

**8.2.4415 Regional infrastructure overlay code**



**Photograph 8.2.4415-1**

Example of regional infrastructure. Photograph by City of Gold Coast.

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**8.2.4415.1 Application**

This code applies to assessing material change of use, reconfiguring a lot or operational work for development subject to the Regional infrastructure overlay and the State controlled roads, rail corridor and transport noise corridors overlay where indicated within **Part 5.10 Categories of development and assessment – Overlays**.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3** in **Part 5**.

**Note:** For the purpose of this code, the term 'noise' encompasses road traffic noise, road construction noise and road maintenance noise.

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**8.2.4415.2 Purpose**

- (1) The purpose of the Regional infrastructure overlay code is to:
  - (a) ensure that development is compatible with, and does not adversely affect the viability, integrity, operation and maintenance of existing and planned regional infrastructure, including:
    - (i) high voltage electricity transmission lines and substations;
    - (ii) water supply pipelines and infrastructure;
    - (iii) state-controlled roads; and
    - (iv) railways.
  - (b) regulate development of properties adjacent to all state-controlled roads or near rail operations to ensure that potential conflicts between sensitive land uses are mitigated.

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- (2) The purpose of the code will be achieved through the following overall outcomes:
- (a) Existing and planned regional infrastructure facilities, networks and corridors are protected from incompatible development.
  - (b) Development adjacent to existing and planned regional infrastructure facilities, networks and corridors:
    - (i) is appropriately located, designed, constructed and operated to avoid compromising the integrity, operational efficiency and maintenance of regional infrastructure; and
    - (ii) protect the amenity, health and safety of people and property.
  - (c) Sensitive land uses (excluding Office, Relocatable home park, Short-term accommodation and Tourist park) proposed to be located adjacent to a state-controlled road or located within 100m of the Gold Coast rail corridor are appropriately attenuated.
  - (d) The number of people exposed to potential adverse impacts emanating from regional infrastructure is minimised.

**8.2.1415.3 Specific benchmarks for assessment**

**Part A** applies to accepted development subject to requirements.

**Part B** applies to assessable development.

**PART A – ACCEPTED DEVELOPMENT SUBJECT TO REQUIREMENTS**

**Table 8.2.1415-1: Regional infrastructure overlay code – for accepted development subject to requirements**

**Required outcomes**

**Setbacks**

Where directly abutting the existing Energex Ferry Road 110kV high voltage electricity corridor, Southport between Bundall Substation (Lot 1, 2 and 3 on RP89651) and Southport Substation (Lot 1 on RP801646 and Lot 893 on SP191060)

**RO1**

Front boundary setbacks are as follows:

- (a) ~~Medium~~ Low-medium density residential zone – 4m (where the building height is no greater than 9m), otherwise 6m.
- (b) Mixed use, Neighbourhood centre and Centre zones – 2m (where the building height is no greater than 9.5m ~~or 2 storeys~~), otherwise 6m.

**Advisory note**

Accepted development identified in the assessment tables as subject to requirements must comply with all the nominated requirements in this and other applicable codes.

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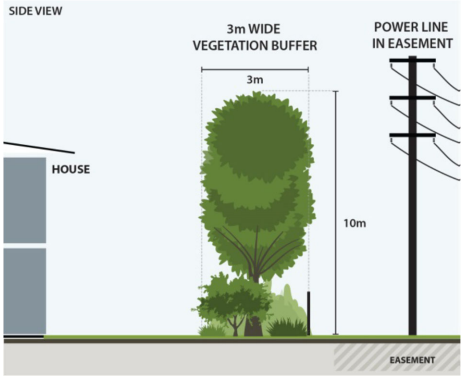
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**Commented [OCOP7]:** R1 - Theme: Height and density - creating a sustainable city shape;  
Item 3 – New Low-medium residential zone

**Commented [OCOP8]:** R1 - Theme: Height and density - creating a sustainable city shape;  
Item 1&2 – Building height overlay map and new building height categories

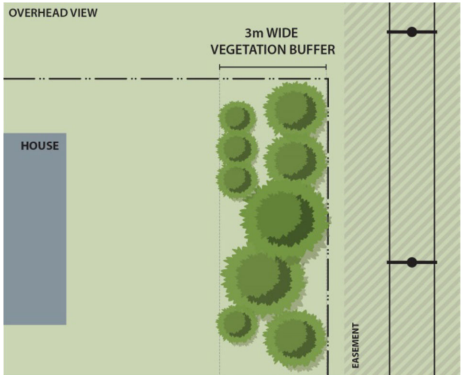
**PART B – ASSESSABLE DEVELOPMENT BENCHMARKS**

**Table 8.2.15-2: Regional infrastructure overlay code – for assessable development**

Performance outcomes	Acceptable outcomes
<p><b>Setbacks</b></p> <p>Where directly abutting the existing Energex Ferry Road 110kV high voltage electricity corridor, Southport between Bundall Substation (Lot 1, 2 and 3 on RP89651) and Southport Substation (Lot 1 on RP801646 and Lot 893 on SP191060)</p>	
<p><b>PO1</b></p> <p>Development does not compromise the integrity, functionality, access to or efficient delivery of the electricity corridor.</p>	<p><b>AO1</b></p> <p>Front boundary setbacks are as follows:</p> <p>(a) <b>Medium-Low-medium</b> density residential zone – 4m (where the building height is no greater than 9m), otherwise 6m.</p> <p>(b) Mixed use, Neighbourhood centre and Centre zones – 2m (where the building height is no greater than 9.5m), otherwise 6m.</p>
<p><b>Major electricity infrastructure</b></p>	
<p><b>PO2</b></p> <p>Sensitive land uses are appropriately located to ensure the amenity, health and safety of people and property are protected, and to avoid compromising the integrity, operational efficiency and maintenance of regional infrastructure.</p>	<p><b>AO2</b></p> <p>Buildings and outdoor use areas associated with a sensitive land use are setback from the closest boundary of an easement for, or an area otherwise affected by, a high voltage electricity line corridor, in accordance with the following:</p> <p>(a) 20m for transmission lines up to 132kV;</p> <p>(b) 30m for transmission lines between 133kV and 275kV; and</p> <p>(c) 40m for transmission lines exceeding 275kV.</p>
<p><b>PO3</b></p> <p>There is sufficient space within the site to establish landscaping which substantively assists in screening and softening obtrusive high voltage electricity lines and substations.</p>	<p><b>AO3</b></p> <p>A minimum 3m wide densely planted landscaped buffer is provided along the boundary adjoining high voltage electricity lines and/or substations, including provision for advanced trees and shrubs that will grow to a minimum height of 10m.</p> 

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**Commented [OCOP10]:** R1 - Theme: Height and density - creating a sustainable city shape;  
Item 3 – New Low-medium residential zone

Performance outcomes	Acceptable outcomes
	 <p>OVERHEAD VIEW</p> <p>3m WIDE VEGETATION BUFFER</p> <p>HOUSE</p> <p>EASEMENT</p>
<p><b>PO4</b></p> <p>High voltage electricity lines on private land are included in an easement.</p>	<p><b>AO4</b></p> <p>Existing infrastructure easements are maintained and where none currently exist, new easements are created which are sufficient for the electricity provider's requirements.</p>
<p><b>Water supply infrastructure</b></p>	
<p><b>PO5</b></p> <p>Development within a water supply pipeline buffer:</p> <p>(a) is located, designed and constructed to protect the integrity of the water supply pipeline; and</p> <p>(b) maintains adequate access for any required maintenance or upgrading work to the water supply pipeline.</p>	<p><b>AO5</b></p> <p>Buildings and structures are located outside of the water supply pipeline buffer area, as identified on a <b>Regional infrastructure overlay map</b>.</p>
<p><b>PO6</b></p> <p>Development is located and designed to maintain required access to water supply infrastructure.</p>	<p><b>AO6</b></p> <p>Development does not restrict access to water supply infrastructure of any type or size, having regard to:</p> <p>(a) buildings or structures;</p> <p>(b) gates and fences;</p> <p>(c) storage of equipment or materials; and</p> <p>(d) landscaping, earthworks, stormwater or other infrastructure.</p>
<p><b>Protection from road traffic and rail noise</b></p>	
<p><b>PO7</b></p> <p>Development mitigates noise intrusion to provide acceptable levels of amenity for occupants of the development.</p>	<p><b>AO7</b></p> <p>All sensitive land uses (excluding Office, Relocatable home park, Short-term accommodation and Tourist park) comply with the Design level – road and rail noise criteria identified in <b>Table 8.2.4415-3: Design level – road and rail noise criteria</b> through the implementation of 1 or more of the following noise attenuation measures:</p> <p>(a) the use of earth mounds and noise barrier fences, between the noise source and the sensitive land use; and/or</p> <p>(b) the use of appropriate buffer distances between the noise source and the sensitive land use.</p>
<p><b>PO8</b></p> <p>Noise barriers are designed to mitigate impacts on visual amenity.</p>	<p><b>AO8</b></p> <p>Noise barriers are set back from the property boundary and adequately screened with dense landscaping.</p>

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Performance outcomes	Acceptable outcomes
<b>Lot design (for subdivision only)</b>	
<b>PO9</b> Reconfiguration of lots does not compromise or adversely impact upon the efficiency and integrity of major electricity and water supply infrastructure networks.	<b>AO9</b> Urban residential lots and buildings and structures are not located within an easement for, or an area otherwise affected by, a high voltage electricity transmission line or water supply pipeline as identified on the <b>Regional infrastructure overlay map</b> .
<b>PO10</b> Reconfiguring of lots ensures that access requirements of major electricity and water supply infrastructure are maintained.	<b>AO10</b> Major electricity or water supply infrastructure traversing or within private land are protected by an easement in favour of the service provider for access and maintenance.

**Table 8.2.1415-3: Design level – road and rail noise criteria**

Measurement location	Design level road noise criteria
1m in front of the most exposed part of a proposed sensitive land use	<p><b>For road noise</b></p> <p>(a) 60 dB (A) L<sub>10</sub> (18 hour) or less, where existing levels measured at the setback for the zone are greater than 40 dB (A) L<sub>90</sub> (8 hour) between 10pm and 6am. (L<sub>10</sub> (18 hour) is the arithmetic average of 18 hourly L<sub>10</sub> levels measured in dB (A) between the hours of 6am and midnight).</p> <p>(b) 57 dB (A) L<sub>10</sub> (18 hour) or less, where existing levels measured at the setback for the zone are less than or equal to 40 dB (A) L<sub>90</sub> (8 hour) between 10pm and 6am.</p> <p>(c) Where the above criteria cannot be met, internal maximum design criterion levels specified in Table 1 <i>AS/NZS 2107:2016 Acoustics—Recommended design sound levels and reverberation times for building interiors</i> apply, particularly for buildings greater than <u>4.5m 1-storey</u> high.</p> <p><b>For rail noise</b></p> <p>(a) 65 dB (A), assessed as the 24-hour average equivalent continuous A-weighted sound pressure level;</p> <p>(b) 87 dB (A), assessed as a single event maximum sound pressure level.</p>
Balconies and formal external open space	<p><b>For road noise</b></p> <p>(a) 60 dB (A) L<sub>10</sub> (18 hour) or less, where existing levels measured at the setback for the zone are greater than 45 dB (A) L<sub>90</sub> (18 hour).</p> <p>(b) 57 dB (A) L<sub>10</sub> (18 hour) or less, where existing levels measured at the setback for the zone are less than or equal to 45 dB (A) L<sub>90</sub> (18 hour).</p>
Classrooms and meeting rooms	<p><b>For road noise</b></p> <p>(a) 48 dB (A) L<sub>10</sub> (1 hour) or less, as measured or calculated (in the centre of the room) as an indoor level between the hours of 8am and 4pm.</p>
Inside bedrooms, living areas and noise-sensitive areas of non-residential uses (e.g. classrooms)	<p><b>For rail noise</b></p> <p>Average L<sub>max</sub> (10pm to 6am) not greater than 50 dB (A).</p>
External formal living area	<p><b>For rail noise</b></p> <p>LA<sub>eq</sub> (1hr) (6am to 10pm) not greater than 55 dB (A).</p>

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**Commented [OCOP13]:** R1 - Theme: Height and density - creating a sustainable city shape;  
Item 1&2 – Building height overlay map and new building height categories

Notes: Road noise criteria

- (1) For the measurements above, all external levels stated are free field, and the expectation is that an additional 2.5 dB (A) increase is applied for the façade correction when the building is constructed. This will achieve a level equal to, or less than, 63 dB (A) and 60 dB (A), respectively, 1m from the most exposed façade of a building.
- (2) The calculation and prediction of road noise levels is to be in accordance with the *Road Traffic Noise Management Code of Practice 2008*, published by the Queensland Department of Main Roads, and measurement is to be in accordance with *AS 2702-1984: Acoustics – Methods for the measurement of road traffic noise*. Alternative road traffic noise prediction models may be used where they can be justified as being appropriate to the circumstances of the particular situation and location and have been validated for Australian conditions.
- (3) An assessment of road traffic noise is to be based on an ultimate ten-year traffic plan for the road, from the completion of construction of the development.
- (4) The determination of building construction, siting and design measures required to achieve internal noise levels shall be in accordance with *AS 2107:2016 Acoustics-Recommended design sound levels and reverberation times for building interiors* and *AS 3671:1989 Acoustics – Road traffic noise intrusions – Building siting and construction*. Alternative methods may be used where they can be justified as being appropriate to the circumstances of the particular situation and location.
- (5) When the requirements of *AS 2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors* and *AS 3671:1989 Acoustics – Road traffic noise intrusions – Building siting and construction* need to be achieved, the developer/owner shall engage the service of an acoustic engineer to certify (RPEQ) that the architectural measures (including air conditioning) have been incorporated into the building envelope. This will require the engineer to undertake inspections both during and at the end of construction.

Notes: Rail noise criteria

- (1) For the purposes of this overlay, LAeq (1hr) (6am to 10pm) represents the highest 1 hour equivalent continuous A-weighted sound pressure level between 6am and 10pm. The LAeq (1hr) is to be calculated from the highest four consecutive 15 minute samples, and is not restricted to measurement from the hour.
- (2) For the purpose of this overlay, the average Lmax (10pm to 6am) represents the average of the A-weighted maximum sound pressure levels of train pass-by events between 10pm and 6am.
- (3) The calculation and prediction of rail noise levels is to be in accordance with the requirements of the *Queensland Rail Code of Practice – Rail Noise Management*. Alternative rail noise prediction methods may be used where they can be justified as being appropriate to the circumstances of the particular situation and location.
- (4) An assessment of rail noise is to be based on the ultimate traffic flow for the railway. If such data does not exist, a 10-year planning projection is to be used.
- (5) The external formal living area criteria represent the rail noise level to be achieved, whether free field or non-free field. A correction of plus 2.5 dB(A) for facade reflection is to be included in the calculation, where appropriate.
- (6) External areas exceeding the design level criteria for the external the formal living area(s) will not be considered as external formal living.