

SOURCES OF DATA FOR THE HAWKESBURY-NEPEAN VALLEY INTERACTIVE FLOOD MAPPING TOOL

May 2024

Area		Flood size / chance				
		Small flood - very high chance (1 in 5 chance per year)	Large flood - high chance (1 in 20 chance per year)	Very large flood – medium chance (1 in 100 chance per year)	Huge flood – low chance (1 in 500 chance per year)	Biggest flood possible - extremely low chance (probable maximum flood)
Nepean River floodplain (Bents Basin near Wallacia to Yarramundi, including Penrith, Emu Plains, etc)		flood information from <i>Hawkesbury-Nepean River Flood Study</i> (2024)				
Hawkesbury River floodplain (Yarramundi to Brooklyn including Richmond, Windsor, etc) ¹		flood information from <i>Hawkesbury-Nepean River Flood Study</i> (2024)				
South Creek Catchment floodplain	Local catchment flooding ^{2,3}	flood information from <i>Wianamatta (South Creek) Catchment Flood Study</i> (2022) (refer to Figure 1 below) ⁴	flood information from <i>Wianamatta (South Creek) Catchment Flood Study</i> (2022) (refer to Figure 2 below)	flood information from <i>Wianamatta (South Creek) Catchment Flood Study</i> (2022) (refer to Figure 3 below)	flood information from <i>Wianamatta (South Creek) Catchment Flood Study</i> (2022) (refer to Figure 4 below)	flood information from <i>Wianamatta (South Creek) Catchment Flood Study</i> (2022) (refer to Figure 5 below)
	Regional backwater flooding ²	downstream of mapped local catchment flood information, flood information from <i>Hawkesbury-Nepean River Flood Study</i> (2024) (refer to Figures 1-5 below)				
Eastern Creek Catchment floodplain	Local catchment flooding ^{2,5}	Not shown ⁶	flood information from <i>Eastern Creek Catchment – Development Scenario Hydraulic Assessment</i> (2016) (refer to Figure 6 below)	flood information from <i>Eastern Creek Catchment – Development Scenario Hydraulic Assessment</i> (2016) (refer to Figure 7 below)	flood information from <i>Eastern Creek Catchment – Development Scenario Hydraulic Assessment</i> (2016) (refer to Figure 8 below)	flood information from <i>Eastern Creek Catchment – Development Scenario Hydraulic Assessment</i> (2016) (refer to Figure 9 below)
	Regional backwater flooding ²	downstream of mapped local catchment flood information, flood information from <i>Hawkesbury-Nepean River Flood Study</i> (2024) (refer to Figures 6-9 below)				

References:

Advisian (2022). *Wianamatta (South Creek) Catchment Flood Study: Existing Conditions*, prepared for Infrastructure NSW, May 2022.

Catchment Simulation Solutions (2016). *Eastern Creek Catchment - Development Scenario Hydraulic Assessment*, prepared for Blacktown City Council. Used with permission.

Rhelm and Catchment Simulation Solutions (2024). *Hawkesbury-Nepean River Flood Study*, prepared for NSW Reconstruction Authority, May 2024.

Notes:

- ¹ The extent and depth of backwater flooding mapped along Colo River, Webbs Creek, Macdonald River and Mangrove Creek is not a direct model output but has been generated through GIS spatial analysis by creating a flood level surface using the peak level near each tributary's junction with the Hawkesbury River, and intersecting this flood surface with the Digital Elevation Model developed for the *Hawkesbury-Nepean River Flood Study (2024)*. Backwater flood extents and depths up these 4 tributaries are approximate only. It is noted that Hawkesbury City Council is in the process of developing flood studies with a specific focus on Colo River, Webbs Creek and Macdonald River. These should be consulted when available.
- ² The boundary between Hawkesbury River backwater flooding and local catchment flooding varies with flood likelihood/size – being further up South and Eastern creeks with rarer, larger Hawkesbury River floods. Figures below show where the flood information from each source has been joined for each flood likelihood/size.
- ³ Flood extents upstream of Elizabeth Drive are not presented.
- ⁴ Some significant landform changes have occurred since the topographic base was prepared for *Wianamatta (South Creek) Catchment Flood Study: Existing Conditions*. For this reason, GIS spatial analysis was used to adjust flood information for a localised part of the floodplain north of Melonba for the 1 in 5 chance per year event, to better match the changed landform.
- ⁵ Some significant landform changes have occurred since the topographic base was prepared for *Eastern Creek Catchment – Development Scenario Hydraulic Assessment (2016)*. For this reason, flood information for the Nirimba Fields and Fairwater development areas are not shown for the 1 in 5, 1 in 20, 1 in 100 and 1 in 500 chance per year floods. Until such time that flood maps are updated, Blacktown Council advises interested parties to contact floodadvice@blacktown.nsw.gov.au for advice in these areas.
- ⁶ The *Eastern Creek Catchment – Development Scenario Hydraulic Assessment (2016)* adopted a Hawkesbury River tailwater level for the 1 in 5 chance per year flood that is significantly different to the *Hawkesbury-Nepean River Flood Study (2024)* level. This makes it difficult to join the flood datasets.

Figure 1: Adopted boundary between Hawkesbury River backwater flooding and Wianamatta (South Creek) local catchment flooding – 1 in 5 chance per year

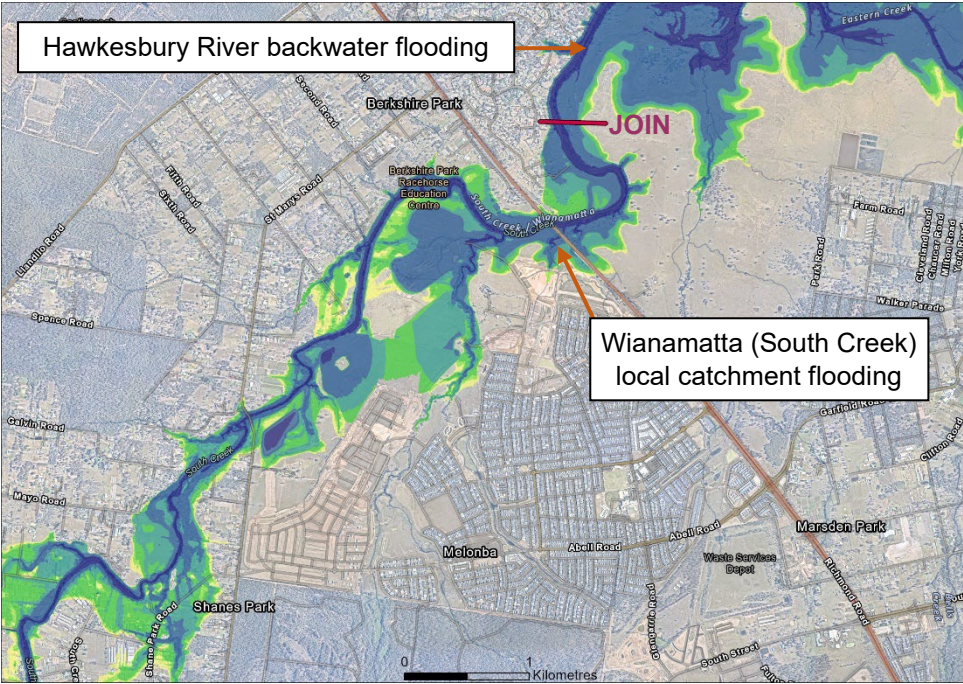
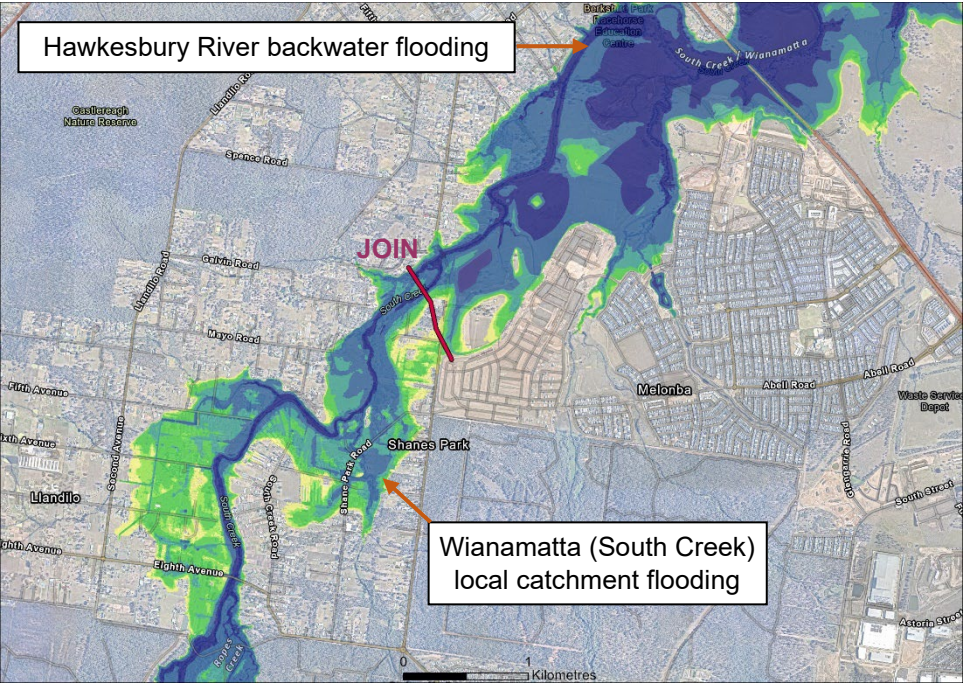


Figure 2: Adopted boundary between Hawkesbury River backwater flooding and Wianamatta (South Creek) local catchment flooding – 1 in 20 chance per year



Hawkesbury River backwater flooding

Wianamatta (South Creek) local catchment flooding

JOIN

0 1 Kilometres

Hawkesbury River backwater flooding

Werrington Downs

Werrington County

Werrington

North St Marys

St Marys

Wianamatta (South Creek) local catchment flooding

0 1 Kilometres

Figure 5: Adopted boundary between Hawkesbury River backwater flooding and Wianamatta (South Creek) local catchment flooding – probable maximum flood (PMF)

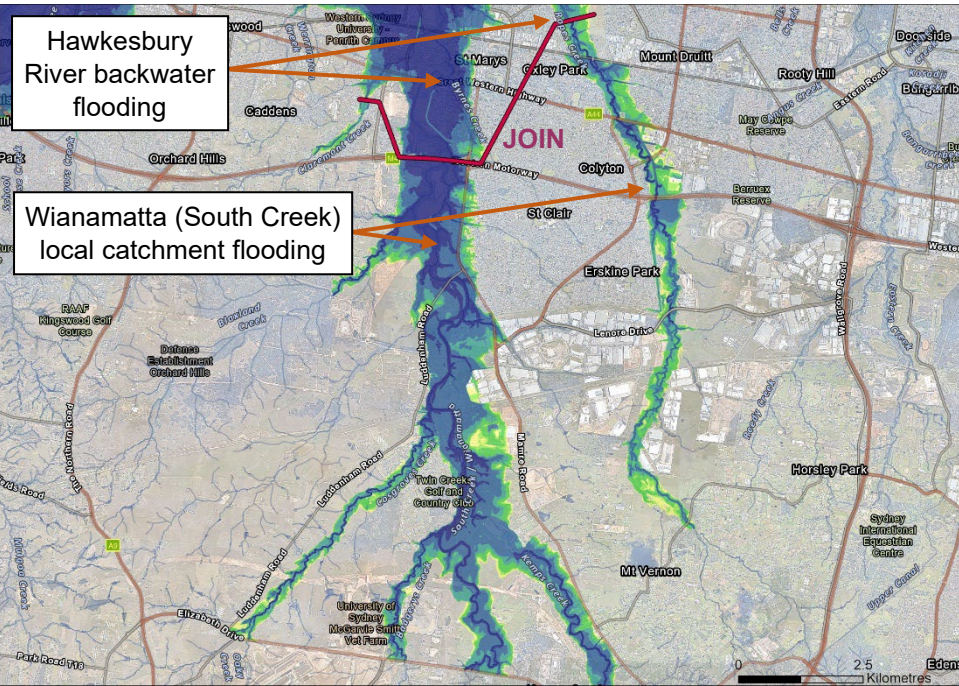


Figure 6: Adopted boundary between Hawkesbury River backwater flooding and Eastern Creek local catchment flooding – 1 in 20 chance per year

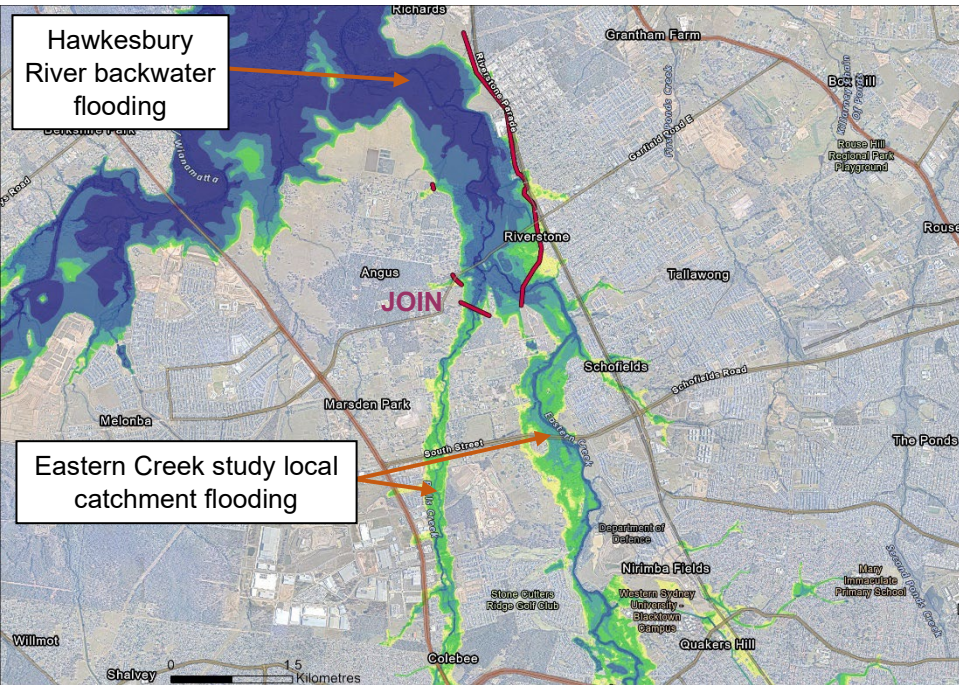


Figure 7: Adopted boundary between Hawkesbury River backwater flooding and Eastern Creek local catchment flooding – 1 in 100 chance per year

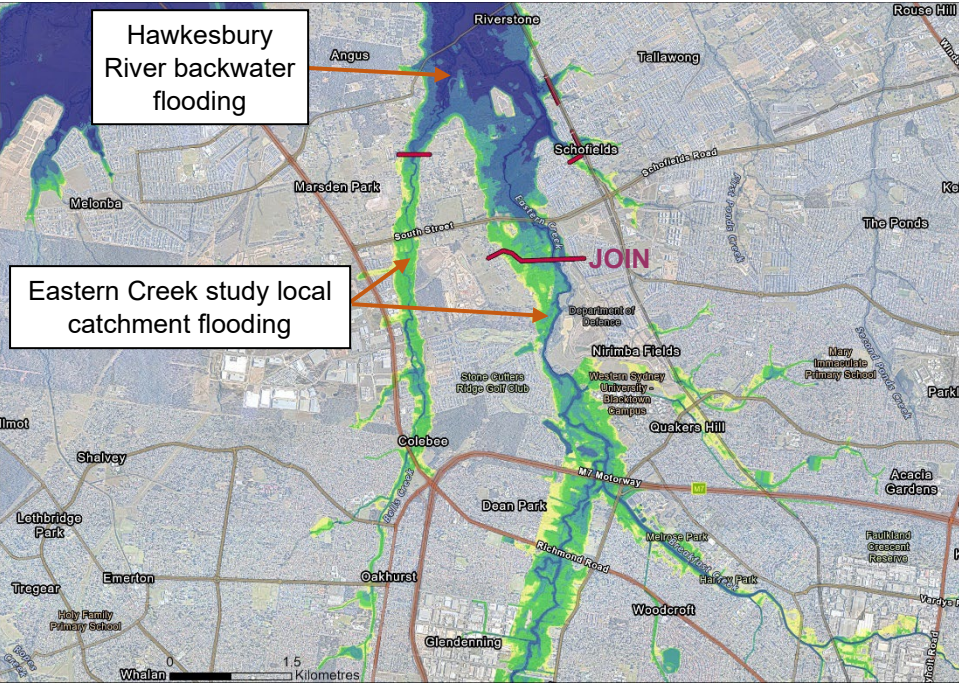


Figure 8: Adopted boundary between Hawkesbury River backwater flooding and Eastern Creek local catchment flooding – 1 in 500 chance per year

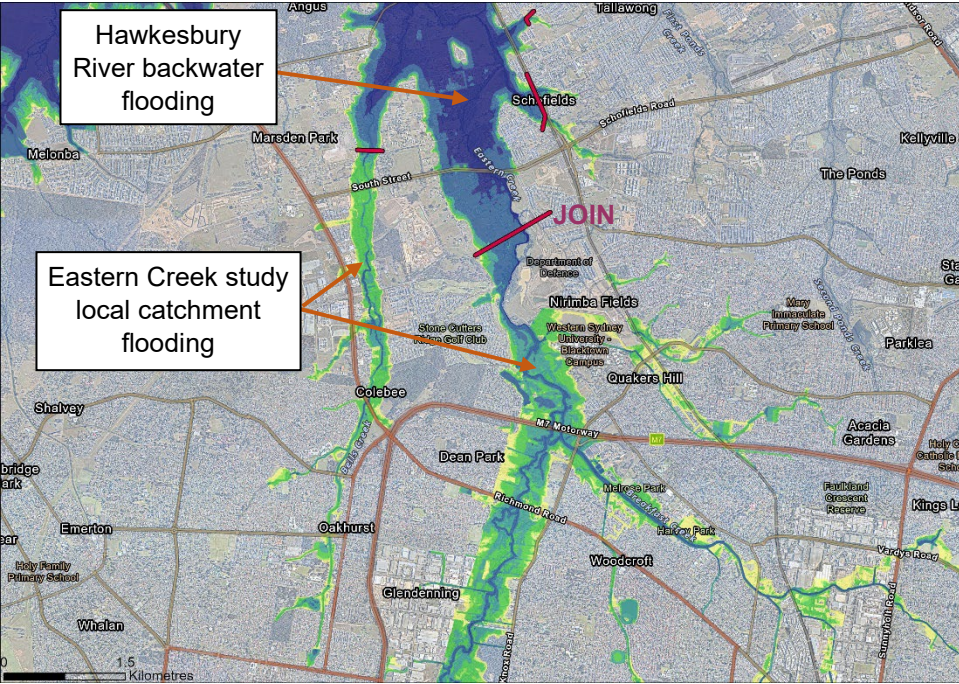


Figure 9: Adopted boundary between Hawkesbury River backwater flooding and Eastern Creek local catchment flooding – probable maximum flood (PMF)

