

# State code 2: Development in a railway environment

## 2.1 Purpose statement

The purpose of the code is to protect **railways**, future **railways** and other infrastructure in a **railway 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, **railways**.

Specifically, this code seeks to ensure:

1. development does not create a safety hazard for users of a **railway**, by increasing the likelihood or frequency of loss of life or serious injury
2. development does not compromise the structural integrity of **railways**, **rail transport infrastructure**, **other rail infrastructure** or **railway works**
3. development does not result in a worsening of the physical condition or operating performance of **railways** and the rail network
4. development does not compromise the state's ability to construct **railways** and future **railways**, or significantly increase the cost to construct **railways** and future **railways**
5. development does not compromise the state's ability to maintain and operate **railways**, or significantly increase the cost to maintain and operate **railways**
6. the community is protected from significant adverse impacts resulting from environmental emissions generated by a **railway**.

## 2.2 Performance outcomes and acceptable outcomes

Development that is in a **railway** environment should demonstrate compliance with the relevant provisions of table 2.2.1 and table 2.2.2.

Development that is in a future **railway** environment should demonstrate compliance with the relevant provisions of table 2.2.3.

**Table 2.2.1: Development in a railway environment**

Performance outcomes	Acceptable outcomes
<b>Buildings and structures</b>	
<b>All railways</b>	
<b>PO1</b> The location of buildings, <b>structures</b> , infrastructure, services and utilities does not create a safety hazard in a <b>railway corridor</b> or cause damage to, or obstruct, <b>rail transport infrastructure</b> or <b>other rail infrastructure</b> .	<b>AO1.1</b> Buildings, <b>structures</b> , infrastructure, services and utilities are not located in a <b>railway corridor</b> .  AND  <b>AO1.2</b> Buildings, <b>structures</b> , infrastructure, services and utilities can be maintained without requiring access to a <b>railway corridor</b> .  AND  <b>AO1.3</b> Buildings, <b>structures</b> and infrastructure are set back horizontally a minimum of 3 metres from the outermost projection of <b>overhead line equipment</b> .  Note: Section 2.3 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads,

Performance outcomes	Acceptable outcomes
	<p>2015 provides guidance on how to comply with this acceptable outcome.</p> <p>AND</p> <p><b>AO1.4</b> The lowest part of development in or over a <b>railway</b> is a minimum of:</p> <ol style="list-style-type: none"> <li>1. 7.9 metres above the <b>railway</b> track where the proposed development extends along the <b>railway</b> for a distance of less than 40 metres</li> <li>2. 9 metres above the <b>railway</b> track where the development extends along the <b>railway</b> for a distance of between 40 and 80 metres.</li> </ol> <p>AND</p> <p><b>AO1.5</b> Pipe work, services and utilities:</p> <ol style="list-style-type: none"> <li>1. are not attached to rail <b>transport infrastructure</b> or <b>other rail infrastructure</b></li> <li>2. do not penetrate through the side of any proposed building element or <b>structure</b> where built to boundary in, over or abutting a <b>railway corridor</b>.</li> </ol>
<p><b>PO2</b> Buildings and <b>structures</b> are located to not interfere with, or impede access to, a <b>railway bridge</b>.</p>	<p><b>AO2.1</b> Buildings and <b>structures</b> are set back horizontally a minimum of 3 metres from a <b>railway bridge</b>.</p> <p>AND</p> <p><b>AO2.2</b> Permanent <b>structures</b> are not located below or abutting a <b>railway bridge</b>.</p> <p>AND</p> <p><b>AO2.3</b> Temporary activities below or abutting a <b>railway bridge</b> do not impede access to a <b>railway corridor</b>.</p> <p>Note: Temporary activities below or abutting a <b>railway bridge</b> could include, for example, car parking or outdoor storage.</p>
<p><b>PO3</b> Development does not add or remove loading that will cause damage to <b>rail transport infrastructure</b> or a <b>railway corridor</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended a RPEQ certified geotechnical assessment, prepared in accordance with the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads 2015 is provided.</p>	<p>No acceptable outcome is prescribed.</p>
<p><b>PO4</b> Development above a <b>railway</b> is designed to enable natural ventilation and smoke dispersion in the event of a fire emergency.</p> <p>Note: To demonstrate compliance with the performance outcome it is recommended the applicant contact the Queensland Fire and Emergency Service and relevant <b>railway manager</b> to determine the fire scenarios to be used to inform ventilation design. Modelling of smoke dispersion should also be undertaken by a RPEQ to predict the spread of combustion products and inform the ventilation design. Section 5.1 – Development over a railway of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this acceptable outcome.</p>	<p>No acceptable outcome is prescribed.</p>

Performance outcomes	Acceptable outcomes
<p><b>PO5</b> Construction activities do not cause ground movement or vibration impacts in a <b>railway corridor</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended a RPEQ certified geotechnical assessment, prepared in accordance with section 2.7 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015 is provided.</p>	<p>No acceptable outcome is prescribed.</p>
<p><b>PO6</b> Buildings and <b>structures</b> in a <b>railway corridor</b> are designed and constructed to remain structurally sound in the event of a derailed train.</p>	<p><b>AO6.1</b> Buildings and <b>structures</b>, in a <b>railway corridor</b> including piers or supporting 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.</p> <p>Note: Section 3.2 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this acceptable outcome.</p>
<p><b>PO7</b> Buildings and <b>structures</b> in <b>high risk locations</b> and where also located within 10 metres of the centreline of the nearest <b>railway</b> track are designed and constructed to remain structurally sound in the event of a derailed train.</p>	<p><b>AO7.1</b> Buildings and <b>structures</b>, in a <b>railway corridor</b> including piers or supporting 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.</p> <p>Note: Section 3.2 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015 provides guidance on how to comply with this acceptable outcome.</p>
<p><b>PO8</b> Buildings and <b>structures</b> in a <b>railway corridor</b> are designed and constructed to prevent projectiles from being thrown onto a <b>railway</b>.</p>	<p><b>AO8.1</b> Buildings and <b>structures</b> in a <b>railway corridor</b> include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR-005 Design of buildings over or near railways, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR-008 Protection screens, Queensland Rail.</p> <p>AND</p> <p><b>AO8.2</b> Road, pedestrian and bikeway bridges over a <b>railway</b> include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR-005 Design of buildings over or near railways, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR-008 Protection screens, Queensland Rail.</p> <p>Note: Section 2.4 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this outcome.</p>
<p><b>PO9</b> Buildings, and <b>structures</b>, other than <b>accommodation activities</b>, are designed and constructed to prevent projectiles from being thrown onto a <b>railway</b> from any publicly accessible areas located within 20 metres from the centreline of the nearest <b>railway</b> track.</p>	<p><b>AO9.1</b> Publicly accessible areas located within 20 metres from the centreline of the nearest <b>railway</b> track do not directly overlook a <b>railway</b>.</p> <p>OR</p>

Performance outcomes	Acceptable outcomes
	<p><b>AO9.2</b> Buildings and <b>structures</b> are designed to ensure publicly accessible areas located within 20 metres of the centreline of the nearest <b>railway</b> track and that overlook the <b>railway</b> include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR-005 Design of buildings over or near railways, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR-008 Protection screens, Queensland Rail.</p> <p>Note: Section 2.4 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this outcome.</p>
<b>Filling, excavation and retaining structures</b>	
<p><b>PO10</b> Filling, excavation and <b>retaining structure</b> do not interfere with, or result in damage to, infrastructure or services in a <b>railway corridor</b>.</p> <p>Note: Information on the location of services and public utility plants <b>railway corridor</b> can be obtained from the <b>railway manager</b>. Where development will impact on an existing or future service or public utility plant in a <b>railway corridor</b> such that the service or public utility plant will need to be relocated, the alternative alignment must comply with the standards and design specifications of the relevant service or public utility provider, and any costs of relocation are to be borne by the developer.</p>	No acceptable outcome is prescribed.
<p><b>PO11</b> Filling, excavation, building foundations and <b>retaining structures</b> do not undermine, or cause subsidence of, a <b>railway corridor</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended a RPEQ certified geotechnical assessment is provided, prepared in accordance with section 2.7 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015.</p>	No acceptable outcome is prescribed.
<p><b>PO12</b> Filling and excavation, building foundations and <b>retaining structures</b> do not cause ground water disturbance in a <b>railway corridor</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended a RPEQ certified geotechnical assessment is provided, prepared in accordance with section 2.7 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015.</p>	No acceptable solution is prescribed.
<p><b>PO13</b> 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 a <b>railway corridor, rail transport infrastructure or railway works</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended a RPEQ certified geotechnical assessment is provided, prepared in accordance with section 2.7 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015.</p>	No acceptable outcome is prescribed.
<p><b>PO14</b> Filling and excavation material does not cause an obstruction or nuisance in a <b>railway corridor</b>.</p>	<p><b>AO14.1</b> Development does not store fill, spoil or any other material in, or adjacent to, a <b>railway corridor</b>.</p>

<b>Stormwater and drainage</b>	
<p><b>PO15</b> Development does not result in an <b>actionable nuisance</b> or worsening of stormwater, flooding or drainage impacts in a <b>railway corridor</b>.</p> <p>Note: Section 2.8 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this performance outcome.</p>	<p>No acceptable outcome is prescribed.</p>
<p><b>PO16</b> Run-off from the development site during construction of development does not cause siltation of stormwater infrastructure affecting a <b>railway corridor</b>.</p>	<p><b>AO16.1</b> Run-off from the development site during construction of development is not discharged to stormwater infrastructure in a <b>railway corridor</b>.</p>
<b>Access</b>	
<p><b>PO17</b> Development prevents unauthorised access to a <b>railway corridor</b>.</p>	<p><b>AO17.1</b> Where development is abutting a <b>railway corridor</b> fencing is provided along the property boundary with the <b>railway corridor</b> in accordance with the <b>railway manager's</b> standards.</p> <p>Note: It is recommended the applicant contact the railway manager for advice regarding applicable fencing standards.</p> <p>AND</p> <p><b>AO17.2</b> A road barrier designed in accordance with Civil Engineering Technical Requirement – CIVIL-SR-007 Design and selection criteria for road/rail interface barriers, Queensland Rail 2011, and certified by an RPEQ, is installed along any roads abutting a <b>railway corridor</b>.</p> <p>AND</p> <p><b>AO17.3</b> Proposed vehicle manoeuvring areas, driveways, loading areas or carparks abutting a <b>railway corridor</b> include rail interface barriers.</p> <p>Note: Section 2.4 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with acceptable outcome 16.3.</p>
<p><b>PO18</b> Development does not obstruct existing access to a <b>railway corridor</b>.</p>	<p><b>AO18.1</b> Development is sited and designed to ensure existing authorised access points and access routes for maintenance and emergency works to a <b>railway corridor</b> are clear from obstructions at all times.</p>
<p><b>PO19</b> Access to a <b>railway corridor</b> does not create a safety hazard for users of a <b>railway</b>, or result in a worsening of operating conditions on a <b>railway</b>.</p>	<p><b>AO19.1</b> Development does not require a new <b>railway crossing</b>.</p> <p>AND</p> <p><b>AO19.2</b> Development does not propose new or temporary <b>structures</b> or works connecting to <b>rail transport infrastructure</b> or <b>other rail infrastructure</b>.</p> <p>AND</p> <p><b>AO19.3</b> Vehicle access points achieve sufficient clearance from a <b>railway</b> level crossing in accordance with AS1742.7:2016 – Manual of uniform traffic control devices, Part 7: Railway</p>

	<p>crossings, by providing minimum 5 metres clearance from the edge running rail (outer rail), plus the length of the largest vehicle anticipated on-site.</p> <p>Note: Section 2.2 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this acceptable outcome.</p>
<p><b>PO20</b> Development does not damage or interfere with <b>public passenger transport infrastructure, public passenger services</b> or pedestrian and cycle access to <b>public passenger transport infrastructure</b> and <b>public passenger services</b>.</p>	<p><b>AO20.1</b> Development does not necessitate the relocation of existing <b>public passenger transport infrastructure</b>.</p> <p>AND</p> <p><b>AO20.2</b> Vehicular access and associated road access works for a development is not located within 5 metres of existing <b>public passenger transport infrastructure</b>.</p> <p>AND</p> <p><b>AO20.3</b> On-site vehicle circulation is designed give priority to entering vehicles at all times so vehicles using a vehicular access do not obstruct <b>public passenger transport infrastructure</b> and <b>public passenger services</b> or obstruct pedestrian or cyclist access to <b>public passenger transport infrastructure</b> and <b>public passenger services</b>.</p> <p>AND</p> <p><b>AO20.4</b> The normal operation of <b>public passenger transport infrastructure</b> or <b>public passenger services</b> is not interrupted during construction of the development.</p>
<b>Planned upgrades</b>	
<p><b>PO21</b> Development does not impede delivery of <b>planned upgrades</b> of rail transport infrastructure.</p>	<p><b>AO21.1</b> Development is not located on land identified by the Department of Transport and Main Roads as land required for <b>planned upgrades</b> to rail transport infrastructure.</p> <p>Note: Land required for the <b>planned upgrade</b> of rail transport infrastructure is identified in the <b>DA mapping system</b>.</p> <p>OR</p> <p><b>AO21.2</b> Development is sited and designed so that permanent buildings, <b>structures</b>, infrastructure, services or utilities are not located on land identified by the Department of Transport and Main Roads as land required for the <b>planned upgrade</b> of rail transport infrastructure.</p> <p>OR all of the following acceptable outcomes apply:</p> <p><b>AO21.3 Structures</b> and infrastructure located on land identified by the Department of Transport and Main Roads as land required for the <b>planned upgrade</b> of a of rail transport infrastructure are able to be readily relocated or removed without</p>

	<p>materially affecting the viability or functionality of the development.</p> <p>AND</p> <p><b>AO21.4</b> Development does not involve filling and excavation of, or material changes to, land required for a <b>planned upgrade of rail transport infrastructure</b>.</p> <p>AND</p> <p><b>AO21.5</b> Land is able to be reinstated to the pre-development condition at the completion of the use.</p>
<b>Network safety</b>	
<p><b>PO22</b> Development involving <b>dangerous goods</b> adjacent to a <b>railway corridor</b> does not adversely impact on the safety or operations of a <b>railway</b>.</p> <p>Note: Development involving <b>dangerous goods</b>, or 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, should demonstrate that impacts on a <b>railway</b> from a fire, explosion, spill, gas emission or <b>dangerous goods</b> incident can be appropriately mitigated.</p> <p>Section 2.6 – Dangerous goods and fire safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this performance outcome.</p>	<p><b>AO22.1</b> 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.</p>
<p><b>PO23</b> Development does not adversely impact on the safety of a <b>railway crossing</b>.</p> <p>Note: It is recommended a traffic impact assessment be prepared to demonstrate compliance with this performance outcome. An impact on a level crossing may require an Australian Level Crossing Assessment Model (ALCAM) assessment to be undertaken. Section 2.2 – Railway crossing safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this performance outcome.</p>	<p><b>AO23.1</b> Development does not require a new <b>railway crossing</b>.</p> <p>OR</p> <p><b>AO23.2</b> A new <b>railway crossing</b> is grade separated.</p> <p>Note: It is recommended a traffic impact assessment be prepared to demonstrate compliance with this acceptable outcome. An impact on a level crossing may require an Australian Level Crossing Assessment Model (ALCAM) assessment to be undertaken. Section 2.2 – Railway crossing safety of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015, provides guidance on how to comply with this acceptable outcome.</p> <p>OR all of the following acceptable outcomes apply:</p> <p><b>AO23.3</b> Upgrades to a level crossing are designed and constructed in accordance with AS1742.7 – Manual of uniform traffic control devices, Part 7: Railway crossings and applicable <b>railway manager’s</b> standard drawings.</p> <p>AND</p> <p><b>AO23.4</b> Vehicle access points achieve sufficient clearance from a level crossing in accordance with AS1742.7 – Manual of uniform traffic control devices, Part 7: Railway crossings by providing a minimum clearance of 5 metres from the edge</p>

	<p>running rail (outer rail) plus the length of the largest vehicle anticipated on-site.</p> <p>AND</p> <p><b>AO23.5</b> On-site vehicle circulation is designed to give priority to entering vehicles at all times to ensure vehicles do not queue in a <b>railway crossing</b>.</p>
--	---

**Table 2.2.2: Environmental emissions**

Statutory note: Where development is adjacent to a **railway** with fewer than 15 passing trains per day, compliance with table 2.2.2 is not required.

Performance outcomes	Acceptable outcomes
<b>Noise</b>	
<b>Accommodation activities</b>	
<p><b>PO24</b> Development involving:</p> <ol style="list-style-type: none"> <li>an <b>accommodation activity</b>; or</li> <li>land for a future <b>accommodation activity</b> minimises noise intrusion from a railway or <b>type 2 multi-modal corridor</b> in <b>habitable rooms</b>.</li> </ol>	<p><b>AO24.1</b> A noise barrier or earth mound is provided which is designed, sited and constructed:</p> <ol style="list-style-type: none"> <li>to meet the following external noise criteria at all facades of the building envelope: <ol style="list-style-type: none"> <li>≤65 dB(A) <math>L_{eq}</math> (24 hour) façade corrected</li> <li>≤87 dB(A) (single event maximum sound pressure level) façade corrected</li> </ol> </li> <li>in accordance with the Civil Engineering Technical Requirement – CIVIL-SR-014 Design of noise barriers adjacent to railways, Queensland Rail, 2011.</li> </ol> <p>Note: To demonstrate compliance with the acceptable outcome, it is recommended a RPEQ certified noise assessment report be provided.</p> <p>If the building envelope is unknown, the deemed-to-comply setback distances for buildings stipulated by the local planning instrument or relevant building regulations should be used.</p> <p>In some instances, the design of noise barriers and mounds to achieve the noise criteria above the ground floor may not be reasonable or practicable. In these instances, any relaxation of the criteria is at the discretion of the Department of Transport and Main Roads.</p> <p>OR all of the following acceptable outcomes apply:</p> <p><b>AO24.2</b> Buildings which include a <b>habitable room</b> are setback the maximum distance possible from a <b>railway</b> or <b>type 2 multi-modal corridor</b>.</p> <p>AND</p> <p><b>AO24.3</b> Buildings are designed and oriented so that <b>habitable rooms</b> are located furthest from a <b>railway</b> or <b>type 2 multi-modal corridor</b>.</p> <p>AND</p> <p><b>AO24.4</b> Buildings (other than a <b>relevant residential building</b> or <b>relocated building</b>) are designed and constructed using materials which ensure that <b>habitable rooms</b> meet the following internal noise criteria:</p>

Performance outcomes	Acceptable outcomes
	<p>1. ≤45 dB(A) single event maximum sound pressure level.</p> <p>Note: Noise levels from <b>railways</b> or <b>type 2 multi-modal corridors</b> are to be measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise.</p> <p>Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report be provided.</p> <p><b>Habitable rooms</b> of <b>relevant residential buildings</b> located within a <b>transport noise corridor</b> must comply with the Queensland Development Code MP4.4 Buildings in a transport noise corridor, Queensland Government, 2015. <b>Transport noise corridors</b> are mapped on the State Planning Policy Interactive Mapping System.</p>
<p><b>PO25</b> Development involving an <b>accommodation activity</b> minimises noise intrusion from a <b>railway</b> or <b>type 2 multi-modal corridor</b> in <b>outdoor spaces</b> for passive recreation.</p>	<p><b>AO25.1</b> A noise barrier or earth mound is provided which is designed, sited and constructed:</p> <ol style="list-style-type: none"> <li>1. to meet the following external noise criteria in <b>outdoor spaces</b> for passive recreation: <ol style="list-style-type: none"> <li>a. ≤62 dB(A) <math>L_{eq}</math> (24 hour) free field</li> <li>b. ≤84 dB(A) (single event maximum sound pressure level) free field</li> </ol> </li> <li>2. in accordance with the Civil Engineering Technical Requirement – CIVIL-SR-014 Design of noise barriers adjacent to railways, Queensland Rail, 2011.</li> </ol> <p>OR</p> <p><b>AO25.2</b> Each dwelling has access to an <b>outdoor space for passive recreation</b> which is shielded from a <b>railway</b> or <b>type 2 multi-modal corridor</b> by a building, a solid gap-free fence, or other solid gap-free <b>structure</b>.</p> <p>AND</p> <p><b>AO25.3</b> Each dwelling with a balcony directly exposed to noise from a <b>railway</b> or <b>type 2 multi-modal corridor</b> has a continuous solid gap-free balustrade (other than gaps required for drainage purposes to comply with the Building Code of Australia).</p>
<b>Childcare centres and educational establishments</b>	
<p><b>PO26</b> Development involving a:</p> <ol style="list-style-type: none"> <li>a. <b>childcare centre</b>; or</li> <li>b. <b>educational establishment</b></li> </ol> <p>minimises noise intrusion from a railway or type 2 multi-modal corridor in indoor education areas and indoor play areas.</p>	<p><b>AO26.1</b> A noise barrier or earth mound is provided which is designed, sited and constructed:</p> <ol style="list-style-type: none"> <li>1. to meet the following external noise criteria at all facades of the building envelope: <ol style="list-style-type: none"> <li>a. ≤65 dB(A) <math>L_{eq}</math> (1 hour) façade corrected (maximum hour during opening hours)</li> <li>b. ≤87 dB(A) (single event maximum sound pressure level) façade corrected</li> </ol> </li> <li>2. in accordance with the Civil Engineering Technical Requirement – CIVIL-SR-014 Design of noise barriers adjacent to railways, Queensland Rail, 2011.</li> </ol>

Performance outcomes	Acceptable outcomes
	<p>Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report be provided.</p> <p>If the building envelope is unknown, the deemed-to-comply setback distances for buildings stipulated by the local planning instrument or relevant building regulations should be used.</p> <p>OR all of the following apply:</p> <p><b>AO26.2</b> Buildings which include an <b>indoor education area, indoor play area</b> or sleeping room are setback furthest from a <b>railway</b> or <b>type 2 multi-modal corridor</b> as possible.</p> <p>AND</p> <p><b>AO26.3</b> Buildings are designed and oriented so that <b>indoor education areas, indoor play areas</b> or sleeping rooms are located furthest from a <b>railway</b> or <b>type 2 multi-modal corridor</b>.</p> <p>AND</p> <p><b>AO26.4</b> Buildings are designed and constructed using materials which ensure <b>indoor education areas</b> and <b>indoor play areas</b> meet the following internal noise criteria:</p> <ol style="list-style-type: none"> <li>1. <math>\leq 50</math> dB(A) single event maximum sound pressure level.</li> </ol> <p>AND</p> <p><b>AO26.5</b> Buildings are designed and constructed using material which ensure sleeping rooms in a <b>childcare centre</b> meet the following internal noise criteria:</p> <ol style="list-style-type: none"> <li>1. <math>\leq 45</math> dB(A) single event maximum sound pressure level.</li> </ol> <p>Note: Noise levels from <b>railways</b> or <b>type 2 multi-modal corridors</b> are measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise.</p> <p>To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report be provided.</p>
<p><b>PO27</b> Development involving a:</p> <ol style="list-style-type: none"> <li>1. <b>childcare centre</b>; or</li> <li>2. <b>educational establishment</b></li> </ol> <p>minimises noise intrusion from a <b>railway</b> or <b>type 2 multi-modal corridor</b> in <b>outdoor education areas</b> and outdoor play areas.</p>	<p><b>AO27.1</b> A noise barrier or earth mound is provided which is designed, sited and constructed:</p> <ol style="list-style-type: none"> <li>1. to meet the following external noise criteria in each <b>outdoor education area</b> or <b>outdoor play area</b>: <ol style="list-style-type: none"> <li>a. <math>\leq 62</math> dB(A) <math>L_{eq}</math> (24 hour) free field (between 6am and 6pm)</li> <li>b. <math>\leq 84</math> dB(A) (single event maximum sound pressure level) free field</li> </ol> </li> <li>2. in accordance with the Civil Engineering Technical Requirement – CIVIL-SR-014 Design of noise barriers adjacent to railways, Queensland Rail, 2011.</li> </ol>

Performance outcomes	Acceptable outcomes
	<p>Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report be provided.</p> <p>OR</p> <p><b>AO27.2</b> Each <b>outdoor education area</b> and <b>outdoor play area</b> is shielded from noise generated from a <b>railway</b> or <b>type 2 multi-modal corridor</b> by a building, a solid gap-free fence, or other solid gap-free <b>structure</b>.</p>
<b>Hospitals</b>	
<p><b>PO28</b> Development involving a <b>hospital</b> minimises noise intrusion from a <b>railway</b> or a <b>type 2 multi-modal corridor</b> in <b>patient care areas</b>.</p>	<p><b>AO28.1 Hospitals</b> are designed and constructed using materials which ensure ward areas meet the following internal noise criteria:</p> <ol style="list-style-type: none"> <li>1. ≤45 dB(A) single event maximum sound pressure level.</li> </ol> <p>AND</p> <p><b>AO28.2 Hospitals</b> are designed and constructed using materials which ensure <b>patient care areas</b> (other than ward areas) meet the following internal noise criteria:</p> <ol style="list-style-type: none"> <li>1. ≤50 dB(A) single event maximum sound pressure level.</li> </ol> <p>Note: Noise levels from <b>railways</b> or <b>type 2 multi-modal corridors</b> are measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise.</p> <p>To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report be provided.</p>
<b>Vibration</b>	
<b>Hospitals</b>	
<p><b>PO29</b> Development involving a <b>hospital</b> located within 25 metres of the centreline of the nearest <b>railway</b> track minimises vibration impacts from a <b>railway</b> or <b>type 2 multi-modal corridor</b> in <b>patient care areas</b>.</p>	<p><b>AO29.1 Hospitals</b> are designed and constructed to ensure vibration in the treatment area of a <b>patient care area</b> does not exceed a vibration dose value of 0.1m/s<sup>1.75</sup>.</p> <p>AND</p> <p><b>AO29.2 Hospitals</b> are designed and constructed to ensure vibration in the ward area of a <b>patient care area</b> does not exceed a vibration dose value of 0.4m/s<sup>1.75</sup>.</p> <p>Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified vibration assessment report be provided.</p>
<b>Air and light</b>	
<p><b>PO30</b> Development involving an <b>accommodation activity</b> minimises air quality impacts from a <b>railway</b> in <b>outdoor spaces for passive recreation</b>.</p>	<p><b>AO30.1</b> Each dwelling has access to an <b>outdoor space for passive recreation</b> that is shielded from a <b>railway</b> by a building, a solid gap-free fence, or other solid gap-free <b>structure</b>.</p>
<p><b>PO31</b> Development involving a:</p> <ol style="list-style-type: none"> <li>1. <b>childcare centre</b>; or</li> <li>2. <b>educational establishment</b></li> </ol>	<p><b>AO31.1</b> Each <b>outdoor education area</b> and <b>outdoor play area</b> is shielded from a <b>railway</b> by a</p>

Performance outcomes	Acceptable outcomes
minimises air quality impacts from a <b>railway</b> in <b>outdoor education areas</b> and <b>outdoor play areas</b> .	building, a solid gap-free fence, or other solid gap-free <b>structure</b> .
<b>PO32</b> Development involving an <b>accommodation activity</b> or <b>hospital</b> minimises lighting impacts from a <b>railway</b> .	<p><b>AO32.1</b> Buildings for an <b>accommodation activity</b> or <b>hospital</b> are designed to minimise the number of windows or transparent/translucent panels facing a <b>railway</b>.</p> <p>OR</p> <p><b>AO32.2</b> Windows facing a <b>railway</b> include treatments to block light from a <b>railway</b>.</p>

**Table 2.2.3: Development in a future railway environment**

Performance outcomes	Acceptable outcomes
<b>PO33</b> Development does not impede delivery of <b>rail transport infrastructure</b> in a <b>future railway corridor</b> .	<p><b>AO33.1</b> Development is not located in a <b>future railway corridor</b>.</p> <p>OR</p> <p><b>AO33.2</b> Development is sited and designed so that permanent buildings, <b>structures</b>, infrastructure, services or utilities are not located in a <b>future railway corridor</b>.</p> <p>OR all of the following acceptable outcomes apply:</p> <p><b>AO33.3 Structures</b> and infrastructure located in a <b>future railway corridor</b> are able to be readily relocated or removed without materially affecting the viability or functionality of the development.</p> <p>AND</p> <p><b>AO33.4</b> Development does not involve filling and excavation of, or material changes to, a <b>future railway corridor</b>.</p> <p>AND</p> <p><b>AO33.5</b> Land is able to be reinstated to the pre-development condition at the completion of the use.</p>
<p><b>PO34</b> Filling and excavation, building foundations and <b>retaining structures</b> do not undermine or cause subsidence of, a <b>future railway corridor</b>.</p> <p>Note: To demonstrate compliance with this performance outcome, it is recommended that a RPEQ certified geotechnical assessment is provided, prepared in accordance with section 2.7 of the Guide to Development in a Transport Environment: Rail, Department of Transport and Main Roads, 2015.</p>	No acceptable outcome is prescribed.
<b>PO35</b> Fill material from a development site does not result in contamination of land for a <b>future railway corridor</b> .	<p><b>AO35.1</b> Fill material is free of contaminants including acid sulfate content.</p> <p>Note: Soil and rocks should be tested in accordance with AS1289 – Methods of testing soils for engineering purposes and AS4133 2005 – Methods of testing rocks for engineering purposes.</p> <p>AND</p>

Performance outcomes	Acceptable outcomes
	<b>AO35.2</b> Compaction of fill is carried out in accordance with the requirements of AS1289.0 2000 – Methods of testing soils for engineering purposes.
<b>PO36</b> Development does not result in an <b>actionable nuisance</b> or worsening of stormwater, flooding or drainage impacts in a <b>future railway corridor</b> .	No acceptable outcome is prescribed.

## 2.3 Reference documents

Department of Justice and Attorney-General (Office of Industrial Relations) 2016, [Model Planning Scheme Development Code for Hazardous Industries and Chemicals](#)

Department of Transport and Main Roads 2015, [Guide to Development in a Transport Environment: Rail](#)

Department of Transport and Main Roads 2014, [Design criteria for bridges and other structures manual](#)

Department of Transport and Main Roads 2015, [Road drainage manual](#)

Department of Transport and Main Roads 2016, [Road Planning and Design Manual 2<sup>nd</sup> 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, [SD1474 - Steel beam guardrail - Installation and setout](#)

Department of Energy and Water Supply 2013, [Queensland Urban drainage manual](#)

Standards Australia 2000, [AS1289.0-2000 – Methods of testing soils for engineering purposes](#)

Standards Australia 2010, [AS2436–2010 – Guide to noise and vibration control on construction, demolition and maintenance sites](#)

Standards Australia 2005, [AS4133.0–2005 – Methods of testing rocks for engineering purposes](#)

Department of Infrastructure, Local Government and Planning 2016, [State Planning Policy – state interest guideline: Emissions and hazardous activities](#)

Queensland Rail, Civil Engineering Technical Requirements and standard drawings:

[Civil-SR-001 – Design of road overbridges](#)

[Civil-SR-002 – Work in or about Queensland Rail property](#)

[Civil-SR-003 – Requirements for work on or near high voltage overhead line equipment and low voltage services](#)

[Civil-SR-005 – Design of buildings over or near railways](#)

[Civil-SR-006 – Design of footbridges](#)

[Civil-SR-007 – Design and selection criteria for road/rail interface barriers](#)

[Civil-SR-008 – Protection screens](#)

[Civil-SR-012 – Collision protection of supporting elements adjacent to railways](#)

[Civil-SR-014 – Design of noise barriers adjacent to railways](#)

[Civil-SR-016 – Requirements for services under the railway corridor \(non-QR services\)](#)

QR-C-S3231 – 1800mm high timber paling fence

QR-C-S3236 – Standard rural fences

QR-C-S3230 – Standard security fence

Standard Drawing 2754 – Standard clearances for new structures

Standard Drawing 2614 – Standard rural fences (fencing with rail posts)

International Erosion Control Association Australasia, [Best Practice Erosion and Sediment Control document](#)

## 2.4 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, Department of Energy and Water Supply, 2013 for further information.

**ADG Code** see schedule 1 of the *Work Health and Safety Act 2011*.

Note: **ADG Code** means the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, as updated from time to time.

**Childcare centre** see schedule 24 of the Planning Regulation 2017.

Note: **Childcare centre** means the use of premises for the 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.

**Dangerous goods** see schedule 1 of the *Work Health and Safety Act 2011*.

Note: **Dangerous goods** means:

1. asbestos, or
2. anything defined under the **ADG Code** as:
  - a. dangerous goods; or
  - b. goods too dangerous to be transported.

**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 railway corridor** see schedule 24 of the Planning Regulation 2017.

Note: **Future railway corridor** means:

1. land identified in a guideline made under the *Transport Planning Act*, section 8E as a future transport corridor for:

- a. **rail transport infrastructure**; or
  - b. other rail infrastructure; or
  - c. railway works; or
2. future railway land.

See the **DA mapping system**.

**Future railway land** see section 242 of the *Transport Infrastructure Act 1994*.

Note: Land becomes **future railway land** when the chief executive [TIA], by written notice to the relevant local government and in the gazette, indicates that the land is intended to be used for a **railway**. **Future railway land** ceases to be **future railway land** when it is subleased to a **railway manager** under section 240(4) of the *Transport Infrastructure Act 1994*. If the chief executive [TIA] decides that **future railway land** is no longer to be used for the **railway**, the chief executive [TIA] must give written notice of that fact to the relevant local government and in the gazette.

**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.

**High risk location** means properties adjacent to the **railway corridor** where the risk of train derailment warrants a risk assessment and consideration of possible structural responses incorporated into adjacent development.

Note: See the **DA mapping system**.

**Hospital** see schedule 24 of the Planning Regulation 2017.

Note: **Hospital** means the use of premises for:

1. the medical or surgical care or treatment of patients, whether or not the care or treatment requires overnight accommodation; or
2. providing accommodation for patients; or
3. 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 or infrastructure.

**Other rail infrastructure** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Other rail infrastructure** means:

1. freight centres or depots
2. maintenance depots
3. office buildings or housing
4. rolling stock or other vehicles that operate on a **railway**
5. workshops
6. any **railway** track, works or other thing that is part of anything mentioned in paragraphs 1 to 5.

**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.

**Overhead line equipment** means overhead lines, cabling and associated **structures** used to provide power to electric trains.

**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**.

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

**Public passenger service** see 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 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), or
2. a ferry terminal, jetty, pontoon or landing for ferry services; or
3. a bus stop, bus shelter, bus station or bus lay-by; or
4. a busway station; or
5. a light rail station; or
6. a taxi rank, limousine rank or limousine standing area; or
7. a **railway** station; or
8. vehicle parking and set-down facilities; or
9. pedestrian and bicycle paths and bicycle facilities; or
10. a road on which a public passenger transport service operates.

**Rail transport infrastructure** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Rail transport infrastructure** means facilities necessary for operating a **railway**, including:

1. **railway** track and works built for the **railway**, including for example:
  - a. cuttings; or
  - b. drainage works; or
  - c. excavations; or
  - d. land fill; or
  - e. track support earthworks any of the following things that are associated with the **railway's** operation:
    - i. bridges; or
    - ii. communication systems; or
    - iii. machinery and other equipment; or
    - iv. marshalling yards; or
    - v. noticeboards, notice markers and signs; or
    - vi. overhead electrical power supply systems; or
    - vii. over-track **structures**; or
    - viii. platforms; or
    - ix. power and communication cables; or
    - x. service roads; or
    - xi. signalling facilities and equipment; or
    - xii. stations; or
    - xiii. survey stations, pegs and marks; or
    - xiv. train operation control facilities; or
    - xv. tunnels; or
    - xvi. under-track **structures** vehicle parking and set down facilities for intending passengers for a **railway** that are controlled or owned by a **railway manager** or the chief executive [TIA]; or
    - xvii. pedestrian facilities, including footpath paving, for the **railway** that are controlled or owned by a **railway manager** or the chief executive [TIA], but does not include **other rail infrastructure**.

**Railway** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Railway** means a guided system, or proposed guided system, designed for the movement of rolling stock that is capable of transporting passengers or freight, or both, on a **railway** track and:

1. includes:
  - a. rail transport infrastructure
  - b. a **railway** being or proposed to be built on **future railway land**
2. but does not include:
  - a. rolling stock
  - b. a **railway** mentioned in section 107(2) of the *Transport Infrastructure Act 1994*.

**Railway bridge** means a **structure** which crosses a watercourse, land, road or other obstacle, on which **rail transport infrastructure** or **other rail infrastructure** is located.

**Railway corridor** see schedule 24 of the Planning Regulation 2017.

Note: **Railway corridor** means:

1. land on which rail transport infrastructure or other rail infrastructure is situated; or
2. land on which railway works are carried out if the works relate to rail transport infrastructure or other rail infrastructure; or
3. land on which services for the maintenance or operation of **rail transport infrastructure** or **other rail infrastructure** are situated.

See the **DA mapping system**.

**Railway crossing** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Railway crossing** means a level crossing, bridge or another **structure** used to cross over or under a **railway**.

**Railway manager** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Railway manager** means:

1. for a **railway** – the person who is an accredited rail infrastructure manager in relation to **railway** operations relating to the **railway**; or
2. for **rail corridor** land – the person who is an accredited rail infrastructure manager in relation to **railway** operations relating to the **railway** or proposed **railway** on or proposed to be on the **rail corridor** land.

**Railway works** see schedule 6 of the *Transport Infrastructure Act 1994*.

Note: **Railway works** means:

1. works for constructing, maintaining, altering or operating a **railway** or rolling stock; or
2. works for establishing, constructing or maintaining transport infrastructure, other than **rail transport infrastructure**, that are:
  - a. directly related to paragraph 1; and
  - b. necessary for the safety, efficiency and operational integrity of transport infrastructure; or
3. other works declared under a regulation to be **railway works**.

**Relevant residential building** see section 6 of the Queensland Development Code Mandatory Part 4.4: Buildings in a Transport Noise Corridor.

Note: A building is a **relevant residential building** if:

1. a building development application for the construction of the building is made after 31 August 2010
2. the building:
  - a. is a class 1, 2, 3 or building
  - b. is located in a **transport noise corridor**
  - c. is not a **relocated building**
3. the building development approval for the construction of the building was not given under the building assessment provisions in force immediately before 1 September 2010, under section 37 of the *Building Act 1975*.

**Relocated building** see section 7 of Queensland Development Code Mandatory Part 4.4: Buildings in a Transport Noise Corridor.

Note: A building is a **relocated building** if the building:

1. is a class 1, 2, 3 or 4 building
2. was constructed on an allotment (the first allotment) where it was used as a residence
3. is relocated from:
  - a. the first allotment to another allotment; or
  - b. a site on the first allotment to another site on the first allotment.

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

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

**Transport noise corridor** means land designated under chapter 8B of the *Building Act 1975* as a transport noise corridor.

**Type 2 multi-modal corridor** means a transport corridor that includes a **railway** (with 15 or more passing trains per day) and at least one of the following:

1. a state-controlled road; or
2. a busway; or
3. light rail.

## 2.5 Abbreviations

**RPEQ** – Registered Professional Engineer of Queensland