SDAP Supporting Information

Stormwater and drainage in a state-controlled road environment

Purpose

This document provides explanatory guidance to support the state's requirements to mitigate stormwater and drainage impacts on a state-controlled road, as stated in *State code 1: Development in a state-controlled road environment* and *State code 6: Protection of state transport networks* of the State Development Assessment Provisions (SDAP).

The content in this section supports the performance outcomes outlined in:

State code 1: Development in a state-controlled road environment

- Table 1.2.1: Development in a state-controlled road environment
  - Stormwater and drainage (**PO12-PO14**)
- Table 1.2.3: Development in a future state-controlled road environment
  - Stormwater and drainage (**PO36-PO37**)

State code 6: Protection of state transport networks

- Table 6.2.2: All Development
  - Stormwater and drainage (**PO11-12**)

What is the issue?

Stormwater and drainage impacts associated with development, including during construction and ongoing operation, have the potential to adversely impact the safety and operational integrity of an existing or future state-controlled road or road transport infrastructure. This includes stormwater and drainage:

- resulting in a worsening or actionable nuisance on an existing or future state-controlled road or road transport infrastructure. For example, the discharge of stormwater from a subject site causing flooding on a state-controlled road.
- interfering with and/or causing damage to road transport infrastructure. For example, run off from a subject site causing siltation of stormwater and drainage infrastructure.
- causing erosion which results in the de-stabilisation of an existing or future state-controlled road or road transport infrastructure.

Adverse impacts can be caused by changes to peak discharges, flood levels, the frequency/duration of flooding, flow velocities, water quality, sedimentation, and scour effects.

What is the objective?

The objective of the provisions is to ensure:

- development does not create a safety hazard for users of a state-controlled road
- development does not compromise the structural integrity of a state-controlled road corridor, future state-controlled road, road transport infrastructure or road transport infrastructure works

- development does not compromise the state's ability to maintain and operate state-controlled roads, or significantly increase the cost to maintain and operate state-controlled roads
- that any stormwater, flooding and drainage impacts of development are managed to ensure no worsening or actionable nuisance to a state-controlled road, future state-controlled road or road transport infrastructure.

How to achieve the performance outcomes

State code 1: Performance outcome 12 and performance outcome 36

State code 6: Performance outcome 11

No acceptable outcomes have been provided. Therefore, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include but is not limited to the following actions:

- provide basic stormwater information to enable development assessment officers to establish whether the proposed development will result in stormwater and drainage impacts on an existing or future state-controlled road or road transport infrastructure. Guidance on preparing basic stormwater information is provided in Appendix 1.
- provide a stormwater management plan prepared in accordance with *Queensland Urban Drainage Manual* and certified by a Registered Professional Engineer of Queensland (RPEQ) that demonstrates the development will not result in an actionable nuisance or worsening of stormwater, flooding or drainage impacts in an existing or future state-controlled road. Guidance on preparing a stormwater management plan is provided in Appendix 1.

State code 1: Performance outcome 13 and performance outcome 37

State code 6: Performance outcome 12

Acceptable outcomes have been provided for this performance outcome. An application can demonstrate it has complied with the acceptable outcomes by providing the following information as part of the application:

- basic stormwater information demonstrating that:
  - the development does not create any new points of discharge to a state-controlled road
  - stormwater run-off is discharged to a lawful point of discharge
  - the development does not worsen the condition of an existing lawful point of discharge to a state-controlled road.

Where a development cannot comply with the acceptable outcomes, an application must demonstrate compliance with the performance outcome. Demonstrating compliance with the performance outcome may include providing a stormwater management plan demonstrating that development does not unlawfully discharge run-off from the site to a state-controlled road.

Guidance on preparing basic stormwater information and a stormwater management plan is provided in Appendix 1.

State code 1: Performance outcome 14

State code 6: Performance outcome 13

Acceptable outcomes have been provided for this performance outcome. An application can demonstrate it has complied with the acceptable outcomes by providing the following information as part of the application:

- basic stormwater information demonstrating that stormwater will not be discharged to stormwater infrastructure for a state-controlled road. Guidance on preparing basic stormwater information is provided in Appendix 1.

Where a development cannot comply with the acceptable outcomes, an application must demonstrate compliance with the performance outcomes. Demonstrating compliance with the performance outcomes may include, but is not limited to, the following:

- provide an erosion and sediment control plan certified by an RPEQ and prepared in accordance with:
  - Chapter 13 of the *Road Drainage Manual*, Department of Transport and Main Roads, 2015
  - *Best Practice Erosion and Sediment Control Document*, International Erosion Control Association, Australasia.

Contact details

Please contact your local Transport and Main Roads office for more information. The contact details for your local Transport and Main Roads office are listed at www.tmr.qld.gov.au/About-us/Contact-us/In-person/Roads-offices.

Appendix 1: Basic stormwater information and stormwater management plan

Basic stormwater information (including a suitable scaled drawing) must include the following:

- existing site topography/levels. Contour information can be sourced from the relevant local government or prepared by a registered surveyor.
- proposed finished levels for the proposed development.
- information verifying whether the subject site is flood prone. Flood searches and mapping can often be obtained from the relevant local government.
- existing drainage infrastructure on the subject site and in the immediate surrounding area. For example, culverts or kerb and channel in surrounding roads. This should include the location of all natural and constructed drainage features such as pits, culverts, open channels, drains, detention or retention basins as well as gullies, wetlands, waterways and the like. This information is best provided in the form of a Site Detail and Contour Survey prepared by a registered surveyor.
- proposed drainage infrastructure to be provided by the development. This will include any devices such as pipes, downpipes, pits, detention basins, tanks and drains that are proposed to be used to manage stormwater and connect it to the proposed point of discharge. The location where stormwater is proposed to be discharged should be clearly identified, preferably by a RPEQ certified drawing showing the proposed stormwater drainage design for the development with associated hydraulic calculations.
- proposed increase in impervious area of the subject site as a result of the development. This will include the location and extent of any proposed hardstand or sealed surfaces. This should be clearly illustrated on the architectural drawings showing the proposed development.

A stormwater management plan should:

- be prepared in accordance with the relevant performance outcomes of the State Development Assessment Provisions and with consideration given to the *Queensland Urban Drainage Manual* (available at https://www.dews.qld.gov.au/water-supply-regulations/urban-drainage).
- demonstrate that the management of stormwater (quantity and quality) post development can achieve a no worsening impact (on the pre-development condition) for all flood and stormwater events that exist prior to development and up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)). Stormwater management for the proposed development must ensure no worsening or actionable nuisance to the state-controlled road corridor, including road transport infrastructure, caused by peak discharges, flood levels, frequency/duration of flooding, flow velocities, water quality, sedimentation and scour effects.
- incorporate appropriate hydraulic and hydrological analysis demonstrating:
  - design flood peak discharges for the site and surrounding area which exist prior to the development for all flood and stormwater events up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)). This should include at least the following flood and stormwater events: 50%, 20%, 10%, 5%, 2% and 1% AEP (equivalent to 2, 5, 10, 20, 50 and 100 year ARI events).
  - design flood peak discharges for the site and surrounding area after the development has occurred for all flood and stormwater events up to a 1% Annual Exceedance Probability (AEP) (equivalent to 1/100 year Average Recurrence Interval (ARI)). This should include at least the following flood and stormwater events: 50%, 20%, 10%, 5%, 2% and 1% AEP (equivalent to 2, 5, 10, 20, 50 and 100 year ARI events).

  - where flood modelling is required to be undertaken, the flood model needs to be extended to encompass the state-controlled road corridor. Mapping should be provided to illustrate the pre-development scenario and the post development impacts for all relevant flood events.

- ensure the following are addressed, where applicable:
  - all relevant legal points of discharge for the development site are identified. No new discharge points for stormwater will be permitted on the state-controlled road
  - the impact of existing or proposed noise barriers on overland flow paths is taken into account
  - overland flow paths are identified and hydraulic conveyance is maintained on the site as part of the proposed development
  - flood storage capacity is maintained on the site as part of the proposed development
  - the adverse impacts from sheet flow on the state-controlled road are prevented
  - the proposed development does not cause a concentration of stormwater (including floodwater) flows discharging on the state-controlled road during construction or thereafter
  - retaining structures, filling/excavation, landscaping, construction activities or any other works to the land have been designed to include provision for drainage so as not to adversely impact on the state-controlled road
  - the proposed development does not impede or interfere with any drainage, stormwater or floodwater flows from the state-controlled road
  - stormwater or floodwater flows have been designed to maintain the structural integrity of the road transport infrastructure
  - existing stormwater drainage infrastructure on the state-controlled road is not interfered with or damaged by the proposed development such as through concentrated flows, surcharging, scour or deposition, and
  - the quality of stormwater discharging onto the state-controlled road is not reduced through erosion and sedimentation.
- include details of the mitigation measures proposed to address any potential stormwater impacts (including flooding impacts) of the proposed development. The design flood peak discharges should be shown for the mitigated case to demonstrate there is no worsening impact on the state-controlled road.