From: Rachel Townrow
To: [redacted]
Subject: RE: Heavy Vehicle Transport Roebuck Street Westport
Date: Friday, 19 May 2023 4:54:57 pm
Attachments: image002.png
image004.png
image006.png

Hi [redacted]

Thanks for your emails, and my apologies for the delay in replying.

I've been told that the additional signage has now gone up.

My understanding is that the because traffic calming is not in the current Waka Kotahi NLTP and the traffic count data does not support the case for traffic calming structures, budgets for traffic calming structures in the Roebuck/Stout/Menzies area have not been included in the Draft Annual Plan 2023/24. The Plan is now open for feedback until 28 May - https://bullerdc.govt.nz/have-your-say/draft-2023-2024-annual-plan/.

The team are working on a report for the 31 May Council meeting.

We'll treat the request for the traffic count data and analysis as a LGOIMA request, so that there is tracking and follow-up once I've left to ensure it is responded to.

Kirstin, can you please confirm with [redacted] whether this report is on the agenda for the May meeting (I will have finished at Council before the agenda is completed), and enter the LGOIMA.

Thanks

Rachel Townrow | Acting Chief Executive Officer
DDI 03 788 9688 | Mobile 027 298 7594 | Email Rachel.Townrow@bdc.govt.nz

Buller District Council | Phone 0800 807 239 | www.bullerdc.govt.nz
PO Box 21 | Westport 7866

Community Driven | One Team | Future Focused | Integrity | We Care

Email Disclaimer: This correspondence is for the named person's use only. It may contain confidential or legally privileged information or both. No confidentiality or privilege is waived or lost by any mistransmission. If you receive this correspondence in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or relay any part of this correspondence if you are not the intended recipient. Any views expressed in this message are those of the individual sender, except where the sender expressly, and with authority, states them to be the views of Buller District Council.

BULLER DISTRICT COUNCIL
Te Kaunihera O Kawatiri

WEST COAST NEW ZEALAND
UNTAMED NATURAL WILDERNESS

From: [redacted]
Sent: Sunday, May 14, 2023 6:05 PM

To: Rachel Townrow <Rachel.Townrow@bdc.govt.nz>; Kirstin McKee <kirstin.mckee@bdc.govt.nz>
Subject: Fwd: Heavy Vehicle Transport Roebuck Street Westport

Hi Rachel

I am touching base to see if there has been any progress on the issues I have raised below.

Would you please let me know if there is going to be a report tabled at the Council meeting on 31 May 2023 relating to the Traffic Count that occurred in Roebuck Street in April. This is so I can arrange time off work to attend the meeting. Also can I have a copy of the count data and analysis emailed to me.

Regards,

-------- Forwarded Message --------
Subject: Re: Heavy Vehicle Transport Roebuck Street Westport
Date: Mon, 1 May 2023 18:26:32 +1200
From:
To: Rachel Townrow <Rachel.Townrow@bdc.govt.nz>

Hi Rachel

Following on from your email of 6 April, neither or I have had any contact from Council's infrastructure staff regarding the additional signage that Mike assured us he would follow up on when we meet more than three months ago. Also no response has been received to any of the other issues I have raised in my emails below.

I am concerned that the language that Mike and Eric use in their correspondence with me indicates they consider our situation as trivial or irrelevant, have no empathy for us, and are not genuinely committed to successfully restricting heavy transport vehicle through traffic from Roebuck Street.

We are still experiencing out of town transport operators on the street including livestock truck and trailer units, Mr Belcher's truck, and Westreef trucks! Today a large digger on a transporter went past.

I still do not understand why the Council resolution directing the trial of traffic calming structures has not been followed.

I don't really know what else I can do to be taken seriously.

Regards,

On 6/04/2023 3:59 pm, Rachel Townrow wrote:

Hi

Apologies for the delay in acknowledging receipt of your email.

Mike and I are meeting next week to see what we can do to move this forward. One of us will be in touch after that.

Have a nice Easter

Rachel Townrow | Acting Chief Executive Officer
DDI 03 788 9688 | Mobile 027 298 7594 | Email Rachel.Townrow@bdc.govt.nz

Buller District Council | Phone 0800 807 239 | www.bullerdc.govt.nz
PO Box 21 | Westport 7866

Community Driven | One Team | Future Focused | Integrity | We Care

Email Disclaimer: This correspondence is for the named person's use only. It may contain confidential or legally privileged information or both. No confidentiality or privilege is waived or lost by any mistransmission. If you receive this correspondence in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or relay any part of this correspondence if you are not the intended recipient. Any views expressed in this message are those of the individual sender, except where the sender expressly, and with authority, states them to be the views of Buller District Council.

BULLER DISTRICT COUNCIL
Te Kaunihera O Kawatiri

WEST COAST NEW ZEALAND
UNTAMED NATURAL WILDERNESS

From: [redacted]
Sent: Sunday, 2 April 2023 6:43 pm
To: Rachel Townrow <Rachel.Townrow@bdc.govt.nz>
Subject: Fwd: Heavy Vehicle Transport Roebuck Street Westport

Hi Rachel

I am emailing as a follow up to the meeting [redacted] and I attended with you and Mike Williams in January as I am concerned there has not been any progress on the actions we discussed.

Mike said that he would take prompt action on the additional signage requested but to date no Transportation Department staff have been in touch with [redacted] and no new bypass signs have gone up. I have not received the contact details for Waka Kotahi.

In respect to the emails below I have received no feedback or comment on the safety issues I have outlined, the funding options for traffic calming without Waka Kotahi contributions, or whether budgets for this work will be included in the 2023/24 Annual Plan.

Once again I would appreciate your assistance in this matter.

Regards, [redacted]

-------- Forwarded Message --------
Subject: Re: Heavy Vehicle Transport Roebuck Street Westport
Date: Wed, 8 Mar 2023 07:11:54 +1300
From: Wendy Thompson [redacted]
To: Mike Williams <Mike.Williams@bdc.govt.nz>, Rachel Townrow <Rachel.Townrow@bdc.govt.nz>, Eric de Boer <eric.deboer@bdc.govt.nz>
CC: [redacted]

Good morning Mike

I am well aware that currently heavy transport vehicles are able to use the route - and still do! The whole point of the heavy transport bypass is to direct heavy transport vehicles away from our small, residential streets and efforts to date have only been partially successful and would have been less so without residents involved. Have you investigated directly funding the traffic calming structures without Waka Kotahi contributions?

I note you have not mentioned the 2023/24 Annual Plan budgets or if you have actually considered the safety issues I raised.

Will staff be contacting [redacted] about the new signage as agreed?

Regards, [redacted]

On 8/03/2023 5:55 am, Mike Williams wrote:

> Good morning [redacted]
>
> Thank you I did receive your email 25/01.
>
> In regards to this email, I wish to reiterate that currently vehicles are able to use the route that you have highlighted, and there are no change is planned in the immediate future for this area.
>
> Signage was discussed with the roading team and I will follow this up to see where this is at.
>
> As you may see around the Westport area, traffic counting is currently underway with results due late April, early May. Once the traffic count information comes back and the team have analysed the data, an update report will be presented to council for their information regarding all areas including the route that you continue to highlight.

I must reconfirm that traffic calming is not in the current Waka Kotahi NLTP, and based on their new roading priorities (flood damaged roading networks) it is unlikely to get much traction in the next round of NLTP bids for the 2024-2027.

Contacts for Waka Kotahi have changed since our last talk. I will follow up with Eric and come back with a Waka Kotahi contact person.

Kind regards

Mike Williams | Acting GM Infrastructure Services
DDI 03 788 9652 | Mobile 027 204 0796 | Email mike.williams@bdc.govt.nz

Buller District Council | Phone 0800 807 239 | bullerdc.govt.nz
PO Box 21 | Westport 7866

Community Driven | One Team | Future Focused | Integrity | We Care

Email Disclaimer: This correspondence is for the named person's use only. It may contain confidential or legally privileged information or both. No confidentiality or privilege is waived or lost by any mistransmission. If you receive this correspondence in error, please immediately delete it from your system and notify the sender. You must not disclose, copy or relay any part of this correspondence if you are not the intended recipient. Any views expressed in this message are those of the individual sender, except where the sender expressly, and with authority, states them to be the views of Buller District Council.

From: [redacted]
Sent: Tuesday, 7 March 2023 8:24 pm
To: Rachel Townrow <Rachel.Townrow@bdc.govt.nz>; Mike Williams <Mike.Williams@bdc.govt.nz>
[redacted]
Subject: Heavy Vehicle Transport Roebuck Street Westport

Hi Rachel and Mike

I am writing to follow up on the actions arising from our meeting

of 20 January 2023 on the assumption that your received my email below, even though it was not acknowledged.

Additional Signage

During our meeting Mike committed to engage directly with [redacted] over the placement of two additional signs as soon as possible; these being bypass signage on the grass verge on Queen Street before the entry to Roebuck Street and to the right of the "Welcome to Westport" sign on Palmerston Street adjacent to the entry to Menzies Street. Neither the contact with [redacted] or the required signage has occurred. Please advise when progress will be made to improve the signage.

Heavy Transport Vehicle Traffic

Since our meeting we have continued to have heavy transport vehicles traveling along Roebuck Street, including:

1. Westland Milk tankers
2. Johnston Bros trucks
3. various out of town truck and trailer units
4. Pearson Contractors and Avery Bros gravel trucks (also traveling along Stout Street)

Incredibly, during last week's resealing of the top course of Roebuck Street the contractors had to cease work and move equipment to let through a large stock truck and trailer unit that turned into Roebuck Street and could not reverse out.

Even more incredible was the very same reseal contractors using Roebuck Street today to transport their street rollers and other big equipment on their own large trucks to Queen Street and beyond. In the process they have scuffed up tar and loosened new seal chip. I lodged a service request this afternoon so hope they have been instructed to use the bypass.

Clearly need the better signage and traffic calming structures remains!

Traffic Counter

Last week Council installed a traffic counter on Roebuck Street again, but this has since been removed while the reseal occurred. Please note we had hoped the new signs would have been installed before the counter was put in place.

Traffic Calming Structures

Please confirm if the funding of the traffic calming structures has been investigated further given the safety issues raised and the provisions of the Council's Revenue and Financing Policy?

By now I am sure that work is well underway on the Transportation Activity's budgets for the 2023/24 Annual Plan and the upcoming three year funding program with Waka Kotahi.

Please advise if budgets for traffic calming structures in the Roebuck/Stout/Menzies precinct have been included in either of these?

Regards, [redacted]

-------- Forwarded Message --------
Subject: Heavy Vehicle Transport Roebuck Street Westport
Date: Wed, 25 Jan 2023 08:12:09 +1300
From: [redacted]
To: Rachel Townrow <rachel.townrow@bdc.govt.nz>, Mike Williams <Mike.Williams@bdc.govt.nz>
CC [redacted]

Good morning Rachel and Mike

Thank you for meeting with [redacted] and me last Friday. We both appreciate you time and the robust discussion. Below is clarification of our perspective, our end goal and a summary of the meeting outcomes.
The disturbance heavy transport traffic creates on our street, the unsuitability of its design for this type of traffic, and that Council staff should act to restrict heavy transport vehicles from using Roebuck Street has already been acknowledged and agreed during the 2022/23 Annual Plan submission process.
Our goal remains to restrict all heavy transport through traffic using Roebuck and Menzies Streets as a shortcut to Palmerston Street and the Buller Bridge. The District Plan clearly identifies Mill and Queen Streets as arterial and collector routes respectively, and these streets are designed with a wider carriageway for these purposes. Mill and Queen Streets are also well established as Council's preferred Heavy Transport Bypass.
Mike, I appreciate the fact that you drove along Roebuck Street prior to meeting with us on Friday and note that you considered the road surface to be fine. However, your journey does not establish the condition of the road base or measure the lateral vibrations. Nor does it in any way replicate the experience of sitting in our living rooms or trying to relax in our gardens while huge, laden truck and trailer units go past our properties. Our concerns are not just about the vibration and rattling in our homes as these heavy vehicles pass, but also the high noise level, intrusive visual impact, the safety of other street users and more recently the damage to underground infrastructure.

Signage and Letters
As expressed by [redacted] we and other residents of Roebuck Street

appreciate the signage that has been put in place to date and the resumption of the annual letters to heavy transport operators. These actions along with [redacted] personal efforts have reduced the heavy transport traffic. However, there remain some local operators and drivers who still use the Menzies/Roebuck shortcut, along with out of town drivers who do not understand the bypass route because of the signage placement.
Unfortunately, a comprehensive list of operators for the annual mail outs is a moving target and it is of real concern to us that if some operators continue to use Roebuck/Menzies Streets, others will drift back to the shortcut also - wasting all our combined efforts to date.

Funding Traffic Calming Measures
My understanding is the only obstruction to installing traffic calming structures relates directly to the funding of these - primarily due to the traffic counts at Roebuck Street not meeting the criteria for Waka Kotahi (NZTA) to fund their local road contribution. However, Mike indicated that direct communication with Waka Kotahi from residents can have a positive impact on funding decisions.
Mike, you said that safety issues including the proximity of vulnerable users are considered when making these types of funding decisions, for example traffic calming structures on streets adjacent to schools. As raised in our meeting I have previously discussed the safety issues that exist relating to large truck and trailer units turning right into Menzies Street with poor line of sight around the left bend on the state highway with Mike Duff. In addition to this:

- our locality includes the elderly residents of O'Conor Home, some of whom walk (or are otherwise aided by staff) along Roebuck and Menzies Streets as an outing,

- many of the families and unaccompanied children who visit the Domain and its playground enter using the main gate at the very intersection where the heavy transport vehicles turn extremely wide into Roebuck Street, and

- groups of Primary School children walk along Roebuck Street to use the Domain as part of their curriculum activities, and to compete in annual cross-country competitions.

However, even without Waka Kotahi funding, following a review of the Buller District Council Revenue and Financing Policy in the 2021/31 Long Term Plan it is apparent the funding of traffic calming structures would fall into either the Roading and Transport Capital or Urban Development work categories, neither of which are constrained by the 72% NZTA subsidy contribution.

Actions Going Forward
We welcome Mike's commitment to place two additional signs as soon as possible where [redacted] has suggested and await Mike's direct

engagement with him about their installation; these being bypass signage on the grass verge on Queen Street before the entry to Roebuck Street and to the right of the "Welcome to Westport" sign on Palmerston Street adjacent to the entry to Menzies Street.
Please prioritise the staff investigation of Waka Kotahi funding for traffic calming structures in light of the safety issues raised relating to the Menzies Street entrance off the State Highway and the community use of Roebuck/Menzies Streets and the Westport Domain.
Please also provide me with suitable contact details at Waka Kotahi so we can engage directly with them about the installation of traffic calming structures. To this end I am committed to work with Council to develop a suitable line of persuasion for me and other residents to use for this communication.
We understand the Infrastructure Delivery team intends to present a report to Councillors following the upcoming traffic counts to outline the result of interventions to date, likely to occur in either March or April 2023. I hope this paper will support our goal to restrict all heavy transport through traffic using Roebuck and Menzies Streets as a shortcut and our desire for mechanisms that are not reliant on residents monitoring compliance.
I appreciate Rachel's commitment to let me know when this report is to be included in a Council agenda as this will give me the opportunity to read the paper when published and arrange to speak at public forum if I desire.

Regards

This email has been filtered by SMX. For more information visit smxemail.com

This email has been filtered by SMX. For more information visit smxemail.com

BULLER DISTRICT COUNCIL
Te Kaunihera O Kawatiri

R7/23

3 May 2023

To whom it concerns

HEAVY TRAFFIC ROUTE - WESTPORT

The Council would like to remind heavy traffic operators and industrial users of the preferred heavy traffic routes through Westport.

The attached map shows the preferred route.

Council appreciates your co-operation in using the preferred route which reduces the impact on a residential area.

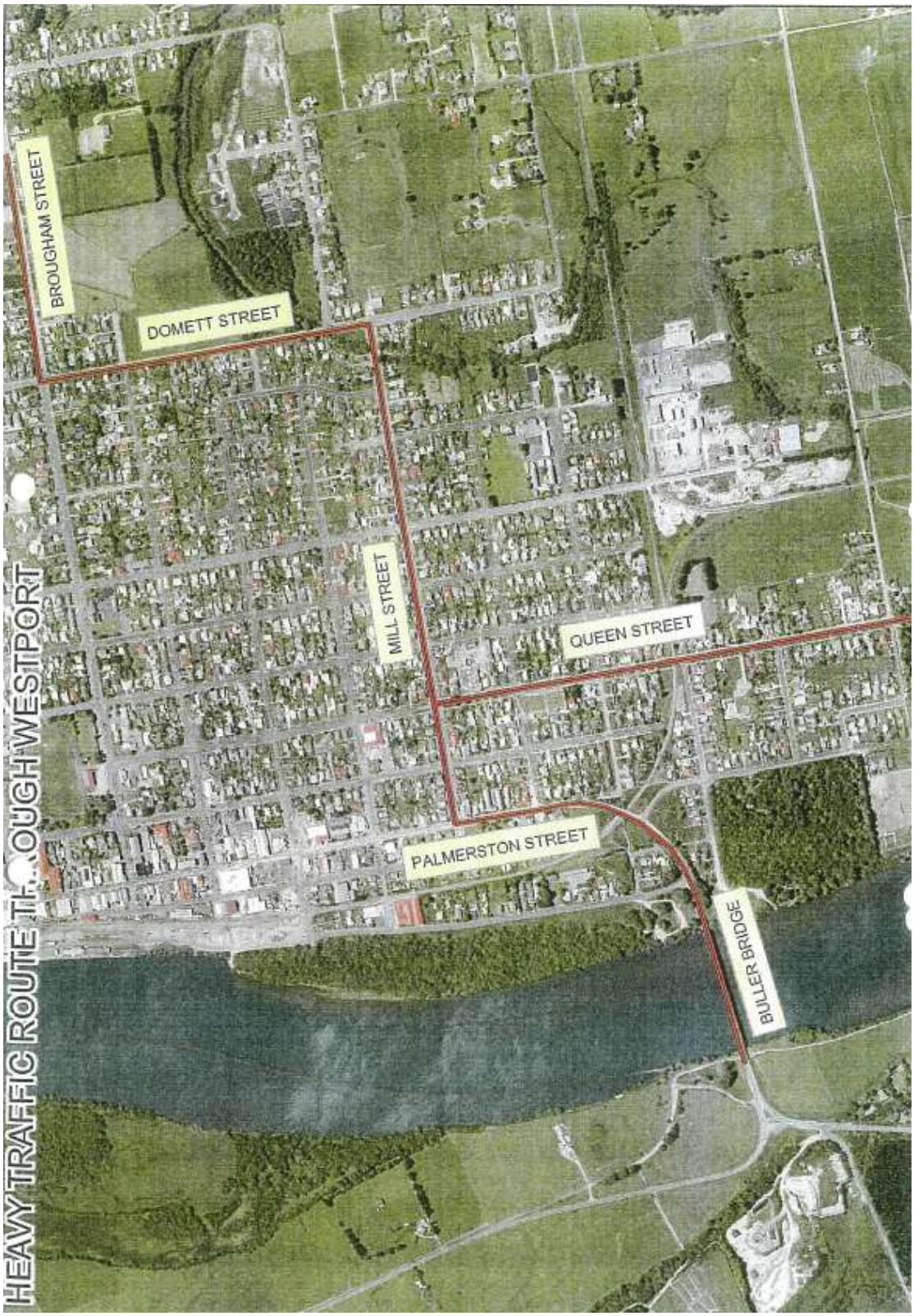
A reminder email will be sent annually.

Please contact me should you wish to discuss.

Yours faithfully

Mike Williams
Acting-Group Manager Infrastructure Services

BULLER
DISTRICT COUNCIL
Te Kaunihera O Kawatiri



BULLER DISTRICT COUNCIL

31 MAY 2023

AGENDA ITEM 5

Prepared by Neil Hateley
Coordinator Transport

Reviewed by Eric de Boer
Manager Infrastructure Delivery

Attachments **Nil**

HEAVY TRAFFIC BYPASS – PERFORMANCE TO DIRECT HEAVY TRAFFIC THROUGH WESTPORT

---

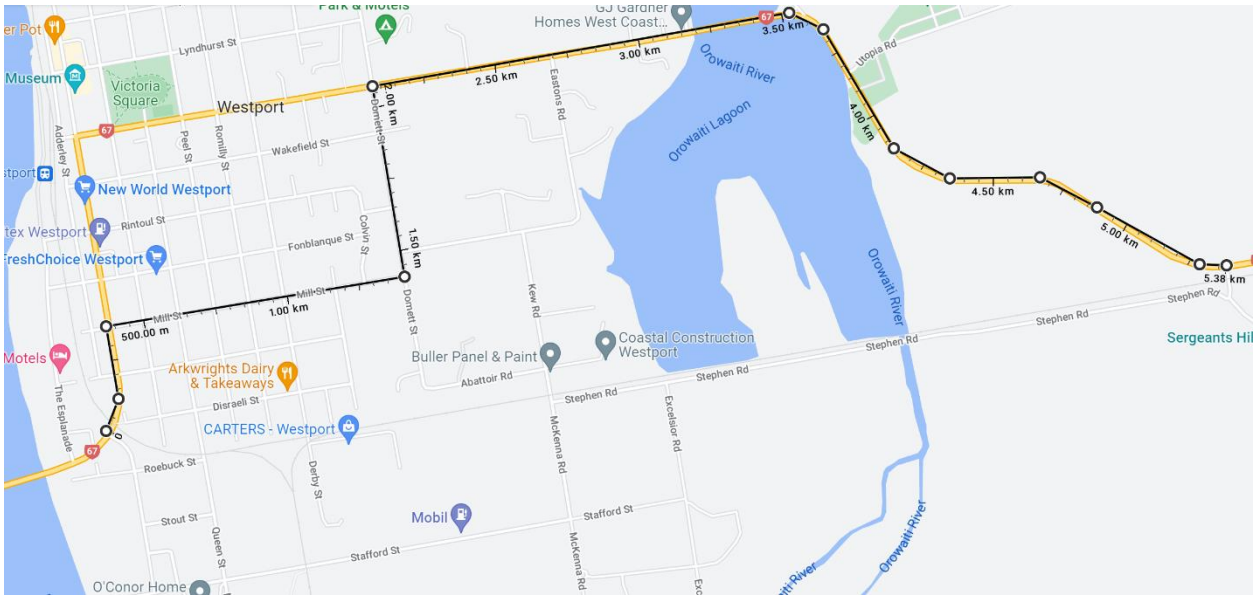
1. REPORT PURPOSE

Heavy traffic is a legitimate part of all road networks' traffic loads. Movement of goods and freight is part of a healthy economy. Appropriate management of such heavy truck movements is an important aspect of a well-functioning transport system.

Westport has a dedicated heavy traffic bypass. This seeks to ensure that heavy trucking use is concentrated onto this bypass route, thereby reducing its effect on the sub-urban roading network.

2. REPORT SUMMARY

The Heavy Traffic Bypass is a well-established route through Westport linking the Western and Eastern sides of Westport (SH 67).



The route has a southern extension down Queen Street that connects trucking to the Nine Mile area and to trucking depots such as Johnson Bros Transport Ltd.

The route is designed, constructed, and maintained to sustain heavy traffic use and over-dimensioned loads (these are primarily mining industry machinery road transporters travelling to and from the Northern Buller Coal Fields).

Concerns have been raised in previous Annual Plan submissions on the level of perceived truck usage, and their speed, along Roebuck Street as a ‘short cut’ between the Buller Bridge exit and Queen Street. Historically Holcim cement used this route as a short cut to access their Nine Mile packing plant until the bypass was put in place.

Council undertakes regular traffic counting surveys that consider both street traffic loading, density and speed.

In general, all road-using vehicles are required to adhere to road rules surrounding speed and road behaviour. Road vehicles, such as trucks, provide revenue into the road maintenance fund through elements of road user charges. Being licensed and deemed fit to use the network via a Certificate of Fitness (COF) and Rego and RUC allows trucks to use the roading network legally unless specific and stringent bylaws are in place excluding them from any part of a roading network.

Council undertakes several measures and actions to influence, control, and direct the heavy traffic use on our network towards the bypass and away from the suburban road network. This includes clear signage of the heavy traffic bypass in all directions and regular letters reminding all Buller transport operators to use the heavy traffic routes and avoid sub-urban roads.

The mean average speed along Roebuck Street is significantly below the posted speed limit and in some measuring cycles the use of Roebuck Street by heavies has been shown to be within the broader measure of truck densities that is experienced by other streets across the Buller District.

Council traffic engineering staff deem the current soft measures adequate.

Any improvements to hard traffic engineering are not currently funded in the 2021-24 National Land Transport Fund plan (NLTP) and therefore will not be eligible for the Waka Kotahi funding assistance rate (FAR) of 72% financial support and will mean the costs will be exclusively funded by general rates.

3. DRAFT RECOMMENDATIONS

That Council:

1. **Notes the contents of the report.**

2. **Approves the continuation of the current management practices of the Heavy Traffic Bypass route and the management of Roebuck Street.**

4. CONSIDERATIONS

4.1 Previous Annual Plan submissions

Council has previously considered submissions into the Annual Plan to restrict heavy traffic use of Roebuck Street via either creating legal local bylaws or hard traffic engineering.

Council has previously resolved in AP deliberations to not introduce bylaws and legal restrictions, but has in its most recent 2022/23 Annual Plan deliberations instructed staff to monitor traffic use and report back on the results and the considerations of more intense traffic engineering and ‘traffic calming’ measures.

4.2 The Current Situation and Statistics

Council undertakes regular traffic count surveys across the roading network. Road counting data surveys have been undertaken at three date ranges on the roads surrounding Roebuck Street to ascertain heavy transport usage and speed.

The date sets are from before we improved the Heavy Traffic Bypass signage and also again monitored after the improved signage has gone in.

Data taken pre-signage dates:
June 16, 2022 - June 24, 2022
June 25, 2022 - July 2, 2022

Data taken post-signage dates:
September 29, 2022 - October 6, 2022
October 6, 2022 - October 13, 2022
March 15, 2023 - March 22, 2023

Data has been taken from three sites:

1. Roebuck Street between Menzies Street and Queen Street (the residential street)
2. Queen Street between Mill Street and Bentham Street (the heavy traffic bypass road)
3. Queen Street between Roebuck Street and Stout Street (this covers all off Roebuck, Queen Entry, and Queen All respectively)

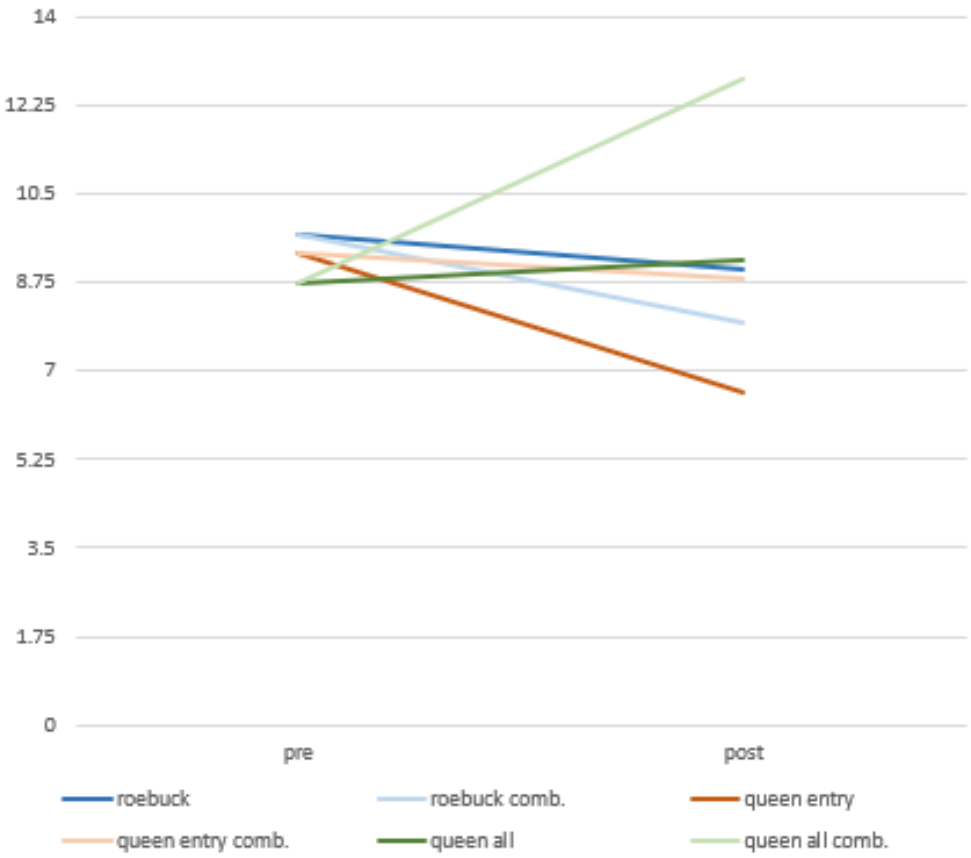
Heavy Traffic (Class 4 and higher)

Data showing average volumes of traffic of the three sites in the Westport area.

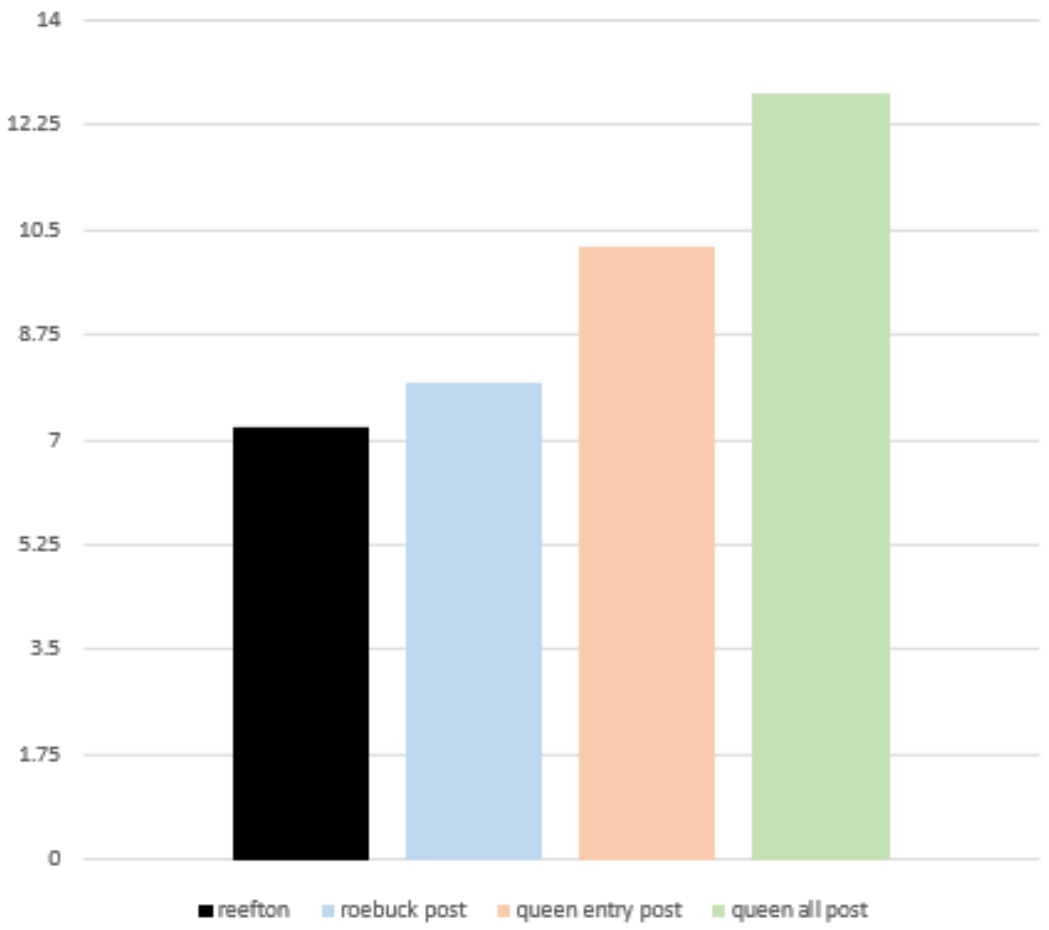
				Heavy(class 4 and higher)				
Site	Average	Week Total	All Days Average	Week Total	All Days Average	%	Difference	direction
Roebuck	Pre Signs	2087.5	298.5	201	29	9.7		
	Post signs	2090.5	298.5	147	20.5	6.9	2.8	Decrease
	Post 23	2027	290	183	25	9	0.7	Decrease
Queen Entry	Pre Signs	7837.5	1119.5	731.5	103.5	9.35		
	Post signs	7978	1140	877.5	125.5	11.1	1.75	Increase
	Post 23	8122	1160	528	75	6.6	2.75	Decrease
Queen All	Pre Signs	7296	1042.5	644	91	8.75		
	Post signs	7470.5	1067.5	1225.5	175	16.35	7.6	Increase
	Post 23	7550	1079	692	98	9.2	0.45	Increase

It can be seen that Queen All has increased in its heavy Class 4 traffic flow and Roebuck Street has decreased in its traffic flow.

Average percentage difference from pre-signage to post-signage in the three Westport monitoring sites (including combined post difference with previous reading values).



Trucks and Class 4 Heavy Vehicles use other roads across the district. For comparison, the traffic monitoring shows that the average Class 4 use on urban roads in Reefton (excluding the State Highway running through Reefton) is 7.2% of volume and for Roebuck Street post the signage improvement it is 7.95%



Queen Street (all) not surprisingly carries the most Class 4 usage per volume at 12.75% across these monitoring sites.

Speed (Roebuck Street and other streets)

All roads monitored are posted as 50km/h speed zones.

Data showing the average speeds at the three sites in the Westport area.

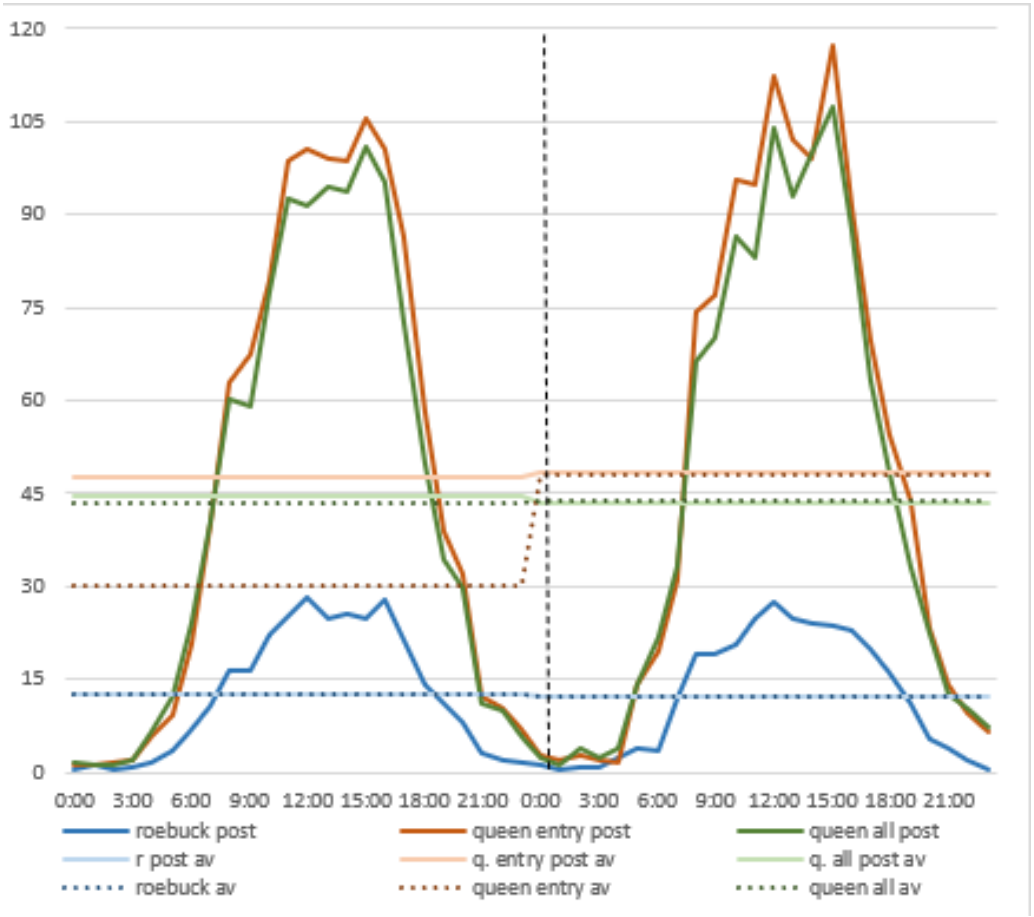
Site	Average	All Days Average	Difference	Direction
Roebuck	Pre Signs	40.32857143	0.3428571	Increase
	Post Signs	40.67142857		
Queen Entry	Pre Signs	41.64285714	1.4428571	Increase
	Post Signs	43.08571429		
Queen All	Pre Signs	45.97857143	1.0142857	Increase
	Post Signs	46.99285714		

The average across the monitoring period saw the average speed on Roebuck Street being just over 40km/h (approx. 40.5km/h).

This is significantly less than the posted speed limit. Additional traffic calming is going to have limited effect, as the mean speed is already approx. 20% under the allowable legal speed.

Traffic volume and flow characteristics (Roebuck Street and other streets)

The following graph shows the traffic flow, volumes and times of day.



It can be seen that Roebuck Street carries significantly less volume of traffic than Queens Street. It is also noteworthy that traffic volume takes a sharp decline from early evening/dinner time and stays low through the night period.

In contrast Queen Street carries significantly more volume and stays busier longer in the evening and the flow starts much earlier in the morning than Roebuck Street.

4.3 Current Council commitments on controlling traffic flow

Road controlling authorities, like Council, can recommend that heavy vehicles use particular routes for safety and environmental reasons. The recommended routes can be for:

- over dimensioned vehicles and loads
- vehicles carrying livestock
- vehicles carrying dangerous goods
- general heavy vehicles

Council has in place a set of way-finding signage for the Heavy Traffic bypass that meet the Manual of Traffic Signs and Markings (MOTSAM).

Heavy vehicle bypasses shall be indicated by MOTSAM signs IG4 and IG5. Signs showing recommended heavy vehicle routes should be rectangular in shape and have black characters on a white background with a black border as set out in Traffic Note 18 of MOTSAM.

These signs are currently located along SH67, Mill Street, Queen Street, Domett Street and about to also be installed on Stafford Street to further improve the signage layout after some feedback from local residents on Stafford Street.

Council also sends out letters each year (Attachment B) to all transport operators in the District, including regional wider operators such as Westland Milk Products Ltd.

At times when we become aware of heavy construction activity or resource consents that result in significant extraction of gravel in the Buller River, the Council transport staff liaise with the main trucking firms and contractors to advocate for the usage of the heavy transport routes and to advocate to their drivers to not take shortcuts through the sub-urban network.

Examples of this are the recent phases of work undertaken by the West Coast Regional Council on the upstream Buller River protection repair works.

4.4 More Stringent Build Environmental Engineering Options or Legal Restriction Avenues Available to Council

Prohibiting Heavy Vehicle use

The New Zealand Transport Agency RTS-16 guidance provides a framework for heavy transport management.

Section 14.2 and 14.3 sets out a mechanism to temporarily restrict heavy truck usage either on a specific road or on a route between two destinations.

This is often used where conditions or climatic events dictate that a transport road or road corridor is not able to withstand the heavy vehicle movements. A recent example of this rule being used is the temporary restriction of heavy vehicles from the Tasman District. In that instance damage from trucks led council to prohibit heavy vehicle passage on the route through Tophouse. Damage to road surfaces has forced a ban on heavy vehicles using the Korere-Tophouse Road. Trucks were using the route because of the closure of State Highway 6 over the Whangamoa Saddle between Nelson and Blenheim[1].

Section 14.4 takes this one step further and sets in place the mechanism to ban heavy traffic on parts of the network. It needs to be noted that in New Zealand, all roads are class 1 roads (legally trafficable) unless they are likely to suffer excessive damage from heavy motor vehicles. In those cases, the road can be given a class C rating by Land Transport NZ. Heavy motor vehicles are in effect then banned from the road and can only be operated on class C roads to deliver or collect goods or passengers to, or from, locations along that road.

The threshold for classifying a road as a Class-C road is prescriptive and needs to be bound in evidence.

Road controlling authorities, who propose to classify a road as class C, must do so by public notice (in a prescribed format) and then consider any objections to the proposal. Local authorities can then send the proposal (with any objections) to the Regional Manager Programmes at Land Transport NZ for consideration. The local authority should provide appropriate evidence for the proposal including the likely impact on heavy

[1] https://www.tasman.govt.nz/my-council/about-us/media-centre/news-and-notices/heavy-vehicles-prohibited-from-korere-tophouse-road/

https://www.stuff.co.nz/national/130537212/truckies-comply-with-heavy-vehicle-ban-along-damaged-tasman-road

vehicle operators and the cost of upgrading the route for full heavy vehicle traffic.

A recent network survey undertaken by Council's Road maintenance contractor WestReef Services Ltd in December of 2022 did not indicate any substrate failures of Roebuck Street. It is noteworthy that since then the street has been resealed as part of our District wide resealing programme this summer, further improving its surfacing.

Traffic Calming Measures (build infrastructure)

The current mean speed is approx. 20% less than the legal and posted speed limit. This indicates that the traffic velocity along Roebuck Street is low. In effect the speed data along Roebuck Street indicated that the traffic is calm.

Traffic calming describes a range of techniques used to manage road users and the road environment to ensure speeds are appropriate to the local environment and the safety of other road users.

The visual appearance of any street should make it clear to a driver what is expected of them and what speed is reasonable, although sometimes traffic calming relies uniquely on signs to reduce speeds.

Traffic calming features can be combined together as a package but generally fall into the following groups:

Vertical features
Examples include road humps, or 'speed bumps', The term 'road hump' is generic. Road humps are constructed in different sizes and shapes to cater for different locations and situations. Indeed, any traffic calming scheme can contain a variety of hump types. Humps can be rounded or flat topped and be used to raise the level of a road. Wherever road humps have previously been installed in urban environments in Buller, it has not taken long for Council to remove them again due to the continued and persistent noise they created from traffic navigating over them.

Horizontal features
Examples can include build infrastructure such as road narrowing, high trees, planting boxes, etc, all aimed to reduce the available road space for drivers to lower traffic speeds. Narrowing the road by re-allocating space to pedestrians and/or cyclists is one way of doing this. This approach can also include build infrastructure such as traffic islands.

Traffic management and control

This can be undertaken by way of engineered vehicle restrictions or access control methods, such as engineering to restrict road entry access to particular vehicles, that depending on the vehicle type and their entry curve radius. This would see engineers allow design changes and mayor changes to the road layout such as building tighter corner radii on road entrances and constructing narrower streets etc.

Traffic signs and road markings

Road markings are used to warn drivers of hazards on the roadways and to separate traffic streams. Permitted signs are detailed in the Land Transport Rule: Traffic Control Devices 2004 (TCD) and Manual of traffic signs and markings part 2 (2008) (MoTSAM). Any road marking applied will need to meet these standards. As with road signs, road markings have a role to play in many traffic calming projects, but generally have little effect if used in isolation.

Full zonal treatments.

This is where traffic is completely excluded from an area, and it is engineered into a pedestrian area.

Council road and transport engineering staff do not believe that such measures are justified nor needed for Roebuck Street on the strength of the current evidence.

These measures would be costly (can be up to $75-150k) and these costs would expended to attain traffic calming where the average speed is already well under the legal operating speed.

Furthermore, these measures are not currently endorsed in the Council Tri-Annual roading expenditure plan approved by Waka Kotahi and so would need to be funded solely by Council, impacting directly on General Rates. All ongoing operational maintenance expenditure will need to be included into long term plans on an ongoing basis.

Any work undertaken at Roebuck Street, unnecessarily sets precedence for other streets and urban treatments at other locations across the District.

The opportunity remains to attempt to request funding for this work in future NLTP periods, but currently the strategic investment logic for this expenditure does not rate as high as other high-need road network investment demands that are in our roading network forwards works plans.

4.5 Conclusions

Residents continue to have Annual Plan submission processes available to them to continue advocacy.

Current management practices of the Heavy Traffic Bypass route are deemed adequate.

The current approved FAR supported roading investment programme does not include funding more involved engineering response to traffic calming or street redesign elements.

Currently, the field data statistics does not make the Engineering team form the view that there is a problem (when compared to other streets across the District) that is not already being adequately addressed with our improvement to the signage networks, and our regular liaison with users and our annual letters to operators.

5. CONSIDERATIONS

5.1 Strategic Alignment

The successful delivery of a fit for purpose roading network with appropriate levels of service is in accordance with our annual plan and LTP and is critical to the economic success of our district.

5.2 Significance Assessment

Roading network and transport planning delivery is highly significant in terms of capital and operating expenditure, complexity, impact to levels of service and community benefit.

5.3 Tangata Whenua Considerations

Council works in partnership with Ngāti Waewae to provide governance. The decision does not specifically impact Tangata Whenua, their culture and traditions.

5.4 Risk Management Implications

Major risks are managed in accordance with Council's risk management processes including a "what could go wrong?" approach to ensure all practicable steps are being taken to assess, control and monitor identified risks.

5.5 Policy Framework Implications

Council must comply with the relevant policy and legal requirements including the Land Transport Act 1998, the Resource Management Act

1991, Local Government Act 2002 as well as NZTA and Council's own Policies and Procedures Guidelines.

5.6 Legal Implications

Failing to implement effective road carriage way services can have legal implications in the context of Council duties as a Territorial Authority and Road Controlling Authority.

5.7 Financial / Budget Implications

Costs for delivering roading services are expended against approved control baseline budgets established in the LTP and Annual Plans and are reported to Council accordingly. Funding assistance for the approved programme and qualifying activities is received from Waka Kotahi New Zealand Transport Agency.

5.8 Media/Publicity

Publicity is expected with impacts to the roading network service delivery, not all of which will be positive. However, this should not deter from the reasons for delivering important assets and infrastructure for the community.

5.9 Consultation Considerations

Residents have strong views on the transport matters in their own areas, and we attempt to inform the debate and investment logic mapping and expenditure decision making with facts and data.

HEAVY BYPASS AUDIT TRAFFIC COUNT RESULTS (2)

DATES

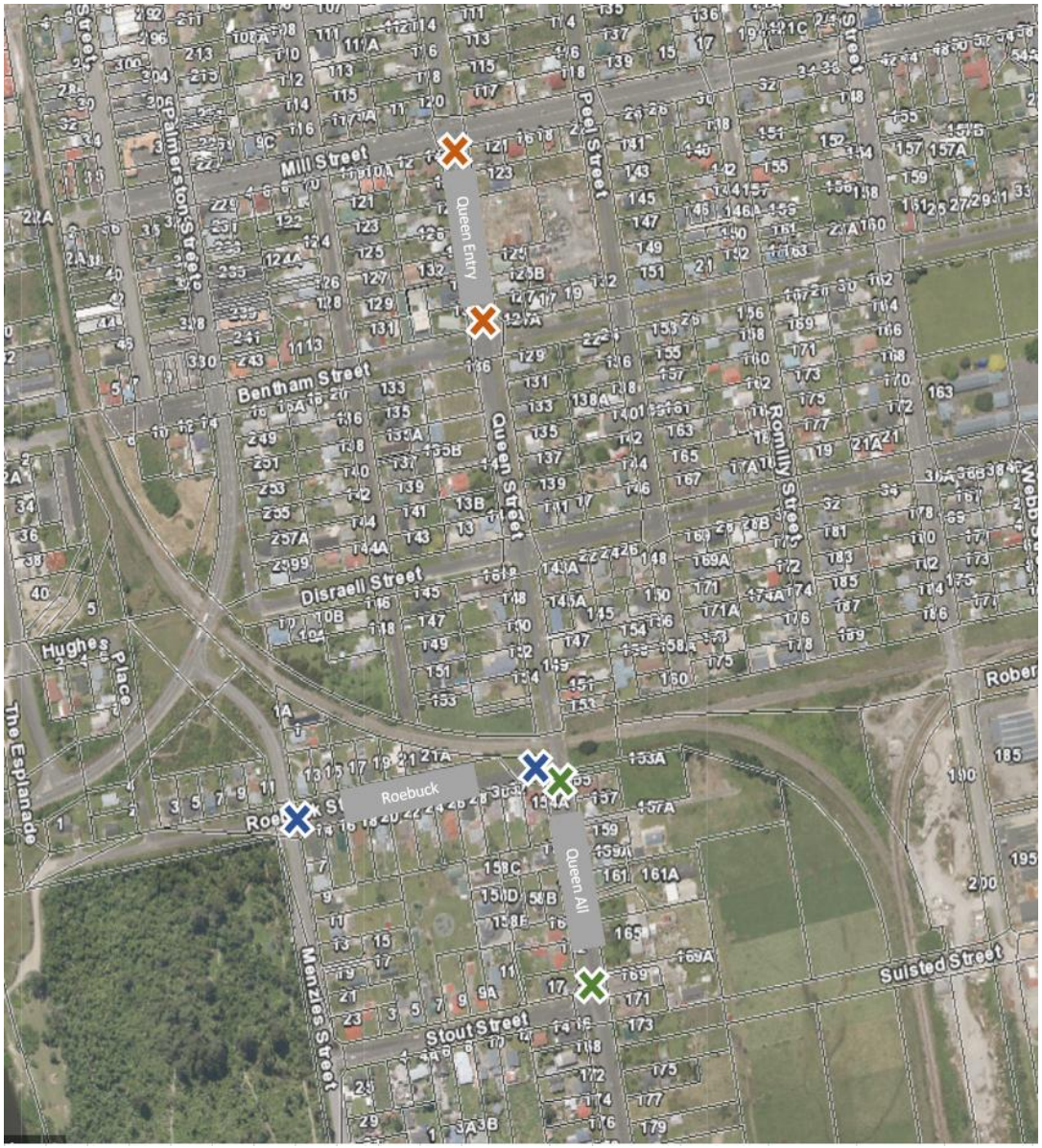
Data taken pre-signage dates from 00:00 June 16, 2022, till 00:00 June 24, 2022, and from 00:00 June 25, 2022, till 00:00 July 2, 2022.

Data taken post-signage dates from 00:00 September 29, 2022, till 00:00 October 6, 2022, 00:00 October 6, 2022, till 00:00 October 13, 2022, and 0:00 March 15, 2023 till 0:00 March 22, 2023.

SITES

Data taken from three within the Westport area.

Roebuck Street between Menzies Street and Queen Street, Queen Street between Mill Street and Bentham Street, and Queen Street between Roebuck Street and Stout Street, labelled Roebuck, Queen Entry, and Queen All respectively.

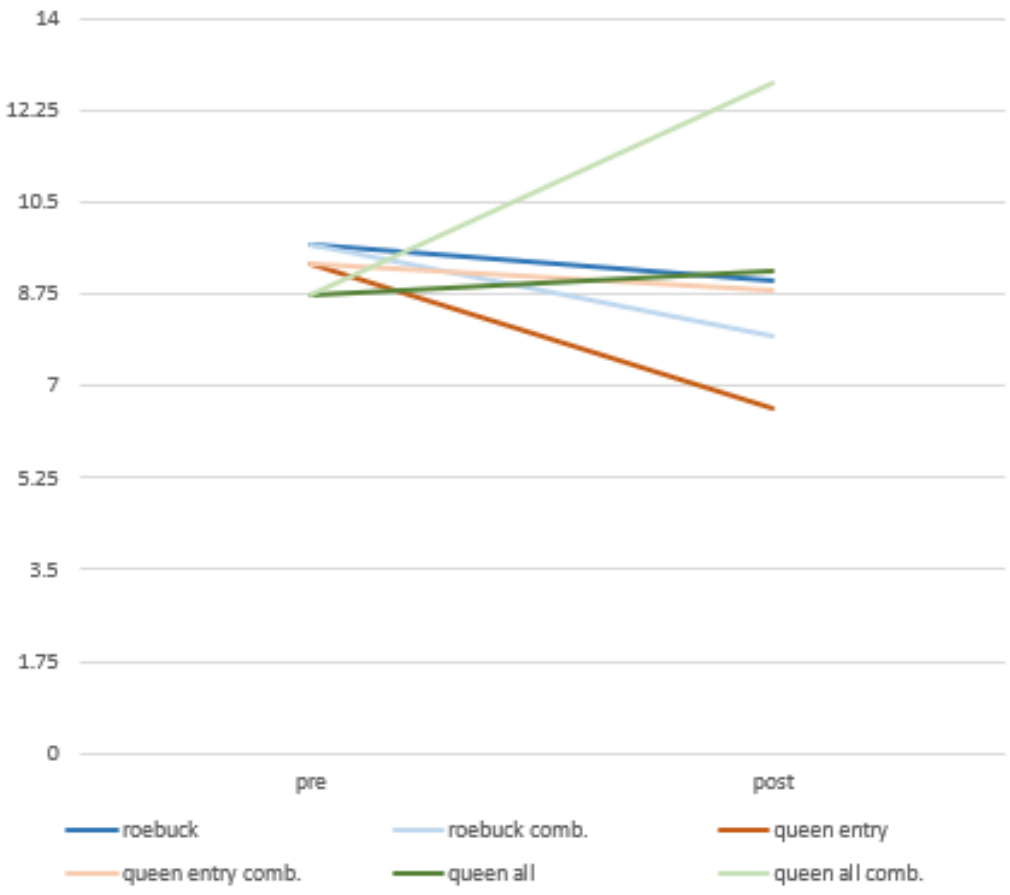

Mill Street
Queen Entry
Peel Street
Bentham Street
Queen Street
Romilly Street
Disraeli Street
Hughes Place
The Esplanade
Roebuck
Queen All
Menzies Street
Stout Street
Suisted Street

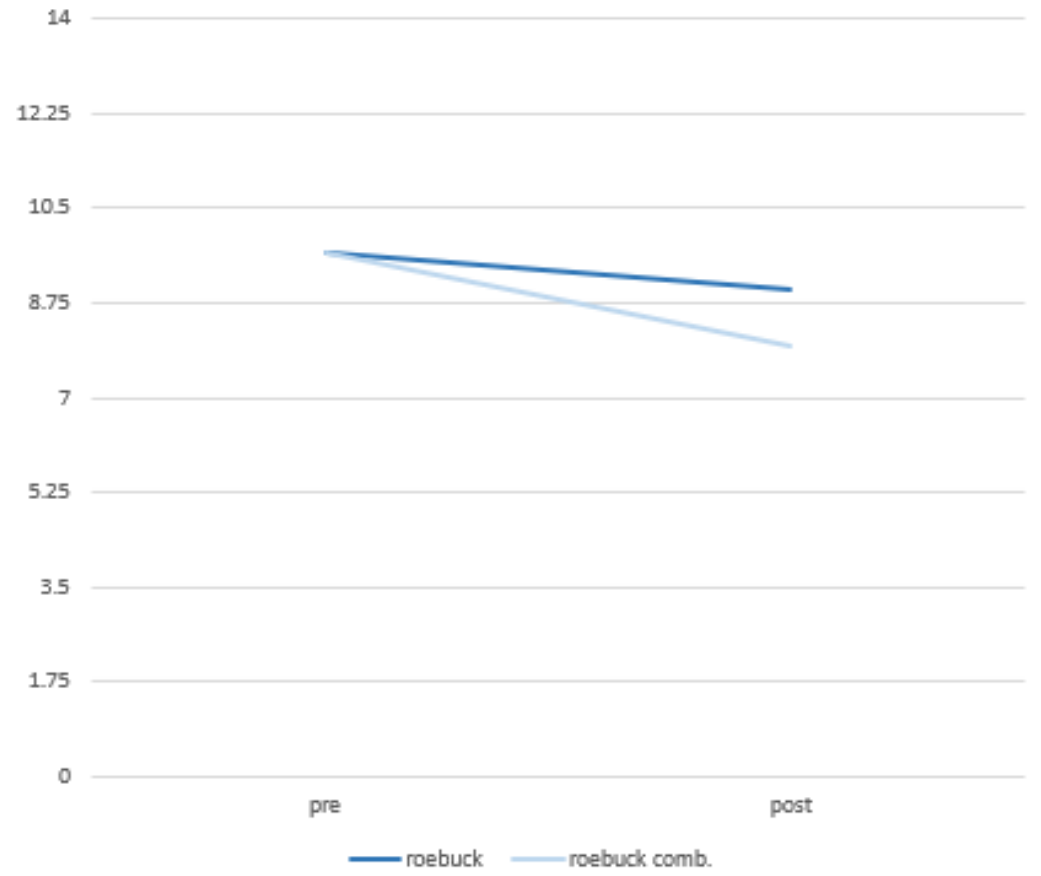
TRENDS

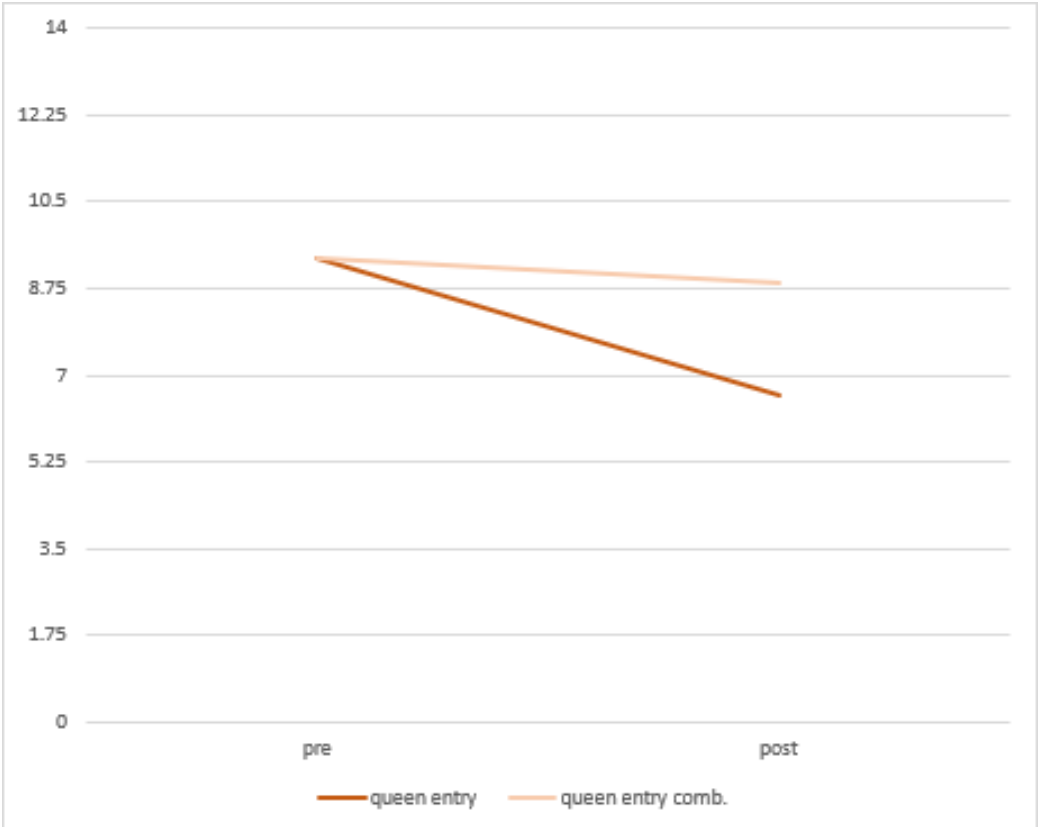
Data showing average volumes of traffic of the three sites in the Westport area.

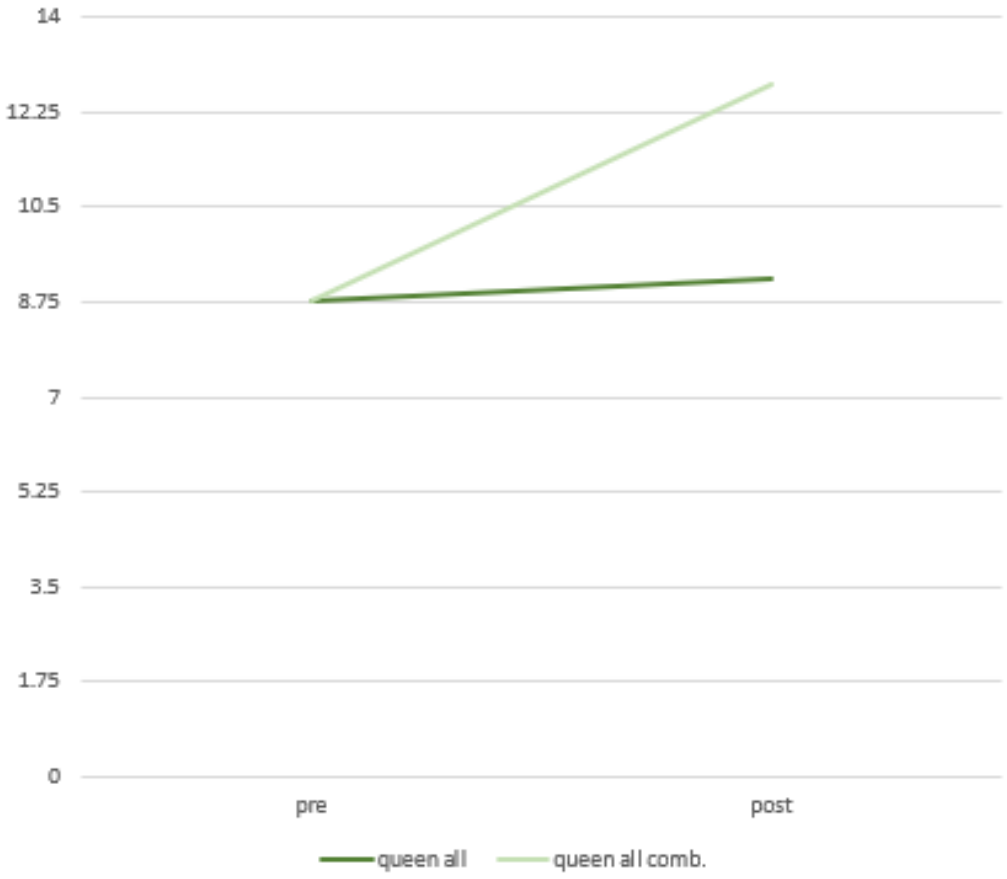
				Heavy(class 4 and higher)				
Site	Average	Week Total	All Days Average	Week Total	All Days Average	%	Difference	direction
Roebuck	Pre Signs	2087.5	298.5	201	29	9.7		
	Post signs	2090.5	298.5	147	20.5	6.9	2.8	Decrease
	Post 23	2027	290	183	25	9	0.7	Decrease
Queen Entry	Pre Signs	7837.5	1119.5	731.5	103.5	9.35		
	Post signs	7978	1140	877.5	125.5	11.1	1.75	Increase
	Post 23	8122	1160	528	75	6.6	2.75	Decrease
Queen All	Pre Signs	7296	1042.5	644	91	8.75		
	Post signs	7470.5	1067.5	1225.5	175	16.35	7.6	Increase
	Post 23	7550	1079	692	98	9.2	0.45	Increase

Average percentage difference from pre-signage to post-signage in the three Westport are sites (including combined post difference with previous reading values).



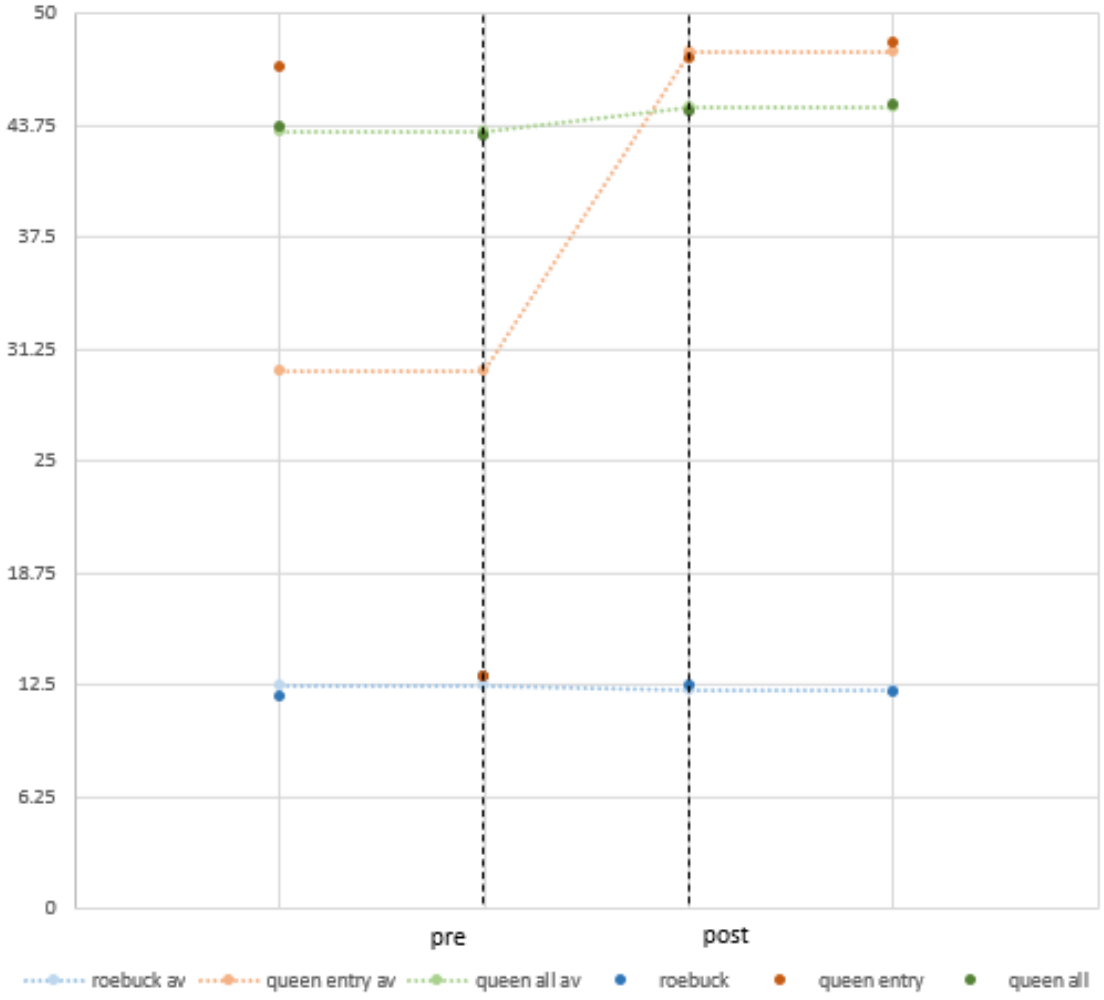

14
12.25
10.5
8.75
7
5.25
3.5
1.75
0
pre
post
roebuck
roebuck comb.


14
12.25
10.5
8.75
7
5.25
3.5
1.75
0
pre
post
queen entry
queen entry comb.

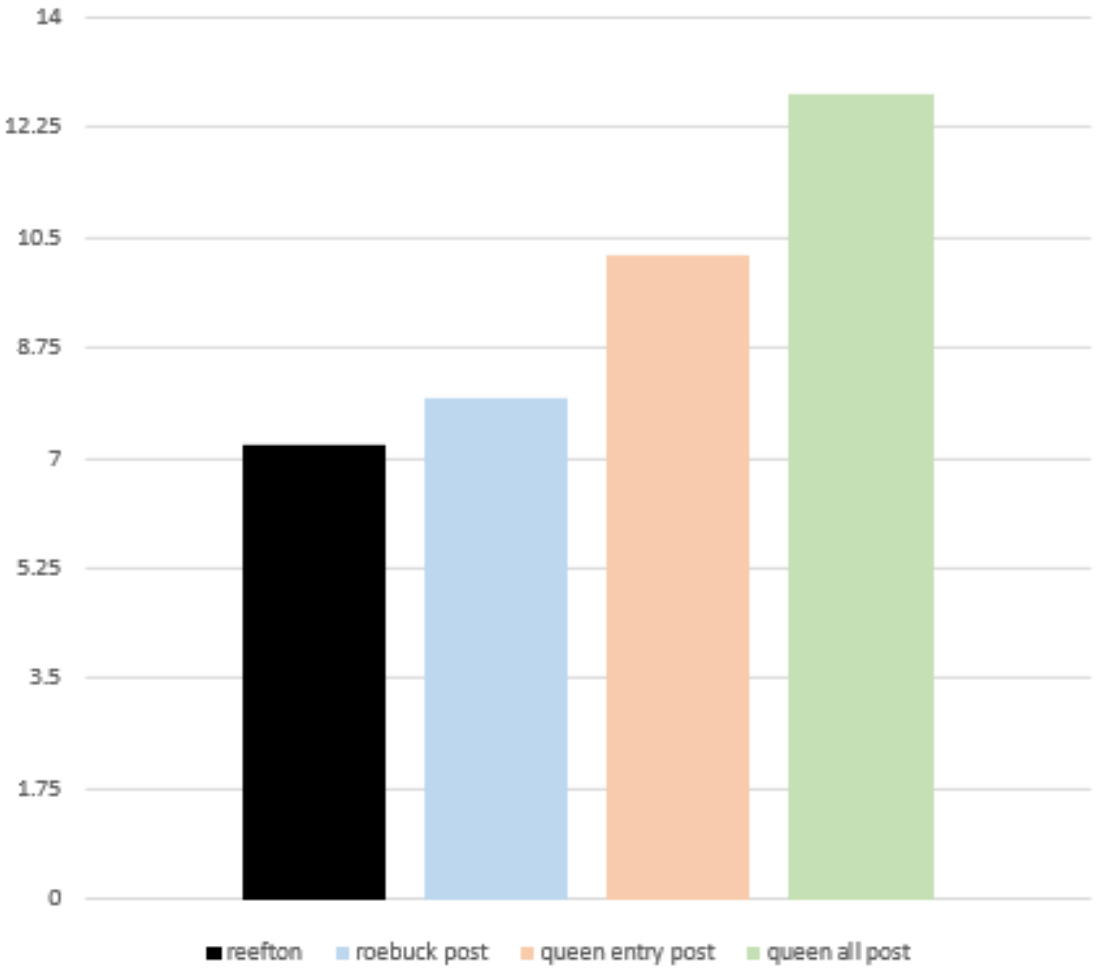

14
12.25
10.5
8.75
7
5.25
3.5
1.75
0
pre
post
queen all
queen all comb.

COMPARISON

Average volume of heavy (class four and higher) traffic volume in the three Westport are sites.



Average percentage of heavy (class four and higher) traffic post-signage in the three Westport area sites compared to the Reefton data.

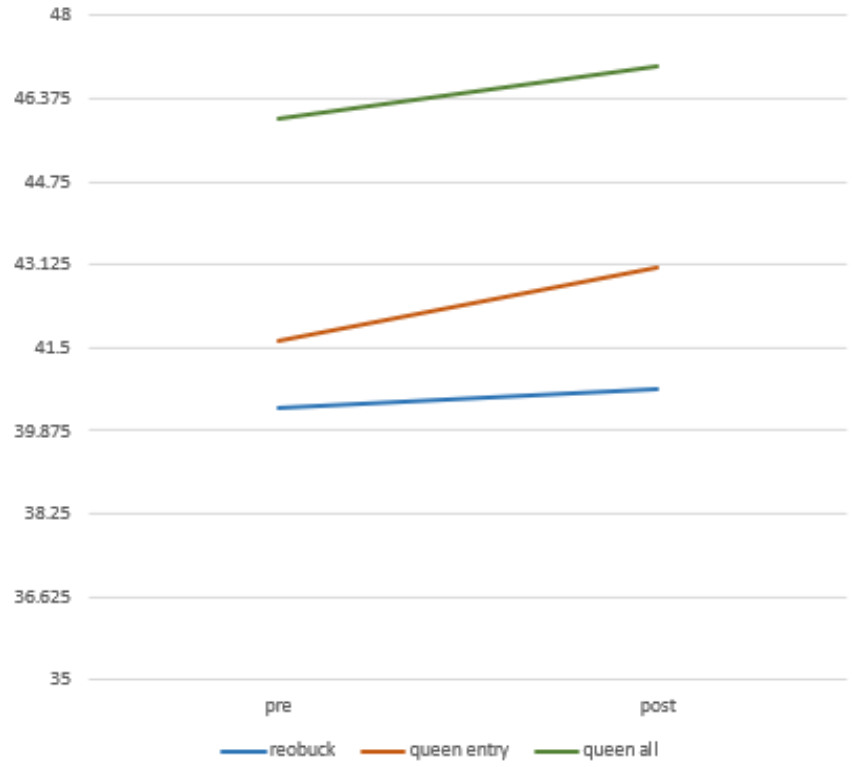


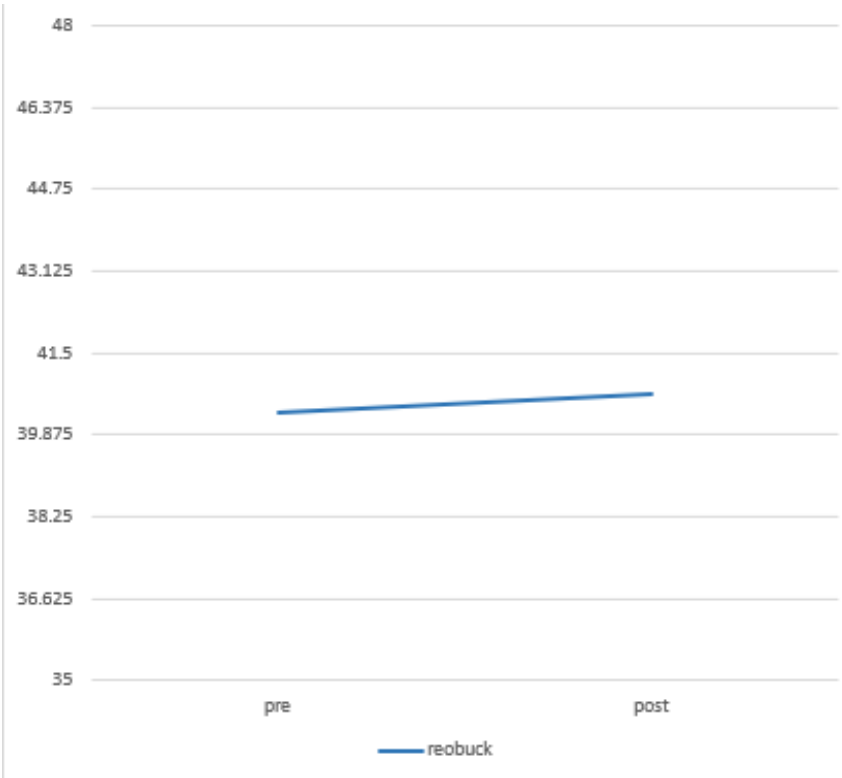
SPEED

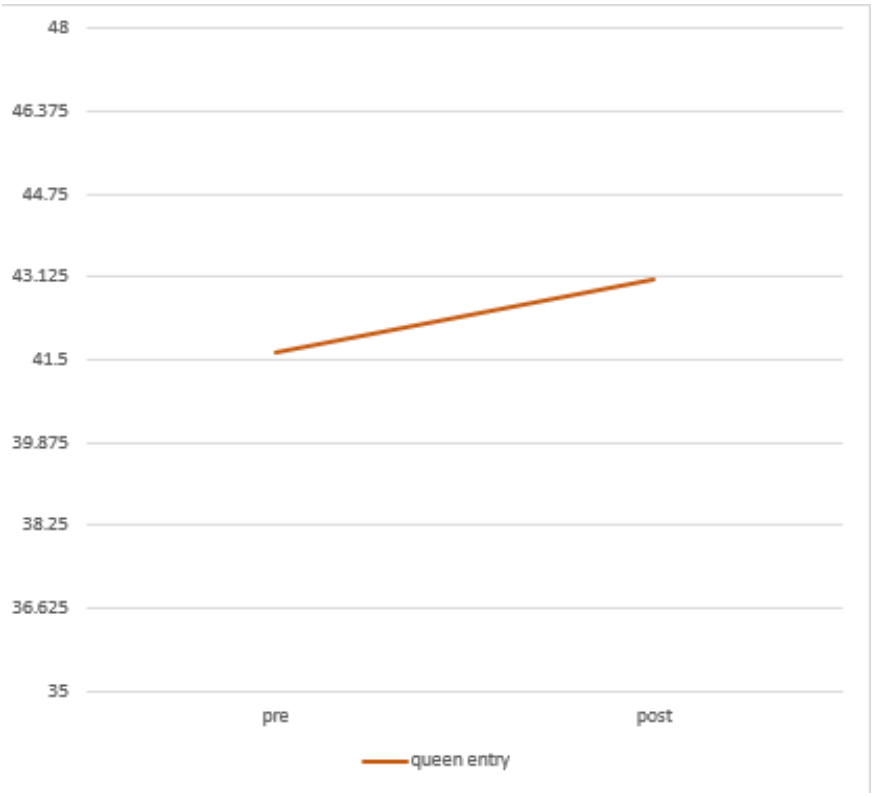
Data showing the average speeds at the three sites in the Westport area.

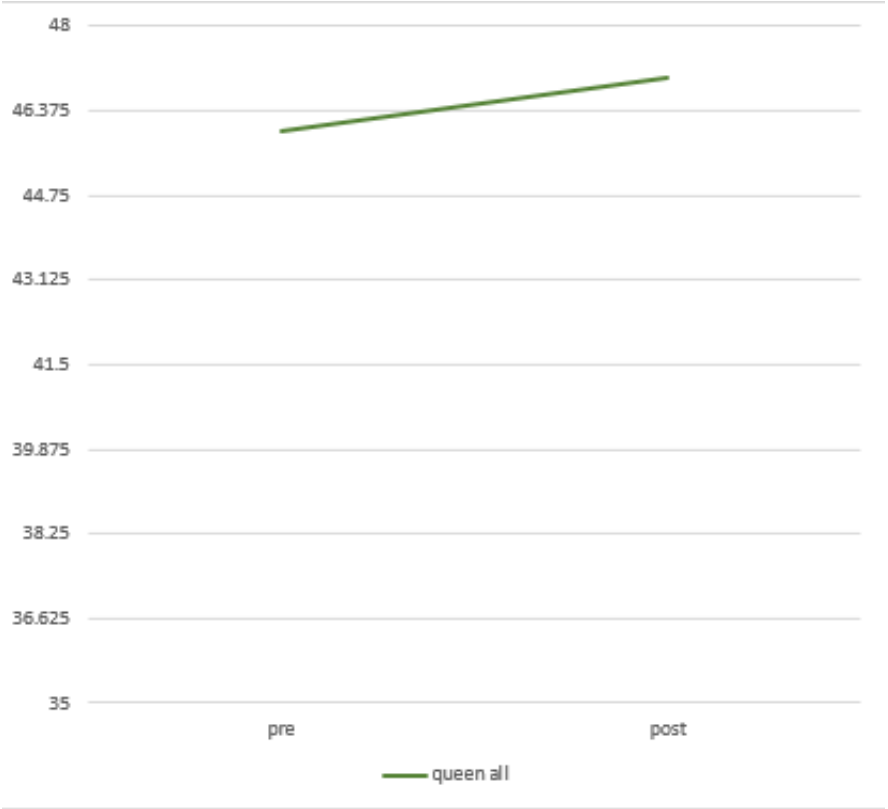
Site	Average	All Days Average	Difference	Direction
Roebuck	Pre Signs	40.32857143		
	Post Signs	40.67142857	0.3428571	Increase
Queen Entry	Pre Signs	41.64285714		
	Post Signs	43.08571429	1.4428571	Increase
Queen All	Pre Signs	45.97857143		
	Post Signs	46.99285714	1.0142857	Increase

Average speed difference from pre-signage to post-signage in the three Westport area sites.

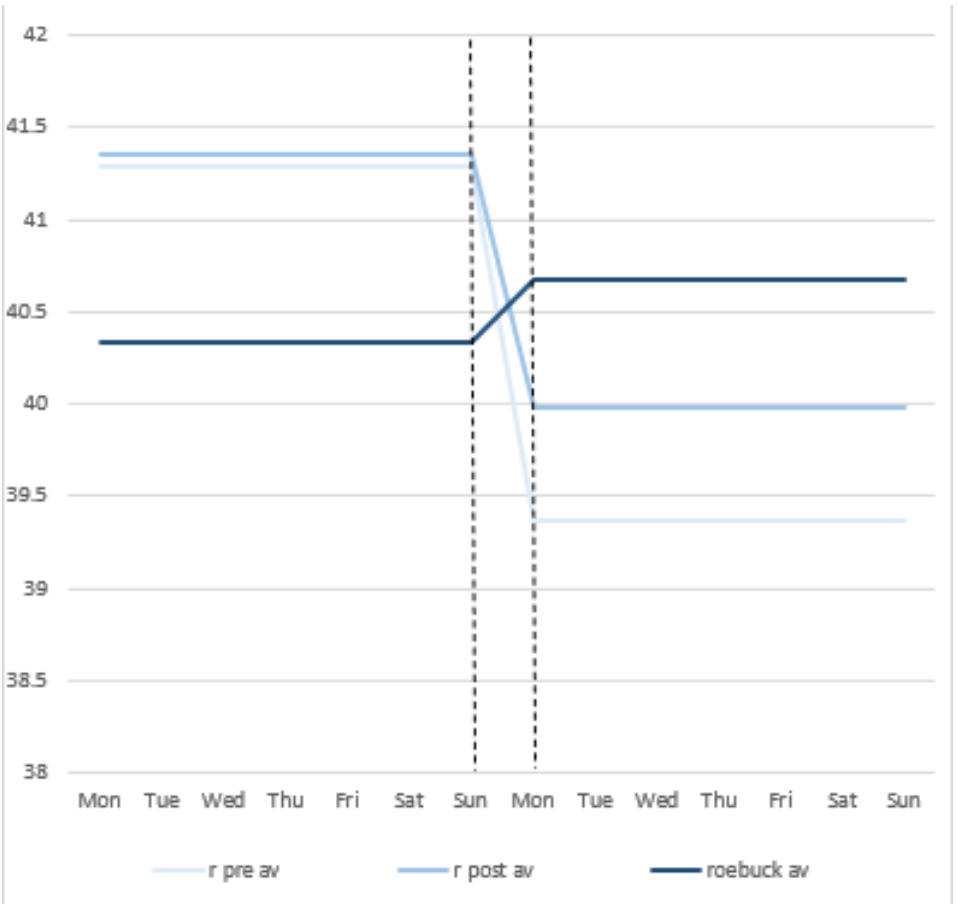


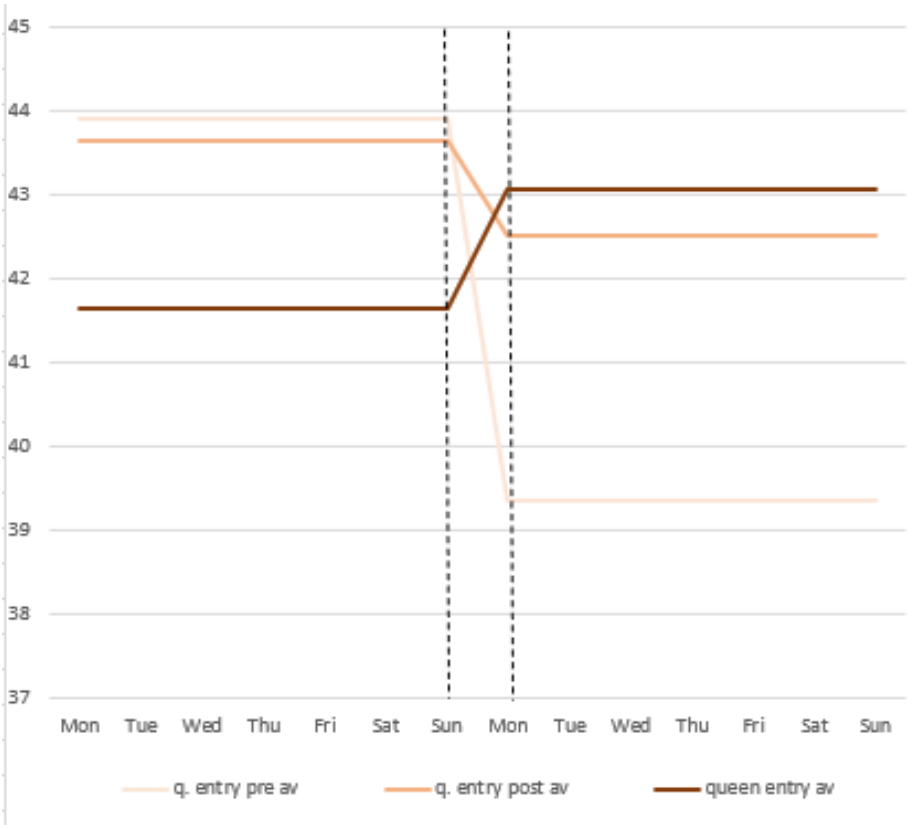


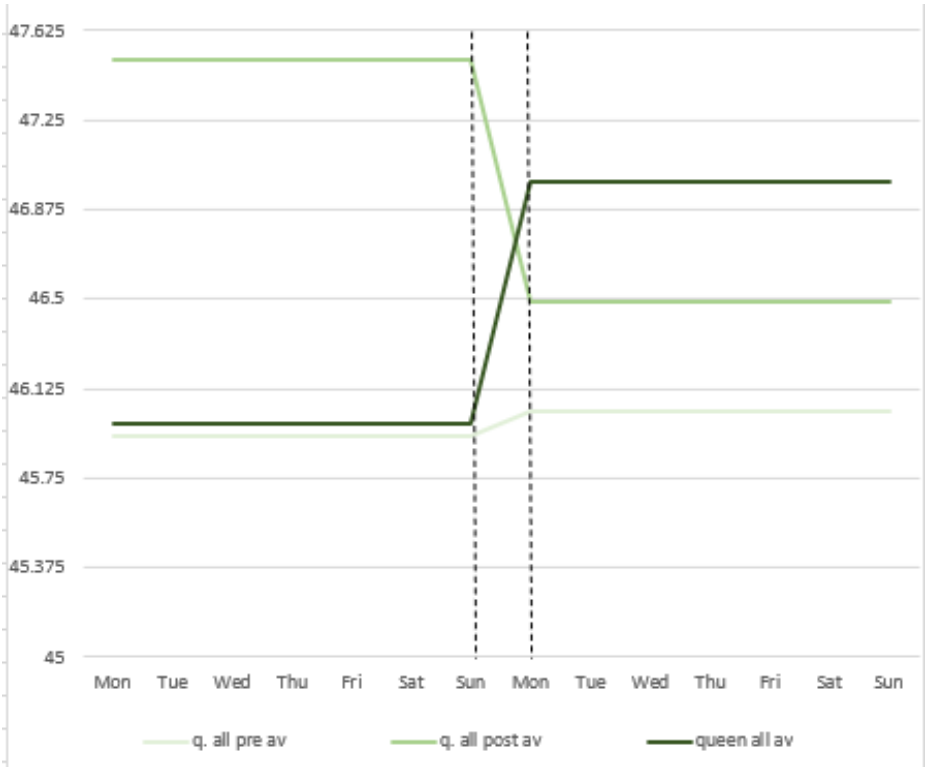

48
46.375
44.75
43.125
41.5
39.875
38.25
36.625
35
pre
post
queen entry

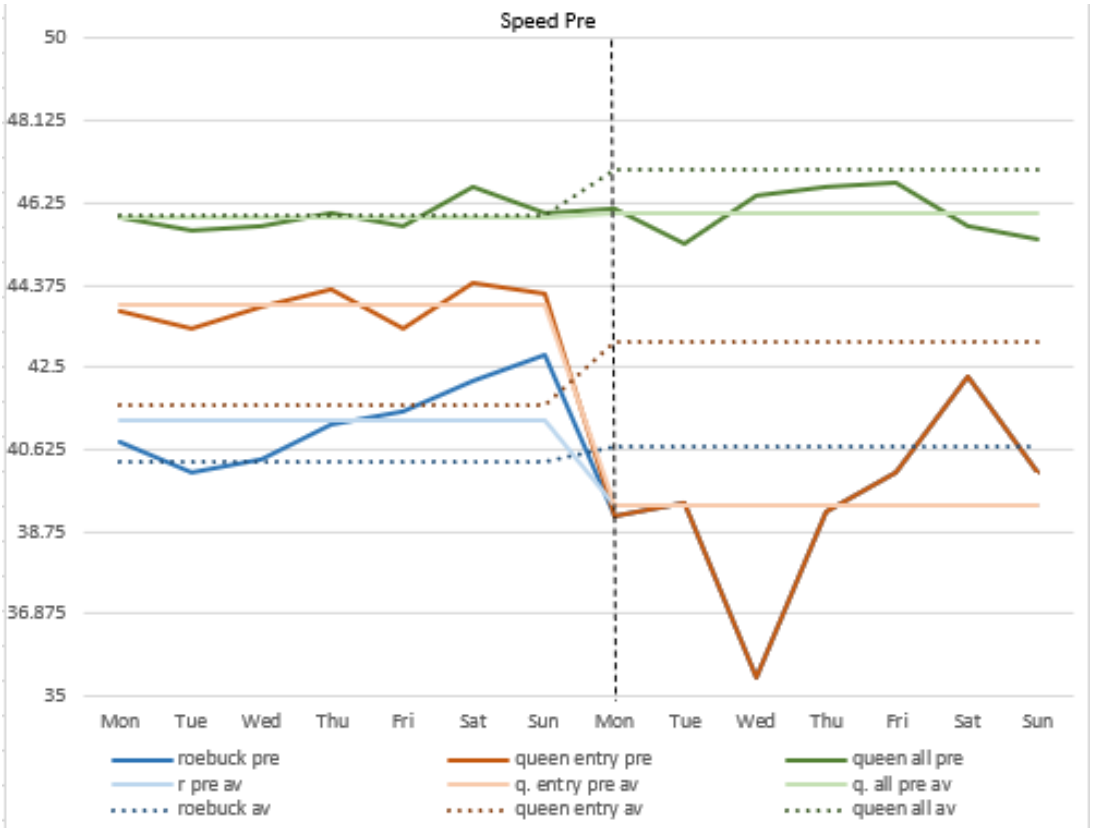

48
46.375
44.75
43.125
41.5
39.875
38.25
36.625
35
pre
post
queen all

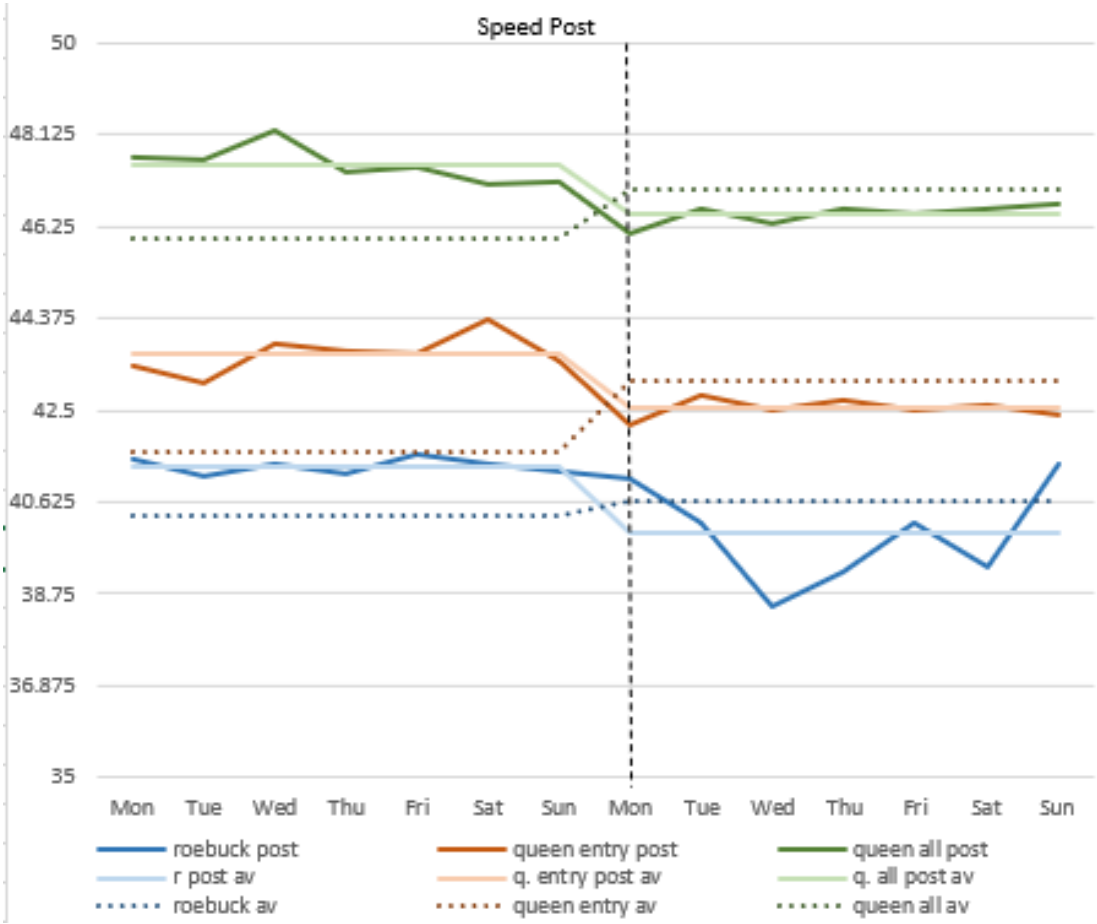
Average pre-signage and post-signage speeds by day in the three Westport area sites.




45
44
43
42
41
40
39
38
37
Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun
q. entry pre av
q. entry post av
queen entry av

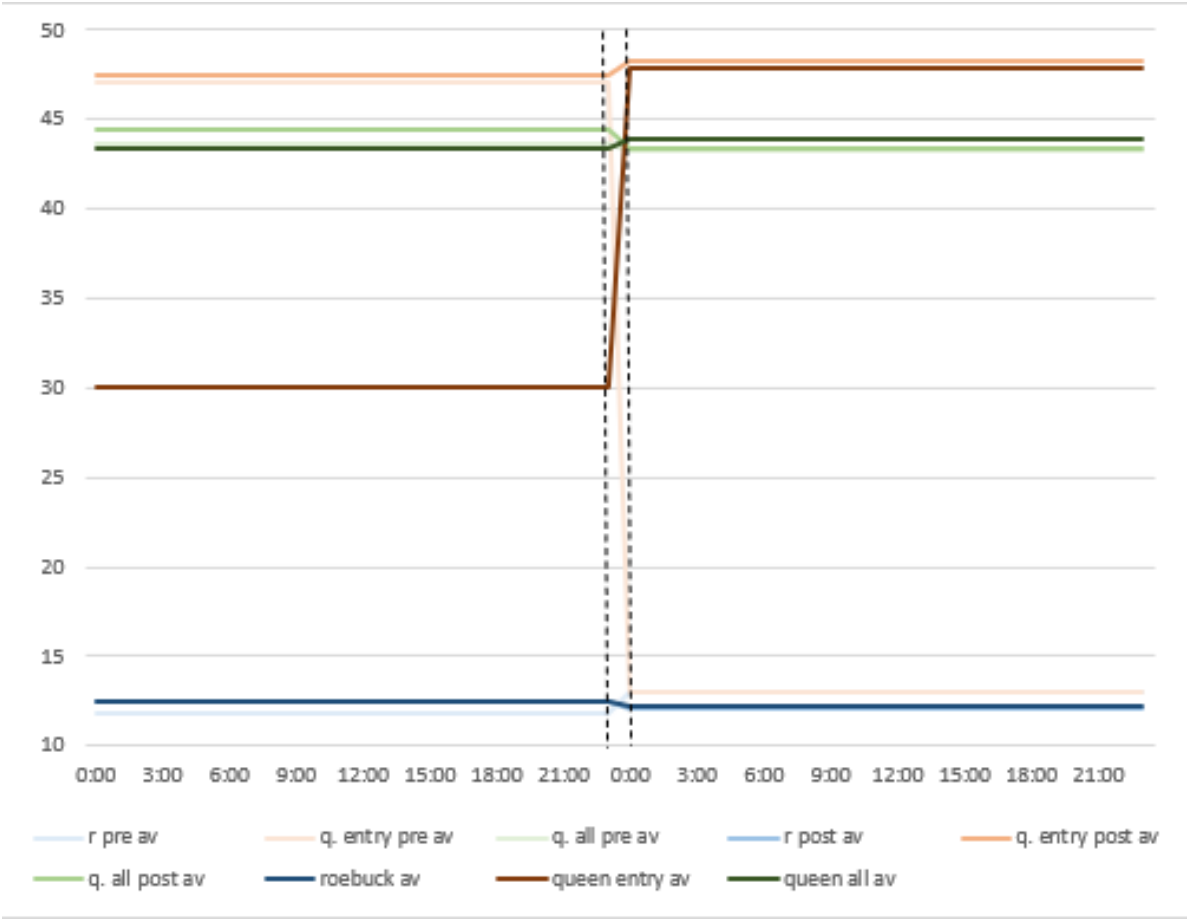

47.625
47.25
46.875
46.5
46.125
45.75
45.375
45
Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun
q. all pre av
q. all post av
queen all av

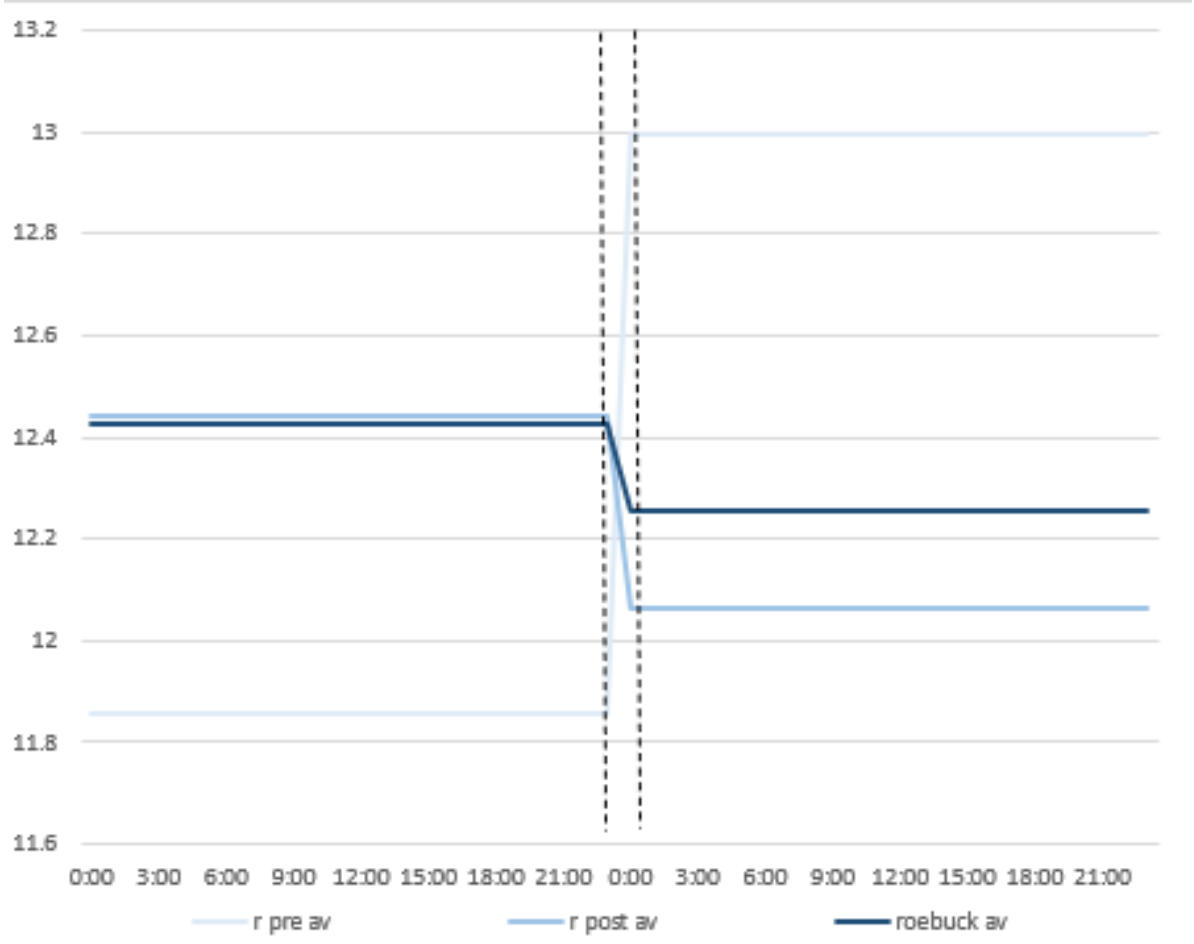

Speed Pre
50
48.125
46.25
44.375
42.5
40.625
38.75
36.875
35
Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun
roebuck pre
queen entry pre
queen all pre
r pre av
q. entry pre av
q. all pre av
roebuck av
queen entry av
queen all av

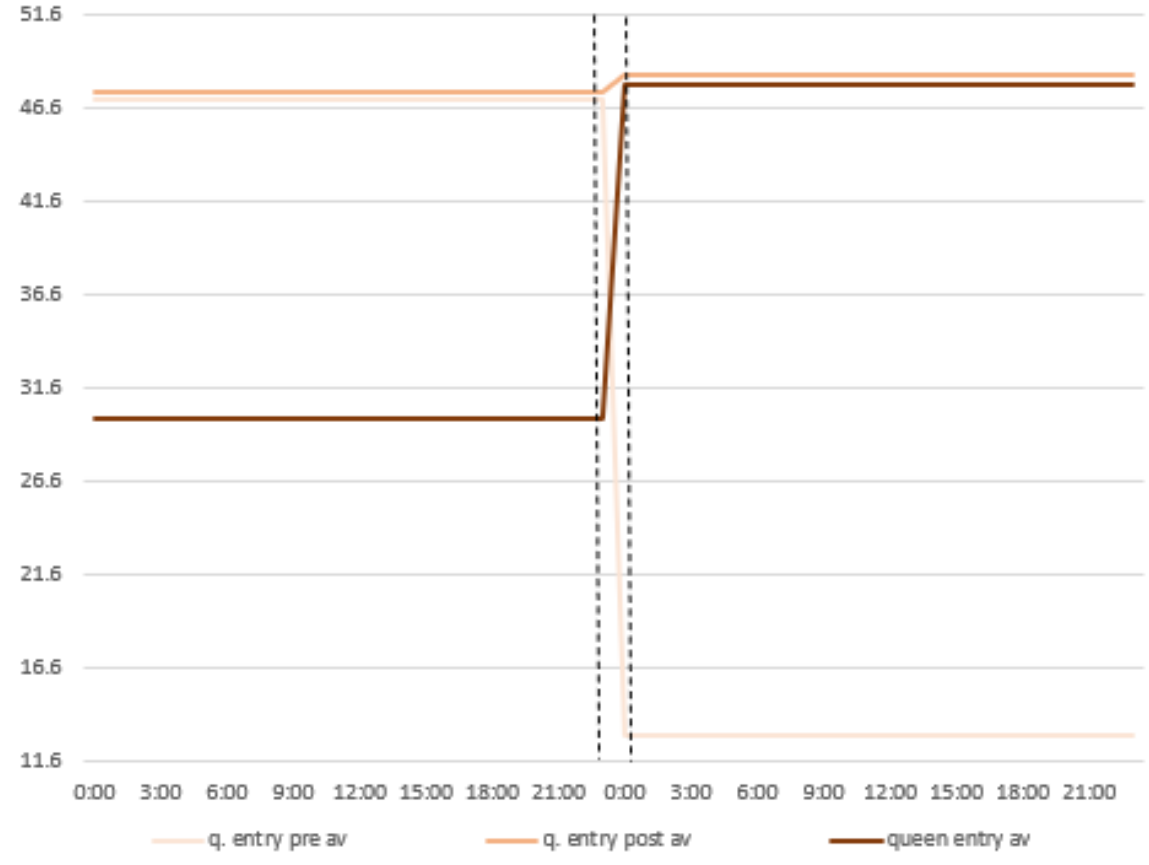

Speed Post
50
48.125
46.25
44.375
42.5
40.625
38.75
36.875
35
Mon Tue Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun
roebuck post
queen entry post
queen all post
r post av
q. entry post av
q. all post av
roebuck av
queen entry av
queen all av

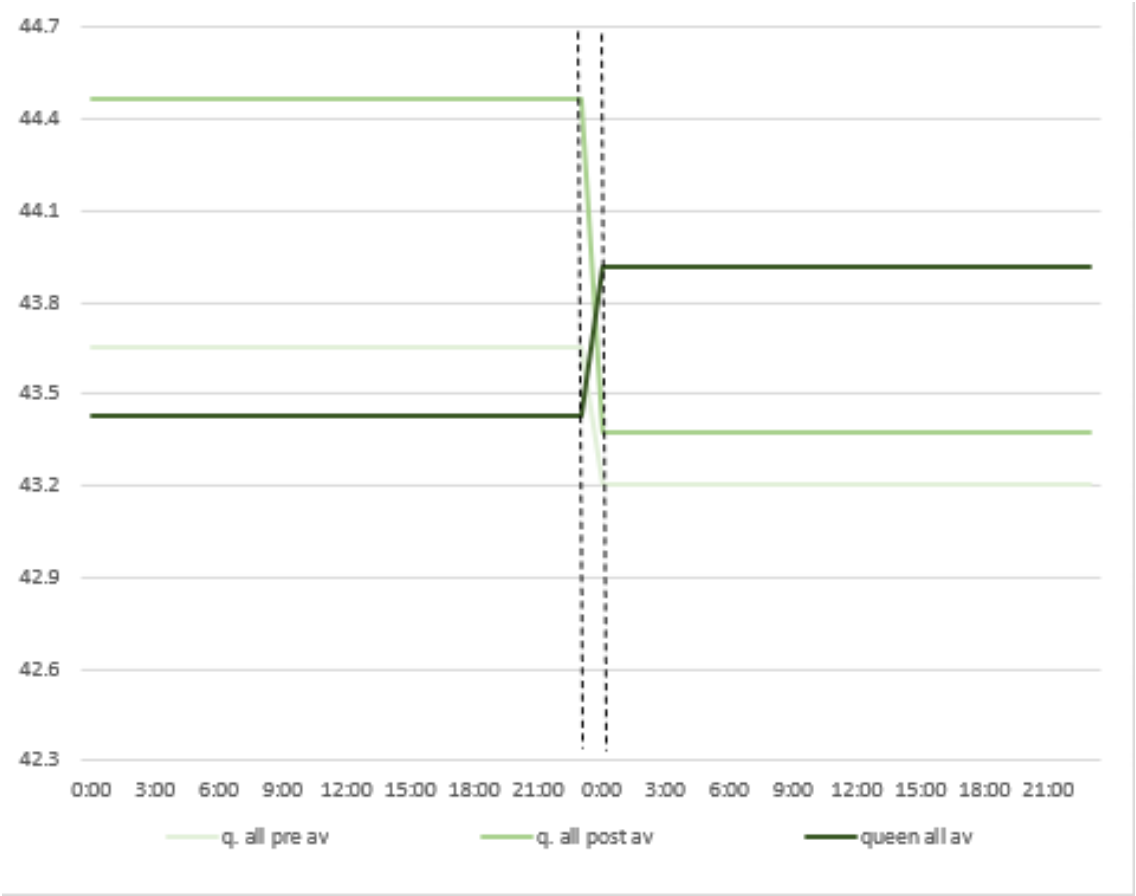
OTHER

Average hourly volume of traffic in the three Westport area sites during the data collection periods.

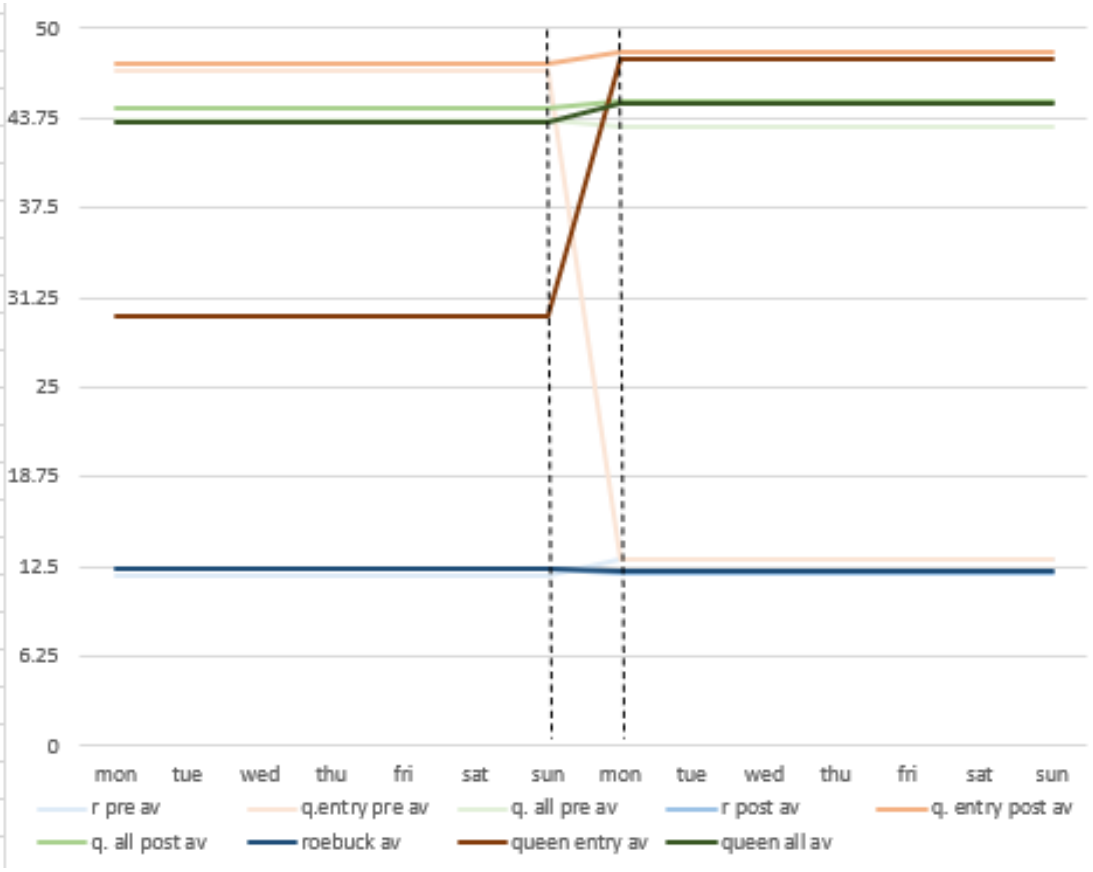


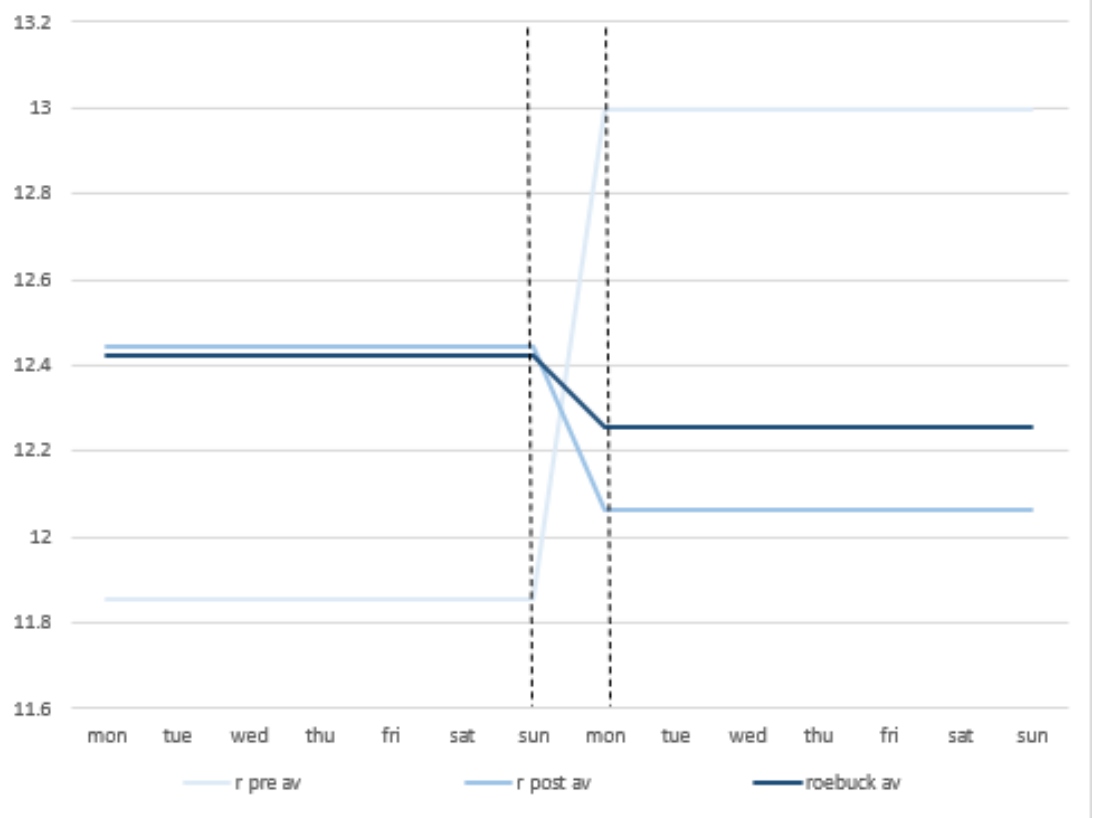

13.2
13
12.8
12.6
12.4
12.2
12
11.8
11.6
0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00 0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00
r pre av
r post av
roebuck av

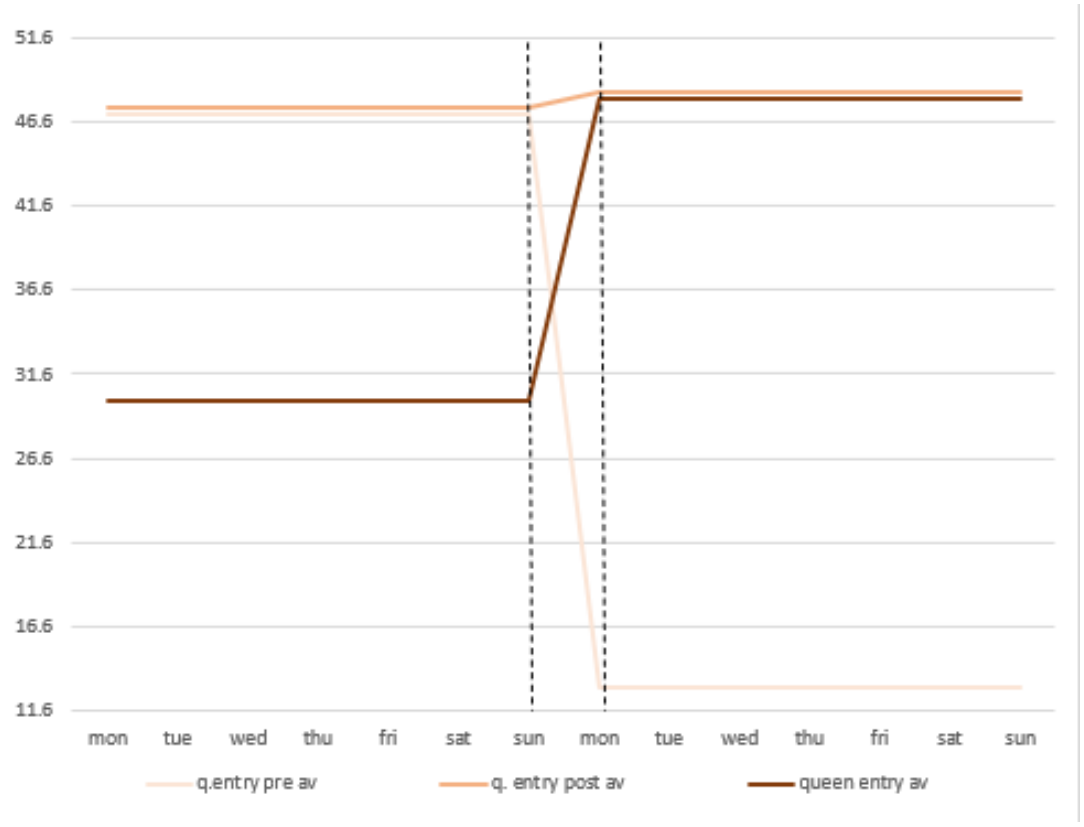

51.6
46.6
41.6
36.6
31.6
26.6
21.6
16.6
11.6
0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00 0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00
q. entry pre av
q. entry post av
queen entry av

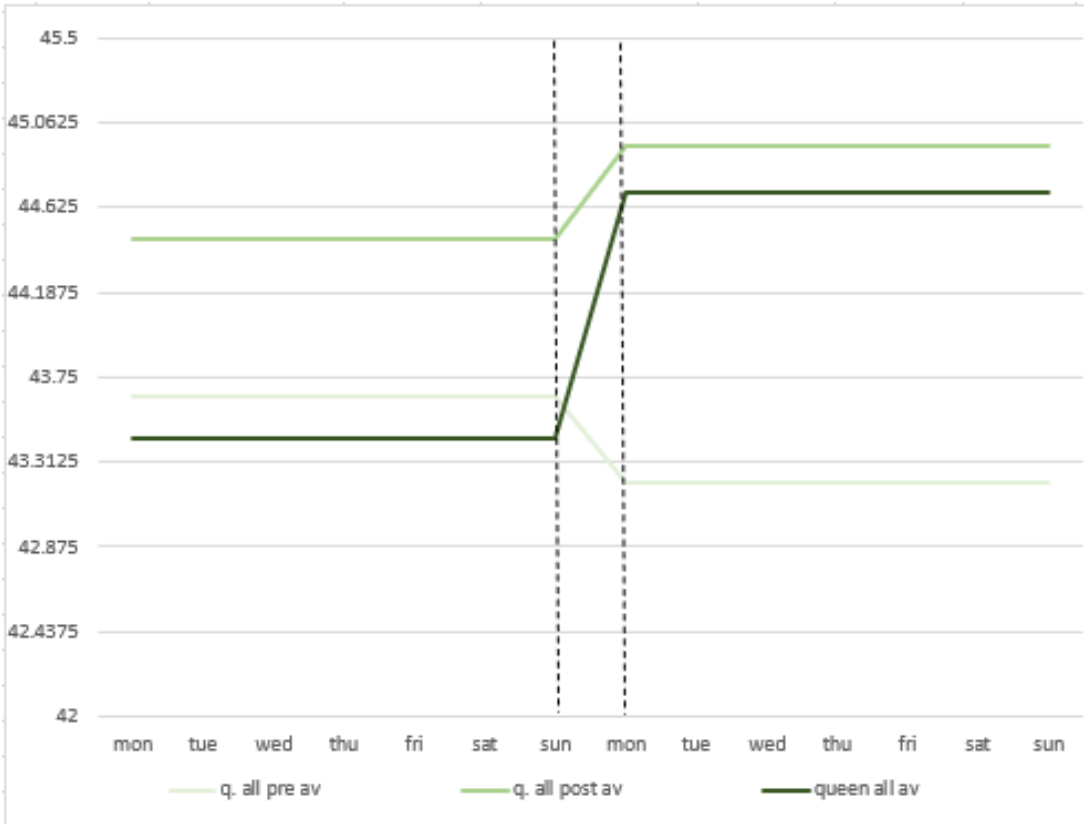

44.7
44.4
44.1
43.8
43.5
43.2
42.9
42.6
42.3
0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00 0:00 3:00 6:00 9:00 12:00 15:00 18:00 21:00
q. all pre av
q. all post av
queen all av

Average daily volume of traffic in the three Westport area sites during the data collection periods.

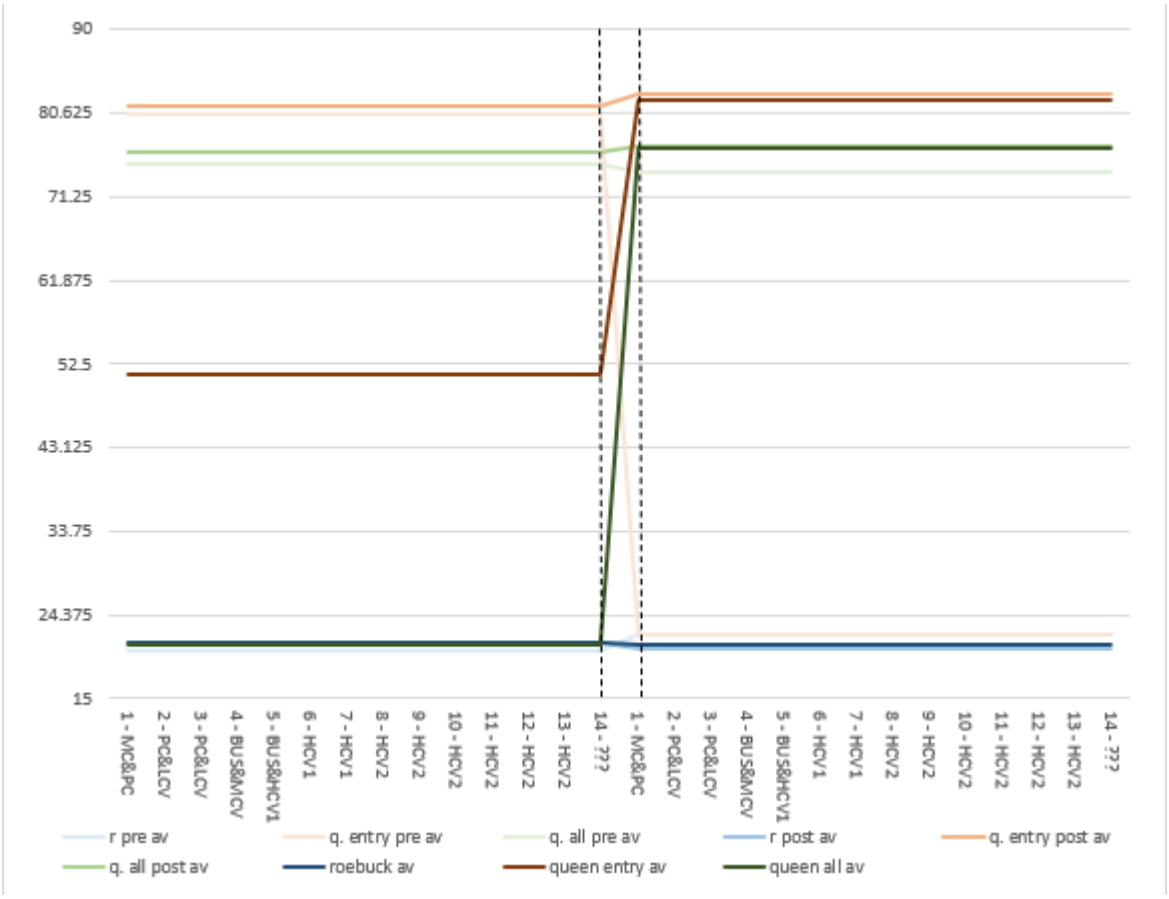


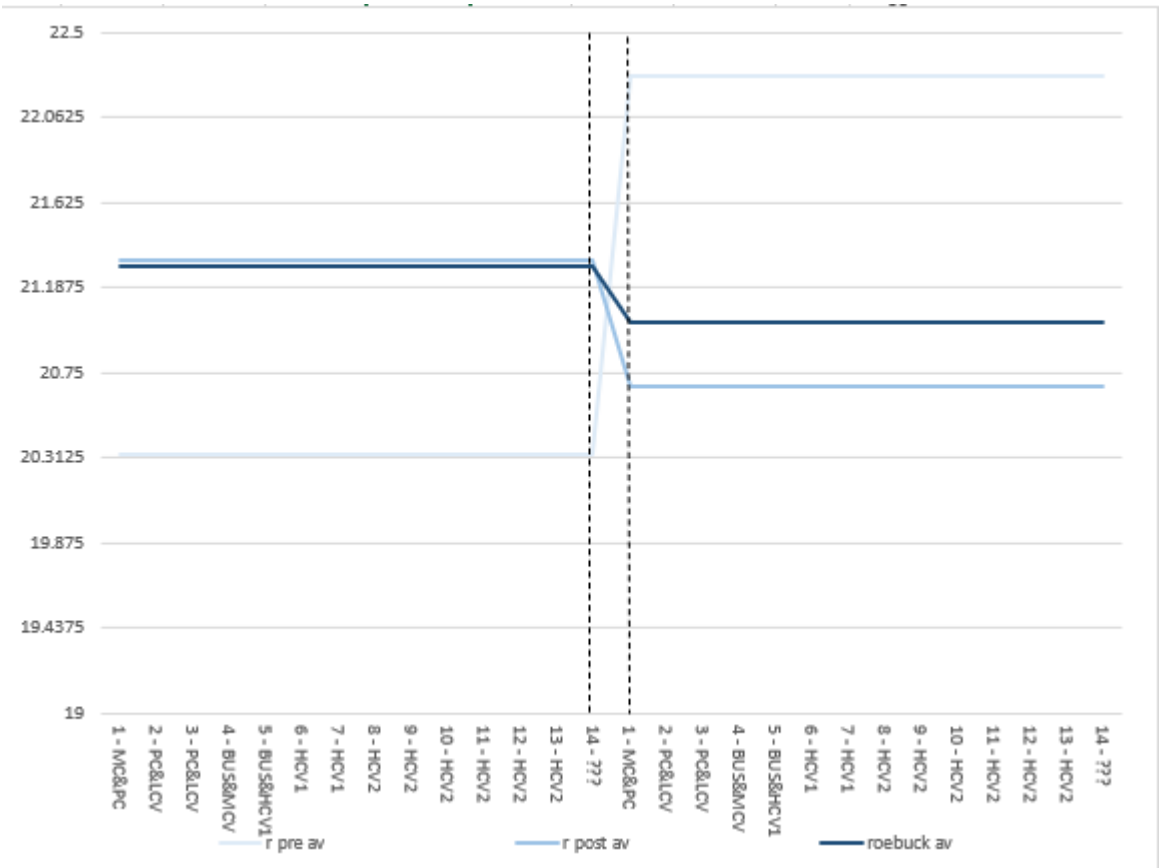


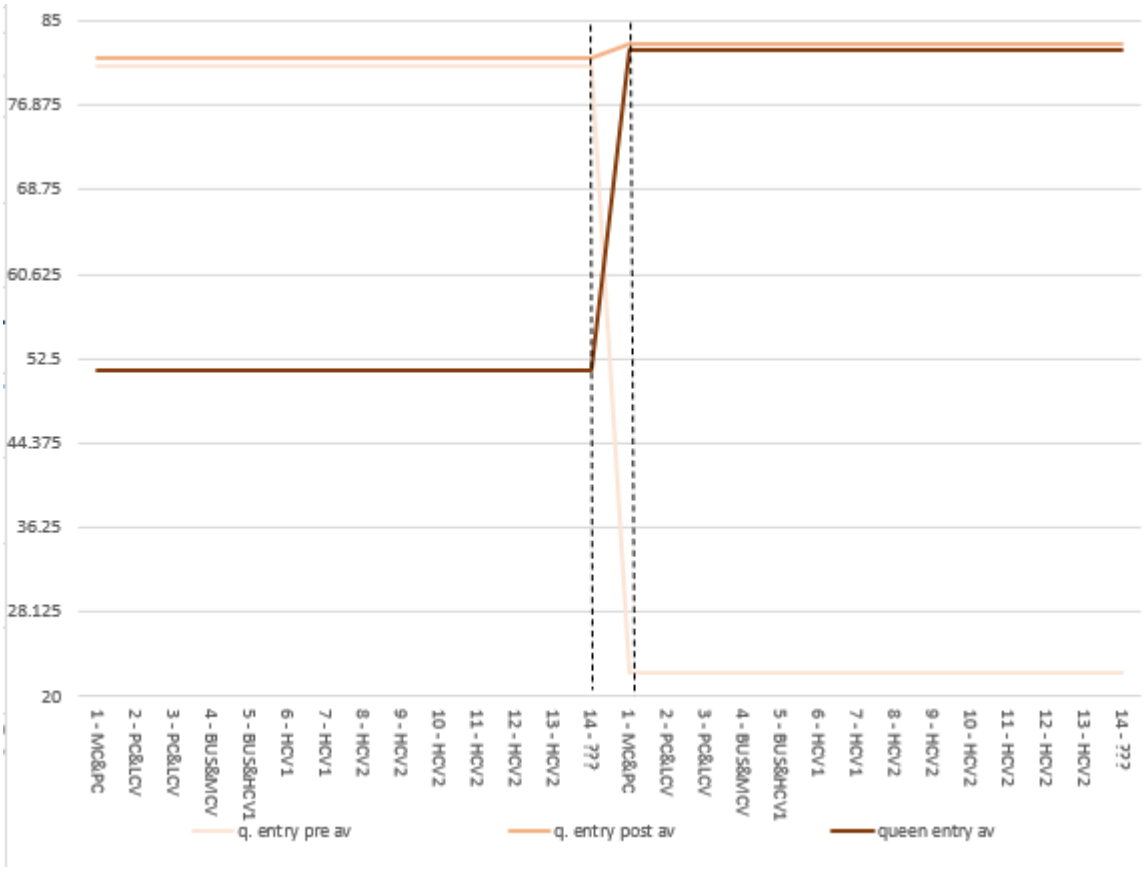

51.6
46.6
41.6
36.6
31.6
26.6
21.6
16.6
11.6
mon tue wed thu fri sat sun mon tue wed thu fri sat sun
q.entry pre av
q. entry post av
queen entry av

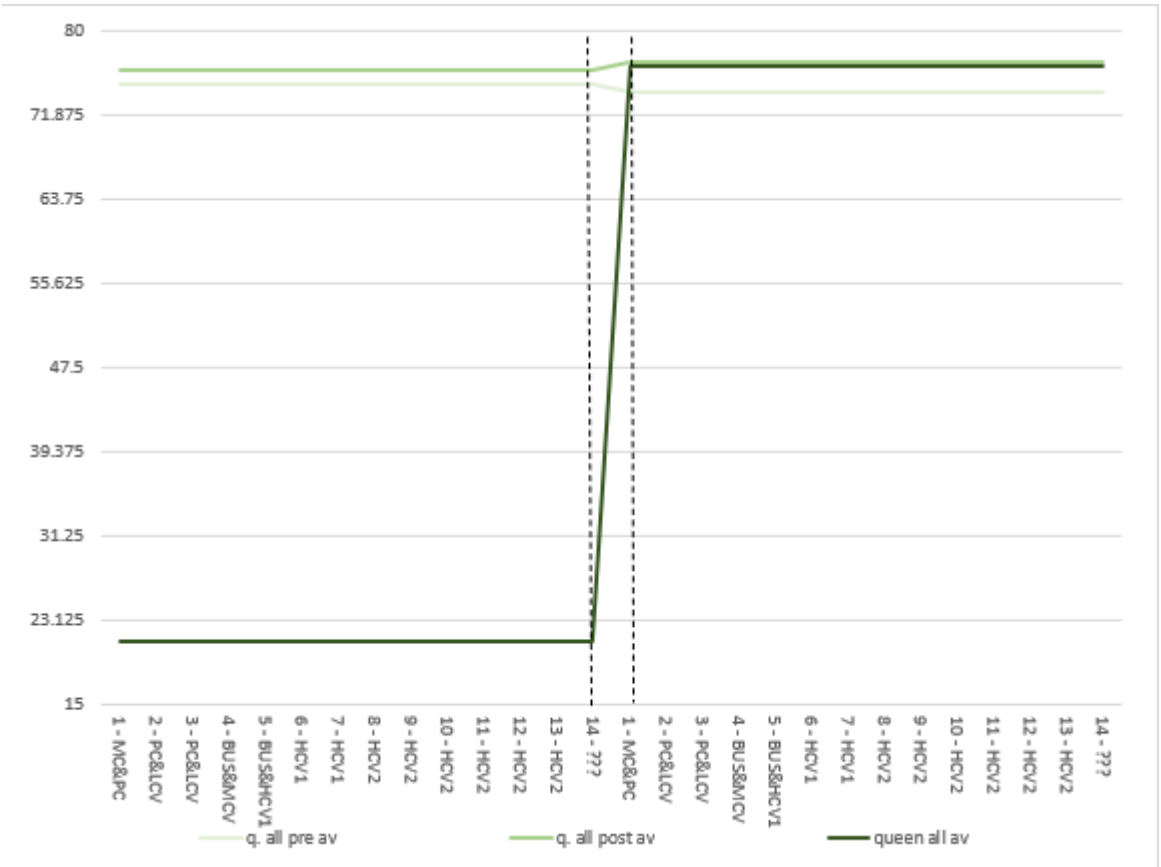

45.5
45.0625
44.625
44.1875
43.75
43.3125
42.875
42.4375
42
mon tue wed thu fri sat sun mon tue wed thu fri sat sun
q. all pre av
q. all post av
queen all av

Average pre-signage and post-signage traffic volumes over the data collection periods.

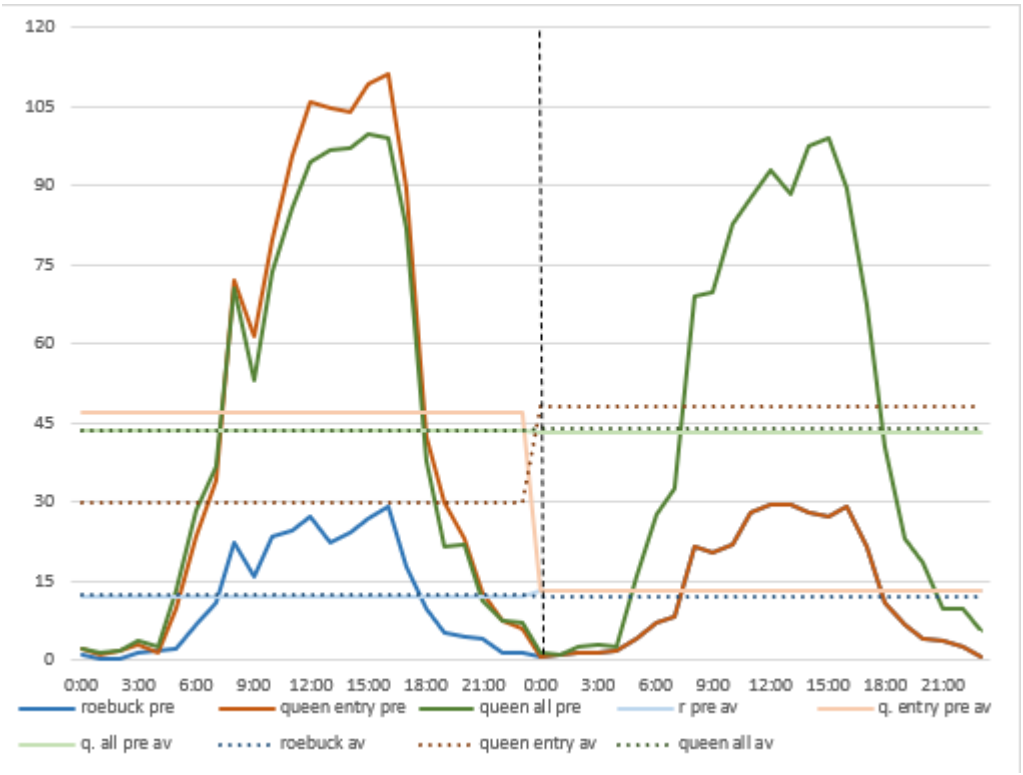


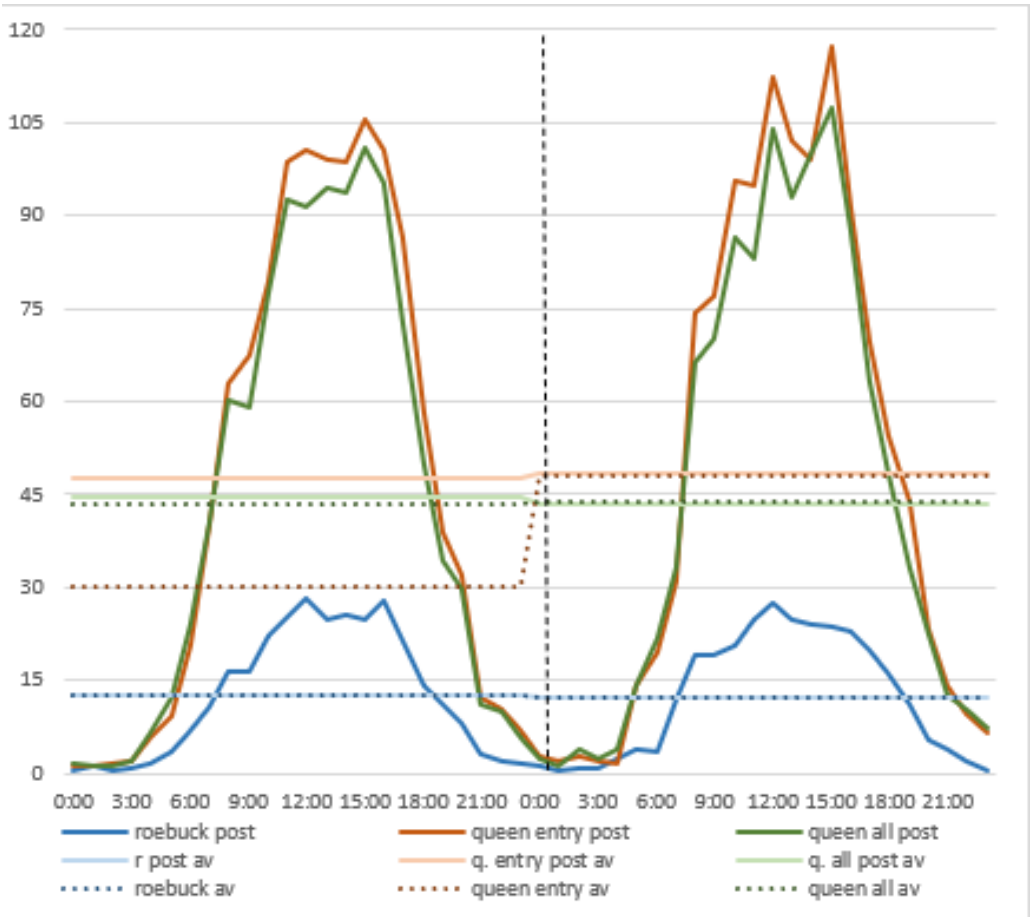



85
76.875
68.75
60.625
52.5
44.375
36.25
28.125
20
1 - MC&PC
2 - PC&LCV
3 - PC&LCV
4 - BUS&MCV
5 - BUS&HCV1
6 - HCV1
7 - HCV1
8 - HCV2
9 - HCV2
10 - HCV2
11 - HCV2
12 - HCV2
13 - HCV2
14 - ???
1 - MC&PC
2 - PC&LCV
3 - PC&LCV
4 - BUS&MCV
5 - BUS&HCV1
6 - HCV1
7 - HCV1
8 - HCV2
9 - HCV2
10 - HCV2
11 - HCV2
12 - HCV2
13 - HCV2
14 - ???
q. entry pre av
q. entry post av
queen entry av

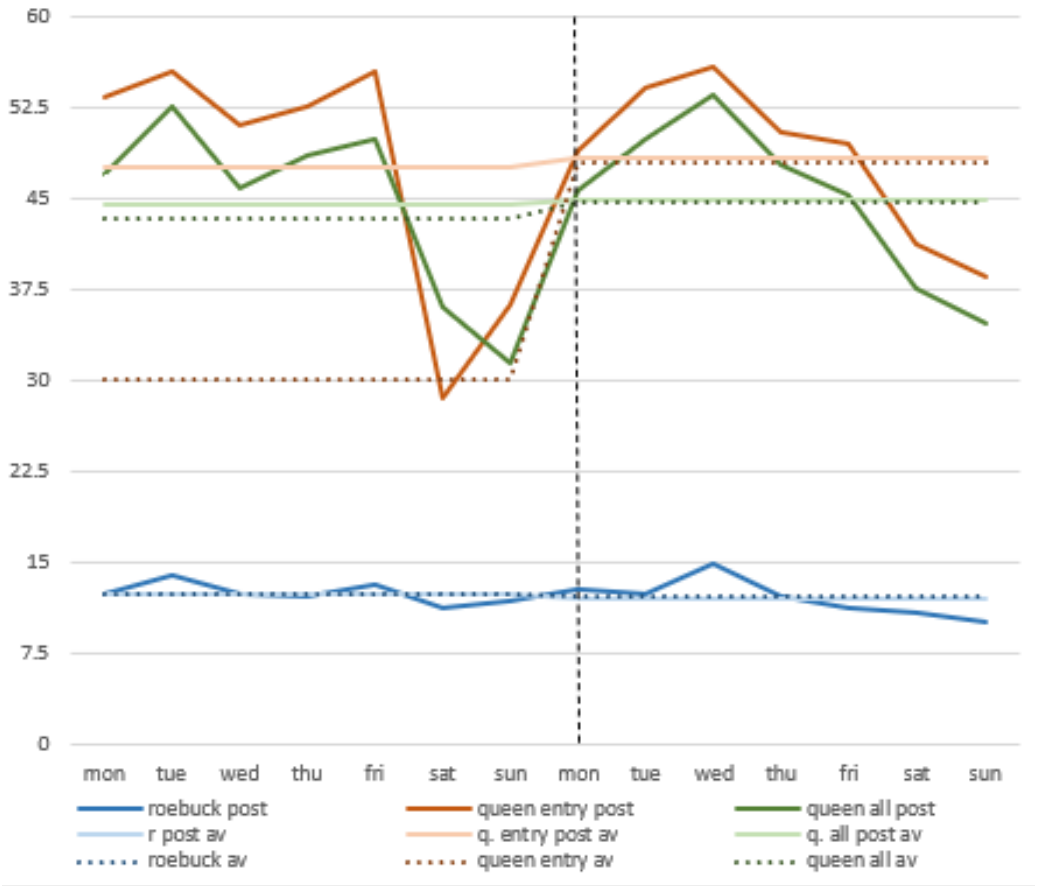

80
71.875
63.75
55.625
47.5
39.375
31.25
23.125
15
1 - MC&PC
2 - PC&LCV
3 - PC&LCV
4 - BUS&MCV
5 - BUS&HCV1
6 - HCV1
7 - HCV1
8 - HCV2
9 - HCV2
10 - HCV2
11 - HCV2
12 - HCV2
13 - HCV2
14 - ???
1 - MC&PC
2 - PC&LCV
3 - PC&LCV
4 - BUS&MCV
5 - BUS&HCV1
6 - HCV1
7 - HCV1
8 - HCV2
9 - HCV2
10 - HCV2
11 - HCV2
12 - HCV2
13 - HCV2
14 - ???
q. all pre av
q. all post av
queen all av

Average pre-signage and post-signage hourly volume of traffic in the three Westport area sites during the data collection periods.





Average pre-signage and post-signage daily volume of traffic in the three Westport area sites during the data collection periods.



NOTES FROM SUMMARY

Surprisingly in the pre audit data the Queen St Entry site recorded higher in all bar 1 day compared to the exit for the same timeframes. Possibly shows influence of the Fox Distributors site or other activity.

Extra project works can definitely have an isolated impact with recent trucking for KiwiRail receiving several complaints.

Milk tankers at reduced scale in pretesting due to closing stages of dairy season whereas the post round will be increasing frequency of pickups.

Class 4 in the table does not relate to driver's license class and is reflective of the table below.

Class	1 – MC& PC	2 – PC&LCV	3 - - PC&LCV	4 – BUS& MCV	5 – BUS& HCV1	6 – HCV1	7 – HCV1	8 – HCV2	9 – HCV2	10 – HCV2	11 – HCV2	12 – HCV2	13 – HCV2

CONCLUSIONS FROM SUMMARY

The total traffic over the three sites has been relatively consistent with less than 2.5% variation between pre and post installations. Over the time between the two monitoring periods the signs were installed early September 2022 giving roughly 4-5 weeks to observe if any behaviour changes by heavy unit operators. Roebuck St site observed a 2.8% decrease in the volume of heavy vehicles while the other sites on Queen St showed increases of 1.75% and 7.6%. The signs have had a positive impact and expect with more time and follow up to specific operators that this number will reduce further. The most recent general testing was completed in the Inangahua ward with 14 sites. In this example 68% of the sites or within 1 standard deviation of the average (7.2%) would allow for a range from 4.51% through to 9.89%. Roebuck St results are within the standard deviations of this sample lot prior to the signs being installed and now below the average at 6.9%. With the results shown I do not recommend any physical works to limit entry of heavy trucks to the Roebuck Street section. Agree for the continued encouragement of the common operators in the region to be sent annual letter.

Road and traffic guidelines

RTS 16

Guide to heavy vehicle management

ISSN 1170–5337

June 2006

Land Transport New Zealand

P O Box 2840

Wellington

This publication is copyright © Land Transport New Zealand. Material in it may be reproduced for personal or in-house use without formal permission or charge, provided suitable acknowledgement is made to this publication and Land Transport New Zealand as the source. Requests and enquiries about the reproduction of material in this publication for any other purpose should be made to the Manager, Information, Land Transport New Zealand, P O Box 2840, Wellington.

The permission to reproduce material in this publication does not extend to any material for which the copyright is identified as being held by a third party. Authorisation to reproduce material belonging to a third party must be obtained from the copyright holder(s) concerned.

Disclaimer: Land Transport NZ has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. Land Transport NZ does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact Land Transport NZ.

Contents

1 Introduction

Land Transport New Zealand (Land Transport NZ) has received requests from road and traffic engineers and planners employed in both local government and independent consultancies for information relating to the design and management of roads and off-road facilities to safely cater for heavy vehicles.

This document has been produced as a reference guide for those seeking further details about particular heavy vehicle issues. It also provides an introduction to how heavy vehicles perform on New Zealand roads and how roads can be designed to carry heavy vehicles safely.

There are many aspects of heavy vehicles that road and traffic engineers and planners need to be aware of in order to design facilities to accommodate these vehicles or manage them on their roading network.

This document is the latest in a series of Road and Traffic guidelines which are set out on page 53.

2 Size and weight limits

Most vehicles used on public roads are required to fit within the maximum size (dimension) and weight (mass) limits which are specified in the *Land Transport Rule: Vehicle Dimensions and Mass 2002* (VDM Rule).

2.1 National limits

The dimension limits are set out in Table 4.1 and the mass limits in schedule 2 of the VDM Rule.

The basic maximum dimension limits for standard vehicles are as follows:

Height	(all vehicles)	4.25 m (excluding ropes, chains and straps) or 4.275 m (including ropes, chains and straps).
Width	(all vehicles)	2.5 m (excluding mirrors etc) or 2.98 m (including side mirrors and other allowable projecting devices).
Length	Motor vehicle only	12.6 m (excluding mirrors).
Length	Motor vehicle towing one or two trailers	20 m (excluding mirrors).

Note: Articulated buses and motor vehicles towing only one semi-trailer are limited to an overall length of 18 m.

These are the standard maximum size limits that vehicles carrying passengers or goods must fit within. Vehicles transporting large indivisible loads and vehicles incorporating specialist machinery (such as mobile cranes) may operate on roads with dimensions greater than those shown above under special conditions as *overdimension* vehicles (see *section 8 Overdimension vehicles* below).

In New Zealand all public roads are deemed to be class 1 and able to carry vehicles of standard maximum mass (weight) unless a special restriction or weight limit applies to those roads. This is set out in *regulation 3 Classification of roads* of the *Heavy Motor Vehicle Regulations 1974*. For class 1 roads, the maximum allowable mass limit for each vehicle depends on the width of the tyres and the number of tyres on each axle, the number of axles in each axle set and the spacing of axle sets along the vehicle.

Note: An axle set consists of one, two, three or four axles in a group.

These limits are set out in *Schedule 2* of the VDM Rule.

Maximum mass limits applying to heavy vehicles:

Single axle set with single standard width tyres	6,000 kg
Single axle set with single large (wide) tyres	7,200 kg
Single axle set with dual standard width tyres	8,200 kg
Tandem axle set with dual standard width tyres*	15,000 kg
Tri axle set with dual standard width tyres	18,000 kg
Quad axle set with dual standard width tyres	20,000 kg

*with axles spaced from 1.3 m to less than 1.8m apart (for full details see VDM Rule).

2.2 Enforcement

The maximum dimension limits for standard vehicles (without a load) are enforced by heavy vehicle inspectors in testing stations when heavy vehicles are checked for a first certificate of fitness (or after the vehicle has been modified).

The maximum vehicle dimension and mass limits (on public roads, including any load carried) are enforced by the NZ Police Commercial Vehicle Investigation Unit (CVIU). These specially trained officers undertake driver and vehicle inspections at 8 permanent weigh bridge stations as well as at other suitable areas close to the roadway where they employ mobile weighing equipment. The requirements for these areas are explained in paragraph 5.3(1)(d) below.

For more information see the NZ Police website at:
http://www.police.govt.nz/service/road/cviu.php

2.3 Powers of road controlling authorities to restrict limits

Road controlling authorities (RCAs) have the power to further restrict the size and weight of vehicles which can use particular roads if those roads are unsuitable for vehicles of standard maximum size or standard maximum weight limits.

These powers are described in *section 14 Restrictions on use of roads by heavy motor vehicles* below. Depending on the reason for the restriction, temporary or permanent restrictions can be imposed.

Temporary restrictions can be imposed under the *Heavy Motor Vehicle Regulations 1974*.

Permanent restrictions can be imposed through a bylaw made pursuant to the *Transport Act 1962*.

There are also provisions for RCAs to restrict routes that heavy vehicles can use (in *section 70AA* of the *Transport Act 1962*) and to request that Land Transport NZ classify a road as unsuitable for heavy vehicles except for access purposes – that is Class C (in *regulation 3* of the *Heavy Motor Vehicle Regulations 1974*).

3 Vehicle types

Two basic types of heavy vehicle are permitted to operate on New Zealand roads – *rigid vehicles* and *trailers*.

Vehicles with a driver's position and their own motive power are called rigid vehicles (except for articulated buses which are a separate type). Many rigid vehicles are fitted with couplings to tow trailers.

There are four types of trailer:
Simple trailer – with one axle set usually located near the centre of the trailer and most of the weight of the trailer supported by that axle set.

Semi-trailer – with one axle set located towards the rear of the trailer and usually connected to the towing vehicle by an articulated coupling located above the rear axle set of the towing vehicle.

Full trailer – with two axle sets and a drawbar attached to first axle set.

Pole trailer – with one or two axle sets and a telescoping drawbar to steer the trailer. They support part of a long load which is also partly supported by the truck that tows the trailer through the load.

Some heavy rigid vehicles are permitted to tow two trailers:

- *A-trains* – where a heavy rigid vehicle tows a semi-trailer which tows a full trailer.
- *B-trains* – where a heavy rigid vehicle tows a semi-trailer which tows a second semi-trailer.
- A combination of vehicles where the second trailer is a light trailer and the gross weight of the combination is less than 20 tonnes.

For more details about vehicle dimension and mass requirements see Land Transport NZ Factsheets (available at www.landtransport.govt.nz):

- No. 13 *Vehicle dimensions and mass*
- No. 13a *Heavy rigid vehicles*
- No. 13c *Towing and trailers (full, semi, simple, pole, A- and B-train)*

or *section 4* of the VDM Rule.

4 Tracking curves

Large vehicles need more space to turn than smaller vehicles – at intersections, bus stops, driveways, parking areas, loading docks and maintenance garages. Land Transport NZ has published a set of tracking curves setting out the amount of road space that vehicles in New Zealand will need to turn.

New Zealand on-road tracking curves sets out 27 curves showing the swept path for six types of vehicle turning on at least four different radii.

These tracking curves are available from the Programmes section in Land Transport NZ regional offices.

Note:
1. Rigid trucks and buses can now have a length of 12.6 m (the same as a tour coach) so the tour coach tracking curves should be used when designing facilities for large rigid vehicles.
2. The maximum length for a rigid vehicle towing one semi-trailer or for an articulated bus is now 18 m.

Land Transport NZ is in the process of updating these tracking curves. A revised set of curves is expected to be available on the Land Transport NZ website later in 2006.

The detailed design of off-road parking facilities is explained in *AS2890.2–2002 Parking facilities part 2: Off-street commercial vehicle facilities.* This document provides detailed advice on the dimensions required for the manoeuvring of some types of heavy vehicles.

Note: New Zealand maximum dimension limits are different in some details to those used in this Australian Standard. New Zealand also allows A-trains, B-trains and truck and full trailer combinations which are not included in this standard. The NZ tracking curves should be referred to in these cases.

5 Heavy vehicle safety

Heavy vehicles are likely to operate with a greater degree of safety if the roads and facilities they run on have been designed to take account of their particular operating characteristics.

Many heavy vehicles have lower performance capability than cars in braking, acceleration, stability, dynamic handling and manoeuvrability.

Heavy vehicles need additional road space to fit safely on a road, particularly to negotiate curves. They are also more sensitive to road design features such as road curvature, camber and crossfall due to the high centre of gravity of the loads they often carry.

Many heavy vehicles have lower speed capabilities than cars and cannot maintain speeds up to the posted speed limit on steep grades.

Compared to light vehicles, most trucks have a big weight difference between being fully loaded and carrying no load. Their suspension systems must not only handle greater loadings, but also a greater range of loadings. The speed, acceleration, braking capacity and lateral stability of a truck (or trailer) can differ markedly between being fully loaded and carrying no load.

Drivers of light vehicles should refer to Factsheet 34 *Sharing the road safely with trucks* for basic safety information about heavy vehicles on the road.

5.1 Braking distance

Trucks typically need considerably more distance to stop than cars:

- There is *less friction (grip)* between truck tyres and the road than for car tyres.
  - Heavy vehicle tyres use different compounds (for carrying heavy weights and for high mileage use) from those used in car tyres.
  - Pavement surfaces with low friction (or skid resistance) or high roughness (as measured by a roughness measuring machine) are a particular problem for trucks, especially in wet conditions or if they are carrying no load or only a light load.
- Trucks may have *lower braking efficiency* due to their higher weight when fully loaded.
- Truck brakes may require a *greater activation time* for braking to commence on all axles (particularly trailer axles).

For more details refer to minimum stopping sight distance tables in the Austroads road design guides:

- *Rural road design – A guide to the geometric design of rural roads.*
- *Urban road design – Guide to the geometric design of major urban roads.*

An increased braking distance will be needed on a downward sloping road.

Truck drivers need sufficient warning that they may need to slow considerably or stop. Truck braking distance is particularly important in the placement of warning signs in higher speed limit areas in advance of:

- intersections where drivers may need to give way to other traffic
- railway level crossings
- curves with low advisory speeds
- one lane bridges or places with restricted size limits
- traffic signals.

The design, phasing and visibility of traffic signals should accommodate the braking and acceleration capabilities of heavy combination vehicles.

5.2 What heavy vehicle drivers cannot see

Most heavy vehicle drivers have a better view of the road ahead than car drivers do due to their higher seating position. However, they often have significant blind spots due to parts of their vehicle or its load blocking their view, as follows:

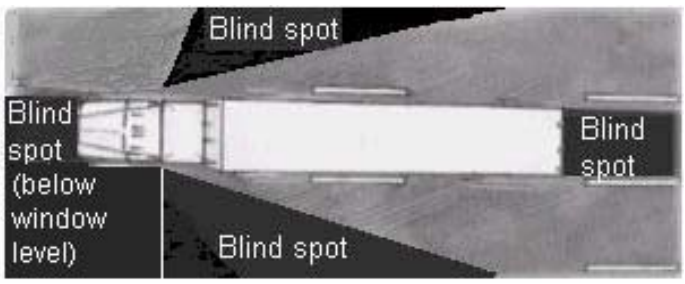


Figure 1. Heavy vehicle driver's blind spots

In front: Drivers cannot see immediately in front of the vehicle below window level – particularly if the driver's seat is set back from the front of the vehicle (as in bonneted-engine trucks and agricultural tractors).

Behind: There is a blind spot directly behind the vehicle – particularly in the case of loaded trucks and buses (unless they have special mirrors or an on-board video system which allows the driver to see behind the vehicle).

Heavy vehicle drivers should, therefore, not be required to reverse their vehicle without assistance in areas to which the general public has access.

Truck stops, commercial premises and bus stations should be designed so that vehicles can enter and leave without having to reverse on the roadway.

Similarly, bus turnaround areas should be designed so that the bus can turn without needing to reverse.

Front left side: Drivers cannot see to the left of the vehicle below the front side window level – particularly on trucks, (the driver is situated on the right-hand side of the cab and cannot see what is happening near road level on the left-hand side of the vehicle).

This area is particularly dangerous for pedestrians and cyclists who may be situated beside the heavy vehicle when the driver wishes to turn left or change lanes to his or her left.

Through left side window: Visibility is restricted to the left of the vehicle behind the cab window.

The driver is situated on the right-hand side of the cab and cannot see what is happening on the left-hand side of the vehicle to the rear of the cab window.

At intersections and railway level crossings, truck drivers cannot see approaching traffic or trains which are behind their field of view through the left side window.

At many intersections and at rail level crossings the truck driver has to give way to road traffic or trains approaching from his or her left.

To allow for adequate driver visibility, road intersections and level crossings should be laid out so that the road approach angle to the main road or railway line is as close as possible to a right angle.

See section 5.3(4) Intersection design, paragraph (b) on page 15.

Rear side views: On both sides of vehicle to the rear of the cab the driver's view may be limited.

The rear vision mirrors may only show the area immediately along the side of the vehicle, meaning that drivers may not see vehicles behind the cab in adjacent lanes.

Mirrors: Land Transport NZ recommends that, whenever it is reasonably possible, motor vehicles be fitted with mirror systems that reduce their driver's blind spots to the minimum. This is particularly important if :

- the driver's view of the road behind the vehicle is obstructed by a load-carrying body or other equipment or a load placed behind the cab or;
- the motor vehicle is towing a trailer or trailers or other unpowered motor vehicle.

If the load-carrying body, equipment, load or attached trailer or other motor vehicle is wider than the driver's cab, then additional rear vision mirrors should be fitted in positions which enable the driver to see to the rear past his or her vehicle (and any attached trailer or other vehicle).

The requirements for mirrors on vehicles are set out in *Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999*. *Clause 5.5* of this Rule allows for the fitting of additional rear view mirrors.

Retro-reflective delineators: These devices mark centrelines and edgelines and tend to be designed to suit the car headlight height and the eye height of car drivers. Heavy vehicle drivers may not be as well catered for with these delineators due to their higher headlight and eye heights. These factors should be considered when choosing appropriate reflectors.

5.3 Recommended safety features of roads and facilities

Crashes involving heavy vehicles are likely to be fewer if the following features are included in the design and planning of roads and facilities which will be used by heavy vehicles.

5.3(1) Heavy vehicle stops

a. *Heavy vehicle rest stops and parking areas*. It is important that adequate off-road parking facilities are provided adjacent to routes used by long haul drivers so they can stop their vehicles to take a break from driving and also to check the vehicle for possible mechanical problems and its load for possible movement or loose chains, ropes or straps. Refreshment, refuelling and toilet facilities could also be desirable at these stopping places. The presence of these areas should be indicated with advisory signs displaying the motorist service symbols S16 'Parking for heavy motor vehicles' or S17 'Parking for heavy trailers' as specified in the *Manual of traffic signs and markings* (MOTSAM).

b. *Bus stops* These should be designed to allow the buses to stop clear of the traffic lane on main roads with a paved or all-weather waiting area for passengers. A safe pedestrian route should be provided to the bus stop if it is not adjacent to an existing footpath. School bus stops should be designed according to the guidelines set out on this webpage: http://www.landtransport.govt.nz/road-user-safety/school-buses/bus-stops.html
Bus stops should be signed with the RP 5 'Bus stop' or RP 5.1 'Bus stop – with arrow' signs.

c. *Effluent dump sites* These should be provided for vehicles carrying livestock and for mobile homes/caravans/campervans at convenient locations such as near ports, meat processing plants, camping grounds and tourist accommodation. These should be indicated with MOTSAM signs IG–18 and IG–19 and/or a motorists' service sign displaying the S14 'Waste disposal point' symbol.

d. *Heavy vehicle inspection areas* These areas are needed for the weighing and inspection of heavy vehicles by Police CVIU. Such areas need to be large enough to get a heavy vehicle combination off the main road safely, flat enough to allow for weighing or brake testing, with good visibility for the vehicle entering and leaving the stop area. CVIU do not need to have weigh pit facilities at all sites. If a road is being realigned, then the old bypassed roadway may provide a good facility for this activity. Transit NZ has a policy providing for the installation and maintenance of these facilities alongside state highways. This is set out in *section 4.11 Weight enforcement facilities* of the *State highway control manual.* Land Transport NZ will consider providing funds for such facilities as set out in *section 7.4.31 Weighing facilities* of the *Programme and funding manual*.

5.3(2) Pedestrian and cycle facilities

a. *Footpaths* These should be provided so pedestrians can walk or run clear of heavy vehicle movement.

b. *Pedestrian crossing facilities* These should be provided for pedestrians where pedestrian and vehicle traffic flows warrant.

c. *Cycle lanes or shoulders* On main heavy vehicle routes (including bridges), cycle lanes or shoulders of sufficient width for cyclists should be provided. Another option is wide, shared lanes for heavy vehicles and cyclists (at least 4.5 m wide).

d. *Cycle tracks* Separate cycle tracks or alternative routes (including crossing facilities at main roads) should be provided if there is insufficient width on main routes for both heavy vehicles and cyclists to share the road safely.

5.3(3) Road width and alignment

a. *Lane width* Sufficient lane width is needed for heavy vehicles, so that they are separated from opposing traffic on two-lane roads. The total heavy vehicle width including mirrors is nearly 3.0 metres. After allowing for the effects of pavement crossfall, leaning or swaying of the truck body and potentially untrue tracking of trailer trains – a design envelope of up to 3.5 metres wide should be adopted. 3.5 m should be the minimum lane width on two-lane, two-way roads. Where there are two lanes in the same direction and heavy vehicle traffic flows are low, some reduction in lane width is acceptable as drivers are able to avoid having trucks in adjacent lanes at the same time.

b. *Curves* The lane or seal width on curves should be wider to allow the extra road space needed by heavy vehicles when traversing the curve (particularly truck and trailer combinations). Suitable superelevation should be provided on curves to maintain vehicle stability for the appropriate road design speed. Advisory speed signs and/or chevron curve indicators or chevron boards should be provided at curves where the safe speed for the curve is significantly lower than the operating speed of the road. This is particularly important for trucks towing heavy trailers because laden trailers are often less stable than other motor vehicles. Drivers towing laden heavy trailers are advised to reduce their speed to 10 km/h below the speed shown on the advisory speed sign. See *Traffic note 20*: *Truck crashes and advisory speeds*.

c. *Shoulders* Sufficient shoulder width is needed to provide a safe clearance to roadside objects and provide a recovery area for driver steering errors, particularly on curves. Sufficient strength should be provided in the shoulder pavement (and road edge) so it can support heavy vehicle axle weights. Shoulder crossfall to be similar to that for the traffic lanes so that a driver can easily return to the traffic lanes if the vehicle runs onto the shoulder either inadvertently or as a result of a defensive driving manoeuvre.

d. *Bridges and tunnels* Clear marking of the ends of narrow bridge handrails or tunnels is needed so heavy vehicle drivers are aware of limited clearances. Clear signage should be provided showing restricted height clearances. Sufficient clearance should be provided to bridge rails and tunnel walls. See Transit New Zealand *Bridge manual, Appendix A, Table A4*, which recommends clearances to guard rails and side walls of up to 1.2 metres in addition to normal lane widths, depending on traffic volumes. Also see *section 5.7 Lateral clearances* .

5.3(4) Intersection design

a. *Visibility* At uncontrolled junctions and those with a Give way or Stop control, adequate sight distances should be maintained to allow heavy vehicle drivers to choose suitable gaps in the main road traffic so they can cross or turn their vehicle safely.

b. *Layout* At uncontrolled junctions and those with Give way or Stop control, the side road approach to a main road should be designed so that a vehicle waiting at the limit line to turn right or proceed straight ahead is at right angles to the main road. This is so approaching traffic can be seen by the heavy vehicle driver and is not in his or her blind spot (particularly to his or her left behind the left cab window). The distance which a driver at a side road needs to see approaching traffic depends on the speed of that traffic. The greater the main road traffic speed, the greater the visibility required by a driver at a side road junction. An intersection angle that varies from 90 degrees should only be installed if it can be shown that sufficient visibility of conflicting main road traffic is still provided for truck drivers at the side road approach. Generally intersection angles should not be outside the 70 to 110 degree range (as recommended for railway level crossings) unless a roundabout or traffic signal control is used at the junction.

c. *Main roads* Sufficient turning area should be provided at intersections of main roads so heavy vehicle combinations can turn without hitting traffic islands, signs or signals and do not have to cross into opposing lanes to complete their manoeuvre.

d. *Minor roads* At minor road junctions in urban areas with a low volume of heavy traffic use, the safety of pedestrians is enhanced if kerb radii are kept small (as recommended in RTS 14), even if heavy vehicles do need to encroach over the centreline. However, care must be taken to ensure that heavy vehicles are able to turn without riding over the kerb and thereby endangering pedestrians. The risk for cyclists can also be increased, particularly from trucks turning left. Damage can also be caused to vehicles if they need to ride across kerbs. Those designing kerb changes must consider the needs of all road users including cyclists and heavy vehicle movements so a balance of these needs is provided for in the kerb layout.

e. *Left turn lanes* Separate left turn lanes should be installed where there is high heavy vehicle left-turn traffic. A straight-through cycle lane may need to be provided to the right of the left-turn lane. A pedestrian refuge triangular island may improve safety.

f. *Stacking length* Sufficient stacking length should be provided in turning lanes at intersections where heavy vehicle combinations are likely to make such a turn.

g. *Roundabouts* Sufficient space should be provided on the roadway for heavy vehicle combinations to manoeuvre through a roundabout without colliding with or riding over raised traffic islands. Heavy vehicles may need to run over the edgelines, lane lines and hatched areas which are marked to guide the movements of smaller vehicles. Laden heavy trucks can roll over if forced to manoeuvre across raised traffic islands.

h. *Traffic signals*

- Conflicts between trucks and cyclists at traffic signals can be reduced by

use of advanced cycle boxes which allow the cyclist to wait in front of the trucks where they are visible.

- Conflicts between left turning trucks and pedestrians at traffic signals can be reduced by giving the pedestrian phase an early start, thereby moving the pedestrians into view before the truck is permitted to turn.
- Where heavy combination vehicles make turning movements at traffic signals, the phases directing these movements should be set to allow sufficient time for the movement to be completed before the next phase is called.

i. *Level crossings* Sufficient separation of intersections from railway level crossings is needed so that heavy vehicle combinations can wait between the intersection and the level crossing without blocking either the intersection or the level crossing.

5.3(5) Driveways and off-road facilities

a. *Loading facilities* Appropriately sized off-road facilities should be provided for loading and unloading heavy vehicles, particularly large trucks (and trailers). Adequate loading/unloading docks or space for forklifts or cranes to operate should be installed clear of general highway or road traffic (including cyclists and pedestrians). This is particularly important if the site is a generator of light vehicle, cyclist or pedestrian traffic (such as an educational facility, supermarket, shopping mall or entertainment centre) or is situated close to such a facility or area. Generally the layout of such facilities should be arranged so that the reversing of heavy vehicles onto or off the roadway can be avoided. Reference can be made to *AS 2890.2–2002 Parking facilities part 2: Off-street commercial vehicle facilities.* This document provides much detailed advice on the dimensions required for the manoeuvring of some types of heavy vehicles.

Note: Some New Zealand maximum vehicle dimensions differ from those used in *AS 2890.2–2002*.

b. *Visibility* Adequate sight distances are needed to allow heavy vehicle drivers to choose suitable gaps in the main road traffic to turn into or out of driveways as set out in *RTS 6 – Guidelines for visibility at driveways (1993)*.

c. *Width* Sufficient width should be provided in driveway entrances to allow large vehicles to turn into or out of driveways. Refer to *RTS 6 Guidelines for visibility at driveways,* Figures 3 and 4, for design details of road widening at driveway entrances used by heavy vehicles. In low speed environments (less than 10 km/h), *AS 2890.2* recommends a minimum width of 6.5 metres kerb to kerb or 7.1 metres wall-to-wall if two trucks are to pass each other. At higher speeds, greater clearances are advised.

d. *Flush medians* On busy main roads, flush medians of sufficient width and length should be installed to allow right-turning heavy traffic to wait for gaps in the main road traffic.

e. *Turning space* If there is only one driveway servicing a site, provision of adequate off-road manoeuvring space to enable large vehicles to be turned around so they do not have to back onto the roadway.

f. *Height clearance* Sufficient height clearance is needed so large vehicles do not collide with overhead obstructions.

5.3(6) Railway level crossings

a. *Visibility* Adequate sight distances should be provided to allow heavy road vehicle drivers to see a sufficient distance along the railway track (in both directions) so they can ensure their vehicle (including trailers) will be able to completely pass over the crossing before any train reaches that crossing. If such visibility is not available then half-arm barriers should be installed.
Note: The required minimum sight distances are set out in the *Manual of traffic signs and markings, Part 1 Traffic signs, Appendix A4, Table A3 'Typical minimum stop line distances'*

b. *Controlling devices* Appropriate controlling devices and markings should be installed at level crossing according to *RTS 10 – Road signs and markings for railway level crossings*.

c. *Layout* The angle between the road and the railway track should be as close to a right angle (90 degrees) as possible and should not be outside the 70 to 110 degree range so that heavy vehicle driver visibility along the railway track is provided for.

d. *EXEMPT signs* Buses and vehicles carrying some types of dangerous goods are required to stop at most level crossings (except those fitted with half arm barriers). Where such crossings are only used by trains moving at slow speed (less than 15 km/h), RCAs may (subject to *clause 9.5 of the Land Transport Rule: Traffic control devices 2004*) install a supplementary EXEMPT sign, which allows these road vehicles to move over the crossing without stopping. See *Traffic note 31 'Exceptions to requirement for passenger service and dangerous goods vehicles at rail level crossings – Guidelines'* for details.

5.3(7) Road surface and pavement

a. *Skid resistance* Good skid resistance is needed so that braking and traction are effective particularly on curves.

b. *Strength* Pavements and road base should be of adequate strength and durability for heavy traffic.

c. *Roughness* Low roughness surfaces should be provided so braking performance, tracking and driver comfort can be maintained (and driver fatigue reduced).

d. *Rideability* This is the absence of long wavelength bumps. On some types of road foundation, sustained use of the roadway by heavy vehicles can create long wavelength bumps which can be unsafe and unpleasant for both heavy vehicle and light vehicle users. Drivers and passengers could become stressed, distracted or dizzy if there is a prolonged series of such bumps. These bumps may also cause some types of loads to move about within a vehicle making it less stable. In recent years Transit NZ have had a remedial programme on some state highways to remove this 'wave' effect.

e. *Signs* Clear signage showing weight restrictions on bridges or other restrictions on heavy vehicle movement (see *section 14 Restrictions on use of roads by heavy motor vehicles*).

f. *Effluent dump sites* Provision of facilities should be made for the safe disposal of effluent from livestock carried on heavy vehicles so that it does not spill on to the roadway (see 5.3(1) (c) above).

5.3(8) On rural roads, motorways and expressways (speed limit greater than 70 km/h)

The following features should be considered depending on the traffic flows, traffic mix, crash record, cost, feasibility and likely benefits:

a. A divided carriageway with a road safety barrier in the median strip.

b. A road safety barrier along the centre line on 2 lane roads with high traffic flows.

c. A wire rope barrier on a three-lane highway (forming a '2+1' type of road with alternate passing lanes).

d. Moderate gradients (if a steep grade is necessary then a passing lane or slow vehicle bay should be provided on two-lane highways).

e. Provision of escape ramps for heavy vehicles at the bottom of long steep gradients.

f. Rumble strips at edgelines and centre lines to alert drivers if they stray off their correct path.

g. Provision of passing lanes on two-lane highways and other major roads so light vehicles can pass slower heavy vehicles safely.

   Transit NZ has developed a strategy for doing this on State Highways as follows:
   'The current policy on passing opportunities described under the Efficiency and safety improvements *section (4.2)* of the *National State Highway Strategy*, sets out the objectives as follows:

   i. To maximise passing opportunities by trimming back vegetation, embankments and crests that restrict sight distances.

   ii. To provide passing lanes of an appropriate length to enable passing manoeuvres to be safely undertaken at nominal spacing of 5 km on routes with traffic volumes in excess of 4000 vehicles per day, and otherwise where necessary to provide regular passing opportunities – particularly in rolling and mountainous terrain where such opportunities may be limited.

   iii. To provide slow vehicle bays on steep grades and where appropriate on lower volume heavy vehicle and tourist routes.'

   Land Transport NZ recommends that other RCAs use the same criteria in deciding whether to install passing lanes on their rural roads.

   The economic criteria and methods for analysing passing lane proposals are set out in the Land Transport NZ *Project evaluation manual, Appendix A10 Passing Lanes*.

   The recommended markings and signage at passing lanes (including design reference documents) are set out in *MOTSAM part 2 Markings* pages 2–18, updated July 2004.

h. Removal of roadside hazards.

5.3(9) On urban roads (up to 70 km/h speed limit)

The following features should be considered depending on the traffic flows, traffic mix, crash record, cost, feasibility and likely benefits:

a. Control of parking in urban areas so that traffic lanes are available for heavy vehicle movement.

b. Provision of loading zones (as set out *sections 12.4(2)* to *12.4(4)* of the *Land Transport Rule: Traffic Control Devices 2004*) in old established commercial areas where there are no service lanes or off-road areas for unloading goods vehicles. Planning schemes should encourage the development of off-road unloading areas adjacent to or as part of these sites so the loading zones on the roadway can be removed.

c. Sufficient clearance to roadside furniture (signs, poles, verandas, traffic signals, signal control boxes, litter bins, trees, shrubs, planter boxes, monuments, telephone kiosks, seats etc.) particularly at bus stops and loading zones. Allowance should also be made for the usual camber of a road towards the kerb as this is likely to cause a large vehicle which is parked alongside a kerb to overhang that kerb.

5.4 Heavy vehicle speed limit

The maximum speed limit for heavy vehicles on New Zealand roads is 90 km/h (as set out in *clause 5.5(1)* of the *Land Transport (Road User) Rule 2004* (RU Rule)) unless the RCA has imposed a speed restriction for a particular road which is less than that imposed by this Rule – in which case the lower speed limit for the road takes precedence.

School buses are limited to a maximum of 80 km/h (*clause 5.6(2)* of RU Rule).

Heavy vehicles without adequate suspension systems must comply with a maximum speed limit of 45 km/h (see RU Rule *clause 5.5(2)*), unless a lower speed limit applies.

Vehicles without pneumatic rubber tyres must comply with the conditions imposed by the RCA (which could include a specific speed limit).

Some bridges with limited structural strength have lower heavy vehicle speed limits to protect the structural safety of the bridge. See *section 14.1* below.

5.5 Vehicle and load safety

5.5(1) General

Heavy vehicles are usually a place of work and, if so, they are now subject to the requirements of the *Health And Safety In Employment Act 1992* as amended in 2004 (HSE Act). Drivers need to be trained in the safety procedures appropriate to that type of vehicle and any load it carries.

Most heavy vehicles are designed to carry goods, animals or people. The *Land Transport Act 1998 (section 9*) requires that any load carried by a vehicle be safely secured to that vehicle so it cannot fall or escape from the vehicle. The *Land Transport (Road User) Rule 2004* specifically requires that a vehicle be loaded in such a way that the vehicle or its load is not likely to:

- cause injury to any person or animal
- cause annoyance to any person
- cause damage to any property
- cause distraction to the driver
- drag on the roadway.

The recommended methods and principles of securing goods to heavy trucks are set out in the *Truck Loading Code* (which is available in bookshops).

The loading of buses is required to comply with the Land Transport Rule: Passenger Service Vehicles 1999.

Most heavy vehicles are required to have a Certificate of Loading which lists the maximum weight or passenger limits that the vehicle can safely carry or tow (as set out in *section 8* of the *Vehicle Standards Compliance Rule 2002*).

Most heavy trailers with a maximum laden weight of more than 10 tonnes need to be assessed for their stability (Static Roll Threshold or SRT test) when laden. The safe maximum height and weight limits for loading are printed on their Certificate of Loading. This is explained in *Factsheet 13e Static roll thresholds*.

RCAs are able to indicate recommended routes for vehicles carrying livestock or other specified loads (such as dangerous goods). An information sign in accordance with *Traffic Note 18 Traffic information signs* should be used.

RCAs can also prohibit the use of some roads by vehicles carrying livestock or other specified loads (such as dangerous goods) by passing a bylaw in accordance with the *Transport Act 1962*. See *section 14.6 Bylaws,* below.

5.5(2) Loading of vehicles

Vehicles should be loaded or unloaded clear of the traffic lanes and preferably in an off-road area. If a vehicle is to be loaded or unloaded on a roadway or in an area open to the public, the driver and the person undertaking this work should ensure that other road users are not endangered or unduly delayed by this activity. The loading and unloading of vehicles should be undertaken in accordance with the HSE Act. Loading equipment which is carried on or fitted to a vehicle should only be operated by people who have been trained in the safe use of that equipment.

Loaders who need to work on a roadway should wear high visibility clothing and receive appropriate training in safety procedures. Where goods are being directly

loaded from, or unloaded onto, a roadway, the vehicle should display a hazard warning (either simultaneously flashing direction indicator lights or a flashing amber beacon). Generally goods vehicles should not be loaded or unloaded on roadways with high traffic flows or with speed limits greater than 50 km/h. Vehicle operators and loaders should consult the road controlling authority for its recommendations regarding the safety and timing of such work if they wish to load or unload vehicles directly to or from the roadway. On main traffic routes, RCAs should limit the loading or unloading of heavy vehicles (including the collection of domestic rubbish and similar materials) to off-peak hours when traffic flows are lower so that this work can be carried out more safely and with less inconvenience to other road users.

Note: The law regarding the standing or parking of vehicles on a roadway is set out in part 6 of the *Land Transport (Road User) Rule 2004.* Parking on flush medians is prohibited by *clause 6.7* of this Rule.

5.5(3) Dangerous goods

Dangerous goods include substances that have explosive, flammable, toxic, oxidising, infectious, radioactive or corrosive properties; and containers that have held dangerous goods.

The general requirements for safely transporting dangerous goods are set out in *Land Transport Rule: Dangerous Goods 2005* (DG Rule).

For an introduction to these requirements see Factsheet 64 – *Transporting dangerous goods*.

Persons wishing to transport some types of dangerous goods (particularly explosives and radioactive substances) or dangerous goods in bulk may need to meet additional requirements set out in the *Hazardous Substances and New Organisms Act 1996* or the *Radiation Protection Act 1965,* or in regulations made in accordance with these Acts.

Tankers and containers for the bulk transport of dangerous goods need to meet the requirements of the *Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004* (as amended in 2004).

Drivers of vehicles carrying particular types of dangerous goods (explosives, flammable gases and flammable liquids as specified in *section 8.4* of the DG Rule) must stop at rail level crossings unless the crossing is protected by half arm barriers or has an EXEMPT sign. See *paragraph 5.3(6)d* above.

A good general reference document covering the movement of dangerous goods by land, sea and air transport is published by the Ministry of Transport, entitled *Multimodal Transport of Dangerous Goods.*

5.5(4) Waste discharged by animals

An issue which can affect motorists, motorcyclists, cyclists and pedestrians is the discharge of animal waste by trucks or trailers carrying livestock (particularly cattle, sheep etc). In the *Land Transport Act 1998*, waste which is discharged by animals being carried on a vehicle is excluded from the definition of 'load'. This definition of load also applies to most other Land Transport legislation. So it is difficult for the NZ Police to bring a prosecution against a driver whose vehicle discharges animal waste.

The livestock transport industry has been fitting holding tanks for stock effluent to its vehicles.

A national stock effluent working group (consisting of road controlling authorities, government agencies, transport, farming and meat industry representatives) has produced a code of practice for minimising stock effluent spillage from trucks and guidelines for installing disposal sites. The group is promoting the installation of disposal sites through regional and local planning processes. Several sites have already been installed as part of a coordinated national network. The installation of such sites has several benefits:

Significantly reducing the spillage of slippery, smelly animal waste onto roadways – making them safer and more attractive (particularly to motorists, motorcyclists and cyclists) – thus improving the image of the area and increasing its tourism potential.

Reducing the likelihood of run-off from roads and the dumping of animal waste into streams and watercourses, thus improving the quality of water in these natural waterways.

RCAs should ensure that sufficient stock effluent dump sites are provided in their area at convenient locations. The entry point to such dump sites should be indicated with the IG – 19 'Stock Effluent Disposal – Direction' sign. This sign should be preceded by an IG – 18 'Stock Effluent Disposal – Advisory' sign.

RCAs should also ensure that sufficient campervan dump sites are provided. These need to be separate from stock effluent dump sites as human wastes are disposed of differently to animal wastes. Such sites should be indicated with a motorist' service sign displaying the S14 'Waste disposal point' symbol.

Other legislation controls the spillage of dangerous material on a roadway:

a. The *Land Transport (Road User) Rule 2004*, (in *clause 7.16 Dangerous substances on roads*) requires the driver of a vehicle to remove from the road any dangerous substance or glass from the road if it falls or escapes from his or her vehicle. Dangerous substances include those that are slippery, piercing or of a size and nature that could constitute a danger to road users. If the substance cannot be quickly and safely removed, the driver must warn the public or report what has happened to the police.
b. The *Transit New Zealand Act 1989*, (in *section 51(2)(f)*) prohibits any person from allowing any material to fall on a State Highway from any vehicle to the danger of lawful road users.
c. The *Local Government Act 1974*, (in *section 357(1)(f)*) prohibits any person from allowing oil or any liquid likely to cause a danger to vehicles on sealed or paved roads to escape onto any sealed or paved (local authority) road.

5.6 Wind effect of heavy vehicles on other road users

There are two effects which should be considered when designing roads for heavy vehicles and two-wheeled vehicles and/or pedestrians.

Large vehicles tend to have an effect on the air surrounding them as they move through it. This effect is greater than for smaller vehicles because a high vehicle needs to push its way through more air than a low vehicle does. At higher vehicle speeds, a *suction* effect can develop along the sides of a large vehicle as the air close to the vehicle tends to move forward with the vehicle. This effect can be dangerous for motorcyclists, moped riders, cyclists and pedestrians who are passed closely by a heavy vehicle moving at high speed as the moving air may cause them to lose balance and be sucked towards the vehicle.

When a strong wind is blowing, motorists, motorcyclists, moped riders and cyclists may need to adjust their steering and balance. If they are passed by a large vehicle, the wind flow around them can be temporarily disrupted, meaning they may have to adjust their steering and balance both as the large vehicle begins to pass them and also after it has passed by them.

5.7 Lateral clearances

Sufficient lateral clearance should be provided from signs, power and streetlight poles, trees, shrubs, verandas and other structures so that heavy vehicles are not likely to collide with these fixed objects. *MOTSAM*, *part 1, section 1.7.3* sets out recommended clearances for traffic signs. The lateral clearance is measured from the edge of the sign (nearest to the road) to:

- the kerb face
- the outer edge of the road shoulder
- the nearest edge line of the traffic lane
- the face of the guardrail.

Clearance should be as follows:

- in urban areas – kerbed roads (non-mountable kerbs) 300 mm minimum
- in urban areas – kerbed roads (mountable kerbs) 500 mm minimum.

Where these clearances cannot be achieved, the mounting height for signs should be increased to at least 4.6 m. This is the minimum height for a sign located over a road shoulder or parking lane and will ensure adequate clearance to all vehicles that are within standard height limits. The recommended height clearance for signs mounted above traffic lanes is at least 5.3 metres.

- in urban areas – unkerbed roads and expressways – same as for rural roads
- in rural areas – kerbed roads 500 mm minimum.
- in rural areas – unkerbed roads, a minimum of 600 mm from the outer edge of the road shoulder, line of edge marker posts or face of guardrail and a maximum of 5 m from the nearest edgeline of the traffic lane.

5.8 Safety Management Systems

Most road controlling authorities have either developed, or are in the process of developing, a Safety Management System (SMS). An SMS provides a framework where safety risks can be assessed in a consistent, documented way. This Guide document can provide a heavy vehicle safety component to an SMS. Where a feature of a road network has been assessed as needing improvement to safely accommodate both heavy vehicles and other road users, the SMS will provide a method for setting priorities for improvement projects. The timetabling of improvement works depends on the cost of the work and the funding available.

6 Geometric design

The safe design of roads for heavy vehicles will depend on many factors including several that have been introduced above.

Issues that should be considered are:

- likely heavy vehicle traffic flows
- likely traffic flows of light vehicles, cyclists and pedestrians
- likely numbers of heavy trailer combinations
- heavy vehicle performance (speed and stopping ability) on gradients
- heavy vehicle braking capacity
- driver's sight distance.

A document which discusses possible technical approaches to geometric design has recently been published by Austroads (the association of Australian and New Zealand road transport authorities – including Transit NZ). It is entitled *Geometric design for trucks – Where, why and how?* 2002 (AP – R221) and is available for downloading from the website at:
http://203.42.45.20/mall/austroads_v2/pdfs/456_AP-R211-02.pdf

The design of state highways should be done in accordance with the *State highway geometric design manual*, Transit NZ, available at:
http://www.transit.govt.nz/technical_information/index.jsp

7 Bridges, tunnels, level crossings and roads with restricted dimensions

The MOTSAM recommends a range of warning signs for bridges, tunnels, railway level crossings and other structures or roads with limited clearances.

In addition to erecting signs on the immediate approach to, and at the place of, restricted height or width, RCAs should erect information signs (as set out in Traffic Note 18) warning large vehicle drivers of such restrictions before they enter that section of road. These signs should be placed so that drivers can then take an alternative route or safely turn a large combination vehicle around and return back the way he or she has come from and thus avoid taking their vehicle onto the section of road where it will not fit past the restriction. These signs can include one of the symbols in the PW–44 'Narrow Bridge', PW–45 'Low Overhead Clearance – Advanced Warning' or PW–52 'Tunnel' signs and a supplementary plate showing the words 'Next Right', 'Next Left'; or 'Ahead' (with borders and text in black).

7.1 Height

For bridges, tunnels and other rigid structures of low height, permanent warning signs are strongly recommended where the minimum clearance from the soffit (underside of the structure) to the roadway is less than 4.4 m:

- A sign to warn of the height restriction ahead ('Low Overhead Clearance – Advanced Warning': PW–45 – diamond shape, yellow background, with the minimum height clearance (in metres) shown between opposing vertical arrows).
- The 'Tunnel' sign can also be erected to warn of low bridges or tunnels (PW–52: diamond shape, yellow background, tunnel symbol). Its use is recommended if the portal or low structure is not visible for at least 120 metres. In 100 km/h areas, this sign should be erected at least 160 m in advance of the tunnel portal or low overhead structure.
- A sign on the low structure or tunnel showing the actual clearance (PW–46: rectangular, yellow background, with the minimum height clearance (in metres) shown above a downward arrow). If the soffit varies in height (such as an arch bridge or a tunnel roof), additional reflectorised white arrows should indicate the points where the clearance is a minimum. See *MOTSAM part 1, figure 6.3 or part 2, figure 5.8*.
- The shape of the soffit of the structure or tunnel should also be highlighted with a 200 mm wide reflectorised yellow band.

For railway level crossings with electrified overhead traction wires, where the clearance under the wires is restricted, two signs are required:

- A warning sign 'Overhead Power Cable' (PW 47 diamond shape, yellow background, with symbol of lightning bolt coming from an insulator) which is to be erected immediately above.
- A regulatory sign: 'Low Overhead Clearance At Electrified Railway Crossing' (RG–21: circular, red border, vertical distance between two triangular arrow heads).

This combination of signs should be located between the PW–57 'Railway Level Crossing Ahead' (symbolic steam train) sign and the level crossing.

If the road has been signed as recommended, drivers of large vehicles should have sufficient warning about low bridges and tunnels with vertical clearances which are less than 4.4 m above the road surface.

As overdimension vehicles carrying loads up to 5 m high can be moved without a permit (see *section 8* below), RCAs should also consider locating appropriate warning signs on the approach, and attached to, bridges and tunnels with height clearances from 4.4 to 5.3 m if:

- there are no height restrictions below 4.4 m on that route
- they consider vehicle operators are likely to move overdimension loads over 4.25 m in height on that route.

Note: NZ Heavy Haulage Association recommends a minimum clearance 6 m above the roadway for overdimension load routes.

7.2 Width

For a short section of narrow width on two-lane, two-way roads (such as a bridge), MOTSAM recommends these permanent warning signs:

- 'Narrow Bridge' (symbolic PW–44) where the trafficable width is 6.1 m or less, or where the bridge width is less than the sealed width of the approach road including shoulders
- the one-way bridge combination of signs:
  RG–19 'Single Lane Give Way' (red circle enclosing red (upward) and black (downward) vertical arrows in opposite directions on white background) and
  RG–20 'Single Lane Priority' (rectangular white border enclosing white (upward) and red (downward) vertical arrows in opposite directions on blue background)
  The RG 19.1 'Single Lane Supplementary Give Way' (rectangular red border enclosing the words 'GIVE WAY' on white background) sign can also be used with RG–19.

Note: Where the trafficable width of the bridge is between 5.0 m and 6.1 m, MOTSAM allows the use of the 'Caution Wide Vehicles' sign (PW–44.1: supplementary, rectangular) instead of the one-way bridge combination signs RG–19 and RG–20. This sign should be used with caution as its meaning may not be clear to some drivers. If the bridge or section of roadway is a long one or if conflicts between heavy vehicles travelling in opposing directions are likely, it would be safer to sign the bridge for one way operation with RG–19 and RG–20 signs as above. The use of PW–44.1 may be reviewed.)

If the one-lane section of road is not straight or visibility is restricted by banks, walls, or structures or trees, or if traffic delays are becoming significant then consideration should be given to installing traffic signals to provide more equal opportunities for drivers or to widening the narrow section.

8 Overdimension vehicles

Overdimension vehicles (including a load they may be carrying) have one or more dimensions larger than the maximum dimensions allowed for standard vehicles.

Some vehicles (such as large mobile cranes and some agricultural machinery) need to be larger than the limits set for standard vehicles so they can perform their specialist function.

Large indivisible loads (such as houses, bridge beams, long run roofing, etc.) may be carried on either standard size vehicles or special oversize trailers.

Drivers who wish to move overdimension vehicles (and their loads) must comply with the conditions set out in *sections 6* and *7* of the VDM Rule 2002, which include ensuring that the overdimension vehicle will fit within the size limits of the proposed route.

Vehicles that are within all the following dimension limits may be able to operate without getting a permit from Land Transport NZ provided they comply with some travel time restrictions and piloting requirements:

Width:	up to 4.5 m
Height:	up to 5 m
Length of vehicle combination:	up to 25 m.

Vehicles that exceed these dimensions must obtain a permit from Land Transport NZ's Overdimension Permit Issuing Agency (OPIA) and comply with the more restricted travel times and specific piloting requirements that apply to these larger vehicles.

Note:

(1) A vehicle must display approved warning devices (yellow flags or hazard panels) if its width (including any load) exceeds 2.5 m.

(2) An oversized vehicle (including any load) that exceeds 3.1 m in width must display an 'OVERSIZE' sign, a revolving amber light and be accompanied by at least one load pilot vehicle (usually preceding the oversize vehicle and displaying a sign reading 'WIDE LOAD FOLLOWS'), unless:

- its width does not exceed 3.7 m
- it travels only in daylight
- its speed does not exceed 40 km/h.

Two pilot vehicles are required for loads from 4.5 to 5.0 m wide.

Three pilot vehicles (usually two in front of and one behind the oversize vehicle) are required if the load is greater than 5 m wide.

(3) Vehicle combinations which exceed 25 m in length must be accompanied by at least one load pilot vehicle.

(4) Vehicles which are overdimension or carry overdimension loads may need additional rear-view mirrors to reduce the driver's 'blind spots' as much as possible. These additional mirrors may need to be fitted on a temporary or

retracting basis on vehicles carrying wide or long loads. If the size or shape of the vehicle, or its equipment or its load means that the driver still has significant blind spots, then it is recommended that sufficient load pilots accompany the overdimension vehicle to ensure its safety and the safety of other road users.

The maximum dimensions for which permits are normally issued are:

Width:	up to 11 m
Height:	up to 6.5 m
Length of vehicle combination:	up to 35 m.

Very large loads which exceed these limits need special approval from Land Transport NZ– it is usually only granted after the vehicle operator has first obtained a report from a surveyor or civil engineer on the suitability of the route for such a load and also obtained approvals from the New Zealand Police and the road controlling authorities (RCAs) for that route.

RCAs, their consultants, overhead lines companies and the Police can apply to OPIA (Ph 0800 OVERSIZE (0800 683 774) or fax 06 350 2393) to receive emailed notification of permits that have been issued as set out in *Traffic note 39 Overdimension permit notifications to road controlling authorities – information*.

For more information on the conditions of operation of overdimension vehicles, see Land Transport NZ's Factsheet 53: *Overdimension vehicles and loads*.

If an RCA objects (on reasonable grounds – usually because of the limitations of a particular route or special heavy traffic flows) to permits for overdimension vehicles or loads being issued for that route (possibly for a limited period of time while the road is reconstructed), then it can notify the OPIA in writing, who will refuse to issue permits for that route.

If the RCA wishes to temporarily restrict the movement of overdimension vehicles (that can normally move without a permit) on a particular road, it may need to use the procedure set out in *section 14.2* below. The RCA should also take reasonable steps to notify heavy vehicle operators who may be affected by such a restriction.

Transit NZ has published a set of *Overdimension vehicle route maps* (version 2, November 2004) which identify routes commonly used by overdimension vehicles. The maps indicate the presence of special restrictions (at bridges etc) on state highways. They do not specify the dimension clearances which are available on those routes.

The NZ Heavy Haulage Association (NZHHA) recommends that for large overdimension loads, a path 11 m wide and 6.0 m high be kept clear of permanently fixed poles, wires, trees, shrubs and other street furniture. Kerbs should be mountable and roundabouts designed so that large overdimension loads can traverse them.

See NZHHA's *Roading design specifications for overdimension loads* for more details.

There is no requirement for RCAs to provide routes to comply with the dimensions in this NZHHA document. It is for each RCA to decide if and how it can meet the needs of the different road users who may want to use its network. However RCAs should consider the needs of overdimension vehicle operators in their road planning and traffic management.

9 Overweight vehicles

Some loads are so heavy that they need to be carried on vehicles where the axle weights exceed the mass limits set out in schedule 2 of the VDM Rule.

Only RCAs have the ability to issue permits for these vehicles to operate. The law relating to these vehicles is set out *section 5 Permits for overweight vehicles* of the VDM Rule.

One roading authority may issue an overweight permit for travel on another roading authority's roads if the second roading authority has agreed to this.

Generally, the movement of overweight vehicles is controlled by Transit NZ on both state highways and on behalf of other road controlling authorities. Transit NZ has published an *Overweight permit manual* which explains its requirements in detail.

Contact the appropriate Transit NZ regional office for details of their procedures for issuing overweight permits.

Transit NZ's *Overweight permit manual* is available at**:**
http://www.transit.govt.nz/technical_information/

10 Vehicles without pneumatic tyres

Motor vehicles fitted with non-pneumatic or metal tyres or self-laying tracks or a tyre with studs, cleats, lugs or other gripping devices may not be operated on a road unless:

- the tyre is fitted with temporary gripping devices (such as chains) used in appropriate conditions
- permission has been obtained from the RCA.

See *Land Transport Rule: Tyres and Wheels 2001*, section 2.3(18).

11 Vehicle crossing points

These are places on roads where an RCA can allow special non-standard vehicles to cross over a road from private land on one side to private land on the other side. The road pavement may need to be especially strengthened to carry these vehicles and the surface could be different from the rest of the road.

The non-standard vehicles may be able to operate over these crossing points under the following legal approvals:

a. An overweight permit is issued under *section 5* of the VDM Rule.

b. Permission is gained from the RCA in accordance with *section 2.3(18)* of the *Tyres and Wheels Rule 2001* as set out above.

c. A deed of grant for motor vehicles crossing state highways – which Transit NZ may be able to approve in accordance with the *State highway control manual SM012, chapter 1, Appendix 1D*.

12 Road works zones

RCAs have a responsibility to ensure the general safety of: the public, traffic, and people employed on or near any road. They must take all reasonable precautions to prevent accidents during the construction or repair of any road. When any opening is made in the road for the repair of drains or gas pipes or for any other purpose (by the RCA or by other persons doing such work) they must erect barriers, devices to cause traffic to slow down, or fences across the road or around any dangerous place and shall require any such dangerous place to be sufficiently lighted by night. This is set out in the *Local Government Act 1974*, *section 353* (which is referred to in *section 61(2)* of the *Transit New Zealand Act 1974*).

Contractors and other persons undertaking work on or near a road need to comply with the HSE Act. They need to ensure that their personnel receive appropriate safety training and that road users are not endangered by the work they carry out.

Transit New Zealand has published a *Code of practice for temporary traffic management* which sets out detailed procedures for the safety of workers and road users where construction or maintenance work is carried out on or near roadways. Generally, the approval of the RCA should be obtained for works or activities within the legal boundaries of the road. If required by the RCA, the person or organisation undertaking the work should do so in accordance with a traffic management plan approved by the RCA. These works should be planned, supervised and carried out by persons with the appropriate training and qualifications.

RCAs may set temporary speed limits in accordance with a traffic management plan they have approved for a particular road. Such speed limits must apply to all vehicles and must be at least 20 km/h lower than the permanent or holiday speed limit for that road. See *section 5* of the *Land Transport Rule: Setting of speed limits 2003.*

The RCA may allow special vehicles (such as those with tracks or without pneumatic rubber tyres) to operate in roadworks zones. Overdimension vehicles may also operate in roadworks zones up to the size limits set out in the traffic management plan. See *subclause 6.3(3)* of the *Land Transport Rule: Vehicle Dimensions and Mass 2002*.

12.1 Road construction zones

Construction machinery which is wider or heavier than standard vehicles or does not have pneumatic tyres may need to operate on a road for construction purposes. To allow for this, the RCA may declare (by notice) all or part of that road to be a road construction zone as set out in Regulation 12 of the Heavy Motor Vehicle Regulations 1974. The boundaries of the zone, the classes of heavy motor vehicle that are permitted to operate in the zone, any limitation on vehicle size, speed, weight, tyres or tyre pressure and the period for which the zone will remain in force need to be specified in the notice. The **'**Construction zone' sign numbered IG 11 in MOTSAM must be erected at the boundaries of the zone and a copy of the notice forwarded to the nearest office of Land Transport NZ.

The relevant officer in New Zealand Police CVIU should also be advised of the details of the construction zone and the OPIA advised if the zone causes restrictions on the movement of overdimension vehicles through that zone. Transit NZ's regional overweight permit officer should be advised if the movement of overweight vehicles will be affected by the zone. The local Police, Ambulance and Fire Services should be advised if the zone will affect the movement of emergency vehicles.

12.2 Requirements for vehicles used only in road construction zones

Vehicles which are only used in construction zones still need to comply with the following legal requirements:

a. In the *Heavy Motor Vehicle Regulations 1974*:

   Construction zones are declared by an RCA in accordance with *Regulation 12*.

   The notice which is issued by the RCA must set out the type of heavy vehicles which are permitted to operate in a construction zone – see *subclause (2)(c)(ii)*.

   The RCA can also limit the vehicle size, speed, weight, tyres and tyre pressure of such vehicles – *subclause (2)(c)(iii)*.

   The notice must state the period for which the notice will remain in force – *subclause (2)(c)(iv)*.

   The extent to which the normal size and weight limits (in the *Vehicle Dimensions and Mass Rule 2002*) do have to be complied with depends on exactly what is contained in the notice that the RCA has issued – see clause (4). Vehicle operators need to make sure they operate in compliance with the notice that the RCA has issued.

b. The *Transport (Vehicle Registration and Licensing) Regulations 1994* set out various exemptions from the T*ransport (Vehicle and Driver Registration and Licensing) Act 1986*.

   Part 2 of the *First schedule* to these regulations states that the following vehicles must be registered and licensed, but are exempted from registration and licensing fees:

   - *Clause 4* – any motor vehicle propelled and supported solely by self-laying tracks;
   - *Clause 5* – any motor vehicle used on roads only in road construction zones in accordance with notices declaring such zones.

c. *Land Transport Rule: Vehicle Standards Compliance 2002 (VSC Rule*

Some vehicles are exempted from the need for inspection and certification under the VSC Rule.

Those exempted from entry or re-entry inspections under *section 6.1* include:

6.1(d) a mechanically propelled roller

6.1(e) a tractor or machine, including a trailer, for use solely in roading operations

6.1(f) a vehicle in schedule 3 (h) to (mm)

6.1(g) a vehicle that is not in schedule 3, that is similar in design, construction and purpose to a vehicle in 6.1(f).

Vehicles in schedule 3 in the range (h) to (mm) include:

(h) Pedestrian –controlled goods service vehicles;

(i) Vehicles supported and propelled solely by self laying tracks;

(j) Vehicles used on roads only in construction zones in accordance with notices
declaring those zones;

(k) Vehicles used on a road only under special authorisation of the RCA according
the conditions set out in *paragraph (k) of Schedule 3*;

(l) All-terrain vehicles that are used on a public highway;

(n) Tractors owned by a local authority and used exclusively on work relating to
the banks of watercourses;

(o) Mobile or movable huts or similar vehicles that are used solely in connection
with the construction or maintenance of roads;

(q) Traction engines;

(r) Forklifts;

(t) Trailers while being drawn by motor vehicles described paragraphs (n) to (r)
above;

(w) Cable jinkers;

(x) Front end loaders;

(z) Tractor cranes;

(aa) Rough-terrain cranes;

(bb) Mobile crushing and screening machines, mounted on trailers;

(cc) Motor graders;

(dd) Motor scrapers;

(ee) Trailer scrapers;

(ff) Plant for servicing oil-filled cables;

(hh) Saw bench apparatus;

(ii) Forestry chippers;

(kk) Trench diggers and excavators;

(ll) Vehicles always used unladen on a road and designed exclusively for carrying earth or other bulk materials;

(mm) Mobile concrete mixers mounted on tractors.

Most of the above vehicles however will require regular in-service inspection for a warrant or certificate of fitness.

A few vehicles from the above list are exempt from in-service inspection (under *section 7.1*), namely:

7.1(c) traction engines;

7.1(d) mechanically propelled rollers;

7.1(e) cranes fitted with self-laying tracks;

7.1(f) excavators fitted with self-laying tracks;

7.1(g) tractors or machines that are used solely for roading operations, that are not operated at a speed exceeding 30 km/h, together with any trailer operated only while being towed by that tractor or machine.

Generally, specialist construction vehicles which can be operated at speeds exceeding 30 km/h do need an in-service inspection and a warrant of fitness (WoF).

Note: A heavy motor vehicle capable of traction (towing) at speeds exceeding 50 km/h is not defined as a tractor. It requires a certificate of fitness (CoF) as do heavy trailers designed for speeds in excess of 50 km/h.

See the Land Transport NZ website at:
http://www.landtransport.govt.nz/publications/vir-manual/specialist-vehicles/sv-tractors-v2-4.pdf

d. *Land Transport Act 1998*: The provisions of this Act continue apply as follows:

i. *Section 2 Interpretation*, subsection (1).

A 'Motor vehicle'

(a) Means a vehicle drawn or propelled by mechanical power; and

(b) Includes a trailer…..'.

A 'Vehicle'

(a) Means a contrivance equipped with wheels, tracks or revolving runners on which it moves or is moved…….

A road construction zone confers a temporary right to use certain specified vehicles within a specified area of roadway. It does not legally stop that area of road and the public continue to have right of access to that road. Therefore, that area continues to be a road under the *Land Transport Act 1998* and the general requirements of the Act and its rules and regulations continue to apply.

ii. *Section 5 Drivers to be licensed*

Drivers who operate vehicles within a construction zone must have a current driver licence of the appropriate class (and endorsement if required) for the particular vehicle they are driving or operating.

iii. *Section 6 Vehicles to be safe and operated in compliance with the rules. Section 6(1)* of this Act states: 'A person may not operate an unsafe motor

vehicle on a road'.

This means that any motor vehicle used in a road construction zone must be safe.

iv. *Section 8 Drivers not to be careless or inconsiderate and section 9 Loads transported by vehicles to be secured.*

These requirements also apply to all drivers and vehicles operating in construction zones.

This does not prevent drivers spraying water, tar or similar liquids, or discharging and spreading gravel, sealing chips or similar materials as part of road construction activity. However, he or she must do so with due consideration for other road users.

12.3 Temporary closure of roads

RCAs are able to temporarily close a road to all traffic or any specified type of traffic (including pedestrian traffic) for several reasons including:

a. construction or repair of pipes, drains or apparatus under, upon, or over the road
b. when, in order to resolve problems associated with traffic operations on a road network, experimental diversions of traffic are required
c. during a period when public disorder exists or is anticipated
d. when, for any reason, it is considered desirable that traffic should be temporarily diverted to other roads, or
e. for a period or periods not exceeding in aggregate 31 days in any year for any exhibition, fair, show, market, concert, film-making, race or other sporting event, or public function.

The RCA may impose such conditions as it thinks fit (including the imposition of a reasonable bond), and must consult with the Police and the Ministry of Transport.

See clause 11 in schedule 10 of the *Local Government Act 1974*.

13 Special routes for heavy vehicles

RCAs can recommend that heavy vehicles use particular routes for safety and environmental reasons. The recommended routes can be for:

- overdimension vehicles and loads
- vehicles carrying livestock
- vehicles carrying dangerous goods
- heavy vehicles generally.

Heavy vehicle bypasses can be indicated by MOTSAM signs IG4 and IG5.

Other signs showing recommended heavy vehicle routes should be rectangular in shape and have black characters on a white background with a black border as set out in Traffic Note 18.

14 Restrictions on use of roads by heavy motor vehicles

There are several legislative provisions that an RCA may use to limit the use of heavy vehicles on a road. They are set out below.

Land Transport NZ recommends that the following signs, which are described in the TCD Rule, be used for all restrictions on the movement of heavy motor vehicles:

- R5–3 No heavy motor vehicles sign (red circle; white background; a black truck symbol with superimposed red diagonal bar): If only buses are to be prohibited, then the sign should incorporate the bus symbol instead of a truck.

Figure 2. Suggested generic heavy motor vehicle restriction sign

A supplementary plate should be installed identifying the particular restrictions that apply to heavy vehicles (immediately below or combined with R5–3 into one large sign).
The supplementary plate should be the format as set out for:

R5–8	Heavy vehicles – maximum length
R5–9	Heavy vehicle – bridge limits
R5–10	Heavy vehicle – axle limits
R7–10	General regulatory.

The sign should be rectangular in shape with a red border, a white background and black text.

- The sign shown below (R5–10 Heavy vehicle – axle limits) is an example of the appropriate type of supplementary sign.

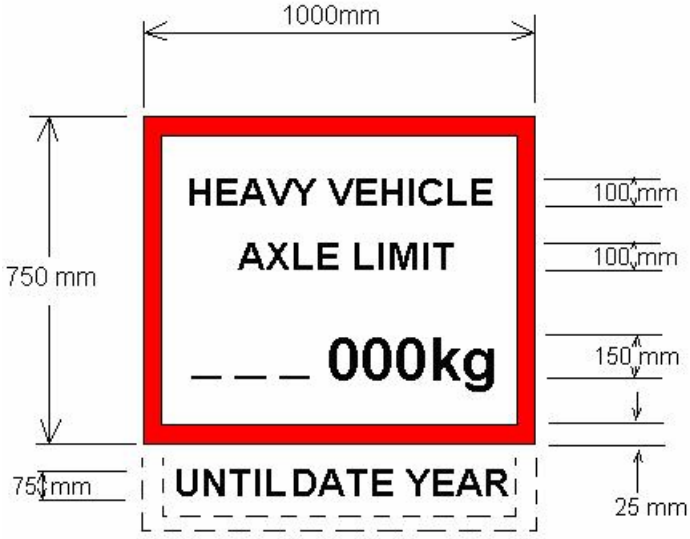


Figure 3. Typical supplementary sign specifying restrictions on the movement of some heavy vehicles

Note: The wording depends on the particular restriction(s) which are imposed.

This combination of signs should be used on the entry to the restricted road. It should be placed in line with the property boundary of the connecting road, or as close as possible to that point. Similar sign(s) should make clear to drivers approaching from side roads that the restriction is in place. However, to reinforce that a driver is approaching a road with restrictions, an information sign showing the same symbol as the heavy vehicle restriction sign can be combined with a supplementary plate showing the words 'NEXT RIGHT', 'NEXT LEFT'; or 'AHEAD' (with borders and text in black) as shown in Figure 4.

Figure 4. Advance warning sign of a heavy vehicle restriction

14.1 Protection of bridges by temporary weight or speed limits

A number of older bridges lack sufficient structural strength to carry heavy axles loaded to the maximum mass limits set out in schedule 2 of the VDM Rule 2002.

The RCA may impose special temporary weight and/or speed limits on these bridges in accordance with *Regulation 11* of the *Heavy Motor Vehicle Regulations 1974.*

These restrictions can only be imposed after a certificate of inspection is obtained from a chartered professional engineer, stating that in his opinion such restrictions are necessary to prevent the bridge being overstrained and ultimately failing. The restrictions can only be imposed for a maximum period of 12 months but may be renewed if a new inspection certificate is obtained.

Such bridge restrictions need to be indicated near each end of the bridge on rectangular R5–9 'Heavy vehicle – bridge limits' signs as set out in schedule 1 of the TCD Rule (note that the RH–4 sign shown in the September 1998 version of MOTSAM has been replaced with a similar sign with black text on a white background). A notice of these restrictions must also be published in a newspaper circulated in that district. A copy of the newspaper containing the notice must be forwarded to Land Transport NZ together with the engineer's advice. The Police Commercial Vehicle Investigation Unit (CVIU), the overweight permits officer at the relevant Transit NZ regional office and the NZ Fire service should also be advised of the notice.

It is recommended that signs warning heavy vehicle drivers of the bridge restrictions are erected on appropriate connecting roads so drivers can take alternative routes to avoid the restricted bridge.

Permanent weight restrictions on bridges can be imposed by means of a bylaw made in accordance with *section 72(1)(b)* of the *Transport Act 1962*. See *section 14.6* below.

14.2 Temporary prohibition or restriction of heavy motor vehicle traffic

An RCA has the power to temporarily control the movement of heavy vehicles on its roads. It may restrict (with conditions) or prohibit all heavy vehicles or any specified class of heavy motor vehicle – during any specified period or series of periods – from using any road provided it has reasonable grounds for imposing such a restriction. This is set out in *Regulation 10* of the *Heavy Motor Vehicle Regulations 1974*. It should specify the affected roads, the class of heavy motor vehicle affected and the period of the restriction.

Such restrictions can be made for up to 12 months but can be renewed for an extra 12 months if necessary. A notice of the restriction must appear in a newspaper circulated in the district and adequate signs advising drivers of the restriction must be erected at all entrances to the road affected by the restriction.

A copy of such notice should be forwarded to:

- the Manager Programmes at Land Transport NZ's regional office
- Police CVIU senior officer for that district
- the overweight permits officer at the relevant Transit NZ regional office
- OPIA at Land Transport NZ
- the NZ Fire service.

14.3 Restriction of heavy traffic on roads

Under the *Transport Act 1962* RCAs may direct, by public notice, that heavy traffic (or any specified kind of heavy traffic) must not use a particular route for travel between any two places (see *section 70AA*).

A copy of this notice must be displayed in a prominent position on every road to which the notice applies.

Appropriate signs must be erected to warn drivers of such a restriction (TCD Rule *clause 4.2(3)*) and a copy of the notice should be forwarded to:

- the Manager Programmes at Land Transport NZ's regional office
- Police CVIU senior officer for that district
- the overweight permits officer at the relevant Transit NZ regional office
- OPIA at Land Transport NZ
- the NZ Fire service.

14.4 Classification of class C roads (not suitable for heavy vehicles)

In New Zealand, all roads are class 1 roads unless they are likely to suffer excessive damage from heavy motor vehicles, in which case they can be given a class C rating by Land Transport NZ. Heavy motor vehicles can only be operated on class C roads to deliver or collect goods or passengers to, or from, locations along that road.

Road controlling authorities, who propose to classify a road as class C, must do so by public notice (in a prescribed format) and then consider any objections to the proposal. Local authorities can then send the proposal (with any objections) to the Regional Manager Programmes at Land Transport NZ for consideration. The local authority should provide appropriate evidence for the proposal including the likely impact on heavy vehicle operators and the cost of upgrading the route for full heavy vehicle traffic. (Transit NZ can determine the re-classification of state highways and request that Land Transport NZ declare that classification.) See *Regulations 3* and *5* of the *Heavy Motor Vehicle Regulations 1974* and *Traffic note* 47 *Class C road classification December 2004*.

If a class C road is approved or declared by Land Transport NZ, the RCA must advertise the classification in a newspaper and the following signs (as specified in *part 1 of MOTSAM*) must be erected:

- RH–1 'Road classification – Heavy motor vehicles' - class C at the entrance to the class C road (showing the letter 'C')
- R5–7.1 'Road classification – Heavy motor vehicles' - class 1 on adjoining class 1 roads (showing the numeral '1').

A copy of the classification notice should be forwarded to:

- the Police CVIU senior officer for that district
- the overweight permits officer at the relevant Transit NZ regional office
- OPIA at Land Transport NZ.

14.5 Special vehicle lanes

RCAs may mark lanes for the exclusive use of special vehicles (buses, heavy motor vehicles and/or other specified vehicles) in accordance with *section 11.2* of the *TCD Rule*, using specified signs (schedule 1 of the TCD Rule) and by making a bylaw defining such lanes. See *section 72(1)(kb)* of the *Transport Act 1962* as set out below.

14.6 Bylaws

In the *Local Government Act 2002*, *sections 145 and 151* set out the general bylaw-making powers of local authorities. *Sections 155, 156 and 157* set out the procedure for making bylaws.

Parts of the *Local Government Act 1974* are still in effect, including *subsection 684 (1)(13)* which allows a council to make a bylaw that concerns the use of roads. Transit NZ also has the power to make bylaws under the *Local Government Act 1974* in relation to state highways as set out in *section 61(3)* of the *Transit New Zealand Act 1989*.

RCAs may make bylaws to restrict the movement of heavy vehicles over roads under their control as set out in *section 72* of the *Transport Act 1962*.

These can include:

- providing for the weighing and measurement of loads of vehicles (*clause 72(1)(a)*)
- regulating the weights of vehicles that pass over bridges (*clause 72(1)(b)*)

- prescribing the routes and times that specified classes of vehicles may pass over such roads (*clause 72(1)(d)*)
- providing for the taking of security to insure roads and bridges against damage by heavy traffic (*clause 72(1)(e)*)
- prohibiting any specified class of heavy traffic that may cause serious damage to any road unless the cost of reinstating or strengthening the road is previously paid (*clause 72(1)(f)*)
- providing for the collection of payment for compensation for damage to roads and bridges by heavy traffic (*clause 72(1)(g)*)
- providing for the collection of tolls from any class of heavy traffic in accordance with *section 361* of the Local Government Act 1974 (*clause 72(1)(h)*)
- prohibiting or restricting any specified class of traffic or motor vehicle, which by reason of its size or the nature of the goods carried, is unsuitable for use on a particular road (*clause 72(1)(i)*)
- limiting the stopping, standing or parking of vehicles on any road to vehicles of any specified class or description and limiting the period of time that such class of vehicle may park (*clause 72(1)(k)*)
- limiting left or right turns to a particular class of vehicle (*clause 72(1)(ka)*)
- limiting particular lanes marked on a roadway or a particular turning movement to the use by omnibuses, taxis, or other specified classes of vehicle or vehicles carrying specified classes of loads or not less than a specified number of occupants (*clause 72(1)(kb)*)
- prohibiting or restricting the parking of heavy motor vehicles or a specified class or description of such vehicles on a road during the hours or for the period specified (*clause 72(1)(kc)*).

A copy of a bylaw made under *section 72* must be sent to the Minister of Transport who may disallow the bylaw or any part thereof if, in their opinion, it is unreasonable or undesirable (see *section 74* of *Transport Act 1962*).

Copies of a bylaw (made under *section 72*) which has special reference to a bridge or a statement of the effect of the bylaw (that is, a suitable sign) must be displayed in a clearly legible condition at each end of that bridge.

Printed copies of bylaws made under *section 72* must be available for sale at reasonable charge to every person applying for them (see *section 73* of *Transport Act 1962*).

Under other legislation RCAs are also required to give public notice of a new bylaw, make such a bylaw available for public inspection free of charge and make copies of the bylaw available for purchase for a reasonable charge. See *section 157* of the *Local Government Act 2002* and *section 105* of the *Transit New Zealand Act 1989.*

15 Engine braking noise controls

Guidelines for the control of noise from engine braking of heavy vehicles are set out in *Traffic note 19 Engine braking controls – Guidelines*

16 Road user charges

The cost of using New Zealand's roads is recovered from road users via levies in the price of some fuels or through road user charges (RUC). Road user charges are administered by Land Transport NZ and enforced by the NZ Police. Most vehicles with a manufacturer's gross laden weight of more than 3.5 tonnes (3500 kg) must pay RUC and display a current RUC licence. RUC licences are available from many Land Transport NZ agencies or they can be purchased by telephone or fax. The RUC helpdesk is at: 0800 655 644.

The price of RUC licence depends on the vehicle type, the maximum gross weight of vehicle applied for, and the distance applied for.

See the booklet *Road user charges* at http://www.landtransport.govt.nz/publications/docs/road-user-charges.pdf

17 Driver licences

People who wish to drive or operate a heavy vehicle on a road or in an area accessible to the public must hold a valid drivers licence for the type and weight of that vehicle (including appropriate endorsements if required).

For example:

Persons holding a class 1 licence (suitable for cars, utes and other similar light vehicles) may drive a motor vehicle (including a tractor or a combination vehicle, but not a motorcycle) that has a laden weight of up to 4,500 kg, or a forklift vehicle that has a laden weight of up to 18,000 kg .

Note: To drive a forklift, an F (forklift) endorsement is also required.

For more information see:
http://www.landtransport.govt.nz/licensing/heavy/index.html or Factsheet 70 – *Heavy vehicle driver licences.*

The law relating to driver licences is set out in the *Land Transport (Driver Licensing) Rule 1999.*

18 Certificate of fitness

Most heavy vehicles (which can exceed 50 km/h)need to be inspected every six months to check they are in a safe condition to use on a road. If they pass inspection at a testing station which inspects heavy vehicles *and* they have a certificate of loading, a road user charges licence and a hubodometer, they will be issued with a certificate of fitness.

See: http://www.landtransport.govt.nz/vehicle-ownership/cof.html

Most other heavy vehicles (which can exceed 30 km/h) need a warrant of fitness.

See: http://www.landtransport.govt.nz/publications/vir-manual/specialist-vehicles/sv-tractors-v2-4.pdf

The law relating to vehicle inspection and certification is in the *Land Transport Rule: Vehicle Standards Compliance 2002*.

Operators of vehicles requiring a certificate of fitness or warrant of fitness must keep the condition of that vehicle up to the appropriate certificate of fitness or warrant of fitness standard if it is being operated on a road. See RU Rule clause 8.9(1).

Heavy vehicles need to comply with the relevant requirements of the *Land Transport Rule: Heavy vehicles 2004* and other Rules relating to vehicles.

19 Transport service licences

People who wish to operate a transport service on a road, or provide a tow service for disabled vehicles or provide vehicles for hire to others must first obtain transport service licence. There are four types of licence:

- Good Service Licence.
- Passenger Service Licence.
- Vehicle Recovery Service Licence.
- Rental Service Licence.

See: http://www.landtransport.govt.nz/commercial/service.html

The law relating to transport licences is set out in the *Transport Services Licensing Act 1989.*

20 Heavy vehicle selection guide

Land Transport NZ has produced a guide to issues managers should consider when buying or leasing a heavy vehicle.

See http://www.landtransport.govt.nz/commercial/hvy-veh-selection/index.html

21 Traction engines

Traction engines are vehicles which are propelled by steam power but are not designed for use on a railway or for the carriage of goods or passengers. A traction engine is a motor vehicle – so it must be registered as a road vehicle, and the driver must have both a road vehicle driver licence appropriate to the weight of the vehicle and an appropriate qualification for driving a steam powered vehicle.

The general requirements for traction engine operation are now set out in *sections 22B and 22C* of the *Land Transport Act 1998* (as inserted by the *Land Transport Amendment Act 2005*). Detailed interim regulations applying to traction engines are being prepared by the Ministry of Transport. It is expected that these regulations will be replaced by a Land Transport Rule at a later date.

At present, drivers of traction engines must hold a steam engine drivers certificate or a traction engine drivers certificate which have been issued in accordance with the *Engine Drivers' Examination Regulations 1952*

Note: Section 95 of the *Land Transport Amendment Act 2005* repealed the *Boilers, Lifts, and Cranes Act 1950*.

But despite the repeal of the *Boilers, Lifts, and Cranes Act 1950*, the *Engine Drivers' Examination Regulations 1952*:

a. continue in force as if that Act had not been repealed

b. may be amended or revoked as if that Act were still in force.

Traction engine drivers need to comply with the relevant Land Transport Rules which apply to road vehicles.

If the traction engine:

a. exceeds the maximum standard size or weight limits (in *section 2* above) and is therefore:
   i. overdimension, see *section 8 Overdimension vehicles*, and/or
   ii. overweight, see *section 9 Overweight vehicles*;

b. is not fitted with pneumatic rubber tyres, see *section 10 'Vehicles without pneumatic tyres*;

c. is not fitted with an adequate suspension system then the driver must comply with a maximum speed limit of 45 km/h (see RU Rule *clause 5.5(2)*) (unless a lower speed limit applies).

Appendix 1: Reference documents

Legislation

Note: Many Acts, Rules and Regulations have been amended since their date of first publication. The current version of the legislation should be referred to (if available), which includes all amendments since first publication.

Acts

Boilers, Lifts, and Cranes Act 1950
Note: this Act has been repealed but regulations made under it, such as the *Engine Drivers' Examination Regulations 1952* remain in force until specifically revoked.

Hazardous Substances and New Organisms Act 1996.

Health And Safety In Employment Act 1992 (as amended to 2004).

Land Transport Act 1998 (as amended to 2005).

Local Government Act 1974 (as amended to 2005).

Local Government Act 2002.

Radiation Protection Act 1965.

Road User Charges Act 1977.

Transit New Zealand Act 1989 (as amended to 2005).

Transport Act 1962 (as amended to 2005).

Transport (Vehicle and Driver Registration and Licensing) Act 1986.

Transport Services Licensing Act 1989 (as amended to 2005).

Rules

Land Transport (Driver Licensing) Rule 1999 (SR 1999/100) (as amended to 2006)

Land Transport (Road User) Rule 2004 (SR 2004/427 or No. 61001) (as amended to 2005)

Land Transport Rule: Dangerous Goods 2005 (No. 45001/1).

Land Transport Rule: Glazing, Windscreen Wipe and Wash, and Mirrors 1999 (No. 32012/1) (as amended to 2005).

Land Transport Rule: Heavy Vehicles 2004 (No. 31002) (as amended to 2005).

Land Transport Rule: Passenger Service Vehicles 1999 (No. 31001) (as amended to 2005).

Land Transport Rule: Setting of Speed Limits 2003 (No. 54001) (as amended to 2005).

Land Transport Rule: Traffic Control Devices 2004 (No. 54002) (as amended to 2005).

Land Transport Rule: Tyres and Wheels 2001 (No. 32013) (as amended to 2005).

Land Transport Rule: Vehicle Dimensions and Mass 2002 (No. 41001) (as amended to 2005).

Land Transport Rule: Vehicle Standards Compliance 2002 (No. 35001/1) (as amended to 2005).

Regulations

Engine Drivers' Examination Regulations 1952

Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004 (as amended in 2004).

Heavy Motor Vehicle Regulations 1974 (as amended to 2005).

Transport (Vehicle Registration and Licensing) Regulations 1994.

Other reference documents

Published by Land Transport New Zealand

Available at www.landtrandsport.govt.nz unless otherwise stated:

New Zealand on-road tracking curves (expected to be on the Land Transport NZ website during 2006).

Factsheets:

No. 13 *Vehicle dimensions and mass*

No. 13a *Heavy rigid vehicles*

No. 13c *Towing and trailers (full, semi, simple, pole, A-train and B-train)*

No. 13e *Static roll thresholds*

No. 34 *Sharing the road safely with trucks*

No. 53 *Overdimension vehicles and loads.*

No. 64 *Transporting dangerous goods*

No. 70 *Heavy vehicle driver licences.*

Guidelines for the safe siting of school bus stops.

Programme and funding manual.

Project evaluation manual.

Road and traffic standards series:

RTS 6 Guidelines for visibility at driveways (1993)

RTS 10 Road signs and markings for railway level crossings

RTS 14 Guidelines for facilities for blind and vision-impaired pedestrians (2003).

Road user charges booklet.

Traffic Note 18 *Traffic information signs: Black on white background – Information*.

Traffic Note 19 *Engine braking controls – Guidelines*.

Traffic Note 20 *Advisory speed signs and heavy vehicles*.

Traffic Note 39 *Overdimension permit notifications to road controlling authorities – information*.

Traffic Note 47 *Class C road classification*.

Truck loading code (last published by Land Transport Safety Authority in 1999, available in bookshops).

Published by Ministry of Transport	Available at http://www.transport.govt.nz/publications/dangerous-goods/: *Multi-modal transport of dangerous goods*
Published by Transit New Zealand	Available at: http://www.transit.govt.nz/technical_information/index.jsp *Bridge manual.* *Code of practice for temporary traffic management.* *Manual of traffic signs and markings (MOTSAM).* *Overdimension vehicle route maps (Version 2 November 2004).* *Overweight permit manual.* *State highway geometric design manual.* *State highway control manual.*
Published by Standards Australia	**Note:** the maximum dimension and weight limits and permitted axle arrangements for standard heavy vehicles in New Zealand differ in some details from those used in Australia. Also note that Australian States and Territories may have differing maximum limits for different regions. The documents below should be referred to in conjunction with the relevant New Zealand document. Australian standard: *AS 2890.2–2002 Parking facilities part 2: Off-street commercial vehicle facilities*.
Published by Austroads	*Geometric design for trucks – Where, why and how? 2002 (AP–R211/02)* Austroads – available at: http://www.onlinepublications.austroads.com.au/script/Details.asp?DocN=AR0000067_0904 *Rural road design – A guide to the geometric design of rural roads, AP–G1/03*; available at: http://www.onlinepublications.austroads.com.au/script/details.asp?DocN=AR0000032_1004 *Urban road design – Guide to the geometric design of major urban roads, AP–G69/02*; available at: http://www.onlinepublications.austroads.com.au/script/details.asp?DocN=AR0000047_1004
Published by the NZ Heavy Haulage Association	*Roading design specifications for overdimension loads*, available at: http://www.transit.govt.nz/rca_forum/content_files/RcaNewsItem13_Attachment.pdf

Appendix 2: Acknowledgements

This guideline was drafted by Land Transport NZ, reviewed by technical staff of Transit New Zealand and the Ministry of Transport and then placed on the Land Transport NZ website for a period of public consultation in September /October 2005.

Five submissions were received, including those from:

- Manukau City Council
- Waimakariri District Council
- NZ Automobile Association
- Transportation Group of the Institution of Professional Engineers NZ.

Staff who contributed to the project include Bob Gibson, Don Hutchinson and Michael Doole along with several others.

Appendix 3: Traffic sign references

The traffic signs recommended in this document are denoted by their reference characters in the *Manual of Traffic Signs and Markings* (MOTSAM).

This table sets out the equivalent reference characters of each sign in the *Land Transport Rule: Traffic Control Devices 2004* (TCD Rule).

Section reference in this document	MOTSAM reference in Part 1: Traffic Signs	TCD Rule reference in Schedule 1 Signs
5.3(1) Heavy vehicle stops	Motorist service symbol S16 'Parking for heavy motor vehicles'	A20–S16
5.3(1) Heavy vehicle stops	Motorist service symbol S17 'Parking for heavy trailers'	A20–S17
5.3(1) Heavy vehicle stops	Regulatory sign – parking RP 5 'Bus stop'	R6-71
5.3(1) Heavy vehicle stops	Regulatory sign – parking RP 5.1 'Bus stop – with arrow'	R6-71.1
5.3(1) Heavy vehicle stops	General information sign IG–18 'Stock effluent disposal – advisory'	A45-3
5.3(1) Heavy vehicle stops	General information sign IG–19 'Stock effluent disposal – direction'	A45-4
5.3(1) Heavy vehicle stops	Motorists' service sign displaying the S14 'Waste disposal point' symbol	A20-S14
7 Bridges, tunnels etc	Permanent warning sign PW–44 'Narrow Bridge'	W13-2
7 Bridges, tunnels etc	Permanent warning sign PW–45 'Low Overhead Clearance – Advanced Warning'	W13-3
7 Bridges, tunnels etc	Permanent warning sign PW–52 'Tunnel'	W13-6
7.1 Height	Permanent warning sign PW–46 'Low Overhead Clearance – Indication on Structure or Tunnel'	W13–4
7.1 Height	Permanent warning sign PW 47 'Overhead Power Cable'	W13–5

7.1 Height	Regulatory sign RG–21: 'Low Overhead Clearance At Electrified Railway Crossing'	R5–4
7.1 Height	Permanent warning sign PW–57 'Railway Level Crossing Ahead' (symbolic steam engine)	W15-5
7.2 Width	Regulatory sign RG–19 'Single Lane Give Way'	R2–7
7.2 Width	Regulatory sign RG–20 'Single Lane Priority'	R2–8
7.2 Width	Regulatory sign RG 19.1 'Single Lane Supplementary Give Way'	R2–7.1
12.1 Road construction zones	General information sign IG 11'Construction zone'	A41–3
13 Special routes for heavy vehicles	General information sign IG4 'Heavy traffic bypass [distance] m'	A45–1
13 Special routes for heavy vehicles	General information sign IG5'Heavy traffic bypass'	A45–2
14.4 Classification of class C roads	RH–1 Road classification – Heavy motor vehicles - class C'	R5-7
14.4 Classification of class C roads	RH–1 'Road classification – Heavy motor vehicles - class 1'	R5–7.1

Road and traffic guideline publications

The following Road and Traffic Guidelines are available:

RTS 1 Guidelines for the implementation of traffic controls at crossroads (1990)

RTS 2 Guidelines for street name signs (1990)

RTS 3 Guidelines for establishing rural selling places (1992)

RTS 4 Guidelines for flush medians (1991)

RTS 5 Guidelines for rural road marking and delineation (1992)

RTS 6 Guidelines for visibility at driveways (1993)

RTS 7 Advertising signs and road safety: design and location guidelines (1993)

RTS 8 Guidelines for safe kerbline protection (1993)

RTS 9 Guidelines for the signing and layout of slip lanes (1993)

RTS 10 Road signs and markings for railway level crossings (2000)

RTS 11 Urban roadside barriers and alternative treatments (1995)

RTS 13 Guidelines for service stations (1995)

RTS 14 Guidelines for facilities for blind and vision-impaired pedestrians (2003)

RTS 15 Guidelines for urban-rural speed thresholds (2002)

RTS 16 Guide to heavy vehicle management (2006).

For copies of the road and traffic guideline series forward your request with a payment of $10.00 per copy to:

Publications, Land Transport New Zealand, PO Box 2840, Wellington.