

Interim Guide to Development in a Transport Environment

Busway

July 2017

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Part A – Context and purpose

1. Introduction

The *Guide to Development in a Transport Environment: Busway* (the Busway Guide) provides important information for those involved in development, works or activities in the vicinity of busways in Queensland. It is intended for use as a technical reference document.

The Busway Guide provides specific technical guidance on how to achieve compliance with the provisions in the *State Development Assessment Provisions* (SDAP) in relation to managing impacts of development on the safety and operational efficiency of busways.

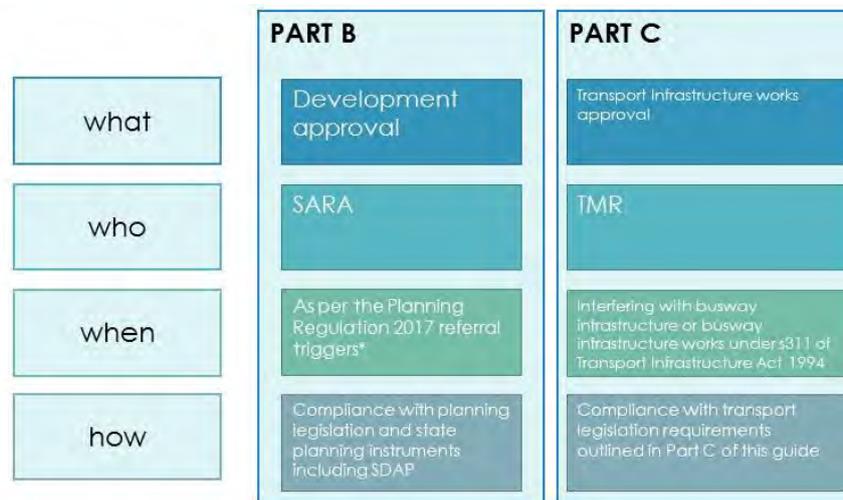
The Busway Guide also provides useful information in relation to the operational constraints and requirements when undertaking works or activities within the busway environment.

1.1 How to use this guide

The Busway Guide is structured in four parts:

- **A:** provides the context for development in a busway environment.
- **B:** is relevant to development proposed on land adjacent to a busway corridor. It outlines the key issues which need to be considered when proposing development near a busway corridor and provides information for proponents about how development applications can demonstrate compliance with SDAP.
- **C:** is relevant to development, works or activities proposed in a busway corridor. It outlines the approvals, processes and technical requirements which must be satisfied to comply with the legislation governing activities, works, and public utility plants (PUP) in a busway corridor.
- **D:** provides supplementary information to support the Busway Guide.

Figure 1 describes the differences between Parts B and C of the Busway Guide.



* Generally within 25m of busway corridors or land identified as a future busway corridor. Applicants should consult the Planning Regulation referral triggers to determine whether their development is triggered for state assessment.

Figure 1 Explanation of content of parts B and C

1.2 Development process

The *Planning Act 2016* provides the legislative framework for planning and development assessment. Development that may impact on the safety or efficient operation of state transport infrastructure, state transport corridors or future state transport corridors is triggered under the Planning Regulation 2017 and referred to the State Assessment and Referral Agency (SARA) for assessment.

SARA, in consultation with the Department of Transport and Main Roads (TMR), will assess a triggered application against planning legislation and state planning instruments including SDAP.

SDAP is structured in a performance based code format, whereby applicants can address assessment criteria to demonstrate that a development appropriately manages any impacts on a matter of state interest, and/or protects a development from impacts of matters of state interest. *State code 3: Development in a busway environment* includes the assessment criteria for applications triggered because of their proximity to a busway corridor. The code seeks to protect busways, future busways, and other infrastructure in a busway environment from the adverse impacts of development. In addition, the code seeks to protect the safety of people using, and living and working near busways.

The development process is dependent on the circumstances of the development itself. However, in order to provide basic guidance, the following flow chart (see Figure 2) outlines typical steps in the process for applications for development in a busway environment.

Step 1	Where relevant, pre-lodgement meetings with, or advice from, SARA and technical agencies.
Step 2	Applicant prepares development application having regard to SDAP and guidance provided in the Busway Guide.
Step 3	Applicant submits development application to assessment manager. Application is referred to SARA where triggered by state referral triggers.
Step 4	SARA, in consultation with TMR, assess the development application. Additional information may be requested from the applicant and/or an applicant may be advised of any identified issues relating to the development proposal.
Step 5	After assessing all information, SARA finalises state response taking into account TMR and other state agencies' technical advice.
Step 6	The assessment manager (for example, local government) issues the development decision. Any approval may be subject to conditions.
Step 7	Where required, applicant seeks approval from TMR for works in a busway corridor in accordance with requirements outlined in Part C of the Busway Guide.
Step 8	TMR assesses works requirements and provides a decision. Any approval provided by TMR may be subject to conditions.
Step 9	TMR, the applicant or other authorised entity undertakes development and works in accordance with conditions.
Step 10	Certification of works undertaken by TMR or relevant authority.

Figure 2 Typical process flowchart for development in a busway environment

As noted in [Part C: Advice for works within a busway corridor](#), where any works interferes with busway transport infrastructure, TMR may seek to enter into an agreement with the applicant for these works. In these situations, discussions should occur as early as possible with TMR. Ideally these matters should be raised during pre-lodgement discussions (step 1) or during formulation of a proposal.

1.3 Roles and responsibilities

Department of Transport and Main Roads

TMR is the Queensland Government department responsible for busway and busway transport infrastructure. In this regard, TMR's role is to protect the safety and operational efficiency of busways.

TMR administers the *Transport Infrastructure Act 1994* and the *Transport Operations (Passenger Transport) Act 1994*, the governing legislation for the management and operation of state transport infrastructure, including busways. TMR also administers the *Transport Planning and Coordination Act 1994*, which seeks to achieve transport effectiveness and efficiency through strategic planning and management of transport resources.

Department of Infrastructure, Local Government and Planning

The Department of Infrastructure, Local Government and Planning (DILGP) is the Queensland Government department responsible for regulating planning and development. The chief executive of DILGP is responsible for administering the Planning Act and for assessing development applications in relation to state interests, as outlined in the Planning Regulation.

State Assessment and Referral Agency

SARA is an agency within DILGP. It is responsible for coordinating the assessment of development applications for state agencies in relation to matters of state interest. SARA provides a single agency lodgement, assessment and decision point for development applications where the State has a jurisdiction.

SARA assesses relevant development applications against SDAP and seeks technical advice from state agencies, such as TMR for development applications that are of relevance. Typically, where an application involves development in a busway environment, SARA will consult with TMR in relation to technical matters before finalising the assessment. As part of the process, TMR may also consult with other stakeholders to seek their input.

Local government

Local governments are responsible for land use planning and the built environment in accordance with local government planning schemes.

Brisbane City Council also has a role in the co-management and operation of busways in the Brisbane City local government area, through the provision of bus services and management of traffic incidents, including incidents on busways.

Economic Development Queensland

Operating under *the Economic Development Act 2012*, Economic Development Queensland (EDQ) is a specialist land use planning and property development agency within DILGP. They are responsible for engaging with state and local government, the development industry and the public to identify, plan, facilitate and deliver property development and infrastructure projects.

EDQ's responsibilities include the assessment of development applications located within priority development areas (PDA). EDQ will assess all development on land within the boundary of the PDA

against a supporting PDA development scheme. In addition, EDQ will likely consider the development considerations in Part B of this Guide.

1.4 What is the busway environment?

The busway environment

The busway environment comprises the following:

- the busway corridor, including the land on which busway transport infrastructure or busway transport infrastructure works are situated, the land below the infrastructure works and the airspace above.
- the area adjacent to the busway corridor in which development can affect busway transport infrastructure and busway transport infrastructure works.

Definitions of *busway corridor*, *busway transport infrastructure* and *busway transport infrastructure works* are contained in the glossary of the Busway Guide. The extent of the busway environment is illustrated in Figure 3.

The area adjacent to the busway corridor should be determined with reference to the relevant state referral triggers as per the Planning Regulation 2017. In the majority of referrals, this area will be land within 25 metres of a state transport corridor, as illustrated in Figure 3. A state transport corridor includes land identified as a busway corridor.

DILGP provides [online mapping](#) which includes layers depicting the busway environment, that is, busway corridors and land within 25 metres of a busway corridor.

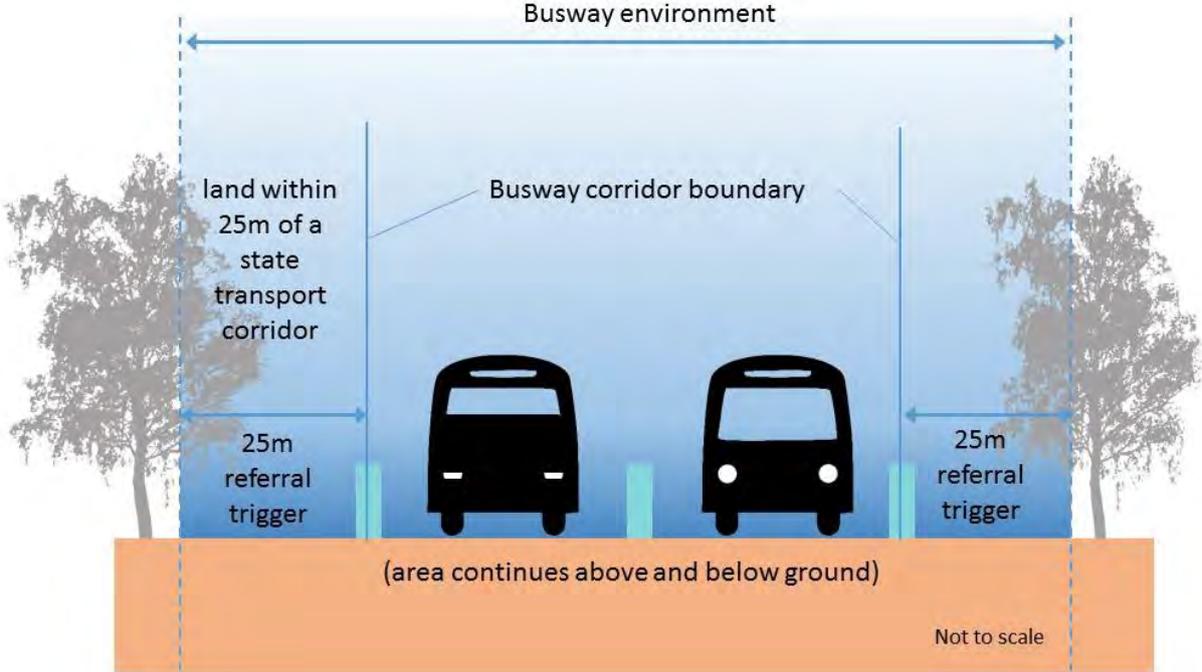


Figure 3 Extent of the busway environment

The future busway environment

The future busway environment comprises land identified for a future busway corridor. This includes land on which busway transport infrastructure or busway transport infrastructure works will be located in future. Note, the future busway environment does not include land adjacent to a future busway corridor unless part of the land is located in the corridor.

DILGP provides [online mapping](#) that includes layers depicting future busway corridors.

Busways in a tunnel

Where a busway is located in a state-controlled transport tunnel or future state-controlled transport tunnel, the width of the land included in the busway environment increases to 50 metres from the boundary of the tunnel. This includes the land above ground as illustrated in Figure 4.

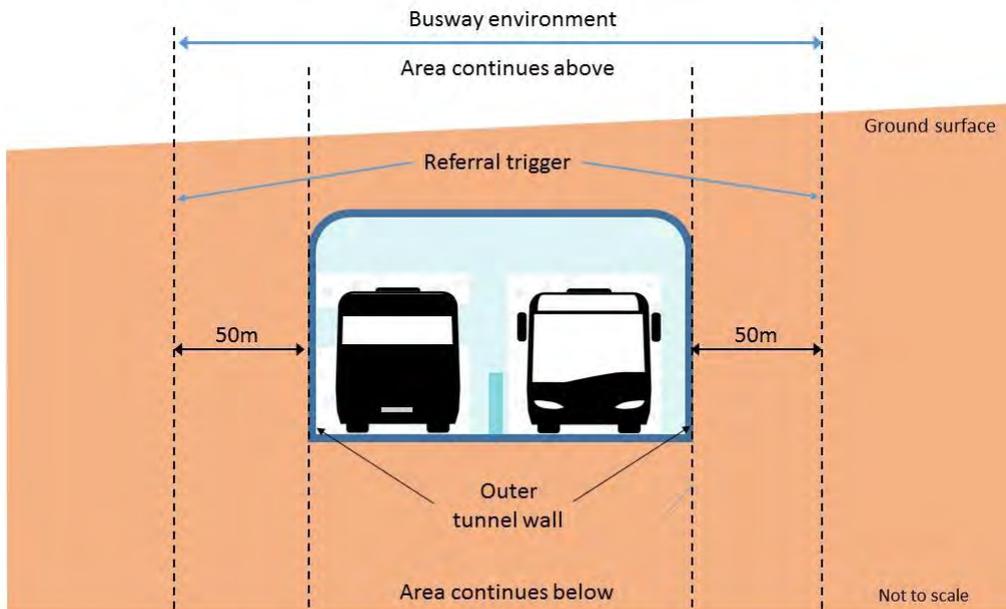


Figure 4 Extent of the busway environment in a tunnel

Where a development is proposed in, or adjacent to, a busway that is in a state-controlled transport tunnel, the application will trigger assessment against *State code 5: Development in a state-controlled transport tunnel environment*.

DILGP provides [online mapping](#) that includes layers depicting sections of busways which are located in a state-controlled transport tunnel or future state-controlled road tunnel.

Part B – Development adjacent to a busway corridor

2. Relationship between SDAP and the Busway Guide

The purpose of Part B of the Busway Guide is to provide applicants with important information about the issues which need to be considered when proposing development adjacent a busway corridor.

Part B provides supporting information to assist in the preparation of a development application and how that application can demonstrate it achieves compliance with the assessment criteria contained in SDAP's [State code 3: Development in busway environment](#). Table 1 describes how the provisions in SDAP relate to information in section 3 of the Busway Guide.

It is strongly recommended the Busway Guide is read in conjunction with the relevant sections of SDAP, summarised in Table 1.

Table 1 Relationship between SDAP and the Busway Guide

SDAP Provision	Relevant sections in this Guide						
	3.1 Building and structures	3.2 Filling, excavation and retaining structures	3.3 Stormwater and drainage	3.4 Unauthorised access to busway corridor	3.5 Access to public transport infrastructure and services	3.6 Future busway corridors and planned upgrades	3.7 Environmental emissions
State code 3: Development in a busway environment							
Table 3.2.1: Development in a busway environment							
Building and structures	PO1 – PO4	✓					
Filling, excavation and retaining structures	PO5 – PO10		✓				
Stormwater and drainage	PO11 – PO12			✓			
Access	PO13 – PO15				✓	✓	
Planned upgrades	PO16						✓
Table 3.2.2: Environmental emissions							
Noise	PO17 – PO21						✓
Vibration	PO22						✓
Air and light	PO23 – PO25						✓
Table 3.2.3: Development in a future busway environment							
Building and structures	PO26					✓	
Filling, excavation and retaining structures	PO27 – PO28		✓				
Stormwater and drainage	PO29			✓			

3. Guidance for assessable development

This section provides guidance to applicants on how to demonstrate compliance with *State code 3: Development in a busway environment*.

State code 3: *Development in a busway environment* contains a purpose statement, performance outcomes and acceptable outcomes. If a development application complies with all the relevant acceptable outcomes of the code, it complies with the purpose statement of the code and therefore the code itself. If an application does not comply with one or more of the acceptable outcomes, an alternative means of meeting the performance outcomes should be proposed.

Acceptable outcomes are provided for some, but not all performance outcomes. In instances where an acceptable outcome/s are not provided, a development application must demonstrate it complies with all the relevant performance outcomes and therefore the code itself.

3.1 Buildings and structures

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Buildings and structures (**PO1-PO4**)

What is the issue?

Development in a busway environment including the siting of buildings and structures can compromise the safety and structural integrity of a busway corridor, future busway corridor, busway transport infrastructure or busway transport infrastructure works.

In addition, road, bikeway or pedestrian bridges, if not designed and constructed appropriately, can provide opportunities for projectiles to be thrown onto a busway. This may create a safety hazard for users of a busway or damage busway transport infrastructure.

What is the objective?

The objective of the performance outcomes is to ensure that:

- development does not create a safety hazard for users of a busway
- development does not compromise the structural integrity of a busway, busway transport infrastructure or busway transport infrastructure works
- development does not compromise the state's ability to maintain and operate busways, or significantly increase the cost to maintain and operate busways.

How to achieve the performance outcomes

Performance outcome 1

Acceptable outcomes have been provided for this performance outcome. An application can demonstrate it has complied with the acceptable outcomes by providing the following information as part of the application:

- scaled and sufficiently detailed plans which clearly identify all aspects of the proposed development in relation to a busway corridor, future busway corridor, busway transport infrastructure or busway transport infrastructure works, including any intended staging for the development. The plan should clearly show the site's property boundaries and the location and setbacks of all proposed buildings, structures, infrastructure, services, utilities and other works from the busway corridor and busway transport infrastructure. Typical elements that should be shown include buildings, structures such as fences, earthworks, temporary and permanent retaining structures, stormwater management measures, vehicular and pedestrian access and manoeuvring areas, recreational areas, potential pipework, service and utility connections and the like. The proposed development's interface with the busway corridor boundary should be clearly depicted and may need to be illustrated with cross sections and/or sections.
- supporting technical information demonstrating that the proposed development will not compromise the safety and structural integrity of busway transport infrastructure or busway transport infrastructure works. The application should demonstrate that all works associated with the development will be outside the busway corridor and that pipework, services and utilities can be maintained without requiring access to the busway corridor.
- supporting technical information outlining any transport easement for support and demonstrating that the proposed development will not compromise or obstruct the easement.

If an application does not comply with the acceptable outcomes, details of the alternative means of meeting the performance outcome should be provided.

Performance outcome 2

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome which is about adding or removing loading. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide a RPEQ certified geotechnical assessment identifying the design parameters for the structural aspects of the development, namely loadings, footings and the like, to ensure the safety and operational integrity of busway transport infrastructure, busway transport infrastructure works or the busway corridor. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1.
- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2.
- provide RPEQ certified structural engineering drawings demonstrating that the loading implications of the proposed development will not compromise the structural integrity of busway transport infrastructure and busway transport infrastructure works. The loading configuration of the proposed development should be provided.

Performance outcome 3

An acceptable outcome has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by providing RPEQ certified drawings showing that any road, pedestrian and bikeway bridges are designed to include throw protection screens in accordance with section 4.9.3 of the Design criteria for bridges and other structure manual, Department of Transport and Main Roads, 2017.

If an application does not comply with the acceptable outcome, details of the alternative means of meeting the performance outcome should be provided.

Performance outcome 4

No acceptable outcome has been provided. Therefore an application must demonstrate compliance with the performance outcome which is about construction activities not causing ground movement or vibration impacts. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide a RPEQ certified geotechnical assessment identifying the potential for construction activities to cause ground movement and vibration issues in a busway corridor. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1.
- provide RPEQ certified structural engineering drawings showing the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters and the like) and all permanent structures and buildings, above and below ground.
- provide a RPEQ certified groundwater monitoring and management plan which investigates construction impacts (including earthworks, boring, piling and the like) on the busway corridor. The plan should establish a management and monitoring program which ensures the busway corridor is not adversely affected by the construction of the development. Note, this may be required post detailed design stage.
- provide a RPEQ certified Total Station (prisms), inclinometer and vibration monitoring and management plan which investigates any demolition, excavation and construction work impacts on the busway corridor and busway transport infrastructure such as tunnels, retaining walls and retaining structures. Note, this may be required post detailed design stage.
- provide RPEQ certified dilapidation surveys of the busway transport infrastructure. These will be required to be undertaken prior to the commencement of works and the completion of works. Note, all necessary rectification works will need to be undertaken at the applicant's expense to ensure a no worsening impact on the pre-development condition of the busway transport infrastructure.

3.2 Filling, excavation and retaining structures

The content in this section supports the POs as outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Filling and excavation (**PO5-PO10**)
- Table 3.2.3: Development in a future busway environment
 - Filling and excavation (**PO27-PO28**)

What is the issue?

Filling, excavation and retaining structures in a busway environment or future busway environment can impact on the structural integrity of busway transport infrastructure. Filling, excavation and retaining structures can also undermine or cause subsidence of land in an existing or future busway corridor.

Specifically, works involving ground disturbance can de-stabilise or undermine busway transport infrastructure and the land supporting this infrastructure such as through vibration impacts, ground movement, subsidence, changes to loading such as lateral and vertical loading and groundwater impacts.

Earthworks in future busway corridors can compromise the State's ability to cost effectively plan, construct and maintain future busway transport infrastructure on the land. For example, considerable works may need to be undertaken to re-stabilise land so that it can support busway infrastructure or and retaining walls and fill batters may compromise the future corridor.

Filling and excavation may be associated with creating a level building pad, excavation for basement car parking, the installation or insertion of temporary and permanent retention systems, constructing footings for fences and building foundation structures, amongst other forms of ground disturbance.

What is the objective?

The objective of the provisions is to ensure:

- development does not compromise the structural integrity of a busway corridor, future busway corridor, busway transport infrastructure or busway transport infrastructure works.

Where development is proposed in a busway environment or future busway environment, assessment, monitoring, management plans and the like may be required to demonstrate that filling, excavation and retaining structures will not cause adverse impacts.

Due to the risk of adverse impacts, permanent retention systems within a busway corridor will not be permitted. Any temporary retention systems such as shoring walls, rock anchors and/or soil nails in a busway corridor will require approval under section 311 of the *Transport Infrastructure Act 1994*.

How to achieve the performance outcomes

Performance outcome 5

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide a site plan demonstrating how the development will be serviced with services and utilities, including any proposals to connect to existing services and utilities, the proposed augmentation or relocation of services and utilities and the like. This should clearly detail whether any proposed works or connections are intended in the busway corridor or will otherwise interfere with the busway corridor. General information on the location of services and public utilities in a busway can be obtained from the Dial Before You Dig service and other mapping tools that may be provided by a local government. A site detail and contour survey prepared by a registered surveyor should identify the relevant service and utility connections available to the site.
- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2. These drawings should clearly demonstrate that the proposed earthworks and retaining structures are located outside the busway corridor and do not interfere with the busway corridor such as through loading implications, instability and similar adverse impacts.
- provide RPEQ certified drawings showing the structural engineering design of the development. This should detail the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters, retaining walls and the like), foundation structures (such as footings, bored piles, piers and the like) and all permanent structures and buildings, above and below ground.

Please also note the following:

- Should access be required to the busway corridor for a survey to prepare plans, relevant approvals will need to be obtained from TMR. See [Part C: Advice for works within a busway corridor](#) for further details.
- Where the proposed development is required to connect to services and utilities in a busway corridor, approval under the *Transport Infrastructure Act 1994* will be required.

- Where development will impact on a service or public utility plant in a busway corridor, such that the service or plant will need to be relocated, the applicant will need to contact the relevant service or plant provider for standards and design specifications for the alternative alignment. Any costs of relocation are to be borne by the applicant.

Performance outcome 6

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2. These drawings should clearly demonstrate that the proposed earthworks and retaining structures are located outside the busway corridor and do not adversely impact the busway corridor such as through loading implications, instability and similar adverse impacts.
- provide a RPEQ certified geotechnical assessment identifying the sub-surface profile and providing recommendations for the structural engineering design of the development. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1. Note, this may be required at the MCU stage.
- provide RPEQ certified drawings showing the structural engineering design of the development. This should detail the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters, retaining walls and the like), foundation structures (such as footings, bored piles, piers and the like) and all permanent structures and buildings, above and below ground.
- provide a RPEQ certified groundwater monitoring and management plan which investigates construction impacts (including earthworks, boring, piling and the like) on the busway corridor. The plan should establish a management and monitoring program which ensures the busway corridor is not adversely affected by the construction of the development. Note, this may be required post detailed design stage.
- provide a RPEQ certified Total Station (prisms), inclinometer and vibration monitoring and management plan which investigates any demolition, excavation and construction work impacts on the busway corridor and busway transport infrastructure such as tunnels, retaining walls and retaining structures. Note, this may be required post detailed design stage.
- provide RPEQ certified dilapidation surveys of the busway transport infrastructure. These will be required to be undertaken prior to the commencement of works and the completion of works. All necessary rectification works will need to be undertaken at the applicant's expense to ensure a no worsening impact on the pre-development condition of the busway transport infrastructure.

Performance outcome 7

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2. These drawings should clearly demonstrate that the proposed earthworks and retaining structures are located outside the busway corridor and do not interfere with the busway corridor such as through loading implications, instability and similar adverse impacts.
- provide a RPEQ certified geotechnical assessment identifying the sub-surface profile and providing recommendations for the structural engineering design of the development. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1.

- provide RPEQ certified drawings showing the structural engineering design of the development. This should detail the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters, retaining walls and the like), foundation structures (such as footings, bored piles, piers and the like) and all permanent structures and buildings, above and below ground.
- provide a RPEQ certified groundwater monitoring and management plan which investigates construction impacts (including earthworks, boring, piling and the like) on the busway corridor. The plan should establish a management and monitoring program which ensures the busway corridor is not adversely affected by the construction of the development.

Performance outcome 8

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2. These drawings should clearly demonstrate that the proposed earthworks and retaining structures are located outside the busway corridor and do not interfere with the busway corridor such as through loading implications, instability and similar adverse impacts.
- provide a RPEQ certified geotechnical assessment identifying the sub-surface profile and providing recommendations for the structural engineering design of the development. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1.
- provide RPEQ certified drawings showing the structural engineering design of the development. This should detail the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters, retaining walls and the like), foundation structures (such as footings, bored piles, piers and the like) and all permanent structures and buildings, above and below ground.
- provide a RPEQ certified Total Station (prisms), inclinometer and vibration monitoring and management plan which investigates any demolition, excavation and construction work impacts on the busway corridor and busway transport infrastructure such as tunnels, retaining walls and retaining structures. Note, this may be required post detailed design stage.
- provide RPEQ certified dilapidation surveys of the busway transport infrastructure. These will be required to be undertaken prior to the commencement of works and the completion of works. All necessary rectification works will need to be undertaken at the applicant's expense to ensure a no worsening impact on the pre-development condition of the busway transport infrastructure.

Performance outcome 9

An acceptable outcome has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by providing a statement that demonstrates that the development can be constructed without storing fill, spoil or any other material in, or adjacent to, the busway corridor.

If the development involves the storage of fill, spoil or any other material in, or adjacent to, the busway corridor, the application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2. These drawings should clearly

demonstrate that the proposed earthworks and retaining structures are located outside the busway corridor and the location of any temporary stockpiles.

- provide proposal plans and supporting documentation showing the storage location any fill, spoil or any other material and details on the methods of storage to mitigate impacts on the busway corridor.

Performance outcome 10

An acceptable outcome has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by:

- providing information about the fill compaction methods that will be used during construction of the development and their consistency with the requirements of AS 1289.0 2000 – Methods of testing soils for engineering purposes
- providing information about the dust suppression measures which will be used during filling and excavation activities to prevent wind-blown dust nuisance.

Performance outcome 27

This performance outcomes relate to filling, excavation, building foundations and retaining structures not undermining, or cause subsidence of a future busway corridor. No acceptable outcomes have been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide RPEQ certified earthworks drawings. Guidance on preparing earthworks drawings is provided in Part D: Supporting information, Appendix 2.
- provide a RPEQ certified geotechnical assessment identifying the sub-surface profile and providing recommendations for the structural engineering design of the development. Guidance on preparing a geotechnical assessment is provided in Part D: Supporting information, Appendix 1. Note: this may be at the MCU stage.
- provide RPEQ certified drawings showing the structural engineering design of the development. This should detail the design of temporary retaining structures (such as rock anchors, soil nails, shoring walls, batters, retaining walls and the like), foundation structures (such as footings, bored piles, piers and the like) and all permanent structures and buildings, above and below ground.
- provide a RPEQ certified groundwater monitoring and management plan which investigates construction impacts (including earthworks, boring, piling and the like) on the future busway corridor. The plan should establish a management and monitoring program which ensures the future busway corridor is not adversely affected by the construction of the development. Note: this may be required post detailed design stage.

Performance outcome 28

An acceptable outcomes has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by providing a statement certified by an RPEQ:

- that fill, spoil or any other material associated with the development is free of acid sulphate content
- details the methods of compaction which will be used and that it is in accordance with AS1289.0 2000 – Methods of testing soils for engineering purposes.

3.3 Stormwater and drainage

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Stormwater and drainage (**PO11-PO12**)
- Table 3.2.3: Development in a future busway environment
 - Stormwater and drainage (**PO29**)

What is the issue?

Stormwater and drainage impacts associated with development, including during construction and ongoing operation, have the potential to adversely impact the safety and operational integrity of an existing or future busway corridor or busway transport infrastructure. This includes stormwater and drainage:

- resulting in a worsening or actionable nuisance on an existing or future busway corridor or busway transport infrastructure. For example, concentrating stormwater flows into a busway corridor or increasing flood levels on a busway corridor.
- interfering with and/or causing damage to busway transport infrastructure. For example, run off from the development causing sedimentation which affects the operational integrity and safety of busway transport infrastructure.
- causing erosion which results in the de-stabilisation of an existing or future busway corridor or busway transport infrastructure.

Adverse impacts can be caused by changes to peak discharge, flood levels, the frequency/ duration of flooding, flow velocities, water quality, sedimentation and scour effects.

What is the objective?

The objective of the provisions is to ensure:

- development does not create a safety hazard for users of a busway
- development does not compromise the structural integrity of a busway corridor, future busway corridor, busway transport infrastructure or busway transport infrastructure works
- development does not compromise the state's ability to maintain and operate busways, or significantly increase the cost to maintain and operate busways.

How to achieve the performance outcomes

Performance outcome 11 and performance outcome 29

No acceptable outcome has been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include, but is not limited to, the following actions:

- provide basic stormwater information to enable development assessment officers to establish whether the proposed development will result in stormwater and drainage impacts on a busway corridor or future busway corridor. Guidance on preparing basic stormwater information is provided in Part D: Supporting information, Appendix 4.
- provide a RPEQ certified stormwater management plan including a flood impact assessment where relevant, that demonstrates the development will not result in an actionable nuisance or worsening of stormwater, flooding or drainage impacts in a busway corridor or future busway

corridor. Guidance on preparing a stormwater management plan is provided in Part D: Supporting information, Appendix 5.

Performance outcome 12

An acceptable outcome has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by providing basic stormwater information demonstrating that stormwater will not be discharged to stormwater infrastructure for a busway. Guidance on preparing basic stormwater information is provided in Part D: Supporting information, Appendix 4.

If an application does not comply with the acceptable outcome, details of the alternative means of meeting the performance outcome should be provided. This may include but not limited to the following actions:

- provide basic stormwater information to enable development assessment officers to establish whether the proposed development will result in stormwater and drainage impacts on a busway corridor. Guidance on preparing basic stormwater information is provided in Part D: Supporting information, Appendix 4.
- provide a RPEQ certified stormwater management plan, including an erosion and sediment control plan, that demonstrates the development will not result in an actionable nuisance or worsening of stormwater, flooding or drainage impacts in a busway corridor. Guidance on preparing a stormwater management plan is provided in Part D: Supporting information, Appendix 5. The erosion and sediment control plan should be prepared in accordance with:
 - Chapter 13 of the Road Drainage Manual, Department of Transport and Main Roads, 2015
 - the Best Practice Erosion and Sediment Control Document, International Erosion Control Association, Australasia.

3.4 Unauthorised access to a busway corridor

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Access (**PO13-PO14**)

What is the issue?

Unauthorised access to a busway corridor may result in disruption of busway services, cause damage to busway transport infrastructure or harm people using the busway.

Also, the location and design of vehicular access for a development may cause a safety issue for pedestrians accessing busway stations. The vehicular access for a development can also interfere with buses entering the busway at busway portals or at on-ramps or off-ramps.

Specifically, the vehicular access to a development should not obstruct buses entering or exiting a busway and should prioritise bus movements at all times. Development should not compromise pedestrian safety by allowing vehicles to reverse or manoeuvre in proximity to pedestrian access to busway stations.

What is the objective?

The objective of the provisions is to ensure:

- development does not create a safety hazard for users of a busway
- development does not compromise the state's ability to maintain and operate busways.

How to achieve the performance outcomes

Performance outcome 13

An acceptable outcome has been provided for this performance outcome. An application for development abutting a busway corridor can achieve compliance with the acceptable outcome by ensuring that a fence is provided along the property boundary in accordance with:

- clause 4.1.6 of the Guide to Road Design Part B, Austroads, 2015, and
- part 6B of the Road Planning and Design Manual, Department of Transport and Main Roads, 2016.

To demonstrate compliance it is recommended the following information is provided as part of the application:

- a site plan showing the location of fencing along the property boundary between the development and the busway corridor
- any supporting technical drawings depicting the proposed design of the fence.

If an application does not comply with the acceptable outcome, details of the alternative means of meeting the performance outcome should be provided.

Performance outcome 14

No acceptable outcome is provided. Therefore, an application must demonstrate compliance with the performance outcome. To assist development assessment officers to determine whether vehicular access for a development in proximity to a busway portal will create a safety hazard or result in worsening of operating conditions on a busway, it is recommended the following information is provided:

- a site plan showing the location of:
 - any existing or proposed vehicle access points to the development
 - busway portals in proximity to the subject site.

RPEQ certified traffic information may be required regarding the location and design of vehicular access, including details on service vehicles and development generated traffic and how this impacts on pedestrian access to busway stations and bus access to busway portals.

3.5 Access to Public Passenger Transport Infrastructure and Services

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Access (**PO15**)

What is the issue?

The design and construction of a development can damage or interfere with public passenger transport infrastructure or public passenger services. In addition, the design and construction of a development can impede the ability of pedestrians and cyclists to access busway transport infrastructure and services.

What is the objective?

The objective of this provision is to ensure development does not adversely impact public passenger transport infrastructure and maintains safe, efficient and legible access to public passenger transport infrastructure for pedestrians and cyclists.

For example, if a development proposed altering the gradient of paths and access ramps to a busway station would be unlikely to meet the objective of this performance outcome as it would impede public access and disability access to busway transport infrastructure.

How to achieve the performance outcome

Performance outcome 15

Acceptable outcomes have been provided for this performance outcome. To demonstrate compliance with the acceptable outcomes it is recommended the following information is provided as part of an application:

- a site plan of the development showing the location of:
 - proposed vehicle access points to the development
 - existing public passenger transport infrastructure and services
 - existing and proposed pedestrian and cycle access to the public passenger transport infrastructure.
- supporting information demonstrating how the development will maintain safe, efficient and legible access to public passenger transport infrastructure for pedestrians and cyclists.
- supporting RPEQ certified traffic information demonstrating how vehicle access, vehicular circulation, swept paths and development generated traffic will not compromise the safety, efficiency and operation of public passenger transport services and infrastructure.
- a construction management plan outlining:
 - how impacts on public passenger transport infrastructure such as bus stops and pedestrian and cycle paths will be mitigated during the construction of the development
 - proposed consultation with the TMR's TransLink Division and any other relevant third parties regarding temporary arrangements affecting public passenger transport services and routes.

If an application does not comply with the acceptable outcome, details of the alternative means of meeting the performance outcome should be provided.

3.6 Future busway corridors and planned upgrades

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.1: Development in a busway environment
 - Planned upgrades (**PO16**)
- Table 3.2.3: Development in a future busway environment
 - Buildings and structures (**PO26**)

What is the issue?

Development, especially buildings, structures and operational works, can affect the State's ability to construct future busway transport infrastructure or planned upgrades to existing busway transport infrastructure. In particular, buildings, structures and operational works can impact the form, cost and delivery of busway transport infrastructure.

A planned upgrade can include any extension, upgrade or duplication of busway transport infrastructure for which affected land has been identified in a publicly available government document, or in written advice to affected land owners. Land required for planned upgrades or a future busway corridor are identified in the [DA Mapping system](#).

What is the objective?

The objective of the provisions is to ensure that development does not compromise the State's ability to cost effectively deliver new busway transport infrastructure or planned upgrades to existing busway transport infrastructure.

How to achieve the performance outcomes

Performance outcome 16 and performance outcome 26

Five acceptable outcomes have been identified as a way for applications to meet the performance outcome. If a development does not involve land required for a planned upgrade or future busway corridor, an application may be able to demonstrate compliance with the first two acceptable outcomes. An alternative is the application can demonstrate it complies with all of the final three acceptable outcomes.

To demonstrate compliance with the acceptable outcomes it is recommended the following information is provided as part of an application:

- scaled and sufficiently detailed plans and supporting documentation which clearly shows all aspects of the proposed development (buildings, structures and works and their setbacks) in relation to the future busway corridor or planned upgrade. The boundaries of the future busway corridor or area of land affected by the planned upgrade in relation to the site boundaries and proposed development should be clearly identified. The plans should also identify whether buildings, structures or works are permanent or temporary.
- supporting information demonstrating how TMR's future infrastructure has been considered in the site layout of the development.

If an application does not comply with the acceptable outcomes, details of the alternative means of meeting the performance outcome should be provided.

3.7 Noise

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.2: Environmental emissions
 - Noise (PO17-PO21)

What is the issue?

Busway transport infrastructure and buses generate noise. Noise can have an adverse impact on the health, wellbeing and quality of life of communities located in the busway environment if development is not located, designed and constructed to reduce the exposure of occupants of the affected buildings to noise from busway operations and infrastructure.

What is the objective?

The objective of the provisions is to ensure that development affected by noise from busway transport infrastructure is designed and constructed in a way that reduces the community's exposure to adverse noise impacts.

How to achieve the performance outcomes

Important note: Where a busway is co-located in the same transport corridor as a state-controlled road, development should instead comply with table 1.2.2 Environmental emissions of *State code 1: Development in a state-controlled road environment*.

Where a busway is co-located in the same transport corridor as a railway, development should instead comply with table 2.2.2 Environmental emissions of *State code 2: Development in a railway environment*.

Performance outcomes 17 – 21

Applications proposing new sensitive uses are responsible for ensuring significant noise impacts on the proposed development are mitigated to appropriate levels. Sensitive uses are accommodation activities, educational establishments, child care centres and hospitals.

To demonstrate compliance with the acceptable outcomes, specific information about the proposed development and surrounding acoustical environment must be provided with an application in order for the State to determine whether the development can mitigate noise to acceptable levels for residents, visitors, workers and patrons.

The type of information that needs to be provided with an application depends on the extent to which the proposed development is likely to be affected by noise generated by transport operations and infrastructure. The State has sought to minimise the costs of demonstrating compliance with noise criteria by only requiring detailed noise assessment reports to be prepared when there is a medium to high probability of the development being impacted by noise from transport operations and infrastructure.

Table 2 identifies the likelihood of a development being adversely impacted by noise (based on the type and location of the proposed development) and the corresponding level of information, which must be provided with an application.

Table 2 Information required as part of a development application

Probability of Impact	Development Proposed	Information Required
Low	Development not involving a sensitive use.	Standard information
Medium	Development involving a sensitive use that is located greater than 100 metres from a busway corridor. Development involving a sensitive use that is located within 100 metres of a busway corridor but the level of impact does not exceed the relevant criteria for the development listed in the <i>Policy for development on land affected by environmental emissions</i> .	A report outlining the noise assessment findings and conclusions. (Noise Assessment Report - Part A)
High	Development involving a sensitive use that is located within 100 metres of a busway corridor and the level of impact will exceed the relevant noise criteria for the development listed in the <i>Policy for development on land affected by environmental emissions</i> .	A report detailing the noise attenuation measures required as per the results of Part A. (Noise Assessment Report - Part A and Part B)

For **low impact** development an application should include the following supporting information:

- the type of development proposed (i.e. whether the development is a sensitive use)
- the intensity of development proposed (e.g. maximum floor area, maximum building height)
- the location of development on the subject site
- building layouts showing sensitive areas and uses and their distance from a busway corridor
- land contours for the subject site and transport corridor showing any physical embankments/buildings/existing noise barriers located between the busway corridor and the proposed buildings
- the volume of traffic using the busway corridor daily. This can be obtained from TMR.

For **medium impact** development an application should be supported by a Noise Assessment Report Part A, prepared by an appropriately qualified acoustic consultant and certified by a RPEQ, and which demonstrates the relevant noise criteria will not be exceeded and therefore no attenuation measures are required. Note, where the Noise Assessment Report Part A demonstrates the relevant noise criteria will be exceeded, a Noise Assessment Report Part B will need to be prepared. Guidance on preparing a Noise Assessment Report is provided in Part D: Supporting information, Appendix 6.

For **high impact** development an application should be supported by a Noise Assessment Report Part A and Part B, prepared by an appropriately qualified acoustic consultant and certified by a RPEQ, and which demonstrates that noise attenuation treatments can be included in the development to ensure that noise levels are reduced to an acceptable level. Guidance on preparing a Noise Assessment Report is provided in Part D: Supporting information, Appendix 6.

Application of noise criteria in development assessment

The performance outcomes in SDAP include three types of criteria for noise generated by linear transport operations and infrastructure:

- external (façade corrected) noise criteria for buildings
- external (free field) noise criteria for outdoor spaces for passive recreation, outdoor education areas and outdoor play areas, and
- internal noise criteria.

The impact of noise generated by busway operations and infrastructure external to buildings is a prime concern. These areas are the building facades, outdoor areas for passive recreation, outdoor

education areas and outdoor play areas. The external criteria are therefore referred to as the 'primary noise criteria', while the internal criteria are referred to as the 'secondary noise criteria'.

Where a new sensitive development is proposed on land near busway operations and infrastructure and an application is referred to the state for assessment, the state will seek to ensure that the primary noise criteria are achieved in the first instance. By way of example, if a new childcare centre is proposed next to a busway, the state will require the application to demonstrate that the following noise criteria can be achieved:

- at all facades: ≤ 55 dB(A) L_{eq} (1h) façade corrected (maximum hour during normal opening hours)
- in all outdoor education areas and outdoor play areas: ≤ 52 dB(A) L_{eq} (1h) free field (maximum hour during opening hours).

In some circumstances, where the noise criteria for building facades (façade corrected) can be achieved, the criteria for outdoor areas for passive recreation, outdoor education areas and outdoor play areas may be achieved simultaneously. This is because the building façade criteria is always more stringent than the criteria for outdoor spaces for passive recreation, outdoor education areas and outdoor play areas. The logic follows that if the more stringent criteria can be achieved, the less stringent criteria is likely to be achieved also.

The state will only apply noise criteria for outdoor space for passive recreation, outdoor education areas and passive recreation areas where these types of open space are included in a development proposal.

The primary noise criteria in SDAP can be achieved using noise barriers, earth mounds, separation distances/setbacks, topography and site design (building location and orientation) (see section 7.2 of the Environmental Emissions Policy for more information on these strategies).

However, near a busway, when a new sensitive development is proposed and a noise barrier is technically feasible and reasonable, it will always be the Department of Transport and Main Roads preferred method for achieving the primary noise criteria. This means that the state will require the proponent of a development near a busway to provide a noise barrier as a condition of development approval where it is both technically feasible and reasonable.

In contrast, construction of large noise barriers and earth mounds are generally not supported on sites in the vicinity of busway stations due to safety and security concerns. Applicants should refer to the Crime Prevention through Environment Design Guidelines for Queensland (CPTED Guidelines) for more information about designing environments to lessen or prevent the incidence of crime. The CPTED Guidelines are available from Queensland Police (www.police.qld.gov.au).

Where an application can demonstrate that the primary noise criteria (façade corrected) can be achieved with recommended noise attenuation treatments, compliance with the secondary noise criteria in SDAP will not be assessed by the state.

Where an application cannot demonstrate compliance with the primary noise criteria, the state will take into consideration whether the secondary criteria can be achieved with recommended noise attenuation treatments. In some circumstances the secondary criteria will not be achievable without the use of noise barriers, earth mounds and/or separation distances/setbacks to reduce the impact of noise emissions at the building façade.

An application which demonstrates compliance with the secondary noise criteria must still demonstrate that significant adverse impacts on the development's outdoor space for passive recreation, outdoor education areas and outdoor play areas will be attenuated to the maximum extent practicable and explain why further attenuation measures to achieve the primary criteria were not considered to be reasonable, feasible or cost effective to the satisfaction of the State.

3.8 Vibration

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.2: Environmental emissions
 - Vibration (**PO22**)

What is the issue?

Busway transport infrastructure and operations have the potential to generate vibration which can have an adverse impact on the treatment of patients in hospitals. In particular, patient care areas in hospitals must be located, designed and constructed to reduce or mitigate exposure to vibration from busway operations and infrastructure.

What is the objective?

The objective of the provisions is to ensure that patient care areas in hospitals are developed in a way that reduces these areas' exposure to adverse vibration impacts from busway transport infrastructure.

How to achieve the performance outcome

Performance outcome 22

An acceptable outcome has been provided for this performance outcome. An application can demonstrate compliance with the acceptable outcome by providing a RPEQ certified vibration assessment report which demonstrates that the vibration dose values in patient care areas of hospitals does not exceed the levels specified in the acceptable outcomes.

If an application does not comply with the acceptable outcome, details of the alternative means of minimising vibration impacts from a busway in patient care areas should be provided.

3.9 Air and light

The content in this section supports the POs outlined in:

State Code 3: Development in a busway environment

- Table 3.2.2: Environmental emissions
 - Air and light (**PO23-PO25**)

What is the issue?

Air and light emissions from busway operations have the potential to have an adverse impact on the health, wellbeing and quality of life of nearby communities. In particular, development should be located, designed and constructed to reduce or mitigate the community's exposure to air and light emissions from busway operations and infrastructure.

What is the objective?

The objective of these provisions is to ensure that sensitive developments affected by air and light from busway transport infrastructure is developed in a way that reduces the community's exposure to adverse air quality and light impacts.

How to achieve the performance outcomes

Performance outcome 23 and performance outcome 24

An acceptable outcome has been provided for these performance outcomes. To demonstrate compliance with the acceptable outcomes it is recommended an application provides the following information:

- for accommodation activities:
 - a site plan which clearly identifies the outdoor space for passive recreation for each dwelling and any shielding buildings and structures. It should be noted that not all outdoor spaces for passive recreation need to be shielded from a busway. If an application demonstrates that each dwelling has access to an outdoor space for passive recreation which is shielded from the busway (this can include private, communal or public open space) then an application will comply with the acceptable outcome.
- for education establishments and child care centres:
 - a site plan which clearly identifies the location of all outdoor education area and/or outdoor play areas and any shielding buildings and structures.
- for accommodation activities, education establishments and child care centres:
 - a structural design or information which demonstrates that a fence or other structure provided to shield the outdoor space is solid and gap-free.

Performance outcome 25

Acceptable outcomes have been provided for this performance outcome. To demonstrate compliance with the acceptable outcomes it is recommended an application provides the following information:

- building layout plans and designs demonstrating that the number of windows or transparent/translucent panels facing a busway have been minimised, and/or that windows for habitable rooms do not face the busway, or that windows facing a busway include treatments, such as blinds or curtains that enable light from a busway to be blocked during the night time hours.

Part C – Advice for works within a busway corridor

4. Overview

The purpose of Part C of the Busway Guide is to provide information in relation to the constraints and requirements for undertaking works within a busway corridor. The type of work may include accessing a busway corridor, constructing over busway land or interfering with busway transport infrastructure. Many of the activities associated with works on busway land are regulated under the *Transport Infrastructure Act 1994*.

The order in which applicants should seek approval to carry out works within a busway corridor will depend on the nature of the development.

It is important to note the information outlined in this part is intended as general guidance only. The appropriate procedures and processes should be confirmed with TMR prior to undertaking the proposed works. It is also recommended that TMR be contacted early in the planning stages of development to discuss and negotiate access arrangements, licences and any associated development or agreements.

The safety of busway operations and workplace health and safety in the busway environment are paramount. TMR has safety policies, which extend to all works undertaken by third parties in the busway environment. It is recommended that applicants liaise with TMR to ascertain safety requirements, prior to works commencing.

5. Busway land

The following section provides guidance regarding the parties, processes and requirements involved in obtaining temporary or permanent access to busway land.

5.1 Busway land ownership

TMR holds the perpetual lease over busway land on behalf of the state government. As such, TMR is the 'owner' of the busway land. Note that in some instances (such as the Eleanor Schonell Bridge) busways do not run on busway land, but on privately owned land.

5.2 Owner's consent

For development applications involving freehold land held by TMR or land administered by TMR, the applicant is required to obtain owner's consent from TMR.

Further information on the requirements for obtaining owner's consent can be found on TMR's website.

5.3 Development of airspace

An encroachment into the airspace above a busway, for example a building awning, will require approval from TMR and be subject to a negotiated commercial agreement between the applicant, TMR and the state government. The agreement may cover matters such as the conditions of use, security of the corridor, supervision (for busway safety purposes) and insurances or indemnities.

The development of airspace in an operating busway environment will involve certain design requirements to be met and necessary agreements to be in place to protect the busway and enable airspace sale. For example, it may involve a development agreement, a contract of sale, a development lease and either a building management statement.

Any encroachment may involve a volumetric lease or excision / boundary realignment. Transfer of title does not usually take place until the development is completed and the envelope of the building is accurately defined by survey. A long term leasehold arrangement may be more appropriate than a freehold arrangement, particularly where a plan for a future corridor may affect the site.

5.4 Private treaty dealings

Private treaty dealings (priority disposals under Property Queensland) are rare and the disposal or sale of most government owned sites will be by way of a tender process. Owning or having an option to purchase land adjacent to a busway corridor will not necessarily be regarded as sufficient basis for a priority disposal.

5.5 Building management statement

If the proposed development involves both private land and busway land in an integrated development, and involves shared access and services, a building management statement (BMS) may be required in accordance with Section 294D of the *Land Act 1994*. The state government and TMR will both be a party to the BMS.

The BMS may include certain development requirements to maintain light and ventilation to the busway as well as any other relevant access and maintenance requirements.

5.6 Easements

A permanent easement will generally not be granted over the busway corridor. This is to preserve the state's ability to upgrade or relocate infrastructure in the corridor at any time.

Where provision needs to be made for a utility service, the preferred means of granting a right of occupation is by way of a licence.

The state government may require an easement through a development to protect and preserve public access to a busway station.

Private properties adjoining a busway corridor may be burdened by busway supporting easements. These include rights and obligations concerning the land burdened by the easement, including relevant approvals and permissions that may need to be obtained from the Department of Transport and Main Roads.

5.7 Indemnities, insurances and securities

If a proposed development integrates with the busway corridor, the current and subsequent owners will be required to:

- have adequate insurance cover
- indemnify TMR against any claims arising from events occurring during the life of the development.

Security may also need to be provided to cover such costs as the expense of rectification works required to maintain the operational efficiency of busway operations in light of the development.

5.8 Native title

Before entering into negotiations with a private party, a development applicant will need to undertake an assessment to determine if there is a need to address native title matters in relation to the busway corridor land.

5.9 Temporary access

Temporary access to a busway corridor for works associated with the construction of a development will require permission from the Busway Operations Centre. Access may be permitted subject to conditions agreed with TMR and all persons accessing a busway corridor will be required to undertake a safety induction.

6. Interfering with busway transport infrastructure

The following section provides guidance regarding undertaking works which can potentially interfere with a busway corridor or busway transport infrastructure. Particular requirements are outlined in the *Transport Infrastructure Act 1994*.

6.1 Approval to carry out works

Section 311 of the *Transport Infrastructure Act 1994* establishes that a person must not interfere with busway transport infrastructure or busway transport infrastructure works unless they have obtained the written approval of TMR (for example, carrying out works or undertaking activities).

Examples of works that may interfere with busway transport infrastructure or busway transport infrastructure works include:

- construction or maintenance works, including overhead crane operations
- bore works or excavations beneath the busway
- erecting or dismantling scaffolding
- undertaking surveys

- inserting vibration monitoring devices.

In addition, approval may be required by TMR for various activities on a busway corridor, including any work or activity which may obscure busway vehicle sight lines, for example signage or structures.

Written approval can be obtained by directly contacting TMR. Typically, information required to be provided to support approval for works or activities includes the:

- location of works
- timeframe for works
- scope of works and equipment to be used
- company name, contact name and contact details including phone number
- construction management plan
- work method statement
- safety management plan.

6.2 Construction management plan and work method statements

For construction interfering with busway transport infrastructure or busway transport infrastructure works, an applicant will be required to provide a construction management plan detailing the construction procedures. Guidance on preparing a construction management plan is provided in Part D: Supporting information, Appendix 7.

Applications for work within a busway corridor should also provide a detailed work method statement. A work method statement will need to be proved for each package of work and detailed methodologies for the proposed works.

A program for construction of the development must be submitted with the construction management plan. It is strongly recommended that the construction methodology is planned collaboratively with TMR to avoid rework due to safety issues.

Construction must not commence until TMR has considered the construction management plan and individual work method statements, under section 311 of the Transport Infrastructure Act 1994.

6.3 Safety requirements for works in a busway corridor

TMR has a duty of care to advise on, and approve certain safety issues in the busway corridor. A breach of safety requirements may result in severe penalties, including large fines and custodial sentences.

Any application for work within the busway corridor must demonstrate safety issues in the busway corridor has been considered. The following information may need to be provided as part of an application:

- submission of a safety management plan
- details of proposed work site supervision including the use of specialist safety personnel, such as protection officers and lookouts
- copies of appropriate insurances and indemnities
- a quality assurance system and a quality plan
- a dilapidation survey of any busway transport infrastructure before construction commences.

The safety of the public is to be maintained at all times. Any arrangements for work within a busway corridor including temporary access during construction, must meet TMR's safety and operational

requirements. Note that all reasonable costs incurred by TMR in managing safety issues will need to be met by the applicant.

Depending on TMR's specific requirements, a contractor's safety liaison representative may need to be appointed with responsibility for:

- safety of the contractor's employees, plant and equipment during the execution of work in the busway corridor
- coordinating and programming the contractor's work in the corridor
- receiving directions from TMR's superintendent, the site protection supervisor or protection officers on matters relating to the safety of the operating busway
- ensuring that all plant and equipment is operated and all employees of the contractor act in accordance with such directions.

If required, the safety liaison representative is to be present on the subject site at all times while works are being undertaken in the busway corridor. If the safety liaison representative leaves the site at any time while works are being undertaken, a competent relief representative must be appointed.

6.4 Safety management plan

Any safety management plan must align and comply with TMR's operational safety plans for events that occurs in the busway corridor. This includes, but is not restricted to, notification of incidents, command and control of the incident site, and restoration of services.

Where works obstruct the busway unexpectedly or if busway transport infrastructure is damaged, the relevant control room must be immediately informed. Currently this is the Brisbane Metropolitan Traffic Management Centre (BMTMC) which is jointly run by TMR and Brisbane City Council. The control room can be contacted at any time, by for example, contacting the Busway Operations Centre (BOC) on 3066 6044, using emergency help points at busway stations, or by asking a member of staff or emergency services personnel.

6.5 Design risk assessment

A design risk assessment (which incorporates a safe design and risk management approach) should be undertaken to examine the works to ensure 'so far as reasonably practicable' that the works are designed to be without risks to the health and safety of persons who:

- construct the works
- operate and maintain the works
- use the busway transport infrastructure including adjoining development
- demolish and dismantle the works.

This is a legislative requirement in accordance with:

- *Work Health and Safety Act 2011*
- *Safe design of structures code of practice 2013.*

6.6 Site supervision requirements

Where works or activities are being carried out in the busway corridor, it may be necessary for the works to be carried out under the direction of TMR to ensure the safety of the operating busway. The officer assigned by TMR will be entitled to stop or direct the movement of construction workers and the location of plant and equipment in accordance with the safe working procedures.

6.7 Rectification of works

In accordance with section 312 of the *Transport Infrastructure Act 1994*, TMR may inspect any works that interfere with busway transport infrastructure or busway transport infrastructure works and may issue a list of defects with written notice requiring rectification works to be undertaken within a stated time period.

In addition, TMR may require an applicant to provide a dilapidation survey where a development will interfere with busway transport infrastructure or busway transport infrastructure works. A dilapidation survey will be undertaken by TMR, at the applicant's expense, and will record the pre and post construction condition of the busway transport infrastructure and determine if any rectifications works are necessary.

Where rectifications works are identified by TMR, the applicant is required to engage TMR to undertake all necessary rectification works at the applicant's expense. Should rectification works not be complied with, TMR may undertake the works itself and recover the cost of rectification works from the applicant.

6.8 Operational impacts (delay of service)

TMR aims to meet performance measures relating to the operation of the busway service. Consequently, any unscheduled delays or interruptions to busway vehicles or a net worsening of service performance (including longer journey times), which are attributed to the works, may result in penalties.

6.9 Trespassing on a busway

In accordance with section 329 of the *Transport Infrastructure Act 1994*, a person must not be on a busway or busway infrastructure or a site where busway transport infrastructure works are situated unless the person has relevant permission to do so from TMR.

6.10 Transport Interface agreements

Where any works require modification to, or interference with, busway transport infrastructure or busway transport infrastructure works, the written approval of TMR must first be obtained. In providing such approval, TMR may impose conditions including a requirement that the applicant enter into a transport interface agreement. The meaning and scope of transport interface agreements are set out in the *Transport Infrastructure Act 1994*.

A transport interface agreement may require TMR to design, certify and undertake the works itself. An interface agreement may also seek to recover TMR's costs associated with modifying or interfering with the busway transport infrastructure or busway transport infrastructure works. In addition to design and construction costs, these costs may also include additional project specific insurance, design and technical assessments, and documentation update costs.

7. Design aspects of development over a busway corridor

A development proposed to be over or enclosing a busway will need to consider a number of design aspects in consultation with TMR.

7.1 Ventilation and light

Development should be designed to allow access to natural light and ventilation in the busway corridor. This is especially important where a development is located above a busway station.

Ventilation design is intended to maintain busway operations during a fire emergency, by controlling smoke and allowing emergency response teams to enter safely with appropriate firefighting and protective equipment. For development over a busway corridor, it is recommended that applicants:

- discuss and agree with TMR and Queensland Fire and Emergency Services on fire scenarios used as an input into the development of ventilation design
- ensure discharge points for ventilation shafts are designed and located in a position where escaping toxic plumes will not enter air-conditioning intake ducts or affect nearby sensitive uses such as residential, education and medical uses
- ensure air-conditioning intakes, where located above or near ventilation vents, are fitted with smoke detectors which automatically shut down air-conditioning fans and dampers.

7.2 Urban design

Where a proposed development is over or adjoins a busway station, good practice urban design principles must be applied in the layout of the proposed development to promote seamless connectivity to busway stations, from the proposed development to the busway station and between various transport modes. Such development should comply with the [Public Transport Infrastructure Manual](#).

Where a proposed development is in or over a busway station, [crime prevention through environmental design](#) (CPTED) principles should be incorporated in the proposed development.

Applicants may also be required to enter into an agreement with TMR with regard to the use and maintenance of busway transport infrastructure. Further guidance from TMR regarding such developments should be sought early on the planning stages of a development.

7.3 New or altered assets

On completion, any new or altered assets must be transferred with full documentation to the state government or TMR. This includes 'as built' drawings, specifications, manuals, quality assurance documentation and warranties.

8. Public utility provider agreements

To ensure regular access and maintenance of existing and future public utility plants (PUP), an interface agreement between public utility providers and other relevant parties may be established.

Where an interface agreement exists between a public utility provider and TMR, the interface agreement will take precedence over the Busway Guide.

8.1 Public Utility Plant on busway land

Section 318 of the Transport Infrastructure Act provides for a public utility provider to undertake works to their Public Utility Plant where written agreement has been received by TMR.

In accordance with section 318(4), public utility providers may carry out urgent maintenance of its Public Utility Plant on busway land without written agreement where reasonable steps have been taken to obtain agreement.

8.2 Public utility provider consultation with busway authority

In the interests of coordination of mutually benefit works arrangements for government agencies and public utility providers, section 320 of the Transport Infrastructure Act provides for public utility providers to consult TMR when proposing replacement of the whole or a substantial proportion of Public Utility Plant on busway land.

8.3 Compliance and remedy actions for public utility providers

In accordance with section 321 of the Transport Infrastructure Act where a public utility provider undertakes works to their Public Utility Plant without seeking the required written agreement or where works are inconsistent with an existing interface agreement, TMR may require the public utility provider at its cost to take action to remedy the relevant action within a stated time period.

Should rectification works not be undertaken, TMR may arrange to undertake necessary action to remedy the relevant action and request recovery for the cost of these actions from the public utility provider.

8.4 Requirement for public utility providers to alter PUP

In accordance with section 322 of the Transport Infrastructure Act, TMR may require a public utility provider to alter the position of a Public Utility Plant on busway land if it is deemed to interfere with the exercise of TMR's powers for the busway land. TMR is responsible for the cost of altering the position of any PUP.

8.5 Liability for damage

Sections 324 to 326 of the Transport Infrastructure Act provide protection for TMR, where damage is caused to a Public Utility Plant on busway land. In certain circumstances, TMR is not liable for damage where a public utility provider has not complied with legislative requirements.

As per section 327 of the Transport Infrastructure Act the public utility provider may be liable to pay TMR the additional expense incurred in carrying out busway transport infrastructure works.

Part D – Supporting information

Appendix 1: Geotechnical assessment

An RPEQ certified geotechnical assessment should provide design information on the following to inform the structural engineering design and construction management of the development:

- details of earthworks, including methods for excavation, the excavation and drilling of rock, the stability of open excavations and filling/back filling and compaction
- permanent and temporary basement retention options, design loads and geotechnical design parameters
- suitable options for foundation structures, design loads and geotechnical design parameters
- vibration impacts from drilling, boring and excavation
- groundwater management
- advice on effects on the existing busway transport infrastructure and relevant construction issues.

Alternatively, copies of any existing geotechnical investigations previously undertaken for the site should be provided.

Appendix 2: Earthworks drawings

An earthworks plan should be provided, including cross sections/elevations, and any required supporting technical details clearly showing:

- the location/setback and extent of proposed excavation and filling works including likely volumes of cut and fill adjacent to the busway corridor or in a future busway corridor
- the maximum depth of any excavation in relation to the existing ground level on the site and the level of busway transport infrastructure
- the maximum height of any proposed filling and the gradient and height of any proposed batters adjacent to the busway corridor
- the maximum height and intended form/design of any proposed retaining walls or structures adjacent to the busway corridor
- where proposed excavations, filling/backfilling or retaining works will be greater than 1m in depth or height abutting the busway, RPEQ certified drawings should be provided demonstrating that the works will not de-stabilise busway transport infrastructure or the land supporting this infrastructure
- the outermost projections of existing busway transport infrastructure such as soil nails and other retaining and footing structures.

Scaled cross sections and elevations should clearly show the interface with the busway corridor boundary as a result of any proposed earthworks. The difference between existing site levels and finished/design levels should be clearly shown.

The earthworks plan should demonstrate that any excavation or filling/backfilling works and retaining structures will be located outside the busway corridor.

Appendix 3: Structural engineering drawings for retaining structures

Where a development proposal includes basement car parking levels and/or foundation and retaining structures to support medium density to high rise development, RPEQ certified conceptual structural engineering design plans for the development may be required. These should include cross sections/elevations and any required supporting technical details showing the following in relation to the busway corridor and address the following, amongst other relevant considerations:

- the type, spacing, location and depth of building foundation structures (including any structures such as footings, and bored piles/piers and associated columns)
- the temporary and permanent retention system for the development, including the location, length, depth and angle of insertion of any proposed shoring, rock anchors and/or soil nails. Permanent retention systems in a busway corridor will not be permitted. The application should demonstrate that any proposed temporary retention will not compromise the busway both during construction and on-going operation, including any structural or geotechnical impacts
- demonstrate that the lateral and vertical loading implications, for example but not limited to lateral and vertical loading, of the proposed development will not compromise the safety and operational integrity of the busway corridor. The loading configuration of the proposed development should be provided.

The as-constructed drawings for the relevant segment of the busway will need to be obtained. Please contact the TMR's Plan Room in relation to this matter.

Appendix 4: Basic stormwater information

Basic stormwater information (including a suitable scaled drawing) should include the following:

- existing site topography/levels (contour information can be sourced from the relevant local government or prepared by a registered surveyor)
- the proposed finished levels for the proposed development
- information verifying whether the subject site is flood prone. Flood searches and mapping can often be obtained from the relevant local government
- existing drainage infrastructure on the subject site and in the immediate surrounding area. For example, culverts or kerb and channel in surrounding roads, including the location of all natural and constructed drainage features, such as pits, culverts, open channels, drains, detention or retention basins as well as, gullies, wetlands, waterways, and the like. This information is best provided in the form of a site detail and contour survey plan prepared by a registered surveyor
- proposed drainage infrastructure to be provided by the development, this will include any devices such as pipes, downpipes, pits, detention basins, tanks and drains that are proposed to be used to manage stormwater and connect it to the proposed point of discharge. The location where stormwater is proposed to be discharged should be clearly identified, preferably by a RPEQ certified drawing showing the proposed stormwater drainage design for the development with associated hydraulic calculations
- proposed increase in impervious area of the subject site as a result of the development. This will include the location and extent of any proposed hardstand or sealed surfaces. This should be clearly illustrated on the architectural drawings showing the proposed development.

Appendix 5: Stormwater management plan

A RPEQ certified Stormwater Management Plan (water quantity and quality) should assess the potential stormwater impacts on the busway corridor, including busway transport infrastructure, as a result of the proposed development and recommends appropriate mitigation measures.

The Stormwater Management Plan should:

- Be prepared in accordance with the relevant performance outcomes of the State Development Assessment Provisions and with consideration given to the Queensland Urban Drainage Manual (available at <https://www.dews.qld.gov.au/water-supply-regulations/urban-drainage>).
- Demonstrate that the management of stormwater (quantity and quality) post development can achieve a no worsening impact (on the pre-development condition) for all flood and stormwater events that exist prior to development and up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)).
- Demonstrate that the stormwater management for the proposed development can ensure no worsening or actionable nuisance to the busway corridor, including busway transport infrastructure, caused by peak discharges, flood levels, frequency/duration of flooding, flow velocities, water quality, sedimentation and scour effects.
- Incorporate appropriate hydraulic and hydrological analysis demonstrating:
 - design flood peak discharges for the site and surrounding area which exist prior to the development for all flood and stormwater events up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)). This should include at least the following flood and stormwater events: 50%, 20%, 10%, 5%, 2% and 1% AEP (equivalent to 2, 5, 10, 20, 50 and 100 year ARI events);
 - design flood peak discharges for the site and surrounding area after the development has occurred for all flood and stormwater events up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)). This should include at least the following flood and stormwater events: 50%, 20%, 10%, 5%, 2% and 1% AEP (equivalent to 2, 5, 10, 20, 50 and 100 year ARI events).
 - Where flood modelling is required to be undertaken, the flood model needs to be extended to encompass the busway corridor. Mapping should be provided to illustrate the pre-development scenario, and the post development impacts for all relevant flood events.
- Ensure the following are addressed, where applicable:
 - all relevant legal points of discharge for the development site are identified. No new discharge points for stormwater will be permitted on the busway corridor;
 - the impact of existing or proposed noise barriers on overland flow paths is taken into account;
 - overland flow paths are identified and hydraulic conveyance is maintained on the site as part of the proposed development;
 - flood storage capacity is maintained on the site as part of the proposed development;
 - the adverse impacts from sheet flow on the busway corridor are prevented;
 - the proposed development does not cause a concentration of stormwater (including floodwater) flows discharging on the busway corridor during construction or thereafter;

- retaining structures, filling/excavation, landscaping, construction activities or any other works to the land have been designed to include provision for drainage so as not to adversely impact on the busway corridor;
 - the proposed development does not impede or interfere with any drainage, stormwater or floodwater flows from the busway corridor;
 - stormwater or floodwater flows have been designed to maintain the structural integrity of the rail transport infrastructure;
 - existing stormwater drainage infrastructure on the busway corridor is not interfered with or damaged by the proposed development such as through concentrated flows, surcharging, scour or deposition;
 - the quality of stormwater discharging onto the busway corridor is not reduced through erosion and sedimentation.
- Include details of the mitigation measures proposed to address any potential stormwater impacts (including flooding impacts) of the proposed development. The design flood peak discharges should be shown for the mitigated case to demonstrate there is no worsening impact on the busway corridor.

Appendix 6: Noise Assessment

Where development includes a sensitive land use and is likely to be impacted by noise from a busway, an applicant should provide a noise assessment report demonstrating that:

- relevant noise criteria will not be exceeded and therefore no attenuation measures are required, or
- noise attenuation treatments can be included in a development to ensure that noise levels are reduced to an acceptable level.

A noise assessment report seeks to ensure that any sensitive development achieves acceptable noise levels for residents and visitors by ensuring development mitigates the adverse impacts from noise generated by a busway.

A noise assessment report should adequately document and present all the data inputs, assumptions and assessment results, and noise attenuation strategies/options considered as part of the assessment. In order to limit the expense of preparing reports, a noise assessment report has been split into two parts:

- noise assessment report - Part A is to present the noise assessment findings. The findings and conclusion of Part A will determine whether noise attenuation measures will be required for the development
- noise assessment report - Part B is to detail the noise attenuation measures required as per the results of Part A and will only need to be provided when measured noise levels exceed the relevant noise criteria for the development in the State Code 3: Development in a Busway Environment

Where it is obvious that a development will require noise attenuation measures, it is suggested a full noise assessment report (i.e. Part A and Part B) be prepared at the same time. Matters that the noise assessment report should consider are outlined as follows.

Noise assessment report Part A – review of noise impacts

Development details

The following information is to be provided:

- description of the subject site including real property description/s and a locality plan
- architectural drawings illustrating the proposed development including building and open space layout plans, noise sensitive areas and uses, the setback distances for building facades (noise sensitive locations), proposed lot numbers (if applicable)
- drawings showing site contours and earthworks (cut and fill) information to clarify the existing topography and proposed finished levels
- confirmation of the extent and height of any existing noise barriers and their location in relation to the proposed development.

Noise measurement

The following information is to be provided:

- a summary of the noise measurement results including a layout plan depicting the site locations and positions of the noise measurements conducted for the assessment, the time of day and weekday the measurements took place
- measurement data sheets and site attendance records/site notes taken by the consultant measuring noise at each measurement site:
 - all results of measurements, calculations and predictions are to be presented in a tabular format
- tabulation of calculated noise levels for all noise sensitive receptors (without noise attenuation treatments)
- noise contours or plans showing specific areas where noise criteria are exceeded:
 - the noise level exposures can be produced as noise level contours or presented in a format depicting areas where the specified noise criteria are exceeded or where the noise levels of noise sensitive receptors fall within a certain noise level range. Which format to adopt will depend on the number of factors/options/ criteria considered in the noise assessment and the type of development proposal being assessed
 - when presenting noise contours, the figure should make clear whether the noise levels are facade corrected or free field based on a grid assessment. This assessment will determine the relative accuracy of the contours compared with the facade calculations and the receptor height assumed. The maximum grid spacing shall be a 10 metre by 10 metre square depending on the accuracy required. Reference to grid spacing assessment is to be noted in the title block for each figure.

Acoustic assessment

For acoustic assessment, the following information should be provided:

- description of the investigation process in determining the noise exceedance:
 - careful interrogation of noise level contours needs to be undertaken in conjunction with the tabulated noise levels in order to clearly identify whether any of the criteria levels are exceeded
- documentation of all noise model input data and assessment criteria adopted. The source and date of collection of all data used should be clearly documented. Data more than 12 months old cannot be used in the acoustical assessment

- all acoustical assessments undertaken as part of the noise assessment report must take the following into account:
 - for reconfiguration proposals the assumed location of residential building facades is to be the minimum setback distance required by the relevant local government planning scheme for detached and duplex housing. For other noise sensitive developments, the assumed facade location is to be as per the relevant planning scheme. In these situations, a ‘facade correction’ of 2.5dB(A) should be added to the free field measurement of 1 metre from the assumed facade to determine the facade corrected noise level
 - the receptor height used in the acoustical assessment should be 1.5 metres above the finished floor level/s. In the case of multi-level buildings, all floor levels are to be assessed. For residential reconfigurations, where the finished floor level is not known, the receptor heights should be assumed at 1.8 metres and 4.6 metres above an assumed building pad level, for the ground and first floors (first and second storey) respectively. It is essential that both low and high-set residential buildings be considered in the assessment.

Recommendation

The noise assessment report Part A must clearly articulate whether noise generated from the transport corridor exceeds the relevant noise criteria as outlined in SDAP. If levels are exceeded, the Report must recommend that attenuation measures are to be provided by the development.

Certification

The noise assessment report Part A is to be prepared by a qualified acoustic consultant and certified by a RPEQ.

Attachments

Attachments to include where applicable are:

- all field measurement results
- all input and output data and analysis including modelling data files in electronic format
- supplementary reports and references
- any other explanatory and general notes.

Noise assessment report Part B – noise attenuation measures

If the noise assessment report Part A recommends that noise attenuation measures are necessary, these measures should be presented as per the requirements of Part B.

Attenuation

Part B should provide full details of the preferred noise attenuation strategies and clearly demonstrate that the proposed measures will reduce noise to acceptable levels including:

- description of the investigation process in determining the preferred noise attenuation strategies/options
- description and layout plans of all existing and recommended noise attenuation treatment/options, including the length, height and location of proposed noise barriers
- layout plans showing the length, height and location of all existing and recommended noise attenuation treatment options. These should include:

- the maximum height above proposed finished ground levels in Reduced Levels (RLs) on AHD of any proposed noise attenuation structures, which are required to meet the TMR's noise criteria
 - the maximum height above proposed finished ground levels in RLs on AHD of any proposed noise attenuation structures, which are required to meet the TMR's noise criteria for the ground level (first storey) of any noise sensitive receptor (if different from above)
 - the maximum height above proposed finished ground levels in RLs on AHD of any proposed noise attenuation structures which are required to meet the TMR's noise criteria for the first floor level (second storey) of any noise sensitive receptor
 - if the proposed noise attenuating structure(s) include/s an earth mound/s, the footprint extent of any earth mound/s
 - the layout of the proposed development
- supporting analysis, calculations and model outputs substantiating the ability of the proposed treatments to attenuate noise to acceptable levels

Recommendations and conclusions

The noise assessment report Part B must clearly demonstrate and subsequently recommend that the development provide noise attenuation measures to ensure noise generated from the transport corridor meets acceptable noise criteria as outlined in SDAP.

Certification

The noise assessment report in Part B is to be prepared by a qualified acoustic consultant and certified by a RPEQ.

Attachments

Attachments to include where applicable:

- all input and output data and analysis including modelling data files in electronic format
- supplementary reports and references
- any other explanatory and general notes.

Appendix 7: Construction Management Plans

Construction management plan should provide the following:

- a detailed and complete description of the works
- details regarding the estimated duration and timing of construction (including start and finish dates and times)
- identification of the equipment/machinery required to undertake the works and the proximity of the works, equipment and machinery (including crane/s) to the busway
- a schedule of when material or goods will be removed or delivered to the site in quantities that may disrupt traffic on the busway
- identify any disruptions to the operation of the busway including any impacts on busway transport infrastructure or busway transport infrastructure works or other public transport services or stops
- identification of access and egress locations

- identification of any disruption to pedestrian, cyclist or public passenger transport services or infrastructure
- identification of how groundwater, surface and subsurface ground movement and structural movement will be monitored and managed
- details of how waste and other materials will be managed to ensure no encroachment, dust or debris within the busway corridor
- confirmation that an application to undertake works or activities on a busway corridor is to be submitted to, and authorisation obtained from, TMR if any of the following is proposed:
 - any work or activity which may obscure busway sight lines (including signage or structures); or
 - any other works with the potential to impact the integrity of the busway infrastructure or the safe and efficient operation of the busway system.

Glossary of terms

Term	Definition
Busway	<p>Refer to <i>Transport Infrastructure Act 1994</i>, schedule 6.</p> <p>Means—</p> <ul style="list-style-type: none"> • a route especially designed and constructed for, and dedicated to, the priority movement of buses for passenger transport purposes; and • places for the taking on and letting off of busway vehicle passengers using the route.
Busway corridor	<p>Refer to <i>Planning Regulation 2017</i>, schedule 24.</p> <p>Means—</p> <ul style="list-style-type: none"> • land on which busway transport infrastructure is situated; or • land on which busway transport infrastructure works are carried out; or • land on which services for the maintenance or operation of busway transport infrastructure are situated.
Busway environment	<p>Comprises the following:</p> <ul style="list-style-type: none"> • the busway corridor • the area adjacent to the busway corridor. <p>Note: The busway corridor includes the land on which busway infrastructure is located, the land below and the airspace above the infrastructure and works.</p>
Busway land	<p>Refer to <i>Transport Infrastructure Act 1994</i>, schedule 6.</p> <p>Means—</p> <ul style="list-style-type: none"> • Busway land means land declared to be busway land under chapter 9 Part 3, section 302 of Transport Infrastructure Act. • Additionally, the following apply- <ol style="list-style-type: none"> a) for chapter 9, part 4, division 4, see section 316 of the Transport Infrastructure Act; [s364(1) of the Transport Infrastructure Act includes land that is State land, or private agreement land, on which busway transport infrastructure is, or is proposed to be, situated] b) for chapter 9, part 4, division 6, see section 330 of the Transport Infrastructure Act. [s330 of the Transport Infrastructure Act, busway land means busway land that, when declared under this chapter to be busway land, was a road or part of a road] c) for chapter 10, part 4, division 5, see section 378 of the Transport Infrastructure Act; [s378 of the Transport Infrastructure Act, busway land means busway land that, when declared under chapter 9 to be busway land, was a road or part of a road]
Busway manager	<p>Refer to <i>Transport Infrastructure Act 1994</i>, schedule 6.</p> <p>Means a person who holds an accreditation under chapter 9, part 4A as the busway manager for the busway.</p> <p>Note: TMR is currently the only busway manager</p>

Term	Definition
Busway transport infrastructure	<p data-bbox="608 241 1193 271">Refer to <i>Transport Infrastructure Act 1994</i>, schedule 6.</p> <p data-bbox="608 277 916 306">Means each of the following-</p> <ul style="list-style-type: none"> <li data-bbox="608 315 1166 344">• the pavement on which buses run for a busway; <li data-bbox="608 353 1038 383">• the stations for operating a busway; <li data-bbox="608 392 1321 450">• other facilities necessary for managing or operating a busway, including for example— <ul style="list-style-type: none"> <li data-bbox="655 459 1294 517">– infrastructure put in place for the busway, including the following— <ul style="list-style-type: none"> <li data-bbox="703 526 975 555">i. support earthworks, <li data-bbox="703 564 847 593">ii. cuttings, <li data-bbox="703 602 927 631">iii. drainage works, <li data-bbox="703 640 895 669">iv. excavations, <li data-bbox="703 678 847 707">v. land fill; <li data-bbox="655 714 1369 743">– the following things, if associated with the operation a busway <ul style="list-style-type: none"> <li data-bbox="703 752 1038 781">i. access or service lanes, <li data-bbox="703 790 1177 819">ii. bridges, including bridges over water, <li data-bbox="703 828 1145 857">iii. busway operation control facilities, <li data-bbox="703 866 1038 896">iv. communication systems, <li data-bbox="703 904 858 934">v. depots, <li data-bbox="703 943 1126 972">vi. machinery and other equipment, <li data-bbox="703 981 1129 1010">vii. monitoring and security systems, <li data-bbox="703 1019 927 1048">viii. noise barriers, <li data-bbox="703 1057 1214 1086">ix. notice boards, notice markers and signs, <li data-bbox="703 1095 943 1124">x. office buildings, <li data-bbox="703 1133 1347 1191">xi. passenger interchange facilities between the busway and other modes of transport, <li data-bbox="703 1200 879 1229">xii. platforms, <li data-bbox="703 1238 991 1267">xiii. positioning systems, <li data-bbox="703 1276 1145 1305">xiv. power and communication cables, <li data-bbox="703 1314 1145 1344">xv. signalling facilities and equipment, <li data-bbox="703 1352 1134 1382">xvi. survey stations, pegs and marks, <li data-bbox="703 1391 1134 1420">xvii. ticketing equipment and systems, <li data-bbox="703 1429 991 1458">xviii. timetabling systems, <li data-bbox="703 1467 863 1496">xix. tunnels, <li data-bbox="703 1505 1050 1534">xx. under-busway structures, <li data-bbox="703 1543 895 1572">xxi. workshops; <li data-bbox="608 1581 1369 1610">• vehicle parking and set down facilities for intending passengers for a busway; <li data-bbox="608 1619 1337 1648">• pedestrian facilities, including paving of footpaths, for a busway; <li data-bbox="608 1657 1374 1749">• other facilities, or commercial or retail outlets or works, for the convenience of passengers and others who may use a busway, including, for example, automatic teller machines, lockers or showers for cyclists and others, newsagents and wheelchair hire or exchange centres; <li data-bbox="608 1758 1150 1787">• landscaping or associated works for a busway.

Term	Definition
Busway transport infrastructure works	<p>Refer to <i>Transport Infrastructure Act 1994</i>, schedule 6.</p> <p>Means works done for-</p> <ul style="list-style-type: none"> • constructing busway transport infrastructure or things associated with busway transport infrastructure; or • the maintenance of busway transport infrastructure or of things associated with busway transport infrastructure; or • facilitating the operation of busway transport infrastructure or things associated with busway transport infrastructure; or • establishing, constructing or maintaining transport infrastructure, other than busway transport infrastructure, if the works are- <ul style="list-style-type: none"> – directly related to an activity mentioned in paragraph (a), (b), or (c); and – necessary for the safety, efficiency and operational integrity of transport infrastructure; or • other works declared under a regulation to be busway transport infrastructure works.
Development	<p>Refer to the <i>Planning Act 2016</i>, schedule 2.</p> <p>Means—</p> <ul style="list-style-type: none"> • carrying out <ul style="list-style-type: none"> – building work; or – plumbing or drainage work; or – operational work; or • reconfiguring a lot; • making a material change of use of premises.
Dilapidation survey	<p>A survey that is usually undertaken immediately before a contractor commences site work. The purpose of the survey is to record the pre-construction condition of properties adjoining the contractor's site and/or which may be influenced by the contractor's work. The survey encompasses the external elements of these properties and may extend to the internal condition if deemed appropriate.</p>
Future busway corridor	<p>Refer to <i>Planning Regulation 2017</i>, schedule 24.</p> <p>Means land identified in a guideline made under section 8E of the <i>Transport Planning and Coordination Act 1994</i>, for busway transport infrastructure or busway transport infrastructure works.</p>
Interfere with, busway transport infrastructure	<p>For busway transport infrastructure, for chapter 9, part 4, division 2, see section 311 of the <i>Transport Infrastructure Act 1994</i>.</p> <p>[s311 of the <i>Transport Infrastructure Act</i>– interfere with or carry out works on busway transport infrastructure].</p>
Planned upgrade	<p>Means an extension, upgrade, or duplication of state transport infrastructure or transport networks for which affected land has been identified:</p> <ul style="list-style-type: none"> • in a publicly available government document; or • in written advice to affected land owners.
Public passenger service	<p>Refer to <i>Transport Operations (Passenger Transport) Act 1994</i>, schedule 3.</p> <p>Means a service for the carriage of passengers if—</p> <ol style="list-style-type: none"> (a) the service is provided for fare or other consideration; or (b) the service is provided in the course of a trade or business (but not if it is provided by an employer solely for employees); or (c) the service is a courtesy or community transport service; and includes a driver service and a service for the administration of taxi services but does not include a service excluded from this Act by a regulation

Term	Definition
Public passenger transport	Refer to <i>Transport Planning and Coordination Act 1994</i> , section 3. Means the carriage of passengers by a public passenger service using a public passenger vehicle.
Registered Professional Engineer of Queensland (RPEQ)	Registered Professional Engineer of Queensland, under the <i>Professional Engineers Act 2002</i> .
State transport corridors	Refer to the <i>Planning Regulation 2017</i> , schedule 24. Means— <ul style="list-style-type: none"> • a busway corridor; or • a light rail corridor; or • a railway corridor; or • a State-controlled road
Transport easement for support	Refer to Part 4, Division 2 of the <i>Transport Planning and Coordination Act 1994</i> . Means an easement created for the purpose of support.
Works	Refer to <i>Transport Infrastructure Act 1994</i> , schedule 6. Works includes activities.

Reference list

Australian Government, 1992 [*Disability Discrimination Act 1992 \(DDA\)*](#)

Austrorads, *Guide to Road Design – Part 6A: Pedestrian and Cyclist Paths*,
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