

# ATWS Worksite Protection for Helensburgh routine network maintenance activities

<b>DOCUMENT NO.</b>	D2021/27654
<b>WORK DESCRIPTION</b>	Routine Maintenance activities
<b>WPP Number</b>	SC2BWS 10119
<b>SCOPE:</b>	<p>Routine maintenance activities performed by the South Coast Territory Maintenance teams.</p> <ul style="list-style-type: none"> <li>on the Up and Down Illawarra lines between 45.560 km to 45.740 km</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>	<p><b>Protection Officer, ATWS Operator (Operator) &amp; ATWS Installer (Installer):</b></p> <ul style="list-style-type: none"> <li>Protection Officer (PO) Level 1 – 4, and</li> <li>WATWS – Wireless Automatic Track Warning System</li> </ul> <p><b>Dedicated Lookout: (PO) Level 1 - 4, or Handsignaller 1 - 2</b></p>
<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>Automatic Track Warning System (ATWS) - provides visual and audible warning for workers</li> <li>Installed ATWS sensors for Down direction running on the on <b>Up Illawarra Main</b> at <b>44.950 KM</b></li> <li>Installed ATWS sensors for Down direction running on the <b>Down Illawarra Main</b> at <b>44.950 KM</b></li> <li>Installed ATWS sensors for Up direction running on the on <b>Up Illawarra Main</b> at <b>46.125 KM</b></li> <li>Installed ATWS sensors for Up direction running on the on <b>Down Illawarra Main</b> at <b>46.125 KM</b></li> <li>Dedicated lookout(s) at the worksite for unsignalled movements.</li> <li><b>IMPORTANT!</b></li> <li>This document must not 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 sensors</li> </ul>
<b>FURTHER INFORMATION:</b>	<p>Refer to “D2015-45354 Wireless ATWS (Automatic Track Warning System)” for detailed instructions to set-up, connect, test and operate the ATWS system with pre-installed ATWS sensors</p> <ul style="list-style-type: none"> <li>NWT 300 Planning work in the Rail Corridor</li> <li>NWT 310 Lookout Working</li> <li>NGE 200 Walking in the Danger Zone</li> <li>NPR 711 Using Lookouts</li> <li>NPR 751 Calculating Minimum Warning Time</li> <li>NPR 712 Protecting work from rail traffic on adjacent lines</li> <li>NPR 752 Using Wireless Automatic Warning Systems</li> <li>NLA 410 Sutherland - Wollongong</li> <li>Lookout Working Prohibited Locations Register</li> </ul>

## Required ATWS Equipment

Item	Description	Quantity
Aerial	Telescopic Aerial	3
Assembly Kit	Orange Bag with Tools	1
Battery ZA24-2.9	Small battery for Junction Box & Transmitter	8
Device Frame	Protective Frame	3
F500-AB Junction Box	Receiver Device	4
F500-SEN Train Sensor	Sensor	4
Housing for Aerial	Housing for Telescopic Aerial	3
KF5-5 Extension Cable	Extension Cable (5m) for F500-SEN to F500-AB	2
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's name:</b>		<b>Yes</b> (Tick if Yes)
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> <li>All fields have been completed</li> </ul>		
<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

name       signature       contact No.

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 Access Corridor Safety (ACS) must make a safety assessment to cross live lines in accordance with NGE200 and 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 and 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>Bi Directional Running</b>	ATWS sensors placed in both running directions to warn work group of approaching rail traffic	PO
<b>Ineffective ATWS warnings / Adjoining / surrounding worksites</b>	Test and confirm workers can see and hear the warning in the noisiest environment. Explain the emergency warnings. Workers to be within 50m of warning device. Workers to always remain within sight and hearing of warning unit. 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 and the worksite.	PO
<b>Unsignalled movements in Yard limits</b>	Position lookout(s) in safe place. Confirm minimum sighting distance can be achieved. Test effective communication and be within sight and hearing of the workers.	PO / lookouts
<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 and 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>Obstructions to safe place</b>	Agree on paths to reach designated safe places from the worksite.	PO
<b>Electrical storms</b>	Stop work immediately	All

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

Safe Work Instruction



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### Workplace Supervisor details

name \_\_\_\_\_ contact No. \_\_\_\_\_

Emergency assembly point: **Access Gate** SWMS/SWI Ref #: \_\_\_\_\_

First aid kit location: **Sydney Trains Work Vehicle** 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	6. have been briefed on the contents of the Worksite Protection Plan
2. are free from alcohol and drugs	7. have been shown the Worksite Protection Plan diagram
3. are free from the effects of fatigue	8. understand the kinds and limits of worksite protection in place
4. hold the applicable and current Rail Safety Worker Authorisation, trade licence and/or induction record e.g. Construction Industry Induction	9. have been briefed about any new hazards and controls identified during the final site inspection ( <i>final site inspection must be conducted immediately before commencing work</i> )
5. must wear the appropriate Personal Protective Equipment (PPE)	

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

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

Name	Signature	Time of briefing: hh:mm	Amendment briefing: hh:mm and initial

**Worksite Protection Plan – Lookout Working**

**Signaller details**

**Wollongong North Panel**

**Protection Officer details**

Planned duration

Workplace Supervisor details:

Type of work: **Routine Network Maintenance Activities**

**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 dedicated Lookouts used  Position of Lookouts  To

**Note** - Lookouts are relocated to positions within these KMs as workers move along the worksite.

<input type="text" value="7 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>	=	<b>Minimum Warning Time (MWT)</b>	<input type="text" value="20 sec"/>	<input type="text" value="65 km/h"/>	<input type="text" value="362 metres"/>	<input type="text" value="Down Illawarra line"/>
<i>See Time (S)</i>		<i>Move Time (M)</i>		<i>Safe Time</i>		$(S+M+10 \text{ sec} = \text{MWT})$		<i>Track speed</i>	<i>Minimum Sighting Distance as calculated</i>	
<input type="text" value="7 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>	=	<b>Minimum Warning Time (MWT)</b>	<input type="text" value="20 sec"/>	<input type="text" value="65 km/h"/>	<input type="text" value="362 metres"/>	<input type="text" value="Up Illawarra line"/>

**Dedicated Lookout**

<input type="text" value="2 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>	=	<b>Minimum Warning Time (MWT)</b>	<input type="text" value="15 sec"/>	<input type="text" value="25 km/h"/>	<input type="text" value="105 metres"/>
<i>See Time (S)</i>		<i>Move Time (M)</i>		<i>Safe Time</i>		$(S+M+10 \text{ sec} = \text{MWT})$		<i>Track speed</i>	<i>Minimum Sighting Distance as calculated</i>

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

Lookouts:

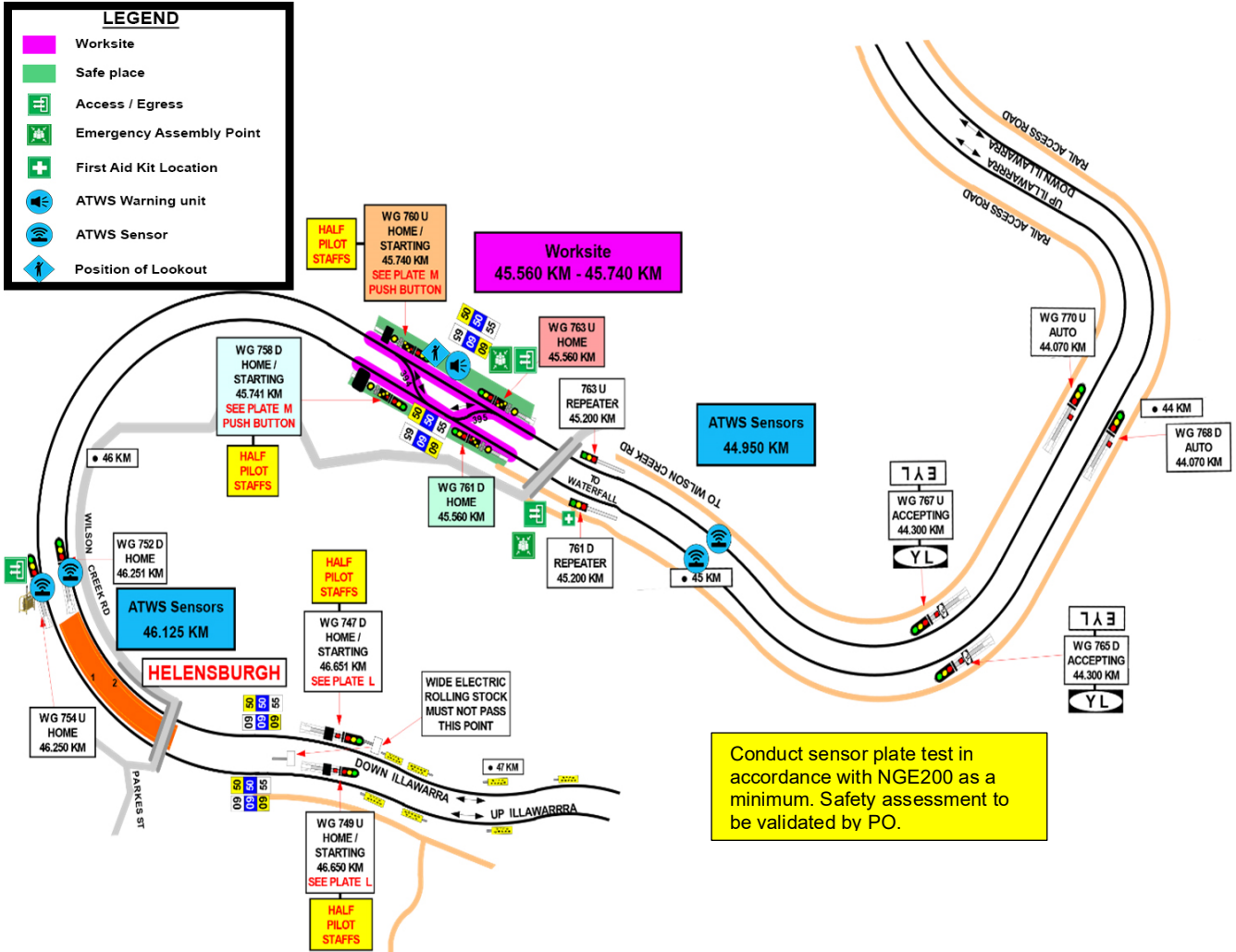
Workers:

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.

Worksite on the Up Illawarra & Down Illawarra lines



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<b>INSTRUCTIONS:</b>	1. Workers enter the rail corridor via access gate <b>100 45.555 D</b> .
	2. Use assets to validate worksite location on the Up and Down Illawarra lines between 45.560km to 45.740km
	3. Conduct WP Pre-work briefing to set-up ATWS.
	4. Tell Signaller at Wollongong North Panel about the use of lookout working with ATWS.
	5. Access Up Cess 46.125 km, verify sensor label & connect to sensor cable, calibrate with test plate, connect & turn on the transmitter.
	6. Access Up Cess 44.950 km, 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
	12. Access Up Cess to turn off and pack up transmitter unit(s).
	13. Access Up Cess to turn off and pack up transmitter unit(s).
	14. Access Up Cess for all workers to leave the rail corridor via access gate <b>100 45.555 D</b>
	15. Tell Signaller at Wollongong North Panel when work is completed and that the workers and their equipment are clear of the Danger Zone.



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## Position of ATWS transmitter and sensor on Up and Down Illawarra line at 44.950 KM



Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access gate 100 45.489 U

## Position of ATWS transmitter and sensor on the Up and Down Illawarra line at 46.125 KM



Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access gate 100 46.168 U



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*(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	Book in ATWS sensor 3	
7	Book in ATWS sensor 4	
8	Perform Worksite Warning Test with all ATWS sensor	
9	Ensure the workers have seen the visual warning and heard the audible warning	
10	Select and Confirm Channel for the Radio Transmitter	
11	Confirm worksite warning unit is operational with Installers and advise them to lock devices & remove key	