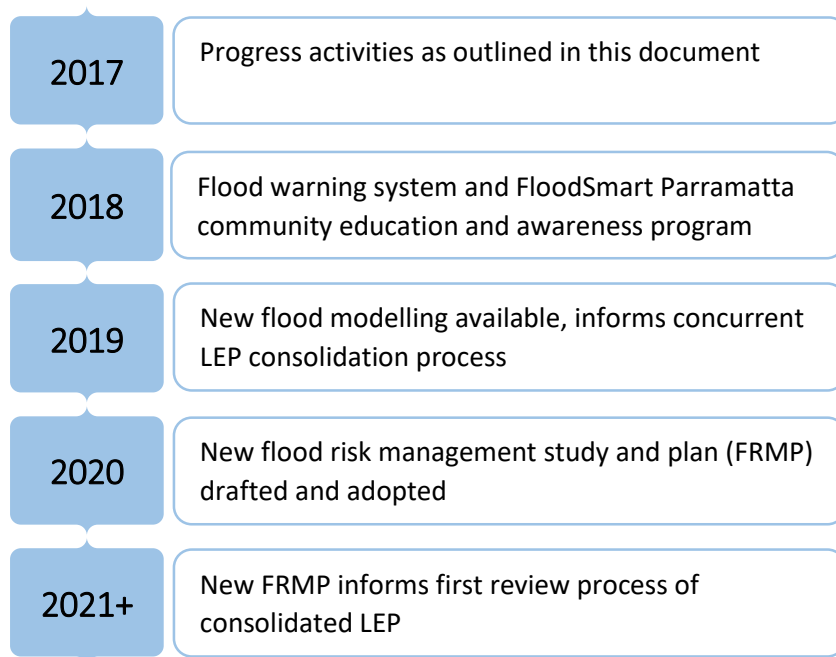


Attachment 3: City of Parramatta Flood Risk Management Activities

Introduction

The Parramatta LGA (including the Parramatta CBD) is, on occasion, severely affected by flooding. The Parramatta CBD is likely to be the most vulnerable major Australian CBD to flash flooding, due to the very rapid rate of rise of floodwaters and very little (if any) advance warning of flooding. In addition, Parramatta (especially the CBD) is experiencing rapid increases in population of both residents and workers. In response, City of Parramatta Council has worked to reduce risks of flooding to the community for many years, and continues to develop new strategies to continue to reduce these risks. This document describes past, present and future activities in this area.

High-Level Estimated Timeline



Past Activities

Flood Risk Management Plans (FRMPs)

FRMPs for the Upper Parramatta River (upstream of Charles St Weir) and for the Lower Parramatta River (downstream of Charles St Weir) were produced in 2003 and 2005, respectively. These plans recommended many actions to reduce flood risks in the LGA. Nearly all of these actions have been carried out, superseded by on-the-ground changes, or found to be impractical.

Literature survey of flood related information

This literature survey for Vineyard Creek was completed in 2012.

Creation of new flood models for Duck River

These new flood models were completed in 2012, and followed by creation of a FRMP in 2013.

New LGA-wide Flood Policy

This policy was adopted by Council in 2014, and encourages measures that “reduce or eliminate the impact of flooding and flood liability on individual owners and occupiers of flood prone property, and reduce private and public losses resulting from floods.”

Flood Planning Levels survey

The type of flood planning rules and flood planning level currently varies depending on the type of land use in question. For example, there is one rule for residential properties, but a more stringent rule for vulnerable land uses such as hospitals. A survey of how 52 Councils across NSW manage flood planning levels has recently been completed, and analysis of the results will feed into a discussion at Parramatta about which planning rule is appropriate for each circumstance. This survey was completed in 2016.

Architectural response to flooding

Council has commissioned a study looking at how to combine good urban form and design with public safety and property protection requirements to manage flooding. For example, the necessity to raise minimum floor levels above the 1 in 100 year flood level can result in buildings being raised much higher than the surrounding public domain, creating adverse public realm outcomes. This project was recently completed (mid-2017).

Supporting flood-related studies to Parramatta CBD Planning Review

These are included as separate attachments to this Exceptional Circumstances application and include:

- Draft Update of Parramatta Floodplain Risk Management Plans (2016) prepared by consultants Molino Stewart
- Parramatta CBD Flood Evacuation Assessment (2017) prepared by consultants Molino Stewart
- Horizontal Evacuation Pilot Study for Parramatta CBD (2017) prepared by consultants SJB Urban.

Current Activities

Parramatta Floodplain Risk Management Committee

This Committee has been active since 2014, and consists of Councillors, members of the business community, major landholders, members of the community, and State Government representatives. The Committee meets regularly to discuss the major strategic flood issues facing the LGA and provides advice to Council.

Creation of a new, integrated flood model covering the Parramatta River catchment

The model will replace the existing, separate flood models for the Upper and Lower Parramatta River catchments, and will create a baseline for all future modelling in the LGA. The model will create flood maps for mainstream (overbank) flooding for the Parramatta River and its tributaries. It will also create overland flow (along drainage lines) flood mapping – a first for Parramatta. The model is expected to be completed in late 2019.

Development of a single approach to modelling the new City of Parramatta council areas

Following the amalgamation of local government areas in 2016, City of Parramatta gained flood-prone areas from a range of councils. This project reviews existing flood model work and looks at a consistent approach to combine with the flood model for the upper and lower Parramatta River Catchments.

Development of a flood warning system for the Parramatta River

A flood warning system is being developed that will provide some advance notice of forthcoming flooding. This will allow pre-flood activation of emergency plans which could include partial evacuation of some parts of the CBD, sending out of warning SMSs, safe shut-down of essential utilities, and activation of patient and hospital management plans at Westmead Hospital. The flood warning system is expected to be fully operational in 2018.

Flood education and media strategy – FloodSmart Parramatta

Currently media and education projects related to flooding are carried out on a project-by-project basis, as required. However, it is proposed to create a long-term (>5 years) strategy to raise awareness

of the issues relating to flooding throughout the Parramatta community. This work supports the development of the flood warning services and buildings on community resilience.

Draft Parramatta CBD Flood Risk Management Plan (FRMP)

A new FRMP for the CBD is being developed, as an integral part of the current Parramatta CBD Planning Review project, which envisages substantial population increase. This Plan recommends many strategies to manage the risk of flooding in the CBD, such as use of shelter in place (vertical evacuation) for parts of the CBD which cannot be evacuated before they are cut off by floodwaters.

Revision of flood related DCP clauses for Parramatta CBD

Once the flood risk plan for the Parramatta CBD is adopted, a series of changes to the DCP will need to be made to put into effect the recommendations of the Plan. Other changes to the DCP are likely to be required based on other flood related projects currently underway (see above). The revision of the DCP is likely to happen in 2018.

Parramatta Emergency Management Plan

This plan updates the previous DISPLAN and describes the actions that would be taken by the Local Emergency Management Committee in support of the relevant agency during a disaster; the Emergency Management Plan is planned for completion in 2018.

Future Activities

Creation of an FRMP for the whole Parramatta River catchment

This will follow the creation of the new flood model, and will describe a comprehensive series of actions to further reduce flood risks in the LGA. This is estimated for completion in 2021.

High flood hazard properties

Several hundred high risk properties across the LGA are likely to be severely damaged or destroyed in a 1 in 100 year or greater flood. This project will rank these properties by relative risk, and propose actions to reduce or eliminate the flood risk to the residents of each property. This project is planned for 2019, and will be done as part of the Flood study.

Stormwater Drainage Master Plan for the CBD

The stormwater disposal network in the Parramatta CBD is currently able to cope with storms of between 1 in 5 year and 1 in 20 year return period. Once rainfall exceeds these capacities, flooding of roads, footpaths and (ultimately) buildings starts to occur. This project will investigate the whole stormwater network and develop plans to ensure a universal level of service of 1 in 20 year stormwater capacity, thus reducing nuisance flooding and ensuring roads remain open longer.

Upgrade of Charles Street Weir

The current Parramatta CBD weir creates a weir pool upstream of the weir for aesthetic and recreational purposes, and includes sluice gates which can be opened manually to lower upstream river levels to perform bank works and clear up the CBD section of the River. Following on from a feasibility study, this project aims to build a new weir that would increase water flow through and over the weir, (including use of an automatically-opening sluice gate). Flood modelling has shown that such a weir would reduce nuisance flooding of the foreshore and would result in lower flood levels in the Parramatta CBD, upstream of the weir.

Post-flood rapid recovery

After a major flood the long-term economic damage to the flood-affected region can be very significant. For example, research has shown approximately 50% of SME's (small to medium enterprises) goes into receivership within 18 months of being flood-affected. In addition, major public services such as electricity, water, and sewerage can be damaged and unavailable for many weeks. This project will investigate what Council can do in the days, weeks, and months after a flood to minimise long-term social, economic and environmental impacts, and will provide a roadmap to set

up all necessary processes and activities before a flood actually occurs. These processes and plans can then be activated without delay once a major flood has occurred in the LGA.

Total economic cost of flooding in the Parramatta CBD

This project will carry out an in-depth, economically rigorous investigation into the total costs of major flooding in the Parramatta CBD, at a local, state and national scale. Once these costs have been calculated, they can form part of the discussion about the level of resources that should be assigned to reduce or eliminate the effects of flooding on the Parramatta CBD.

Resilience of the Parramatta transport system to flooding

This project will investigate how the Parramatta transport system (rail, road, cycleways, footpaths) is affected by major flooding, and make recommendations to improve its resilience to flooding.

Underground car parks

Underground car parks are very dangerous places to be during a flood, as large volumes of water pour into the carpark, lights may go out, and cars and other hazardous debris float. This project will investigate the best methods to (a) stop water getting into the car park in the first place and (b) if it does get in how to minimise property damage and risk to life.

Onsite detention inspection and regulation

Onsite detention (OSD) is a widely used technique to temporarily store floodwaters within the catchment of a river, to reduce downstream flooding. Currently, OSD is used on private land in the Parramatta River catchment, but there is no ongoing inspection/maintenance/certification process for these OSD facilities, and it is likely that many of them will be failing. The project will investigate what methods could be effective to maintain the function of onsite detention in the catchment, including possible regulation and inspection of the facilities.