



STMS REFRESHER HANDBOOK

WAKA KOTAHI - NZ TRANSPORT AGENCY

VERSION 2.0

Participant name:

Copyright information

Copyright ©. This copyright work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to copy, distribute and adapt the work, as long as you attribute the work to the NZ Transport Agency and abide by the other licence terms. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Disclaimer

The NZ Transport Agency has endeavoured to ensure material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The NZ Transport Agency 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 refer directly to the relevant legislation and contact the NZ Transport Agency.

More information

If you have further queries, call our contact centre on 0800 699 000 or write to us:

NZ Transport Agency
Private Bag 6995
Wellington 6141



Contents

OVERVIEW OF CHANGES TO COPTTM.....	4
CAREER PATH.....	5
STMS REFRESHER PRACTICAL ASSESSMENT	9
RISK ASSESSMENT	11
A4 LEVELS OF TTM.....	16
A5.8 STMS RESPONSIBILITIES	16
A5.9 TRAFFIC CONTROLLER (TC)	18
A5.10 TRAFFIC MANAGEMENT OPERATIVE (TMO).....	19
TMO AND TC RESPONSIBILITIES	19
CHANGES IN SECTION C.....	22
CHANGES IN SECTION D.....	24
INFORMATION FOR PRACTICAL ASSESSMENT.....	26
INSTALLATION, MAINTENANCE AND REMOVAL OF TTM	36

CHANGES TO CoPTTM

- CoPTTM has been updated to allow for the Waka Kotahi TTM training and competency model to be implemented.
- The training and competency model has been introduced to:
 - Provide a career path for people who work in the TTM industry
 - Link to unit standards leading to the national certificate in TTM (for those that want it)
 - Provide assessment of practical competency for on-road roles (to meet HSWA requirements regarding a risk assessment approach).
- Changes as a result of the review of CoPTTM will be issued separately.

We will cover the following changes progressively throughout the workshop:

- Introduction of categories of road environment (A, B, C)
- Renaming of the Site Traffic Management Supervisor (STMS) role to Site Traffic Management Supervisor **Specialist** (STMS)
- Amendments to the STMS responsibilities
- Amendments to responsibilities of a TC (and phase out of this role)
- Introduction of additional roles of:
 - Traffic Management Operative (TMO)
 - STMS Mobile operations - STMS (M)
- Amendments to A6 Training to list the learning blocks covered in the Waka Kotahi training and competency model and link to the website for details of each learning block
- Amendments to the requirements for shoulder and roadside activities
- Amendments to requirements for inspection type activities.

CAREER PATH

Categories of road environment

The new TMO and STMS warrants are based on categories of road environment.

Each road environment deals with a different type of risk.

There are different risk profiles depending on the road environment you are working in.

Considerations on low speed roads:

- Pedestrians and pedestrian crossings
- Cyclists and cycle lanes
- Shared pedestrian and cyclist paths
- Restricted parking areas in the form of bus stops, loading zones, taxi stands, coupon parking, resident parking etc
- Higher number of intersections and accessways
- Many distractions.



Considerations on high speed roads:

- Higher speed – longer stopping distances
- More heavy vehicles
- Visibility of the worksite (vertical and horizontal curves)
- Shoulder and pull over areas
- Slower driver reaction time.



Categories of road environment

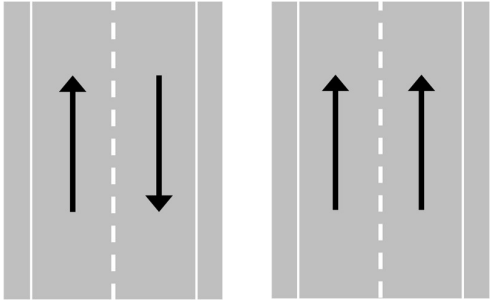
Category A: Low speed roads (60km/h and less)

- Includes LV, L1 and L2 low speed roads
- Using either type A or B signs



Type A

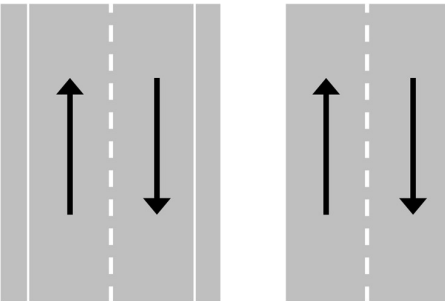
Type B



- Includes two-way two-lane and multi-lane roads.

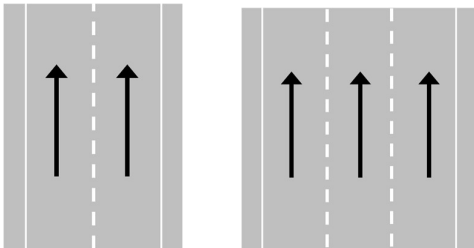
Category B: High speed two-way two-lane roads (70km/h and more)

- Includes LV, L1 and L2 high speed roads
- Using both type A and B signs (depending on requirements)
- Includes roads with or without shoulders.



Category C: High speed multi-lane roads (70km/h and more)

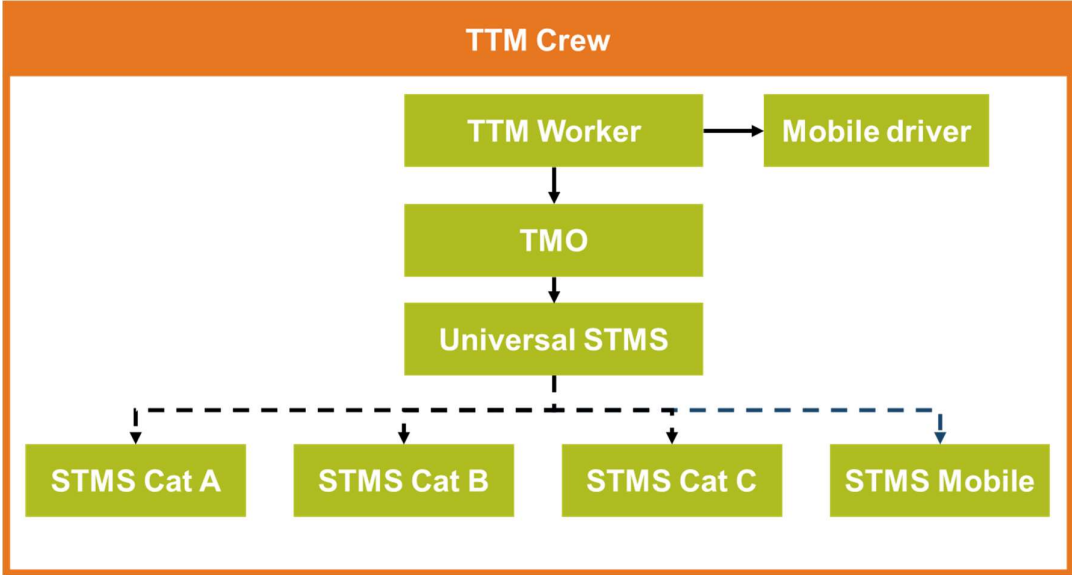
- Includes high speed L1, L2 and L3 multi-lane roads
- Using both type A and B signs (depending on RCA requirements).



Effective date

The effective date for the introduction of categories of road to be used for TTM training, assessments and warrants is 1 April 2021.

Career path for TTM crew



Waka Kotahi TTM warrants

The Waka Kotahi TTM warrants are either non-practising or practising

Warrant	Explanation
Non-practising	Successfully completed the workshop
Practising	Successfully completed the workshop and assessed as competent

Training, mentoring and assessment



3 key parts of the learning are:

- Training
- Mentoring
- Assessment.

NZ Certificate in Temporary Traffic Management at a Worksite

The certificate is optional. Here are the unit standards that make up the certificate.

Learning block	Unit standard	Title
TTM Worker	31958	Explain the role of and operate as a TTM worker on the worksite under temporary traffic management
TMO Non-practising	31959	Demonstrate knowledge of stakeholders and operational requirements for temporary traffic management
TMO Practising	31960	Maintain the worksite under temporary traffic management
Universal STMS	31961	Explain the requirements for the worksite under temporary traffic management
STMS Non-practising	31962	Explain the requirements for the worksite under temporary traffic management for a road environment as defined in CoPTTM
STMS Practising	31963	Operate as a practising Site Traffic Management Supervisor (STMS) within a road environment as defined in CoPTTM

Refreshing an existing STMS warrant

If the STMS successfully completes the STMS Refresher workshop they will be awarded non-practising warrants based on their existing level of warrant:

- Level 1 STMS will be awarded STMS Cat A and B non-practising warrants
- Level 2/3 STMS will be awarded Cat A, B and C non-practising warrants.

To gain the practising warrant the STMS must complete the practical assessment for each of the categories of road environment (Cat A, B, C) they will be an STMS on.

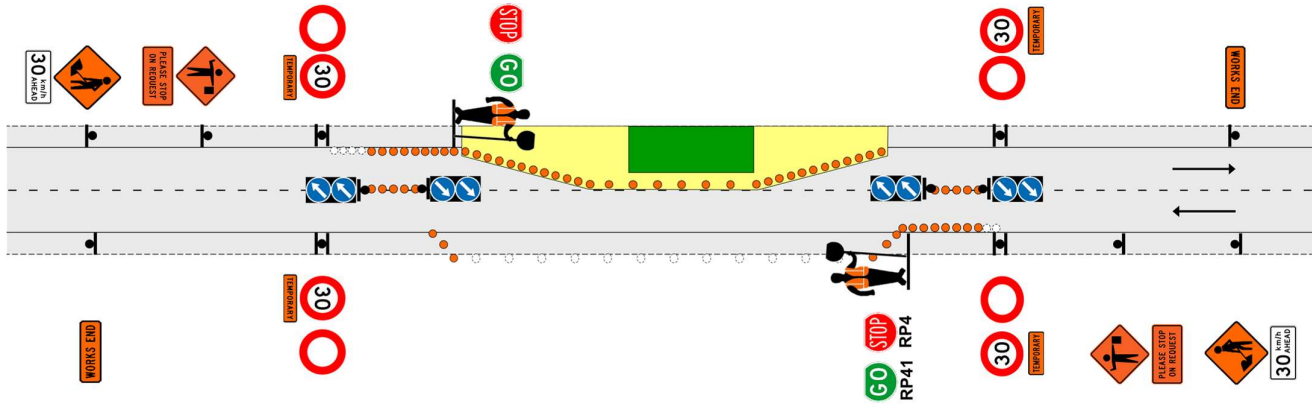
Unit Standards and Recognition of Prior Learning (RPL)

The STMS can also complete the optional STMS non-practising and the STMS practising unit standards. Once the STMS holds these two unit standards, RPL will be applied to all of the prior unit standards which will allow them to apply the NZ Certificate of Temporary Traffic Management (Worksites).

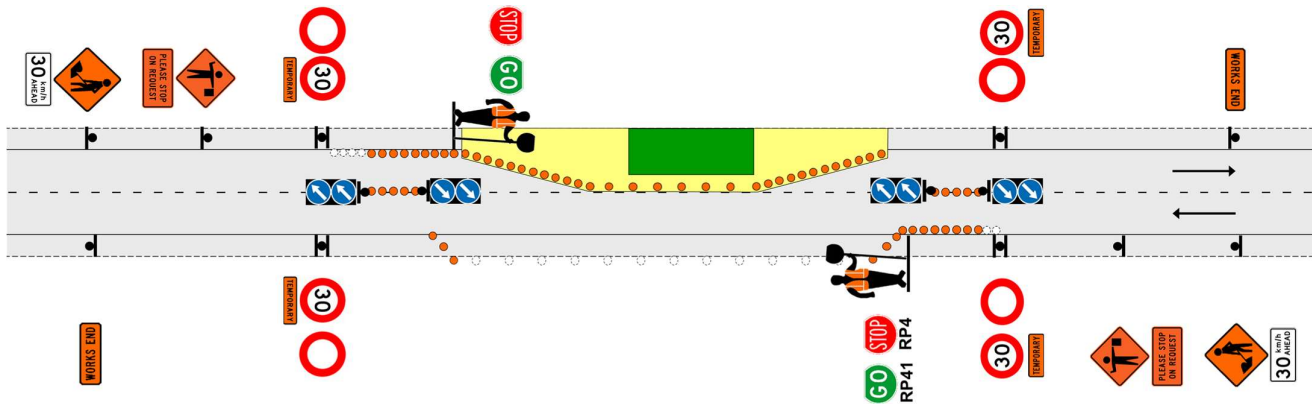
This will allow you to be awarded the NZ Certificate in Temporary Traffic Management at a Worksite.

STMS REFRESHER PRACTICAL ASSESSMENT

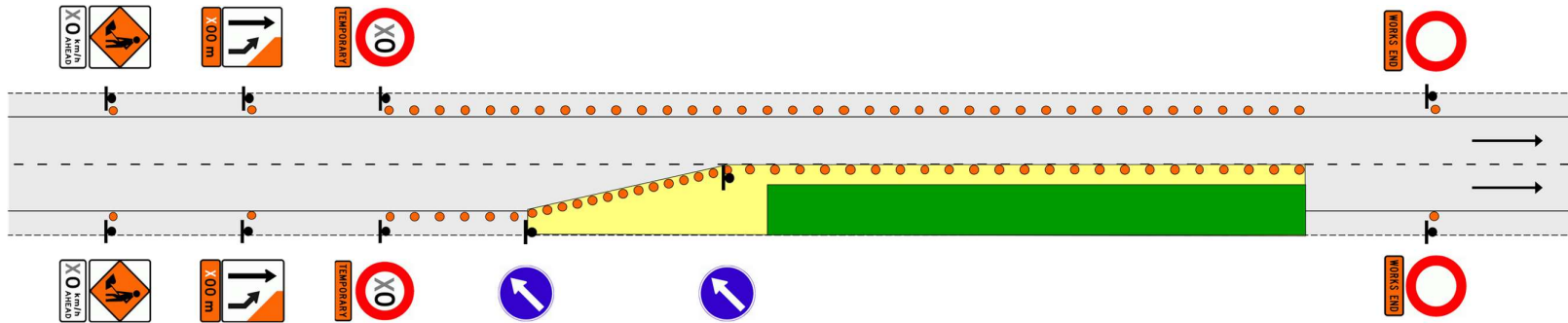
Cat A – Alternating flow closure (60km/h or less)



Cat B – Alternating flow closure (70km/h or more)



Cat C – Lane merge or chicane (70km/h or more)



STMS Mobile operations – mobile closure on the lane

This is for STMS who are in charge of moving work activities (excluding operations for static worksite TTM installation, maintenance and removal at a static worksite) on category A and B roads and on the shoulder or roadside 2m clear of the edgeline of a category C road environment.

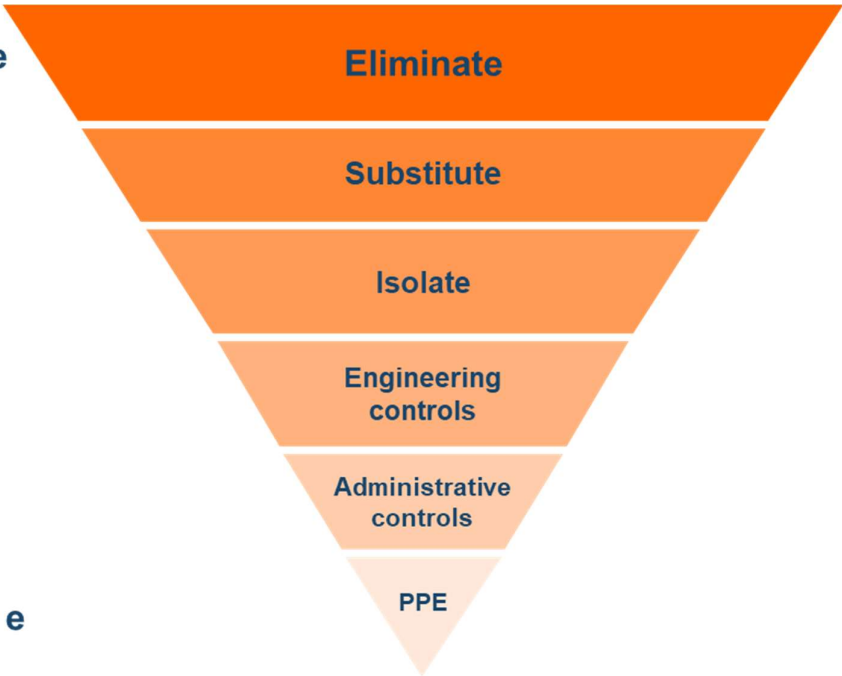


RISK ASSESSMENT

Hierarchy of controls

There is a hierarchy of controls that we all have to apply. The most effective controls need to be considered first.

If any control is not practical, a lower control can be used.

Hierarchy	Examples of TTM related controls
<p>Most effective</p>  <p>Least effective</p>	<p>This is always the first option considered during planning. Close the road and detour traffic</p> <p>Substitute Stop/Go for portable traffic signals Controller can be located away from live traffic</p> <p>Use barriers to isolate the workers from risk of passing traffic</p> <p>Use a TMA to provide extra protection for road users and shadow vehicle driver</p> <p>Mark on the TMP where the safety (no go) zones are and brief crew about not entering these zones. Record briefings</p> <p>High vis garment is the lowest safety control. PPE as primary safety control (eg inspection activity for 3 minutes) is only permitted when it is not practicable to use any other control</p>

Examples of risk management on Cat A roading environments

Hazard	Risk	Likelihood and severity	Action
Mobile crane outriggers are beside working space cones	Vehicles might hit the outrigger and cause the crane to topple during a lift	Possible and severe – risk rating very high	Ensure the lateral safety zone is maintained
Pedestrians or cyclists can enter the working space	Injured by a hazardous area in the worksite or a vehicle	Likely and severe – risk rating very high	Provide appropriate and compliant isolation (eg safety fences, cone bars)
Traffic is travelling too quickly or too close to workers	Injured by vehicle or roadside debris	Possible and severe – risk rating very high	Introduce a TSL. Provide increased positive traffic management measures
Pedestrians and cyclists are forced to use the same narrow temporary path alongside the workspace	Cyclist striking pedestrian. Walking or riding into the live lane	Possible and moderate – risk rating high	Provide greater shared path width if possible and separate using compliant isolation (eg safety fences, cone bars) Require cyclists to dismount
Bus stop relocation not sign-posted. Pedestrians walking into live lane to stop the bus	Pedestrians struck by bus or other vehicles	Possible and severe – risk rating very high	Ensure that all TMP requirements including signage and public notifications are carried out before and on the day that the TMP is setup. Relocate temporary ped refuge

Hazard	Risk	Likelihood and severity	Action
Queues at intersections near a worksite	Road user behavior due to queuing and delays including speeding and overtaking resulting in vehicle strikes vehicle or vehicle strikes worker	Possible and severe – risk rating very high	Create clear cone channels for vehicles. Provide plenty of warning and information on likely delays and alternate routes. Plan the work in smaller chunks to lessen the impact of the works and TTM
Site clutter or many distractions that could overwhelm or confuse the road user	Road user loses concentration and drives into worksite or another vehicle causing injury	Unlikely and severe – risk rating high	Install construction hoarding or blinds to obscure working activity from the road user. Install TSLs to slow the road user and allow more time and space to react

Examples of risk management on Cat B roading environments

Hazard	Risk	Likelihood and severity	Action
Environmental factors that reduce visibility (sun glare, fog, heavy rain)	Road users do not have time to react appropriately resulting in a vehicle crash	Possible and severe – risk rating very high	Delay setup and wait for environmental factors to dissipate
Wind shear caused by heavy vehicles at high speeds	TTM workers pulled or pushed into the lane and struck by a vehicle	Possible and severe – risk rating very high	Ensure CSD and/or sign visibility distance is maintained. Utilise TSLs & positive TM. Cover in safety briefing and maintain safe distances
Road users travelling at higher speeds	Road user errors resulting in late breaking or manoeuvring resulting in a vehicle crash	Possible and severe – risk rating very high	Greater sign spacings and the use of TSLs & TTM where appropriate. Pace vehicle operations
Road users forced closer to road-side culverts and swales	Increased probability of a loss of control type crash due to small driver errors	Possible and severe – risk rating very high	Maintain maximum lane widths, introduce TSLs & positive TTM, create additional safety zones where possible
Slower driver reaction times (up to 2.5 seconds)	Road users do not have time to react appropriately resulting in a vehicle crash	Possible and severe – risk rating very high	Greater sign spacings and the use of appropriate equipment to provide advanced warning ie Variable messaging boards

Hazard	Risk	Likelihood and severity	Action
<p>Pedestrians and cyclists forced closer to traffic</p>	<p>Collisions at higher speeds can cause severe injuries. Some roads have no or very little shoulder areas</p>	<p>Possible and severe – risk rating very high</p>	<p>Ensure that cyclists and pedestrians are included in the planning. The use of alternating flow should be considered if cycle and pedestrian routes are affected</p>

A4 LEVELS OF TTM

Levels of TTM

There have been no changes to the levels of road for TTM (LV, L1, 2LS, L2, L3).

Categories of road environment

An additional subsection has been added to allow for the introduction of categories of road environment (Cat A, Cat B, Cat C).

These road environment categories have been based on common known network risks.

A5.8 STMS RESPONSIBILITIES

STMS role renamed

The role of an STMS has been renamed to Site Traffic Management **Specialist** (STMS).

A practising warrant has been added for all TTM categories of road environment.

Holders of new and existing STMS warrants

The **new practising STMS warrants** enable the STMS to take charge of TTM at worksites in the category of road environments they are warranted for (eg practising STMS Cat A can be in charge of worksites on LV, L1, 2LS and L2 roads with permanent speeds of 60km/h or less).

Holders of **existing STMS warrants** can only take charge of TTM on the level of roads they are warranted for (eg L1 STMS can be in charge of worksites on LV and L1 roads).

STMS and inspection activities



A **practising STMS of any category** (A, B, C) can complete inspections on Category A or Category B road environments.

STMS is not required to be in charge (or undertake briefings/worksites checks) of inspection activities undertaken by a practising TMO or Inspector (or for those holding existing TC or TC-I warrants).

STMS Mobile operations warrant

This warrant does not allow the holder to install, maintain and remove TTM at static worksites

Practising STMS Mobile can take charge of a mobile operation on a category A and B road environment (and on the shoulder or roadside 2m clear of the edgeline of a category C road environment).

Mobile operations within 2m of the edgeline or on the lane of a category C road must be under the control of a practising STMS category C (or an existing L2/3 STMS).

Removal of planning responsibilities

Some RCAs are granting extensions to timeframe to allow time for TTM Planners to get warranted

Since 1 January 2021, TTM Planner have had to submit TMPs for approval.

They are the **Installation Designer**.

They must ensure the installation design:

- Will **protect** workers and the public
- Is **fit for purpose**.



Onsite STMS follows the TMP

Statistics from audits show that if the TMP is right for site and followed, 92% of worksites are rated acceptable or high standard.

If the TMP is NOT right for site (or is not being followed) and the STMS decides to design the setup when they arrive at the worksite, only 35% of worksites are acceptable or high standard – in other words they get it wrong **65%** of the time.

Of the worksites that were not following an approved TMP, 10% of those were dangerous.

Check that the TMP is appropriate

Where not appropriate, **DO NOT** set up the site

Talk to the TTM Planner

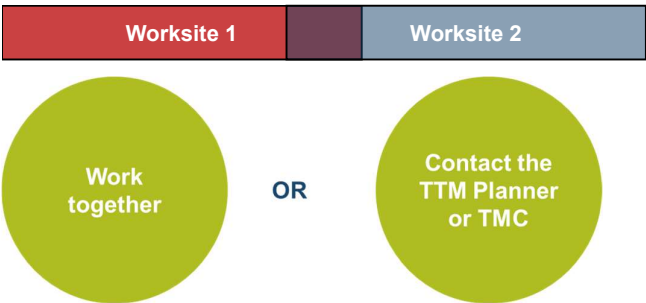
On arrival at site, the STMS should check that the TMP is appropriate to the worksite and the activity. If the TMP is NOT suitable they should NOT set up the site.

What they can do is:

- Make CoPTTM compliant minor changes (eg lengthen taper), or
- Contact the TTM Planner who will talk to the person who has approved the TMP to reach agreement on any changes (eg change TSL), or
- Postpone the work, get the TMP redrawn and re-submitted for approval.

Any changes made must be recorded on the TMP or on-site record.

Overlapping worksites



Where the TTM for one worksite interferes with the TTM of another worksite (eg any signs or cones overlap on the same piece of road) the STMSs should try to work out a practical and compliant solution.

If the matter cannot be resolved the issue must be referred to the TTM Planner(s) or TMC for a decision.

Practising STMS may undertake other worker roles on Cat A and B road environments

A practising category A and/or B STMS will be able to undertake other worker roles on what have traditionally been level 2 and 2LS roads.

The STMS role must take priority

The responsibilities of a practising STMS category C (or an existing L2/3 STMS) must be limited to TTM.

Removal of STMS-NP relaxations

An existing STMS-NP (when under the supervision of a practising STMS) can **NO LONGER** be responsible for worksites:

- On a shoulder
- For a capital project
- For a mobile operation at least two metres clear of the edgeline.

Identification of STMS



The in charge STMS must wear the STMS high visibility garment at all times at the worksite.

The exemption to wear orange vest on LV and L1 roads when only 2 personnel on site has been removed.

A5.9 TRAFFIC CONTROLLER (TC)

TC responsibilities have been revised to reduce risk with activities that the TC has previously been allowed to perform.

For example, the TC **WILL NOT** be able to:

- Set up and remove TTM that impacts a live lane at static worksites
- Lead a mobile operation.

From 1 October 2021, all existing TC warrant holders will only be able to perform the revised TC responsibilities.

Existing TC warrants will continue to the expiry date and are refreshed by:

- Attending TMO Refresher training, and
- Completing the TMO practical assessment (if the practising warrant is required).

Effective date
1 October 2021

(Allows time for STMS training, mentoring and assessment where required)

A5.10 TRAFFIC MANAGEMENT OPERATIVE (TMO)

TMO responsibilities similar to revised TC responsibilities.

One key difference is that the TC can only be delegated responsibility for worksites on level LV and level 1 roads whereas the TMO can be delegated responsibility for worksites on category A and B roading environments (which may include level LV, level 1, level 2 and 2LS roads).

Holders of a TMO-NP warrant will not be able to be delegated responsibility for a worksite.

TMO
Effective
date
1 April 2021

TMO AND TC RESPONSIBILITIES

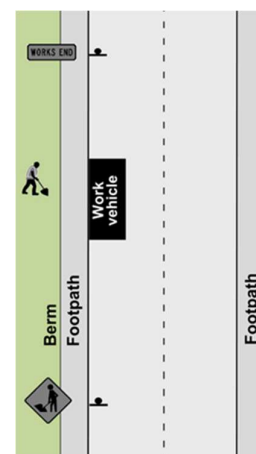
ROADSIDE ACTIVITY

Set up, maintain and remove a static worksite where the permanent speed is 60km/h or less provided:

- The work activity is carried out on the roadside or a footpath
- The work vehicle is legally parked
- The vehicle is only accessed from the non-traffic side

Large plant and machinery must not be used in this situation; a more substantial closure is required. Advance warning and works end are optional. Pedestrians do not have to cross over a kerb or edgeline.

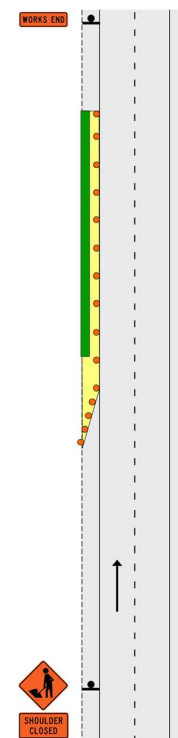
This layout must only be used during daylight hours.



SHOULDER CLOSURE

Set up, maintain and remove a static worksite provided ALL associated TTM equipment is either:

- Out of the live lane, or
- Outside an edgeline (on the shoulder) – *TMO/TC cannot install a shoulder closure if there is no edgeline, or*
- Outside the edge of seal (roadside).



STATIC WORKSITE on the lane

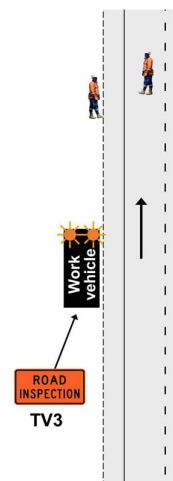
Maintain existing static worksites within the current phase while the STMS is away from worksite.

STMS must return to worksite if there is a need modify current phase of TTM measures.



INSPECTION ACTIVITIES

Undertake inspection activities on Cat A and B roads (or for existing TCs LV and level 1 roads).



INSPECTION ACTIVITIES

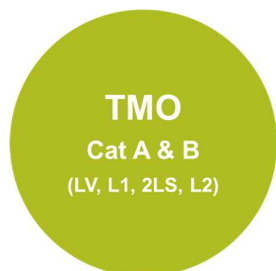
TC can undertake inspection activities as part of the installation, maintenance and removal of TTM at a worksite.

These activities could include:

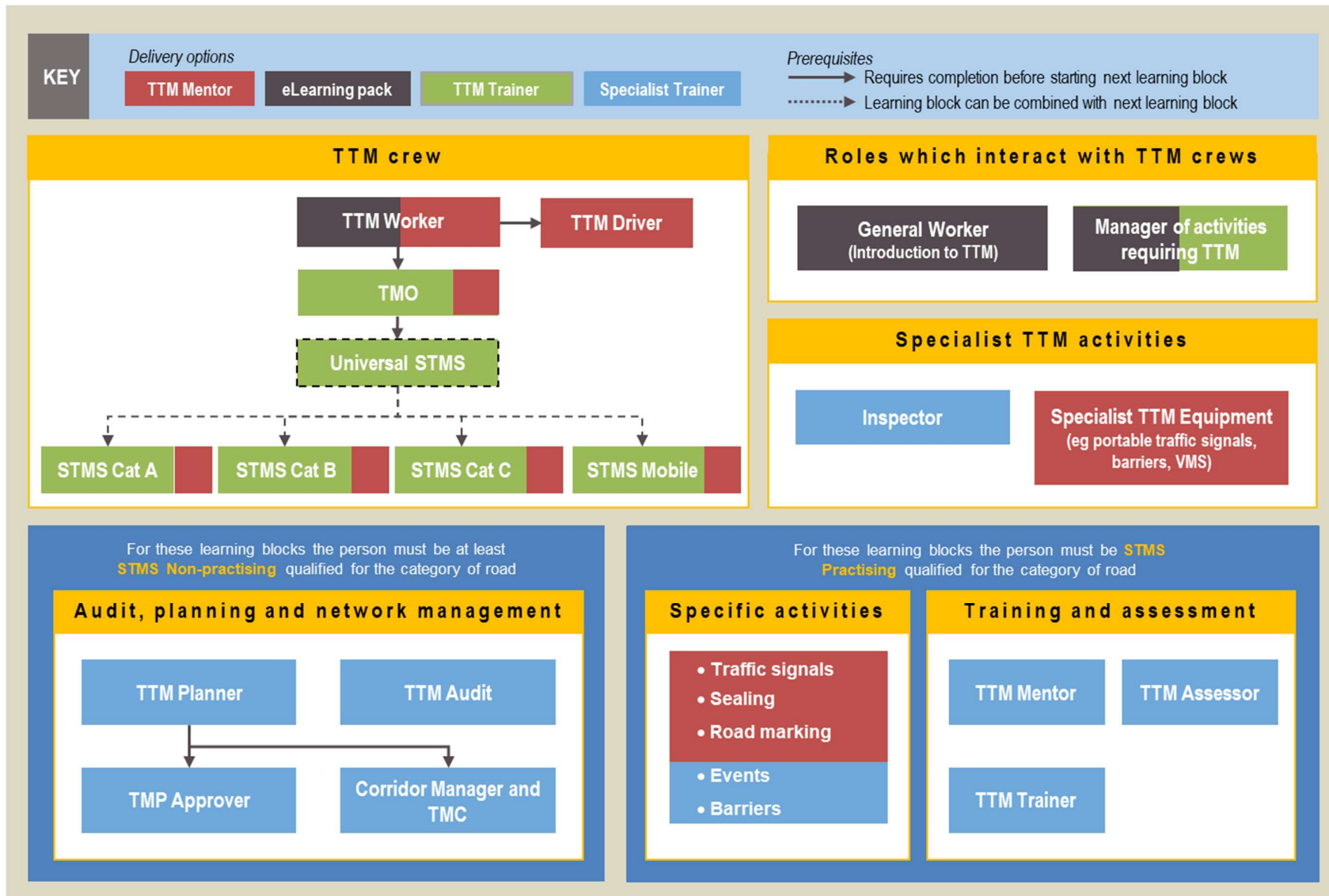
- Installing a cone threshold
- Reinstating a centreline cone that has been knocked over
- Removing a sign that has fallen into the live lane.

Delegation to TMO and TC

STMS can delegated responsibility for TTM at worksites to the TMO and TC in the following categories/levels:



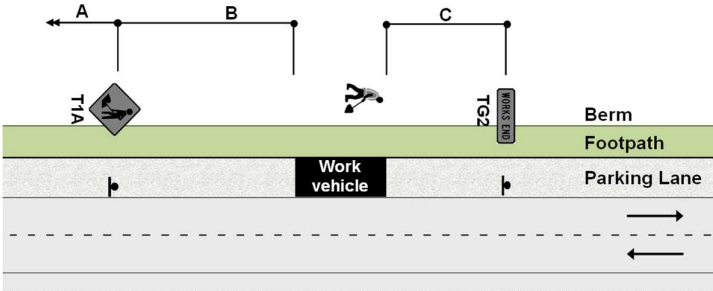
A6 Training and assessment



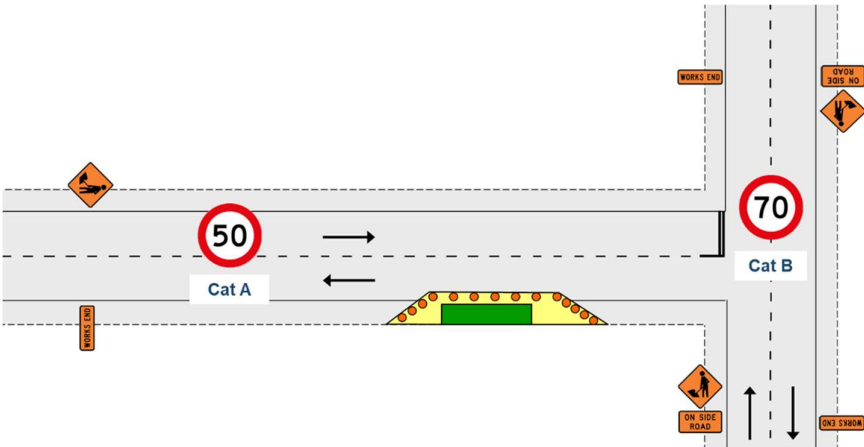
CHANGES IN SECTION C

C8.1.12.1 Roadside activities on category A road environments

This closure may only be used where pedestrians do not have to cross over a kerb or edgeline.



C8.2.21.1 STMS Cat A installing TTM equipment on an adjacent category B road environment



An STMS Cat A can place TTM equipment on a category B road environment if:

- The closure is only on the category A road environment (no part of the closure including safety zones and taper can be placed on the category B road environment)
- Signs and delineation in the category B environment are installed in the shoulder (no TTM equipment to be installed in the lane)
- A shadow vehicle is used and the TTM vehicles when stopped are clear of the lane during the installation process.

If these conditions cannot be met, then an STMS Cat B must install and remove the TTM on the category B road environment.

CHANGES IN SECTION D

Revised D4.1.3 Vehicle position

D4.1.3 Vehicle position

The visibility required for a road user approaching the rear of a shadow vehicle is at least:

- 50m on **level LV**, **level 1** and **level 2LS** roads (if a shadow vehicle is not used then this distance applies to the rear of the work vehicle)
- 100m on **level 2** (excluding 2LS) and **level 3** roads.

Inspection activities

Before commencing an inspection activity

Before commencing an inspection activity:

- The intended worksite area within the road environment is assessed for risk
- The TMP is reviewed
- Hazards and mitigations are identified
- Others involved in the inspection activity are briefed on the activity, hazards and mitigations.

STMS is not required to be in charge

Inspection activities can be undertaken by a:

- TC
- TC-Inspector
- Practising TMO
- Inspector

without the need for the operation to be under the control of an STMS

Network training/briefing

In addition to having a warrant that allows the holder to be in charge of an inspection activity the warrant holder must also undertake any network specific training or briefings required by the RCA.

Revised D7.6 Inspections and non-invasive works

Inspection activities must be completed as detailed in the approved TMP.			
Type of road	On shoulder or roadside – no time limit	On live lane – up to 5 minutes	Over 5 minutes
Low volume (less than 500vpd) category A or B road environment	Spotter optional – can be one person activity Onsite control must be by either a practising STMS of any category, a practising TMO or an Inspector <i>and in the interim until the warrants are phased out, an STMS of any level or a TC-Inspector.</i>		Inspection not permitted. Must use a mobile, semi-static, or static closure.
Category A	Spotter optional – can be one person activity	Spotter required – minimum two person activity	
	Onsite control must be by either practising STMS of any category, practising TMO or Inspector <i>(and in the interim until the warrants are phased out):</i>		
	Road level	Onsite control	
	Level 1 road	TC, TC-Inspector or STMS	
	Level 2 road	L2/3 STMS, STMS-NP, or TC-Inspector	
Category B	Spotter optional – can be one person activity	Spotter required – minimum two person activity	
	Onsite control must be by either a practising STMS of any category, a practising TMO or an Inspector <i>and in the interim until the warrants are phased out:</i>		
	Road level	Onsite control	
	Level 1 road	TC, TC-Inspector or STMS	
	Level 2 road (shoulder, roadside or on the lane with speed 60km/h or less)	L2/3 STMS, STMS-NP or TC-Inspector	
	Level 2 road (on the lane with speed 70km/h or more)	L2/3 STMS or STMS-NP	
Category C	Spotter optional – can be one person activity: Onsite control must be by either a practising STMS (C) or an Inspector <i>(and in the interim until the warrants are phased out, a L2/3 STMS, STMS-NP, or TC-Inspector).</i>	Inspection not permitted. Must use a mobile, semi-static, or static closure.	

INFORMATION FOR PRACTICAL ASSESSMENT

Stage of the assessment	Actions
Before leaving the yard	<ul style="list-style-type: none"> • Initial check of TMP • Carry out vehicle checks • Carry out equipment check
At the site	<ul style="list-style-type: none"> • Check the TMP suits the operation • Carry out TTM crew briefing • Direct the installation of TTM • Ensure equipment is used correctly • STMS drive through worksite inspection • Complete paperwork
While TTM installed	<ul style="list-style-type: none"> • Carry out visitor inductions • Ensure health and safety procedures are followed for safe entry to and exit from the worksite • Carry out site checks and self audits • Implement contingencies • Monitor traffic volumes and queues • Monitor pedestrian numbers and special requirements
Removal of TTM	<ul style="list-style-type: none"> • Direct removal of TTM • Ensure equipment is stowed correctly • Complete paperwork
Make provisions for unattended worksites	<ul style="list-style-type: none"> • Make provisions for any unattended worksites under TTM, ensuring road users can pass by or through. • Attach documentation.

Initial check of TMP and resources

Check that the TMP is complete and fit for the task in hand. Specific items to be checked are that:

- TMP is approved
- Date of installation is within the approved date range
- The drawing is clear and easily understood
- Are there special instructions for the STMS (eg traffic levels before installation).

Pre-start check

Completed in the yard before departure to site. Includes a check of:

Vehicle

- Vehicle compliance
- Correct signage
- All electronic signs operating
- Beacons operating
- TMA operation (if fitted)

TTM equipment and resources

- All required TTM equipment loaded (for example cones, signs, stands, ballast, cone bars, safety fences, pedestrian ramps)
- TTM equipment in acceptable condition
- PPE
- Comms.

TM crew briefing



A TM crew briefing covers the:

- Task to be completed
- How it will be completed
- Roles and responsibilities for the task
- Hazards and mitigations
- Contingencies.

You complete a TM crew briefing with the TTM crew:

- Before completing the installation of TTM
- Before making any subsequent amendments or changes to the worksite
- Before the TTM is removed.



The whole idea of the TM crew briefing is to prepare the TTM crew for the task and make sure they know what to do to keep themselves and others safe during the task.



Potential hazards for installing, maintaining and removing TTM could include:

- High wind
- Slippery steps if wet
- Lack of vehicle visibility if setting up over brow of a hill or around a corner
- Passing traffic in a live lane
- Speed of passing vehicles
- High number of heavy vehicles.

As part of the risk assessment you will also identify how the hazards will be managed.

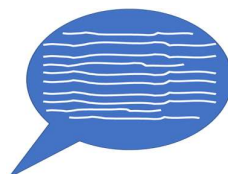
Content of the briefing

Adapting your briefing

You may need to adapt your briefing to fit the crew.

The TM crew briefing can be a:

- Full briefing
- Customised briefing



What to cover in the full TM crew briefing?

Companies will have their briefing procedures and forms. Most company procedures will cover at least the topics listed below. Each briefing will have different content depending on the task to be completed.

Quick reference checklist for FULL briefing		
<p>1 STMS role</p> <ul style="list-style-type: none"> Name, <u>role</u> and authority <p>2 Personal Safety</p> <ul style="list-style-type: none"> Assembly/evacuation point First aid Closest medical centre PPE gear check: <ul style="list-style-type: none"> Hi-Viz (compliant, worn correctly, acceptable condition) Other PPE (as required by NZTA and your company) <p>3 Crew duties</p> <ul style="list-style-type: none"> Vehicles to be used Roles of TTM crew <ul style="list-style-type: none"> AWVMS driver Shadow vehicle driver Work vehicle driver Deck crew <p>Note: Deck crew ride in cab of work vehicle for loops</p> <p>4 TMP for worksite</p> <ul style="list-style-type: none"> Location of TMP Explain any EEDs Hand out relevant parts (eg TMD to be installed) 	<p>5 Activity and closure</p> <ul style="list-style-type: none"> What the activity is (install, <u>modify</u> or remove TTM) Type of closure (eg lane drop/merge, alternating flow) <p>6 Risk assessment for the task</p> <ul style="list-style-type: none"> Hazards/risks to be aware of (eg traffic speed, sun glare, wet conditions, slippery deck, other identified site hazards) Also explain the controls that are in place to manage the hazards <p>7 Safety (no go) zones</p> <ul style="list-style-type: none"> No go areas/safety zones eg <ul style="list-style-type: none"> 10m roll ahead 1m lateral safety zone No going into live lane <p>8 Procedure to be followed</p> <ul style="list-style-type: none"> Go to diagram(s) and summarise layout and sequence of mobile operation. Include: <ul style="list-style-type: none"> Tail pilot/AWVMS - location, display Shadow vehicle – location, position of vehicle to enable crew to safely exit and enter the work vehicle, pad down, display Cover the TTM sequence. Use the procedures in the TMP as the basis for this part of your briefing 	<p>9 Contingency plans</p> <ul style="list-style-type: none"> Briefing to include details on contingencies and actions eg Weather, Delays, Emergency services through site, Traffic incidents (crashes/breakdowns), Spillage of hazardous substances, Other site-specific contingencies <p>10 Communication and Comms check</p> <ul style="list-style-type: none"> Ensure TTM crew have their radio sets Inform crew of channel Confirm call signs Complete comms check Explain emergency call eg: emergency, emergency, emergency then everybody follows my instructions I will have my phone for calls to TOC, Police, TMC, etc If the radios fail, contact me by phone to confirm our return to the assembly point. My phone number is _____ <p>11 Signing the hazard register/briefing sheet</p> <ul style="list-style-type: none"> Check for questions from TTM crew Get them to sign your company's hazard register/briefing sheet

Here is an example of the content you need to cover for a **Full TM crew briefing** for the installation of TTM.

Item	What to cover
STMS Introduction	Name, role and authority
Personal safety	<ul style="list-style-type: none"> • Assembly/evacuation point • First aid • Closest medical centre • PPE gear check: <ul style="list-style-type: none"> – Hi-Viz (compliant, worn correctly, acceptable condition) – Other PPE (as required by NZTA and your company)
Crew duties	<ul style="list-style-type: none"> • Vehicles to be used • Roles of TTM crew: <ul style="list-style-type: none"> – AWWMS driver – Shadow vehicle driver – Work vehicle driver – Deck crew • Deck crew to be in cab of work vehicle for loops

EXAMPLE of what to say

Hi. My Name is Tom Ngatai.

I'm the STMS for this site. My job is to manage the traffic management at the worksite and to act on any safety issues related to traffic management.

Please follow all of my instructions and talk to me straightaway if you don't feel safe or you see something that is dangerous.

The **assembly and evacuation point** for this worksite is...

I am a **certified first aider** and the **first aid kit is** behind the passenger seat in the TTM equipment vehicle **Rego VSP6873**.

The nearest **medical centre** for this worksite is xxxxxx, but if it is a major injury, we call 111, ask for the ambulance service and follow their instructions.

Before we go any further, **I need to check your PPE.**

Check high visibility garment is in good condition and meets requirements for the worksite.

To install this worksite, we will be **using the following vehicles:**

- **Tail pilot vehicle** – Mary you will be the driver
- **Shadow vehicle** – Kahu you are driving that
- **The signs vehicle** – which I will drive

Martin and Maria, you are **deck crew** on the back of the signs truck. Remember that you need to **be in the cab when we do any loops.**

Item	What to cover
TMP for worksite	<ul style="list-style-type: none"> • Location of TMP • Explain any EEDs • Hand out relevant parts (eg TMD to be installed)
Task and closure	<ul style="list-style-type: none"> • What the task is (install, modify or remove TTM) • Type of closure (eg lane drop/merge, alternating flow)
Risk assessment for the task	<ul style="list-style-type: none"> • Hazards / risks to be aware of (eg traffic speed, sun glare, wet conditions, slippery deck, other identified site hazards) • Also explain the controls that are in place to manage the hazards
Safety (no go) zones	<ul style="list-style-type: none"> • No go areas/safety zones for installation and removal of TTM eg <ul style="list-style-type: none"> - 10m roll ahead - 1m lateral safety zone - No going into live lane

EXAMPLE of what to say

The **TMP is going to be with me, and I am going to be in the equipment vehicle.**

There are no EEDs attached to this TMP.

Here is a copy of the TMD we are setting up.

There are 2 lanes in each direction separated by a median strip.

We're installing a left-hand lane drop on this side.

*State the hazards for the **task** – for example:*

The hazards for this task are:

- **It is raining so the steps will be slippery.**
Remember to ensure you have 3 points of contact when using the steps
- **The vehicles are speeding through here at the moment, especially in the rain**
Maria I want you to radio through if you see speeding vehicles (especially heavies) approaching us. Maria and Martin, I want you straight back on the signs vehicle if I tell you to. That's the safest place for you if there is a speeding vehicle. OK?

Maria and Martin, you will be the only crew on foot. You will need to stay out of the 10m roll ahead distance in front of vehicles at all times.

I also want you to be 1m clear of passing traffic and I do not want you going into the live lane. If something goes wrong, talk to me on the radio before you do anything.

Item	What to cover
------	---------------

Note: For changes to and maintenance of TTM at a worksite, the no go areas/safety zones could also include the longitudinal safety zone and plant operating zones.

<p>Procedure to be followed procedure</p>	<ul style="list-style-type: none"> • Go to diagram(s) and summarise layout and sequence of mobile operation. • Include: <ul style="list-style-type: none"> – Tail pilot/AWVMS – location, display <i>Note: You may need to identify the exact locations that you want the tail pilot/AWVMS driver to stop – a separate drive through with them may be helpful</i> – Shadow vehicle – location, position of vehicle to enable crew to safely exit and enter the work vehicle, pad down, display • Cover the TTM sequence. Use the procedures in the TMP as the basis for this part of your briefing
--	---

EXAMPLE of what to say

We're installing a left-hand lane drop on a multilane road.

We're installing signs and side friction cones on the left-hand side first. The sign spacing is XXm and the cone spacing is Xm.

We will loop around... (location of turning points). Remember that deck crew have to be in the cab for loops.

Then we'll install signs and side friction cones on right hand side.

And loop again.

We will then come back around and install the taper (XXm) and longitudinal safety zone (XXm).

The shadow vehicle will need to be positioned at the start of the taper during this phase.

I will move the signs truck inside the closure and complete installing the taper and longitudinal safety zone.

At this point (after the longitudinal safety zone is installed) the shadow vehicle will drive off and wait at the assembly point.

I will complete the installation of signs, cones alongside working space and the site access point.

The tail pilot and I will then do the final loop and complete my drive through check of the worksite.

And then we all meet back at the assembly point.

Item	What to cover
Contingency plans	<ul style="list-style-type: none"> • Briefing to include details on contingencies and actions eg: <ul style="list-style-type: none"> - Weather - Delays - Emergency services through site - Traffic incidents (crashes/breakdowns) - Spillage of hazardous substances - Other site-specific contingencies that are outlined in the TMP.

EXAMPLE of what to say

I have checked the weather and it is expected to get better in the next few hours. If it deteriorates before we get the taper in, we will pause the rest of the installation until the weather improves.

I have completed a traffic count and we are well under the cut off limit for significant delays. We could still get some queueing during installation. Kahu, remember that you do not wave people past your shadow vehicle. Let them make the decision to merge.

Mary, I need you to alert us all if emergency services are passing through our site at speed. That is one of the times I will get Maria and Martin back on to the vehicle for their own safety.

If you see a crash at the worksite, let me know and follow my instructions. I do not want anybody rushing into the live lane to provide assistance until we have some form of protection in place. OK?

If emergency services attend an incident at the worksite, we will provide assistance as required, but do not move any of the installed TTM or add additional TTM without checking with me.

If there is a spillage, we have got an environment clean up kit on board the shadow vehicle. Again, let me know and follow my instructions. Safety is the main priority.

Item	What to cover
Communication and comms check	<ul style="list-style-type: none"> • Ensure TTM crew have their radio sets • Inform crew of channel • Confirm call signs • Complete comms check • Explain emergency call eg: emergency, emergency, emergency then everybody follows my instructions • I will have my phone for calls to TOC, Police, TMC, etc • If the radios fail, contact me by phone to confirm our return to the assembly point. My phone number is _____
Signing the hazard register/briefing sheet	<ul style="list-style-type: none"> • Check for questions from TTM crew (IMPORTANT) • Get them to sign your company's hazard register/briefing sheet

EXAMPLE of what to say
<p>I want to check that everyone has their radios on and set to channel 6.</p> <p>Identify yourself when you are talking on the radio – start conversations with your name and who you want to talk to. For example, Kahu if you want to talk to me, say Kahu to Tom.</p> <p>If you want to talk to everyone then say Kahu to all.</p> <p>So, let's check the radios now. I want each of you to call me and say radio check. So Kahu you would say Kahu to Tom - Radio check.</p> <p><i>Ensure each radio is set to right channel and working.</i></p> <p>If there is a high risk situation, for example a speeding heavy vehicle, I will say emergency, emergency, emergency then the action I want. I need you to follow my instructions immediately.</p> <p>All clear on that?</p> <p>I will have my phone for calls to TOC, Police and the TMC.</p> <p>If the radios fail, contact me by phone to confirm our return to the assembly point. My phone number is _____</p>
<p>Who has got any questions or concerns?</p> <p>I would like you to sign the hazard register to confirm that you under</p> <p>the hazards and mitigations for this site, and you have no further questions.</p>

What to cover in a customised TM crew briefing?

A customised briefing is a shorter briefing focusing on the task to be completed. You use this if you are working with the same crew doing the same type of work every day.

Remember that you still need to complete a full briefing **weekly** with the crew or if there is a change to either the crew or type of activity they are performing.

Content of the customised briefing could include:



TTM induction briefing

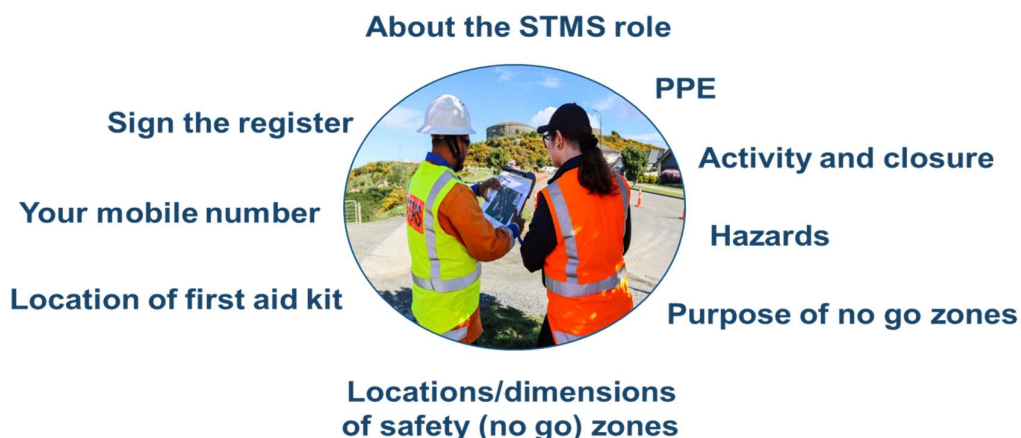
Who to brief?



You need to brief all people arriving at the worksite. This includes anyone arriving at the worksite to:

- Enter the worksite or the working space
- Deliver materials to the worksite
- Assist with TTM
- Audit the TTM (or the activity within the working space).

What to cover in the TTM induction briefing

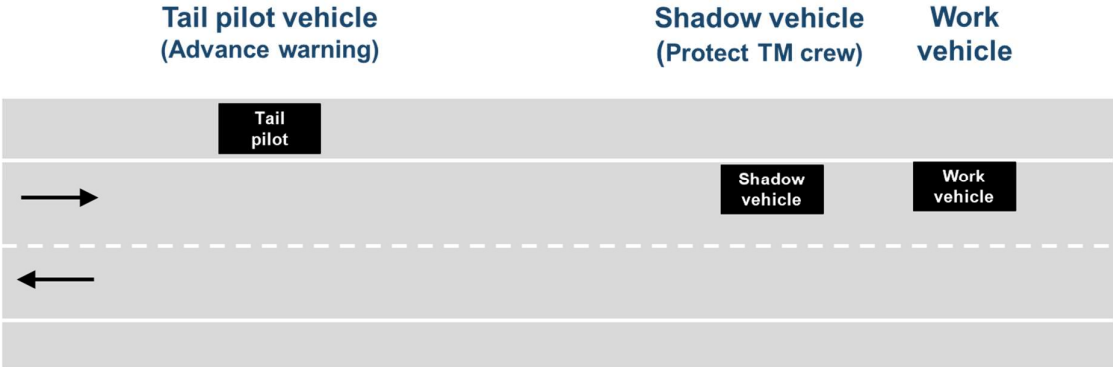


INSTALLATION, MAINTENANCE AND REMOVAL OF TTM

Follow the installation & removal procedures in the TMP.
 Follow your company procedures for installing & removing TTM.

**Talk to the
TTM Planner
if there are any issues**

Vehicles used in a mobile closure when installing, maintaining or removing TTM



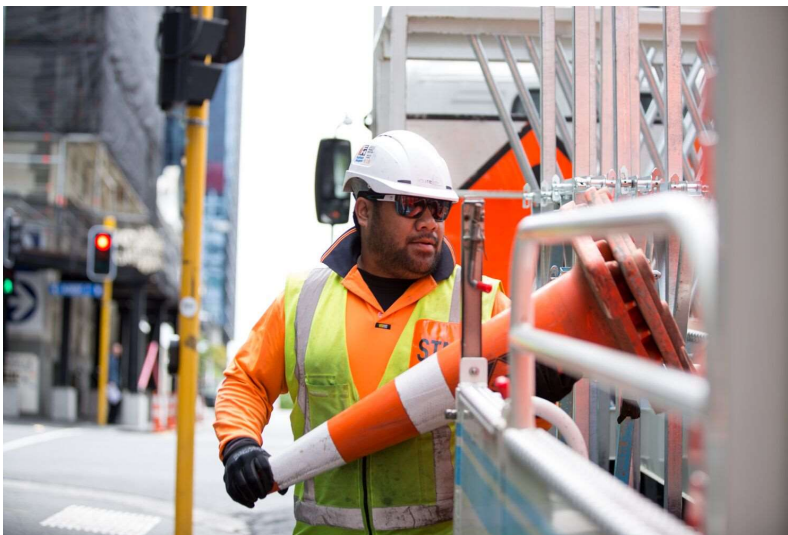
Road	shadow vehicle requirement
Level 2 roads	Shadow vehicle is required when installing, maintaining and removing TTM on level 2 roads.
LV, L1 & 2LS roads	<p>Shadow vehicle is required when work vehicle is in the live lane AND workers are on the rear deck of (or behind a) moving or stationary work vehicle.</p> <p>Shadow vehicle NOT required when:</p> <ul style="list-style-type: none"> • Work vehicle stopped in the live lane and worker is unloading/loading TTM from the non-traffic side of the work vehicle • The work vehicle is stopped out of the live lane and the TM crew is not working in the live lane (they must be on the roadside or in the shoulder) <p>Note: The TM crew can be on the rear deck of the work vehicle when it is stationary and off the live lane.</p>

Unloading and installing TTM equipment



TTM equipment is installed either:

- To the non-traffic side of a work vehicle
- 10m in front of the work vehicle
- To the rear of a work vehicle with a shadow vehicle in place.



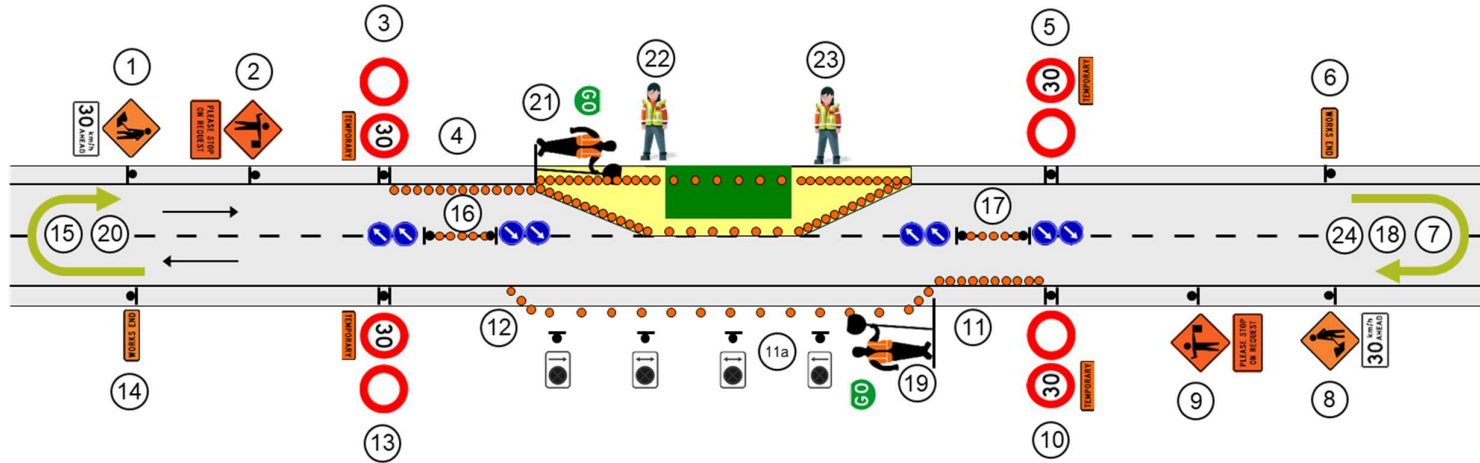
TTM equipment must be unloaded from the non-traffic side of a work vehicle, or the rear of a work vehicle with a shadow vehicle in place

Summary of MTC essentials

The diagram illustrates the setup for a Motorist Traffic Control (MTC) zone on a road. It shows a central work area (green) and a queueing area (yellow) separated by a 30m taper. Traffic signs include 'WORKS END', '30 km/h AHEAD', 'PLEASE STOP ON REQUEST', '30 km/h TEMPORARY', 'STOP', and 'GO'. Workers are shown managing traffic flow with stop and go signs. The diagram also shows the placement of cones and TSLs (Temporary Stop Line) gated across the road.

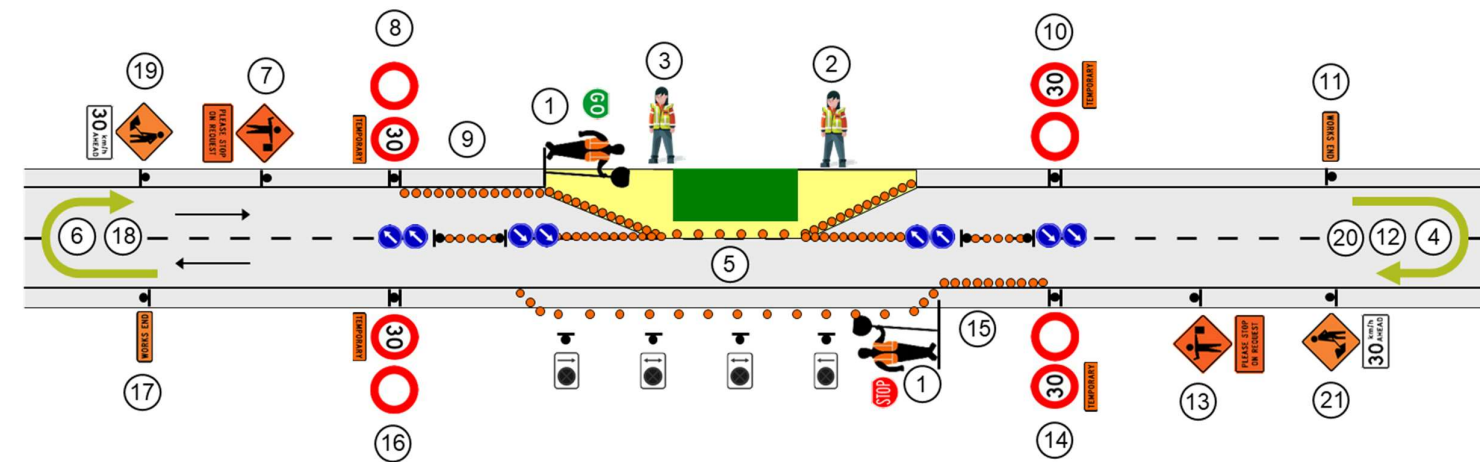
- Extend advance warning signs beyond the anticipated queue length
- 30km/h ahead sign is recommended but optional
- MTC ahead sign must be removed when MTC stop operating
- TSLs gated across the road (if more than 500 vehicles per day)
- Min 5 cones each side of the cone threshold.
- Centerline cones must have RD6L signs.
- Offset centreline cones by 10m to allow heavy vehicles to manoeuvre
- 30m taper - 13 cones at 2.5m spacing
- Must have 30m end taper as well
- Speed reinstatement must be gated if more than 500vpd
- Works end sign to tell road users to return to normal driving conditions

F2.14 - TWO-WAY TWO-LANE ROAD – Single-lane alternating flow (STOP/GO or STOP/SLOW) - Installation procedures



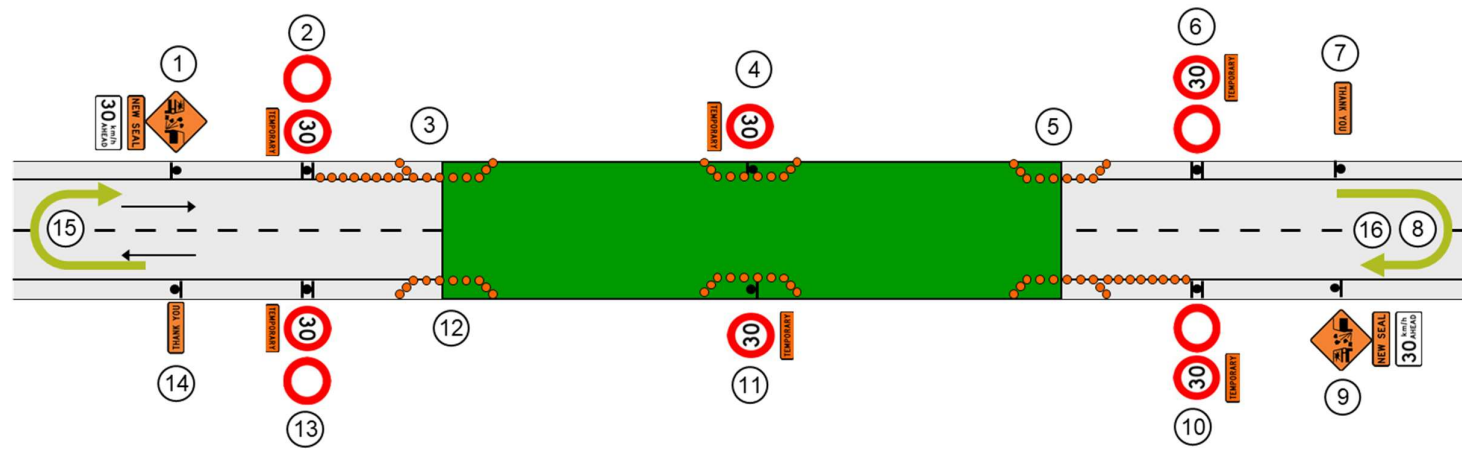
STMS completes drive through check of the worksite once TTM is installed

F2.14 - TWO-WAY TWO-LANE ROAD – Single-lane alternating flow (STOP/GO or STOP/SLOW) - Removal procedures



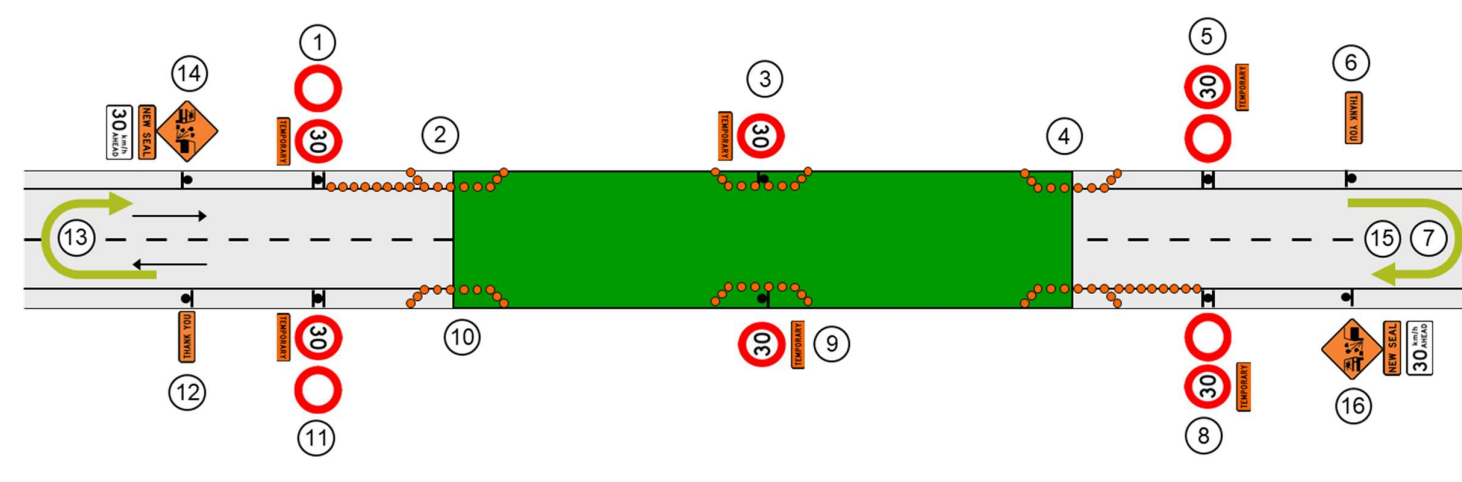
STMS completes final check of the worksite as final 2 signs are removed

F2.27 - TWO-WAY TWO-LANE ROAD – New seal (unattended and/or unswept) - Installation procedures



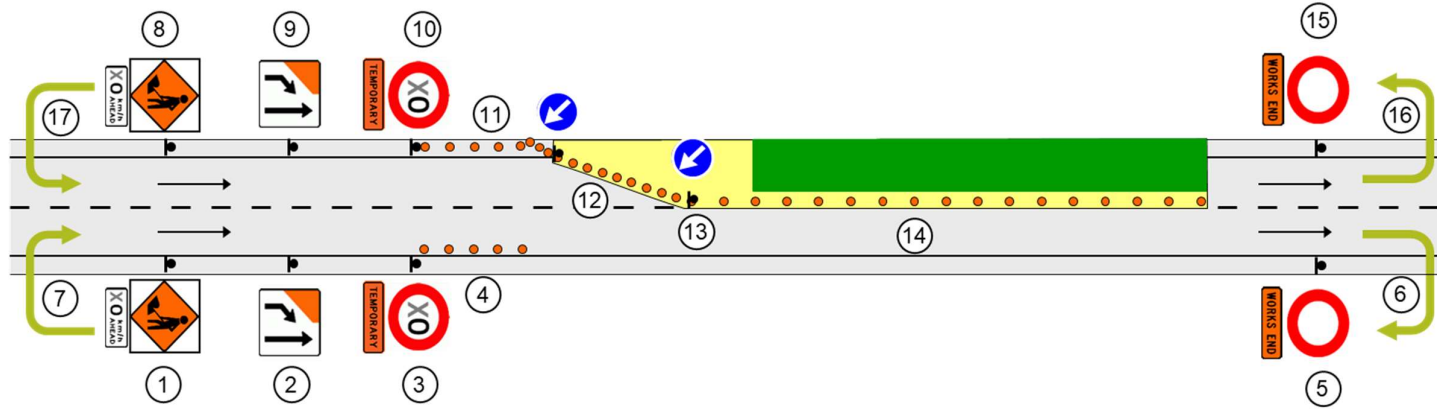
STMS completes drive through check of the worksite once TTM is installed

F2.27 - TWO-WAY TWO-LANE ROAD – New seal (unattended and/or unswept) - Removal procedures



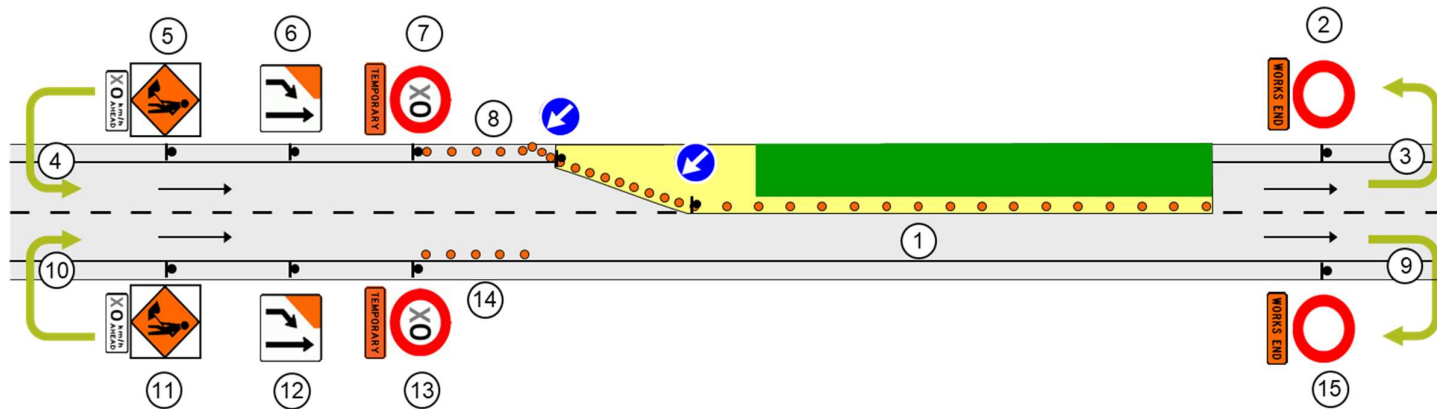
STMS completes final check of the worksite as final 2 signs are removed

G1.17 - ONE-WAY TWO-LANE ROAD – Left-lane closure - Installation procedures



STMS completes drive through check of the worksite once TTM is installed

G1.17 - ONE-WAY TWO-LANE ROAD – Left-lane closure - Removal procedures



STMS completes final check of the worksite as final 2 signs are removed

TMP or generic plan reference	E630078
-------------------------------	----------------

ON-SITE RECORD On-site record must be retained with TMP for 12 months.	Today's date	18/12/XX
--	--------------	-----------------

Location details	Road names(s): Warspite Avenue Castor Crescent	House number/RPs: 41a to 71 1c to 11	Suburb: Cannons Creek
------------------	--	--	---------------------------------


Working space

Person responsible for working space	Fernando Sutton	<i>Fernando Sutton</i>
	Name	Signature
Where the STMS/TC is responsible for both the working space and TTM they sign above and in the appropriate TTM box below		

TTM

STMS in charge of TTM	Rawiri Lowe	187658	1//1/XX	<i>Rawiri Lowe</i>	8.30am
	Name	TTM ID Number	Warrant expiry date	Signature	Time
Worksite handover accepted by replacement STMS					
	Name	ID Number	Warrant expiry date	Signature	Time
	Tick to confirm handover briefing completed				

Delegation

Worksite control accepted by TC/STMS-NP	Kalasia Melina	9715	7/6/XX	<i>Kalasia Melina</i>	9am
	Name	ID Number	Warrant expiry date	Signature	Time
	Tick to confirm briefing completed				

Temporary speed limit

Street/road name (RPs or street numbers):	TSL action	Date:	Time:	TSL speed:	Length of TSL (m):
Warspite Avenue From: 51a To: 61a	TSL installed	18/12/XX	8.45am	30kmh	120m
	TSL remains in place				
	TSL removed	18/12/XX	3.30pm		

Street/road name (RPs or street numbers):	TSL action	Date:	Time:	TSL speed:	Length of TSL (m):
Castor Crescent From: 1c To: 5	TSL installed	18/12/XX	8.45am	30kmh	120m
	TSL remains in place				
	TSL removed	18/12/XX	3.30pm		

Street/road name (RPs or street numbers):	TSL action	Date:	Time:	TSL speed:	Length of TSL (m):
From: To:	TSL installed				
	TSL remains in place				
	TSL removed				

Street/road name (RPs or street numbers):	TSL action	Date:	Time:	TSL speed:	Length of TSL (m):
From: To:	TSL installed				
	TSL remains in place				
	TSL removed				

TMP or generic plan reference	E630078
-------------------------------	---------

Worksite monitoring

TTM to be monitored and 2 hourly inspections documented below.

Items to be inspected	TTM set-up	2 hourly check	2 hourly check	2 hourly check	2 hourly check	2 hourly check	TTM removal
High-visibility garment worn by all?	✓	✓	✓	✓			
Signs positioned as per TMP?	✓	✓	✓	✓			
Conflicting signs covered?	✓	✓	✓	✓			
Correct delineation as per TMP?	✓	✓	✓	✓			
Lane widths appropriate?	✓	✓	✓	✓			
Appropriate positive TTM used?	✓	✓	✓	✓			
Footpath standards met?	✓	X	✓	✓			
Cycle lane standards met?	N/A	N/A	N/A	N/A			
Traffic flows OK?	✓	✓	✓	✓			
Adequate property access?	✓	✓	✓	✓			
Barrier deflection area is clear?	✓	✓	✓	✓			
<i>Add others as required</i>							
Time inspection completed:	<i>8.45am</i>	<i>10.15am</i>	<i>12.10pm</i>	<i>2pm</i>			<i>3.30pm</i>
Signature:	<i>RL</i>	<i>KM</i>	<i>KM</i>	<i>KM</i>			<i>RL</i>

Comments:

Time	Adjustment made and reason for change
<i>9.00am</i>	<i>Site handed over to Kalasia after site had been established</i>
<i>10.15am</i>	<i>Wind kept knocking over centerline cones with cone mounted RD twin disks. Contacted Rawiri and discussed</i>
<i>10.30am</i>	<i>Rawiri arrived onsite with cone connecting strips, these were installed under a mobile operation using the ute</i>
<i>11.15am</i>	<i>Contractor had placed equipment in the temporary footpath. Got them to remove equipment</i>
<i>12.30pm</i>	<i>Contractor asked for more room to work in the front berm area, rang Rawiri to discuss</i>
<i>12.40pm</i>	<i>Footway narrowed as instructed by Rawiri to allow for additional work in the berm – footpath widths reduced from 1.5m to 1.2m</i>
<i>2.00pm</i>	<i>Approached contractor to let him know he had 1 hour to complete and clear the working space as per the TMP timings</i>
<i>3.00pm</i>	<i>Rawiri arrived onsite to take over and manage the removal of TTM. Contractor cleared working space at 2.50pm</i>
<i>3.30pm</i>	<i>Site TTM cleared and road returned to normal. Resident at 3 Castor Crescent requested more room to get vehicle out of driveway tomorrow – noted this on the TMP with resident name and number</i>

