**State code 2: Development in a** **railway environment**

[Guide to Development in a Transport Environment: Rail](http://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-development-in-a-transport-environment-rail.aspx) which provides direction on how to address this code.

**Table 2.1 Development in general**

| **Performance outcomes** | **Acceptable outcomes** | **Response** |
| --- | --- | --- |
| **Building, structures, infrastructure, services and utilities** | | |
| **PO1** Development does not create a safety hazard within the **railway corridor**. | No acceptable outcome is prescribed. | Complies with PO# / AO#  Use this column to indicate whether compliance is achieved with the relevant PO or AO (or if they do not apply), and explain why |
| **PO2** Development does not cause damage to the **railway corridor, rail transport infrastructure** or **other rail infrastructure**. | No acceptable outcome is prescribed. |  |
| **PO3** Development does not interfere with, or obstruct, the **rail transport infrastructure**or **other rail infrastructure**. | No acceptable outcome is prescribed. |  |
| **PO4** Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**. | No acceptable outcome is prescribed. |  |
| **PO5** Development above a **railway** is designed to enable natural ventilation and smoke dispersion in the event of a fire emergency. | No acceptable outcome is prescribed. |  |
| **PO6** Development does not adversely impact the operating performance of the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO7** Buildings and **structures** in a **railway corridor** are designed and constructed to protect persons in the event of a derailed train. | No acceptable outcome is prescribed. |  |
| **PO8** Buildings and **structures** in **high risk locations** and where also located within 10 metres of the centreline of the nearest **railway** track are design and constructed to protect persons in the event of a derailed train. | **AO8.1** Buildings and **structures**, in a **railway** **corridor**, including foundations, retaining and other support elements, are designed and constructed in accordance with Civil Engineering Technical Requirement CIVIL-SR-012 Collision protection of supporting elements adjacent to **railways**, Queensland Rail, 2011, AS5100 Bridge design, and AS1170 Structural design actions. |  |
| **PO9** Buildings and **structures** are designed and constructed to protect people from electrocution. | **AO9.1** The outermost projection of development is set back horizontally a minimum of 3 metres from the outermost projection of **overhead line equipment**. |  |
| **PO10** Development in the **railway** **corridor** is designed and constructed to prevent projectiles being thrown onto the **railway**. | No acceptable outcome is prescribed. |  |
| **PO11** Buildings, and **structures** with publicly accessible or communal areas within 20 metres from the centreline of the nearest **railway** track are designed and constructed to prevent projectiles from being thrown onto a **railway**. | **AO11.1** Publicly accessible areas located within 20 metre from the centreline of the nearest **railway** do not overlook a **railway**.  OR  **AO11.2** Buildings and **structures** are designed to ensure publicly accessible areas located within 20 metres from the centreline of the nearest **railway** track and that overlook the **railway** may include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR005 Design of buildings over or near **railways**, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR008 Protection screens, Queensland Rail. |  |
| **Stormwater and overland flow** | | |
| **PO12** Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard in a **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO13** Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of the **railway corridor**, **rail transport infrastructure** or **other rail infrastructure**. | No acceptable outcome is prescribed. |  |
| **PO14** Stormwater run-off or overland flow from the development site does not interfere with the **structural integrity** or physical condition of the **railway corridor, rail transport infrastructure** or **other rail infrastructure**. | No acceptable outcome is prescribed. |  |
| **Flooding** | | |
| **PO15** Development does not result in a material worsening of flooding impacts within a **railway corridor**. | No acceptable outcome is prescribed. |  |
| **Drainage Infrastructure** | | |
| **PO16** Drainage infrastructure does not create a safety hazard in a **railway corridor**. | **AO16.1** Drainage infrastructure is wholly contained within the development site.  AND  **AO16.2** Drainage infrastructure can be maintained without requiring access to a **railway corridor**. |  |
| **Construction Impacts** | | |
| **PO17** Construction activities do not cause ground movement or vibration impacts in a **railway corridor**. | No acceptable outcome is prescribed. |  |
| **Access** | | |
| **PO18** Development prevents unauthorised access to the **railway corridor**. | **AO18.1** Development abutting the **railway corridor** incorporates fencing along the property boundary with the **railway corridor** in accordance with the **railway manager’s** standards.  AND  **AO18.2** A road barrier designed in accordance with Queensland Rail Civil Engineering Technical Requirement CIVIL-SR-007 – Design Criteria for Road Rail Barriers.  AND  **AO18.3** Vehicle manoeuvring areas, driveways, **loading** areas and carparks abutting the **railway corridor** incorporate **rail interface barriers** along the boundary to the **railway corridor**. |  |
| **PO19** Development maintains existing maintenance and authorised access to the **railway corridor**. | **AO19.1** Development does not obstruct existing authorised access points and access routes for maintenance and emergency works to the **railway corridor** at all times. |  |
| **PO20** Development does not impede the maintenance of a **railway bridge** or authorised access to a **railway bridge**. | **AO20.1** Buildings and other **structures** are set back horizontally a minimum of 3 metres from a **railway bridge**.  AND  **AO20.2** Permanent **structures** are not located below or abutting a **railway bridge**.  AND  **AO20.3** Temporary activities below or abutting a **railway bridge** do not impede access to a **railway corridor**. |  |
| **Public passenger transport and active transport** | | |
| **PO21** Development does not compromise the safety of **public passenger transport infrastructure** and **active transport infrastructure**. | No acceptable outcome is prescribed. |  |
| **PO22** Development maintains pedestrian and cycle access to a **railway** station or other **public passenger transport infrastructure** and **active transport infrastructure** associated with the **railway**. | No acceptable outcome is prescribed. |  |
| **PO23**Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure**and **active transport infrastructure**. | No acceptable outcome is prescribed. |  |
| **PO24**Development does not adversely impact the operating performance of **public passenger transport** **infrastructure,** **public passenger services** and **active transport infrastructure**. | No acceptable outcome is prescribed. |  |
| **Planned upgrades** | | |
| **PO25** Development does not impede delivery of **planned upgrades** of **rail transport infrastructure**. | No acceptable outcome is prescribed. |  |
| **Network safety** | | |
| **PO26** Development involving **dangerous goods** does not adversely impact on the safety or operations of the **railway** and **rail transport infrastructure**. | **AO26.1** Development does not involve handling or storage of hazardous chemicals above the threshold quantities listed in table 5.2 of the Model Planning Scheme Development Code for Hazardous Industries and Chemicals, Office of Industrial Relations, Department of Justice and Attorney-General, 2016. |  |

**Table 2.2 Filling, excavation, building foundations and retaining structures**

|  |  |  |
| --- | --- | --- |
| **Performance outcomes** | **Acceptable outcomes** | **Response** |
| **PO27** Development does not create a safety hazard for users of the **railway** or **other rail infrastructure**. | No acceptable outcome is prescribed. | Complies with PO# / AO#  Use this column to indicate whether compliance is achieved with the relevant PO or AO (or if they do not apply), and explain why |
| **PO28** Development does not adversely impact on the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO29** Development does not undermine, damage, or cause subsidence of, the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO30** Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**. | No acceptable outcome is prescribed. |  |
| **PO31** Development does not cause ground water disturbance in the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO32** Development does not adversely impact the **railway** or **other rail infrastructure** within the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO33** Excavation, boring, piling, blasting, drilling, fill compaction or similar activities does not adversely impact the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO34** Filling and excavation material does not cause an obstruction or nuisance in the **railway corridor**. | **AO34.1** Fill, spoil or any other material is not stored in, or adjacent to, the **railway corridor**. |  |

**Table 2.3 Railway crossings**

| **Performance outcomes** | **Acceptable outcomes** | **Response** |
| --- | --- | --- |
| **PO35** Development does not require a new level **railway** **crossing**. | No acceptable outcome is prescribed. | Complies with PO# / AO#  Use this column to indicate whether compliance is achieved with the relevant PO or AO (or if they do not apply), and explain why |
| **PO36** Development does not adversely impact on the operating performance of an existing **railway crossing**. | No acceptable outcome is prescribed. |  |
| **PO37** Development does not adversely impact on the safety of an existing **railway** **crossing**. | No acceptable outcome is prescribed. |  |
| **PO38** Development is designed and constructed to allow foron-site circulation to ensure vehicles do not queue in a **railway crossing**. | No acceptable outcome is prescribed. |  |

**Table 2.4 Environmental emissions**

Statutory note: Where development is adjacent to a **railway** with 15 or fewer passing trains per day, compliance with table 2.4 is not required.

|  |  |  |
| --- | --- | --- |
| **Performance outcomes** | **Acceptable outcomes** | **Response** |
| **Reconfiguring a Lot** | | |
| **Involving the creation of 5 or fewer new residential lots adjacent to a railway or type 2 multi-modal corridor** | | |
| **PO39** Development minimises free field noise intrusion from a **railway**. | **AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed:   1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: 3. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; 4. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 5. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.     OR    **AO39.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.    OR    **AO39.3**Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to a **railway**. | Complies with PO# / AO#  Use this column to indicate whether compliance is achieved with the relevant PO or AO (or if they do not apply), and explain why |
| **Involving the creation of 6 or more new residential lots** **adjacent to a railway or type 2 multi-modal corridor** | | |
| **PO40**Reconfiguring a lot minimises free field noise intrusion from a **railway**. | **AO40.1** Development provides a noise barrier or earth mound which is designed, sited and constructed:   1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: 3. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers; 4. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 5. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.     OR    **AO40.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. |  |
| **Material change of use (accommodation activity)** | | |
| **Ground floor level requirements adjacent to a railway** **or** **type 2 multi-modal corridor** | | |
| **PO41** Development minimises noise intrusion from a **railway** in **private open space**at the ground floor. | **AO41.1**Development provides a noise barrier or earth mound which is designed, sited and constructed:   1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: 3. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; 4. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 5. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.     OR    **AO41.2**Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** at the ground floor level by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. |  |
| **PO42**Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from the **railway** in **habitable rooms** at the facade of the ground floor level. | **AO42.1**Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed:   1. to achieve the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor level; 2. in accordance with: 3. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; 4. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;. 5. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020.   OR    **AO42.2**Development (excluding a **relevant residential building** or **relocated building**)achieves the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor levelby **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. |  |
| **PO43 Habitable rooms**(excluding a **relevant residential building** or **relocated building**)are designed and constructed using materials to achieve the maximum internal acoustic level in Table 3 (item 3.1). | No acceptable outcome is prescribed. |  |
| **Above ground floor level requirements (accommodation activity)** **adjacent to a railway** **or** **type 2 multi-modal corridor** | | |
| **PO44**Balconies, podiums and roof decks include:   1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and roof decks | No acceptable outcome is prescribed. |  |
| **PO45 Habitable rooms**(excluding a **relevant residential building** or **relocated building**)are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1). | No acceptable outcome is prescribed. |  |
| **Material change of use (other uses)** | | |
| **Ground floor level requirements (childcare centre, educational establishment, hospital)** **adjacent to a** **railway** **or** **type 2 multi-modal corridor** | | |
| **PO46** Development:   1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; 3. in accordance with: 4. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; 5. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; 6. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 7. achieves the maximum free field acoustic level in reference table (item 2.3) for all **outdoor education areas** and **outdoor play areas**by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. | No acceptable outcome is prescribed. |  |
| **PO47** Development involving a **childcare** **centre** or **educational establishment**:   1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: 4. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; or 5. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. | No acceptable outcome is prescribed. |  |
| **PO48** Development involving:   1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital**;   achieves the maximum internal acoustic level in reference table 3 (items 3.2, 3.3 and 3.4). | No acceptable outcome is prescribed. |  |
| **Above ground floor level requirements (childcare centre, educational establishment, hospital)** **adjacent to a** **railway** or **type 2 multi-modal corridor** | | |
| **PO49** Development involving a **childcare centre**; or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from the **railway** are provided with:   1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); and 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and elevated **outdoor play areas**. | No acceptable outcome is prescribed. |  |
| **PO50** Development including:   1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4). | No acceptable outcome is prescribed. |  |
| **Air, light and vibration** | | |
| **PO51 Private open space**, **outdoor education areas** and **outdoor play areas** are protected fromair quality impacts from a **railway**. | **AO51.1** Each dwelling or unit has access to a **private open space** which is shielded from a **railway** by a building, noise barrier, **solid gap-free fence**, or other **solid gap-free structure**.  OR  **AO51.2** Each **outdoor education area** and **outdoor play area** is shielded from a **railway** by a building, noise barrier, **solid gap-free fence,** or other **solid gap-free structure**. |  |
| **PO52 Patient care areas** within **hospitals** are protected from vibration impacts from a **railway**. | **AO52.1** **Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of 0.1m/s1.75.  AND  **AO52.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of 0.4m/s1.75. |  |
| **PO53** Development is designed and sited to ensure light from infrastructure within, and use of, a **railway** does not:   1. intrude into buildings during night hours (10pm to 6am); and 2. create unreasonable disturbance during evening hours (6pm to 10pm). | No acceptable outcomes are prescribed. |  |

**Table 2.5 Development in a future railway corridor**

| **Performance outcomes** | **Acceptable outcomes** | **Response** |
| --- | --- | --- |
| **PO54** Development does not impede the planning, design and delivery of **rail transport infrastructure** in a **future railway corridor**. | **AO54.1** Development is not located in a **future railway corridor**.  OR both of the following acceptable outcomes apply:  **AO54.2** The intensification of lots does not occur within a **future railway corridor**.  AND  **AO54.3** Development does not result in the landlocking of parcels once a **future railway corridor** is delivered. | Complies with PO# / AO#  Use this column to indicate whether compliance is achieved with the relevant PO or AO (or if they do not apply), and explain why |
| **PO55** Development, includingfilling, excavation, building foundations and **retaining structures** do not undermine or cause subsidence of a **future railway corridor**. | No acceptable outcome is prescribed. |  |
| **PO56** Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future railway corridor**. | No acceptable outcome is prescribed. |  |