PARKES SHIRE COUNCIL

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

OCTOBER 2025

VOLUME 2 – FIGURES

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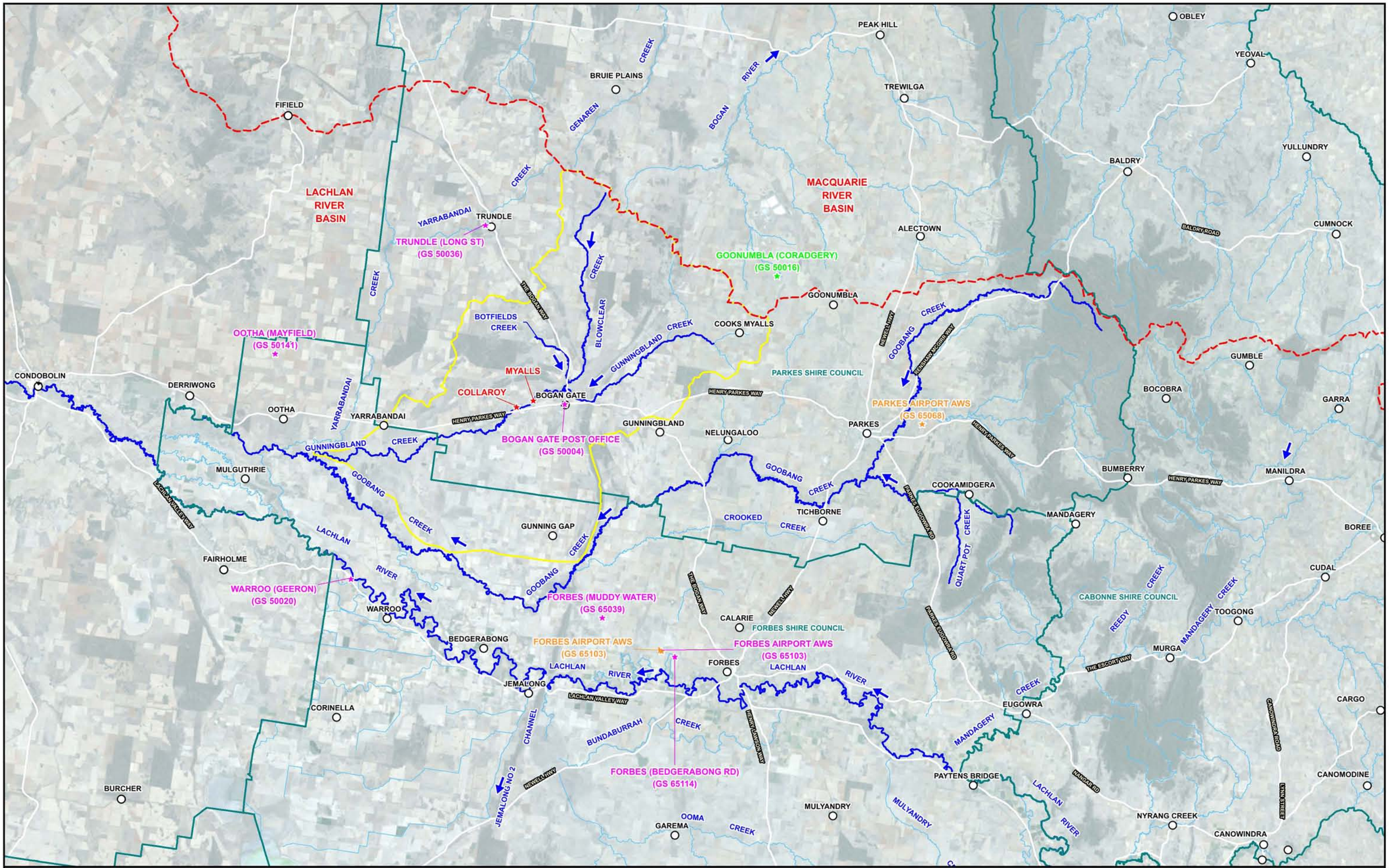
LIST OF FIGURES (MAIN REPORT)


LACHLAN RIVER BASIN
MACQUARIE RIVER BASIN
PARKES SHIRE COUNCIL
CABONNE SHIRE COUNCIL
FORBES SHIRE COUNCIL
FIFIELD
BRUIE PLAINS
PEAK HILL
TREWILGA
OBLEY
YEOVAL
YULLUNDRY
BALDRY
CUMNOCK
ALECTOWN
GOONUMBLA
COOKS MYALLS
TRUNDLE
TRUNDLE (LONG ST) (GS 50036)
GOONUMBLA (CORADGERY) (GS 50016)
OOTHA (MAYFIELD) (GS 50141)
CONDOBOLIN
DERRIWONG
OOTHA
YARRABANDAI
MULGUTHRIE
BOTFIELDS CREEK
MYALLS
COLLAROY
BOGAN GATE
BOGAN GATE POST OFFICE (GS 50004)
GUNNINGBLAND
NELUNGALOO
PARKES
PARKES AIRPORT AWS (GS 65068)
GUMBLE
BOCOBRA
GARRA
BUMBERRY
MANILDRA
COOKAMIDGERA
TICHBORNE
MANDAGERY
BOREE
CUDAL
TOOGONG
MURGA
EUGOWRA
CARGO
CANOMODINE
NYRANG CREEK
CANOWINDRA
PAYTENS BRIDGE
MULYANDRY
GUNNING GAP
FAIRHOLME
WARROO (GEERON) (GS 50020)
WARROO
FORBES (MUDDY WATER) (GS 65039)
BEDGERABONG
FORBES AIRPORT AWS (GS 65103)
FORBES
CALARIE
JEMALONG
CORINELLA
BUNDABURRAH
FORBES (BEDGERABONG RD) (GS 65114)
GAREMA
OOMA
BURCHER
CREEK
RIVER
GOOBANG
BLOWCLEAR
GENAREN
BOGAN
LACHLAN
YARRABANDAI
GUNNINGBLAND
CROOKED
QUART POT
REEDY
MANDAGERY
CHANNEL
JEMALONG NO 2
THE BOGAN WAY
NEWELL HWY
HENRY PARKES WAY
HERBERT MCGIBBEN WAY
BALDRY ROAD
LACHLAN VALLEY WAY
PARKES EUGOWRA RD
THE ESCORT WAY
HENRY LAWSON WAY
MANGAR RD
CANOWINDRA ROAD
LYNN STREET
N
4 0 4 8 12 km
Scale: 1:400,000
LEGEND
BoM All Weather Station (AWS)
BoM Daily Rainfall Station
BoM Flood Warning Network (FWN) Rain Gauge
Privately Owned Rain Gauge
Study Catchment
LGA Boundary
River Basin Catchment Boundary
Lyall & Associates
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure 1.1
LOCATION PLAN

EXTENT OF 268 km² CATCHMENT CONTRIBUTING TO FLOW IN BLOWCLEAR CREEK AT IT'S CONFLUENCE WITH GUNNINGBLAND CREEK

EXTENT OF 231 km² CATCHMENT CONTRIBUTING TO FLOW IN GUNNINGBLAND CREEK AT IT'S CONFLUENCE WITH BLOWCLEAR CREEK

EXTENT OF ADDITIONAL 23.7 km² CATCHMENT CONTRIBUTING TO FLOW IN GUNNINGBLAND CREEK AT ORANGE-BROKEN HILL RAILWAY LINE

TRUNDLE (LONG ST) (GS 50036)

OOTHA (MAYFIELD) (GS 50141)

COLLAROY

MYALLS

BOGAN GATE

BOGAN GATE POST OFFICE (GS 50004)

GOONUMBLA (CORADGERY) (GS 50016)

PARKES AIRPORT AWS (GS 65068)

WARROO (GEERON) (GS 50020)

TRUNDLE

PARKES

FORBES SHIRE COUNCIL

PARKES SHIRE COUNCIL

BRUIE PLAINS RD

TOTTENHAM RAILWAY LINE

YARRABANDAI CREEK

YARRABANDAI RD

BLACK RANGE RD

THE BOGAN WAY

BOTFIELDS CREEK

BLOWCLEAR CREEK

BLOW CLEAR RD

MIDDLE MUDDLE RD

MILPOSE CREEK

FIVE CHAIN LANE

MYALL CREEK

BOX CAMP CREEK

GUNNINGBLAND CREEK

HENRY PARKES WAY

NARROMINE RAILWAY LINE

NEWELL HWY

YARRABANDAI ORANGE BROKEN HILL RAILWAY LINE

GUNNINGBLAND CREEK

BEDGERABONG RD

THE BOGAN WAY

ORANGE BROKEN HILL RAILWAY LINE

GOOBANG CREEK

GOOBANG CREEK

PARKES SHIRE COUNCIL

FORBES SHIRE COUNCIL

N

2 0 2 4 6 km

Scale: 1:200,000

LEGEND

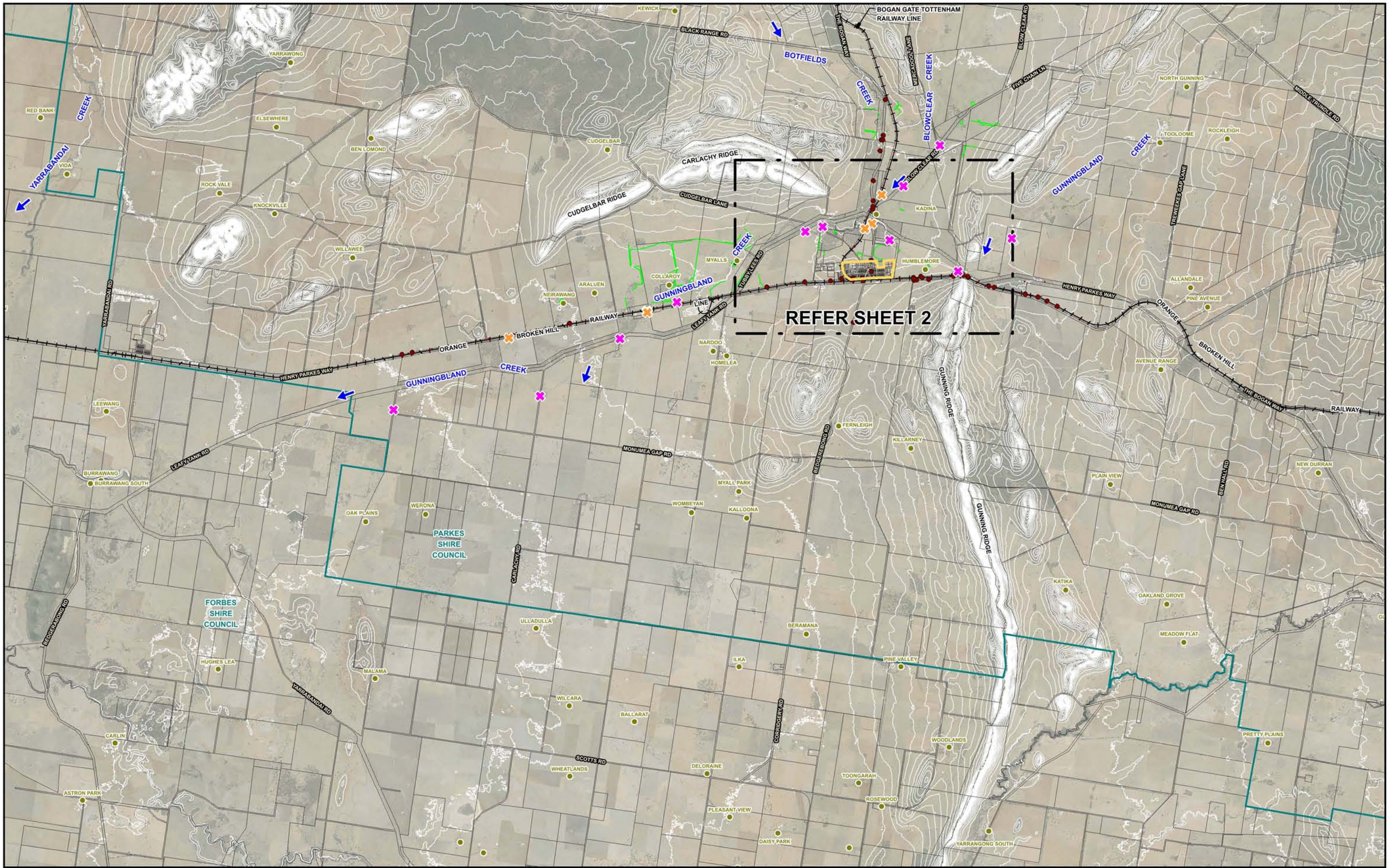
- LGA Boundary
- Catchment Boundary
- BoM All Weather Station (AWS)
- BoM Daily Rainfall Station
- BoM Flood Warning Network (FWN) Rain Gauge
- Privately Owned Rain Gauge

Lyall & Associates

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.1

CATCHMENT PLAN



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

LEGEND

- LGA Boundary
- Rural Levee/Embankment
- Existing Stormwater Drainage System
- Natural Surface Elevation Contour (5m Interval)
- Village Centre
- Homestead
- Causeway
- Bridge/Major Culvert

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.2
(Sheet 1 of 2)

EXISTING STORMWATER DRAINAGE SYSTEM AT BOGAN GATE

CARLACHY RIDGE
BOTFIELDS CREEK
CREEK
BLOWCLEAR RD
BLOWCLEAR
KADINA
CUDGELBAR LN
GUNNINGBLAND CREEK
TUBBY LEES RD
FOOTHILLS LN
RAILWAY LINE
TOTTENHAM
THE BOGAN WAY
RAWSON RD
GUNNINGBLAND CREEK
MYALLS
HUMBLEMORE
BOGAN ST
WEST ST
EDDY ST
LACHLAN ST
BOGAN ST
STATION ST
ORANGE BROKEN HILL RAILWAY LINE
HENRY PARKES WAY
BEDGERABONG RD
MEMORIAL LN
GUNNING RIDGE

N

200 0 200 400 600 m

Scale: 1:20,000

Lyall & Associates

LEGEND

- LGA Boundary
- Rural Levee/Embankment
- Existing Stormwater Drainage System
- Natural Surface Elevation Contour (1m Interval)
- Village Centre
- Homestead
- Causeway
- Bridge/Major Culvert

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.2
(Sheet 2 of 2)

EXISTING STORMWATER DRAINAGE SYSTEM AT BOGAN GATE

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

NOTE:

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

REFER SHEET 2

N

1 0 1 2 3 km

Scale: 1:100,000

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
- Village Centre
- Homesteads
- H01 Road/Rail Design Flood Data Location and Identifier

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.3
(Sheet 1 of 3)

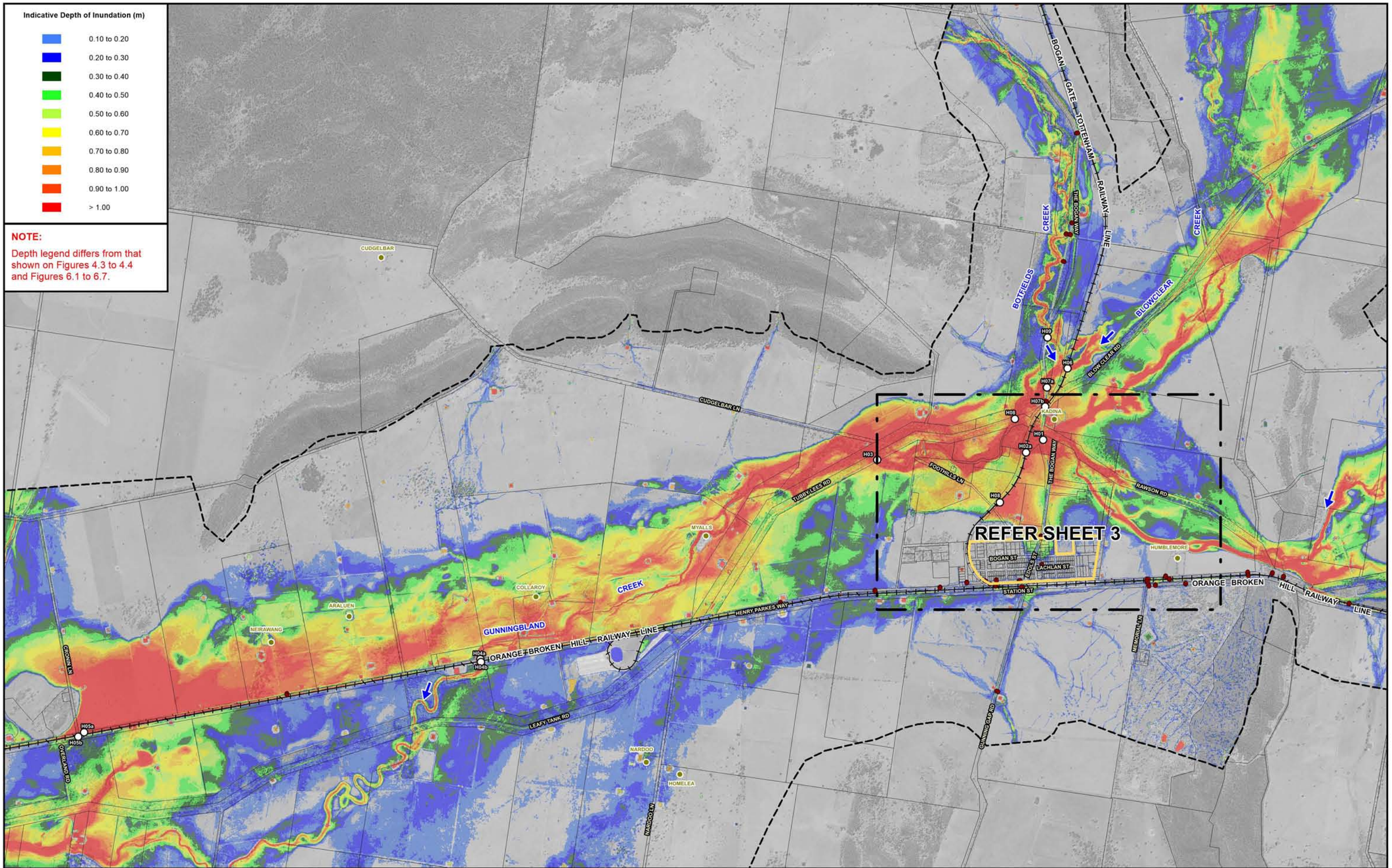
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
1% AEP

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

NOTE:

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

NOTE:

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- H04 Road/Rail Design Flood Data Location and Identifier

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.3
(Sheet 2 of 3)

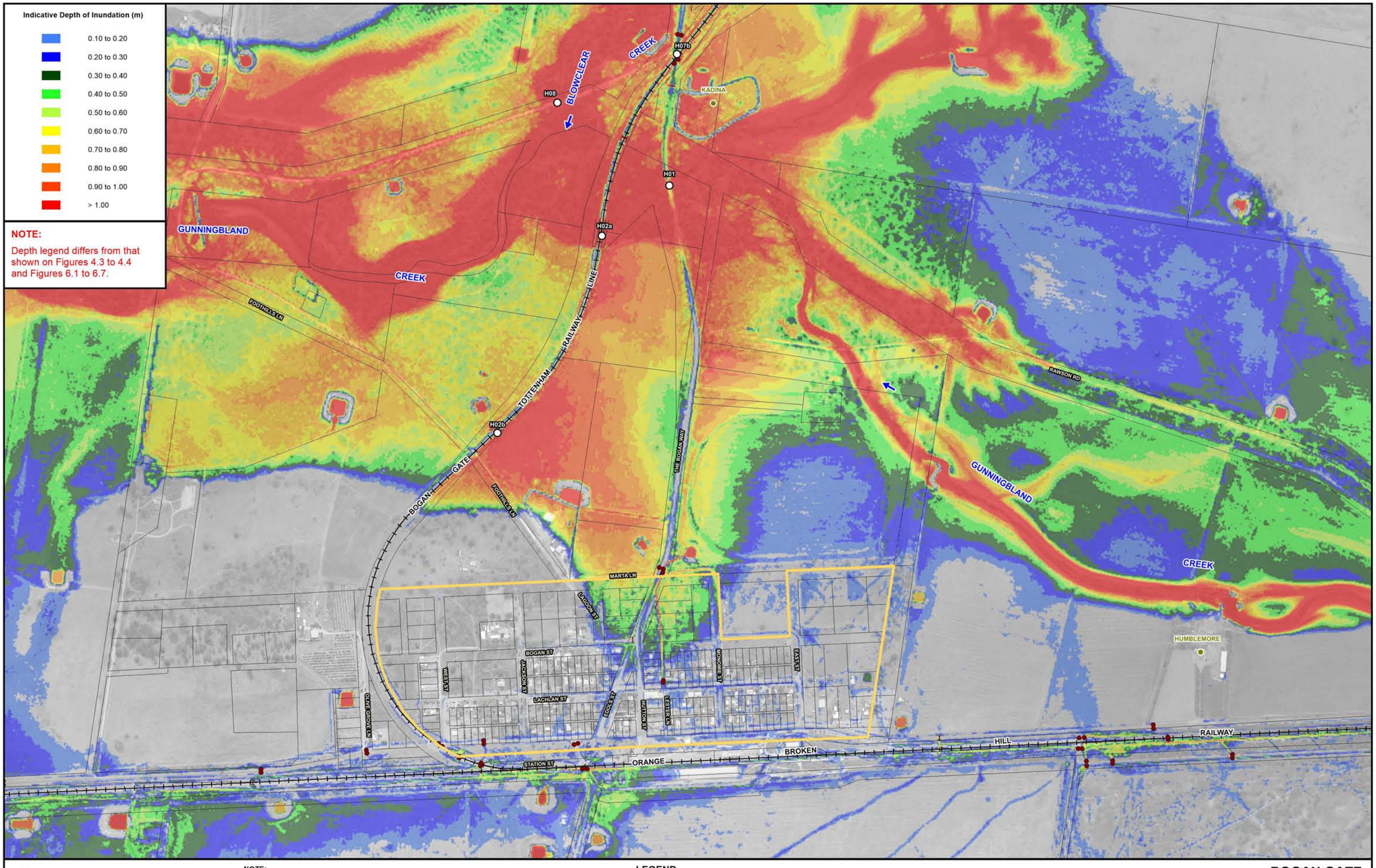
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
1% AEP

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

NOTE:

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



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

NOTE:

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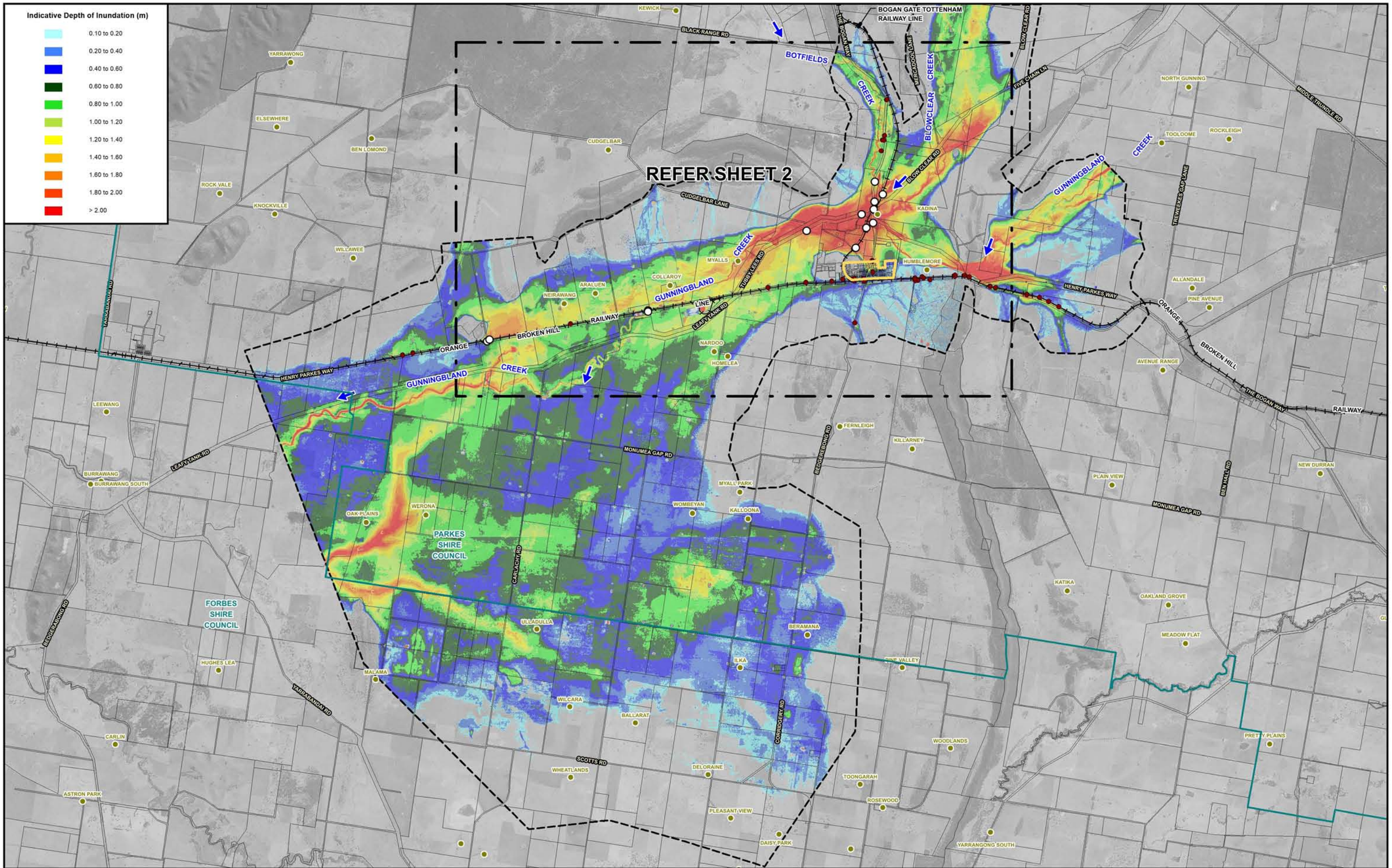
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- H01 Road/Rail Design Flood Data Location and Identifier

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.3
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
1% AEP


Indicative Depth of Inundation (m)
0.10 to 0.20
0.20 to 0.40
0.40 to 0.60
0.60 to 0.80
0.80 to 1.00
1.00 to 1.20
1.20 to 1.40
1.40 to 1.60
1.60 to 1.80
1.80 to 2.00
> 2.00
REFER SHEET 2
BOGAN GATE TOTTENHAM RAILWAY LINE
BLACK RANGE RD
BOTFIELDS
THE BOGAN WAY
MERRIDOO LANE
BLOWCLEAR RD
FIVE SHAIN LN
MIDDLE TRUNDLE RD
NORTH GUNNING
TOOLOOME
ROCKLEIGH
TRIBWEEKES GAP LANE
ALLANDALE
PINE AVENUE
AVENUE RANGE
BROKEN HILL
RAILWAY
KEWICK
YARRAWONG
ELSEWHERE
BEN LOMOND
CUDGELBAR
ROCK VALE
KNOCKVILLE
WILLAWEE
CUDGELBAR LANE
BLOW CLEAR RD
KADINA
HUMBLEMORE
MYALLS
COLLAROY
ARALUEN
NEIRAWANG
TIBBY LEES RD
LEAFY TANK RD
HENRY PARKES WAY
ORANGE
NARDOO
HOMELEA
LEEWANG
BURRAWANG
BURRAWANG SOUTH
MONUMEA GAP RD
FERNLEIGH
KILLARNEY
BEDGERABONG RD
MYALL PARK
PLAIN VIEW
NEW DURRAN
BEM MALL RD
WERONA
OAK PLAINS
WOMBEYAN
KALLOONA
PARKES SHIRE COUNCIL
CARLACHY RD
FORBES SHIRE COUNCIL
ULLADULLA
BERAMANA
KATIKA
OAKLAND GROVE
MEADOW FLAT
HUGHES LEA
MALAMA
ILKA
PINE VALLEY
YARRABANDAI RD
WILCARA
BALLARAT
CORRIDGERY RD
CARLIN
WOODLANDS
PRETTY PLAINS
SCOTTS RD
WHEATLANDS
DELORAINE
TOONGARAH
ASTRON PARK
ROSEWOOD
PLEASANT VIEW
DAISY PARK
YARRANGONG SOUTH
N
1 0 1 2 3 km
Scale: 1:100,000
Lyall & Associates
NOTE:
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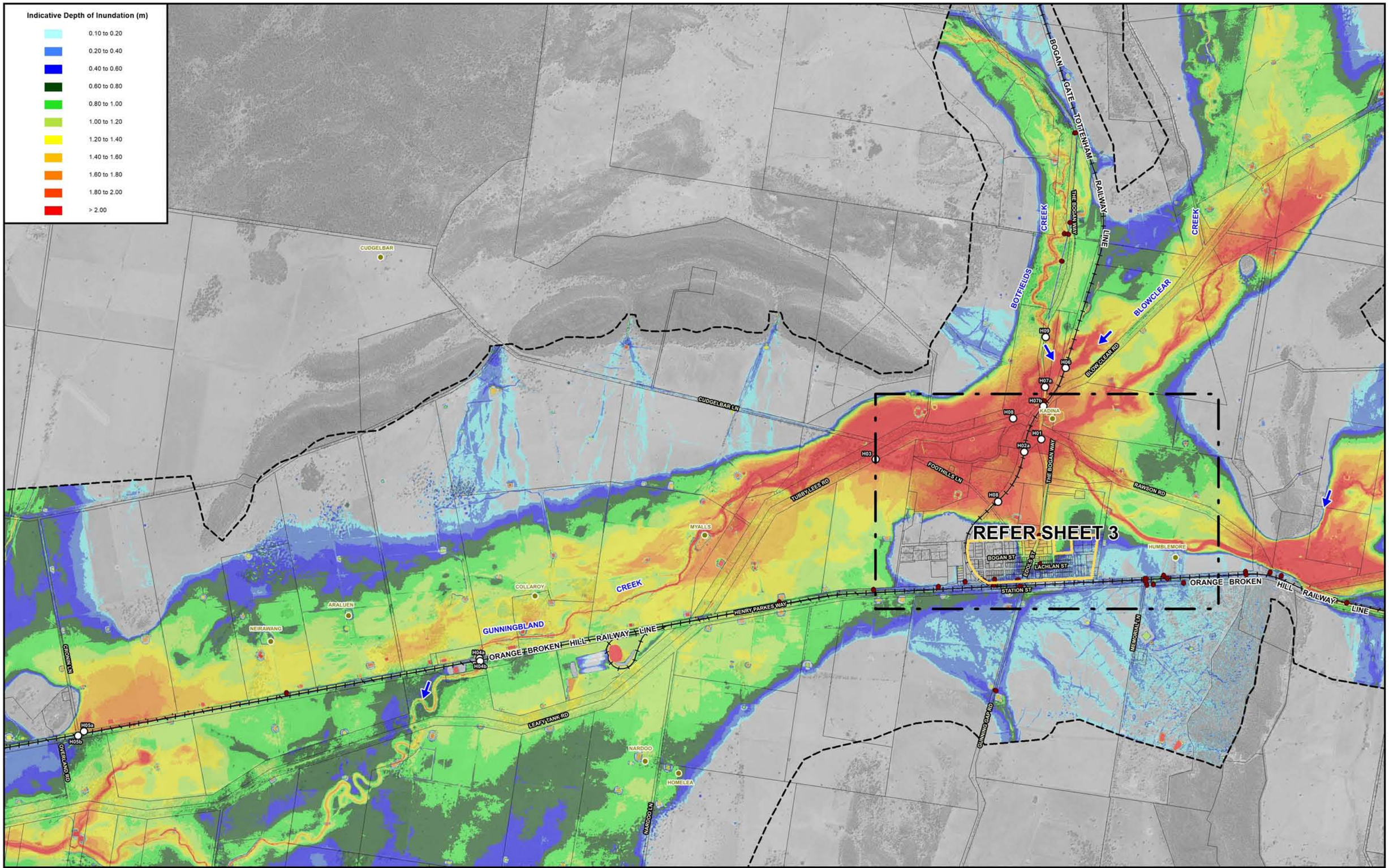
LEGEND
LGA Boundary
Two-Dimensional Model Boundary
Modelled Stormwater Drainage System
Village Centre
Homesteads
H01
Road/Rail Design Flood Data Location and Identifier
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure 2.4
(Sheet 1 of 3)
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
PMF

Indicative Depth of Inundation (m)

- 0.10 to 0.20
- 0.20 to 0.40
- 0.40 to 0.60
- 0.60 to 0.80
- 0.80 to 1.00
- 1.00 to 1.20
- 1.20 to 1.40
- 1.40 to 1.60
- 1.60 to 1.80
- 1.80 to 2.00
- > 2.00



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

NOTE:

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- H01 — Road/Rail Design Flood Data Location and Identifier

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.4
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
PMF

Indicative Depth of Inundation (m)

- 0.10 to 0.20
- 0.20 to 0.40
- 0.40 to 0.60
- 0.60 to 0.80
- 0.80 to 1.00
- 1.00 to 1.20
- 1.20 to 1.40
- 1.40 to 1.60
- 1.60 to 1.80
- 1.80 to 2.00
- > 2.00

NOTE:

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

NOTE:

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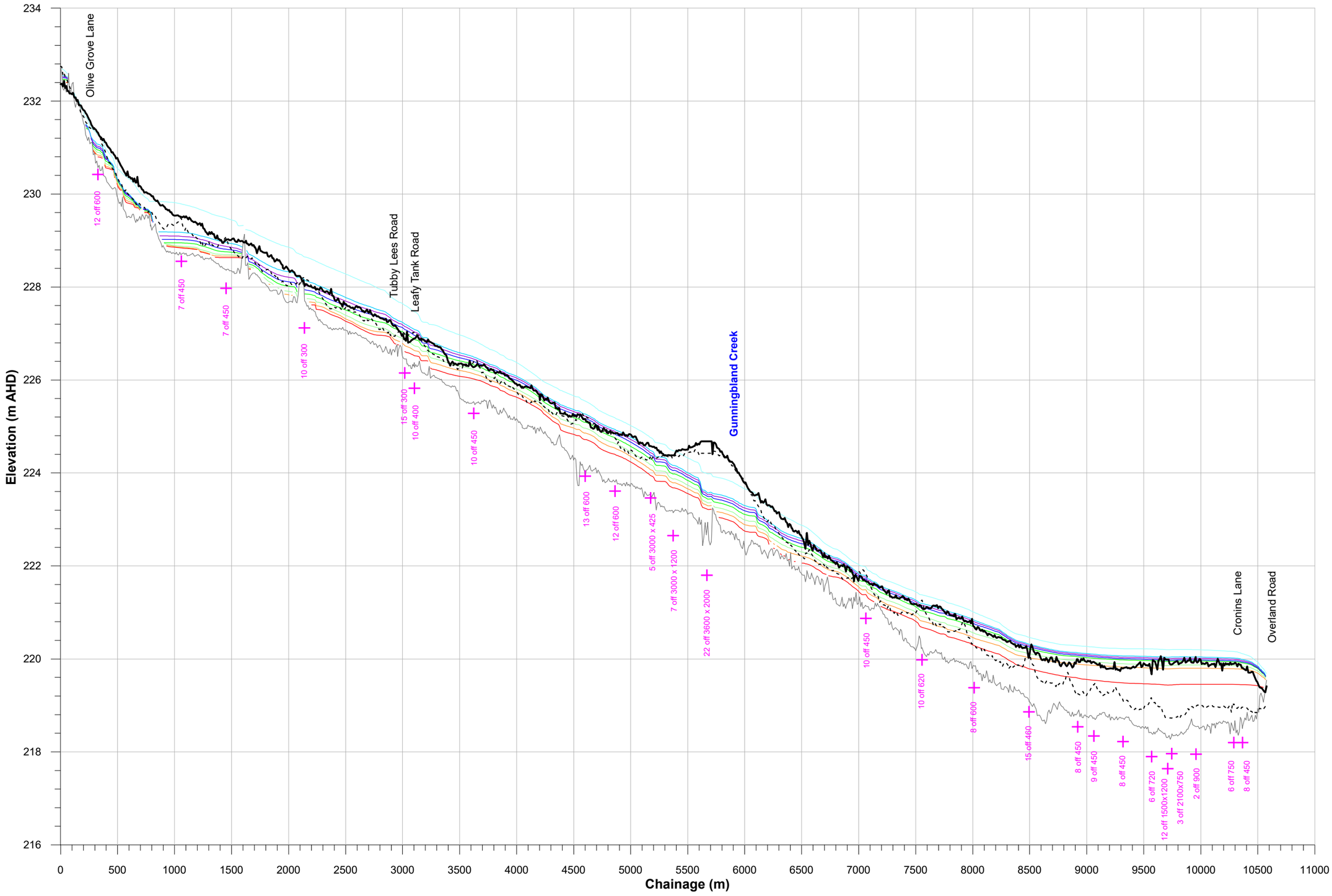
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- H01 Road/Rail Design Flood Data Location and Identifier

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.4
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
PMF



LEGEND

- PMF
- 0.2% AEP
- 0.5% AEP
- 1% AEP
- 2% AEP
- 5% AEP
- 10% AEP
- 20% AEP
- Railway
- Floodplain on Northern Side of Henry Parkes Way
- Henry Parkes Way
- Invert of Drainage Structure Beneath Railway Enhancement

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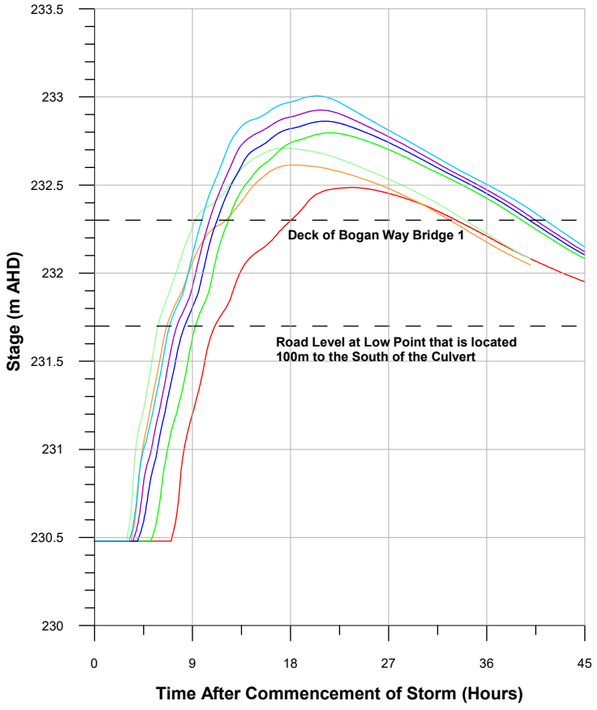
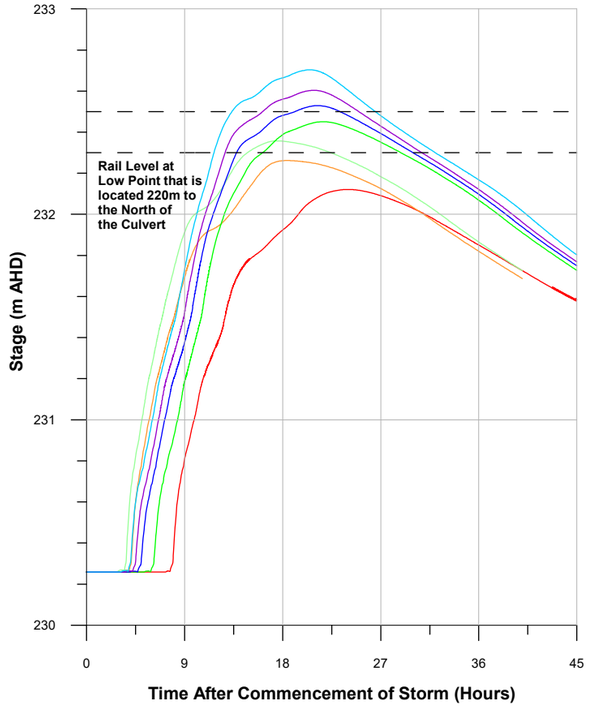
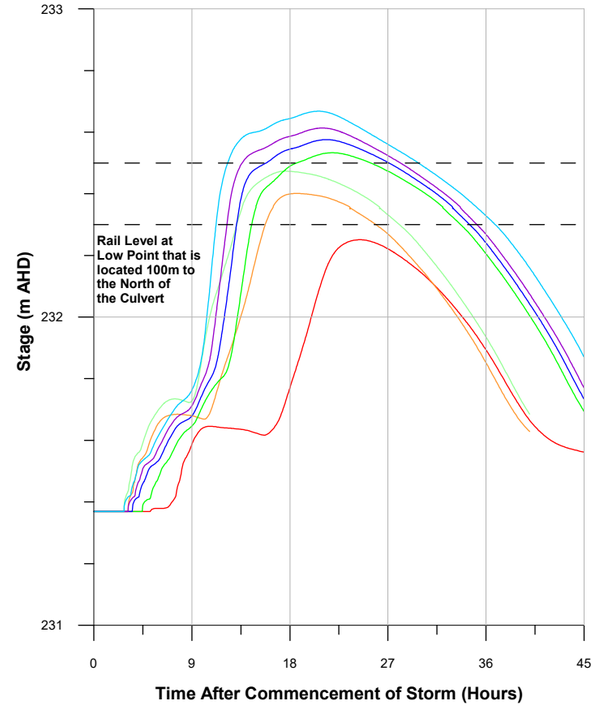
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

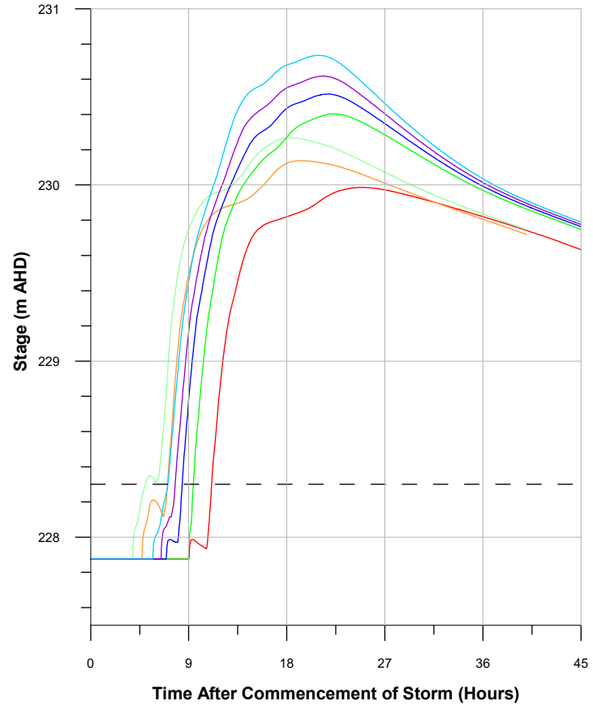
Figure 2.5

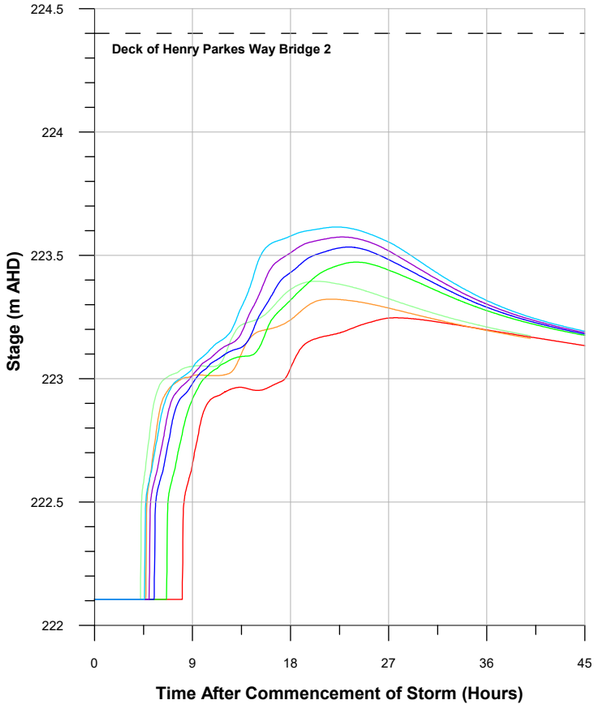
LONGITUDINAL SECTION ALONG ORANGE - BROKEN HILL RAILWAY LINE
BETWEEN OLIVE GROVE LAND AND OVERLAND ROAD - DESIGN STORM EVENTS

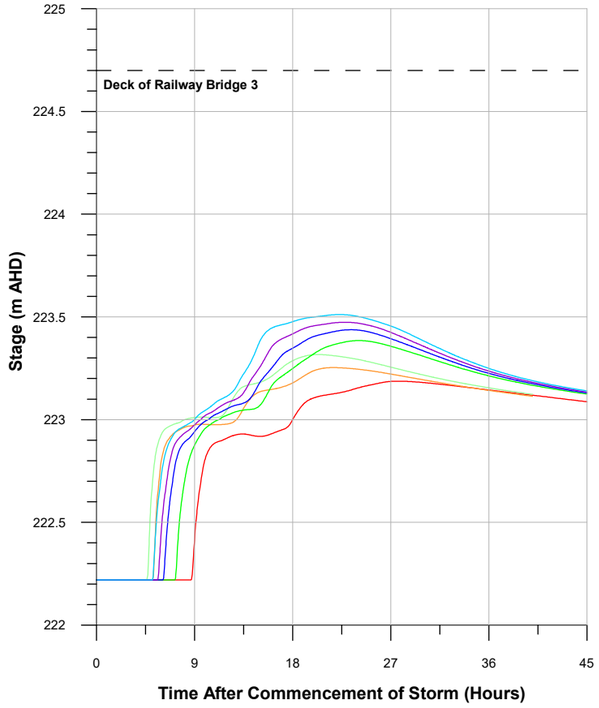


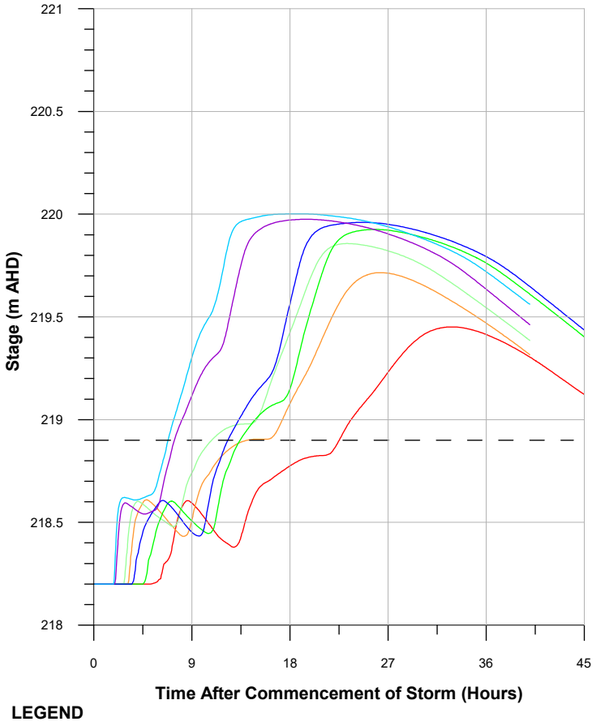


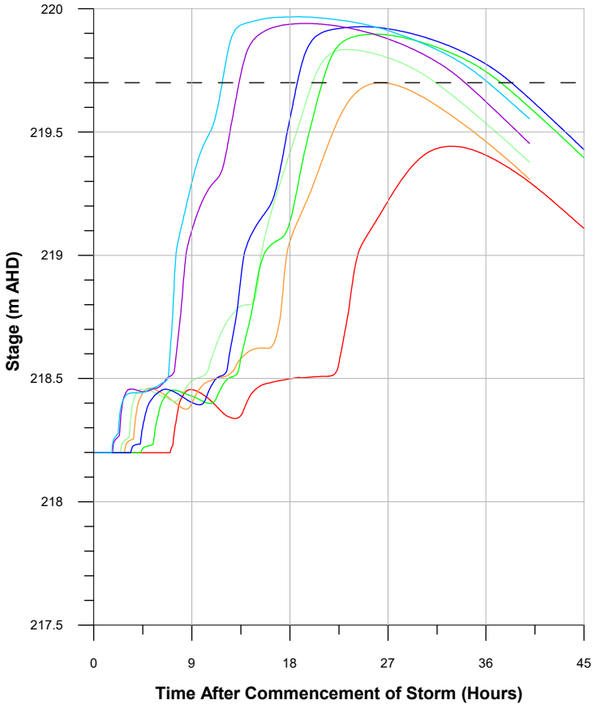












LEGEND

- Road/Rail Level
- 0.2% AEP
- 0.5% AEP
- 1% AEP
- 2% AEP
- 5% AEP
- 10% AEP
- 20% AEP

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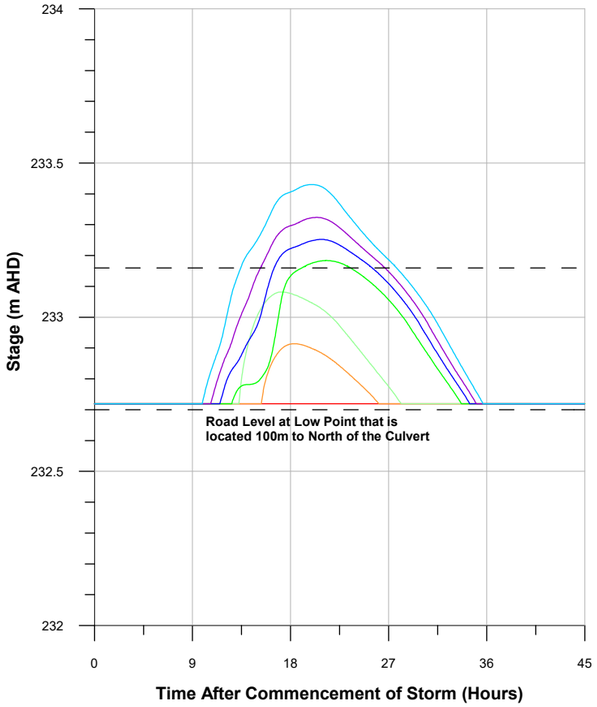
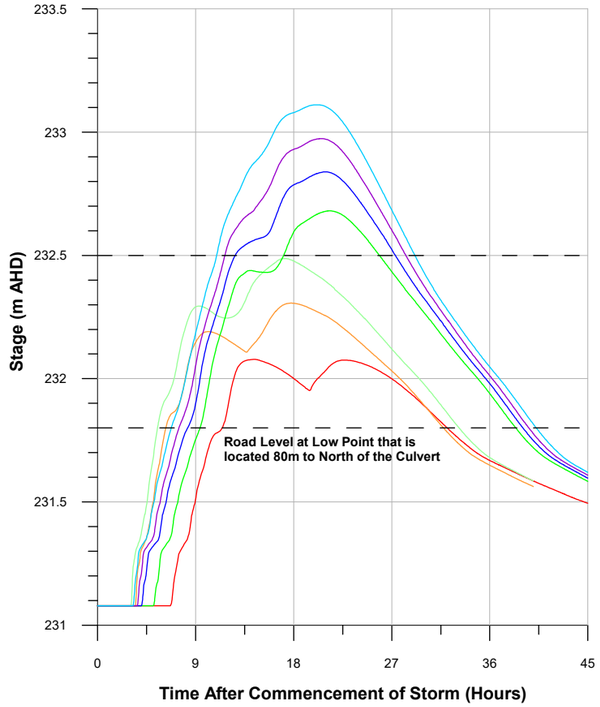
NOTES:

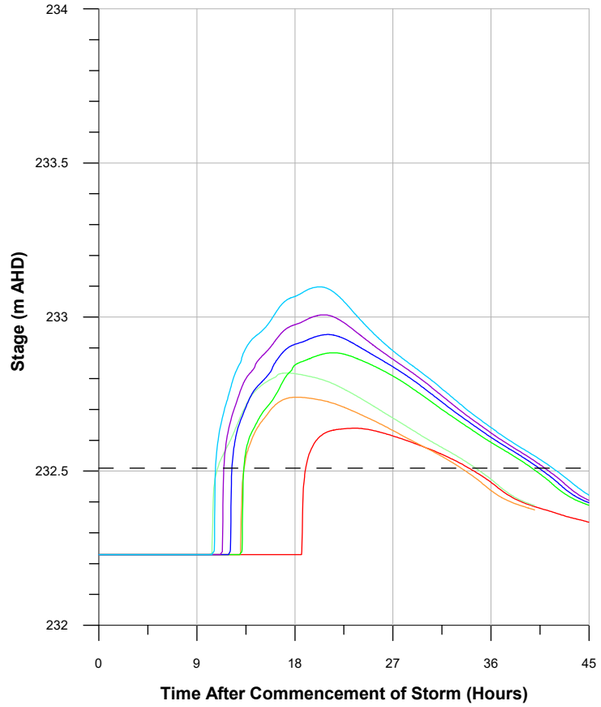
Refer **Figures 2.3** to **2.4** for Peak Flood Level Locations.

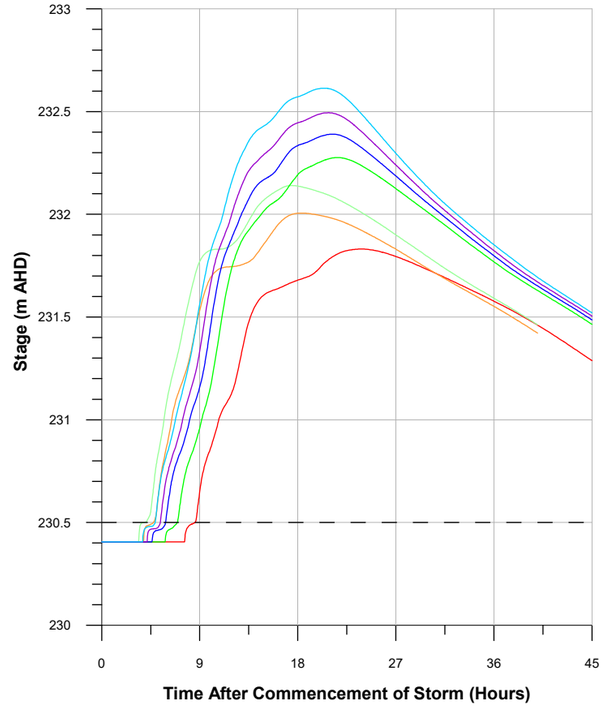
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure 2.6
(Sheet 1 of 2)

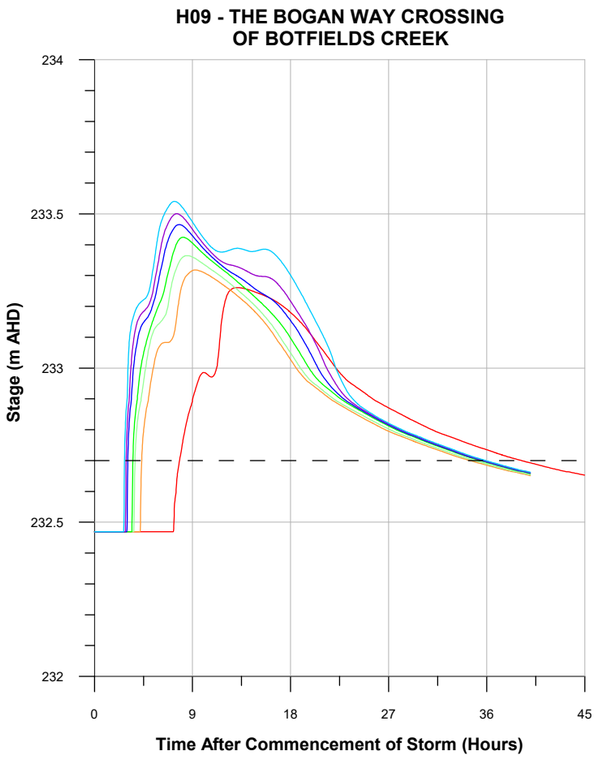
TIME OF RISE OF FLOODWATERS











LEGEND

Road/Rail Level	2% AEP
0.2% AEP	5% AEP
0.5% AEP	10% AEP
1% AEP	20% AEP

Lyall & Associates

NOTES:

Refer **Figures 2.3** and **2.4** for Peak Flood Level Locations.

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure 2.6
(Sheet 2 of 2)

TIME OF RISE OF FLOODWATERS

COMMUNITY ASSET

- Telephone Exchange
- Electricity Substation
- Community Hall
- Major Road Crossing
- Major Rail Crossing

EMERGENCY SERVICES

- RFS Station

VULNERABLE DEVELOPMENT

- Educational Facility

REFER SHEET 2

EXTENT OF INUNDATION

- 20% AEP
- 10% AEP
- 5% AEP
- 2% AEP
- 1% AEP
- 0.5% AEP
- 0.2% AEP
- PMF

N

1 0 1 2 3 km

Scale: 1:100,000

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

Lyall & Associates

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.7
(Sheet 1 of 3)

INDICATIVE EXTENT OF INUNDATION AND LOCATION OF VULNERABLE DEVELOPMENT AND CRITICAL INFRASTRUCTURE

COMMUNITY ASSET

- Telephone Exchange
- Electricity Substation
- Community Hall
- Major Road Crossing
- Major Rail Crossing

EMERGENCY SERVICES

- RFS Station

VULNERABLE DEVELOPMENT

- Educational Facility

CUDGELBAR
CUDGELBAR LN
BOGAN GATE - TOTTENHAM - RAILWAY LINE
THE BOGAN WAY
CREEK
BOTFIELDS
BLOWCLEAR
BLOWCLEAR RD
H09
H06
H07A
H07B
MEDINA
H03
FOOTHILLS LN
TUBBYLEES RD
RAWSON RD
MYALLS
REFER SHEET 3
BOGAN ST
CHILAN ST
STATION ST
HUMBLEMORE
TT2
TT1
ORANGE - BROKEN HILL RAILWAY LINE
COLLAROY
ARALUEN
NEIRAWANG
GUNNINGBLAND
HENRY PARKES WAY
H04A
H04B
GRONIN LN
H05A
H05B
OVERLAND RD
LEAFY TANK RD
NARDOO
HOMELEA
NARDOO LN
GUNNING GAP RD
MEMORIAL LN

EXTENT OF INUNDATION

- 20% AEP
- 10% AEP
- 5% AEP
- 2% AEP
- 1% AEP
- 0.5% AEP
- 0.2% AEP
- PMF

N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

INDICATIVE EXTENT OF INUNDATION AND LOCATION OF VULNERABLE DEVELOPMENT AND CRITICAL INFRASTRUCTURE

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.7
(Sheet 2 of 3)

COMMUNITY ASSET

- Telephone Exchange
- Electricity Substation
- Community Hall
- Major Road Crossing
- Major Rail Crossing

EMERGENCY SERVICES

- RFS Station

VULNERABLE DEVELOPMENT

- Educational Facility

EXTENT OF INUNDATION

- 20% AEP
- 10% AEP
- 5% AEP
- 2% AEP
- 1% AEP
- 0.5% AEP
- 0.2% AEP
- PMF

H08
BLOWCLEAR
CREEK
H07B
KADINA
H01
H02a
GUNNINGBLAND
H03
CREEK
FOOTHILLS LN
TOTTENHAM
RAILWAY
LINE
H02b
BOGAN
GATE
FOOTHILLS LN
THE BOGAN WAY
RAWSON RD
GUNNINGBLAND
CREEK
MARTA LN
LUCOON ST
BOGAN ST
WEST ST
JACKSON ST
LACHLAN ST
OLIVE GROVE LN
RFB2
ROSE ST
TUITON ST
LESTER LN
MONOMIE ST
EAST ST
RFB1
STATION ST
ORANGE
BROKEN
HILL
RAILWAY
HUMBLEMORE
TT1

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.7
(Sheet 3 of 3)

INDICATIVE EXTENT OF INUNDATION AND LOCATION OF VULNERABLE DEVELOPMENT AND CRITICAL INFRASTRUCTURE

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

NOTE:

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.8

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
1% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

BLOCKAGE FACTORS APPLIED TO STRUCTURES

Pipe

15%

25%

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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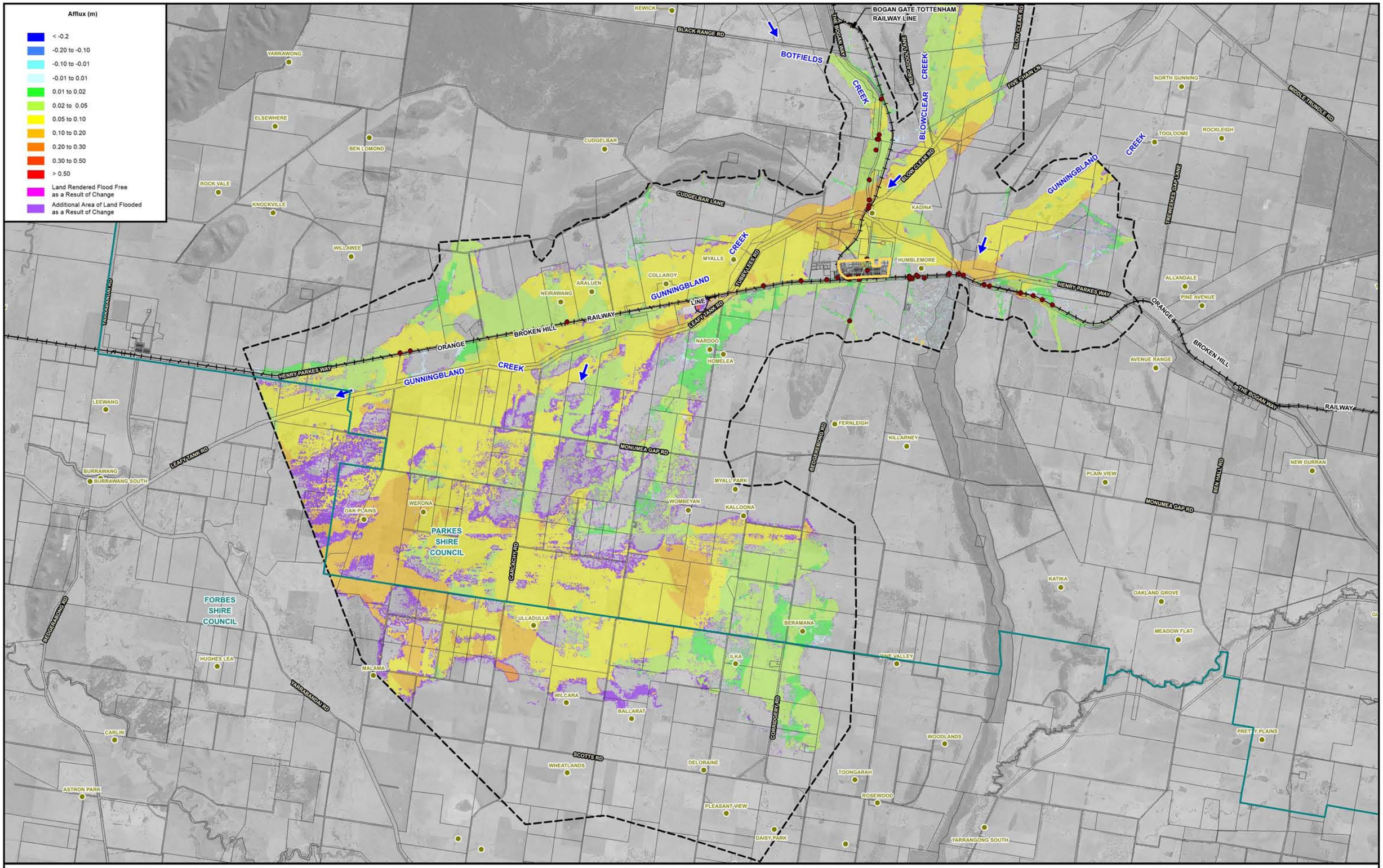
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.9

SENSITIVITY OF FLOOD BEHAVIOUR TO PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
1% AEP


Afflux (m)
< -0.2
-0.20 to -0.10
-0.10 to -0.01
-0.01 to 0.01
0.01 to 0.02
0.02 to 0.05
0.05 to 0.10
0.10 to 0.20
0.20 to 0.30
0.30 to 0.50
> 0.50
Land Rendered Flood Free as a Result of Change
Additional Area of Land Flooded as a Result of Change
BOGAN GATE TOTTENHAM RAILWAY LINE
BLACK RANGE RD
KEWICK
YARRAWONG
ELSEWHERE
BEN LOMOND
CUDGELBAR
ROCK VALE
KNOCKVILLE
WILLAWEE
CUDGELBAR LANE
BOTFIELDS
THE BOGAN WAY
MERGADOOLANE
BLOWCLEAR CREEK
BLOW CLEAR RD
FIVE SHAIN LN
NORTH GUNNING
MIDDLE TRUNDLE RD
TOOLOOME
ROCKLEIGH
TREWEEKES GAP LANE
KADINA
GUNNINGBLAND CREEK
HUMBLEMORE
MYALLS
COLLAROY
ARALUEN
NEIRAWANG
LIBBY LEES RD
LEAFY TANK RD
GUNNINGBLAND LINE
HENRY PARKES WAY
ORANGE BROKEN HILL RAILWAY
ALLANDALE
PINE AVENUE
AVENUE RANGE
NARDOO
HOMELEA
YARRABANDAI RD
LEEWANG
BURRAWANG
BURRAWANG SOUTH
MONUMEA GAP RD
FERNLEIGH
KILLARNEY
BEDGERABONG RD
MYALL PARK
PLAIN VIEW
NEW DURRAN
BEN HALL RD
WERONA
OAK PLAINS
PARKES SHIRE COUNCIL
WOMBEYAN
KALLOONA
GARLACHY RD
KATIKA
OAKLAND GROVE
MEADOW FLAT
FORBES SHIRE COUNCIL
ULLADULLA
BERAMANA
PINE VALLEY
HUGHES LEA
MALAMA
ILKA
YARRABANDAI RD
WILCARA
BALLARAT
CORROBOREY RD
CARLIN
WOODLANDS
PRETTY PLAINS
SCOTTS RD
WHEATLANDS
DELORAINE
TOONGARAH
ROSEWOOD
ASTRON PARK
PLEASANT VIEW
DAISY PARK
YARRANGONG SOUTH
N
1 0 1 2 3 km
Scale: 1:100,000
NOTE:
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LEGEND
LGA Boundary
Two-Dimensional Model Boundary
Modelled Stormwater Drainage System
Village Centre
Homesteads
Lyall & Associates
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure 2.10
SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
1% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

NOTE:

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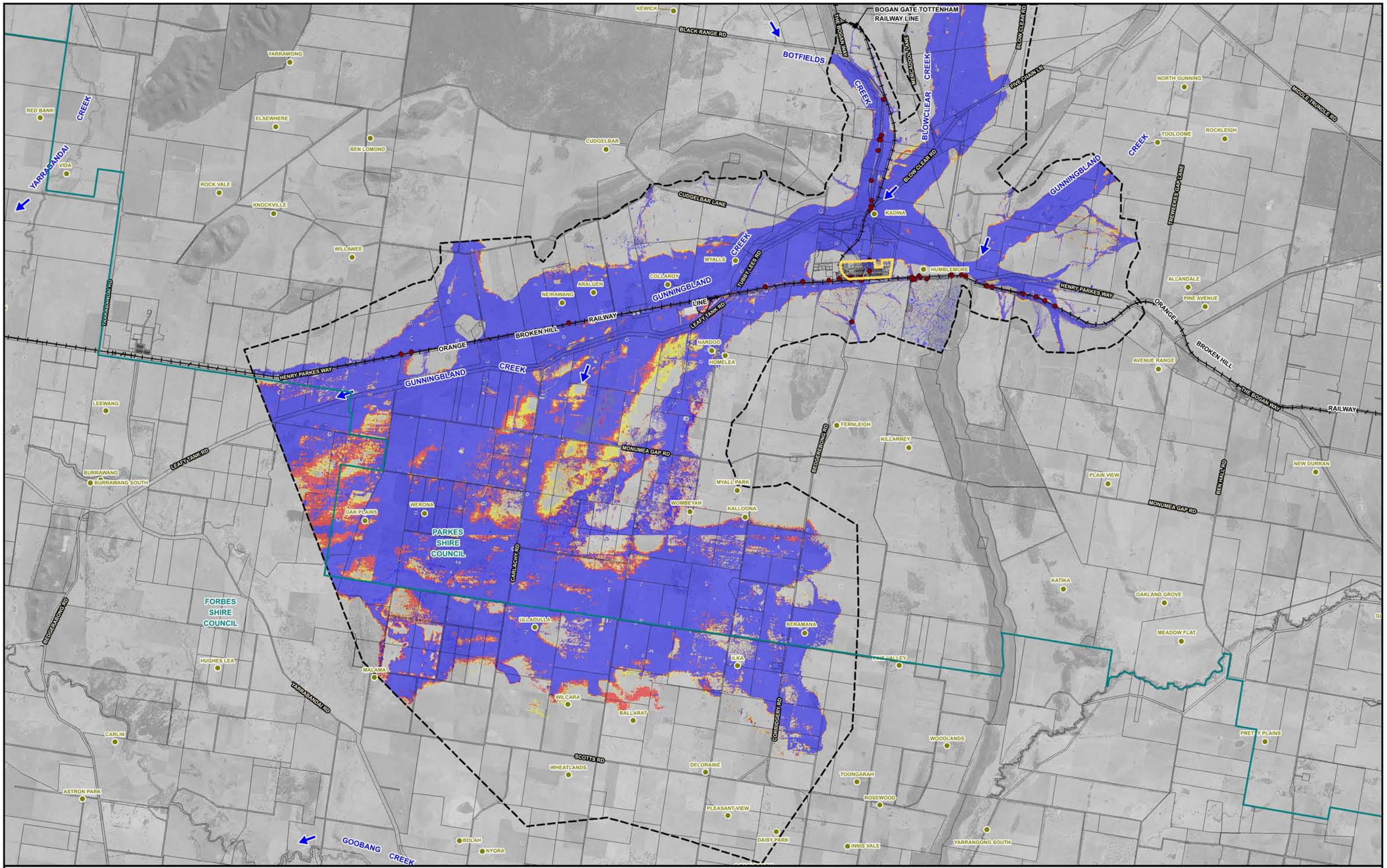
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.11

SENSITIVITY OF FLOOD BEHAVIOUR TO 30% INCREASE IN RAINFALL INTENSITY
1% AEP



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- 1% AEP
- 1% AEP Rainfall Increased by 10%
- 1% AEP Rainfall Increased by 30%

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.12

IMPACT OF INCREASED RAINFALL INTENSITIES ON EXTENT OF FLOODING
1% AEP

FLOOD HAZARD VULNERABILITY CLASSIFICATION

- H1 Generally safe for vehicles, people and buildings.
- H2 Unsafe for small vehicles.
- H3 Unsafe for vehicles, children and the elderly.
- H4 Unsafe for vehicles and people.
- H5 Unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 Unsafe for vehicles and people. All building types considered vulnerable to failure.

REFER SHEET 2

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

NOTE:

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LEGEND

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- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.13
(Sheet 1 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
1% AEP

FLOOD HAZARD VULNERABILITY CLASSIFICATION

- H1 Generally safe for vehicles, people and buildings.
- H2 Unsafe for small vehicles.
- H3 Unsafe for vehicles, children and the elderly.
- H4 Unsafe for vehicles and people.
- H5 Unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure.
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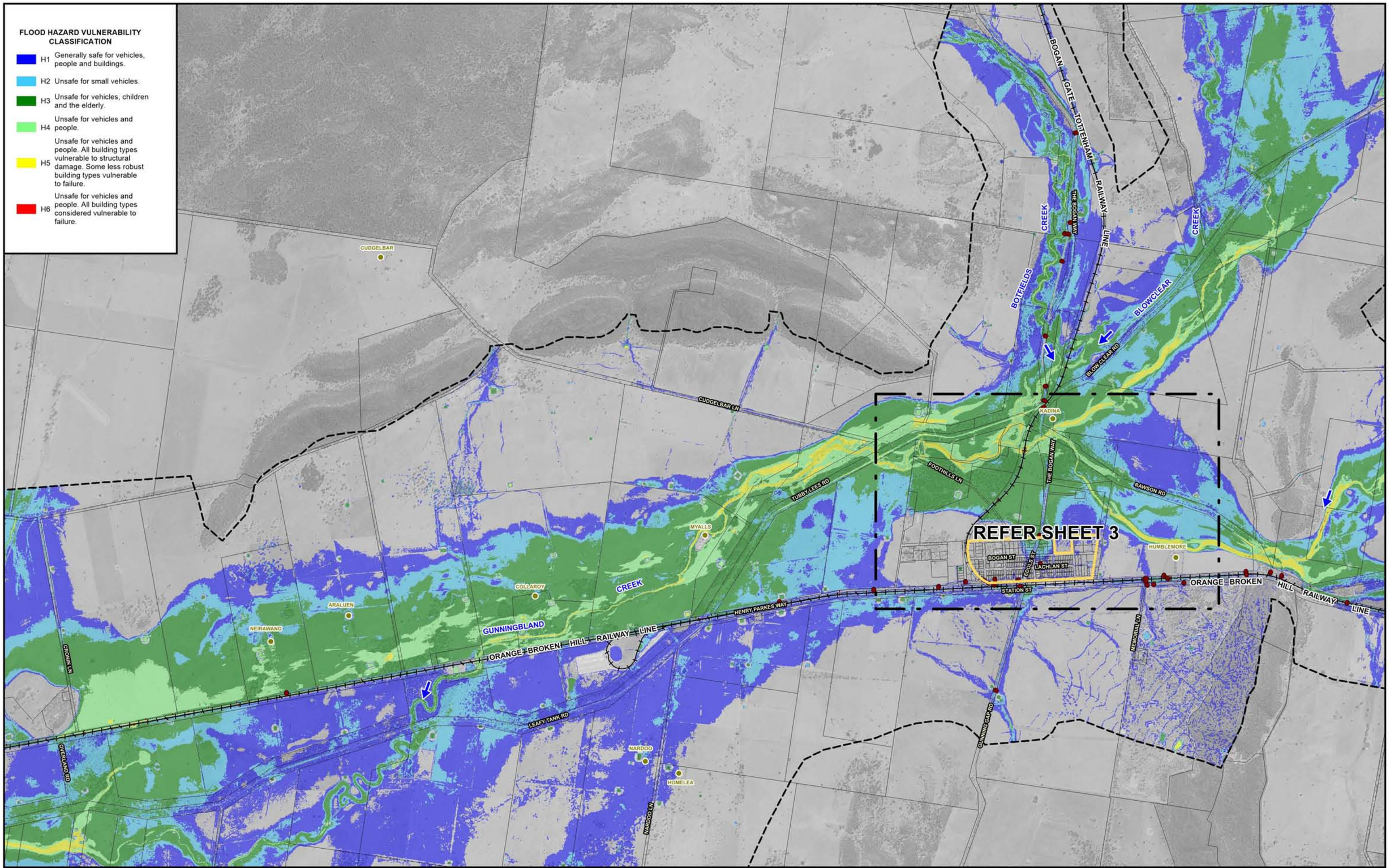

N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.13
(Sheet 2 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
1% AEP

FLOOD HAZARD VULNERABILITY CLASSIFICATION

H1	Generally safe for vehicles, people and buildings.
H2	Unsafe for small vehicles.
H3	Unsafe for vehicles, children and the elderly.
H4	Unsafe for vehicles and people.
H5	Unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure.
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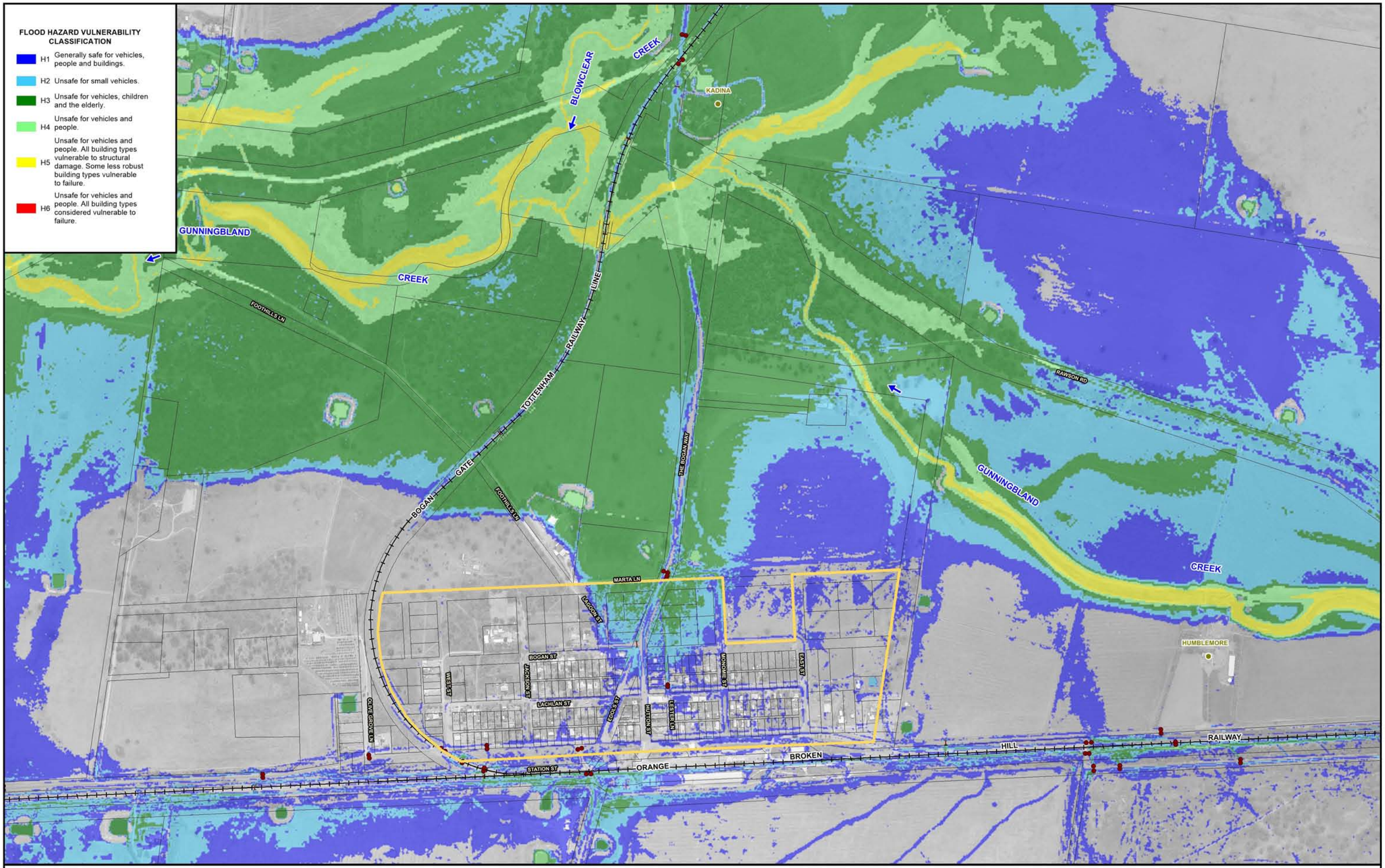

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.13
(Sheet 3 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
1% AEP

FLOOD HAZARD VULNERABILITY CLASSIFICATION

- H1 Generally safe for vehicles, people and buildings.
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REFER SHEET 2

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

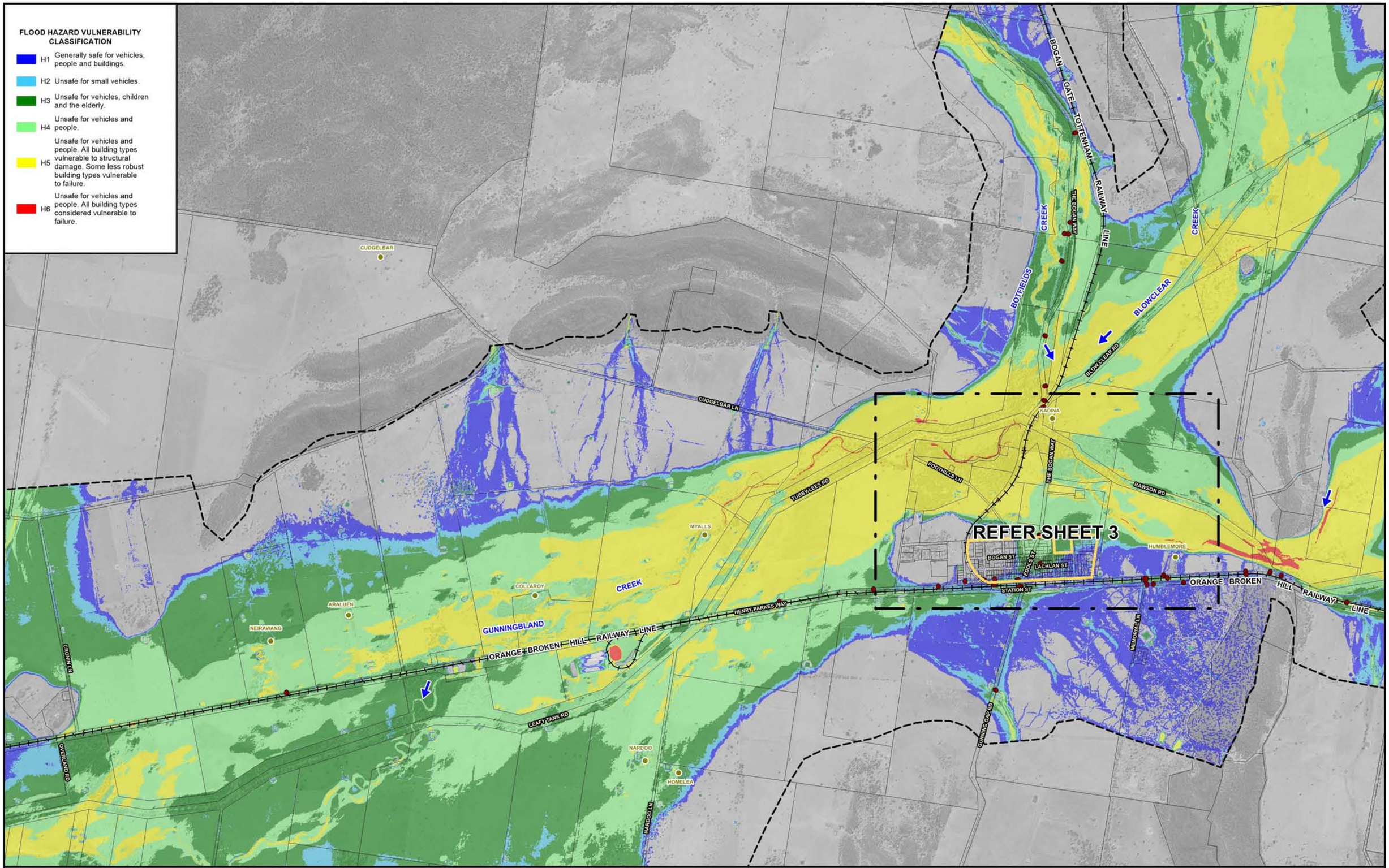
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.14
(Sheet 1 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
PMF

FLOOD HAZARD VULNERABILITY CLASSIFICATION

- H1 Generally safe for vehicles, people and buildings.
- H2 Unsafe for small vehicles.
- H3 Unsafe for vehicles, children and the elderly.
- H4 Unsafe for vehicles and people.
- H5 Unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure.
- H6 Unsafe for vehicles and people. All building types considered vulnerable to failure.



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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LEGEND

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.14
(Sheet 2 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
PMF

FLOOD HAZARD VULNERABILITY CLASSIFICATION

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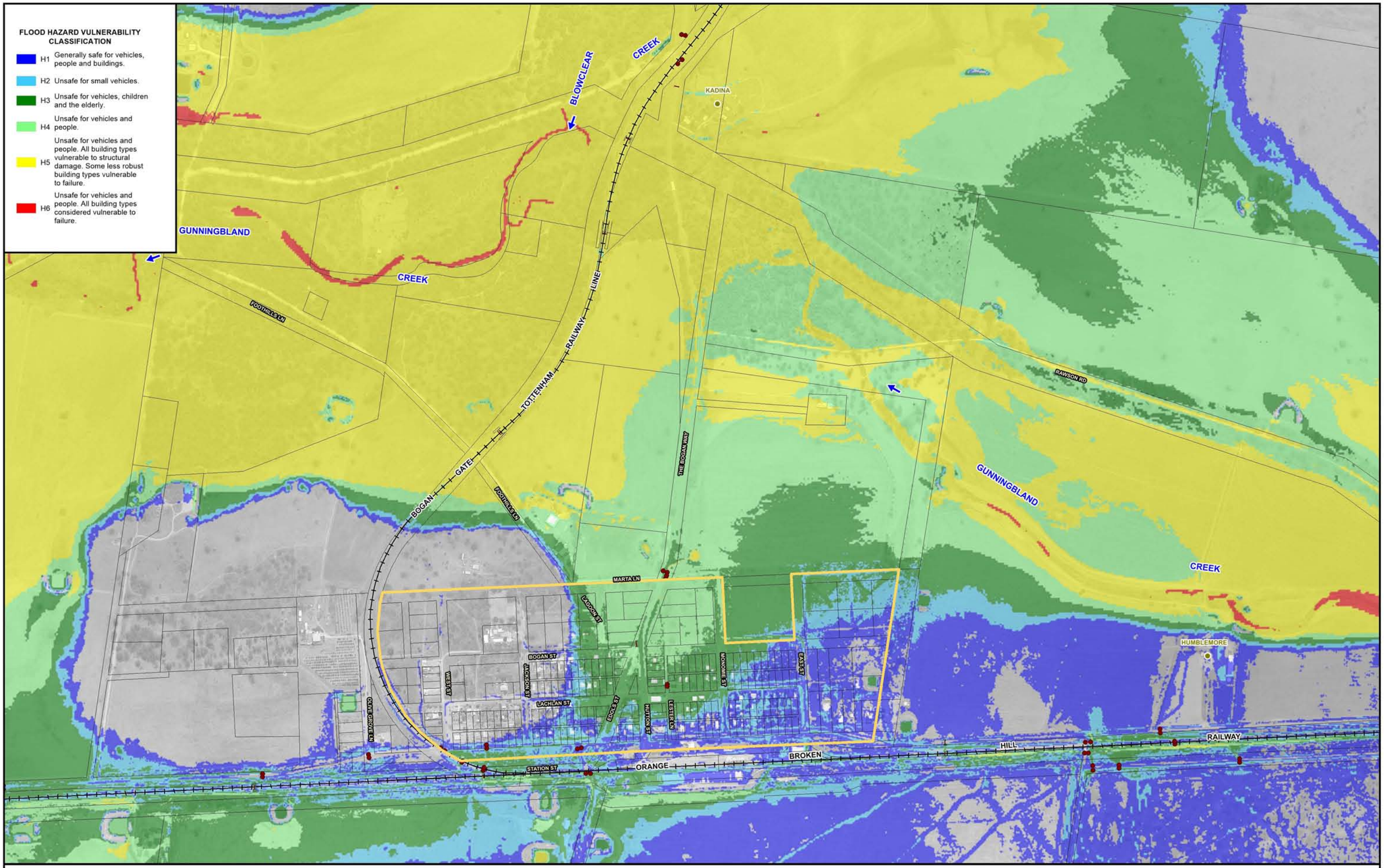

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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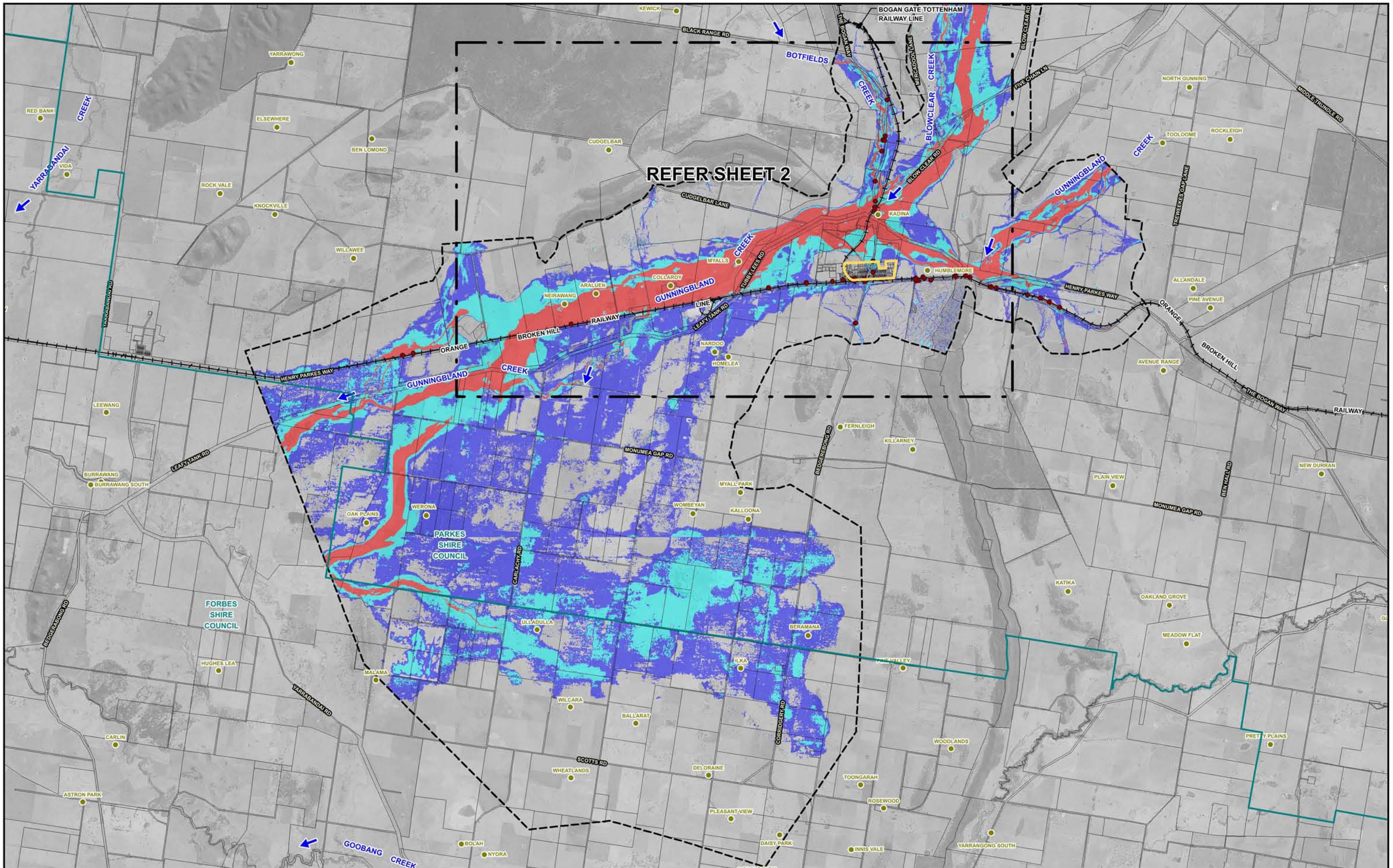
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.14
(Sheet 3 of 3)

FLOOD HAZARD VULNERABILITY CLASSIFICATION
PMF



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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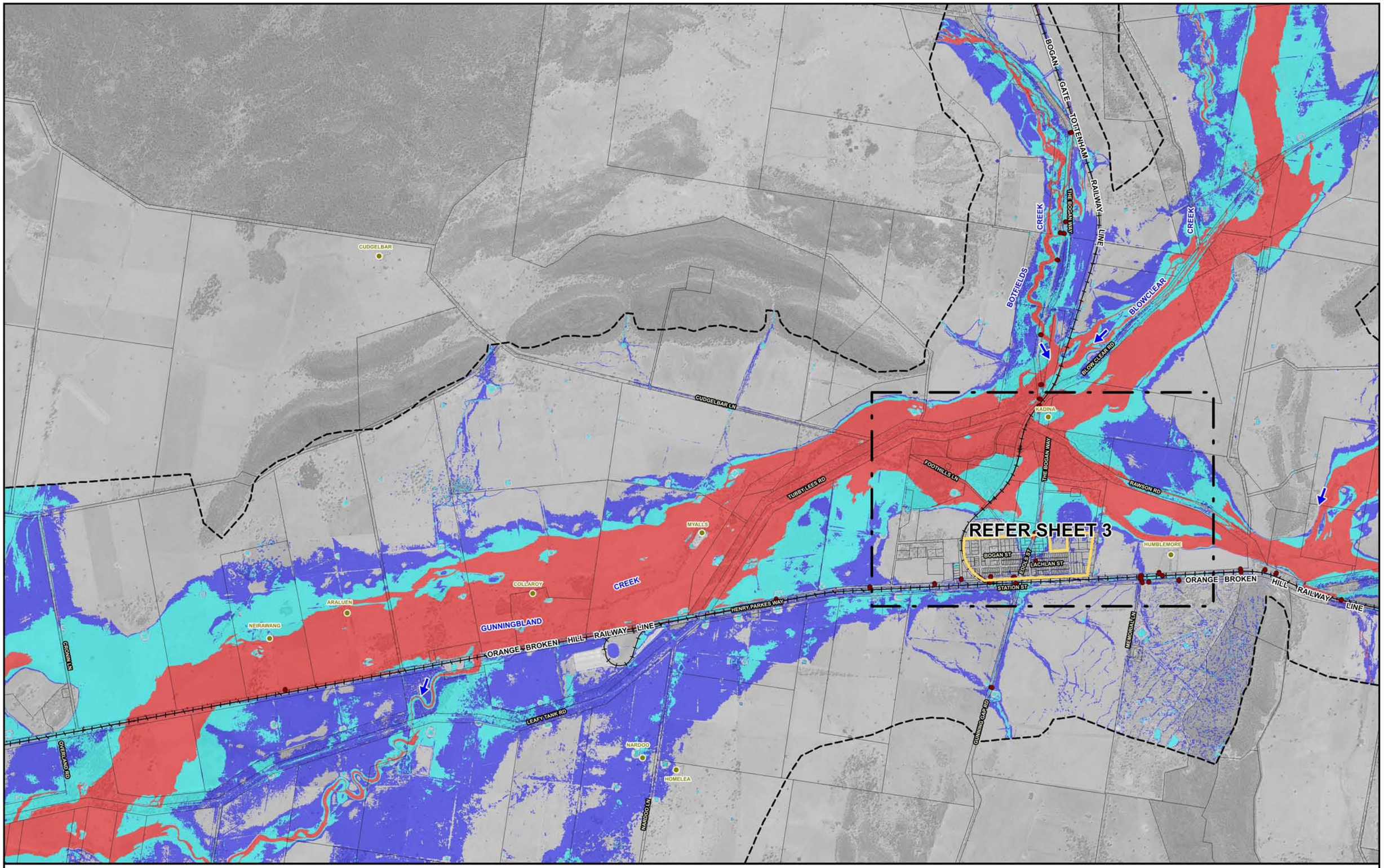
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Floodway
- Flood Storage
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.15
(Sheet 1 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
1% AEP



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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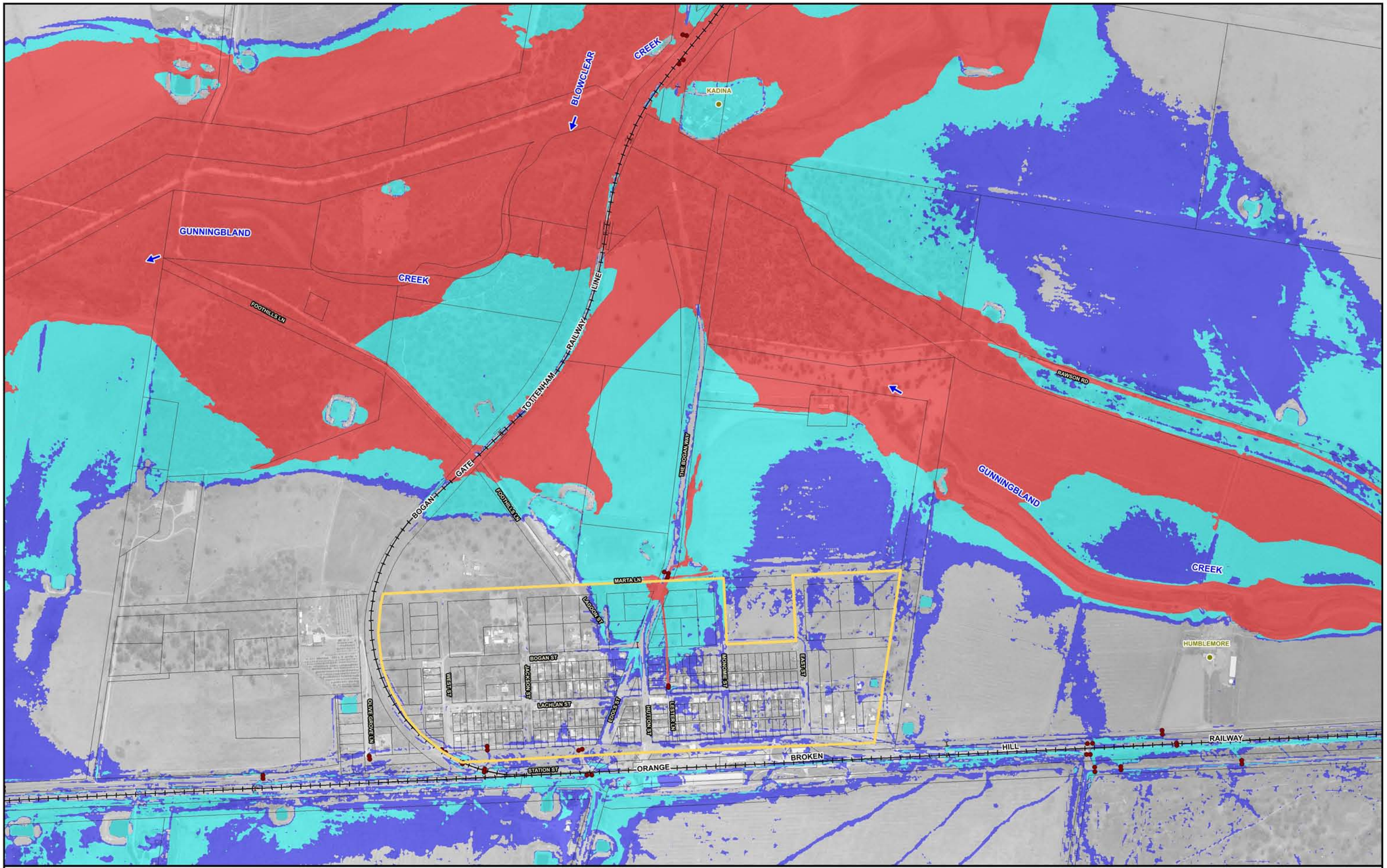
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Floodway
- Flood Storage
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.15
(Sheet 2 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
1% AEP



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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- Village Centre
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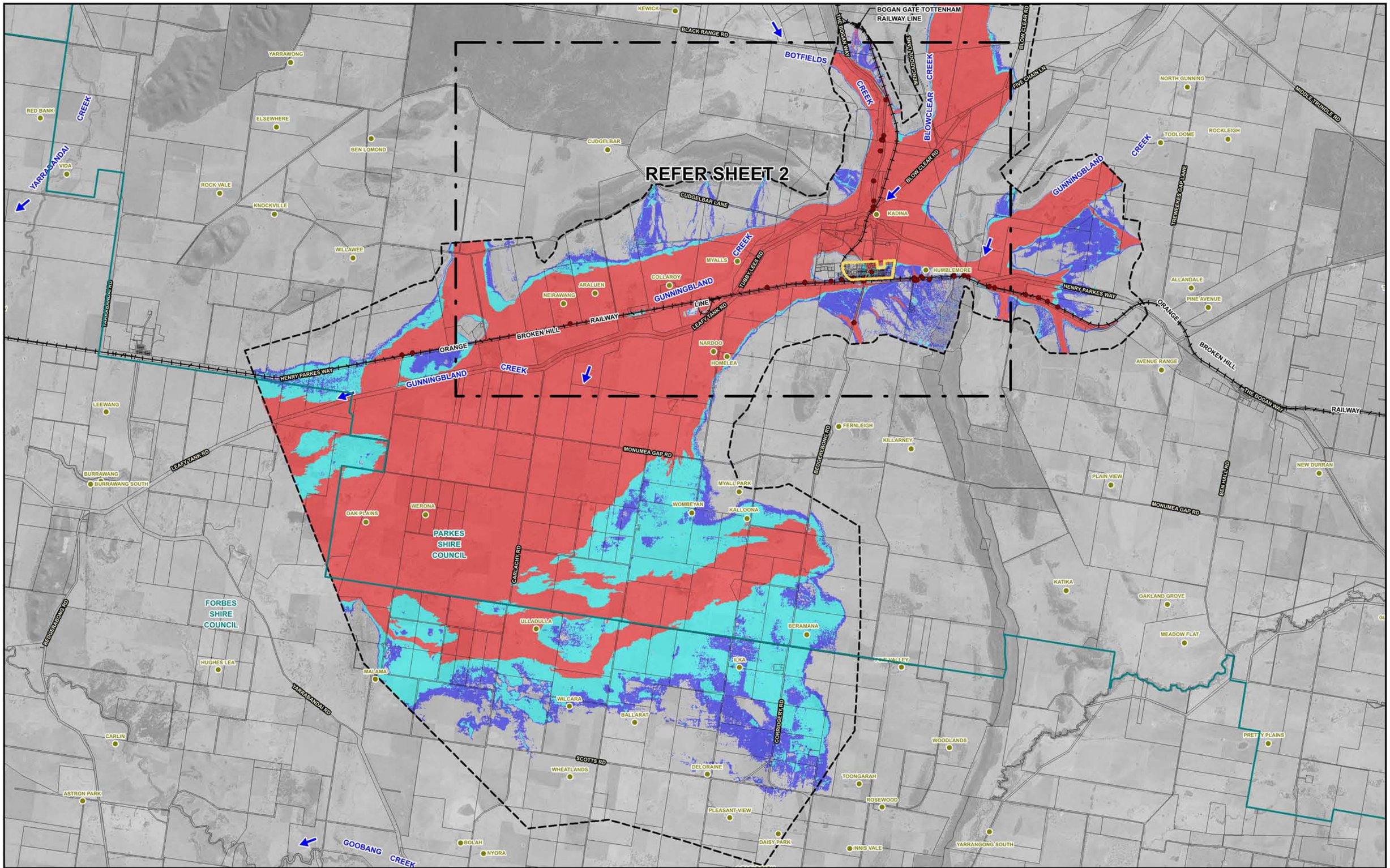
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.15
(Sheet 3 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
1% AEP



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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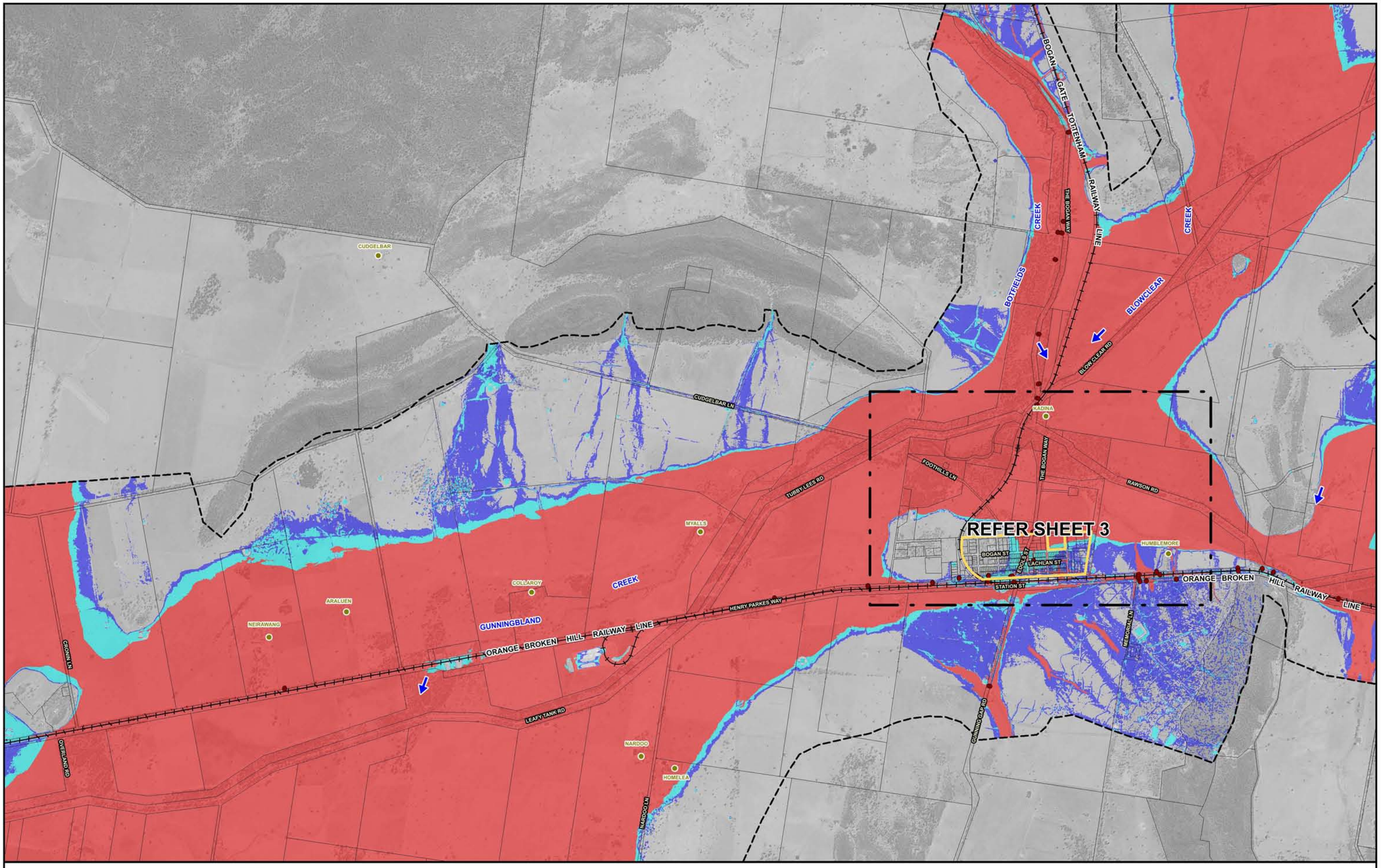
- Village Centre
- Homesteads
- Floodway
- Flood Storage
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.16
(Sheet 1 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
PMF



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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- Village Centre
- Homesteads
- Floodway
- Flood Storage
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.16
(Sheet 2 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
PMF

BLOWCLEAR CREEK
KADINA
GUNNINGBLAND
CREEK
FOOTHILLS LN
TOTTENHAM RAILWAY LINE
RAWSON RD
BOGAN GATE
THE BOGAN WAY
GUNNINGBLAND
CREEK
MARTA LN
LUCOON ST
BOGAN ST
JACKSON ST
WEST ST
LACHLAN ST
OLIVE GROVE LN
EDOLS ST
HUTTON ST
LESTER LN
MONOMIE ST
EAST ST
HUMBLEMORE
HILL
RAILWAY
BROKEN
ORANGE
STATION ST

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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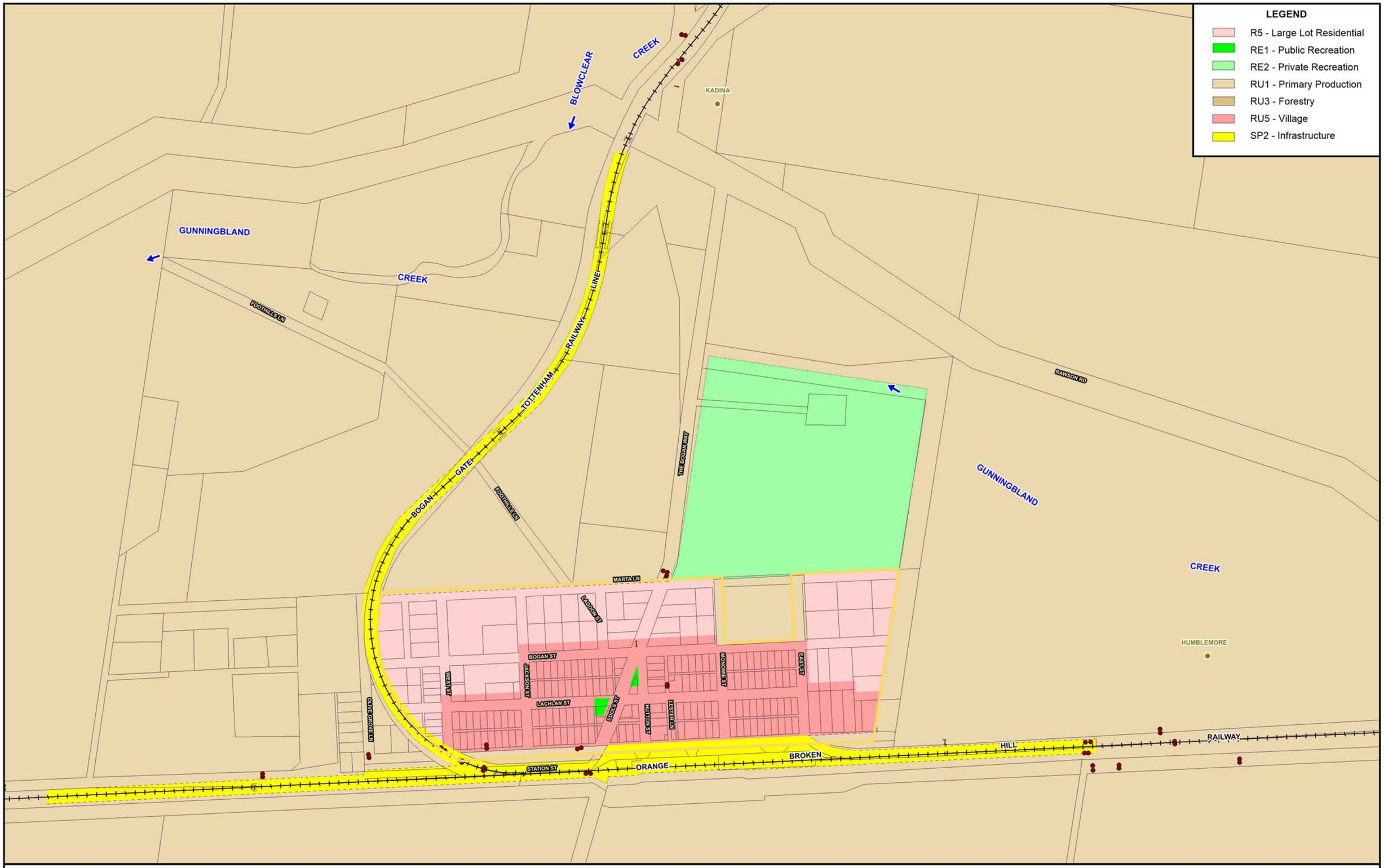
- Flood Fringe

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 2.16
(Sheet 3 of 3)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
PMF



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 2.17

PARKES LEP 2012 ZONING

LAYOUT

20% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

GUNNINGBLAND CREEK

EAST ST

ORANGE BROKEN HILL RAILWAY

N

50 0 50 100 150 m

Scale: 1:5000

Lyall & Associates

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LEGEND

- Proposed Earth Bund
- Proposed Widened/Regraded Channel
- Village Centre

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.1
(Sheet 1 of 2)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 1 (BG_PFMM1) ON FLOOD BEHAVIOUR

5% AEP

1% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

GUNNINGBLAND CREEK

EAST ST

ORANGE BROKEN HILL RAILWAY

N

50 0 50 100 150 m

Scale: 1:5000

Lyall & Associates

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LEGEND

- Proposed Earth Bund
- Proposed Widened/Regraded Channel
- Village Centre

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.1
(Sheet 2 of 2)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 1 (BG_PFMM1) ON FLOOD BEHAVIOUR

EXTENT AND DEPTHS OF INUNDATION
20% AEP

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

IMPACT ON FLOOD BEHAVIOUR
20% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

BOTFIELDS CREEK, THE BOGAN WAY, KADINA, CUDGELBAR, CARLACHY RIDGE, CUDGELBAR RIDGE, CUDGELBAR LANE, MYALLS CREEK, TUBBYLEES RD, COLLAROY, ARALUEN, NEIRAWANG, GUNNINGBLAND LINE, LEARY TANK RD, BROKEN HILL RAILWAY, ORANGE HENRY PARKES WAY, GUNNINGBLAND CREEK, NARDOO, HOMELEA, FERNLEIGH, KILLARNEY, MONUMEA GAP RD, BEDGERERONG RD, MYALL PARK, WOMBEYAN, KALLOONA, OAK PLAINS, WERONA, PARKES SHIRE COUNCIL, CARLACHY RD, ULLADULLA, BERAMANA, FORBES SHIRE COUNCIL, ILKA, PINE VALLEY, MALAMA, YARRABANDAI RD, WILCARA, BALLARAT, CORRIDGERY RD, SCOTTS RD, WHEATLANDS, DELORAINE, TOONGARAH, ROSEWOOD, PLEASANT VIEW, DAISY PARK, INNIS VALE, BOLAH, NYORA, EAGLE FARM, GOOBANG CREEK

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.2
(Sheet 1 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 3 (BG_PFMM3) ON FLOOD BEHAVIOUR

EXTENT AND DEPTHS OF INUNDATION 5% AEP

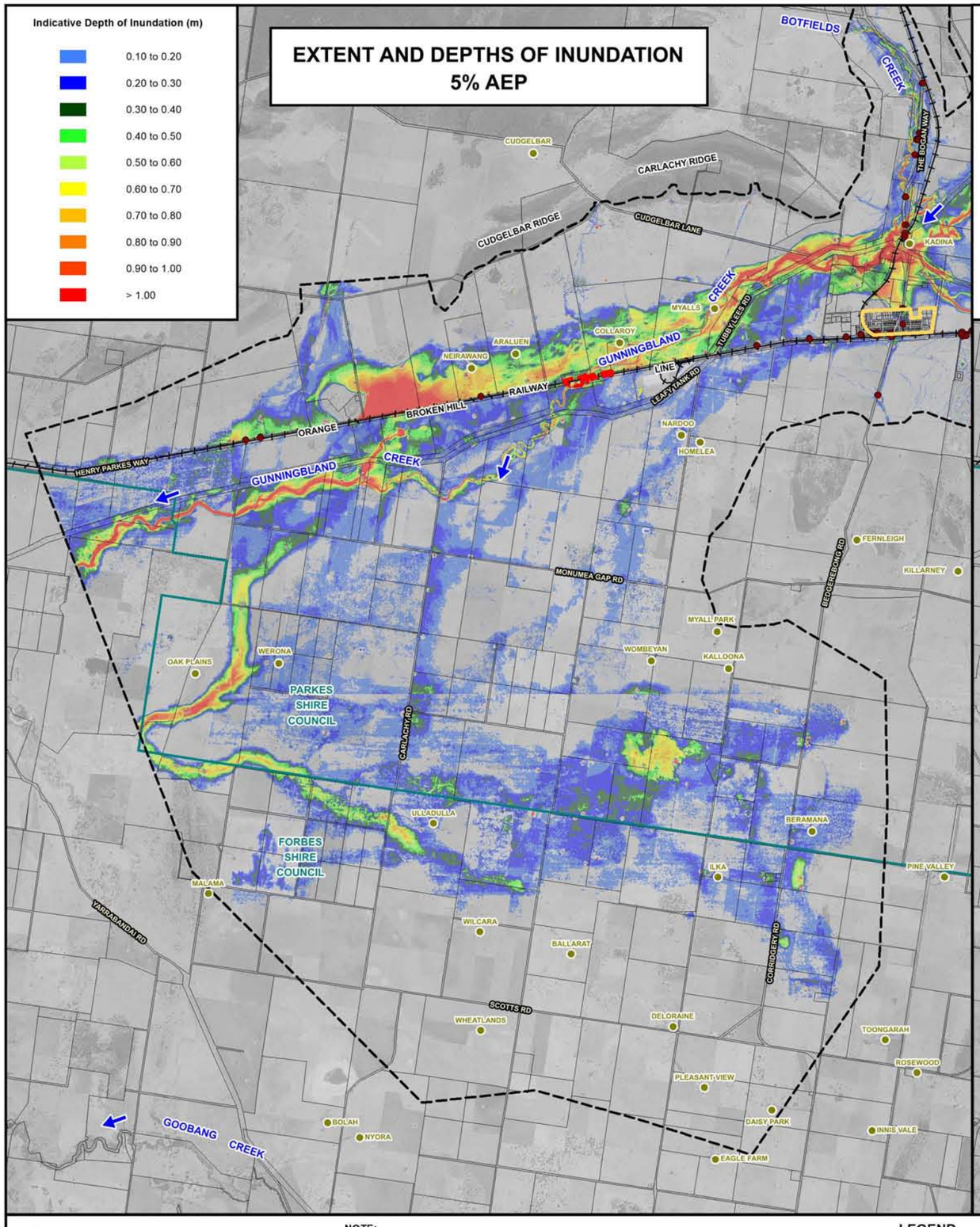
Indicative Depth of Inundation (m)

- 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

IMPACT ON FLOOD BEHAVIOUR 5% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.2
(Sheet 2 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 3 (BG_PFMM3) ON FLOOD BEHAVIOUR

EXTENT AND DEPTHS OF INUNDATION
1% AEP

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

IMPACT ON FLOOD BEHAVIOUR
1% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

BOTFIELDS CREEK, THE BOGAN WAY, CUDGELBAR, CARLACHY RIDGE, CUDGELBAR RIDGE, CUDGELBAR LANE, KADINA, MYALLS CREEK, TIUBYLEES RD, COLLAROY, ARALUEN, NEIRAWANG, GUNNINGBLAND LINE, LEAFY TANK RD, BROKEN HILL RAILWAY, ORANGE, NARDOO, HOMELEA, HENRY PARKES WAY, GUNNINGBLAND CREEK, FERNLEIGH, KILLARNEY, MONUMEA GAP RD, BEDGEREBONG RD, MYALL PARK, WERONA, WOMBEYAN, KALLOONA, OAK PLAINS, PARKES SHIRE COUNCIL, CARLACHY RD, ULLADULLA, BERAMANA, FORBES SHIRE COUNCIL, ILKA, PINE VALLEY, MALAMA, YARRABANDAI RD, WILCARA, BALLARAT, CORRIDGERY RD, SCOTTS RD, WHEATLANDS, DELORAINE, TOONGARAH, ROSEWOOD, PLEASANT VIEW, DAISY PARK, INNIS VALE, BOLAH, NYORA, EAGLE FARM, GOOBANG CREEK

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.2
(Sheet 3 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 3 (BG_PFMM3) ON FLOOD BEHAVIOUR

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

PRE-BG_PFMM3 CONDITIONS

POST-BG_PFMM3 CONDITIONS

GUNNINGBLAND CREEK

HENRY PARKES WAY

ORANGE - BROKEN HILL RAILWAY LINE

LEAFY TANK RD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.3

FLOODING PATTERNS IN VICINITY OF EXISTING CARLACHY RAILWAY BRIDGE UNDER PRE AND POST-BG_PFMM3 CONDITIONS - 20% AEP

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

PRE-BG_PFMM3 CONDITIONS

POST-BG_PFMM3 CONDITIONS

GUNNINGBLAND CREEK
HENRY PARKES WAY
ORANGE - BROKEN HILL RAILWAY LINE
LEAFY TANK RD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.4

FLOODING PATTERNS IN VICINITY OF EXISTING CARLACHY RAILWAY BRIDGE UNDER PRE AND POST-BG_PFMM3 CONDITIONS - 5% AEP

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

PRE-BG_PFMM3 CONDITIONS

POST-BG_PFMM3 CONDITIONS

GUNNINGBLAND CREEK

HENRY PARKES WAY

ORANGE - BROKEN HILL RAILWAY LINE

LEAFY TANK RD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.5

FLOODING PATTERNS IN VICINITY OF EXISTING CARLACHY RAILWAY BRIDGE UNDER PRE AND POST-BG_PFMM3 CONDITIONS - 1% AEP

EXTENT AND DEPTHS OF INUNDATION
20% AEP

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

IMPACT ON FLOOD BEHAVIOUR
20% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

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N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.6
(Sheet 1 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 4 (BG_PFMM4) ON FLOOD BEHAVIOUR

EXTENT AND DEPTHS OF INUNDATION 5% AEP

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

IMPACT ON FLOOD BEHAVIOUR 5% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

BOTFIELDS CREEK, THE BOGAN WAY, KADINA, CUDGELBAR, CARLACHY RIDGE, CUDGELBAR RIDGE, CUDGELBAR LANE, MYALLS CREEK, COLLAROY, NEIRAWANG, ARALUEN, GUNNINGBLAND LINE, TUBBYVALES RD, LEAFY TANK RD, BROKEN HILL RAILWAY, ORANGE, NARDOO, HOMELEA, HENRY PARKES WAY, GUNNINGBLAND CREEK, FERNLEIGH, KILLARNEY, MONUMEA GAP RD, BEDGEREBONG RD, MYALL PARK, WERONA, OAK PLAINS, WOMBEYAN, KALLOONA, PARKES SHIRE COUNCIL, CARLACHY RD, ULLADULLA, BERAMANA, FORBES SHIRE COUNCIL, ILKA, PINE VALLEY, MALAMA, YARRABANDAI RD, WILCARA, BALLARAT, CORRIDGERY RD, SCOTTS RD, WHEATLANDS, DELORAINE, TOONGARAH, ROSEWOOD, PLEASANT VIEW, DAISY PARK, INNIS VALE, BOLAH, NYORA, EAGLE FARM, GOOBANG CREEK

N

1 0 1 2 3 km

Scale: 1:100,000

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.

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.6
(Sheet 2 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 4 (BG_PFMM4) ON FLOOD BEHAVIOUR

EXTENT AND DEPTHS OF INUNDATION 1% AEP

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

IMPACT ON FLOOD BEHAVIOUR 1% AEP

Afflux (m)

- < -0.2
- -0.20 to -0.10
- -0.10 to -0.01
- -0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 1.00
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

BOTFIELDS CREEK, THE BOGAN WAY, KADINA, CUDGELBAR, CARLACHY RIDGE, CUDGELBAR RIDGE, CUDGELBAR LANE, MYALLS CREEK, TUDBY LEES RD, COLLAROY, ARALUEN, NEIRAWANG, GUNNINGBLAND LINE, LEAFY TANK RD, BROKEN HILL RAILWAY, ORANGE, NARDOO, HOMELEA, HENRY PARKES WAY, GUNNINGBLAND CREEK, FERNLEIGH, KILLARNEY, MONUMEA GAP RD, BEDGEREBONG RD, MYALL PARK, WOMBEYAN, KALLOONA, OAK PLAINS, WERONA, PARKES SHIRE COUNCIL, CARLACHY RD, ULLADULLA, BERAMANA, FORBES SHIRE COUNCIL, ILKA, PINE VALLEY, MALAMA, YARRABANDAI RD, WILCARA, BALLARAT, CORRIDGERY RD, SCOTTS RD, WHEATLANDS, DELORAINE, TOONGARAH, ROSEWOOD, PLEASANT VIEW, DAISY PARK, INNIS VALE, BOLAH, NYORA, EAGLE FARM, GOOBANG CREEK

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads
- Extent Over Which Ground Levels Lowered to Approximate Elevation of Adjacent Floodplain

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure 3.6
(Sheet 3 of 3)

IMPACT OF BOGAN GATE POTENTIAL FLOOD MODIFICATION MEASURE 4 (BG_PFMM4) ON FLOOD BEHAVIOUR

POTENTIAL EVACUATION ROUTES

Potential Vehicular Evacuation Route

Location where Potential Vehicular Evacuation Route is Subject to H2-H6 Hazardous Flooding

FLOOD EMERGENCY RESPONSE CLASSIFICATIONS

Extent of Inundation

Low Flood Island

High Flood Island

Rising Road Access

Extent of Flood Emergency Response Classification

BLOWCLEAR CREEK

KADINA

GUNNINGBLAND

GUNNINGBLAND CREEK

FOOTHILLS LN

TOTTENHAM — RAILWAY LINE

RAWSON RD

BOGAN GATE

FOOTHILLS LN

THE BOGAN WAY

GUNNINGBLAND

CREEK

MARTA LN

MAGGON ST

BOGAN ST

WEST ST

JACKSON ST

LACHLAN ST

OLIVE GROVE LN

EDEN ST

HUTTON ST

LESTER LN

MONOMIE ST

EAST ST

HUMBLEMORE

HILL

BROKEN

RAILWAY

STATION ST

ORANGE

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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LEGEND

Modelled Stormwater Drainage System

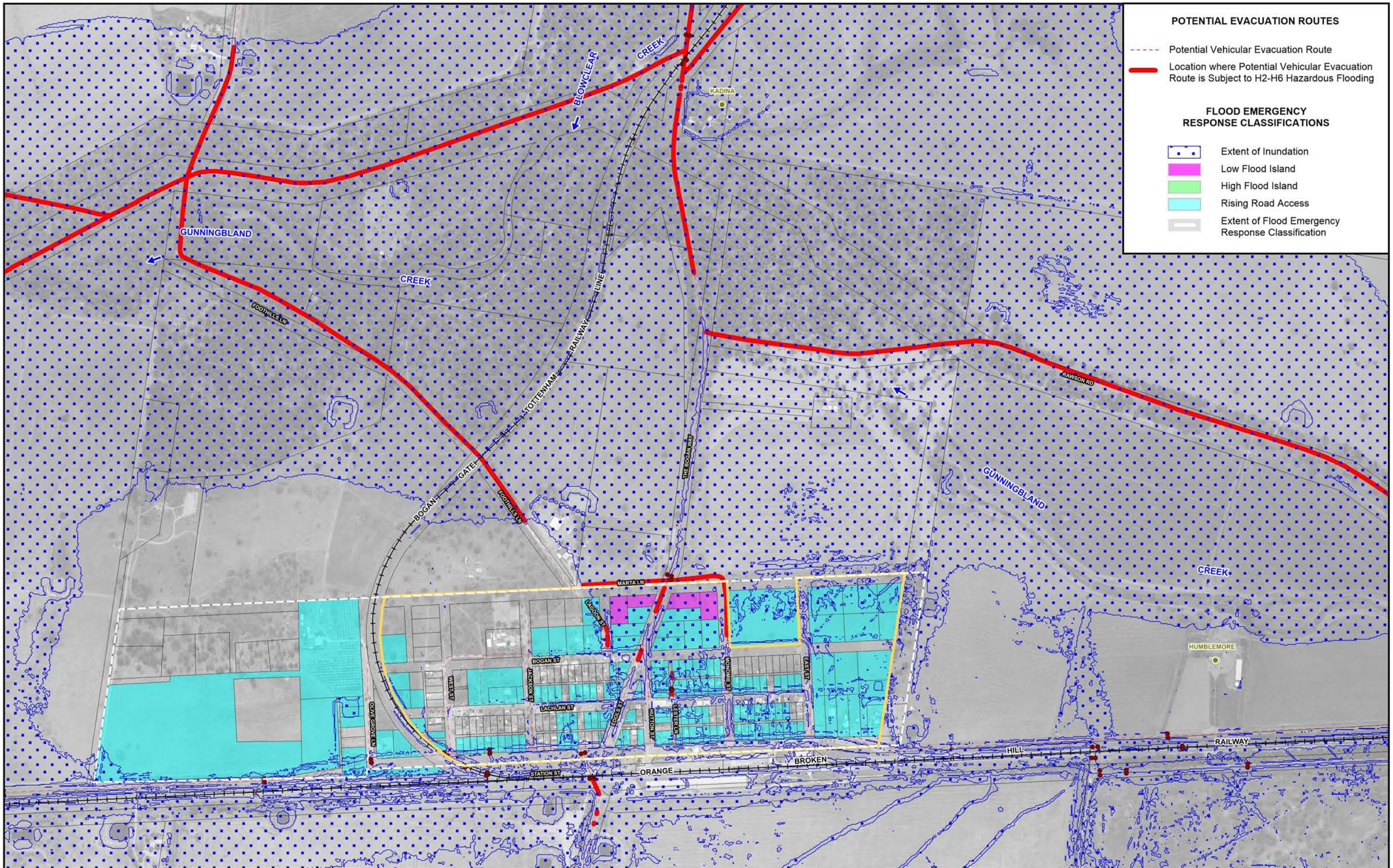
Village Centre

Homesteads

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 3.7

FLOOD EMERGENCY RESPONSE PLANNING CLASSIFICATIONS
5% AEP



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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LEGEND

- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

Figure 3.8

FLOOD EMERGENCY RESPONSE PLANNING CLASSIFICATIONS
1% AEP

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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LEGEND

- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANAGEMENT STUDY AND PLAN

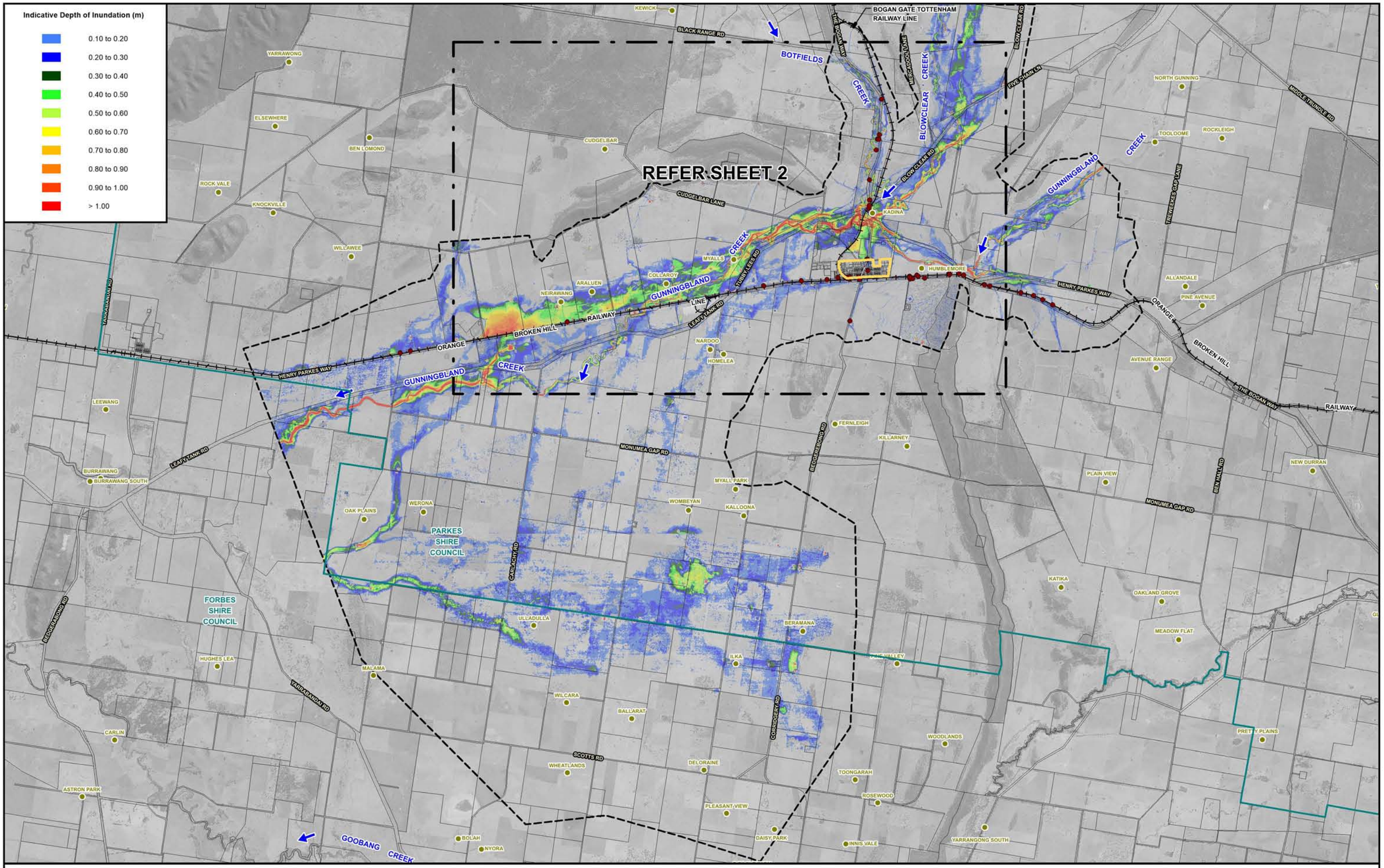
Figure 3.9

FLOOD EMERGENCY RESPONSE PLANNING CLASSIFICATIONS
PMF

APPENDIX B

ADDITIONAL FIGURES SHOWING DESIGN FLOOD BEHAVIOUR AT BOGAN GATE

LIST OF FIGURES (APPENDIX B)



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

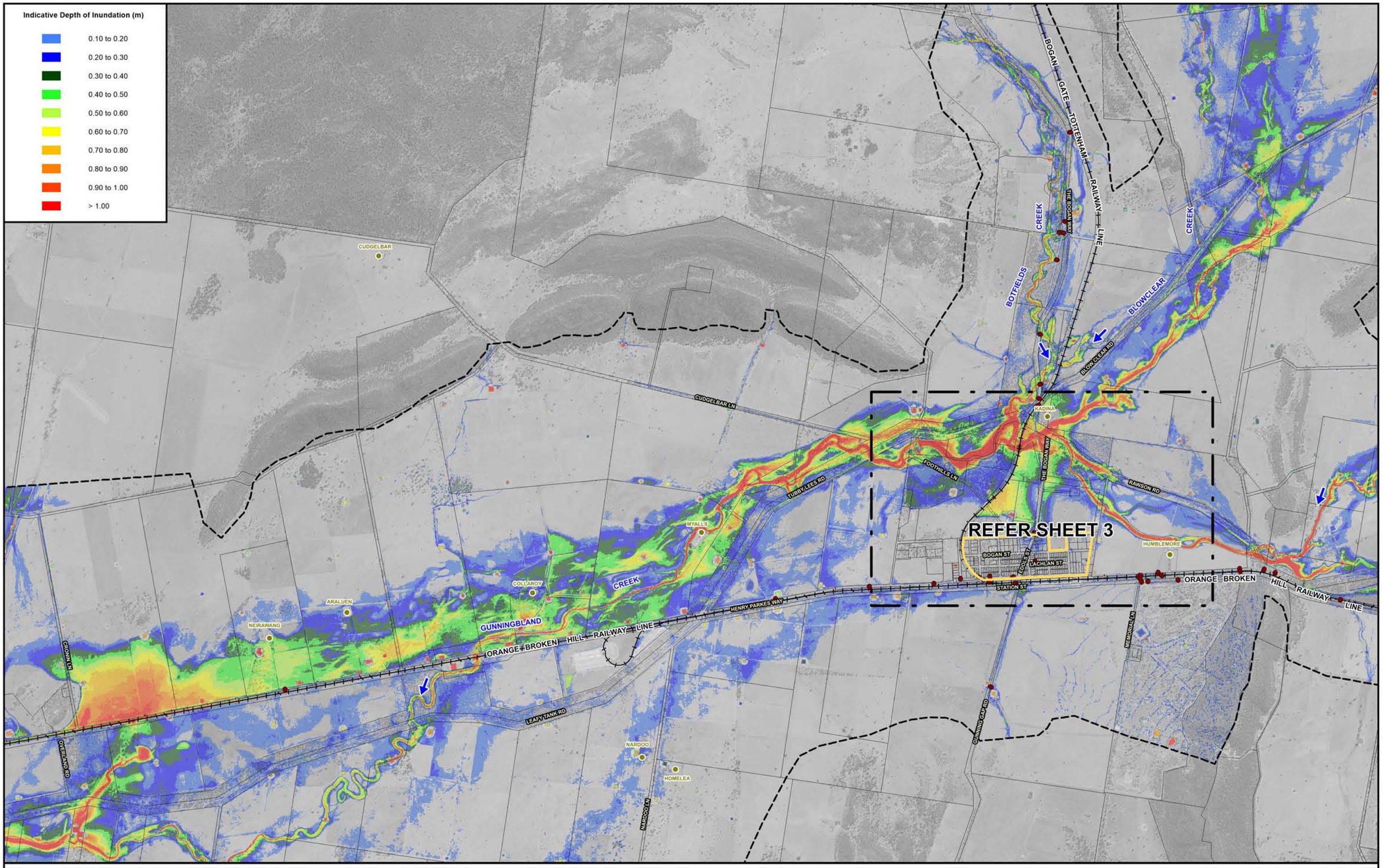
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.1
(Sheet 1 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
20% AEP

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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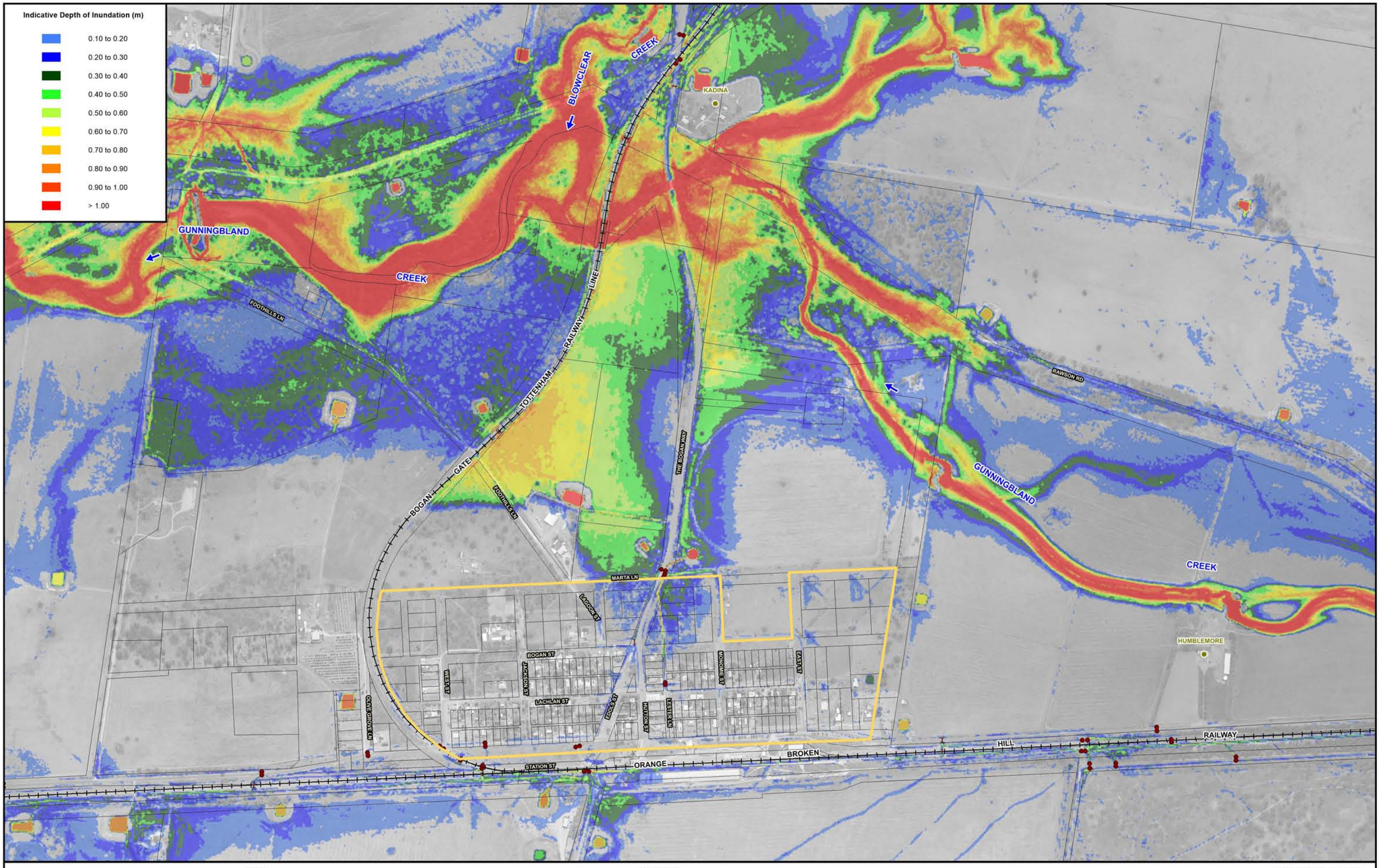
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.1
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
20% AEP


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
BLOWCLEAR CREEK
KADINA
GUNNINGBLAND CREEK
FOOTHILLS LN
TOTTENHAM RAILWAY LINE
BOGAN GATE
THE BOGAN WAY
RAWSON RD
GUNNINGBLAND CREEK
HUMBLEMORE
MARTA LN
LAGOON ST
BOGAN ST
WEST ST
JACKSON ST
LACHLAN ST
ECKS ST
HUTTON ST
LESTER LN
MONOMBIE ST
EAST ST
OLIVE GROVE LN
STATION ST
ORANGE BROKEN HILL RAILWAY
N
100 0 100 200 300 m
Scale: 1:10,000
Lyall & Associates
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LEGEND
LGA Boundary
Two-Dimensional Model Boundary
Modelled Stormwater Drainage System
Village Centre
Homesteads
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure B1.1
(Sheet 3 of 3)
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
20% AEP


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
BOGAN GATE TOTTENHAM RAILWAY LINE
BLACK RANGE RD
BOTFIELDS
THE BOGAN WAY
BLOWCLEAR CREEK
BLOW CLEAR RD
FIVE SHAIN LN
MIDDLE TRUNDLE RD
NORTH GUNNING
TOOLOOME
ROCKLEIGH
TREWEEKES GAP LANE
GUNNINGBLAND CREEK
CUDGELBAR LANE
KADINA
HUMBLEMORE
HENRY PARKES WAY
ALLANDALE
PINE AVENUE
AVENUE RANGE
BROKEN HILL RAILWAY
ORANGE
GUNNINGBLAND
TUBBY LEE RD
LEAFY TANK RD
LINE
NEIRAWANG
ARALUEN
COLLAROY
MYALLS
NARDOO
HOMELEA
CUDGELBAR
YARRAWONG
ELSEWHERE
BEN LOMOND
ROCK VALE
KNOCKVILLE
WILLAWEE
YARRABANDAI RD
LEEWANG
BURRAWANG
BURRAWANG SOUTH
OAK PLAINS
WERONA
PARKES SHIRE COUNCIL
FORBES SHIRE COUNCIL
BEDGERABONG RD
HUGHES LEA
MALAMA
ULLADULLA
WILCARA
BALLARAT
CARLIN
ASTRON PARK
WHEATLANDS
SCOTTS RD
DELORAINE
GOOBANG CREEK
BOLAH
NYORA
CARLAGHY RD
CORRIDGERY RD
MONUMEA GAP RD
MYALL PARK
WOMBEYAN
KALLOONA
FERNLEIGH
KILLARNEY
BEDGERABONG RD
BEN HALL RD
PLAIN VIEW
NEW DURRAN
KATIKA
OAKLAND GROVE
MEADOW FLAT
PRETTY PLAINS
WOODLANDS
TOONGARAH
ROSEWOOD
PLEASANT VIEW
DAISY PARK
INNIS VALE
YARRANGONG SOUTH
BERAMANA
ILKA
KING VALLEY
N
1 0 1 2 3 km
Scale: 1:100,000
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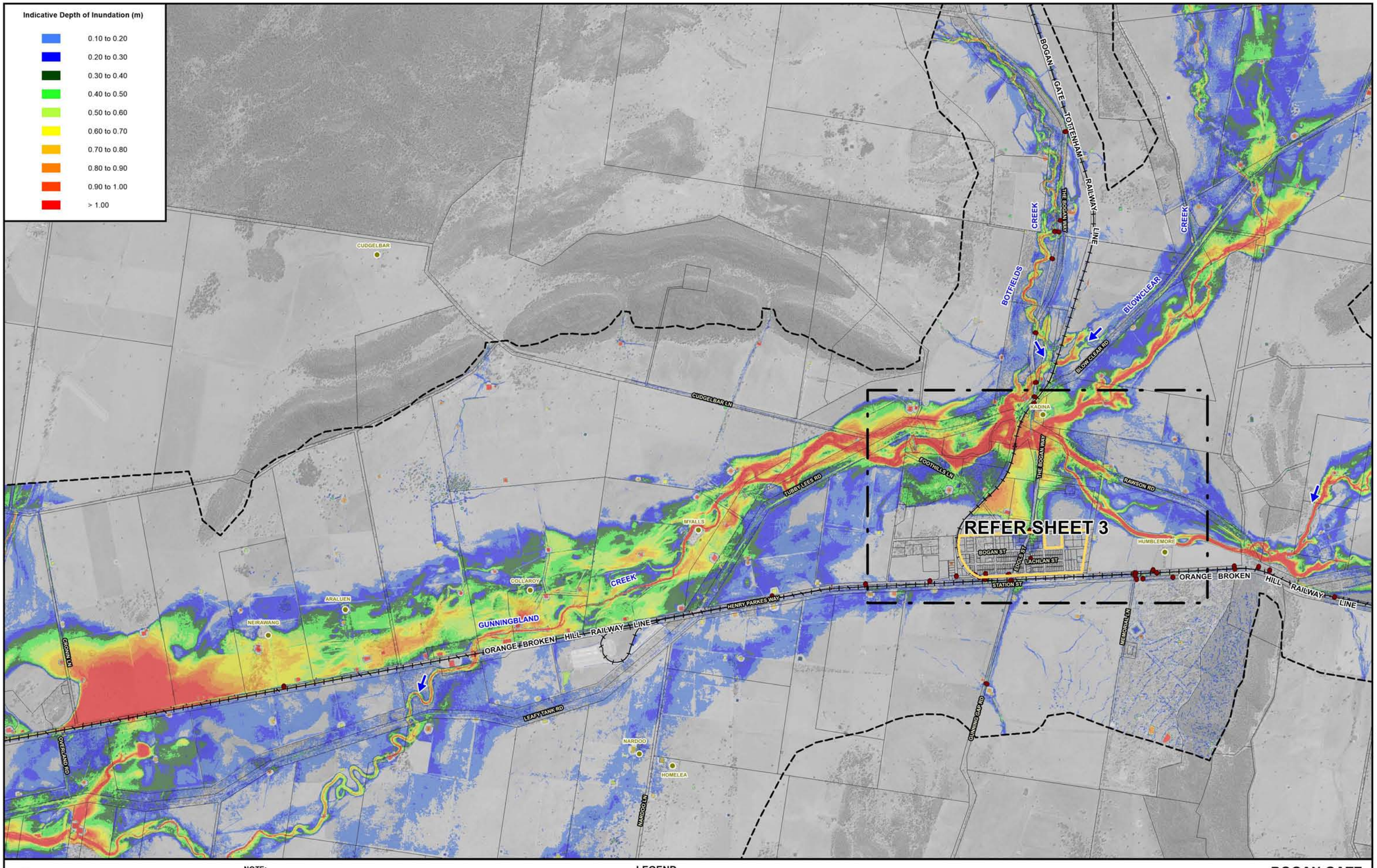
LEGEND
LGA Boundary
Two-Dimensional Model Boundary
Modelled Stormwater Drainage System
Village Centre
Homesteads
Lyall & Associates
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure B1.2
(Sheet 1 of 3)
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
10% AEP

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.2
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
10% AEP

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

BLOWCLEAR CREEK
KADINA
GUNNINGBLAND CREEK
FOOTHILLS LN
TOTTENHAM RAILWAY LINE
THE BOGAN WAY
RAWSON RD
GUNNINGBLAND CREEK
BOGAN GATE
FOOTHILLS LN
MARTA LN
LAGOON ST
BOGAN ST
JACKSON ST
WEST ST
LACHLAN ST
BOOLS ST
HUTTON ST
LESTER LN
MONOMIE ST
EAST ST
OLIVE GROVE LN
STATION ST
ORANGE BROKEN HILL RAILWAY
HUMBLEMORE

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.2
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
10% AEP

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

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

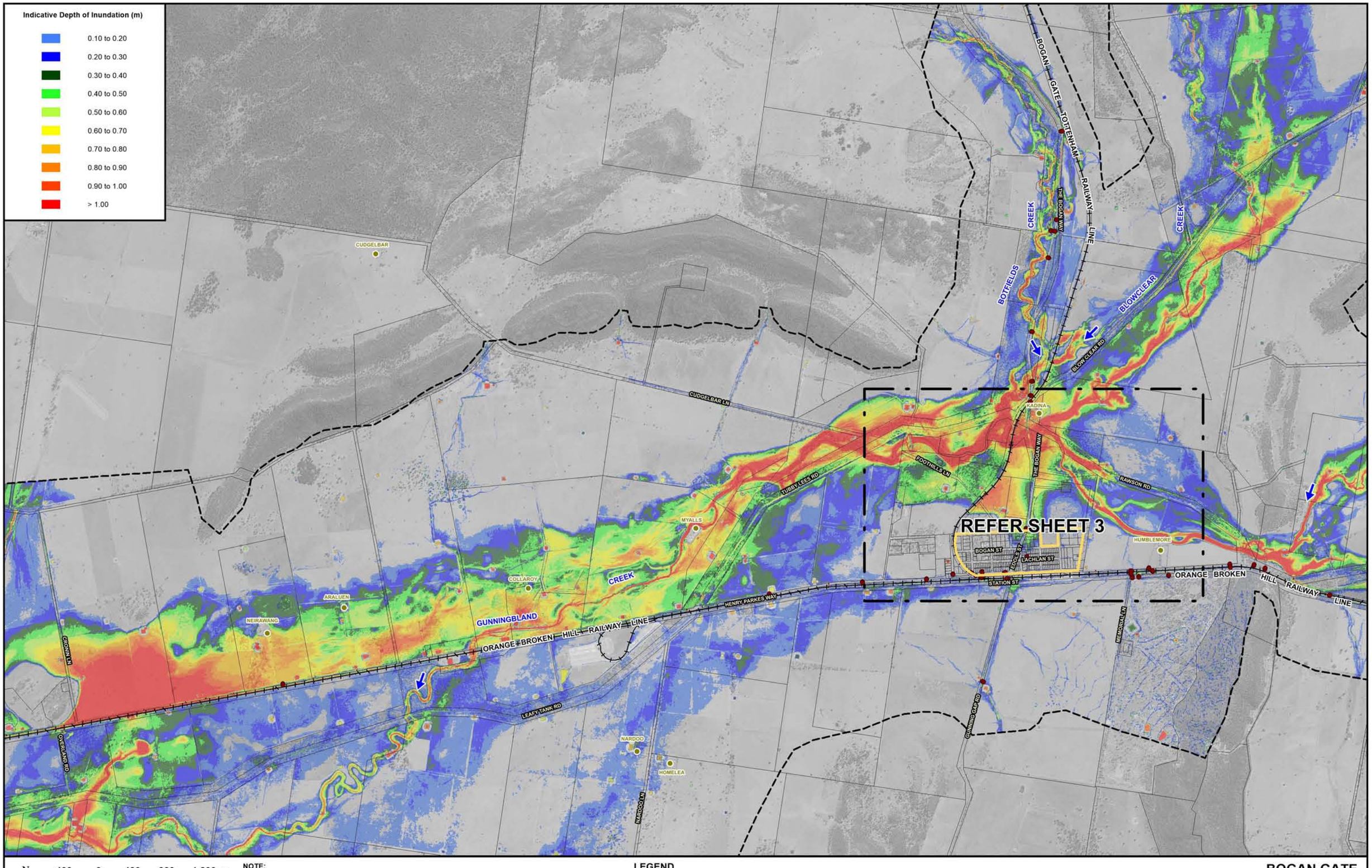
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.3
(Sheet 1 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
5% AEP

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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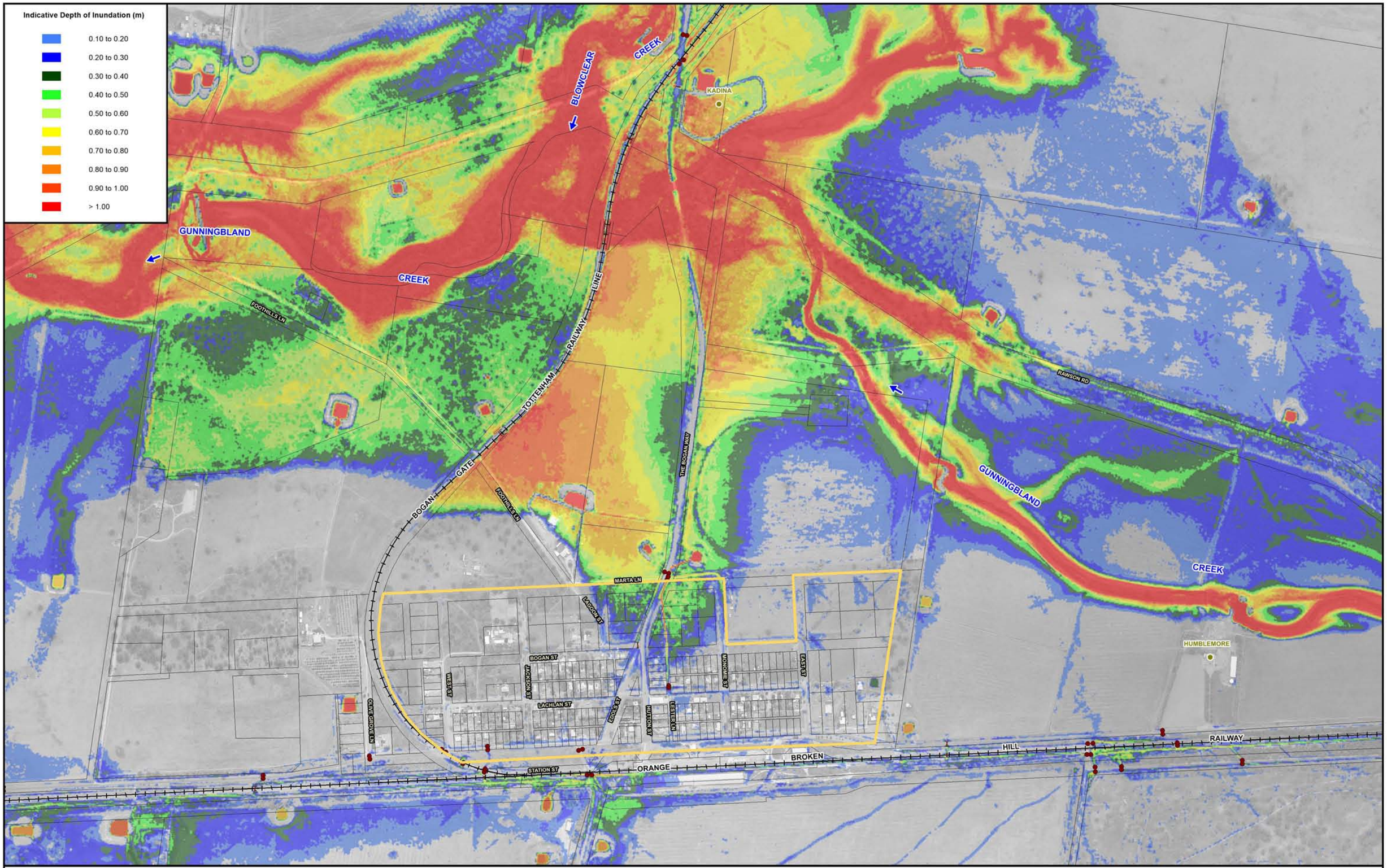
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.3
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
5% AEP



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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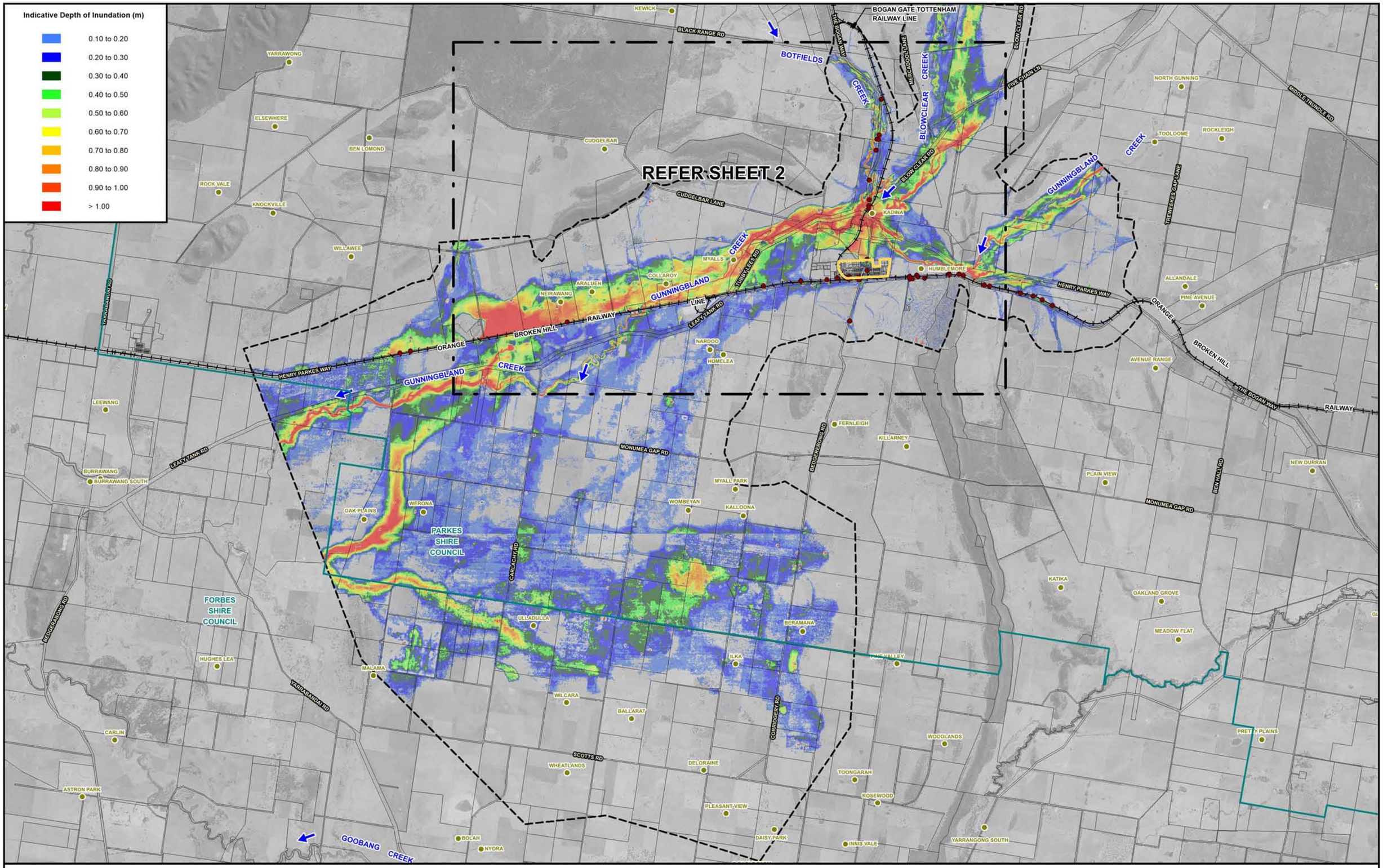
- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.3
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
5% AEP



N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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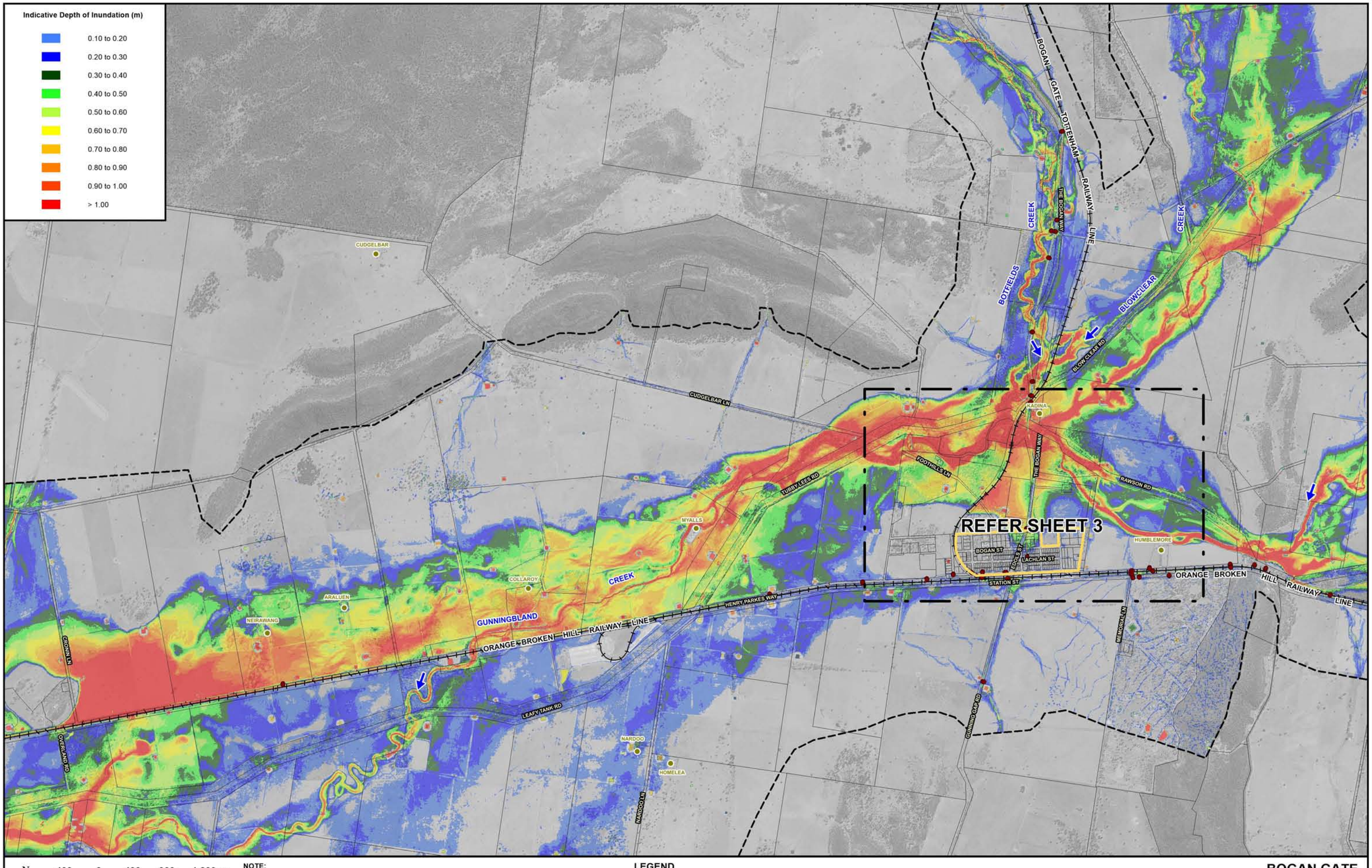
LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.4
(Sheet 1 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
2% AEP



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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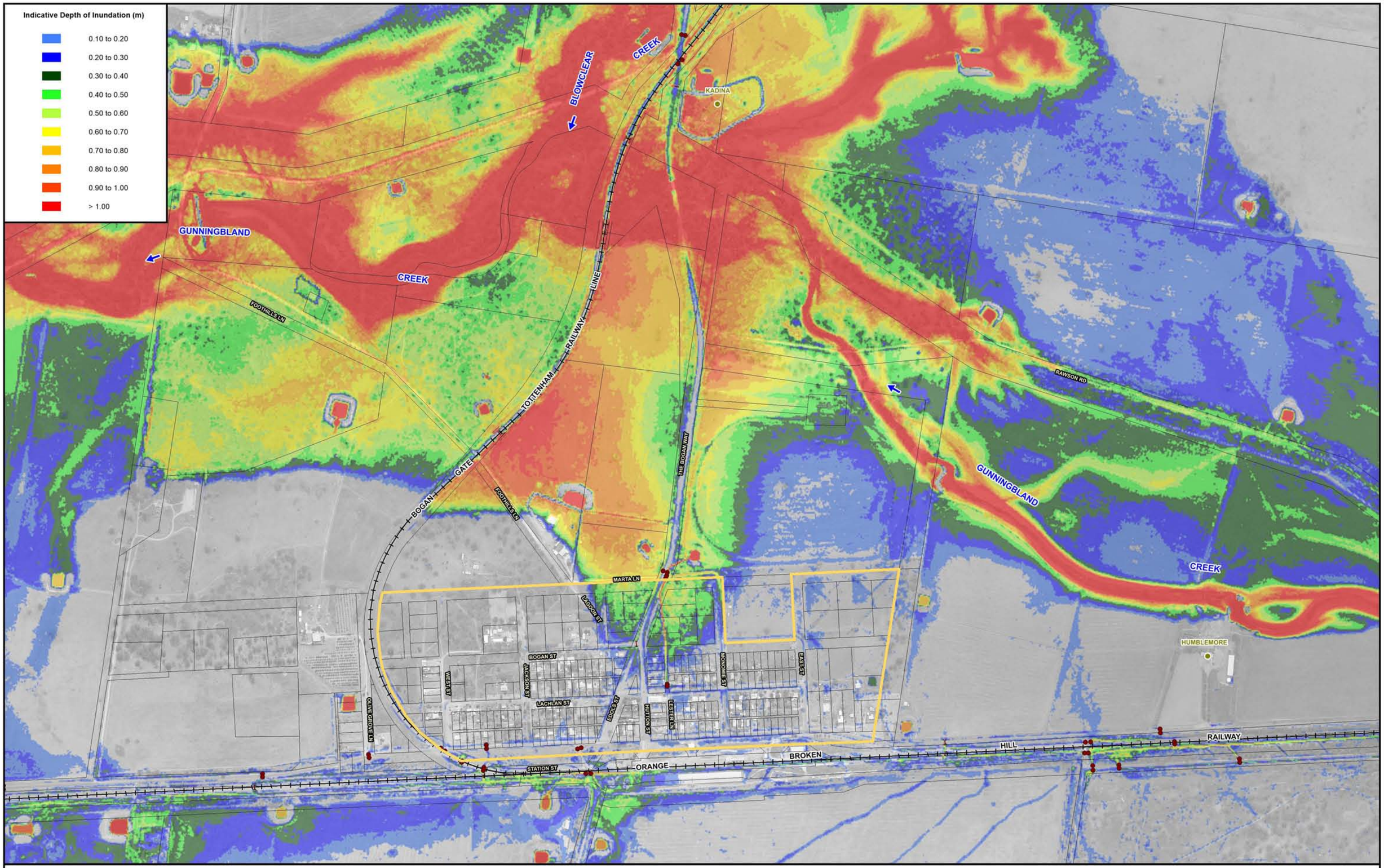
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.4
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
2% AEP



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.4
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
2% AEP

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

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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LEGEND

- LGA Boundary
- Two-Dimensional Model Boundary
- Modelled Stormwater Drainage System
- Village Centre
- Homesteads

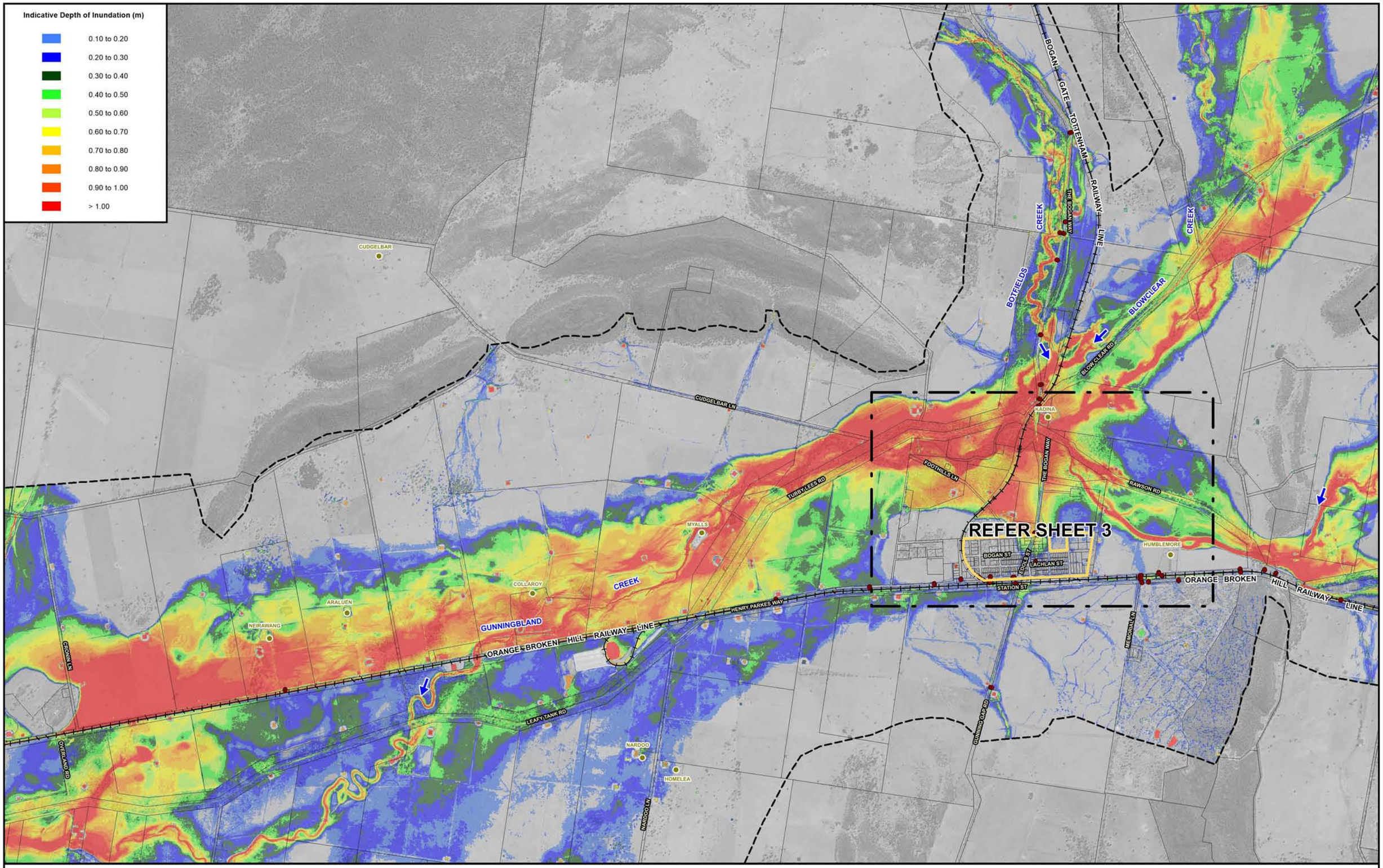
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.5
(Sheet 1 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.5% AEP

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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- LGA Boundary
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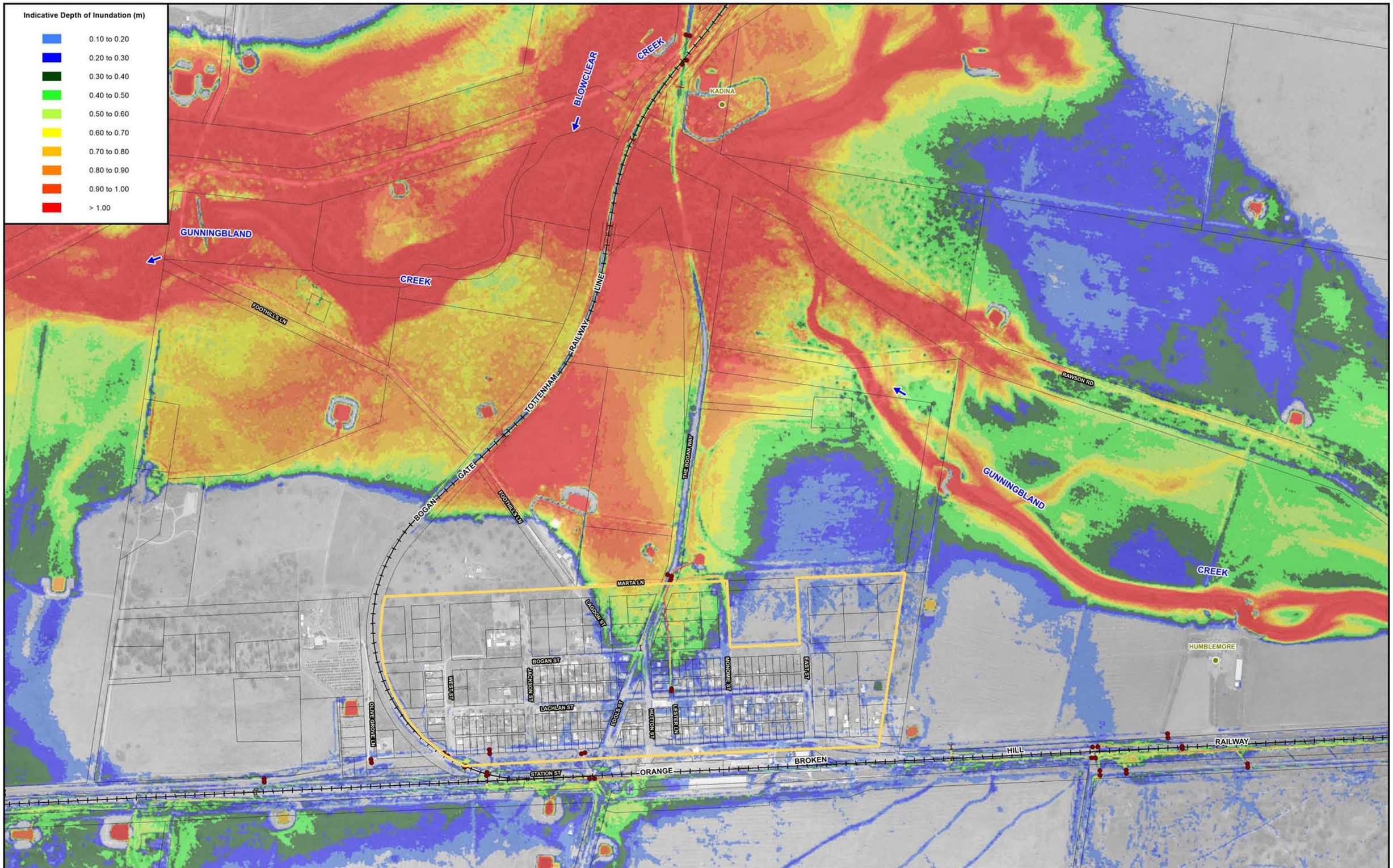
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.5
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.5% AEP



N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

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BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.5
(Sheet 3 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.5% AEP

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

N

1 0 1 2 3 km

Scale: 1:100,000

Lyall & Associates

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- LGA Boundary
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- Village Centre
- Homesteads

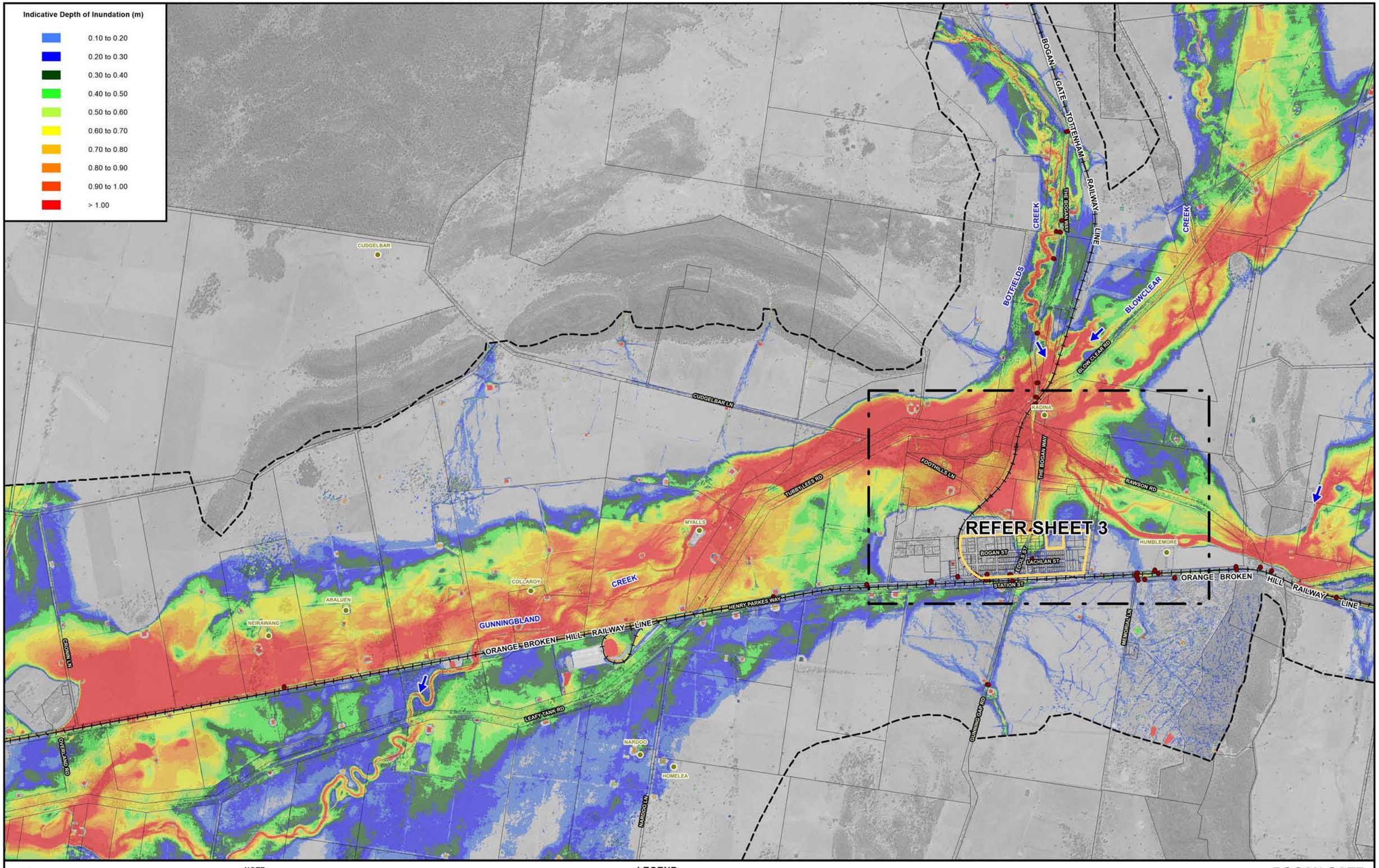
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.6
(Sheet 1 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.2% AEP

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



N

400 0 400 800 1,200 m

Scale: 1:40,000

Lyall & Associates

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LEGEND

- LGA Boundary
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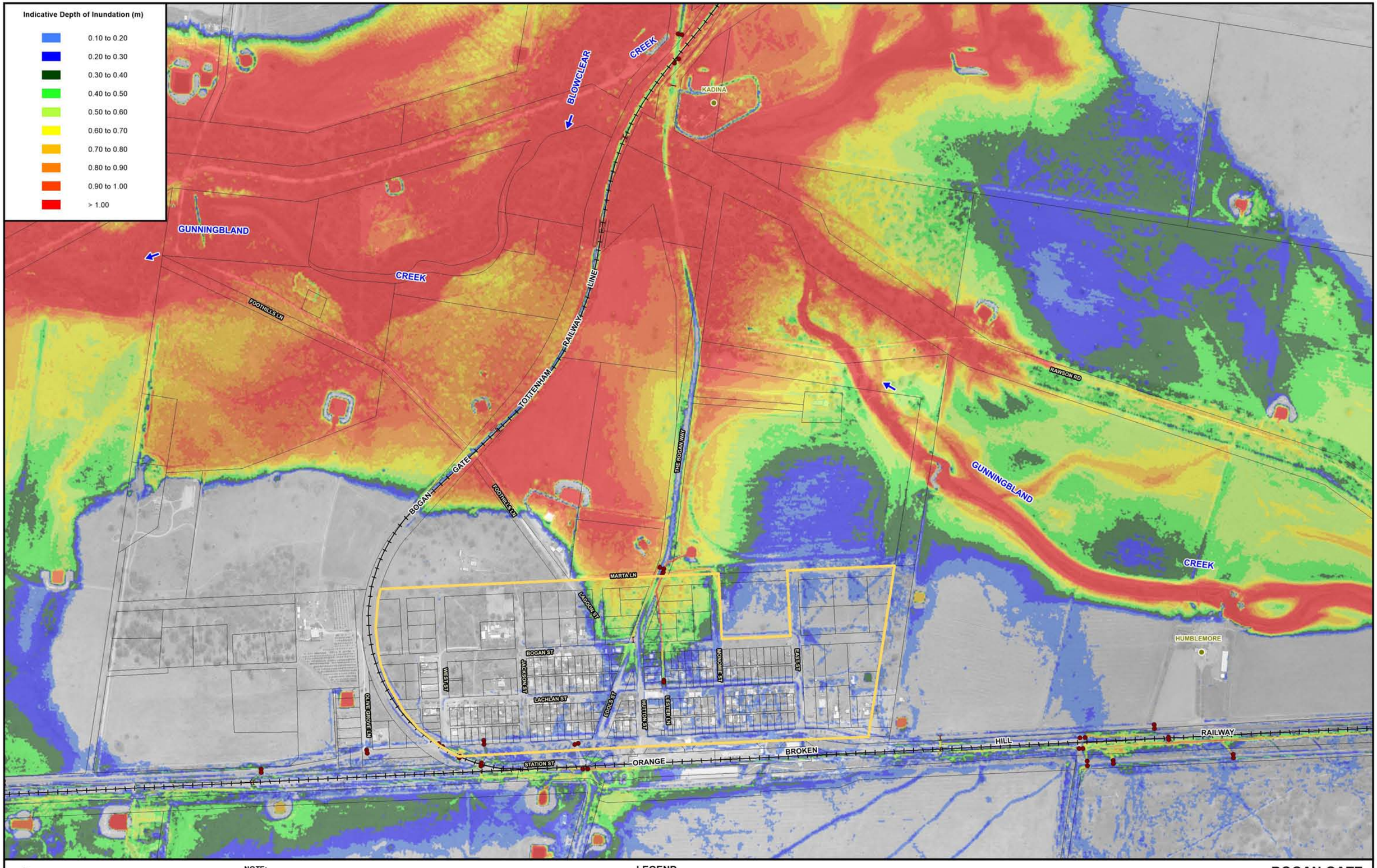
- Village Centre
- Homesteads

BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure B1.6
(Sheet 2 of 3)

INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.2% AEP


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
BLOWCLEAR
CREEK
KADINA
GUNNINGBLAND
CREEK
FOOTHILLS LN
TOTTENHAM
RAILWAY LINE
BOGAN GATE
FOOTHILLS LN
THE BOGAN WAY
RAWSON RD
GUNNINGBLAND
CREEK
HUMBLEMORE
MARTA LN
MCGOON ST
BOGAN ST
JACKSON ST
WEST ST
LACHLAN ST
EDOLS ST
HUTTON ST
LESTER LN
MONOMIE ST
EAST ST
OLIVE GROVE LN
STATION ST
ORANGE
BROKEN
HILL
RAILWAY
N
100 0 100 200 300 m
Scale: 1:10,000
Lyall & Associates
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LEGEND
LGA Boundary
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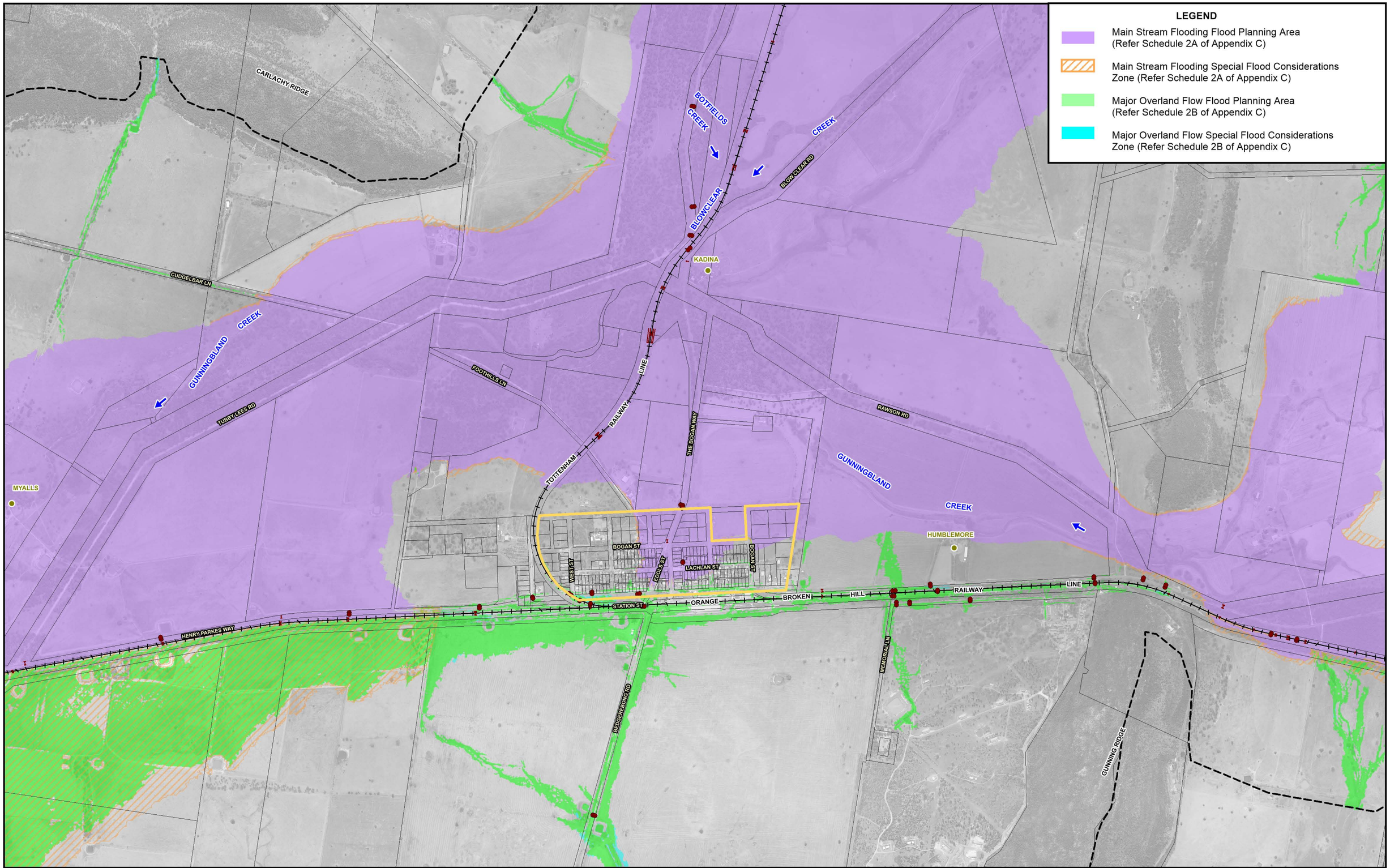
Modelled Stormwater Drainage System
Village Centre
Homesteads
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN
Figure B1.6
(Sheet 3 of 3)
INDICATIVE EXTENT AND DEPTHS OF INUNDATION
0.2% AEP

APPENDIX C

SUGGESTED WORDING FOR INCLUSION IN PARKES SHIRE DEVELOPMENT CONTROL PLAN

LIST OF FIGURES (APPENDIX C)



N

200 0 200 400 600 m

Scale: 1:20,000

Lyall & Associates

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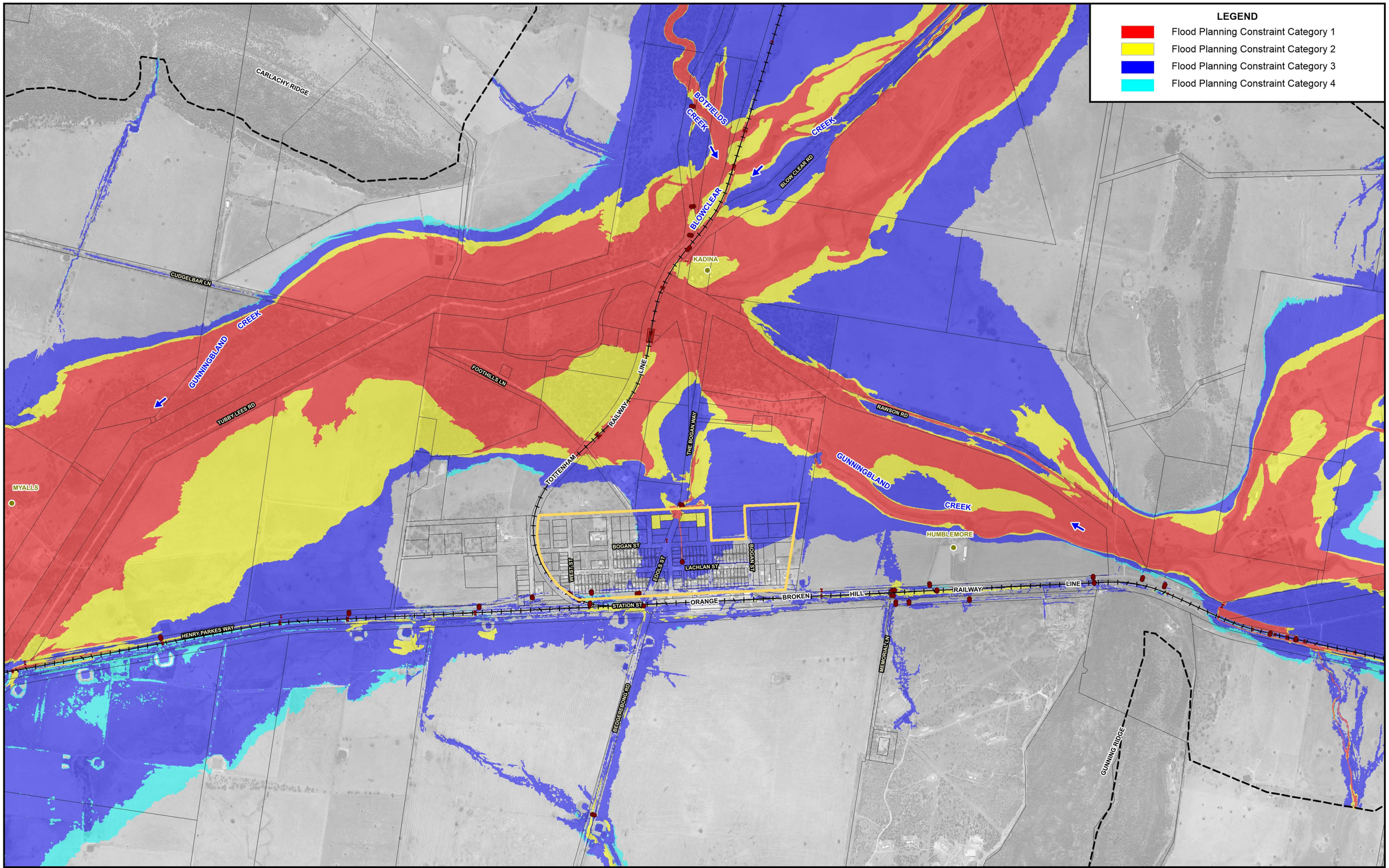
BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure C1.1

EXTRACT OF PARKES SHIRE FLOOD PLANNING MAP AT BOGAN GATE



N

200 0 200 400 600 m

Scale: 1:20,000

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BOGAN GATE
FLOOD RISK MANGEMENT STUDY AND PLAN

Figure C1.2

EXTRACT OF PARKES SHIRE FLOOD PLANNING CONSTRAINT CATEGORY MAP AT BOGAN GATE