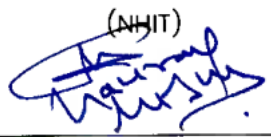
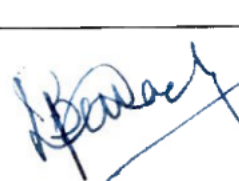


Standard Operating Procedure for Permit to Work (PTW) System

(Doc. No.: 01.01.08/EHS P-08/R1)

	Prepared by	Approved by
R.1	Corporate EHS Team (NHIT) 	Shubhra Bhattacharya (COO)  01-08-2024
Date	01/08/2024	
Revision History (R0)	Approved on 25.11.2022 and circulated for implementation	
R.1 Changes	<p>I. The responsibility matrix has been changed from the subcontractor to the maintenance team for initiating the permit.</p> <p>II. A clause for permit termination by the Safety Officer has been added in the event of any changes in working conditions.</p>	

1. PURPOSE

This Operational Control Procedure is to ensure that the level of defences in the system to prevent injury to road user, employees and damage to property are of a high order during all live road activities.

2. SCOPE

This 'Permit to Work' Operation Control Procedure (OCP) is applicable to NHIT (National Highways Infra Trust) applicable entity (ies) means the legal entity (ies), under the Trust, which holds the Concession (s) granted by the Authority and includes all such asset (s) forming part of the Concession.

3. APPLICABILITY

The Permit to Work is applicable for all the activities to be performed on live road including service road. i.e. – Routine maintenance, Initial Improvement work and any other non-routine activity on live road.

4. RESPONSIBILITY

Permit Initiator: On site Engineer/ Supervisor [NHIT and / or Subcontractor]

Permit Reviewer: Maintenance Manager / In charge

Permit Verified By: Project Manager and Safety Officer (Both)

5. PROCEDURE

S. No	Procedural Steps	Responsibility	
		Initiator	Reviewer / Approver
1	Before starting any work, the site engineer or supervisor submits the PTW format (refer to PTW Format) to the Maintenance Manager with all the details duly filled in.	Maintenance Team or Supervisor – Subcontractor	Maintenance Manager / In charge
2	After receiving the PTW request for a specific task, the Maintenance Manager or In Charge will ensure, through a physical inspection of the work area and according to the checks specified in the PTW, that all requirements are met.	Maintenance Manager / In charge	
3	The Safety Officer, after physical verification, will declare that all necessary safety arrangements for the activity covered by the PTW are in place. This includes ensuring that any Simultaneous Operations (SIMOPS) do not interfere with the intended activity and will recommend the issuance of the PTW.		Safety Officer / Project Manager



	If the Safety Officer identifies any areas of concern or unsafe conditions, he will issue a Stop Work Instruction (SWI). The SWI will remain in effect until all issues are fully addressed. Compliance with the SWI must be ensured by the Maintenance Manager or In Charge and the Project Manager.		
4	Based on safety officer's clearance, Project Manager will grant permission to proceed with the work.		Project Manager
5	If the validity (time and date) of the PTW extends beyond the originally granted permission, the PTW can be formally extended to continue the work, provided that all requirements specified by the Safety Officer and Project Manager are complied with.	Maintenance Team / In charge	Project Manager
6	In the event of any changes in working conditions (such as weather) or the execution process that could impact the safety of the work method, the Safety Officer shall review the safety arrangements and their adequacy. If the Safety Officer finds them insufficient, he can immediately terminate the work permit.	Maintenance Team	Safety Officer / Project Manager
7	The Permit Initiator and Receiver (on-site Engineer or Supervisor) is required to surrender the PTW to the Safety Officer upon completion of the work.	Maintenance Team / Supervisor – Subcontractor	Maintenance Manager / In charge / Safety Officer

6. RECORDS

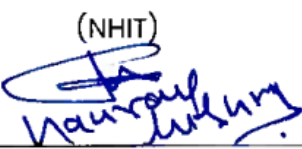

- Permit To Work Format.
- LMRA (Last minute risk assessment) for non-routine activity.



Standard Operating Procedure

“Safety Measures for Working on Live Road”

(Procedure No. EHS/SOP/031 / R1)

	Prepared by	Approved by
R.1	Corporate EHS Team (NHIT) 	Shubhra Bhattacharya (COO)  01-08-2024
Date	01/08/2024	
Revision History (R0)	Approved on 20.09.2023 and circulated for implementation	
R.1 Changes	<ul style="list-style-type: none"> i. Advanced diversion protocols, as well as the construction and deconstruction of both permanent and temporary traffic zones, integrated into this SOP. This integration ensures efficient traffic management and the safety of all site workmen, staff, and commuters. ii. Name Changed – ‘Working on the Operational Road’ to ‘Safety Measures for Working on Live Road’. 	

1. INTRODUCTION

The Standard Operating Procedure ("SOP") shall form minimum standards to be achieved to mitigate the risk/ impact involved in the road diversion and O&M operations across all project sites.

2. SCOPE

This SOP - 'Safety Measures for Working on Live Road' is applicable to National Highways Infra Trust ("NHIT") applicable entity (ies) means the legal entity (ies), under the Trust, which holds the Concession (s) granted by the Authority and includes all such asset (s) forming part of the Concession.

3. APPLICABILITY

The SOP is applicable for all the activities to be performed on live road including service road. i.e. - Routine maintenance, Initial Improvement work and any other non-routine activity on live road.

4. PURPOSE

The purpose of the SOP is to minimize the hazards and risks in traffic diversion and smoothness of traffic on the National Highways in O&M and improvement works.

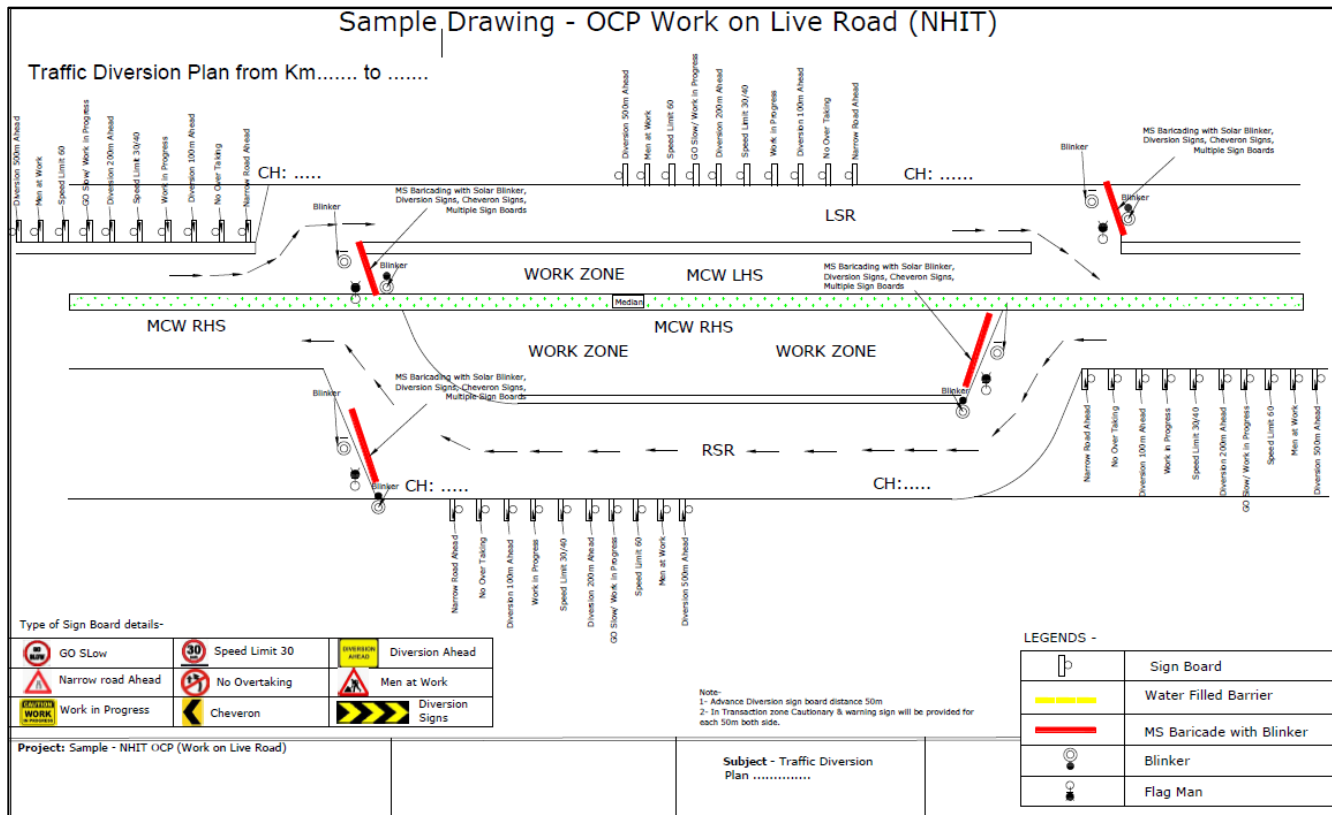
5. REFERENCE

- a. IRC: SP: 55 -2014- Guidelines on Traffic Management in Work Zones.
- b. IRC: 35 - 2015 Code of Practice for Road Markings
- c. IRC 67: 2022 Code of Practice for Road Signs
- d. IRC: SP: 84-2019- Manual of Specifications and Standards for Four Laning of Highways
- e. The Building and Other Construction Workers' (Regulation of Employment and conditions of service) Act, 1996
- f. Motor Vehicle Act, 1948

6. TRAFFIC DIVERSION PLAN AND PROCESSES:

Requirement Of Diversion and Barricading for Working on Live Road: Prior to starting the works, a traffic diversion plan confirming IRC SP 35: 1997, IRC SP 55: 2014 and IRC SP 67: 2022 shall be prepared & followed once approved. Sketch of a diversion plan as sample given below.





6.1 Before Start of Work or during execution:

The respective contractor is responsible for preparing the Traffic Management Plan (TMP). The Maintenance Team (Manager/Engineer – NHIT) is responsible for ensuring that the TMP is prepared and implemented as specified in the guidelines, with all sign boards and barricades.

- The plan must be approved by the respective authority or independent engineer, as applicable. In case of non-compliances, the plan must be revised and resubmitted for approval.
- Once approval is received, the plan must be implemented on the ground, and work can then be started accordingly.
- During Execution, the traffic management arrangements must be checked on the ground as per the IRC SP 35: 2015, IRC SP 55: 2014, and IRC SP 67: 2022.

6.2 Partially Completed Section:

- In the case of staged construction scenario, partially completed sections are opened for traffic operations. Ensure the TMPs must be prepared before opening the section for traffic to indicate temporary markings and temporary signage.
- Channelizing safety devices (Rope light, Blinkers) shall be placed for identification of path in the nighttime.

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7. ROAD DIVERSION

7.1 Diversion extending beyond the shift / days

7.1.1 Full Lane closure for Road Work

The following safety guidelines to be followed while providing road diversion:

- a.** Diversions should be done as per the specifications mentioned in the approved plan.
- b.** Diversion pavements should be in good condition with no potholes. Rectify any damaged road or potholes. Ensure the shoulder of the service road is in proper condition to cater to the MCW traffic.
- c.** Diversion boards should be aligned with no gaps and managed nicely for better presentation.
- d.** A minimum of two diversion boards with blinkers and retro-reflective tape should be provided at every exit.
- e.** Blinkers must be provided at exit and entry points.
- f.** Traffic channelizing devices such as spring delineators and bollards with three rows of reflectors should be provided at merging, demerging, and along the diversion road.
- g.** Thermoplastic marking with road studs should be applied along the diversion and transverse bar markings before the diversion point.
- h.** All advanced signboards must be installed as per IRC SP 67: 2022.
- i.** Provide barricade boards (Type IV), water barricades, and NJ barriers, etc.
- j.** Reflective tape, chevron boards, flashlights, rope lights, etc., should be provided to warn commuters during nighttime.
- k.** To facilitate easy traffic flow, the time limit for diverting MCW traffic to a service road must be kept to a minimum.
- l.** Adequate lighting arrangements should be provided on the service road used as a diversion.
- m.** Ensure flagmen (virtual) are provided at both ends of the diversion and at traffic congestion spots in the market.
- n.** Entry and exit points must be situated at a 45-degree angle to facilitate lane changes in traffic.



Actual photos of Road Diversions are as below for reference:



Road Diversion in Day Time



Road Diversion in the night

Partial Diversion for Road Work:

The following guidelines are to be followed for allowing work on the main carriageway (MCW) for short durations:

- The lane should be closed by an MS board 500 meters ahead of the work location.
- Blinker or LED chevron lights should be provided.
- A red flag and virtual flagman should be displayed.
- Traffic cones shall be spaced at 5-meter intervals, with one or two layers of cones* provided in the work zone. The distance between the inner and outer layers of the cones should be 1.2 meters. The outer layer cones should be connected with nylon rope or plastic chain to provide a visible deterrent.
- A signboard (Men at Work) should be displayed to caution commuters at a sufficient distance.
- All signboards shall comply with IRC SP 67: 2022 regulations and IRC SP 55: 2014.

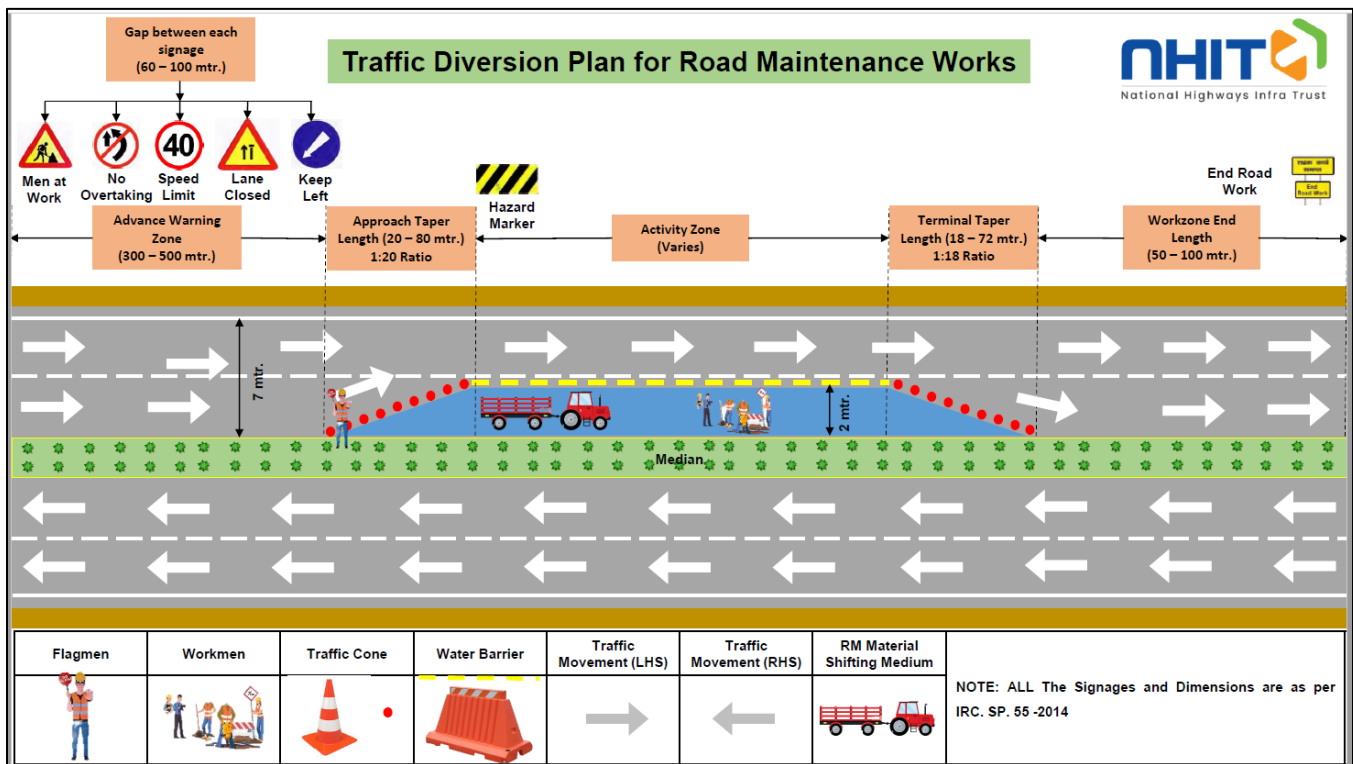
(Signature)

7.2 Diversion maximum extending up to the day shift – Barricading Requirements for O&M Works: (RRM & any Non routine activity on Live Road including Service Road)

A robust barricading plan must be maintained to ensure the safety of all site workmen, staff, and commuters. The barricading requirements for O&M works on the MCW must strictly adhere to the specifications outlined in the diagram below. If these requirements are not met, the work must not be started.

Construction and Deconstruction of Work Zone

- A mechanism shall be put in place to protect workmen on the live carriageway during the construction and deconstruction of the work zone.
- Portable VMS boards should be installed in work zones and for traffic diversions at critical locations.
- Hazard markings and cautionary blinker boards/reflectors should be installed on all vehicles and tractor trolleys hired through subcontractors.



(Signature)

The following safety guidelines must be implemented for O&M works:

- a. Provide an MS board with "Arrow marking & Work in progress" display 100 meters ahead of approach zone.
- b. Ensure to provide LED chevron or blinker in case of **fog or when working during inadequate illumination**.
- c. Display signboards such as "**Go Slow**" and "**Speed Limit**" as per the above plan.
- d. Deploy a flagman with red and green flags and a whistle or place a virtual flagman for better visibility and a risk-free approach.
- e. Provide safety arrangements as per the above plan. No work shall be allowed until the arrangement is reviewed by the maintenance in-charge/engineer and approved Permit to Work.
- f. Contractor safety induction must be completed before engaging them in O&M-related work.
- g. The site manager/engineer must evaluate site hazards and risks before planning any type of O&M-related activities on the live road, along with work zone construction and deconstruction precautionary measures.
- h. Unauthorized access should be closed wherever it is opened or used by surrounding people.
- i. Vehicles should be parked with the carriage body facing towards the entrance of the vehicle.
- j. Work shall be executed only when there is dedicated supervision.
- k. Contractors should ensure sufficient manpower to provide safety arrangements on the live carriageway.
- l. In case of road curvature, an MS board with "Men at Work" and arrow markings should be placed on the live carriageway in the lane 500 meters ahead of the working place.
- m. For any work at height, ladders and full-body harnesses should be used by the workmen.
- n. No one should cross the road while talking on the phone and accompanied by supervisor.
- o. Ensure all workers and employees are wearing PPEs at the workplace.
- p. No one should take a rest or sleep in the vicinity of any vehicle at the site.
- q. Contractors should be engaged at the site based on their acceptance of the above safety arrangements as per IRC & NHIT SOP requirements.

8. TRAINING & AWARENESS:

Training & Awareness must be conducted to all front-line supervisors & workers for making safe diversions as per approved specifications. It must be included in regular TBTs.

9. RECORDS:

Hard copy (Duly filled & signed by maintenance team) of surrendered permit, checklist and other forms & format to be retained & maintained by EHS site EHS department. (Retention period – 4 Months.)



10. NOTE:

- a. Tractor-driven water tankers shall not be used for watering median plants or for any other purpose.
- b. Old-generation Hydra cranes shall not be used or engaged for any lifting operations, including incident management works.
- c. Under no circumstances shall manpower be lifted inside a makeshift man basket.
- d. Manpower shall not be transported in a tractor trolley or any other transporting vehicle. The use of passenger vehicles must be ensured at all times.



PERMIT TO WORK (PTW) - LIVE ROAD ACTIVITIES

To be filled in by the person seeking Permit (Permit Applicant)

Project:		Chainage & Work Activity:		Length of Work Zone:		Date:	
Side of Road (Please (✓) Appropriate)	LHS	Median	RHS	Description of Temporary Lane closed if any:			
Date : _____ Start Time (AM/PM): _____ End Time (AM/PM) : _____							

Sl. No.	Standards	Check (Please ✓ Appropriate)			Supportive Details Or Comments
		Yes	No	N/A	
General					
1.	Risk assessment available for location				
2.	Workers at site are inducted and records available.				
3.	Traffic devices installed in site shall be defect free and shall be as per specification.				
4.	Signs clearly visible to traffic—not hidden by foliage, other signs, or features				
5.	Unneeded signs covered or removed when operation/hazard no longer exists				
6.	Good sight distance to lane closure tapers				
7.	Supervisor available in work area through the execution of the activity.				
Worker and Vehicle Protection					
8.	Safe access provided for workers and vehicles				
9.	Required PPE (Safety shoes or gumboots, reflective vest, helmets) provided to all workers. Work related PPE (such as goggles, gloves) are used.				
10.	Equipment used at site is of good condition. Is right equipment used for right job?				
11.	Fuels are stored in site, away from direct sunlight.				
12.	All vehicles in the work zone shall be provided with wedges.				
13.	Vehicle used in site possess all legal documents (RC, Insurance etc.,)				
14.	No child workers / people older than 55 years shall be deployed at site.				
15.	First aid kit available at site.				
16.	Records of daily TBT available at site.				
17.	Fire protection devices available in case of usage of flammable materials (like paint, petrol, diesel or any other flammable chemicals)				
18.	Availability of drinking water in work zone.				

Note:

- Tractor-driven water tankers shall not be used for watering median plants or for any other purpose.
- Old-generation Hydra cranes shall not be used or engaged for any lifting operations, including incident management works.
- Under no circumstances shall manpower be lifted inside a makeshift man basket.
- Manpower shall not be transported in a tractor trolley or any other transporting vehicle. The use of passenger vehicles must be ensured at all times.

Traffic Management (In line with the guidelines in SOP Procedure No. EHS/SOP/031 / R1)				
19	Does the Traffic management conform to the mutually discussed pre task plan?			
20	Are Taper and Buffer zones clear of operatives, plant and materials?			
21	Are sign vision lines free from bends, hills/dips in the road, parked vehicles, hedges etc.?			
22	Are all misleading permanent signs and road markings covered?			
23	Is the carriageway being kept clear of mud and surplus equipment?			
24	Is diversion pavements in good condition with no potholes?			
25	Are paved (1 mtr) and earthen shoulder (1.5 mtr) available and having standard width.			
26	Are blinker or LED chevron lights provided on rear side of trolley while performing a routine maintenance activity.			
27	Is channelizing of traffic done with the help of spring delineators and bollards with three rows of reflectors provided at merging, demerging, and along the diversion road?			
28	Are barricade boards (Type IV), water barricades, and NJ barriers, etc. Provided for permanent diversion (Diversion beyond the shift) and traffic cones with 5 m spaced interval and connected with nylon rope and plastic chain for temporary diversion.			
29	Are reflective tape, chevron boards, flashlights, rope lights, etc., provided to warn commuters during night time?			
30	Is adequate lighting arrangements done on the service road used as a diversion?			
31	Are flagmen (virtual) provided at both ends of the diversion and at traffic congestion spots in the market.			
32	Does lane closed by an MS board 500 meters ahead of the work location?			

Sl. No.	Standards	Check (Please ✓ Appropriate)			Supportive Details Or Comments
		Yes	No	N/A	
Comments :					
Permit Applicant and Checked By :		Approved By :		Verified By : Project Manager and Safety Officer NHIPPL - NHIT	
Onsite Engineer/ Supervisor (Name, Position, Employer & Date If SUB-Contractor) [NHIT or O&M Subcontractor]		Maintenance Manager - NHIT			

Activity Completion time:		Supervisor Sign:	
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Note: - This permit copy shall be available at site during execution of work. This permit is valid only for operations in day light.

Note:

- Tractor-driven water tankers shall not be used for watering median plants or for any other purpose.
- Old-generation Hydra cranes shall not be used or engaged for any lifting operations, including incident management works.
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