

# Flood Emergency Response Planning Classification Of Communities

## Summary

This floodplain risk management (FRM) guideline was developed in conjunction with the State Emergency Service (SES) to provide a basis for the flood emergency response categorisation of floodplain communities (both existing and future). Classification provides an indication of the relative vulnerability of the community in flood emergency response and when used with FRM Guideline SES Information Requirements from the FRM Process it identifies the type and scale of information needed by the SES to assist with emergency response planning (ERP).

## Introduction

The Floodplain Development Manual, 2005 requires flood studies and FRM studies and plans to address the management of continuing flood risk to both existing and future development areas. As continuing flood risk varies across the floodplain so does the type and scale of emergency response problem and therefore the information necessary for effective ERP.

This guideline provides a basis for the categorisation of floodplain communities into various flood ERP classifications. Table 1 provides an indication of the response required for areas with different classifications. However, these may vary depending on local flood characteristics and resultant flood behaviour i.e. in flash flooding or overland flooding areas.

These classifications are defined in Section 1 and are determined by using the flowchart provided, Figure 1.

## Recommendations

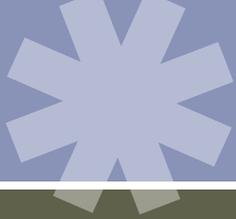
It is recommended that the ERP classification of the floodplain be undertaken for the probable maximum flood (PMF) and 20 and 100 year average recurrence interval (ARI) events. Classifications are to be provided for each event with reference back to the event.

## References

Department of Infrastructure Planning and Natural Resources. "Floodplain Development Manual: the management of flood liable land", gazetted May 2005.

**Table 1 Response Required for Different Flood ERP Classifications**

| Classification                    | Response Required |                |            |
|-----------------------------------|-------------------|----------------|------------|
|                                   | Resupply          | Rescue/Medivac | Evacuation |
| High Flood Island                 | Yes               | Possibly       | Possibly   |
| Low Flood Island                  | No                | Yes            | Yes        |
| Area with Rising Road Access      | No                | Possibly       | Yes        |
| Areas with Overland Escape Routes | No                | Possibly       | Yes        |
| Low Trapped Perimeter             | No                | Yes            | Yes        |
| High Trapped Perimeter            | Yes               | Possibly       | Possibly   |
| Indirectly Affected Areas         | Possibly          | Possibly       | Possibly   |



### Section 1 Flood ERP Classification of Communities

To assist in the planning and implementation of response strategies the SES classifies communities according to the impact flooding has on them. Flood affected communities are those in which the normal functioning of services is altered either directly or indirectly because a flood results in the need for external assistance. This impact relates directly to the operational issues of evacuation, resupply and rescue. The classifications used are described below.

#### Section 1.1 Flood Islands

These are inhabited or potentially habitable areas of high ground within a floodplain linked to the flood-free valley sides by a road across the floodplain and with no alternative overland access. The road can be cut by floodwater, closing the only evacuation route and creating an island. After closure of the road the only access to the area is by boat or by aircraft.

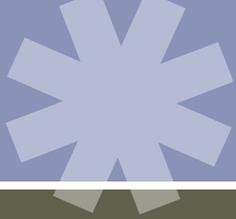
Flood islands are classified according to what can happen after the evacuation route is cut as follows:

- High Flood Island (HFI). The flood island includes enough land higher than the limit of flooding (i.e. above the PMF) to cope with the number of people in the area. During a flood event the area is surrounded by floodwater and property may be inundated. However, there is an opportunity for people to retreat to higher ground above the PMF within the island and therefore the direct risk to life is limited. The area will require resupply by boat or air if not evacuated before the road is cut. If it will not be possible to provide adequate support during the period of isolation, evacuation will have to take place before isolation occurs.
- Low Flood Island (LFI). The flood island is lower than the limit of flooding (i.e. below the PMF) or does not have enough land above the limit of flooding to cope with the number of people in the area. During a flood event the area is isolated by floodwater and property will be inundated. If floodwater continues to rise after it is isolated, the island will eventually be completely covered. People left stranded on the island may drown and property will be inundated.

#### Section 1.2 Trapped Perimeter Areas

These would generally be inhabited or potentially habitable areas at the fringe of the floodplain where the only practical road or overland access is through flood prone land and unavailable during a flood event. The ability to retreat to higher ground does not exist due to topography or impassable structures. Trapped perimeter areas are classified according to what can happen after the evacuation route is cut as follows.

- High Trapped Perimeter (HTP) Area. The inhabited or potentially inhabited area includes enough land to cope with the number of people in the area that is higher than the limit of flooding (i.e. above the PMF). During a flood event the area is isolated by floodwater and property and may be inundated. However, there is an opportunity for people to retreat to higher ground above the PMF within the area and therefore the direct risk to life is limited. The area will require resupply by boat or air if not evacuated before the road is cut. If it will not be possible to provide adequate support during the period of isolation, evacuation will have to take place before isolation occurs.
- Low Trapped Perimeter (LTP) Area: The inhabited or potentially inhabited area is lower than the limit of flooding (i.e. below the PMF) or does not have enough land above the limit of flooding to cope with the number of people in the area. During a flood event the area is isolated by floodwater and property may be inundated. If floodwater continues to rise after it is isolated, the area will eventually be completely covered. People trapped on the island may drown.



### Section 1.3 Areas Able to be Evacuated

These are inhabited areas on flood prone ridges jutting into the floodplain or on the valley side that are able to be evacuated. However, their categorisation depends upon the type of evacuation access available, as follows.

- Areas with Overland Escape Route (OER) are those areas where access roads to flood free land cross lower lying flood prone land. Evacuation can take place by road only until access roads are closed by floodwater. Escape from rising floodwater is possible but by walking overland to higher ground. Anyone not able to walk out must be reached by using boats and aircraft. If people cannot get out before inundation, rescue will most likely be from rooftops.
- Areas with Rising Road Access (RRA) are those areas where access roads rising steadily uphill and away from the rising floodwaters. The community cannot be completely isolated before inundation reaches its maximum extent, even in the PMF. Evacuation can take place by vehicle or on foot along the road as floodwater advances. People should not be trapped unless they delay their evacuation from their homes. For example people living in two storey homes may initially decide to stay but reconsider after water surrounds them.

These communities contain low-lying areas from which people will be progressively evacuated to higher ground as the level of inundation increases. This inundation could be caused either by direct flooding from the river system or by localised flooding from creeks.

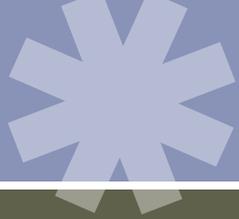
### Section 1.4 Indirectly Affected Areas (IAA)

These are areas which are outside the limit of flooding and therefore will not be inundated nor will they lose road access.

However, they may be indirectly affected as a result of flood damaged infrastructure or due to the loss of transport links, electricity supply, water supply, sewage or telecommunications services and they may therefore require resupply or in the worst case, evacuation.

### Section 1.5 Overland Refuge Areas

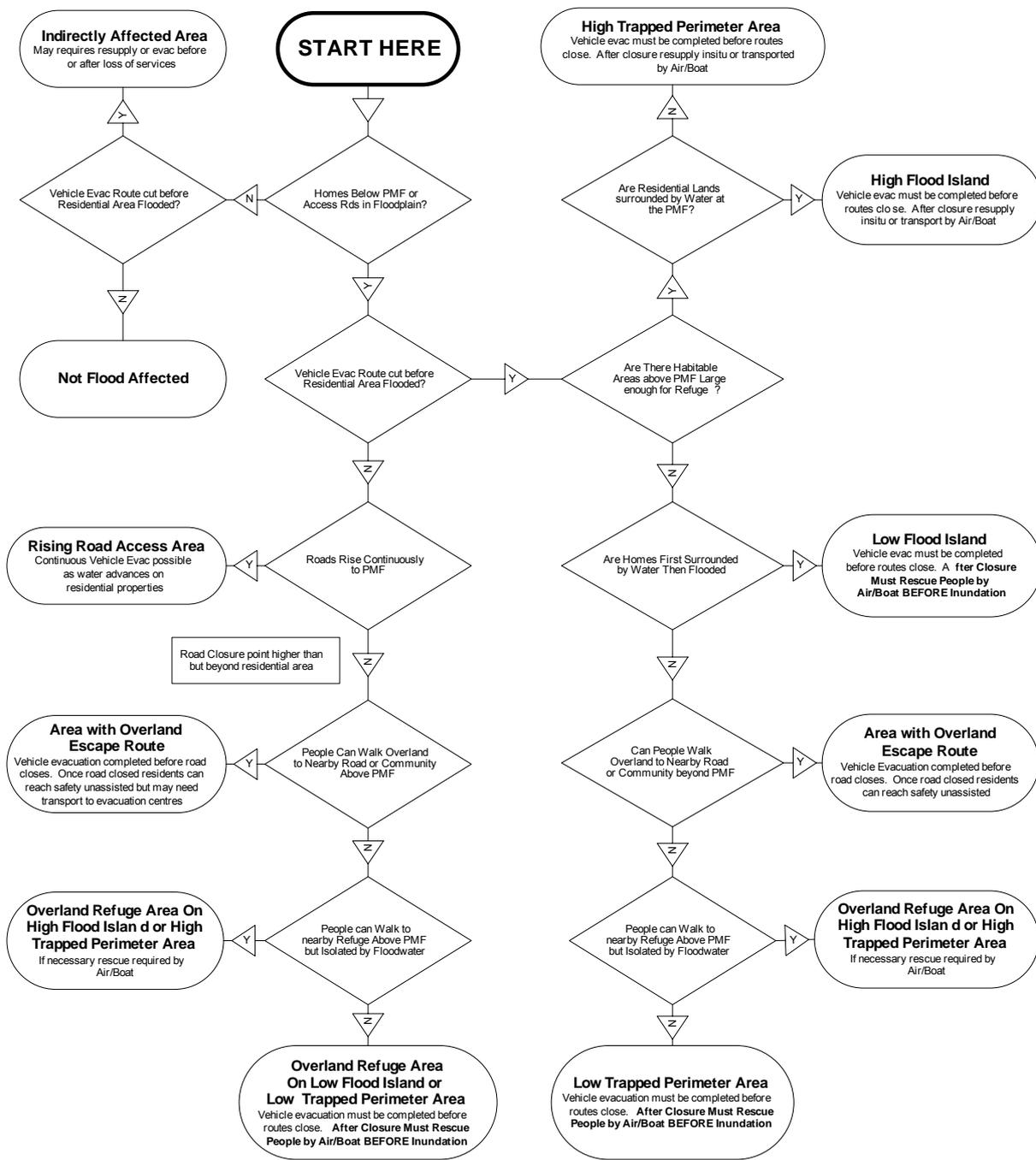
These are areas that other areas of the floodplain may be evacuated to, at least temporarily, but which are isolated from the edge of the floodplain by floodwaters and are therefore effectively flood islands or trapped perimeter areas. They should be categorised accordingly and these categories used to determine their vulnerability.



# Flood Emergency Response Planning Classification of Communities

## Floodplain Risk Management Guideline

Figure 1 – Preliminary Flow Chart for Flood Emergency Response Classification



### Classification of Floodplain Communities for Emergency Management Planning

Notes: Designed for Use on a Broad or Precinct Basis  
**Overland Refuge Area** is an area that may be passed through on the way to an areas beyond the Floodplain  
 Other Definitions in Guideline