REAAA Young Presenter Competition 2008
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Foamed Bitumen Recycling
State Highway 1 Northern Motorway (Alpurt)

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What is Foamed Bitumen?
Specialist Equipment - Purpose-Built WR2000/WR2500

www.hiwaystabilizers.com
Project Overview - Location

- Busy motorway (SH1) section north of Auckland
- High peak traffic volumes
- Section maintained by Transfield Services under PSMC
- Constructed 8 years ago
Transfield identified 9.5km (~40,000m²) of the outer lane was exhibiting significant rutting, cracking and pumping of fines.

- Comprehensive sampling regime and confirmation of test pit logs
- Foamed Bitumen mix designs coordinated by Hiway's & independently performed by Opus Auckland Laboratory
Pre-Construction Testing

- Test results confirmed design assumptions
- FBR selected as preferred treatment option
- Optimum mix design of 3.0% bitumen and 1.5% cement
Construction – Demanding Environment

- Late in season – difficult weather conditions
- Finishing to level of adjoining lane
- High peak traffic volumes
- Supply logistics
Construction – Demanding Environment

- 24-hour service station access
- Single working lane
- Up to 40 pieces of construction equipment on site at any one time
- Initial scheme estimates – 30 days later revised to 16-18 days
- Hiway's established duplicate set of recyclers and ancillary plant
Construction – Innovative Methodology Advantages

- Only two transverse cold joints in the entire 9.5km
- Up 2.3km recycled, compacted and trimmed each day
- Time Vs Cost – significant benefits
- Project duration and overall disruption was significantly reduced
- The longitudinal construction joint compacted warm
Construction – Innovative Methodology

- Hiway's developed unique windrow salvage method
- Continuous & efficient operation
- Minimal disruption to finished surface
Quality Assurance

- Comprehensive & Transparent QA Methodology
- Independent laboratory providing on site conformance testing
- Dedicated Quality Managers
- Large amount of test data retrieved from construction
- Results confirmed that all target parameters either met/exceeded
Conclusion

- ~40,000m² of pavement recycled and presented for sealing in less than 6 days
- Challenging environment
- Disruption to road users and the surrounding environment was significantly reduced
- Comprehensive Quality Assurance plan
- High standard of workmanship and all design assumptions have been met or exceeded
Thank you