Crash Monitoring
Proven Effective Measures

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INTRODUCTION

Importance of crash monitoring:

- Road safety works that have been installed should be followed-up with crash monitoring, to determine if successful.

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- Road safety works that have been installed should be followed-up with crash monitoring, to determine if successful.

- Successful measures can be applied elsewhere, increasing chances of improving success elsewhere.

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- These **measures include**: Traffic calming, speed reduction, enhanced signage/delineation, rural road bend treatments, rural road junction upgrades, and traffic signal installations;
- This presentation demonstrates several successful sites**.**

SITE 1: BRIGHAM CREEK ROAD / TRIG ROAD

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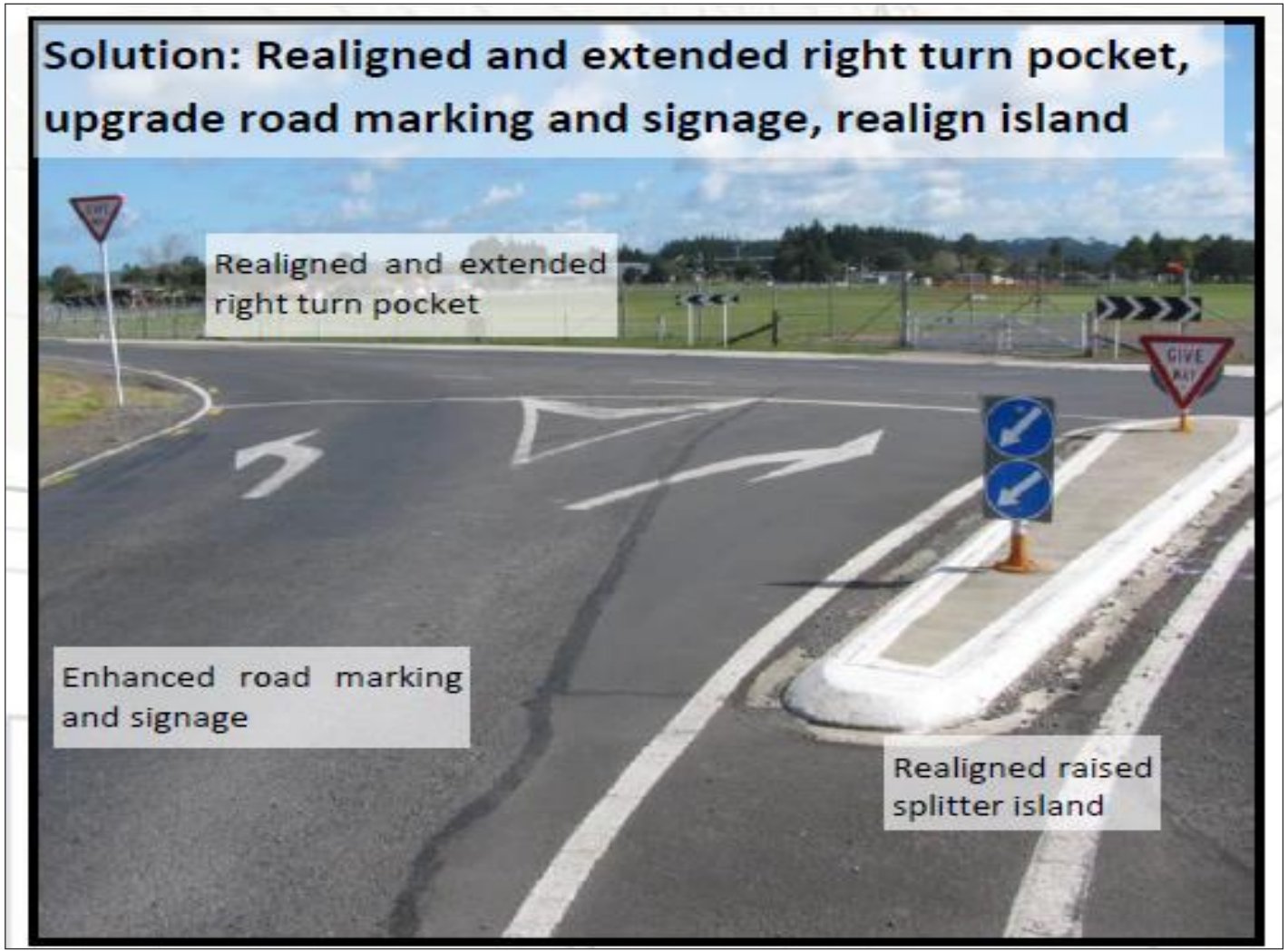

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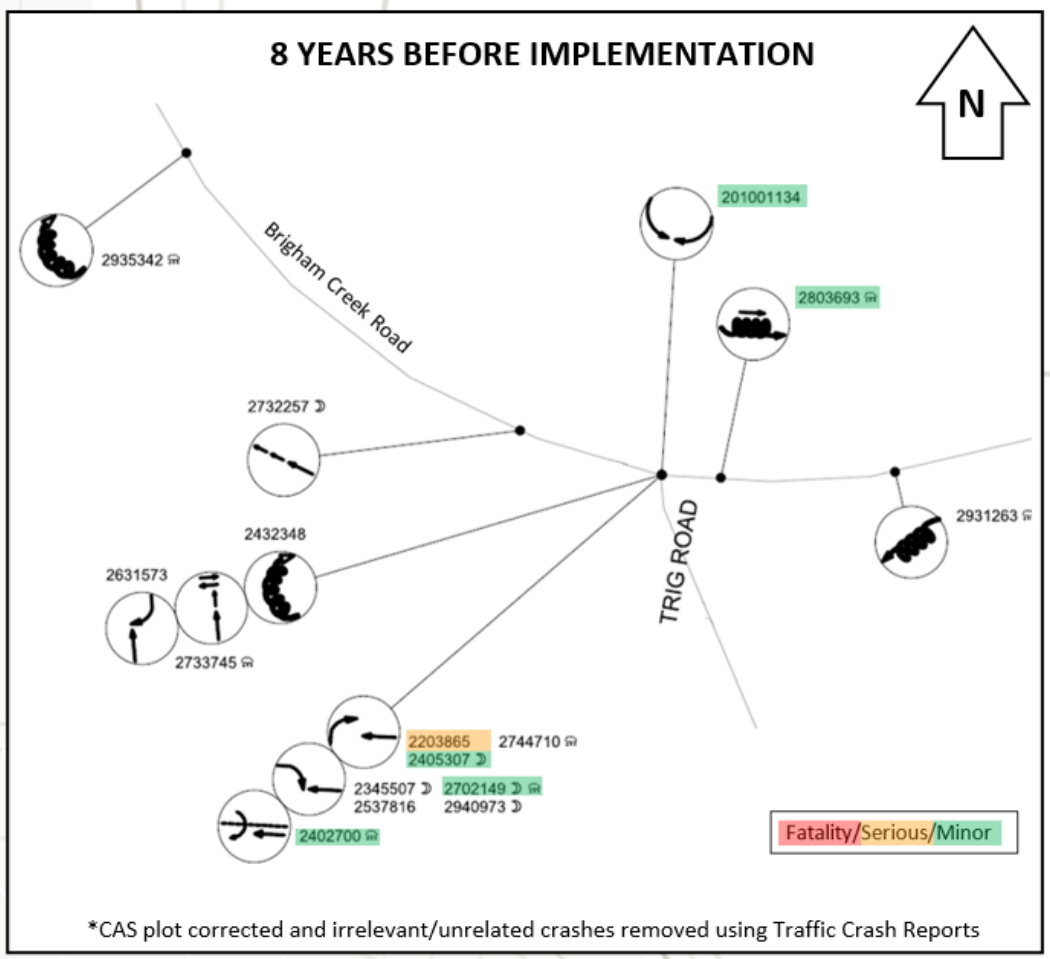
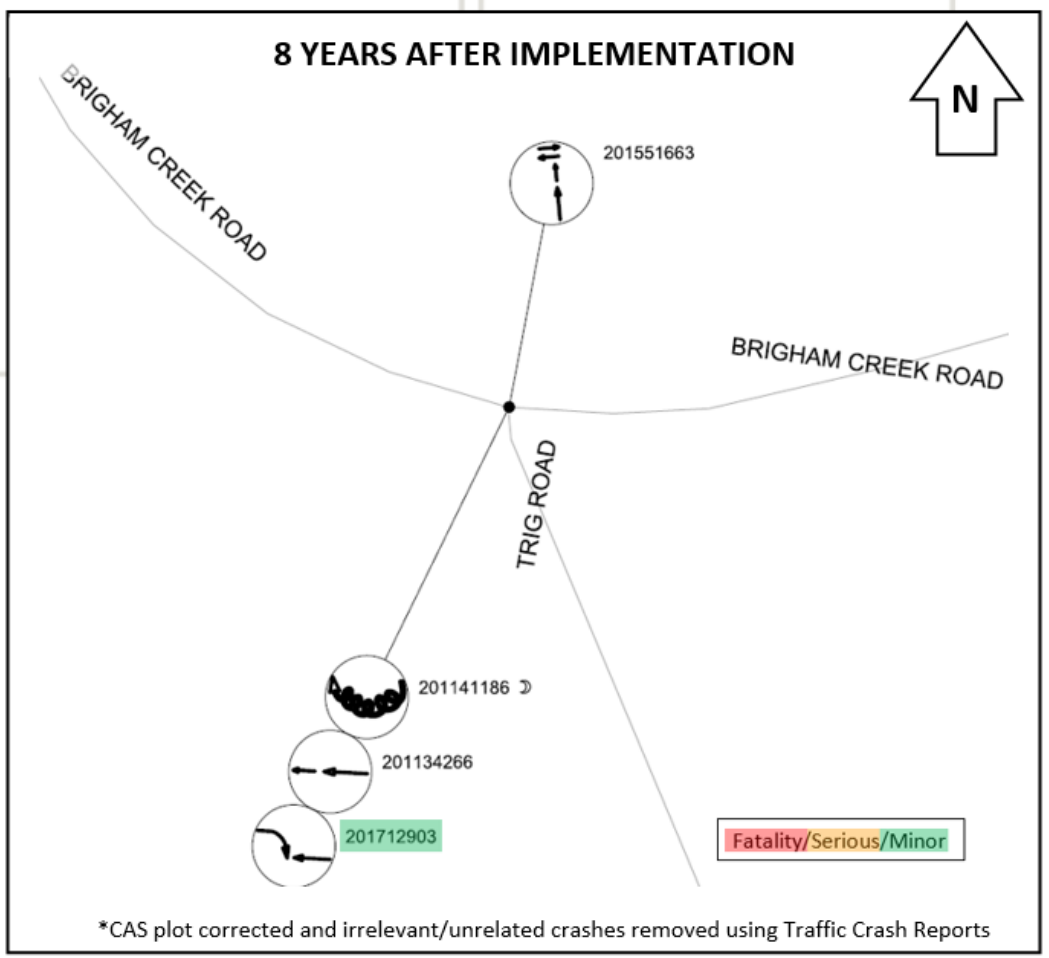


16 reported crashes (1 serious, 5 minor injury) over 8 years before improvements (mid 2002 – mid 2010)



4 reported crashes (1 minor injury) over 8 years since improvements (mid 2010 – mid 2018)

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SITE 1: BRIGHAM CREEK ROAD / TRIG ROAD

71% **Crash Reduction**

- **DSI saved per year = 0.1**
- **BCR = 113**

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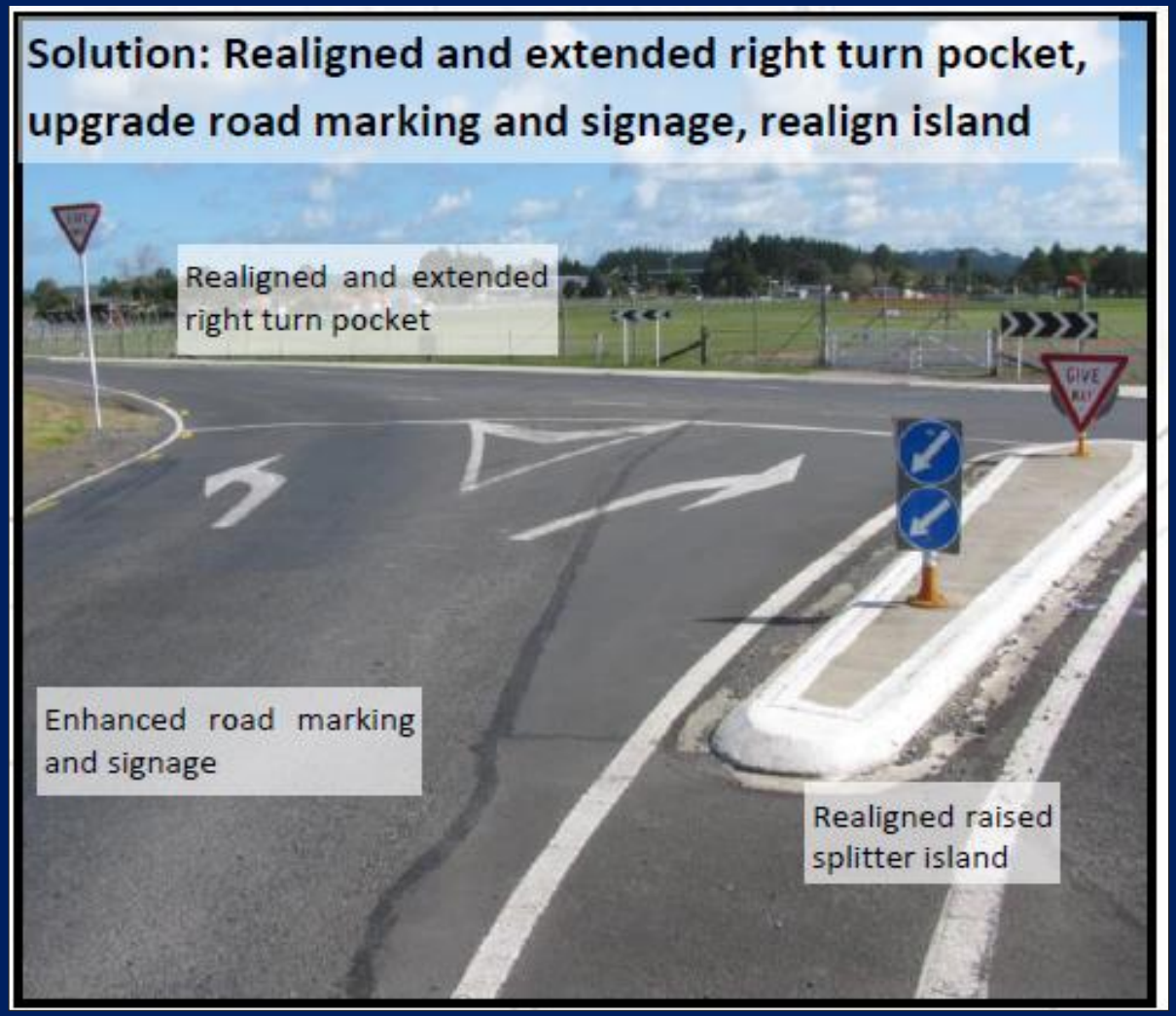
SITE 1: BRIGHAM CREEK ROAD / TRIG ROAD

Conclusion:

JA / LB Type crashes (involving motorists turning across a junction) can be addressed effectively with fairly low cost signage and delineation improvements.



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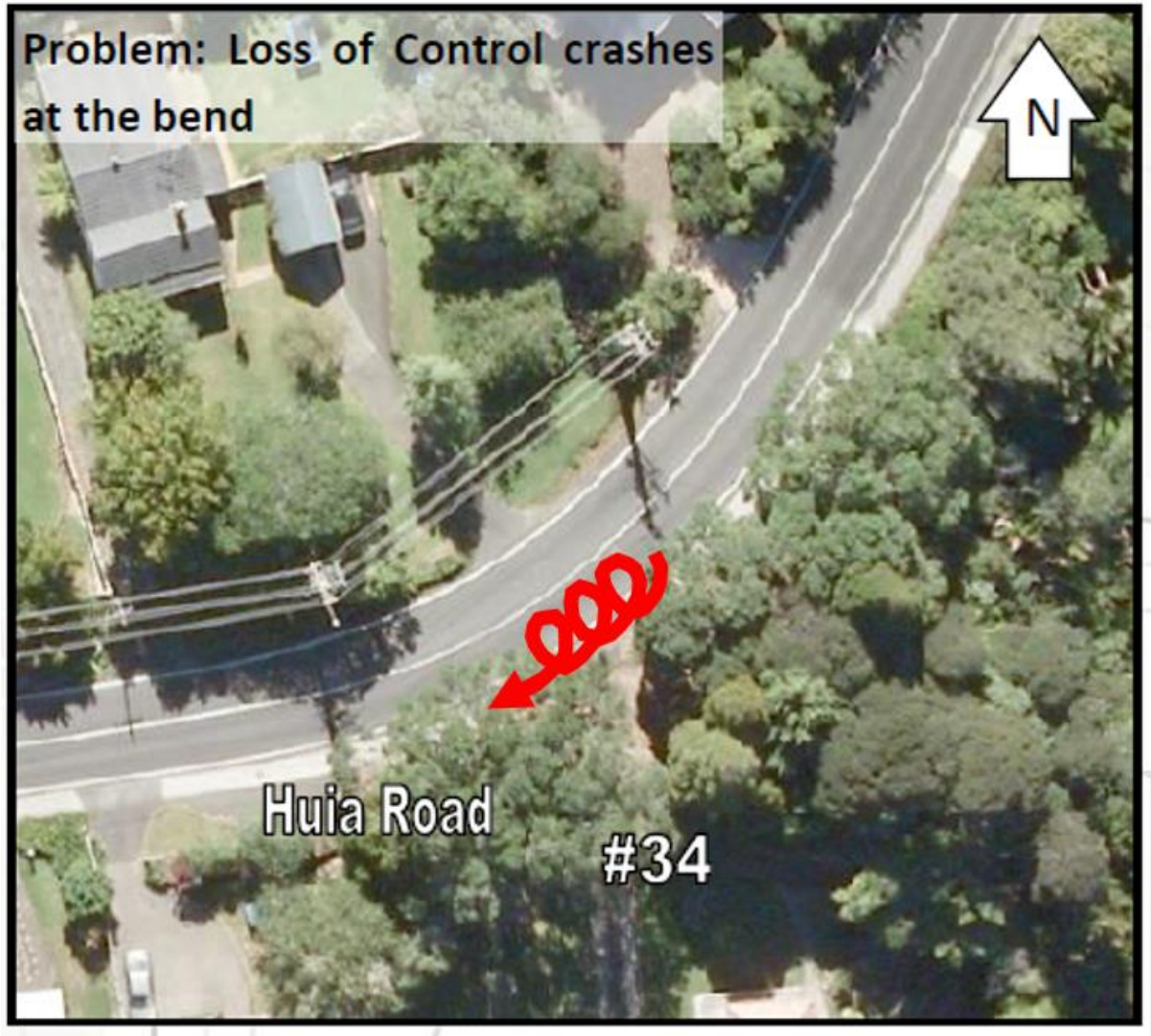
SITE 2: 34 HUIA ROAD



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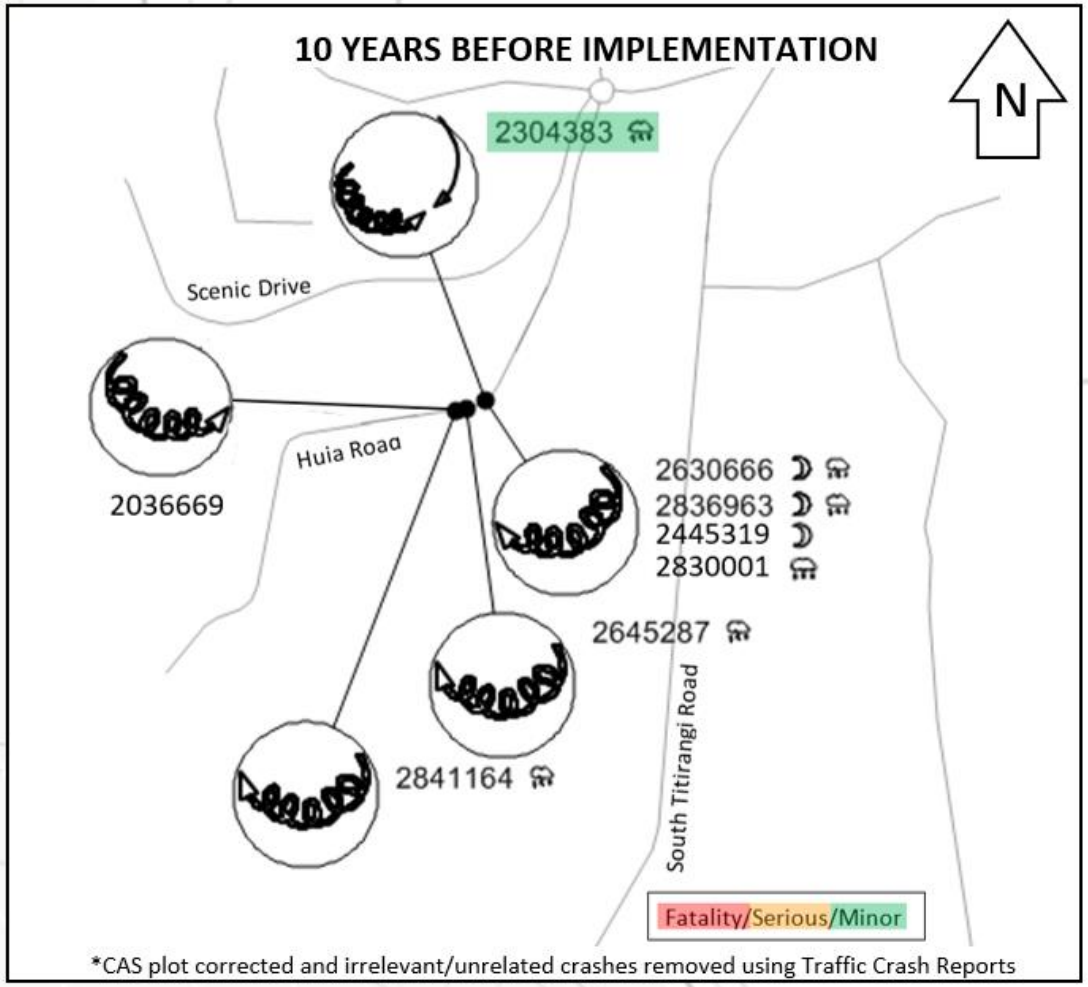
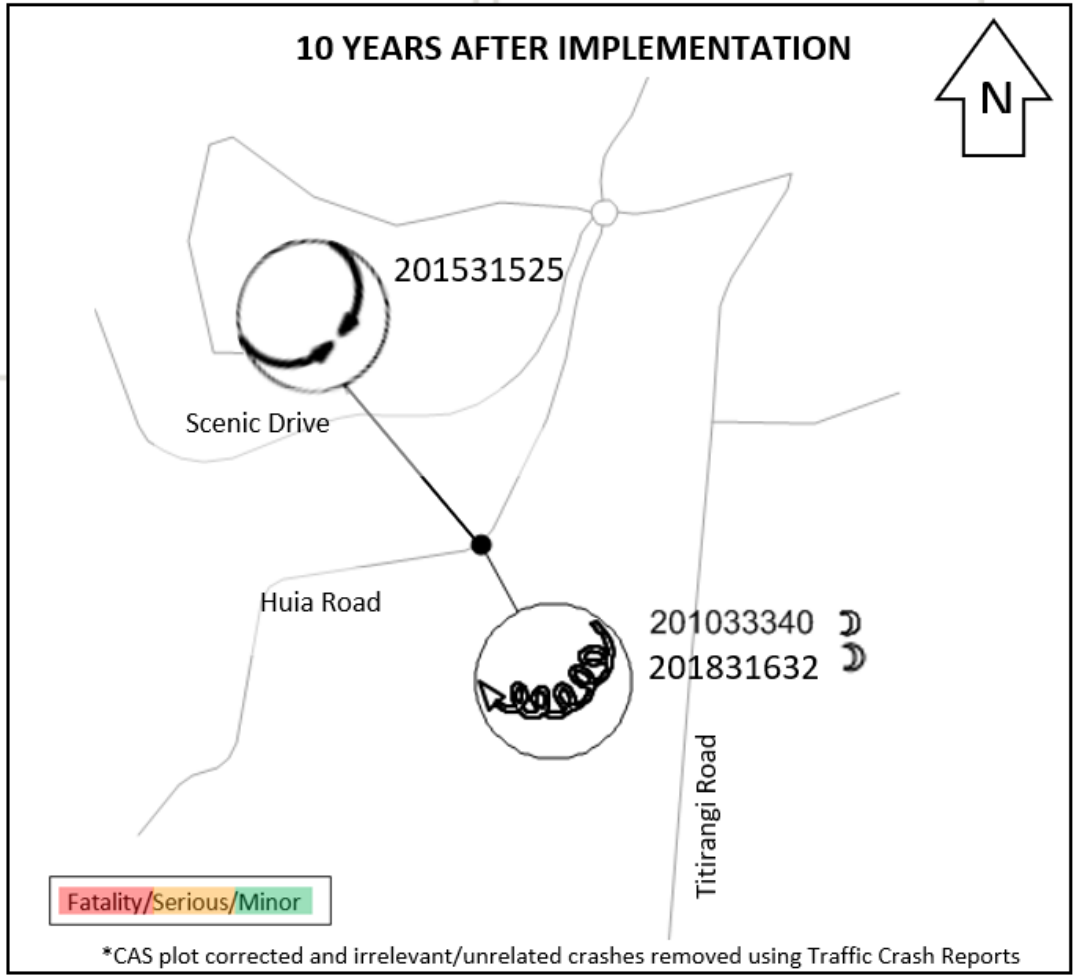


8 reported crashes (1 minor injury) over 10 years before improvements
(Sept 1998 – Aug 2008)



3 non-injury crash reported over 10 years since improvements
(Sept 2008 – Aug 2018)

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SITE 2: 34 HUIA ROAD

57% **Crash Reduction**

- No DSI saved (none prior to works)
- BCR = 7

SITE 2: 34 HUIA ROAD

Conclusion:

Targeting LOC crashes in one direction using a package of complimentary crash remedial works can be effective over the long-term.

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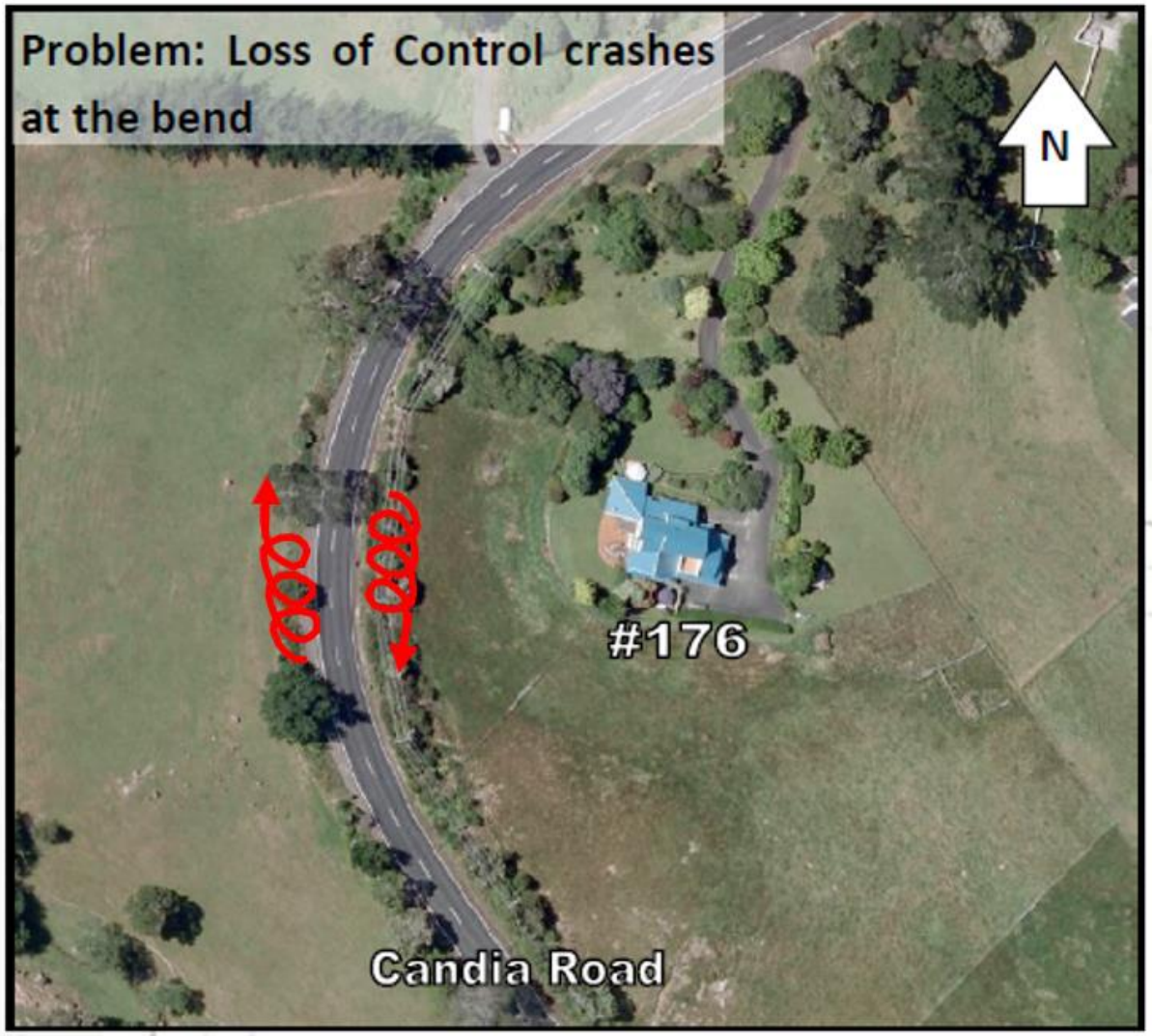
SITE 3: 176 CANDIA ROAD



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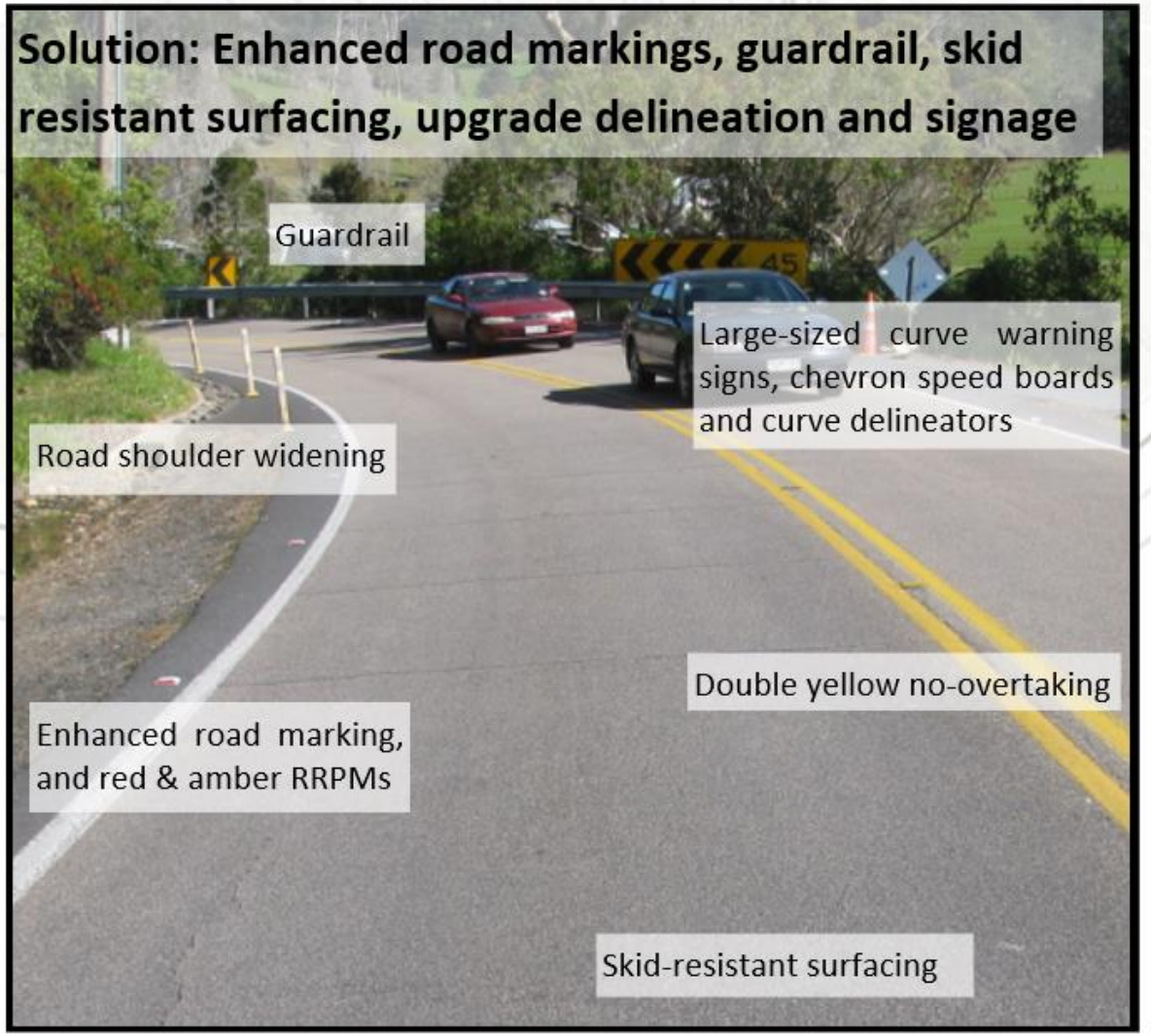

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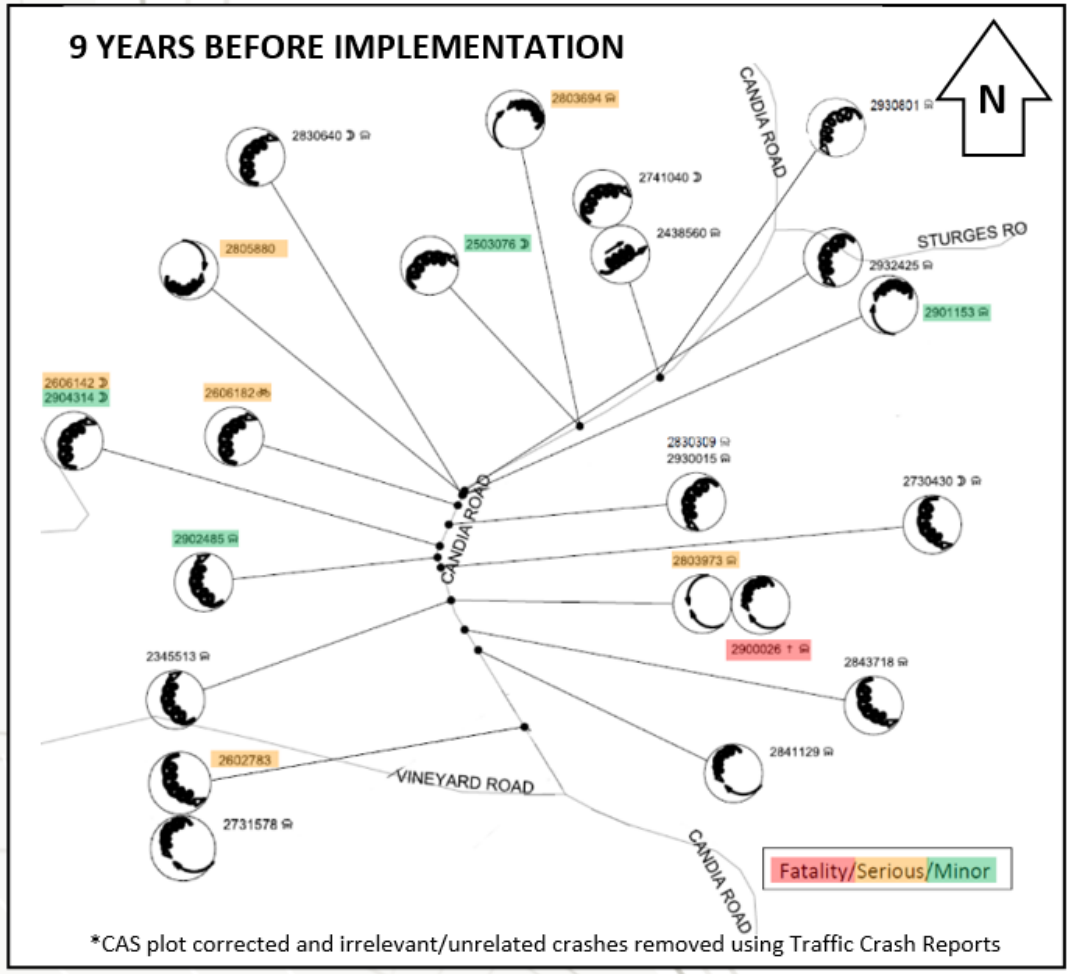
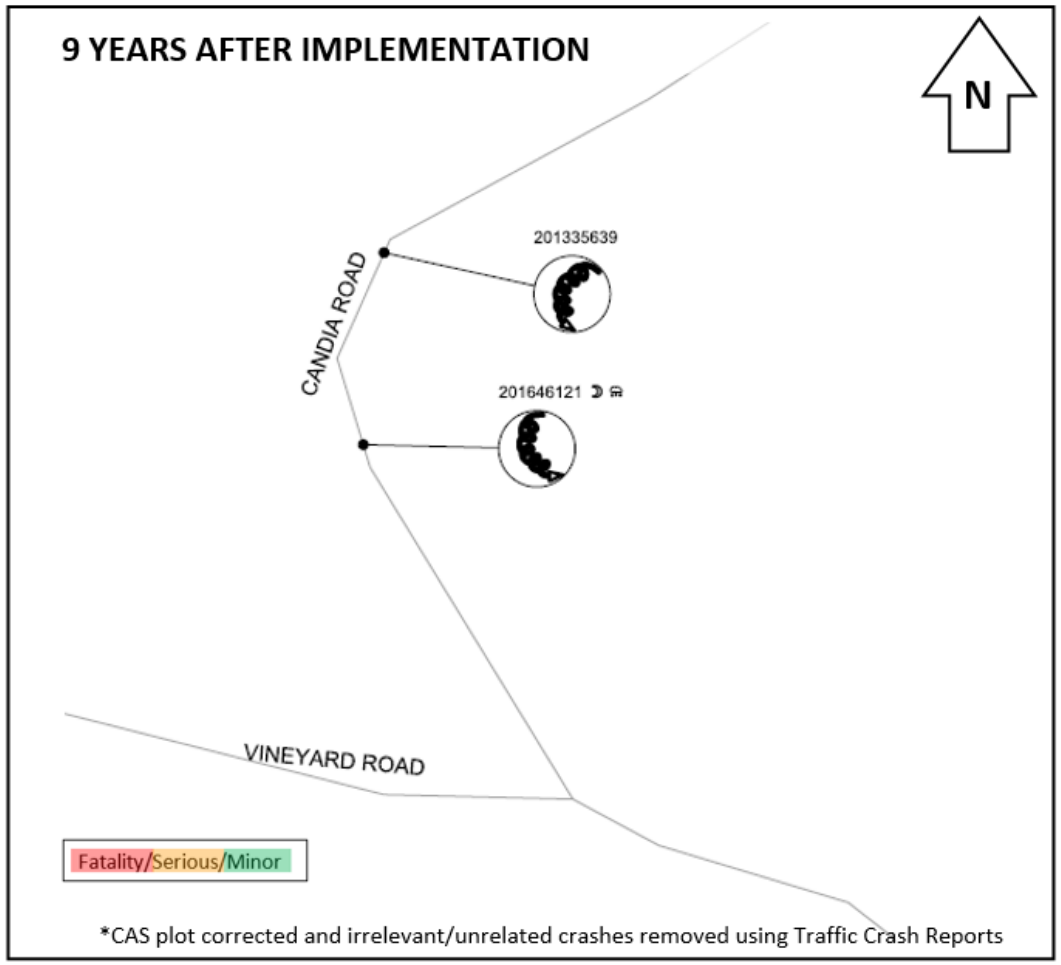


23 reported crashes (1 fatal, 6 serious, 4 minor injury) over 9 years before improvements (2001 – 2009)



2 non-injury crash reported over 9 years since improvements (2010 – 2018)

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SITE 3: 176 CANDIA ROAD

90% **Crash Reduction**

- DSI saved per year = 0.8
- BCR = 26

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SITE 3: 176 CANDIA ROAD

Conclusion:

Targeting rural road LOC crashes with a package of complimentary crash remedial works can be effective over the long-term, without crash migration.

SITE 4: MILL ROAD / RANFURLY ROAD

Problem: Loss of control crashes at bend/junction, and rear-end crashes.

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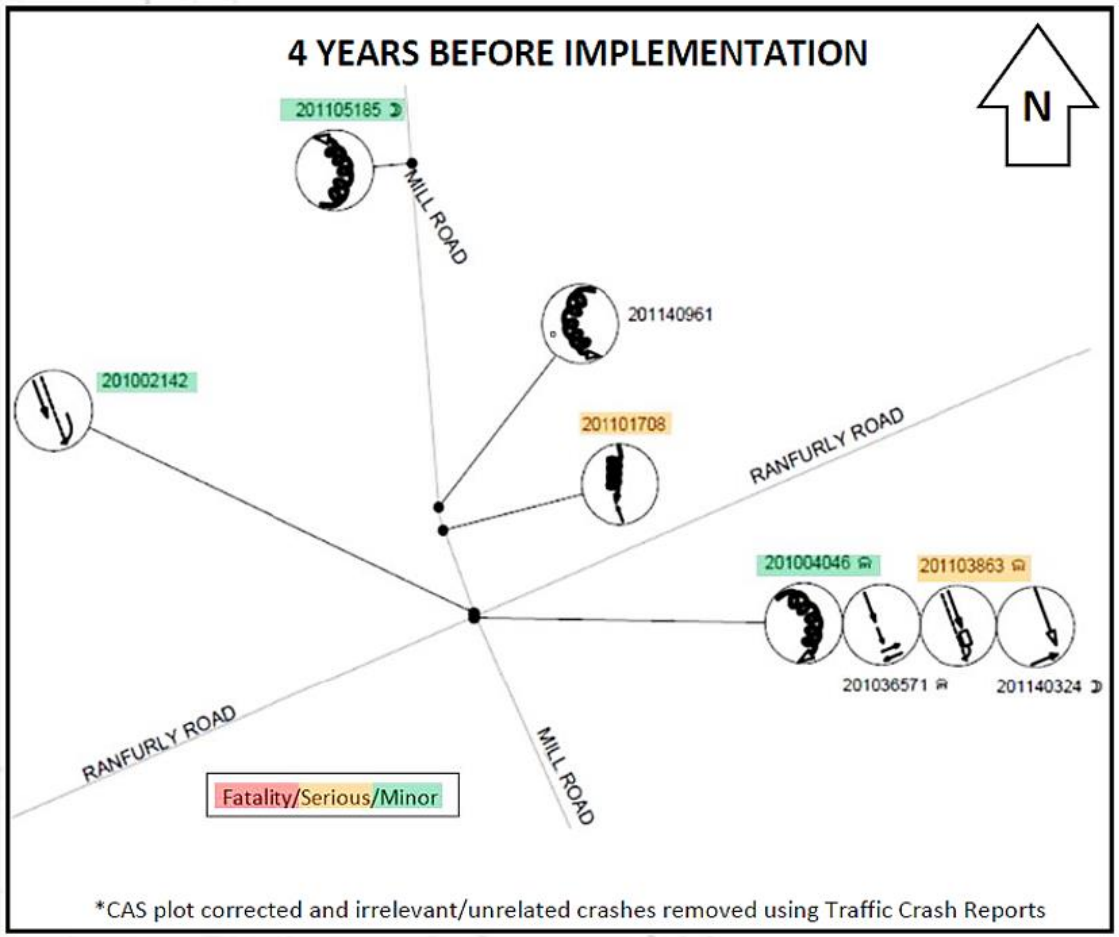
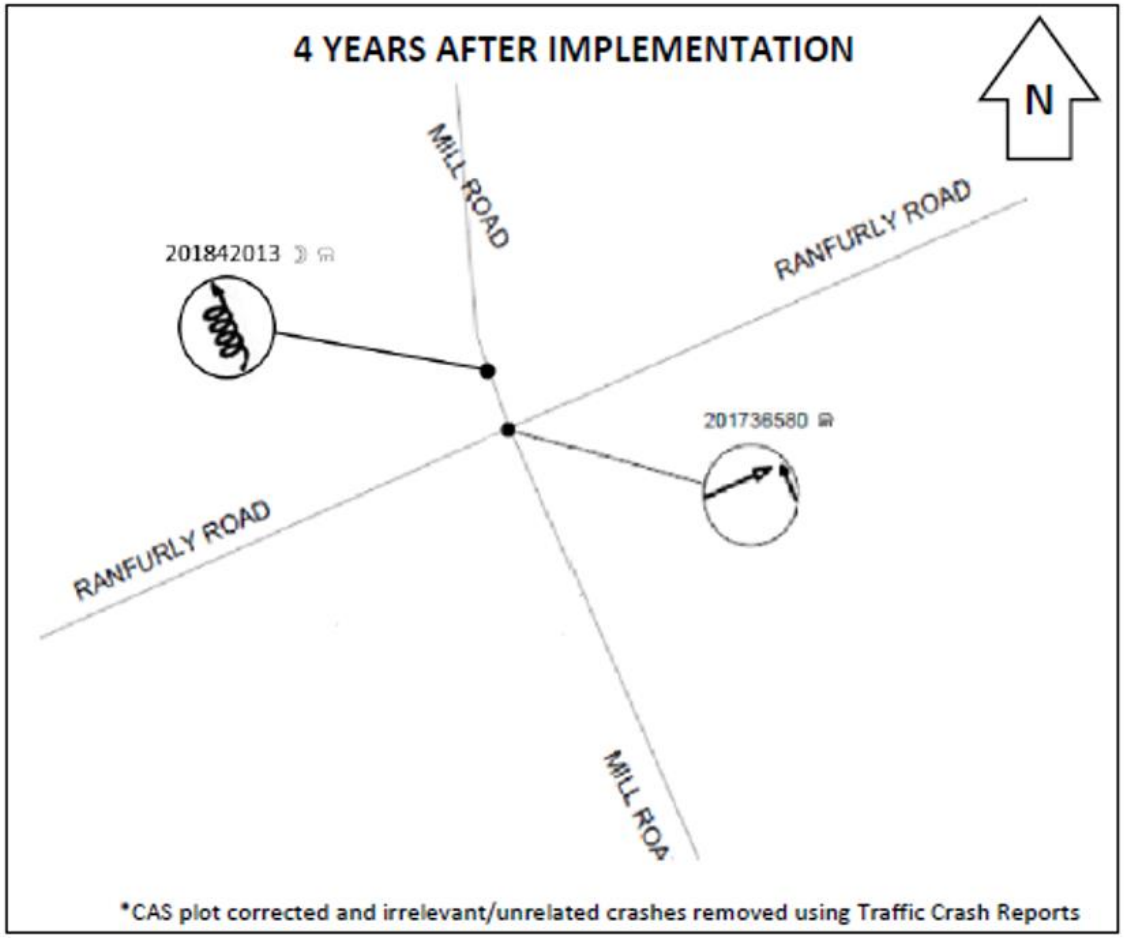
SITE 4: MILL ROAD / RANFURLY ROAD

Solution: Milling, levelling and resealing of junction for LOC. Right turn pocket for rear-ends.

SITE 4: MILL ROAD / RANFURLY ROAD



8 reported crashes (2 serious, 3 minor injury) over 4 years before improvements (2009 – 2012)



2 non-injury crash reported over 4 years since improvements (2015 – 2018)

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SITE 4: MILL ROAD / RANFURLY ROAD

76% **Crash Reduction**

- DSI saved per year = 0.5
- BCR = 34

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SITE 4: MILL ROAD / RANFURLY ROAD

Conclusion:

Significant road works (road surface milling & resealing) can be justified if DSI crashes exist.

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SITE 5: RICHARDSON ROAD (BETWEEN DOMINION & MCKINNON)

Problem: Rear-end, U-turn, and turning crashes.

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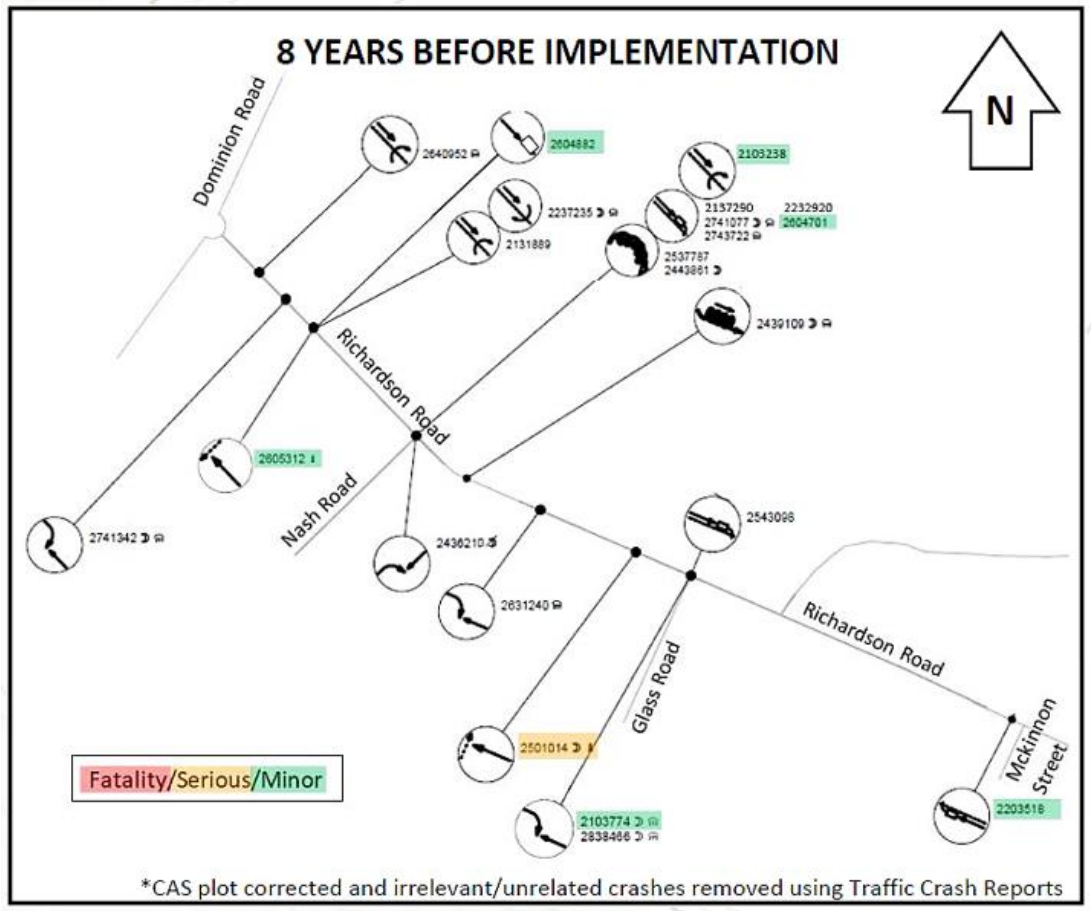
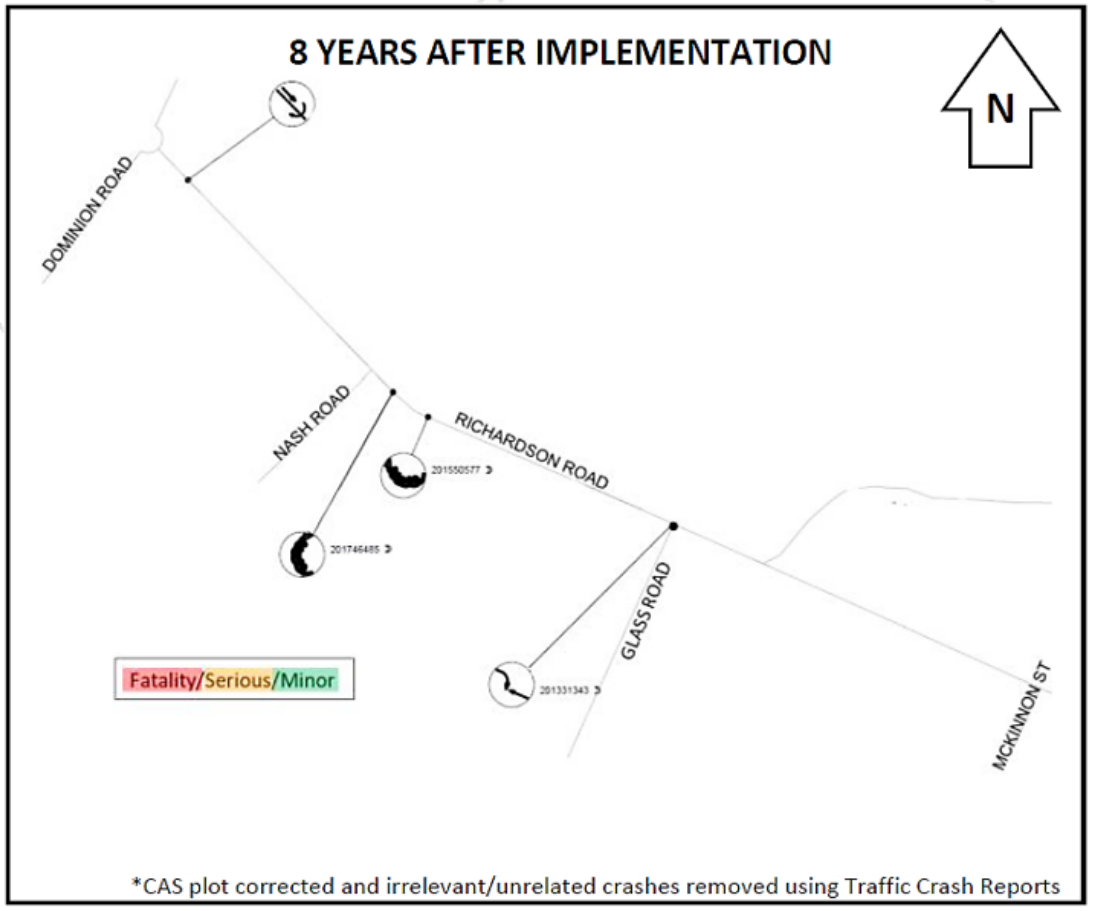


22 reported crashes (1 serious, 6 minor injury) over 8 years before improvements (2001 – 2008)



4 reported non-injury crash over 8 years since improvements (2011 – 2018)

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SITE 5: RICHARDSON ROAD (BETWEEN DOMINION AND MCKINNON)

78% **Crash Reduction**

- **DSI saved per year = 0.1**
- **BCR = 196**

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SITE 5: RICHARDSON ROAD (BETWEEN DOMINION AND MCKINNON)

Conclusion:

Flush median significantly reduced rear-end, right-turn against and U-turn crashes

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SITE 6: VICTORIA STREET (BETWEEN ALBERT AND QUEEN)

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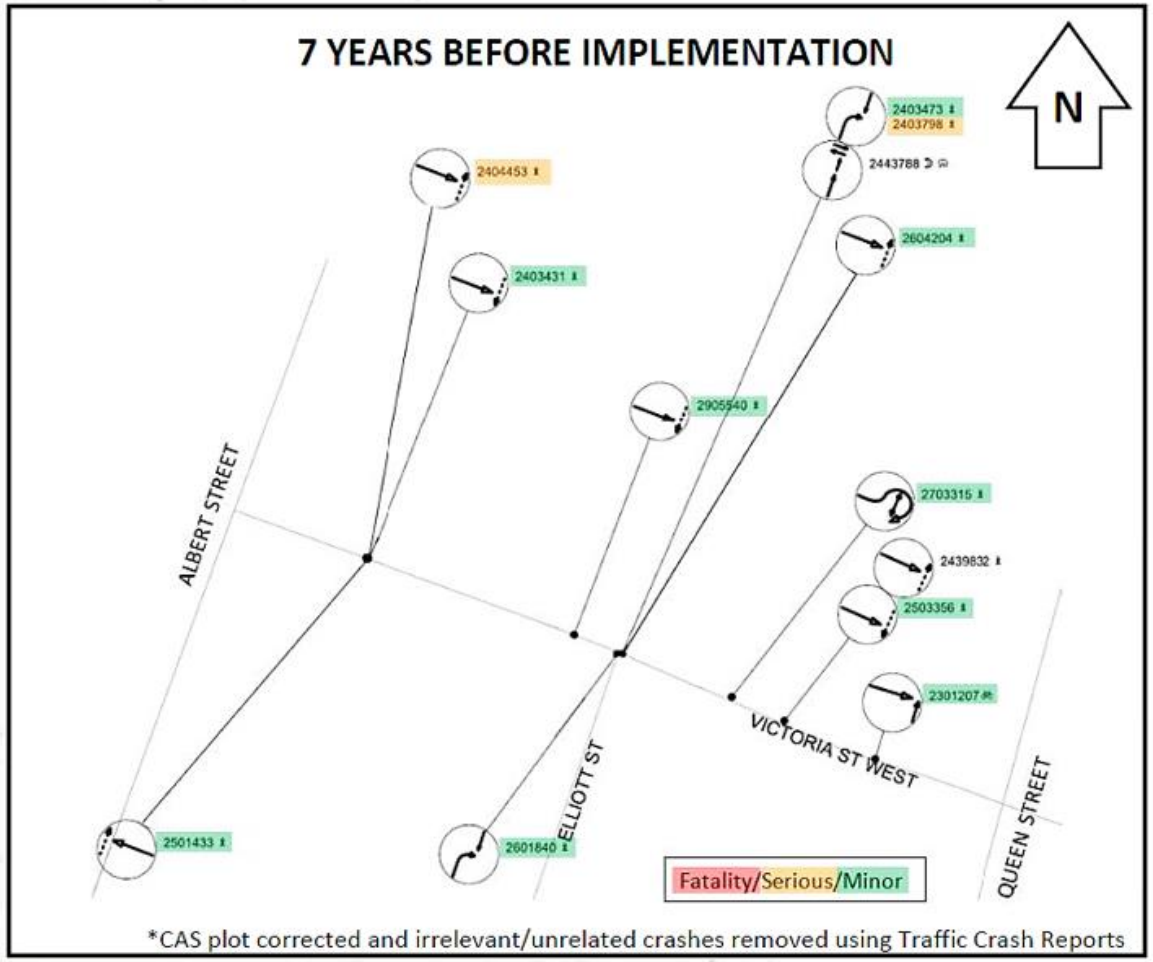
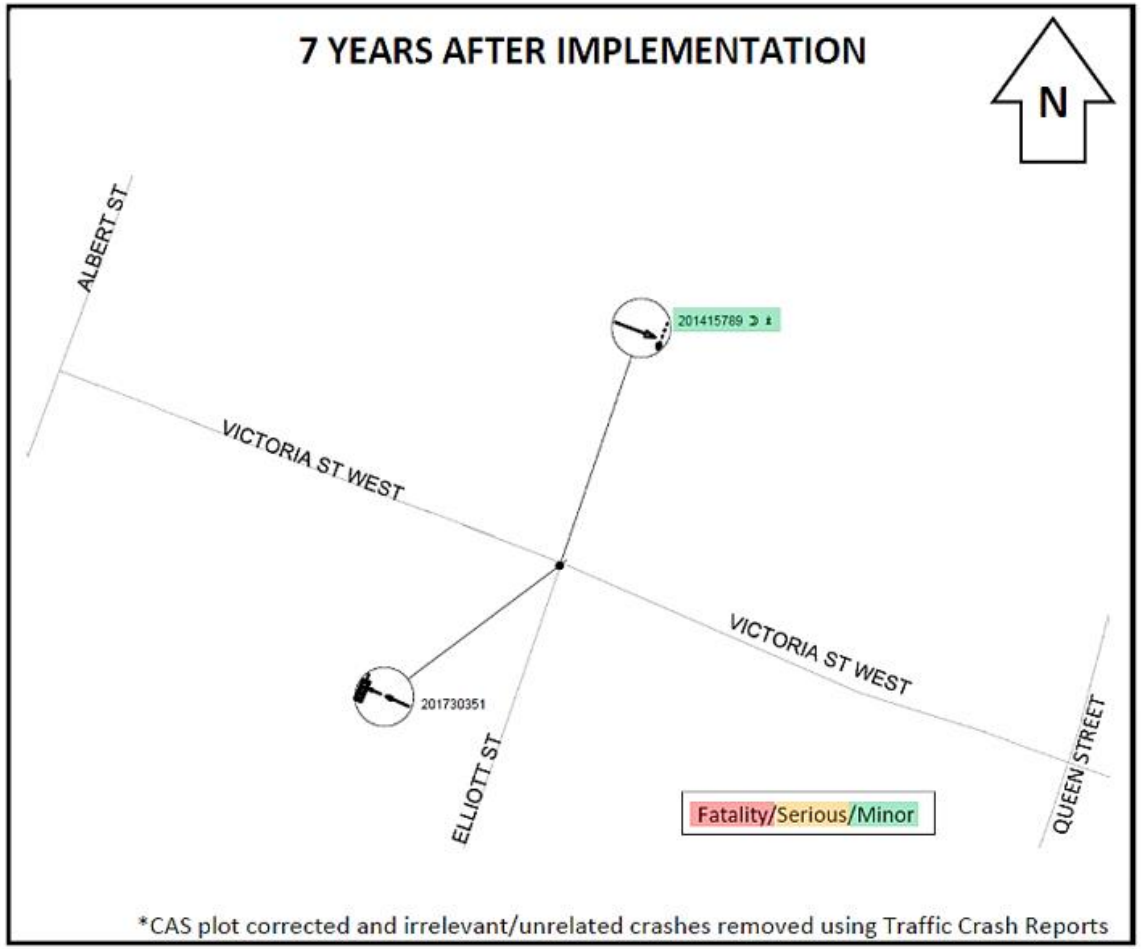


13 reported crashes (2 serious, 9 minor injury) over 7 years before signals (2003 – 2009)



2 reported crashes (1 minor-injury) over 7 years since improvements (2012 – 2018)

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SITE 6: VICTORIA STREET (BETWEEN ALBERT AND QUEEN)

83% **Crash Reduction**

- DSI saved per year = 0.3
- BCR = 39

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SITE 6: VICTORIA STREET (BETWEEN ALBERT AND QUEEN)

Conclusion:

Mid-block signals located on a pedestrian desire line can be easily justified by DSI pedestrian crashes

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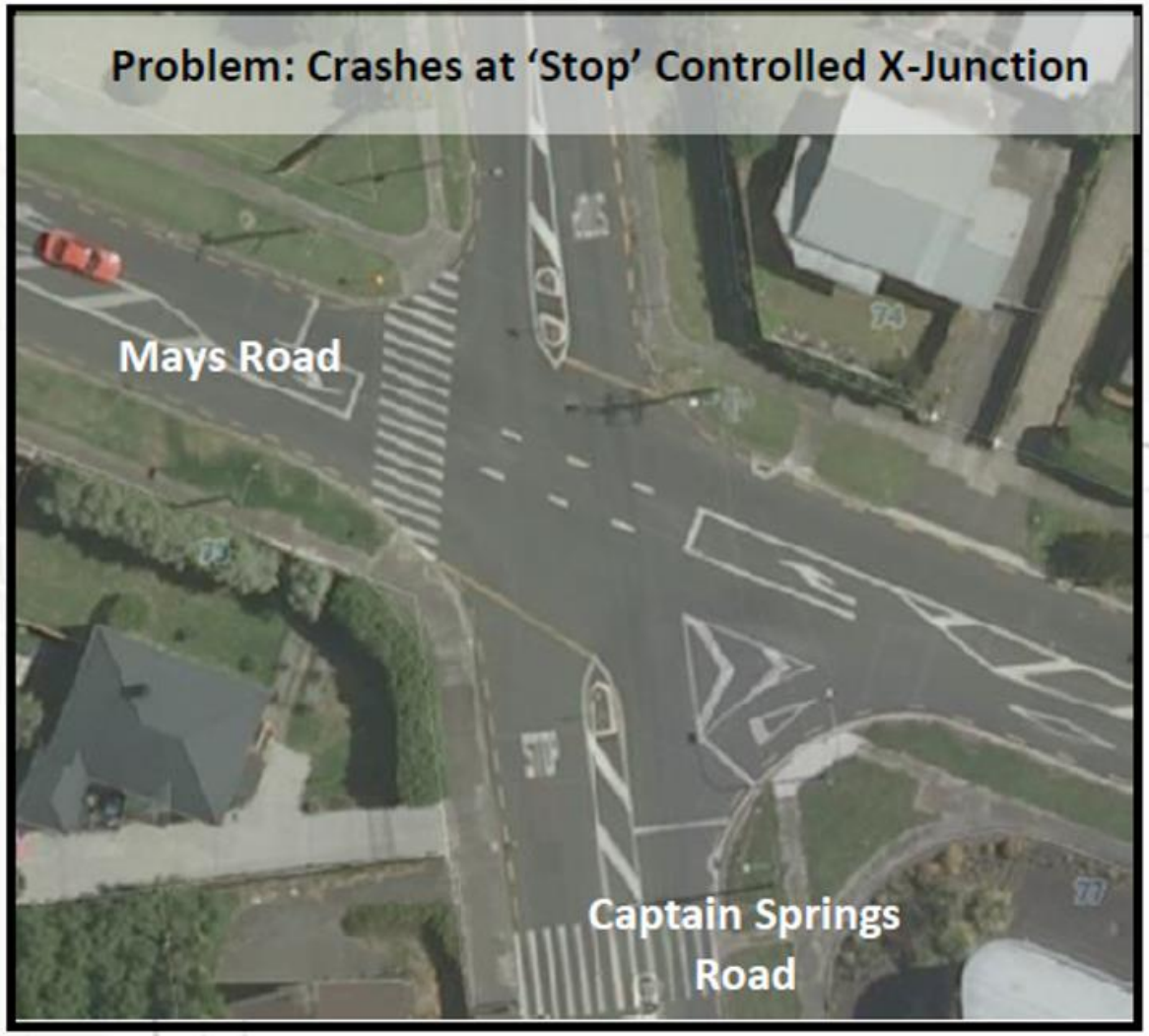
SITE 7: CAPTAIN SPRINGS ROAD / MAYS ROAD



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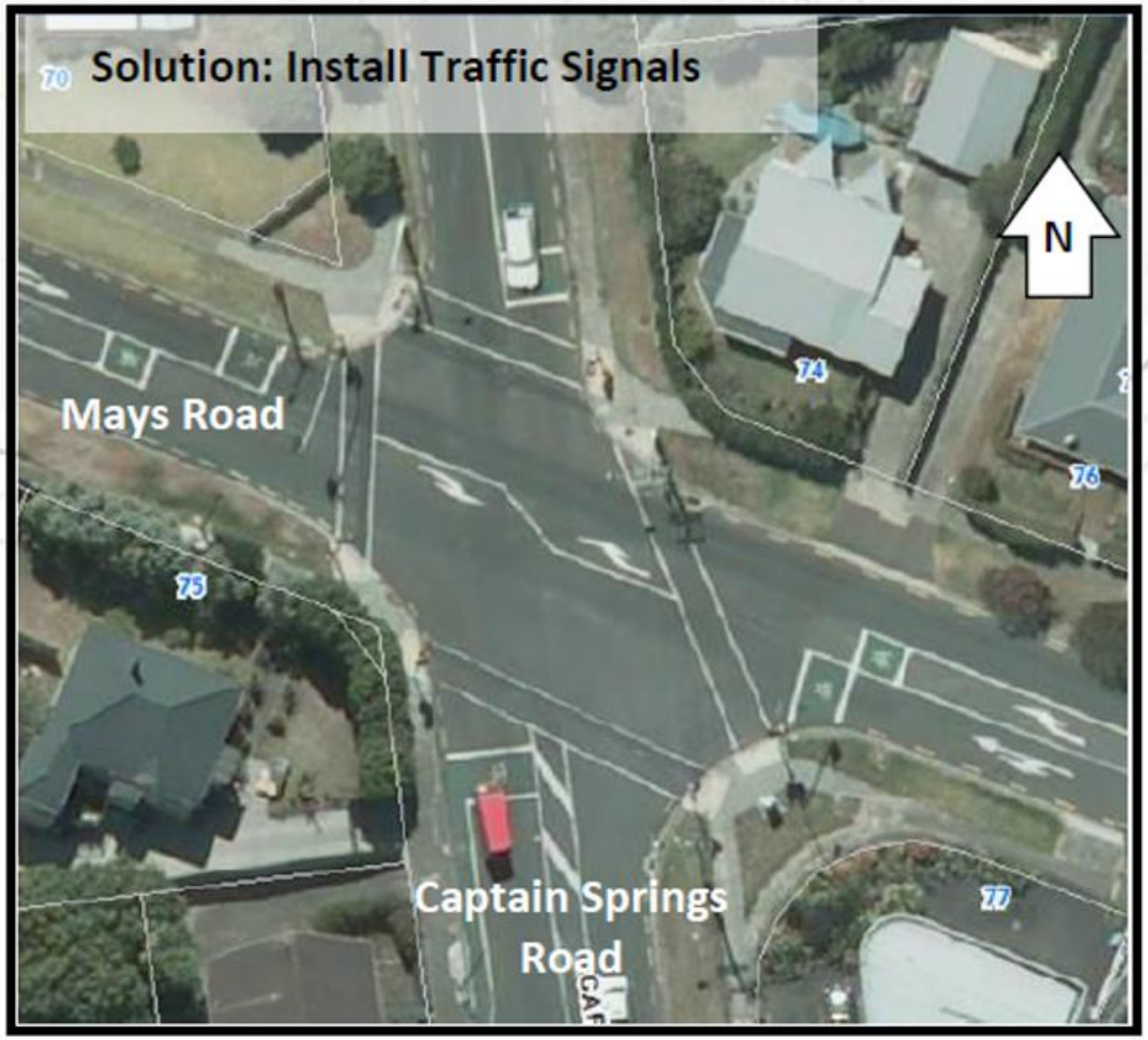

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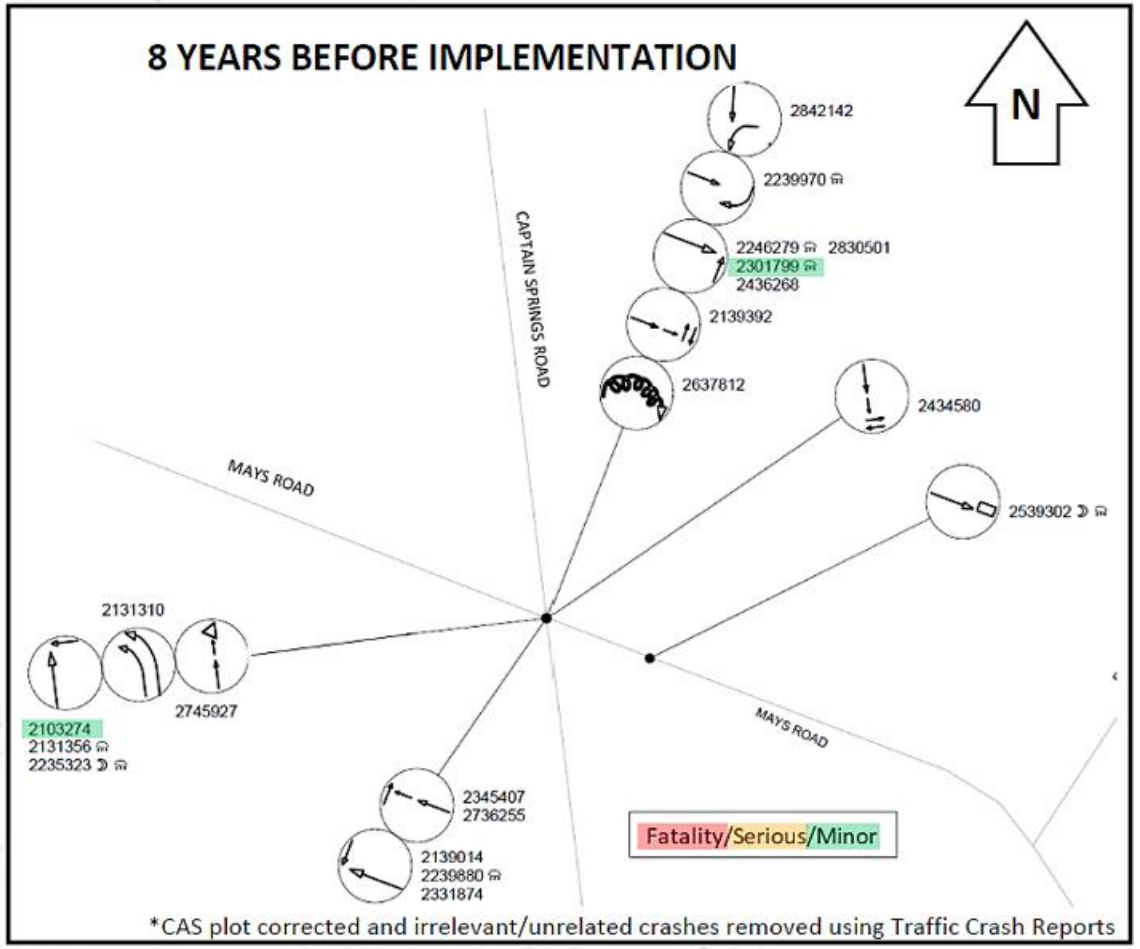
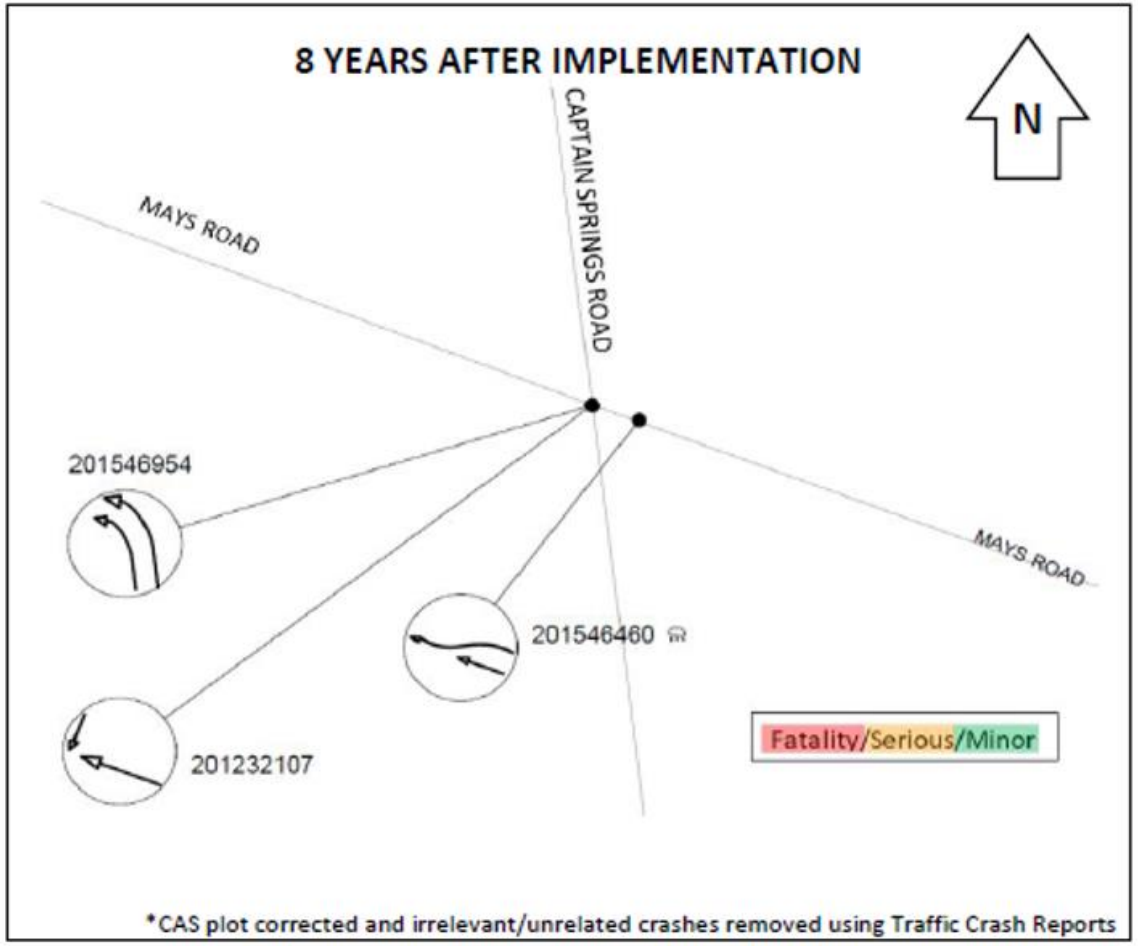


20 reported crashes (2 minor injury) over 8 years before improvements (2001- 2008)



3 reported non-injury crash over 8 years since improvements (2011 – 2018)

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SITE 7: CAPTAIN SPRINGS ROAD / MAYS ROAD

81% **Crash Reduction**

- **DSI saved per year = 0**
- **BCR = 2.6**

SITE 7: CAPTAIN SPRINGS ROAD / MAYS ROAD

Conclusion:

Traffic signals are effective at addressing various crash types at a priority control.

Without DSI, economic justification is low

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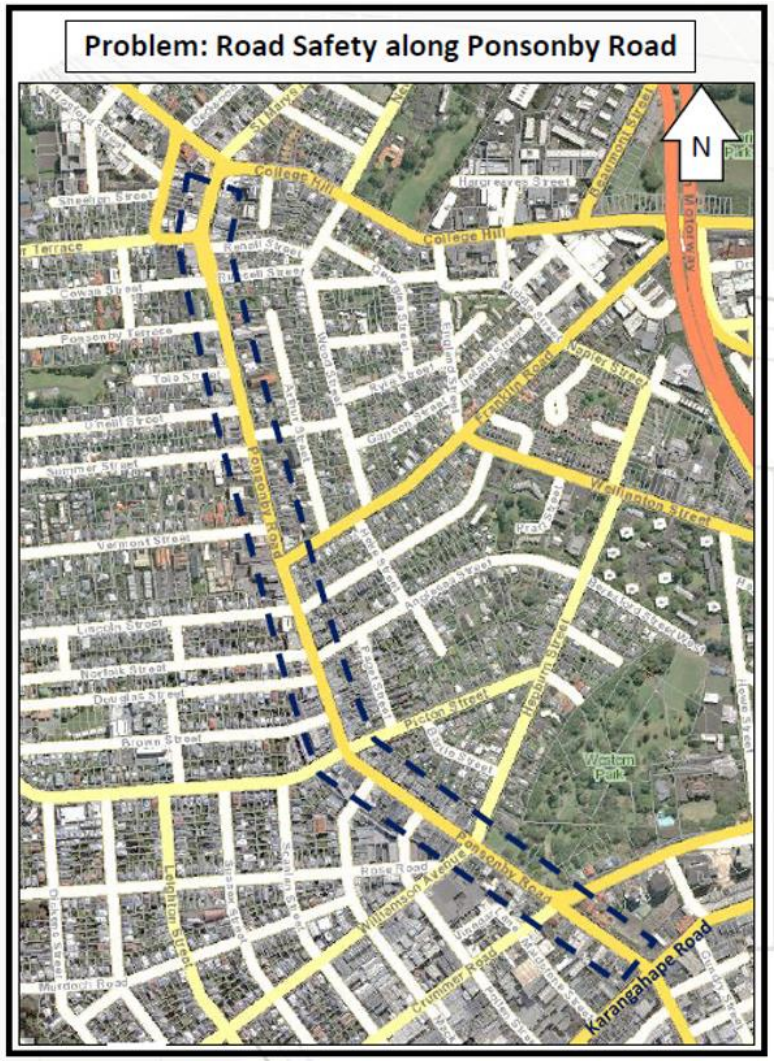
SITE 8: PONSONBY ROAD



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SITE 8: PONSONBY ROAD

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Site No: 10 Ponsonby Road Lowering of Speed Limit	Fatality	Serious	Minor	Non-injury	Total
(2001 – 2008) Actual crashes before over 8 years =	2	14	73	301	390
Expected crashes after (accounting for trend & assuming no works) =	1.4	14	71	229	315
(2011 – 2018) Actual crashes after over 8 years =	0	6	66	225	297
% Crash Reduction (expected crashes compared to actual crashes) =	100%	57%	7%	2%	6%

SITE 8: PONSONBY ROAD

6% **Crash Reduction**

- **DSI saved per year = 1.3**
- **BCR = 119**

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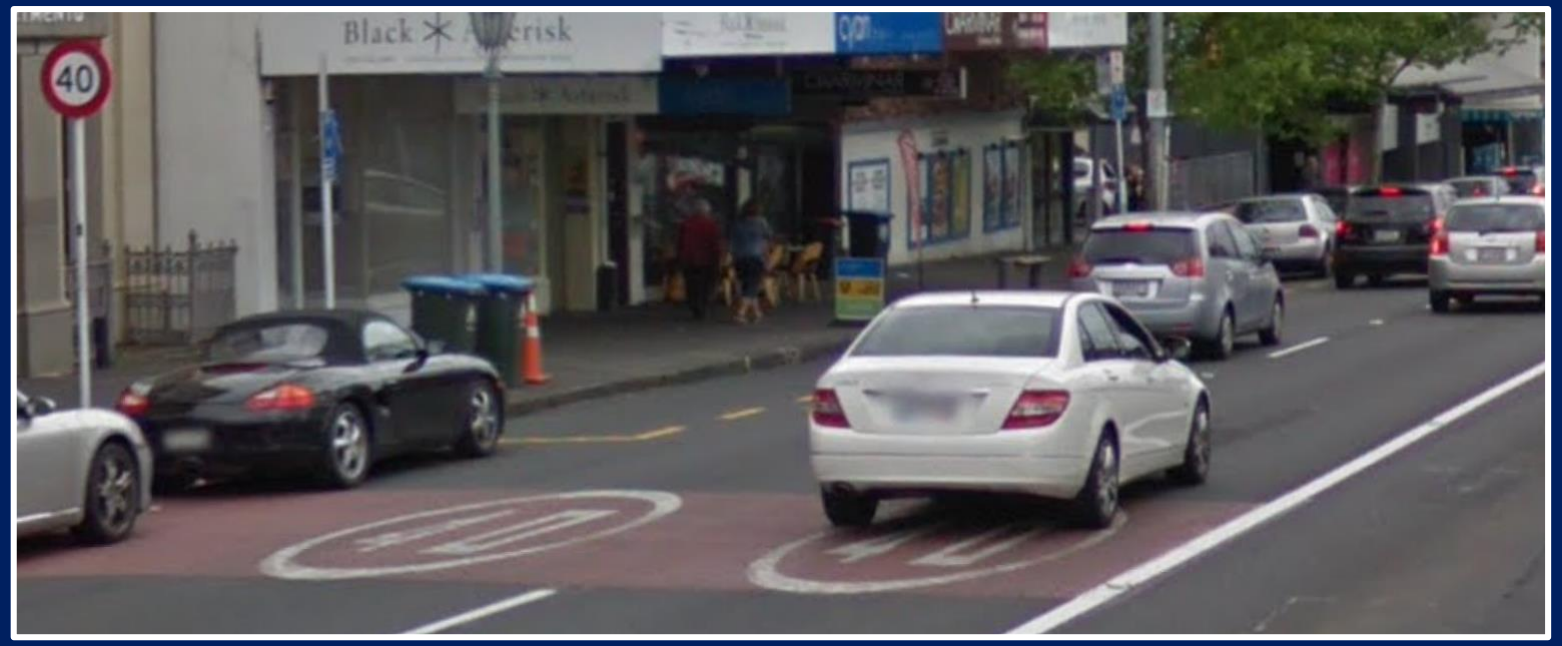
SITE 8: PONSONBY ROAD

Conclusion:

Lowering posted speed at appropriate locations using highly visible gateway treatments can be very effective at reducing DSI crashes



SITE 9: ST HELIERS BAY ROAD / POLYGON ROAD

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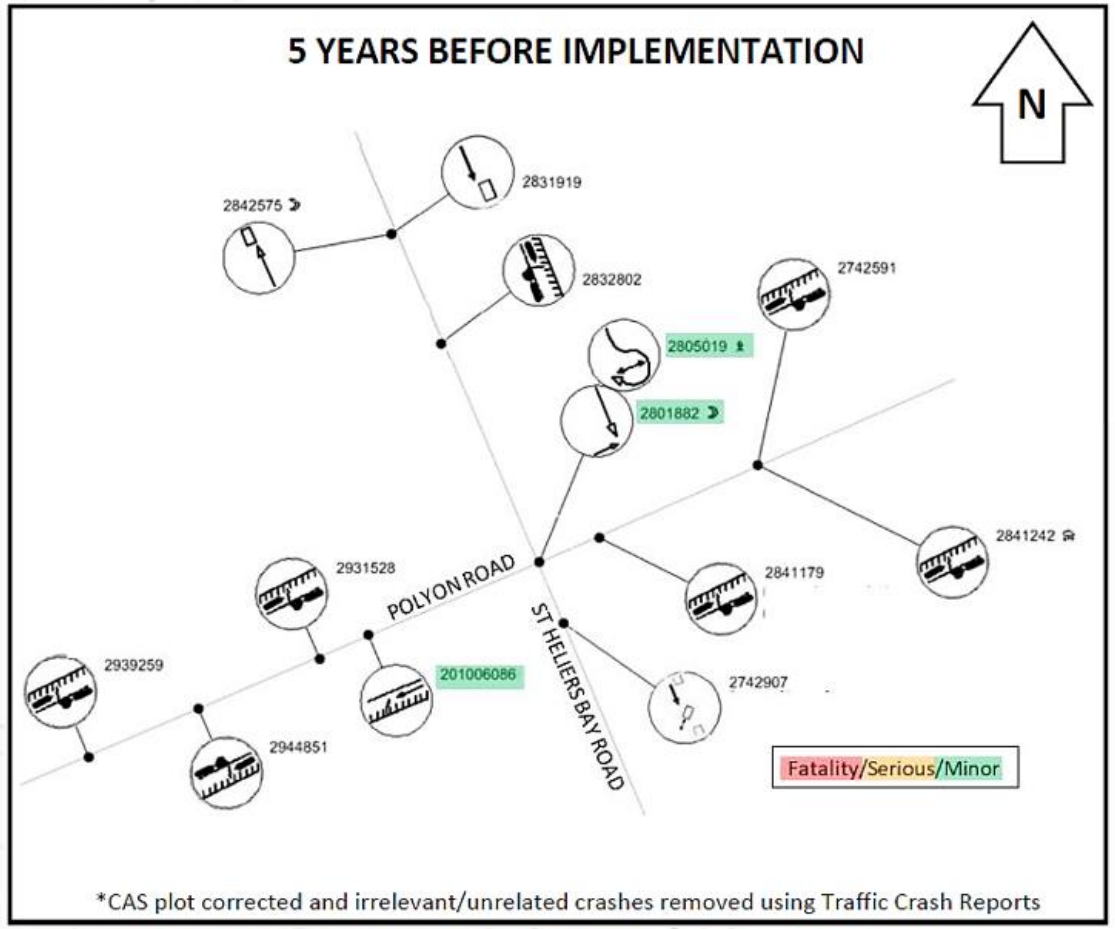
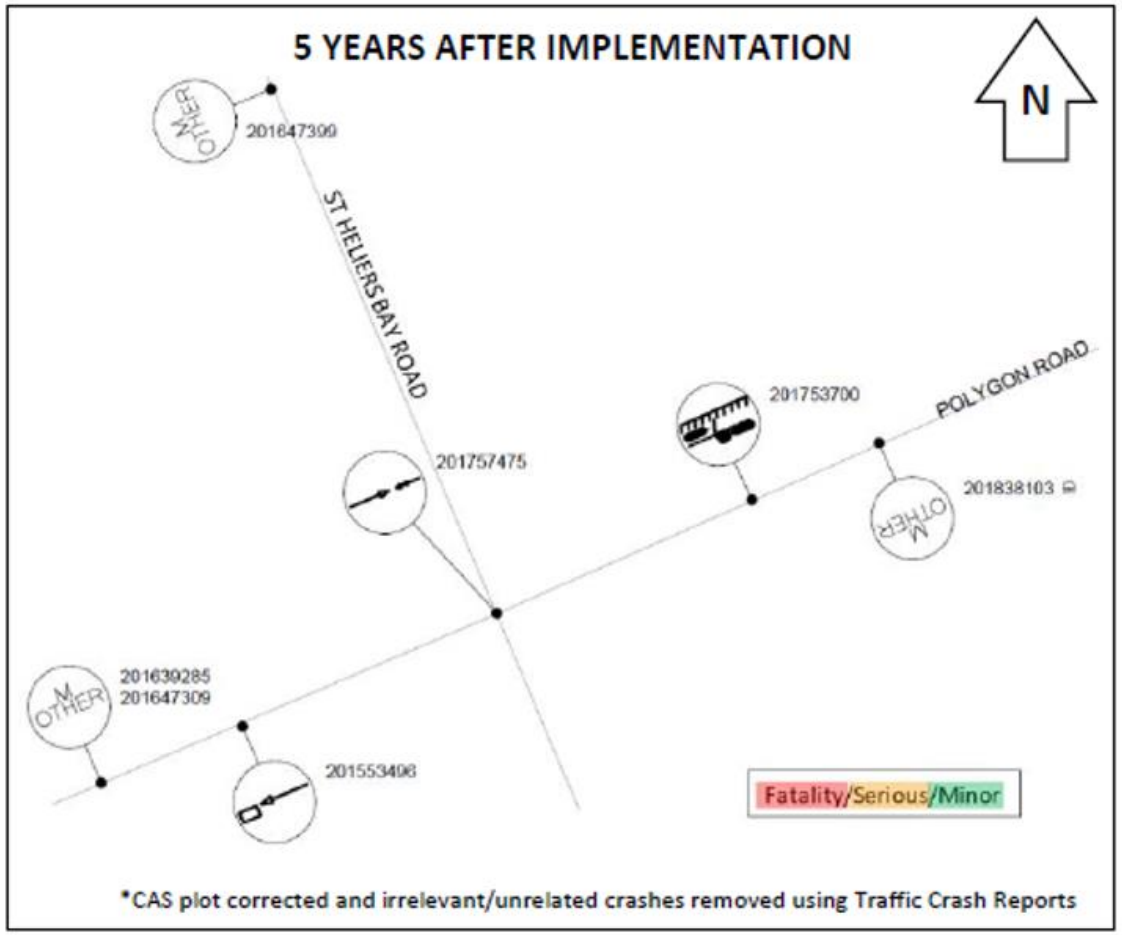


13 reported crashes (3 minor injury) over 5 years before improvements (2007 – 2011)



7 reported non-injury crashes over 5 years since improvements (2014 – 2018)

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SITE 9: ST HELIERS BAY ROAD / POLYGON ROAD

38% **Crash Reduction**

- DSI saved per year = 0
- BCR = 2.9

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SITE 9: ST HELIERS BAY ROAD / POLYGON ROAD

Conclusion:

Traffic calming created from a roundabout can generate benefits beyond the junction

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SITE 10: GODLEY ROAD (BISHOP TO HARRYBROOK)

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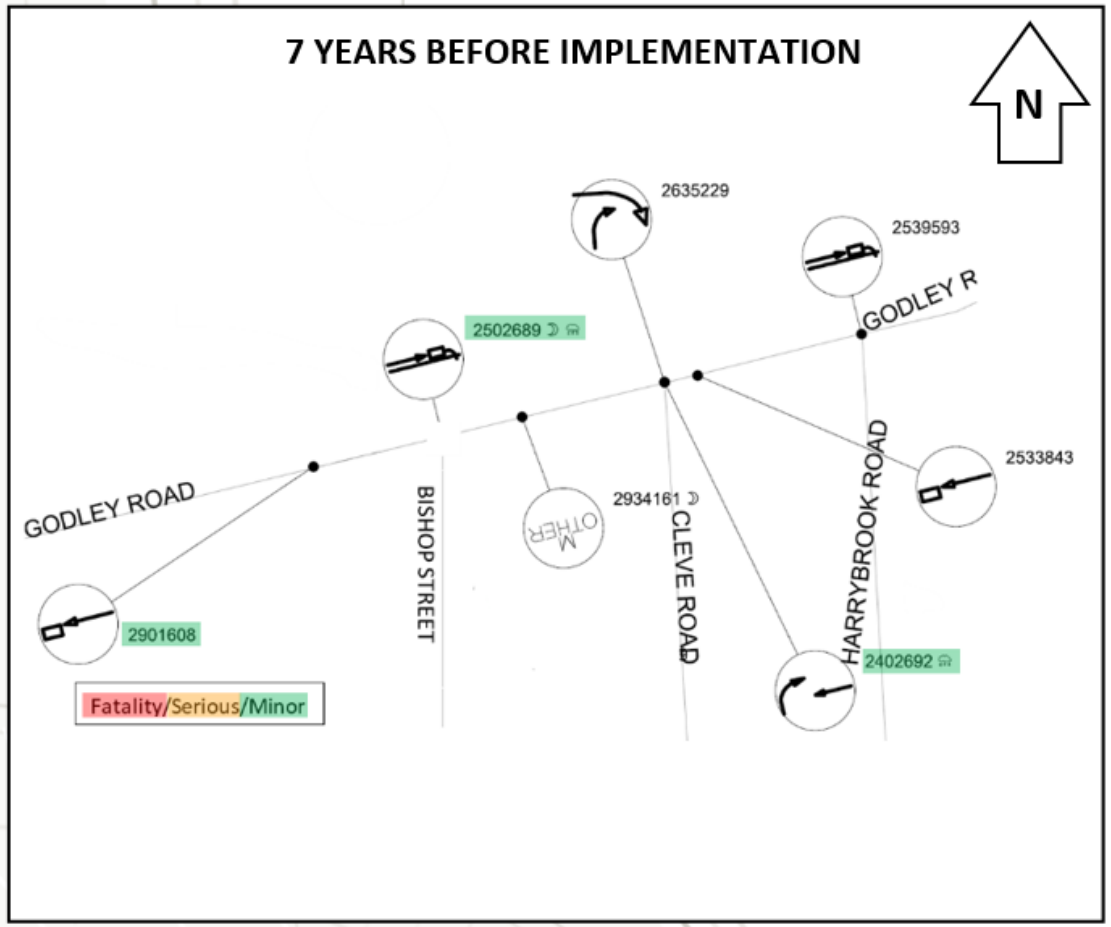
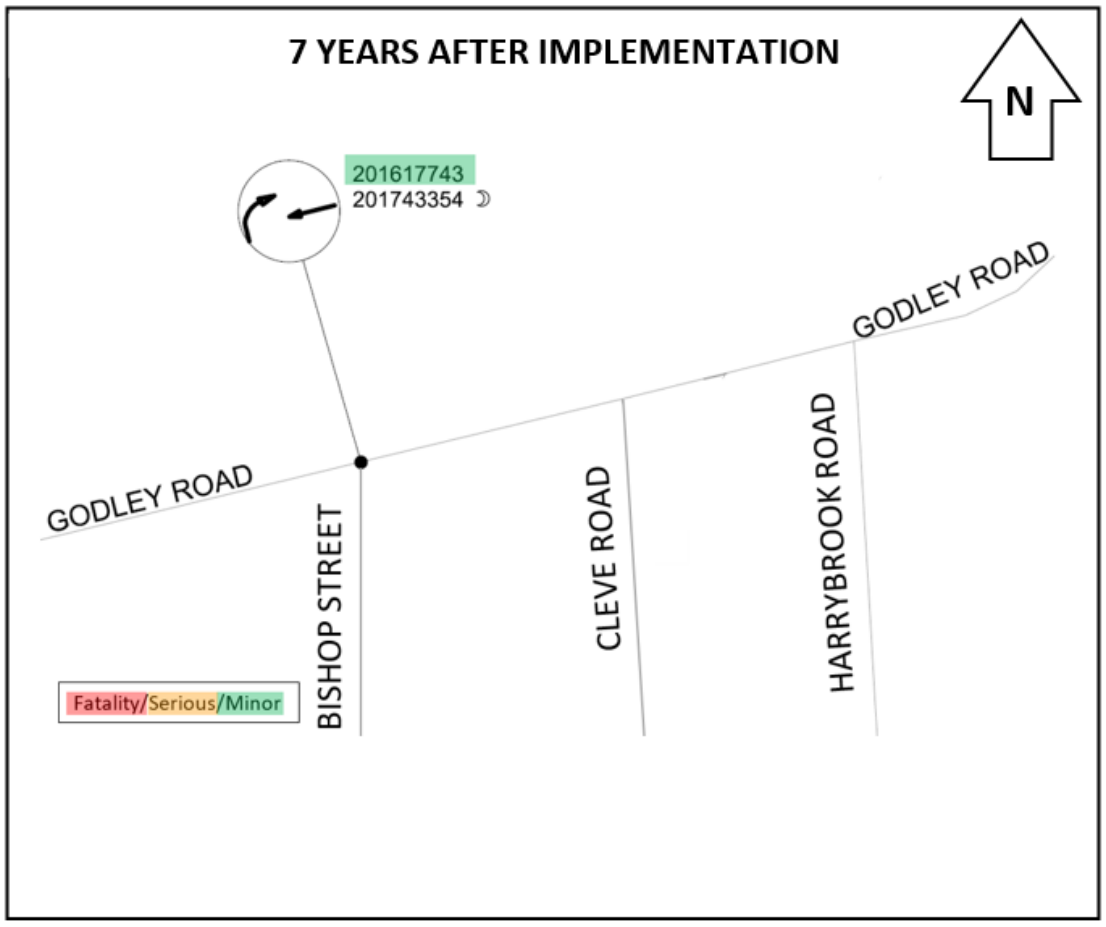


7 reported crashes (3 minor injury) over 7 years before improvements (2003 – 2009)



2 reported crashes (1 minor injury) over 7 years since improvements (2012 -2018)

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SITE 10: GODLEY ROAD (BISHOP TO HARRYBROOK)

66% **Crash Reduction**

- DSI saved per year = 0
- BCR = 8.4

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SITE 10: GODLEY ROAD (BISHOP TO HARRYBROOK)

Conclusion:

Flush median addresses rear-end crashes.

Parking restrictions address parked vehicle crashes.

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Conclusions

1) **Great Crash Savings** can be achieved by targeting reported crashes and applying appropriate crash remedial measures.

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2) **Monitor** crash sites locally to find successful measures locally.

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3) **Reported** crash problems are more likely to achieve crash savings than perceived crash problems.

Conclusions

1) **Great Crash Savings** can be achieved by targeting reported crashes and applying appropriate crash remedial measures.
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4) **Reported crashes** should be reviewed in Safe System studies.

Conclusions

1) **Great Crash Savings** can be achieved by targeting reported crashes and applying appropriate crash remedial measures.
2) **Monitor** crash sites locally to find successful measures locally.
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4) **Reported crashes** should be reviewed in Safe System studies.
5) **DSI crash patterns** should be targeted for better crash savings.

Conclusions

1) **Great Crash Savings** can be achieved by targeting reported crashes and applying appropriate crash remedial measures.
2) **Monitor** crash sites locally to find successful measures locally.
3) **Reported** crash problems are more likely to achieve crash savings than perceived crash problems.
4) **Reported crashes** should be reviewed in Safe System studies.
5) **DSI crash patterns** should be targeted for better crash savings.
6) **Proven effective measures** should be incorporated into future proposed works.

Thank you.

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