

# ATWS Worksite Protection for Medlow Bath routine network maintenance activities

<b>DOCUMENT NO.</b>	D2022/11005		
<b>WORK DESCRIPTION</b>	Routine Maintenance activities		
<b>WPP Number</b>	WT09BWS 10178	<b>SAP Code</b>	RWPP8006
<b>SCOPE:</b>	Routine maintenance activities performed by Network Maintenance Teams: <ul style="list-style-type: none"> <li>on the <b>Up Main and Down Main lines</b> between 115.480km to 115.635km</li> <li>that does not involve the use of tools or equipment, or</li> <li>using tools which can be easily and immediately removed from the track by one person and are light, non-powered hand tools, or light battery powered tools or devices:</li> </ul>		
<b>AUTHORISATIONS:</b>	<b>Protection Officer, ATWS Operator (Operator) &amp; ATWS Installer (Installer):</b> <ul style="list-style-type: none"> <li>Protection Officer (PO) Level 1 – 4, and</li> <li>WATWS – Wireless Automatic Track Warning System</li> </ul>		
<b>PERSONAL PROTECTIVE EQUIPMENT</b>	<ul style="list-style-type: none"> <li>High visibility vest, boots, high visibility lookout sleeve</li> </ul>		
<b>SAFETY CONTROLS – Lookout Working (ATWS) arrangements:</b>	<ul style="list-style-type: none"> <li><b>Automatic</b> Track Warning System (ATWS) - provides visual and audible warning for workers</li> <li><b>Installed</b> ATWS sensors on the <b>Down Main line at 114.492 km</b></li> <li><b>Installed</b> ATWS sensors on the <b>Up Main line at 116.758 km</b></li> </ul> <p><b>IMPORTANT!</b></p> <ul style="list-style-type: none"> <li>This document must not to be used to install or adjust the ATWS sensors.</li> <li>All sensors in the plan and shown on the diagram must be connected to transmit a warning.</li> </ul>		
<b>PRESTART REQUIREMENTS:</b>	<ul style="list-style-type: none"> <li>Refer to D2015-45354 Wireless ATWS (Automatic Track Warning System) to install or remove the sensors.</li> </ul>		
<b>FURTHER INFORMATION:</b>	Refer to “D2015-45354 Wireless ATWS (Automatic Track Warning System)” for detailed instructions to set-up, connect, test and operate the ATWS system with the pre-installed ATWS sensors.		

Required ATWS Equipment		
Item	Description	Quantity
Aerial	Telescopic Aerial	3
Assembly Kit	Orange Bag with Tools	2
Battery ZA24-2.9	Small battery for Junction Box & Transmitter	8
Device Frame	Protective Frame	3
F500-AB Junction Box	Receiver Device	2
F500-SEN Train Sensor	Sensor	2
Housing for Aerial	Housing for Telescopic Aerial	3
KF5-5 Extension Cable	Extension Cable (5m) for F500-SEN to F500-AB	0
Mobile Backpack	Harness for Device	0
Pouch	Pouch for small battery	4
Tripod	Tripod for Device	3
ZFS Radio Transmitter	Radio Transmitter Device	2
ZPW Warning Unit	Control & Warning Device	1

**Protection Officer/Operator assessment checklist**

<b>Protection Officer/Operator's name:</b>		<b>Yes</b> <i>(Tick if Yes)</i>
This document has not expired 12 months beyond the issue date.		
SWI details and protection arrangements have been reviewed and validated for the assessed worksite location, including: <ul style="list-style-type: none"> <li>On-site safety assessment has been completed for relevancy of works being undertaken</li> <li>The required protection details, environment and tasks are unchanged from the details of this SWI</li> <li>All boxes have been ticked if applicable and crossed if not applicable</li> </ul> All fields have been completed		
<b>Corridor Safety Number</b>	<b>Protection Officer Signature</b>	<b>Date</b>

**Warning**



*If an above item does not apply, the Protection Officer must not use this Safe Work Instruction. A new worksite protection plan must be completed in accordance with NRF 014 Worksite Protection Pre-work briefing and NRF 015 Worksite Protection Plan.*

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## Worksite Protection Pre-work Briefing

Briefing date:

### Protection Officer Details

Work location:

Scope of work:

Worksite protection:  Refer to Worksite Protection Plan for details

Hazards (e.g. Site specific hazards identified, including physical environment, human errors, plant and equipment)	Controls (to be implemented to eliminate or reduce the risk to the lowest practicable level)	Person responsible for Control
<b>Crossing live lines</b>	A qualified Protection Officer (PO) or Assess Corridor Safety (ACS) must make a safety assessment to cross live lines in accordance with NGE200 & supervise workers who do not hold the PO or ACS qualification.	Qualified PO/ACS
<b>Accessing Danger Zone to conduct plate test</b>	Use appropriate safety measures as validated by a PO. Refer to diagram for minimum safety assessment.	Qualified PO
<b>Electricity</b>	ATWS antennae not to encroach safe approach distance to overhead wiring.	Operator
<b>Slips, trips, falls carrying ATWS equipment</b>	Use correct manual handling techniques, secure safety boots, clear obstacles for work area & agree a safe path.	All
<b>Approaching rail traffic</b>	Lookout Working using approved ATWS as assessed in the plan & diagram. All points of entry have been validated and ATWS safety measures (sensors) have been installed. Confirm with the Operator that the ATWS has been tested and is operational. Workers immediately move to the designated safe place when warned. Provide ALL CLEAR handsignal after workers and equipment are in a safe place. After the warning has been cancelled, confirm there is no approaching rail traffic between the sensors and the worksite before allowing work to resume.	PO
<b>Ineffective ATWS warnings / Adjoining / surrounding worksites</b>	Test & confirm workers can see & hear the warning in the noisiest environment. Explain the emergency warnings. Workers to be within 50m of warning device. Workers to remain within sight & hearing of warning unit at all times. Radios not to be used near ATWS.	PO
<b>Train warning time longer than expected (stopping points or ATWS equipment fault)</b>	Workers to remain in a safe place until confirmed the ATWS is working correctly. Contact the Signaller or visually confirm the line is clear between the sensors & the worksite. Potential stopping points: 71.8 Signal, 71.3 Signal	PO
<b>Second train warning cancelled in error</b>	Nominate a team member to confirm with the Operator when each rail traffic has completely passed the worksite. Tell the PO & workers about the second train warning. Cancel each warning after each train has completely passed the worksite.	Operator / nominated team member
<b>Distraction</b>	Obtain permission from PO to use electronic devices in the Danger Zone.	All
<b>Obstruction to safe place</b>	Agree on paths to reach designated safe places from the worksite.	PO
<b>Electrical storms</b>	Stop work immediately	All
<b>Highway noise</b>	When setting up the ATWS Warning unit, increase the warning volume to be above the ambient highway noise so workers can hear the warning from the worksite. Adjust volume as required.	Operator

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Hazards (e.g. Site specific hazards identified, including physical environment, human errors, plant and equipment)	Controls (to be implemented to eliminate or reduce the risk to the lowest practicable level)	Person responsible for Control

Safe Work Instruction

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Workplace Supervisor Details

name contact No. Emergency assembly point: SWMS/SWI Ref #: First Aid kit location: First Aider:

Workplace Supervisor Acknowledgement

The Workplace Supervisor acknowledges that all identified WHS and rail safety hazards have the appropriate controls in place to manage and/or eliminate the hazards.

Yes [ ] signature

Participant Acknowledgement

NOTE: Recipients of the briefing are to question the Briefer if they don't understand any part of this briefing.

- All workers listed below acknowledge that they: 1. have been inducted to the site 2. are free from alcohol and drugs 3. are free from the effects of fatigue 4. hold the applicable and current Rail Safety Worker Authorisation, trade licence and/or induction record e.g. Construction Industry Induction 5. must wear the appropriate Personal Protective Equipment (PPE) 6. have been briefed on the contents of the Worksite Protection Plan 7. have been shown the Worksite Protection Plan diagram 8. understand the kinds and limits of worksite protection in place 9. have been briefed about any new hazards and controls identified during the final site inspection (final site inspection must be conducted immediately before commencing work)

Mark each check box below with a tick [x] if the item applies or a cross [X] if the item does not apply.

- [ ] have been informed of the requirements of the electrical permit (if required) [ ] have been made aware of any hazardous materials/substances on site [ ] have been briefed on the SWMS/SWIs/documentated safe work practice for the job [ ] have been briefed on Safety Data Sheets (SDS) [ ] have been instructed in the controls recorded in this document and SWMS/SWIs [ ] have been briefed on the WHS Management plan [ ] have been briefed on the hazards of adjoining worksites/processes.

Table with 4 columns: Name, Signature, Time of briefing: hh:mm, Amendment briefing: hh:mm and initial. Multiple empty rows for data entry.

Safe Work Instruction

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Worksite Protection Plan – Lookout Working

Signaller Details

	<b>Katoomba Panel</b>	<b>9851 7401</b>
	<b>Mt Victoria Panel</b>	<b>6354 9837</b>

Protection Officer Details

name	signature	contact No.
RSW or RIW No.	designation	Planned duration

Workplace Supervisor details:

Type of work:

**Worksite Location**

On the

between  and

On the

between  and

Worksite Assessment

Has the Lookout Working Prohibited Locations Register been consulted? Yes

Warning method

Minimum Warning Time Calculations

Maximum track speed

Number of ATWS Sensors used  Position of ATWS Sensors  and

Number of additional Lookouts\* used  Position of Lookouts  to

7 sec	+	3 sec	+	10 sec	=	Minimum Warning Time (MWT)	20 sec	115 km/h	639 metres
7 sec	+	3 sec	+	10 sec		(S+M+10 sec = MWT)	20 sec	100 km/h	556 metres
<small>See Time (S)</small>		<small>Move Time (M)</small>		<small>Safe Time</small>			<small>Track speed</small>		<small>Minimum Sighting Distance as calculated</small>

Where are the safe places identified for the ATWS operator, Lookouts and workers?

Lookouts:

Operator & Workers:

Record train ID# or type of train observed for all sensors

Confirm mandatory first train tests were completed for all sensors Yes

Ensure the workers have been briefed about these work details Yes

NOTE: Diagrams and instructions that follow form part of this worksite protection plan.

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## Planning

### 1. How will the installed location of sensor(s) be verified?

- The PO will have direct line of sight to the sensor from the worksite location
- The installer will travel from the sensor location to worksite location on the same side of track
- The ID no. of the first train will be verified between the operator and installer

Train ID # observed:

Verified by installer:  (tick to confirm)

## Testing

### 2. Record evidence of mandatory First Train Tests:

- a. Record Train ID # or type of train observed for all sensors:

- b. Confirm mandatory first train tests are complete for all sensors installed  (tick to confirm)

## Pre-work Briefing

### 3. Identify potential stopping points affecting warning times:

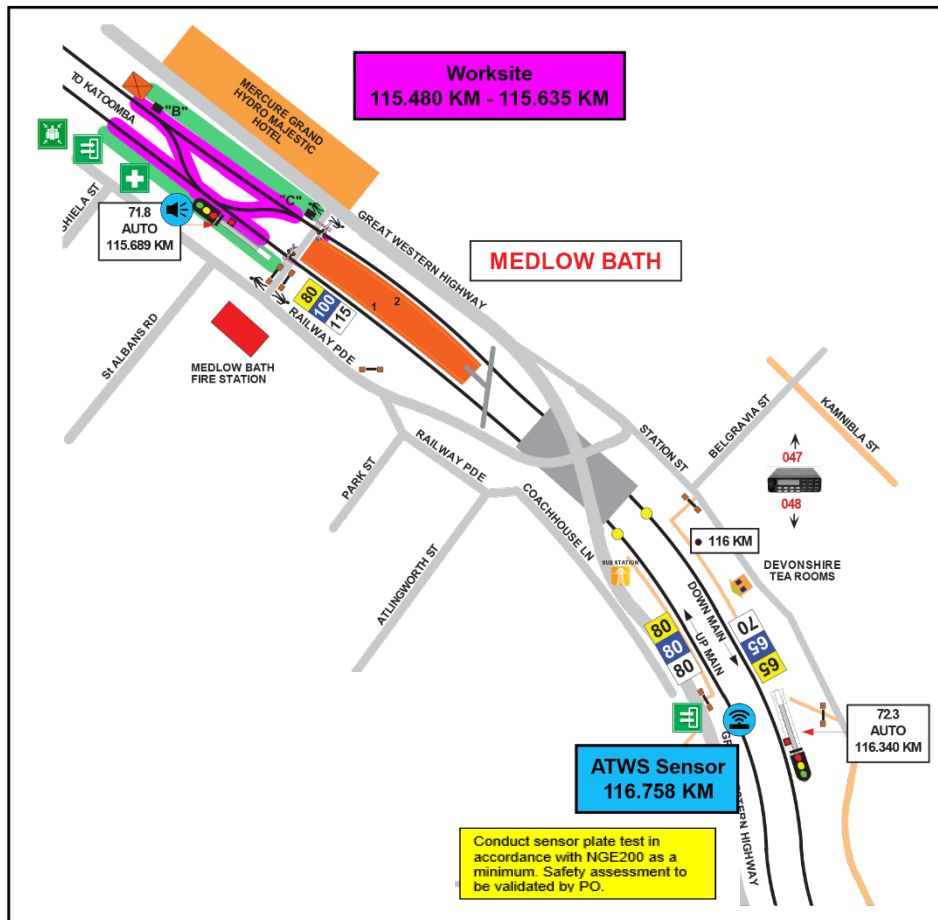
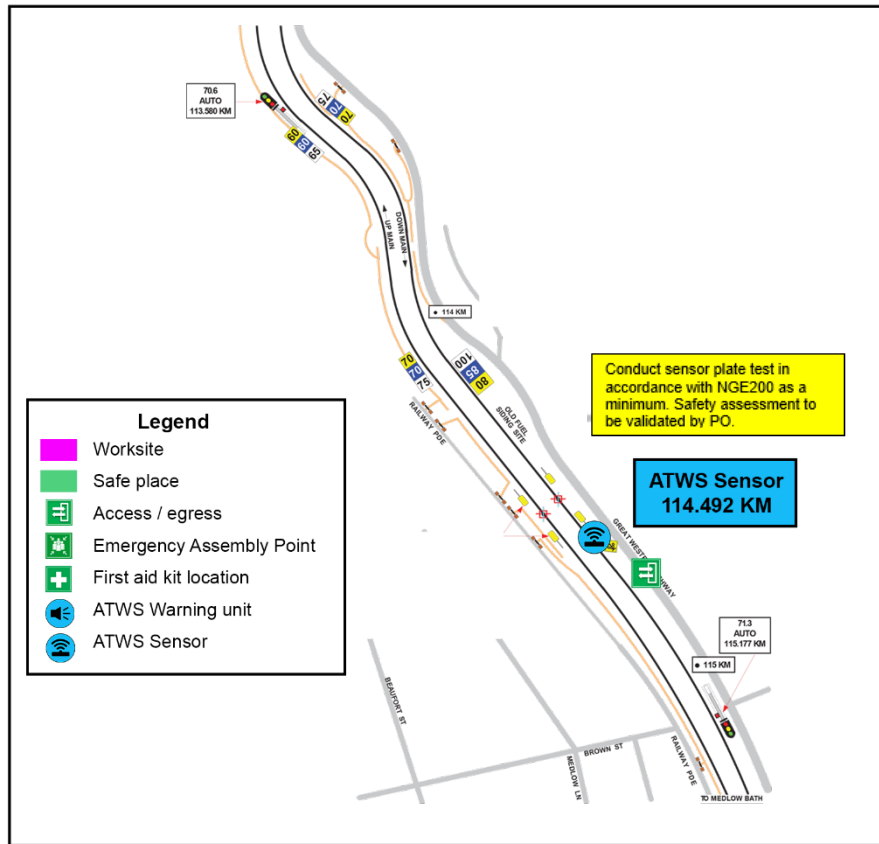
Record any potential stopping points e.g. (stations or signals) between the sensor(s) and worksite which could cause variable warning times:

71.8 Signal, 71.3 Signal

**Note:** Factors affecting warning times should be highlighted to staff during the pre-work brief

# ATWS Worksite Protection for Medlow Bath routine network maintenance activities

Diagram





# ATWS Worksite Protection for Medlow Bath routine network maintenance activities

**INSTRUCTIONS:**

1. Workers enter the rail corridor via access gate **W00 115.749 U**.
2. Use assets to validate worksite location on **Up Main and Down Main lines** between 115.480km to 115.635km
3. Conduct WP Pre-work briefing to set-up ATWS.
4. Tell Signaller at **Katoomba Panel** and **Mt Victoria Panel** about the use of lookout working with ATWS.
5. Access Up Cess 116.758km, verify sensor label & connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.
6. Access Dn Cess 114.492km, verify sensor label, connect to sensor cable, calibrate with test plate, connect & turn on transmitter.
7. Place warning system on same side of tracks if working on one track only within sight & hearing of workers, conduct siren & light self test, & connect to transmitter(s).
8. Record first rail traffic movement test for each sensor on ATWS Check-sheet.
9. Conduct WP Pre-work briefing for lookout working with ATWS and confirm workers have seen and heard the warning.
10. Start work when advised by the PO, and move to the designated safe place when warned.
11. When work is complete, and workers and equipment are in a safe place, turn off and pack up warning unit. Turn off and remove all ATWS transmitter units.
12. Access Up Cess 116.758km to turn off and pack up transmitter unit.
13. Access Dn Cess 114.492km to turn off and pack up transmitter unit.
14. All workers to leave the rail corridor via access gate **W00 115.749 U**.
15. Tell Signaller at **Katoomba Panel** and **Mt Victoria Panel** when work is completed and the workers and their equipment are clear of the Danger Zone.

**Position of ATWS transmitter and sensor on the Up Main West line at 116.758KM**



**Image 1:** Sensor and transmitter installation location



**Image 2:** Sensor access using access gate **W00 116.782 U**

**Position of ATWS transmitter and sensor on Down Main West line at 114.492 KM**



**Image 1:** Sensor and transmitter installation location



**Image 2:** Sensor access using access gate **W00 114.511 D**



## ATWS Worksite Protection for Medlow Bath routine network maintenance activities

*(This page is optional and may be separated and given to the assigned operator to assist set- up of ATWS equipment. Refer also to Refer to "D2015-45354 Wireless ATWS (Automatic Trak Warning System)" for detailed instructions.)*

### Setup Stage 1: Checklist for ATWS transmitter and sensor

Step	Task Description	Installer Check
1	Verify Track Label for location of sensor as per the Protection Diagram and Photos in this document	
2	Confirm equipment is within inspection date	
3	Sensor direction is per Worksite Protection Diagram and photos in this document	
4	Connect sensor cable to junction box	
5	Confirm all batteries are fully charged	
6	Connect junction box to ZFS using channel T1-T4	
7	Commence calibration and automatic self- test	
8	Perform function test using test plate	
9	Confirm transmitter booked in to correct T- channel (T1-T4)	
10	Select & confirm channel for the radio transmitter (AU3 OR AU4)	
11	Perform worksite warning test using test plate	
12	Lock device & remove key	

### Setup Stage 2: checklist for ATWS worksite warning unit

Step	Task Description	Operator Check
1	Confirm equipment is within inspection date	
2	Confirm Audible level	
3	Confirm and set Radio Channel for Warning unit	
4	Book in ATWS sensor 1	
5	Book in ATWS sensor 2	
6	Perform Worksite Warning Test with all ATWS sensor	
7	Ensure the workers have seen the visual warning and heard the audible warning	
8	Select and Confirm Channel for the Radio Transmitter	
9	Confirm worksite warning unit is operational with Installers and advise them to lock devices & remove key	