

PARKES SHIRE COUNCIL

COOKAMIDGERA

FLOOD RISK MANAGEMENT STUDY AND PLAN

JULY 2025

SUMMARY REPORT

DRAFT REPORT FOR PUBLIC EXHIBITION

COPYRIGHT NOTICE



This document, Cookamidgera Flood Risk Management Study and Plan, is licensed under the [Creative Commons Attribution 4.0 Licence](https://creativecommons.org/licenses/by/4.0/), unless otherwise indicated.

Please give attribution to: © Parkes Shire Council 2025

We also request that you observe and retain any notices that may accompany this material as part of the attribution.

Notice Identifying Other Material and/or Rights in this Publication:

The author of this document has taken steps to both identify third-party material and secure permission for its reproduction and reuse. However, please note that where these third-party materials are not licensed under a Creative Commons licence, or similar terms of use, you should obtain permission from the rights holder to reuse their material beyond the ways you are permitted to use them under the [Copyright Act 1968](https://www.copyright.gov/1968/). Please see the Table of References at the rear of this document for a list identifying other material and/or rights in this document.

Further Information

For further information about the copyright in this document, please contact:

Parkes Shire Council

2 Cecile Street, Parkes

council@parkes.nsw.gov.au

+61 2 6862 3946

DISCLAIMER

*The [Creative Commons Attribution 4.0 Licence](https://creativecommons.org/licenses/by/4.0/) contains a Disclaimer of Warranties and Limitation of Liability. In addition: **This document (and its associated data or other collateral materials, if any, collectively referred to herein as the 'document')** were produced by Lyall & Associates Consulting Water Engineers for Parkes Shire Council only. The views expressed in the document are those of the author(s) alone, and do not necessarily represent the views of Parkes Shire Council. Reuse of this study or its associated data by anyone for any other purpose could result in error and/or loss. You should obtain professional advice before making decisions based upon the contents of this document.*

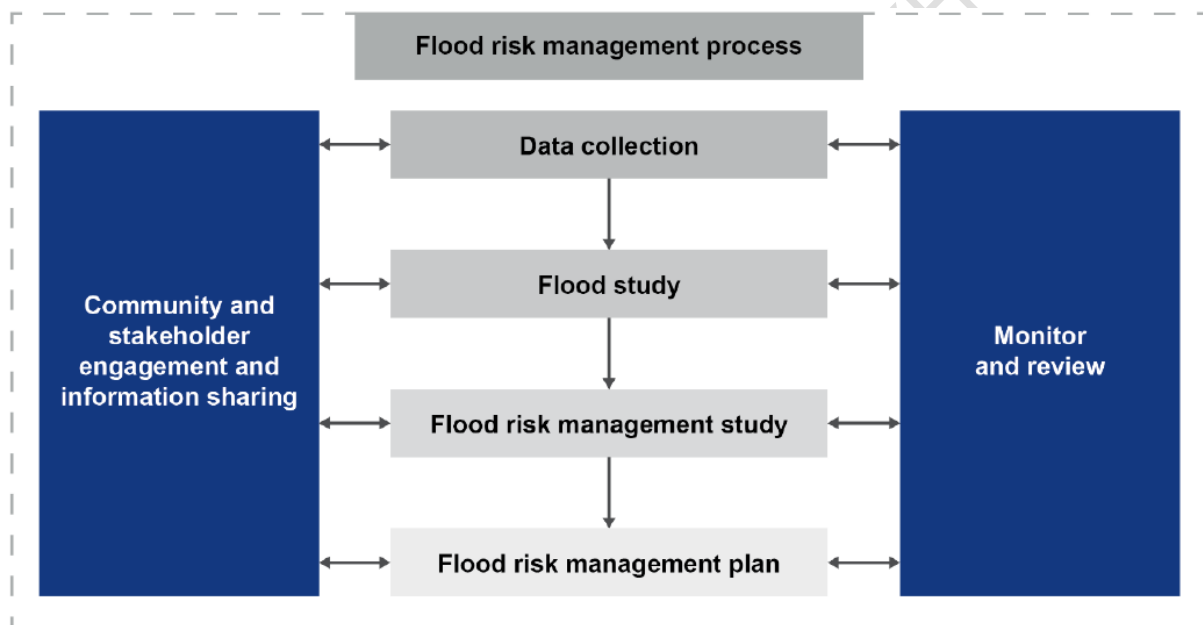
FOREWORD

NSW Government's Flood Policy

The NSW Government's Flood Policy is directed at providing solutions to existing flooding problems in developed areas and to ensuring that new development is compatible with the flood hazard and does not create additional flooding problems in other areas.

Under the Policy, the management of flood liable land remains the responsibility of local government. The State subsidises flood mitigation works to alleviate existing problems and provides specialist technical advice to assist councils in the discharge of their flood risk management responsibilities.

The Policy provides for technical and financial support by the Government through the flood risk management process shown below.



Presentation of Study Results

The results of the recently completed *Cookamidgera Flood Study* (Lyll & Associates, 2024) have been used as the basis for preparing the *Cookamidgera Flood Risk Management Study and Plan*. The *Cookamidgera Flood Risk Management Study and Plan* have been prepared under the guidance of the Flood Risk Management Committee comprising representatives from Parkes Shire Council, the NSW Department of Climate Change, Energy, the Environment and Water, the NSW State Emergency Service and community representatives.

ACKNOWLEDGEMENT

Parkes Shire Council has prepared this document with financial assistance from the NSW Government through its Floodplain Management Program. This document does not necessarily represent the opinions of the NSW Government or the Department of Climate Change, Energy, the Environment and Water.

SUMMARY

S1 Study Objectives

Parkes Shire Council (**Council**) commissioned the preparation of a *Flood Risk Management Study and Plan* for the village of Cookamidgera (**Cookamidgera FRMS&P**). The overall objectives of the *Cookamidgera Flood Risk Management Study (Cookamidgera FRMS)* were to assess the impacts of flooding, review existing Council policies as they relate to development of land in flood liable areas, consider measures for the management of flood affected land and to develop the *Cookamidgera Flood Risk Management Plan (Cookamidgera FRMP)* which:

- i) Proposes modifications to existing Council policies to ensure that the development of flood affected land is undertaken so as to be compatible with the flood hazard and risk.
- ii) Sets out the recommended program of works and measures which are aimed at reducing over time, the social, environmental and economic impacts of flooding.
- iii) Provides a program for implementation of the proposed works and measures.

The study area for the *Cookamidgera FRMS&P* applies to areas within the village and its immediate environs that are affected by the following two types of flooding:

- **Main Stream Flooding**, which occurs when floodwater surcharges the inbank area of Quart Pot Creek and Flagstone Creek (also known as Bartleys Creek). Main Stream Flooding is typically characterised by relatively deep and fast flowing floodwater but can include shallower and slower moving floodwater on the overbank of the aforementioned creeks.
- **Major Overland Flow**, which is experienced during periods of heavy rain and is generally characterised by relatively shallow and slow-moving floodwater that is conveyed overland in an uncontrolled manner toward the abovementioned watercourses and other major drainage lines.

Figures 1.1 and 2.1 show the extent of the 180 km² Flagstone Creek catchment at its confluence with Goobang Creek, while **Figure 2.2** (2 sheets) shows the key features of the existing stormwater drainage system in the vicinity of the urbanised parts of Cookamidgera. Also shown on **Figure 2.2** is the extent of the “Village Centre”, land internal to which is zoned *RU5-Village*.

S2 Study Activities

The activities undertaken in this present study included:

1. Review of available data and the undertaking of a consultation program to ensure that the Cookamidgera community were informed of the objectives, progress and outcomes over the course of the study (**Chapter 1** and **Appendix A**).
2. Review of historic flooding at Cookamidgera, as well as flooding patterns that are presented in the *Cookamidgera Flood Study* for flood events up to the Probable Maximum Flood (**PMF**). (**Chapter 2** and **Appendix B**).
3. Review of the economic impacts of flooding that are presented in the *Cookamidgera Flood Study*, including the numbers of affected properties and estimation of flood damages (**Chapter 2**).
4. Review of current flood related planning controls for Cookamidgera and their compatibility with flooding conditions (**Chapter 2**).

5. Strategic review of potential flood risk management measures aimed at reducing flood damages and recommended inclusions/updates to both the *Parkes Local Environmental Plan 2012 (Parkes LEP 2012)* and the *Parkes Shire Development Control Plan 2021 (Parkes Shire DCP 2021)* (**Chapter 3** and **Appendix C**).
6. Ranking of works and measures using a multi-objective scoring system which took into account economic, financial, environmental and planning considerations (**Chapter 4**).
7. Preparation of the *Cookamidgera FRMP* (**Chapter 5**).

S3 Summary of Flood Impacts

Figure 2.3 (2 sheets) shows the indicate extent and depth of inundation at Cookamidgera for a design flood with an AEP of 1% (1 in 100), while **Figure 2.4** (2 sheets) shows similar information for the Probable Maximum Flood (**PMF**). **Appendix B** of the *Cookamidgera FRMS* report show similar information for floods with AEPs of 20% (1 in 5), 10% (1 in 10), 5% (1 in 20), 2% (1 in 50), 0.5% (1 in 200) and 0.2% (1 in 500).

Flooding in the urbanised parts of the village (denoted herein as the “**Village Centre**”) originates from the following two primary sources:

- a) as a result of floodwater which surcharges the right (northern) bank of Flagstone Creek to the east (upstream) of the Trigg Hill Road crossing; and
- b) as a result of Major Overland Flow which discharges in a westerly direction through the northern portion of the Village Centre.

While floodwater originating from these two sources inundates both existing development and roadways shortly after the onset of flood producing rain, access into the Village Centre via Flagstone Street is effectively cut once flow is experienced in the watercourse that runs in a westerly direction along the northern side of the Orange-Broken Hill Railway. Floodwater can also inundate both private property and the road network for periods of over 12 hours.

The *Cookamidgera FRMS* found that two dwellings would be above-floor inundated in a 1% AEP flood event, resulting in flood damages totalling about \$0.27 Million, while during a PMF event, a total of 22 dwellings and one public building would be above-floor inundated, resulting in flood damages totalling about \$5.92 Million.

For a discount rate of 5% pa and an economic life of 30 years, the *Net Present Worth* of damages for all flood events up to the 1% AEP is about \$0.07 Million, while for all floods up to the PMF it is only about \$0.21 Million. Therefore, one or more schemes costing up to these two amounts could be economically justified if they eliminated all flood related damages in the study area at the two different levels of flooding. While schemes costing more than this value would have a benefit/cost ratio less than 1, they may still be justified according to a multi-objective approach which considers other criteria in addition to economic feasibility.

S4 Flood Risk and Development Controls

An approach which uses the concepts of *flood hazard* and *hydraulic categorisation*, and is aimed at imposing a graded set of controls over development according to the flood risk has been recommended for incorporation into *Parkes Shire DCP 2021*. The delineation of flood planning constraint categories is based on the proximity to flow paths, depths and velocities of flow, the rate of rise of floodwaters and ease of evacuation from the floodplain in the event of a flood emergency.

Figure C1.1 is an extract from the *Flood Planning Map* relating to the study area. The extent of the Flood Planning Area (**FPA**) (the area subject to flood related development controls) has been defined as follows:

- In areas subject to Main Stream Flooding, the FPA is based on the traditional definition of the area that lies at or below by the 1% AEP plus 0.5 m freeboard.
- In areas subject to Major Overland Flow, the FPA is defined as areas where depths of inundation exceed 0.1 m in a 1% AEP event, and where identifiable floodways are present in shallower flow.

Figure C1.2 is an extract of the *Flood Planning Constraint Category Map* for the study area which shows the subdivision of the floodplain into four categories which have been used as the basis for developing the graded set of planning controls.

Minimum habitable floor level (**MHFL**) requirements would be imposed on future development of properties that are identified as lying either partially or wholly within the extent of the FPA shown on **Figure C1.1**. The MHFLs for residential land use types is the level of the 1% AEP flood event plus freeboard, whereas for commercial and industrial land use types the MHFL is to be as close to the 1% AEP flood level plus freeboard as practical, but no lower than the 5% AEP flood level plus freeboard. In situations where the MHFL is below the 1% AEP flood level plus freeboard, a mezzanine area equal to 30% of the total habitable floor area is to be provided, the elevation of which is to be set no lower than the 1% AEP flood level plus freeboard.¹

S5 The Flood Risk Management Plan

Chapter 5 of this report presents the *Cookamidgera FRMP*, with the recommended works and measures summarised in **Table S1** at the end of this Summary. The recommended works and measures have been given a provisional priority ranking, confirmed by the Flood Risk Management Committee (**FRMC**), according to a range of criteria, details of which are set out in **Section 4** of this report.

The *Cookamidgera FRMP* comprises three “non-structural” management measures which could be implemented by Council and NSW State Emergency Service (**NSW SES**) using existing data and without requiring Government funding. The measures are as follows:

- **Measure 1** – Council to consider the inclusion of the optional *special flood considerations* clause 5.22 in *Parkes LEP 2012*, noting that it would apply to land that lies between the FPA and the extent of the PMF where Council considers flood related development controls need to be applied to sensitive and hazardous type development but can also include other types of development where Council considers that the land, in the event of a flood, may cause a particular risk to life, or require the evacuation of people or other safety considerations..
- **Measure 2** - The application of a graded set of planning controls for future development that recognise the location of the development within the floodplain; to be applied through the update of *Parkes Shire DCP 2021*. Suggested wording for inclusion in *Parkes Shire DCP 2021* is set out in Appendix C of this report.

¹ Freeboard is equal to 0.5 m for development being assessed in areas affected by Main Stream Flooding and 0.3 m for development being assessed in areas affected by Major Overland Flow.

- **Measure 3** - Improvements in the NSW SES emergency planning, including use of the flood related information contained in this study to update the *Parkes Shire Local Flood Plan* (NSW SES, 2024). Information in this report which would be of assistance to NSW SES includes data on the nature and extent of flooding, details of which could be used to update Volume 2 of the *Parkes Shire Local Flood Plan*.
- **Measure 4** - Council should take advantage of the information on flooding presented in this report, including the flood mapping, to inform occupiers of the floodplain of the flood risk. This could be achieved through the preparation of a *Flood Information Brochure* which could be prepared by Council with the assistance of NSW SES containing both general and site-specific data and distributed with rate notices.

In addition to the above measures, the *Cookamidgera FRMP* includes the investigation, design and construction of the following set of flood modification measures (denoted Potential Flood Modification Measure (**PFMM**) 6 in *Cookamidgera FRMS*), noting that this would require Government Funding (**Measures 5 and 6**):

- Construction of an engineered earthen embankment approximately 560 m in length and on average 1 m in height running along the right (northern) bank of Flagstone Creek upstream of its crossing of Trigg Hill Road.
- Construction of an engineered earthen embankment around the existing farm dam that is located 500 m to the east of the village centre, as well as a 200 m channel extending south to an overbank flood runner of Flagstone Creek.
- Construction of a grassed swale/channel along the eastern side of Flagstone Street, extending west to the location of an existing dam that is located in the rail corridor.
- Construction of new transverse drainage structures beneath both Flagstone Street and the adjacent unsealed access road (each presently assessed as 2 off 3 m wide by 1.2 m high reinforced concrete box culverts).
- Lowering of the spillway associated with the existing dam that is located in the rail corridor (current assessment assumes a spillway elevation of RL 343.7 m AHD).
- Widening and regrading of the watercourse that runs along the northern side of the rail corridor from where it crosses Cooka Hills Road to where it crosses the Orange-Broken Hill Railway, an overall length of about 550 m (current assessment assumes a 12 m base width).
- Installation of 3 off 3.6 m wide by 0.9 m high reinforced box culverts on Flagstone Street.
- Raising Flagstone Street by about 0.2 m to an elevation of RL 345.7 m AHD.
- Lowering of natural surface levels either side of Flagstone Street to facilitate the installation of the reinforced concrete box culverts and associated inlet/outlet headwall/scour protection works.

Figure 3.6 (2 sheets) shows the key features comprising PFMM6, as well as the impact that their implementation would have on floods with AEPs of 20%, 5% and 1%.

While the implementation of the works associated with PFMM6 cannot be justified purely on economic grounds (i.e. because the benefit/cost ratio of the works is less than 0.1), they would reduce the existing flood risk within the Cookamidgera community by:

- a) significantly reducing both the extent and depth of inundation that is currently experienced within the Village Centre;

- b) removing the above-floor inundation that is currently experienced in two dwellings up to the 1% AEP level of flooding; and
- c) significantly improve the ability of people to be able to travel between the village and Parkes during times of freshes and floods.

S6 Timing and Funding of Cookamidgera FRMP Measures

The total estimated cost to implement the measures set out in the *Cookamidgera FRMP* is **\$2.1 Million**, exclusive of both local and state government agency costs. The timing of the measures will depend on Council's overall budgetary commitments and the availability of both Local, State and Commonwealth Government funds.

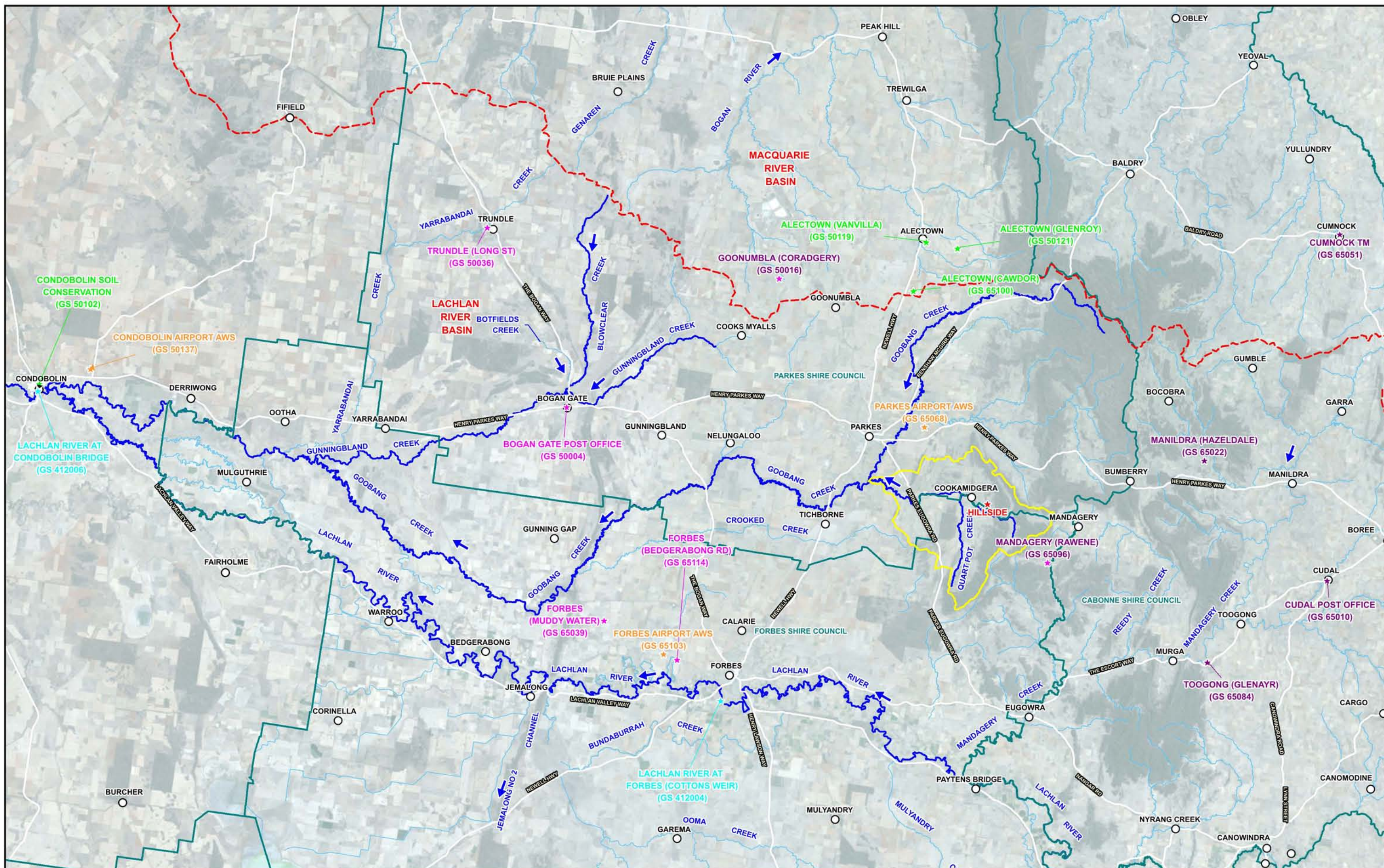
Assistance for funding qualifying projects included in the *Cookamidgera FRMP* may be available upon application under Commonwealth and State funded floodplain management programs, currently administered by the NSW Department of Climate Change, Energy, the Environment and Water.

S7 Council Action Plan

1. Council to consider updating *Parkes LEP 2012* to include the NSW Government's *Special Flood Considerations* clause 5.22 (**Measure 1** of *Cookamidgera FRMP*).
2. Council to update *Parkes Shire DCP 2021* to incorporate the suggested form of wording set out in **Appendix C** of this report (**Measure 2** of *Cookamidgera FRMP*).
3. NSW SES to update the *Parkes Shire Local Flood Plan* using information on flooding patterns, peak flood levels, times of rise of floodwaters and flood prone areas identified in this report (**Measure 3** of the *Cookamidgera FRMP*).
4. Council to inform residents of the flood risk, based on the information presented in the *Cookamidgera FRMS* (e.g. displays of flood mapping at Council offices, preparation of *Flood Information Brochure* for distribution with rate notices, etc) (**Measure 4** of the *Cookamidgera FRMP*).
5. Council to commission an investigation into the feasibility of implementing the full scope of measures comprising PFMM6, as well as the preparation of a preliminary concept design of the preferred set of measures (**Measure 5** of the *Cookamidgera FRMP*).
6. Subject to a favourable outcome of Measure 5, Council to commission the detailed design and construction of the preferred set of measures comprising PFMM6 (**Measure 6** the *Cookamidgera FRMP*).

TABLE S1
RECOMMENDED MEASURES FOR INCLUSION IN COOKAMIDGERA FLOOD RISK MANAGEMENT PLAN

Measure	Required Funding	Features of the Measure	Priority
1. Update of <i>Parkes LEP 2012</i>	Council staff costs	<ul style="list-style-type: none"> ➤ Council to consider including the optional <i>special flood considerations</i> clause 5.22 in <i>Parkes LEP 2012</i>. The optional clause applies to land that lies between the FPA and the extent of the PMF where Council considers flood related development controls need to be applied to sensitive and hazardous type development but can also include other types of development where Council considers that the land, in the event of a flood, may cause a particular risk to life, or require the evacuation of people or other safety considerations. ➤ While the inclusion of the optional <i>special flood considerations</i> clause 5.22 in <i>Parkes LEP 2012</i> would have limited, if any, impact on future development within Cookamidgera, it may have relevance to other urban centres in the LGA such as at Parkes. For this reason, the flood mapping and recommended set of flood related development controls that form part of the present study assume that Council includes the optional clause in <i>Parkes LEP 2012</i>. This approach ensures consistency with other study areas where the adoption of the optional clause has more relevance. 	Medium Priority: this measure is designed to mitigate the flood risk to future sensitive and hazardous type development and has a medium priority. It does not require Government funding.
2. Incorporate recommended approach to managing future development on flood prone land in <i>Parkes Shire DCP 2021</i> .	Council staff costs	<ul style="list-style-type: none"> ➤ Graded set of flood controls based on the type of development and their location within the floodplain, defined as land inundated by the PMF. ➤ Floodplain divided into four zones based on the assessed flood hazard and hydraulic categorisation. ➤ The minimum floor levels for all land use types is the level of the 1% AEP flood event plus 0.5 m freeboard in the case of areas affected by Main Stream Flooding and plus 0.3 m freeboard in areas affected by Major Overland Flow. ➤ Additional controls applied to development that is located on land which lies above the Flood Planning Level. 	High Priority: this measure is designed to mitigate the flood risk to future development and has a high priority for inclusion in the <i>Cookamidgera FRMP</i> . It does not require Government funding.
3. Ensure flood data presented in the <i>Cookamidgera FRMS</i> are available to the NSW SES for improvement of flood emergency planning.	NSW SES costs	<ul style="list-style-type: none"> ➤ NSW SES should update the <i>Parkes Shire Local Flood Plan</i> using information on flooding patterns, times of rise of floodwaters and flood prone areas identified in this report. 	High Priority: this measure would improve emergency response procedures and has a high priority. It does not require Government funding.
4. Implement flood awareness and education program	Council staff costs	<ul style="list-style-type: none"> ➤ Council to inform residents of the flood risk, based on the information presented in the <i>Cookamidgera FRMS</i>. (e.g. displays of flood mapping at Council offices, preparation of <i>Flood Information Brochure</i> for distribution with rate notices, etc). 	Medium Priority: this measure would improve the flood awareness of the community and has a medium priority given the relatively minor impact flooding has on existing development in the village. It does not require Government funding.
5. Investigate feasibility of implementing works comprising PFMM6 and prepare preliminary concept design	\$0.3 Million	<ul style="list-style-type: none"> ➤ Liaise with affected land owners and relevant rail authority to gain in-principle agreement to construct works and also create easements for access (where required). ➤ Underground utilities search ➤ Geotechnical investigation to assess foundation conditions ➤ Hydraulic modelling to confirm sizes of the key elements of individual elements of the measure ➤ Prepare preliminary concept design and cost estimate ➤ Cost-benefit analysis to confirm the economics of the scheme ➤ Prepare a submission for Council and Government funding for detailed design and construction 	High Priority: this measure would significantly reduce the flood risk within the Cookamidgera community.
6. Prepare detailed design and construct preferred set of measures comprising PFMM6	\$1.8 Million	<ul style="list-style-type: none"> ➤ Tasks involved are as follows: <ul style="list-style-type: none"> ○ Prepare detailed design and documentation ○ Prepare a submission for Council and Government funding. ➤ Construct preferred set of measures. 	



Scale: 1:400,000

Lyall & Associates

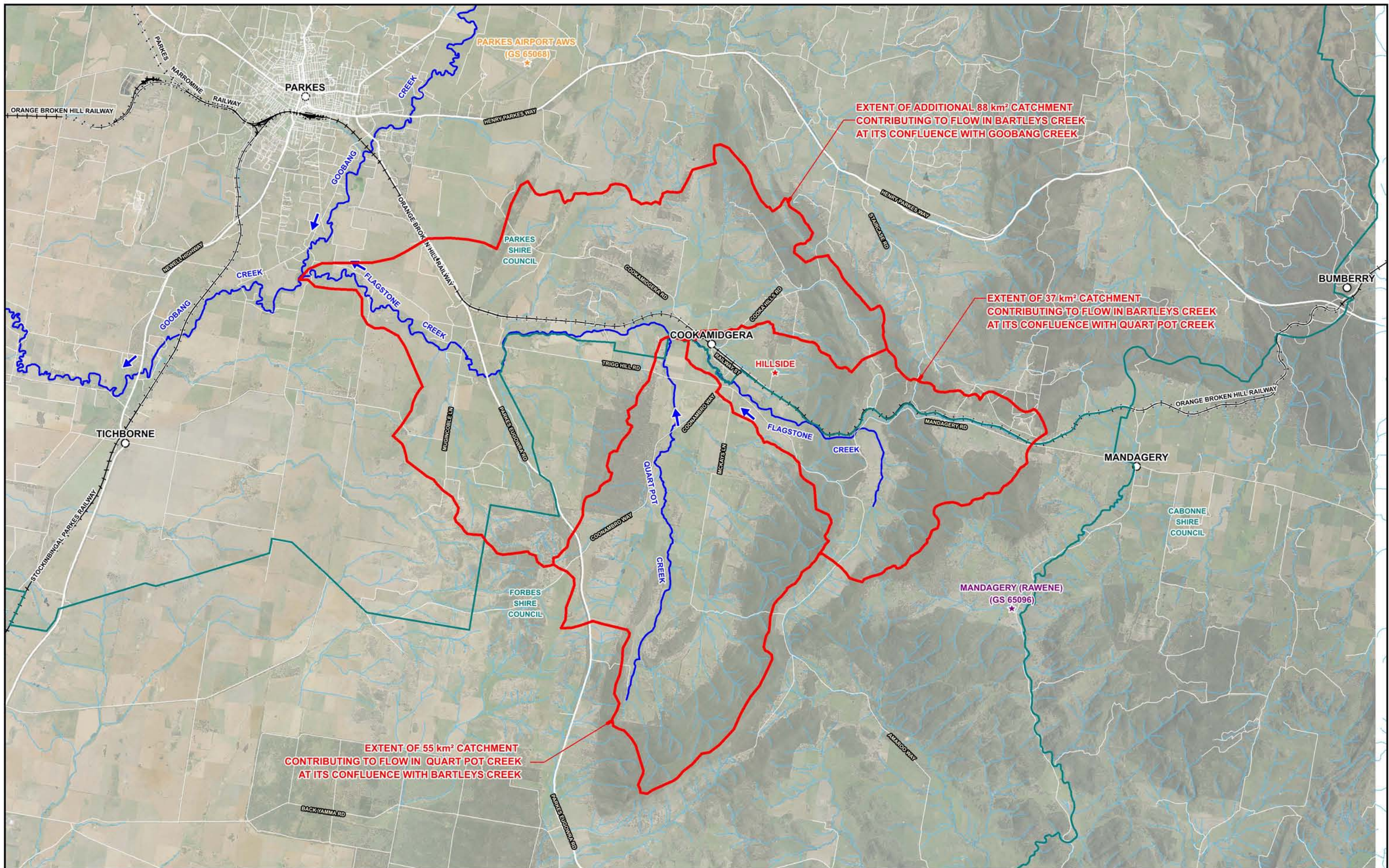
LEGEND

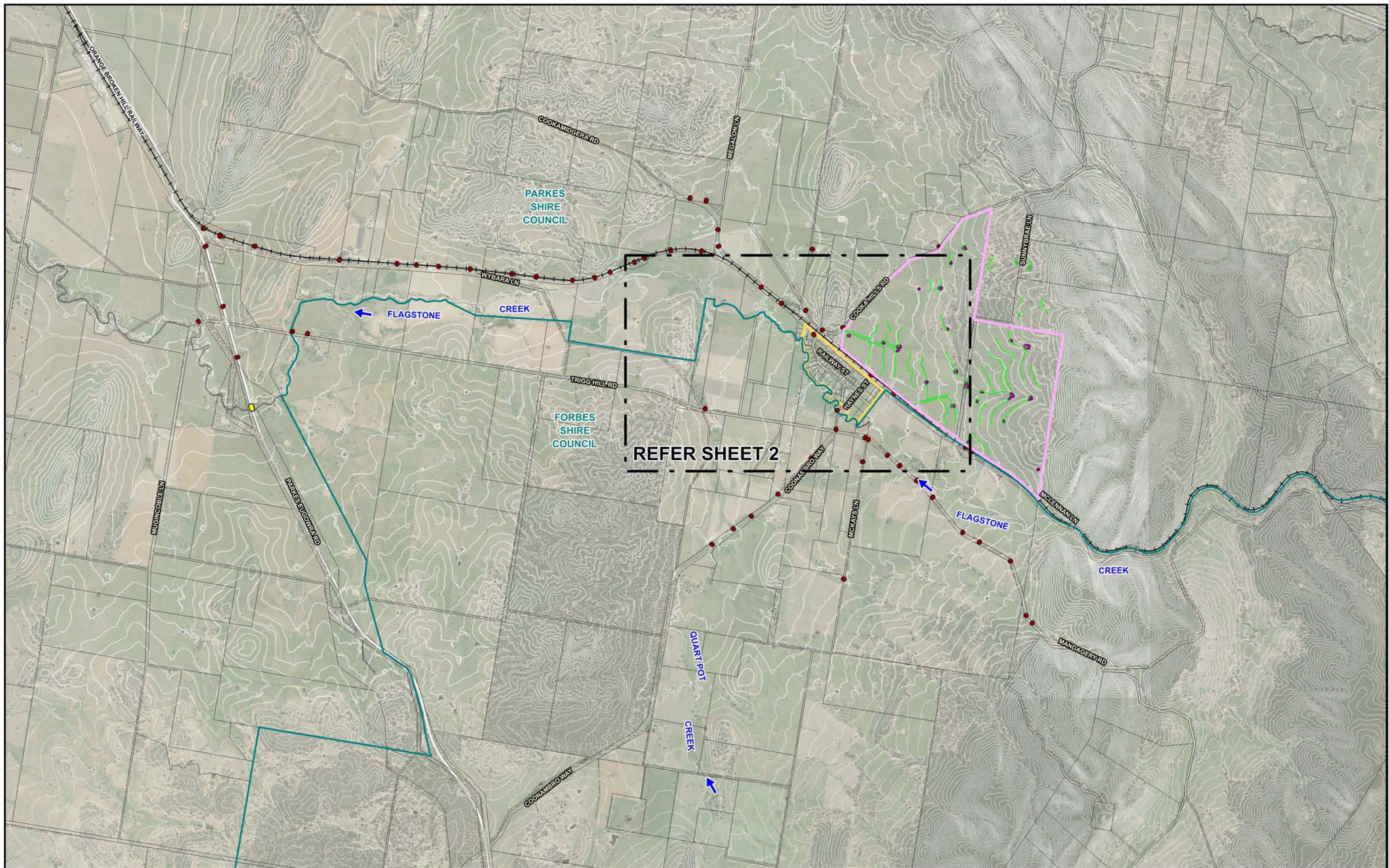
- ★ BoM All Weather Station (AWS)
- ★ BoM Daily Rain Gauge
- ★ BoM Pluviographic Rain Gauge
- ★ WaterNSW Pluviographic Rain Gauge
- ★ Privately Owned Rain Gauge
- Study Catchment
- LGA Boundary
- River Basin Catchment Boundary
- BoM Flood Warning Network (FWN)

COOKAMIDGERA FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 1.1

LOCATION PLAN







N
100 0 100 200 300 m
Scale: 1:10,000

Lyall &
Associates

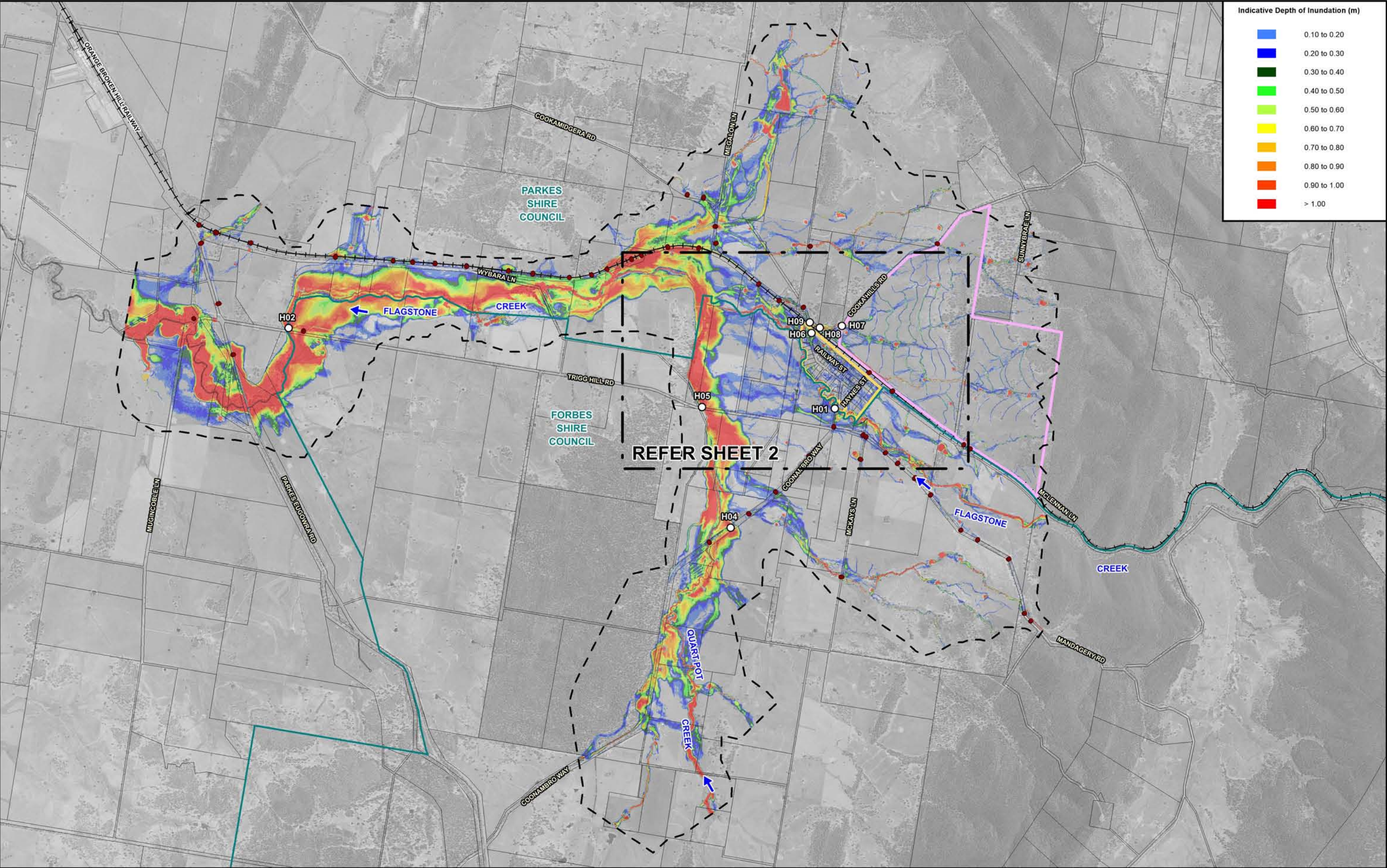
LEGEND

- LGA Boundary
- Village Centre
- Modelled Stormwater Drainage System
- Natural Surface Elevation Contour (2m Interval)
- Extent of The Cookamidgera Project
- Cookamidgera Project Dam
- Cookamidgera Project Earth Bund/Embankment

COOKAMIDGERA FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.2
(Sheet 2 of 2)

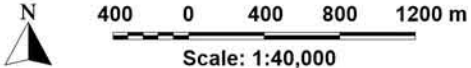
EXISTING STORMWATER DRAINAGE SYSTEM AT COOKAMIDGERA



Indicative Depth of Inundation (m)

- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- 0.50 to 0.60
- 0.60 to 0.70
- 0.70 to 0.80
- 0.80 to 0.90
- 0.90 to 1.00
- > 1.00

REFER SHEET 2



Lyall & Associates

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 3 m (min) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

The allotment boundaries shown are based on the NSW State Database obtained from the Six Maps online database and may not represent the true property boundaries in the study area

LEGEND

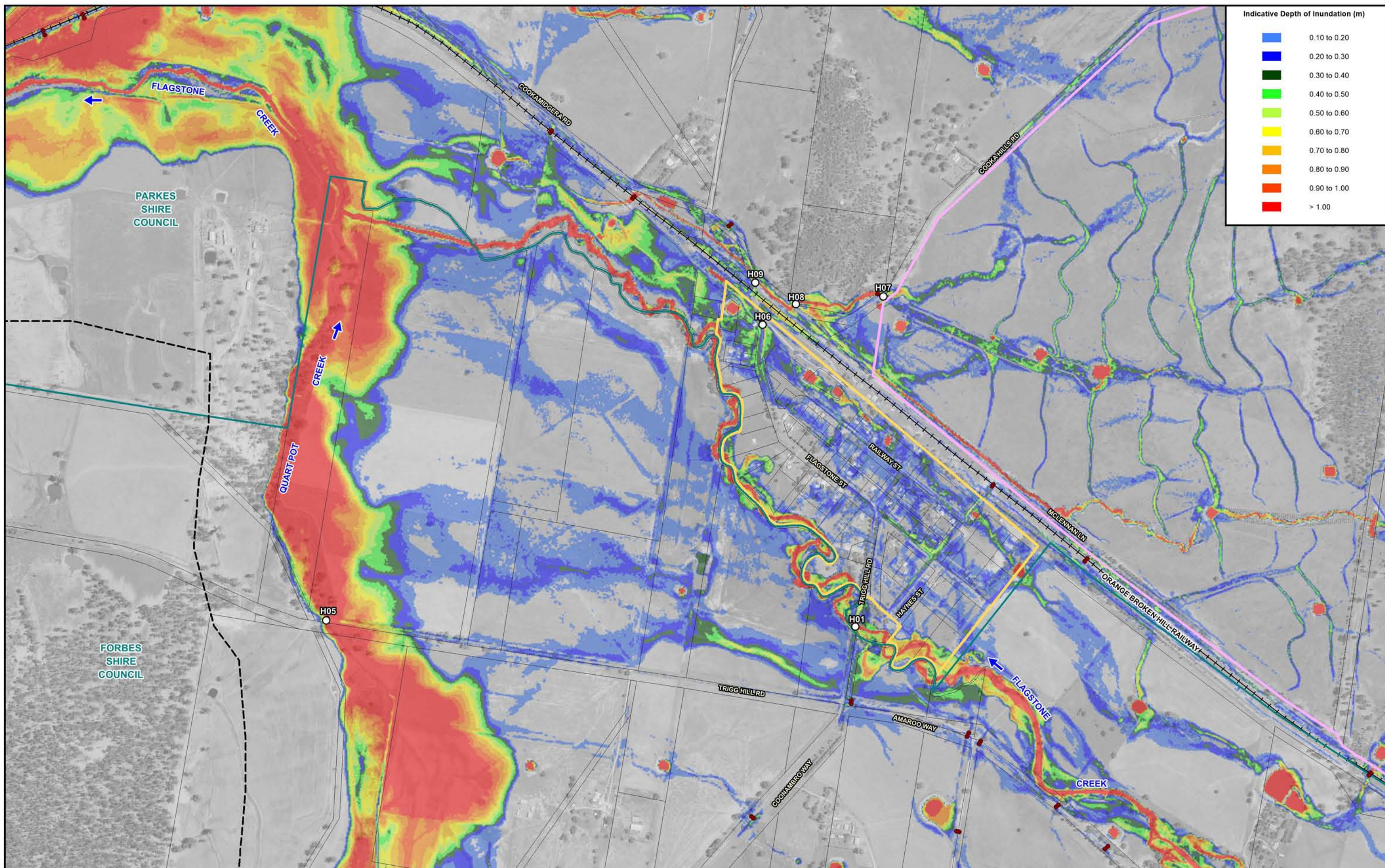
- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Extent of The Cookamidgera Project
- Village Centre

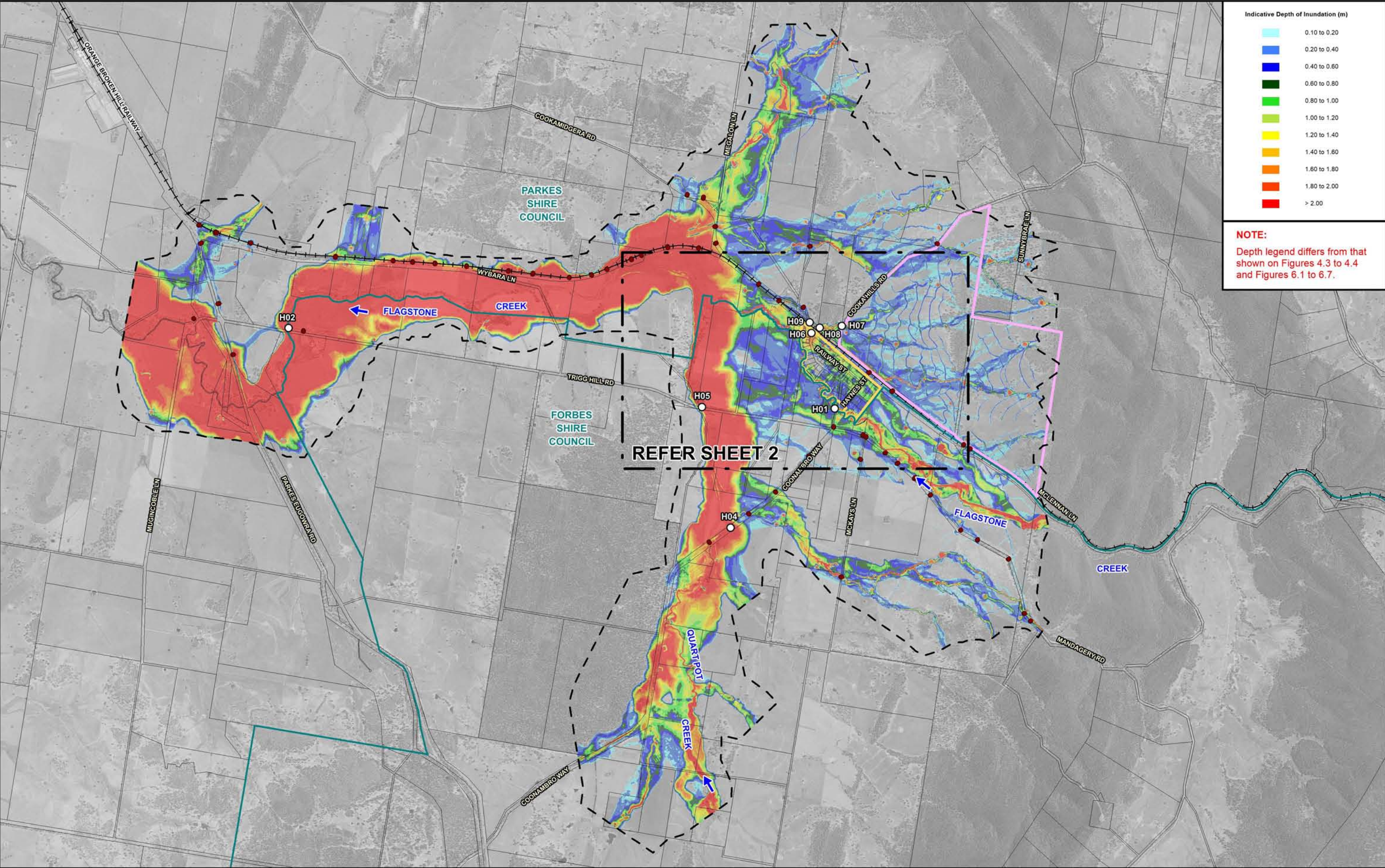
H01 ○ Road Flood Data Location and Identifier

**COOKAMIDGERA
FLOOD RISK MANGEMENT STUDY AND PLAN**

Figure 2.3
(Sheet 1 of 2)

INDICATIVE EXTENT AND DEPTH OF INUNDATION
1% AEP





Indicative Depth of Inundation (m)	
0.10 to 0.20	0.10 to 0.20
0.20 to 0.40	0.20 to 0.40
0.40 to 0.60	0.40 to 0.60
0.60 to 0.80	0.60 to 0.80
0.80 to 1.00	0.80 to 1.00
1.00 to 1.20	1.00 to 1.20
1.20 to 1.40	1.20 to 1.40
1.40 to 1.60	1.40 to 1.60
1.60 to 1.80	1.60 to 1.80
1.80 to 2.00	1.80 to 2.00
> 2.00	> 2.00

NOTE:
Depth legend differs from that shown on Figures 4.3 to 4.4 and Figures 6.1 to 6.7.

400 0 400 800 1200 m

Scale: 1:40,000

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 3 m (min) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

The allotment boundaries shown are based on the NSW State Database obtained from the Six Maps online database and may not represent the true property boundaries in the study area

LEGEND

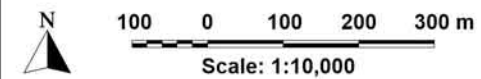
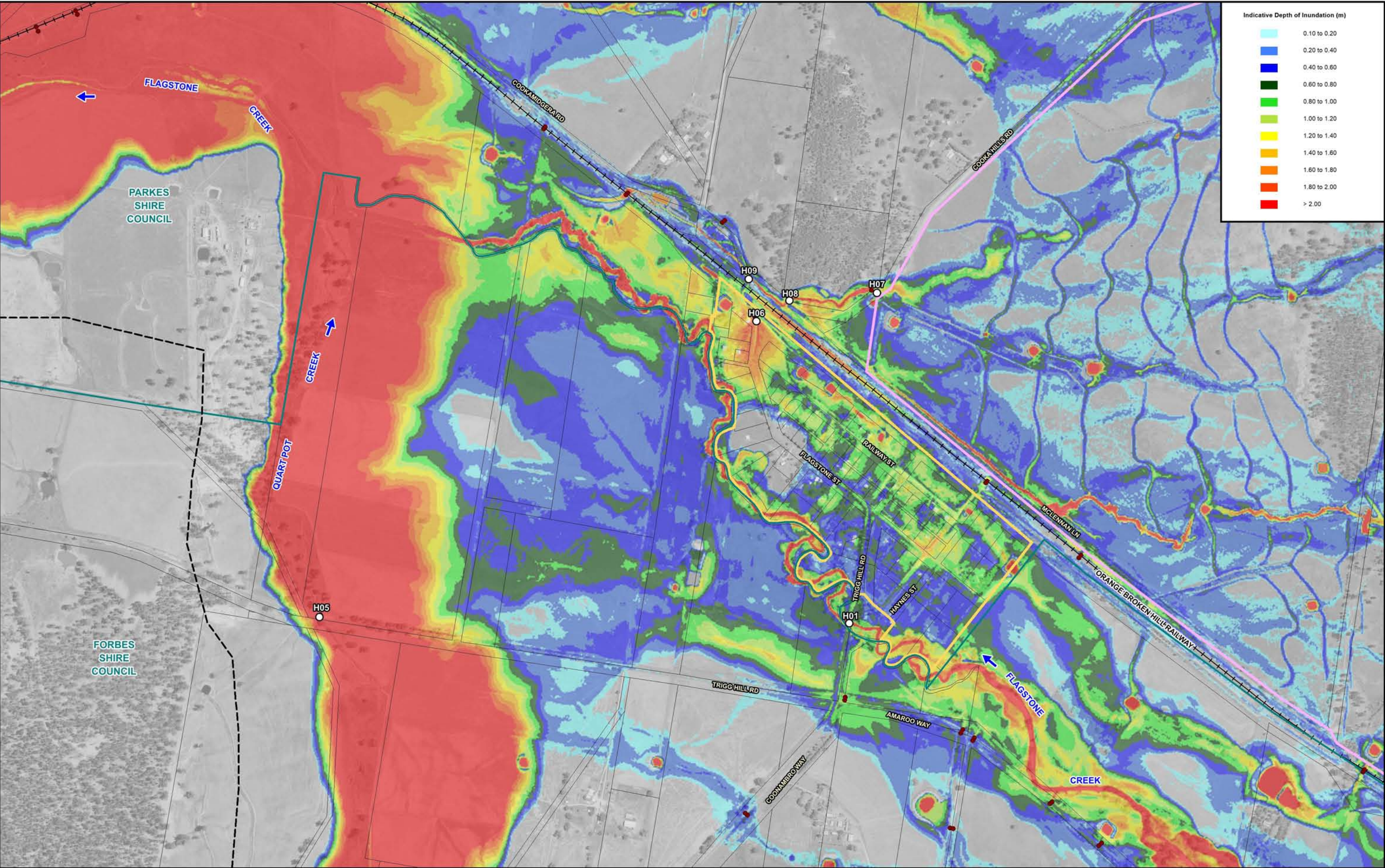
- LGA Boundary
- - - Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Extent of The Cookamidgera Project
- Village Centre

COOKAMIDGERA

FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.4
(Sheet 1 of 2)

INDICATIVE EXTENT AND DEPTH OF INUNDATION
PMF



NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 3 m (min) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

The allotment boundaries shown are based on the NSW State Database obtained from the Six Maps online database and may not represent the true property boundaries in the study area

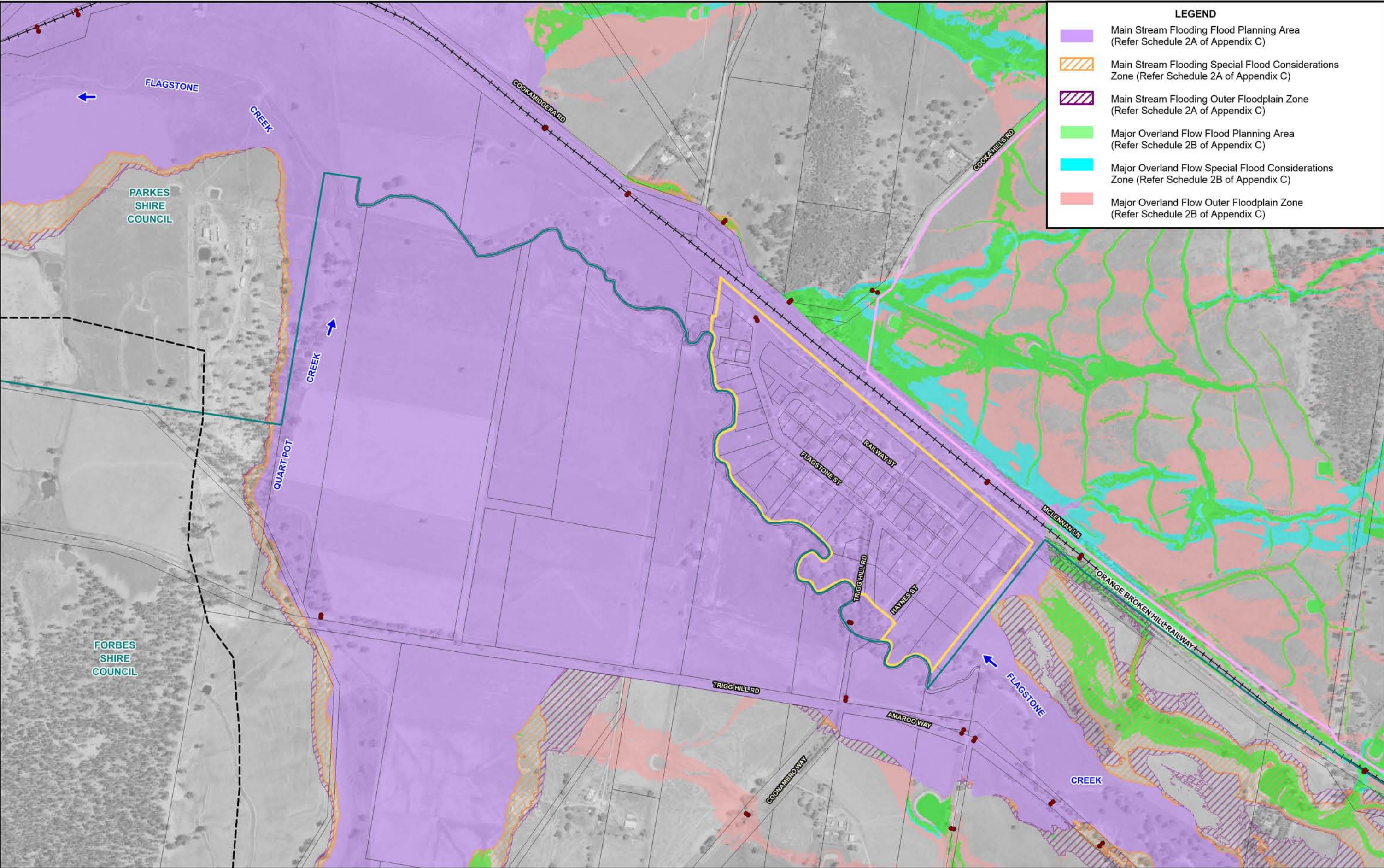
- LEGEND**
- LGA Boundary
 - Two-Dimensional Model Boundary
 - Modelled Stormwater Drainage System
 - Extent of The Cookamidgera Project
 - Village Centre

H01 ○ Road Flood Data Location and Identifier

**COOKAMIDGERA
FLOOD RISK MANGEMENT STUDY AND PLAN**

Figure 2.4
(Sheet 2 of 2)

INDICATIVE EXTENT AND DEPTH OF INUNDATION
PMF



LEGEND

- Main Stream Flooding Flood Planning Area (Refer Schedule 2A of Appendix C)
- Main Stream Flooding Special Flood Considerations Zone (Refer Schedule 2A of Appendix C)
- Main Stream Flooding Outer Floodplain Zone (Refer Schedule 2A of Appendix C)
- Major Overland Flow Flood Planning Area (Refer Schedule 2B of Appendix C)
- Major Overland Flow Special Flood Considerations Zone (Refer Schedule 2B of Appendix C)
- Major Overland Flow Outer Floodplain Zone (Refer Schedule 2B of Appendix C)

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 3 m (min) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

The allotment boundaries shown are based on the NSW State Database obtained from the Six Maps online database and may not represent the true property boundaries in the study area.

LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Extent of The Cookamidgera Project
- Village Centre

**COOKAMIDGERA
FLOOD RISK MANGEMENT STUDY AND PLAN**

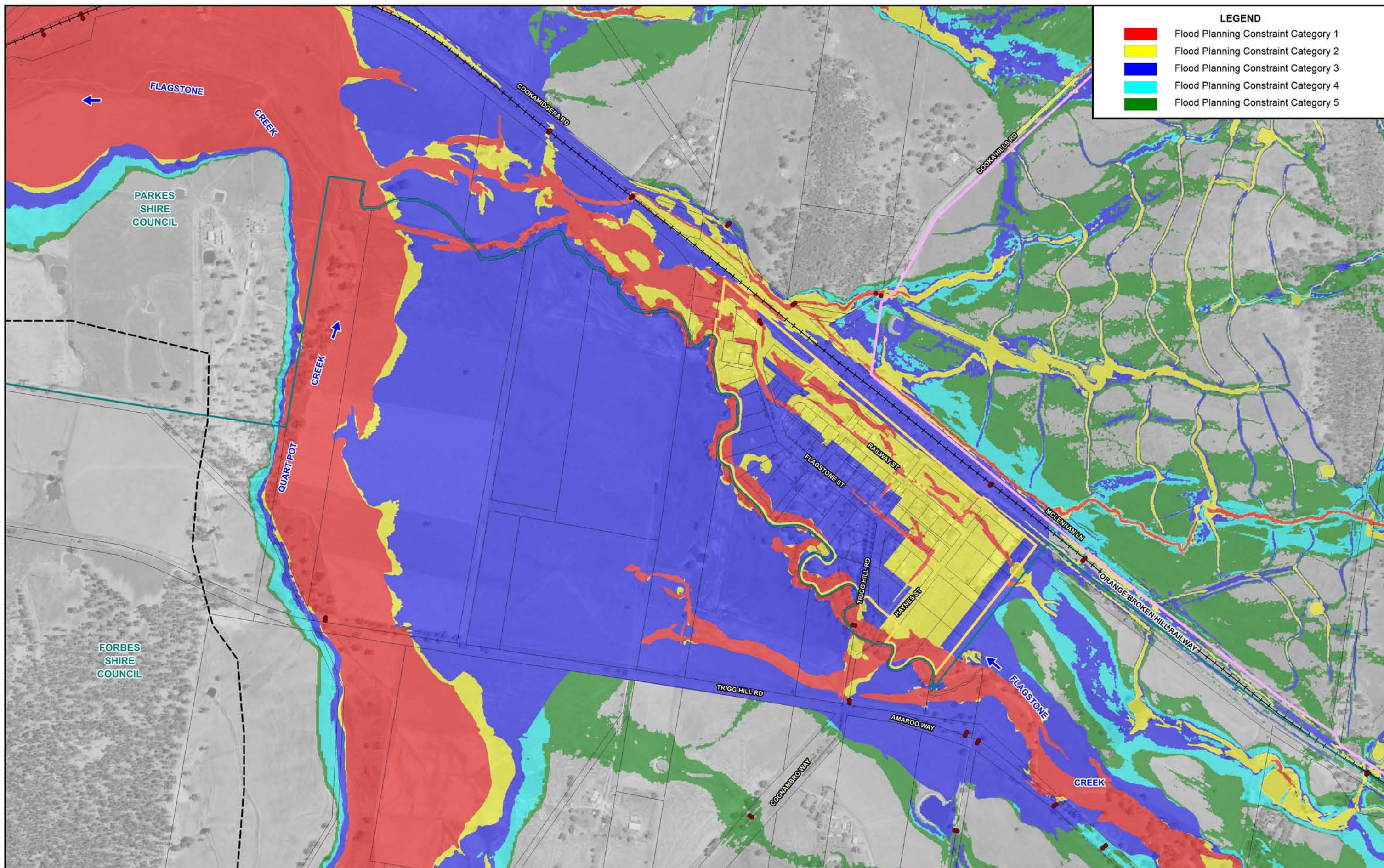
Figure C1.1

EXTRACT OF PARKES SHIRE FLOOD PLANNING MAP AT COOKAMIDGERA

Scale: 1:10,000

100 0 100 200 300 m

Lyall & Associates



- LEGEND**
- Flood Planning Constraint Category 1
 - Flood Planning Constraint Category 2
 - Flood Planning Constraint Category 3
 - Flood Planning Constraint Category 4
 - Flood Planning Constraint Category 5

N
100 0 100 200 300 m
Scale: 1:10,000

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 3 m (min) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

The allotment boundaries shown are based on the NSW State Database obtained from the Six Maps online database and may not represent the true property boundaries in the study area.

- LEGEND**
- LGA Boundary
 - Two-Dimensional Model Boundary
 - Modelled Stormwater Drainage System
 - Extent of The Cookamidgera Project
 - Village Centre

**COOKAMIDGERA
FLOOD RISK MANGEMENT STUDY AND PLAN**

Figure C1.2

EXTRACT OF PARKES SHIRE FLOOD PLANNING
CONSTRAINT CATEGORY MAP AT COOKAMIDGERA

