

State code 8: Coastal development and tidal works

Purpose statement

The purpose of this code is to ensure that development is designed and located to:

1. protect life, buildings and infrastructure from the impacts of **coastal erosion**;
2. maintain **coastal processes**;
3. conserve **coastal resources**;
4. maintain appropriate public use of, and access to and along, **State coastal land**;
5. account for the projected impacts of climate change;
6. avoid impacts or, where the **matters of state environmental significance** cannot be reasonably avoided, impacts are reasonably minimised and mitigated;
7. does not result in a **significant residual impact** on a **matter of state environmental significance** unless the **significant residual impact** is acceptable, and an **offset** is provided.

In addition to the above, the purpose of this code is to ensure that development involving operational works which is not assessed by local government is designed and located to protect life and property from the impacts of **storm tide inundation**.

Using this code

The assessment benchmarks for this code comprise:

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

Development complies with the code where:

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

This code also includes the glossary of terms for definitions relevant to this code and reference documents; including the guideline **State Development Assessment Provisions State Code 8: Coastal development and tidal works**, which provides direction on how to address this code.

Performance outcomes and acceptable outcomes

Table 8.1: All development

Performance outcomes
Development in the erosion prone area
<p>PO1 Development is only permitted in the erosion prone area where it:</p> <ol style="list-style-type: none"> 1. is one of the following types of development: <ol style="list-style-type: none"> a. coastal-dependent development; or b. temporary, readily relocatable or able to be abandoned; or c. essential community infrastructure; or d. redevelopment of an existing permanent building or structure that cannot be relocated or abandoned; and 2. cannot feasibly be located elsewhere; or 3. is located landward of: <ol style="list-style-type: none"> a. a fit for purpose revetment; or b. a proposed revetment that is consistent with: <ol style="list-style-type: none"> i. an agreement with a local government; or ii. the alignment of adjacent lawful revetments; or 4. is on a lot less than 2000m² where a coastal building line is present.
<p>PO2 Development (other than coastal protection work) in the erosion prone area:</p> <ol style="list-style-type: none"> 1. does not adversely impact coastal processes; and 2. ensures that the protective function of landforms and vegetation is maintained. <p>Note: In considering reconfiguring a lot applications, the State may require land in the erosion prone area to be surrendered to the State for coastal management purposes under the <i>Coastal Protection and Management Act 1995</i>.</p> <p>Where the planning chief executive receives a copy of a land surrender requirement or proposed land surrender notice under the <i>Coastal Protection and Management Act 1995</i>, this must be considered in assessing the application.</p>

Performance outcomes
<p>PO3 Development is sited, designed and constructed to limit the risk of impacts of coastal erosion to an acceptable level by:</p> <ol style="list-style-type: none"> 1. locating development outside the erosion prone area; or 2. mitigating or otherwise accommodating the risks posed by coastal erosion.
<p>PO4 Development in the erosion prone area does not significantly increase the risk or impacts to people and property from coastal erosion.</p>
<p>PO5 Development (other than coastal protection work) in the erosion prone area does not directly or indirectly increase the severity of coastal erosion either on or off the site.</p>
<p>PO6 In erosion prone areas where a coastal building line is present, building work is located landward of the coastal building line unless coastal protection work has been constructed to protect the development.</p>
Artificial waterways
<p>PO7 Development of artificial waterways, canals and dry-land marinas conserves coastal resources by:</p> <ol style="list-style-type: none"> 1. ensuring changes to water flows, water levels and sediment movement do not adversely impact the natural waterway to which it is connected; 2. demonstrating appropriate storage, treatment and disposal of dredged material for the life of the development.
Coastal protection work
<p>PO8 Works for beach nourishment minimises adverse impacts on coastal processes.</p>
<p>PO9 Works for beach nourishment do not increase the severity of erosion on adjacent land.</p>
<p>PO10 Erosion control structures (excluding revetments) are only constructed where there is an imminent threat to significant buildings or infrastructure, and there is no feasible option for either:</p> <ol style="list-style-type: none"> 1. beach nourishment; or 2. relocation or abandonment of structures.
<p>PO11 Erosion control structures (revetments only) are only constructed where:</p> <ol style="list-style-type: none"> 1. there is an imminent threat to significant buildings or infrastructure, and there is no feasible option for either: <ol style="list-style-type: none"> a. beach nourishment; or b. relocation or abandonment of structures; or 2. the development: <ol style="list-style-type: none"> a. is in a consistent alignment with adjacent lawful revetments; or b. is consistent with an agreement with a local government that a revetment is appropriate in the proposed location.
<p>PO12 Erosion control structures minimise interference with coastal processes and reduce the severity of erosion on adjacent land.</p>
Water quality
<p>PO13 Development:</p> <ol style="list-style-type: none"> 1. maintains or enhances environmental values of receiving waters; 2. achieves the water quality objectives of Queensland waters; 3. avoids the release of prescribed water contaminants to tidal waters.
Public use of and access to State coastal land
<p>PO14 Development maintains or enhances public use of and access to and along State coastal land (except where this is contrary to the protection of coastal resources or public safety).</p>
<p>PO15 Private marine development does not reduce public use of and access to State coastal land and ensures that works:</p> <ol style="list-style-type: none"> 1. are used for marine access purposes only; 2. minimise the use of State coastal land; 3. are designed to accommodate the berthing of one vessel only per waterfront residence; 4. do not interfere with access between navigable waterways and adjacent properties.
<p>PO16 Development does not reduce public use of and access to State coastal land and ensures that erosion control structures, intended to protect a freehold or leasehold (not State land) premises, are wholly located within the lot:</p> <ol style="list-style-type: none"> 1. except where impeded by significant buildings or infrastructure that cannot be removed or relocated; or 2. for revetments the development is: <ol style="list-style-type: none"> a. in a consistent alignment with adjacent lawful revetments; or b. consistent with an agreement with a local government that a revetment is appropriate in the proposed location.
Matters of state environmental significance

Performance outcomes

PO17 Development is designed and sited to:

1. avoid impacts on **matters of state environmental significance**; or
2. minimise and mitigate impacts on **matters of state environmental significance** after demonstrating avoidance is not reasonably possible; and
3. provide an **offset** if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable **significant residual impact** on a **matter of state environmental significance**.

Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan.

Table 8.2: All operational work

Performance outcomes

Private marine development

PO18 Private marine development is designed and constructed to maintain existing waterway banks in their natural state and not require:

1. **coastal protection work**;
2. shoreline or riverbank hardening;
3. **dredging for marine access purposes**.

Disposal of solid waste or dredged material from artificial waterways

PO19 Solid waste from land and **dredged material** from **artificial waterways** is not disposed of in **tidal water** unless it is for **beneficial reuse**.

Disposal of dredged material other than from artificial waterways

PO20 Dredged material is returned to **tidal water** where the material is needed to maintain **coastal processes** and sediment volume.

PO21 Where the **dredged material** is not needed to maintain **coastal processes** and sediment volume, the quantity of **dredged material** disposed to **tidal water** is minimised through **beneficial reuse** or disposal on land.

All dredging and any disposal of dredged material in tidal water

PO22 Dredging or disposal of **dredged material** in tidal waters does not adversely impact on **coastal processes** and **coastal resources**.

Reclamation

PO23 Development does not involve **reclamation** of land below **tidal water**, other than for the purposes of:

1. **coastal-dependent development, public marine development or essential community infrastructure**; or
2. strategic ports, priority ports, boat harbours or strategic airports and aviation facilities, in accordance with a statutory land use plan or master plan; or
3. **coastal protection work** or work necessary to protect **coastal resources** or **coastal processes**.

Table 8.3: Operational work for tidal works which is not assessed by local government

Performance outcomes

PO24 Tidal works are sited and designed to operate safely during and following a **defined storm tide event**.

Acceptable outcomes

AO24.1 Tidal work is designed and located in accordance with the Guideline: Building and engineering standards for tidal works, Department of Environment and Heritage Protection, 2017.

Reference documents

Department of Environment and Science, [Guideline – SDAP State code 8: Coastal development and tidal works](#)

Department of the Environment, Water, Heritage and the Arts 2009, [National Assessment Guidelines for Dredging 2009](#)

Department of Environment and Heritage Protection 2016, [Environmental offsets framework documents](#)

Department of Environment and Heritage Protection 2017, [Guideline: Building and engineering standards for tidal works](#)

Department of State Development, Infrastructure and Planning 2014, [Significant Residual Impact Guideline](#)

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Glossary of terms

Agreement with a local government is an agreement between the Department of Environment and Science (DES) and a local government in regard to a specified location, alignment and conceptual design of an **erosion control structure**, being:

1. an agreement between the two parties in writing; or
 2. the endorsement by DES of a document provided by a local government (including a Shoreline Erosion Management Plan, or a planning scheme that integrates the natural hazards, risk and resilience state interest in the State Planning Policy 2017);
- supporting a proposed **erosion control structure** at a location, with or without qualifications.

Artificial waterway see section 8 of the *Coastal Protection and Management Act 1995*.

Note: **Artificial waterway** means an artificial channel, lake or other body of water. An **artificial waterway** includes:

1. an access channel
2. an artificial channel that is formed because land has been reclaimed from **tidal water** and is intended to allow boating access to allotments on subdivided land
3. other artificial channels subject to the ebb and flow of the tide
4. any additions or alterations to an **artificial waterway**.

However, an **artificial waterway** does not include the following:

1. a swimming pool
2. an ornamental pond of no more than 5 000 square metres in area
3. a pond for aquaculture or for treating effluent
4. a freshwater storage reservoir for domestic water supply
5. a water storage facility situated on a natural watercourse and used for irrigation or other agricultural purposes
6. a part of a river, creek or stream in which water flows in a natural channel, whether artificially improved or not
7. a drain for carrying stormwater or other material
8. any of the following used for accessing port infrastructure if constructed in the area of a port for which a port authority or port operator is responsible:
 - a. a navigation channel
 - b. a harbour swing basin
 - c. a berth pocket
 - d. a berth approach or departure path.

Beach nourishment means the replenishment of a beach system using imported sediment to balance erosion losses or to re-establish a wider beach and dune system. It does not include the creation of a new beach.

Beneficial reuse means using **dredged material** for a purpose that provides social, economic or environmental benefits (or a combination of these). It includes **beach nourishment**, **reclamation**, environmental restoration purposes (such as restoring wetlands or nesting islands) and use on land for fill or construction purposes.

Coastal building line see the *Coastal Protection and Management Act 1995*.

Note: **Coastal building line** means a line declared as a **coastal building line** under the *Coastal Protection and Management Act 1995*.

Coastal-dependent development:

1. means development that in order to function must be located in **tidal waters** or be able to access **tidal water**; and
2. may include, but is not limited to:
 - a. industrial and commercial facilities such as ports, harbours and navigation channels and facilities, aquaculture involving marine species, desalination plants, tidal generators, **coastal protection works**, **erosion control structures**, **public marine development** and **beach nourishment**;
 - b. tourism facilities for marine (boating) purposes;
 - c. community facilities and sporting facilities which require access to **tidal water** in order to function, such as surf clubs, marine rescue, rowing and sailing clubs;
 - d. co-located residential and tourist uses that are part of an integrated development proposal (e.g. mixed use development) incorporating a marina, if these uses are located directly landward of the marina and appropriately protected from natural hazards; but
3. does not include:
 - a. residential development, including canal development, as the primary use;
 - b. waste management facilities, such as landfills, sewerage treatment plants;
 - c. transport infrastructure, other than for access to the coast.

Coastal erosion means the loss of land or the removal of beach or dune sediments by wave action, wind action, tidal currents or water flows or by permanent inundation due to **sea level rise**.

Coastal management district see the Planning Regulation 2017.

Note: **Coastal management district** means a **coastal management district** under the *Coastal Protection and Management Act 1995*, other than an area declared under section 54(2) of that Act.

Coastal processes means the natural processes of the coast, including:

1. sediment transport to and along the coast;
2. wind, waves, tides and currents which transfer energy to the coast and drive sediment transport;
3. fluctuations in the location and form of landforms and the foreshore and associated ecosystems from sediment transport (erosion and land building); and
4. changes in sea level; ecological processes (including growth and spread of native plants); and the natural water cycle (for example coastal wetlands' role in filtration and flood mitigation).

Coastal protection work means any permanent or periodic work undertaken primarily to manage the impacts of **coastal erosion** or **storm tide inundation**, including the use of **erosion control structures** and altering **coastal processes** such as sediment transport.

Coastal resources means the natural resources of the coastal zone. It includes natural and physical features and landforms, **coastal processes**, vegetation, wildlife, the marine environment, quarry material, soil, water and air.

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.

Defined storm tide event (DSTE) means the event, measured in terms of likelihood of reoccurrence, and associated inundation level adopted to manage the development of a particular area. The DSTE is equivalent to a one in 100 year average recurrence interval storm event incorporating:

1. **sea level rise**; and
2. an increase in cyclone intensity by 10 percent relative to maximum potential intensity.

Note: Where **storm tide inundation** levels have not been determined by a local study, the **defined storm tide event level** can be determined by reference to default **storm tide inundation** area mapping, as depicted in the **DA mapping system**. In these mapping layers, **storm tide inundation** is based on default values of 1.5 metres above highest astronomical tide (HAT) for South East Queensland and 2.0 metres above HAT for the remainder of the state. Where required, the storm tide level can be related back to Australian Height Datum by reference to the Queensland Tide Tables.

Defined storm tide event level means the peak water level reached during a **defined storm tide event**.

Dredged material means mud, sand, coral, shingle, gravel, clay, earth and other material removed by **dredging** from the bed in **tidal water**. Dredged material includes **dredge spoil**, quarry material where it is removed from **tidal water** as a commercial product and sand dredged for **beach nourishment**.

Dredging means the mechanical removal of **dredged material** from below **tidal water**. It excludes minor adjustments to the bed surface to level troughs and peaks and where bed material is only redistributed locally (bed levelling).

Dry-land marina means a marina created by the excavation of land above the high-water mark.

Environmental value see the *Environmental Protection Act 1994*.

Note: **Environmental value** means:

1. a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
2. another quality of the environment identified and declared to be an **environmental value** under an environmental protection policy or regulation.

The Environmental Protection (Water and Wetland Biodiversity) Policy 2019 states the **environmental values** of waters.

Erosion control structure means a structure designed to protect land or to permanently alter sediment transport processes and includes structures such as revetments (including seawalls), groynes, artificial reefs, or breakwaters.

Erosion prone area means an area declared to be an **erosion prone area** under section 70(1) of the *Coastal Protection and Management Act 1995*.

Note: The **erosion prone area** is indicatively shown on the **DA mapping system**.

Erosion prone areas are identified in accordance with the methodology set out in the Coastal Hazard Technical Guide, Department of Environment and Heritage Protection, 2013 and use the following factors to account for the projected impacts of climate change by the year 2100:

1. a **sea level rise** factor of 0.8 metres;
2. an increase in the maximum cyclone intensity by 10 percent.

Essential community infrastructure is:

1. emergency services infrastructure;
2. emergency shelters;
3. police facilities;
4. hospitals and associated facilities;
5. stores of valuable records or heritage items;
6. infrastructure forming part of the electricity transmission grid or supply network;
7. communications facilities;
8. sewerage treatment plants;
9. water treatment plants.

Fit for purpose revetment means a revetment that:

1. is lawfully constructed;
2. is designed to protect against coastal erosion conditions at the site or can meet required design standards (e.g. Australian Standards);
3. has been maintained to the approved design.

Imminent threat from erosion means an area potentially affected by erosion from a one in 100 year annual recurrence interval (ARI) design storm event.

Marine access purpose means a structure in **tidal water** used to facilitate vessel access for people between land and a **navigable waterway**. This includes jetties, pontoons and boat ramps but excludes decks and boardwalks.

Matters of state environmental significance see schedule 2 of the Environmental Offsets Regulation 2014.

Note: **Matters of state environmental significance** are **prescribed environmental matters** under the Environmental Offsets Regulation 2014 that require an **offset** when a prescribed activity will have a **significant residual impact** on the matter. A **matter of state environmental significance** is any of the following matters:

1. regional ecosystems under the *Vegetation Management Act 1999* that:
 - a. are endangered regional ecosystems
 - b. are of concern regional ecosystems
 - c. intersect with a wetland shown on the vegetation management wetlands map
 - d. contain areas of essential habitat shown on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife
 - e. are located within the defined distances stated in the Environmental Offsets Policy 2014 from the defining banks of a relevant watercourse or drainage feature as shown on the vegetation management watercourse and drainage feature map
 - f. contain remnant vegetation and are areas of land determined to be required for ecosystem functioning ('connectivity areas')
2. wetlands in a wetland protection area or wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environmental Protection Policy 2019
3. wetlands and watercourses in high ecological value waters as defined in schedule 2 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019
4. designated precincts in strategic environmental areas under the Regional Planning Interests Regulation 2014
5. threatened wildlife (plants and animals) under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006
6. protected areas under the *Nature Conservation Act 1992* excluding coordinated conservation areas
7. highly protected zones of state marine parks under the *Marine Parks Act 2004*
8. declared fish habitat areas under the *Fisheries Act 1994*
9. waterways that provide for fish passage under the *Fisheries Act 1994* if the construction, installation or modification of waterway barrier works carried out under an authority will limit the passage of fish along the waterway
10. marine plants under the *Fisheries Act 1994*
11. legally secured **offset** areas.

Navigable waterway means waters with a sufficient depth and width to allow safe passage by all vessel sizes and types that frequently use the area.

Offset means environmental **offset** under the *Environmental Offsets Act 2014*.

Note: Environmental **offset** means an activity undertaken to counterbalance a **significant residual impact** of a prescribed activity on a **prescribed environmental matter**, delivered in accordance with the Environmental offsets framework. The **prescribed environmental matters** assessed under the SDAP are **matters of state environmental significance**.

Prescribed environmental matters see the Environmental Offsets Regulation 2014.

Note: A **prescribed environmental matter** is any species, ecosystem or other similar matter protected under Queensland legislation for which an environmental **offset** may be provided. A **prescribed environmental matter** may be a matter of national, state or local environmental significance, however, assessment criteria in the SDAP only relate to **matters of state environmental significance**. Each of the **prescribed environmental matters** are listed under the Environmental Offsets Regulation 2014.

Prescribed water contaminants see the *Environmental Protection Act 1994*.

Note: See schedule 10 of the Environmental Protection Regulation 2019 for a list of **prescribed water contaminants**.

Private marine development means a work for a non-commercial purpose attached to private land and extending over abutting **tidal water**.

Public marine development means development for public use that requires location in or adjacent to **tidal water** to function.

Reclamation see the *Coastal Protection and Management Act 1995*.

Note: **Reclamation** of land under **tidal water** means raising the land above the high-water mark, whether gradually and imperceptibly or otherwise, by carrying out works, including **dredging** and the depositing of solid material.

Redevelopment means development that affects permanent built structures on an already developed site.

Redevelopment includes the expansion of a building footprint or addition of a structure, reconstruction or remodelling an exterior, demolition and replacement of existing structures.

Sea level rise means an increase in sea level caused by global warming due to climate change. Sea level rise is projected to be 0.8 metres from the present day to 2100.

Note: **Sea level rise** projections based on the best available science are prepared by the Intergovernmental Panel on Climate Change.

Significant buildings or infrastructure means a building or infrastructure:

1. in good condition and repair;
2. used for residential, commercial or infrastructure purposes;
3. of a design which cannot be readily dismantled and relocated (excluding foundations);
4. of high economic value.

Significant residual impact see the *Environmental Offsets Act 2014*.

Note: **Significant residual impact** is an impact, whether direct or indirect, of a prescribed activity on all or part of a **prescribed environmental matter** that:

1. remains, or will or is likely to remain, (whether temporarily or permanently) despite on-site mitigation measures for the prescribed activity;
2. is, or will or is likely to be, significant.

Guidance for determining if a prescribed activity will have a **significant residual impact** on a **matter of state environmental significance** is provided in the Significant Residual Impact Guideline, Department State Development, Infrastructure and Planning, 2014.

State coastal land see the *Coastal Protection and Management Act 1995*.

Note: **State coastal land** means land in a **coastal management district** other than land that is:

1. freehold land, or land contracted to be granted in fee simple by the state; or
2. a state forest or timber reserve under the *Forestry Act 1959*; or
3. in a watercourse or lake as defined under the *Water Act 2000*; or
4. subject to a lease or licence issued by the state.

State coastal land includes land that is, or is at any time, covered by **tidal water**.

Storm tide inundation means temporary inundation of land by abnormally high ocean levels caused by cyclones and severe storms.

Temporary, readily relocatable or able to be abandoned means a structure that, if threatened by **coastal erosion**, will be relocated, removed or allowed to be lost rather than protected from the impacts because it is:

1. of low economic value; and
2. is capable of being disassembled, is easily removed, or loss by erosion is of low consequence; and
3. is not an intrinsic part of infrastructure or will have high social value or need; or
4. intended to remain in place for only a short period and then removed, whether or not it is threatened by **coastal erosion**.

Tidal water see the *Coastal Protection and Management Act 1995*.

Note: **Tidal water** means:

1. the sea and any part of a harbour or watercourse ordinarily within the ebb and flow of the tide at spring tides; or
2. the water downstream from a downstream limit as defined under the *Water Act 2000*.

Water quality objectives means the numerical concentration limits, mass or volume limits per unit of time or narrative statements of indicators established for waters to enhance or protection the **environmental values** for those waters set out in:

1. schedule 1 of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019, for water mentioned in the policy; or
2. otherwise, the Queensland Water Quality Guidelines 2009.