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**HAWKESBURY-NEPEAN VALLEY:  
NSW SES DIVISIONS, SECTORS,  
SUBSECTORS  
AND  
EVACUATION STRATEGY SELECTION  
CONSIDERATIONS**

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**Annex C**

**Supporting document (NSW SES Response Arrangements for  
Hawkesbury-Nepean Valley) to the Hawkesbury Nepean Flood Plan**

Last Update: Jun 2020

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# 1 DIVISIONS, SECTORS AND SUB-SECTORS

## 1.1 SUBDIVIDING THE AREA OF OPERATIONS

- 1.1.1 Flood operations across the Hawkesbury-Nepean Valley will be controlled using Divisions and Sectors using the principles of AIIMS.
- 1.1.2 The Hawkesbury-Nepean Valley has four main flood plain areas within the area of operation covered by this plan:
  - a. Wallacia Floodplain;
  - b. Emu Plains / Penrith Floodplain;
  - c. Richmond / Windsor / Wilberforce Floodplain; and
  - d. Lower Hawkesbury Floodplain.

## DIVISIONS

- 1.1.3 These floodplains, along with the geographic constraint of South Creek cutting easterly evacuation routes, provide a natural way to divide the area of operations into Divisions.
- 1.1.4 The Divisions for operational control purposes in the Hawkesbury Nepean Valley are:
  - a. Lower Nepean River Division
  - b. South Creek West Division
  - c. South Creek East Division
  - d. Eastern Creek Division
  - e. Hawkesbury East Division
  - f. Hawkesbury West Division
  - g. Hills Division
  - h. Wisemans Ferry Division
  - i. Hornsby Division
  - j. Gunderman Division (NSW SES Northern Zone)

## 1.2 SECTORS

- 1.2.1 Flood affected areas within the Hawkesbury-Nepean Flood Plan area of operation have been defined into areas known as Sectors for operational control purposes.

### **1.3 SUB-SECTORS**

- 1.3.1 Where applicable Sectors have been further divided into Sub-sectors for planning and operational purposes.
- 1.3.2 The Sub-sectors are determined using the classification of flood areas used by the NSW SES to determine flood risk areas.

### **1.4 SUMMARY**

- 1.4.1 All Sectors and Sub-sectors within the area of operation of this plan are shown in Map 1.
- 1.4.2 Table 1 details the:
  - a. Grouping of Sectors into Divisions
  - b. Localities covered by each Sector
  - c. Relevant flood gauge for each Sector
  - d. Possible locations for Sector Control Centres (where required in a particular flood event).
- 1.4.3 The current list of Sub-sectors is detailed in Tables 2 to 5.

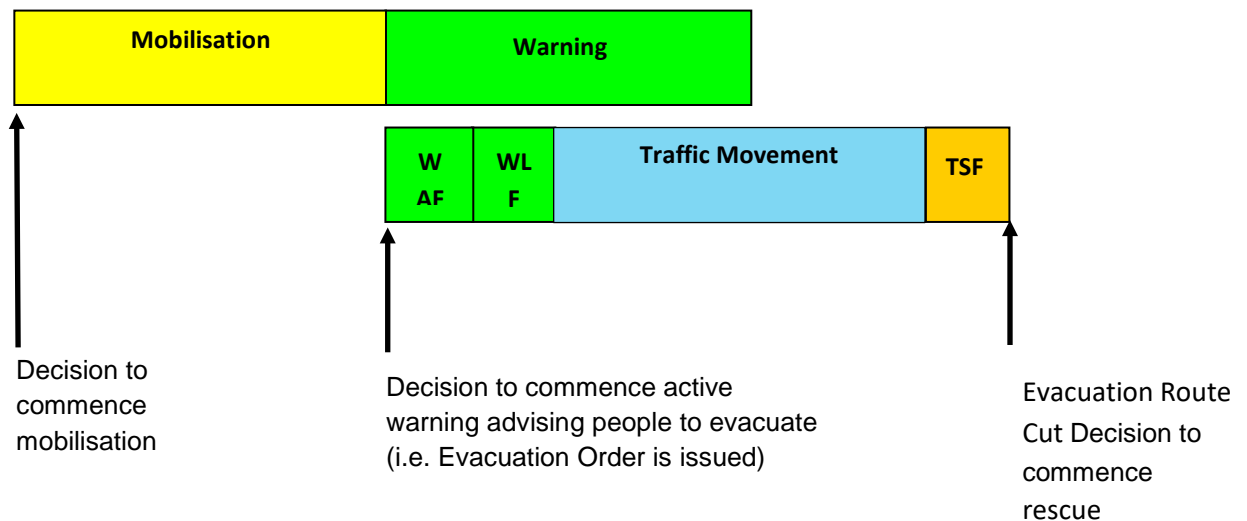
## 2 EVACUATION TIMINGS

### 2.1 EVACUATION TIMELINE METHODOLOGY

2.1.1 The NSW SES uses an evacuation timeline methodology to determine evacuation timings and to guide evacuation decision making.

2.1.2 Figure 1 below shows the conceptual framework for evacuation timelines.

Figure 1 Evacuation Timeline components



Legend:

WAF - Warning Acceptance Factor

WLF - Warning Lag Factor

TSF - Traffic Safety Factor

Time for Community to Evacuate = WAF (1 hr) + WLF (1 hr) + Traffic Movement + TSF

Notes on the components of the timeline:

Mobilisation and Warning

1. Warnings (i.e. Evacuation Orders) will be disseminated concurrently with expected traffic movement and therefore do not affect the total time required for evacuation. The time taken to warn is the time taken to doorknock the sector plus a warning lag factor (WLF) of 1 hour to allow time for people to pack their essential items.
2. A 6 hour time allowance (i.e. Mobilisation time) is assumed to cater for the mobilisation for emergency resources as well as for the evacuation decision process. This time precedes the commencement of the concurrent warning and traffic movement phases.

### Traffic Movement

3. The estimated number of vehicles is based on studies which estimate the number of dwellings and businesses requiring evacuation and used a conversion factor to estimate the number of vehicles. In addition to this there is a provision for buses.
4. Note that traffic movement rates will be slower on some road segments due to convergence of road evacuation routes so the time frames estimated above should be considered indicative only.
5. Based on extensive advice from traffic engineers and experience in the US vehicle movement assumes an evacuation traffic rate of 600 vehicles per hour per lane.

### Time to evacuate

6. The estimated time required for the community to evacuate is the time taken by the community to evacuate once a warning (i.e. evacuation order) is issued and when the last vehicle is expected to be out (assuming mobilisation has already occurred).
7. It is based on an assumed vehicle movement plus a 1 hour allowance for acceptance of warnings (WAF) + a 1 hour warning lag factor to account for people packing (WLF) + a traffic safety factor to cater for vehicle breakdowns/road crashes (TSF).
8. In order to generate vehicle movements of 600 vehicles per hour or more, a minimum number of 28 doorknocking teams are required for each sector. However this may need to be varied if these vehicle movement rates are not being achieved. An average doorknock rate of 5 minutes per dwelling is used in calculating the time taken to warn.

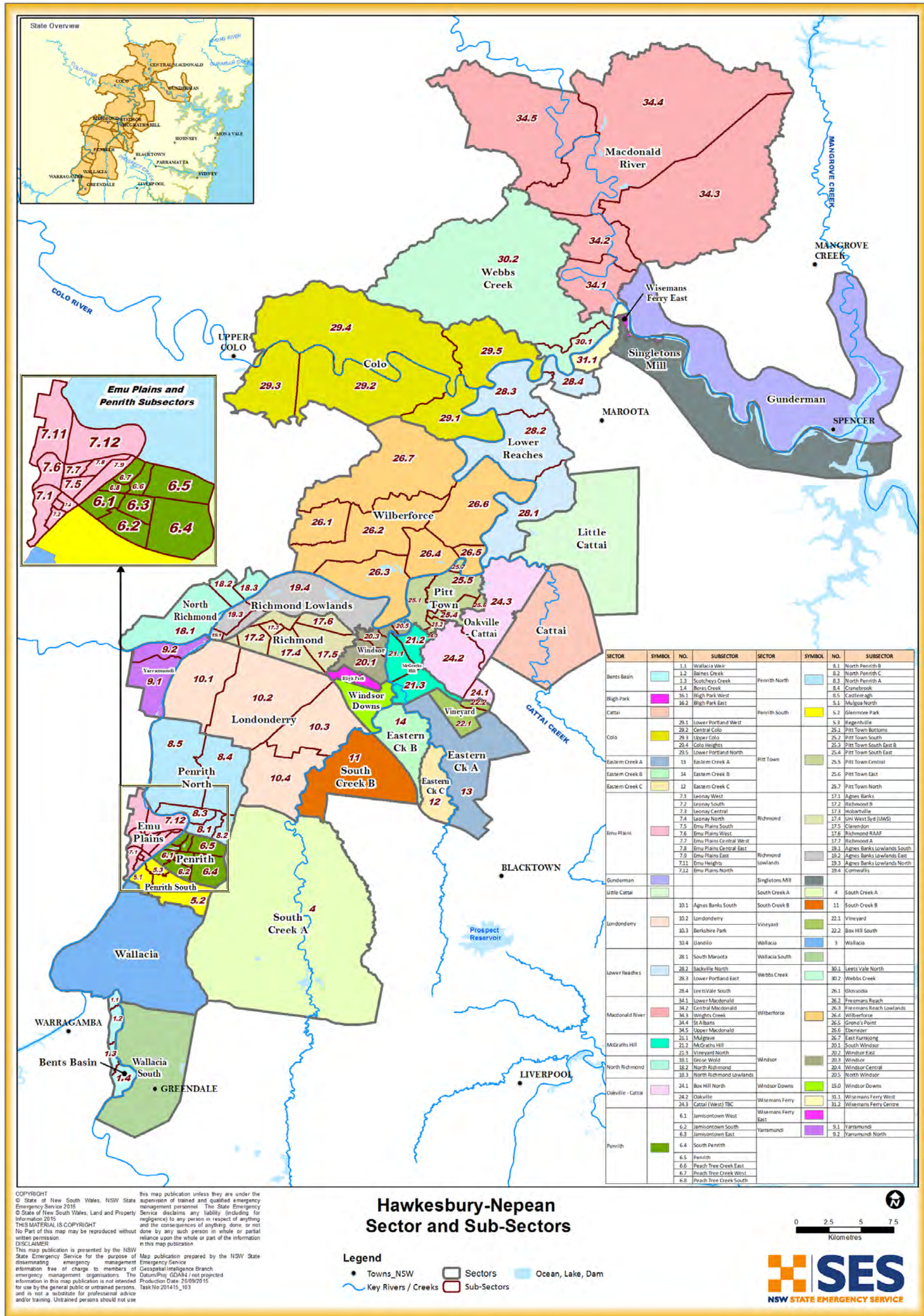
2.1.3 With converging evacuation routes and the number of Sub-sectors sharing evacuations, agent based evacuation modelling is used to calculate traffic movement times.

2.1.4 In determining decision timings for particular Sectors and Sub-sectors the following will need to be taken into account:

- a. the actual flood heights achieved prior to the decision point;
- b. the predicted heights;
- c. the expected rates of rise over the subsequent time period; and
- d. any changes to the number of dwellings and vehicles.

## **2.2 SUMMARY OF CRITICAL FLOOD HEIGHTS FOR STRATEGY SELECTION**

- 2.2.1 To assist with strategy selection for each Sector / Sub-sector, Tables 2 to 5 below, detail in general order of predicted flood height and decreasing overall risk, the Sectors and Sub-sectors to be evacuated according to the floodplain that they are located in.
- 2.2.2 The tables provide the following for each Sector and Sub-sector:
- a. Flood classification (refer to Annex A);
  - b. Height at which the last evacuation route is inundated; and
  - c. Submersion height (where applicable).



Map 1: Sectors and Sub-sectors within the Hawkesbury-Nepean Flood Plan area of Operation



Table 1 Divisions and Sectors

Local Government Area	Division	Sector	Localities	Relevant Gauge	Possible locations for Sector Control Centre
Penrith	Lower Nepean River Division	Wallacia Wallacia South Bents Basin	Wallacia, Mulgoa Rd and Bents Basin Road areas	Wallacia	Wallacia Shopping Centre (using Penrith Control vehicle)
		Emu Plains	Emu Plains, Emu Heights and Leonay areas	Victoria Bridge	Intersection of Mitchell's Pass and the Great Western Highway, Blaxland (using SES Blue Mountains Control Caravan)
		Penrith South	Mulgoa, Regentville and Glenmore Park areas	Victoria Bridge	Regentville Community Hall Jeanette Street Regentville
		Penrith	Penrith, Jamisontown, Peach Tree Creek	Victoria Bridge	NSW SES Penrith HQ
		Penrith North	North Penrith, Penrith Lakes (lower Castlereagh) and Cranebrook areas	Victoria Bridge	Community Centre Hosking Street Cranebrook
	South Creek West Division	Londonderry	Upper Castlereagh, Agnes Banks (South), Londonderry, Berkshire Park and Llandilo areas	Windsor Bridge	Community Centre Hosking Street Cranebrook

Local Government Area	Division	Sector	Localities	Relevant Gauge	Possible locations for Sector Control Centre
		South Creek A	Colyton, Dunheved, Erskine Park, Oxley Park, St Marys, St Clair and Werrington areas	Windsor Bridge	NSW SES Penrith HQ
Hawkesbury	Hawkesbury East Division	Yarramundi	Yarramundi area		Yarramundi Rural Fire Station
		Richmond Lowlands	Agnes Banks Lowlands, Cornwallis	North Richmond	NSW SES Hawkesbury HQ
		McGraths Hill	McGraths Hill and Vineyard areas	Windsor Bridge	McGraths Hill Community Centre
		Windsor	Windsor, Cornwallis, South Windsor	Windsor Bridge	St Matthews Church Hall
		Windsor Downs	Windsor Downs	Windsor Bridge	
		Bligh Park	Bligh Park	Windsor Bridge	Tiningi Community Centre
		Pitt Town	Pitt Town area	Windsor Bridge	Pitt Town Public School
		Richmond	Richmond, East Richmond, Hobartville, Agnes Banks and Clarendon areas	Windsor Bridge	Richmond Public School
		Oakville/ Cattai	Oakville, Scheyville, southern part of Cattai areas	Windsor Bridge	Oakville Rural Fire Station
		Vineyard	Vineyard	Windsor Bridge	

Local Government Area	Division	Sector	Localities	Relevant Gauge	Possible locations for Sector Control Centre
	Hawkesbury West Division	North Richmond	North Richmond and Grose Wold areas	North Richmond	NSW SES Hawkesbury HQ
		Wilberforce	Wilberforce and surrounding areas	Windsor Bridge	NSW SES Hawkesbury HQ
		Colo River	Upper Colo, Central Colo and Colo Heights areas	Colo River (Putty Road)	NSW SES Hawkesbury HQ
		Webbs Creek	Webbs Creek and Leets Vale West	Webbs Creek (Wisemans Ferry)	NSW SES The Hills HQ
		Macdonald River	Lower Macdonald, Central Macdonald and St Albans areas	St Albans	NSW SES The Hills HQ
The Hills	Hills Division	Hills North West	Parts of Lower Portland, Parts of Leets Vale on east side of Hawkesbury River	Lower Portland	NSW SES The Hills HQ
		Hills West	Northern part of Cattai, South Maroota, Eastern part of Sackville	Sackville	NSW SES The Hills HQ
		Hills South West	Western part of Kenthurst, northern part of Nelson, western part of Annangrove, Maraylya		NSW SES The Hills HQ
	Wisemans Ferry Division	Wisemans Ferry West and Wisemans Ferry Central	Wisemans Ferry area west of Old Northern Road	Webbs Creek	NSW RFS Station

Local Government Area	Division	Sector	Localities	Relevant Gauge	Possible locations for Sector Control Centre
					Wisemans Ferry (if flood is predicted to be below 6.7m AHD or 1% AEP at the Webbs Creek gauge) or alternative venue South Maroota Community Centre
Blacktown	South Creek East Division	South Creek B	Shane Park, Ropes Creek and Tregear areas Marsden Park	Windsor Bridge	NSW SES Mount Druitt HQ
	Eastern Creek Division	Eastern Creek A	Riverstone area	Windsor Bridge	Riverstone High School
		Eastern Creek B	Marsden Park North area	Windsor Bridge	NSW SES Blacktown HQ
		Eastern Creek C	Area between Eastern Creek and Bells Creek	Windsor Bridge	Marsden Park Public School
Hornsby	Hornsby Division	Singletons Mill	Laughtondale, Singletons Mill, Canoelands	Wisemans Ferry	
		Bar Point to Brooklyn	Berowra Waters, Berowra Creek, Bar Point, Milsons Passage, Mooney Mooney, Dangar Island, Little Wobby	Wisemans Ferry	
Central Coast		Gunderman	Gunderman, Spencer, Wendoree Park, Lower Mangrove,		

Local Government Area	Division	Sector	Localities	Relevant Gauge	Possible locations for Sector Control Centre
			Mangrove Creek, Glenworth Valley		

Table 2: Summary of Critical Flood Heights for Strategy Selection – Wallacia Floodplain

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m at Wallacia gauge	Comments
Bents Basin	Baines Creek	Overland Escape Route	33.9m (1)		Bents Basin Road is cut at Baines Creek in a 20% AEP (1 in 5 year) event. This isolates these three sub-sectors with the only escape route overland up a steep hill.
	Scotchcays Creek	Overland Escape Route			
	Beres Creek	Overland Escape Route			
	Wallacia Weir	Overland Escape Route	39.0m (1)	4.25m	People can escape for a time along Silverdale Road until it is also cut at 39.0m AHD in which case they have overland access to the west. Blaxlands Crossing Bridge will also be closed due to flooding.
Wallacia	NA	Rising Road Access (However access out is through South Wallacia High Flood Island)	*39.8m (1)		* The primary evacuation route Park Road is cut at 39.8m AHD in a 5% AEP (1 in 20 year) event. It may be possible to use the Wallacia Alternative Route in an emergency, however part of this route consists of a dirt track through a private property which may not be suitable for vehicles. Greendale Road forming part of the Wallacia alternative route is cut at 61.28m during a PMF event. Mulgoa Road will also be closed due to flooding preventing evacuation to the north.
South Wallacia	NA	High Flood Island and Rising Road Access	* 39.8m AHD (1) (61.28m) (1)		

Table 3: Summary of Critical Flood Heights for Strategy Selection – Emu Plains / Penrith / Castlereagh Floodplain

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m (At Penrith gauge)	Submersion Height m AHD	Comments
Penrith	Peach Tree Creek West	Low Flood Island	22.1m (2)	8.0m	32.2 AHD	Cut at Ladbury Avenue as well as High Street and Memorial Ave.
Penrith North	North Penrith A	Low Flood Island	22.3m (2)	8.2m	Around 30m AHD	Cut at Castlereagh Rd 0.2% AEP (1 in 500 year) event. Various flood islands form around 30m AHD.
	Cranebrook	Low Flood Island	24.6m		28.3m AHD	Area starts to form Low Flood Island in 0.2% AEP (1 in 500 year) event. Waterside Boulevard is cut at 24.6m AHD.
	Castlereagh	Rising Road Access	Not applicable			Proposed area for Penrith Lakes development. Cut on Old Castlereagh Road.
Penrith South	Regentville	Low Flood Island in part of sub-sector the rest has Rising Road Access	23.2m (2)	9.1m	34.2m AHD	Cut at Factory Road (2).
Emu Plains	Emu Plains North	Low Flood Island	23.2m to 23.4m AHD (1)		>PMF	During a 1% event Old Bathurst Road is cut in three places and the area is isolated. Some very small areas of land are flood free in a PMF. Most areas are flooded in a 0.1% AEP (1 in 1000 year) event.
Penrith	Peach Tree Creek South	Low Flood Island	23.6m (2)	9.5m	28.4m AHD	Cut at Jamison Rd close to Anakai Drive in a 2% AEP (1 in 50 year) event.
	Jamisontown West	Effectively a Low Flood Island	24.8m AHD (1)		28.9m AHD	Blake Rd near the intersection with Jamison Road is cut in a 1% AEP event.
Emu Plains	Emu Heights	High Trapped Perimeter	23.8m (2)	9.7m	>PMF	Wedmore Rd close to Alma Crescent is cut in a 2% AEP (1 in 50 year) event. Able bodied people may be able to climb the hill to the west to escape overland.
Penrith South	Mulgoa North	Overland Escape	25.7m AHD (1)			Mulgoa Road is cut however as last resort people could get out by walking overland to the south or east.

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m (At Penrith gauge)	Submersion Height m AHD	Comments
Emu Plains	Emu Plains East	Low Flood Island	25.7m at Penrith gauge (2)	11.6m	29.5m	Isolations begin from 1% AEP event.
	Emu Plains Central West	Low Flood Island	25.7m at Penrith gauge (2)	11.6m	> PMF  Note: Mostly submerged by 31.9m AHD	Russel Street near Pyramid Street is cut and the area is isolated in a 1% event. A very small area of land is still remaining in a PMF.
	Emu Plains Central East	Overland Escape	25.7m at Penrith gauge (2)	11.6m		The Great Western Hwy is cut in 2% AEP (1 in 50 year) event with overland escape possible to the south, however the surrounding sub-sectors may themselves be flooded.
Penrith	Peach Tree Creek East	Low Flood Island	27.1m at Penrith gauge (2)	13.0m	32.2m AHD	Mulgoa Road is closed at numerous locations in a 1% (1 in 100 year) event.
	Jamisontown South	Rising Road Access	27.1m at Penrith gauge (2)	13.0m		
Emu Plains	Leonay North	Overland Escape	34.2 m AHD (3) (Note: individual sub-sectors are cut at different heights)			The last evacuation route out of all these sub-sectors is via Leonay Parade where it joins with Russel St and the M4 Western Motorway. Overland escape is possible to the west during a PMF.
	Leonay West	Overland Escape				
	Leonay Central	Overland Escape				
	Leonay South	Overland Escape				
South Creek A	South Creek A	Rising Road Access	Not Applicable			
Penrith South	Glenmore Park	Rising Road Access	Not Applicable			



Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m (At Penrith gauge)	Submersion Height m AHD	Comments
Penrith	Jamisontown South	Rising Road Access	Not Applicable			
	Jamisontown East	Rising Road Access	Not Applicable			Mulgoa Road becomes cut, evacuation routes via Preston Street and Batt Street.
	South Penrith	Rising Road Access	Not Applicable			
	Penrith	Rising Road Access	Not Applicable			Mulgoa Road is first cut in 1% AEP (1 in 100 year) event.
Emu Plains	Emu Plains South	Rising Road Access	Not Applicable			Gough Street is first cut in a 1% AEP at 26.5m AHD.
	Emu Plains West	Rising Road Access	Not Applicable			
Penrith North	North Penrith B	Rising Road Access	Not Applicable			
	North Penrith C	Rising Road Access	Not Applicable			

Table 4: Summary of Critical Flood Heights for Strategy Selection – Richmond Windsor Wilberforce Floodplain

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Windsor Gauge Height m	Submersion Height m AHD	Comments
Wilberforce	Grono's Point	High Flood Island	5.1m (1)	6.5m to 6.75m	>PMF	Progressively inundated. Most properties flooded in a PMF. Way out is by road only. Grono Farm Road is cut in 1 in 2 year event.
Richmond Lowlands	Cornwallis	Low Flood Island	8.34m (4)		23.1m AHD (1)	Numerous isolated islands between 17 and 23m AHD. Various roads cut prior to 8.34m within this sub-sector.
Wilberforce	Freemans Reach Lowlands	Low Flow Island	9.7m (1)	9.5m (2)		Hibberts Lane is cut in 20% AEP (1 in 5 year) event.
Richmond Lowlands	Agnes Banks Lowlands North	Low Flood Island	11.9m (1)		18.9m AHD (1)	
	Agnes Banks Lowlands South	Low Flood Island	13.0m (1)		18.3m AHD (1)	
	Agnes Banks Lowlands East	Low Flood Island	15.7m (1)		24.3m AHD	Drift Road cut near Inalls Lane at 15.7m AHD in a 2% (1 in 50) event.
North Richmond	North Richmond Lowlands	Low Flood Island	11.6m (2)		20.2m AHD in a 1 in 500 year event.	Terrace Road is first cut at (1 in 5 year event at 11.5m AHD near Redbank Creek (1). Then Terrace Road is cut near Beamont Ave in a 1 in 500 year event at 19.3m AHD (1).
McGraths Hill	McGraths Hill	Low Flood Island	13.5m (5)		16.0 to 18m <sup>(5)</sup>	Around 50 properties flooded by 13.7m AHD.
	Mulgrave	Low Flood Island				
Eastern Creek C	Eastern Creek C	Low Flood Island	13.5m (4)			Multiple roads cut from 9.8m AHD (4).
Windsor	North Windsor	Low Flood Island	14m (6)			Submerged in a 5% AEP (1 in 20 year) event.
Yarramundi	Yarramundi and	Trapped Perimeter	15.1 to 15.5m (6)		>PMF	Springwood Road is cut.
	Yarramundi North	Trapped Perimeter				

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Windsor Gauge Height m	Submersion Height m AHD	Comments
Wilberforce	Ebenezer	High Flood Island		15.5m (2)	>PMF	Properties flooded from 11.1m AHD, 50% in a PMF (6).
Pitt Town	Pitt Town Bottoms	Low Flood Island	6.35m (4)	6.2m		Isolations begin when Pitt Town Bottoms Rd is cut (4).
	Pitt Town North	Low Flood Island	7.35m (4)	7.2m		Becomes isolated when Hall Street closes (4).
	Pitt Town Central	High Flood Island	16.0m AHD (2) (6)	15.85m	>PMF	The Regional Evacuation Route out of the Pitt Town Sector is cut at 16.0m AHD.  There is a small high point in Pitt Town that is just above the PMF level (6).
	Pitt Town East	Low Flood Island	(Note: individual sub-sectors are cut at different heights)			
	Pitt Town South	Overland Escape				
	Pitt Town South East	Low Flood Island				
	Pitt Town South East B	Low Flood Island				
Windsor	South Windsor	Low Flood Island	17.3m (7)	17.15m	26.8m (6)	The last regional evacuation route out is cut at 17.3m AHD. 17.3m AHD sustainability height. .
	Windsor East	Low Flood Island	(Note: individual sub-sectors are cut at different heights)			
	Windsor	Low Flood Island				
	Windsor Central	Low Flood Island				
Bligh Park	Bligh Park West	Overland escape	18.5m (17.2*) (6)	18.35m	25.0m (>PMF)	16.0m sustainability height. . Internal road closures from 17.2m (6). Thorley Street exit closed at 18.5m. Some possibility for overland escape.
	Bligh Park East	Overland Escape			Overland flood free in PMF	
North Richmond	North Richmond	Rising Road Access		17.6m (2)		

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Windsor Gauge Height m	Submersion Height m AHD	Comments
Richmond	Richmond RAAF	Low Flood Island	20.1m (6)		20.4m (6)	Flooding begins at around 16.4m at the Richmond gauge.
	Hobartville	Low Flood Island	20.2m (6)		23.6m (6)	Progressively inundated from 17.5m (at Richmond gauge) (6).
	Clarendon	Overland Access)				
Windsor Downs	Windsor Downs	Flood Island (Parts are Low and parts are High)	23.8m	23.65m	26.4m (PMF)	Progressively inundated from 16m. Llandilo evacuation route is cut at 23.8m AHD.
Eastern Creek A	Eastern Creek A	Rising Road Access	Not applicable			
Eastern Creek B	Eastern Creek B	Low Flood Island				
Eastern Creek C	Eastern Creek C	Rising Road Access	Not applicable			
Cattai	NA	Rising Road Access	Not applicable			Flooding mostly affects along the creek lines. May result in some isolations, however overland escape is possible.
Little Cattai	NA	Rising Road Access	Not applicable			Mostly affects along the creek's lines. Evacuation is via Wisemans Ferry or Halcrows Roads.
Londonderry	Agnes Banks South	Rising Road Access	Not applicable			
	Londonderry	Rising Road Access	Not applicable			Small flood islands can form within the Sector.
	Berkshire Park	Rising Road Access	Not applicable			
	Llandilo	Rising Road Access	Not applicable			
South Creek B	South Creek B	Rising Road Access	Not applicable			

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Windsor Gauge Height m	Submersion Height m AHD	Comments
Richmond	Agnes Banks	Rising Road Access)	Not applicable			
	UWS	Low Flood Island	20.2m		>PMF (Two small islands)	Londonderry Road is the last road access out. Two small islands flood free in a PMF at the eastern side of the sub-sector.
	Richmond A	Low Flood Island	20.2m			
	Richmond B	Low Flood Island	20.2m			
North Richmond	Grose Wold	Rising Road Access	Not applicable			
McGraths Hill	Vineyard North	Rising Road Access	Not applicable			
Vineyard	Vineyard	Rising Road Access	Not applicable			
	Box Hill South	Rising Road Access	Not applicable			
Oakville-Cattai	Box Hill North	Rising Road Access	Not applicable			
Oakville Cattai	Oakville	Rising Road Access	Not applicable			
	Cattai (West)	Rising Road Access	Not applicable			
Wilberforce	Glossodia	Rising Road Access	Not applicable			Largely unaffected by flooding. More indirect affects.
	Freemans Reach	Rising Road Access	Not applicable			Last Roads out via Stannix Park Road and Creek Ridge Road.
	Wilberforce	Rising Road Access	Not applicable			Last Road out via Kurmond Road.
	East Kurrajong	Rising Road Access	Not applicable			Some properties flood affected on West Portland Road with some possibility of overland

Sector	Sub-sector	Flood Classification	Last Road Cut m AHD	Windsor Gauge Height m	Submersion Height m AHD	Comments
						escape.

Table 5: Summary of Critical Flood Heights for Strategy Selection – Lower Hawkesbury Floodplain

Sector	Sector / Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m	Submersion Height m AHD	Comments
Singletons Mill	NA	Trapped Perimeter	From 1.2m (4)			Various locations cut along Singletons Mills Rd.
Gunderman	NA	Trapped Perimeter	1.2 to 2m (4)			Various locations cut along Wisemans Ferry Rd.
Macdonald River	Lower Macdonald	Trapped Perimeter	1.5m to 1.9m (4)			Roads cut at various locations including St Albans Road cut at 1.5m AHD and Settlers Rd cut at 1.9m AHD. Wollombi Road is also often affected by local flooding isolating the Macdonald Valley area.
	Central Macdonald	Trapped Perimeter				
	Wrights Creek	Trapped Perimeter				
	St Albans	Trapped Perimeter				
	Upper Macdonald	Trapped Perimeter				
Lower Reaches	South Maroota	Parts High Flood Island)	1.5 to 4m (4)			River Road is cut in a number of places from 1.5m AHD (4).
	Sackville North	Rising Road Access				
	Lower Portland East	Trapped Perimeter				
	Leets Vale South	Trapped Perimeter				

Sector	Sector / Sub-sector	Flood Classification	Last Road Cut m AHD	Gauge Height m	Submersion Height m AHD	Comments
Webbs Creek	Leets Vale North	Trapped Perimeter	1.78m (4)			Cut on Chaseling Rd. Parts may be isolated during minor flood events between 1-7m at the Windsor Gauge (2). Others have Rising Road Access out to the west.
	Webbs Ck	Trapped Perimeter	2.28m (4)			Cut on Webbs Ck Rd. May be isolated during minor flood events between 1-7m at the Windsor Gauge (2).
Colo	Lower Portland West	Most have Rising Road Access, some Overland Escape		Exact heights not available. Between 1-7m at the Windsor gauge (2)		May become isolated during minor flood events between 1-7m at the Windsor Gauge (2).
	Central Colo	Overland Escape				The Lower Colo Road is cut during a 10% AEP (1 in 10 year) event. Able bodied people may be able to climb the hills behind to escape.
	Upper Colo	Trapped Perimeter				Upper Colo Road is cut. Evacuation Route out is via Comleroy Road which is also cut.
	Colo Heights	Rising Road Access				Evacuations via the Putty Road
	Lower Portland North	Trapped Perimeter				Greens road is cut at three points at 2.25m AHD, 7.2m AHD and 13.9m AHD.
Wisemans Ferry	Wisemans Ferry West	Rising Road Access	Not Applicable			
	Wisemans Ferry Centre	Rising Road Access	Not Applicable			
Wisemans Ferry East	Wisemans Ferry East	Trapped Perimeter				Singleton Road is very low and can be cut in several places due to normal tidal influences.



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