Heavy Transport Network Use
Make the Connections

September 2013
Presented by Steve Maddigan
• Council has a network length of 1,721 km, of which 1,390 km (80%) has traffic volumes < 500 vpd.
• There is no rail transport in the Nelson/Tasman region.
• Approximately 1.8 million cubic metres of forest is harvested in the Nelson region annually.
• Prior to 2000 Council generally had a reactive approach to gathering forest harvesting information.
• Communication channels with forestry industry were sporadic and irregular.
• Safety of the road user was compromised and the reactive nature of attending to pavement failures was very disruptive and costly.
Objective

• Move from the previous reactive approach to the ‘no surprises’ proactive management and information gathering. Eg identify key personnel contacts, arrange stakeholder discussions/meeting, and ensuring regular communication.

• Reduce the impact on roading programmes where resources and money have to be taken from programmed work to deal with unscheduled roading failures.

• Programme and budget for asset improvements that are required before harvesting. Eg bridge upgrades, safety sight distance improvements and unsealed road strengthening.
Who are our stakeholders and what do we need to consider?

- Road User – reliable access, driver comfort and safety.
- Ratepayer – value for money as contributes to maintenance expenditure on the network.
- Council – owner of the network asset and responsible for timely and economic decision making.
- Forest Owners – Small and large block owners who want to get their product to destination point at minimum cost.
- Haulage Contractors – Transport product to processing point safely by shortest route possible and with minimum wear and tear to vehicle.
Who did we talk to?

- Talked with large forest owners which included consultant representatives.
- Some smaller lot owners and log buyers. Time consuming to track down all.

What information was requested?

- Ownership and Location of Forest Blocks.
- Year of harvesting.
- Volumes to be harvested and number of truck movements across the network to destination point eg Processing Plant, Port.
- Exit and entry points from the forest blocks onto the roading network and route travelled to destination point.
What information was provided?

- Spreadsheets and/or maps were provided by forest owners with varying degrees of detail and accuracy. Eg shape files, manually drawn maps.
- We needed to get very specific about the entry/exit points from forests.
- Quality and accuracy of supplied information. Needed to go back several times to clarify information required eg type, kind and details.
- In early days, there were suspicions of why this information was being requested.
<table>
<thead>
<tr>
<th>Forest</th>
<th>HF M Road Name</th>
<th>Exit</th>
<th>HFM Road Exit Point</th>
<th>TDC Road RP</th>
<th>Goldpine</th>
<th>Mill</th>
<th>NPI</th>
<th>Port</th>
<th>HF M Road Name</th>
<th>Exit</th>
<th>HFM Road Exit Point</th>
<th>TDC Road RP</th>
<th>Goldpine</th>
<th>Mill</th>
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<tr>
<td>Harvest Routes/Tonnage</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>
What did we do with this information?

Created maps to show information spatially with supporting spreadsheets eg ability to overlay onto the maps the following information

• Identify route deficiencies eg carriageway width, poor visibility, inappropriate vertical and horizontal alignments. (Refer spreadsheet).
• Forestry location/processing plants. Refer map forest stands/industrial sites.
• Forest size/yield.
• Haulage routes travelled to destination. Refer map tonnage by roads traversed.
• Forward works programmed eg pavement rehabilitation, bridge renewals, seal extension drainage, safety. Refer map forward work programme/posted bridges.
<table>
<thead>
<tr>
<th>Road Name</th>
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<th>Year</th>
<th>NAASRA (Average)</th>
<th>Hierarchy</th>
<th>Pavement Type</th>
<th>Average width</th>
<th>Pothole Rating</th>
<th>Corrosion</th>
<th>Ver. Align</th>
<th>Grade/S</th>
<th>Aggregate Size</th>
<th>Drainage</th>
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<th>Planned Future Works</th>
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<td>YES</td>
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<td>Peake Valley (right branch)</td>
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<td>YES</td>
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<td>YES</td>
<td>Varies</td>
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<td>NO</td>
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<td>YES</td>
<td>Varies</td>
<td>0 - 5</td>
<td>30-60 POOR</td>
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Forest Stands Processing Plant
Tonnage by Road 2013
Forward Works 2011-2014

BRIDGE NAME
- ANDREWS ROAD BRIDGE
- AORERE VALLEY BRIDGE
- ARMAGDA BRIDGE
- BAYGENTS BRIDGE
- BAXTER CREEK BRIDGE
- BAYOU CREEK BRIDGE
- BULLER RIVER BRIDGE
- CARTER BRIDGE
- COOKS CREEK BRIDGE
- COOKS CREEK BRIDGE 1
- EDEN VALLEY STREAM BRIDGE
- GLENUGARY BRIDGE
- GRANITY CREEK OR PAPA BRIDGE
- HOPS VALLEY BRIDGE
- MCCALLUM ROAD BRIDGE
- MCCONNECHIES BRIDGE
- PARAGUAN CATTLE UNDERPASS
- PARAPA stream BRIDGE
- PENINSULAR BRIDGE
- POMEROY BRIDGE
- RIKANA VALLEY BRIDGE
- ROCKY CREEK BRIDGE
- ROCKY CREEK BRIDGE 1
- ROSES BRIDGE
- RUSSELS BRIDGE
- SUMP IT CREEK BRIDGE
- WALSH STREET BRIDGE
- WALSH STREET BRIDGE
- PULGULAE BRIDGE
- JELINEK BRIDGE

BRIDGE REPLACEMENT LIST

<table>
<thead>
<tr>
<th>Bridge Name</th>
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<tbody>
<tr>
<td>Yellowwino Creek Bridge</td>
</tr>
<tr>
<td>Awaroa Road Bridge 1</td>
</tr>
<tr>
<td>Poiata Stream Bridge</td>
</tr>
<tr>
<td>Narrow Bridge</td>
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LEGEND
- Green dot: Posted bridge locations
- Blue line: Bridge replacement programme
- Orange line: Potential pavement rehabilitations
- Red line: Capital works
- Yellow line: Roads traversed by logging industry
- Black line: Local road centreline
- Grey line: State highway

TASMAN DISTRICT FOREST INDUSTRY HARVESTING 2011-2014
POSTED BRIDGES AND FORWARD WORK PROGRAMME

Scale: 1:25,000

MWH
Tasman District Council

Original map data: 20 Oct, 2014
What did we find?

• Common routes travelled by haulage operators from various forest blocks annually.
• New routes were identified where there had been no previous forest traffic and now forest activity planned.
• High Speed Data (HSD) testing periodically on selected routes showed wheel track rutting in loaded lane. Ability to measure progression.
• Where we were unsure of the structural capacity of the road pavement we initiated pavement testing (Falling Weight Deflectometer) and testing pitting on specific sections.
• Undertook a crash analysis on the higher trafficked routes travelled which showed up a number of crashes involving trucks over a 10 year period eg 23% of total crashes being trucks.
• Horticulture main products assessed were apples and kiwi fruit. Information on pack house and cold storage location, route travelled and volume was accessed through the main cartage contractor.

• Quarry locations and ownership was researched through Council records with known operators and word of mouth. Record keeping and quality of information of route travelled and quantity of aggregate from the quarries varied.

• For dairy industry, contacts were made with both Fonterra and Westland Milk. Bulk information was provided on liquid and dry products.
Benefits to the Client

• Illustrates that the client knows and understands the demands and condition of the network.
• Periodic meetings and regular communication between key personnel has built up relationships and ability to react more efficiently.
• Ability to support maintenance and renewal funding requests to NZTA with factual and not subjective reasoning.
• Growing the regional economy by spending money on the network sections that are earning revenue for the district.
• Reduced CSR’s eg happier communities and road users.
• Money saved from less reactive maintenance and the movement to programmed work.
Latest on HPMV Impact

- Testing was undertaken on bridge structure where required before route opened up to HPMV’s. Some strong feeling by the industry on perceived delays however, stakeholders need to be aware of Council constraints.
- Ongoing dialogue six-monthly with parties is critical to provide regular feedback and response to market changes.
- Taking a risk on some pavements and approving routes with little or no pavement strength information.
- Monitoring to be undertaken using HSD testing and FWD to capture deterioration trends and manage risk.
- Growing collaboration between Council and stakeholders eg shared costs for analysis of significant structures.