The imperative of tackling the skid resistance issue

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Content of presentation

- New Zealand Transport Strategy
- Road Management
- Risk Management
- Safety Management Systems
- Skid resistance
- Special surfaces
- Conclusions
By 2010, New Zealand will have an affordable, integrated, safe, responsive, and sustainable transport system.
Objectives of the NZTS

- Assisting economic development
- Assisting safety and personal security
- Improving access and mobility
- Protecting and promoting public health
- Ensuring environmental sustainability
Transport Sector Review Changes

• Legislation & broader focus
• Greater leadership from MoT
• Better co-ordination across sector
• New entity - Land Transport New Zealand
The safety imperative within the NZTS

- Roads are an essential service
- Like water and power roads are an infrastructural service
- But, hundreds of New Zealanders die and are injured every year on the roads
- Governments goal to reduce fatalities to 300 per annum by 2010
The focus of safety management is changing

• Society is less prepared to accept constraints on individual freedom
• There is greater awareness on the safety of goods and services
• Road users should still behave in a responsible manner
• But increasingly expect a safe road network
Road Management

• Big responsibility
• Satisfy road users
• Duty of care for communities, tax payers and users
• Road management business based on balancing risk
Risk Management

- Identification of the risks
- Proactively manage them
- Important task of any infrastructure manager
- Balancing competing demands with identified risks is demanding
- Many liabilities and legal challenges can be mitigated by good management and documentation of risk analysis and actions taken
Key elements in road management

What do road users focus on:

• Road system reliability
• Comfort and low stress
• Safety
• Efficiency
• Price and levels of service
Highway design and management

What should road managers focus on:

- Fitness for purpose
- No surprises to the driver
- Balance between mobility and safety
- Use of new technology
Safety Management Systems

- Management structure
- Identifying hazards
- Road pavement and bridge design and maintenance
- Traffic control devices
- The roadside
- Vulnerable road users
- Audit
Safety Features

- Skid resistance
- Guard rails / barriers
- Signage / markings
- Clear zones
- One lane-bridges
Skid Resistance

• Is a term that characterises the contribution the road surface makes to the available level of surface friction.

• Factors influencing Surface Friction are:
  • vehicle speed
  • surface texture / aggregates
  • water depth and tyre characteristics
  • seasonal variation / temperature
  • road geometry
  • surface contamination
Skid Resistance continued

- My first contact
- Asset owner responsibility
- Applies equally to airport runways
Skid Resistance continued

• Need to know the state of the existing network

• Interpretation of results

• Action plan to improve skid resistance

• Liabilities
Skid Resistance continued

• In NZ the State Highways are measured annually for evenness, and skid resistance
• This provides a quantitative measure on the changes to the asset
• All road owners need to develop a risk based strategy for improving skid resistance
Skid Resistance Continued

• 1.6 times more fatal and injury crashes on wet surfaces than dry
• Skid resistance at a location in dry conditions can be 20-30% higher than in the wet
• Considerable potential to approach dry crash rates through improving skid resistance properties of roads
TNZ Strategy

Estimated cost to improve skid resistance
= $5.2M (yr1) + $1M/year to transport required PSV aggregate

$395M predicted in crash savings over 10 years due to implementation of policy

B/C ratio of 40

(Above estimates made in 2000 dollar values)
Special Surface Treatment

Number of accidents on SH2 near Petone Overbridge

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- Resealed Mar '90
- Resealed Mar '94
- Calcined Bauxite Mar '97
Special Surface Treatment

Crashes SH2 - Petone underpass northbound

The graph shows the number of crashes at the Petone underpass northbound from 1990 to 2004. The x-axis represents the years and quarters, while the y-axis represents the number of crashes. The graph indicates a significant increase in crashes in 1997 and 1998, with a drop in the subsequent years.
Conclusions:

• All road owners need to develop appropriate, realistic and achievable strategies

• Develop an understanding of responsibilities and risks as road owners

• A proactive strategic approach to address risk is a defendable position against litigation
Conclusions:

• Skid Resistance is a major safety management issue

• There has been considerable effort spent over the last 10 years

• It is still a challenge facing all roading managers
Thank You