Transport noise corridors mapping tool

User Guide for the online property search tool

Queensland Development Code Mandatory Part 4.4—Buildings in a transport noise corridor
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What is the transport noise corridor mapping tool?

The State Planning Policy Interactive Mapping System (SPP mapping tool) is a geographic information system (GIS)-based system hosted by the Department of Infrastructure, Local Government and Planning. It can be used to determine if a property is located within a designated transport noise corridor. The SPP mapping tool can provide users with a mapped image and report about a property’s transport noise corridor status. This information can be required with a building development application.

The Queensland Development Code MP 4.4–Buildings in a transport noise corridor (QDC 4.4) sets the mandatory building standards required to ensure residential buildings located on noise-affected properties are designed and constructed to reduce transport noise for the dwelling’s occupants. The mapping tool is intended only to provide a search result for properties when demonstrating compliance with QDC 4.4. A property may be located in one, or some cases more than one, of the following designated transport noise corridors:

- **State-controlled road** – either a ‘mandatory’ or ‘voluntary’ area. Where a property and building is located within the mandatory area (wholly or partly), the residential building will need to comply with the relevant noise category measures under QDC 4.4. Where a property and building is located within the voluntary area (wholly or partly), the building owner can choose to include the relevant noise category measures under QDC 4.4.
- **railway**
- **local government road**.

Purpose of this guide

This user guide provides building industry professionals and homeowners with detailed information on:

- how to access and use the online SPP mapping tool for designated transport noise corridors
- how to locate properties that the ‘search’ function cannot easily find, and
- what to do if a problem is encountered when using the mapping tool.

A five page ‘Quick guide’ is also available as an introductory guide to assist with using the SPP mapping tool.

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1. Only where a local government has designated and gazetted their major roads under the Building Act 1975 (BA). To date, Logan City Council has designated its major roads under the BA and its mapping is included in the SPP mapping tool. For all other local government areas building applicants are recommended to contact the relevant local government to check for any planning scheme requirements that may apply in the area.
Abbreviations used in this guide

- dB(A): decibels measured on the ‘A’ weighting frequency
- LG: Local Government
- QDC: Queensland Development Code
- QDC 4.4: Queensland Development Code MP 4.4—Buildings in a transport noise corridor
- TNC: transport noise corridor (as designated under the Building Act 1975)

How to use the SPP mapping tool

Accessing the mapping tool

To access the mapping tool to undertake a property search:

- visit the SPP mapping tool at: [https://planning.dilgp.qld.gov.au/maps](https://planning.dilgp.qld.gov.au/maps) (or alternatively type ‘SPP mapping’ into an search browser).
- click on the box titled ‘SPP Interactive Mapping Systems’.
- on the next page, click the ‘I accept’ disclaimer and on the next page click on the ‘Start’ tab. The mapping tool will open in a new window and begin by showing a map of Queensland as the starting point (Figure 1).
• Click on the ‘⊙’ symbol on the left hand side in the bar titled ‘Information Purposes’ to reveal drop down options.

• Underneath this, click on ‘TRANSPORT INFRASTRUCTURE’ so the various noise corridors appear.

• Underneath this, tick the box ‘All’ to show all the State and local government TNC data.

Figure 1: Opening screen of SPP Interactive Mapping System and accessing the designated TNCs
Mapping tool functions

After accessing the SPP mapping tool, a range of functions are available to assist with the property search (Figure 2):

- ‘Search for Land Parcels’ function
- ‘Identify’ and ‘Print Current View’ functions
- ‘Zoom’ tool
- ‘Scale’ bar (this will automatically adjust when zooming in or out of the map, either via using the zoom tool or scrolling with the mouse)
- list of mapping ‘layers’ are available from the Key for the designated transport noise corridors:
  - ‘State-controlled road’, both ‘mandatory’ and ‘voluntary’ areas
  - ‘local government road’
  - ‘railway’.

When the ‘All’ box is ticked, these layers are all automatically checked. All designated TNCs will be displayed when the property search result is generated. They will also be displayed when zooming the map at different scales.
Searching for a property

To search ‘By Street Address’ (Figure 3a)

- Click on the ‘Search for Land Parcels’ function.

- Click on ‘By Street Address’ tab.

- Type the street address details into the box provided (NB. no spaces to be used when entering details). AutoText will be prompted when entering details to the ‘Street Type’ and ‘Suburb’, including the relevant local government.

- After entering the property’s address details, click on the ‘Search’ button.

Figure 3a: Property search options—By Street Address
To search ‘By Lot Plan’ (Figure 3b)

- Click on the ‘Search for Land Parcels’ function.
- Click on ‘By Lot Plan’ tab.
- Type the lot plan details into the box provided (NB. no spaces to be used when entering details).
- Click on the ‘Search’ button.

Figure 3b: Property search options—By Lot Plan
Search result screen

If the property is recorded in the SPP mapping tool’s database, the following information will be displayed after the screen automatically zooms into the property:

- a box will appear titled ‘Mapping Layers for State Interests’. This box does not contain any TNC data and is information for land use planning issues associated with various other SPP mapping layers, therefore close this box.

- the searched property will be shown with a red boundary outline in the centre of the screen. It will identify if the property is located within or outside of a designated TNC. More of the map can be viewed by closing the bottom half of the screen titled ‘Search for Land Parcels’ by clicking on the black ‘X’ on right-hand side of that bar.

Users must confirm that the identified allotment is the correct property searched i.e. is the correct street address and/or lot plan number. If the identified allotment is not the correct property the property’s location should be checked by:
- re-submitting the search using the alternative search option i.e. use the ‘By Lot Plan’ tab (if ‘By Street Address’ was previously used)
- cross-referencing the lot plan number against the survey plan or registered plan with land title information, or
- scan the general location with the view options available via the ‘Basemaps’ function e.g. ‘Hybrid Aerial’ or ‘Aerial’ (refer ‘Basemaps’ on page 24). Alternatively, check details available from another online mapping tool, such as the Queensland Government’s Queensland Globe service (www.data.qld.gov.au/maps-geospatial/qld-globe).

If the identified property cannot be found, a manual search will need to be carried out (see ‘Manual Search’ on page 11).

- a red-dashed line in the middle of the TNC identifies its centreline for State-controlled road. For a local government road, it is a blue-dashed line.

- The various types of TNCs are shown as coloured contours, with examples shown in Figure 4. The key on the left hand side of the SPP mapping tool shows their type and associated noise category contour colours (Table 1).

**Table 1: TNC types, noise categories and contour colours**

<table>
<thead>
<tr>
<th>Noise Category</th>
<th>State-controlled roads – mandatory</th>
<th>State-controlled roads – voluntary</th>
<th>Local government roads</th>
<th>Railways</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Brown</td>
<td>Dark Green</td>
<td>Emerald</td>
<td>Violet</td>
</tr>
<tr>
<td>3</td>
<td>Orange</td>
<td>Green</td>
<td>Dark Blue</td>
<td>Purple</td>
</tr>
<tr>
<td>2</td>
<td>Gold</td>
<td>Light Green</td>
<td>Grey</td>
<td>Mauve</td>
</tr>
<tr>
<td>1</td>
<td>Beige</td>
<td>Pale Green</td>
<td>Green</td>
<td>Lavender</td>
</tr>
<tr>
<td>0</td>
<td>Yellow</td>
<td>Soft Green</td>
<td>No colour</td>
<td>No colour</td>
</tr>
</tbody>
</table>
Figure 4: State and local government TNCs with contours showing relevant noise categories
What if the property cannot be found?

Even though the SPP mapping tool’s database is updated monthly with registered property details, some addresses such as new residential estates or a recently sub-divided property may yet to be recorded. In these cases, no result will be available and no property will appear with a red boundary after clicking ‘Search’. Instead, only the lot plan number will appear in the ‘Search for Land Parcels’ screen with a ‘+’ sign in front of it (Figure 5a). Clicking on the ‘+’ sign will provide further information on the searched property. In cases where the text appears “No lot plan found for this search term”, this confirms that the property is not yet recorded in the SPP’s database (Figure 5b).

To continue searching for the property, first confirm that the street address or lot plan details were entered correctly (including spelling and locality). If the search was undertaken using the street address search function, try again using the lot plan search (or vice versa).

If the property cannot be found, a manual search can be carried out.

Manual search

To find the location of the property one, or a combination, of the following is suggested:

- obtain a copy of the survey plan or registered plan which contains land title information and checking details for adjoining properties
- identifying the lot plan number for the original (or parent) lot from which the new estate or sub-divided property was created
- using the ‘Navigate to Location’ function, go to the broad location of the property and check for similar property shapes in that area
- using the ‘Basemaps’ function (e.g. ‘Hybrid Aerial’) to identify nearby local landmarks
- by checking details available from another online mapping tool, such as the Queensland Government’s Queensland Globe service (www.data.qld.gov.au/maps-geospatial/qld-globe).

If referencing from a survey plan with a known boundary from the original (or parent) lot on the survey plan, the SPP’s ‘Measure’ function can be used to identify the location of a lot within the new estate or sub-divided property (see ‘Using the Measure function’ on page 18 on how to do this).
Lots and units within a Building Unit Plan (Group Title)

Allotments and units that form part of a Building Unit Plan (BUP) arrangement, commonly referred to as ‘group title’ which are typically covered by a body corporate, may not be individually identified in the SPP mapping tool. Therefore they may not be found when undertaking a TNC property search. However, users may be able to identify other parts of the same BUP using the ‘By Lot Plan’ or ‘By Street Address’ functions.

If the allotment or unit cannot be located users will need to refer to information from a registered plan for the site covered by the BUP. Details from this can be used to assist with identifying the position of that allotment or unit from the SPP mapping tool.

For example, Figure 6 shows the property boundary of a BUP as outlined in red. The SPP mapping tool also shows the outline of individual allotments within the BUP, however it does not identify lot numbers for each of them. Instead, the mapping tool labels all of these lots as the entire BUP reference.

As shown with the search result map, this BUP is mainly affected by noise categories 2 and 3, with a small part in category 4. To identify the noise category that applies to a particular allotment within the BUP, users will need to refer to the registered plan for the BUP and then use the ‘Measure’ function to identify the location of that lot (see ‘Using the Measure function’ on page 18 on how to do this) and the relevant noise category that applies for the allotment or unit.

![Figure 6: Allotments and units within a Building Unit Plan (Group Title) arrangement](image)
Understanding the property search results

A property search can result in one of the following three scenarios:

1. **Property is not located within a TNC (Figure 7)**—then the proposed residential building will not need to comply with any QDC 4.4 building requirements.

2. **Property is located in a single noise category (Figure 8)**—then the proposed residential building will need to comply with the relevant building requirements for that noise category under QDC 4.4. For example, if the search result shows the property is located solely within Category 1, then only Category 1 building requirements will apply.

3. **Property is located across multiple noise categories (Figures 9a and 9b)**—where the building’s footprint sits across multiple noise category areas, then the relevant part of the proposed residential building will need to meet the particular building requirements of each corresponding noise category that applies to that respective part of the building under QDC 4.4 (i.e. the search result shows the property within a TNC across multiple colour contours). For overlapping noise corridors, such as a State-controlled road and a railway, the building will have to meet the requirements of the highest noise category that applies to each respective part of the building.

Further information is provided below about how to apply these search results.

**Note:** On 16 November 2016, mapping for State-controlled roads was updated using the ‘terrain’ (or ‘topographical’) modelling. This type of mapping takes into account additional local factors that can influence the extent of transport noise from State-controlled roads, such as the existence of known noise barriers and topography. It also incorporated the most up-to-date traffic information such as vehicle volumes, speed environment, pavement type and heavy vehicles.

This means the designated TNCs for State-controlled roads more accurately represent the transport noise impacts on land adjacent to these corridors. As such, the updated mapping is now accurate enough for most property owners to avoid undertaking an on-site noise assessment to measure the actual level of transport noise affecting a property.

1. **Property is not located within a TNC (Figure 7)**

If after entering the property details and the red property boundary appears outside of a coloured corridor, then the search result will mean that the property is not located within a TNC.

Always **check that the ‘All’ box is ticked** in the Key to confirm that the TNCs mapping layer is turned on.

Print and save a copy of the property’s search result for future reference (see ‘Printing and saving a search result’ on pp25–26).
Figure 7: Search result showing a property not located within a TNC

Ensure ‘All’ is ticked
2. **Property is located in a single transport noise category (Figure 8)**

A property is affected by only one transport noise category if it lies wholly within a single coloured contour. Use the Key to identify which noise category applies to the property.

Print and save a copy of the property’s search result for future reference (see ‘Printing and saving a search result’ on pp25-26).

![Figure 8: Search result showing the property is located within a TNC and affected by a single transport noise category—State-controlled road (mandatory)](image)
3. Property is located across multiple transport noise categories (Figures 9a and 9b)

A property can be affected by multiple noise categories, either:

- from a single TNC, as shown in Figure 9a, or
- from overlapping TNCs, as shown in Figure 9b.

Types of modelling

Understanding the search results for a property that is located across multiple noise categories may depend on how the corridor was modelled. The various TNCs within the SPP mapping tool have been modelled in two ways:

1. ‘Terrain’ modelling—accounts for local conditions that may influence the extent of transport noise from the corridor to adjacent properties, such as slope (topography) and the existence of known noise barriers. While terrain modelling is more complex than flat earth modelling, it can potentially provide a more
accurate result given it is based on local conditions. The TNC is typically displayed as irregular as noise categories can change suddenly over a short distance (Figure 10a). Terrain modelling is used for State-controlled roads and may be used for local government roads.

2. ‘Flat earth’ modelling—is based on predicted noise levels but does not take into account local conditions, such as slope or the presence of known noise barriers. The TNC is displayed as regular and smooth, with noise categories typically running parallel over long distances (Figure 10b). Flat earth modelling is used for railways and may be used for local government roads.

Understanding ‘terrain’ modelling

As terrain modelling provides a higher degree of mapping detail which may result in sudden changes in noise category contours, and in some instances ‘islands’ within the corridor, the residential building will need to account for these differing distances at the property level.

Noise categories can increase or decrease where the characteristics of the road alter (such as speed limits, gradient or type of road surface) the associated noise levels in that corridor can suddenly change. These changes can be identified by the width of the relevant noise category and can curve inwards or outwards within a property. Therefore the corresponding measurements for all noise categories and where they may suddenly change need to be accounted for when assessing their extent within the property.

Figure 10a: Image of ‘terrain’ modelling—State-controlled roads (mandatory)

Figure 10b: Image of ‘flat earth’ modelling—railway
To assist with identifying the extent of the noise category area, the ‘Measure’ function can be used to determine the changing noise category distances within a property.

Using the ‘Measure’ function (Figure 11)

Once the property has been identified with its red boundary, scroll in or use the zoom tool to view the property as close as possible while keeping its entire outline visible on the screen (this will improve the accuracy of measured distance). The relative distance and changes for each noise category will need to be measured from the property boundary using the following steps:

1. click on the 'Measure' function along the top green bar (Step 1)—a pop-up box titled ‘Measure’ will appear (as circled in green). It contains three measuring options, and from left to right the icons are:
   
   - 🏡 = Area
   - 🌋 = Distance
   - 🌍 = Location

2. click on the ruler icon which will allow the ‘Distance’ to be measured in metres (Step 2 as circled in blue).

   **Note:** Users can change the measurement unit to ‘Miles’, ‘Kilometres’, ‘Feet’ or ‘Yards’ by clicking on the drop-down menu inside this box (small down facing arrow).

3. To start measuring the distance, place the cursor on the edge of the property boundary closest to centre of the TNC. Click on this spot for a green flag to appear as the starting point. For the finishing point, move the cursor to the outer edge of the relevant noise category and click again for another green flag to appear. A blue line will then appear between the green flags (Step 3 as circled in purple).

4. the ‘Measurement Result’ will be displayed in the Measure box (Step 4 as circled in orange).

To clear the result and make another measurement, click on the ‘Distance’ icon again.

Repeat the above process for each relevant transport noise category that affects the property and its respective distance.

To measure the distance where there is a curved TNC, measure perpendicular to the outer edge of the noise category to where the building envelope is to be located on the property.

The distances can be transferred to a registered plan or scaled site plan to identify the noise category(s) that would affect the residential building.

Print and save a copy of the property's search result for future reference (see 'Printing and saving a search result' on pp. 25-26).
Using the ‘Identify’ function

The ‘Identify’ function can provide extra details related to the property and TNC by using the following steps:

1. Click on the ‘Identify’ function (Figure 12–Screen 1, Step 1).

2. Click directly on the adjacent TNC centreline to the property (Figure 12–Screen 1, Step 2 as marked with the black ‘X’) —a pop-up box titled ‘Attributes’ will then appear (this can be page 1 of several pages to click through). The type of TNC will appear in the ‘Attributes’ box (as underlined in green for State-controlled road (mandatory)).

   Note: The TNC centreline can be either a red-dashed line for a State-controlled road or blue-dashed line for a local government road.
3. Click on the small white arrow along the top right of the ‘Attributes’ box to click through to pages with other details about the property and TNC (Figure 12–Screen 1, Step 3 as circled in purple).

4. The associated characteristics for the property and TNC will be displayed, such as the corridor name, speed limit, current and predicted annual average daily traffic (AADT), traffic growth rate and type of road surface (Figure 12–Screen 2, as circled in green).
Understanding ‘flat earth’ modelling

Finding the extent of each noise category on a property that has been affected by flat earth modelling is usually simpler than the process for terrain modelling as flat earth TNCs show corridors as more regularly shaped and run in parallel over long a distance. To assist with identifying the extent of the area affected within the property, the ‘Measure’ function can be used to determine the width of the noise category for a particular area. This can be done as per the method outlined for terrain modelling by using the ‘Measure’ function (page 18).
Understanding overlapping transport noise corridors

A property can be affected by more than one TNC where they overlap (Figure 13a). In these circumstances, the highest noise category for the particular area on the property will prevail and must be used in the assessment process for compliance with QDC 4.4.

Figure 13a: Property affected by overlapping TNCs—a State-controlled road (mandatory) and a railway
It is useful to ‘switch off’ the separate corridor layers in the Key by un-ticking the appropriate boxes (Figure 13b). This can assist with viewing how each TNC and its noise categories individually affect the property.
Basemaps

The SPP mapping tool allows users to change the viewing features of the map via the ‘Basemaps’ function (Figure 14). To change the mapping view:

1. Click on ‘Basemaps’ (Step 1)—a pop-up ‘Basemaps’ box will then appear showing five options:
   i. ‘Greyscale Street’ — shows standard property cadastre only
   ii. ‘Topography’ — shows property cadastre with topographic contours
   iii. ‘QLD Imagery’ — shows high resolution satellite image with property cadastre
   iv. ‘Aerial’ — shows satellite image with property cadastre
   v. ‘Hybrid Aerial’ — shows satellite image with property cadastre and extra features e.g. road names.

2. Click on the preferred view from the ‘Basemaps’ pop-up box (Step 2 with ‘Hybrid Aerial’ highlighted).

Figure 14: ‘Basemaps’ function—image shown in ‘Hybrid Aerial’ view
Printing and saving a search result

Printing a search result

To print a copy of the search result for the property, scroll in or use the zoom tool to view the property as possible while keeping its entire outline visible on the screen, and then use the following steps:

1. click on the ‘Print Current View’ function (Figure 15, Step 1).
   - a pop-up box titled ‘Print Current View’ will appear. The drop down menu offers a choice of the combined paper size and layout as ‘A4’ and ‘A3’ in ‘portrait’ or ‘landscape’.
   - select the type of preferred print size and layout (it may take a few moments for the report to be generated into a .pdf document).

2. select the ‘Download PDF’ function when it displays after choosing the preferred print size and layout (Figure 15, Step 2)
   - the printing output (.pdf document) will appear separately in a web browser window. This includes the map and associated TNC details for the property. **This document can be used as the search result with a building development application.**
   - to print, click on the web browser’s print function. An example pathway to ‘Print’ the .pdf document is shown in Figure 16 for Internet Explorer.

![Figure 15: ‘Print Current View’ function process](image-url)
Saving a search result

To save a copy of the search result, from the .pdf page used for printing above, simply click on the web browser's tool function and its 'File' pathway and follow the prompt to 'Save as...' to save document. An example of the three steps to saving the .pdf document is shown in Figure 16 for Internet Explorer.

Figure 16: Printing and saving a search result as generated from the .pdf document
**Centreline and road mis-alignment**

In some instances with the SPP mapping tool, the TNC centreline (red-dashed or blue-dashed line) and the road may not fully align with each other. Instead, the map may show the centreline and road diverging from each other, or it may show the centreline and road running parallel but off-set from each other. Using the ‘Measure’ function to measure from the property’s boundary to the relevant width of the particular noise category will still provide the appropriate distance(s) for the property.

**Mapping issues**

Please note that the Department of Housing and Public Works is not responsible for the mapping of TNCs or the data underlying their designations. For any questions about the mapping data or the location of a designated TNC, please contact the:

- Department of Transport and Main Roads for State Government TNCs at: planningpolicy@tmr.qld.gov.au, or
- the relevant local government for local government TNCs.

**Compliance with QDC 4.4**

The proposed residential building will need to comply with the noise reduction requirements for each of the relevant noise categories under QDC 4.4.

Alternative to the mapping result generated from the SPP mapping tool, a detailed on-site acoustic assessment can be carried out. An on-site acoustic assessment can be used to identify situations where a lower noise category might apply to the property due to features that may affect the transport noise levels experienced, such as other buildings. This will measure the specific transport noise levels at the property and, based on these results, can provide a tailored building design to comply with the construction requirements for the identified transport noise levels. Where an on-site acoustic assessment is undertaken it will need to meet the requirements for noise assessments as presented in Schedule 3 of QDC 4.4 and is to be undertaken by a suitably qualified person.

Note that an on-site noise assessment may indicate that higher or lower transport noise levels affect the property than was identified for the property using the SPP mapping tool.