FACT SHEET: SH6 Blenheim roundabout project

NZGTTM-aligned practice, enabling safer, smarter TTM

Prepared by NZ Transport Agency Waka Kotahi

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Overview

The SH6 Blenheim roundabout project was one of the first NZTA capital works sites to pilot the New Zealand guide to temporary traffic management (NZGTTM). In 2024, two adjacent roundabouts were constructed: the first under CoPTTM, and the second under NZGTTM following a contract variation.

The application of NZGTTM in the complex environment of the second roundabout encouraged the project team to remain flexible and adapt traffic management as the project progressed. The site sits on the main access route to Marlborough Airport and the NZ Defence Force Woodbourne base, both requiring uninterrupted, time-critical access. Local businesses, including the Runway Café, and the wider community were also directly affected by traffic changes.

By applying NZGTTM principles, the team were able to identify issues with their original plan and adjust controls to improve safety and reduce disruption. Examples included giving NZDF emergency staff direct control of temporary traffic signals and assessing the risks of potential road closure points to balance safety with the needs of local businesses. This willingness to change course resulted in safer outcomes and better support for the community.

Project summary – adapting plans through a risk-based approach

Client: NZ Transport Agency Waka Kotahi

Lead contractor: Fulton Hogan

Traffic management contractor: Fulton Hogan

Project manager: Josh Kenney, NZTA

Dates: June – December 2024

The SH6 Blenheim to Woodbourne project originally included safety improvements at three intersections. The first roundabout at St Leonards/Bells Road was completed under CoPTTM in May 2024, and a third intersection was later removed from scope. For the second roundabout, at Tancred Crescent, a contract variation introduced a requirement to apply NZGTTM. This made it one of the first capital works pilots for the new approach.

At this site, the team worked in a confined space within an 80 km/h environment, managing around 8,000 vehicles a day (up to 18 percent heavy vehicles) and 1,400 daily turning movements into the airport and NZDF base. The challenge was not only to design traffic management for these conditions, but also to stay open to adapting the plan as work progressed.

Using NZGTTM's risk-based planning process, the team adopted a staged construction approach to manage surfacing and pavement risks and to create larger, safer work areas. They also regularly updated

a risk register to guide decisions throughout delivery. This willingness to adjust the approach mid-delivery was key to improving safety and reducing disruption for both the community and critical users of the network.

What was done

- **Collaborative planning**: A preliminary Traffic Control Plan (TCP) was developed by Fulton Hogan, then refined through a workshop with NZTA, the RCA representative, Journey Manager, designer, and traffic management planners. This produced a risk register that guided delivery and was updated as new risks and issues emerged on site.
- **Defence Force (NZDF) access**: Temporary traffic signals were installed that could be directly controlled by NZDF emergency response staff, allowing double-red stops for urgent access across the site for the remainder of the project. The project team also collaborated with Fire and Emergency New Zealand (FENZ) to agree on emergency response protocols suited to the site conditions, which were successfully implemented during several callouts.
- **Runway Café access**: The planned road closure was shifted following a 2-week trial to maintain safe access for café patrons while reducing the risk of heavy vehicles turning in residential streets. Adjustments were made after monitoring driver behaviour and engaging directly with freight operators.
- **Community and safety considerations**: Risks were continually assessed during delivery, including informal detour use at Godfreys Road, speed management near a nearby school, and access for NZDF family quarters. Additional controls were introduced as new risks emerged.
- **Adaptive delivery**: Controls and plans were updated as conditions changed, with decisions documented against the hierarchy of controls. For example, when drivers were observed travelling the wrong way through the one-way system, the project team introduced live monitoring and worked with Police to improve compliance. **See Emerging risks during delivery on page 5** for further examples of additional measures introduced.

Why it was needed

- **Challenging site conditions**: The project was delivered within a confined 80 km/h environment, managing high daily traffic volumes (including heavy vehicles), frequent turning movements into the airport and NZDF base and the presence of overhead services and nearby landowners.
- **Critical access requirements:** The site sits on the main route to Marlborough Airport and the NZDF Woodbourne base, where uninterrupted access was essential, particularly for NZDF emergency vehicles. Stakeholder engagement with NZDF and review of the original plan highlighted that existing provisions wouldn't guarantee reliable access. Without adaptation, the solution would have required 24/7 on-site STMS cover or a costly new crash gate.
- **Business and community impacts**: The planned closure point risked heavy vehicles turning in residential streets (near NZDF family quarters) and cutting off customer access to the Runway Café. Early monitoring and community feedback showed the location needed to be reconsidered.
- **Emerging risks**: Once works began, new issues arose that had not been fully anticipated at the planning stage. Addressing these required the project team to apply their professional judgement and adapt traffic management in real time to maintain safety and community access.

Read more in Additional details on page 5.

NZGTTM principles applied

- **Proactive risk management**: A risk register was developed before construction began and refined through collaborative workshops. During delivery, it was actively maintained and updated as new risks and issues were identified, ensuring specific risks were tracked and addressed.

- **Plan–Do–Check–Act cycle**: An iterative process was used to manage traffic management overall — plans were implemented, monitored in real conditions, and then adjusted where necessary, reinforcing a continuous cycle of improvement.
- **Hierarchy of controls**: Adaptations were assessed and documented against the hierarchy of controls, ensuring decisions followed a structured approach to reducing risk.
- **Consultation, coordination and collaboration (the 3Cs)**: Engagement across multiple partners and the community was essential to maintaining safety and access and to identifying risks and refining solutions. Early and ongoing collaboration involved NZTA staff, the RCA Traffic Management Coordinator, Marlborough District Council, freight and wine-industry representatives, Marlborough Airport, NZDF, schools and local businesses. Their input informed changes such as road-closure locations and access arrangements.

  Supported by NZTA's communications team, the contractor also provided timely updates of upcoming changes and project progress to ensure communities were well informed throughout delivery.
- **Lowest total risk**: By adapting plans as new issues arose, the team reduced overall exposure for workers, road users, and the community, aligning with NZGTTM's focus on managing cumulative risk rather than individual activities in isolation.

Benefits

"These outcomes illustrate how NZGTTM supports a culture of flexibility, where adapting the plan during delivery can lead to safer and more community-focused results."

— Josh Kenney, Principal Project Manager, NZTA

- **Improved safety**: Adapting the plan during delivery addressed emerging risks and reduced exposure for workers, road users, and the community.
- **Critical access maintained**: Emergency access for NZDF was assured without requiring overnight STMS cover, reducing potential risk for workers and avoiding additional staff costs.
- **Community responsiveness**: Adjustments to road closure points maintained access for the Runway Café and reduced the risk of heavy vehicles diverting through residential areas.
- **Accelerated delivery:** The one-way system enabled larger, safer work zones that allowed continuous operations, including night and weekend shifts. Careful coordination between crews and traffic management teams helped the project progress ahead of schedule while minimising disruption to road users.
- **Stakeholder engagement**: Consultation with NZDF, Marlborough Airport, the RCA, local businesses, and freight operators directly informed changes such as closure points and access arrangements.

Building on the pilot

As an early capital works pilot, the project delivered strong outcomes and also highlighted areas where the application of NZGTTM could be further strengthened:

- **Clarifying risk ownership:** Some risks were complex to allocate, reinforcing the need for clear responsibility frameworks across project partners.
- **Managing off-site risks:** The project reinforced the importance of assessing and managing risks on detour and alternative routes as actively as those within the construction site.
- **Improving documentation:** The hierarchy of controls guided decisions effectively, but further development is needed to ensure adaptations are consistently documented.
- **Reducing legacy influence:** Some CoPTTM-style practices remained, showing that ongoing experience with NZGTTM will help embed the new approach more fully.

- **Embedding in procurement:** The trial reinforced the importance of integrating NZGTTM into procurement and TRMP expectations from the outset.

Appendices

Additional details

Traffic volumes and movements

- The site carried approximately 8,000 vehicles per day, including 5–18% heavy vehicles.
- Around 1,400 daily turning movements were recorded into Marlborough Airport and the NZDF base.

Site constraints

- Construction took place within a confined 80 km/h environment.
- Work was carried out around existing services, including high voltage overhead lines.
- Interfaces with neighbouring landowners added further complexity.

Trial relocation of closure point

- The original road closure design would have restricted access for the Runway Café's patrons, many of whom travel from Renwick.
- A two-week trial relocation tested the impact of shifting the closure point.
- Monitoring identified repeat issues with a small number of freight operators, which were addressed through direct engagement.

Emerging risks during delivery

- Informal detour use at Godfreys Road was observed, requiring additional controls.
- Speed management concerns were raised near a local school, leading to further adjustments.
- Risks relating to access for NZDF family quarters also required ongoing review.
- Increased detour traffic required additional controls, including temporary solar lighting at the Jackson Road - Old Renwick Road intersection, and a temporary speed reduction on Godfreys Road after monitoring confirmed higher traffic volumes.
- Electronic speed awareness signs (eSAS) were installed at approaches to the site to reduce vehicle speeds and improve compliance with the temporary speed limit.

Project site and network map

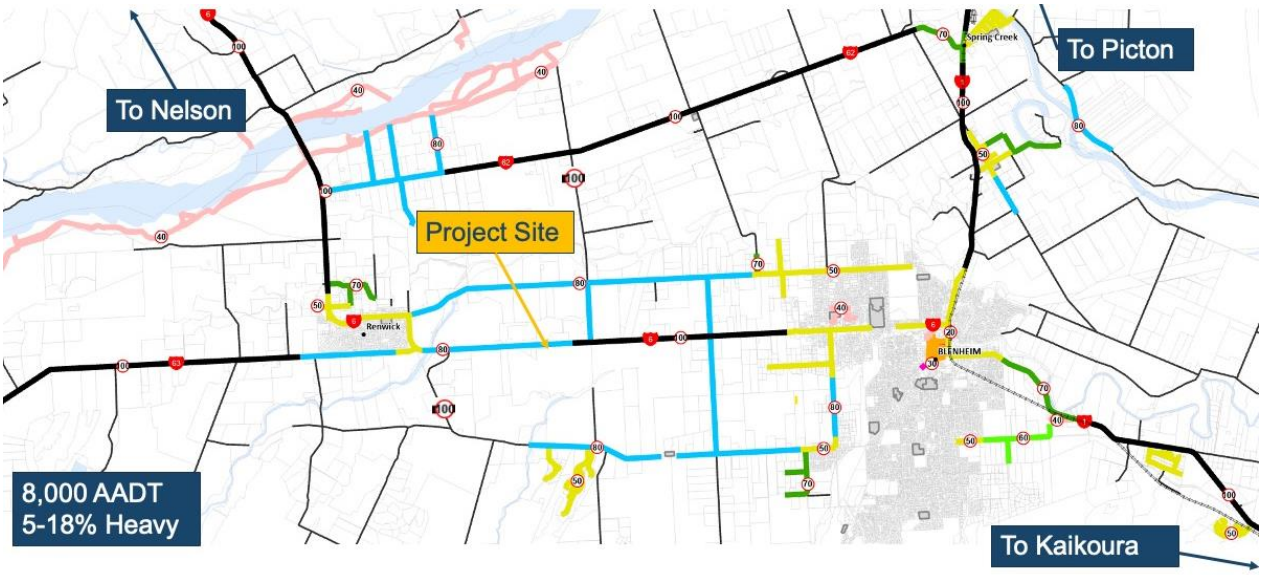

Figure 1: Network and speed environment

Figure 2: Tancred crescent site