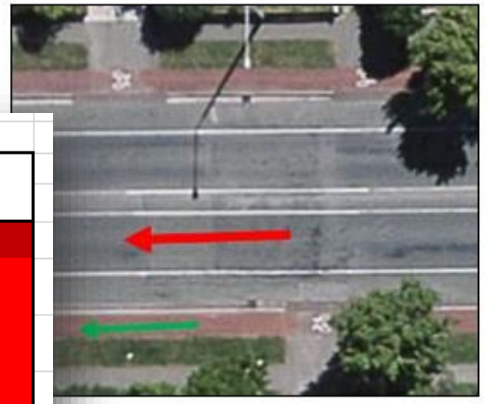


P3 Intersections (vehicle straight through)



P4 Pedestrian and Cyclists

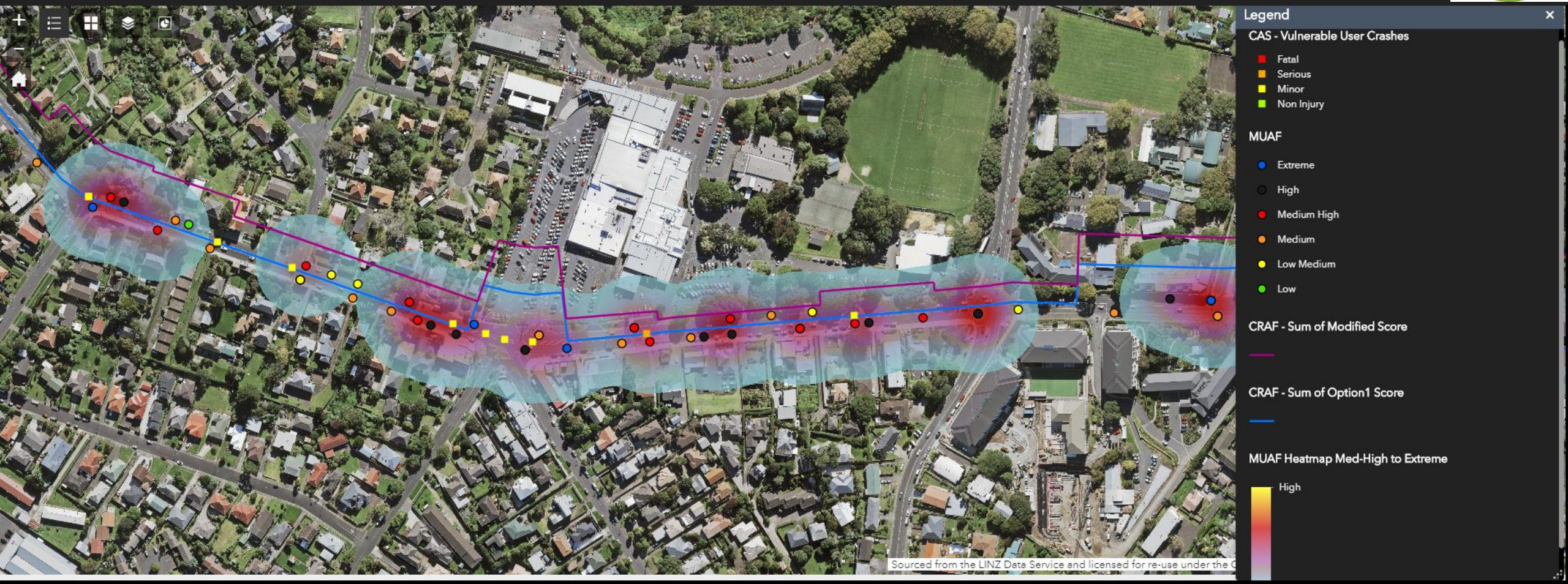
Cycle Movements

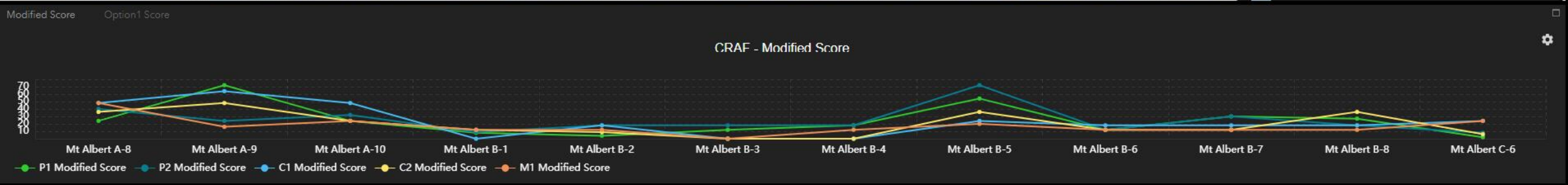


Mid-Block Side Swipe

C2 Intersection/Access (vehicles turning)

Data Collection and Collation





Results to Date

	Section	6 Score	7 Score	8 Score	9 Score	10 Score	11 Score	12 Score
P1 - Vehicle Turning	Existing	6	24	12	24	16	4	6
	Option 1	4	12	6	12	12	4	3
	Option 2	4	12	6	12	12	4	6
P2 - Vehicle Straight	Existing	48	112	32	84	24	24	24
	Option 1	16	16	8	6	12	12	8
	Option 2	16	16	8	12	12	12	16
C1 - Mid block SS	Existing	16	32	16	32	16	16	24
	Option 1	4	4	4	4	6	12	6
	Option 2	8	8	12	8	12	12	12
C2 – Vehicle Turning	Existing	4	12	4	32	8	4	4
	Option 1	2	6	2	4	8	4	4
	Option 2	4	12	4	8	8	4	4
C3 - Side Swipe	Existing	16	16	16	16	16	16	16
	Option 1	8	4	4	4	8	12	6
	Option 2	8	8	6	8	12	12	12

Table 7-4: Economic Evaluation Summary

	Option 1a	Option 1b	Option 2	Option 3
PV Net Safety Benefits	$7.4 m	$7.5 m	$6.9 m	$7.0 m
PV Net Efficiency Benefits	-$32.2 m	-$40.3 m	-$32.2 m	-$40.3 m
PV Net Benefits (Safety + Efficiency)	-$23.5 m	-$31.5 m	-$24.3 m	-$32.2 m
Cost (inc. Design + Maintenance)	$4.6 m	$4.6 m	$3.8 m	$3.8 m
Safety BCR	1.6	1.6	1.8	1.8
Safety + Efficiency BCR	Negative	Negative	Negative	Negative

Where to from here!