

Bulletin on:
TMP - GETTING IT RIGHT

Theme of the month:
TMP

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TMP – GETTING IT RIGHT

WHY TRAFFIC MANAGEMENT DURING CONSTRUCTION IS IMPORTANT?

Traffic Management Plan (TMP) is a site-specific plan that covers design, implementation, maintenance and removal of temporary traffic management measures while work or activity is carried out in the road corridor.

Lately, JKR received many feedbacks from the public regarding poor performance of the implementation of TMP at construction sites. This inevitably cause traffic congestion and may lead to crashes involving road users. This will lead to an increase exposure of risk involving litigation claims from the crash victims. Hence, the purpose of Traffic Management During Construction is not only to provide mobility but also to ensure safety among road users.

WHAT IS THE CHARACTERISTICS OF AN EFFECTIVE TMP?

- Ability to pre-warn motorist and pedestrians of hazard ahead
- Able to advise motorists of the proper travel path through the area, at all time (day or night) and in all type of weather condition
- Delineate areas where traffic should not operate
- Separate and protect motorist, pedestrians and the workers
- Increase of traffic safety and comfort
- Manage traffic movement in work zone
- Safeguarding and improvement of the public mobility and accessibility

DESK STUDY AND ANALYSIS BY BAHAGIAN AUDIT & PROGRAM KESELAMATAN JALAN (BAPKJ)

In view of all the recent complaints and concerns, BAPKJ Cawangan Jalan has carried out a short study to assess the performance of TMP for road projects. Several projects have been selected randomly and audited.

Findings from the study are as follows :

1. TMP was inadequately planned and prepared at the onset of the construction stage.
2. Poor inspections records and follow up by Traffic Management Officer (TMO).
3. Certain projects do not have any specific Standard Operating Procedure (SOP) for TMP.
4. Some projects do not provide Emergency Response Plan (ERP).
5. The supervision team and contractor's personnel have no training regarding TMP.
6. Road Safety Auditor was not appointed at the early stage of the construction.
7. Work zones do not comply with the principles of the five (5) areas as per latest guideline ie ATJ 2C/85 (Pindaan 2016).
8. Inappropriate type and placements of traffic control devices.

HOW CAN WE IMPROVE ?

Traffic Management at Work Zones is everybody's responsibility. All relevant parties need to play their roles. Adherence to ATJ 2C/85 (Pindaan 2016) and its principles are important to ensure an effective TMP. Among ways to improve are:

1. Traffic Management Officer (TMO)

- Need to provide a well-planned TMP at the initial stage of project.
- Regular inspection carried out, minimum twice (2) a day and execute prompt correction actions.
- Prepare well documented SOP and ERP for TMP.

2. Supervision Team

- Regular Auditing of the TMP to ensure proper monitoring at a minimum of three (3) times a week.

3. Road Safety Auditor

- Road Safety Auditor need to be appointed early to ensure road safety is adequately catered for in the TMP.

4. Carry out regular courses regarding TMP for supervision team

TMP courses offered by JKR or CIDB need to be attended by the supervision and contractor's personnel to ensure the fundamentals of TMP are well understood and implemented.

5. Compliance to ATJ 2C / 85 (Revised 2016)

- This guideline should always be used as a basis in planning and design of traffic management.
- Proper implementation of the 5 Areas In Work Zones as per Figure 1.

The design of traffic management plan must follow the basic concept of a typical work zone. A typical work zone should have the following areas:

ADVANCE WARNING AREA

An advance warning area is necessary for all traffic control zone because drivers need to know what to expect. Before reaching the work area, drivers should have enough time to alter their driving patterns. The advance warning area may vary from series of signs starting 1 km in advance of the work area to a single sign or flashing lights on a vehicle.

TRANSITION AREA

When work is performed within one or more traveled lanes, a lane/multiple lane closure(s) is/maybe required. In the transition area, traffic is channelized from the normal highway lanes to the path required to move traffic around the work area. The transition area includes the taper transition length.

BUFFER AREA

The buffer space provides a margin of safety for both traffic and workers. If a driver does not see the advance warning or fails to negotiate the transition, a buffer space provides room for a driver to stop before the work area. It is important for the buffer space to be free of equipment, workers, materials and work vehicles.

WORK AREA

The work area is that portion of the roadway which contains the work activity and is closed to traffic and set aside for the exclusive use by workers, and placement of equipment and construction materials. Work areas may remain at fixed locations or may move as work progresses. And empty buffer space may be included at the upstream end. The work area is usually delineated by channelizing devices or shielded by barriers to exclude traffic and pedestrians.

TERMINATION AREA

The termination area provides a short distance for traffic to clear the work area and to return to the normal traffic lanes. It extends from the downstream end of the work area to the “PEMBINAAN TAMAT” sign. A downstream taper may be placed at the termination area.

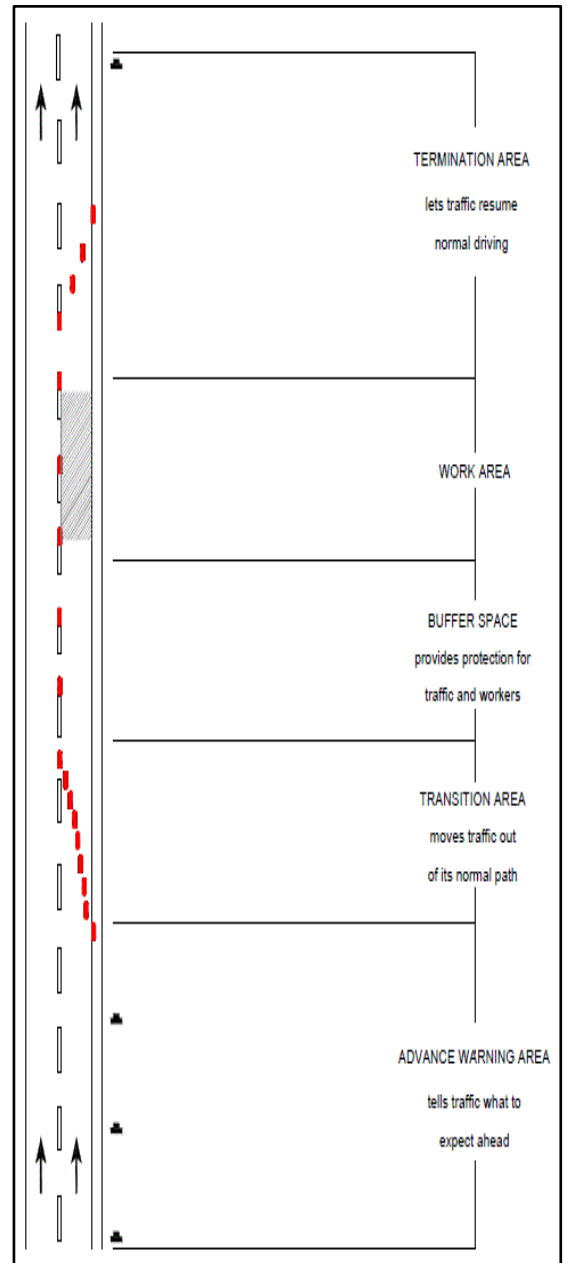
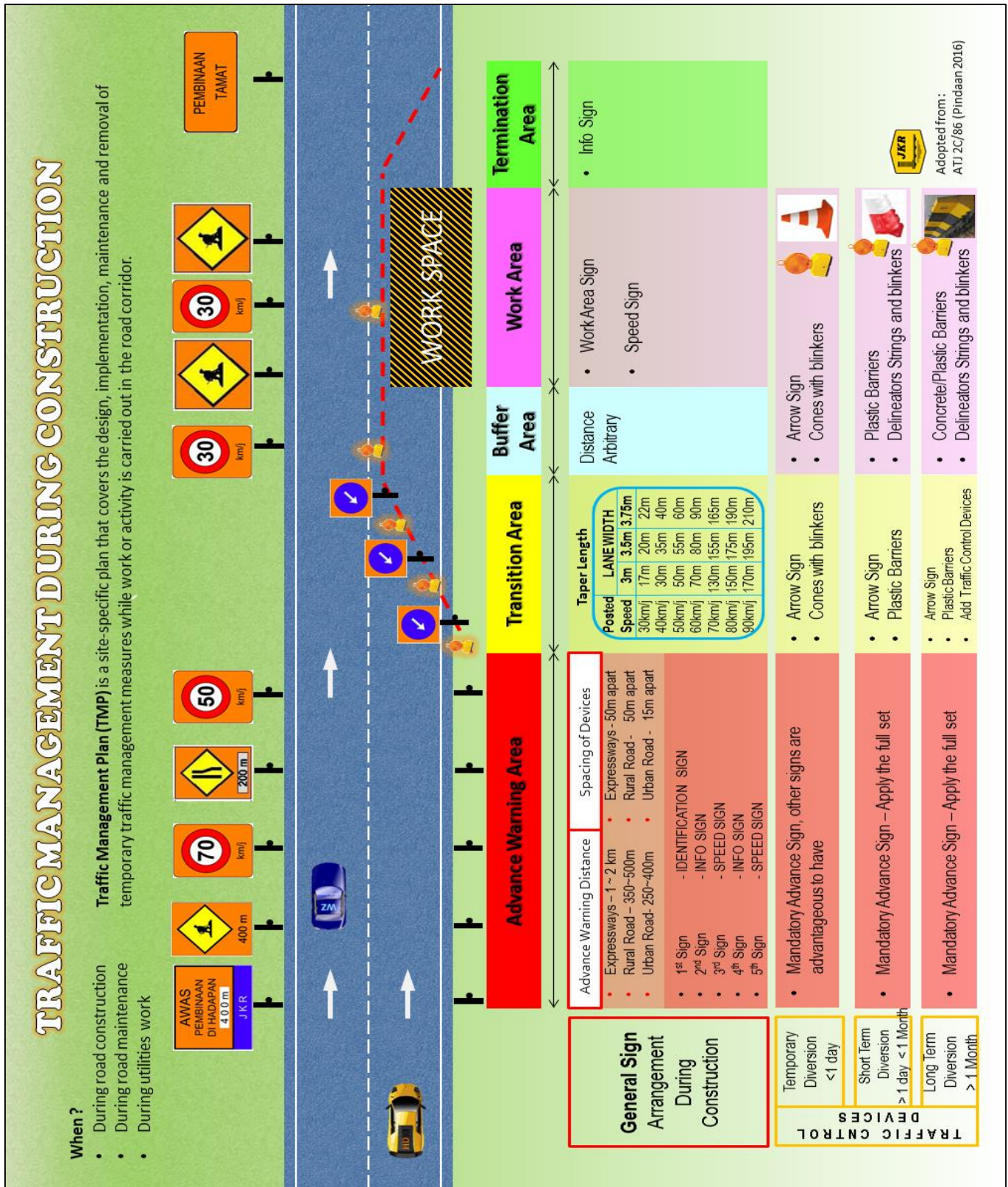










Figure 1: The Five Areas In Work Zones

The temporary signs and other traffic control devices to be used at work zones are dependent to location of the work zones, duration of works and speed of travelling vehicles. The info graphic below summarise the requirements.



Traffic Control Devices and Where To Use?

Traffic Control Devices	Type/Where to use
<p>Concrete Barrier</p> 	<ul style="list-style-type: none"> To be used at excavation work with depth 1m or more from road level, arranged continuously and interlocked. Minimum 0.6m lateral clearance to be provided from edge of barrier to the excavated area. Located close to rigid objects, which may obstruct or cause harm to road users, such as sheet piling, bridge structures, stockpile etc. Sharp and dangerous corners. Replacing an existing permanent safety feature that has been removed such as guardrails, bridge railings, median barrier etc.
<p>Plastic Barrier</p> 	<ul style="list-style-type: none"> To be used at excavation work with depth less than 1m from road level, arranged continuously and interlocked. Minimum 1m lateral clearance device to be provided from edge of barrier to the excavated area and concrete barrier to be used if otherwise. Serve as channelizing devices to road users rather than as a safety barrier that can contain vehicle when hit. For work area that has been flushed up and waiting to be paved, plastic barriers shall be placed 4m spacing for Rural road and interlocked for Urban road. To be filled with water/sand as per requirement by manufacturer
<p>Blinker</p> 	<ul style="list-style-type: none"> Use on channelizing device To be placed on the barriers at 30m interval along the construction area (excluding the work site area and temporary road diversion) To be placed at 10m interval along the excavation work sign and at signboards
<p>String delineator</p> 	<ul style="list-style-type: none"> Use as supplement on channelizing devices in outlining the correct vehicle path
<p>Warning lamps</p> 	<ul style="list-style-type: none"> Portable type and light emitted shall be yellow (amber) Use on channelizing devices and signs
<p>Floodlights</p> 	<ul style="list-style-type: none"> Light work activities or hazardous area at night Providing temporary luminaries at certain location
<p>Flagmen</p> 	<ul style="list-style-type: none"> To stop, proceed or slowing the traffic Flagger should be wearing visible clothing (orange or fluorescent)
<p>Temporary Signage</p> 	<ul style="list-style-type: none"> Fluorescent Orange Prismatic Retroreflective sheeting on their faces

CONCLUSION

Effectiveness and efficiencies of TMP requires the involvement and commitment of all parties. Among the three (3) key activities that can significantly improve the TMP are:

- Proper overall TMP plans need to be prepared at the initial stage of project to ensure adequate planning was carried out. Any changes to suit site conditions, a localised TMP need to be provided.
- Regular inspection and immediate corrective carried out.
- Regular auditing by supervision team to ensure the effectiveness of TMP implementation.

REFERENCES

1. ATJ 2C/85 (Pindaan 2016), *Manual on Traffic Control Devices – Temporary Signs and Work Zone Control* by Cawangan Jalan, JKR
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3. Paper entitled *Making Work Zone That Works* presented at Bengkel TMP, 26 January 2017.

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