

# ATWS Worksite Protection for Mulgrave Routine Network Maintenance Activities

<b>WORK DESCRIPTION</b>	Routine Maintenance activities
<b>WPP NUMBER</b>	WT11BWS 10191
<b>SCOPE</b>	Routine maintenance activities performed by Western Territory Maintenance teams: <ul style="list-style-type: none"> <li>on the <b>Richmond Main Line</b> and <b>Mulgrave Loop Line</b> between <b>52.385 km</b> to <b>53.010 km</b></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:</b> (PO) Level 1 - 4, or Handsignaller 1 - 2</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>ATWS sensor installed on the <b>Richmond Main Line</b> at <b>51.237 km</b> for Down direction rail traffic</li> <li>ATWS sensor installed on the <b>Richmond Main Line</b> at <b>54.137 km</b> for Up direction rail traffic</li> <li>Dedicated lookout(s) at the worksite for unsignalled movements.</li> </ul> <p><b>IMPORTANT!</b></p> <ul style="list-style-type: none"> <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>NLA 222</li> </ul>

Required ATWS Equipment		
Item	Description	Min Quantity
Aerial	Telescopic Aerial	3
Assembly Kit	Orange Bag with Tools	1
Battery ZA24-2.9	Small battery for Junction Box & Transmitter	4
Device Frame	Protective Frame	2
F500-AB Junction Box	Receiver Device	2
F500-SEN Train Sensor	Sensor	2
Housing for Aerial	Housing for Telescopic Aerial	2
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

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Tripod	Tripod for Device	2
ZFS Radio Transmitter	Radio Transmitter Device	2
ZPW Warning Unit	Control & Warning Device	1

*Note: Additional quantities may be required depending on ATWS setup configuration for example extra batteries, using Mobile Backpack, or stationery ZPW/ZRC Warning Unit.*

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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>		
Corridor Safety Number	Protection Officer Signature	Date

 **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. environment, plant, equipment, human error)	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>	<ul style="list-style-type: none"> <li>Lookout Working using approved ATWS as assessed in the plan &amp; diagram.</li> <li>All points of entry have been validated and ATWS safety measures (sensors) have been installed.</li> <li>Confirm with the Operator that the ATWS has been tested/calibrated and is operational.</li> <li>Workers immediately move to the designated safe place when warned.</li> <li>Provide ALL CLEAR handsignal after workers and equipment are in a safe place.</li> <li>After the warning has been cancelled, confirm there is no approaching rail traffic between the sensors and the worksite before allowing work to resume.</li> </ul>	PO
<b>Ineffective ATWS warnings / Adjoining / surrounding worksites</b>	<ul style="list-style-type: none"> <li>Test and confirm workers can see and hear the warning in the noisiest environment.</li> <li>Explain the emergency warnings.</li> <li>Workers to be within 50m of warning device.</li> <li>Workers to remain within sight and hearing of warning unit at all times.</li> <li>Radios not to be used near ATWS.</li> </ul>	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. Potential stopping points: ME 12, ME 10, ME 6 ME 4, Mulgrave Station Platforms 1 & 2, ME 1, ME 3, ME 9, ME 7	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>	Operator to confirm 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>Mulgrave Railway Station Platforms</b>	Workers must not use ATWS protection for working within the platforms. All rail traffic must have departed Mulgrave Station and be completely clear of the worksite prior to work commencing on track.	All
<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

A final site inspection has been conducted immediately before commencing work, and any new hazards and controls have been included.

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**Worksite Protection Plan – Lookout Working**

**Signaller details**

	<b>Blacktown Panel</b>	<b>02 9851 7207</b>
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**Protection Officer details**

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

Workplace Supervisor details:

Type of work: **Routine Maintenance Activities**

**Worksite location**

on the

between  and

**Worksite assessment**

The Lookout Working Prohibited Locations Register been consulted? Yes

**Warning method**     ATWS     Whistle     Voice     Eco Blast Pro

**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

**ATWS Sensor**

<input style="width: 50px;" type="text" value="7 sec"/>	+	<input style="width: 50px;" type="text" value="3 sec"/>	+	<input style="width: 50px;" type="text" value="10 sec"/>	= <b>Minimum Warning Time (MWT)</b>	<input style="width: 50px;" type="text" value="20 sec"/>	<input style="width: 50px;" type="text" value="115 km/h"/>	<input style="width: 50px;" type="text" value="639 metres"/>
<input style="width: 50px;" type="text" value="7 sec"/>	+	<input style="width: 50px;" type="text" value="3 sec"/>	+	<input style="width: 50px;" type="text" value="10 sec"/>		<input style="width: 50px;" type="text" value="20 sec"/>	<input style="width: 50px;" type="text" value="115 km/h"/>	<input style="width: 50px;" type="text" value="639 metres"/>
<i>See Time (S)</i>		<i>Move Time (M)</i>		<i>Safe Time</i>	<i>(S+M+10 sec = MWT)</i>		<i>Track speed</i>	<i>Minimum Sighting Distance as calculated</i>

**Dedicated Lookout**

**Note** - Lookout to relocate to positions within these KMs as workers move along the worksite.

<input style="width: 50px;" type="text" value="2 sec"/>	+	<input style="width: 50px;" type="text" value="3 sec"/>	+	<input style="width: 50px;" type="text" value="10 sec"/>	= <b>Minimum Warning Time (MWT)</b>	<input style="width: 50px;" type="text" value="15 sec"/>	<input style="width: 50px;" type="text" value="25 km/h"/>	<input style="width: 50px;" type="text" value="105 metres"/>
<i>See Time (S)</i>		<i>Move Time (M)</i>		<i>Safe Time</i>	<i>(S+M+10 sec = MWT)</i>		<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:

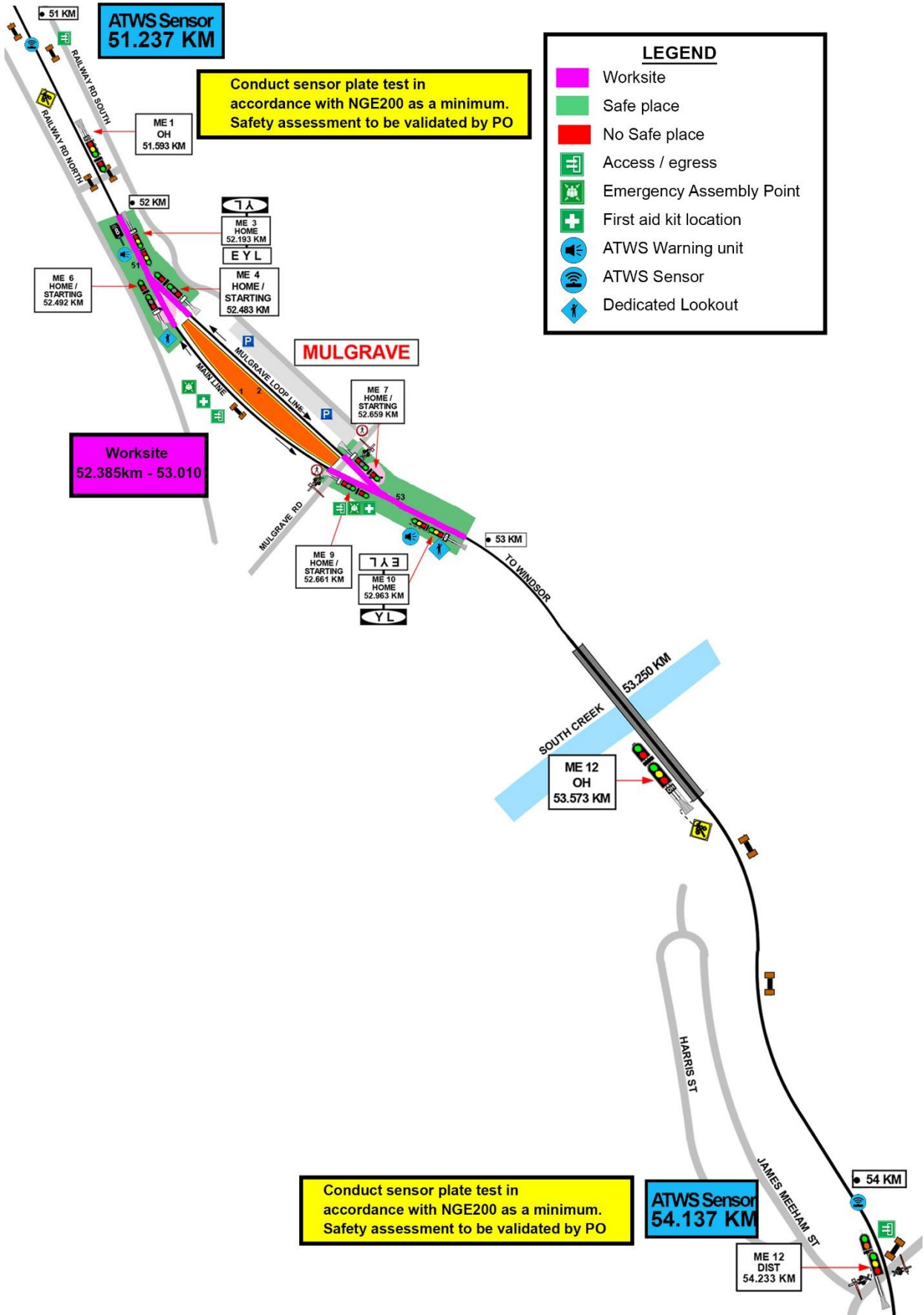
**Confirm mandatory first train tests were completed for all sensors**    Yes

**Ensure the workers have been briefed about these work details**    Yes

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

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**Diagram**



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## INSTRUCTIONS:

1. Workers enter the rail corridor via access gate **M17 52.719 U**.
2. Use assets to validate worksite location on **Richmond Main Line and Mulgrave Loop Line** between **52.385 km** to **53.010 km**
3. Conduct WP Pre-work briefing to set-up ATWS.
4. Advise Signaller at **Blacktown Panel** about the use of lookout working with ATWS.
5. Access Up Cess 51.237 km Richmond Main Line, verify sensor label & connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.
6. Access Up Cess 54.137 km Richmond Main Line, verify sensor label, connect to sensor cable, calibrate with test plate, connect and turn on the 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 51.237 km Richmond Main Line to turn off and pack up transmitter unit.
13. Access Up Cess 54.137 km Richmond Main Line to turn off and pack up transmitter uni.
14. Access Up Cess for all workers to leave the rail corridor via access gate **M17 52.719 U**.
15. Advise Signaller at Blacktown Panel when work is completed and the workers and their equipment are clear of the Danger Zone.

Tick if used  Position of ATWS transmitter and sensor on Richmond Main Line at 51.237 KM



**Image 1:** Transmitter and sensor installation location



**Image 2:** Sensor access using access gate M17 51.260 D

Tick if used  Position of ATWS transmitter and sensor on Richmond Main Line at 54.137 KM



**Image 1:** Transmitter and sensor installation location



**Image 2:** Sensor access using access gate M17 54.185 D

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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.)*

<b>Setup Stage 1: Checklist for ATWS transmitter and sensor</b>		
<b>Step</b>	<b>Task Description</b>	<b>Operator Check</b>
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 and confirm channel for the radio transmitter (AU3 OR AU4)	
11	Perform worksite warning test using test plate	
12	Lock device and remove key	

<b>Setup Stage 2: Checklist for ATWS worksite warning unit</b>		
<b>Step</b>	<b>Task Description</b>	<b>Operator Check</b>
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	

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9	Confirm worksite warning unit is operational with Installers and advise them to lock devices and remove key	
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