

North West Transmission Developments

Fact sheet | Noise and vibration

April 2025



Powering a
Bright Future



This fact sheet provides information on the study carried out to understand the potential noise and vibration impacts from the construction and operation of the transmission lines, towers and the associated substations, switching station and access tracks.



As Tasmania's energy demands increase, TasNetworks needs to strengthen the state's transmission network. The North West Transmission Developments (NWTD) will include new and upgraded overhead transmission lines (OHTLs), substations and switching stations.

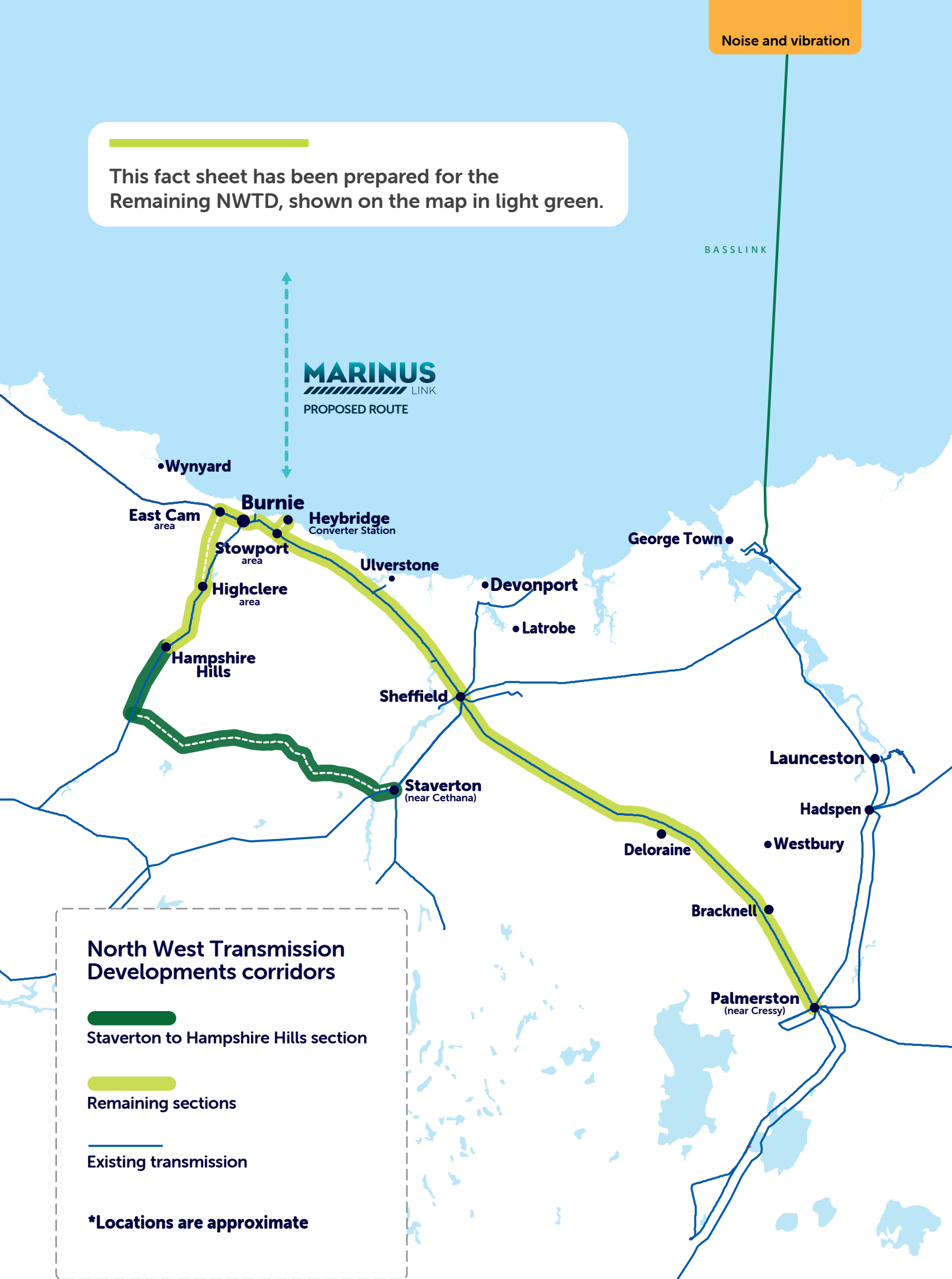
NWTD will support new renewable energy developments and generate significant benefits and opportunities for Tasmanian communities and businesses. The project is proposed to be delivered across two stages. The first stage will link Cressy, Sheffield and Burnie, and the second stage will connect Staverton, Hampshire Hills and Burnie. Two spurs will be constructed between the Stowport area and Heybridge.

The Remaining NWTD includes constructing new double-circuit OHTLs, dismantling of the existing single circuit 220 kV OHTLs from Palmerston to Sheffield and Sheffield to Burnie, constructing a new switching station at Hampshire Hills, modifying the Palmerston, Sheffield and Burnie substations, modifying two short sections of the existing 110 kV Sheffield to Burnie OHTL, and modifying the 22 kV distribution network where the new OHTL crosses distribution lines.

A permit is required for the section of new OHTL between Staverton to Hampshire Hills, and a separate permit is required for the remaining sections of the project (Remaining NWTD).



This fact sheet has been prepared for the Remaining NWTD, shown on the map in light green.



North West Transmission Developments corridors

 Staverton to Hampshire Hills section

 Remaining sections

 Existing transmission

***Locations are approximate**



Understanding noise and vibration

There are a number of factors that influence noise and vibration levels including the types of activities being undertaken, when they happen (day or night) and how close they are to communities and sensitive areas. People also have varying reactions and sensitivities to noise and vibration. These factors have been taken into consideration when assessing noise and vibration for the construction of the transmission lines.

Technical specialists have carried out a thorough assessment of the preferred route to understand the potential noise and vibration impacts from the construction and operation the project.

The assessment involved:

- Measuring noise and vibration levels for two weeks at five representative locations along the preferred route to help us to understand existing noise and vibration levels. Weather conditions were taken into consideration as part of the assessment. Local weather stations were deployed at some of the locations to enable identification of periods affected by adverse weather (i.e. rain and windy conditions).
- Identifying the different types of construction and operational activities that are likely to generate noise and vibration.
- Modelling the predicted noise levels of the different construction and operational activities within 500 metres of the preferred route.
- Modelling the predicted vibration levels of the different types of construction and operational activities within 100 metres of the preferred route. Vibration impacts were assessed using the NSW Roads and Maritime Services Construction Noise and Vibration Guideline August 2016 as there is no standard or regulation for construction noise and vibration levels in Tasmania.
- Identifying measures to reduce noise and vibration impacts.

This document focuses on noise and vibration impacts on buildings and people. Noise and vibration impacts on animals can be found in the Ecology Study.



Construction vibration levels

A range of construction methods will be used to construct the transmission lines, towers, substations, switching station and access tracks, some of which produce vibrations. These vibrations can affect both buildings and people.

As most of the construction activities will take place away from buildings and structures there is a low risk of cosmetic damage to buildings from construction vibrations. However, there are some locations along the preferred route where access tracks will be constructed close to existing buildings.

Research has shown that people can be sensitive to vibration and can detect vibration levels that are well below the threshold that could cause cosmetic damage to buildings. The construction of access tracks, transmission tower foundations and earthworks for substations/switching station may have the potential to impact the comfort of people living or working within 100 metres of these activities.



Construction noise levels

The transmission lines will be constructed through locations that range from uninhabited areas to sparsely populated agricultural areas, urban areas and residential suburbs. Noise from construction activities is likely to have a greater impact in more densely populated areas including Burnie, Stowport and Heybridge as these areas have a higher concentration of people, houses, holiday accommodation and community facilities located close to where the new transmission lines will be built. Recreational areas were also considered when assessing noise impacts.

Construction of the project will involve multiple noise generating activities including removal of existing towers, drilling to install tower foundations, earthworks for access roads, substations and the switching station, rock breaking, vegetation clearing, tower construction, traffic movements and stringing electricity cables.

The project will take up to four years to complete, however the construction timeframe in any given location will be much less. The majority of the construction activities will be carried out during the day, seven days a week and during normal construction hours.

The typical work hours are:

- **Monday to Friday:** 7am to 6pm
- **Saturday:** 8am to 6pm
- **Sunday:** 10am to 6pm.

There are some activities that may need to be undertaken outside of normal working hours for safety, operational reasons or where general construction works won't disturb people or animals. Some of these activities include works that need to be undertaken without a break in the program,

such as concrete pouring, 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, and emergency works required due to unforeseen circumstances.

The assessment of the background noise levels along the preferred route has shown that existing noise levels are low in most areas. This means that communities located near the transmission line will experience a temporary increase in noise levels during construction. Additional measures will be considered in some built-up residential areas where homes and businesses are located close to where construction works will take place. These areas include Burnie, Stowport and Heybridge.

There are no noise level requirements for temporary construction activities which are proposed to occur during normal working hours in Tasmania. While construction noise may exceed long-term permanent noise limits, it will be temporary and generally limited to normal construction hours. With management measures, increased noise levels is a manageable impact for the project.

Helicopters will be used for cable stringing activities along the preferred route. TasNetworks understands noise from helicopters can impact livestock and farming operations.

Construction of the transmission lines will also result in more trucks using local roads to transport materials. The assessment has shown that temporary noise impacts from increased vehicle movements are unlikely to require dedicated noise management measures.



Operational noise and vibration

The main sources of noise associated with operating the transmission lines include maintenance activities, wind interacting with transmission lines and corona discharge (see next page for a description). These noise sources will be intermittent and are expected to have a low impact on surrounding communities.

The transmission lines are expected to operate for 60+ years and will be removed at the end of the operational period. Noise and vibration levels associated with removing the transmission lines are expected to be similar to those experienced during the construction phase. Management measures identified for construction will be used to minimise any impact during the removal of the transmission lines.

No vibration will be produced from the ongoing operation of the transmission lines.



Corona discharge

Corona discharge refers to the hissing or crackling noise that is produced when air around a conductor becomes charged.

The conditions which give rise to corona discharge noise are well understood and documented in industry design guidance for transmission line infrastructure. It is an infrequent source of noise that is dependent on many things, and mostly increases when water droplets form on the surface of the line during rainfall or fog.

The findings of the noise and vibration study demonstrated that corona discharge noise can be appropriately managed through the detailed design of the overhead transmission lines.

Main construction activities and duration



Activity



Typical duration per site [1][2]

Activity	Typical duration per site [1][2]
Access road construction	3-6 weeks
Vegetation clearance	<3 weeks
Temporary facilities and workspace	3-6 weeks
Tower foundations – bore piled	<3 weeks
Tower foundations – rock dowel	<3 weeks
Tower foundations – mass concrete	<3 weeks
Transmission tower delivery and assembly (per tower)	<3 weeks
Cable stringing (per tower)	<3 weeks
Switching station – earthworks/civil	8 months
Switching station – infrastructure	6 months
Off-site vehicle movements	Full duration of project

[1] For activities that occur in a continuous manner along the route, the term 'site' refers to a typical 2 km section.

[2] Works that occur for less than 2-3 weeks are typically regarded as short term. In this instance, and in lieu of Tasmanian guidelines, the 3, 6 and 12 week values referenced in the duration categories are based on example guidance from NSW.



Managing impacts

Several measures have been identified in the Environmental Impact Statement to avoid, reduce, and manage noise and vibration impacts from the construction and operation of the project.

TasNetworks will implement a noise and vibration management plan to manage noise and vibration impacts, with some of the recommended measures including:

- Scheduling and undertaking construction activities in accordance with the Environmental Management and Pollution Control (Noise) Regulations 2016 unless unavoidable works are required. Where unavoidable works are required, TasNetworks will consult with relevant authorities on the nature and duration of planned works
- 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 near 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
- Contractors to turn off vehicles and machinery when it is not in use (not leave idling)
- Locating temporary access roads and laydown areas as far away as practicable from sensitive areas, and maximising the distance between sensitive areas and noise generating equipment
- Managing helicopter-generated noise through implementing the TasNetworks Helicopter Operations Procedure, which includes liaison with affected parties and identification of 'no fly' zones
- 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.

A Construction Environmental Management Plan will be in place throughout the construction period that will detail how works are to be undertaken to manage, minimise and mitigate these impacts.



Next steps

The Remaining NWTD permit application will be submitted to the Tasmanian Planning Commission (TPC) for review and consideration. The TPC will place the application on public exhibition, including the full versions of all technical reports.

All members of the community will then be provided with the opportunity to make a written submission on the application when it is placed on public exhibition. We anticipate this to occur during May 2025.

The TPC will consider all submissions received and then hold hearings to provide community members with an additional opportunity to have a say. It is possible that the TPC could require additional information to address any matters raised in submissions or hearings. The TPC will then determine if the project will be approved or not approved. If the project is approved the permit would be subject to a number of conditions.

In addition, the project will need to be approved by the Commonwealth Government to satisfy the requirements of the *Environment Protection and Biodiversity Conservation Act 1999 (Cwth)* before works can commence.

We encourage you to sign up to receive the NWTD newsletter for regular updates on the project at www.tasnetworks.com.au/nwtd

Get in touch

To learn more about the North West Transmission Developments:



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