

# Smart Disruption Minimisation

## Te Ararata - Walmsley Road Bridge Closure



**Presented by:**

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# Project Background

- Significant rainfall in 2025 saw Māngere experience severe flooding.
- As part of the Auckland Council Healthy Waters: Making space for water project, an upgrade to Te Ararata Creek was proposed.
- **Walmsley Road Bridge Closure:** This required the demolition of existing bridge and construction of new bridge.
- Once completed, the project would significantly benefit the local community; reducing the potential flood levels of 250 properties, including 38 with intolerable risk of life, and 100 with floor level flooding.
- It would also reduce flood risks to a further 1000 properties caused by blockages in the current system.

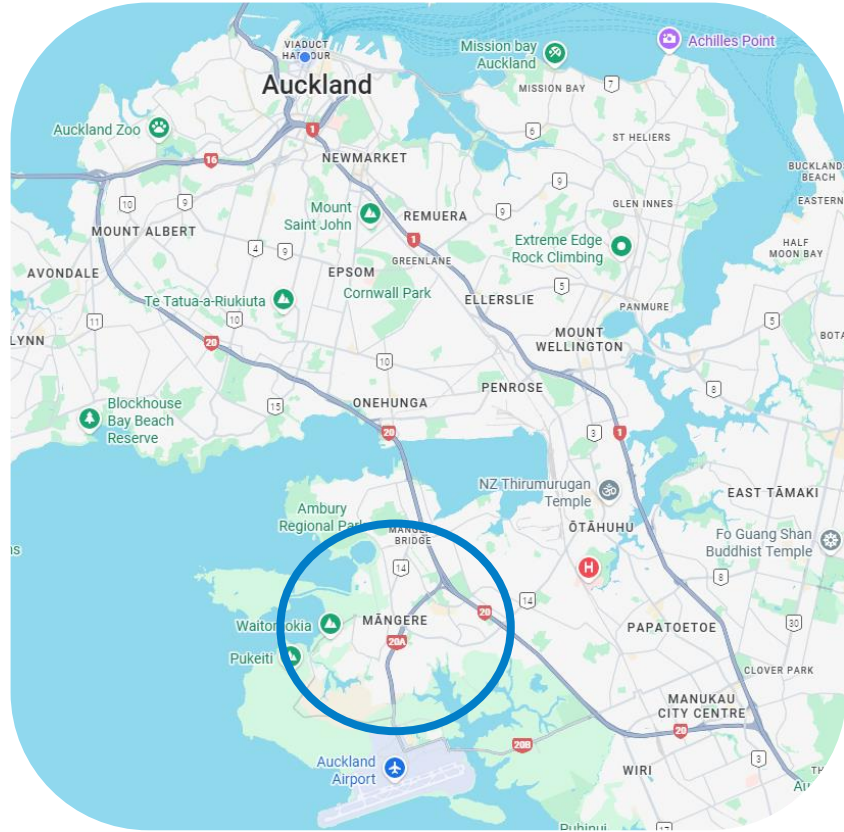


**Māngere flooding**



**Proposed upgrades to Te Ararata Creek**

# Project Location



The project is on a key arterial route in South Auckland, 17,500 AADT with large number of trucks and peak period congestion.

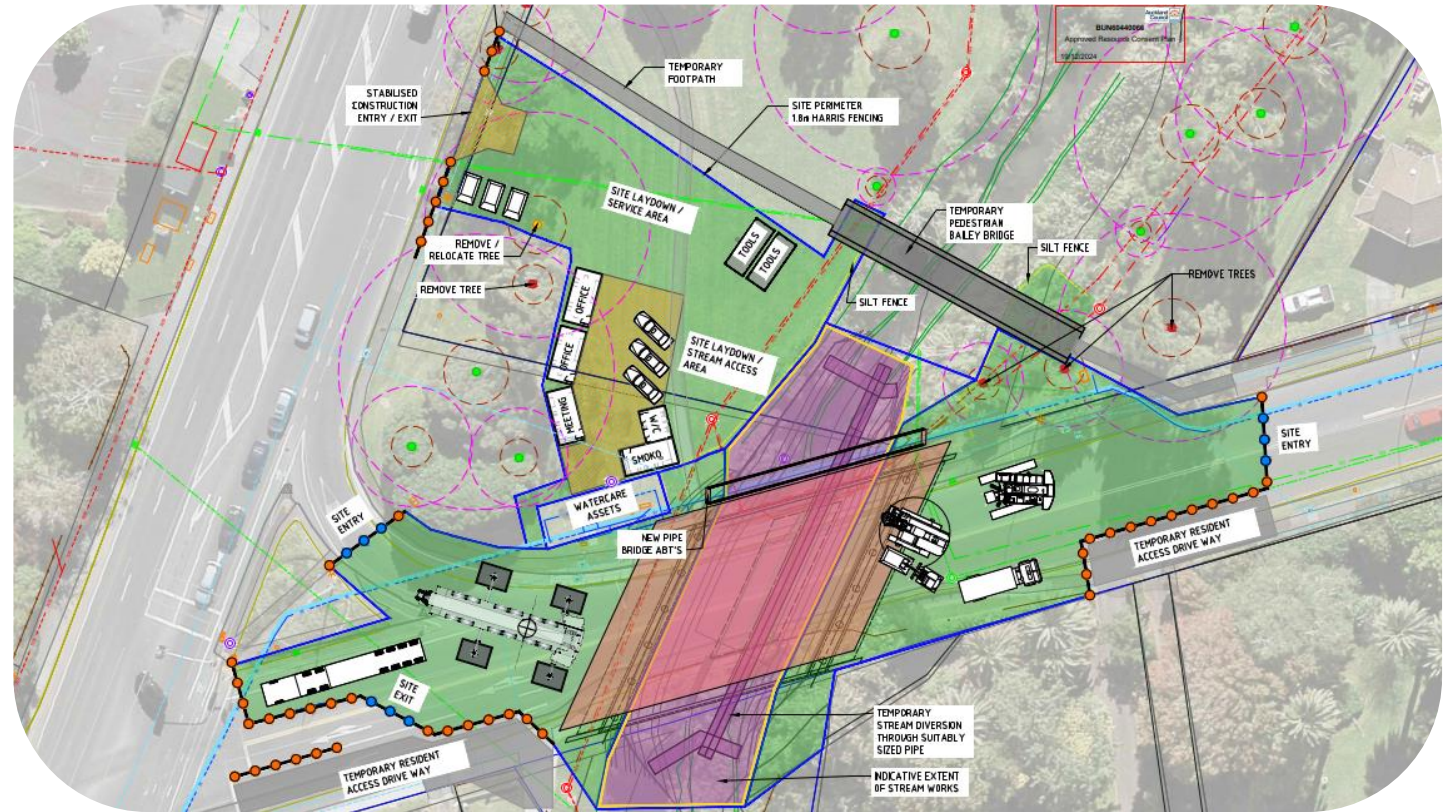
Adjacent to SH20 and 20A, Māngere residential and town centre, Airport and industrial & warehousing estates.

# Optioneering

**To complete works on Te Ararata Creek, Walmsley Road Bridge was required to be demolished, and a new bridge built.**

Temporary bridge options to the north and south of the existing bridge were rejected due to:

- Land acquisition required
- Increased construction period from 7 months (with closure) to 18 to 24 months impacting on funding window.
- Longer construction period increases the duration of impact on the community and leaving the flood-prone area at risk for a longer period.
- Increased costs, exceeding budget.
- High level economic assessment indicated up to three times the travel time costs for road users with a temporary bridge.

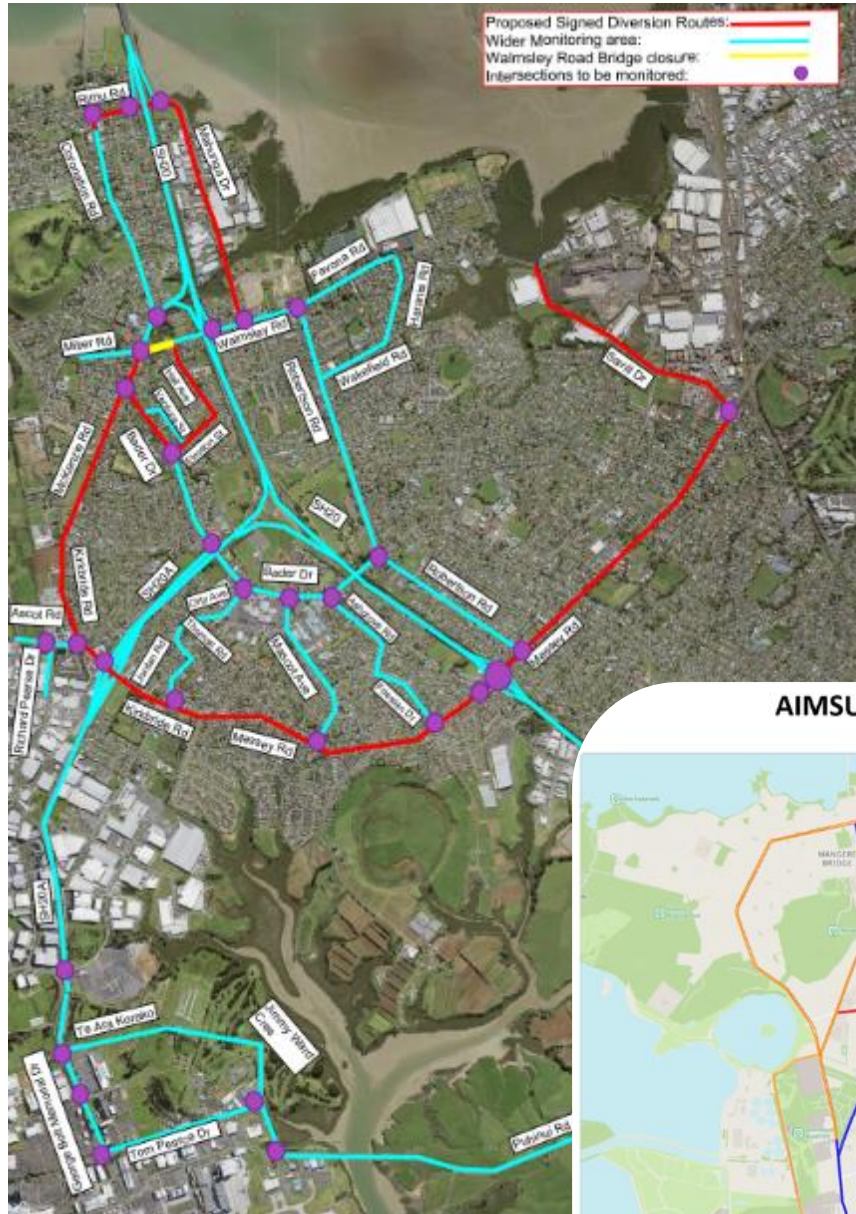


## Preferred option

Closing the bridge would enable completion of the project in only 7 months, and at a significantly lower cost.

## Problem statement

How do we successfully divert traffic onto detour routes safe and efficiently?



# Pre-closure Modelling

Prior to closing of Walmsley Road Bridge, we conducted an investigation into current traffic patterns to determine where displaced traffic may move to.

Due to the absence of available strategic models, we conducted manual modelling, with a bespoke Aimsun model later commissioned.

AIMSUM Modelling Analysis Summary



## The Results

The results identified key routes outside of the diversion routes that traffic may choose to use instead.

These results defined the Disruption Minimisation Plan (DMP) area, taking into account signed detour routes and other routes that drivers may take (e.g. following google maps).

# Disruption Minimisation Plan (DMP)

Once we understood the area that may be impacted by the closure. We then set about creating a team, defining goals, and creating a resilient DMP.

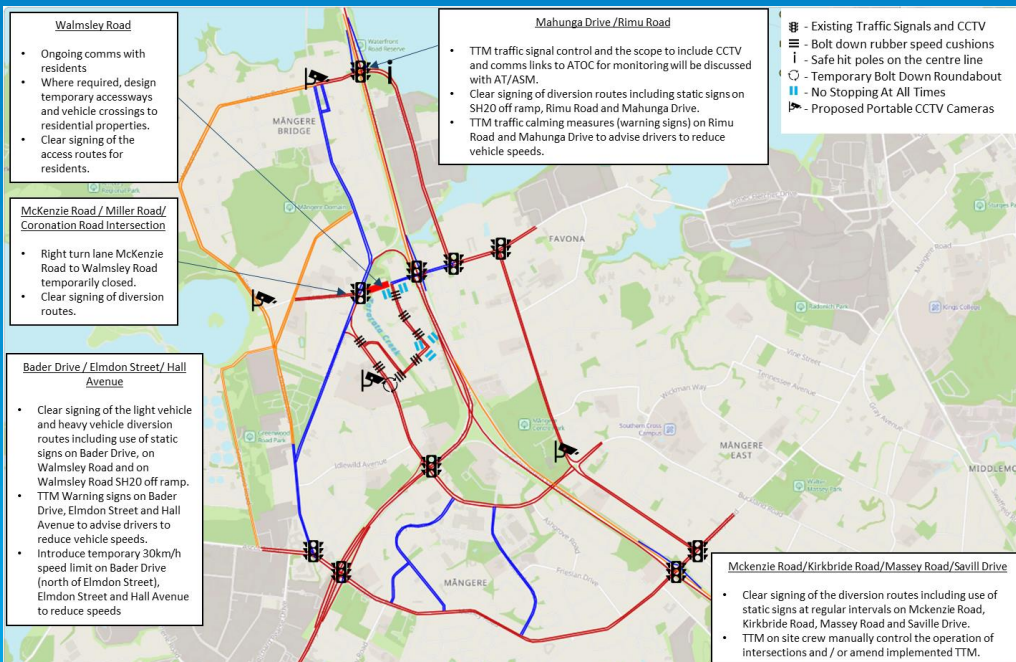
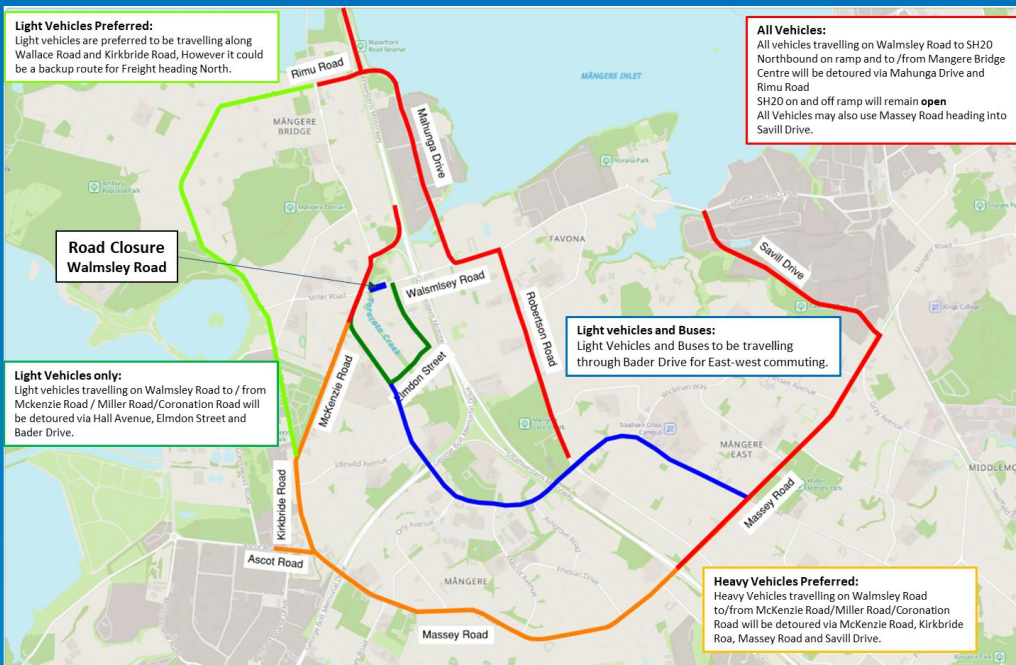
## Factors which enabled our success:

- **We established a collaborative real time response team:** Auckland Transport / NZTA / Auckland Airport / Auckland Council / HEB / Tonkin & Taylor.
- **Communications Strategy** – Established set roles & responsibilities, incident response, works coordination, complaints management process.
- **Monitoring Strategy** – Baseline, real time journey times, SCATS, CCTV, drone survey, on site observations, incidents/ crashes.
- **Mitigation** – Pre closure and real time response contingency measures, Traffic Resolutions, Safe System Audits, Traffic Management Plan (TMP) approvals.
- **Emergency Action Plan** – Emergency scenarios procedures, requirements, and responsibilities
- **Monitoring and reporting** – Real time monitoring and weekly/monthly reporting plus RAID register.

# Planned Mitigations

**To ensure the DMP was successful, and customers experienced minimal disruptions, several mitigations were planned:**

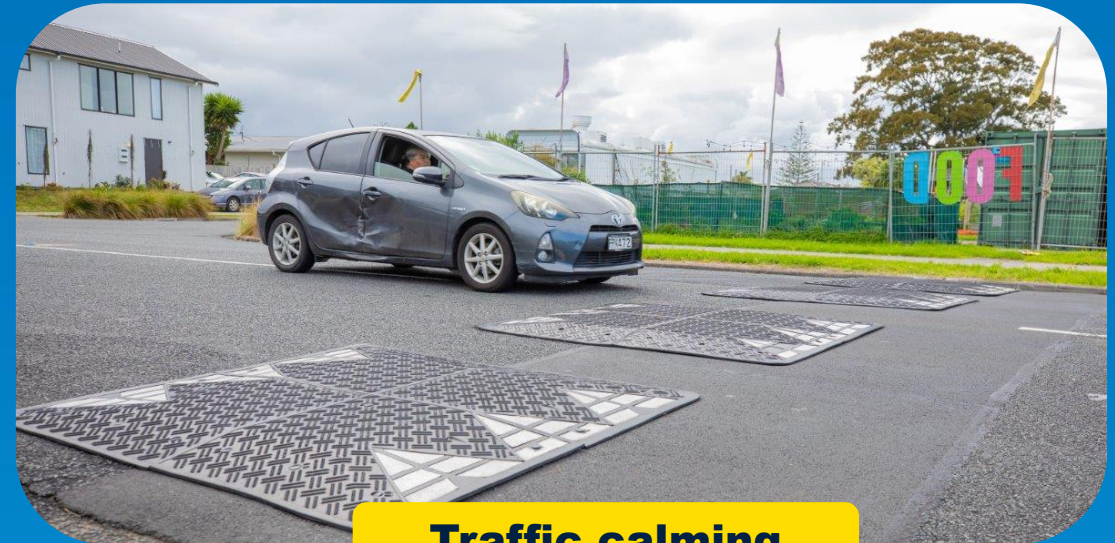
- ✓ Sticked to basics – follow ANOP
- ✓ Identified blind spots and installed temporary cameras
- ✓ Installed temporary traffic lights
- ✓ Installed speed calming devices
- ✓ Installed VMS and detour signage
- ✓ Used temporary RABs on uncontrolled intersections
- ✓ Repainted road markings to prevent roadside parking
- ✓ Used hit-sticks at bends and curves on the roads
- ✓ Did extensive comms campaign to inform local stakeholders of the potential delays
- ✓ SCATS signals plans and retunes completed



# Mitigations Implemented Prior To Closure



**Changes to intersection control**



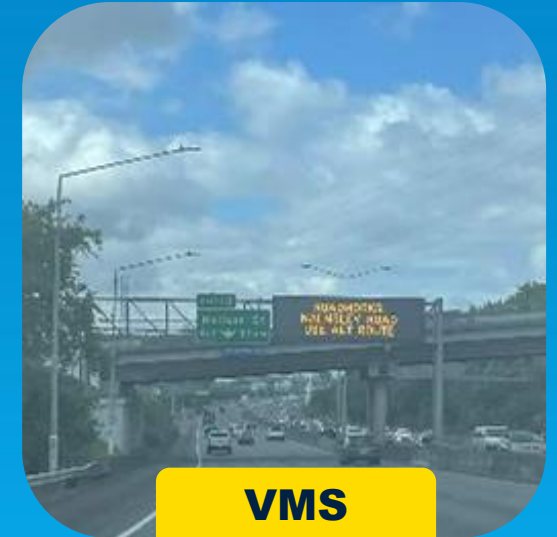
**Traffic calming**



**Changes to bus routing**

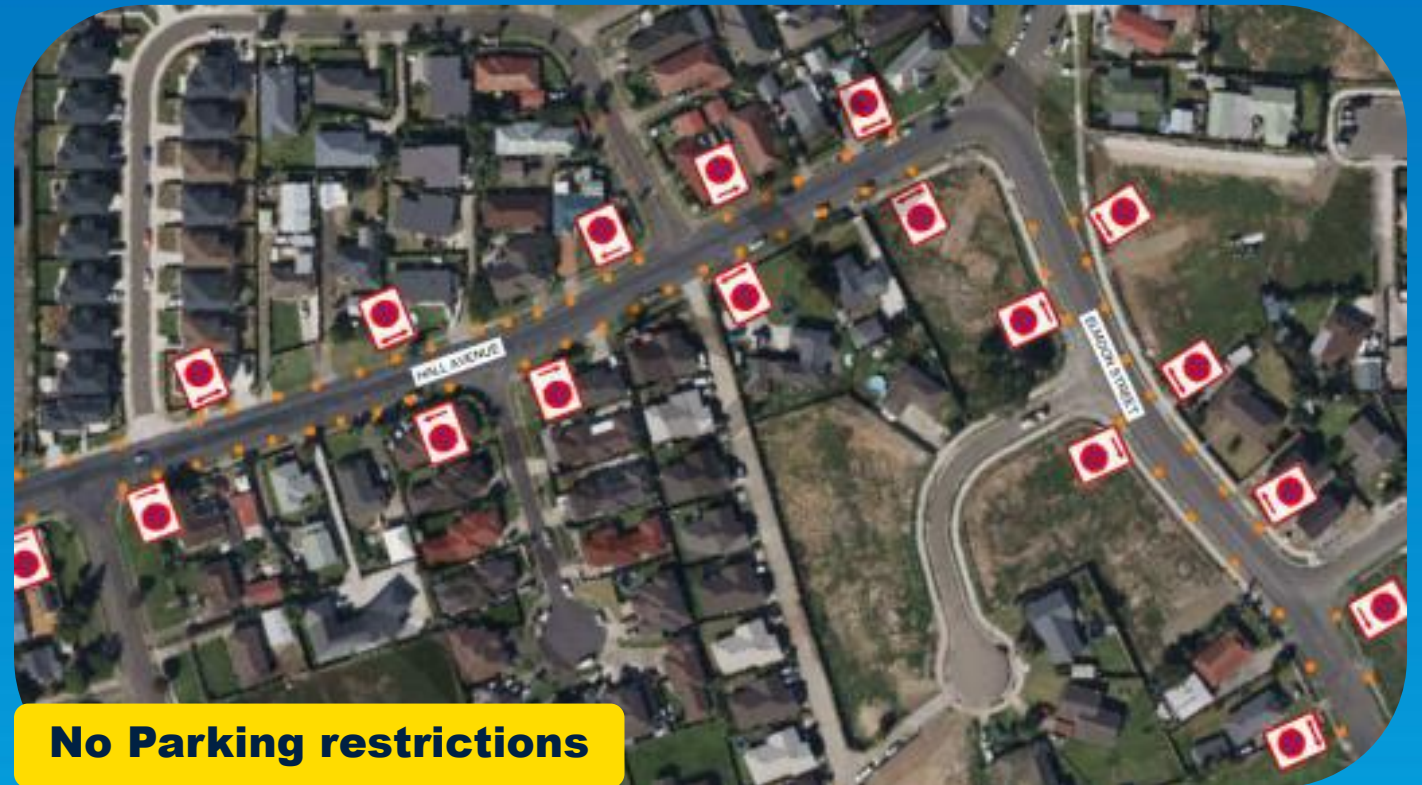


**VMS**



# Contingency Mitigation Measures

Measures that could be rapidly implemented should issues arise e.g. signal timing changes, changes to road layouts, signs, communications etc.



# How We Delivered

- Strong Collaboration between participating agencies
- Setting up a delivery charter to establish ways of working
- Developing a shared understanding of the project scope
- Setting up a shared project repository to unify information



**Defining common ways of working and aligning on scope and information gave us a common objective – “Deliver the project successfully within the constraints whilst minimising customer impact”**

# Real time response

**Closure took place on 4 October**

Monitoring was undertaken to understand impacts of displaced traffic in terms of travel times, delays, congestion, queues, safety for general traffic, freight, buses and active modes through a combination of measures including:

- ✓ Real-time monitoring of the project site and surrounding areas through AI Powered traffic monitoring software, CCTV analytics and SCATS
- ✓ Drone Surveys
- ✓ Daily project team standups
- ✓ Customer complaints and feedback addressed promptly
- ✓ RAID register - 62 Actions were identified and completed
- ✓ Risks were identified and Managed



**Based on monitoring, changes to the road network were rapidly implemented by the Working Group Partners, including signal timing changes, additional/changes to road layouts, additional signs and additional comms.**

# Public Feedback

In addition to stakeholders and members of the public raising issues through general AT and the Healthy Waters comms channels a 'pulse' survey was also carried out during closure.

In the first four months 70 comments received.

## Positive feedback:

- *Traffic coping better than expected*
- *Good communication and signage*






## Key concerns:

- Increased congestion
- Impact of increased trucks
- Too many speed humps – mixed comments in terms of slowing vehicles speeds but increasing delays
- Illegal maneuvers by vehicles.
- Safety of pedestrians








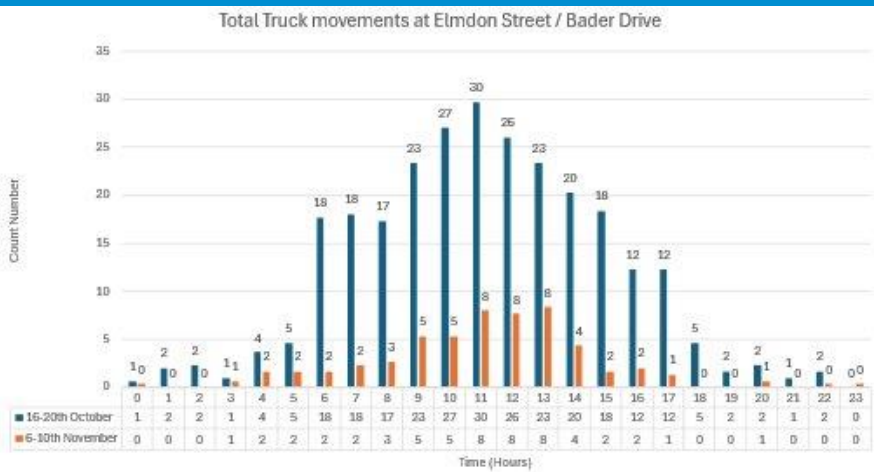
# “A Picture is worth...”

## What we heard

-  Too many trucks using light vehicle detours
-  Congestion at Mangere Village and Rimu Road / SH20 on-ramp
-  Speed cushions along Bader Drive and Hall Avenue causing vibrations
-  Roundabout and Signal Phasing is confusing the drivers.
-  General appreciation for early communication and signage`

## How we responded

-  New Truck-restriction signage + freight operator engagement -> Significant reduction in heavy vehicles
-  Signal phasing optimised at key intersections
-  Speed cushions reviewed: Some removed, added, repaired or replaced
-  Improved temporary roundabout with clearer markings and arrows
-  Ongoing monitoring at SH20 ramps, Mangere Village & detour routes



**1 Introduction**

Walmsley Road bridge was closed on Saturday 4<sup>th</sup> October at circa 2000. This week 1 report summarises:

- Key issues and mitigation undertaken.
- Mooven monitoring findings.
- Traffic flow comparison.
- Complaints received and actions taken.
- Drone survey monitoring.

Weather during the week was mainly fine with some showers, apart from heavy rain on Tuesday 7 October.

Incidents/Events – during the week there were the following events/incidents reported within Mooven:

- Crash northbound on SH20 near SH20A link just after 0800 on 9 October 2025.
- Incident SH20 Southbound between Coronation Rd on ramp and Hall Avenue 1728-1747 on 9 October 2025.

**2 Issues/Mitigations**

Tables 2.1 and 2.2 below summarise the key issues and actions taken:

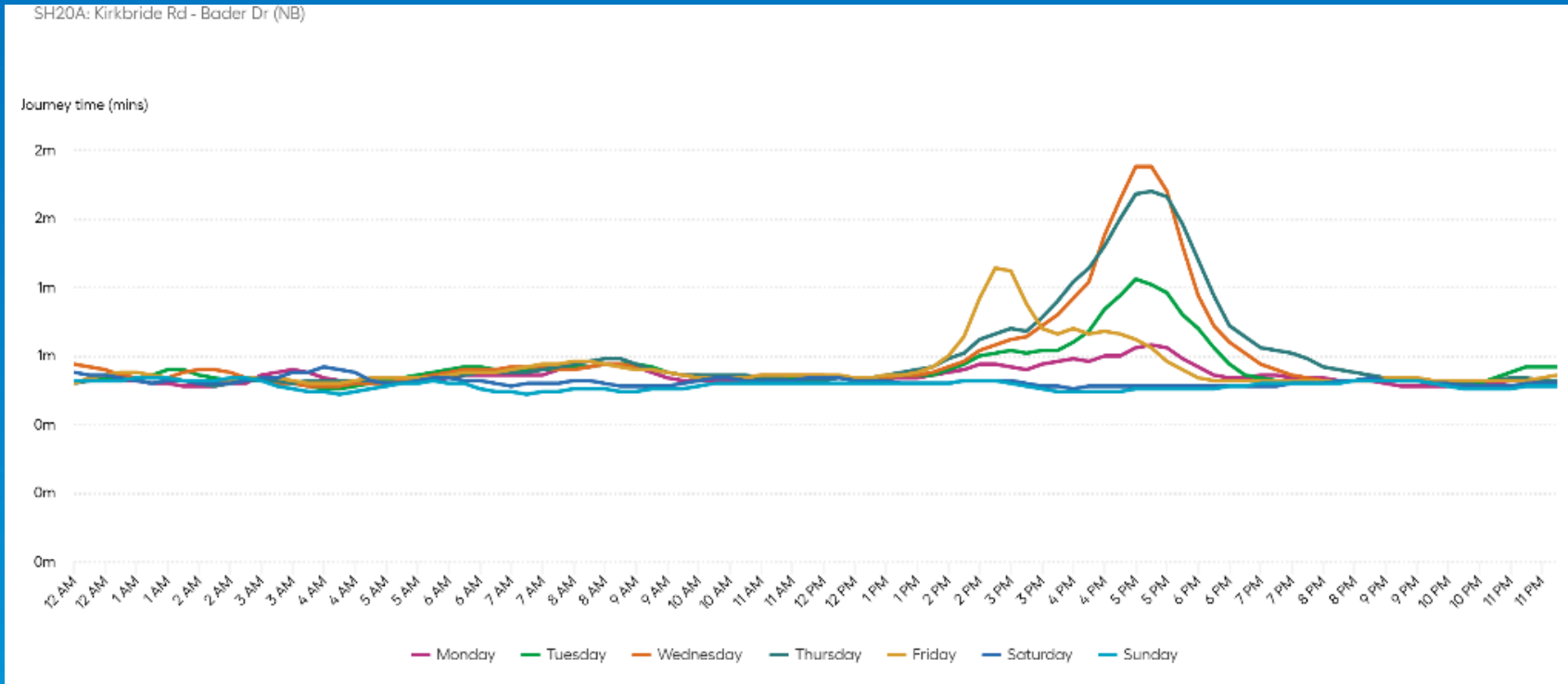
**Table 2.1: Action items**

Description	Action taken	Raised	Status
Road markings at Hall Ave/Walmsley Road	Road markings installed 9 October	02/10/2025	Completed
Additional speed cushions on Hall Ave/Elmdon Street	Installed 9 October	02/10/2025	Completed
Trucks accessing Elmdon Street / Hall Avenue instead of HV detour route. Turning radius at the Bader Dr / Elmdon St intersection is not enough to accommodate larger trucks.	<b>Actions completed</b>	05/10/2025	In progress In progress In progress Completed Completed
	<ul style="list-style-type: none"> <li>• Engagement with freight associations.</li> <li>• Police liaison office informed.</li> <li>• Discussion with AT freight regulatory body.</li> </ul>		
	<ul style="list-style-type: none"> <li>• Additional static sign at the Walmsley Road southbound off ramp for trucks to only turn left.</li> </ul>		
	<ul style="list-style-type: none"> <li>• EJT sign used on Walmsley Road to indicate trucks to turn left.</li> </ul>		
	<b>To be carried out</b>		
	<ul style="list-style-type: none"> <li>• VMS sign to be installed at Bader</li> </ul>		

# DMP - Reporting

- Issues occurring during the week and action taken
- AI powered traffic monitoring software results including KPI alerts (>7 min delays), site impact (i.e. comparison with baseline), bus journey times, incidents.
- Traffic flow changes and freight volumes.
- Drone monitoring results.
- Complaints/Pulse survey and actions taken.
- RAID Register - to log and monitor actions

Description	Date Raised	Due Date	RAID	AT Action Respon...	Partner Actio...	Status	Priority	Follow up Notes	Modified By
Decision to be made if ATOC/AT want to make the current temporary cameras permanent.	1/20/2026	1/27/2026	Action	Aqil Imam (AT) Parvez Sheikh (AT)		Not Started	High	Awaiting pricing / cost from Roxhine.	Janith Jayakody (Aure)
Leighton to update the project sponsor board of the revised completion date.	1/20/2026	1/27/2026	Action	Leighton Gillespie		Completed	Normal		Janith Jayakody (Aure)
Brigitte to update the media comms noting the new completion date.	1/20/2026	1/27/2026	Action	Brigitte Lambert Fernanda Munoz		Completed	High	Updated the main web page. Radio has been updated. SAG meeting 27/01/26 to be updated. Freight group, Airport and Schools to be updated.	Janith Jayakody (Aure)
Colin to Send the Monthly Network Performance Report from Mooven this week.	1/20/2026	1/23/2026	Action	Colin Shields		Completed	Normal		Janith Jayakody (Aure)



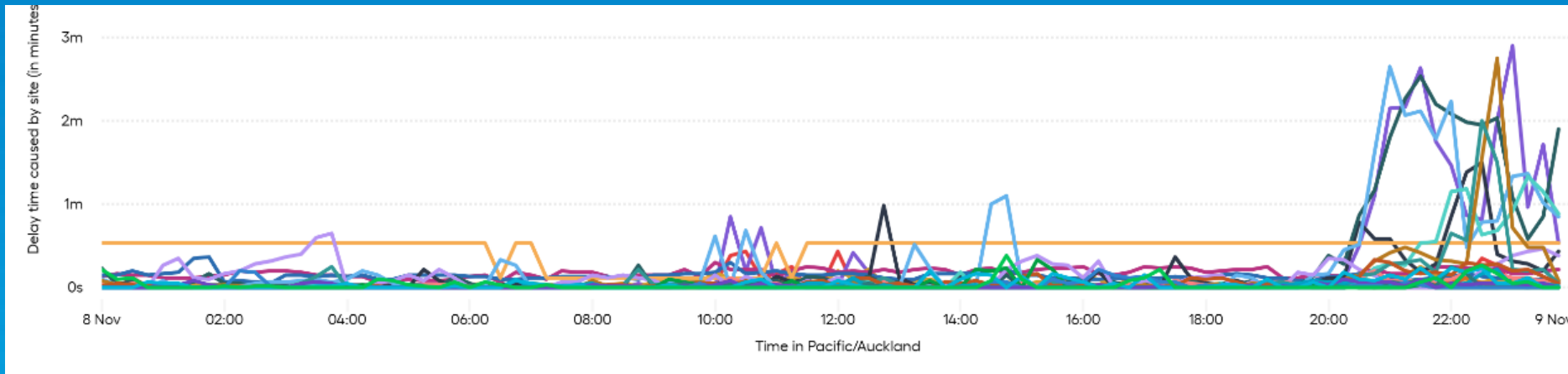
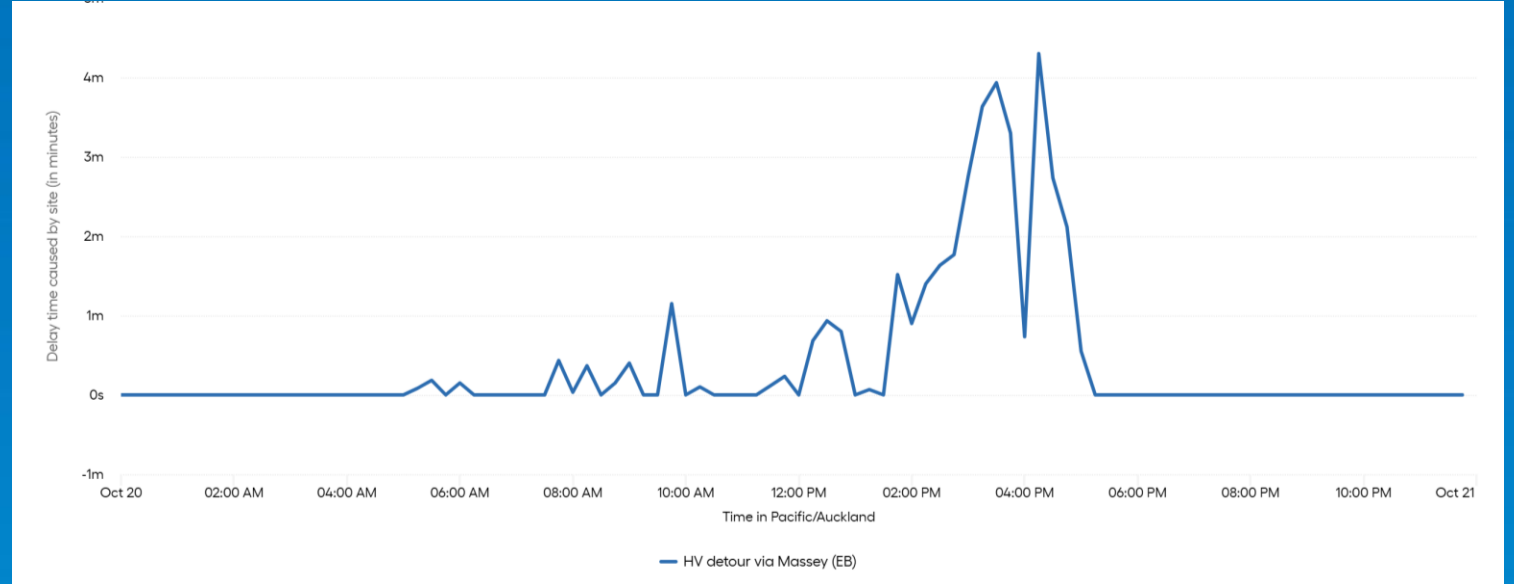
# Pre-closure baseline

A dynamic baseline allows the comparison of journeys with an equivalent baseline journey, e.g. 9am Monday compared to a baseline Monday 9am journey rather than a median journey time

# During closure

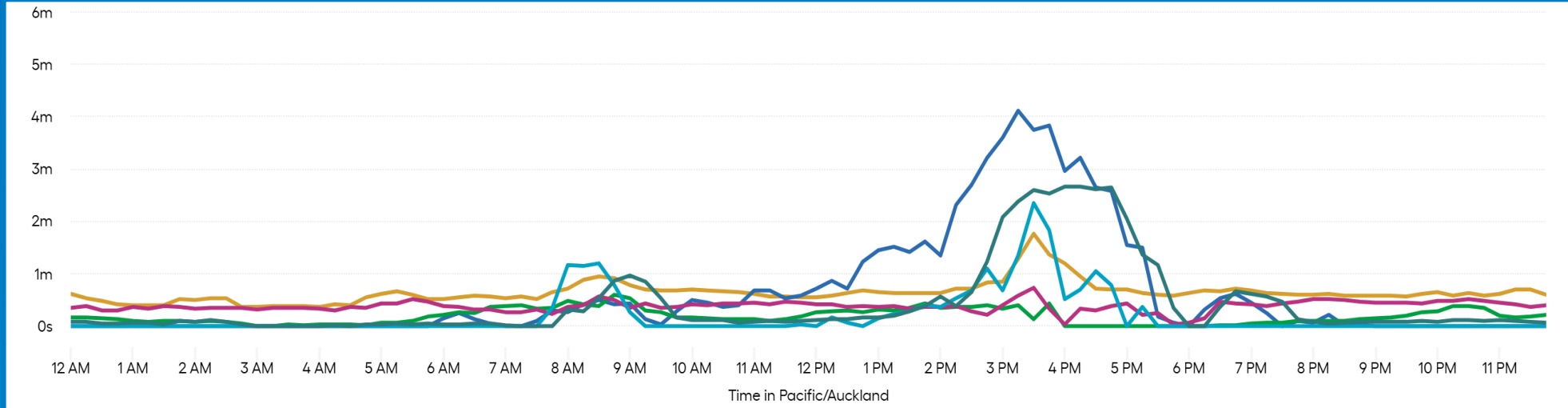
Site Impact compares the live journey times with the baseline, you can instantly see where it is occurring and how long it lasts

When additional delays exceed preset KPIs alerts are sent directly through



Delays outside of peak periods usually been discarded, unless it is a reoccurring delay, since likely influenced by another cause not related to the road closure.

# Outcome

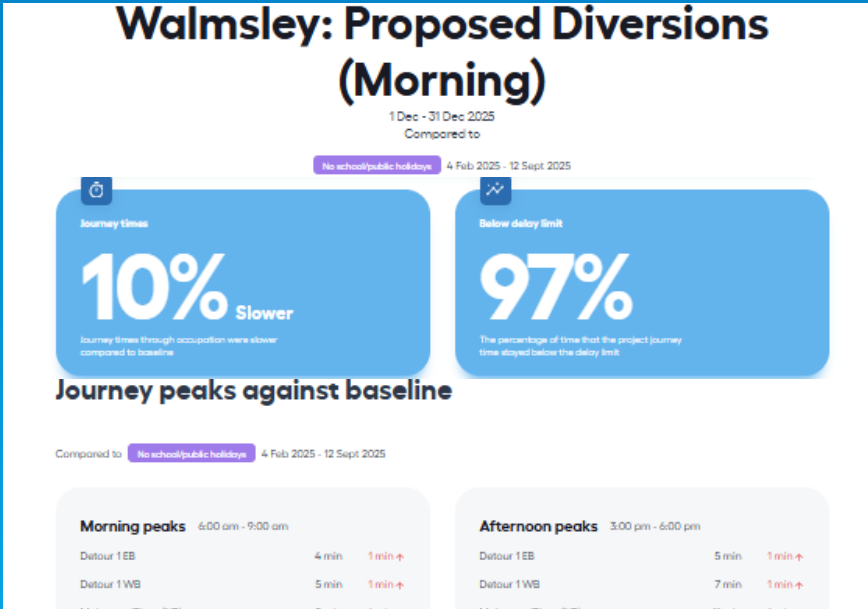


## Aggregated weekday site impact:

- Identifies any regular additional delays above the baseline.
- Routes where there is consistently spikes in additional delay is where we have been focusing additional contingency measures e.g. peak period traffic signal phasing packages.

## Scorecards:

- Compare closure journey time performance to baseline journeys.



# Lessons identified

## What went well

- Early engagement and planning with RCA helped foresee and address potential risks
- Community engagement throughout the project earned us the social license to deliver this highly disruptive project.
- Access to smart technology like CCTV Analytics, Performance Dashboards, Drones, and VMSs created an actionable operating picture
- Collaborative co-located real time response team enabled rapid response to situations, customer feedback
- Agile and flexible mitigation and implementation processes with speedy approvals.

## What can we improve

- Initial messaging/maps for heavy-vehicle detours did not filter down to drivers quickly enough. There is an opportunity for an uplift in this space
- Working with navigation maps providers to allocate weights to different corridors could have helped in redistributing traffic according to travel mode and traffic volume
- People had to operate several applications at a time to create an integrated operating picture. Having these in one system would have been very useful.

# Thank you

 **Tonkin+Taylor** **ATOC**

  NZ TRANSPORT  
AGENCY  
WAKA KOTAHU