Temporary Traffic Management Local Operating Procedures

Version 5 – July 2018

TTM Local Operating Procedures (LOP) Version 5

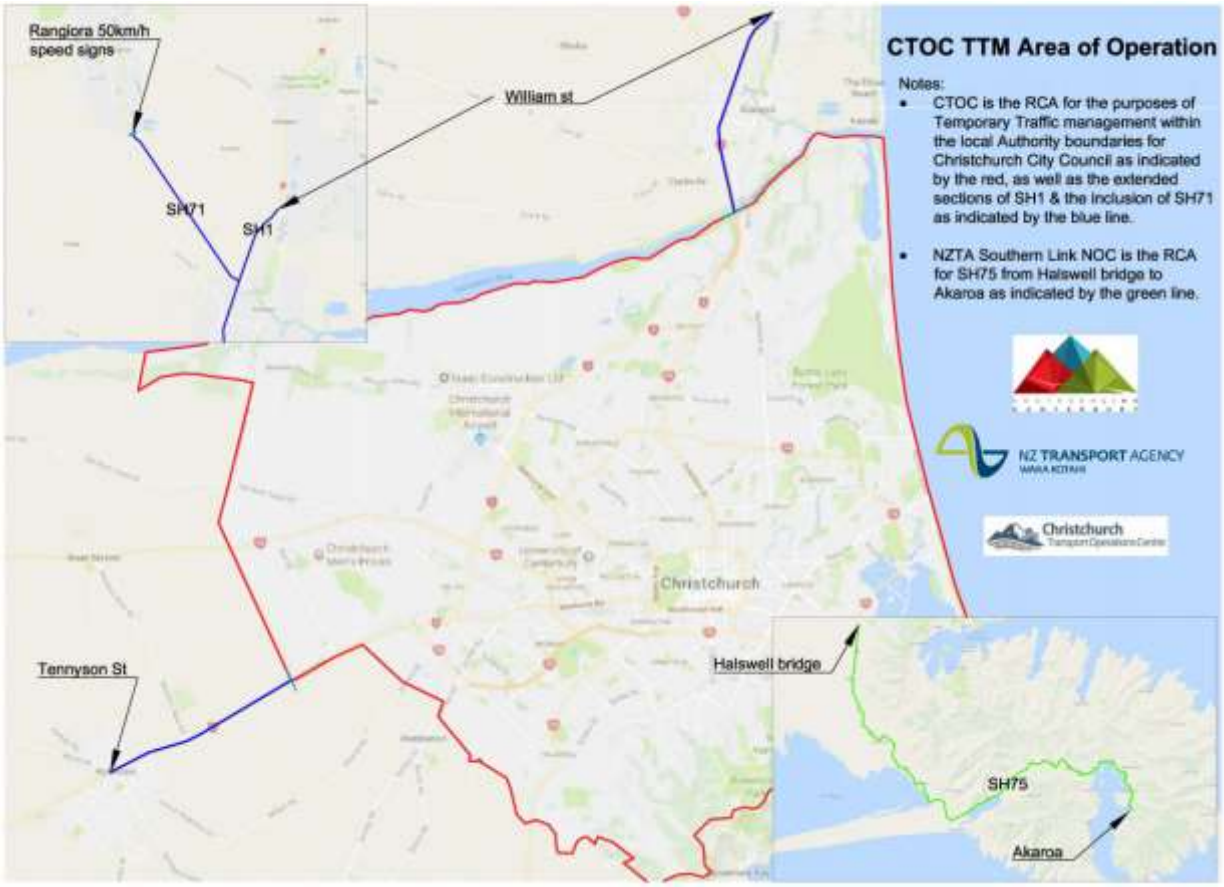
This document outlines the Christchurch Traffic Operations Centre (CTOC)'s view on Temporary Traffic Management (TTM) applications within the area administered by CTOC. The NZTA Code of Practice for Temporary Traffic Management (CoPTTM) is the primary reference standard, and this LOP document explains variations to CoPTTM that are acceptable within the CTOC area.
These LOPs aim to clarify RCA expectations and outline differences to the traditional CoPTTM approach. Where no departure from CoPTTM has been identified, adherence to standard CoPTTM principles and practices is expected.

LOP Application

These LOPs are intended to be applied to all roads within the CTOC area.
Justification will need to be provided, and documented, should TTM Providers wish to apply the standard CoPTTM approach, instead of these LOPs.

Area of usage

Note that TTM activities on roads that are not administered by CTOC must meet normal CoPTTM or RCA requirements. CTOC boundaries can also be found here: CTOC area map



LOP CHAPTERS

1. Submitting Traffic Management Plans

All TMPs must be submitted through CTOC's TMP processing website. Currently, the website is tmpforchch.co.nz. However, this will be migrating to myworksites.co.nz in 2018

CTOC TMP minimum processing time frames, from when CTOC receive a submitted TMP.

	LV, L1, L2 (L2 short-term operations)	L2 (Long-term operation – more than 2 days work)
Standard TMP	5 working days	10 working days
Generic Plan or Service Agreement	10 working days	
Roadworks TMP with a road closure proposed	Varies, see Road Closure Process and Information	
Event TMP with a road closure proposed	Varies, see Road closure for events	

Short form TMP usage

The use of the CoPTTM TMP short form is accepted by CTOC, however, the use of the short form is limited to being used for the submission of universal diagrams relating to simple works at simple locations as defined in E.1 CoPTTM.

Extension Forms usage

Situations where an extension form may be used

- A date extension or date change
- Addition of STMS's or Traffic Management personnel
- Alteration of Work Hours
- Addition of diagrams that do not substantially* increase a TMPs impact above the originally approved TMP methodology. 'Impact' includes the nature of the TTM activity and the local road environment.

Please note that impacts are assessed and addressed on an area of effect basis, meaning that if a work area shifts substantially* into an area that has not been previously assessed or increases impact, an extension form should generally not be used. In these situations, a revision or new TMP should be submitted to assess, record and mitigate the different impacts with sufficient accuracy.
* At AE / TMC discretion.

Service Agreements and Generic plans

For CTOC Plan types and definitions, please refer to TMP Plan Types explanation document

Road space booking form usage

The CTOC road space booking form may be used to book road space in association with a currently accepted Service Agreement or Generic TMP. Additional conditions of when a road space booking form can be used are addressed within the How to use Service Agreements/Generic Plans flow diagrams.

CTOC Forms and templates

All CTOC forms and templates are available at TMPforCHCH

2. Reduction of network capacity

Mandatory Forward Works Viewer Data Entry.

CTOC require Project and Traffic Impact data for planned works/events affecting traffic capacity on Level 2 (L2) Roads, to be entered into the Forward Works Viewer (FWV). Inputting of data is to enable the Transport Impact Minimisation (TIM) Group to review combined affects and consider issuing 'Preapprovals' ahead of TMP submission. *https://www.forwardworks.co.nz/*

Responsibility for data input

CTOC recommends that each programme or project management and delivery team discuss who from within their structure will take responsibility to enter and maintain data. If it is not intended to engage a TTM provider early (months before the start of works), then we recommend responsibility should be assumed by a member of the programme or project management.

Traffic Impact Minimisation Group

The TIM group make recommendations to CTOC on scheduled work programme and impacts.
To enable the TIM group to fully consider the impact, they may require a Project Level discussion to further investigate the proposed TTM methodology, before the providing a recommendation to CTOC.
CTOC encourages contractors to submit works, which require TIM group sign off, with several months lead time for major projects.
Please note that the TIM group only meets once every two weeks.

Area of intense work activity

Should there be an area of intense work activity, CTOC may require all work that creates an impact to be entered into FWV and have the impact considered by the TIM group.

Escalation Process

Should data entry into FWV not occur with sufficient lead time and accuracy, and urgent decisions become needed regarding planned works/events, there is an escalation process that may enable impacts to be considered outside of the standard process. The escalation process is intended for exceptional circumstances only.

3. Contacting CTOC Temporary Traffic Management (TTM) Team

Urgent TMP reviews

When a contractor is requesting an urgent review of a submitted TMP, they must email the TMC mailbox documenting why the TMP review or update is urgent and why standard processing time frames are not able to be followed. TMC@tfc.govt.nz.
E.g. late submission of TMP that does not meet standard processing time frames due to urgent works

Contacting the TTM team

To get in contact with the TTM team, please refer to:
http://tmpforchch.co.nz/wp-content/uploads/2016/02/Contacting-TTM-Team.pdf

4. Worksites impacting signalised intersections

When any work is planned to occur in or near a signalised intersection (generally within 50m, however, may be greater) contractors must contact RTO during the planning phase of works to discuss any works being proposed. This discussion is to enable the RTO team to identify any requirements for changes due to intersection functionality and layout. This discussion must occur a minimum of two weeks before the scheduled start date on site, to enable pre-planning and any signal controller personality changes to be programmed.

RTO team contact

The RTO team operating hours are Mon to Fri 6 am to 6 pm
Duty number for contact during operational hours is 03 941 8620 or email: signals@tfc.govt.nz

Pre-Notification of scheduled deployment of works at a signalised intersection

Once the contractor has received the accepted TMP, the RTO team must be emailed. Emails are preferred to be sent 48 hours but, at least 24 hours before work is planned to commence on site.
Notification email must include:

- The TMP reference number.
- Specific intersection details and impacts that are covered in the TMP, including a detailed plan or drawing to help explain changes, as previously agreed with the RTO team during consultation.

Notification to confirm scheduled installation or removal of works at a signalised intersection

RTO team must be notified to enable signal phasing alterations or to schedule returning of signals to the normal operating condition. *See table below for required notification time frames*

Time of deployed TTM removal	RTO team must be contacted
Weekday “day” 6 am - 6 pm	Before 2 pm on the day before removal
Weekday “night time” 6 pm - 6 am following day	Before 2 pm on the day before removal
Weekend From 6 pm Fri – 6 am Mon	Before 12midday on the Friday preceding removal

Notifications to confirm physical deployment of works at a signalised intersection

RTO team must be notified, via a phone call, before physical deployment of TTM at an intersection deployment. *See table below for required notification time frames*

Time of TTM Deployment	RTO team must be contacted
During RTO operational hours	Immediately before TTM deployment
Weekday- night time	Before 2 pm on the day of deployment.
Weekend - day or night	Prior 12 midday on the Friday preceding deployment.

Covering of Traffic Signal lanterns

Where signal shrouds are required due to TTM deployments altering signal operations, conflicting lanterns must be covered or completely obscured so as not to generate the potential for road user confusion.
The material used to cover the lanterns must meet NZTA P43 Specifications for Traffic Signals.
CTOC prefers that the material used to cover lanterns is a light/mid blue colour.

Working at signalised intersection when signals phasing has been altered - Including Flashing Yellow (FY)

When a prearranged Flashing Yellow, or other alteration of signal phasing, has been agreed to, by CTOC RTO, for works that are outside CTOC operational hours. The STMS responsible must be on site and have installed the TMP as agreed, at the agreed time as the signals will change to the altered function.
The STMS must also remain onsite until the scheduled time for the signals to return to normal phasing.
Should an unforeseen issue arise, the STMS can contact RTO, via the duty phone number after hours, to remove the altered phasing. Justification as to why altered phasing is not required will need to be provided.

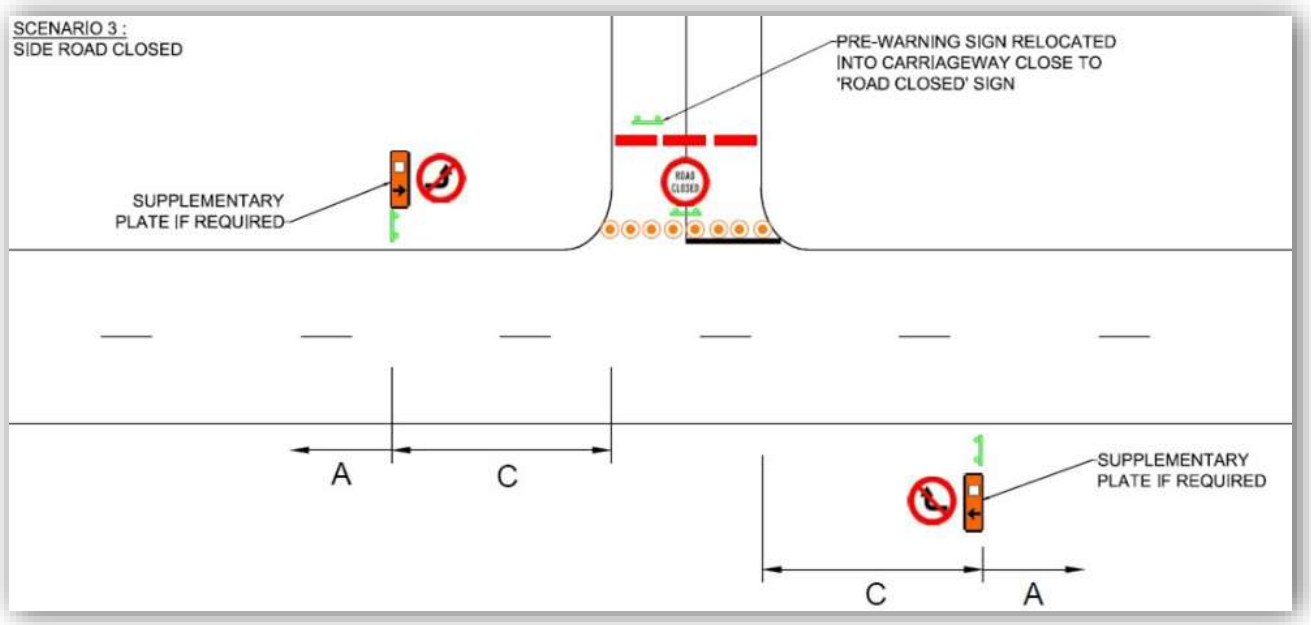
5. Side Road Signage

Scenario 1 and Scenario 2 from previous LOPs are no Longer required as they have been included in CoPTTM as standard practice

Scenario 3: Side Road Closed PSL under 65km/hr

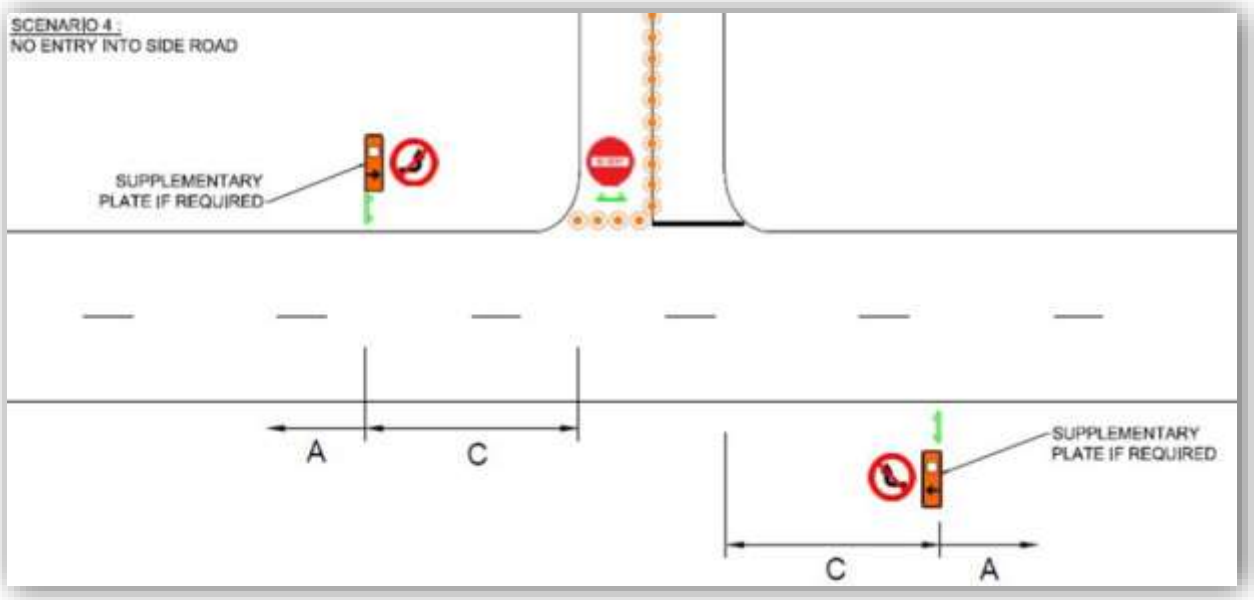
- T1 ROADWORKS signs should be omitted from the main road.
- TD1 Variant SIDE ROAD CLOSED AHEAD signs should be omitted from the main road.
- TD3A DETOUR AHEAD FOLLOW "*SYMBOL*" signs should be omitted from the main road.
- RD1R/L NO RIGHT/LEFT TURN, with supplementary TDA6 FOLLOW *"SYMBOL"* (if appropriate) must be installed.
- RD3 ROAD CLOSED at intersection must be installed.

In speed environments greater than 65kph, or where major risks exist (e.g. tight geometrics, restricted visibility, narrow road carriageway etc.), then STMSs must enhance or extend warning signage on the main road approaches to provide sufficient warning.
Deploying the normal CoPTTM layouts - L2 to L2: J2.25 / 2.25a (L1) F2.24. maybe required.
Combining last two sets on one stand (RD1 (No Left/Right Turn) with TDA2 (Detour Arrow).



- *Scenario 4: Side Road is Exit Only (Entry closed) PSL under 65km/hr*
- T1 ROADWORKS signs should be omitted from the main road.
- TD1 Variant SIDE ROAD CLOSED AHEAD signs must be omitted from the main road.
- TD3A DETOUR AHEAD FOLLOW o signs should be omitted from the main road.
- RD1R/L NO RIGHT/LEFT TURN, with supplementary TDA6 FOLLOW ↑ (if appropriate) must be installed.
- RD2 NO ENTRY at intersection must be installed.

In speed environments greater than 65kph, or where major risks exist (e.g. tight geometrics, restricted visibility, narrow road carriageway, rough / unsealed surface etc.), then STMSs must enhance or extend warning signage on the main road approaches to provide sufficient warning.
Deploying the normal CoPTTM layouts - L2 to L2 J2.25 / 2.25a (L1) F2.24 maybe required.
Combining last two sets on one stand (RD1 (No Left/Right Turn) with TDA2 (Detour Arrow).



6. Speed Management

If Speed Management is required to create safe vehicle operating speeds through a site, then the 'Best Practice for Speed Management at Roadwork Sites' guideline must be followed.

Use of Temporary Speed Humps

Specific CTOC acceptance must be obtained when the use of Temporary Speed Humps is proposed, due to the impacts that the noise and vibrations can have on surrounding residents.

Temporary Speed Limits

- Temporary Speed Limits (TSLs) must be appropriate to provide an acceptable level of safety at a worksite, while not unduly delaying traffic. TSLs must not be deployed on every worksite, but only where TSLs are justifiable as part of an overall Speed Management treatment for a site.
- IncluIncluding a completed CoPTTM Speed decision Matrix form is encouraged when submitting TMPs with proposed.

7. Cone Mounted RD6L/R signs

To assist guiding traffic around a closure, 400mm diameter RD6L/R KEEP LEFT/RIGHT (single) arrows are permitted to be used on cones in low-risk situations.
Cone-mounted RD6L/R signs are not intended for use at the start or end of lane closure tapers and chicanes. These (high risk) situations must be signed as per normal CoPTTM practice.

8. Temporary Barrier Systems

Where barrier systems are proposed as a safety device for closure protection, the proposed product must be one that is currently included in NZTA's authorised product list M23.
Details must be clearly explained in the TMP as to what product is proposed, the test Level of the product in terms of NCHRP 350 or AASHTO MASH.
Layout diagrams must be provided that show critical elements of design, including:

- Upstream End Treatment
- Clear zones and gating areas (where equipment must not be stored, and no work may occur)
- Flare sections
- Protection Zone (Length of Need)
- Downstream End Treatment (if required)
- Offset to live lanes
- Delineation*
- Transition details (if required)
- Deflection Distance
- Maintenance standards proposed for the barrier system.
- A close-up scale drawing and cross-sections are recommended to fully explain the proposed barrier system configuration. The TMP must explain how key elements will be installed so that performance will replicate the crash-tested performance, where the crash-tested configuration (especially deflection distances) cannot be provided, the TMP must explain why the configuration is proposed, the expected performance as well as any mitigation measures to be adopted to manage risks.

*The minimum Delineation for barriers used to channel traffic at speeds less than 65kph is reflective markers (chevrons) at 10m spacing. Additional delineation is necessary for any worksites with a speed limit higher than 65kph, or where significant risks exist.

9. Traffic Impact Assessments

The TTM plan designer must consider traffic impacts during the development of each TMP.
A suitable balance of safety, construction efficiency, economic impact and network impact must be considered when developing the TTM methodology.
The TMP Designer must identify if traffic volumes are at risk of exceeding the available capacity at the site, and along detour routes, the 'CTOC Transport Efficiency and Impact Guide' and 'Transport Impact Assessment (TIA) Guide' provide tools for TMP designers to use. More detailed network modelling and impact assessment/coordination may be necessary to assure the expected capacity.
TMPs must summarise the assessment undertaken, identify when network efficiency impact is likely to occur, and outline mitigation measures to minimise impact.

10. Mitigation Measures for Significant works

- When Network Impacts are unavoidable, mitigation measures must be considered, planned and delivered alongside the TMP. Specific details of Communication and Notification Strategies do not need to be included in the TMP. However, the TMP must at least outline the measures being planned.
- For major worksites that may create a significant impact for a large area of impact or prevent movement across the city, A Travel Demand Management plan may be required to be developed and accepted by CTOC before TMP acceptance.

11. Peak Traffic Hours

For works within CTOC boundaries "Peak Hours" are defined as:
07:00 – 09:00 Monday to Friday
16:00 – 18:00 Monday to Thursday
15:30 – 18:00 Friday
Any weekday before a public holiday assumes Friday timing.

Peak hours on strategic routes

On Strategic Routes, the AM and PM Peak Hours above may require adjusting to reduce the risk of severe network congestion. The TMP Designer should present an initial opinion on this as part of their Traffic Impact Analysis, with review and confirmation of acceptable timings from TMCs.
E.g. the outer reaches of Northern motorway peak hours do not match the above criteria due to the distance away from Central Christchurch, peak demand in this area is reached at around 6:30 am for City-bound traffic.

Work during Peak Hours

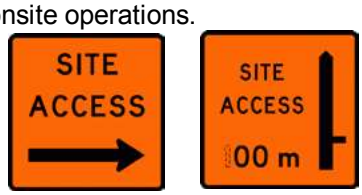
Road Level	TTM Operations (incl. mobile operations)	Construction Work within established TTM worksite
2	Not permitted	Permitted, provided that capacity is not reduced below what is accepted in the TMP. Disruptive vehicle manoeuvring for site accessing, and operations that significantly distract passing traffic are not permitted.
1, LV & LV/LR	Permitted*	Permitted*

*Provided that traffic delays do not exceed 5 minutes, or as accepted in the TMP.

12. Site Accessing

Site accessing methodologies must be considered and planned for within each TMP. Specific access points must be detailed in TMPs wherever possible, to confirm that both the work and the necessary site accessing methodologies are viable without compromising sign spacing, safety zones, traffic flow, safe road operating conditions etc.

Where site accessing cannot be accomplished in the normal direction of traffic (e.g. reversing into the site, using oncoming lanes), then a safe methodology must be designed, explained clearly in the submitted TMP, and resources allowed for within onsite operations.



13. Mobile VMS boards

Where VMS boards are utilised, the CTOC best practice for VMS messaging must be used to plan and manage the use of VMS on the CTOC network

14. Cyclist Impacts

Where marked cycle lanes, CCC endorsed cycle routes, or any road with high cyclist demand (e.g. near schools, universities, suburban shopping centres, key activity areas etc.) are affected by TTM operations, the 'Best Practice for Cyclists' Guide must be followed. The principles must be utilised during TMP design, the site deployment phase and also (continuously) during onsite operations.

15. Level 2 low speed (2LS) roads.

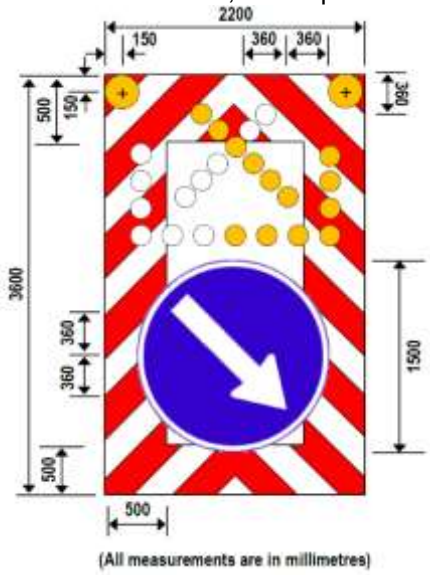
CTOC have not adopted the Level 2 low speed (2LS) road classification at this point.

16. Bus Service Impacts

Where Temporary traffic management operations will impact on a bus route or public transport infrastructure, the Best Practice for TTM Impacting Bus Services must be used to manage the impacts on bus services.

17. Use of TMAs within the CTOC network:

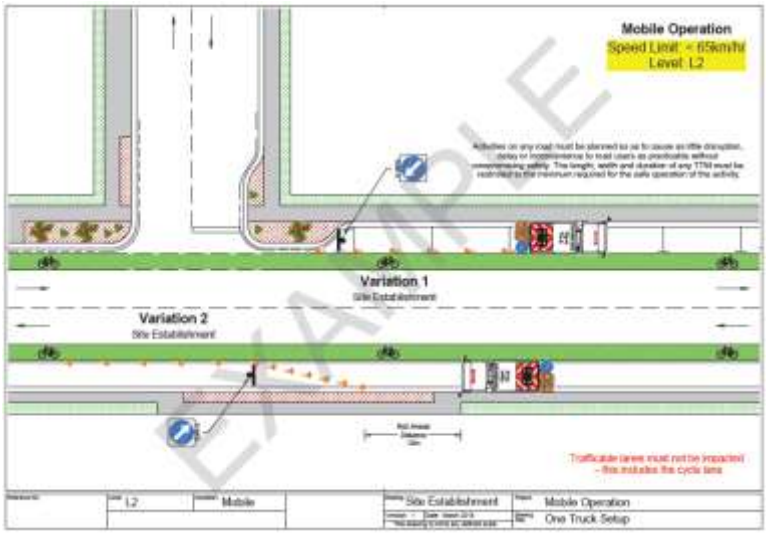
On non State Highways: The STMS may consider replacing the TMA with a CoPTTM Compliant arrow board on L2 Two-Lane Two-Way carriageways, with a posted speed limit of 50km/hr or less.
CTOC still accept the use of TMAs fitted with arrow boards on non State Highways within CTOC boundaries
In all other situations, the requirements of CoPTTM apply.

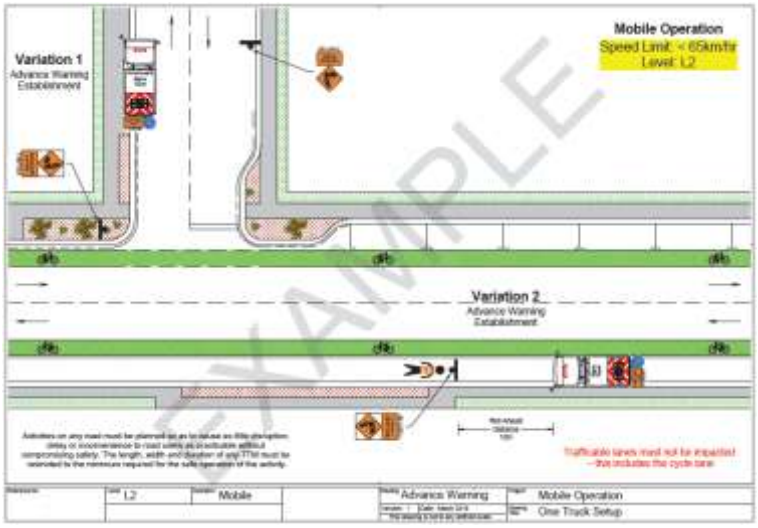


18. Allowance for a L2/3NP STMS to install Shoulder closures on a Level 2 Road PSL Under 65km/hr

Where works are contained completely within the Shoulder of a Level 2 Road, PSL under 65km/hr, and no trafficable lanes are affected, a L2/3 NP STMS may install, monitor and remove a site provided that the conditions below are met:

- The L2/3 NP STMS has been formally competency checked, by the organisation they are working for, and that organisation is confident that they are of a level of skill and competency to undertake the operation they are being given.
- No Trafficable lanes may have capacity reduced, on a Level 2 Road PSL under 65km/hr, by a L2/3 NP STMS at time of installation, removal or during works unless a L2/3 Practising STMS is present for the duration of the time that the works are effecting the trafficable lane.
- All Shoulder closures installed by a L2/3NP STMS, on a Level 2 Road, PSL under 65km/hr, must be able to be installed from a protected position in front of a legally parked work vehicle fitted with the minimum of CoPTTM compliant, and operational, arrow board accessed from the Non traffic side of the vehicle.
- Alternatively the installation of equipment, on a Level 2 Road, PSL under 65km/hr, maybe undertaken from a footpath where a road environment constraint presents a position that enables equipment to be installed from a protected area, i.e. Kerb protrusion or build out, without entering a live lane or parking shoulder
- No mobile operation is required during the installation or removal of the shoulder closure.
- All above departures from CoPTTM have been documented in an accepted TMP before utilisation.





19. Inspection activities on L2 roads

Allowance for a L1 STMS to undertake inspection activities on a Level 2 Road PSL Under 65km/hr

Where works are

- contained completely behind a kerb line on a Level 2 Road,
- PSL under 65km/hr,
- no work will occur in front of the kerb line
- appropriate safety zones are available,

A L1 STMS may install, monitor and remove a site provided that the L1 STMS has been formally competency checked, by the organisation they are working for, and that organisation is confident that they are of a level of skill and competency to undertake the operation they are being given.

Inspection activities on the live lane of a Level 2 road

Inspection activities on L2 roads in the live lane are permitted as long as traffic volumes do not exceed the figures in table 1 below and comply with Sections D7.6 and D7.7 of CoPTTM.

Table 1:

	Max vehicles per hour (vph)	Max time on road (secs)
1 lane	500	10
2 lanes	400	20
3 lanes	300	30
4 lanes	200	40

If the inspection utilises a pedestrian refuge in between two lanes on a two-lane two-way road, each direction (both lanes) can be undertaken as 2 separate inspection activities (1 lane at a time). By utilising a pedestrian refuge, an activity does not exceed the 500vph limit for a 1 lane inspection activity. A manual traffic count must be undertaken before the commencement of inspections to verify that the vph is below the maximum set out in the table above.

20. Low volume Low-Risk Roads

To enable the use of Low Volume Low-Risk Roads <250VPD methodologies. Contractors must undertake a vehicle count to verify that the traffic volumes will be below the 250 VPD threshold before deploying methodologies for Low Volume Low-Risk Roads that have been accepted in a TMP.

21. Road closures

When a Road closure is proposed for Road Works or an Event, see Road closure process information on the CTOC Website. A road closure application form must also be filled out and submitted with any TMP requesting a closure..

When a road closure extension is requested, a new Road closure application form will be required to be filled out with the TMP revision or extension form.

22. Public notifications requirements

- Notifications must be undertaken to inform impacted businesses and residents.
- For large projects that have multiple phases of works or are over an extended period, update notifications relevant to the upcoming phases will be required to keep stakeholders informed. E.g. one notification letter delivered in advance of a 3-month project that has different phases of impact will not be sufficient. Notifications are required to inform of impacts in a timely manner.
- Responsibility for who undertakes notifications must be agreed between the contractor and TTM provider, however, the STMS must check any required notifications have been undertaken before deploying an accepted TMP.

Notification time frames

Type of restriction	Notification timeframe (before deployment)	Type of notification (if required)
Removal of time-limited parking outside a business premises blue "P" signage	Notification required at least 72 hours in advance for planned works.	Letter drop or door knock
Removal of mobility Parking	No notification required	Alternative parking facility with similar level of service MUST be provided close by
Parking restriction Residential	No notification required	If restrictions to be less than 48 hours
Parking restriction Residential	24 Hours notification	Letter drop or door knock If restrictions to be more than 48 hours but less than 5 days
Parking restriction Business premises	72 Hours notification	Letter drop or door knock If restrictions are less than 5 days
Road closure Cul-de-sac Less than 100m in length	72 Hours notification	Letter drop/door knock
Road closure Other than Cul-de-sac <100m in length	7 Days notification	Letter drop and Pre-warning signage
Parking restriction for major works or restriction longer than 5 days	7 Days notification	Letter drop
One Way Systems on Roads under 1000vpd	7 Days Notification	Letter drop
One Way Systems on Roads over 1000vpd	7 Days Notification	Letter drop and Pre-warning signage
Customer notification "Letter" and "Prewarning signage" specifications are available on TMP for CHCH website		

23. Pedestrian Management

Footpath closure

Where a Footpath closure is required and road users are asked to, “Please use other side” of carriageway, the traffic volume must be 5,000 vehicles per day or less. The following conditions must be met to enable this methodology to be deployed:

- The permanent speed limit is under 65km/hr
- There is a suitable footpath on the other side of the road.
- There is suitable clear sight distance available for pedestrians to make a safe crossing.
- Compliant transitions from kerb to road level (e.g. ramps) have been put in place where required.
- Crossing points are clearly defined using appropriate signage.
- STMS has carried out a risk assessment on site to ensure that the location is appropriate. (This assessment must consider the likely users of the crossing point, e.g. if near a primary school, then particular care is needed to determine a safe location and additional mitigation may be necessary.)

Where any of the above requirements cannot be met, or traffic volumes are above 5,000 vehicles per day, a Site Specific TMP is required.

Dedicated crossing points

A Site Specific TMP is required for any footpath closure that affects a Zebra crossing or dedicated school crossing point.

Pedestrian islands in the centre of the road

Where there is no other reasonably practicable option available to facilitate pedestrian movement past a work area, and other options such as directing pedestrians to the opposite side of the carriageway are not feasible, Installation of pedestrian refuges to prevent pedestrians needing to cross more than a single lane at a time need to be considered.

24. Tail pilot usage for site installation and removal operations

- Where a work vehicle can install a T1 sign from a safe position outside of the edge line, or from a legally parked position, a tail pilot is not required for works on a road, less 65 km/hr PSL
- Where on multi-lane road signs are being installed on a median, or the permanent speed limit is over 65km/hr or, a tail pilot must be used in accordance with an accepted mobile diagram.

25. Omission of Works End signs

- Works End and Thank You signs may be omitted on all worksites under 65km/hr PSL.
  For this purpose the 'End of Works' zone is redefined as: "The last sign or TTM device used". Where a Temporary Speed Limit (TSL) has been deployed, the 'End of Works' zone will usually be defined by the Permanent Speed Limit reinstatement signs. Where a TSL has not been deployed, it will usually be defined by the last TTM device (e.g. cone) used in the Direction and Protection zone around the closure, or the first sign for the opposing approach.

- Where the PSL is greater than 65km/hr Works End or Thank You signs are required at all times as per CoPTTM.

26. Distance warning supplementary plates

- On all roads with a PSL of Over 65km/hr Temporary Lane Shift distance warning supplementary plates are required.
- On roads with a PSL of Under 65km/hr the Temporary Lane Shift supplementary plates are optional.

27. T144 Temporary Speed Limit Ahead signs

- On all Road levels PSL over 65km/hr the T144 'XX km/h ahead' sign is required when a TSL is deployed. *CTOC acknowledges this is a higher requirement than that which is stated in CoPTTM.*

- On all Road levels PSL under 65km/hr the T144 'XX km/h ahead' sign is optional when a TSL is deployed.

28. Work that impacts on stakeholders by creating noise

- Where works are undertaken that create noise that impacts stakeholders, CTOC acceptance of a TMP does not grant permission to exceed noise levels as set within the Christchurch City District Plan, nor does it grant permission to create excessive noise.
- Should noise be generated, that exceeds levels as set in the Christchurch District Plan, or works create excessive noise, pursuant to section 326 of the Resource Management Act, the work may need to be abated immediately.

29. Engineering Design of Temporary Transport Facilities

Where temporary road situations are proposed to be substantially different to normal layout of the road due to the construction of new pavement, intersection controls, or substantial alterations to geometric alignment, additional engineering design to the standard TTM considerations is necessary. The additional design is necessary to adequately manage the risks created by the new alignment and to fulfil obligations under the HSWA 2015. Road engineering standards must be referred to and considered during the design of these temporary facilities, to ensure that the levels of safety and service being proposed meet adequate standards. The risks around any lower standard designs must be identified, assessed, and balanced against other factors. Appropriate strategies to mitigate risk must also form part of the design process.

The TMP designer may not be sufficiently qualified and experienced to design all elements of a temporary transport facility themselves, and may therefore need to seek assistance or design inputs from other specialist designers (refer below for areas of design). The TMP designer is responsible for providing the proposed details of temporary facilities in the submitted TMP enabling assurance that a coordinated, safe, and well-considered design is proposed.
Standards for the following (plus any other significant design elements) must be considered and documented within every TMP that proposes to substantially change the normal road environment:

Examples include:

- Geometric standards: horizontal and vertical alignments
- Cross Section and Roadside features
- Lighting
- Drainage
- Intersection controls
- Signage and delineation

Common references for these include:

Area of Design	*Reference*
General principles and Geometric design	Austroads Part 2-3 including NZ Supplement, and NZTA State Highway Geometric Design Manual Parts 1-5
Cross section and Roadside features	Austroads Part 3, and NZTA State Highway Geometric Design Manual Parts 6 & 7
Lighting	AS/NZS 1158 Road lighting (includes footpath lighting)
Drainage	Austroads Guide to Road Design Parts 5, 5A
Intersection controls	Austroads Guide to Road Design Part 4A The references contained in NZTA State Highway Geometric Design Manual Part 8: Intersections and Interchanges
Traffic Signals	Traffic Control Devices (TCD) Manual and NZTA P43: Specification for Traffic Signals and CCC Local Specification
Signage and delineation	NZTA Traffic Control Devices (TCD) Manual, including Part 8: COPTTM
CCC standards (includes vehicle crossings, footpaths, cycleways)	Austroads Part 2-3 including NZ Supplement, and CCC Construction Standard Specifications (CSS)
Other	As listed in Contract Documents

Designs for a temporary transport facility must outline the standards adopted for the elements listed above in comparison to the facility that is being replaced. CTOC would generally expect a similar LOS to be offered (for example a 50kph design speed, sealed all-weather surface facility would ideally be replaced with a 50kph design speed, sealed all-weather surface temporary facility), however compromises to the normal LOS in light of the context around the temporary situation can be considered using our standard 'best for NZ' decision-making philosophy.
While the shorter than normal expected life of the temporary facility should be taken into account, safety of all users of the facility remains a key priority. CTOC will be seeking assurance that acceptable levels of safety, service, and asset resilience, have been considered within the design.
We recommend that the following pieces of assurance are provided during concept discussions or (at latest) supplied in conjunction with or embedded within the TMP submission:

- Design Plan(s): drawn to scale, showing critical dimensions and features of the proposed temporary concepts. The holistic scenario presented by all of the design elements in conjunction with the TTM elements must be clear.
- Design Statement(s): from suitably qualified designer(s) confirming that relevant design references have been taken into account, and that appropriate* standards have been adopted.
- Operating Detail: where systems such as partially complete traffic signals are proposed, operational details (eg phasing diagrams, detector loop functionality, available movements, and delineation details), must be clearly explained.
- Risk Assurance: Significant and/or high risk temporary transport facilities may require a higher level of assurance, such as a design safety audit of the proposed details.

* 'appropriate' means: within the context of the temporary situation and that support 'best for NZ' outcomes. If compromises to normal design standards are proposed, the risks must be clearly identified, justification provided for the departure(s), and mitigation measures detailed.

30. Glossary

AADT	Average Annual Daily Traffic volume
CCC	Christchurch City Council
CITTM	Christchurch Improvements Temporary Traffic Management
CoPTTM	Code Of Practise Temporary Traffic Management
CTOC	Christchurch Transport Operations Centre
FWV	Forward Works Viewer
FY	Flashing Yellow traffic signals
L1	Level 1 Road Level classification
L2	Level 2 Road Level classification
L2/3 STMS	Level 2/3 Practising STMS
L2/3NP STMS	Level 2/3 Non Practising STMS
LAS	Light Arrow System
LINZ	Land Information New Zealand
LOP	CTOC Local Operating Procedure
LV	Low Volume Road Level classification
LV/LR	Low Volume / Low-Risk Road Level classification
Max.	Maximum
mVMS	Mobile Variable Message Sign
NZTA	New Zealand Transport Agency
PSL	Permanent Speed Limit
RCA	Road Controlling Authority
RTO	Real-Time Operations Team
STMS	Site Traffic Management Supervisor
TIM	Traffic Impact Minimisation Group
TMA	Truck Mounted Attenuator
TMC	Traffic Management Coordinator
TSL	Temporary Speed Limit
TTM	Temporary Traffic Management
VMS	Variable Message Sign
VPD	Vehicles per day equivalent to AADT
VPH	Vehicles per hour