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Identifying Network Safety Deficiencies For Manawatu District Council

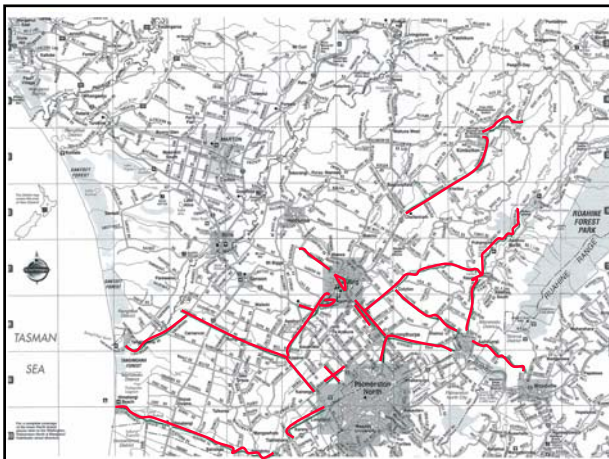
Ann Fosberry – Manager Traffic - GHD

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Introduction

Manawatu District

- Predominantly rural
- Feilding the main urban area
- Strategic routes to Palmerston North and rural settlements



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Study Requirements

- Safety review of the District's Strategic Roding Network
- Value for money
- Relatively quick turnaround to allow the whole network to be assessed within a reasonable amount of time
- Consistency

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Study Requirements

- Gap Analysis
 - Sight distance
 - Geometric layout
 - Seal width
 - Signing and Delineation
 - Clear zones
- Reporting
 - Clear reporting and prioritisation of recommendations

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Sight Distances


- Important determinant of safety
- Time consuming to assess on site
- Often omitted from studies
- Requirement for:
 - Approach Sight Distance (ASD)
 - Safe Intersection Sight Distance (SISD)
 - Overtaking Sight Distance (OSD)

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Use of GPS Survey and MX Roads

Worked with MX Designers:

- Feasibility of using MX to analyse GPS data to assess sight distances
- Develop scripts and routines to “drive” the model
- Testing
- Production of plans and longsections




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Production of Plans

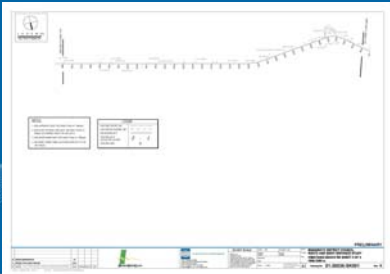
Visual representation of relevant data:

- GPS data in plan form
- Mark on intersections, accesses, signs etc.
- Sections with substandard visibility marked on plan
- Crash diagrams overlaid
- Long sections
- Table of relevant RAMM data



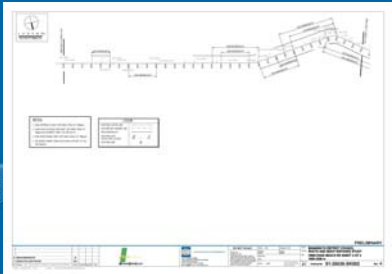
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Survey Data



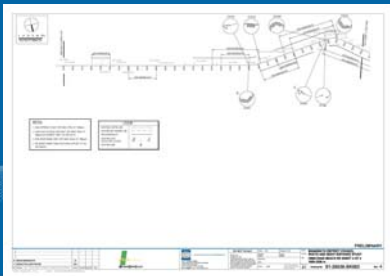
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Sight Distances



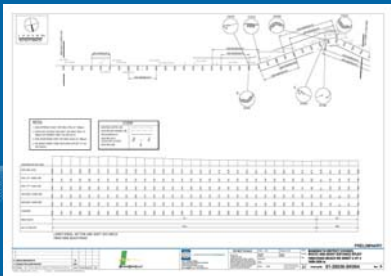
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Crash Data



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RAMM Data and Longsection



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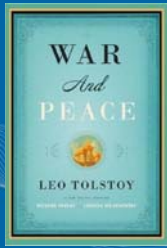
Identification of Issues

- Plans simplify gap analysis and allow cross reference with crash data
- Daytime and night time driveovers to identify:
 - Signing / delineation issues
 - Curve speeds
 - Clear zone issues
 - Pavement issues
 - Maintenance issues
 - Assess safety issues and severity
 - Solutions.....



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Results and Reporting



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Deficiency Database

Asset Name	Asset Ref / Location	Priority Level	Source	Priority Level	Stage	Short Description	Estimated Cost £	BSC	Existing Asset	SCM / SACS	Current Value	Cost / Value Ratio	Score	Risk
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low
Highway	Highway	High	High	High	1	Highway	10000	1	10000	10000	10000	1.0	5	High
Highway	Highway	Medium	Medium	Medium	2	Highway	5000	2	5000	5000	5000	1.0	4	Medium
Highway	Highway	Low	Low	Low	3	Highway	2000	3	2000	2000	2000	1.0	3	Low

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Results

- Programme of prioritised safety improvements
- Direct download to deficiency database
- Funding directed to best safety outcomes based on the whole strategic network
- Plans that can be used for other purposes
- Transferable Methodology
- Safety improvement?



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Questions.....

Thank-you for listening!

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