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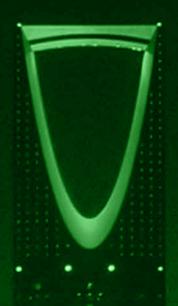
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Celebrating the 12th Year of the GRAA Program



On behalf of the International Road Federation and our international panel of judges, I would like to congratulate the winners of the 2012 IRF Global Road Achievement Awards (GRAA)! The Global Road Achievement Awards represent the very essence of IRF's mission to gather expertise, technologies, and best practices from around the world and share them with the global road community.

This year's winners are a great example of the ingenuity and creativity of individuals and organizations in the road transport industry and their tremendous positive impact on society as a whole. In 2000, the IRF created the GRAAs to highlight these impacts and to celebrate the road industry's role as catalysts for countries to improve their economies. With this year's winners, I am proud to say that the total number of awards has surpassed one hundred projects in more than thirty countries.

Additionally, in my capacity as Mayor of Riyadh and Chairman of IRF, I would like to take this opportunity to invite you to the occasion of the 17th IRF World Meeting & Exhibition (November 9-13, 2013 – Riyadh, Saudi Arabia). Held once every four years, the World Meeting will be the premier global surface transportation event of 2013 where thousands of the world's brightest transportation professionals will convene in Riyadh to discuss and develop strategies to address new and existing industry challenges and stakeholder needs.

As we continue fulfilling IRF's mission of encouraging and promoting better, safer and more sustainable roads through the continuous exchange of knowledge and best practices from all corners of the globe, I look forward to welcoming you to Riyadh, and to the 17th IRF World Meeting and Exhibition.

Abdullah A. Al-Mogbel Chairman International Road Federation



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The Intercounty Connector was completed after more than fifty years of planning, studies, and legal challenges. The multi-modal project connects two major Interstate highways (including I-95 that connects major cities along the East Coast of the United States). The road provides an alternative route to crowded local streets and a way to bypass the congested Washington DC Beltway.

Construction began in 2007 and the 18.8 mile road was opened to traffic in 2011. Work included 66 bridges – most built extra-long in order to decrease the roadway's environmental foot print; seven full interchanges; more than 95,000 feet (about 18 miles) of noise walls; and 41 earth retaining walls.

Maryland State Highway Administration needed to implement a quality management approach that could handle 21st century issues while also meeting traditional quality objectives. Based on a national review of quality assurance oversight methods used on other large and complex design-build contracts, the State Highway Administration decided to work with Delcan. Delcan leveraged its four-phased QMOST approach to tailor a Quality Assurance Oversight program to meet the specific needs being faced by the Intercounty Connector:

- Focus on requirements.
- Risk-based system to ensure that inspection and analysis focused on activities of greatest importance.
- Verification measured performance towards meeting the project's requirements.
- A final acceptance process that tracked progress relative to requirements and provided the owners with the ability to track performance.

The success of the Intercounty Connector has resulted in a cost-effective highway that is increasing mobility and safety while facilitating the movement of goods between two main Interstate corridors. The emphasis placed on managing and delivering quality not only contributed to completing the project on schedule and within budget...but will be the key success factor in establishing the legacy of this project.

"As a winner of four IRF Awards for Quality Management since 2006, Delcan has gained credibility in its efforts to convince industry leaders that delivered quality is the single most significant factor in determining a project's legacy."



Launched in 2010, the IDB's Road Safety Strategy (IDB-RSS) is the first regional initiative aiming to lead a change process in Latin America and the Caribbean by promoting a social and political culture that aspires to be free of road traffic accidents. The IDB's efforts are directed at supporting governments in the strengthening of their technical and institutional capacities throughout the mobilization of financial resources and promoting social road safety responsibility among the general public. The IDB-RSS plays an important role by promoting improvements in the road safety components into every transportation project financed by the Bank.

In 2012 and in order to meet the RSS-IDB objectives, the Bank implemented an Action Plan for a five year period including concrete actions at the global, regional and national levels, which will:

- Strengthen institutional and technical capacity within the region in relation to road safety
- Promote the dissemination of road safety knowledge and best practice across the region
- · Promote regulatory safety standards for vehicles sold in the region
- Positively influence the general public through awareness campaigns in order to increase the adoption of responsible road behaviours
- Provide appropriate tools for evaluating the impact of road safety activities

The Plan incorporates strategic alliances with the private sector and other international organizations in order to develop and pursue measures that maximally reduce the human and financial costs arising from road traffic accidents.

The Inter-American Development Bank has demonstrated its commitment to tackle poor road safety practices in the region long before launching its RSS. In 2008 aiming to increase its internal technical knowledge in road safety, the Bank commissioned the Spanish Road Association with a couple of studies to help identify the road safety status for the region with recommendation for alternatives to incorporate road safety components in IDB's transport activities. Some of these outcomes have been incorporated in the development of the RSS and in some specific activities for road safety.

Pilot tests were conducted in Costa Rica, Argentina, Nicaragua and Brazil where the philosophy of the action plan and the road safety guide were incorporated by identifying the most serious problems and providing best solutions.

"The Inter-American Development Bank is delighted to receive the IRF Global Road Achievement Award 2012 in Road Safety for its Road Safety Strategy in the Latin American Region. This encourages our work, which aims to lead a change process in promoting a social and political culture and that aspires to be free of road traffic incidents."

Esteban Diez-Roux - Principal Transport Specialist Inter-American Development Bank



The State of Rio de Janeiro, Brazil, administers a wide network of highways and is faced with a significant maintenance management challenge of how best to make improvements that have long lasting impacts. The maintenance management needed to be done at a reasonable cost and be able to withstand heavy traffic. To meet such challenges, the State of Rio de Janeiro selected project RJ122 to undertake a new type of maintenance strategy.

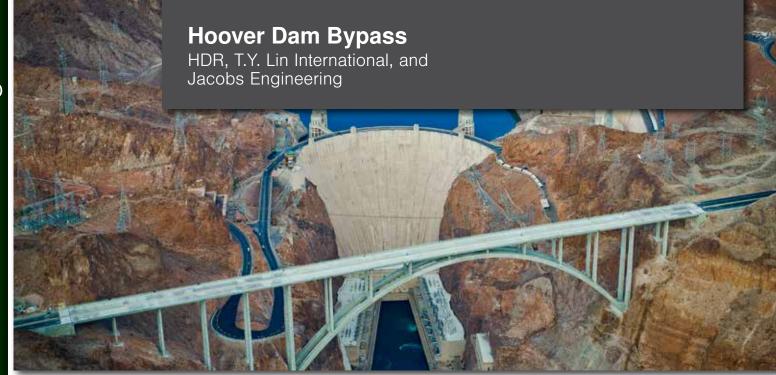
The RJ122 highway is a unique paving project in the recent history of the Government of the State of Rio de Janeiro. The RJ122 highway was paved in the seventies, becoming extensively cracked, making the ride unsafe and uncomfortable for the high traffic volume of cars and trucks. The shoulders were also lacking in most areas. The Government of the State of Rio de Janeiro decided to use an environmentally sustainable technology in the rehabilitation of the pavement, which was completely new to Brazil. Typically the 35.6 km project would need to be completely reconstructed; however, they chose to construct a pavement structure using recycled tires as modified rubberized bitumen. By employing this rubberized bitumen within two very unique paving hot mixes, it was possible to construct a much more economical rehabilitation pavement structure. Construction began in 2009 and was completed in 2011.

The State of Rio de Janeiro deserved this special IRF recognition award because they were proactive in employing new technology, maintenance and associated project management to address the rehabilitation of a severely distressed roadway. With the support of Governor Sergio Cabral, and before undertaking this laudable task, the DER-RJ Chief Operating Officer / Engineer Angelo Pinto did the due diligence of thoroughly investigating the new technology to reduce any potential risk of incorrectly using it. They received assistance from many noted experts in the field of rubberized asphalt. This included: Dr. Jorge Sousa of Consulpav International, Mr. George Way of the Rubberized Asphalt Foundation, Professor Kamil Kaloush of Arizona State University, and Mr. Mark Belshe of the Rubber Pavements Association. Additionally they coordinated and received training on how to use the new rubberized asphalt blending equipment. Modern standard tests of the rubberized asphalt binder and mixtures were completed with in-house practical laboratory evaluations during the project.

This project demonstrated outstanding final pavement qualities: improved skid resistance, better ride quality, and reduced environmental impacts by recycling 200,000 tires. Post construction assessment included the use of falling weight deflectometer and in-situ heavy vehicle simulator to estimate future performance. The project won public support because of these qualities and lower roadway noise.

"Winning the GRAA gives my organization great honor, recognition and merit from a world class entity. This recognition will help answer our youths' question regarding long term sustainability of the asphalt rubber technology, and all the environmental and safety benefits that come with it. This award will help promote growth and excellence in a positive momentum in Brazil."

Angelo Pinto - Chief Operating Officer
DER-RJ



Soaring 890 feet above the Colorado River, the Hoover Dam Bypass overlooks one of the America's greatest icons and assets. The October 2010 opening of the bypass, a triumph more than 40 years in the making, improves the security of the historic Hoover Dam by removing through traffic from U.S. Route 93, reducing the vulnerability to a terrorist attack against an international landmark and guarding the most sustainable source of electricity and the scarce water supply for the entire southwestern United States.

By diverting traffic from the hairpin turns and two-lane bottleneck approaching and crossing the dam, the bypass improves driver and pedestrian safety. Bypassing the dam also reduces travel time and fuel consumption for motorists traveling between Las Vegas and Phoenix while strengthening the international economy by restoring a critical freight trucking route between the United States and Mexico.

In addition to the bridge's safety, security, mobility and economic impacts, the structure itself demonstrates design excellence. The Colorado River crossing is the centerpiece of the project, connecting new approaches on both sides of the river and eight other bridges. It sets the record as the highest and longest concrete arch bridge in the Western Hemisphere and features the world's tallest precast concrete columns. The innovative hybrid structure is designed to complement the dam with the high-performance concrete arch while limiting the load demands with a modern steel superstructure. It is the first steel-concrete hybrid arch bridge in the United States.

The project's legacy includes environmental and cultural stewardship. Because construction of the approach bridges encroached on migration routes, designers incorporated underpasses for bighorn sheep to safely avoid the highway. Many native plants that were displaced by construction were collected and stored in a National Park Service nursery, then replanted. Additionally, changes to the approach alignment helped save 200,000 cubic yards of rock excavation and reduce the project footprint by 15 acres. Water sources temporarily disrupted by construction were also relocated.

The Hoover Dam Bypass set new standards for successful project management. The project was managed by a six-agency project management team, led by the Central Federal Lands Highway Division of the Federal Highway Administration. The other major project stakeholders included the states of Arizona and Nevada, the Bureau of Reclamation, the Western Area Power Administration and the National Park Service. The project design team consisted of HDR, Jacobs Engineering, and T.Y. Lin International. The large, complex team delivered the project on budget without any disputes or claims.

"This is a significant award for all of the project participants because the project required the world's best and brightest, all who came together for a common goal."



Kosovo's Route 7 Motorway is an 84 km dual carriage Motorway that will span Kosovo from the southwest border with Albania to the capital city of Prishtina, tying the heart of Kosovo to the Albanian port city of Durres. This Motorway is part of the pan European Motorway network for Southeast Europe and provides a key trade corridor. In November 2011, Bechtel-Enka General Partnership (BEGP) successfully delivered 38 km to the people of Kosovo, only 19 months after the contract award. The second main achievement came in November 2012 when a further 18.4 km of motorway was opened after only 8 months of construction. BEGP is proud to have delivered this 'fast track' Motorway while maintaining a high level of both safety and quality.

There were three major obstacles to be overcome upon contract signing in April 2010. The first obstacle was that the final design was not complete. With construction needing to start almost immediately to deliver the first three sections within the client's required timeframe, BEGP had to begin construction while working in parallel with the designer to manage the delivery of the design to support these construction activities on site. The second obstacle was that while the expropriation process was underway, the government had not yet taken the final decision and therefore had not expropriated any of the land for construction. BEGP worked closely with the client's expropriation teams to expedite the process in order of priority, so that major structures and areas of large excavation that were on the projects critical path could begin immediately. The third obstacle was the long and very cold winter weather conditions.

Staffing a major Infrastructure project is always a key challenge success. In total, BEGP trained 3733 individuals from 14 different countries including an unskilled majority from the local Kosovo community. The project also implemented a "buddy" system whereby employees who have been on the project less than 90 days are given a different color helmet and work closely with more experienced members of the team to ensure their safety on site and the quality of their product.

In order to maintain the required high quality standards and in addition to the craft training program, BEGP developed 172 procedures within the first 6 months of work. Development of the Quality Management System (QMS) was jointly completed by the Quality and Construction Departments with input from all department leads to ensure completeness.

"Our team is honoured to have been selected to build this Motorway and it is our great pleasure to be contributing towards developing the modern infrastructure of a nation. Our experience in Kosovo has taught us that when a nation seeks to achieve and embraces economic growth, it can overcome obstacles and deliver success."



The New York City ITS Modernization Program has been a large scale, cost effective traffic oriented program which has included upgrading thousands of traffic signal controllers, deploying a city-wide cellular based network, and upgrading the central traffic management systems. This program affects millions of NYC multimodal travelers by improving safety, reducing delays and lowering vehicle emissions, thus improving the environmental quality of life. The project has transitioned NYC to the state-of-the-art in transportation management technologies.

Over the past seven years, working with TransCore, NYC has developed and implemented a master plan for modernization of the entire ITS infrastructure; this complex program for ITS modernization has included the following efforts:

- The development of a full function traffic controller that can support both interval-based Pretimed control and Phase based control based on NEMA TS2.
- The deployment of a City-owned communications network that provides wireless connectivity to all five City boroughs. The wireless network is used to quickly deploy ITS field devices such as vehicle detectors, variable message signs, traffic controllers, EZpass readers, and CCTV for traffic monitoring.
- The modernization of the traffic management center to support all of traffic and incident management applications as well as the data collection and operation of the field devices, video display walls, and traveler information systems.

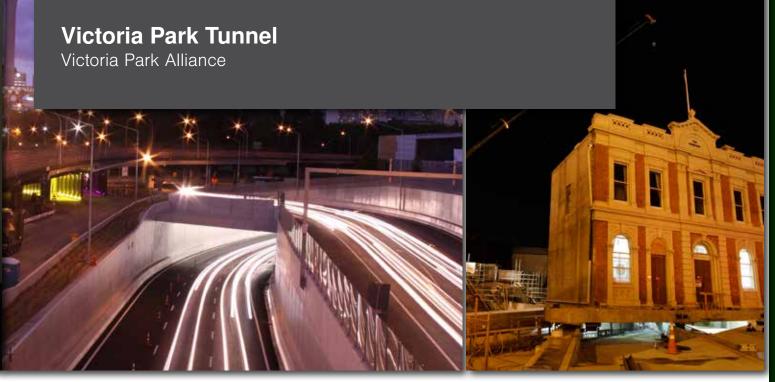
Using this infrastructure, NYC has deployed the Midtown-in-Motion Project to improve and promote multimodal mobility in the midtown core of Manhattan over a 200 square block zone. This Project includes new turning lanes, signal phasing changes, and employs Active Traffic Management algorithms developed by KLD and integrated with the TransCore TransSuite® Central System to regulate entry to the zone and optimize the mobility within the zone. Preliminary results showed an overall 10% increase in travel speeds during the peak periods on the Avenues in the area serviced.

NYC has also deployed a centralized Transit Signal Priority (TSP) system developed by TransCore that supports TSP for the City's fleet of over 6,000 buses without the need for any new intersection based infrastructure.

Working in a collaborative relationship with its contractors and stakeholders, the City of New York has deployed the building blocks that have enabled the rapid deployment of ITS projects. The City has transitioned from managing the operation of electro-mechanical signal controllers to the use of the most advanced traffic controllers available.

"We are happy with winning the IRF award for the New York City Intelligent Transportation System Modernization Project and hope our success will set a new practical example for the use of the current advanced technologies and Active Traffic Management in big cities."

> Mohamad Talas - Deputy Director, Systems Engineering New York City Department of Transportation



As a small, sparsely populated country distant from world markets, New Zealand relies on a robust transport network to move people, goods and services safely and efficiently. In 2009 the Government identified seven state highway projects that are essential to achieve more efficient and reliable business and freight connections. Called the Roads of National Significance (RoNS), they are New Zealand's biggest ever infrastructure investment.

The first of the RoNS projects was the Victoria Park Tunnel in Auckland. In July 2009, the NZTA joined with infrastructure delivery companies Beca, Fletcher Construction, Higgins Contractors and Parsons Brinckerhoff to form the Victoria Park Alliance. Work was completed in March 2012, three months early.

The Victoria Park Tunnel project widened and upgraded 2.2km of highway used by 155,000 vehicles a day. The project involved the commissioning of a 450m cut-and-cover tunnel through a prime downtown park on reclaimed land to provide three northbound traffic lanes. A 50-year-old motorway viaduct over the park was reconfigured to carry four southbound lanes. Both sides of the motorway were widened to optimize the operation.

Significant urban design initiatives improved local amenity and connectivity in a downtown area of Auckland that still bore the scars of previous infrastructure development. Victoria Park was reinstated on top of the tunnel and art was incorporated into the design of utilitarian structures such as the tunnel egresses.

The protection of the 1886-built Rob Roy Hotel attracted international acclaim for its engineering excellence. The unreinforced brick and mortar structure sat directly in the path of the tunnel. It was strengthened, moved away from the construction, and then moved back to its original location – now on the tunnel roof.

A significant innovation was restoration of the derelict 1910-built Campbell Free Kindergarten to house standby tunnel operating systems. This negated the need for a purpose built plant room and extensive cabling, resulting in savings that funded the restoration.

The Victoria Park Tunnel project successfully removed the last major traffic bottleneck on Auckland's central motorway network. It will be remembered as the project that set new benchmarks for the delivery of major infrastructure in New Zealand.

"The Victoria Park Tunnel was a fast-paced, high profile project that went beyond business as usual in many ways. To have that recognised by the International Road Federation is a great endorsement of that achievement."



Infrastructure improvement is one of the most critical issues facing Minnesota's transportation system. Extreme weather, and the age of the system result in roads that are in great need of maintenance and improvement. Approximately 700 miles of Minnesota's highways were currently classified as being in "poor" condition in 2011 with a projected increase to 1,900 miles by the year 2020. The increase not only raises future costs of road maintenance, but it also has a significant negative impact on the traveling public. In response, the Minnesota Department of Transportation, in partnership with Governor Mark Dayton, and the Minnesota legislature established the Better Roads for a Better Minnesota program.

MnDOT conducted a risk analysis of investment levels in pavements, bridges, safety and mobility. The result determined pavement preservation to be the highest risk for the department and led to the development and implementation of the Better Roads for a Better Minnesota Program to deliver sustainable solutions that incorporate safety and accessibility improvements, state-of-the-art pavement, and technology. The program's high return on investment preserves and improves an asset vital to the state's economy while generating jobs and economic prosperity in Minnesota.

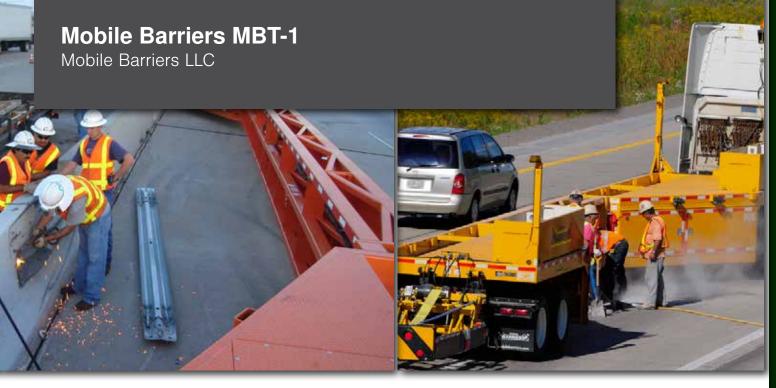
Funding for the program did not require increases in revenue. Instead, funding came from current state and federal funds. The department also explored market conditions and identified cost efficiencies to free up capital resources. MnDOT's materials lab and road research facility also provided a testing ground for innovative engineering and delivery techniques that resulted in pavement materials that are sustainable and now have longer life cycles.

A large part of the program includes exploring innovative and sustainable engineering and delivery techniques that result in additional benefits to Minnesota taxpayers. One of these sustainable solutions is alternative bidding. Traditionally MnDOT specifies the type of pavement, either bituminous or concrete, and awards the contract based on the lowest bid. With alternative bidding, contractors bid on equivalent concrete and bituminous designs. The bid with the lowest life-cycle cost is awarded the contract instead of the bid with the lowest initial cost. Another solution is the use of stone mastic asphalt. The material appears to be open-graded but instead it contains a large proportion of a single size material. The material will not rut and may offer improved performance against cracking and deterioration around cracks.

The Better Roads for a Better Minnesota Program provides a sustainable and efficient method of addressing MnDOT's highest risk investment area, smoother rides on Minnesota highways and a transportation system that remains economically competitive and improves quality of life.

"Minnesota is honored to win an award of this magnitude. MnDOT's strategic vision is to be a global leader in transportation, and this award validates MnDOT's commitment to innovative transportation engineering and delivery."

Nick Thompson - Director: Policy, Safety & Strategic Initiatives Division Minnesota Department of Transportation



Short term work zones, especially at night, pose significant challenges and are becoming the norm rather than the exception. Incentives and disincentives to reduce the number and duration of lane closures, improve traffic flows, and reopen roads more quickly are increasingly being incorporated into work plans and contracts. A new tool called Mobile Barriers MBT-1 is helping, and is proving to be beneficial for users and passing traffic alike.

Designed for safety, Mobile Barriers MBT-1 is also improving productivity, reducing the need for collateral equipment, and providing crews with more usable time and space in which to work. Instead of deploying multiple pieces of equipment (generator/light carts, flatbeds trailers with supplies, utility trucks with power and tools, multiple TMA and other trucks), everything is carried on the barrier and simply pulled into place. Lights and tools run right off on-board power and air. Materials and supplies are carried on the decks.

The barrier provides mobility, efficiency and protection (front, back and sideways) not otherwise possible – with the functionality of a utility truck, flatbed trailer, light/gen cart, and multiple blocker/TMA trucks all in one. Short term work, such as road, bridge and ITS maintenance and upgrades, become as simple as pulling forward.

For passing traffic affected by the work, the mobile barrier helps reduce distraction, reduce glare, keep more lanes open, and maintain higher, more uniform speeds through the work zone. The barrier's 5' (1.5m) high walls prevent vehicles from seeing into the work zone, and help prevent work debris from inadvertently scattering into passing lanes. 90° lighting avoids issues of glare, allowing traffic to pass with less eye strain. Lanes otherwise used for buffer can remain open, and work lanes can more quickly be reopened. These factors help reduce problems and accidents that can otherwise cripple work zones.

Every year there are hundreds of thousands of incidents in and around work zones around the world. Many involve injury and loss of life. All involve property damage and additional delay. Mobile Barriers is proud to help improve safety, efficiency and traffic flows in and around work zones.

"It is a great honor for Mobile Barriers to receive IRF's Innovation Award. The IRF is a highly respected organization, identifying and promoting best practices globally. This award recognizes MBT-1 as a significant advance in how work can be done on roadways and underscores our mutual commitment to improving safety, efficiency and traffic flows in and around work zones."

Kevin K. Groeneweg - Chairman & CEO Mobile Barriers LLC



New Zealand's remoteness to global markets requires efficient freight supply chains and secure and resilient transport networks. The NZ Transport Agency is responsible for the state highway network and its strategic priorities include road safety, public transport and freight movement efficiency. Winter in New Zealand places additional pressure on parts of the state highway network. In the South Island and the alpine areas of the central North Island snow falls, frost and icy road conditions are frequent, leading to the closing of highways and disrupting traffic and freight movements.

Due to increasing public concerns for the environment and the effect on motor vehicles, the use of salt as a de-icer was discontinued in the early 1980's. As a result, maintaining roads in winter conditions became reliant on the use of abrasives only to manage frost and ice conditions. Severe winter storms in 1995 closed a section of State highway 1, also known as the "Desert Road", in the central North Island for nine consecutive days due to the inability to satisfactorily manage ongoing ice conditions.

A review of management practices recommended the need for a chemical de-icer although salt was still clearly unacceptable. Calcium Magnesium Acetate (CMA) was identified as a suitable alternative, however introducing a new chemical was to present a challenge, both environmentally and with road users. The Desert Road in particular caused concerns as it is an alpine road which passes through a world heritage National Park with significant environmental characteristics and cultural and spiritual concerns for indigenous Maori.

The NZ Transport Agency set out to rigorously examine the effects of the de-icer on the environment, including a carefully planned and programmed introduction to ensure any environmental risks could be avoided, remedied or mitigated. The progressive trialling and the results from the initial trials provided confidence that any risk of significant effects on the environment during full-scale operational use could be minimized and managed.

After more than 12 years of monitoring and environmental safeguards, no long term cumulative effects on the environment have been identified. As a result of the extended trials, the chemical de-icer has proved to be an effective and environmentally friendly tool to assist with winter management of New Zealand's road network and can therefore continue to be used with confidence that the environment is protected for the future. The benefits include the resilience and accessibility of the highway network, as well as the provision of significant safety benefits to road users and communities which in turn contributes to New Zealand's economy and the governments' direction for economic growth.

"The NZ Transport Agency is proud to have this project selected as the winner in the environmental mitigation category. In receiving this award from such a respected international road organization it recognises and acknowledges the excellent work being done by our people."





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