

FLOODPLAIN MANAGEMENT IN THE CITY GREATER GEELONG

DRAFT Corangamite Regional Floodplain Management Strategy

The Corangamite Catchment Management Authority has been working with local communities, Traditional Owners, Local Government Authorities, the Victorian State Emergency Service (SES) and other regional agencies to prepare the draft Corangamite Regional Floodplain Management Strategy. The Strategy responds to outcomes of the 2016 Victorian Floodplain Management Strategy, with the aim to:

- **Build flood resilience** – by sharing information about flood behaviour;
- **Reduce flood risks** – through emergency management, flood mitigation infrastructure works and risk management;
- **Avoid future flood risks** – through land use planning and building controls;
- **Manage residual flood risks** – through flood insurance, sharing flood risk information and flood emergency management
- **Protect floodplains for their ecological and cultural values** – by integrating the management of flood risks with protecting the environmental and cultural values of natural floodplains.

The City contains twenty-one named waterways. These waterways form an important network, with a combined length of about 1,350 km. Major watercourses in the City include the Barwon, Moorabool, Hovells and Little Rivers (the Little River is outside the Corangamite CMA region). Parts of Moorabool River and its tributary, Sutherland Creek, which form the western border of the City and Hovells Creek which forms the eastern border. Other watercourses include the Yarram and Waurm Ponds Creeks.

The Barwon River is the largest watercourse flowing through Geelong itself. As most of its catchment lies outside the City, flooding of the lower Barwon may be independent of local rainfall.

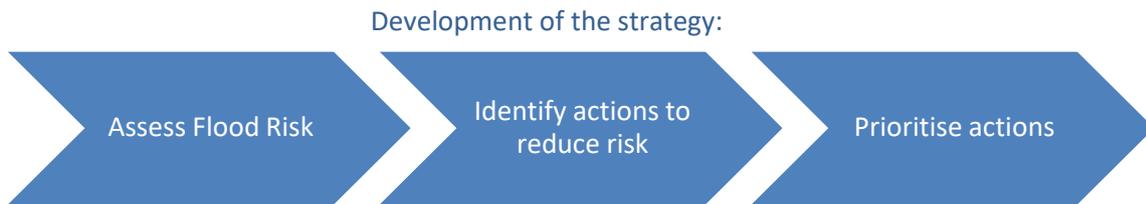
The river rises in the Otway Ranges and flows generally north-east to Inverleigh then turns east through Geelong and then passes through the Lake Connewarre/Reedy Lake system on the Bellarine Peninsula before discharging to the ocean at Barwon Heads.

The Barwon River catchment is 3,925 km² to the Macintyre Bridge gauge in Geelong and is made up of 1,020km² for the Barwon River to Inverleigh, 900 km² for the Leigh River to Inverleigh and 1,150 km² for the Moorabool River. The balance is the main stem of the Barwon from Inverleigh to Geelong. The bigger floods at Geelong usually result from rainfall that causes flooding in all three major rivers. The relative timing of the peaks becomes very important.

There are also number of swamps, lakes and wetlands on both sides of Barwon Heads. Lake Victoria, west of Point Lonsdale, drains a considerable catchment extending west to Collendina and part of Ocean Grove. The outlet from the Lake winds its way through to Swan Bay.

The City also contains a significant drainage infrastructure network of which 1,898 km is owned and maintained by the City. This network is subject to flooding where it has not been designed to cope with high intensity rainfall, which was evident in the January 2016 severe thunderstorm event in Geelong.

This brochure summarises the information in the draft Corangamite Regional Floodplain Management Strategy relevant to the City of Greater Geelong, and is consistent with the Shire's intent and capacity to address flooding issues across its entire municipality.



City of Greater Geelong Flood Risks

Point Lonsdale and South Geelong were identified as priority risk areas within the City of Greater Geelong. Point Lonsdale, with the flood risk associated with Lake Victoria and South Geelong with flood risks associated with the Barwon River.

Additional risks

Stormwater flooding is a significant risk to the City. There are a number of urbanised catchments that are subject to periodic flash flooding or stormwater flooding. The Moolap area is one such catchment. It has a history of flooding, primarily due to poor drainage caused by the flat topography and ground elevations relative to Stingaree Bay and a number of 'bottlenecks' in the overland flow paths. The catchment supports urban and industrial development and is mostly less than 2.5 m above mean sea level.

Addressing Flood Risk

Actions that do the most to reduce risk have been prioritised. All suggested actions are subject to feasibility, which may require further detailed investigation, and the availability of funding. The suggested actions have been prioritised over a regional scale, and may not address some specific localised issues including stormwater flooding, which are more appropriately dealt with through other channels.

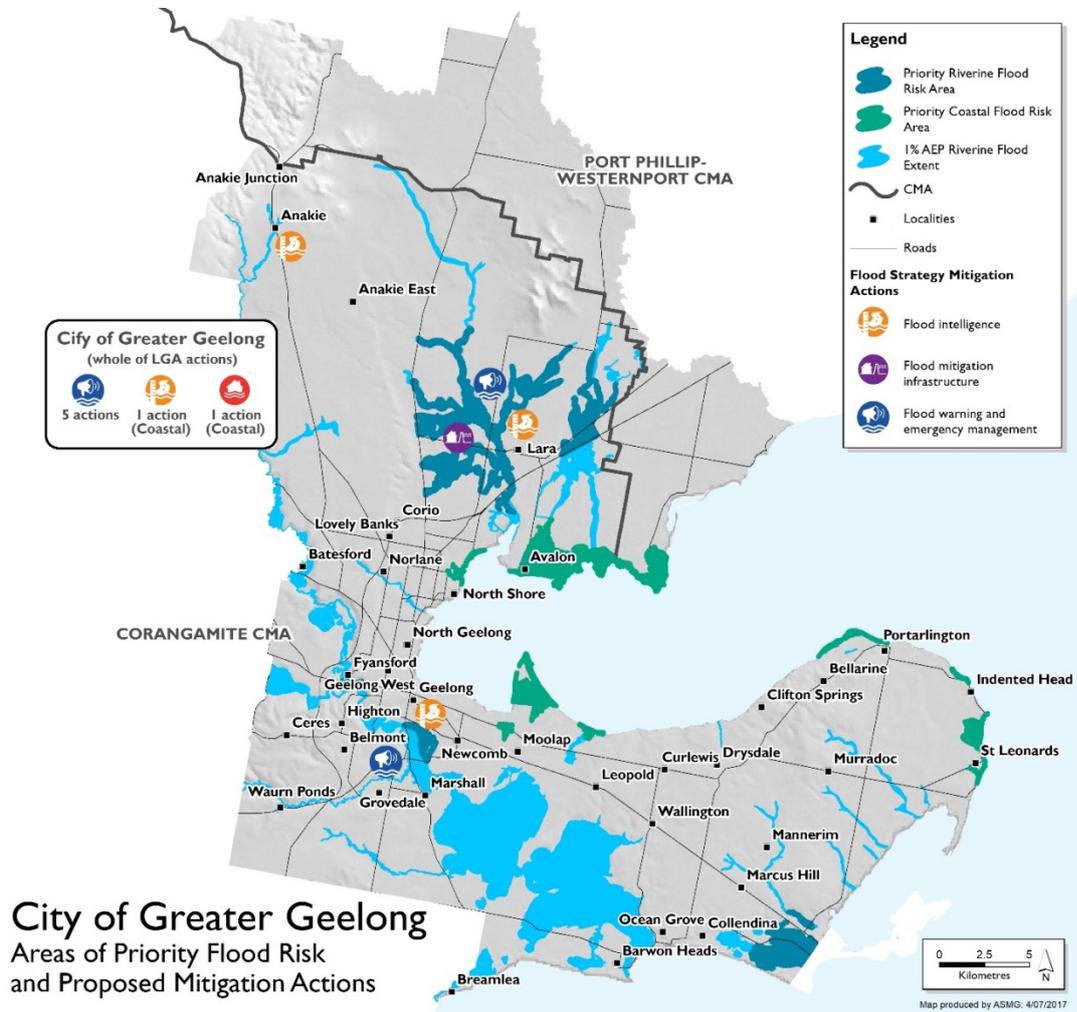
The flood mitigation actions proposed can be grouped into four categories:

Flood mitigation infrastructure involves the construction and management of physical works designed to reduce the impacts of flooding, such as levees, floodways and retarding basins. Example actions include managing waterways, developing retarding basins and developing or managing levees.

Flood warning and emergency management involves community education and awareness in support of flood preparedness to reduce existing flood risks. Example actions include the installation of flood warning systems on roads prone to regular flooding, and developing and sharing detailed flood maps. It also includes emergency management planning to manage residual risks such as updating Flood Emergency Management Plans.

Flood intelligence involves acquiring information about flood behaviour in order to understand the flood risk in more detail. An example action is the development of a flood study for a river reach.

Land use planning relates to tools such as Planning Schemes and building regulations, which manage development in flood-prone areas to reduce risk to life and property associated with new development. An example action is updating Planning Schemes to reflect current flood mapping.



Possible Flood Mitigation Actions

	<p>Flood Mitigation Infrastructure</p> <ul style="list-style-type: none"> • Implement recommendations from the Lara Flood Levee Audit, SMEC 2016.
	<p>Flood Warning and emergency management</p> <ul style="list-style-type: none"> • Ensure that relevant components of the Barwon and Moorabool flood study are operationalised. For example, updating the MFEP to include: <ul style="list-style-type: none"> ○ inundation plans that include above floor flooding ○ impacts on significant infrastructure ○ key triggers for evacuations and road closures • Undertake community flood education activities and develop flood awareness products for Geelong that may include pre-recorded flood education videos, local flood guides, community response plans, community signs and gauge boards. This work will include educating the community about the role of retarding basins in floodplain management. • Identify priority locations for new rain gauges within the Council area and seek to add these to the Regional Water Monitoring Partnership. • Investigate how to add the Barwon River flood warning system to the regional water monitoring partnership (RWMP). • Implement recommendations from the Lara flood and drainage study, for example updating the MFEP to include: <ul style="list-style-type: none"> ○ inundation plans that include above floor flooding ○ impacts on significant infrastructure ○ key triggers for evacuations and road closures,
	<p>Flood Intelligence</p> <ul style="list-style-type: none"> • Support the implementation of the Barwon and Moorabool River flood study. • Review the need for a flood study for Anakie Township. • Complete flood and drainage strategy for Lara. • As part of the Coastal Hazard Assessment, develop an adaptation pathways plan and implement the recommendations from this adaptation pathways plan.
	<p>Land Use Planning</p> <ul style="list-style-type: none"> • Investigate the most appropriate planning process to ensure flood study outputs from the 'Our Coast' program are incorporated into the Planning Scheme.