

Floodway and Causeway Strategy

2015 - 2018

Version Control

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Scenic Rim Regional Council
82 Brisbane Street, Beaudesert QLD 4285
Phone: 5540 5111
Web: www.scenicrim.qld.gov.au

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Introduction

Floodway and Causeways are generally utilised on low volume roads as a lower cost structure to cross watercourses throughout the region.

A floodway or causeway is generally provided as part of the road infrastructure to service locations prone to flooding for short to medium duration (dependant on rainfall intensity and duration). The infrastructure generally consists of a concrete pavement, underground culverts and erosion control measures within the watercourse.

This Strategy is to provide the basis for development and management of the floodway and causeway assets within the transport network which services the Region.



Sarabah Road, Sarabah

Strategy Context

This Strategy has been developed with consideration to the linkages with a range of strategic documents, legislation, guidelines and standards relating to Council's provision of floodway and causeways.

The below figure shows the interconnection of the Floodway and Causeway Strategy within other existing documents of Council.

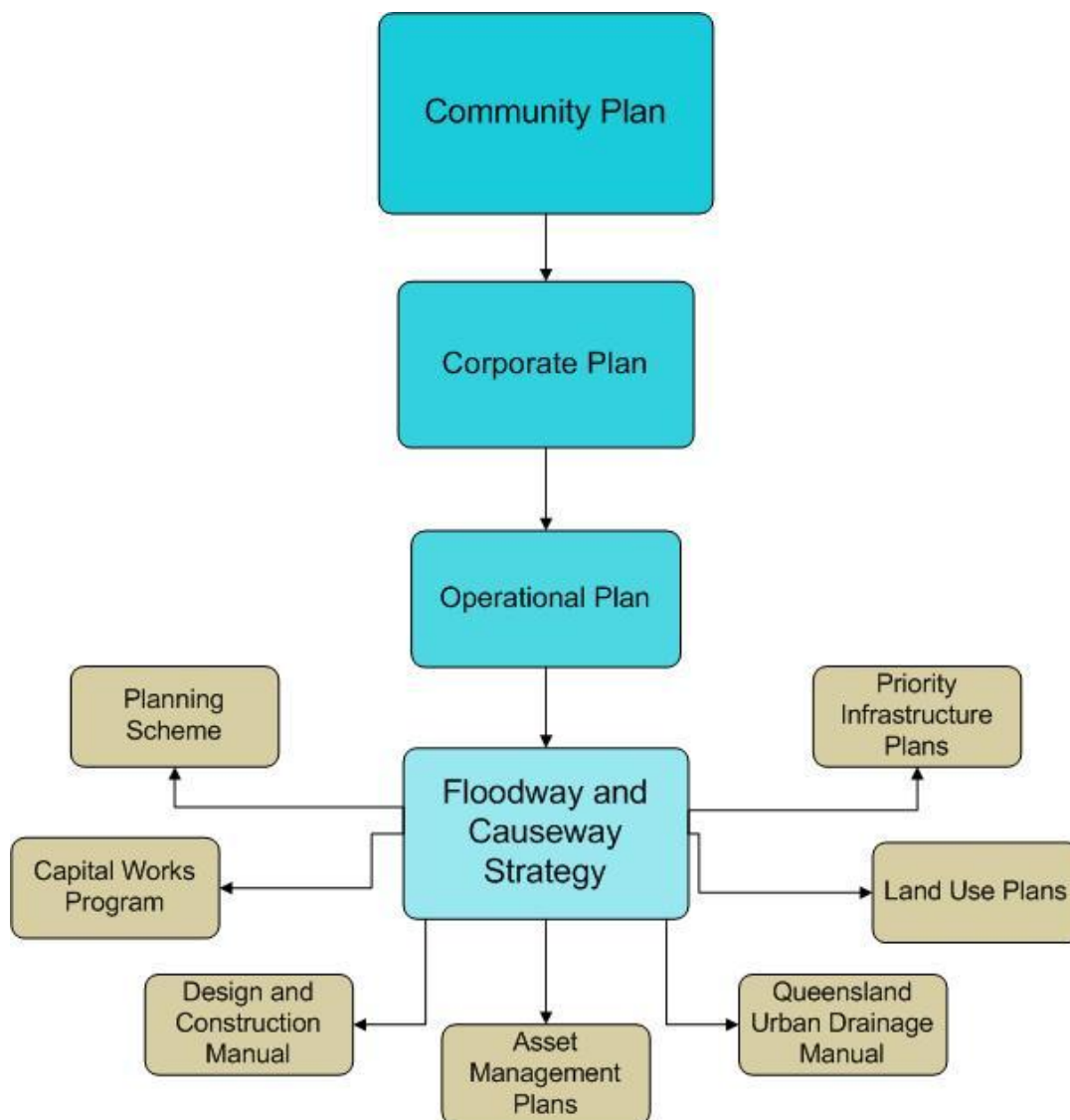


Figure 1. Strategy Plan linkages

Corporate Strategy Documents

The Scenic Rim Community Plan 2011 – 2026 has been prepared following extensive consultation with the community. It is the overarching Plan for the future of the Scenic Rim region in that it “provides a shared vision and plan for the region’s future and will guide Council, other levels of government and community action on issues including the environment, economic development, social well-being, infrastructure and governance.

A theme in the Community Plan which focuses on Accessible and Serviced Region is appropriate to this Strategy. One of the outcomes in this theme is for “Infrastructure and services keep pace with growth and changing needs and are compatible with our environment”.

The Corporate Plan Statement of Intent for Accessible and Serviced Region states “Council will provide and advocate for infrastructure and services in accordance with the prioritised needs of our growing community”. This Strategy must respond to assessment of the prioritised needs of the community. A Prioritisation Model is essential to assist in the development of project priorities.

Legislative Requirements

The *Local Government Act 2009* has been developed with the purpose to provide for “the way in which a local government is constituted and the nature and extent of its responsibilities and power; and a system of local government in Queensland that is accountable, effective, efficient and sustainable”

As defined in *Chapter 3 Part 3* of the *Local Government Act 2009*, a road is “an area of land that is dedicated to public use as a road; or an area of land that – is developed for, or has as one of its main uses, the driving or riding of motor vehicles; and is open to, or used by, the public; or a footpath or bicycle path; or a bridge, culvert, ford, tunnel or viaduct.”

The Act outlines the control of roads and bridges by Council, the ability to acquire land for a road or bridge, closure of bridges, and unauthorised works on roads and bridges, amongst other items associated with roads and bridges.

In addition to the above State legislation there may be applicable legal or policy requirements under the common law, local government planning schemes, local laws and/or road and transport guidelines and codes.

A floodway or causeway when referenced in legislation is generally referred to as a ford.



Council Local Laws and Policies

Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2011, has the purpose to "protect the health and safety of persons using local government controlled land, facilities, infrastructure and roads; and preserve features of the natural and built environment and other aspects of the amenity of local government controlled land, facilities, infrastructure and roads". The Local Law achieves this by regulating access to roads (including bridges), and prohibiting or restricting certain activities.

Further to *Local Law No. 4*, a number of Subordinate Local Laws are relevant to road use, these include *Subordinate Local Law No. 1.1 (Alteration or Improvement to Local Government Controlled Areas and Roads) 2011*, *Subordinate Local Law No. 1.2 (Commercial Use of Local Government Controlled Areas and Roads) 2011*, *Subordinate Local Law No. 1.7 (Gates and Grids) 2011*, *Subordinate Local Law No. 1.14 (Undertaking Regulated Activities on Local Government Controlled Areas and Roads) 2011*, *Subordinate Local Law No. 1.15 (Carrying Out Works on a Road or Interfering with a Road or its Operation) 2011*, and *Subordinate Local Law 4 No. (Local Government Controlled Areas, Facilities and Roads) 2011*.

Guidelines and Standards

The Austroads Guidelines are the standards used by Council for the design and management of the transport network. Complementing the Austroads Guidelines, are ARRB (Australian Road Research Board) Guidelines. The Department of Transport and Main Roads also have reference standards and guidelines in the building of these structures.

The installation of a new, renewed or upgraded floodway, or causeway, is required to be designed and constructed in accordance with these standards and guidelines, ensuring a safe and efficient network (to current standards) for the Scenic Rim region and its community.

Notwithstanding the above technical documents, Registered Professional Engineers (Qld) assumes full legal responsibility for all designs. This is a state legislative requirement, under the *Professional Engineers Act*.

Disaster Management

Floodways and causeways are positioned in watercourses, and are subjected to flooding during high frequency rainfall events; with the structures subject to impact from high velocity water flow.

The restoration of this infrastructure following natural disasters is prioritised based on community needs and levels of service. At times, due to funding restrictions and other priority work, some of the network may function at a lower level of service for a period of time, via the use of detours and temporary side-tracks.

The Natural Disaster Relief and Recovery Arrangements (NDRRA) is a joint funding initiative of the Commonwealth and State Governments to provide disaster relief and recovery payments for restoration of public infrastructure to help communities recover from the effect of natural disasters.

Following a declared disaster event, there is a period of emergent works whereby Council will rectify the priority areas of the infrastructure network to ensure the immediate safety and connectivity of the community. The remainder of the work to restore the network to its previous level of function is completed in the restoration period, whereby Council assesses the damage, and submits proposals for approval under NDRRA Guidelines. Once approved, Council (or its contractors) restoration of the network is undertaken.

Town Planning

The preparation of the region's Planning Scheme is an opportunity to promote the importance transport network in land use planning.

Development assessment plays a significant part in the process to ensure suitable alignment of transport corridors. Conditions of development application approvals allow for the designers to achieve efficient development in terms of a sustainable transport network.

Floodways and causeways should be acknowledged as a viable alternative for watercourse crossings when low level development occurs on particularly lower order roads within the transport network; therefore providing conditions of development application approvals allowing for the designers to achieve efficient development in terms of transport management.

Infrastructure Agreements (IAs)

Infrastructure Agreements with developers have been used for the identification of major transport network needs and contributions required for delivery. The opportunity exists to utilise the same framework for this infrastructure; however it is highly unlikely that a floodway or causeway would be considered appropriate on higher order transport corridors.



Strategic Priority Areas

Strategic Priority Areas have been developed to address these needs.

The provision of a safe transport network provides a link for visitors and residents to commute throughout the Scenic Rim region.

In order to ensure the ongoing provision of such a network to meet transport needs, it is necessary to manage the floodway and causeway network through a variety of documents, including a Floodway and Causeway Strategy which outlines the key Strategic Areas of focus.

The Strategy covers the Strategic Priority areas of:

Community Service Levels

- Ensure the floodway and causeway infrastructure provides a level of service that meets the needs of the community.

Personal and Property Security

- Provision of floodway and causeway infrastructure to ensure stormwater does not adversely impact on persons using the transport network.



Zillman Flat Road, Roadvale

Floodway and Causeway Network Infrastructure

- Provide a network of floodway and causeway infrastructure servicing the transport needs of the community throughout the region in a sustainable manner.

Infrastructure Operation and Maintenance

- Ensure the constructed infrastructure operates in an efficient and effective manner.
- Ensure the infrastructure is maintained over its useful life to perform as the design intended.

Land Use Planning

- Ensure land use planning delivers development that has a focus on sustainable and efficient transport network.

Project Prioritisation

- Ensure renewal, upgrades and new floodway and causeway infrastructure projects are prioritised according to network need.

Strategic Priority Area 1: Community Service Levels

Ensure the floodway and causeway infrastructure provides a level of service that meets the needs of the community.

Community service levels must be established through defining the objectives which the floodway and causeway infrastructure must achieve and to link the design standards to these service levels.

Austrorads, ARRB, Australian Standards and the State government's Department of Transport and Main Roads, provide guidelines on the assessment of floodway and causeway infrastructure; as well as providing direction on the design of this infrastructure class.

Strategies

- 1.1 Review community service objectives and subsequent service levels for the provision of the current floodway and causeway assets.
- 1.2 Adjust, where necessary, the design criteria for the provision of infrastructure in order to achieve the service levels.
- 1.3 Undertake assessment of the existing transport network in relation to floodway and causeway assets on a priority basis, to assess the capacity and identify gaps where the infrastructure does not meet the standards; and therefore unable to achieve community service levels.

Strategic Priority Area 2: Personal and Property Security

Provision of floodway and causeway infrastructure to ensure stormwater does not adversely impact on persons using the transport network.

Without effective floodways and causeways to manage water flow depth, velocity and pathways, travelling within the network during and after rain events would be impeded.

Signage standards have been developed over time by industry professionals for the advising of the travelling public to ensure adverse impacts of stormwater running over the travelled path is identified to inform road users and to minimise personal and property damage.

Strategies

- 2.1 Ensure the safety of the general public through the design and construction of new floodway and causeway infrastructure, while meeting current standards.
- 2.2 Undertake a review of existing floodway and causeway infrastructure to ensure that there are no high risk items of infrastructure, and program the necessary rectification as funding permits.
- 2.3 Review signage annually on the floodway network to ensure signage adequately provides appropriate advice to the road user.
- 2.4 Operate and maintain the existing floodway and causeway infrastructure in order for it to operate at its optimum performance, in regards to personal and property security.

Strategic Priority Area 3: Floodway and Causeway Network Infrastructure

Provide a network of floodway and causeway infrastructure servicing the transport needs of the community throughout the region in a sustainable manner.

The provision of a reliable, safe and sustainable transport network relies on fit for purpose infrastructure, to achieve liveable communities. Design standards provide the basis for the provision of such infrastructure, which will achieve the community service levels.

The use of floodways and causeways for an efficient and effective means of traversing watercourses, on particularly lower order roads within the transport network, is a sustainable option.

While it is generally accepted that existing floodways and causeways provide (in general) an adequate level of service in most circumstances; this may not always be the case.

There is limited information currently available on this particular asset class, with no current mapping data available for location identification purposes.

Strategies

- 3.1 Identify and record all floodway and causeway assets within the region.
- 3.2 Develop an Asset Register which lists all Council controlled floodways and causeways.
- 3.3 Review and assess the network (once known) for its conformance with current standards and develop a program, subject to funding, to replace the infrastructure.
- 3.4 Undertake a full condition assessment of the asset class every three to five years.
- 3.5 Include this asset class within the Road Asset Management Plan.
- 3.6 Recognise funding for renewal of floodways and causeways with regards to available funds; and monitor long-term sustainability of the floodway and causeway network.



Strategic Priority Area 4: Infrastructure Operation and Maintenance

Ensure the constructed infrastructure operates in an efficient and effective manner.

Ensure the infrastructure is maintained over its useful life to perform as the design intended.

The floodway and causeway network requires operational and maintenance activities to maximise the life of the asset and reduce the whole of life costs.

Over time the infrastructure is subject to wear and tear, and at times becomes blocked by debris, reducing the intended level of service provided by the infrastructure. Unless there is an ongoing program to maintain the network through the clearing of debris, silt and vegetation from both the upstream and downstream of the infrastructure, the floodway or cause is unable to perform as expected. High flows, debris collisions and environmental impacts can also cause infrastructure deterioration over time.

A Maintenance Management System is required to ensure the infrastructure is kept at a standard to achieve service levels.

Strategies

- 4.1 Develop and implement a Maintenance Management System for floodways and causeways infrastructure.
- 4.2 Determine minimal acceptable program for operation and maintenance budget allocations.
- 4.3 Develop and implement an operational and maintenance inspection program to ensure defects are logged and rectified, as funding permits.

Strategic Priority Area 5: Land Use Planning

Ensure land use planning delivers development that has a focus on sustainable and efficient transport network.

Land Use Planning is an appropriate tool to manage the impacts of new development that impact on the transport network.

Floodways and causeways should not be modulated as an effective way to traverse watercourses on lower order roads.

Strategies

- 5.1 Develop the region's Planning Scheme with consideration of principles and key actions of this strategy.
- 5.2 Condition development in the Scenic Rim region to ensure a sustainable, planned transport network is created/ maintained.
- 5.3 Integrate Infrastructure Plans with other strategic Council documents to ensure the transport network is maintained appropriately.
- 5.4 Ensure Infrastructure Agreements (IAs) are developed that appropriate levels of funding is provided for floodway and causeway assets from developers.



Strategic Priority Area 6: Project Prioritisation

Ensure renewal, upgrade and new floodway and causeway infrastructure projects are prioritised according to network needs.

As identified in Strategic Priority Area 3: Floodway and Causeway Network Infrastructure, there is limited information on the funding need for this network. Council is yet to develop a prioritisation model for this class of assets; with funds currently allocated on an annual basis to the asset class meeting community needs undetermined. Projects current listed on Council's Ten Year Capital Works Program have been identified purely from a condition only assessment.

Strategies

- 6.1 Monitor transport network demands to determine floodway and causeway effectiveness in meeting the demands identified.
- 6.2 Develop a floodway and causeway infrastructure project prioritisation model.
- 6.3 Undertake a reassessment of the Ten Year Capital Works Program, based on a project prioritisation model.

