NSW Road Toll Response Package – Application of the General Evaluation Framework to the Ongoing Monitoring of Completed Road Safety Engineering Projects

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Background

- In response to 2009 fatality increase, the NSW Government announced the $170 million Road Toll Response Package (RTRP) across five years in March 2010
- RTRP includes a number of road safety measures, with road engineering treatments a major component
### RTRP Overview

**Aim** = To improve road safety in NSW by reducing road casualty crashes and resultant road trauma, with a focus on reducing fatalities on NSW roads

<table>
<thead>
<tr>
<th>SAFER ROADS</th>
<th>Improvements to roads and roadsides resulting in reduction of casualty crashes and less severe injury outcomes in the event of a crash</th>
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</thead>
<tbody>
<tr>
<td>SAFER SPEEDS</td>
<td>Increase in road user compliance with speed limits resulting in reduction of casualty crashes and less severe injury outcomes in the event of a crash</td>
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<tr>
<td>SAFER VEHICLES</td>
<td>Safe and efficient operation of freight and logistics industry resulting in reduction of heavy vehicle casualty crashes and less severe injury outcomes in the event of a crash</td>
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<tr>
<td>SAFER PEOPLE</td>
<td>Adoption of safer practices by all road users, including pedestrians and motorcyclists, resulting in reduction of casualty crashes and less severe injury outcomes in the event of a crash</td>
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- Specific projects within each pillar include:
  - re-introducing mobile speed cameras
  - highway route safety reviews
  - safety upgrades on high crash areas
  - development and implementation of safety strategies
  - heavy vehicle road safety initiatives
  - pedestrian safety initiatives
Summary of RTRP Engineering Works Program

• Four programs:
  – Safety Barriers – roll-out of wire-rope safety barriers and other barrier types, with associated shoulder widening and audio-tactile lines
  – Local Government Road Review and Work – targeted safety works to rectify safety concerns on poor performing council managed roads
  – Route Safety Reviews – comprehensive multi-disciplinary review of four State highways, supported by a tailored package of safety works
  – Pedestrian Fencing – rollout of pedestrian fencing at locations with a high pedestrian crash history to better protect pedestrians

• An Analytical Framework guided state-wide analysis, identification, assessment, selection and prioritisation of RTRP Road Safety Engineering Works
  – Based on crash cluster analysis and identification of specific crash types
General Evaluation Framework for RTRP

- Transparent and accountable to the public
- Developed upfront to allow for clear direction and outcome measures for the duration of the package
- Multi-tiered approach to ensure diversity and complexity of the Package is fully explored
- Overarching approach for RTRP as a whole, to be used for program-level approaches for program streams
- Target high risk crash locations for immediate road safety benefits, and long term gains through systemic research and strategies
General Evaluation Framework for RTRP

• Undertaken at the following three levels:
  – **Level 1 (Community Results)** – Evaluation focusing on assessing the success of the overall aim of the program to reduce road casualty crashes and resultant road trauma on NSW roads
  – **Level 2 (Safe System Results)** – Evaluation that will focus on assessing the primary objectives of the program area in line with a safe system approach to road safety
  – **Level 3 (Individual Program Results)** – Evaluation that will assess the specific effect of individual RTRP projects
Evaluation Framework for RTRP Engineering Works Program

• Aligns with RTRP General Evaluation Framework
• Informed by best-practice literature review
• Includes design for each of the four program streams
• Process evaluation
  – comparison of program delivery against program plans and timelines
  – analysis of minutes, issues logs and file notes from steering committee meetings
  – review of any subsequent changes made to the program
Outcome Evaluation Approach

• Crash analysis based on relevant crash types for each program:
  – **Safety Barriers** – Head-on casualty crashes, off-path casualty crashes
  – **Local Government Road Review and Work** – Intersection crashes, same direction crashes, head-on crashes and off-path crashes on local and regional roads where the posted speed limit is 70km/h or more
  – **Route Safety Reviews** – All casualty crashes on an identified route of the reviewed State highway
  – **Pedestrian Fencing** – Pedestrian casualty crashes

• Before-after analysis of crash/casualty rates (per VKT) at treatment locations compared to control locations (where possible)

• Crash data collated and analysed annually to monitor progress, and 5-year data aggregated for longer-term analysis
Preliminary Findings – Level 1

- NSW road toll dropped by 11% between 2009 and 2010, and by another 8% between 2010 and 2011, both below the five-year average.
- Consideration of other measures (e.g. modelling)
Preliminary Findings – Level 2

- Reductions in relevant crash types in 2010
- Reductions continued in 2011 for 2 of 3 crash types

**Annual Percentage Change in NSW Crashes for Crash Types Relevant to the RTRP Engineering Works Program, 2010 and 2011 Compared to 2005-2009 Average**

- **Pedestrian Casualty Crashes**: -11% in 2010 and -12% in 2011
- **Head-On (Not Overtaking), Off Path Casualty Crashes**: -1% in 2010 and 9% in 2011
- **Crashes on Local and Regional Roads**: -1% in 2010 and -2% in 2011

*Intersection crashes, same direction crashes, head-on crashes and off-path crashes where the posted speed limit is 70km/h or more*
Annual Monitoring of Completed Engineering Projects – Level 3

• Based on 26 completed engineering projects (as at October 2012):
  – 12 casualty crashes (resulting in 13 injuries) approximately one year after implementation
  – 21 casualty crashes (resulting in one fatality and 22 injuries) before implementation

• Location report prepared for each completed project

• Further work needed to rigorously evaluate the RTRP Engineering Works program
E.g. Pedestrian Fencing Project – Before Treatment
E.g. Pedestrian Fencing Project – After Treatment
Summary

• Application of a broad evaluation framework to a specific part of a broader package of road safety countermeasures

• Initial monitoring of RTRP Engineering Works program demonstrates a crash reduction of almost 50% at current completed engineering project locations in their first year

• Further work needed to rigorously evaluate the program according to evaluation framework parameters
Thank You

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