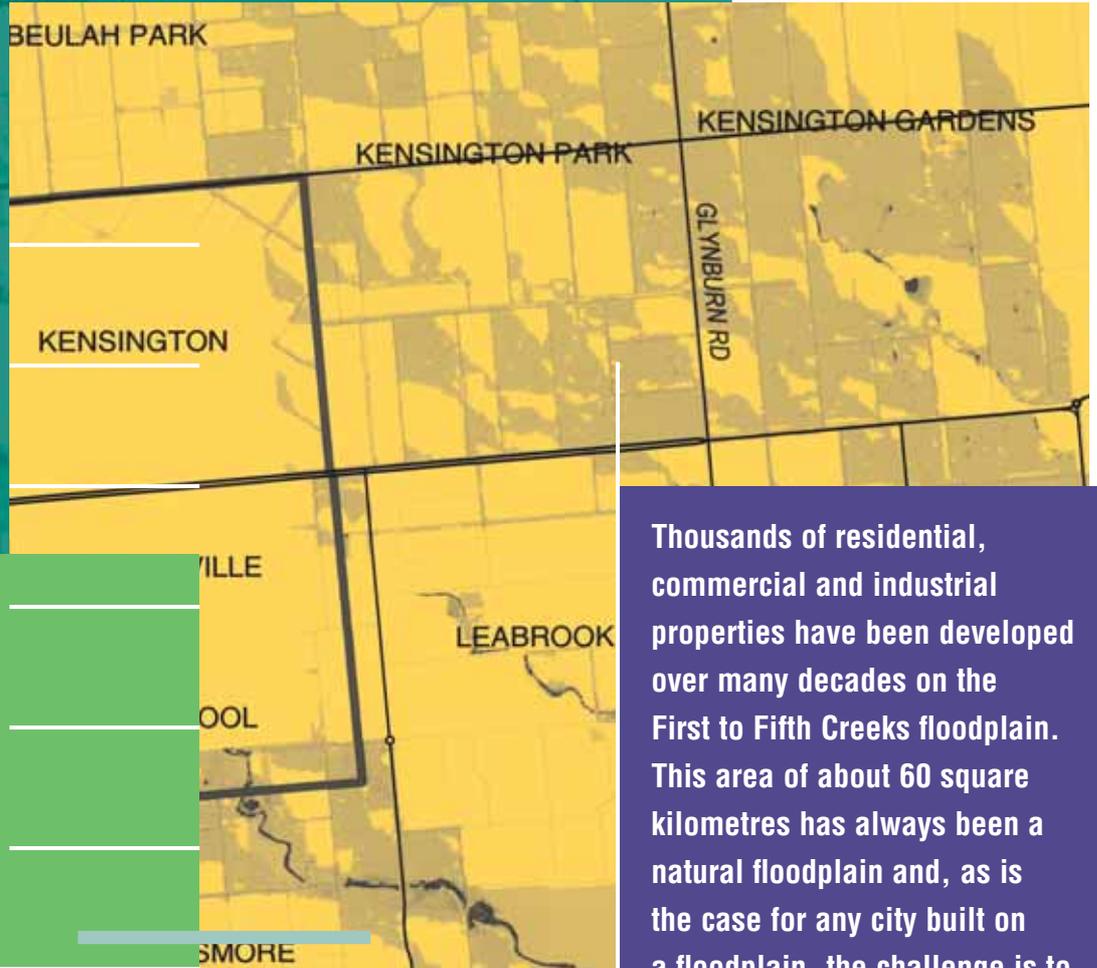


First to Fifth Creeks

Floodplain Mapping Study



Information Brochure



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Thousands of residential, commercial and industrial properties have been developed over many decades on the First to Fifth Creeks floodplain. This area of about 60 square kilometres has always been a natural floodplain and, as is the case for any city built on a floodplain, the challenge is to manage the potential for flooding.

This floodplain mapping study is a significant step towards achieving that goal.

July 2007

First to Fifth Creeks Floodplain Mapping Study

The First to Fifth Creek Floodplain includes First, Second, Third, Fourth, Fifth, Botanic and Stonyfell Creeks.

Although there has been some localised mapping of creeks in the past, never before have they been comprehensively studied as part of the broader floodplain, which is situated between the Adelaide Hills and the River Torrens.

The development of new technologies has now enabled the City of Burnside, along with the Cities of Adelaide, Campbelltown and Norwood Payneham & St Peters and the Adelaide and Mount Lofty Ranges Natural Resources Management (AMLR NRM) Board, to map the First to Fifth Creek Floodplain in detail, taking into account changes in the urban and creek environments which have occurred over the last 30 to 40 years.

The map in this brochure shows the 1-in-100 year floodplain for the City of Burnside. It provides an up-to-date understanding of the likely extents and behaviours of potential floods arising from Burnside's creeks, and will assist property owners, Councils and Government bodies to better prepare for and manage flood events.

A full and detailed 1-in-100 year floodplain map is available for viewing in the Customer Service Centres at the Cities of Adelaide, Burnside, Campbelltown and Norwood Payneham & St Peters, as well as at the office of the AMLR NRM Board.

Background

The Cities of Adelaide, Burnside, Campbelltown and Norwood Payneham & St Peters and the AMLR NRM Board have joined together to provide leadership on issues of flooding and watercourse management for First, Second, Third, Fourth, Fifth, Botanic and Stonyfell Creeks.

With input from the Bureau of Meteorology and substantial funding from State and Federal Governments, the Councils and the AMLR NRM Board appointed consultants to develop up-to-date floodplain inundation and hazard maps.

What is a floodplain?

A floodplain is an area of land subject to flooding arising from creeks. Essentially, the whole of Adelaide lies on a floodplain between the Adelaide Hills and Gulf St Vincent.

What is a floodplain map?

A floodplain map shows the depth of water over a certain area in a given rainfall event. The floodplain map provides authorities with a guide for future development of the urban environment in addition to assisting with the formulation of strategies to reduce and manage flood risk.

The map does not increase the risk or affect the level of flooding over an area or property. It merely provides a prediction, using the best available technology, of the extent of flooding under a given set of conditions.

How was the map created?

The map was generated by computer modelling which predicted how water from a series of 1-in-100 year storm events in both rural and urban catchments would affect the local creek system. This is based on our knowledge of the likely volume of water and the ground level across the catchment.

1-in-100 year flood

The 1-in-100 year flood is a standard measure that is internationally recognised for the management of urban environments.

A flood of such magnitude would be expected to occur, on average, once every 100 years. That means there is a one percent, or 1-in-100, chance of a flood of this magnitude in any one year.

Of course, floods do not occur on a regular basis and a 1-in-100 year flood may not occur in every 100 year period. Conversely there could be several floods that exceed the 1-in-100 year flood levels within any period of 100 years.

It is important to note that while floods greater than that shown on the map are possible, they would occur even less frequently.

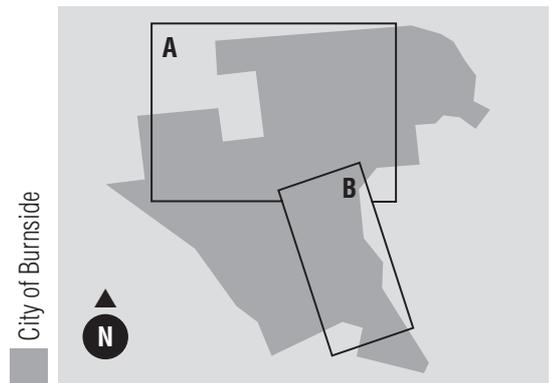
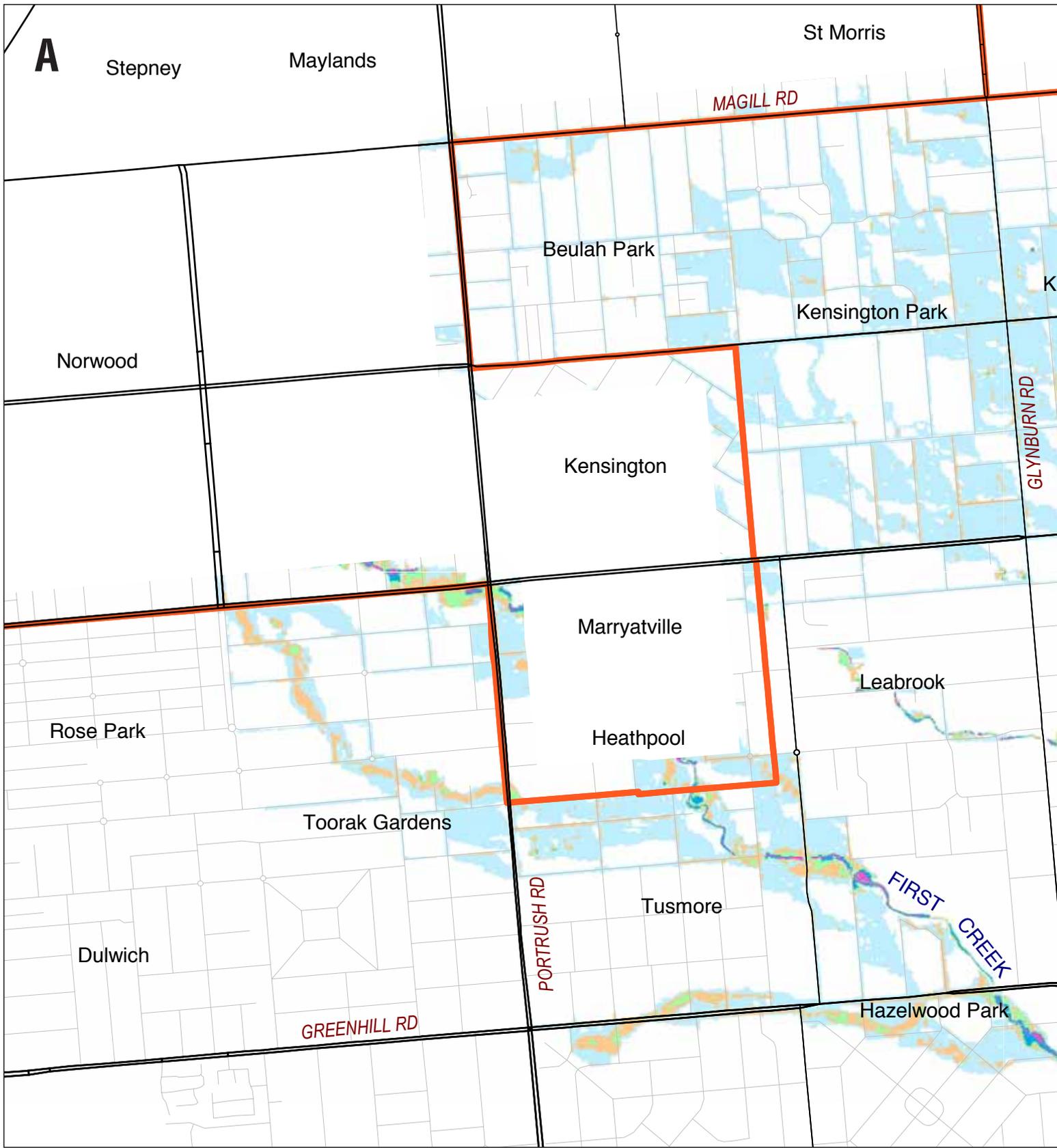
Going forward

The Cities of Adelaide, Burnside, Campbelltown and Norwood Payneham & St Peters, the AMLR NRM Board and the State Government are working together to develop an Urban Stormwater Management Plan for the First to Fifth Creeks catchment area. The Management Plan will, among other things, identify options, priorities and costs for reducing the risk of flooding in vulnerable areas.

In the meantime, the City of Burnside has already responded to the new information that the Flood Plain Mapping Study has provided. Council has engaged engineering consultants to identify and prioritise flood mitigation options for our highest risk watercourse – First Creek.

A range of flood mitigation options are being evaluated to determine their effectiveness, estimated cost and social and environmental consequences. These options include flood control dams, road crossing upgrades, improved channel capacity and temporary detention of floodwaters in Council parks and reserves.

Council will seek opportunities for the joint funding of these initiatives from both State and Commonwealth Governments.



1-in-100 year floodplain map for the City of Burnside

Kensington Gardens

Rosslyn Park

Wattle Park

Erindale

Burnside

B

Burnside

Waterfall Gully

Flood depth zones

Light Blue (Depth less than 0.1 metre)

During a 1-in-100 year flood it is expected that water will be less than 10 centimetres (4 inches) above the ground level. Buildings which are slightly elevated may not be affected.

Orange (Depth 0.1 metre to 0.25 metre)

During a 1-in-100 year flood it is expected that water will be between 10 and 25 centimetres (4 to 10 inches) above ground level and some buildings may be affected.

Green (Depth 0.25 metre to 0.5 metre)

During a 1-in-100 year flood it is expected that water will be between 25 centimetres and 50 centimetres (10 to 20 inches) above ground level. These areas have a medium hazard rating and property damage is possible.

Dark blue (Depth 0.5 metre to 1 metre)

During a 1-in-100 year flood it is expected that water will be between 50 centimetres and one metre (20 inches to about 3 feet) above ground level. These areas have a high hazard rating and property damage is likely.

Pink (Depth greater than 1 metre)

During a 1-in-100 year flood it is expected that water will be greater than one metre above ground level. These areas have a high hazard rating and property damage is likely.

Key

— Council boundary

STONYFELL

CREEK

SECOND CREEK

FIRST CREEK

Protection from Floods

KENSINGTON

In the event of a flood

- Listen to the radio for information and updates
- Turn off electricity, gas and water
- Secure objects that could float around and cause damage
- Move garbage, chemicals and poisons to a high place
- If you have time, elevate valuable possessions in your home, such as personal papers, photo albums, family mementos and electronic equipment, as high as possible
- Avoid wading, even in shallow water. If you must enter shallow floodwater, wear solid shoes and check the depth with a stick
- Avoid fast flowing water. Remember that there may be currents that could be dangerous near stormwater inlets in the street

What to do in a flood

Personal safety is the most important factor to consider during a flood. Although floods greater than the 1-in-100 year event are possible, it is important to remember that the vast majority of the floodplain shown on the map is subject to very shallow water depth and consequently is classified as low risk. In areas of shallow flooding, driving or walking from your home could be more problematic or hazardous than staying at home.

Areas where water is deep or velocity is high – for example, near watercourses – are more hazardous. In this situation evacuation to higher ground may be necessary. Residents in these areas should be aware of their risk and pre-plan their actions in the event of rising floodwaters, in much the same way as Adelaide Hills residents are expected to pre-plan their response to a fire danger.

Flood warnings

A flood monitoring system known as ALERT has been installed by Councils and the Bureau of Meteorology. It consists of a network of rainfall and water level stations connected to computers at Kent Town and the State Emergency Service (SES).

When heavy rain falls, the alarms are triggered and emergency response personnel are alerted to the potential for floods.

However, floods sometimes generate so quickly along some parts of the creeks on the floodplain that it is not realistic to expect any warning of floods. It will be up to individuals to ensure that as far as possible their property is safe from floods.

Insurance

Questions about insurance should be directed to your insurance company.

It is important to ask about flood insurance because standard policies exclude some forms of flooding.

Further information

If you require further information, contact the City of Burnside on 8366 4200.



City of
Norwood
Payneham
& St Peters



Government
of South Australia

Adelaide and
Mount Lofty Ranges
Natural Resources
Management Board



Australian Government

Further Information

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The 1-in-100 year floodplain map for the First to Fifth Creeks catchment covers an area of some 60 square kilometres, stretching from the Adelaide Hills to the River Torrens.

This information brochure only shows the portion of the map relevant to the City of Burnside. Complete maps are available for public viewing in the Customer Service Centres of each Council involved, as well as at the AMLR NRM Board office.

If it appears that your property lies within the floodplain and you would like further information, please contact the City of Burnside on 8366 4200.

Basis of mapping

The data contained on the 1-in-100 year map is based on survey, hydraulic and hydrological modelling (as at 2005) to an accuracy sufficient for broad scale flood risk management and planning. While the modelling reflects current best practice, it is important to note that there are limitations and assumptions associated with the data and the processes on which the models are based. The flood extents shown on this map cannot therefore be regarded as exact predictions.

A significant flood event struck parts of the catchment in November 2005. Recorded rainfall data for that storm was run through the modelling process and the models closely resembled the flooding that actually occurred. This demonstrated the reliability of the modelling process for predicting flooding that can occur within the catchment.

Scope of mapping

The limit of flooding shown on this map is not a boundary between flood prone and flood free land.

Land outside the flood extent shown on this map could be affected by larger storms or flooding from local drainage systems which can occur as a result of localised heavy rainfall or drain blockage.

The modelling and mapping does not deal with the influence of local underground drainage systems.

Reference to other studies and maps should be made in relation to the River Torrens.

Flood behaviour

A flood occurs when a pipe, channel, or creek cannot carry the volume of water entering from a catchment. As a result, floodwaters travel across the surface of the land potentially damaging property and threatening the safety of people in the floodplain. Flooding is a natural event.

Storm durations

The flooding response of a catchment is dependent on the duration of any storm event. Generally shorter, more intense storms produce the greatest flows from urban areas. Longer duration, but less intense, storms produce the greatest flow from undeveloped natural and rural areas.

As a result of this interaction, this map combines the outer flood extent from 30 minute, 90 minute and 72 hour simulated storm events. Because of this, the extent of flooding shown may not occur across the entire area at the same time or during any one storm event.

Flood depths

The flood depth zones on the 1-in-100 year map indicate that the areas of highest flood hazard are along the existing creek lines. Previous information about flood depths along the creeks has resulted in a management approach that remains suitable in light of the new floodplain map information. In essence, the new information does not change the current development controls applicable to areas close to creeks (Watercourse Zone).

Flood inundation away from creeks is generally shallow and of low hazard. Flows in these areas can be affected by kerbs, the stormwater collection system, solid fences, landscaping and buildings. In certain circumstances, new development in these areas may need to modify floor level heights.

Property development and renovations on the floodplain

Controls are currently in place within the Burnside Development Plan for issues relating to flooding. This ensures that development is planned in a way that recognises flood prone areas, public health and safety risks.

Applicants should discuss options available with the Burnside Council before committing to a project.

If you have any questions regarding development on properties in the floodplain area, please contact Council on 8366 4200.