A-4 Noise and Vibration Management Subplan

Stage 1 – North West Transmission Developments Project

TN ID: NWTD-EP-PL-102-0A4.0.6

GNI ID: PLN-J0955-GNI-0012



TASMANIAN
PLANNING COMMISSION

Endorsed

Date: 20 August 2026

Table of Contents

1. Introduction 4
2. Objectives 4
3. Reference documents 5
4. Induction and training 6
5. Responsibility 7
6. Performance criteria 8
6.1 Context of deriving performance criteria 8
6.1.1 Relevant construction activities and site context 8
6.1.2 Source noise and vibration activities and characteristics 9
6.1.3 Background noise monitoring 10
6.1.4 Key findings of noise and vibration assessment 10
6.2 Noise and vibration reference levels 11
6.2.1 Noise reference levels 11
6.2.2 Vibration reference levels 11
6.2.3 Summary of noise and vibration impacts 12
6.2.4 Locations of management zones 12
6.3 Exceedances of noise and vibration 13
7. Management controls 14
8. ISC requirements 20
8.1 Description of Env-2 noise credit 20
8.2 Description of Env-3 vibration credit 23
9. Monitoring requirements 26
9.1 Vibration monitoring 26
9.2 Noise monitoring 28
9.3 Noise and vibration triggers 28
10. Adaptive management measures 29
10.1 Communications and complaints protocol 29
11. Reporting and documentation requirements 30
12. Reviews and updates 31
13. Document history 32
13.1 Current document authoriser 32
13.2 Revision history 32

Tables

Table 1 Objectives for the Noise and Vibration Management Subplan 4
Table 2 Reference documents for the Noise and Vibration Management Subplan 5
Table 3 Induction and training for noise and vibration management 6
Table 4 Responsibilities for noise and vibration management 7
Table 5 Detailed description of noise and vibration activities 9
Table 6 Noise reference levels 11
Table 7 Vibration levels and adopted actions 12
Table 8 Noise and vibration impacts distances 12
Table 9 Management zone figures 13
Table 10 Performance criteria for noise and vibration management 13
Table 11 Summary of noise and vibration management controls 14
Table 12 Env-2 credit map 20
Table 13 Env-3 credit map 24
Table 14 Vibration monitoring requirements 27
Table 15 Noise monitoring requirements 28
Table 16 Summary of monitoring and triggers associated 29
Table 17 Adaptive management measures and complaints response 29
Table 18 Noise and Vibration Management Subplan reporting requirements 31

Appendices

Appendix 1 - Technical memorandum – Review of project compliance with IS Env-2 noise requirements

Appendix 2 - Technical memorandum – Review of project compliance with IS Env-3 Vibration requirements

Appendix 3 - Maps – High priority management zones (extracted from NWTD Noise and Vibration Assessment, Marshall Day Acoustic, 7 March 2025)

1. Introduction

This document is the Noise and Vibration Management Subplan, a subplan under the Construction Environmental Management Plan (CEMP) for Stage 1 of the North West Transmission Developments Project (NWTD) in Tasmania.

The Contractor for the delivery of the project is Genus Infrastructure (NSW) Pty Ltd, referred to as Genus throughout this document. Genus has developed the CEMP and subplans to address the environmental management of the project.

The CEMP should be referred to for additional context, including:

- Project details including document control, commitments/conditions and person accepting responsibility for the CEMP and all associated subplans including this Noise and Vibration Management Plan
- Project description
- Emergency contacts and procedures
- Potential environmental risks and impacts of the project
- Auditing and review requirements
- Glossary and abbreviations

This CEMP subplan applies to all personnel and subcontractors engaged by Genus for the duration of the contract. The CEMP and subplans will be used to develop site specific, or activity specific environmental management plans.

2. Objectives

The primary objectives of the Noise and Vibration Management Subplan (NVMSP) are to comply with:

- Commitments in the Development Application (DA) and Environmental Impact Statement (EIS)
- Conditions of approval in Permit number MIPP-2026-01 issued under the MIDA Act
- Conditions of approval in EPBC 2022/09247 issued under the EPBC Act.
- Environmental Protection Authority Tasmania
- All relevant TasNetworks standards and procedures.

Aspect specific objectives are outlined in Table 1.

Table 1 Objectives for the Noise and Vibration Management Subplan

Aspect	Objectives
Noise and vibration	– Avoid noise and vibration-related harm or disturbance to fauna or humans – Establish appropriate performance criteria and monitoring procedures for construction noise and vibration – Support adaptive management and continuous improvement through monitoring, reporting, and feedback mechanisms – Meet ISC Noise (Env-2) and Vibration (Env-3) Level 2 requirements for the NWTD developments

3. Reference documents

Table 2 Reference documents for the Noise and Vibration Management Subplan

Title	Reference/link
Regulator Permits	
Major Infrastructure Project Planning Permit Granted under the *Major Infrastructure Development Approvals Act 1999* and the *Land Use Planning and Approvals Act 1993*	Permit number: MIPP-2026-01 North West Transmission Upgrades Project - Palmerston to Hampshire Section - Final Report and permit, 10 March 2026
Environmental Protection and Biodiversity Conservation Act 1999	EPBC 2022/09247
North West Transmission Developments DA/EIS information	
NWTD DA/EIS	NWTD - Part C EIS Chapter 6 Potential impacts and their management; biophysical environment July 2025 (response to RFI by regulator) NWTD - Part C EIS chapter 6 Potential Impacts and their management March 2025 NWTD - Part B - Planning Report NWTD - Part C EIS Chapter 9 Environmental management, monitoring and review Remaining North West Transmission Developments Part E – Attachments and appendices Attachment 10 – Management measures August 2025NWTD-EP-DA-610
TasNetworks protocols	
TasNetworks Noise Management Procedure	TasNetworks, 2018
Other relevant guidelines, regulations and legislation	
Environmental Management and Pollution Control (Noise) Regulations 2016	View - Tasmanian Legislation Online
Environment Protection Policy (Noise) 2009	Environment Protection Policy (Noise) 2009 | EPA Tasmania
AS 2436 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites (Reconfirmed 2016)	Refer to Australian Standards
Noise Measurement and Procedures Manual 2008	Measures of Noise | EPA Tasmania

Title	Reference/link
Australian Standard 1055:2018 Acoustics - Description and measurement of environmental noise	Refer to Australian Standards
FPA Fauna Technical Note No. 1	Fauna Technical Notes | Forest Practices Authority
Environmental Management and Pollution Control Act 1994 (the EMPC Act)	View - Tasmanian Legislation Online
BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings (BS 6472-1)	Refer to British Standards
BS 7385-2:1993: The Standard for Evaluation and measurement for vibration in buildings - Guide to damage levels from groundborne vibration	Refer to British Standards
NSW Department of Environment and Conservation titled Assessing Vibration: a technical guideline dated February 2006	Assessing vibration | EPA
Related Subplans	
Flora and Fauna Management Subplan	NWTD Construction Environment Management Plan.

4. Induction and training

Table 3 Induction and training for noise and vibration management

Induction/training	Details (as required)
Sensitive receivers	Locations of priority management areas (impacting residential human receivers) and buffer zones for threatened fauna receivers (owl, eagle, grey goshawk nest sites)
Roles and responsibilities	Clear explanation of individual responsibilities for managing noise and vibration impacts and implementing management controls
Noise and vibration monitoring program	Purpose of noise and vibration program, understanding management and appropriate responses to reference exceedances
Response procedures	What to do if there are noise and vibration triggers, including notification and inspection protocols
Adaptive management	Overview of monthly reviews of triggers. Site personnel will be made aware that reviews may lead to updated controls or mitigation requirements, and that these reviews are undertaken

Induction/training	Details (as required)
	with input from suitability qualified person / acoustic specialists (SQP)
Communication tools	Toolbox/prestart talks must facilitate communication between management and site workers to ensure that relevant responsibilities for noise and vibration management and controls are clearly understood
Fauna noise management procedures	Train staff on noise protocols around work near nest sites and identified habitat.
Mitigation handling	Train staff on noise and vibration protocols, including use of low-emission equipment and management practices for works in management zones
Complaint handling	Provide induction on complaint handling, community notification procedures, and emergency work protocols

5. Responsibility

Table 4 Responsibilities for noise and vibration management

Role	Responsibility
Suitably qualified acoustic consultant	Develop a noise and vibration monitoring program (NVMSP) for the duration of the construction work from early works construction through to completion of construction works (Section 9 of this report)
Environmental Manager	– Designated personnel for community consultation and notification – Documenting community consultation of noise and vibration management program as a solution to noise and vibration impacts to key stakeholders (EPA Tasmania, landowners, local community) – Managing and maintaining the NVMSP (through consultation with SQP if required) for the duration of construction works.
Stakeholder Manager	– Preparation of noise and vibration complaint register and monthly reporting on community complaints
Suitably qualified ecologist	– Verification of active nesting sites before construction commences in fauna management zones
All workers	– Understand the NVMSP and responsibilities for minimising noise and vibration impacts – Notify manager(s) of noise and vibration related incidents

6. Performance criteria

6.1 Context of deriving performance criteria

The performance criteria for this Subplan are derived from the findings of the EIS Appendix C: Technical Noise and Vibration Report by Marshall Day Acoustics (NWTD-EP-DA-503) for environmental noise and vibration impacts associated with the 220 kV overhead transmission lines (OHTLs) of the NWTD (Stage 1).

This Subplan will focus on sensitive receivers identified within 500 m of the Project, which are classified to experience the highest construction noise and vibration impacts.

Whilst construction impacts may extend beyond this 500 m zone, noise mitigation and management outlined in this Subplan will address noise levels at sensitive receivers within 500 m of the Project, as this will benefit the environment more broadly than just the locations of identified sensitive receivers. As the mitigations and management measures will address the worst case impacts, this will inherently address noise levels at receivers beyond 500 m of the Project.

6.1.1 Relevant construction activities and site context

The typical work hours proposed are as follows over a total construction period for Stage 1 works (as required by MIDA Act permit condition 36, 10 March 2026):

- Monday-Friday: 7:00 am – 6:00 pm
- Saturday: 8:00 am – 6:00 pm
- Sunday or public holiday: 10:00 am – 6:00 pm

For the 'high priority noise management zones' identified in the Nosie and Vibration Assessment:

- Works on Saturdays, Sundays and Public holidays must be avoided
- Low noise plant must be used (i.e. selection of plant which incorporates dedicated noise control measures, or fitting plant with additional noise control measures)

Extended working hours are not scheduled but may be necessary in circumstances such as if weather adversely affects the construction schedule, during cutovers and commissioning to allow system outages on existing OHTLs, or during periods where activities are required to be continued to completion to ensure the safety of the workers, community or environment.

Extended working hours resulting from unavoidable works relate to:

- Works that need to be undertaken without a break in the program, such as concrete pouring and helicopter stringing.
- Delivery of oversized plant or equipment where travel times are specified by road authorities.
- Time sensitive maintenance or repair of public infrastructure to reduce impacts on customers.
- Commissioning, cutovers and testing activities which are typically done outside peak demand.
- Emergency works required due to unforeseen circumstances.

The Burnie, Palmerston and Sheffield substation construction sites may require works outside of normal construction hours to minimise customer disruption when outages of existing equipment or lines are required for safe access.

In general, works are not expected to occur outside of normal working hours unless 24-hour work is essential and will require management controls as outlined in Section 7. Refer to Section 2 of the CEMP for further detail.

6.1.2 Source noise and vibration activities and characteristics

Construction of the project would broadly involve transitory noise and vibration generating activities which occur along, and in the vicinity of, the proposed project. Off-site truck movements on public roads are also a relevant consideration with respect to environmental noise and vibration but are unlikely to warrant dedicated noise mitigation measures, particularly given the temporary nature of the associated impact.

Sources associated with the NWTD Stage 1 construction phase are categorised according to the following activities:

- Cable stringing
- Switching station earthworks/civil
- Switching station infrastructure
- Transmission tower erection
- Tower foundation construction
- Temporary facilities and laydown areas
- Vegetation clearance
- Access track construction

The detailed description of activities corresponding to equipment types, durations and locations are shown in Table 5. Note that the activities correspond to each 2 km section of the Stage 1 construction of the OHTLs along the NWTD.

Table 5 Detailed description of noise and vibration activities

Activity	Equipment schedule	Assumed worst case equipment selection	Typical duration per site (each 2 km section of OHTLs)
Access track construction	2x excavator, 1x dozer, 2x wheeled loader, 2x dump truck, 1x grader, 1x roller, 1x water truck, 2x tipper, 5x light vehicles, 1x hand tool	18 tonnes or more vibratory roller	3-6 weeks
Vegetation clearance	1x excavator, 1x dozer, 1x tipper, 1x chipper, 2x chainsaw, 2x light vehicles	18 – 34 tonne excavator	< 3 weeks
Temporary facilities and laydown areas	2x excavator, 1x dozer, 2x wheeled loader, 2x dump truck, 1x grader, 1x roller, 1x water truck, 2x tipper, 5x light vehicles, 1x hand tool	18 tonnes or more vibratory roller	3-6 weeks
Tower foundation construction – bore piled	1x excavator, 5x light vehicles, 1x drilling rig, 2x concrete agitator, 1x concrete pump	18 – 34 tonne excavator	< 3 weeks
Tower foundation construction – rock dowel	1x excavator, 5x light vehicles, 2x concrete agitator, 1x concrete pump, 1x drilling rig, 1x hand tool, 1x rock breaker	18 – 34 tonne excavator	< 3 weeks

Activity	Equipment schedule	Assumed worst case equipment selection	Typical duration per site (each 2 km section of OHTLs)
Tower foundations - Mass concrete	1x excavator, 5x light vehicles, 2x concrete agitator, 1x concrete pump, 1x hand tools, 1x non-slewing crane	18 – 34 tonne excavator	< 3 weeks
Transmission tower erection (per tower)	3x light vehicles, 2x crane, 1x non-slewing crane, 4x hand tools	Large crane	< 3 weeks
Cable stringing (per tower)	1x crane, 1x helicopter, 1x non-slewing crane, 1x light vehicle	Large crane and Helicopter	< 3 weeks
Switching station earthworks/civil	2x excavator, 1x dozer, 1x wheeled loader, 2x dump truck, 1x roller, 2x tipper, 5x light vehicles, 1x concrete agitator, 1x concrete saw	18 tonnes or more vibratory roller	8 months
Switching station infrastructure	5x light vehicles, 1x crane, 4x hand tools, 1x non-slewing crane, 2x boomlift, 1x telehandler	Large crane	6 months

6.1.3 Background noise monitoring

The background noise monitoring was conducted during the month of May 2022 at five locations broadly selected to represent the areas of the project. The background monitoring results indicate that construction activities involving large plant items and high noise emission activities in proximity to sensitive receivers would be clearly audible above the background noise environment.

6.1.4 Key findings of noise and vibration assessment

The findings of the construction noise assessment are as follows:

- **Noise levels:** Key construction activities are predicted to exceed 55 dB and 75 dB L_{Aeq} at many nearby sensitive receivers. From the indication of noise levels at these sensitive receivers, the following was possible:
  - Identification of priority locations where reasonable and practical noise mitigation is recommended to be prioritised.
  - Identification of high priority locations for implementing additional site-specific noise controls.
- **Vibration levels:** Construction activities consisting of roller usage predicted risk of cosmetic damage to nearby sensitive receivers.
- **Contributing factors:** High noise due to project scale and proximity to sensitive receivers, especially in suburban areas.
- **Peak sources**: Highest levels occur near access road works, vegetation clearance and cable stringing.
- **Duration of impact:** Peak noise typically lasts less than one week per location as work progresses.
- **Annoyance potential**: Noise may be intrusive in densely populated areas but is short-term (less than one week at each section).
- **Manageability:** Construction noise is considered manageable due to daytime-only work and short exposure periods.

- **Adaptive management:** Targeted noise and vibration management measures are necessary at high impact locations.

6.2 Noise and vibration reference levels

Noise and vibration reference levels aim to represent noise limits that allow for a measurable goal and indicate priority locations where specific management controls identified in section 7 should be implemented to reduce noise levels and/or the duration of the work where practicable. The locations of the priority locations are described in section 6.2.4.

6.2.1 Noise reference levels

6.2.1.1 Classification of priority areas

Priority areas: A conservative noise level reference of 55 dB L_{Aeq} was used to identify priority areas, referencing guidance from the Noise EPP which is based on criteria for long-term and permanent noise sources.

This level of noise corresponds to a large number of sensitive receivers in the 500 m buffer zone of the OHTLs that will require management measures as indicated by the modelling.

High priority areas: A noise level reference of 75 dB L_{Aeq} has been used to identify high priority areas, based on guidance referenced from the NSW Government publication Interim Construction Noise Guideline (NSW ICNG) (DECC, 2009).The 75 dB L_{Aeq} level is based on the NSW ICNG definition for 'highly noise affected' locations. Above this level, the NSW ICNG guidance indicates there may be strong community reaction to noise, and additional noise controls are warranted (such as the introduction of respite periods, and consultation with the community around the times of day when the work would be least disruptive and possible changes to the duration of the work).

This level of noise corresponds to a large number of sensitive receivers in the 500 m buffer zone of the OHTLs that will require site-specific management measures as indicated by the modelling.

This can be summarised in the following table.

Table 6 Noise reference levels

Noise impact	Noise reference level	Classification
Sensitive receivers close enough to noise source to exceed or meet reference level	55 dB L_{Aeq}	Priority management zone
Sensitive receivers close enough to noise source to exceed or meet reference level	75 dB L_{Aeq}	High priority management zone

These noise reference levels are supported by initial background noise monitoring findings which indicate that the background noise levels are not sufficiently high enough to warrant further elevation of this reference levels.

6.2.2 Vibration reference levels

Vibration source reference levels prioritise amount of cosmetic damage to buildings over human response to vibration as it's an observable criterion. Selection of cosmetic damage classification comes from NSW Construction Noise and Vibration Guide (CNVG) (Transport for NSW, 2011) based on the criteria contained in BS 7385.

Table 7 Vibration levels and adopted actions

Vibration impact classification	Vibration reference level	Adaptive management actions
Sensitive receivers close enough to vibration source to exceed or meet reference level	10 mm/s Cosmetic damage to buildings	Vibration management zone

6.2.3 Summary of noise and vibration impacts

The distances of noise and vibration impacts drives the performance criteria, with location of any residential buildings inside these distances triggering specific management actions (as outlined in Section 7).

Table 8 Noise and vibration impacts distances

Activity	Noise impact distance to 75 dB (High Priority Management)	Noise impact distance to 55 dB (Priority Management)	Vibration impact distance to cosmetic damage (Vibration Management)
Access track construction	85 m	640 m	25 m
Vegetation clearance	55 m	385 m	22 m
Temporary facilities and laydown areas	85 m	640 m	25 m
Tower foundation construction – Bore piled/rock dowel/mass concrete	85 m	640 m	22 m
Transmission tower erection (per tower)	85 m	640 m	< 2 m
Cable stringing (per tower)	215 m	1,135 m	< 2 m
Switching station earthworks/civil	55 m	385 m	25 m
Switching station infrastructure	85 m	640 m	< 2 m

6.2.4 Locations of management zones

The figures showing the zones for each activity is provided in Appendix D and Appendix E of the EIS (NWTD-EP-DA-503) as follows in Table 9. The relevant figures are only for the areas outlined in Stage 1 works as per Section 6.1.1.

The identification of sensitive receivers is based on the Noise and Vibration Assessment (Marshall Day Acoustics, March 2025), which includes spatial mapping of residential and other sensitive land uses within the project area. The mapped priority and high priority noise management zones presented in Appendix C of this Plan are derived from predicted construction noise levels relative to these receivers, and therefore

represent the locations of sensitive receivers within the study area, including those potentially affected by helicopter operations.

Table 9 Management zone figures

Activities and associated management zone	Located in
Access road construction Construction noise and vibration management zones	Appendix D1 construction management zones (Priority and High Priority) and Appendix E vibration management zones
Vegetation clearance Construction noise management zones	Appendix D2 construction management zones (Priority and High Priority)
Temporary facilities and laydown areas Construction noise management zones	Appendix D3 construction management zones (Priority and High Priority)
Tower foundation construction and erection Construction noise management zones	Appendix D4 construction management zones (Priority and High Priority)
Cable stringing Construction noise management zones	Appendix D5 construction management zones (Priority and High Priority)
Switching station earthworks/civil Construction noise management zones	Appendix D6 construction management zones (Priority and High Priority)
Switching station Infrastructure Construction noise management zones	Appendix D7 construction management zones (Priority and High Priority)

6.3 Exceedances of noise and vibration

The expected exceedances are outlined in Section 6.2 for Priority and High Priority management areas as well as high risk areas for vibration impacts to buildings.

The criteria to ensure that these exceedances are managed to comply with EMPC Noise Regulations 2016 (EPA, 2016) are driven by management measures.

The following outlines the way in which exceedances are to managed:

1. Section 9 – Monitoring requirements: Details the noise and vibration monitoring program to capture exceedances of reference levels.
2. Section 11 – Adaptive management measures: Specific to addressing triggers outlined in the noise and vibration monitoring program.

Table 10 Performance criteria for noise and vibration management

Objective	Performance criteria
Comply with key commitments regarding development of a noise and vibration management plan in the EIS	No noise or vibration complaints . Where there are complaints, they are managed in accordance with the communications and complaints protocol and Stakeholder Engagement Plan
Meet ISC Noise (Env-2) Level 2 requirements for the	No exceedances of reference levels (as per Table 6) Where reference levels are exceeded, adaptive management measures are

Objective	Performance criteria
NWTD development	implemented to reduce noise levels
Meet ISC Vibration (Env-3) Level 2 requirements for the NWTD development	No exceedances of reference levels (as per Table 7) Where reference levels are exceeded, adaptive management measures are implemented to reduce vibration levels

Complaints on noise and vibration, or breaches of this NVMSP must be dealt with in accordance with the Stakeholder Engagement Plan complaints protocol.

7. Management controls

Table 11 provides management controls intended to minimise noise and vibration impacts.

Table 11 Summary of noise and vibration management controls

Item	Specific control	Reference	Responsibility
Pre-construction			
NV01 (a)	Pre-construction engagement: – Dialogue with people likely to be impacted by noise, with clear information on mitigation strategies provided. This includes: • Local land owners • Residents of nearby buildings within management zones	MIDAA permit condition 54.5	TasNetworks
NV03	Prior to commencement of helicopter works (e.g. cable stringing), sensitive receivers within helicopter flightpaths and associated work/landing zones must be identified. These receivers must be verified prior to the first use of helicopters, and notified of the nature, timing and duration of works. Communication and engagement with affected landowners and occupants must include information on proposed helicopter activities, including expected timing, duration and potential noise impacts. Advance notification of helicopter works, including details of activity type (e.g. cable stringing), indicative duration, and contact details for enquiries or complaints, must be provided to sensitive receivers.	MIDAA permit condition 54.5	Environmental Manager Stakeholder Manager
Construction			
NV01 (b)	During construction: – Dialogue to be documented to provide evidence of agreed management solutions as outlined in this Subplan:	MIDAA permit condition 54.5	Stakeholder Manager

Item	Specific control	Reference	Responsibility
	• A feedback register is to be established for all complaints and resolutions.		
NV02	Prior to commencement of works, informing stakeholders of impacted areas of priority noise and vibration management zones: – Informing of the vibration modelling (mapping), and be part of the review of mitigation measures – Informing of noise priority and high priority impact zones and be part of the review of mitigation measures – Informing of complaints and feedback procedures	MIDAA permit condition 54.5	Stakeholder Manager
NV04	Prioritise efficient work practices to reduce duration of impact to nearby sensitive receivers: – Schedule noisy work during less sensitive periods (Monday to Saturday: 7:00 am to 6:00 pm) – Impose limitations for noise generating activities, such as time of and duration restrictions. This includes reducing overall duration of impact to community which is most effective way of reducing community complaints. Works should take place during periods of higher ambient noise in daytime as evidenced in noise survey (Appendix C of EIS) – The duration of the works is particularly relevant for any receivers where there is the potential for multiple work locations to be within or near priority management zones of a receiver (e.g. consider completing work at the locations simultaneously, which may increase the total noise level, but avoid prolonged exposure to the highest noise, subject to consultation with the receivers in question). – For the 'high priority noise management zones' (shown in maps attached to this NVMSP at Appendix C, as identified in the Nosie and Vibration Assessment): • Works on Saturdays, Sundays and Public holidays must be avoided, • Low noise plant must be used (i.e. selection of plant which incorporates dedicated noise control measures, or fitting plant with additional noise control measures) – For helicopter operations (e.g. cable stringing), additional measures will be implemented to minimise noise impacts on sensitive receivers, including: • Scheduling helicopter activities during	EIS commitment: CM024 TasNetworks, Noise Management Procedure, (TasNetworks, 2018) EMPC Noise Regulations (EPA, 2016) MIDAA permit condition 54.4	Construction Manager

Item	Specific control	Reference	Responsibility
	standard construction hours and avoiding more sensitive periods • Minimising the duration and frequency of helicopter use in proximity to sensitive receivers with planning of flightpaths and work sequencing • Implementing site-specific measures where required based on engagement outcomes or complaints		
NV05	Prioritise efficient work practices to reduce magnitude of impact to nearby sensitive receivers (Priority noise management areas): – Undertaking best endeavours to plan work and arrange worksites to take advantage of existing noise barriers, such as buildings and topography. – Using location and orientation to avoid noise nuisance to neighbours and other sensitive receptors, e.g. appropriate location and orientation (e.g. engine of mobile plant to face away from sensitive receivers). – Maximise separation from sensitive areas. Increasing distance between the noise source and receivers. A doubling of distance results in a 6 dB reduction in noise levels. – All equipment used will be maintained in good working condition. – Shielding line of site to noise receivers – Use low-noise equipment where possible, apply engineering controls (for example noise attenuators, silencers, acoustic shrouds) and temporary noise barriers in line of sight to receivers.	EIS commitment: CM024 TasNetworks, Noise Management Procedure, (TasNetworks, 2018) EMPC Noise Regulations (EPA, 2016), Appendix C of EIS MIDAA permit condition 54.4	Construction Manager
NV06	High priority management zones, as shown in maps attached to this NVMSP at Appendix C, as identified in the Nosie and Vibration Assessment (site specific noise controls): – In addition to limiting the work to the daytime period, construction activities in high priority management zones are recommended to be scheduled on weekdays (i.e. avoiding Saturday, Sunday and public holidays), and during less sensitive periods of the day (i.e. avoiding the shoulder periods at the start and end of the day). – Dedicated community notification and consultation procedures for construction activities located in high priority management zones to identify any feasible	EIS commitment: CM024 MIDAA permit condition 54.4	Construction Manager

Item	Specific control	Reference	Responsibility
	scheduling and duration plans to minimise the disruption (e.g. identification of the most sensitive time periods for the local community and gauging the potential merits of more intensive work practices if the duration of the works can be reduced). – Utilise low noise emission plant where available (having regard to the typical range of plant noise emissions detailed in AS 2436), either through the selection of plant which incorporates dedicated noise control measures, or fitting plant with additional noise control measures (e.g. the use of acoustic shrouds for any rock breaking activity that needs to occur in high priority noise management zones). – Given the transitory nature of the construction work, and that the location of much of the construction activity will change throughout the project, scheduling of the work to reduce the duration of exposure to elevated noise levels is expected to be one of the most effective mitigation measures.		
NV07	For helicopter/drone work near nests: – Helicopter use for stringing operations, maintenance and repair operations should be limited outside the eagle breeding season, except where transmission lines are located more than 1 km from eagle nests, except in the event of emergency repairs. – Helicopters/drones are not permitted to fly within 1000 m of any known eagle nest during the breeding season (July-Jan/Feb inclusive) unless authorised. – Avoid flying within 2 km of all known eagle nests during the breeding season (July-Jan/Feb inclusive) where practical to do so. – Helicopters/drones are permitted to fly within 1000 m of known eagle nests outside of the breeding (Feb/March-June). – If helicopters/drones are required to be used within 1000 m of a known eagle nest during the breeding season, a nest activity search much be conducted to determine the activity status of the impacted nest. – If the impacted nest is determined to be active and work must proceed regardless this should be reported Note: – Helicopter work includes line stringing,	EIS commitments: CM053, CM056 TasNetworks, Noise Management Procedure, (TasNetworks, 2018) MIDAA permit conditions 25, 26, 27, 54.4, 54.5	Environmental Manager Construction Manager Suitably qualified ecologist

Item	Specific control	Reference	Responsibility
	maintenance and check flights – Current known eagle nest zones are as identified in maps within the EIS (Fig 6.4) – Goshawks and owl nests are to be identified in pre-construction surveys – Nest searches will be conducted annually and new nests may be found		
NV08	For non-helicopter/drone work near nests: – No work should occur within the relevant buffer of an active known nest during the breeding season (July-Jan/Feb). – If work must occur within the relevant buffer on an active nest during the breeding season a nest activity check should be conducted by a suitable qualified person. – If the nest is found to be active, work should not proceed and should wait until after the breeding season. – If the nest is found to be inactive, work can proceed during the breeding season. – Buffers for all work (excluding helicopter work): • 100 m around grey goshawk active nests • 500 m or 1000 m line-of-sight from eagle wedge-tail eagle (or white bellied sea-eagle) active nests. • 150 m masked owl active nests Note: – Current known eagle nest zones are as identified in maps within the EIS (Fig 6.4) – Goshawks and owl nests are to be identified in pre-construction surveys – Nest searches will be conducted annually and new nests may be found	EIS commitments: CM053, CM056 TasNetworks, Noise Management Procedure, (TasNetworks, 2018) MIDAA permit conditions 25, 26, 27, 54.4, 54.5	Environmental Manager Construction Manager Suitably qualified ecologist
NV09	Vibration impacts: – Adopt minimum safe working distances for construction equipment based on the adopted vibration reference level distances in Section 6.2.3 from any residential building Vibration management zones: – Use of equipment that has been deemed likely to exceed vibration goals in vibration management zones is not to be used within the management zones.	EIS commitment: CM024 MIDAA permit condition 54.4	Construction Manager

Item	Specific control	Reference	Responsibility
	See Table 5 – worst case column for equipment that will be excluded for use within management zones. – Equipment such as vibratory rollers would need to be selected and used with caution to address the potential for cosmetic damage to buildings for any sensitive receivers within 25 m – Consider using a lower tonne vibratory roller (less than 15 tonnes) to minimise vibration impacts		
NV10	Managing tonality and annoying noise characteristics: – Regular maintenance on mobile plant – Replace tonal with non-tonal reversing alarms for trucks	TasNetworks, Noise Management Procedure, (TasNetworks, 2018) EMPC Noise Regulations (EPA, 2016) MIDAA permit condition 54.4	Construction Manager
NV11	Out of hours work: – Where out of hours works have been approved by the relevant authorities (works that are not emergency or fault works) Notifying neighbouring properties and local communities prior to commencing noisy activities outside normal hours – Communications and consultation, e.g. letterbox drops, community consultation, information hotline	TasNetworks, Noise Management Procedure, (TasNetworks, 2018) MIDAA permit condition 54.4	Genus Project Manager Stakeholder Manager
NV12	Workplace noise: – Must be managed as per guidelines in TasNetworks HSEQ Management procedure. This includes: • Handling noise complaints and incident recording • Training contractors on occupational noise impacts • Reviewing individual responsibilities for noise related activities	TasNetworks, Noise Management Procedure, (TasNetworks, 2018) MIDAA permit condition 54.4	Environmental Manager
NV13	Vehicles, plant and equipment are to be turned off when not in use, or throttle down when used intermittently.	MIDAA permit condition 54.4	Environmental Manager
Post-construction			
NV14	Reporting and archiving requirements for post construction: – Noise and vibration complaint register – Survey/monitoring data – Mitigation change register	MIDAA permit condition 54.4	Environmental Manager

8. ISC requirements

This section describes requirements for accreditation to a Level 2 for the Env-2 Noise and Env-3 Vibration credits. Some of the obligations intersect with EIS commitments, whilst others are additional compliance pre-requisites linked to the ISC accreditation process.

8.1 Description of Env-2 noise credit

Within the Environmental Impact category, the Env-2 Noise credit aims to manage noise impacts and improve amenity for noise receptors. Level 2 verification is being sought for this credit. Table 12 provides an overview of the Env-2 requirements and the intersections with the CEMP and this NVMSP.

For the Env-2 Noise credit, the following actions are required for compliance with Level 1 requirements:

- **Review and update baseline studies** of the existing noise environment and assessment of impact, including mapping of sensitive receptors.
- Identify **noise impacts** through modelling for both the construction and operation phases.
- Develop **noise goals** for construction and operation phases, and **identify measures to achieve goals**.
- Develop a **noise monitoring program.**

To achieve Level 2 certification, further requirements are to:

- **Affected stakeholders review** of noise impacts, controls and mitigation measures
- Monitoring demonstrates **no recurring or major exceedances of goals**

Table 12 maps the requirements from the IS Rating v2.1 Technical Manual, and the current status of meeting these requirements. Based on an initial gap analysis, a suitably qualified acoustic consultant has prepared a technical memo to be included as an appendix to this Subplan, to confirm where ISC requirements have been met, and to provide additional information to address identified gaps.

Table 12 Env-2 credit map

Credit	Must statements	Status
DL1.1	**The location, extent, type and sensitivity of noise receptors and their pre-existing exposure to noise have been determined.** Baseline studies must be undertaken or reviewed by a suitably qualified professional to identify and assess the pre-existing noise environment prior to any potential project impacts (e.g. undertaking demolition works or breaking ground in construction), and cover: – Relevant environmental parameters including: • Peak and average measurements of monitoring parameters • Seasonal or time of day variations (whichever is more appropriate for accurate baselines to be established) • Specific local variations, representative sampling and links to activities likely to affect the baseline (such as nearby construction works or rail transport services) • The measurement criteria or indicators or factors used in the assessment • Background noise levels to allow for assessment of impact • Consideration of sensitive receptors (see Additional Guidance)	These requirements have been met in the EIS. The Technical Memo Report from a suitably qualified acoustic consultant to confirm.

Credit	Must statements	Status
	A map showing the location of any sensitive receptors must be provided with the baseline studies.	
DL1.2	**Modelling for noise has been developed for the construction and operation phases of the project.** Noise impacts must be modelled (see Definitions) for the construction and operation phases of the project and consider a comparison against the baseline data (DL1.1). Modelled impacts must be developed by a suitably qualified professional and incorporate all equipment proposed to be used through the project's construction and operation that could result in noise impacts. For the operation phase, impacts are normally assessed using modelling results from the design development. Modelled impacts must factor in sensitive receptors and the increased noise impacts they experience, as well as accumulated impacts (i.e. multiple impacts affecting the same sensitive receptor, such as fatigue due to concurrent or enduring construction impacts).	Following reports address impacts regarding corona discharge: Report: IS370319-SO19-EE-RPT-0003 | 0 June 1, 2021, Hampshire Hills - East Cam 220kV Line EMF, Audible Noise and Radio Frequency Interference Assessment Report: IS370319-SO19-EE-RPT-0004 | 0 June 15, 2021 Sheffield - Heybridge 220kV Line EMF, Audible Noise and Radio Frequency Interference Assessment Report IS370319-SO19-EE-RPT-0005 | 0 June 15, 2021: Palmerston - Sheffield 220kV Line EMF, Audible Noise and Radio Frequency Interference Assessment Report NWTD-EP-DA-519 March 2025: Remaining North West Transmission Developments Part E – Attachments and appendices Appendix R – EMF, audible noise and radio frequency

Credit	Must statements	Status
		interference assessment report
DL1.3	**Noise goals have been identified for construction and operations.** SMART noise goals (see Additional Guidance) must be established for the project considering the baseline data (DL1.1) and modelled impacts (DL1.2) and cover both construction and the operating asset. Documentation for goals must outline: – The intended outcome/s (measurable/quantifiable) – Any assumptions made, with relevant calculations – How the baseline data and modelled impacts have been incorporated Noise goals must be reviewed by a suitably qualified professional against the requirements above.	Goals set in this NVMSP (Section 6). Have been reviewed by a suitably qualified acoustic consultant as part of Technical Memo Appendix A.
DL1.4	**Measures to achieve noise goals during construction and operation have been identified and implemented.** Measures to meet the noise goals (DL1.3) must be identified and assessed for construction and operation. During the design phase, measures to be implemented for construction and operation must be detailed in relevant documents i.e. measures incorporated into the design to mitigate impacts or improve amenity in operation and controls specified to mitigate impacts or improve amenity during construction. Where exceedances are predicted, these predicted exceedances must be clearly identified with the appropriate control measures to limit the scale of the impact. consideration of resource outputs in the final design and in construction management plans.	Measures in Section 7 in this NVMSP. Technical Memo in Appendix A from a suitably qualified acoustic consultant reviewed measures and confirm ISC requirements are met. Design Report to include documentation of measures implemented through design.
DL1.5	**Monitoring requirements for noise receptors have been determined with due regard to the project's noise goals.** A noise monitoring program must be prepared or reviewed by a suitably qualified professional in line with the project's noise goals (DL1.3) and for all scenarios where the risk to sensitive receptors warrants, and outline: – Monitoring objectives – Risk assessment outcomes used to determine monitoring requirements – Monitoring methods (if targeting Level 3 see DL3.2) – The frequency, duration and locations of monitoring, any relevant triggers e.g. high-risk activities, complaints, incidents – The parameters to be monitored	Monitoring program in Section 9 of this NVMSP. Technical Memo in Appendix A from a suitably qualified acoustic consultant reviewed measures and confirm ISC requirements are met.
DL2.1	**Noise impacts, controls and mitigation measures have been reviewed with affected stakeholders.**	These requirements will be met in the

Credit	Must statements	Status
	Affected stakeholders including those in the local community must be actively engaged to understand and respond to predicted noise impacts for construction and operations, proposed controls and the choices and potential consequences of mitigation measures. These requirements may be linked to aspects of Sta-1 and Sta-2. The project must demonstrate how they have considered stakeholder inputs in proposed noise controls and mitigation measures.	Stakeholder Engagement Plan. NVMSP to be updated as required to incorporate any stakeholder inputs.
DL2.2	**Modelling demonstrates no recurring or major exceedances of the noise goals.** Modelling interpreted by a suitably qualified professional must demonstrate no recurring or major exceedances of the project's construction and operations noise goals (set in DL1.3). Modelling of construction and operational noise must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified	Technical Memo in Appendix A from a suitably qualified acoustic consultant to provide modelling interpretation and any additional advice to meet this requirement.
ABL1.1	Construction measures to mitigate noise and meet the noise goals established in Design have been implemented and monitored.	This NVMSP provides the high level framework for achieving these aspects during construction. Will need to be updated on the basis of additional requirements highlighted in Technical Memo from a suitably qualified acoustic consultant, detailed design and construction methodology information, and stakeholder inputs.
ABL1.2	Measures to mitigate operational noise and meet the operations noise goals established in Design have been implemented.	
ABL2.1	Details regarding mitigation measures and monitoring that require ongoing attention during operation have been formally handed over to the proponent/operator.	
ABL2.2	Noise impacts and mitigation measures have been regularly reviewed with affected stakeholders and their feedback considered.	
ABL2.3	Implemented construction measures have been monitored and no recurring or major exceedances of the noise goals demonstrated.	
ABL2.4	Modelling of noise during asset operation has been updated if required and demonstrates no recurring or major exceedances of the noise goals.	

8.2 Description of Env-3 vibration credit

Within the Environmental Impact category, the Env-3 Vibration credit aims to manage vibration impacts and improve amenity for vibration receptors. Level 2 verification is being sought for this credit.

Table 13 maps the requirements from the IS Rating v2.1 Technical Manual, and the current status of meeting these requirements. This reflects the current status of the project at the 70% design gate. Based on an initial gap analysis, a SQP has prepared a technical memo to be included as an appendix to this subplan, to confirm where ISC requirements have been met, and to provide additional information to address identified gaps.

Table 13 Env-3 credit map

Credit	Must statements	Status
DL1.1	**The location, extent, type and sensitivity of vibration receptors and their pre-existing exposure to noise have been determined.** Baseline studies must be undertaken or reviewed by a suitably qualified acoustic consultant to identify and assess the pre-existing vibration environment prior to any potential project impacts (e.g. undertaking demolition works or breaking ground in construction) Baseline studies must be undertaken by SQP to identify and assess the pre-existing vibration environment prior to potential project impacts. Relevant environmental parameters that may include: – Seasonal or time of day variations (whichever is more appropriate for accurate baselines to be established) – Specific local variations, representative sampling and links to activities likely to affect the baseline (such as nearby construction works or rail transport services) – The measurement criteria or indicators or factors used in the assessments – A map showing the location of any sensitive receptors must be provided with the baseline studies	There is no detailed investigation of baseline vibration. This will be reviewed and addressed in Technical Memo Report by from a suitably qualified acoustic consultant, reviewing potential vibration sources (e.g. rail lines) and to provide an opinion if modelling is required, given there is no tunnelling, blasting, or other high vibration impacts. Refer to Appendix B
DL1.2	**Modelling for vibration has been developed for the construction and operation phases of the project.** Vibration impacts **must** be modelled (see Definitions) for the construction and operation phases of the project and consider a comparison against the baseline data (DL1.1). Modelled impacts **must** be developed by a suitably qualified professional and incorporate all equipment proposed to be used through the project's construction and operation that could result in vibratory impacts. For the operation phase, impacts are normally assessed using modelling results from the design development. Modelled impacts **must** factor in sensitive receptors (see DL1.1) and the vibration impacts they experience, as well as accumulated impacts (i.e. multiple impacts affecting the same sensitive receptor, such as fatigue due to concurrent or enduring construction impacts). Dilapidation surveys **must** be undertaken for properties at a high risk of being impacted by vibration. Where the risk of vibration impacts from operations is insignificant, modelling of operational vibration impacts is not required (also applies in Level 2 and 3). Suitable evidence to demonstrate that the risk from vibration is insignificant must be provided.	Suitably qualified acoustic consultant to address the need for modelling in the Technical Memo Report, and provide further steps if required. See Section 9.1 for requirements for dilapidation surveys.
DL1.3	**Vibration goals have been identified for construction and operations.** SMART vibration goals **must** be established and cover both the construction and operational phases.	Vibration goals set in Section 6 of NVMSP (and reviewed by a suitably qualified acoustic consultant).

Credit	Must statements	Status
	The project's vibration goals **must** include no physical damage to buildings or structures attributable to the project. Documentation for goals must outline: – The intended outcomes (measurable/quantifiable) – Damage to buildings and structures – Human comfort in buildings – Any assumptions made, with relevant calculations – How the baseline data and modelled impacts have been incorporated Vibration goals **must** be reviewed by a suitably qualified professional against the requirements above.	
DL1.4	**Measures to achieve vibration goals during construction and operation have been identified and implemented.** Measures to meet the vibration goals (DL1.3) must be identified for construction and operation. In the design phase, measures to be implemented for construction and operation must be detailed in relevant documents i.e. measures incorporated into the design to mitigate impacts or improve amenity in operation and controls specified to mitigate impacts or improve amenity during construction. Where exceedances are predicted, these predicted exceedances **must** be clearly identified with the appropriate control measures to limit the scale of the impact.	Measures in Section 7 of NVMSP. Technical Memo from a suitably qualified acoustic consultant to review measures and confirm ISC requirements are met.
DL1.5	**Monitoring requirements for vibration receptors have been determined with due regard to the project's vibration goals.** A vibration monitoring program must be prepared or reviewed by a suitably qualified professional in line with the project's vibration goals (DL1.3) and for all scenarios where the risk to sensitive receptors warrants, and outline: – Monitoring objectives – Risk assessment outcomes used to determine monitoring requirements – Monitoring methods – The frequency, duration and locations of monitoring and any relevant triggers e.g. high-risk activities – The parameters to be monitored	Section 9.1 of NVMSP (have been developed by a suitably qualified acoustic consultant).
DL2.1	**Vibration impacts, controls and mitigation measures have been reviewed with affected stakeholders.** Affected stakeholders (e.g. asset owners, local community, building occupiers) must be informed of the results of vibration modelling for construction and operations and engaged to review the project's vibration goals, and the choices and potential consequences of mitigation measures for construction and operations.	These requirements will be met in the Stakeholder Engagement Plan. NVMSP to be updated as required to

Credit	Must statements	Status
	These requirements may be linked to aspects of Sta-1 and Sta-2. The project must demonstrate how they have considered stakeholder inputs in proposed vibration controls and mitigation measures.	incorporate any stakeholder inputs
DL2.2	**Modelling demonstrates no recurring or major exceedances of the noise goals.** Modelling must demonstrate that there are no exceedances of vibration goals for damage to buildings and structures for construction and operations (DL1.3). Modelling must demonstrate that there are no recurring or major exceedances of vibration goals for human comfort criteria for operations (DL1.3). Modelling of construction and operational vibration must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified. Modelling must be interpreted by a suitably qualified professional in line with the project's construction and operations vibration goals.	Technical Memo from a suitably qualified acoustic consultant to provide modelling interpretation and any additional advice to meet this requirement.
ABL1.1	Construction measures to mitigate vibration and meet the vibration goals established in Design have been implemented and monitored.	This NVMSP provides the high level framework for achieving these aspects during construction. Will need to be updated on the basis of additional requirements highlighted in Technical Memo from a suitably qualified acoustic consultant, detailed design and construction methodology information, and stakeholder inputs.
ABL1.2	Measures to mitigate operational vibration and meet the operations vibration goals established in Design have been implemented	
ABL2.1	Details regarding mitigation measures and monitoring that require ongoing attention during operation has been formally handed over to the proponent / operator.	
ABL2.2	Vibration impacts and mitigation measures have been regularly reviewed with affected stakeholders and their feedback considered.	
ABL2.3	Monitoring and modelling demonstrates no exceedances of vibration goals for damage to buildings and structures.	
ABL2.4	Modelling of vibration during asset operation has been updated if required and demonstrates no recurring or major exceedances of the vibration goals for human comfort in buildings.	

9. Monitoring requirements

The following outlines the noise and vibration monitoring program, which aims to ensure the reference level exceedances are managed.

9.1 Vibration monitoring

For any buildings at risk (those located in the Vibration Management Zones), a risk analysis and where required, a dilapidation survey should be undertaken. Having a condition assessment of houses (e.g. photographing any existing wall cracks) will provide protection against claims that damage was caused from construction and ensure if mitigations are appropriate.

Table 14 Vibration monitoring requirements

Activity/trigger	Type of monitoring / parameter to be monitoring	Objective	Method	Frequency
Access road construction in high risk vibration management zone	Building cosmetic damage	Understand if high risk vibration activities cause any observable cosmetic damage	Dilapidation surveys of all modelled areas where residential buildings are at high risk of cosmetic damage	Pre-construction condition assessment to establish baselines at high risk properties. With follow ups as requested by property owner
Commencement of activity using high risk vibration equipment (as per Table 5)	Vibration levels	Validate vibration levels of equipment to inform mitigation strategies	Where possible, vibration monitoring will be undertaken at the affected structure to confirm compliance with management levels. This will include monitoring at the edge of source vibration (0m). Where it is not possible to take measurements at the affected structure, and vibration levels are exceeding targets at the project boundary, monitors will be subsequently set up at the edge of source of vibration (0m), and at 10m, and 25m (where the site boundary is further than 25m) and data will be provided to a SQP to interpret levels at the affected structure.	As required

Activity/trigger	Type of monitoring / parameter to be monitoring	Objective	Method	Frequency
Verified community complaint	Vibration levels	To verify vibration levels exceed reference levels and/or confirm adopted measures have reduced vibration levels.	Vibration monitoring at affected sensitive receptor during construction activities	As required

9.2 Noise monitoring

Noise monitoring will not involve quantitative measurement of noise reference levels in the management zones, but will rather rely on keeping an effective community complaint register to track and review effectiveness of noise management measures. This will additionally involve checking if new or different equipment is used per activity type to keep a record of how this will impact the community.

Table 15 Noise monitoring requirements

Activity	Type of monitoring / parameter to be monitoring	Objective	Method	Frequency
Construction activities in priority or high priority management zones	Community complaints	Understand if mitigations adopted for priority areas are effective and revise as necessary	Community complaint register to be reviewed to ensure noise risk is managed	Weekly review of complaint register and reporting
Use of new/different construction plant not assessed in construction activities used in priority management zones	Community complaints	Understand if mitigations adopted for priority areas are effective and revise as necessary	Liaison with potentially affected parties in advance of new/different activities and keep record of these activities and any recorded complaints	Each time there is new/different construction works
Verified community complaint	Noise levels	To verify if noise levels exceed reference levels and/or confirm adopted measures have reduced noise levels.	Noise monitoring at affected sensitive receptor during construction activities	As required

9.3 Noise and vibration triggers

The trigger for both noise and vibration are detailed below, with actions specified for managing these triggers addressed in Section 11.

Table 16 Summary of monitoring and triggers associated

Acoustic parameter	Trigger	Actions
Noise	– Noise complaint – Use of construction plant not assessed in construction activities	See Section 10
Vibration	– Commencement of activity using high risk vibration equipment – Vibration complaint – Claim made that construction has caused cosmetic damage	See Section 10

10. Adaptive management measures

10.1 Communications and complaints protocol

Communication and management of noise and vibration impacts will be undertaken in accordance with the Stakeholder Engagement Plan and this Subplan.

A complaints and communication protocol will be implemented to ensure that sensitive receivers are informed of construction activities and that any noise-related complaints are appropriately managed. This includes:

- proactive communication with potentially affected stakeholders prior to high-noise activities (including helicopter use and works in high priority management zones)
- maintaining a complaints register to record all noise and vibration complaints
- investigation of complaints in accordance with the adaptive management measures outlined in Table 17
- implementation of additional mitigation measures where required
- ongoing communication with affected stakeholders regarding outcomes and any changes to management measures

Management of complaints and engagement with stakeholders will be undertaken by the Stakeholder Engagement Team in accordance with the NWTD Stakeholder Engagement Plan.

Adaptive management measures (contingency actions) associated with this Subplan are presented in Table 17.

Table 17 Adaptive management measures and complaints response

Trigger	Adaptive management measure
Use of construction plant not assessed in construction activities (e.g. helicopter usage for transmission tower erections) in priority areas	Liaison with potentially affected parties in one week in advance of planned activities and identification of sensitive zones to discuss: – Time(s) and day(s) of impact – Duration of exposure for each day – Expected level of impact (qualitatively) The potentially impacted parties to be given a means to which complaints can be made, which will be recorded by the Environmental Manager. Any complaints will trigger a review of the noise at the property with the following methodology: – Review of mitigation measures (by a suitably qualified acoustic consultant) – Application of revised mitigations by the Construction Manager and a suitably

Trigger	Adaptive management measure
	qualified acoustic consultant – All workers trained for revised mitigations This is to be undertaken by consultation with the Construction Manager and a suitably qualified acoustic consultant on a per activity basis.
Noise complaint	If community complaint register has more than one (1) complaint after a week of construction activity, the following actions are to be taken: – Review of mitigation measures (by a suitably qualified acoustic consultant) – Application of revised mitigations by the Construction Manager and a suitably qualified acoustic consultant – Noise monitoring to verify noise levels exceed reference levels and/or confirm adopted measures have reduced noise levels as required – Ongoing communication with affected stakeholders regarding outcomes and proposed mitigation measures – Management of complaints and communications by the Stakeholder Engagement Team in accordance with the Stakeholder Engagement Plan – All workers trained for revised mitigations – Notification of community and TasNetworks of revised mitigations
Vibration complaint	If community complaint register has more than one (1) complaint after a week of construction activity, the following actions are to be taken: – Review of mitigation measures (by a suitably qualified acoustic consultant) – Application of revised mitigations by the Construction Manager and a suitably qualified acoustic consultant – Vibration monitoring to verify vibration levels exceed reference levels and/or confirm adopted measures have reduced vibration levels as required. – All workers trained for revised mitigations – Notification of community and TasNetworks of revised mitigations If there is a claim of cosmetic damage to buildings identified in community complaints, this should be reported and following actions are to be taken: – Notification to Genus Project Manager – Investigation into equipment used at the time of the alleged damage, and any available monitoring or mitigation data should be revied by the Genus environmental team – Review of mitigation measures and monitoring data (by a suitably qualified acoustic consultant if deemed necessary) – All workers trained for any revised mitigations – Notification of investigation outcome to TasNetworks and the property owner

11. Reporting and documentation requirements

A full summary of reporting requirements for environmental management of the Project is provided in Section 7 of the CEMP. The reporting and documentation inputs from this Subplan are provided in Table 18.

Table 18 Noise and Vibration Management Subplan reporting requirements

Reporting requirement	Type	Frequency	By who	To who
Noise and vibration monitoring program as set out in this Subplan	Report	Duration of construction	Environmental Manager	Key stakeholders (EPA Tasmania, community, land owners), All workers
Initial building condition assessment for high priority vibration zones	Report	Preconstruction	Environmental Manager	Executive Steering Committee
Noise and vibration complaint register and monthly reporting on community complaints	Register/report	Monthly/as needed	Environmental Manager	Executive Steering Committee
Community consultation and notification	Notification/consultation	As needed	Genus Project Manager	Landowners/ community
Documenting community consultation as a solution to noise and vibration impacts	Documentation	As needed	Environmental Manager	Executive Steering Committee
Verification of active nesting sites before construction in fauna zones	Verification	Before construction commences	Environmental Manager (responsible for development of plan by suitably qualified ecologist)	Construction Manager and Environmental Manager

12. Reviews and updates

If monitoring determines that the controls outlined in this Subplan are not effective, the process generating the adverse outcome will be paused. Alternative management controls will be determined in accordance with the CEMP and the above management measures. Once determined, works may resume.

This document is not static and will be updated during the approval process to reflect new information and changes to management measures, in accordance with the CEMP.

13. Document history

13.1 Current document authoriser

Title	Name
General Manager – Major Projects Transmission	Craig Gosney

13.2 Revision history

Rev	Date	Author	Authoriser	Details of Amendment
A	27/10/2025	GHD	Craig Gosney	Initial document – 70% Design Gate Draft
B	30/01/2026	GHD Genus	Craig Gosney	90% design gate submission addressing TasNetworks' comments from 70% design gate submission
C	26/03/26	GHD & EC	Craig Gosney	90% TN comments addressed, MIDA Act Permit Conditions Addressed, IFC Submission
D	24/04/2026	GHD Genus	CG	Address 100% TN comments, updates based on provisional EPBC Approval conditions
E	30/04/26	Genus	CG	Address TN comments, adding reference to management measures document and updating Table 11 (NV01 and NV02) roles and responsibilities to reflect TN comments, Updating Table 4 roles and responsibilities to reference Stakeholder Manager instead of community team, minor formatting.
F	15/07/2026	GHD Genus	CG	Address TPC comments

Appendices

Appendix A

Technical memorandum – Review of project compliance with IS Env-2 noise requirements

Technical Memorandum

13 October 2025

To	Flavia Tarmo	**Contact No.**	0421219469
Copy to		**Email**	flavia.tarmo@genus.com.au
From	James Forrest	**Project No.**	12658174
Project Name	Genus NWTD - Sustainability Rating Support		
Subject	Review of Project compliance with IS Env-3 noise requirements		

1. Introduction

1.1 Project description

Tasmanian Networks Pty Ltd (Tas Networks) proposes upgrading and building new transmission lines required for the Tasmanian transmission network. This project includes the construction of new double-circuit 220 kV overhead transmission lines (OHTLs) in Northwest Tasmania, the upgrade of the existing substations, and the construction of new switching stations. This project is part of the broader Northwest Transmission Developments (NWTD) proposed by Tas Networks and is referred to as the Remaining NWTD (the project). It is being delivered in two stages, with the current focus on Stage 1. The following describes the details of this project:

Stage 1

- **Palmerston – Sheffield OHTL.** A new double circuit 220 kV OHTL between Palmerston station and Sheffield. The existing single circuit 220 kV OHTL between the Palmerston and Sheffield substations will be dismantled.
- **Sheffield – Heybridge OHT via Stowport.** A new double circuit 220 kV OHTL between the Sheffield substation and a proposed switching station at Heybridge. The proposed switching station at Heybridge is not part of this project. The existing single circuit 220 kV OHTL will be dismantled.
- **Heybridge – Burnie OHTL via Stowport.** A new double circuit 220 kV OHTL between the proposed Heybridge switching station and Burnie substation. The existing single circuit 220 kV OHTL between the Sheffield and Burnie substations will be dismantled.

Stage 2

- Burnie to East Cam (not included)
- East Cam to Hampshire Hills (not included)

As outlined in Figure 1.1, the NWTD project is located across various sites.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

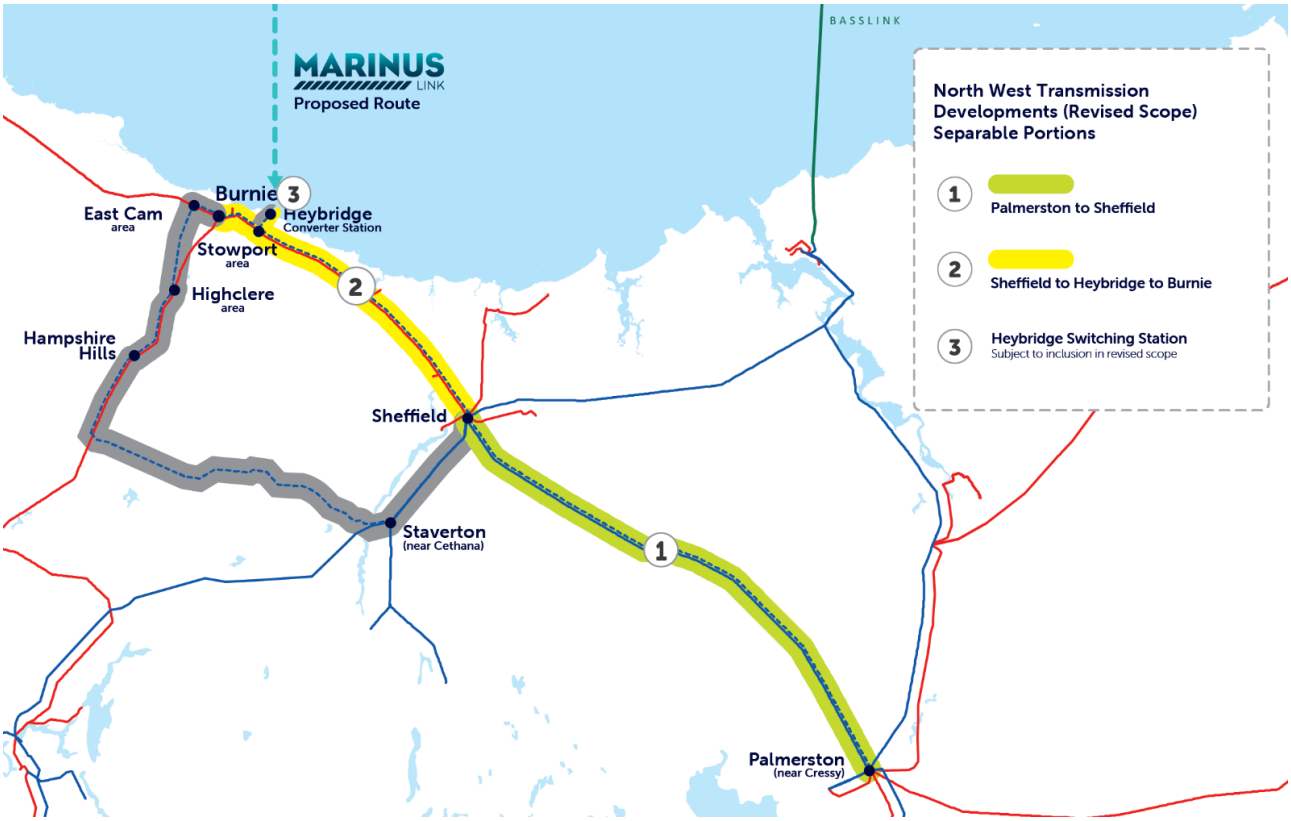


Figure 1.1 NWTD Project outline

1.2 NWTD and potential impacts on noise

The Project will create noise emissions during construction activities. To understand potential impacts, an analysis of potentially sensitive receptors found that there are over 3,155 receivers categorised as residential buildings within approximately 500 m of the Project. An additional 42 non-residential receivers, mostly community buildings and educational facilities, were also identified within 500 m of the Project. However, the area of the study encapsulates both Stage 1 and Stage 2 of the Project, with Stage 1 the subject of the current rating process. The Technical Noise and Vibration Assessment Report notes that the greatest concentrations of receivers are located near Burnie, Stowport and Heybridge; all of which are included in Stage 1.

The relevant policies utilised to assess noise impacts were the following Tasmanian legislation and policy:

– *Environmental Management and Pollution Control Act 1994* (EMPCA)
– *Environmental Management and Pollution Control (Noise) Regulations 2016* (EMPCA Noise Regulations)
– *Environment Protection Policy (Noise) 2009* (EPP).

Restricting construction work hours to daylight hours is a key management measure for noise emissions, although the assessment notes that out of hours work may be required for emergencies, time sensitive repairs of maintenance of public infrastructure, essential oversized deliveries, and works that require completion such as a concrete pour. Night work may occur for protection and control commissioning within switching stations to meet outage schedules for generators.

Assessment of operational noise was also undertaken, highlighting the following potential sources:

– Corona noise as assessed against the night noise limit of 40 dB L_{Aeq}
– Circuit breaker trips from rare faults or deliberate switching associated with maintenance (~30 incidents per year during daytime hours)
– Easement maintenance – Ground patrols and vegetation clearance

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

– Aerial inspections of overhead transmission lines (OHTL) using helicopters
– Wind passing across the surface of new OHTL across the surface of the line (aeolian tones)

The upgrades to substations do not include new or additional power transformers or other noise generating plant.

Corona discharge was assessed to be below the night noise limit of 40 dB $L_{Aeq,}$ with the exception of the Sheffield to Burnie section under wet conductor conditions, while the existing single-circuit line is operational. Once this has been replaced by the double-circuit OHTL, the calculated audible noise emissions are below the proposed noise limit under all operating and weather conditions. The study notes that the design requirements of the line will ultimately depend on final approval conditions, which remain unknown at this stage. It is noted that the corona discharge noise can be appropriately managed through the detailed design of the OHTL.

Operational noise generated by wind passing across the transmission line conductors can produce a noise known as Aeolian tone. This typically occurs during higher wind speeds, a time when background noise levels are also elevated. The potential noise from this source is assessed as not expected to represent noise compliance consideration for the project.

1.3 Sustainability support

GHD was engaged by Genus to be a part of the sustainability team support associated with NWTD, providing the sustainability support to obtain Infrastructure Sustainability (IS) v2.1 Design and As Built Rating. The sustainability target of this project is a minimum score of 30 points (Bronze) for both the Design and As Built phases. GHD was assigned 14 credits, including those related to environmental impacts, ecology, stakeholder engagement, heritage, and workforce sustainability.

Genus provided a phased schedule for the IS rating, which included critical milestones throughout the project. At the 70 percent design gate of the Project, a CEMP was developed for submission to TasNetworks, including a Noise and Vibration Management Subplan (Env-2f). The CEMP will be updated at the 90 percent design gate, with any sustainability rating requirements integrated into the management and monitoring measures.

1.4 IS rating requirements

The Infrastructure Sustainability (IS) Rating Scheme, developed by the Infrastructure Sustainability Council (ISC), is designed to assess the sustainability efforts of infrastructure projects, focusing on their environmental, social, and economic impacts. This framework is intended for a broad range of stakeholders, including project proponents, designers, and teams involved in construction and operations, providing guidance on sustainable practices across design, procurement, construction, and operational stages.

The ISC rating requirements are structured around four key themes: governance, economic, environmental, and social, which are further divided into 16 categories and 37 credits. Each credit has specific criteria outlining the necessary actions, documentation, and evidence to demonstrate compliance. The credit levels, ranging from basic to advanced, reflect the sustainability practices implemented at various project stages. Achieving higher levels requires stronger evidence of sustainability outcomes.

This memorandum focuses on the Environmental theme under the Environmental Impact category, specifically the Env-2 Noise credit. The overarching intent of the Env-2 credit is **to manage noise impacts and improve amenity for noise receptors.**

For the Env-2 Noise, the following actions are required for compliance with Level 1 requirements:

– **Review and update baseline studies** of the existing noise environment and assessment of impact, including mapping of sensitive receptors.
– Identify **Noise impacts** through modelling for both the construction and operation phases.
– Develop **noise goals** for construction and operation phases, and **identify measures to achieve goals**.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

– Develop a **noise monitoring program.**

To achieve Level 2 certification, further requirements are to

– **Affected stakeholders review** of noise impacts, controls and mitigation measures
– Monitoring demonstrates **no recurring or major exceedances of goals**

The key document for the Env-2 Noise credit is Part C-Appendix I - Environmental Impact Statement – Noise and Vibration (Env-2a). This document provides relevant evidence for baseline studies and outlines the nearest sensitive areas along the proposed project routes, all of which are categorized under DL1.1 requirements.

1.5 Management measures committed to in EIS

Attachment 5 of the Environmental Impact Statement (EIS) provides a list of management measures committed to. Whilst these may differ from the final permit conditions, they provide insight into likely conditions. Relevant to noise emissions is CM024, which states:

– Implement a noise and vibration management plan to manage noise and vibration impacts on sensitive receivers. As a minimum, the plan will include:
  - Identifying priority and high priority noise management zones.
  - Consulting with communities in priority and high priority management zones to identify any feasible scheduling and duration plans to minimise disruption (e.g., identification of the most sensitive time periods for the local community and gauging the potential merits of more intensive work practices if the duration of the works can be reduced).
  - Prioritising efficient work practices that minimise the duration of work in the vicinity of sensitive receivers, particularly where there is potential for multiple work locations to be within priority or high priority management zones. This may involve completing work at the locations simultaneously, which may increase noise, but avoid prolonged exposure to noise.
  - Scheduling noisy work on weekdays (i.e., avoiding Saturday, Sunday and public holidays), and during less sensitive periods of the day (i.e., avoiding the shoulder periods at the start and end of the day) as far as practicable, particularly in high priority management zones.
  - Notifying neighbouring properties and local communities prior to commencing unavoidable works or noisy activities outside normal working hours of the nature and duration of planned works. Unavoidable works are defined as:
    – Works that need to be undertaken without a break in the program, such as concrete pouring.
    – Delivery of essential, oversized plant or equipment.
    – Time sensitive maintenance or repair of public infrastructure.
    – Emergency works required due to unforeseen circumstances.
  - Scheduling and undertaking construction activities in accordance with the *Environmental Management and Pollution Control (Noise) Regulations 2016* (EMPC noise regulations) unless unavoidable works are required. Where unavoidable works are required, consult relevant authorities on the nature and duration of planned works.
  - Locating temporary access roads and laydowns as far as practicable from sensitive receivers.
  - Turning off vehicles, plant and equipment when not in use or throttling down when used intermittently.
  - Planning work and arranging worksites to take advantage of existing noise barriers, such as buildings and topography, where practicable.
  - Maximising separation distance between demarcated habitat features and noise-generating equipment.
  - Using low noise emission equipment, by selection of inherently low noise emission equipment (e.g., plant which already incorporates standard noise attenuation) or using noise barriers or

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

similar structures to shield sensitive receivers in high priority noise management zones from noise.

- Obtaining approved instrument in accordance with the *Environmental Management and Pollution Control (Noise) Regulations 2016* if planning to use a chainsaw powered by an internal combustion engine within 300 m of residential premises.
- Managing construction noise in accordance with Australian Standard AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.
- Managing helicopter-generated noise through implementing the Tas Networks Helicopter Operations Procedure, which includes liaison with affected parties and identification of 'no fly' zones.
- Turning off vehicles, plant and equipment when not in use or throttling down when used intermittently.
- Selecting equipment, designing methods, and conducting works (e.g., rock hammering or piling) in a manner that does not cause structural or cosmetic damage to buildings from vibration impacts.

1.6 Purpose of this memorandum

This memorandum has been prepared to provide a response on some of the requirements of the Infrastructure Sustainability (IS) V2.1 Design and As Built Rating, specifically aspects relating to Env-2 (Noise) credit. This memorandum should be read in conjunction with the Construction Environmental Management Plan (CEMP), particularly on matters for the construction phase. The basis for this memorandum is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-2 (Noise).

1.7 Scope and limitations

This memorandum has been prepared by GHD for Genus Services Pty Ltd and may only be used and relied on by Genus Services Pty Ltd for the purpose agreed between GHD and Genus Services Pty Ltd as set out in Section 0 of this memorandum.

GHD otherwise disclaims responsibility to any person other than Genus Services Pty Ltd arising in connection with this memorandum. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this memorandum were limited to those specifically detailed in the memorandum and are subject to the scope limitations set out in the memorandum.

The opinions, conclusions and any recommendations in this memorandum are based on conditions encountered and information reviewed at the date of preparation of the memorandum. GHD has no responsibility or obligation to update this memorandum to account for events or changes occurring subsequent to the date that the memorandum was prepared.

The opinions, conclusions and any recommendations in this memorandum are based on assumptions made by GHD described in this memorandum (refer Section 1.8 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.8 Assumptions

This memorandum is subject to the following assumptions and limitations:

– The client and the project team recognise the extent of the requirements in achieving the project's sustainability goals under the IS v.2.1 rating scheme and understand that these cannot be achieved with a 'business as usual' approach to the project.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

– While GHD is committed to supporting the project in achieving the target sustainability rating, the final outcome may be influenced by factors beyond our direct control. As such, GHD cannot be held liable if the project does not meet the target IS rating or the individual credit scores.
– GHD is entitled to rely on information provided by Genus and its client (Tas Networks) consultants and contractors in performing our assistance. We will not perform any validation or verification of information provided outside of what is within the agreed scope of work.
– This memorandum is based on reports made available to GHD at the time of writing. Any additional information or further iterations of environmental assessment documents will need to be considered during the design phase, but this memorandum will not be updated.
– The CEMP and Noise and Vibration Management Subplan documents referred to in this memorandum were prepared at the 70% design gate. These documents will be updated at the 90% design gate and will have ongoing iterations during Project implementation.

2. Gap analysis

A Gap Analysis memorandum has been provided to Genus to highlight what has been achieved to date in documenting noise. Our team has reviewed all available information to date and presents this memorandum to inform the next steps.

2.1 Response to gaps identified

This memorandum has been prepared to provide a response on some of the requirements of the Infrastructure Sustainability (IS) V2.1 Design and As Built Rating, specifically aspects relating to Env-2 (Noise) credit. This memorandum should be read in conjunction with the CEMP, particularly on matters for the construction phase, which I have also provided input to and reviewed, noting that at the time of writing this memorandum, this refers to the 70% design gate CEMP, which will be updated at the 90% design gate.

The basis for this memo is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-2 (Noise).

The Env-2 (Noise) credit outlines the general method for understanding the existing background (baseline) noise to enable predictions for construction and operation, including setting noise goals.

2.1.1 DL1.1 The location, extent, type and sensitivity of noise receptors and their pre-existing exposure to noise have been determined

As identified in the Gap Analysis Report, extensive mapping of sensitive receptors and the pre-existing noise issues were documented in the EIS. I have reviewed this work and it is likely to satisfy the ISC rating requirement.

2.1.2 DL1.2 Modelling for noise has been developed for the construction and operation phases of the project

Modelling of noise impacts for the construction and operation phases of the project and considered a comparison against the baseline data.

Noise model inputs are provided in the Technical Noise and Vibration Report, as follows for the construction and operation stages.

Construction stage:

– Noise modelling for the construction phase was undertaken for various activities and equipment types, with maximum noise levels at each receptor predicted based on the minimum separation distances (Section 4.1.2, pg. 35-36).

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

– Baseline noise levels were established through background monitoring at multiple representative locations over 24-hour monitoring cycles, capturing daytime, evening, and night-time levels for comparison with modelled impacts (Section 5, pg. 38-40).
– The detailed modelling results of each activity are discussed in Section 6.1.2, including access track construction, vegetation clearance, temporary facilities and laydown areas, tower foundations, transmission tower erection, cable stringing, switching station - earthworks/civil, and switching station – infrastructure erection (pg. 43-44).

Operational stage:

– Section 2.4 of the Technical Noise and Vibration Assessment Report (pg. 20-23) summarises the potential operational sources of noise emissions, including circuit breaker trips, wind induced noise, and maintenance such as ground patrols along easement, helicopter inspections, vegetation management, and switching station maintenance. Whilst major faults are less likely with new infrastructure, these events may necessitate night works, exacerbating the impact of any noise emissions. However, the emissions will be temporary in nature.
– Additional ongoing emissions of corona discharge were also studied in the EMF, Audible Noise and Radio Frequency Interference Assessment. The study includes wideband cracking noise and narrowband tonal hum. The modelling of operational noise caused by corona noise generation was undertaken under different weather conditions, including ice and non-ice crossarm geometries. The effect of pollution and rain on corona performance was also factored into the model using standard industry correction factors (Section 7 provides the modelling results). The conclusion (pg. 36) states that the AN emissions from the proposed new 220 kV transmission line will be much lower than those of the existing transmission line and will not significantly impact the AN noise levels adjacent to the new easement. The acoustic noise emissions from the proposed 220 kV line do not exhibit significant narrowband tonality near the line.

The remaining gap is in relation to changes made during the design phase. It is recommended that the following text in italics below be drafted by Genus prior to finalising this Technical Memo.

During the design process, components were selected that reduce the noise from corona discharge as follows:

– *List measures*

The above demonstrates an instance of improving impacts from noise for sensitive receptors.

2.1.3 DL1.3 Noise goals have been identified for construction and operations

SMART noise goals must be established and cover both the construction and operational phases. Documentation for goals must outline the intended outcomes (measurable/quantifiable).

Environmental Management and Pollution Control (Noise) Regulations 2016 (EMPC Noise Regulations) provide the relevant restrictions relating to equipment operation. Additionally, the *Tasmanian State Road Traffic Noise Management Guidelines* (October 2015) provide a conservative reference for contextualising predicted construction traffic noise levels. Table 5 summarises the average noise levels and time base of different health effects under a specific environment (Section 3.2.2, pg. 29).

The *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2016* in Tasmania set time-based noise limits for fixed equipment, which can be used as a reference standard for assessing corona noise.

Tasmanian environmental noise legislation and guidelines do not set mandatory noise level requirements for construction activities that are proposed to occur during normal working hours (i.e., outside of the time periods specified as prohibited hours), as is the case for the project. Instead, the legislation and guidelines promote the use of reasonable and practical measures to reduce environmental noise in all instances. This is a common approach that is also adopted in other Australian states.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

The challenge to establish measurable goals is that the noise emissions will be higher than the recommended indicator levels under EMPC Noise Regulations. Indicator levels are presented below. The conclusion for the construction phase of the project in the impact assessment is as follows:

– The construction noise modelling indicates that most of the key construction activities will result in predicted noise levels above both the 55 dB and 75 dB L_{Aeq} thresholds at a relatively large number of receivers.
– This result is to be expected given the large scale of the project, and the proximity of receivers to the construction activity, particularly where the route traverses more densely populated suburban areas.
– The highest predicted noise levels occur at receivers adjacent to activities such as access road construction, vegetation clearance, and cable stringing.
– The highest predicted noise levels relate to the times when these activities would be occurring nearest to a receiver.
– Given the proximity of the OHTL routes to receivers at some locations, particularly in the more densely populated suburban areas, there is the potential for construction noise to be highly annoying and intrusive.
– However, the highest noise levels would only occur for a limited time period (typically less than one week for the mobile activities along the project route), and noise levels would reduce relatively quickly as the work-front progresses along the project route.
– Given the limited time that the receivers would experience the highest noise levels, and that construction of the project would only occur during the day, other than for unavoidable works, construction noise is a manageable impact for the project.
– However, dedicated noise mitigation and management measures will be required to address the locations where the predicted noise levels are highest.

Tas Networks has a range of standard environmental controls for all work sites, including controls related to noise. These measures comprise:

– Undertaking best endeavours to plan work and arrange worksites to take advantage of existing noise barriers, such as buildings and topography.
– Notifying neighbouring properties and local communities prior to commencing noisy activities outside normal hours.
– Scheduling noisy equipment use in accordance with the *Environmental Management and Pollution Control (Noise) Regulations 2016.*
– Turning off vehicles, plant and equipment when not in use or throttle down when used intermittently.

The standard environmental controls are suitable general measures for the project. The noise modelling data has been used to identify the Priority and High Priority Noise Management Zones where additional construction noise mitigation measures should be prioritised beyond the standard controls.

Given the transitory nature of the construction work, and that the location of much of the construction activity will change throughout the project, scheduling of the work to reduce the duration of exposure to elevated noise levels is expected to be one of the most effective mitigation measures. For the High Priority Noise Management Zones, the recommended additional measures include:

– Avoiding work on Saturdays, Sundays and public holidays.
– Utilising low noise emission plant where available (i.e. selection of plant which incorporates dedicated noise control measures, or fitting plant with additional noise control measures).
– Dedicated community notification and consultation procedures.

All managerial and engineering noise control measures, including SMART noise goals, will be fully documented in the CEMP and associated Noise and Vibration Management Subplan. The relevant noise mitigation measures nominated for the construction phase should also be applied during decommissioning

For noise management during the operational phase, standard environmental controls for Tas Networks work sites would be implemented.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

How the baseline data and modelled impacts have been incorporated.

Table 14 of the Technical Noise and Vibration Report summarises the distribution of predicted construction noise levels for each activity, with a number of receivers per predicted noise level band (noting that this table includes data from Stage 1 and Stage 2).

Additionally, Table 15 presents the approximate distance from each noise generating activity where a level of 55 and 75 dB L_{Aeq} is predicted to occur, and the number of weeks of likely impact duration (pg. 47).

Sections 5 to 8 of the EMF, Audible Noise and Radio Frequency Interference Assessment (pg. 15-35) present the assessment results for Audible Noise (AN). The results are summarised in Tables 6 to 24 (pg. 15-35).

This criterion is related to the goals specifically, i.e. showing how the baseline and modelled data have been considered in the development of goals. The SMART goals will be set for both phases, reflecting the potential impacts and baseline data, within the CEMP Noise and Vibration Management Subplan.

2.1.4 DL1.4 Measures to achieve noise goals during construction and operation have been identified and implemented

Measures to meet the noise goals (DL1.3) must be identified and assessed for construction and operation.

There are limited opportunities to reduce noise emissions through design choices, for example opportunities for micro-siting. Therefore, the need for mitigation during construction becomes central to sustainability outcomes. The route options assessment completed as part of the EIS, and going forward, the Change Management Process, will take into consideration any opportunities. For example, any time a tower is moved or alignment changes for any sort of reason, the design team as part of the change management process, documents the basis for the change decision. Where possible, Genus should also consider documenting secondary benefits such as reduced noise impacts to sensitive receptors

Section 7 of the Technical Noise and Vibration Report details the standard environmental controls provided by Tas Networks for all work sites, provisions for managing the scheduling of construction activities and additional measures for construction activities located in the High Priority Noise Management Zones (pg. 56-57).

Section 7 also discusses additional measures that need to be considered for the mapped High Priority Noise Management Zones, where impacts are likely to be significant (although short term).

These mitigation measures for construction are detailed in the CEMP Noise and Vibration Management Subplan.

As the operational phase is likely to comply with noise goals, there is no requirement for a further plan, but there is evidence that noise emissions will be aligned with SMART goals.

During the design phase, measures to be implemented for construction and operation must be detailed in relevant documents i.e. measures incorporated into the design to mitigate impacts or improve amenity in operation and controls specified to mitigate impacts or improve amenity during construction.

Section 7 of the Technical Noise and Vibration Report provides the mitigation measures for the construction (pg. 60-61).

The assessment of audible noise during operations (EMF, Audible Noise and Radio Frequency Interference Assessment, pg. 40) concludes that the emissions from the proposed new 220 kV transmission line will be much lower than that of the existing transmission line and will not have a significant impact on the AN noise levels adjacent to the new easement. The acoustic noise emissions from the proposed 220 kV line do not exhibit significant narrowband tonality near the line.

The Route Selection report provides detailed methodology for identifying prudent and feasible routes within the existing transmission line corridors. Table 7.1 (pg. 42-44) provides route selection criteria and includes

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

proximity to occupied houses. Identified routes were evaluated against the route selection criteria and inspected from the public road network to ground-truth geospatial data and publicly available information to inform route selection. Moving forward, the route has now been set, although there remains an opportunity to micro-site to reduce site-specific impacts.

In the Palmerston-Sheffield section, where the easement for OHTL needs widening, one of the outcomes was to reduce proximity to houses through expansion on the eastern side of the OHTL rather than the western side (pg. 45).

For the Heybridge Converter Station assessment of route options, three choices were compared across criteria. The final selection (western route) included consideration of housing occupation, with the nearest occupied house at 250 m as opposed to 200 m for the eastern route option (pg. 48).

The route options assessment done as part of the EIS, and going forward, the Change Management Process, will take into consideration any opportunities. For example, any time that they move a tower or alignment for any sort of reason, the design team as part of the change management process, documents the basis for the change decision. Where possible, Genus should also consider documenting secondary benefits such as reduced noise emission impacts to sensitive receptors.

The primary method for reduction is identification as part of the risk assessment and required mitigation implemented through the CEMP Noise and Vibration Management Subplan.

Where exceedances are predicted, these predicted exceedances must be clearly identified with the appropriate control measures to limit the scale of the impact.

Additional mitigation measures specifically recommended for High Priority Noise Management Zones have been outlined in Section 7 of the Technical Noise and Vibration Report (pg. 56-57). Exceedances are predicted, particularly in the mapped Priority and High Priority Noise Management Zones. Additional control measures are documented (pg. 56-57).

It is noted that exceedances are only predicted for construction, with no operational exceedances predicted.

In assessing the risk of noise impacts occurring, appropriate mitigation measures, based on the likely risk, have been incorporated into the CEMP Noise and Vibration Management Subplan.

2.1.5 DL1.5 Monitoring requirements for noise receptors have been determined with due regard to the project's noise goals

A noise monitoring program must be prepared in line with the relevant project goals (DL1.3) and for all scenarios where the risk warrants and outlined:

- ***Monitoring objectives***
- ***Risk assessment outcomes are used to determine monitoring requirements***
- ***Monitoring methods***
- ***The frequency, duration and locations of monitoring, any relevant triggers***
- ***The parameters to be monitored***

There is currently no monitoring program proposed for the construction and operation stages documented within the Noise Impact Assessment.

As part of the Noise and Vibration Management Subplan, the required noise goals, different areas of risk (Priority and High Priority Noise Management Zones mapped) and methods, parameters, and timescales will be considered.

Measures will be included such as transparent communication, compliance with time restrictions, and complaints recorded (and responses). There may be no actual noise monitoring except in response to complaints, and additional mitigations may be applied. The precise approach will need to be developed with the involvement of a SQP

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

2.1.6 DL2.1 Noise impacts, controls and mitigation measures have been reviewed with affected stakeholders

Affected stakeholders, including those in the local community, must be actively engaged to understand and respond to predicted noise impacts for construction and operations, proposed controls and the choices and potential consequences of mitigation measures.

Concerns about noise may have been raised and documented in some of the public forums and opportunities for feedback during the conceptual design and EIS process. It is recommended that the TasNetworks Stakeholder Engagement Team provide this detailed data to Genus, as it may provide evidence that noise issues have been discussed with stakeholders during the early planning and design processes.

During the current phase of detailed design, it is critical that consultation is proactive rather than reactive. Specific information on potential noise impacts and mitigation measures must be provided to affected stakeholders for their review and input. This provides the opportunity to improve mitigation measures in response to sensitivities that were not picked up during the EIS study. This early engagement with affected stakeholders provides the opportunity to prevent impacts during construction.

As the construction stage approaches, consultation must clearly provide a schedule of works and information on potential local impacts, including noise. There needs to be clear pathways for affected stakeholders to raise complaints, but more importantly, they need the opportunity for input into appropriate mitigation measures from the outset to avoid complaints where possible.

Pre-construction engagement will include dialogue with people likely to be impacted by noise, particularly during the individual landholder agreement process. It is important that this dialogue, including any additional noise mitigation measures, is documented. In addition, a feedback register will be established for all complaints and resolutions. This has been developed as part of the CEMP, with specific aspects related to noise emissions incorporated in the Noise and Vibration Management Subplan.

The project must demonstrate how they have considered stakeholder inputs in proposed noise controls and mitigation measures.

The Noise and Vibration Management subplan of the CEMP outlines methods for stakeholder engagement, particularly for affected land owners and neighbouring properties. During this engagement, the potential impact of noise emissions and proposed mitigations must be discussed. Affected stakeholders must be able to raise any sensitive receptors that may be impacted and propose additional mitigation measures. This must be documented in the Noise and Vibration Management subplan. An ideal opportunity is to undertake this consultation prior to the 90% design gate, so that the updated CEMP can reflect inputs from affected stakeholders.

A further opportunity for the Project to demonstrate stakeholder inputs is each individual landholder agreement. Additional mitigation or monitoring measures over and above the CEMP can be included in these localised management plans if there are particular concerns from the landholder in relation to noise impacts.

2.1.7 DL2.2 Modelling demonstrates no recurring or major exceedances of the noise goals

Construction and operations modelling results showing no recurring or major exceedances.

The Technical Noise and Vibration Report indicates potential construction noise to be highly annoying and intrusive at some locations, and dedicated noise mitigation and management measures will therefore be required to address the locations where predicted noise levels are highest (Section 8, pg. 58-59).

Exceedances are predicted, particularly in the mapped priority and high priority zones. Additional control measures are documented (pg. 57).

The conclusion in the EMF, Audible Noise and Radio Frequency Interference Assessment (pg. 36) states AN emissions from the proposed new 220 kV transmission line will be much lower than that of the existing

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

transmission line and will not have a significant impact on the AN noise levels adjacent to the new easement. The acoustic noise emissions from the proposed 220 kV line do not exhibit significant narrowband tonality near the line.

The CEMP Noise and Vibration Management Subplan clearly articulates the noise goals. As the project progresses, modelling (risk assessment) will be reviewed to demonstrate that no major or recurring exceedances are going to occur. The noise emission goals have been selected to avoid regular or recurring exceedances.

As the modelling shows that exceedances of EMPC Noise Regulations Indicator levels are going to occur, noise emission goals will be selected carefully to avoid regular or recurring exceedance, while also reflecting the level at which the impacts are highly disruptive to sensitive receptors. The goals will ultimately reflect expected exceedances, as IS view major exceedance as only 2 dB and recurring exceedances as happening more than twice. As this is likely to occur, the risk to Genus is that the credit may be unattainable if the goals are not appropriate. It is also important in this case to factor in the duration of the predicted exceedance when determining the impact of such exceedances.

Modelling of construction and operational noise must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified.

Section 6.1.3 of the Technical Noise and Vibration Report discussed the predicted noise levels for each construction activity, identified the periods when noise is expected to be highest, as well as the distances within which sensitive receptors are most likely to be affected (pg. 45-50).

The modelling uses a risk based approach based on distances. I have reviewed this approach and find it to be appropriate and no further modelling is required.

Ecological receptors have been assessed separately in Appendix A of the EIS – Ecology (Eco-1a). Potential disturbance of fauna including eagles, Tasmanian devils and quolls from both noise and vibration has been assessed. Disturbance to maternal dens through noise emissions for both devils and quolls may impact breeding, and as such a range of mitigation measures have been outlined to identify and avoid dens. Mitigation measures to protect Tasmanian wedge-tailed eagles have also been developed, including avoidance of any construction activities within 500 m or 1 km line of sight of a known nest site during the breeding cycle. The detailed measures to minimise impact from noise will be covered in project-specific management plans following the detailed ecological surveys. This risk-based approach is appropriate for ecological receptors.

3. Summary response to key gaps identified

This memorandum has been provided primarily to resolve the following gaps which have previously been identified:

– This memorandum refers to the modelling from the EIS and specifically demonstrate that with the additional implementation of mitigation measures, there will be no major or recurring exceedances against the goals to be established.
– Demonstration that the Design considered reduction of noise impacts.
– Provides documentation that demonstrates the design has considered noise impacts – both for construction and operation. This is particularly relevant if technology choices can be shown to reduce corona discharge or low tonal hum.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Table 3.1 Summary of additions required for CEMP Subplan

ISC requirement		CEMP Subplan reference	Additional work required
DL1.1	The location, extent, type and sensitivity of noise receptors and their pre-existing exposure to noise have been determined.	N/A	Nil
DL1.2	Modelling for noise has been developed for the construction and operation phases of the project.	Section 6, Table 8	Nil
DL1.3	Noise goals have been identified for construction and operations.	Section 6.2, Tables 6, 7, 8 and 9	Nil
DL1.4	Measures to achieve noise goals during construction and operation have been identified and implemented.	Section 10, Table 17	Nil
DL1.5	Monitoring requirements for noise receptors have been determined with due regard to the project's noise goals.	Section 9	Nil
DL2.1	Noise impacts, controls and mitigation measures have been reviewed with affected stakeholders.	Section 11, Table 18	Need to ensure this has occurred as part of ongoing consultation and individual landholder agreements. This will be further reviewed at 90% design gate CEMP and subplans.
DL2.2	Modelling demonstrates no recurring or major exceedances of the noise goals.	N/A	Nil

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Technical Memorandum

4. Project document references

Table 4.1 Reference documents for Env-2 credit

Document	CSF Reference
Appendix I of EIS. Noise and Vibration Assessment Report	Env-2a
Justin Adcock CV (SQP for Noise and Vibration Assessment Report)	Env-2b
Env-04 EMF, Audible Noise, and Radio Frequency Interference Assessment	Env-2c
Route Assessment Report	Env-2d
Noise Gap Analysis Report	Env-2e
CEMP Air Noise and Vibration Management Subplan	Env-2f
James Forrest CV (SQP for Noise and Vibration Management Subplan and this memorandum)	Env-2g
Appendix A of EIS. Ecology	Eco-1a

5. Closing

I trust this information provides clarification and background on potential noise emissions and impacts for the Project. Should you require additional information, please do not hesitate to contact me.

Kind regards

James Forrest
Technical Director - Air Quality, Noise and Tunnel Ventilation

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Appendix B

Technical memorandum – Review of project compliance with IS Env-3 Vibration requirements

Technical Memorandum

13 October 2025

To	Flavia Tarmo	**Contact No.**	0421219469
Copy to		**Email**	flavia.tarmo@genus.com.au
From	James Forrest	**Project No.**	Genus Infrastructure (NSW) Pty Ltd. 12658174
Project Name	Genus NWTD - Sustainability Rating Support		
Subject	Review of Project compliance with IS Env-3 vibration requirements		

1. Introduction

1.1 Project description

Tasmanian Networks Pty Ltd (Tas Networks) proposes upgrading and building new transmission lines required for the Tasmanian transmission network. This project includes the construction of new double-circuit 220 kV overhead transmission lines (OHTLs) in Northwest Tasmania, the upgrade of the existing substations, and the construction of new switching stations. This project is part of the broader Northwest Transmission Developments (NWTD) proposed by Tas Networks and is referred to as the Remaining NWTD (the project). It is being delivered in two stages, with the current focus on Stage 1. The following describes the details of this project:

Stage 1

- **Palmerston – Sheffield OHTL.** A new double circuit 220 kV OHTL between Palmerston station and Sheffield. The existing single circuit 220 kV OHTL between the Palmerston and Sheffield substations will be dismantled.
- **Sheffield – Heybridge OHT via Stowport.** A new double circuit 220 kV OHTL between the Sheffield substation and a proposed switching station at Heybridge. The proposed switching station at Heybridge is not part of this project. The existing single circuit 220 kV OHTL will be dismantled.
- **Heybridge – Burnie OHTL via Stowport.** A new double circuit 220 kV OHTL between the proposed Heybridge switching station and Burnie substation. The existing single circuit 220 kV OHTL between the Sheffield and Burnie substations will be dismantled.

Stage 2

- Burnie to East Cam (not included)
- East Cam to Hampshire Hills (not included)

As outlined in Figure 1.1, the NWTD project is located across various sites.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

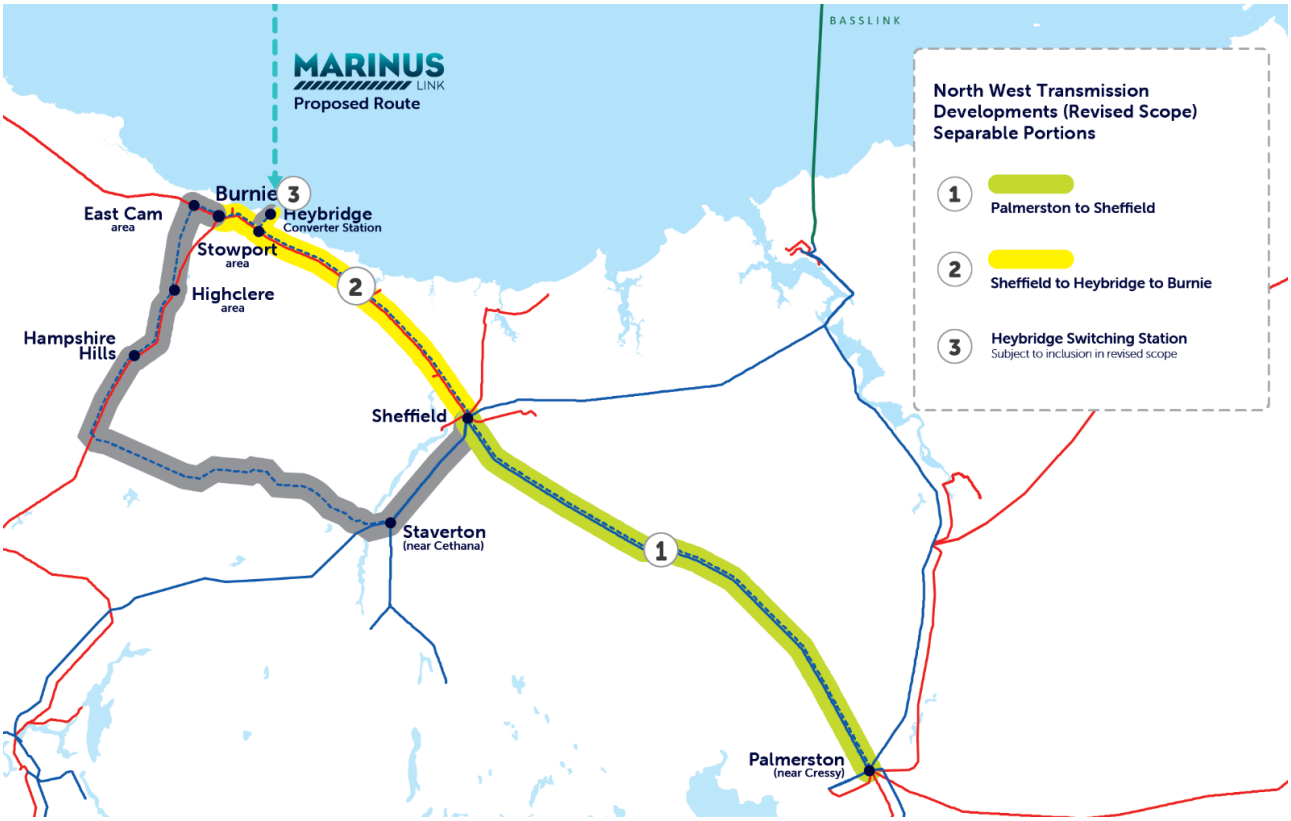


Figure 1.1 NWTD Project outline

1.2 NWTD and potential impacts on vibration

Vibration is likely to occur from construction activities for access roads, tower foundations and switching station earthworks.

In Tasmania, there is no standard or regulation that specifies criteria for the control of construction vibration levels. In lieu of this, the Vibration Assessment references the NSW Roads and Maritime Services Construction Noise and Vibration Guideline (CNVG) published August 2016. Empirical limits are presented as effects on buildings and effects on humans, with effects on buildings (such as cosmetic damage) depending on whether the vibration is short term or long term, whereas the effects on humans depend on whether the vibration is continuous, intermittent or occasional. Distance to sensitive receptors were used to inform the risk assessment process, using the safe working distances detailed in the NSW CNVG.

The risk assessment is a preliminary screening method. The findings were that the construction of access roads in some locations present a risk of cosmetic damage to properties when using vibrating rollers over 100 kN (typically 2-4 tonnes). However, the number of receivers where this is a risk is small, and can be managed through appropriate plant selection, consultation, and vibration monitoring if required.

In terms of effects for humans, with the work intermittent in nature, and over relatively short periods, this is likely to be acceptable to sensitive receptors. However, ongoing engagement and proactive mitigation of risk will be a necessary measure during construction.

1.3 Sustainability support

GHD was engaged by Genus to be a part of the sustainability team support associated with NWTD, providing the sustainability support to obtain Infrastructure Sustainability (IS) v2.1 Design and As Built Rating. The sustainability target of this project is a minimum score of 30 points (Bronze) for both the Design and As Built phases. GHD was assigned 14 credits, including those related to environmental impacts, ecology, stakeholder engagement, heritage, and workforce sustainability.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Genus provided a phased schedule for the IS rating, which included critical milestones throughout the project. At the 70 percent design gate of the Project, a CEMP was developed for submission to TasNetworks, including a Noise and Vibration Management Subplan. The CEMP will be updated at the 90 percent design gate, with any sustainability rating requirements integrated into the management and monitoring measures.

1.4 IS rating requirements

The Infrastructure Sustainability (IS) Rating Scheme, developed by the Infrastructure Sustainability Council (ISC), is designed to assess the sustainability efforts of infrastructure projects, focusing on their environmental, social, and economic impacts. This framework is intended for a broad range of stakeholders, including project proponents, designers, and teams involved in construction and operations, guiding sustainable practices across design, procurement, construction, and operational stages.

The ISC rating requirements are structured around four key themes: governance, economic, environmental, and social, which are further divided into 16 categories and 37 credits. Each credit has specific criteria outlining the necessary actions, documentation, and evidence to demonstrate compliance. The credit levels—ranging from basic to advanced—reflect the sustainability practices implemented at various stages of the project. Achieving higher levels requires stronger evidence of sustainability outcomes.

This memorandum focuses on the Environmental theme under the Environmental Impact category, specifically the Env-3 Vibration credit. The over-arching intent of the Env-3 credit is **to manage vibration impacts and improve amenity for vibration receptors.**

For the Env-3 Vibration credit, the following actions are required for compliance:

– Conduct a **Vibration Risk Assessment** to identify location, extent, type and sensitivity of vibration receptors and their pre-existing exposure to vibration
– Undertake **modelling for vibration** for the construction and operation phases of the project
– Establish **SMART goals** for vibration during construction and operation
– Measures to achieve vibration goals have been **identified and implemented**
– Develop **monitoring program** for vibration receptors with regard to the project's vibration goals
– Review impacts, controls and mitigation measures with a**ffected stakeholders**
– **Modelling demonstrates no exceedances of vibration goals** for buildings and structures, and now recurring or major exceedances of vibration goals for human comfort in buildings.

The key document for the Env-3 Vibration credit is Part C-Appendix I - Environmental Impact Statement – Noise and Vibration. This document provides relevant evidence for baseline studies and outlines the nearest sensitive areas along the proposed project routes, all of which are categorized under DL1.1 requirements.

1.5 Management measures committed to in EIS

Attachment 5 of the Environmental Impact Statement (EIS) provides a list of management measures committed to. Whilst these may differ from the final permit conditions, they provide insight into likely conditions. Relevant to vibration is DCM499. Most of the content is more relevant to noise rather than vibration, but for completeness the entire commitment is provided below.

Implement a noise and vibration management plan to manage noise and vibration impacts on sensitive receivers. As a minimum, the plan will include:

– Identifying priority and high priority noise management zones.
– Consulting with communities in priority and high priority management zones to identify any feasible scheduling and duration plans to minimise disruption (e.g., identification of the most sensitive time periods for the local community and gauging the potential merits of more intensive work practices if the duration of the works can be reduced).

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

– Prioritising efficient work practices that minimise the duration of work in the vicinity of sensitive receivers, particularly where there is potential for multiple work locations to be within priority or high priority management zones. This may involve completing work at the locations simultaneously, which may increase noise, but avoid prolonged exposure to noise.
– Scheduling noisy work on weekdays (i.e., avoiding Saturday, Sunday and public holidays), and during less sensitive periods of the day (i.e., avoiding the shoulder periods at the start and end of the day) as far as practicable, particularly in high priority management zones.
– Notifying neighbouring properties and local communities prior to commencing unavoidable works or noisy activities outside normal working hours on the nature and duration of planned works. Unavoidable works are defined as:
    - Works that need to be undertaken without a break in program, such as concrete pouring.
    - Delivery of essential, oversized plant or equipment.
    - Time sensitive maintenance or repair of public infrastructure.
    - Emergency works required due to unforeseen circumstances.
– Scheduling and undertaking construction activities in accordance with the Environmental Management and Pollution Control (Noise) Regulations 2016 (EMPC noise regulations) unless unavoidable works are required. Where unavoidable works are required, consult relevant authorities on the nature and duration of planned works.
– Locating temporary access roads and laydowns as far as practicable from sensitive receivers.
– Turning off vehicles, plant and equipment when not in use or throttling down when used intermittently.
– Planning work and arranging worksites to take advantage of existing noise barriers, such as buildings and topography, where practicable.
– Maximising separation distance between demarcated habitat features and noise-generating equipment.
– Using low noise emission equipment, by selection of inherently low noise emission equipment (e.g., plant which already incorporates standard noise attenuation) or using noise barriers or similar structures to shield sensitive receivers in high priority noise management zones from noise.
– Obtaining approved instrument in accordance with the Environmental Management and Pollution Control (Noise) Regulations 2016 if planning to use a chainsaw powered by an internal combustion engine within 300 m of residential premises.
– Managing construction noise in accordance with Australian Standard AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.
– Managing helicopter-generated noise through implementing the TasNetworks Helicopter Operations Procedure, which includes liaison with affected parties and identification of ‘no fly’ zones.
– Turning off vehicles, plant and equipment when not in use or throttling down when used intermittently.
– Selecting equipment, designing methods, and conducting works (e.g., rock hammering or piling) in a manner that does not cause structural or cosmetic damage to buildings from vibration impacts.

1.6 Purpose of this memorandum

This memorandum has been prepared to provide a response on some of the requirements of the Infrastructure Sustainability (IS) V2.1 rating framework, specifically aspects relating to credits Env-3 (Vibration). This should be read in conjunction with the Construction Environment Management Plan (CEMP), particularly on matters for the construction phase. The basis for this memorandum is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-3 (Vibration).

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

1.7 Scope and limitations

This memorandum has been prepared by GHD for Genus Services Pty Ltd and may only be used and relied on by Genus Services Pty Ltd for the purpose agreed between GHD and Genus Services Pty Ltd as set out in Section 0 of this memorandum.

GHD otherwise disclaims responsibility to any person other than Genus Services Pty Ltd arising in connection with this memorandum. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this memorandum were limited to those specifically detailed in the memorandum and are subject to the scope limitations set out in the memorandum.

The opinions, conclusions and any recommendations in this memorandum are based on conditions encountered and information reviewed at the date of preparation of the memorandum. GHD has no responsibility or obligation to update this memorandum to account for events or changes occurring subsequent to the date that the memorandum was prepared.

The opinions, conclusions and any recommendations in this memorandum are based on assumptions made by GHD described in this memorandum (refer Section 1.8 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.8 Assumptions

This memorandum is subject to the following assumptions and limitations:

– The client and the project team recognise the extent of the requirements in achieving the project's sustainability goals under the IS v.2.1 rating scheme and understand that these cannot be achieved with a 'business as usual' approach to the project.
– While GHD is committed to supporting the project in achieving the target sustainability rating, the final outcome may be influenced by factors beyond our direct control. As such, GHD cannot be held liable if the project does not meet the target IS rating or the individual credit scores.
– GHD is entitled to rely on information provided by Genus and its client (Tas Networks) consultants and contractors in performing our assistance. We will not perform any validation or verification of information provided outside of what is within the agreed scope of work.
– This memorandum is based on reports made available to GHD at the time of writing. Any additional information or further iterations of environmental assessment documents will need to be considered during the design phase, but this report will not be updated.
– The CEMP and Noise and Vibration Management Subplan documents referred to in this memorandum were prepared at the 70% design gate. These documents will be updated at the 90% design gate and will have ongoing iterations during Project implementation.

2. Gap analysis

A Gap Analysis memorandum has been provided to Genus to highlight what has been achieved to date in documenting vibration. Our team has reviewed all available information to date and presents this memorandum to inform the next steps.

2.1 Response to gaps identified

This memorandum has been prepared to provide a response on some of the requirements of the Infrastructure Sustainability (IS) V2.1 Design and As Built Rating, specifically aspects relating to Env-3 (Vibration) credit. This memorandum should be read in conjunction with the CEMP, particularly on matters for the construction phase, which I have also provided input to and reviewed, noting that at the time of

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

writing this memorandum, this refers to the 70% design gate CEMP, which will be updated at the 90% design gate.

The basis for this memorandum is to respond to certain requirements that are not easily covered off by the CEMP, specifically operational requirements, although some construction advice is provided in relation to Env-3 (Vibration).

The Env-3 (Vibration) credit outlines general method for understanding the existing background (baseline) vibration to enable predictions for construction and operation, including setting vibration goals. Advice regarding the adopted approach for operational predictions, goals, measures and monitoring is addressed below.

For this Project, vibration impacts are not anticipated during operation. During construction, the main vibration impacts are those from operation of plant and machinery. This is discussed further below for each ISC requirement.

2.1.1 DL1.1 The location, extent, type and sensitivity of vibration receptors and their pre-existing exposure to vibration have been determined

Baseline studies must be undertaken by SQP to identify and assess the pre-existing vibration environment prior to potential project impacts. Relevant environmental parameters that may include:

- ***Seasonal or time of day variations (whichever is more appropriate for establishing accurate baselines)***
- ***Specific local variations, representative sampling and links to activities likely to affect the baseline (such as nearby construction works or rail transport services)***
- ***The measurement criteria, indicators or factors used in the assessments***

The Technical Noise and Vibration Report states that background vibration levels in remote rural and suburban environments are likely negligible in most instances in Section 5 (pg. 38).

The factors used in the risk assessment are taken from the Technical Noise and Vibration Report reference the NSW Roads and Maritime Services *Construction Noise and Vibration Guideline* (CNVG) published August 2016. Empirical limits are presented as effects on buildings and humans, with effects on buildings (such as cosmetic damage) depending on whether the vibration is short term or long term. In contrast, the effects on humans depend on whether the vibration is continuous, intermittent or occasional. Distance to sensitive receptors was used to inform the risk assessment process, using the safe working distances detailed in the NSW CNVG. (Section 3.3, pg. 32-35).

There is no detailed investigation of baseline vibration. I have reviewed the existing land use within and surrounding the Project, as well as the length of the development, and the location and time specific nature of vibration, and consider this approach appropriate. Without other existing sources of vibration emissions, measuring existing background vibration levels is not warranted.

2.1.2 DL1.2 Modelling for vibration has been developed for the construction and operation phases of the project

Vibration impacts must be modelled for the construction and operation phases of the project and consider a comparison against the baseline data.

Vibration impacts were projected using recommended minimum working distances between vibration intensive plant and sensitive receptors during construction. Table 6 (pg. 31 of the Technical Noise and Vibration Report) provides expected vibration levels from equipment likely to be used in construction, documenting the minimum working distances required to prevent cosmetic damage to buildings, and to prevent a negative human response, with variation depending on local geotechnical conditions, condition of

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

buildings, and the particular item of plant in use. The minimum working distances are derived from the NSW *Construction Noise and Vibration Guideline* (CNVG), which informs the modelling analysis.

There are no vibration impacts expected from the operational phase of the project.

The above presents a risk based approach based on conservative estimates of buffer requirements and mapping of sensitive receptors to predict vibration management zones. The mapping serves as a form of modelling commensurate with the project risk.

I have reviewed this approach and find it to be appropriate from both a technical and management perspective.

Modelled impacts must be developed by a suitably qualified professional and incorporate all equipment proposed to be used through the project's construction and operation that could result in vibratory impacts.

The main activities that are most relevant to ground vibration are outlined in Table 16 (Section 6.2, pg. 50 of the Technical Noise and Vibration Report). Table 6 (pg. 31) provides expected vibration emissions from the equipment likely to be used in construction, documenting the minimum working distances required to prevent cosmetic damage to buildings, and to prevent a negative human response.

I have reviewed this approach and find it to be appropriate from both a technical and management perspective.

Modelled impacts must factor in sensitive receptors and the increased vibration impacts they experience, as well as accumulated impacts (i.e. multiple impacts affecting the same receptor, such as fatigue due to concurrent or enduring construction impacts)

Table 16 of the Noise and Vibration Report summarises the construction activities to ground vibration and relevant receiver distances. Section 6.4 considers cumulative impacts associated with other proposed and foreseeable developments in the regions of the Project. Section 6.4 states in terms of construction, the risk of cumulative noise is low on account of the transient nature of construction impacts (particularly for the construction activities along the project route) and the separation of the projects.

I have reviewed this approach and find it to be appropriate from a technical perspective.

Dilapidation surveys must be undertaken for properties at a high risk of being impacted by vibration

The Noise and Vibration Report did not undertake the dilapidation surveys as the risk of vibration impact for properties is considered as low. The report mentions that buffer distances may be lower for heritage buildings (note at the bottom of Table 6, pg. 32).

Dilapidation surveys will be implemented as part of the Noise and Vibration Management Subplan procedures for any buildings at risk (those located in the Vibration Management Zones in the maps). A risk analysis and where required, a dilapidation survey will be completed. Having a condition assessment of houses (e.g. photographing any existing wall cracks) will provide a record for comparison of any claims that damage was cause from construction. From a sustainability viewpoint, having this baseline data will also highlight risk at a more detailed site level, and inform construction actions to minimise the potential for impact to sensitive receptors.

Where the risk of vibration from operation is insignificant, modelling of operational vibration impacts is not required. Suitable evidence to demonstrate that the risk from vibration is insignificant must be provided.

Noise and Vibration Report states that the operational vibration impacts are negligible. I have reviewed and concur with this conclusion.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

2.1.3 DL1.3 Vibration goals have been identified for construction and operation

SMART vibration goals must be established and cover both the construction and operational phases. The project's vibration goals must include no physical damage to buildings or structures attributable to the project. Documentation for goals must outline:

- ***The intended outcomes (measurable/quantifiable)***
  - ***Damage to buildings and structures***
  - ***Human comfort in buildings***
- ***Any assumptions made, with relevant calculations***

Section 3.3 of the Technical Noise and Vibration Report outlines the minimum working distances from receivers for the typical vibration-intensive plant, as specified in the NSW CNVG. Section 3.3.2 states that where vibration monitoring is found to be warranted during the construction stage (as a result of activity occurring at distances less than or comparable to the indicative minimum working distances), guidance on vibration dose values for human comfort is provided in Table 7 (pg. 32).

Table 7 indicates vibration dose value ranges that may result in probabilities of adverse comments in relation to human comfort. Table 8 (pg. 32) provides acceptable vibration dose values for intermittent vibration in relation to human comfort in buildings.

Table 9 (pg. 33) provides criteria that can be used to specify vibration criteria for building damage. This covers three types of buildings – commercial and industrial buildings, residential buildings, and structures sensitive to vibration, such as heritage listed buildings.

Assumptions:

- Although the minimum working distances provided in the CNVG are based on continuous vibration sources, the construction activities in this project are likely to generate intermittent vibration. Therefore, continuous vibration is adopted as a conservative assumption, under which higher short-term vibration levels may be acceptable (Section 3.3.1, pg. 31).
- For buildings, there are no Australian standards for vibration criteria for building damage. A widely accepted international standard – *German Standard DIN 4150-3:2016-12 Vibration in buildings Part 3: Effects on structures* (DIN 4150-3) is used to provide assessable vibration criteria.
- SMART vibration goals have been established in Section 6 of the CEMP Noise and Vibration Management Subplan, as recommended in the Noise and Vibration Assessment Report. Goals include intended outcomes and how they will be monitored (Section 9).
- For operations, it is assumed there will be no vibration emissions, and therefore, SMART vibration goals are not required.

How the baseline data and modelled impacts have been incorporated

The activities that are most relevant to ground vibration considerations are listed in Table 16 (pg. 50). Maps identifying access road sections where the minimum separating distance is less than 25 m are presented in Appendix E.

Vibration SMART goals have considered the maps (Appendix E), as they are based on the Vibration Management Zones which have been established.

The Technical Noise and Vibration Report states that background vibration levels in remote rural and suburban environments are likely negligible in most instances in Section 5 (pg. 38). There is no detailed investigation of baseline vibration. I have reviewed the length of the development, and the location and time specific nature of vibration, and consider this approach appropriate.

Vibration goals must be reviewed by a SQP against the IS requirements.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

If the vibration goals are adopted from the Noise and Vibration Assessment, this was authored by Justin Adcock, an Associate with extensive experience in environmental noise measurement, modelling, and impact assessment.

I have reviewed this approach and find it to be appropriate from a technical perspective.

2.1.4 DL1.4 Measures to achieve vibration goals during construction and operation have been identified and implemented

Measures to meet the vibration goals (DL1.3) must be identified for construction and operation

Some broad mitigation measures have been recommended in the Technical Noise and Vibration Report including:

– Equipment used in construction activities, such as vibratory rollers, should be selected and used with caution to address the risk of cosmetic damage to any receivers within 25 m (Section 7, pg. 57).
– There is no blasting proposed as part of construction methods.
– Construction works should be scheduled during the day period and adhere to the time periods specified by the EMPC noise regulations, to minimise vibration during the night, unless unavoidable works are required (Section 2.3.2, pg. 20).
– Consultation with potentially affected receivers and vibration monitoring if/where required (Section 6.2, pg. 50).

Measures to meet vibration goals have been clearly identified and detailed within the Noise and Vibration Management Subplan in Section 7.

In the design phase, measures to be implemented for construction and operation must be detailed in relevant documents, i.e. measures incorporated into the design to mitigate impacts or improve amenity in operation, and controls specified to mitigate impacts or improve amenity during construction.

There are limited opportunities to reduce vibration emissions through design choices, for example opportunities for micro-siting. Therefore the need for mitigation during construction becomes central to sustainability outcomes. The route options assessment completed as part of the EIS, and going forward, the Change Management Process, will take into consideration any opportunities. For example, any time a tower is moved or alignment changes for any sort of reason, the design team as part of the change management process, documents the basis for the change decision. Where possible, Genus should also consider documenting secondary benefits such as reduced vibration impacts to sensitive receptors.

The scheduling of construction activities, cautious equipment selection and operation, and dedicated community notification and consultation procedures for construction activities are the primary mitigation measures for the construction phase (Section 2.3.2, pg. 20 and Section 7, pg. 56-57).

Noise and Vibration Report states that the operational vibration impacts are negligible. I have reviewed and concur with this conclusion.

Measures to mitigate vibration and meet vibration goals have been clearly identified and detailed within the Noise and Vibration Management Subplan in Section 7.

Where exceedances are predicted, these predicted exceedances must be clearly identified with the appropriate control measures to limit the scale of the impact.

Measures to meet vibration goals have been clearly identified and detailed within the Noise and Vibration Management Subplan in Section 7.

2.1.5 DL1.5 Monitoring requirements for vibration receptors have been determined with due regard to the project's vibration goals

A vibration monitoring program must be prepared in line with the relevant project goals (DL1.3) and for all scenarios where the risk warrants and outlined:

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

- ***Monitoring objectives***
- ***Risk assessment outcomes used to determine monitoring requirements***
- ***Monitoring methods***
- ***The frequency, duration and locations of monitoring, any relevant triggers***
- ***The parameters to be monitored***

The Technical Noise and Vibration Report states that a vibration monitoring program should be implemented where there is potential for vibration impacts on receptors (Section 6.2, pg. 50 and Section 3.3.2, pg. 32).

Maps showing the location of vibration management zones for Stage 1 are presented in Appendix E (pg. 255-276). This forms the basis for the monitoring program.

Vibration monitoring to meet vibration goals has been clearly identified and detailed within the Noise and Vibration Management Subplan in Section 9.

2.1.6 DL2.1 Vibration impacts, controls and mitigation measures have been reviewed with affected stakeholders

Affected stakeholders (e.g. asset owners, local community, building occupiers) must be informed of the results of vibration modelling for construction and operations and engaged to review the project's vibration goals, and the choices and potential consequences of mitigation measures for construction and operations.

Concerns about vibration may have been raised and documented in some of the public forums and opportunities for feedback during the conceptual design and EIS process. It is recommended that the TasNetworks Stakeholder Engagement Team provide this detailed data to Genus, as it may provide evidence that vibration issues have been discussed with stakeholders during the early planning and design processes.

During the current phase of detailed design, it is critical that consultation is proactive rather than reactive. Specific information on potential vibration impacts and mitigation measures must be provided to affected stakeholders for their review and input. This provides the opportunity to improve mitigation measures in response to sensitivities that were not picked up during the EIS study, including heritage listed or older buildings or the existence of equipment that may be sensitive to vibration. This early engagement with affected stakeholders provides the opportunity to prevent impacts during construction.

As the construction stage approaches, consultation must clearly provide a schedule of works and information on potential local impacts, including vibration. There needs to be clear pathways for affected stakeholders to raise complaints, but more importantly, they need the opportunity for input into appropriate mitigation measures from the outset to avoid complaints where possible.

Pre-construction engagement will include dialogue with people likely to be impacted by vibration, particularly during the individual landholder agreement process. It is important that this dialogue, including any additional vibration mitigation measures, is documented. In addition, a feedback register will be established for all complaints and resolutions. This has been developed as part of the CEMP, with specific aspects related to noise emissions incorporated in the Noise and Vibration Management Subplan.

The project must demonstrate how they have considered stakeholder inputs in proposed vibration controls and mitigation measures.

The Noise and Vibration Management subplan of the CEMP outlines methods for stakeholder engagement, particularly for affected land owners and neighbouring properties. During this engagement, the potential impact of vibration and proposed mitigations must be discussed. Affected stakeholders must be able to raise any sensitive receptors that may be impacted and propose additional mitigation measures. This must be documented in the Noise and Vibration Management subplan. An ideal opportunity is to undertake this consultation prior to the 90% design gate, so that the updated CEMP can reflect inputs from affected stakeholders.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

A further opportunity for the Project to demonstrate stakeholder inputs is each individual landholder agreement. Additional mitigation or monitoring measures over and above the CEMP can be included in these localised management plans if there are particular concerns from the landholder in relation to vibration impacts.

2.1.7 DL2.2 Modelling demonstrates no recurring or major exceedances of the vibration goals

Modelling must demonstrate that there are no exceedances of vibration goals for damage to buildings and structures for construction and operations

Section 8 concludes that cosmetic damage to buildings is unlikely at most locations, and the number of receivers where this is a risk is small; however, mitigation measures will be implemented. Equipment such as vibratory rollers must be carefully selected and operated to address the risk of cosmetic damage to any receivers within 25 metres (pg. 59).

Modelling needs to be reviewed in relation to vibration goals. There will need for more detailed site based assessments in the mapped Vibration Management Zones, particularly in the vicinity of heritage buildings.

The Technical Noise and Vibration Report presents a risk based analysis model rather than quantitative modelling, where vibration management zones are identified, signalling the need for strengthened mitigations. Measures to mitigate vibration and meet vibration goals have been clearly identified and detailed within the Noise and Vibration Management Subplan in Section 7.

As the project progresses, modelling (risk assessment) will be reviewed to demonstrate that no major or recurring exceedances are going to occur. The vibration goals have been selected to avoid regular or recurring exceedances.

Noise and Vibration Report states that the operational vibration impacts are negligible. I have reviewed and concur with this conclusion.

Modelling must demonstrate that there are no recurring or major exceedances of vibration goals for human comfort criteria for operations

Noise and Vibration Report states that the operational vibration impacts are negligible. I have reviewed and concur with this conclusion.

Modelling of construction and operational vibration must be completed for all scenarios where the risk to sensitive receptors warrants, and the risk levels justified

The modelling (risk assessment) of construction vibration considered three key activities with the potential to impact human response and cause property damage: access road construction, tower foundation works, and earthworks at switching stations. The results show that access road construction poses the greatest potential for ground vibration impacts, particularly for receptors within 25 metres. For the other activities, the risk of vibration impact is considered negligible (Section 6.2, pg. 50).

According to the CNVG guideline, the reference minimum separation distance for managing human response to continuous vibration is 100 metres. However, vibration emissions from most construction activities are expected to be intermittent in nature and short term (see Table 1, pg. 19). As such, higher vibration levels over shorter durations are considered acceptable, in line with the guidance provided in BS 6472-1. Specific mitigation measures will be implemented for receptors located within 25 metres, including careful equipment selection and community consultation (Section 6.2, pg. 50).

The modelling uses a risk based approach based on distances. I have reviewed this approach and find it to be appropriate and no further modelling is required.

Ecological receptors have been assessed separately in Appendix A of the EIS – Ecology (Eco-1a). Potential disturbance of fauna including eagles, Tasmanian devils and quolls from both noise and vibration has been assessed. Disturbance to maternal dens through vibration for both devils and quolls may impact breeding, and as such a range of mitigation measures have been outlined to identify and avoid dens. Mitigation measures to protect Tasmanian wedge-tailed eagles have also been developed, including

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

avoidance of any construction activities within 500 m or 1 km line of sight of a known nest site during the breeding cycle. The detailed measures to minimise impact from vibration will be covered in project-specific management plans following the detailed ecological surveys. This risk-based approach is appropriate for ecological receptors.

3. Summary response to key gaps identified

This memorandum has been provided primarily to resolve the following gaps which have previously been identified:

– Review of approach to the assessment, and endorsement of risk-based mapping against the standards as an appropriate response in alignment with the risk.
– Review of likely existing vibration sources and confirmation that accumulated vibration impacts are of negligible concern.
– Confirmation that no blasting, tunnelling or high vibration activities will occur.
– Confirmation of the negligible vibration that will occur during the operational phase of the Project.

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Table 3.1 Summary of additions required for CEMP Subplan

ISC requirement		CEMP Subplan reference	Additional work required
DL1.1	The location, extent, type and sensitivity of vibration receptors and their pre-existing exposure to vibration have been determined	N/A	Nil
DL1.2	Modelling for vibration has been developed for the construction and operation phases of the project	Section 6, Table 8	Nil
DL1.3	Vibration goals have been identified for construction and operation	Section 6.2, Tables 6, 7, 8 and 9	Nil
DL1.4	Measures to achieve vibration goals during construction and operation have been identified and implemented	Section 10, Table 17	Nil
DL1.5	Monitoring requirements for vibration receptors have been determined with due regard to the project's vibration goals	Section 9	Nil
DL2.1	Vibration impacts, controls and mitigation measures have been reviewed with affected stakeholders	Section 11, Table 18	Need to ensure this has occurred as part of ongoing consultation and individual landholder agreements. This will be further reviewed at 90% design gate CEMP and subplans.
DL2.2	Modelling demonstrates no recurring or major exceedances of the vibration goals	N/A	Nil

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Technical Memorandum

4. Project document references

Table 4.1 Reference documents for Env-3 credit

Document	CSF Reference
Appendix I of EIS. Noise and Vibration Assessment Report	Env-3a
Justin Adcock CV (SQP for Noise and Vibration Assessment Report)	Env-3b
Env-3 Noise Gap Analysis Report	Env-3c
CEMP Air Noise and Vibration Management Subplan	Env-3d
James Forrest CV (SQP for Noise and Vibration Management Subplan and this memorandum)	Env-3e
Appendix A of EIS. Ecology	Eco-1a

5. Closing

I trust this information provides clarification and background on potential vibration and impacts for the Project. Should you require additional information, please do not hesitate to contact me.

Kind regards

James Forrest
Technical Director - Air Quality, Noise and Tunnel Ventilation

This Technical Memorandum is provided as an interim output under our agreement with Genus Infrastructure (NSW) Pty Ltd. It is provided to foster discussion in relation to technical matters associated with the project and should not be relied upon in any way.

Appendix C

Maps – High priority management zones (extracted from NWTD Noise and Vibration Assessment, Marshall Day Acoustic, 7 March 2025)

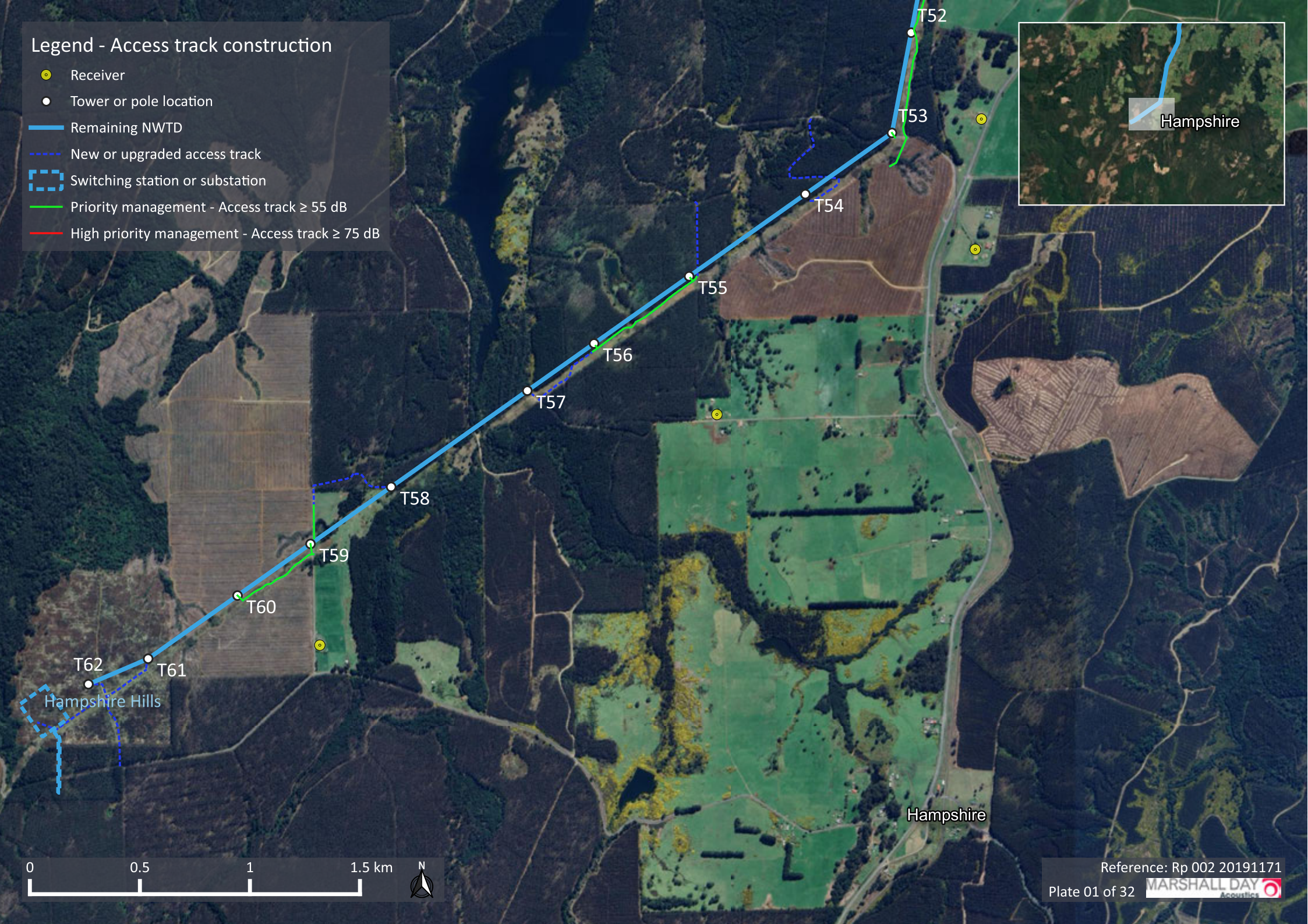
APPENDIX D PRIORITY AND HIGH PRIORITY MANAGEMENT ZONE MAPS

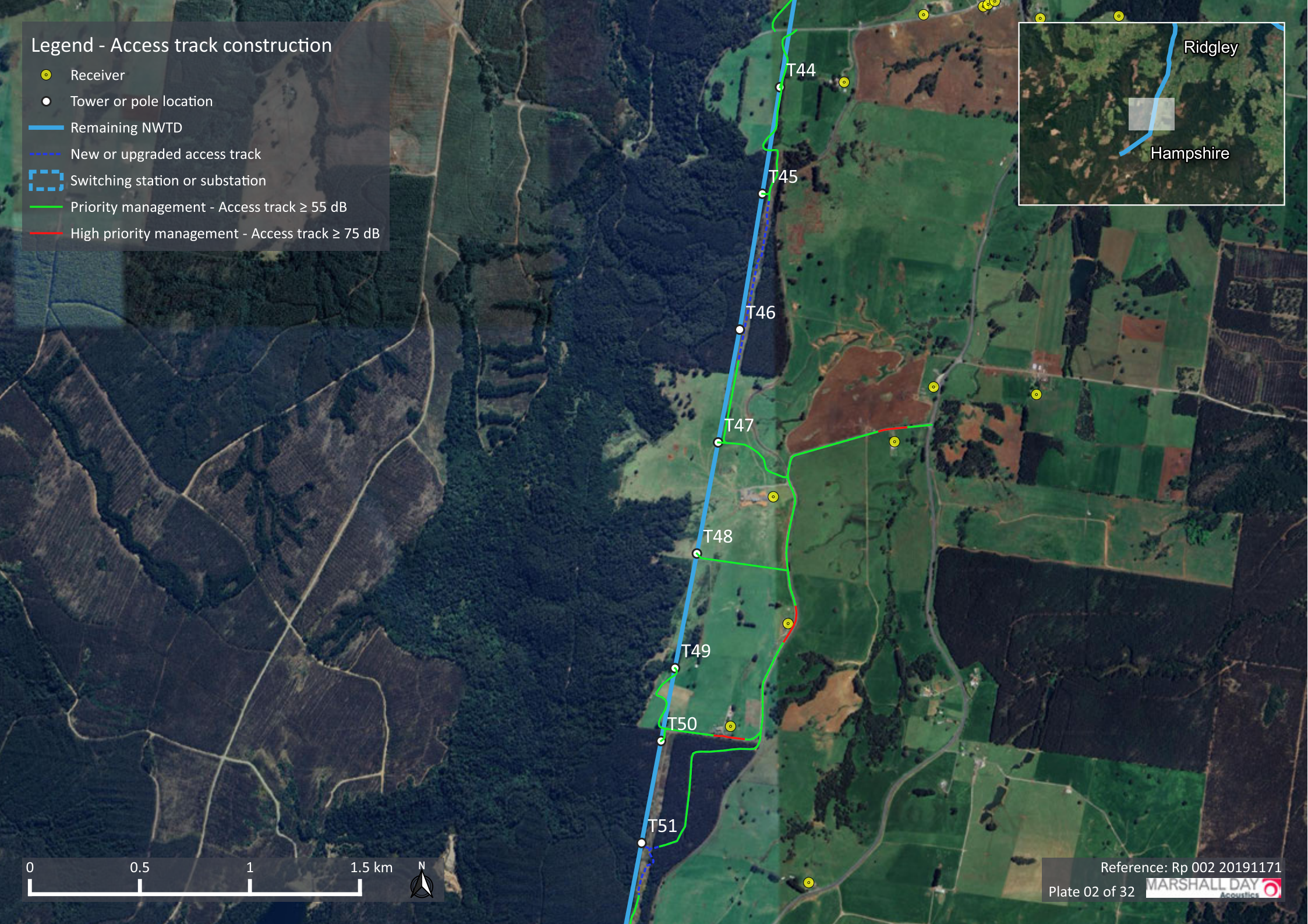
This appendix presents priority and high priority noise management zone maps for construction activity during normal working hours at the following locations:

- Access track construction
- Vegetation clearance
- Temporary facilities and laydown areas
- Tower foundations – rock dowel
- Cable stringing
- Switching station – Earthworks/Civil
- Switching station – Infrastructure.

The priority noise management zone maps identify the activity locations where the highest predicted noise levels extend above 55 and 75 dB L_{Aeq} (see Section 4.1.1 for the basis of these reference levels), corresponding to priority and high priority work locations for construction noise control.

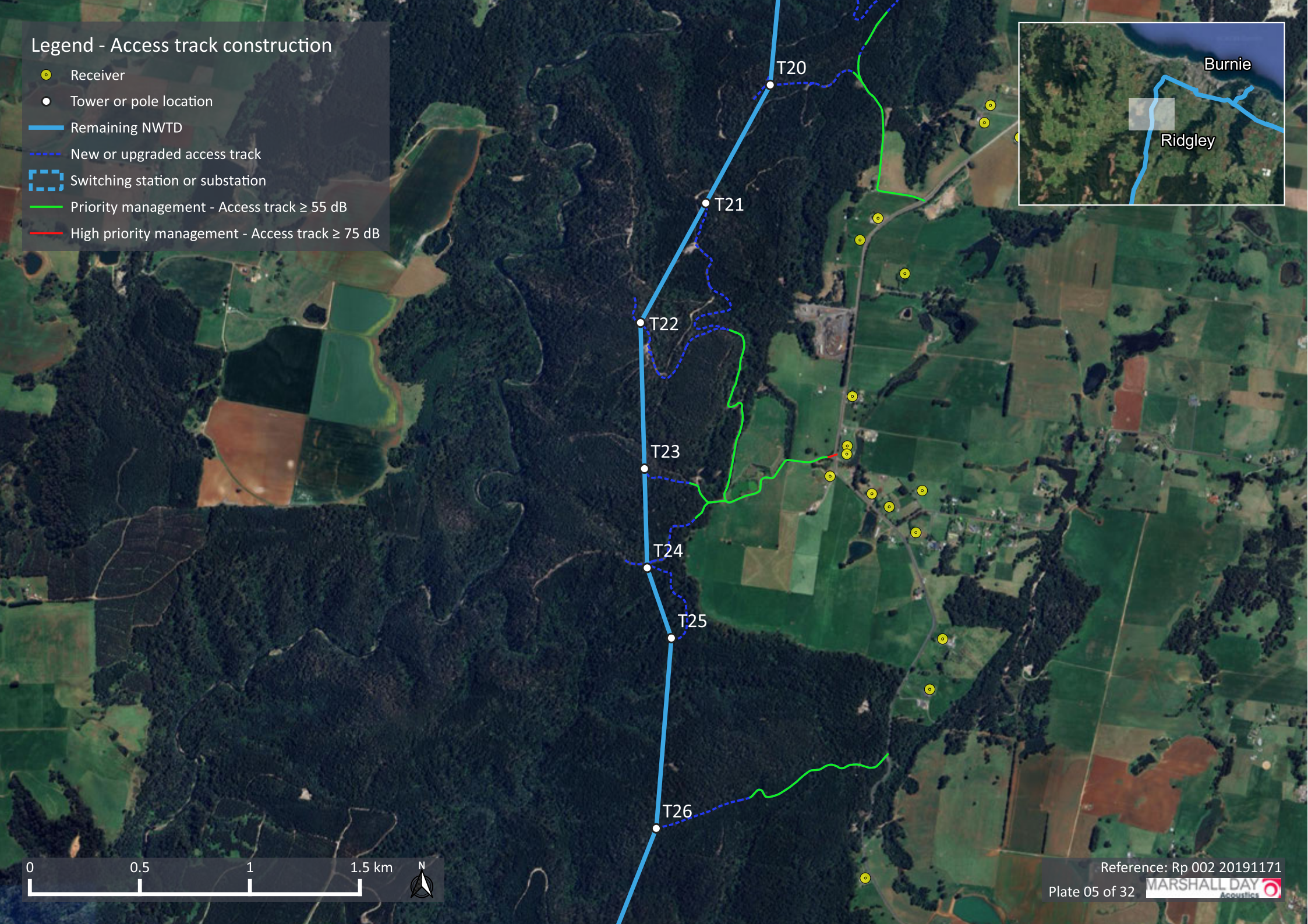
D1 Access track construction

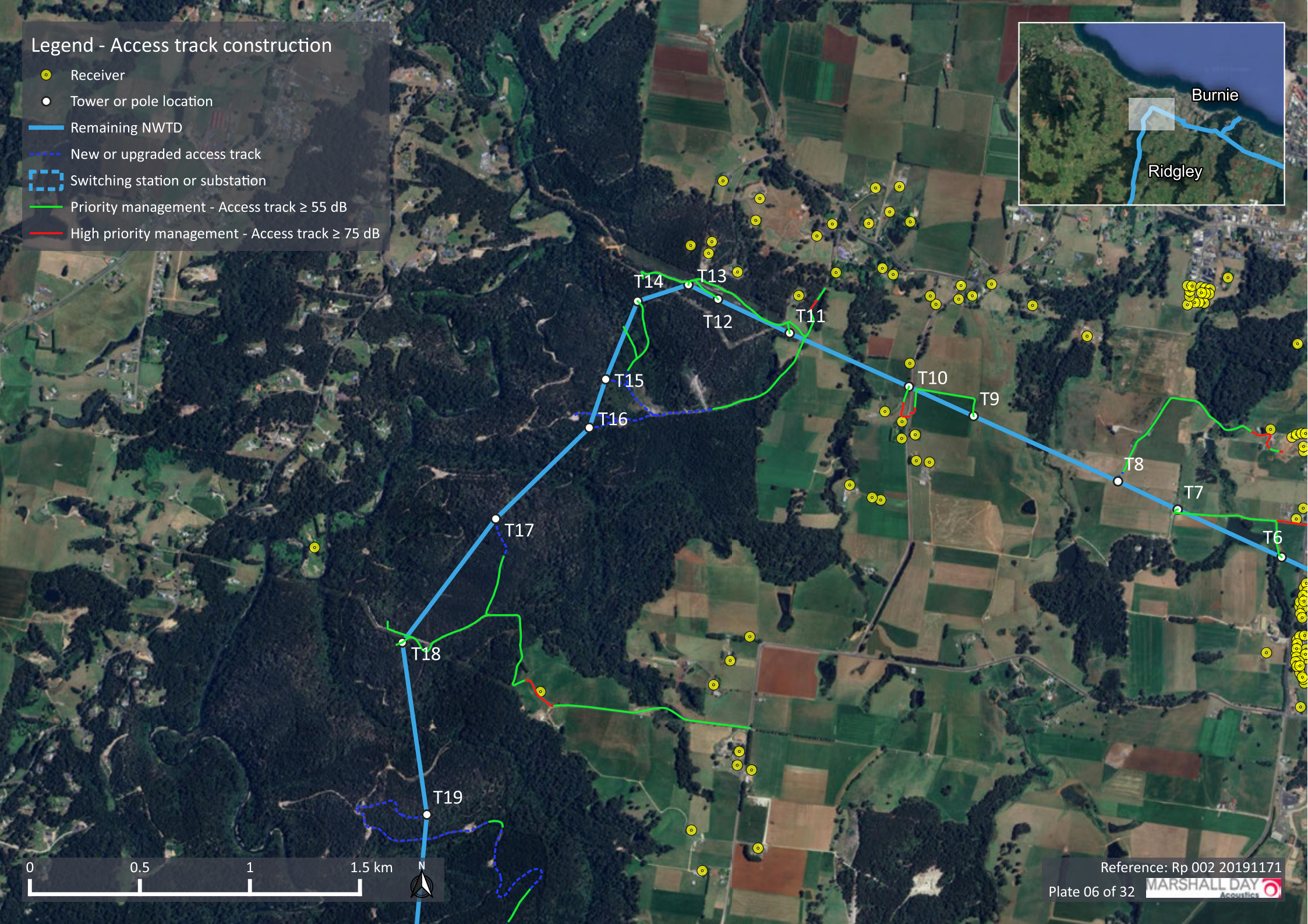

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T52
T53
T54
T55
T56
T57
T58
T59
T60
T61
T62
Hampshire Hills
Hampshire
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 01 of 32
MARSHALL DAY Acoustics

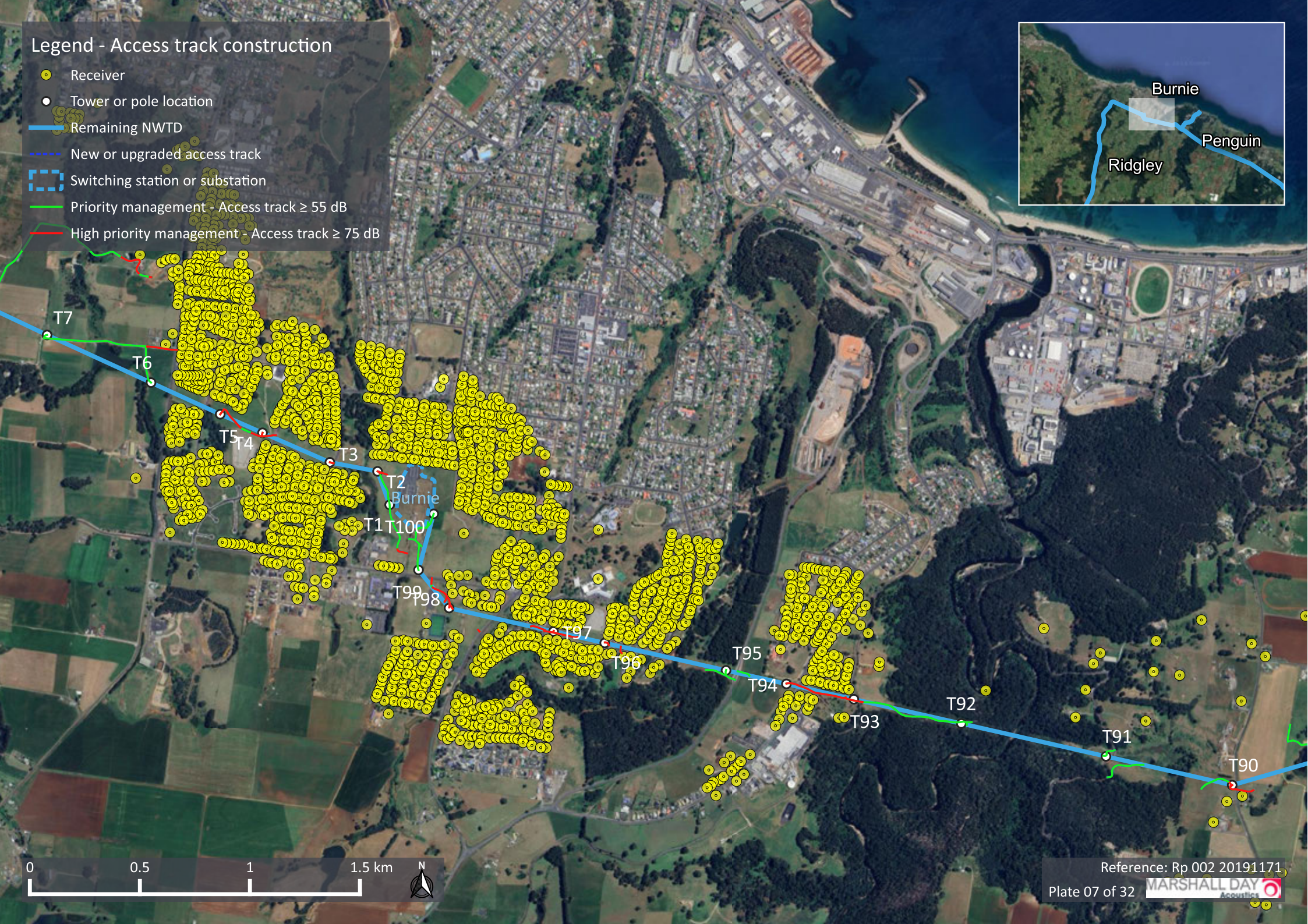

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T44
T45
T46
T47
T48
T49
T50
T51
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 02 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T35
T36
T37
T38
T39
T40
T41
T42
T43
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 03 of 32
MARSHALL DAY Acoustics

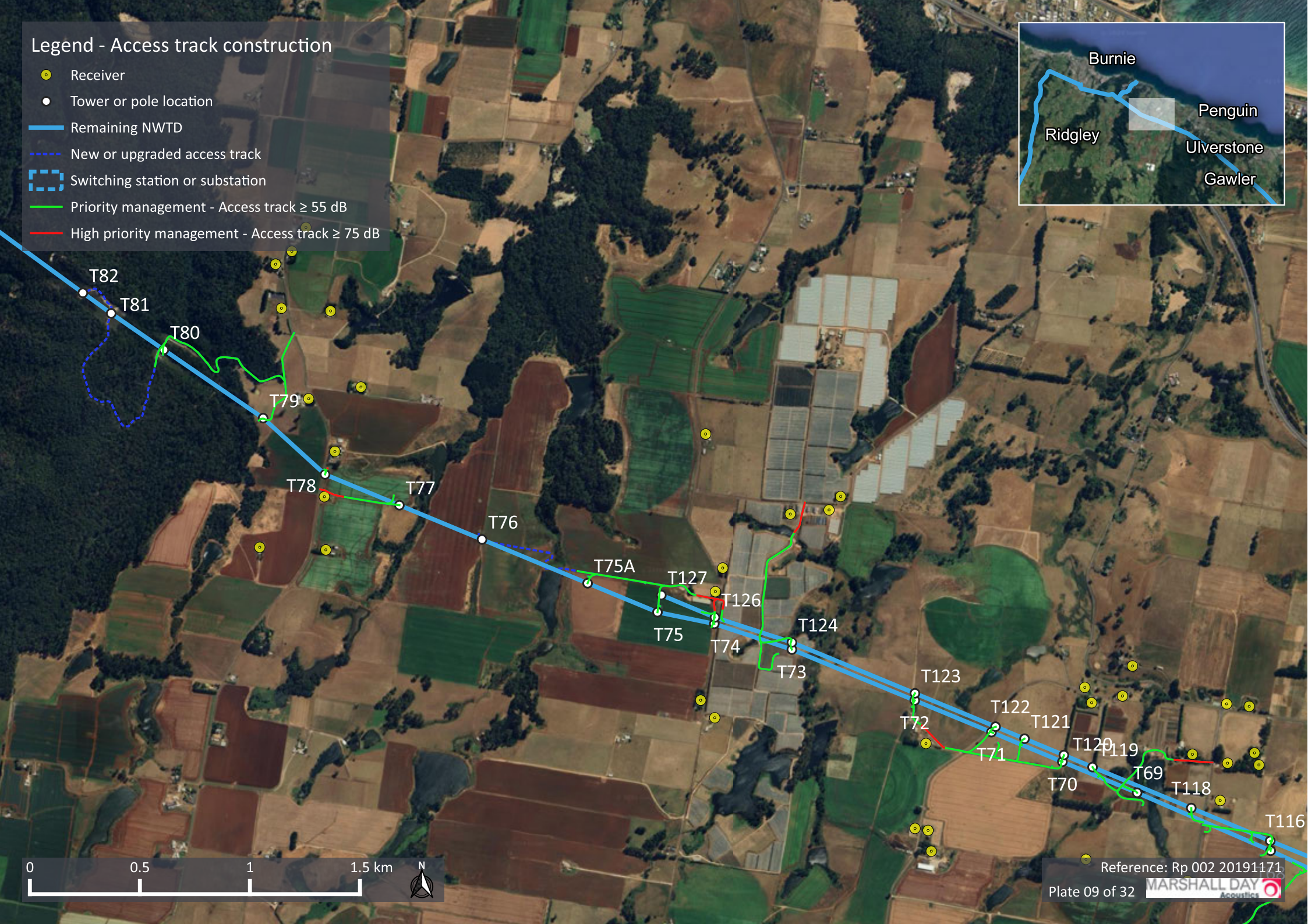

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Ridgley
T27
T28
T29
T30
T31
T32
T33
T34
T35
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 04 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T20
T21
T22
T23
T24
T25
T26
Burnie
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 05 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Ridgley
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15
T16
T17
T18
T19
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 06 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Penguin
Ridgley
T7
T6
T5
T4
T3
T2
Burnie
T1
T100
T99
T98
T97
T96
T95
T94
T93
T92
T91
T90
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 07 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
HB_Gantry
T9
T8
T7
T6
T5
T4
T3
T2
T1
T90
T89
T88
T87
T86
T85
T84
T83A
T83
T82
T81
T80
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 08 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
T82
T81
T80
T79
T78
T77
T76
T75A
T127
T126
T75
T74
T124
T73
T123
T72
T122
T121
T120
T119
T71
T70
T69
T118
T116
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 09 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
Penguin
T69
T118
T116
T115
T68
T114
T67
T113
T66
T65A
T65
T64
T63A
T62A
T61
T60A
T60
T59A
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 10 of 32
MARSHALL DAY Acoustics

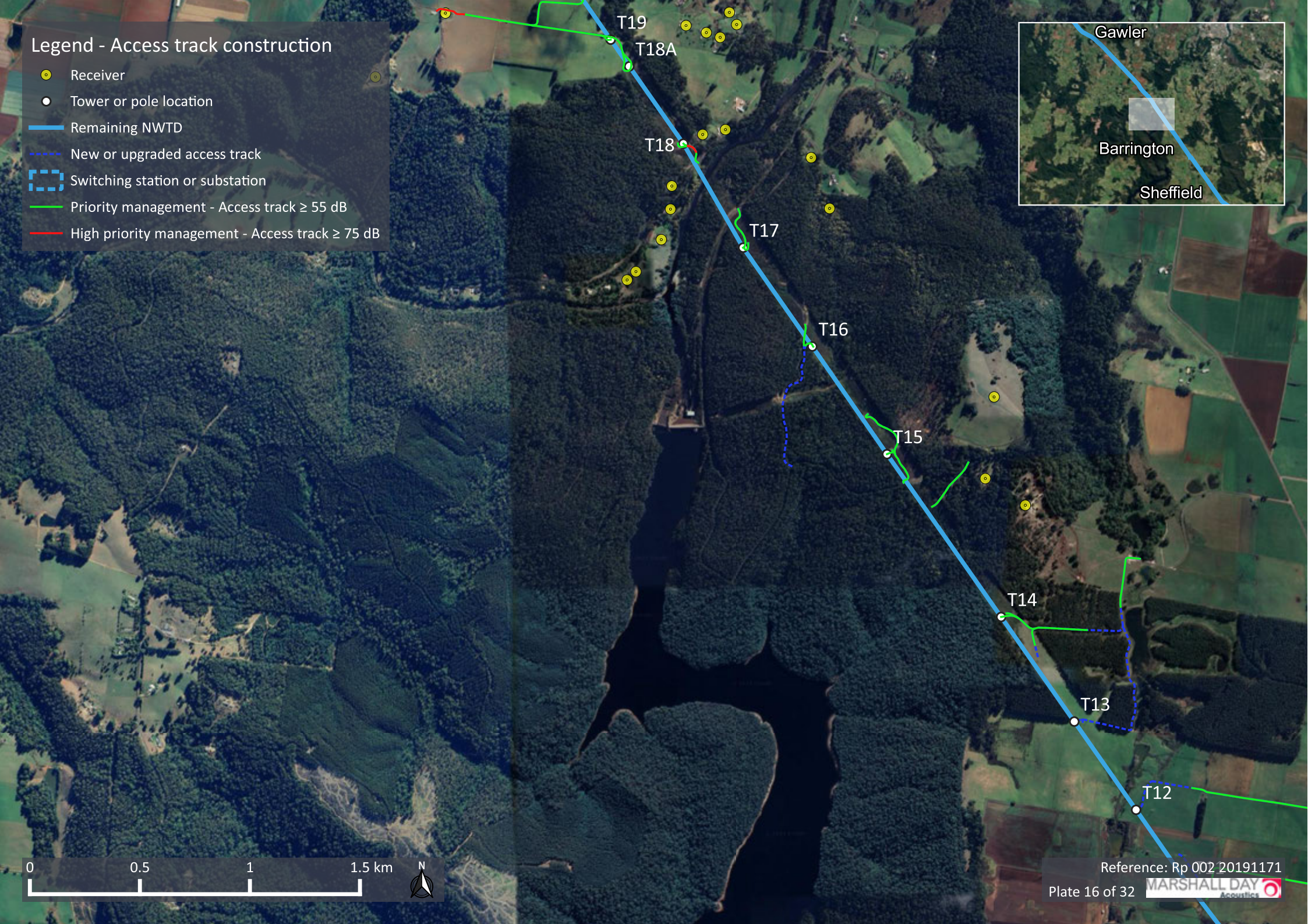

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
T60A
T59A
T60
T59
T58
T57A
T94
T57
T93
T92
T56
T55
T91
T54A
T54
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 11 of 32
MARSHALL DAY Acoustics

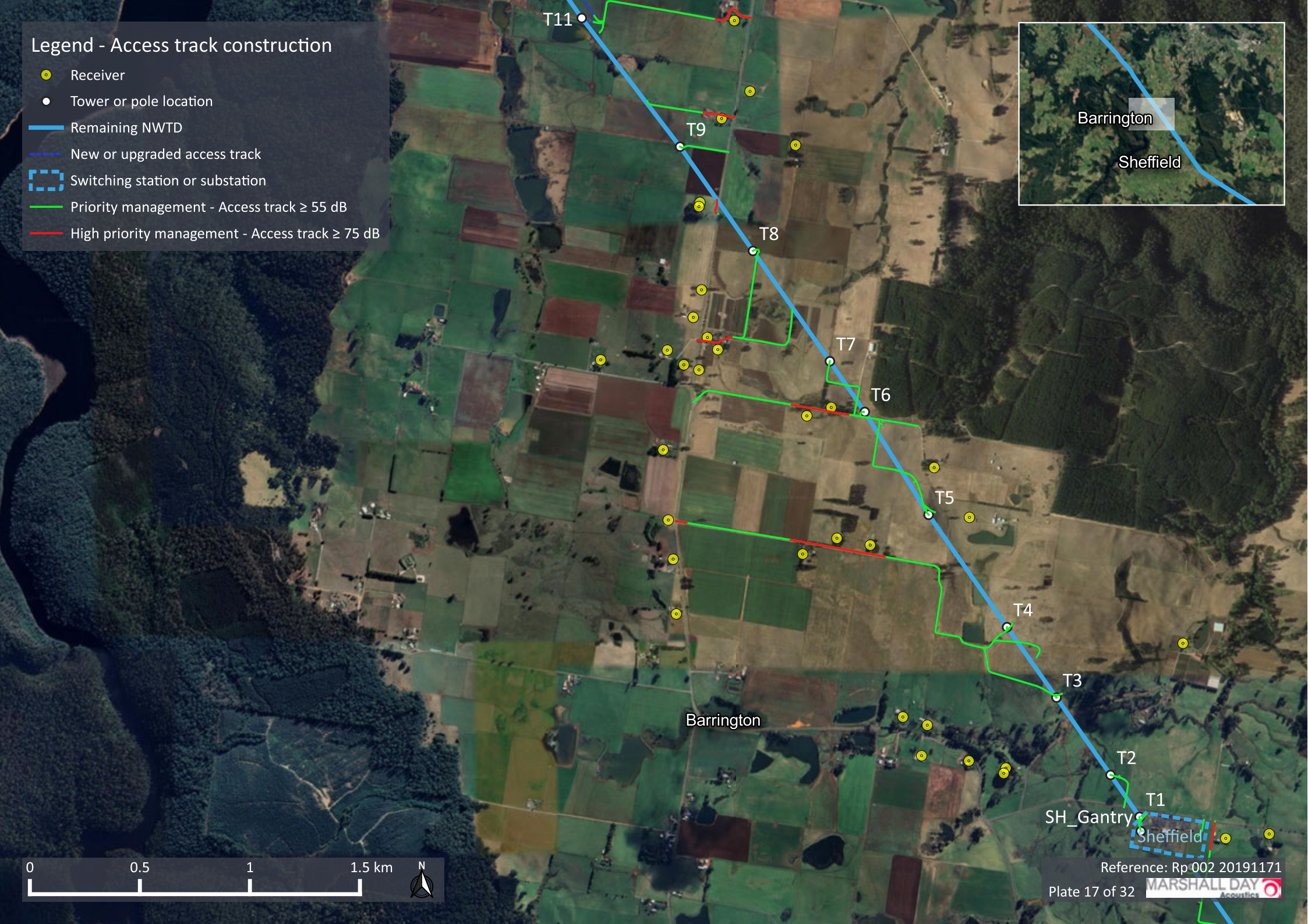

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Penguin
Ulverstone
Gawler
T91
T54A
T54
T53
T52
T51
T50
T49
T48
T47
T46
Gawler
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 12 of 32
MARSHALL DAY Acoustics

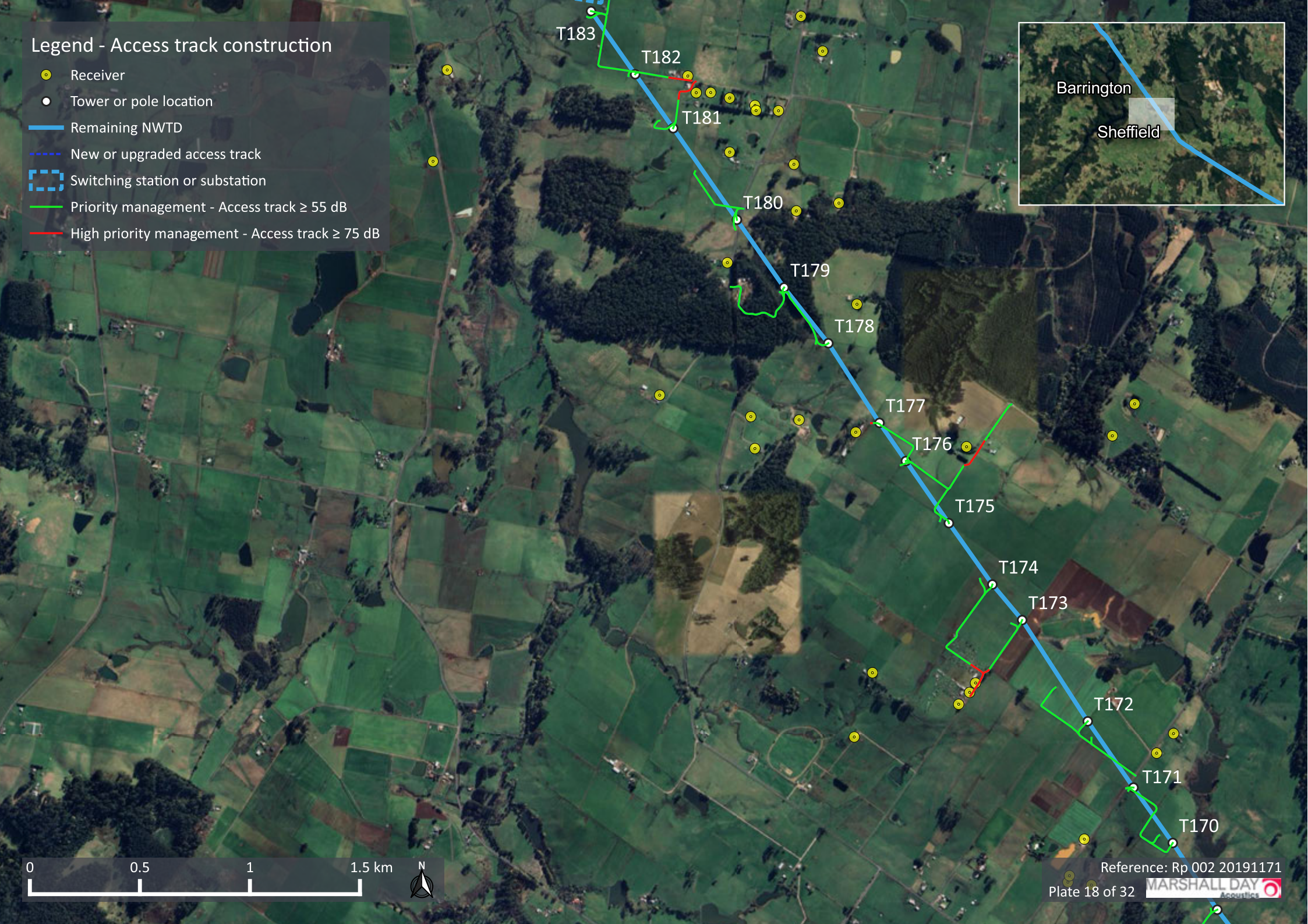

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Penguin
Ulverstone
Gawler
Devonport
Gawler
T46
T45
T44
T43
T42
T41
T40
T39
T38
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 13 of 32
MARSHALL DAY Acoustics

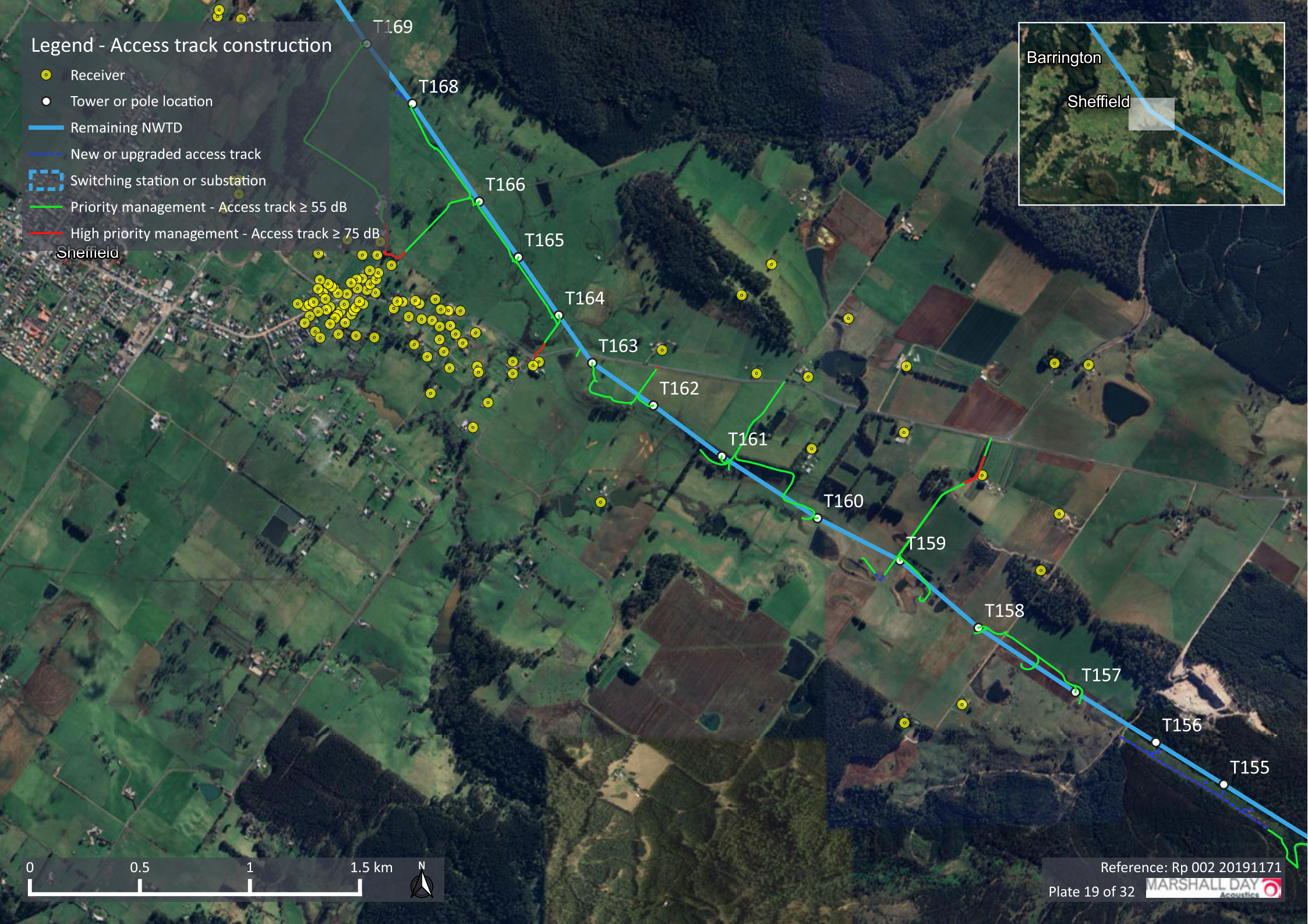

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T38
T37
T36
T35
T34
T33
T32
T31
T30
T29
Ulverstone
Gawler
Devonport
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 14 of 32
MARSHALL DAY Acoustics

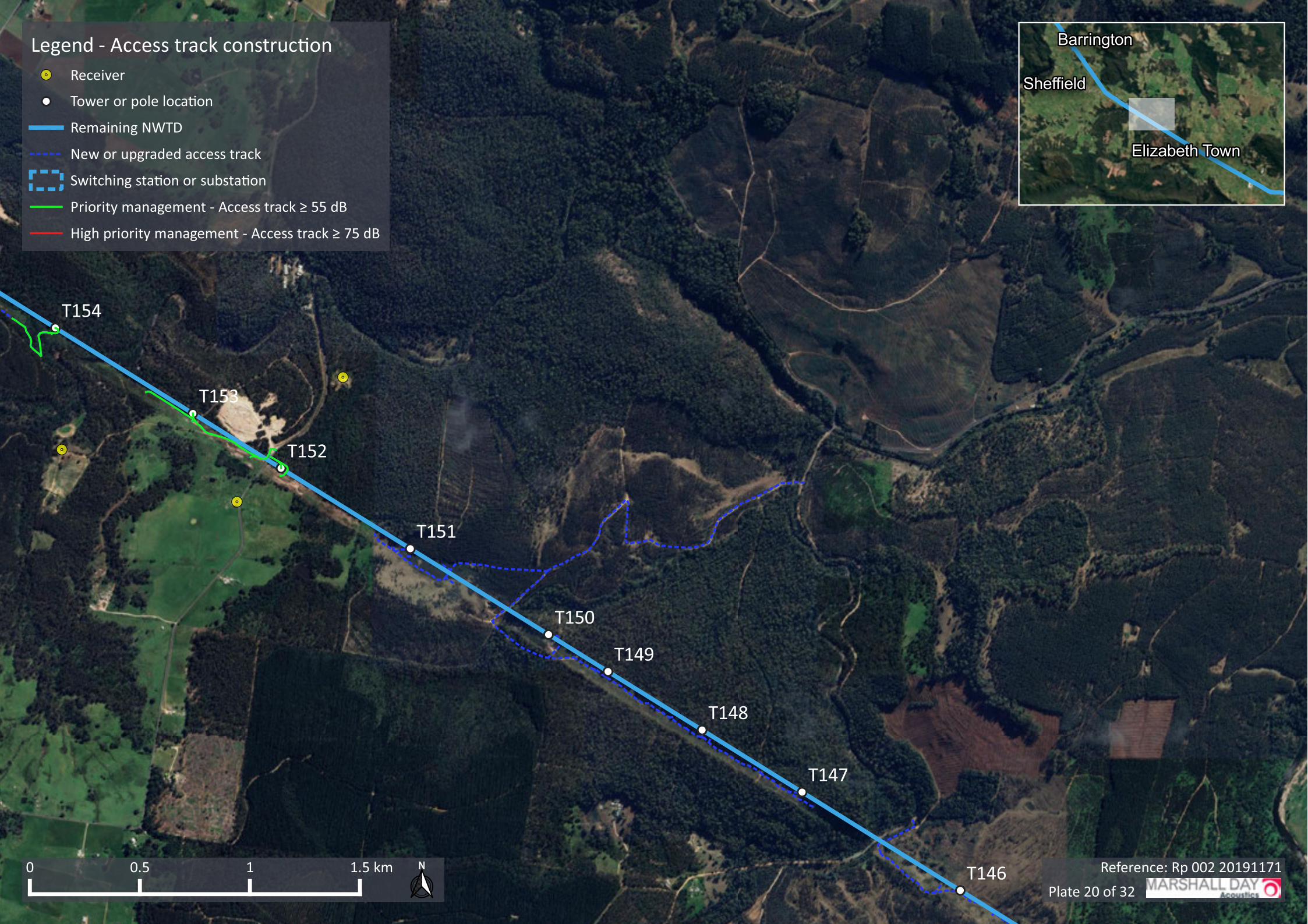

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Gawler
Devonport
Barrington
T28
T27
T26
T25
T24
T23
T22
T21
T20
T19
T18A
T18
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 15 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T19
T18A
T18
T17
T16
T15
T14
T13
T12
Gawler
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 16 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T11
T9
T8
T7
T6
T5
T4
T3
T2
T1
SH_Gantry1
Barrington
Sheffield
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 17 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T183
T182
T181
T180
T179
T178
T177
T176
T175
T174
T173
T172
T171
T170
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 18 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Sheffield
T169
T168
T166
T165
T164
T163
T162
T161
T160
T159
T158
T157
T156
T155
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 19 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Barrington
Sheffield
Elizabeth Town
T154
T153
T152
T151
T150
T149
T148
T147
T146
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 20 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Sheffield
Elizabeth Town
Deloraine
T145
T144
T143
T142A
T142
T141
T140
T139
T138
T137
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 21 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T135
T134
T133
T132
T131
T130
T129
T128
T127
T126
T125
T124
T123
T122
Elizabeth Town
Deloraine
Elizabeth Town
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 22 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Elizabeth Town
Deloraine
T120
T119
T118
T117
T116
T115
T114
T112
T111
T110
T109
T107
T106
T105
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 23 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T105
T104
T103
T102
T101
T100
T99
T98
T97
T96
T95
T94
T93
T91
Deloraine
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 24 of 32
MARSHALL DAY Acoustics

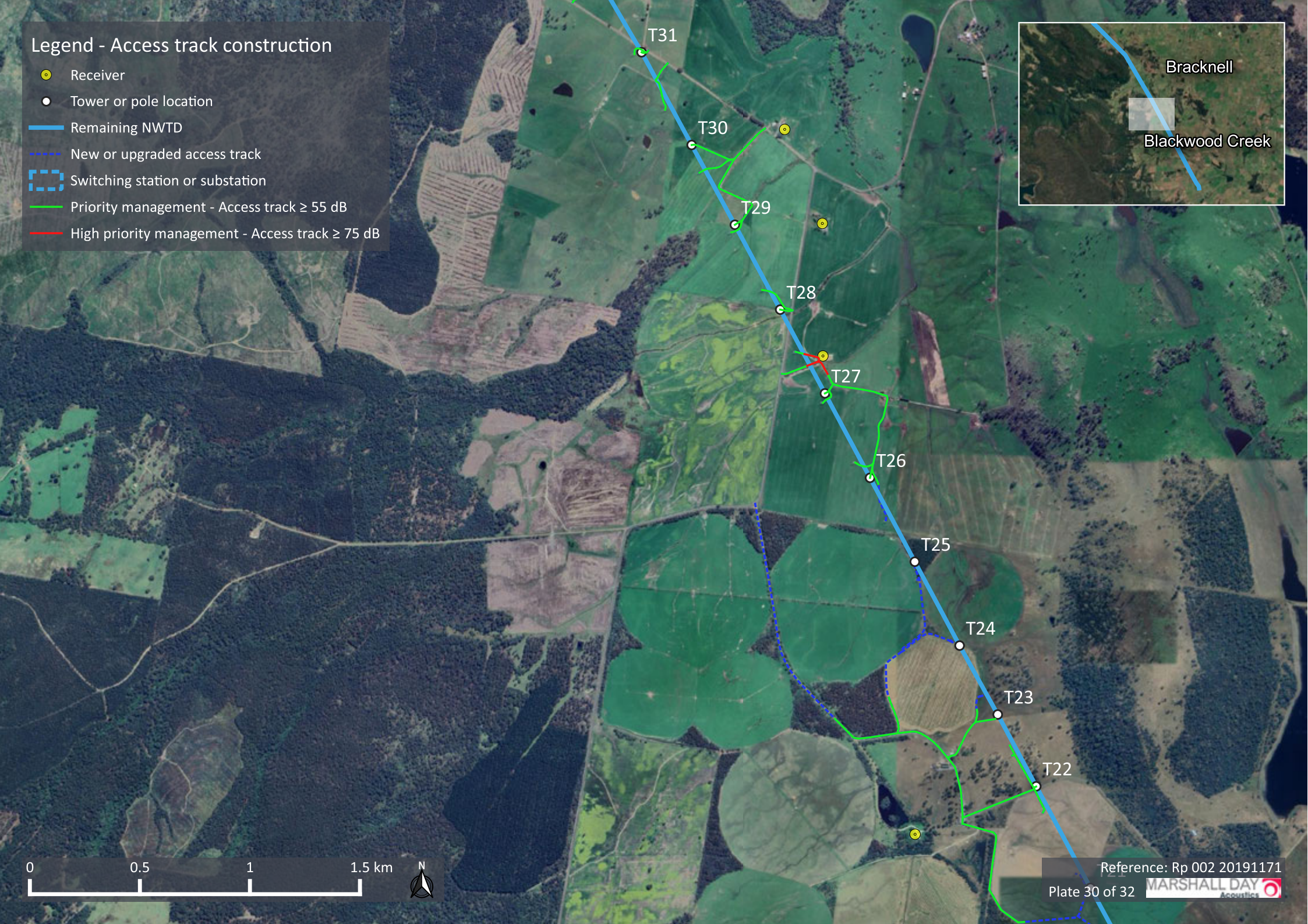

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T91
T90
T89
T88
T87
T86
T85
T84
T83
T82
T81
T80
T79
T78
T77
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 25 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T76
T75
T74
T73
T72
T71
T70
T69
T68
T67
T66
T65
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 26 of 32
MARSHALL DAY Acoustics

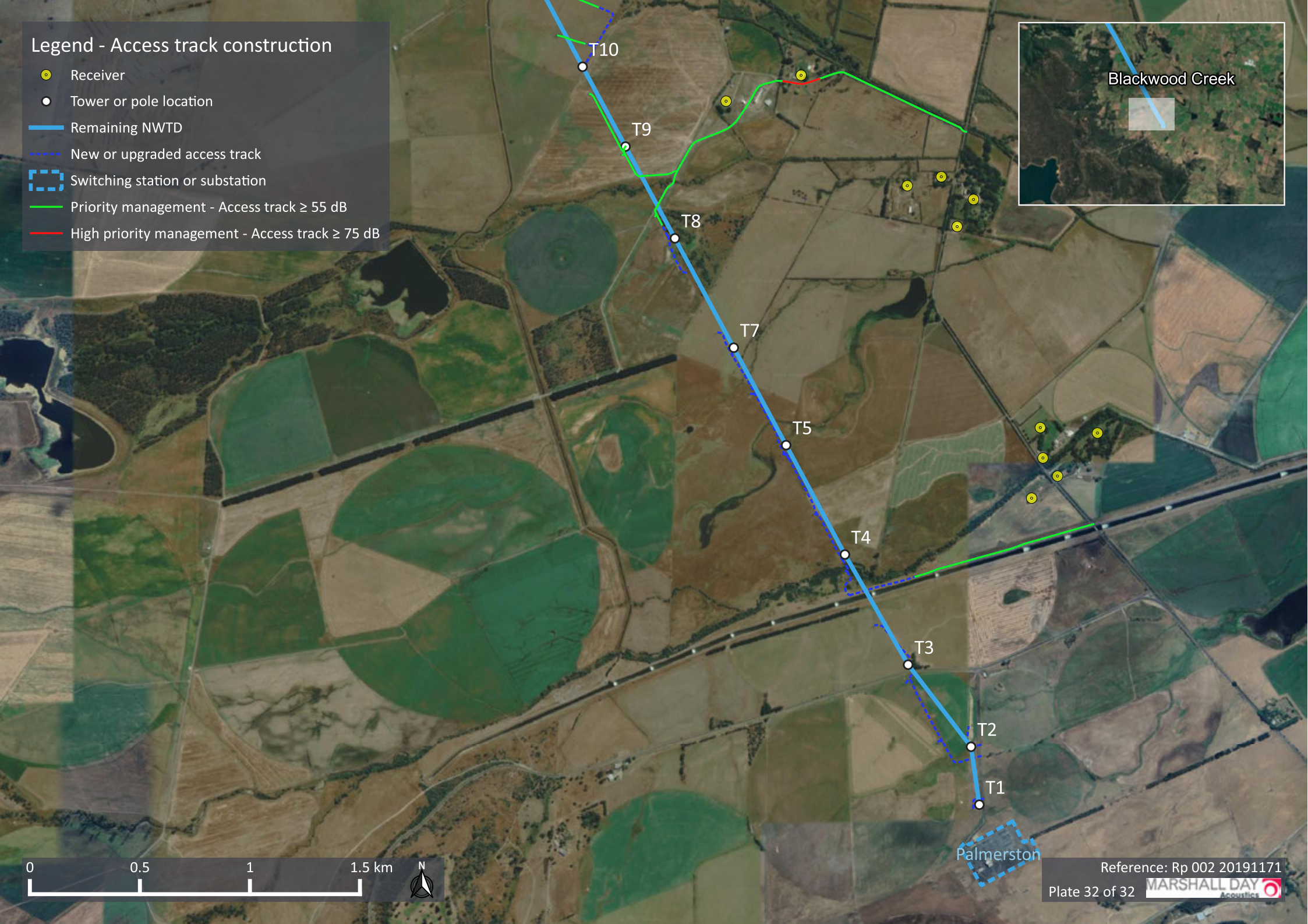

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T64
T63
T62
T61
T60
T59
T58
T57
T56
T55
Cluan
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 27 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T54
T53
T52
T51
T50
T49
T48
T47
T46
T45
T44
T43
T42
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 28 of 32
MARSHALL DAY Acoustics

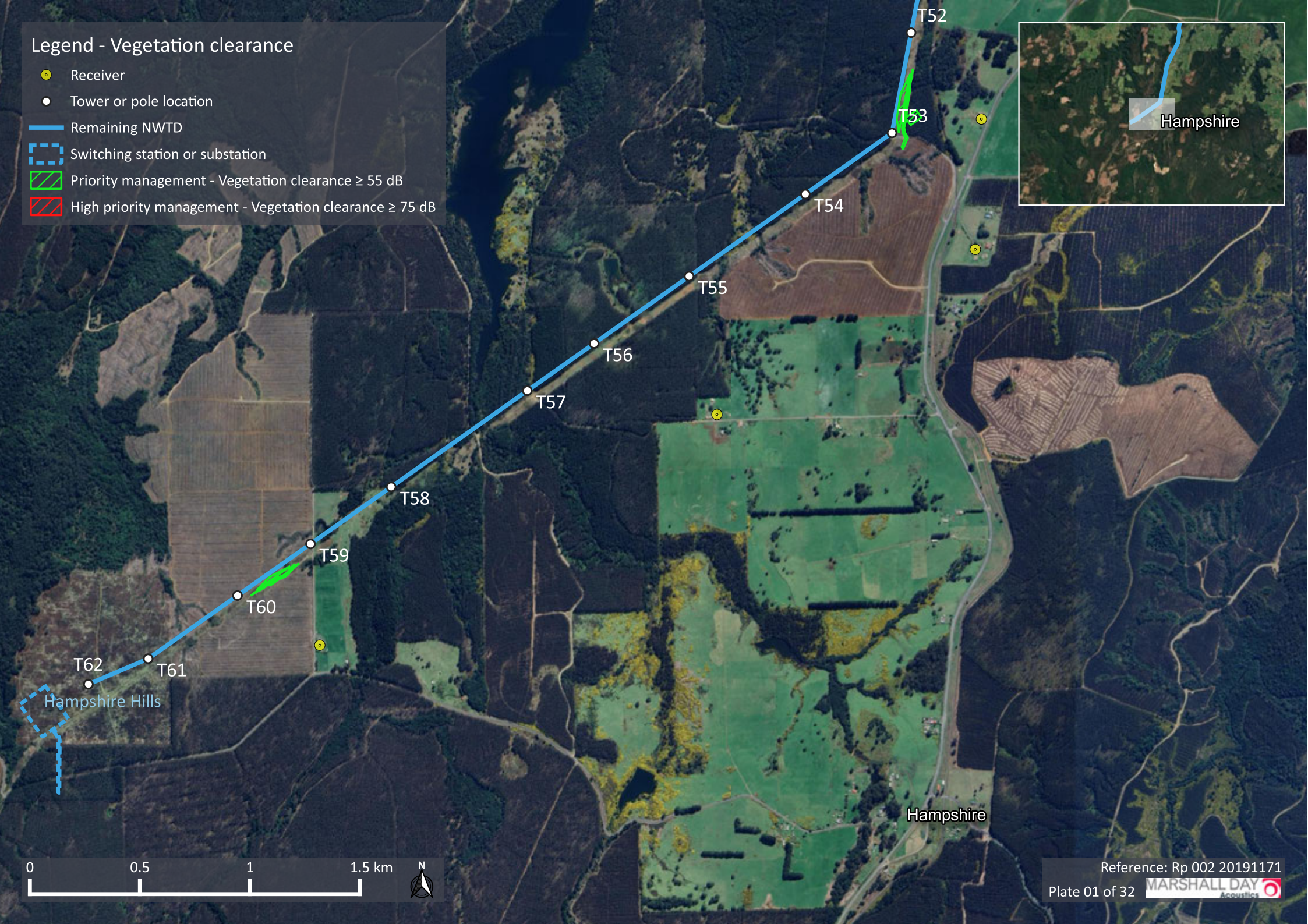

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T41
T40
T39
T38
T37
T36
T35
T34
T33
T32
Cluan
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 29 of 32
MARSHALL DAY Acoustics

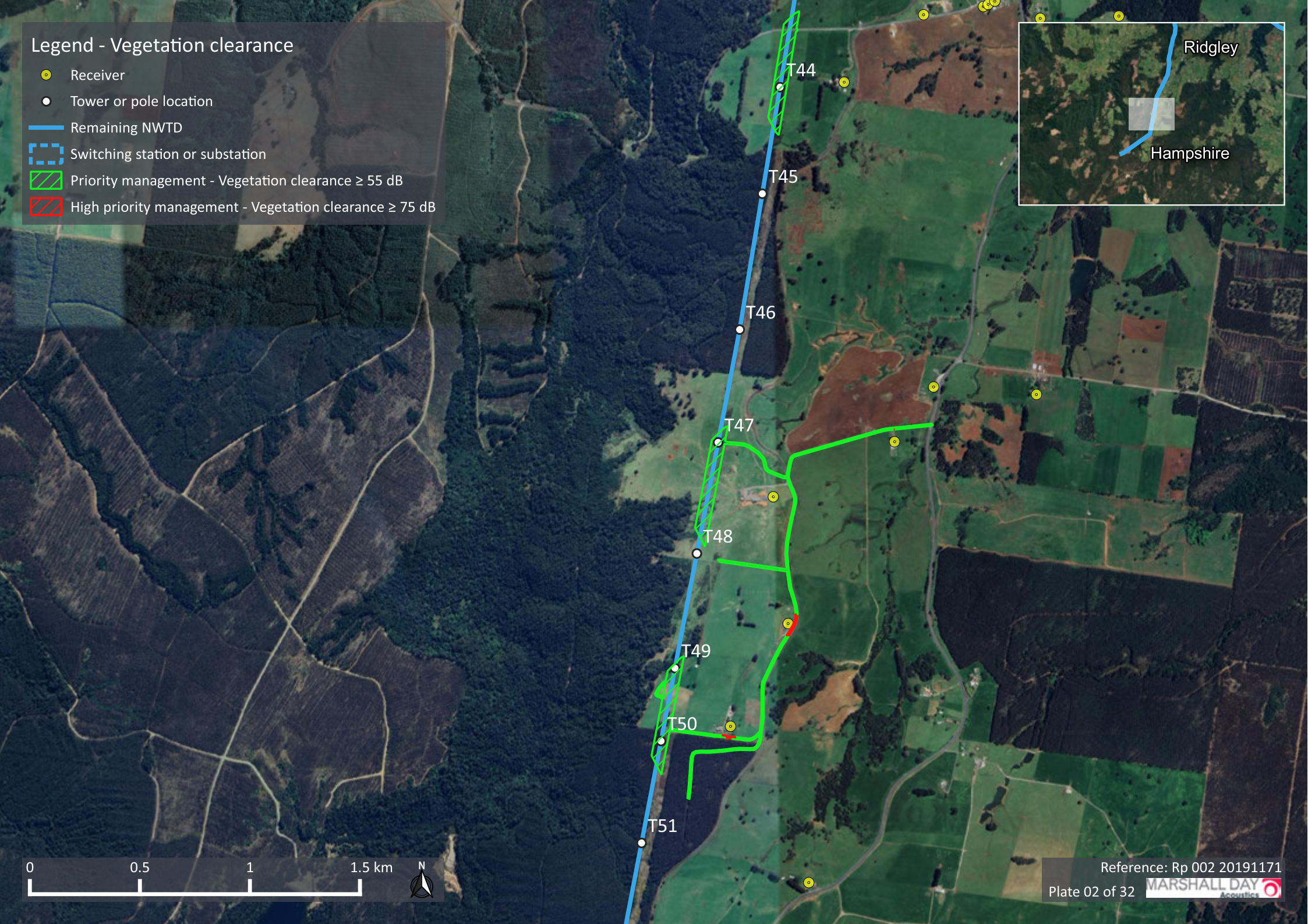

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T31
T30
T29
T28
T27
T26
T25
T24
T23
T22
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 30 of 32
MARSHALL DAY Acoustics

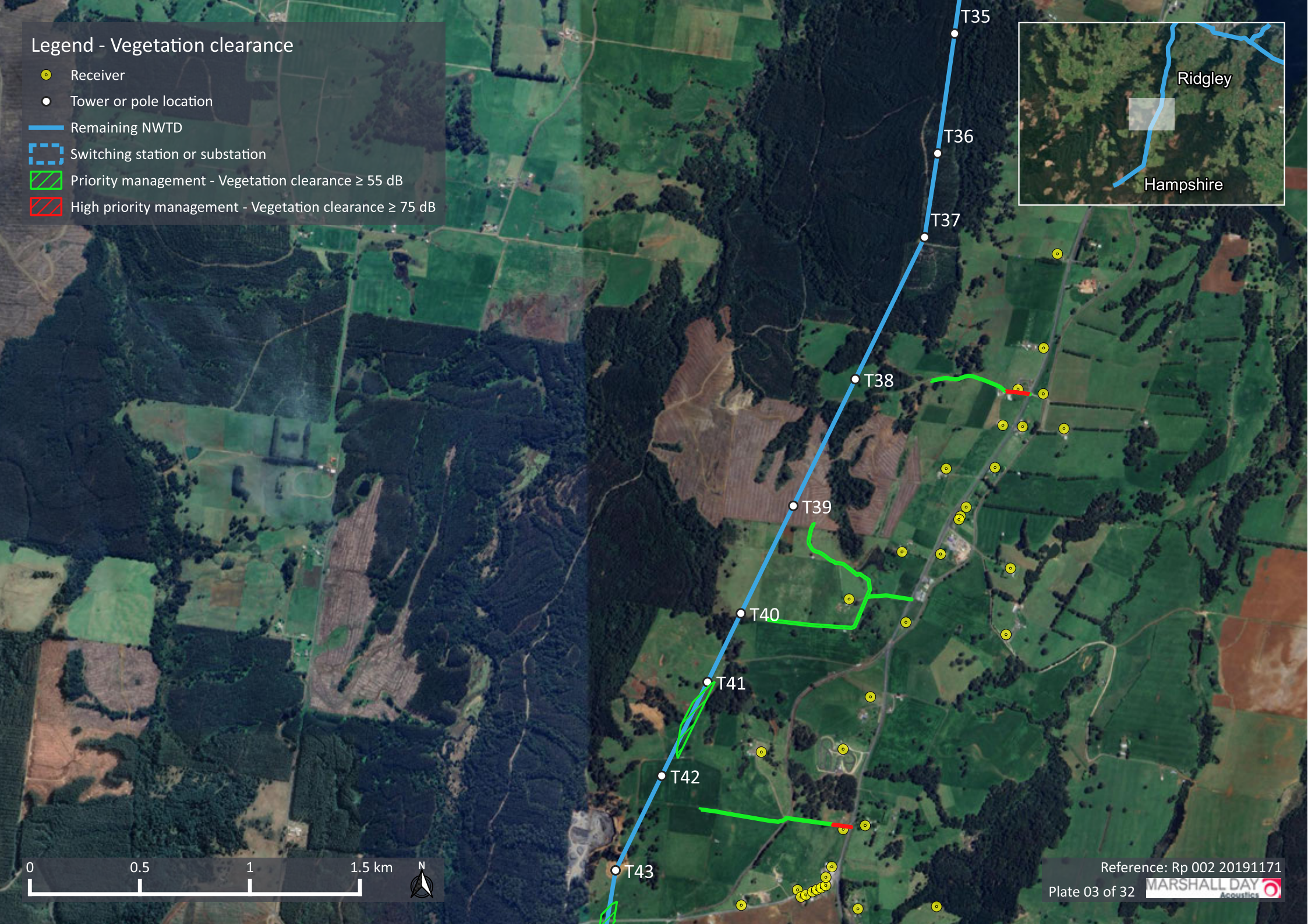

Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T21
T20
T19
T18
T17
T16
T15
T14
T13
T12
T11
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 31 of 32
MARSHALL DAY Acoustics


Legend - Access track construction
Receiver
Tower or pole location
Remaining NWTD
New or upgraded access track
Switching station or substation
Priority management - Access track ≥ 55 dB
High priority management - Access track ≥ 75 dB
T10
T9
T8
T7
T5
T4
T3
T2
T1
Palmerston
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 32 of 32
MARSHALL DAY Acoustics

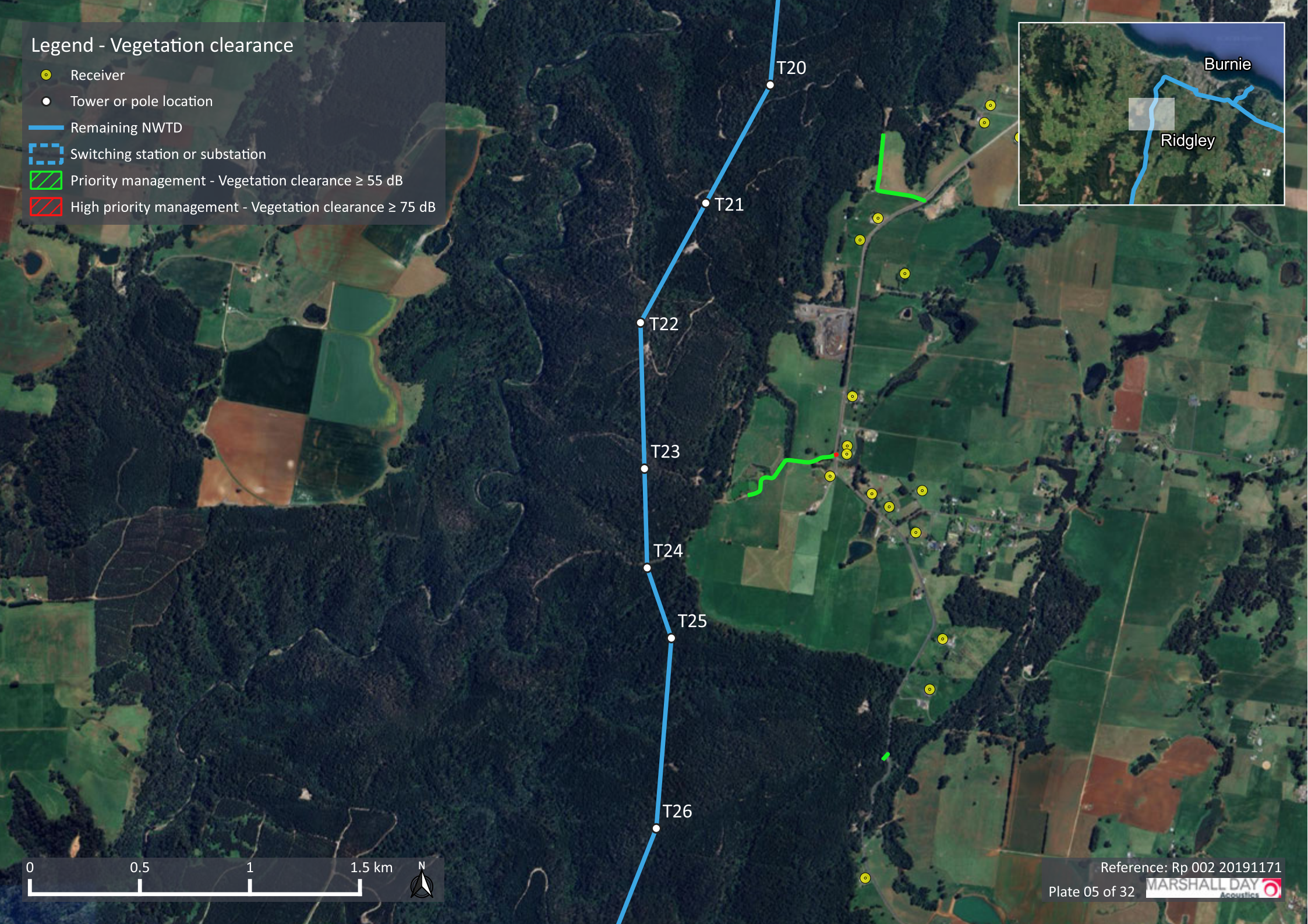
D2 Vegetation clearance

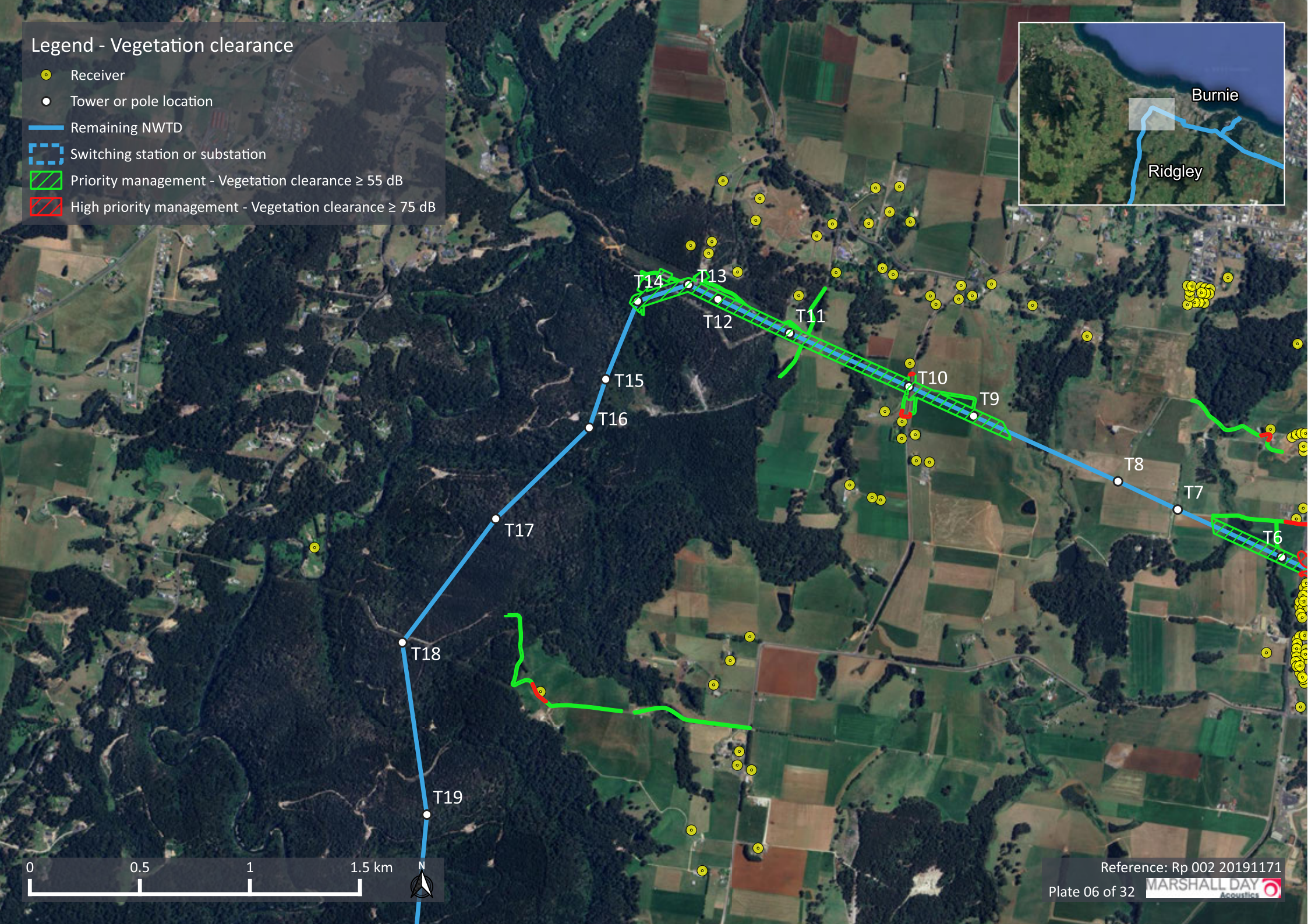

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T52
T53
T54
T55
T56
T57
T58
T59
T60
T61
T62
Hampshire Hills
Hampshire
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 01 of 32
MARSHALL DAY Acoustics

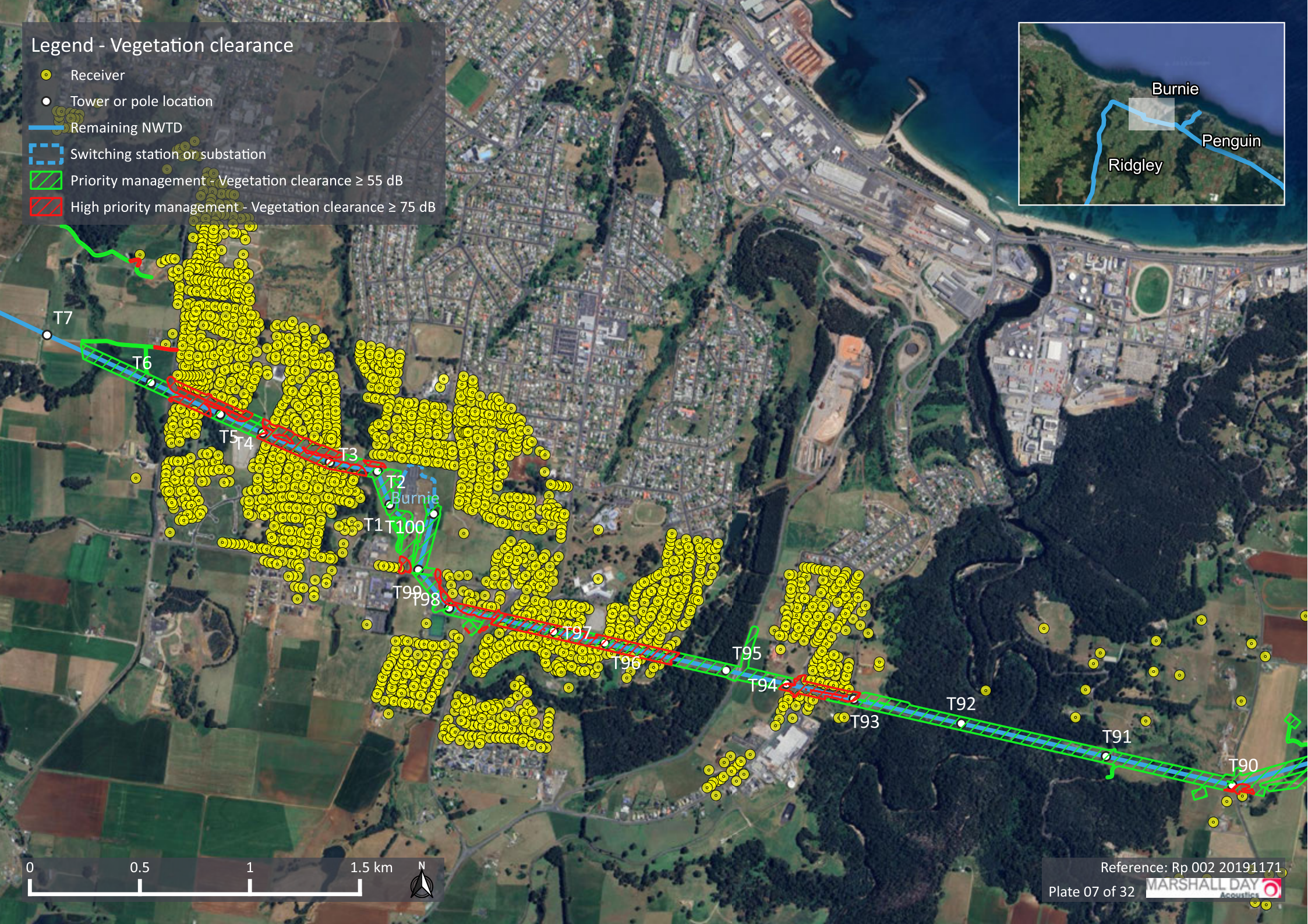

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T44
T45
T46
T47
T48
T49
T50
T51
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 02 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T35
T36
T37
T38
T39
T40
T41
T42
T43
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 03 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Burnie
Ridgley
T27
T28
T29
T30
T31
Ridgley
T32
T33
T34
T35
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 04 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T20
T21
T22
T23
T24
T25
T26
Burnie
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 05 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Burnie
Ridgley
T14
T13
T12
T11
T10
T9
T8
T7
T6
T15
T16
T17
T18
T19
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 06 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Burnie
Penguin
Ridgley
T7
T6
T5
T4
T3
T2
Burnie
T1
T100
T99
T98
T97
T96
T95
T94
T93
T92
T91
T90
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 07 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
HB_Gantry
T90
T89
T88
T87
T86
T85
T84
T83A
T83
T82
T81
T80
T1
T2
T3
T4
T5
T6
T7
T8
T9
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 08 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
T82
T81
T80
T79
T78
T77
T76
T75A
T127
T126
T75
T74
T124
T73
T123
T72
T122
T121
T71
T120
T119
T70
T69
T118
T116
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 09 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Penguin
Burnie
Penguin
Ulverstone
Gawler
T69
T118
T116
T115
T68
T114
T67
T113
T66
T65A
T65
T64
T63A
T62A
T61
T60A
T60
T59A
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 10 of 32
MARSHALL DAY Acoustics

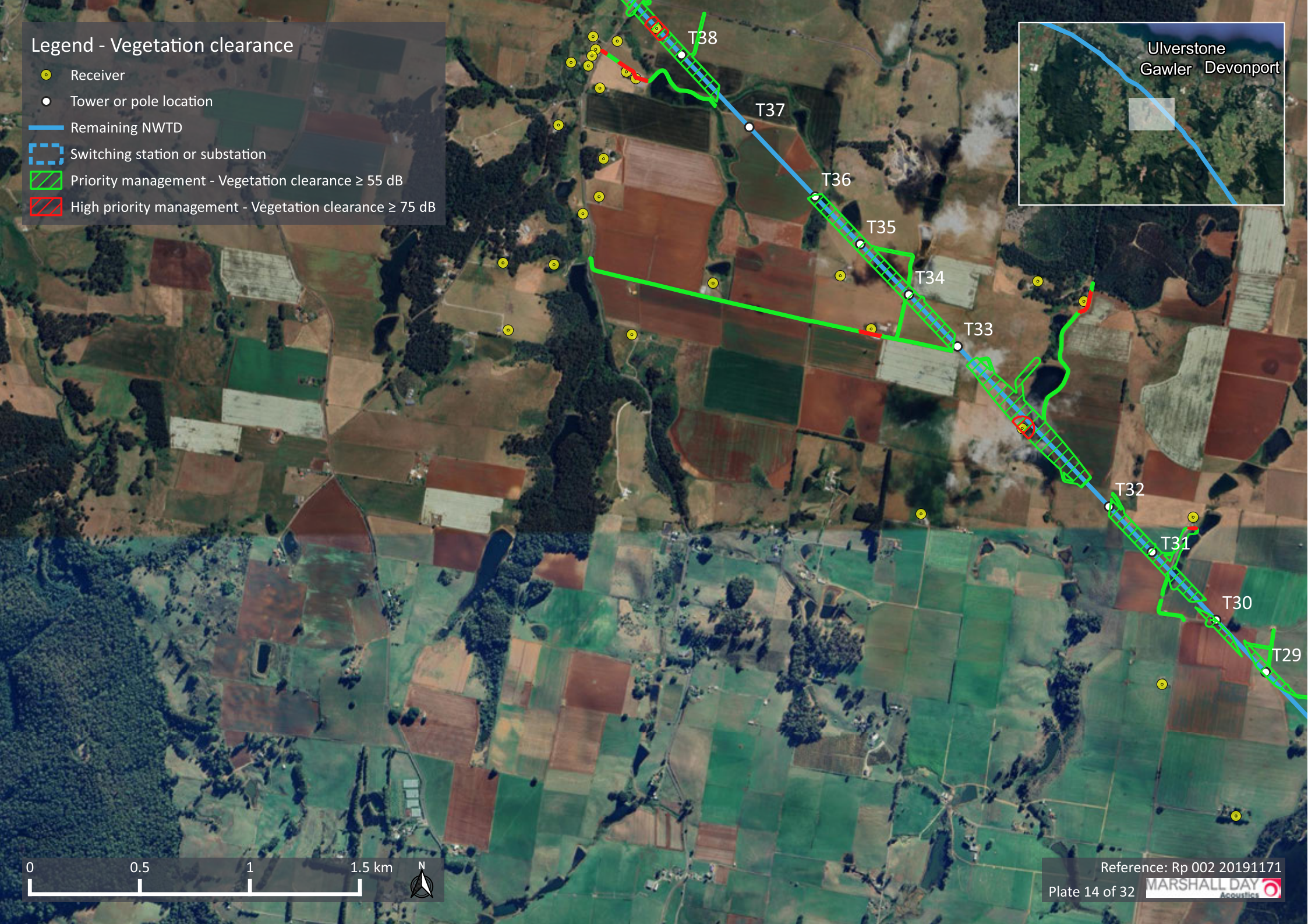


Reference: Rp 002 20191171

Plate 11 of 32

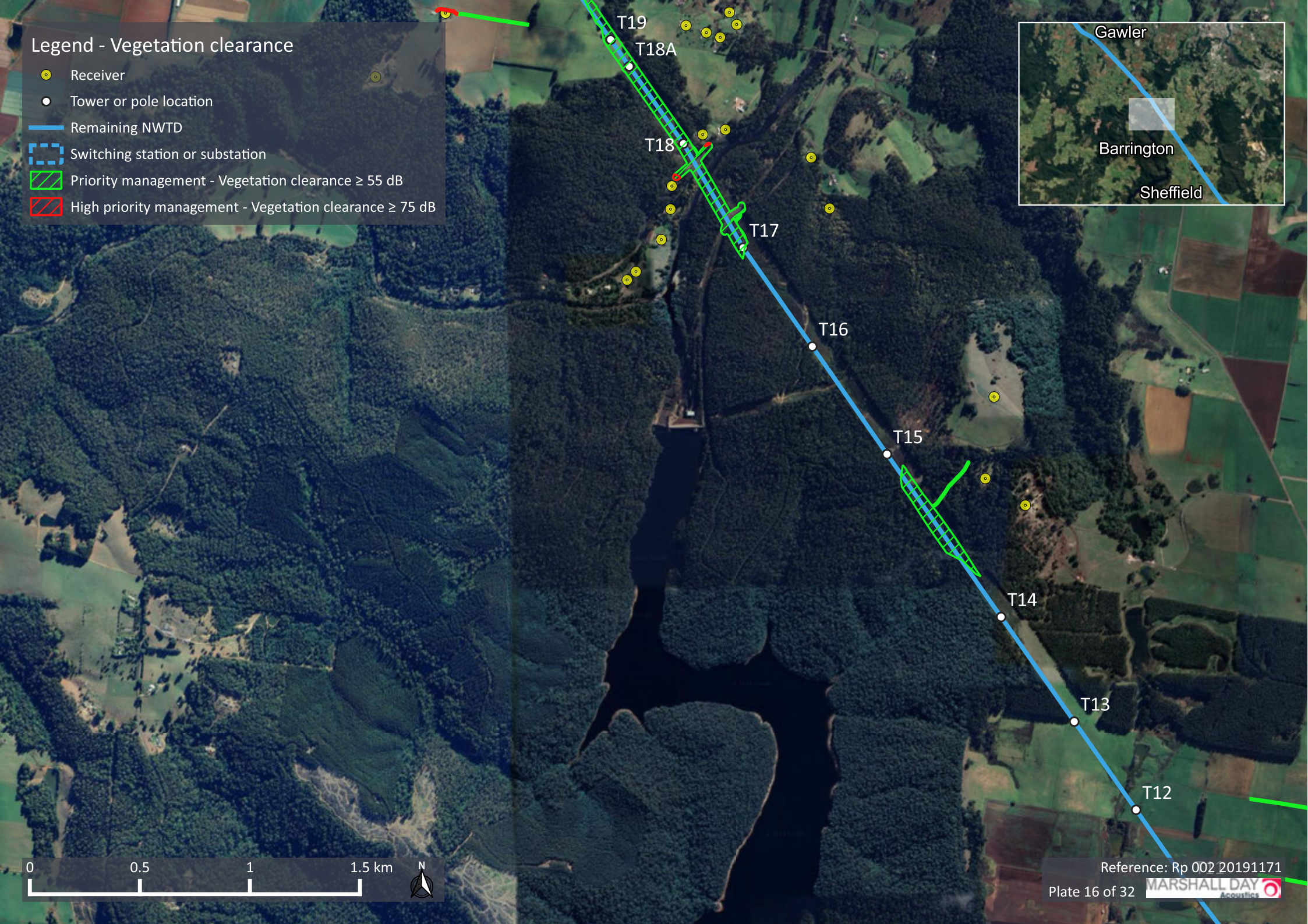

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Penguin
Ulverstone
Gawler
T91
T54A
T54
T53
T52
T51
T50
T49
T48
T47
T46
Gawler
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 12 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Penguin
Ulverstone
Gawler
Devonport
T46
T45
T44
T43
T42
T41
T40
T39
T38
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 13 of 32
MARSHALL DAY
Acoustics

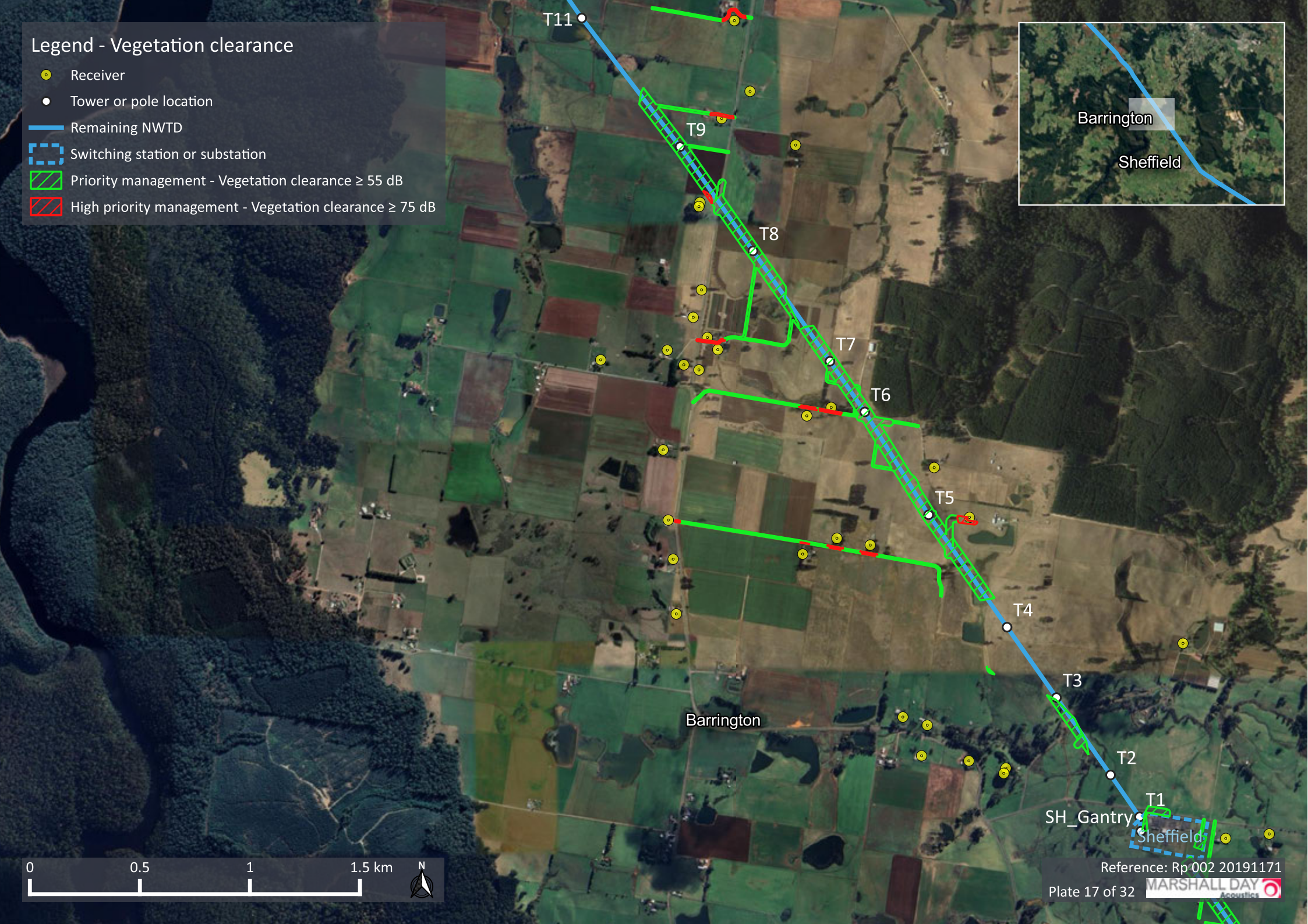

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T38
T37
T36
T35
T34
T33
T32
T31
T30
T29
Ulverstone
Gawler
Devonport
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 14 of 32
MARSHALL DAY Acoustics



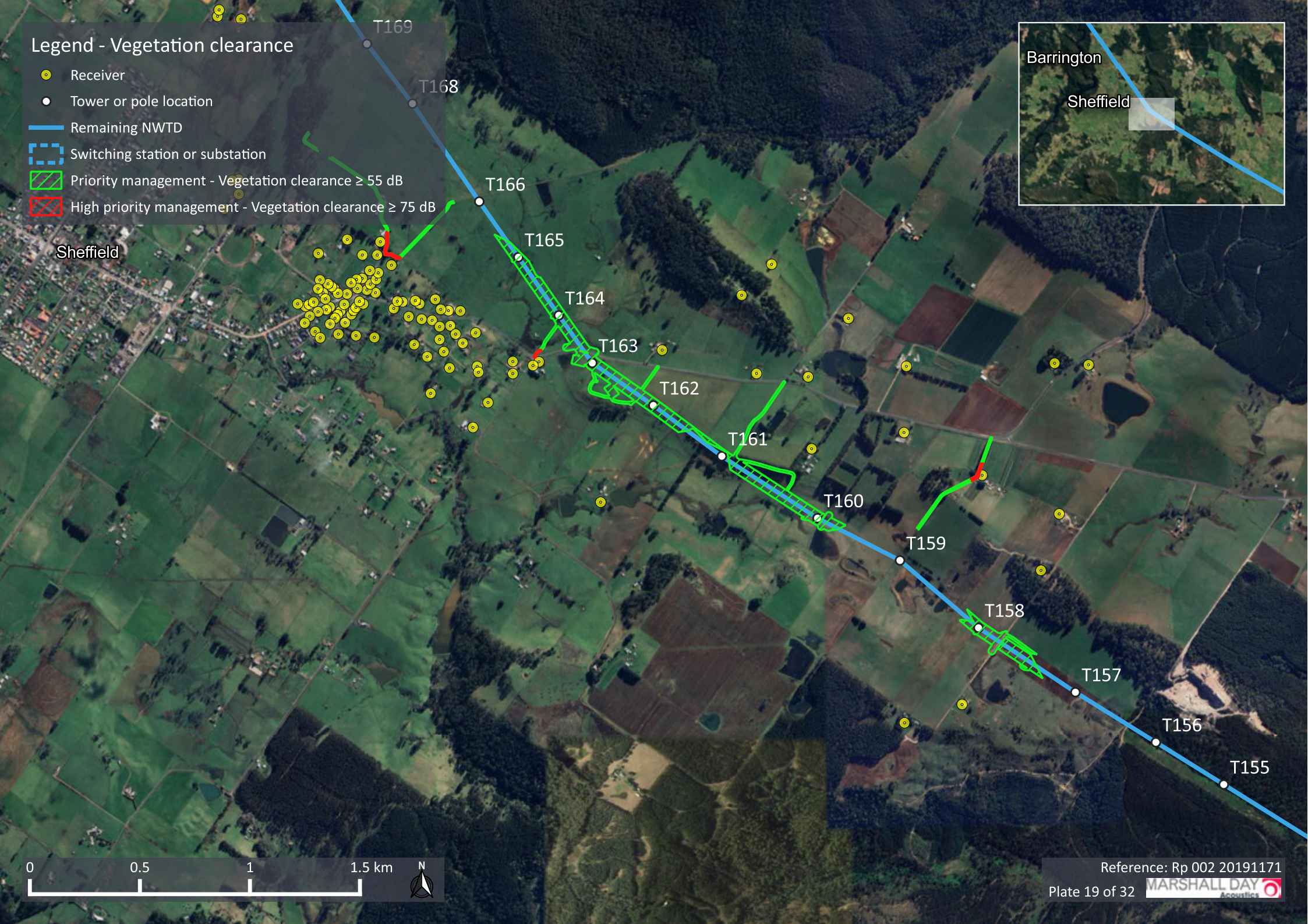
Reference: Rp 002 20191171



Reference: Rp 002 20191171


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T11
T9
T8
T7
T6
T5
T4
T3
T2
T1
SH_Gantry
Barrington
Sheffield
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 17 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Barrington
Sheffield
T183
T182
T181
T180
T179
T178
T177
T176
T175
T174
T173
T172
T171
T170
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 18 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Barrington
Sheffield
Sheffield
T169
T168
T166
T165
T164
T163
T162
T161
T160
T159
T158
T157
T156
T155
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 19 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Barrington
Sheffield
Elizabeth Town
T154
T153
T152
T151
T150
T149
T148
T147
T146
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 20 of 32
MARSHALL DAY Acoustics



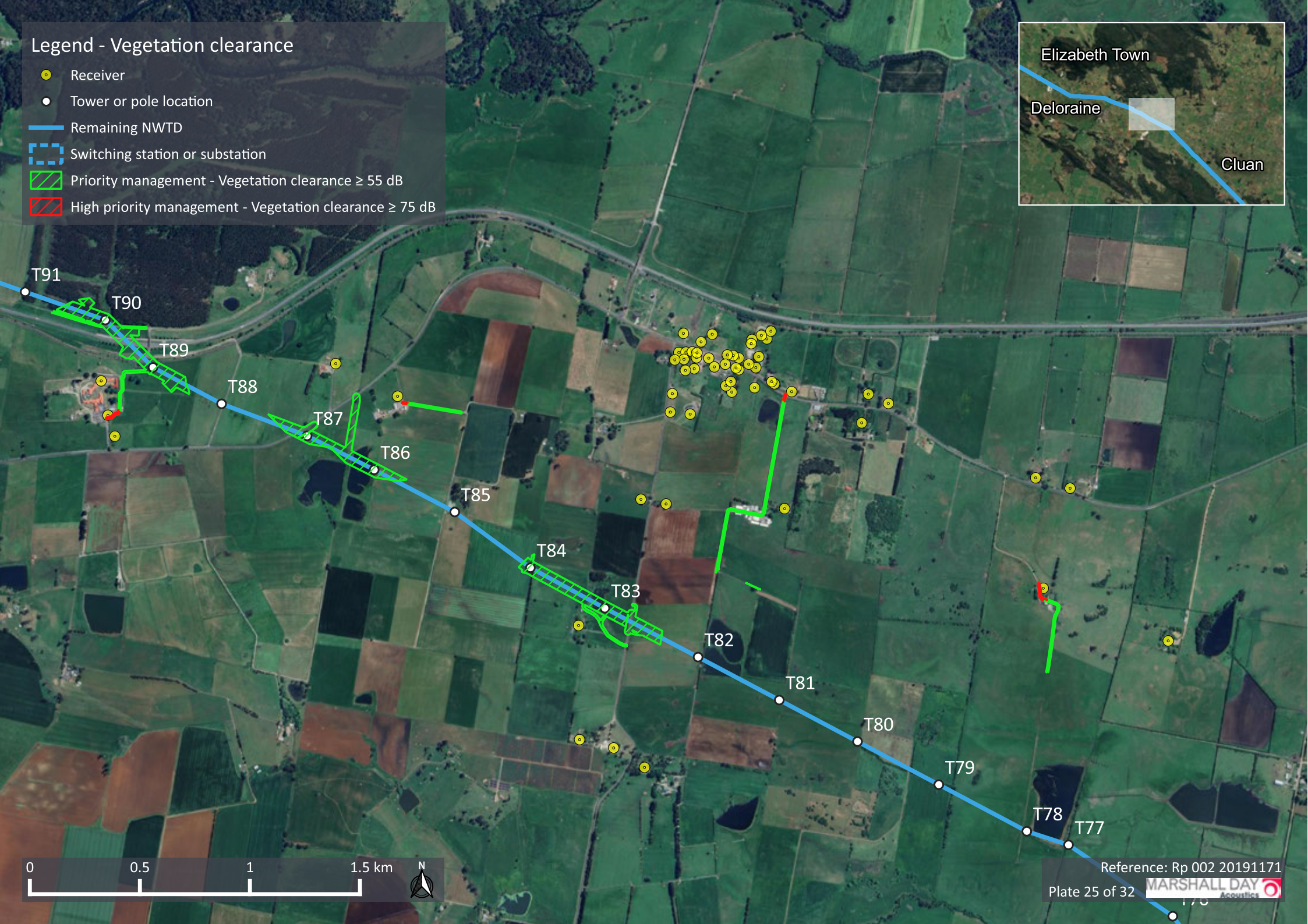
Reference: Rp 002 20191171

Plate 21 of 32


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T136
T135
T134
T133
T132
T131
T130
T129
T128
T127
T126
T125
T124
T123
T122
Elizabeth Town
Deloraine
Elizabeth Town
0
0.5
1
1.5 km
N


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Elizabeth Town
Deloraine
T120
T119
T118
T117
T116
T115
T114
T112
T111
T110
T109
T107
T106
T105
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 23 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T105
T104
T103
T102
T101
T100
T99
T98
T97
T96
T95
T94
T93
T91
Deloraine
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 24 of 32
MARSHALL DAY Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T91
T90
T89
T88
T87
T86
T85
T84
T83
T82
T81
T80
T79
T78
T77
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 25 of 32
MARSHALL DAY Acoustics

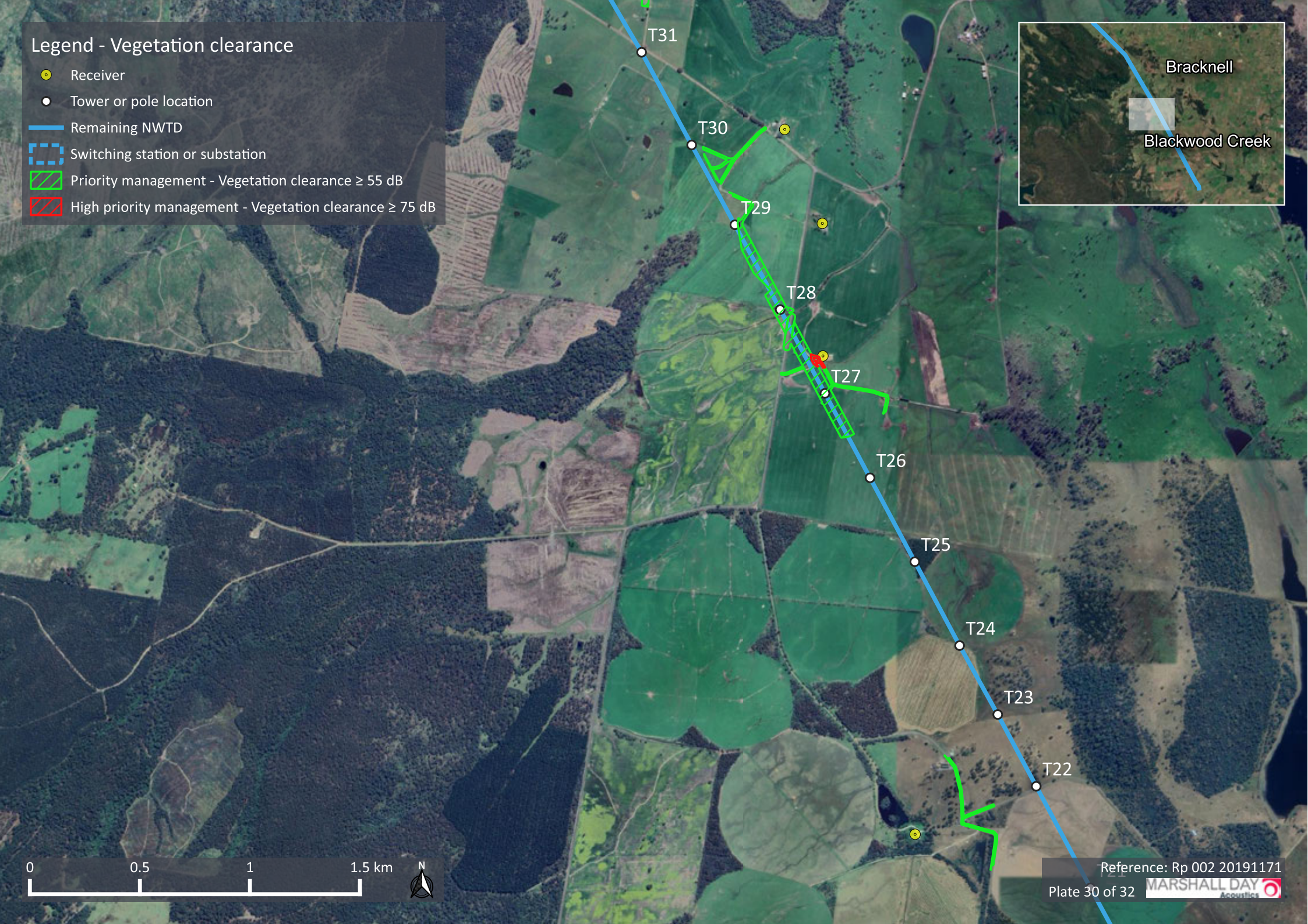

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T76
T75
T74
T73
T72
T71
T70
T69
T68
T67
T66
T65
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 26 of 32
MARSHALL DAY Acoustics

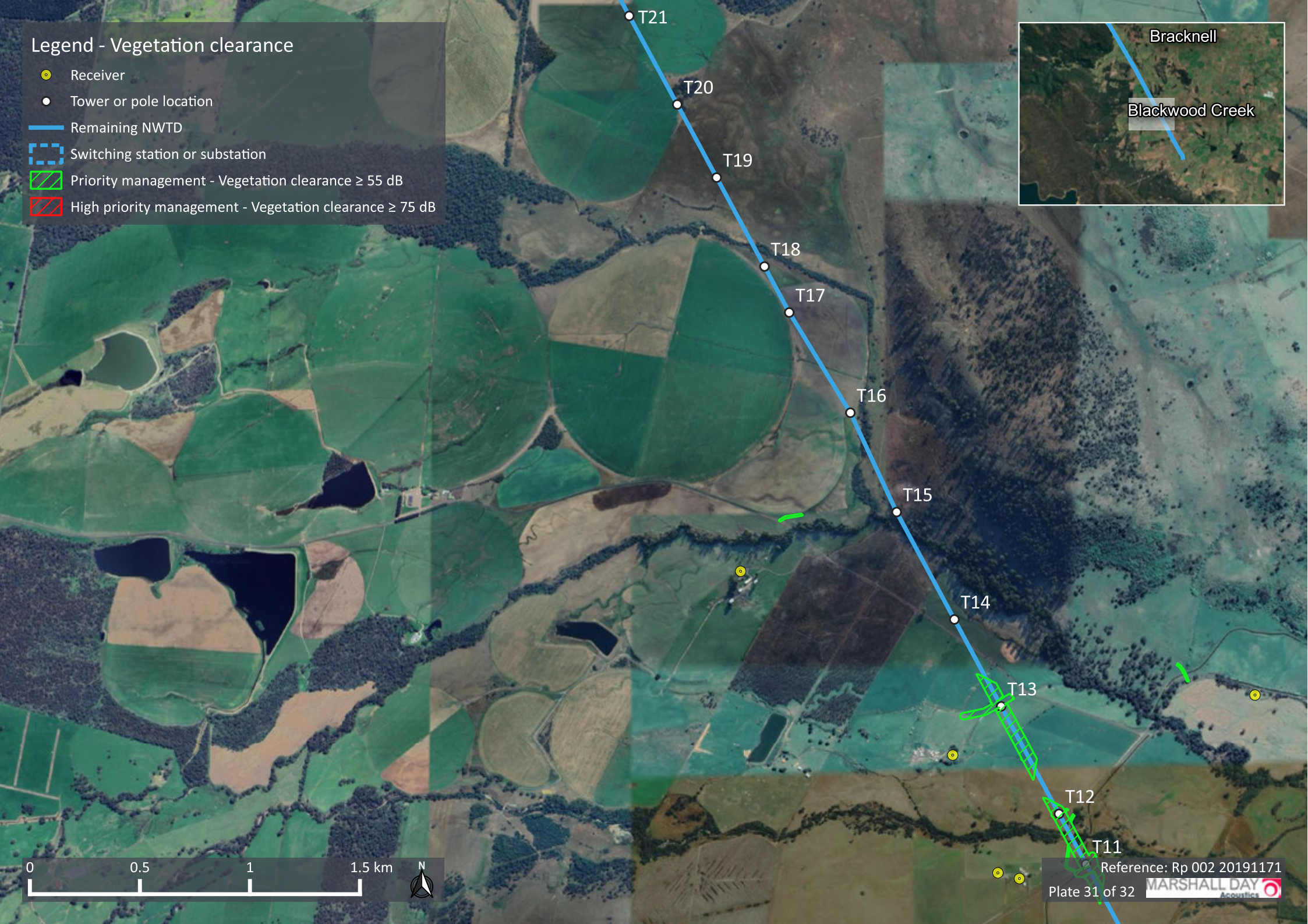


Reference: Rp 002 20191171


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T54
T53
T52
T51
T50
T49
T48
T47
T46
T45
T44
T43
T42
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 28 of 32
MARSHALL DAY Acoustics

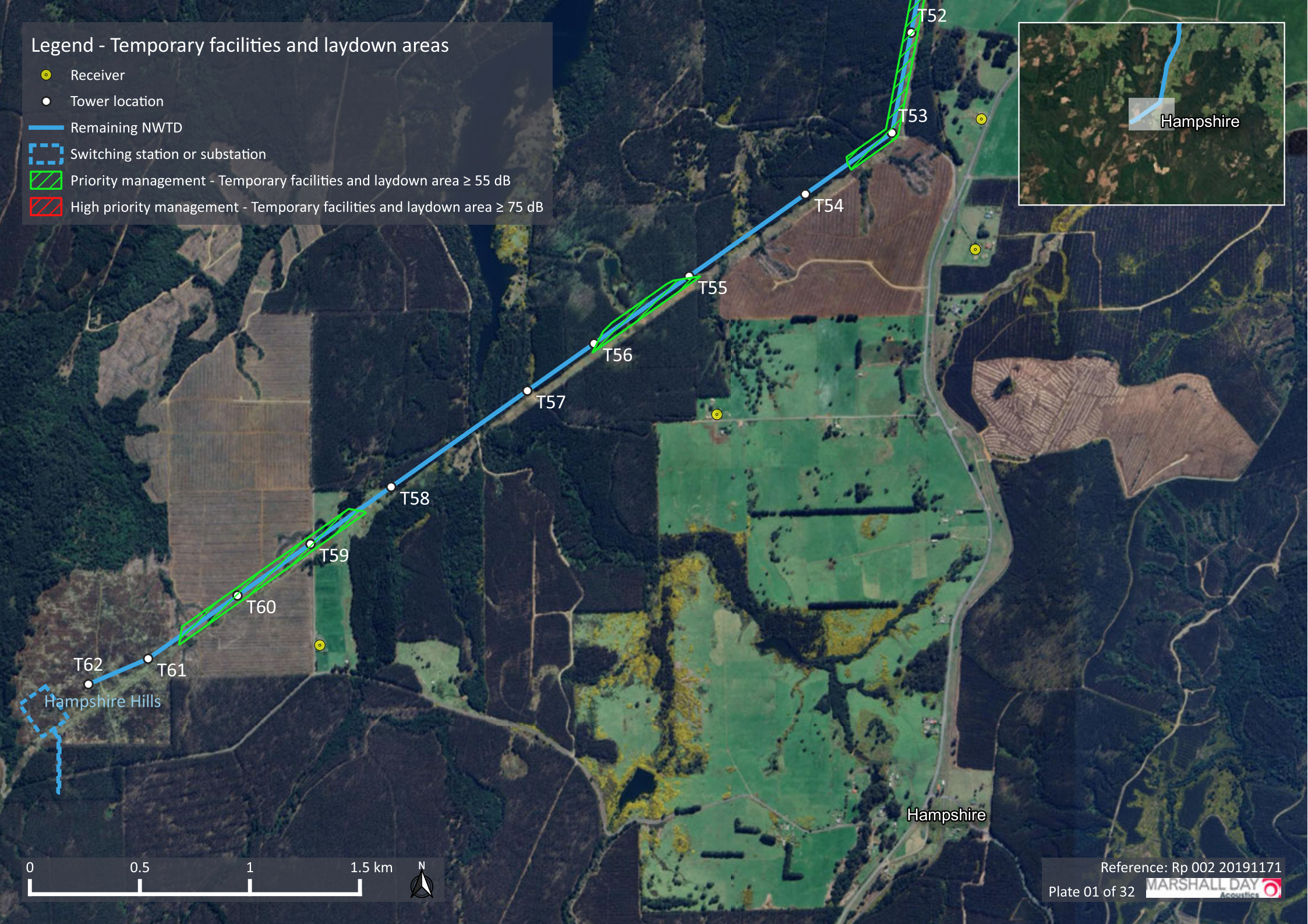

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T41
T40
T39
T38
T37
T36
T35
T34
T33
T32
Cluan
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N

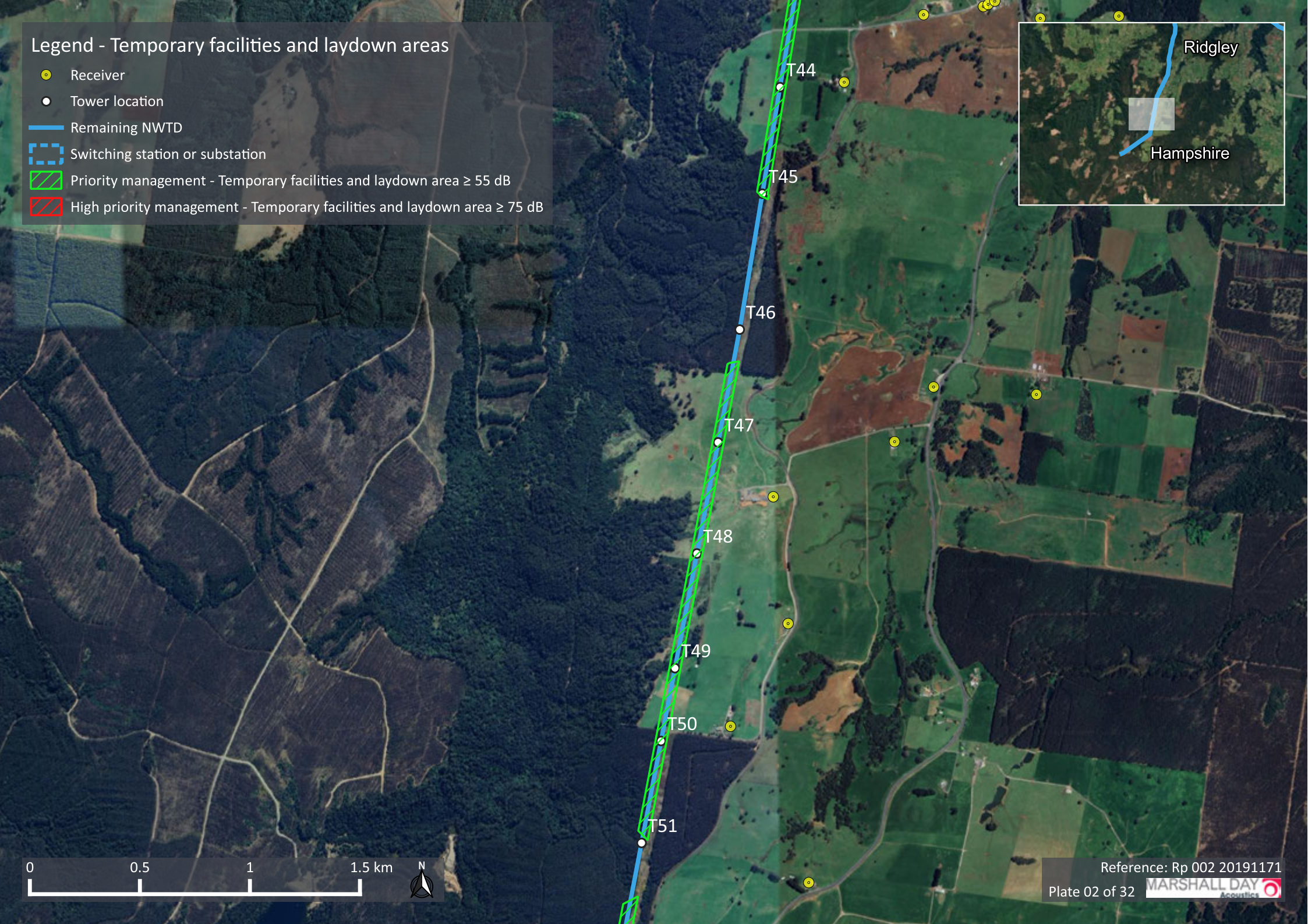

Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T31
T30
T29
T28
T27
T26
T25
T24
T23
T22
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T21
T20
T19
T18
T17
T16
T15
T14
T13
T12
T11
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 31 of 32
MARSHALL DAY
Acoustics


Legend - Vegetation clearance
Receiver
Tower or pole location
Remaining NWTD
Switching station or substation
Priority management - Vegetation clearance ≥ 55 dB
High priority management - Vegetation clearance ≥ 75 dB
T10
T9
T8
T7
T5
T4
T3
T2
T1
Blackwood Creek
Palmerston
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 32 of 32
MARSHALL DAY Acoustics

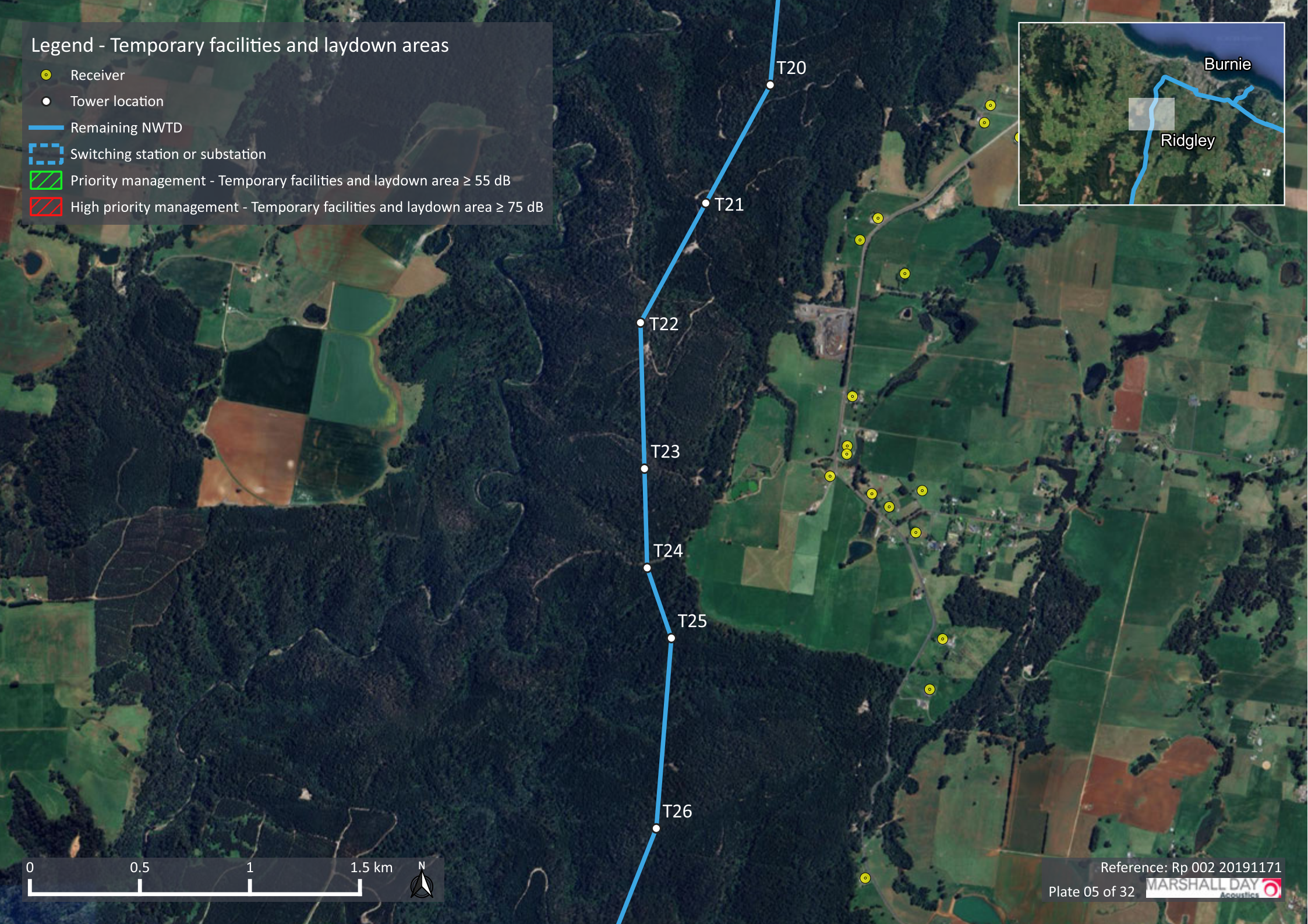
D3 Temporary facilities and laydown areas


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T52
T53
T54
T55
T56
T57
T58
T59
T60
T61
T62
Hampshire Hills
Hampshire
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 01 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T44
T45
T46
T47
T48
T49
T50
T51
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 02 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T35
T36
T37
T38
T39
T40
T41
T42
T43
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 03 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Ridgley
T27
T28
T29
T30
T31
T32
T33
T34
T35
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 04 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T20
T21
T22
T23
T24
T25
T26
Burnie
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 05 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Ridgley
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15
T16
T17
T18
T19
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 06 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Penguin
Ridgley
T7
T6
T5
T4
T3
T2
Burnie
T1
T100
T99
T98
T97
T96
T95
T94
T93
T92
T91
T90
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 07 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
HB_Gantry
T9
T8
T7
T6
T5
T4
T3
T2
T1
T89
T90
T88
T87
T86
T85
T84
T83A
T83
T82
T81
T80
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 08 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
T82
T81
T80
T79
T78
T77
T76
T75A
T127
T126
T75
T74
T124
T73
T123
T72
T122
T121
T71
T120
T119
T70
T69
T118
T116
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 09 of 32
MARSHALL DAY Acoustics

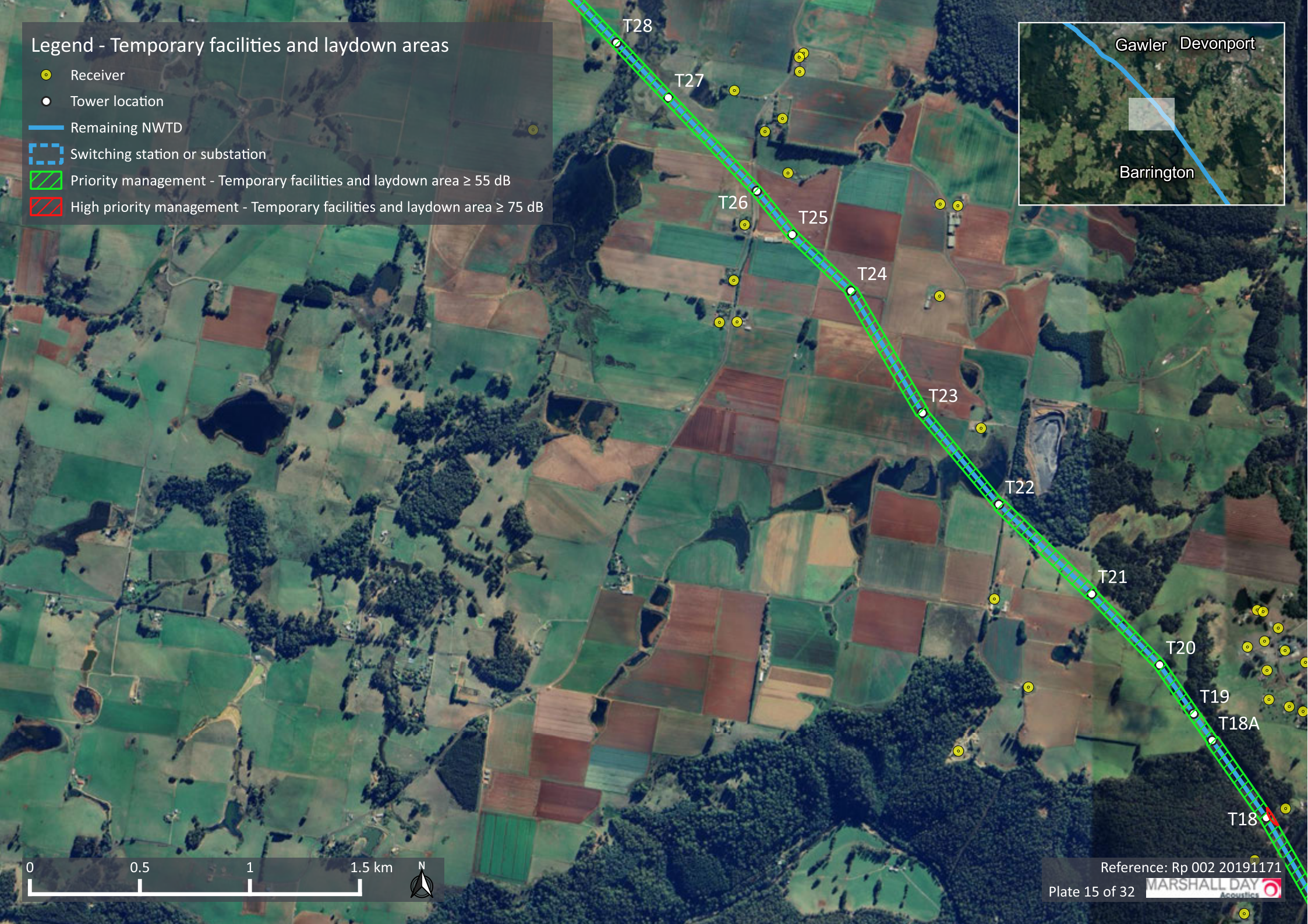

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
Penguin
T69
T118
T116
T115
T68
T114
T67
T113
T66
T65A
T65
T64
T63A
T62A
T61
T60A
T60
T59A
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 10 of 32
MARSHALL DAY Acoustics

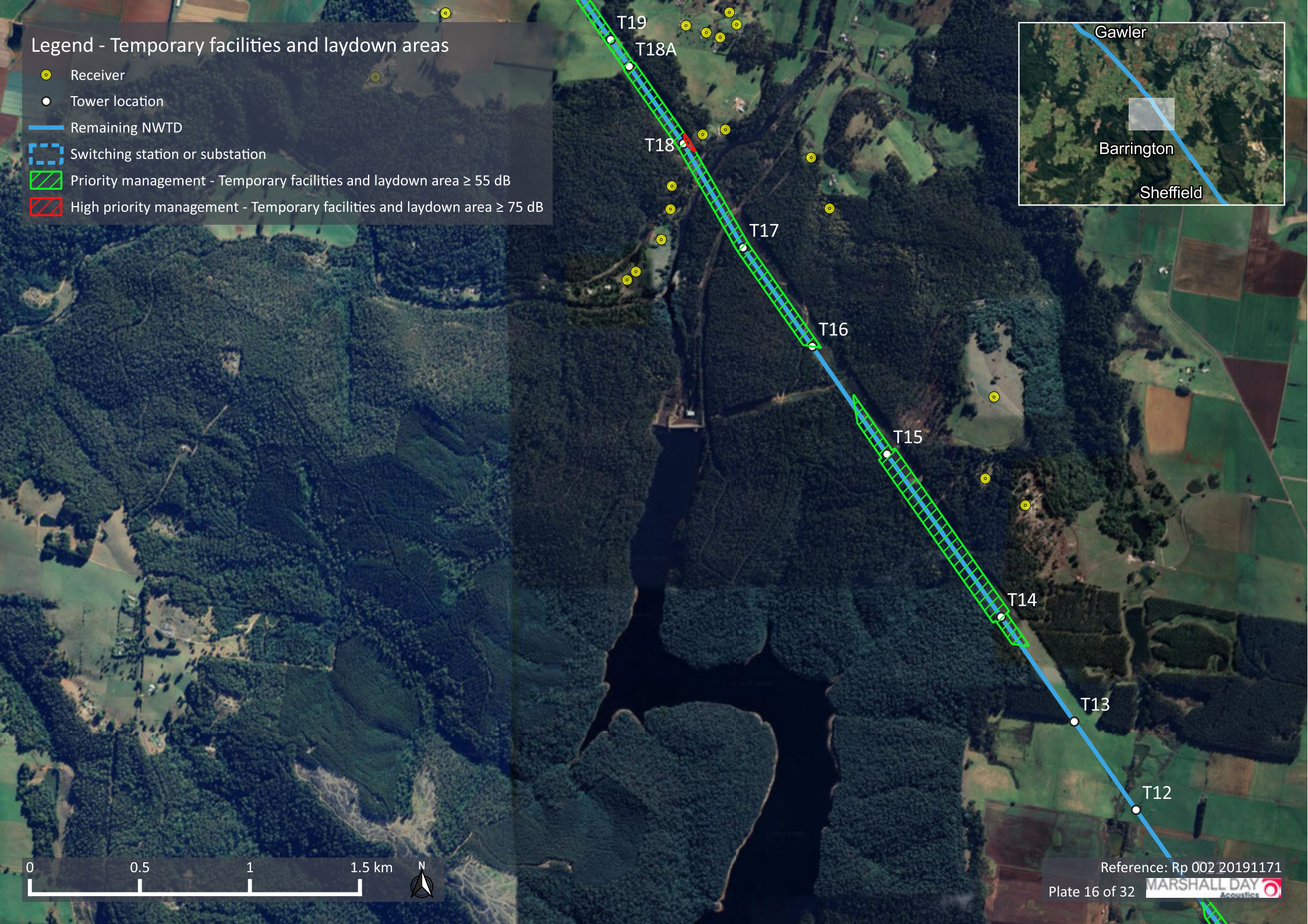

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
T60A
T59A
T60
T59
T58
T57A
T94
T57
T93
T92
T56
T91
T55
T54A
T54
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 11 of 32
MARSHALL DAY Acoustics

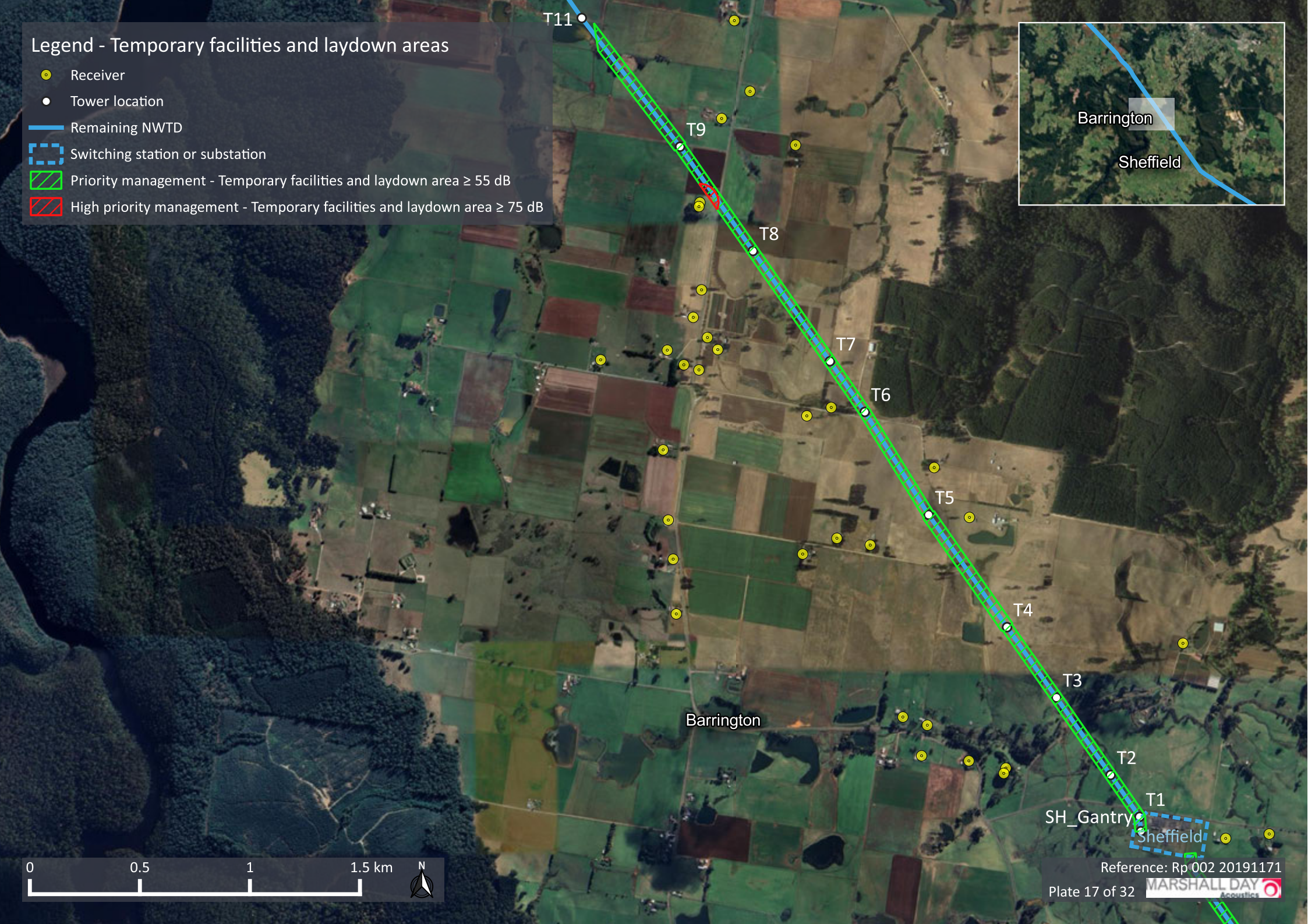

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Penguin
Ulverstone
Gawler
T91
T54A
T54
T53
T52
T51
T50
T49
T48
T47
T46
Gawler
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 12 of 32
MARSHALL DAY Acoustics

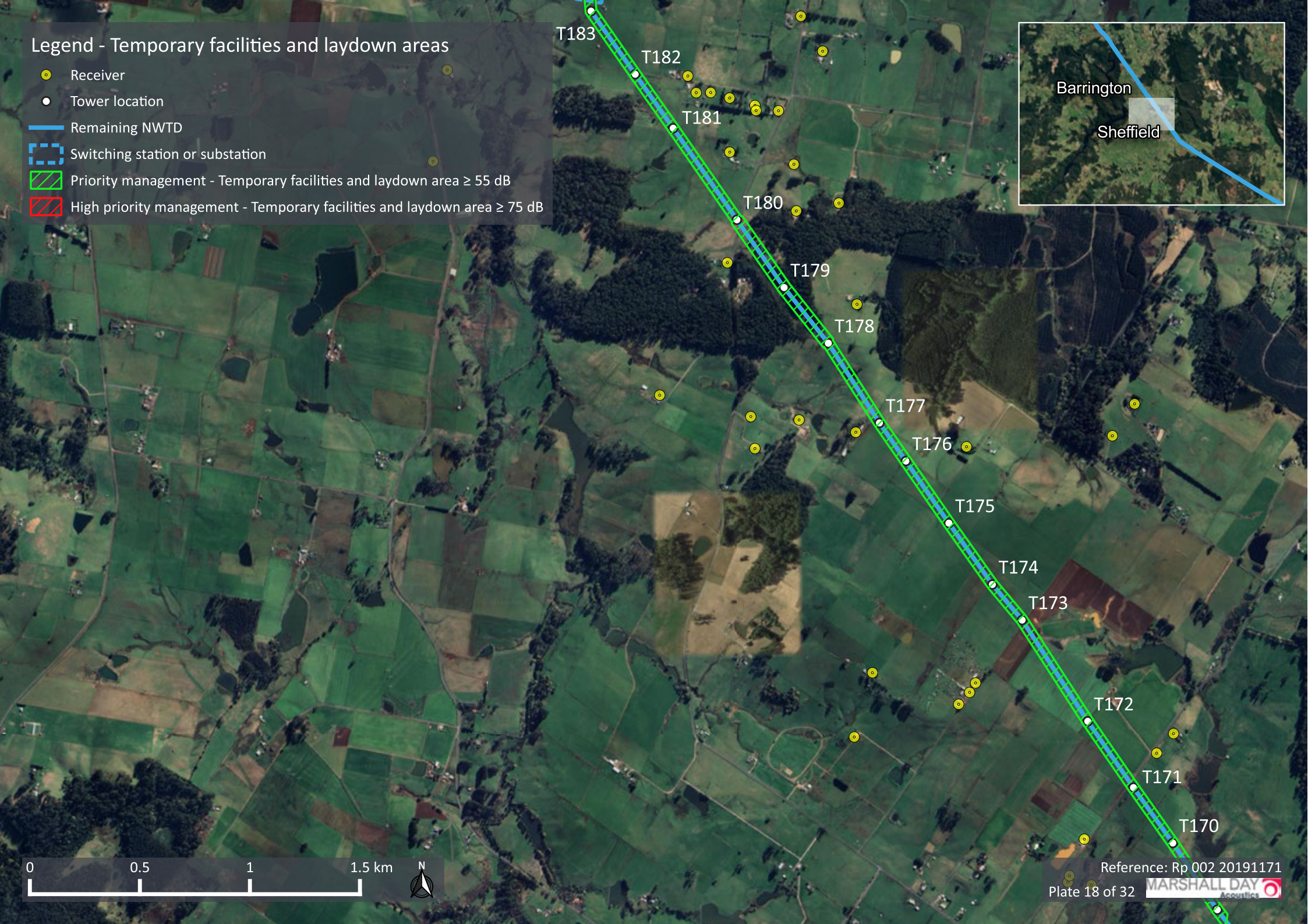

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Penguin
Ulverstone
Gawler
Devonport
T46
T45
T44
T43
T42
T41
T40
T39
T38
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 13 of 32
MARSHALL DAY Acoustics

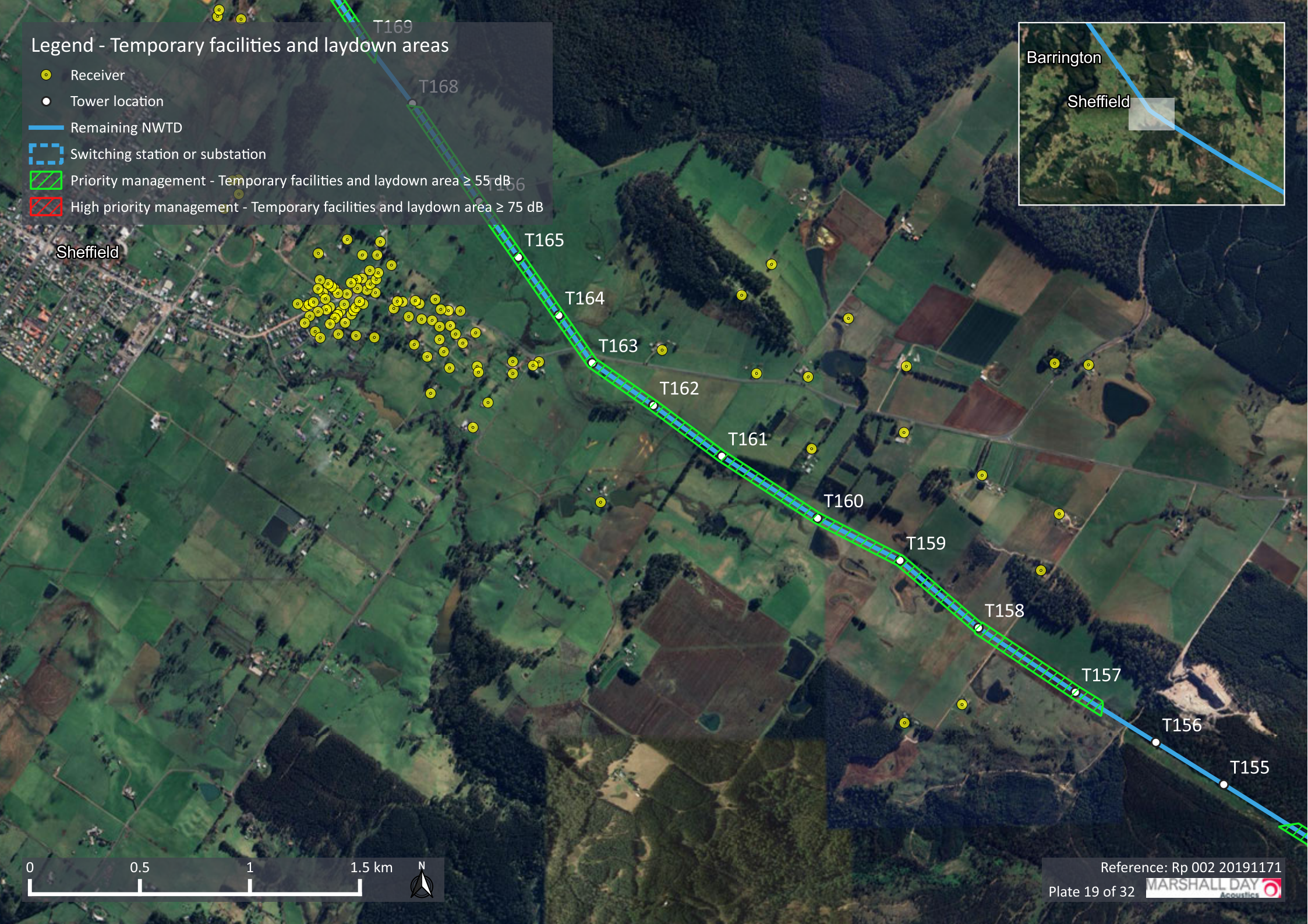

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T38
T37
T36
T35
T34
T33
T32
T31
T30
T29
Ulverstone
Gawler
Devonport
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 14 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T28
T27
T26
T25
T24
T23
T22
T21
T20
T19
T18A
T18
Gawler
Devonport
Barrington
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 15 of 32
MARSHALL DAY
Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T19
T18A
T18
T17
T16
T15
T14
T13
T12
Gawler
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 16 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T11
T9
T8
T7
T6
T5
T4
T3
T2
T1
SH_Gantry1
Barrington
Sheffield
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 17 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Barrington
Sheffield
T183
T182
T181
T180
T179
T178
T177
T176
T175
T174
T173
T172
T171
T170
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 18 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Barrington
Sheffield
Sheffield
T169
T168
T166
T165
T164
T163
T162
T161
T160
T159
T158
T157
T156
T155
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 19 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Barrington
Sheffield
Elizabeth Town
T154
T153
T152
T151
T150
T149
T148
T147
T146
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 20 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Sheffield
Elizabeth Town
Deloraine
T145
T144
T143
T142A
T142
T141
T140
T139
T138
T137
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 21 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Elizabeth Town
Deloraine
T136
T135
T134
T133
T132
T131
T130
T129
T128
T127
T126
T125
T124
T123
T122
Elizabeth Town
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 22 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Elizabeth Town
Deloraine
T120
T119
T118
T117
T116
T115
T114
T112
T111
T110
T109
T107
T106
T105
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 23 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T105
T104
T103
T102
T101
T100
T99
T98
T97
T96
T95
T94
T93
T91
Deloraine
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 24 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T91
T90
T89
T88
T87
T86
T85
T84
T83
T82
T81
T80
T79
T78
T77
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 25 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T76
T75
T74
T73
T72
T71
T70
T69
T68
T67
T66
T65
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 26 of 32
MARSHALL DAY Acoustics

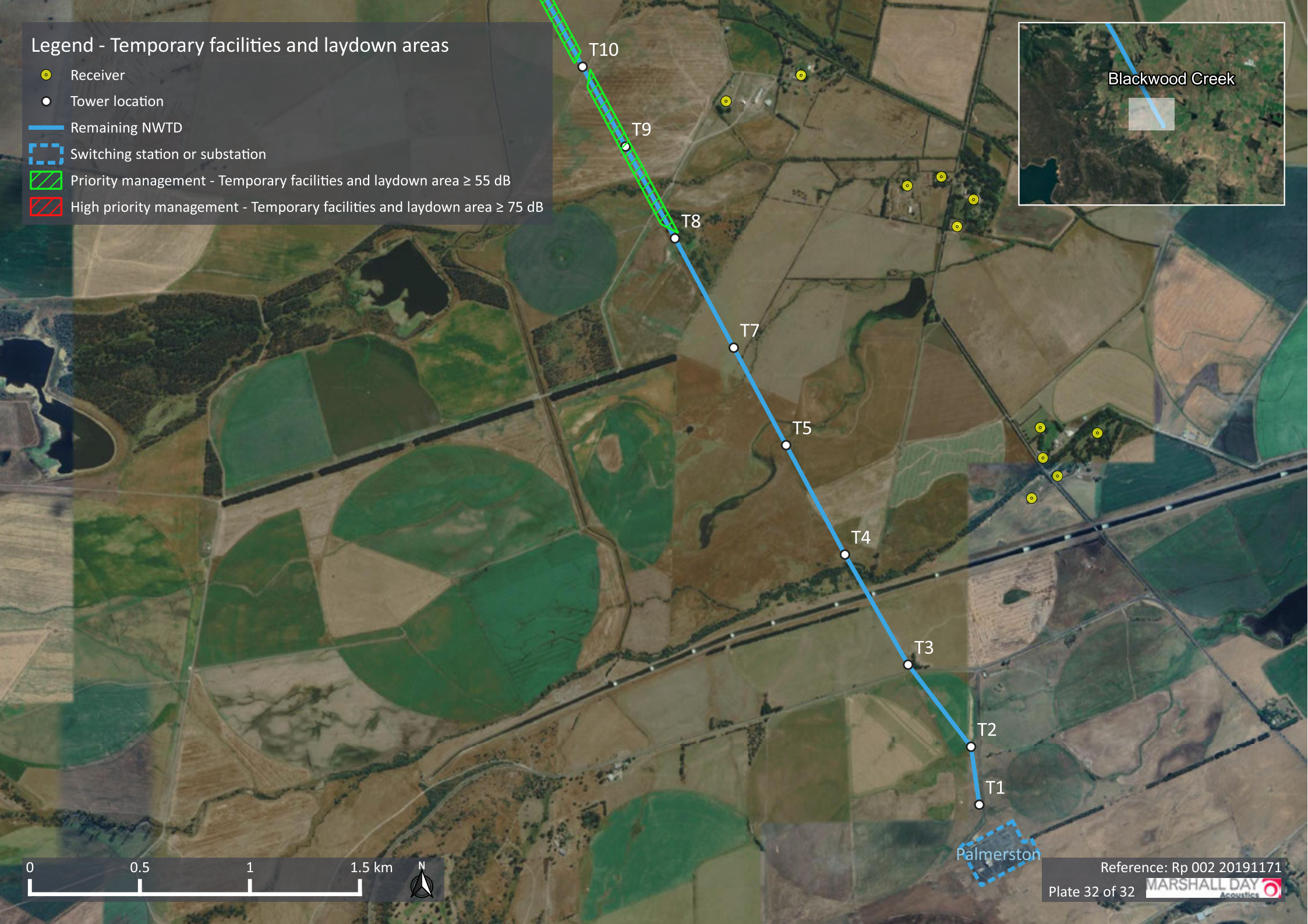

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T64
T63
T62
T61
T60
T59
T58
T57
T56
T55
Cluan
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T54
T53
T52
T51
T50
T49
T48
T47
T46
T45
T44
T43
T42
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 28 of 32
MARSHALL DAY Acoustics

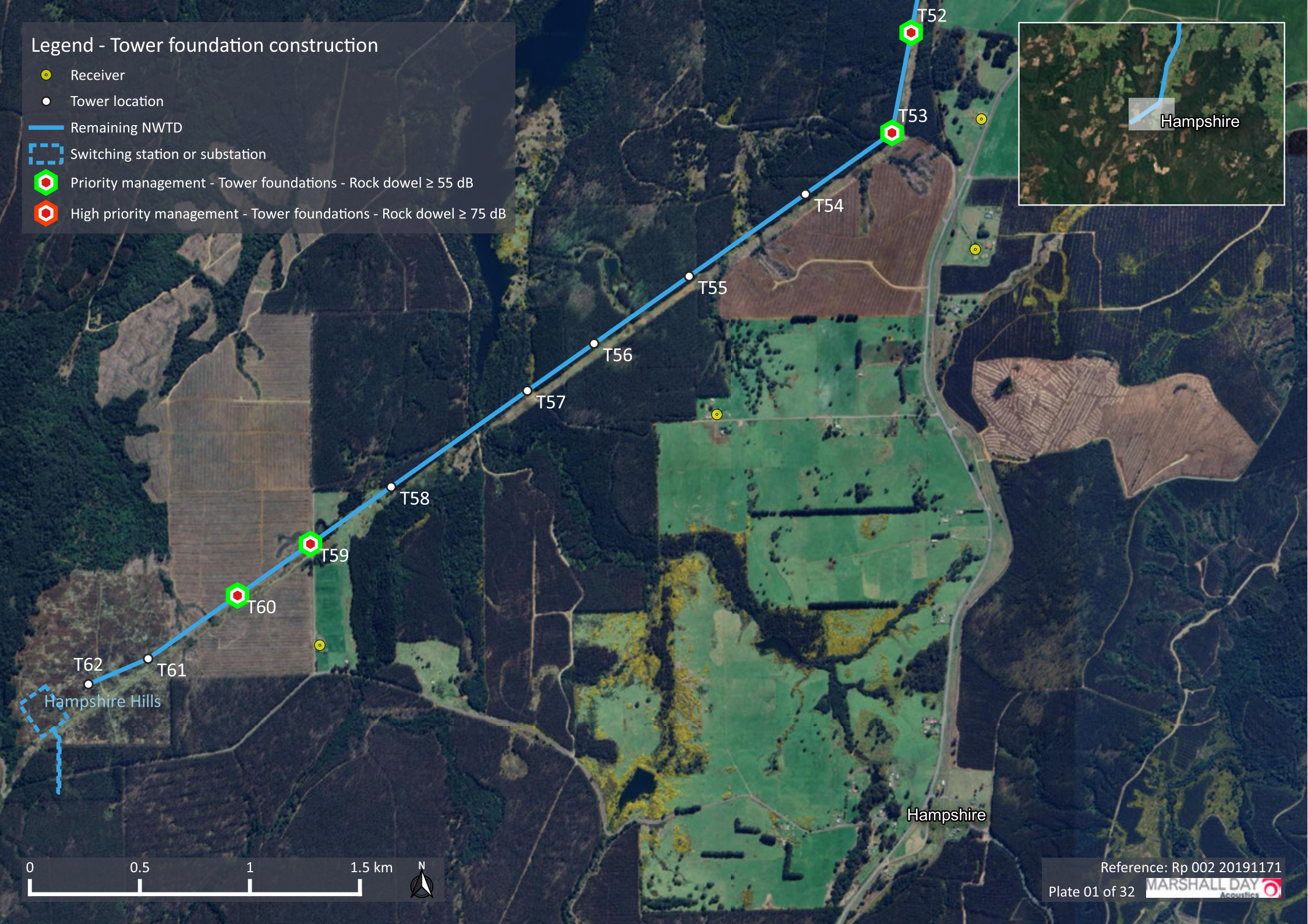

Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T41
T40
T39
T38
T37
T36
T35
T34
T33
T32
Cluan
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 29 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T31
T30
T29
T28
T27
T26
T25
T24
T23
T22
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 30 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T21
T20
T19
T18
T17
T16
T15
T14
T13
T12
T11
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 31 of 32
MARSHALL DAY Acoustics


Legend - Temporary facilities and laydown areas
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Temporary facilities and laydown area ≥ 55 dB
High priority management - Temporary facilities and laydown area ≥ 75 dB
T10
T9
T8
T7
T5
T4
T3
T2
T1
Blackwood Creek
Palmerston
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 32 of 32
MARSHALL DAY Acoustics

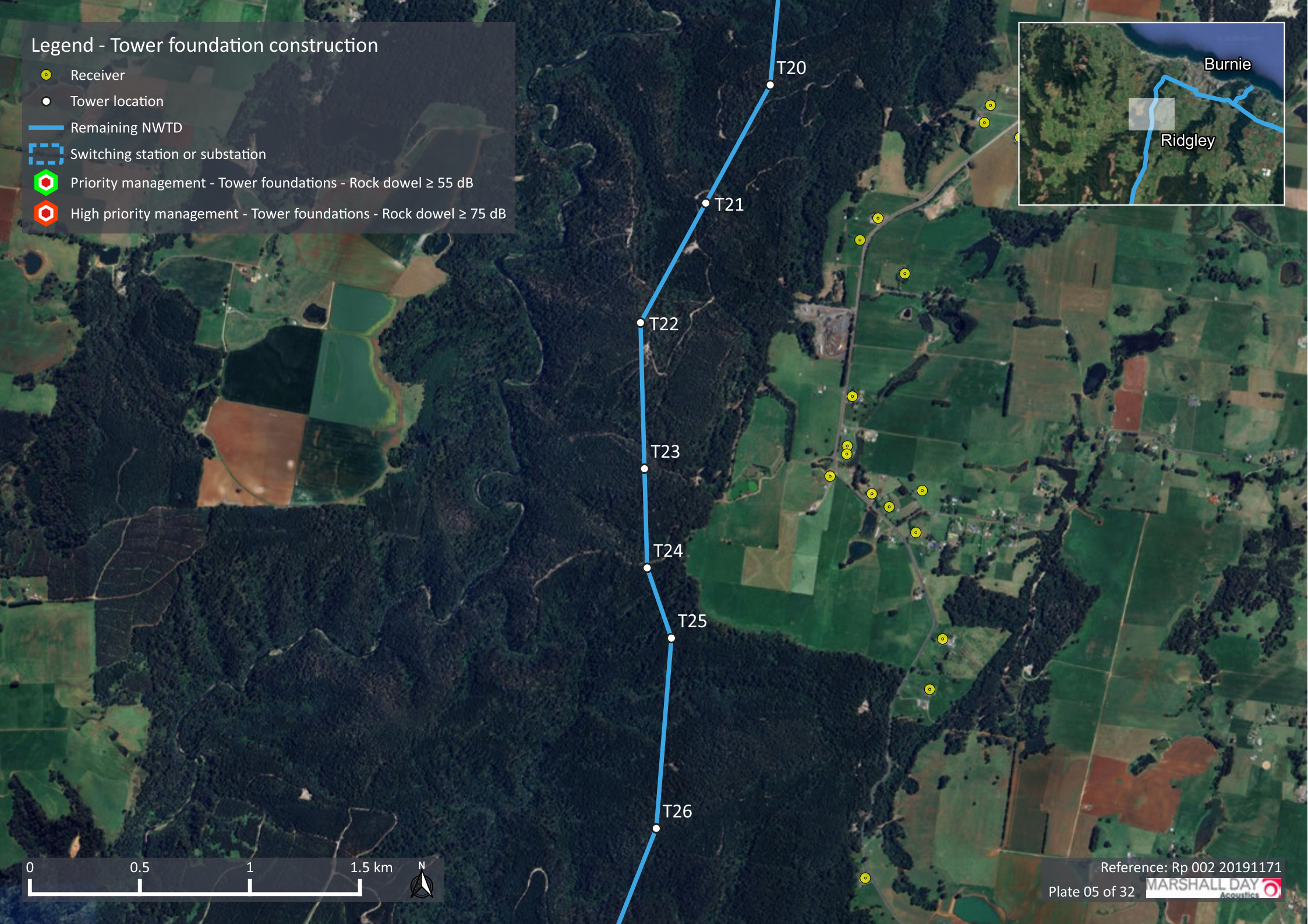
D4 Tower foundation construction – Rock dowel

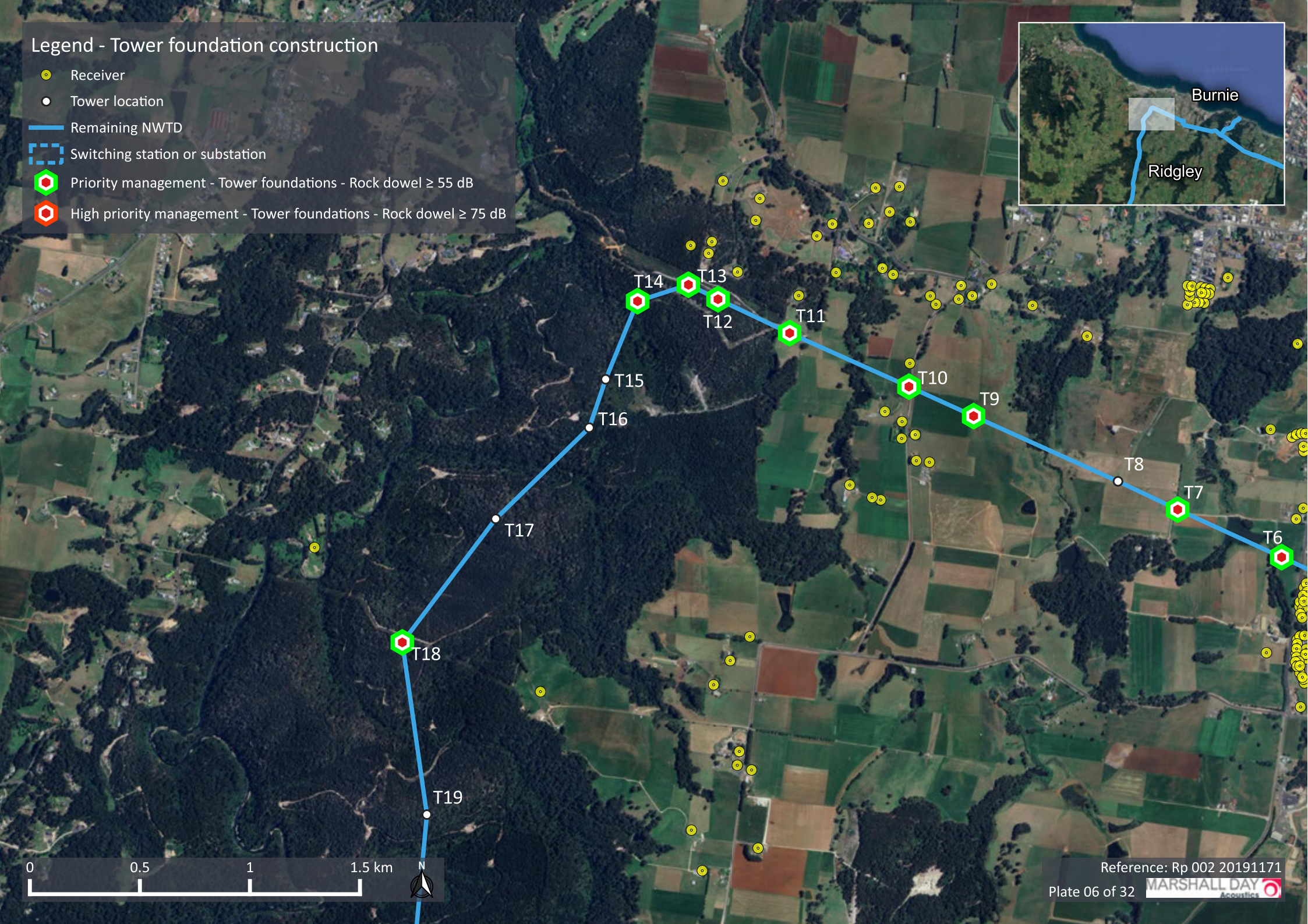

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T52
T53
T54
T55
T56
T57
T58
T59
T60
T61
T62
Hampshire Hills
Hampshire
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 01 of 32
MARSHALL DAY Acoustics

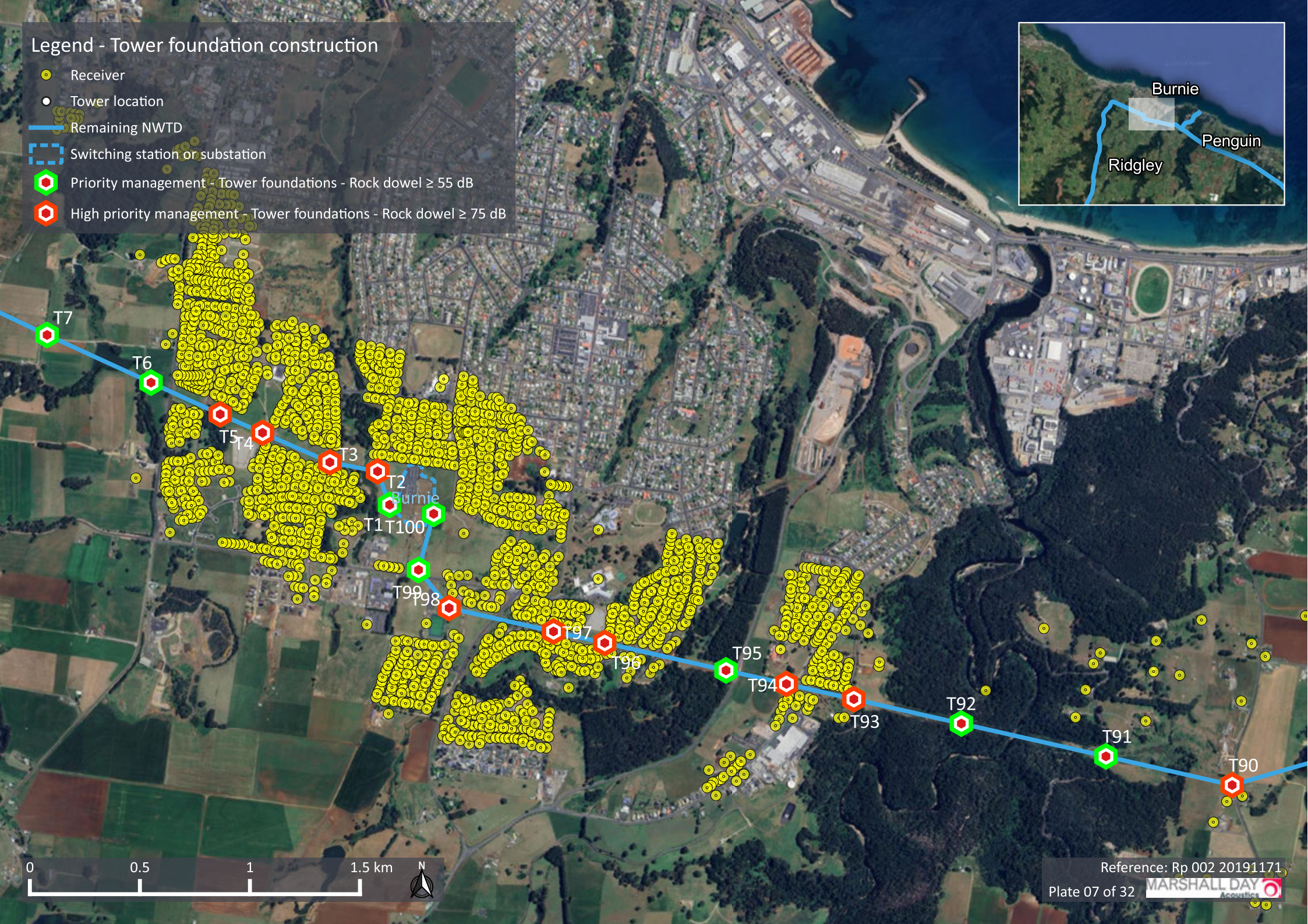

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T44
T45
T46
T47
T48
T49
T50
T51
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 02 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T35
T36
T37
T38
T39
T40
T41
T42
T43
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 03 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Ridgley
T27
T28
T29
T30
T31
T32
T33
T34
T35
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 04 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T20
T21
T22
T23
T24
T25
T26
Burnie
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 05 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Ridgley
T14
T13
T12
T11
T15
T10
T16
T9
T8
T7
T17
T6
T18
T19
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 06 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Penguin
Ridgley
T7
T6
T5
T4
T3
T2
T1
T100
T99
T98
T97
T96
T95
T94
T93
T92
T91
T90
Burnie
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 07 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
HB_Gantry
T9
T8
T7
T6
T5
T4
T3
T2
T1
T89
T90
T88
T87
T86
T85
T84
T83A
T83
T82
T81
T80
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 08 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
T82
T81
T80
T79
T78
T77
T76
T75A
T127
T126
T75
T74
T124
T73
T123
T72
T122
T121
T71
T120
T119
T70
T69
T118
T116
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 09 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
Penguin
T69
T118
T116
T115
T68
T114
T67
T113
T66
T65A
T65
T64
T63A
T62A
T61
T60A
T60
T59A
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 10 of 32
MARSHALL DAY Acoustics

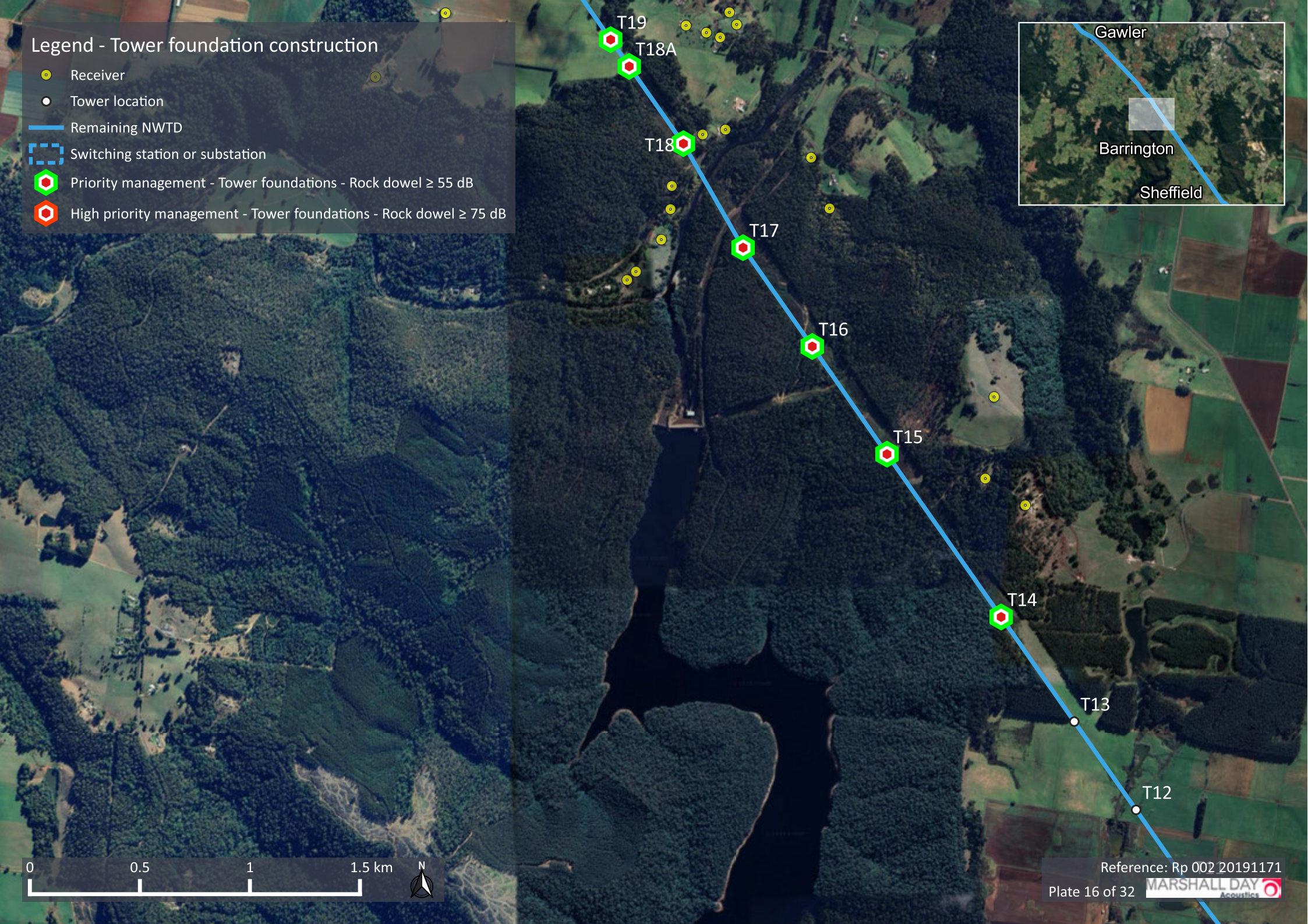

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
T60A
T59A
T60
T59
T58
T57A
T94
T57
T93
T56
T92
T55
T91
T54A
T54
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 11 of 32
MARSHALL DAY Acoustics

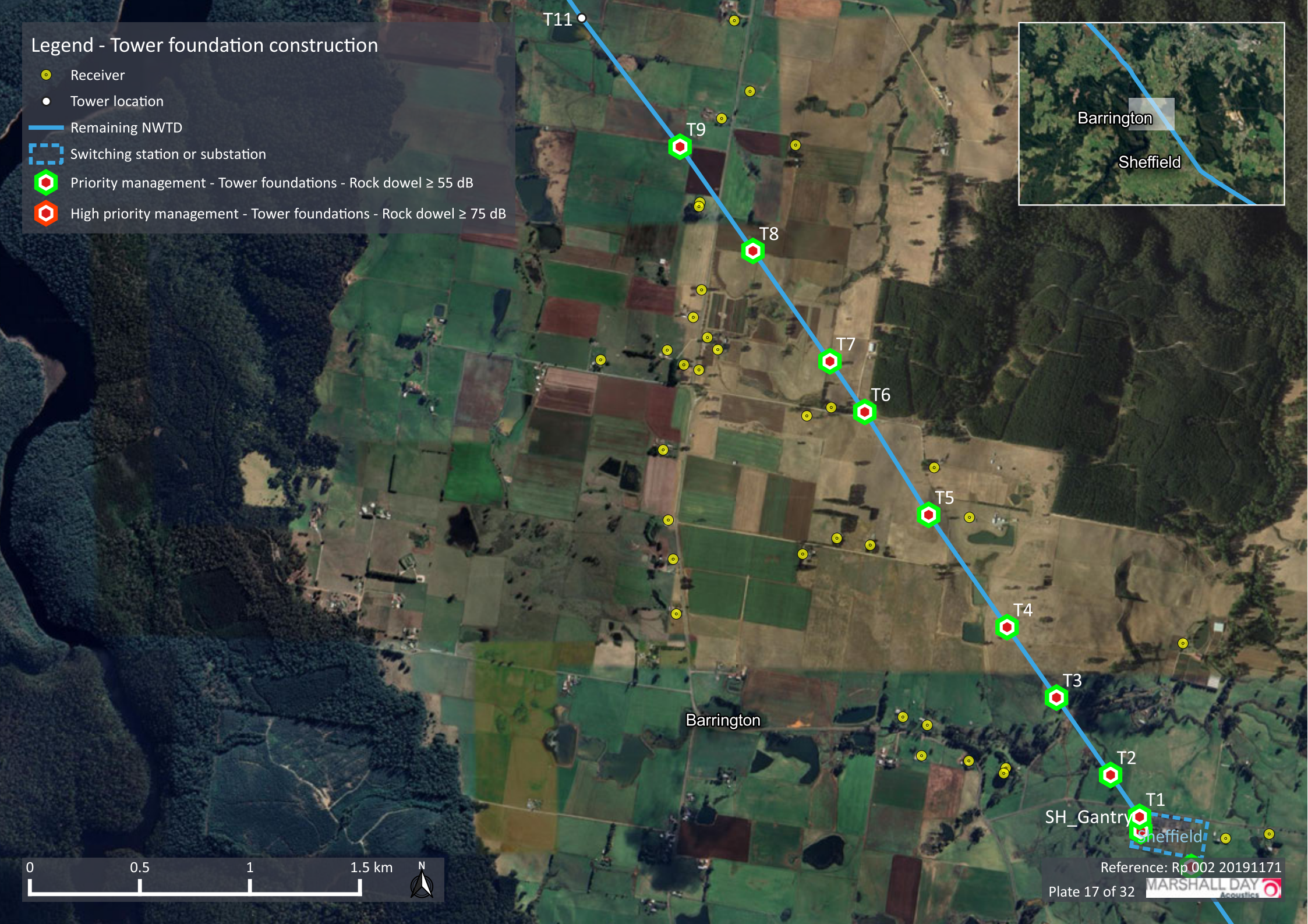

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Penguin
Ulverstone
Gawler
T91
T54A
T54
T53
T52
T51
T50
T49
T48
T47
T46
Gawler
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 12 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Penguin
Ulverstone
Gawler
Devonport
Gawler
T46
T45
T44
T43
T42
T41
T40
T39
T38
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 13 of 32
MARSHALL DAY
Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T38
T37
T36
T35
T34
T33
T32
T31
T30
T29
Ulverstone
Gawler
Devonport
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 14 of 32
MARSHALL DAY Acoustics

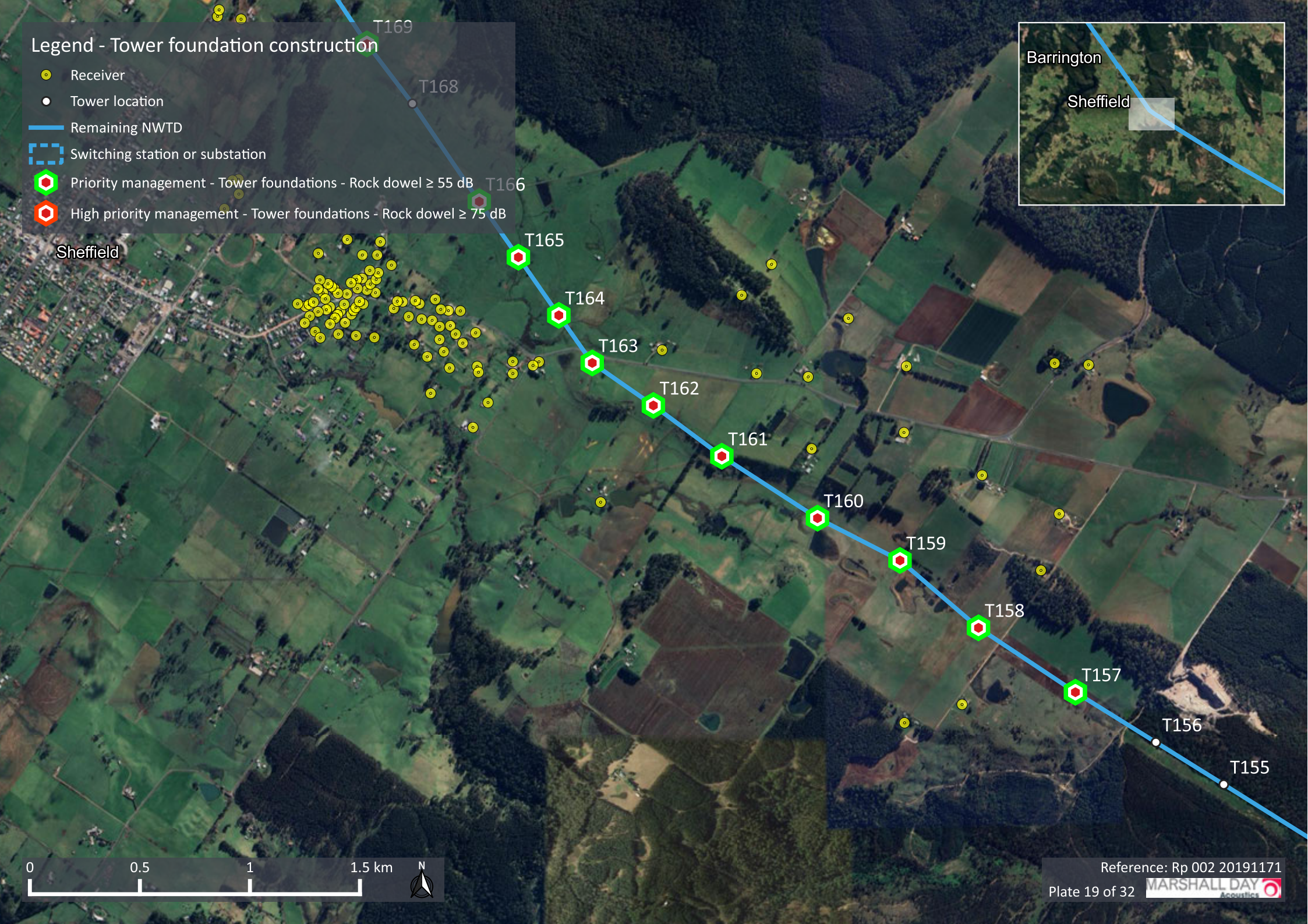

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Gawler
Devonport
Barrington
T28
T27
T26
T25
T24
T23
T22
T21
T20
T19
T18A
T18
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 15 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T19
T18A
T18
T17
T16
T15
T14
T13
T12
Gawler
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 16 of 32
MARSHALL DAY Acoustics



Reference: Rp 002 20191171


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Barrington
Sheffield
T183
T182
T181
T180
T179
T178
T177
T176
T175
T174
T173
T172
T171
T170
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 18 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Barrington
Sheffield
Sheffield
T169
T168
T166
T165
T164
T163
T162
T161
T160
T159
T158
T157
T156
T155
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 19 of 32
MARSHALL DAY Acoustics

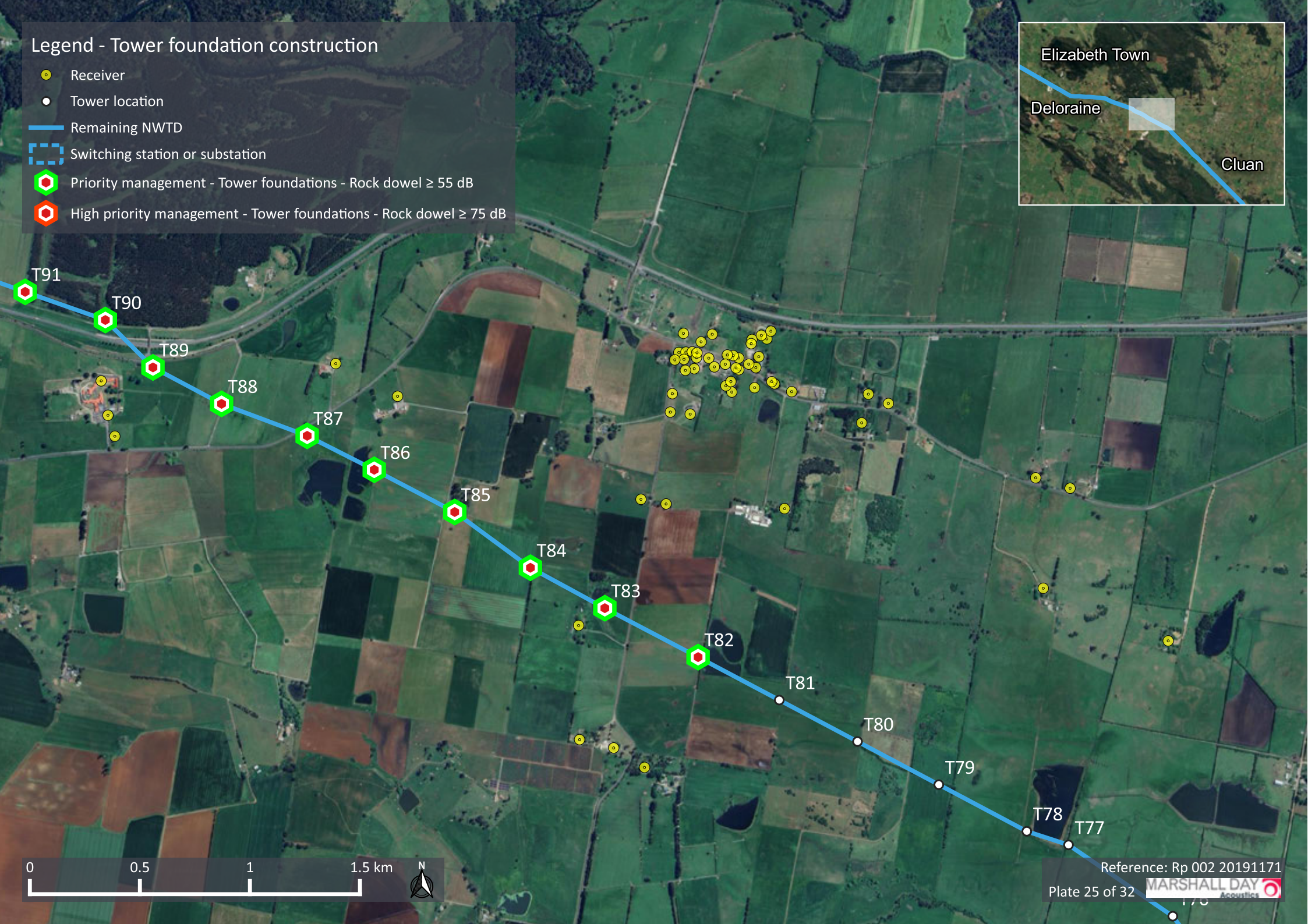

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Barrington
Sheffield
Elizabeth Town
T154
T153
T152
T151
T150
T149
T148
T147
T146
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 20 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Sheffield
Elizabeth Town
Deloraine
T145
T144
T143
T142A
T142
T141
T140
T139
T138
T137
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 21 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Elizabeth Town
Deloraine
T136
T135
T134
T133
T132
T131
T130
T129
T128
T127
T126
T125
T124
T123
T122
Elizabeth Town
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 22 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Elizabeth Town
Deloraine
T120
T119
T118
T117
T116
T115
T114
T112
T111
T110
T109
T107
T106
T105
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 23 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T105
T104
T103
T102
T101
T100
T99
T98
T97
T96
T95
T94
T93
T91
Deloraine
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 24 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T91
T90
T89
T88
T87
T86
T85
T84
T83
T82
T81
T80
T79
T78
T77
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 25 of 32
MARSHALL DAY Acoustics

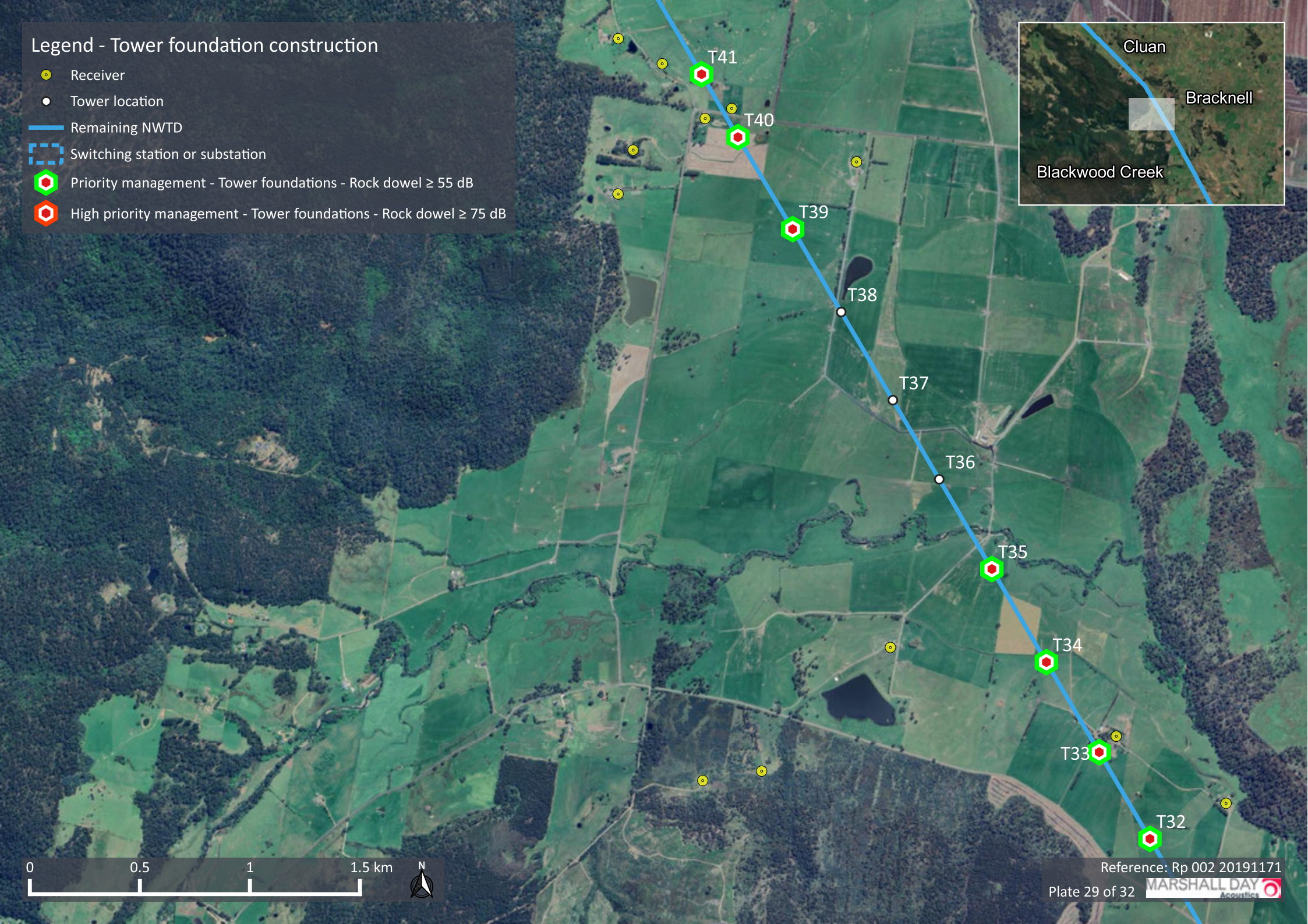

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T76
T75
T74
T73
T72
T71
T70
T69
T68
T67
T66
T65
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 26 of 32
MARSHALL DAY Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T64
T63
T62
T61
T60
T59
T58
T57
T56
T55
Cluan
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 27 of 32
MARSHALL DAY Acoustics



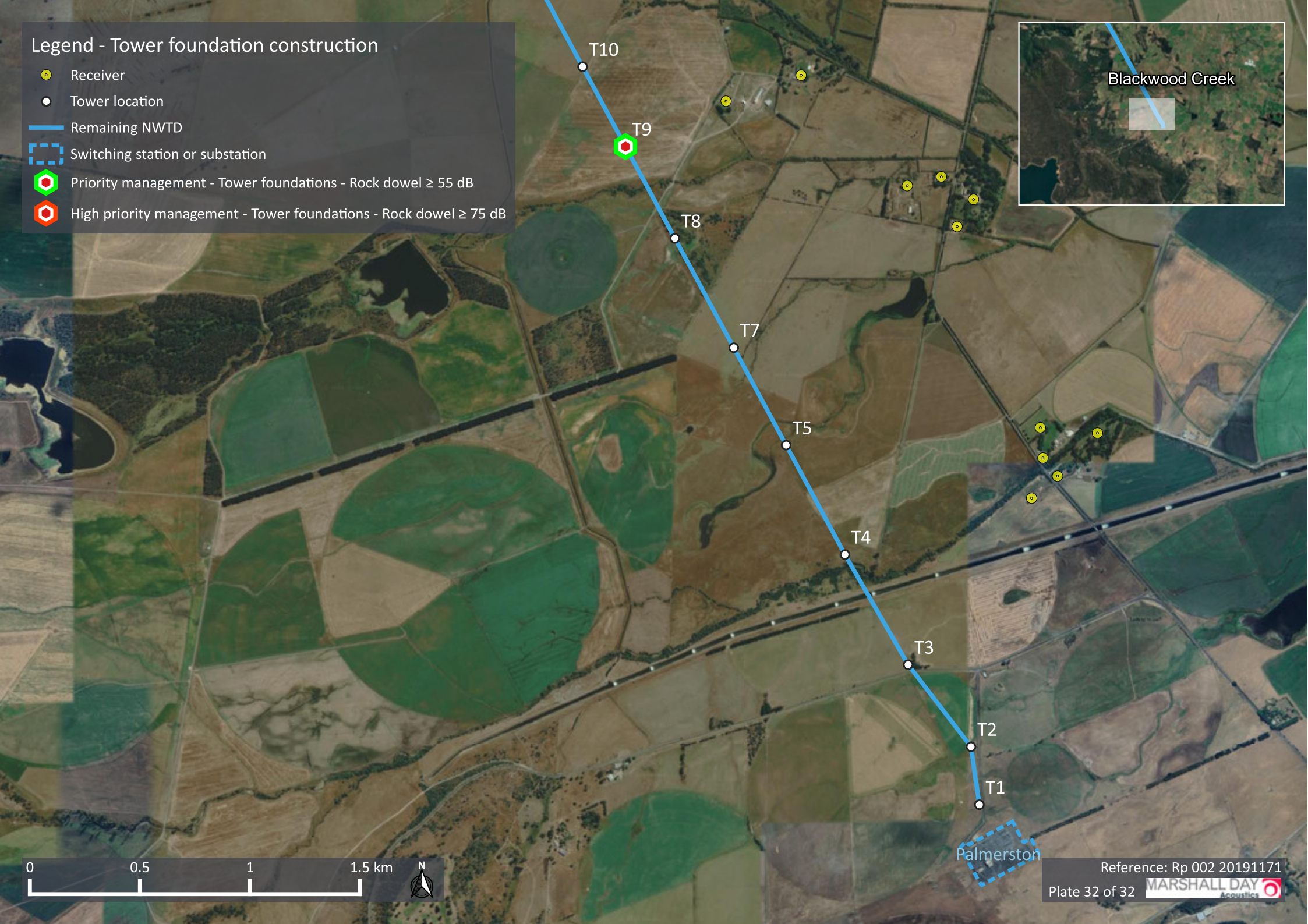
Reference: Rp 002 20191171

Plate 28 of 32

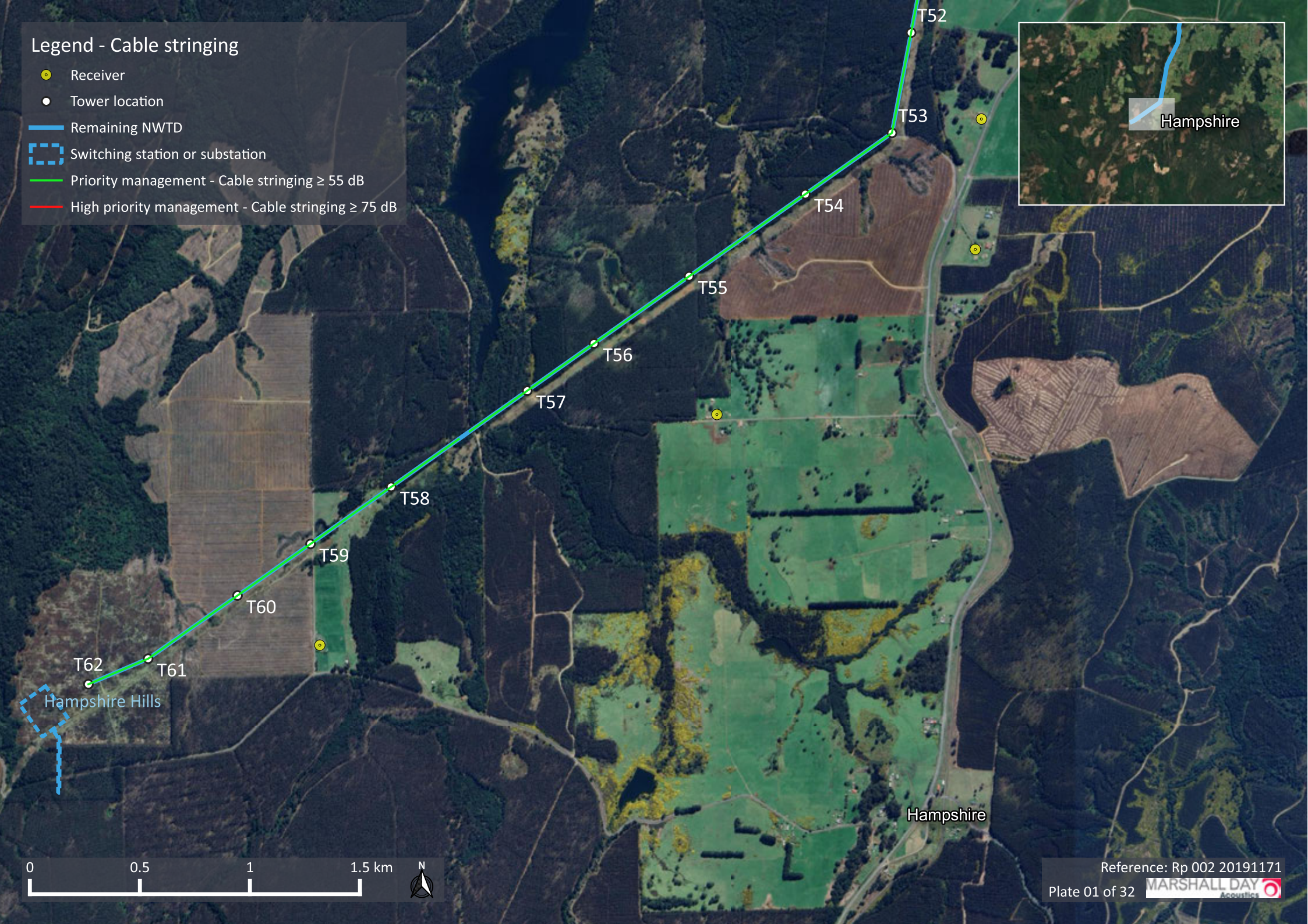

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T41
T40
T39
T38
T37
T36
T35
T34
T33
T32
Cluan
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 29 of 32
MARSHALL DAY Acoustics

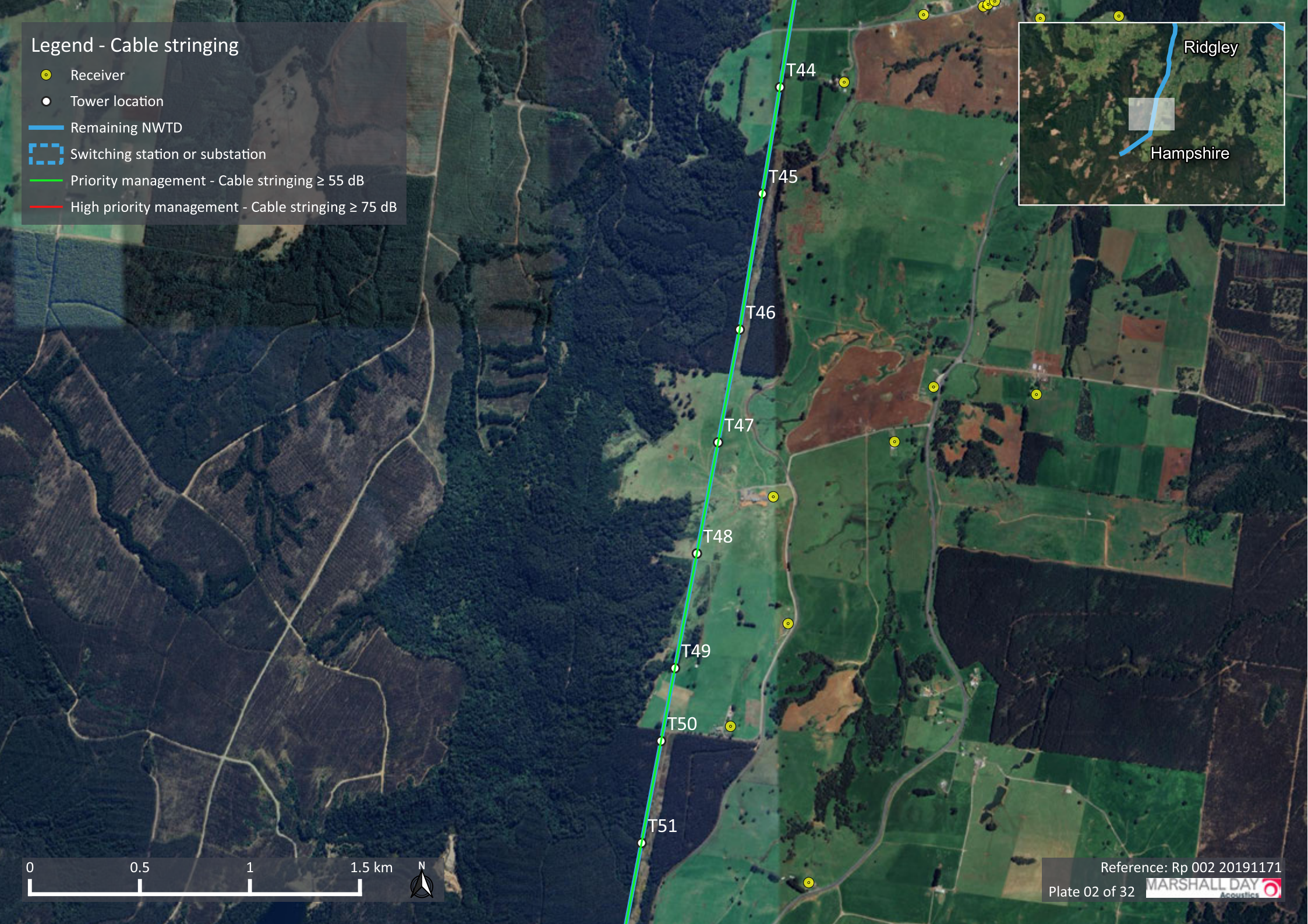

Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T31
T30
T29
T28
T27
T26
T25
T24
T23
T22
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
T21
T20
T19
T18
T17
T16
T15
T14
T13
T12
T11
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 31 of 32
MARSHALL DAY
Acoustics


Legend - Tower foundation construction
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Tower foundations - Rock dowel ≥ 55 dB
High priority management - Tower foundations - Rock dowel ≥ 75 dB
Blackwood Creek
T10
T9
T8
T7
T5
T4
T3
T2
T1
Palmerston
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 32 of 32
MARSHALL DAY Acoustics

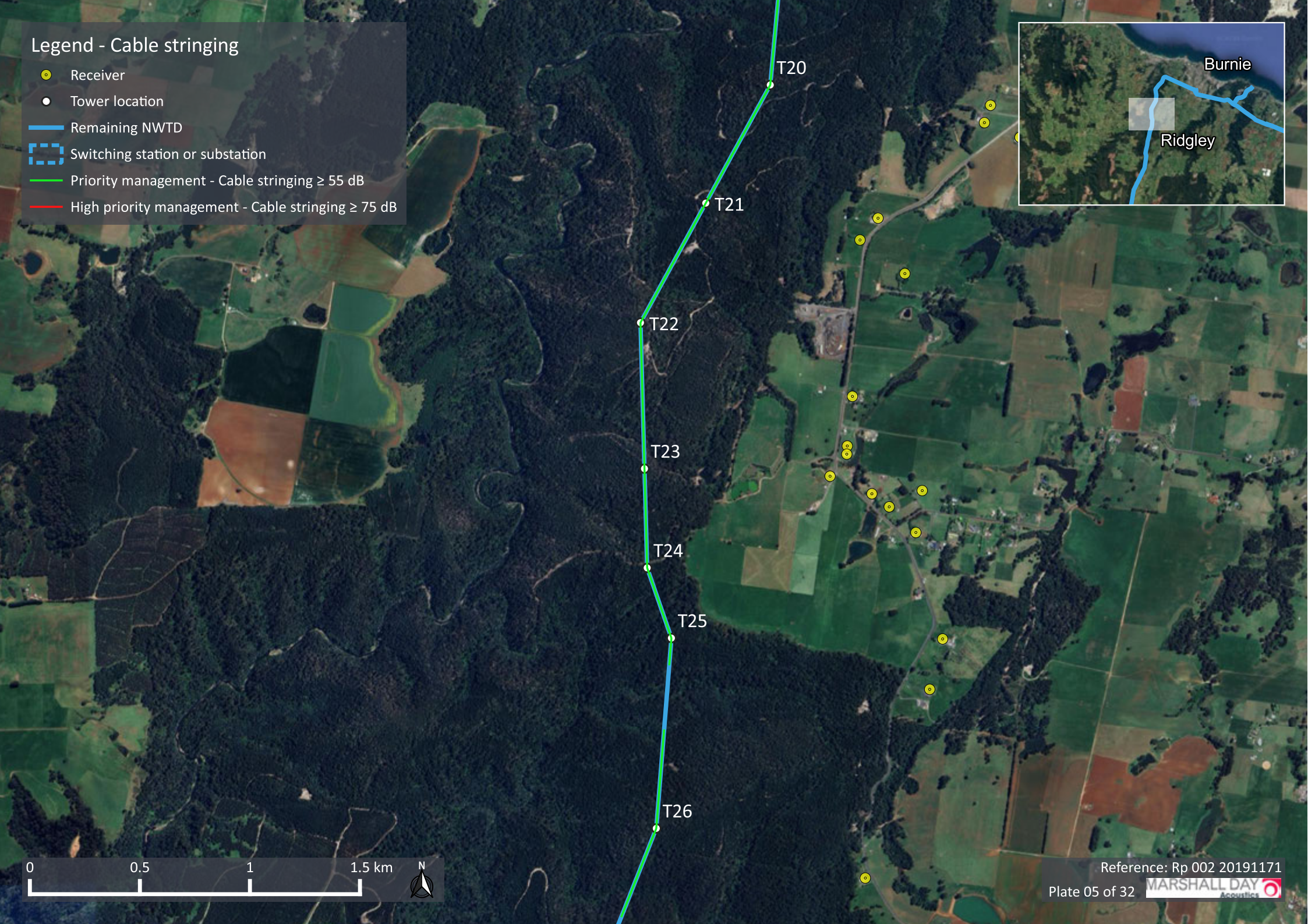
D5 Cable stringing


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T52
T53
T54
T55
T56
T57
T58
T59
T60
T61
T62
Hampshire Hills
Hampshire
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 01 of 32
MARSHALL DAY Acoustics

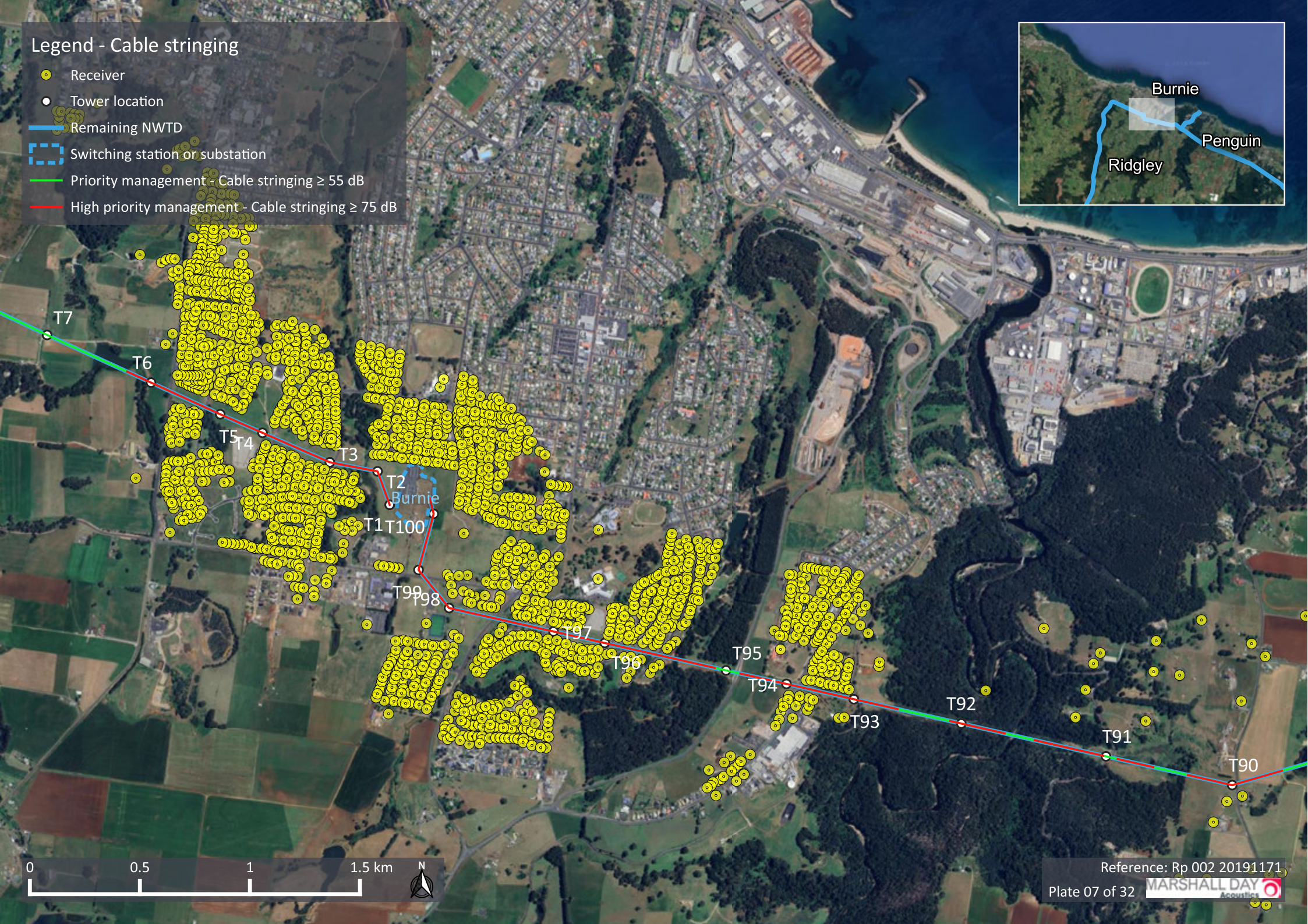

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T44
T45
T46
T47
T48
T49
T50
T51
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 02 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T35
T36
T37
T38
T39
T40
T41
T42
T43
Ridgley
Hampshire
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 03 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Ridgley
T27
T28
T29
T30
T31
Ridgley
T32
T33
T34
T35
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 04 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T20
T21
T22
T23
T24
T25
T26
Burnie
Ridgley
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 05 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Ridgley
T14
T13
T12
T11
T10
T9
T8
T7
T6
T15
T16
T17
T18
T19
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 06 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Penguin
Ridgley
T7
T6
T5
T4
T3
T2
T1
T100
T99
T98
T97
T96
T95
T94
T93
T92
T91
T90
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 07 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
HB_Gantry
T9
T8
T7
T6
T5
T4
T3
T2
T1
T89
T90
T88
T87
T86
T85
T84
T83A
T83
T82
T81
T80
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 08 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Penguin
Ridgley
Ulverstone
Gawler
T82
T81
T80
T79
T78
T77
T76
T75A
T127
T126
T124
T75
T74
T73
T123
T72
T122
T121
T120
T119
T71
T70
T69
T118
T116
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 09 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
Penguin
T69
T118
T116
T115
T68
T114
T67
T113
T65A
T66
T65
T64
T63A
T62A
T61
T60A
T60
T59A
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 10 of 32
MARSHALL DAY Acoustics

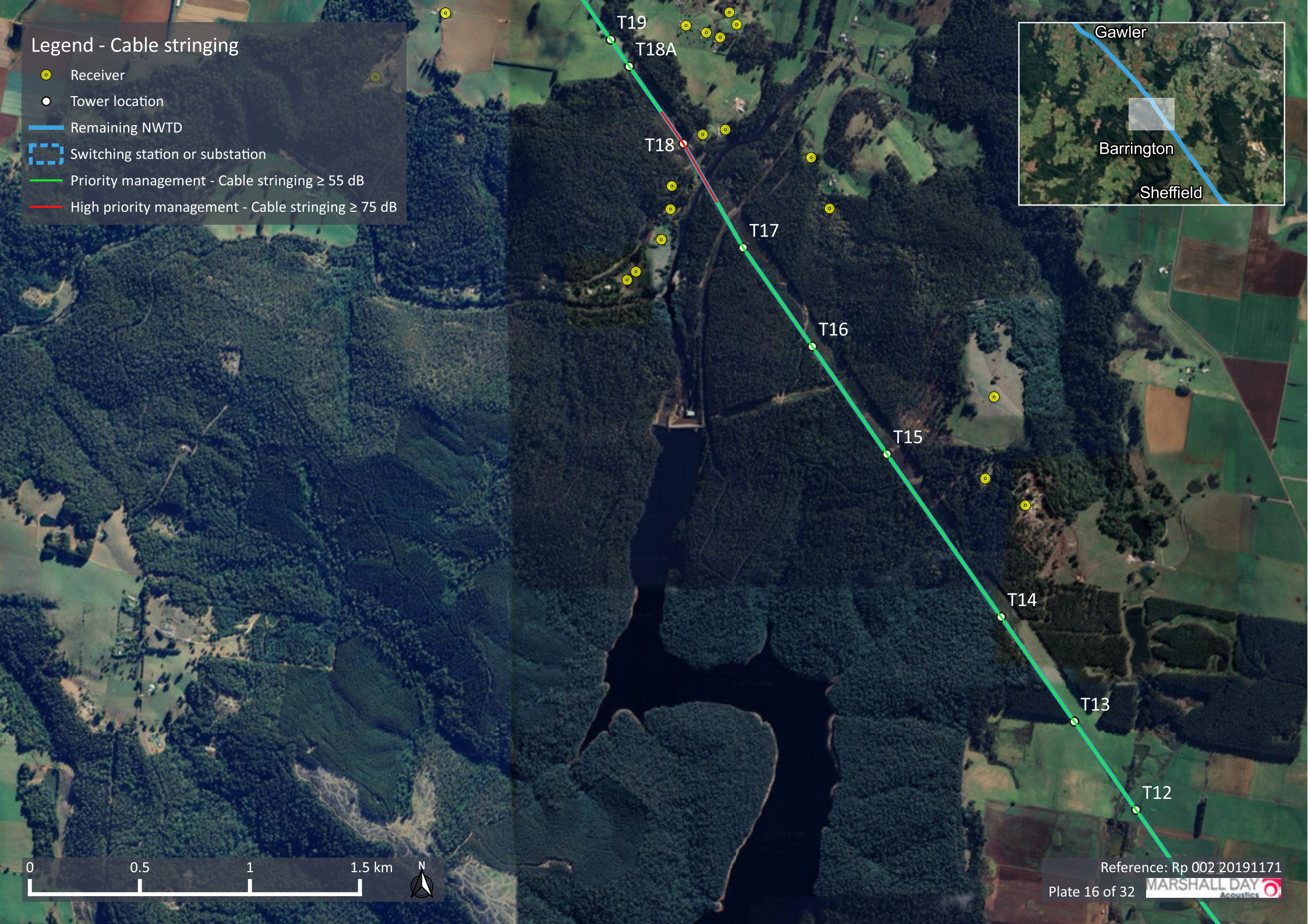

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Burnie
Penguin
Ulverstone
Gawler
T60A
T59A
T60
T59
T58
T57A
T94
T57
T93
T92
T56
T91
T55
T54A
T54
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 11 of 32
MARSHALL DAY Acoustics

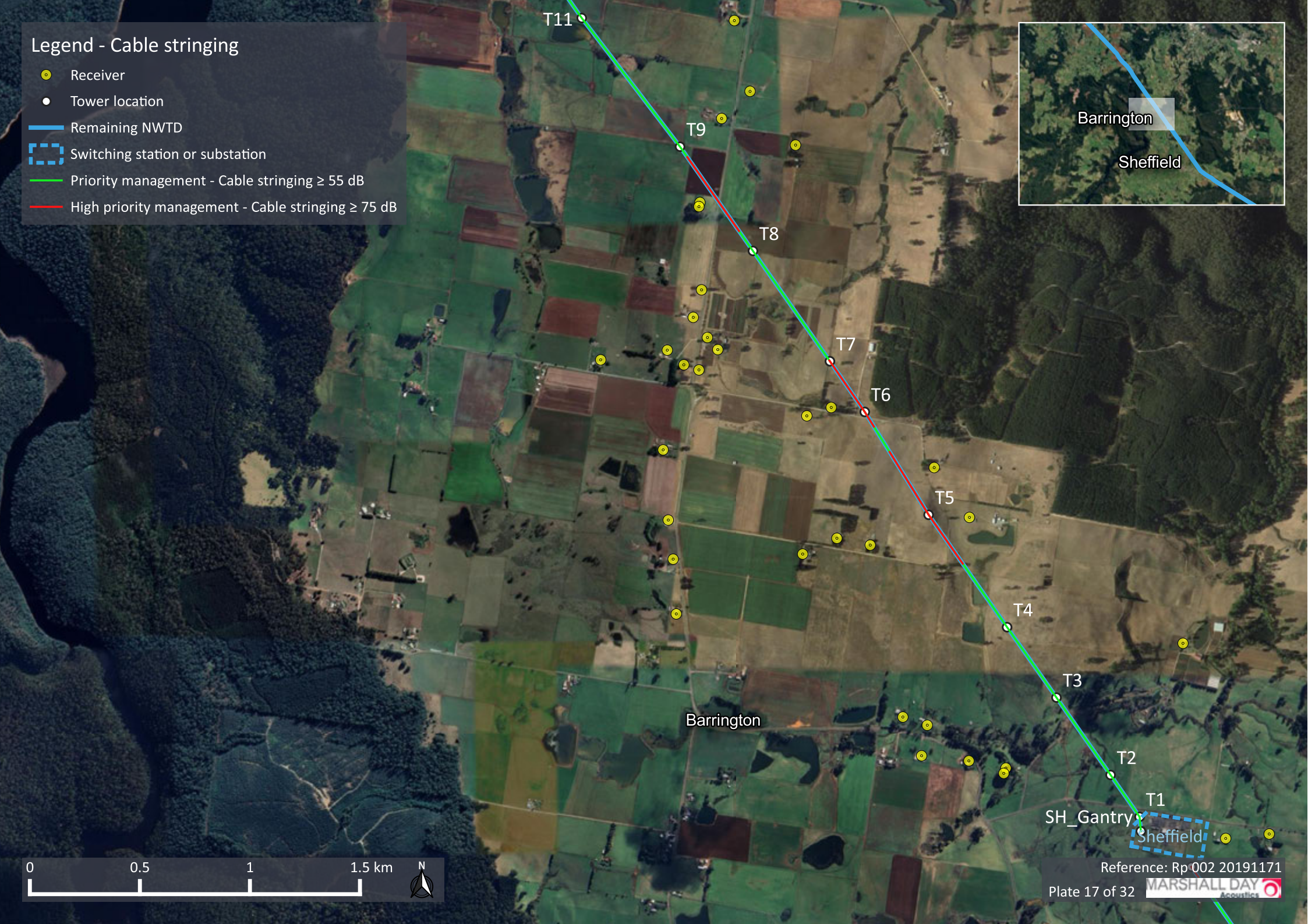

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Penguin
Ulverstone
Gawler
T91
T54A
T54
T53
T52
T51
T50
T49
T48
T47
T46
Gawler
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 12 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Penguin
Ulverstone
Gawler
Devonport
Gawler
T46
T45
T44
T43
T42
T41
T40
T39
T38
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 13 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T38
T37
T36
T35
T34
T33
T32
T31
T30
T29
Ulverstone
Gawler
Devonport
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 14 of 32
MARSHALL DAY Acoustics

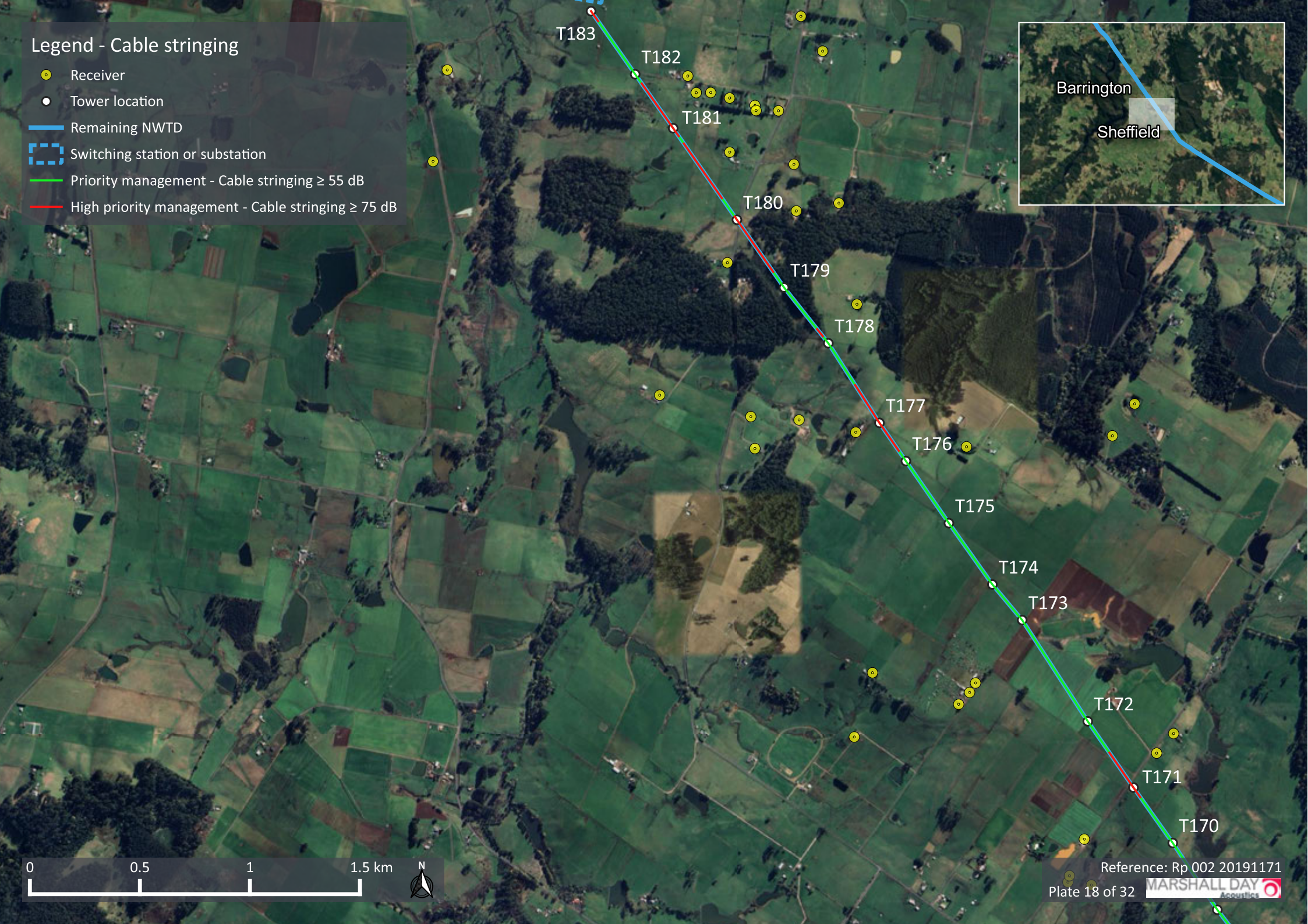

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T28
T27
T26
T25
T24
T23
T22
T21
T20
T19
T18A
T18
Gawler
Devonport
Barrington
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 15 of 32
MARSHALL DAY Acoustics

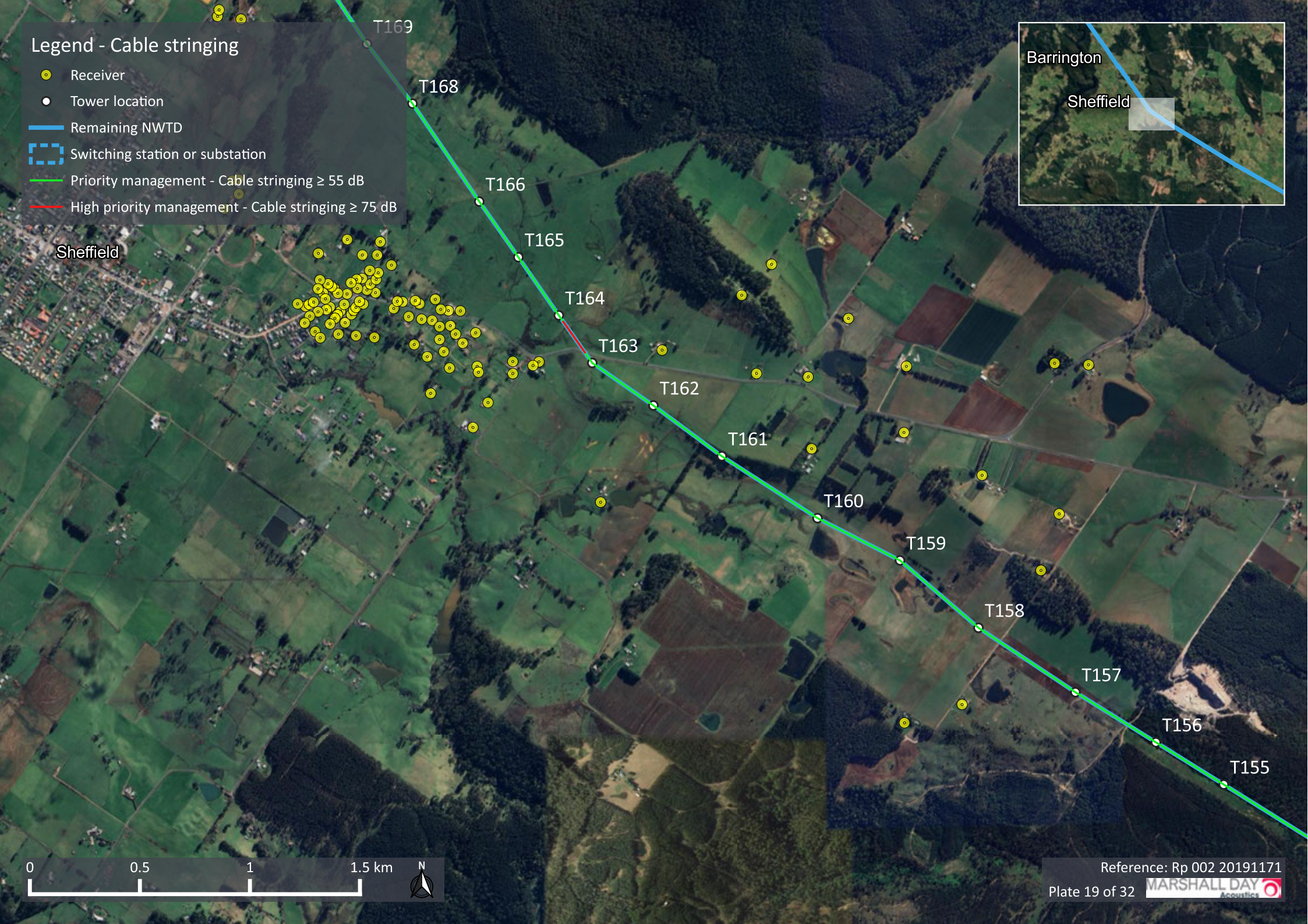

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T19
T18A
T18
T17
T16
T15
T14
T13
T12
Gawler
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 16 of 32
MARSHALL DAY Acoustics

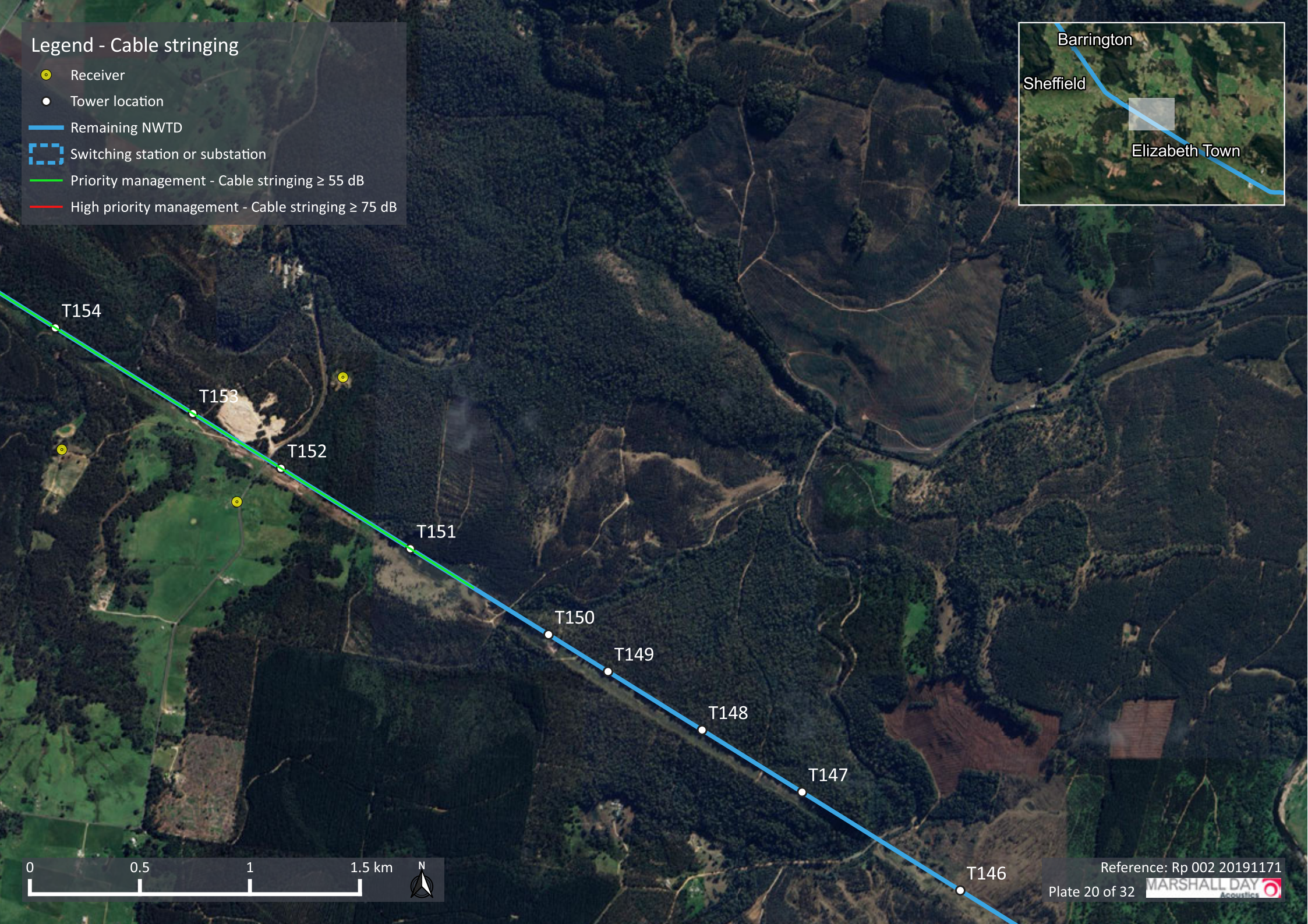


Reference: Rp 002 20191171

MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T183
T182
T181
T180
T179
T178
T177
T176
T175
T174
T173
T172
T171
T170
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 18 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T169
T168
T166
T165
T164
T163
T162
T161
T160
T159
T158
T157
T156
T155
Sheffield
Barrington
Sheffield
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 19 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Barrington
Sheffield
Elizabeth Town
T154
T153
T152
T151
T150
T149
T148
T147
T146
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 20 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Sheffield
Elizabeth Town
Deloraine
T145
T144
T143
T142A
T142
T141
T140
T139
T138
T137
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 21 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Elizabeth Town
Deloraine
Elizabeth Town
T136
T135
T134
T133
T132
T131
T130
T129
T128
T127
T126
T125
T124
T123
T122
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 22 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Elizabeth Town
Deloraine
T120
T119
T118
T117
T116
T115
T114
T112
T111
T110
T109
T107
T106
T105
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 23 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T105
T104
T103
T102
T101
T100
T99
T98
T97
T96
T95
T94
T93
T91
Deloraine
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 24 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
Elizabeth Town
Deloraine
Cluan
T91
T90
T89
T88
T87
T86
T85
T84
T83
T82
T81
T80
T79
T78
T77
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 25 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T76
T75
T74
T73
T72
T71
T70
T69
T68
T67
T66
T65
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 26 of 32
MARSHALL DAY Acoustics

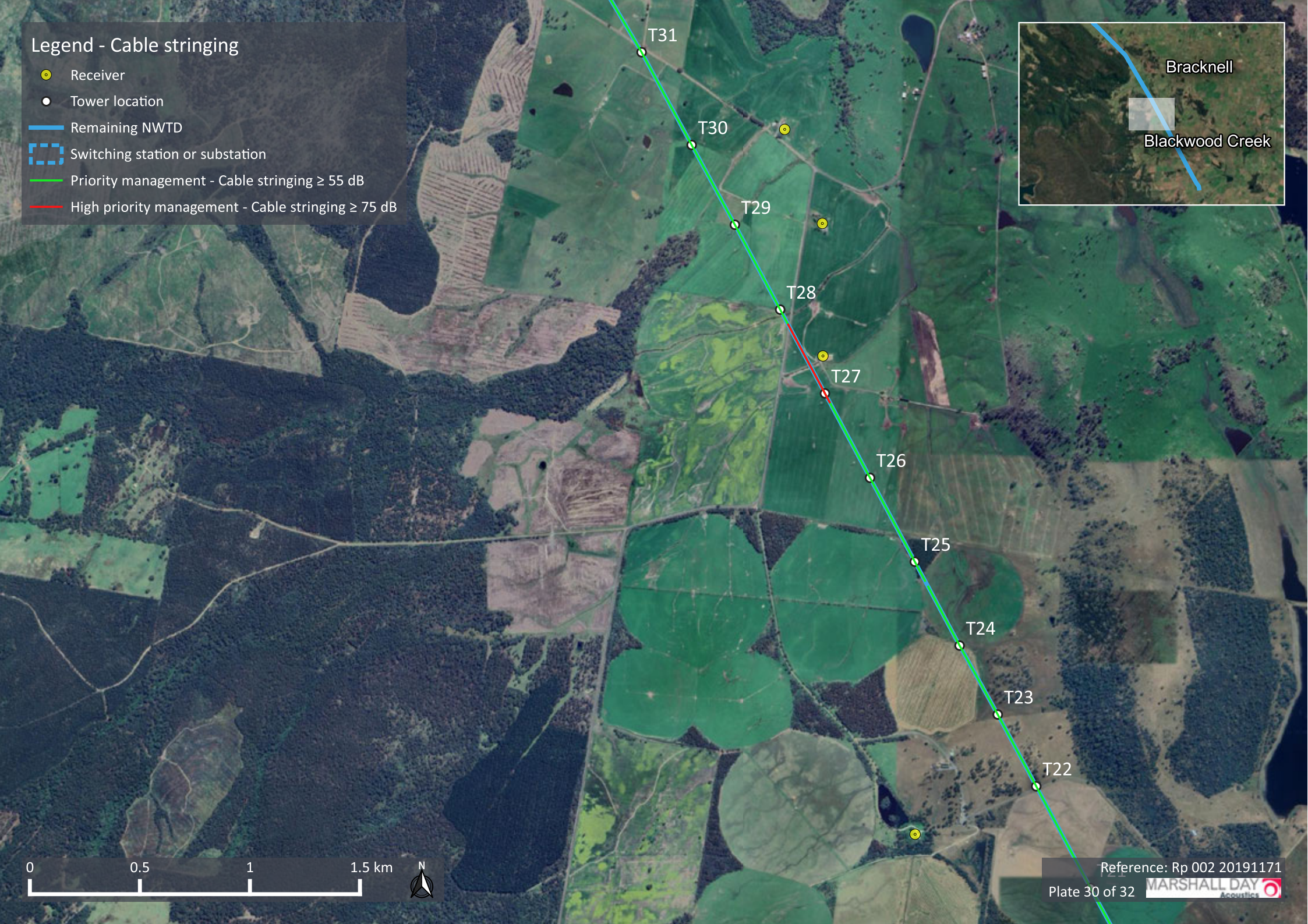

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T64
T63
T62
T61
T60
T59
T58
T57
T56
T55
Cluan
Deloraine
Cluan
Bracknell
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 27 of 32
MARSHALL DAY Acoustics



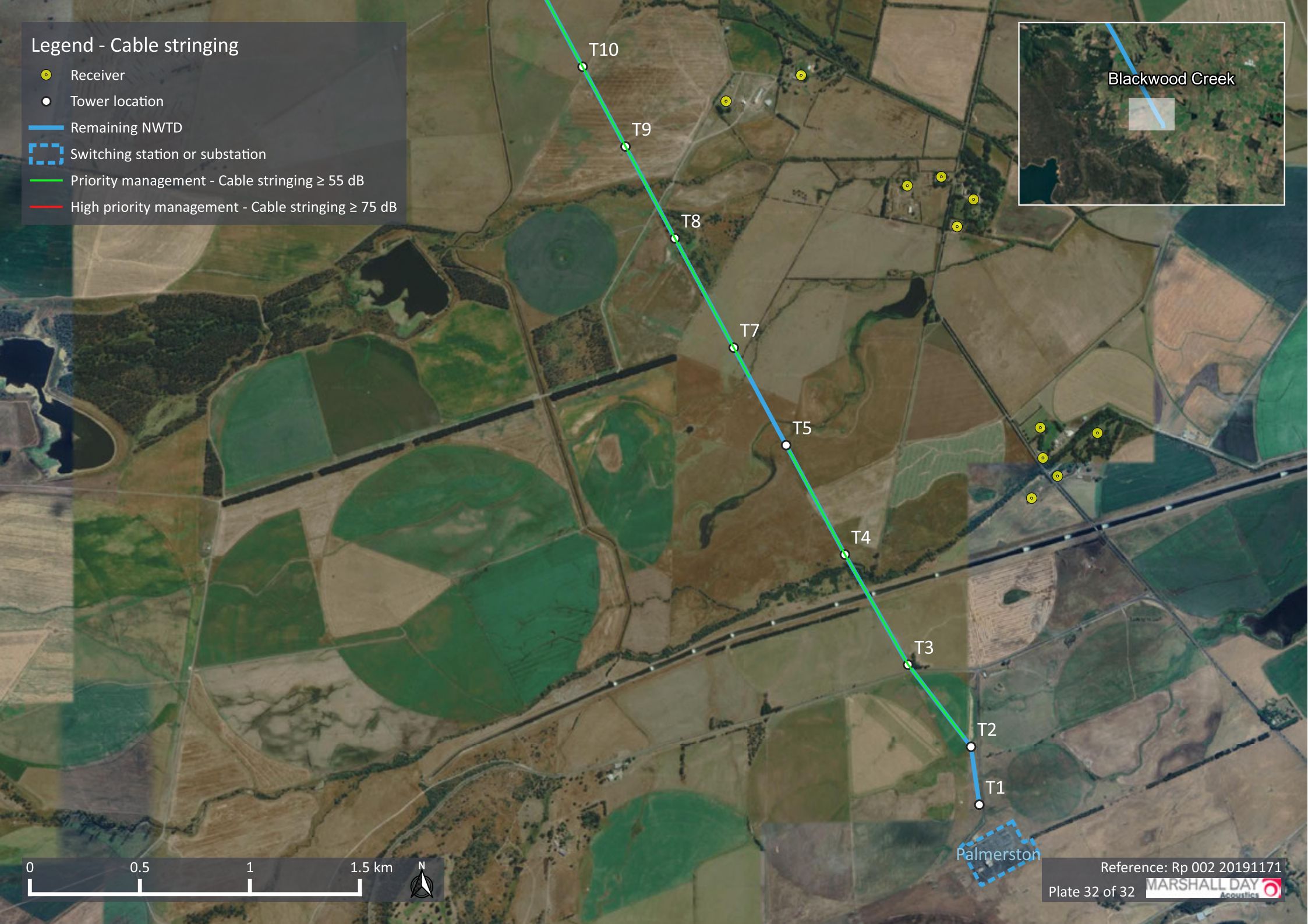
Reference: Rp 002 20191171

Plate 28 of 32

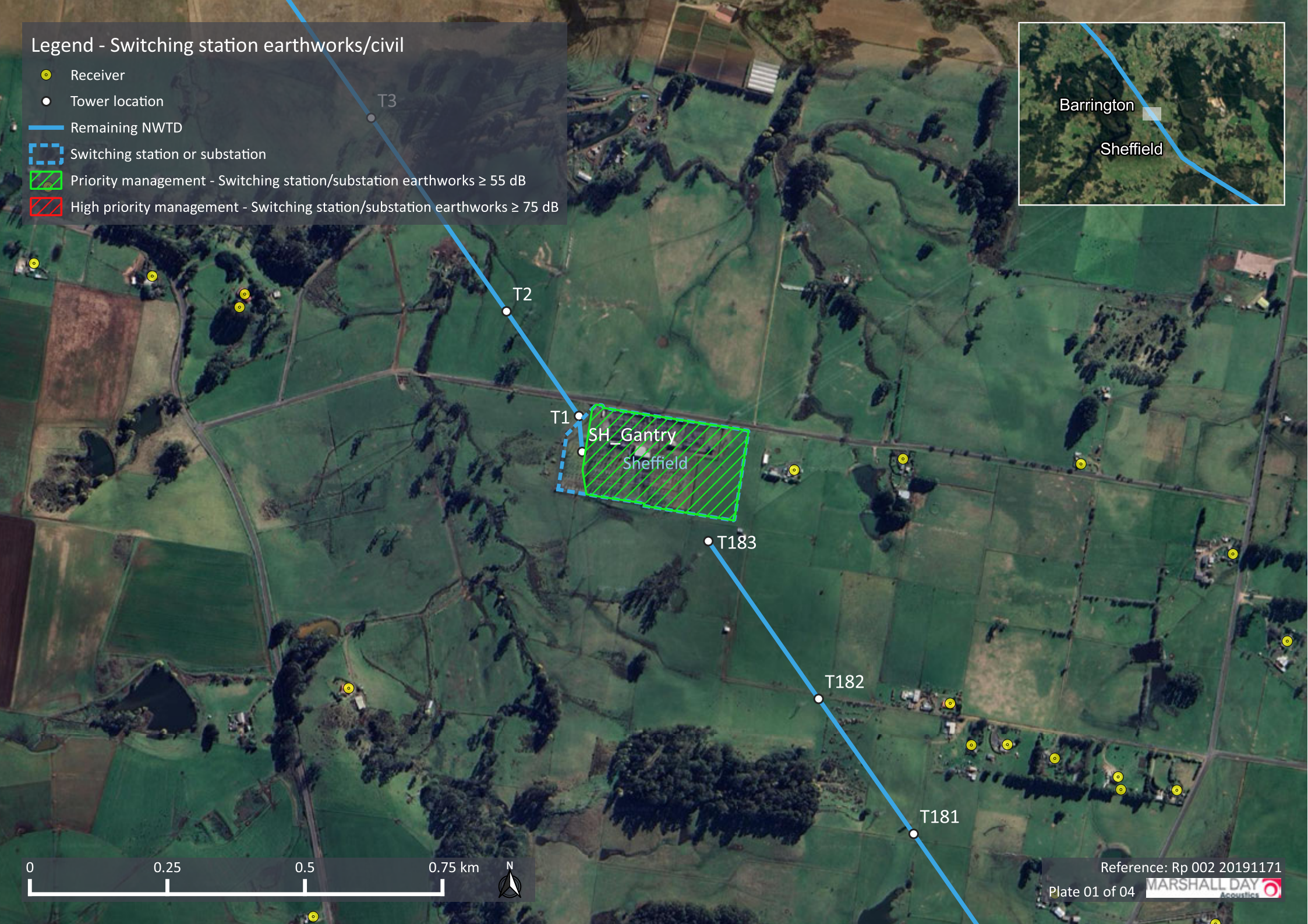

Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T41
T40
T39
T38
T37
T36
T35
T34
T33
T32
Cluan
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 29 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T31
T30
T29
T28
T27
T26
T25
T24
T23
T22
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T21
T20
T19
T18
T17
T16
T15
T14
T13
T12
T11
Bracknell
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 31 of 32
MARSHALL DAY Acoustics


Legend - Cable stringing
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Cable stringing ≥ 55 dB
High priority management - Cable stringing ≥ 75 dB
T10
T9
T8
T7
T5
T4
T3
T2
T1
Palmerston
Blackwood Creek
0
0.5
1
1.5 km
N
Reference: Rp 002 20191171
Plate 32 of 32
MARSHALL DAY Acoustics

D6 Switching station – Earthworks/Civil


Legend - Switching station earthworks/civil
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation earthworks ≥ 55 dB
High priority management - Switching station/substation earthworks ≥ 75 dB
Barrington
Sheffield
T3
T2
T1
SH_Gantry
Sheffield
T183
T182
T181
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 01 of 04
MARSHALL DAY Acoustics


Legend - Switching station earthworks/civil
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation earthworks ≥ 55 dB
High priority management - Switching station/substation earthworks ≥ 75 dB
T2
T1
Palmerston
Blackwood Creek
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 02 of 04
MARSHALL DAY Acoustics



Reference: Rp 002 20191171

Plate 03 of 04

MARSHALL DAY Acoustics


Legend - Switching station earthworks/civil
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation earthworks ≥ 55 dB
High priority management - Switching station/substation earthworks ≥ 75 dB
Burnie
Penguin
Ridgley
T6
T4
T3
T2
T1
Burnie
T100
T99
T98
T97
T96
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 04 of 04
MARSHALL DAY Acoustics

D7 Switching station – Infrastructure


Legend - Switching station infrastructure
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation infrastructure ≥ 55 dB
High priority management - Switching station/substation infrastructure ≥ 75 dB
Barrington
Sheffield
T3
T2
T1
SH_Gantry
Sheffield
T183
T182
T181
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 01 of 04
MARSHALL DAY Acoustics


Legend - Switching station infrastructure
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation infrastructure ≥ 55 dB
High priority management - Switching station/substation infrastructure ≥ 75 dB
T2
T1
Palmerston
Blackwood Creek
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 02 of 04
MARSHALL DAY Acoustics



Reference: Rp 002 20191171

Plate 03 of 04


Legend - Switching station infrastructure
Receiver
Tower location
Remaining NWTD
Switching station or substation
Priority management - Switching station/substation infrastructure ≥ 55 dB
High priority management - Switching station/substation infrastructure ≥ 75 dB
Burnie
Penguin
Ridgley
T6
T4
T3
T2
T1
Burnie
T100
T99
T98
T97
T96
0
0.25
0.5
0.75 km
N
Reference: Rp 002 20191171
Plate 04 of 04
MARSHALL DAY Acoustics