State code 3: Development in a busway environment

Purpose statement

The purpose of this code is to protect **busways**, future **busways** and other infrastructure in a **busway corridor** from adverse impacts of development. The purpose of this code is also to protect the safety of people using, and living and working near, **busways**.

Specifically, this code seeks to ensure:

1. development does not create a safety hazard for users of a **busway**, by increasing the likelihood or frequency of fatality or serious injury;
2. development does not compromise the structural integrity of a **busway**, **busway transport infrastructure** or **busway transport infrastructure works**;
3. development does not compromise the state's ability to construct **busways** and future **busways**, or significantly increase the cost to construct **busways** and future **busways**;
4. development does not compromise the state's ability to maintain and operate **busways**, or significantly increase the cost to maintain and operate **busways**;
5. the community is protected from significant adverse impacts resulting from environmental emissions generated by **busways**.

Using this code

The assessment benchmarks for this code comprise:

- a purpose statement which identifies the overall intent of the code;
- performance outcomes which set benchmarks to achieve the purpose statement of the code;
- acceptable outcomes which identify one way to achieve the relevant performance outcome.

Development complies with the code where:

- it complies with the acceptable outcomes for the performance outcome; or
- it complies with all the performance outcomes, where not complying with the acceptable outcomes; or
- development does not meet relevant performance outcome(s) and SARA determines, on balance, that the development complies with the purpose statement.

This code also includes the glossary of terms for definitions relevant to this code and reference documents; including the guideline: **Interim Guide to Development in a Transport Environment: Busway** which provides direction on how to address this code.

Performance outcomes and acceptable outcomes

Table 3.1 Development in a busway environment

Performance outcomes	Acceptable outcomes
Buildings and structures	
PO1 The location of buildings, **structures**, infrastructure, services and utilities does not create a safety hazard in a **busway corridor** or cause damage to, or obstruct **busway transport infrastructure**.	**AO1.1** Buildings, **structures**, infrastructure, services and utilities are not located in a **busway corridor**. AND **AO1.2** Buildings, **structures**, infrastructure, services and utilities can be maintained without requiring access to a **busway corridor**.
PO2 Development does not add or remove **loading** that will cause damage to **bus transport infrastructure** or a **busway corridor**.	No acceptable outcome is prescribed.
PO3 Road, pedestrian and bikeway bridges over a **busway corridor** are designed and constructed to	**AO3.1** Road, pedestrian and bikeway bridges include throw protection screens in accordance with section 4.9.3 of the Design Criteria for Bridges and

Performance outcomes	Acceptable outcomes
prevent projectiles from being thrown onto a **busway**.	Other Structures Manual, Department of Transport and Main Roads, 2018.
PO4 Construction activities do not cause ground movement or vibration impacts in a **busway corridor**.	No acceptable outcome is prescribed.
Filling, excavation and retaining structures	
PO5 Filling, excavation and **retaining structures** do not interfere with, or result in damage to, infrastructure or services in a **busway corridor**.	No acceptable outcome is prescribed.
PO6 Filling, excavation, building foundations and **retaining structures** do not undermine or cause subsidence of a **busway corridor**.	No acceptable outcome is prescribed.
PO7 Filling, excavation, building foundations and **retaining structures** do not cause ground water disturbance in a **busway corridor**.	No acceptable outcome is prescribed.
PO8 Excavation, boring, piling, blasting or fill compaction during construction of a development does not result in ground movement or vibration impacts that would cause damage or nuisance to **busway transport infrastructure** or **busway transport infrastructure works**.	No acceptable outcome is prescribed.
PO9 Filling and excavation material does not cause an obstruction or nuisance in a **busway corridor**.	**AO9.1** Development does not store fill, spoil or any other material in, or adjacent to, a **busway corridor**.
PO10 Filling and excavation does not cause wind-blown dust nuisance in a **busway corridor**.	**AO10.1** Compaction of fill is carried out in accordance with the requirements of AS1289.0 2000 – Methods of testing soils for engineering purposes. AND **AO10.2** Dust suppression measures are used during filling and excavation activities such as wind breaks or barriers and dampening of ground surfaces.
Stormwater and drainage	
PO11 Development does not result in an **actionable nuisance** or worsening of stormwater, flooding or drainage impacts in a **busway corridor**.	No acceptable outcome is prescribed.
PO12 Run-off from the development site during construction of development does not cause siltation of stormwater infrastructure affecting a **busway**.	**AO12.1** Run-off from the development site during construction of development is not discharged to stormwater infrastructure for a **busway**.
Access	
PO13 Development prevents unauthorised access to a **busway corridor**.	**AO13.1** Where development is abutting a **busway corridor**, a fence is provided along the property boundary in accordance with clause 4.1.6 of the Guide to Road Design Part 6B, Austroads 2015 and Part 6B of the Road Planning and Design Manual, 2nd edition, Department of Transport and Main Roads, 2016.
PO14 Vehicular access for a development does not create a safety hazard or result in worsening of operating conditions on **busways**.	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
PO15 Development does not damage or interfere with **public passenger transport infrastructure**, **public passenger services** or pedestrian and cycle access to **public passenger transport infrastructure** and **public passenger services**.	**AO15.1** Vehicular access and associated road access works are not located within 5 metres of **public passenger transport infrastructure**. AND **AO15.2** Development does not necessitate the relocation of existing **public passenger transport infrastructure**. AND **AO15.3** On-site vehicle circulation is designed to give priority to entering vehicles at all times so vehicles using a vehicular access do not obstruct **public passenger transport infrastructure** and **public passenger services** or obstruct pedestrian or cycle access to **public passenger transport infrastructure** and **public passenger services**. AND **AO15.4** The normal operation of **public passenger transport infrastructure** or **public passenger services** is not interrupted during construction of the development.
Planned upgrades	
PO16 Development does not impede delivery of **planned upgrades** of **busway transport infrastructure**.	**AO16.1** Development is not located on land identified by Department of Transport and Main Roads as land required for the **planned upgrade** of **busway transport infrastructure**. OR **AO16.2** Development is sited and designed so that permanent buildings, **structures**, infrastructure, services or utilities are not located on land identified by the Department of Transport and Main Roads as land required for the **planned upgrade** of **busway transport infrastructure**. OR all of the following acceptable outcomes apply: **AO16.3 Structures** and infrastructure located on land identified by the Department of Transport and Main Roads as land required for the **planned upgrade** of a **busway transport infrastructure** are able to be readily relocated or removed without materially affecting the viability or functionality of the development. AND

Performance outcomes	Acceptable outcomes
	AO16.4 Development does not involve filling and excavation of, or material changes to, land required for a **planned upgrade** to **busway transport infrastructure**. AND **AO16.5** Land is able to be reinstated to the pre-development condition at the completion of the use.

Table 3.2 Environmental emissions

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

Performance outcomes	Acceptable outcomes
Noise	
Accommodation activities	
PO17 Development involving: 1. an **accommodation activity**; or 2. land for a future **accommodation activity** minimises noise intrusion from a **busway** in **habitable rooms**.	**AO17.1** A noise barrier or earth mound is provided which is design, sited and constructed: 1. to meet the following external noise criteria at all facades of the building envelope: a. ≤55 dB(A) L_{eq} (1 hour) facade corrected (maximum hour between 6 am and 10 pm); b. ≤50 dB(A) L_{eq} (1 hour) facade corrected (maximum hour between 10 pm and 6 am); c. ≤64 dB(A) L_{max} facade corrected (between 10pm and 6am); 2. in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Department of Transport and Main Roads, 2013. OR all of the following acceptable outcomes apply: **AO17.2** Buildings which include a **habitable room** are setback the maximum distance possible from a **busway**. AND **AO17.3** Buildings are designed and oriented so that **habitable rooms** are located furthest from a **busway**. AND **AO17.4** Buildings are designed and constructed using materials which ensure that **habitable rooms** meet the following internal noise criteria:

Performance outcomes	Acceptable outcomes
	1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour over 24 hours).
PO18 Development involving an **accommodation activity** minimises noise intrusion from a **busway** in **outdoor spaces for passive recreation**.	**AO18.1** A noise barrier or earth mound is provided which is design, sited and constructed: 1. to meet the following external noise criteria in **outdoor spaces for passive recreation**: a. ≤52 dB(A) L_{eq} (1 hour) free field (maximum hour between 6 am and 10 pm); b. ≤66 dB(A) L_{max} free field in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Department of Transport and Main Roads, 2013. OR **AO18.2** Each dwelling has access to an **outdoor space for passive recreation** which is shielded from a **busway** by a building, a solid gap-free fence, or other solid gap-free **structure**. AND **AO18.3** Each dwelling with a balcony directly exposed to noise from a **busway** has a continuous solid gap-free balustrade (other than gaps required for drainage purposes to comply with the Building Code of Australia).
Childcare centres and educational establishments	
PO19 Development involving a: 1. **childcare centre**; or 2. **educational establishment** minimises noise intrusion from a **busway in indoor education areas** and **indoor play areas**.	**AO19.1** A noise barrier or earth mound is provided which is designed, sited and constructed: to meet the following external noise criteria at the building envelope: 1. ≤55 dB(A) L_{eq} (1 hour) facade corrected (maximum hour during normal opening hours); 2. in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Department of Transport and Main Roads, 2013. OR all of the following acceptable outcomes apply: **AO19.2** Buildings which include **indoor education areas** and **indoor play areas** are setback the maximum distance possible from a **busway**. AND **AO19.3** Buildings are designed and oriented so that **indoor education areas** and **indoor play areas** are located furthest from the **busway**.

Performance outcomes	Acceptable outcomes
	AND **AO19.4** Buildings are designed and constructed using materials which ensure **indoor education areas** and **indoor play areas** meet the following internal noise criteria: 1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour during opening hours).
PO20 Development involving a: 1. **childcare centre**; or 2. **educational establishment** minimises noise intrusion from a **busway** in **outdoor education areas** and **outdoor play areas**.	**AO20.1** A noise barrier or earth mound is provided which is design, sited and constructed: 1. to meet the following external noise criteria in **outdoor education areas** and **outdoor play areas**: a. ≤52 dB(A) L_{eq} (1 hour) free field (maximum hour during normal opening hours); b. ≤66 dB(A) L_{max} free field (during normal opening hours); 2. in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Department of Transport and Main Roads, 2013. OR **AO20.2** Each **outdoor education area** and **outdoor play area** is shielded from noise generated from a **busway** by a building, a solid gap-free fence, or other solid gap-free **structure**.
Hospitals	
PO21 Development involving a **hospital** minimises noise intrusion from a **busway** in **patient care areas**.	**AO21.1 Hospitals** are designed and constructed using materials which ensure **patient care areas** meet the following internal noise criteria: 1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour during opening hours).
Vibration	
Hospitals	
PO22 Development involving a **hospital** minimises vibration impacts from a **busway** in **patient care areas**.	**AO22.1 Hospitals** are designed and constructed to ensure vibration in the treatment area of a **patient care area** does not exceed a vibration dose value of 0.1m/s$^{1.75}$. AND **AO22.2 Hospitals** are designed and constructed to ensure vibration in the ward area of a **patient care area** does not exceed a vibration dose value of 0.4m/s$^{1.75}$.
Air and light	
PO23 Development involving an **accommodation activity** minimises air quality impacts from a	**AO23.1** Each dwelling has access to an **outdoor space for passive recreation** which is shielded

Performance outcomes	Acceptable outcomes
busway in **outdoor spaces for passive recreation**.	from a **busway** by a building, a solid gap-free fence, or other solid gap-free **structure**.
PO24 Development involving a: 1. **childcare centre**; or 2. **educational establishment** minimises air quality impacts from a **busway** in **outdoor education areas** and **outdoor play areas**.	**AO24.1** Each **outdoor education area** and **outdoor play area** is shielded from a **busway** by a building, solid gap-free fence, or other solid gap-free **structure**.
PO25 Development involving an **accommodation activity** or **hospital** minimises lighting impacts from a **busway**.	**AO25.1** Buildings for an **accommodation activity** or **hospital** are designed to minimise the number of windows or transparent/translucent panels facing a **busway**. OR **AO25.2** Windows facing a **busway** include treatments to block light from a **busway**.

Table 3.3 Development in a future busway environment

Performance outcomes	Acceptable outcomes
PO26 Development does not impede delivery of **busway transport infrastructure** in a **future busway corridor**.	**AO26.1** Development is not located in a **future busway corridor**. OR **AO26.2** Development is sited and designed so that permanent buildings, **structures**, infrastructure, services or utilities are not located in a **future busway corridor**. OR all of the following acceptable outcomes apply: **AO26.3 Structures** and infrastructure located in a **future busway corridor** are able to be readily relocated or removed without materially affecting the viability or functionality of the development. AND **AO26.4** Development does not involve filling and excavation of, or material changes to, a **future busway corridor**. AND **AO26.5** Land is able to be reinstated to the pre-development condition at the completion of the use.
PO27 Filling, excavation, building foundations and **retaining structures** do not undermine or cause subsidence of a **future busway corridor**.	No acceptable outcome is prescribed.

Performance outcomes	Acceptable outcomes
PO28 Fill material from a development site does not result in contamination of land for a **future busway corridor.**	**AO28.1** Fill material is free of contaminants including acid sulfate content. AND **AO28.2** Compaction of fill is carried out in accordance with the requirements of AS 1289.0 2000 – Methods of testing soils for engineering purposes.
PO29 Development does not result in an **actionable nuisance**, or worsening of, stormwater, flooding or drainage impacts in a **future busway corridor**.	No acceptable outcome is prescribed.

Reference documents

Department of Transport and Main Roads, Interim Guide to Development in a Transport Environment: Busway

Austroads 2015, Guide to Road Design Part 6B: Roadside Environment

Department of Transport and Main Roads 2013, Transport Noise Management Code of Practice – Volume 1: Road Traffic Noise

Department of Transport and Main Roads 2016, Road Planning and Design Manual 2nd edition: Volume 3

Department of Transport and Main Roads 2016, Transport Noise Management Code of Practice: Volume 2: Construction Noise and Vibration

Department of Transport and Main Roads 2018, Design criteria for bridges and other structures manual

Institute of Public Works Engineering Australasia (Queensland Division), Queensland Urban Drainage Manual, Fourth edition, 2016

International Erosion Control Association Australasia, Best Practice Erosion and Sediment Control document

Standards Australia 1997, AS1055.1–1997 Acoustics – Description and measurement of environmental noise

Standards Australia 2000, AS1289.0–2000 – Methods of testing soils for engineering purposes

Glossary of terms

Accommodation activity means any of the following:
1. caretaker's accommodation;
2. community residence;
3. dual occupancy;
4. dwelling house;
5. dwelling unit;
6. multiple dwelling;
7. relocatable home park;
8. residential care facility;
9. resort complex;
10. retirement facility;
11. rooming accommodation;
12. short-term accommodation;

13. tourist park;
14. a development with a combination of uses 1 to 13.

Actionable nuisance means where stormwater or surface water drainage to a downstream property causes a loss of enjoyment of property or physical damage to property (termed 'nuisance') such that the nuisance is actionable in law.
Note: See the Queensland Urban Drainage Manual, Institute of Public Works Engineering Australasia (Queensland Division), Fourth edition, 2016, for further information.

Busway see schedule 6 of the Transport Infrastructure Act 1994.
Note: **Busway** means:
1. a route especially designed and constructed for, and dedicated to, the priority movement of buses for passenger transport purposes
2. places for the taking on and letting off of bus passengers using the route.

Busway corridor means land on which:
1. **busway transport infrastructure** is situated; or
2. **busway transport infrastructure works** are being done; or
3. other services are provided for the maintenance or operation of **busway transport infrastructure**.

Busway transport infrastructure see schedule 6 of the *Transport Infrastructure Act 1994*.
Note: **Busway transport infrastructure** means each of the following:
1. the pavement on which buses run for a **busway**
2. the stations for operating a **busway**
3. other facilities necessary for managing or operating a **busway**, including for example:
   a. infrastructure put in place for the **busway**, including the following:
      i. support earthworks
      ii. cuttings
      iii. drainage works
      iv. excavations
      v. land fill
   b. the following things, if associated with the operation of the **busway**:
      i. access or service lanes
      ii. bridges, including bridges over water
      iii. **busway** operation control facilities
      iv. communication systems
      v. depots
      vi. machinery and other equipment
      vii. monitoring and security systems
      viii. noise barriers
      ix. notice boards, notice markers and signs
      x. office buildings
      xi. passenger interchange facilities between the **busway** and other modes of transport
      xii. platforms
      xiii. positioning systems
      xiv. power and communication cables
      xv. signalling facilities and equipment
      xvi. survey stations, pegs and marks
      xvii. ticketing equipment and systems
      xviii. timetabling systems
      xix. tunnels
      xx. under-**busway structures**
      xxi. workshops.
4. vehicle parking vehicle parking and set down facilities for intending passengers for a **busway**
5. pedestrian facilities, including paving of footpaths, for a **busway**
6. 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
7. landscaping or associated works for a **busway**.

Busway transport infrastructure works see schedule 6 of the *Transport Infrastructure Act 1994*.
Note: **Busway transport infrastructure works** means works done for:
1. constructing **busway transport infrastructure** or things associated with **busway transport infrastructure**; or
2. the maintenance of **busway transport infrastructure** or of things associated with **busway transport infrastructure**; or
3. facilitating the operation of **busway transport infrastructure** or things associated with **busway transport infrastructure**; or
4. establishing, constructing or maintaining transport infrastructure, other than **busway transport infrastructure**, if the works are:
   a. directly related to an activity mentioned in paragraph 1, 2 or 3; and
   b. necessary for the safety, efficiency and operational integrity of transport infrastructure; or
5. other works declared under a regulation to be **busway transport infrastructure works**.

Childcare centre see schedule 24 of the Planning Regulation 2017.
Note: **Childcare centre** means the premises used for care, education and minding, but not residence, of children.

DA mapping system means the mapping system containing the Geographic Information System mapping layers kept, prepared or sourced by the state that relate to development assessment and matters of interest to the state in assessing development applications.
Note: The **DA mapping system** is available on the department's website.

Educational establishment see schedule 24 of the Planning Regulation 2017.
Note: **Educational establishment** means the use of premises for:
1. training and instruction to impart knowledge and develop skills; or
2. student accommodation, before or after school care, or vacation care, if the use is ancillary to the use in paragraph 1.

Future busway corridor means land identified in a guideline made under section 8E of the *Transport Planning and Coordination Act 1994*, for **busway transport infrastructure** or **busway transport infrastructure works**.
Note: See the **DA mapping system**.

Habitable room see the Building Code of Australia.
Note: **Habitable room** means a room used for normal domestic activities, and includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom but excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Hospital see schedule 24 the Planning Regulation 2017.
Note: **Hospital** means the use of premises for:
the medical or surgical care or treatment of patients, whether or not the care or treatment requires overnight accommodation; or
1. providing accommodation for patients; or
2. providing accommodation for employees, or any other use, if the use is ancillary to the use in paragraphs 1 or 2.

Indoor education area means an enclosed area within a **childcare centre** or **educational establishment** intended for use for the training or teaching of people including a classroom, lecture hall/theatre and library.

Indoor play area means an enclosed area within a **childcare centre** or **educational establishment** intended for use for children's play. This term excludes functional areas such as bathrooms, food preparation areas, washing facilities and other spaces of a specialised nature.

Loading means pressure or force exerted on land of infrastructure.

Outdoor education area means outdoor areas intended for use for the training or teaching of persons. This term does not include playgrounds or outdoor sport and recreational areas.

Outdoor play area see the Queensland Development Code.
Note: **Outdoor play area** means an unenclosed area located outside the external walls of the building. This term only includes playgrounds/play areas in a **childcare centre** or **educational establishment**.

Outdoor space for passive recreation means **private open space**, communal open space or public open space.

Patient care area see the Building Code of Australia.
Note: **Patient care area** means a part of a health-care building normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a ward area and treatment area. A ward area means that part of a **patient care area** for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities. A treatment area means an area within a **patient care area** such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

Planned upgrade means an extension, upgrade, or duplication of state transport infrastructure or transport networks for which affected land has been identified:
1. in a publicly available government document; or
2. in written advice to affected land owners.

Note: Government documents are Commonwealth, state or local government documents that include a statement of intent for, or a commitment to, a planning outcome or infrastructure provision.
See the **DA mapping system**.

Public passenger service see schedule 3 of the *Transport Operations (Passenger Transport) Act 1994*.

Note: **Public passenger service** means a service for the carriage of passengers if:
1. the service is provided for fare or other consideration; or
2. 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
3. the service is a courtesy or community transport service; and
4. includes a driver service and a service for the administration of taxi services but does not include a service excluded from the *Transport Operations (Passenger Transport) Act 1994* by a regulation.

Public passenger transport infrastructure see schedule 1 of the *Transport Planning and Coordination Act 1994.*
Note: **Public passenger transport infrastructure** means infrastructure for, or associated with, the provision of public passenger transport, including, but not limited to:
1. a transit terminal for **public passenger services** (for example, an airport terminal, a coach terminal, a cruise ship terminal)
2. a ferry terminal, jetty, pontoon or landing for ferry services
3. a bus stop, bus shelter, bus station or bus lay-by
4. a **busway** station
5. a light rail station
6. a taxi rank, limousine rank or limousine standing area
7. a railway station
8. vehicle parking and set-down facilities
9. pedestrian and bicycle paths and bicycle facilities
10. a road on which a public passenger transport service operates.

Private open space means an **outdoor space** for the exclusive use of occupants of a building.

Retaining structures means retention **structures** and systems such as walls, anchors, bolts, soil nails, shoring, piles, piers, beams.

Structure means any built **structure** as well as **retaining structures**.

Abbreviations

dB(A) – decibels measured on the 'A' frequency weighting network