



Submitted to
IPENZ Transportation
Conference

Adapting a State Highway Upgrade to RoNS Requirements

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Introduction

We'll look at:

- Normal highway upgrade Vs RoNS
- 1 project – SH1 Johns Road (Groynes to Sawyers)

Background:

- SAR in 2003 for Western Corridor (13km)
- Divided into sections for detailed design
- RoNS standards released after design contract awarded
- Posted 80km/h, design speed 100km/h
- AADT (2012) 21,000 vehicles



Project Area



Visually...

Before and After shots



Design Alterations – Curve Geometry



- 4 horizontal curves below RoNS minimums (N to S)
 - 440m (Groynes)
 - 375m (Clearwater)
 - 470m (Gardiners N)
 - 400m (Gardiners S)
- Groynes removed from project (Western Belfast improvements)
- Clearwater, changed to 550m
- Gardiners combined to form 820m radius

= additional land acquisition! BUT better consistency



Side Protection



- Late change across Western Corridor
 - Notice of Requirement already submitted
 - Requires 3.0m shoulder in front of barrier (2.5m included in design)
 - Potential for wider corridor
 - Access density
- Re-profiled swale drains
- Steepened up batter slopes
- Maintain stormwater capacity
- Avoid extra land take
- 100m lengths minimum (achieved approx. 60% coverage)



Direct Highway Access



- Limited Access Road
 - 78 direct accesses
- 4 local road intersections
- Combined / deleted accesses
- New one-way service road between two local roads (20 accesses)
- 1 SAR Roundabout completely removed
- Left in / left out at 3 intersections / 1 new roundabout

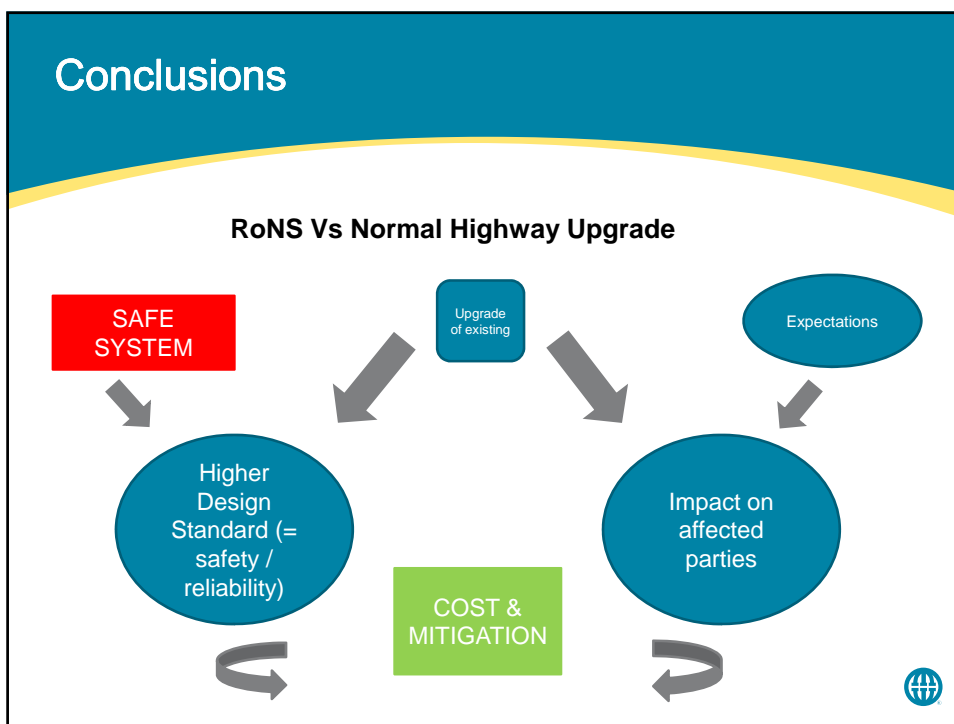
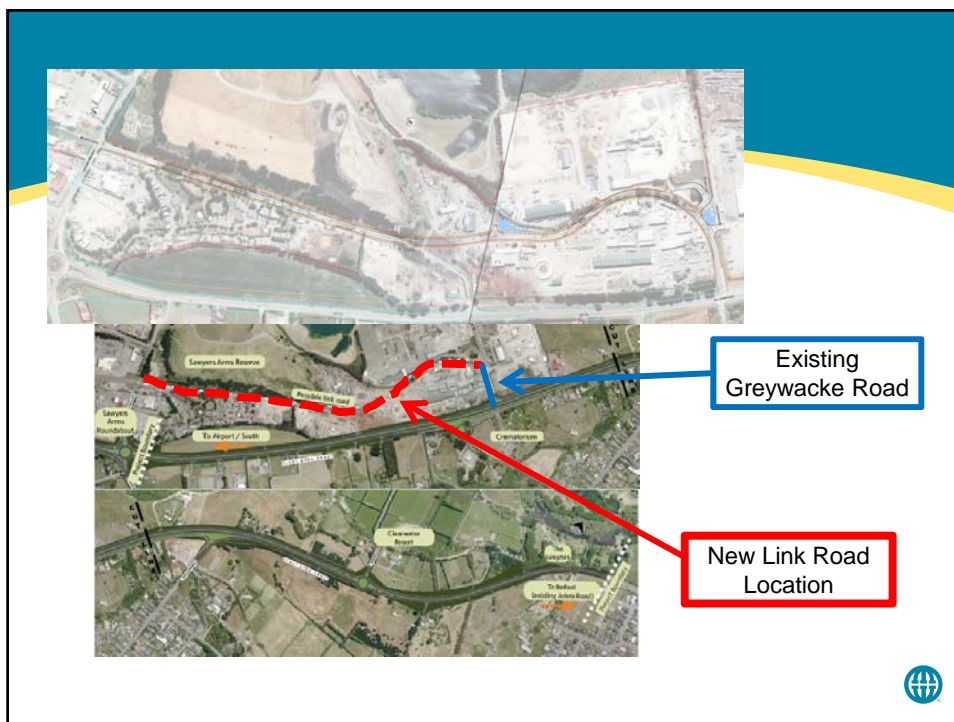


New Link Road



- SAR Proposed Roundabout (4-arm) at Greywacke / Wilkinsons
- 1.3km to existing Sawyers Arms roundabout
- Future capacity issues / network delay
- Deleted proposed roundabout
- RoNS Objectives for route reliability
- Left in / left out only at Greywacke Road
- BUT....new two way link road (dual purpose – providing alternative for right turn and relocating accesses off SH1)





Thanks

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