

*Appendix V*

# **PRIORITISATION OF SETTLEMENTS WITHOUT A FLOOD FORECAST LOCATION**

## Appendix V

# Prioritisation of Settlements without a Flood Forecast Location

### INTRODUCTION

The BOM provide a flood forecasting and warning services at a number of settlements across the state. Three levels of flood information are provided, which are defined in the Service Level Specification (SLS) as follows:

- **Forecast location** - a location for which the BOM provides a forecast of future water level either as the class of flood that is predicted (minor, moderate or major) or as a level and class. At these locations observed data, flood classifications and additional qualifying information will also be available.
- **Information location** - a location at which flood classifications are defined and observations of water level data are provided. At these locations forecasts of future water level are not produced. Other key thresholds may be defined and reported against.
- **Data location** - a location for which just the observed water level data is provided. Flood classifications are not available for these locations and forecasts of future water level are not produced.

Forecast locations are detailed in Schedule A of the SLS. There are 143 forecast locations across the state, however some of these are at multiple locations close to one settlement. There are 123 settlements with forecast locations in close proximity.

The purpose of this appendix is to identify flood prone settlements in Queensland that do not currently have a forecast location in close proximity and may benefit from one being provided in the future. These settlements are then prioritised on the basis of flood risk and proximity to existing flood forecast locations. The outcomes of this desktop assessment need to be confirmed through discussion with local council, BOM and other interested parties.

### SETTLEMENT IDENTIFICATION

A desktop assessment was undertaken to identify settlements with a riverine flood risk that do not currently have a forecast location. These settlements were identified by:

- Criterion 1: BOM or DCS identified the settlement as having a flood risk (587 locations, of which 123 have a forecast location and 464 do not); **AND**

- Criterion 2: Must meet **either** of these requirements
  - Identified by BOM as having a riverine flood risk (125 locations, of which 86 have a forecast location and 39 do not) **OR**
  - QFAO encroaches into the settlement extent **AND** feasible warning time (based on catchment characteristics) is >6hr (172 locations, of which 76 have a forecast location and 96 do not)

There are 99 settlements in the database that meet these criteria and do not have a forecast location. Some of the settlements in the database are in fact suburbs or extensions of larger settlements, and so there are 92 discrete settlements.

### PRIORISATION

Prioritisation of settlements was based on the following:

- Criterion 1 (Primary) - Flood hazard score
- Criterion 2 (Secondary) - Proximity to existing forecast locations

The flood hazard score is detailed in Appendix E. It is a scale from 1 to 4, where 1 is the lowest and 4 is the highest. It depends on the flood risk (as determined by previous BOM and DSC flood risk assessments), population, and disruption caused by flooding (determined by overlaying QFAO flood extents with land use mapping). The flood hazard score was used as the primary method of prioritisation. For example, all settlements with a flood hazard score of 4 were given a higher priority than those with a flood hazard score of 3.

Secondary criteria were used to prioritise settlements with the same flood hazard score. The proximity of settlements to existing forecast locations was inspected manually for each settlement. Scores were awarded for proximity to existing forecast locations in a consistent manner as detailed below.

Score	Description
0 (nil)	Existing forecast location close, additional forecast location not required
1 (lowest)	Downstream of existing forecast location, additional forecast location may be warranted
2	Upstream of existing forecast location, additional forecast location may be warranted
3 (highest)	Nothing nearby suitable, forecast location may be warranted

The highest score (highest priority) was awarded to locations with no other forecast locations nearby. A lesser priority was awarded to settlements downstream of an existing forecast location than those upstream of an existing forecast location. This is because settlements downstream of an existing forecast location are more likely to be able to anticipate flooding if they are further downstream of a location for which a prediction is being made. This may not be the case if there is considerable branching and catchment contributions between the upstream forecast location and the settlement, which has been considered when deciding whether to award a score of 2 or 3.

## FINDINGS

The outcome of the analysis is presented in Table V1. It identifies the following:

- 11 settlements with a Very High priority for a forecast location
- 36 settlements with a High priority for a forecast location
- 23 settlements with a Medium priority for a forecast location
- 8 settlements with a Low priority for a forecast location.

A number of settlements (21) that were initially identified as having a riverine flood risk and no forecast location were later screened from the analysis since they were deemed to be close enough to settlements that have a forecast location.

The outcomes of this desktop assessment need to be confirmed through discussion with local council, BOM and other interested parties.

Table V1 - PRIORITISATION OF SETTLEMENTS FOR CONSIDERATION INTO PROVIDING A FLOOD WARNING SERVICE

Settlement	Flood hazard score <sup>(a)</sup>	Proximity to existing forecast location <sup>(b)</sup>	Comments	Priority <sup>(c)</sup>
<b>VERY HIGH PRIORITY</b>				
HUGHENDEN	4	3	Nothing nearby	4.3
BILOELA	4	3	Nothing nearby	4.3
DOOMADGEE	4	3	Nothing nearby	4.3
EROMANGA	4	3	Nothing nearby	4.3
TOOGOOLAWAH	4	3	10km to Harlin, but on different branch	4.3
IMBIL	4	3	9.5km to 40814, but on different branch	4.3
CAMOOWEAL	4	3	Nothing nearby	4.3
CHERBOURG	4	2	45km upstream of 40837	4.2
ABERCORN	4	2	45km upstream of 39259	4.2
AMBY	4	2	35km upstream of 43099	4.2
WALKERSTON	4	1	22km downstream of Mirani (33152), 14km upstream of Mackay (33303)	4.1
<b>HIGH PRIORITY</b>				
CLERMONT	3	3	Nothing nearby	3.3
MILES	3	3	Nothing nearby	3.3
ROLLESTON	3	3	Nothing nearby	3.3
MORANBAH	3	3	Nothing nearby	3.3
AURUKUN	3	3	Nothing nearby	3.3
BOYNE ISLAND	3	3	Nothing nearby	3.3
EINASLEIGH	3	3	Nothing nearby	3.3
TANNUM SANDS	3	3	Nothing nearby	3.3
CALLIDE	3	3	Nothing nearby	3.3
JAMBIN	3	3	Nothing nearby	3.3
NANANGO	3	3	Nothing nearby	3.3
THANGOOL	3	3	Nothing nearby	3.3
BENARABY	3	3	Nothing nearby	3.3
WOORABINDA	3	3	Nothing nearby	3.3
CONDAMINE	3	2	50km downstream of Chinchilla (41517), 80km upstream of 43052	3.2
GREGORY DOWNS	3	2	110km upstream of 29157	3.2
MOORE PARK	3	2	20km upstream of 540139	3.2
ARAMAC	3	2	77km upstream of 36013	3.2
BIBOOHRA	3	2	43km upstream of 531048	3.2
GRANTHAM	3	2	8km upstream of 40444	3.2
LINVILLE	3	2	23km upstream of 540139	3.2
COOMINYA	3	2	19km upstream of Lowood, but above Brisbane Rv confluence	3.2
MURGON	3	2	45km upstream of 40837	3.2
TAMBORINE	3	2	14km upstream of Wolfdene (40761)	3.2
MUTTABURRA	3	2	52km upstream of 36013	3.2
JONDARYAN	3	2	60km upstream of 41346	3.2
MOORE	3	2	19km upstream of 540139	3.2
WARRA	3	2	43km upstream of 41411	3.2
KARUMBA	3	1	60km downstream of 29155, but additional tributaries	3.1
TULLY HEADS	3	1	14km downstream of 32167	3.1
KANDANGA	3	1	27km downstream of 540330	3.1
MILLMERRAN	3	1	15km downstream of 41499	3.1
BAFFLE CREEK	3	1	15km downstream of 39267	3.1
MUNGINDI	3	1	70km downstream of Talwood (42100)	3.1
ROCKINGHAM	3	1	7km downstream of 532059	3.1
OWANYILLA	3	1	12km downstream of Tiaro (40203)	3.1
<b>MEDIUM PRIORITY</b>				
KOWANYAMA	2	3	Nothing nearby	2.3
KYNUNA	2	3	Nothing nearby	2.3
JULIA CREEK	2	3	Nothing nearby	2.3
SAPPHIRE	2	3	Nothing nearby	2.3
CARDOWAN	2	3	Nothing nearby	2.3
PORT STEWART	2	3	Nothing nearby	2.3
KURANDA	2	2	8km upstream of 531048	2.2
MYOLA	2	2	13km upstream of 531048	2.2
MULGILDIE	2	2	63km upstream of 39259	2.2
BILWON	2	2	30km upstream of 531048	2.2
BUNGUNYA	2	2	17km upstream of Talwood (42108)	2.2
TOOBEAH	2	2	43km upstream of Talwood (42108)	2.2
KOAH	2	2	26km upstream of Talwood (42108)	2.2
KOWROWA	2	2	17km upstream 531048	2.2
SOUTHWOOD	2	2	47km upstream of Flinton (42053)	2.2
BUNGADOO	2	1	31km downstream of 39313	2.1
SOMERSET DAM	2	1	30km downstream of Woodford 540485	2.1
SOUTH BINGERA	2	1	45km downstream of 39313, 22km upstream of Bundaberg (39170)	2.1
BOOLBURRA	2	1	55km downstream of 39143	2.1
AVONDALE	2	1	21km downstream of 539047	2.1
ALTON	2	1	23km downstream Flinton (42053)	2.1
ELECTRA (PINE CREEK)	2	1	35km downstream of 39313	2.1
MALMOE	2	1	19km downstream of 39259	2.1
<b>LOW PRIORITY</b>				
GREENVALE	1	3	Nothing nearby	1.3

**Table V1 - PRIORITISATION OF SETTLEMENTS FOR CONSIDERATION INTO PROVIDING A FLOOD WARNING SERVICE**

Settlement	Flood hazard score <sup>(a)</sup>	Proximity to existing forecast location <sup>(b)</sup>	Comments	Priority <sup>(c)</sup>
LAURA	1	3	Nothing nearby	1.3
NOCCUNDRA	1	3	Nothing nearby	1.3
KAJABBI	1	3	Nothing nearby	1.3
KIDSTON	1	3	Nothing nearby	1.3
CERATODUS	1	2	20km upstream of 39259	1.2
MIARA	1	1	32km downstream of 539047	1.1
KAGARU	1	1	12km downstream of 40939	1.1
<b>NOT REQUIRED (PROXIMAL TO EXISTING FORECAST LOCATION)</b>				
FERNVALE	4	0	6km to Lowood	0.0
BEENLEIGH	4	0	2km to Eaglby	0.0
WATERFORD	4	0	2km to Waterford West	0.0
CORDELIA	4	0	3km to Halifax	0.0
MACKNADE	4	0	3km to Halifax	0.0
FOREST HILL	3	0	8km downstream of 40716	0.0
MACKAY NORTH	3	0	2km upstream of Mackay (33303)	0.0
TREBONNE	3	0	9km to Ingham	0.0
SOUTH YAAMBA	3	0	Yaamba gauge nearby	0.0
BURNETT HEADS	3	0	13km downstream of Bundaberg (39170)	0.0
IDERAWAY	3	0	8km downstream of 39191	0.0
REDLYNCH	3	0	16km from Kamerunga (531048)	0.0
CARAVONICA/LAKE PLACID	3	0	1km to Kamerunga (31170)	0.0
URANDANGI	3	0	Nothing nearby	0.0
FLYING FISH POINT	2	0	4km from 32145	0.0
FRESHWATER CREEK	2	0	3km from Kamerunga (531048)	0.0
DARADGEE	2	0	3km downstream of 532023	0.0
GLAMORGAN VALE	2	0	6km from 530183	0.0
BARRON RIVER DELTA	2	0	2km from 531049	0.0
BEMERSIDE	2	0	7km from Halifax gauge	0.0
BIVOUAC JUNCTION	1	0	4km upstream of 34085	0.0

**Notes:**

(a) Flood hazard score: 1 lowest, 4 highest

(b) Proximity to existing forecast location:

0 - Existing forecast location close, additional forecast location not required

1 - Downstream of existing forecast location, additional forecast location may be warranted

2 - Upstream of existing forecast location, additional forecast location may be warranted

3 - Nothing nearby suitable, forecast location may be warranted

(c) Priority: 1.1 lowest, 4.3 highest