

3 Traffic management planning process

3.1 General

Temporary traffic management (TTM) is one of the highest risk activities on a roadwork site. As such, TTM planning, in accordance with this Technical Manual, must be undertaken to assist with meeting work health and safety requirements and to provide a safe work environment while maintaining road user safety and network efficiency.

Traffic management planning is a risk management process that requires the input of relevant stakeholders to eliminate or manage risk to workers and all road users so far as is reasonably practicable (SFAIRP). The purpose of TTM planning is to:

- Establish the context of the road network, work activity and work environment;
- Assess the risk to road workers and road users by identifying, analysing and evaluating all actual and potential risks;
- Develop a strategy for traffic management based on the context and risks, which determines if traffic is required to be directed ‘around’, ‘past’ or ‘through’ the work site or temporary hazard;
- Develop and implement controls specifically related to the traffic management strategy. This includes design of site specific TMP, traffic guidance scheme/s (TGS) and obtaining required approvals; and
- Establish effective monitoring and review processes to ensure ongoing effectiveness of the process.

The TTM planning process, shown in *Figure 3-1* involves the development of a:

- Traffic Management Strategy; and
- Traffic Management Plan (TMP).

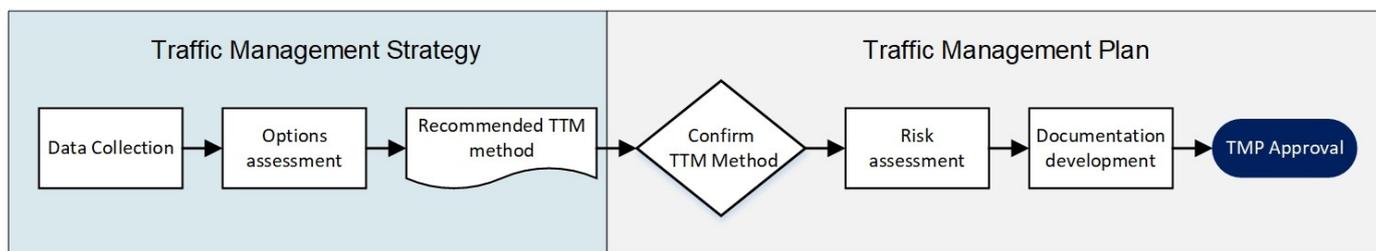


Figure 3-1. Overview of the traffic management planning process

A traffic management strategy and TMP must be developed for all roadworks. A TMP may be developed that applies to either of the following, depending on the nature of work to be completed, its risk profile and location:

- A specific road corridor; or
- A project or activity.

For example, for maintenance of a section of road, it might be more practical to develop a single traffic management strategy and TMP that is applicable to all maintenance work within a specified boundary.

Alternatively, for a project that involves a series of activities completed within a defined timeframe, a traffic management strategy and TMP for the project would be more appropriate.

An iterative process should be adopted in collaboration with relevant stakeholders to adopt the most appropriate traffic management approach and develop the associated documents for the work. For the purposes of Section 3:

- *Client*—refers to the person or team within Transport requesting or commissioning the works. The Client has the ability to access and provide relevant information about the work required and road environment. It does not strictly refer to the people funding the work.
- *Delivery partner*—refers to the team or business engaged to undertake the works. The delivery partner is responsible for making the final determination on the selected traffic management method and managing the development of site specific requirements such as a risk assessment and TGSs.

Table 3-1 provides some examples of client and delivery partner entities for different scenarios, however it is important to note that the client and delivery partner might be different for each activity.

Table 3-1. Example client and delivery partner entities

Example	Client	Delivery Partner
When maintenance works are completed internally	Transport Infrastructure Services	Transport Regional Maintenance
When maintenance works are completed externally	Transport Regional Maintenance Delivery	Principal Contractor
For RMCC works	Transport Delivery Strategy	Local Council
For Transport Major Projects	Transport Regional Project Delivery	Principal Contractor
For Survey Works	Transport Major Project Office or Transport Regional Maintenance Delivery	Transport Engineering Services – Survey and contracted traffic control company

3.1.1 Around, past or through

A considered and consultative approach to traffic management planning allocates appropriate time and provides enough information to determine and apply the safest traffic management method. A traffic management strategy, completed early in the project lifecycle supports the appropriate allocation of time, funds and resources, and allows for consultation in determining the safest and most efficient way for road users to interact with the work site. In accordance with the hierarchy of controls the three overarching TTM methods are described in *Table 3-2*.

Table 3-2. Traffic management methods

Traffic management method	Description	Examples
* Around (elimination)	<p>An around method is where traffic is completely separated from the work area. An around method is the preferred TTM method where achievable, as a majority of risks associated with TTM are eliminated and it generally provides the lowest overall net risk option.</p> <p>This method must be considered as the first option, however if it cannot be achieved, justification must be provided in the TMP.</p>	<p>Examples of around methods include:</p> <ul style="list-style-type: none"> • A road closure requiring a detour of all traffic. • Construction of a sidetrack. • Contraflow of traffic via a separated median.

Traffic management method	Description	Examples
Past (isolation or engineering)	A past method is where substitution, isolation and engineering controls are used to guide traffic along an adjacent path to the work area. A past method includes the use of a barrier or shifting of traffic to provide complete separation of workers and traffic.	Examples of past methods include: <ul style="list-style-type: none"> • Contraflow without a separated median. • A lateral shift tapers. • Use of an accepted temporary barrier system.
Through (administration and PPE)	A through method relies on administrative, training and PPE controls only. A through method does not provide separation of traffic to the work area and requires the passage of traffic through the work area. A through method must only be considered when around and past strategies are not achievable or the risk generated by installing those options outweigh the safety benefit.	Examples of through method include: <ul style="list-style-type: none"> • Directing road users immediately over the work area. • Separation only achieved by use of cones or bollards. • Pilot vehicle used to platoon road users.

Note* to Table 3-2: It is acknowledged that the adoption of an ‘around’ traffic management method might require additional time, budget, area and community consultation. The earlier these are considered in project development, the greater the ability to incorporate into a TMP.

3.2 Developing a traffic management strategy

3.2.1 General

To effectively manage the risk associated with TTM, it is important that the conditions and constraints associated with the works are understood. When commissioning or ordering works to be completed, the client must ensure that sufficient resourcing, including time, funds and information have been provided to the delivery partner to enable effective planning of works.

For this to be achieved, the client must develop a traffic management strategy through the collection of relevant data and information and provide this to the delivery partner. A person developing the traffic management strategy does not require any formal TTM qualifications; however experience and knowledge in TTM, or an ability to consult those with the relevant experience is recommended. A traffic management strategy is comprised of three elements:

- Data collection;
- Options assessment; and
- Recommendation.

Data collection, further detailed in [Section 3.2.2](#) is the minimum mandatory information that must be provided by the client to the delivery partner within the traffic management strategy.

The ‘options assessment’ described in [Section 3.2.3](#) and the ‘recommendation’ described in [Section 3.2.4](#) should also be developed and provided by the client, however these are not mandatory. If they are not provided by the client, then they may be generated by the delivery partner during the development of the TMP.

Additionally, for more complex works, a draft TMP should be developed by the client to demonstrate feasibility of the works. During project development, the draft TMP should be provided to relevant stakeholders for consideration, such as survey and geotechnical, to support traffic management investigations.

In alignment with the [Transport Infrastructure Project Lifecycle Framework](#), the information needed by the client is best collected and assessed early in the project cycle; ideally during the strategic phase, prior to the environmental impact statement or project boundaries are determined. This information should be completed and consulted as part of the Health and Safety in Design process to ensure the considerations of constructability are also factored into the options.

For works requested by a client outside of the Infrastructure Project Lifecycle Framework, consultation with the relevant subject matter expert must be undertaken.

Appendix A – Traffic management planning templates and tools provides a template that may be used to facilitate development of a traffic management strategy.

3.2.2 Data collection

Data must be collected to inform the delivery partner about the way work will be undertaken and the details of work location. This information is fundamental to informing the TMP and the work specific risk assessment that is completed prior to the design of TGSs.

The client must provide the following information, where relevant, to the delivery partner in order to facilitate the development of the TMP:

Site related information

- Name of the project;
- Activity/work to be performed;
- Details of intersections impacted by the project length;
- Location of the work; and
- Details of the project phase the strategy is being developed.

Relevant site related data

- Cross section including description of unique features in cross section, and photo/aerial of the location of works;
- If the work location is in an urban or rural setting;
- Existing permanent and operating speed limits of all roads in work sites;
- Traffic volumes and composition in average daily traffic (ADT) and annual average daily traffic (AADT), if available, and AM and PM peak times;
- Details of heavy vehicle access requirements including vehicle types, e.g. restricted access vehicle (RAV) and over-size, over mass (OSOM) vehicles, and where available indication of length, mass, width, and heights of vehicles and percentage of types;
- Details of crash history;
- Details of intersections impacted by the project length; and
- Details of vulnerable road users and other facilities, including but not limited to:
 - On-street parking;
 - Transport facilities and infrastructure such as bus stops, train stations and tram stops;
 - Clearways;
 - Cycle ways; or
 - Footways.

Constraints

- Road environment constraints such as heritage considerations, utilities, cuttings, significant cut/fills, bridges, guardrails, limited shoulders and other environmental constraints like threatened species; and
- Details of significant traffic generators including their location, duration/time restrictions and other impacts. Examples of significant traffic generators are:
 - Local centres;
 - Retail, business, entertainment and community facilities;
 - Events;
 - Schools; and
 - Mines.

In addition to the above, any other relevant considerations should be provided to the delivery partner as part of the traffic management strategy.

3.2.3 Options assessment

After the work and site related information has been collected, the client should assess, detail and document the options available relating to the TTM methods detailed in [Table 3-2](#). The purpose of the options assessment is to provide the delivery partner with an understanding of the suitability and availability of ways in which traffic can be managed to enable the highest level of controls for road workers to be implemented. As such, when undertaking the options assessment, at least one *around* option should be considered and detailed.

It is acknowledged that information required to undertake an options assessment might not be readily accessible to the client, and in these instances, consultation should be undertaken with the delivery partner. The options assessment should provide detail of the multiple options assessed, and in particular, give information relating to both of the following traffic management methods:

- **Around**—the client should determine options available for around. It is recognised that there will be instances where an around option is not feasible, and in such cases, the reason for non-feasibility can be stated in the options assessment. When investigating suitability for around options the client should provide information to the delivery partner regarding:
 - A detailed description of the *around* route including any detours;
 - The duration that the *around* method will be in place, in either days, weeks or months;
 - The hours of operation of the *around* method, whether day and/or night and where known, the hours of operation;
 - Details of the benefits of the option in terms of cost and/or time;
 - Details of any constraints that will apply to the *around* method;
 - The estimated total cost to implement the *around* method, including route upgrades or infrastructure requirements;
 - Other considerations such as works traffic impacts, e.g. access and egress;
 - Stakeholder consultations required to ensure method is implemented successfully and that any affected residents or businesses have been notified; and
 - Approvals required to implement the *around* method.

- Past—the client should determine and provide information to the delivery partner regarding:
 - A description of the past method;
 - The anticipated duration that the *past* method will be in place, in either days, weeks or months;
 - The hours of operation of the *past* method, whether day and/or night and where known, the hours of operation;
 - The type of temporary traffic management that will be required to facilitate the *past* option;
 - Details of the benefits of the option in terms of cost and/or time;
 - Details of any constraints that will apply to the *past* method;
 - Other considerations such as works traffic impacts, e.g. access and egress;
 - Stakeholder consultations required to ensure method is implemented successfully;
 - Approvals required to implement the *past* method; and
 - Provision of clear access for emergency vehicles.

When developed by the client, the option of through does not need to be considered as this option is managed by the delivery partner. When developed, the options assessment must also be provided to the delivery partner.

3.2.4 Recommendation

After data collection as per Section 3.2.2 Data collection, and available methods for *around* and *past* traffic management have been identified in accordance with Section 3.2.3 Options assessment, a recommendation can then be made to the delivery partner on the preferred method.

Where a recommendation is made to the delivery partner, the recommendation should consist of:

- A preferred method;
 - Note:** *A combination of two or more methods may be suitable.*
- A justification for the recommendation;
- A description of the critical risks and other considerations that the delivery partner is to be aware of; and
- Any additional comments.

Following the options assessment and where an *around* or *past* option is not recommended, the client then acknowledges that a *through* method is the only remaining alternative.

The final decision relating to *around*, *past* or *through* is the responsibility of the delivery partner and is determined following the provision of the above information with sufficient time for the TMP to be developed.

3.3 Developing a traffic management plan

3.3.1 General

A TMP shows how site specific works are integrated into the operation of the road network and additionally provides for the safety of workers and road users while maintaining the service provided by the road network. Management of work on roads must balance the need to protect road workers from traffic, while maintaining a safe and efficient road network for road users including vulnerable road users. The process of developing a TMP must be monitored and reviewed to ensure it is completed effectively.

All resources and documentation for a TMP must be stored in a records management system, to enable and support audit and review during the life of the project and after the project is complete. See [Section 8.2 Record keeping of TTM documentation](#).

After receiving all information needed to develop a TMP, including the traffic management strategy, the PWZTMP qualified person must develop and verify the TMP for the works. The TMP must contain at a minimum:

- A summary of information provided by the client in the form of a template provided by the client;
- An options assessment if not completed by the client in the traffic management strategy;
- Details of the traffic management method selected, including the decision and justification;
- A risk assessment for the works undertaken;
- Site specific documentation including relevant site specific TGS, Vehicle Movement Plans, Safe Work Method Statements (SWMS), Road Occupancy Licence and Speed Zone Authorisation; and
- Approvals, including formal acceptance of the TMP, TGSs and monitoring and review strategies.

[Appendix A – Traffic management planning templates and tools](#) provides a template that may be used to facilitate development of a traffic management plan.

3.3.2 Verification of traffic management strategy

As there can be a significant amount of time between the completion of the traffic management strategy and development of the TMP, verification of the information provided in the traffic management strategy must be undertaken. This includes:

- Verifying if all relevant information is provided and if not, the person developing the TMP must obtain the information from the client representative prior to completing the TMP;
- Verifying the accuracy of all previously collated data;
- Identifying any other work or site considerations that may have arisen since the completion of the traffic management strategy;
- Listing the details of any changes which impact the options identified in the traffic management strategy; and
- Listing additional options that may be available, and not identified in the traffic management strategy.

3.3.3 Decision of TTM method

After the information described in [Section 3.2 Developing a traffic management strategy](#) has been provided by the client and a verification of the information has been completed, the delivery partner must determine the TTM method, or combination of methods, required to safely perform the work or activity. When deciding the TTM method the following should be considered:

- *Detour options*—
 - Does the length and route of the detours proposed by the client introduce a disproportionate amount of disruption to the road users?
 - Does the detour introduce unacceptable impact/s on surrounding areas or unacceptable delays, resulting in undesired road user behaviour?
 - Is the cost of upgrading the route or intersections prohibitive when compared to the project value and duration?
- *Site location*—

- Does the site of the works contain curves, crests, vegetation, existing signage or infrastructure that may obstruct signs and devices needed for certain strategies?
- *Work area*—
 - Does the area needed to safely perform the work justify the full closure of sections of road?
- *Vulnerable road users*—
 - Do desire lines of pedestrians, cyclists, motorcyclists and users of scooters impact on works or create undesired interaction between these road users and traffic?
- *Community facilities and needs*—
 - Does the presence of schools, hospitals, retail outlets, public transport routes or other facilities create conflict with the work?

After considering the above factors, a decision regarding the TTM method must be made. If the method that is selected differs from that recommended by the client, the reasons for the departure to this recommendation must be documented in the TMP and advice provided back to the client. The feedback to the client is critical in ensuring the client is informed of site specific considerations for future reference.

The decision to place traffic around, past or through must be documented with a justification of the decision made in the TMP.

3.3.4 Risk assessment

3.3.4.1 General

After a TTM method has been determined, the delivery partner must then identify the hazards and risks associated with the works through the development of a risk assessment. The purpose of this risk assessment is to determine the controls required for the protection of the road workers and road users.

A risk assessment is generally completed in accordance with the divisional requirements; however, it must comply with the requirements of the Transport procedure for [WHS Risk Management \(PN066P02\)](#) at a minimum. The information and data collected during development of the TTM strategy will need to be considered.

3.3.4.2 Hazard and risk identification

The types of information that should be reviewed and engagement activities that may assist in preparing and identifying hazards includes:

- An examination of the site layout (ideally a site visit should be undertaken);
- Road network maps, including heavy vehicle route maps;
- Traffic volume viewer;
- Consultation with workers and other relevant stakeholders;
- Risk registers, including risk registers from work sites that perform similar activities;
- Operational requirements and constraints; and
- Australian Standards and other Codes of Practice.

Hazards and risks that may be identified include, but are not limited to, the following:

Hazards and risks	
Moving traffic	Traffic generating special events
Queued traffic	Non-compliance with temporary speed limits
High volume traffic	Reduced lane and shoulder widths
High vulnerable road user activity	Compromised access points
Other construction activity or roadworks in close proximity to proposed work site	Emergency vehicle access
Rising and setting sun	Overhead power lines or other utilities
Traffic speed and compliance behaviour	Horizontal (curves) and vertical (crests/sags) alignment
Traffic composition	Crash history
Number and location of traffic control points	Site vehicle access and egress points
Exposure and proximity of workers to live traffic	Topographical constraints
Length of delays for road users	

3.3.4.3 Risk analysis

After the hazards have been identified, a risk analysis must be carried out using the divisional framework or framework provided in *Figure 3-2* and *Table 3-3*. The risk analysis is used to identify the likelihood of harm or damage caused by exposure to the hazard and the consequences of that risk occurring. This analysis must be based on all standard treatments for those risks being in place, with their established degree of effectiveness.

Figure 3-2 provides the framework for the analysis of risk in the development of a TMP.

Risk evaluation matrix								
Risk ratings: Very high VH High H Medium M Low L			Consequence					C1
			Insignificant C6	Minor C5	Moderate C4	Major C3	Severe C2	
Likelihood	Almost certain	L1	M	H	H	VH	VH	VH
	Very likely	L2	M	M	H	H	VH	VH
	Likely	L3	L	M	M	H	H	VH
	Unlikely	L4	L	L	M	M	H	H
	Very unlikely	L5	L	L	L	M	M	H
	Almost unprecedented	L6	L	L	L	L	M	M

Figure 3-2. Risk evaluation matrix

Table 3-3 provides the consequence and likelihood measures for the risk analysis.

Table 3-3. Likelihood and consequence measures

Consequence measures		Likelihood measures	
Rating	Description	Rating	Description
Insignificant	Illness, first aid or injury not requiring medical treatment. No lost time	Almost certain	<ul style="list-style-type: none"> Expected to occur multiple times (10 or more times) during any given year Expected to occur at least 1 in every 4 times the event or action occurs (more than 25% chance of occurrence) This risk is known to occur frequently.
Minor	Minor injury or illness requiring medical treatment No lost time post medical treatment	Very likely	<ul style="list-style-type: none"> Expected to occur occasionally (1 to 10 times) during any given year. Expected to occur between 1 in 4 and 1 in 10 times the event or action occurs (10 to 25% chance of occurrence). This risk is known to occur often.
Moderate	Minor injuries or illnesses resulting in lost time	Likely	<ul style="list-style-type: none"> Expected to occur once during any given year. Expected to occur between 1 in 10 and 1 in 100 times the event or action occurs (1 to 10% chance of occurrence). This risk is known to have occurred on occasions.
Major	1 to 10 serious injuries or illnesses* resulting in lost time or potential permanent impairment	Unlikely	<ul style="list-style-type: none"> Expected to occur once every 1 to 10 years. Expected to occur between 1 in 100 and 1 in 1,000 times the event or action occurs (0.1 to 1.0% chance of occurrence). This risk could occur but not often.
Severe	Single fatality and/or 11 to 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment	Very unlikely	<ul style="list-style-type: none"> Expected to occur once every 10 to 100 years. Expected to occur between 1 in 1,000 and 1 in 10,000 times the event or action occurs (0.01 to 0.1% chance of occurrence). It is unusual that this risk occurs but it has happened.
Catastrophic	Multiple fatalities and/or more than 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment	Almost unprecedented	<ul style="list-style-type: none"> Not expected to occur in the next 100 years (less than once every 100 years). Expected to occur less than 1 in 10,000 times (if ever) the event or action occurs (less than 0.01% chance of occurrence). Any risk can occur but it is very improbable that this risk will occur within the large number of events.

For additional information relating to analysing risk as part of a risk assessment, refer to the Transport procedure for [WHS Risk Management \(PN066P02\)](#).

3.3.4.4 Risk control

In order to decide the controls that are reasonably practicable, the person developing the TMP must consider the following principles:

- Severity of the risk/s mitigated by that option;
- Knowledge of that risk;
- Perceived benefit of the option;
- Nature of the works;
- Practicality of the option proposed; and
- Cost of removing or mitigating that risk.

All possible control measures must be considered, and a decision made on the control measures that are most effective and reasonably practicable.

The controls selected must prioritise the safety of workers and road users, while minimising the delay to traffic and costs associated with treatments.

For each of the risks identified, the [WHS Risk Management](#) process must be applied to ensure risks are managed using the hierarchy of controls framework.

The factors that must be considered in the selection of controls are provided in [Table 3-4](#).

Table 3-4. Factors for selection of temporary traffic controls

Key factor	Explanation
Application of minimum Standards	The cumulative impact of applying multiple minimum standards and the potential for an unsatisfactory outcome to occur as a result of the combination.
Contingency planning	Determine the way traffic will be managed in the instance that work cannot be completed as planned. This is particularly important for work that is not fully protected by temporary safety barriers. Contingency measures that can be implemented immediately should be employed.
Method and location of traffic control	Determine the way traffic will be controlled and the locations control is required. Possible control methods include: <ul style="list-style-type: none"> • Type 2 (automatic) Portable Traffic Signal (PTS)—fixed time operation (no traffic controller); • Temporary PTS (Type 1)—manual operation (traffic controller positioned remotely); • Boom barriers—manual operation (traffic controller positioned remotely); or • STOP/SLOW bat—manual operation (traffic controller exposed to traffic). Where traffic control has been identified as necessary, it must meet the requirements of Section 5.4 Traffic control and the relevant approvals must be sought for the use of a manual traffic controller.
Speed management	<ul style="list-style-type: none"> • Only credible speed limits should be implemented that will be self-enforcing. • Reduced speed zones must not be used in the place of more effective means of traffic control, but to complement such controls.

Key factor	Explanation
	<ul style="list-style-type: none"> • The reduced speed zone must only be used when work is being undertaken or when otherwise needed. • 40 km/h speed zones should only be used when workers are on foot and the site is active. • 30 km/h (see Section 4.5 Speed zones). • Engage with NSW Police Traffic and Highway Patrol Command to determine if enforcement activities will be required to assist with compliance.
Aftercare provisions	<ul style="list-style-type: none"> • Provision for night work traffic controls must be made where works will be undertaken during hours of darkness. • Roadwork sites, whether in operation or shutdown during the hours of darkness, must continue to be managed appropriately.
Emergency access	Provision for emergency services access through a roadworks site to another location to access the site in the event of an emergency on site during the works must be made.
End-of-queue management strategy	Where applicable, control measures must be implemented to stop or reduce the speed of traffic and result in either a static queue or slow moving queue (i.e. 20 km/h below the normal travel speed) in accordance with Section 4.6 End-of-queue management .

3.3.5 Site-specific documentation

The site-specific documentation that must be developed after finalisation of the TMP and risk assessment includes:

- A TGS which shows the placement of all temporary signs and devices. TGSs must be clear and show all traffic controls for each stage of the works;
- Road occupancy licences;
- Plans showing access to local properties and side roads affected by temporary works;
- WHS documentation including SWMSs and strategies for dealing with unplanned events or incidents;
- Emergency Management Plan to manage incidents within the traffic controlled area; (vehicle break down, vehicle fires, pedestrians hit, car crash etc.);
- Approved list of TTM personnel and contacts;
- Vehicle Movement Plans showing mandated travel paths for vehicles to enter, leave or cross through traffic;
- Traffic incident plan; and
- Design drawings for temporary roadways and detour upgrades where applicable to the TTM strategy.

Other documentation that may be developed or included within the TMP includes:

- Speed zone authorisations;
- Traffic staging arrangements including Traffic Staging Plans and the time periods during which staging will be in operation;
- Traffic switches, which are often high risk activities that must have a detailed program of critical activities involved during the time of the switch;

- Pedestrian and cyclist movement plans showing allocated travel paths around, past or through the work site or temporary hazard. This should include provision for safe and unhindered access to public transport services; and
- Records of consultation with public transport operators.

3.3.6 TMP approval and review scheduling

The final step of developing a TMP must detail the approval, monitoring and review requirements of the TMP as provided in [Table 3-5](#).

Table 3-5. TMP approval, monitoring and review

Key factor	Requirements
Approval	The TMP must be reviewed and endorsed by the designer’s one-up manager or other nominated person as determined by the divisional requirements. The one-up manager or nominated person must hold a current Prepare Works Zone Traffic Management Plan qualification. This approved TMP must be used to inform the development of all TGSs for the work as described in Section 7 Traffic guidance schemes (TGS) .
Monitoring	Monitoring and review is important throughout the TMP process to ensure that the TMP remains current and addresses all risks at the work site for the duration of the project or activity. To ensure that the TMP is kept up to date, details of the process to facilitate review and continuous improvement must be detailed in the TMP. This may include audits and inspections as per Section 8 Work site inspections, recording and reporting .
Review	After the TMP has been implemented, TTM reviews must be undertaken in accordance with Section 8.1 Work site inspections, reviews and audits . Other TMP reviews must be completed as required by the G10 Specification, where applicable. Where G10 Specification is not applicable, a TMP review must occur at least every 12 months or where any on-site or works changes occur. All relevant changes must be considered and recorded in the TMP with any changes made by an appropriately qualified person. A copy of all documentation relating to the endorsement of the changes must be available to be accessed, either electronically or in hard copy, by the person responsible for the works.