TAMWORTH CITY-WIDE FLOODING INVESTIGATION

VOLUME 2 – FIGURES AND APPENDICES

MAY 2019

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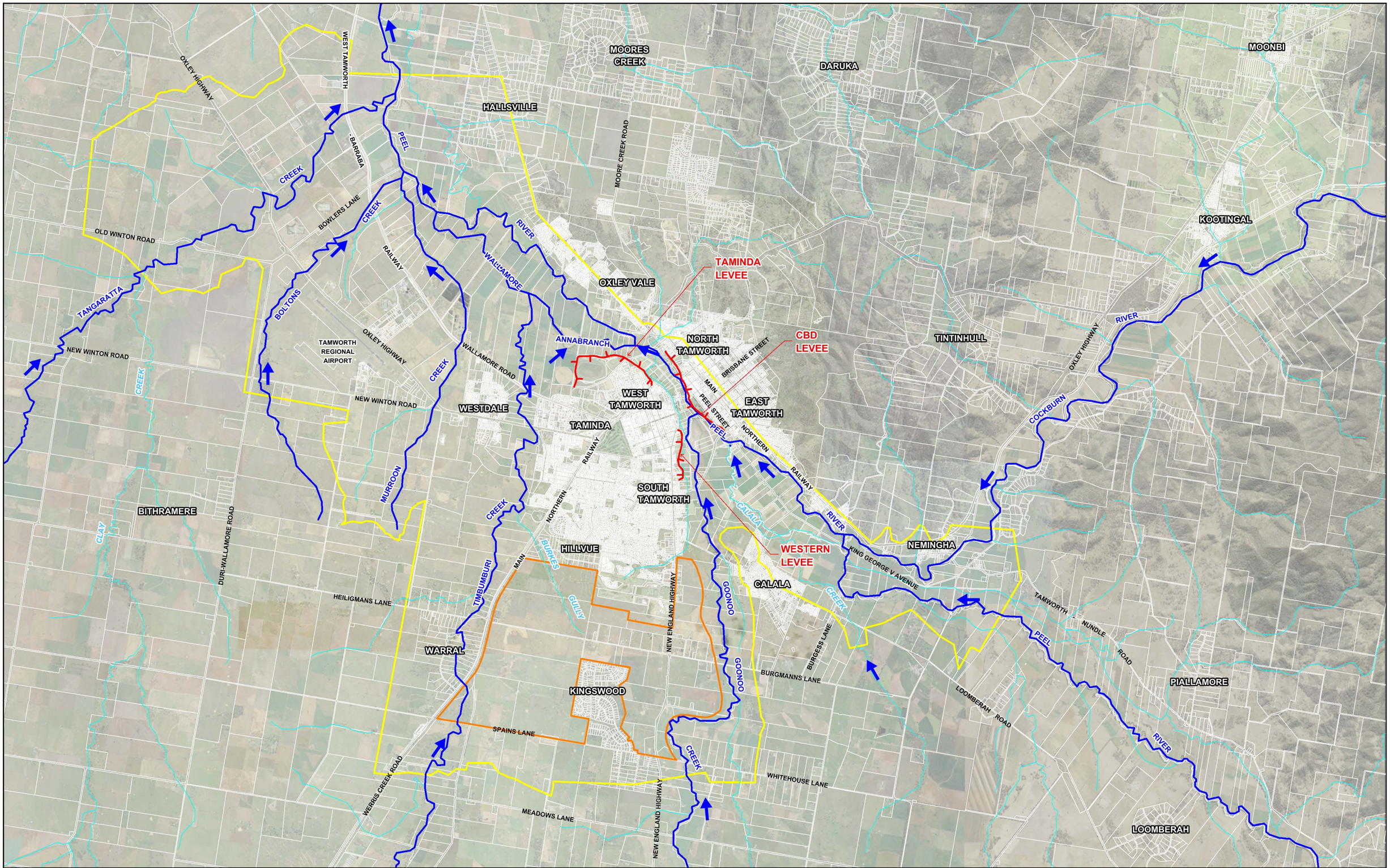

N

0.8 0 0.8 1.6 2.4 km

Scale: 1:80,000

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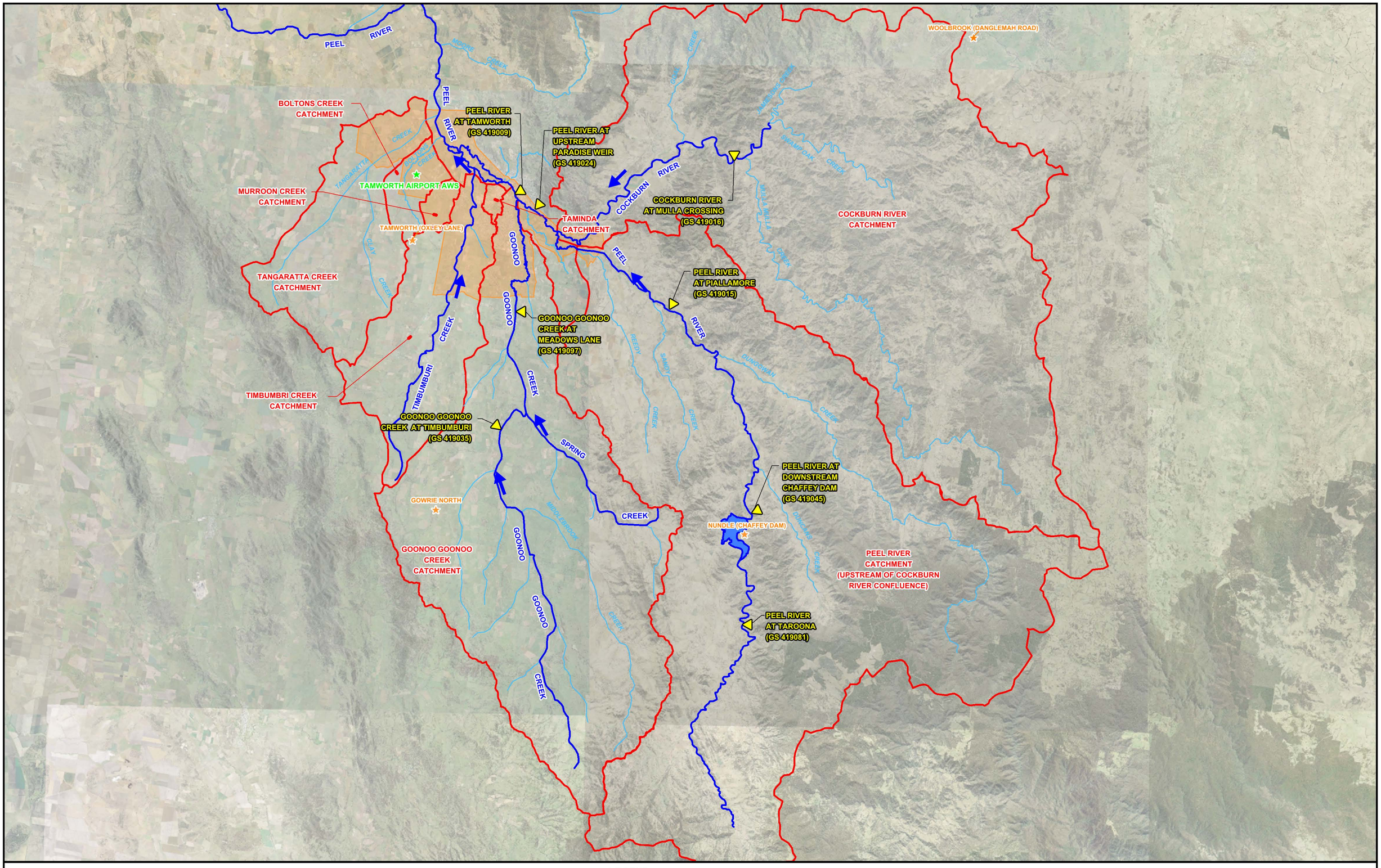
LEGEND

- Levee
- Study Area
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 1.1

STUDY LOCATION PLAN



N

3 0 3 6 9 km

Scale: 1:300,000

LEGEND

- Catchment Boundary
- WaterNSW Stream Gauge
- Study Area
- BoM All Weather Station and Identifier
- BoM Pluviographic Gauge and Identifier

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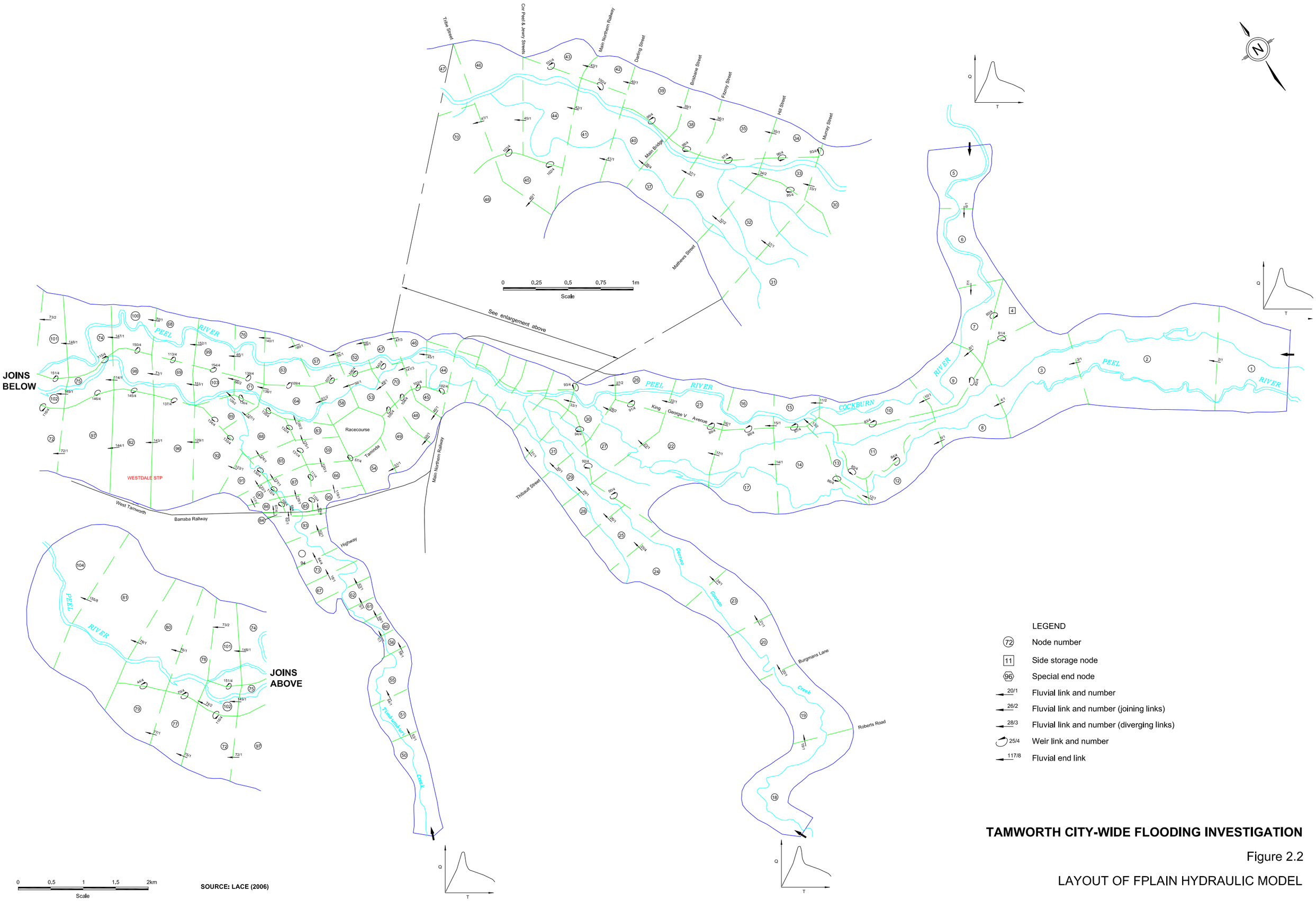
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.1

CATCHMENT PLAN



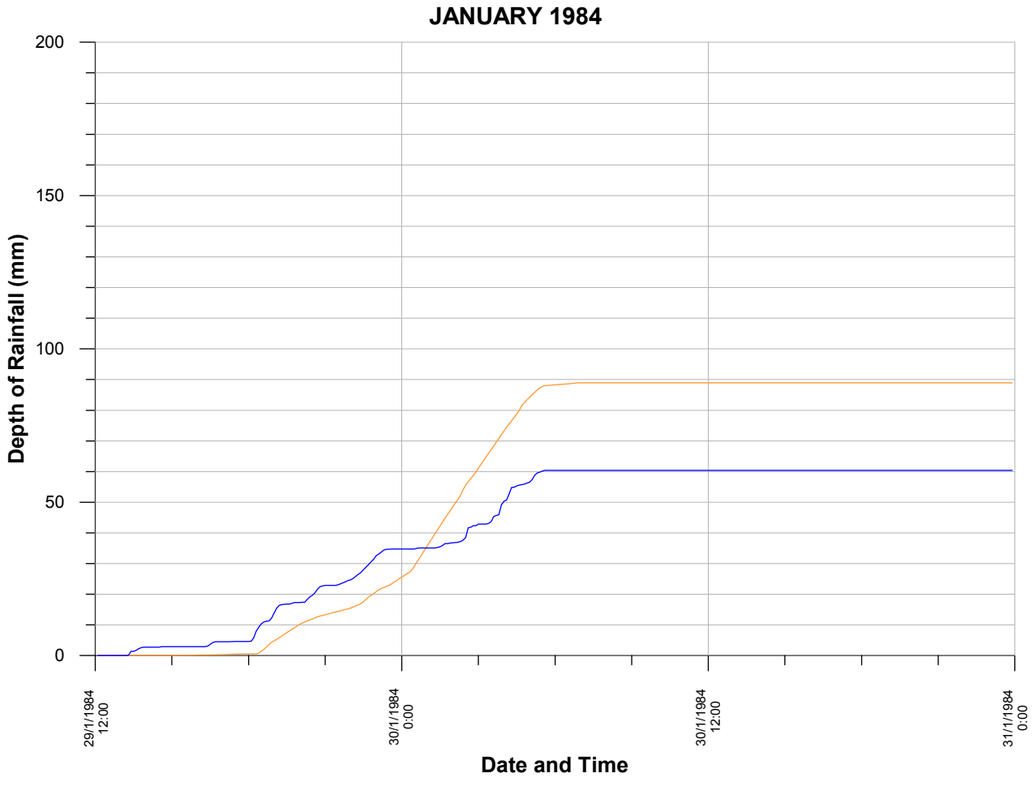
LEGEND

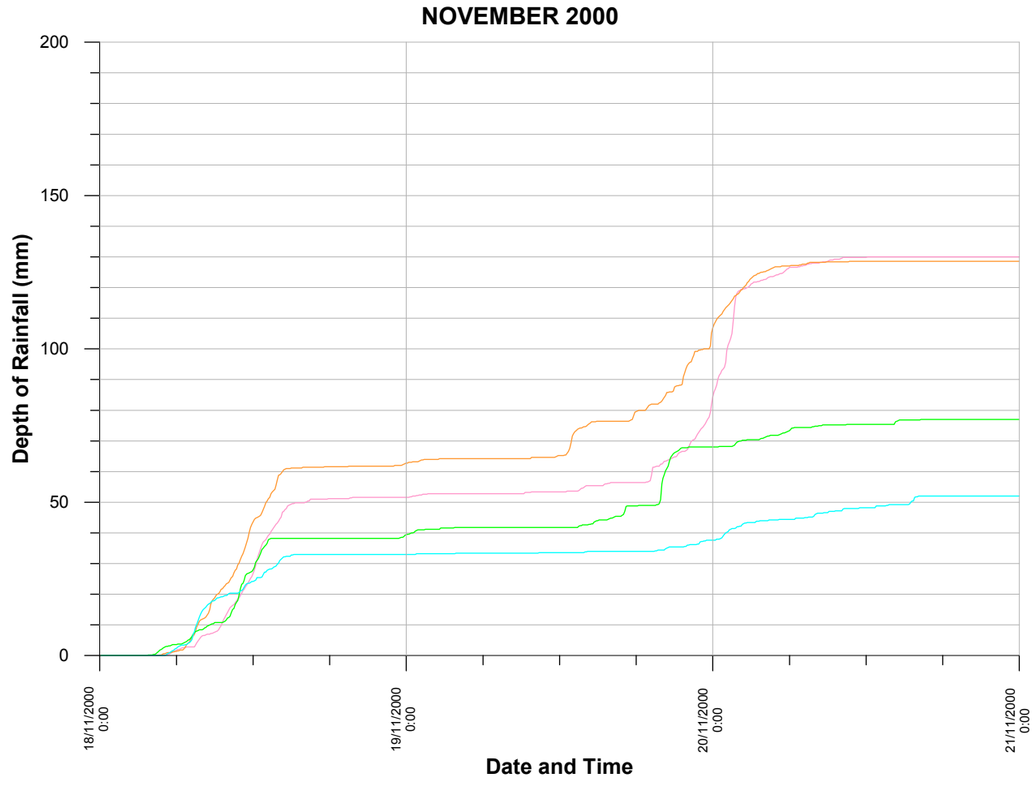
- (72) Node number
- [11] Side storage node
- (96) Special end node
- 20/1 Fluvial link and number
- 26/2 Fluvial link and number (joining links)
- 28/3 Fluvial link and number (diverging links)
- 25/4 Weir link and number
- 117/8 Fluvial end link

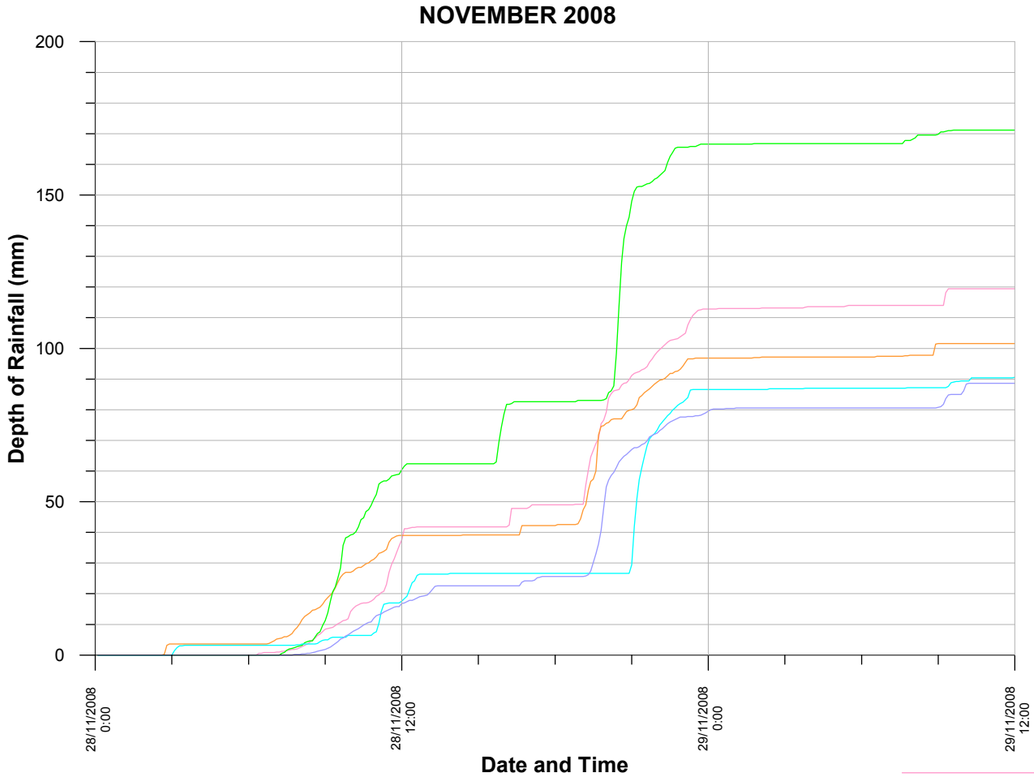
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

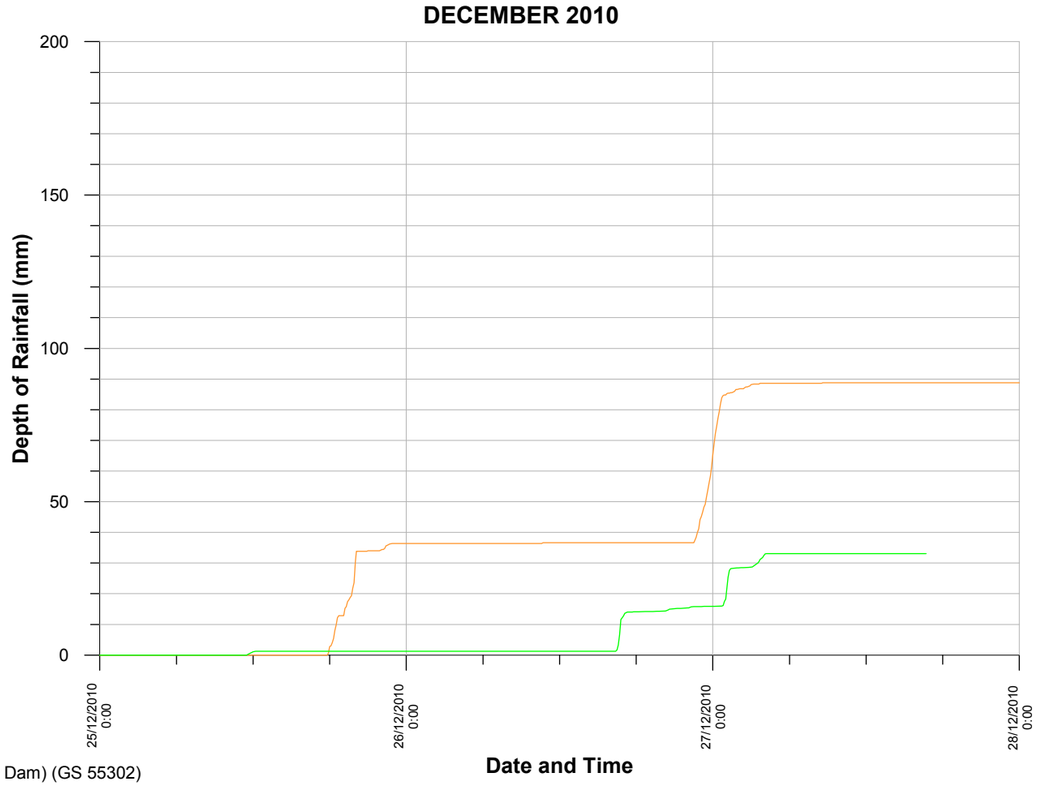
Figure 2.2

LAYOUT OF FPLAIN HYDRAULIC MODEL









LEGEND

- Nundle (Chaffey Dam) (GS 55302)
- Gowrie North (GS 55194)
- Tamworth (Oxley Lane) (GS 55327)
- Woolbrook (Danglemah Road)(GS 55136)
- Nowendoc (Green Hills)(GS 60104)
- Tamworth Airport (GS 55054)

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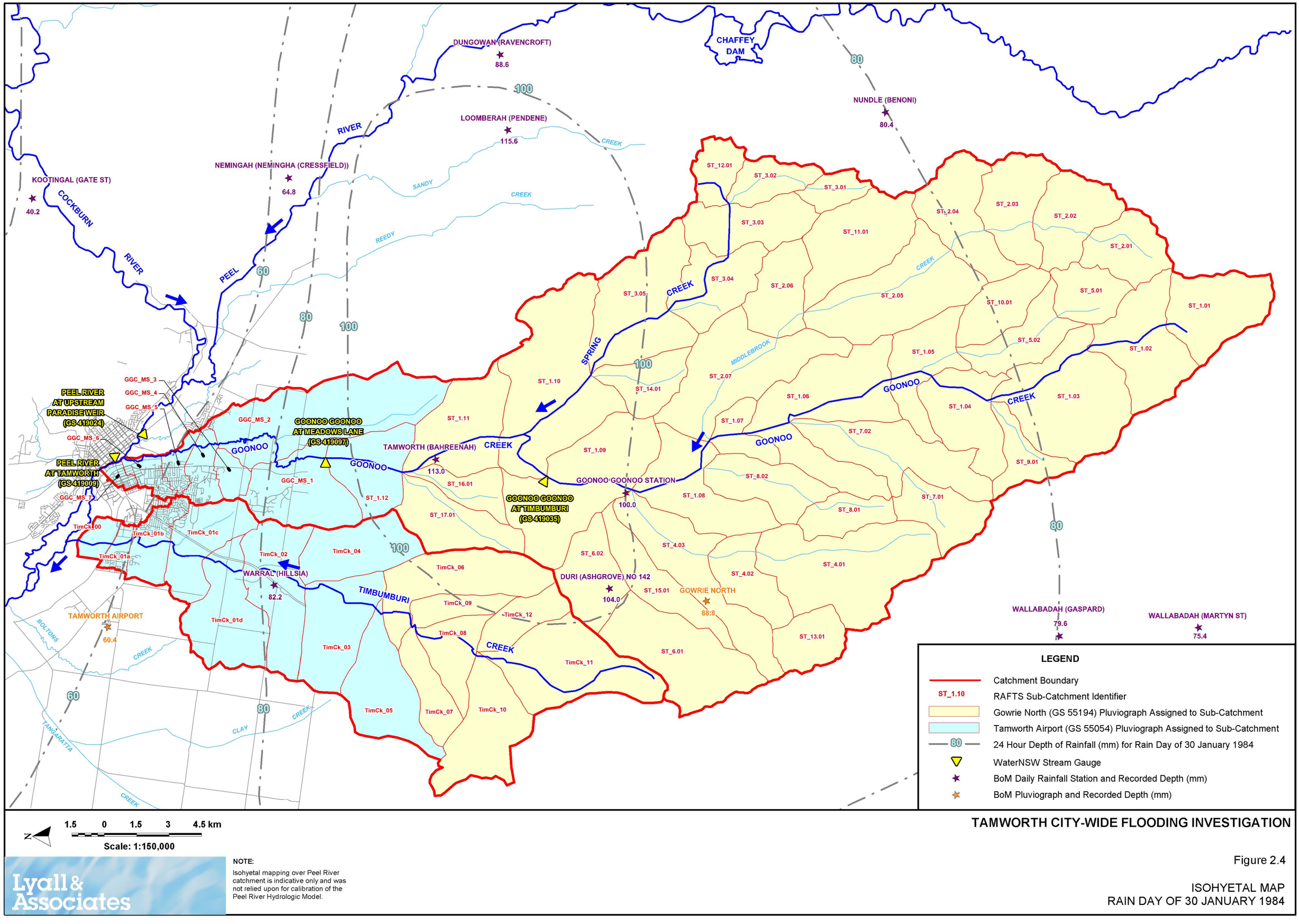
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.3

CUMULATIVE RAINFALL FOR HISTORIC STORM EVENTS



TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.4

ISOHYETAL MAP
RAIN DAY OF 30 JANUARY 1984

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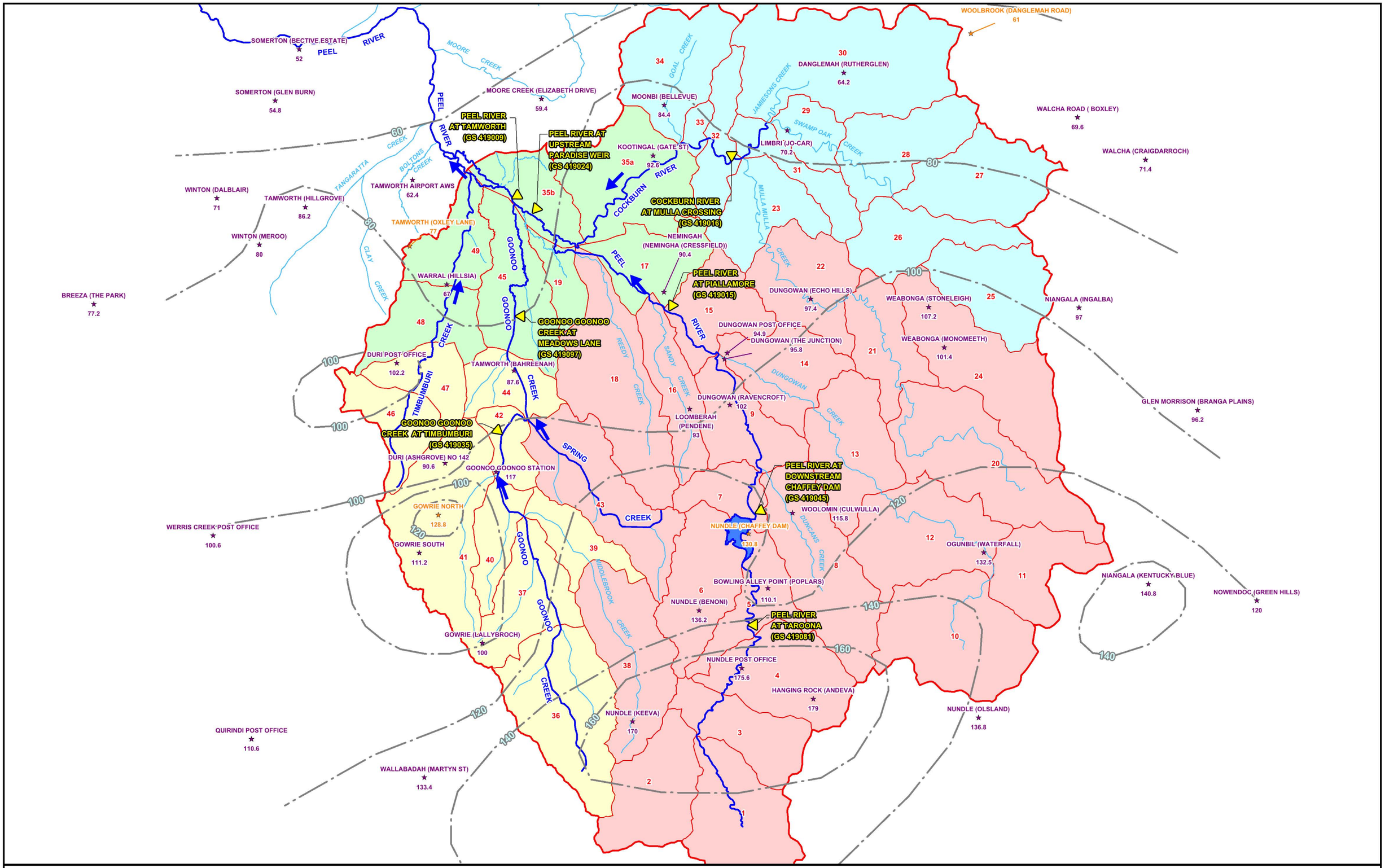
NOTE:
Isohyetal mapping over Peel River catchment is indicative only and was not relied upon for calibration of the Peel River Hydrologic Model.



N

3 0 3 6 9 km

Scale: 1:300,000

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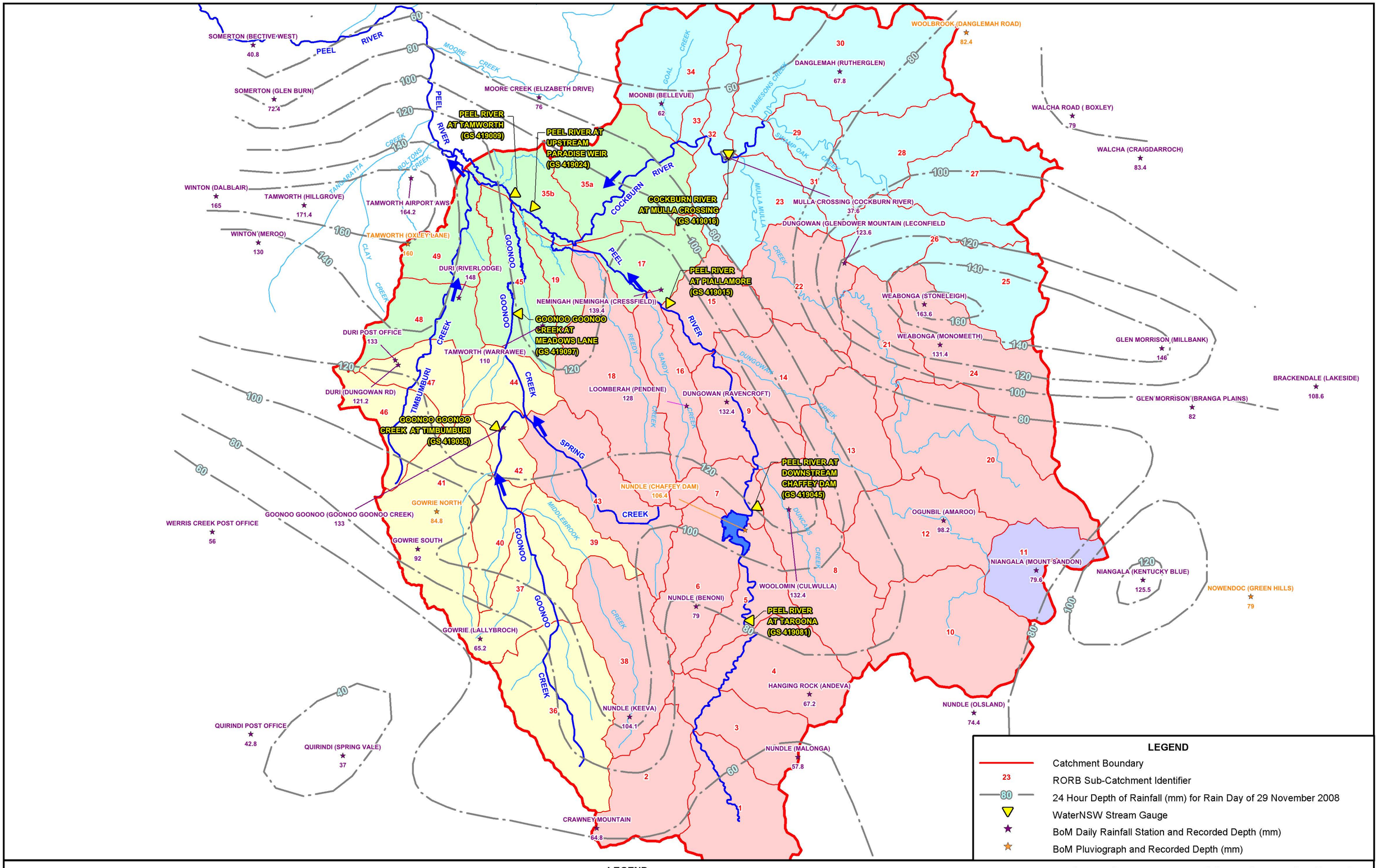
LEGEND

- Tamworth (Oxley Lane) (GS 55327) Pluviograph Assigned to Sub-Catchment
- Gowrie North (GS 55194) Pluviograph Assigned to Sub-Catchment
- Nundle (Chaffey Dam) (GS 55302) Pluviograph Assigned to Sub-Catchment
- Woolbrook (Danglemah Road) (GS 55136) Pluviograph Assigned to Sub-Catchment
- 80 — 96 Hour Depth of Rainfall (mm) for Rain Days of 18-21 November 2000
- Catchment Boundary
- 23 — RORB Sub-Catchment Identifier
- WaterNSW Stream Gauge
- BoM Daily Rainfall Station and Recorded Depth (mm)
- BoM Pluviograph and Recorded Depth (mm)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.5

ISOHYETAL MAP
RAIN DAYS OF 18-21 NOVEMBER 2000


SOMERTON (BECTIVE WEST)
40.8
SOMERTON (GLEN BURN)
72.4
MOORE CREEK (ELIZABETH DRIVE)
76
WOOLBROOK (DANGLEMAH ROAD)
82.4
DANGLEMAH (RUTHERGLEN)
67.8
MOONBI (BELLEVUE)
62
WALCHA ROAD (BOXLEY)
79
WALCHA (CRAIGDARROCH)
83.4
PEEL RIVER AT TAMWORTH (GS 419009)
PEEL RIVER AT UPSTREAM PARADISE WEIR (GS 419024)
COCKBURN RIVER AT MULLA CROSSING (GS 419016)
WINTON (DALBLAIR)
165
TAMWORTH (HILLGROVE)
171.4
TAMWORTH AIRPORT AWS
164.2
MULLA CROSSING (COCKBURN RIVER)
37.6
DUNGOWAN (GLENDOWER MOUNTAIN (LECONFIELD
123.6
WINTON (MEROO)
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TAMWORTH (OXLEY LANE)
160
DURI (RIVERLODGE)
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PEEL RIVER AT PIALLAMORE (GS 419015)
NEMINGAH (NEMINGHA (CRESSFIELD))
139.4
WEABONGA (STONELEIGH)
163.6
GOONOO GOONOO CREEK AT MEADOWS LANE (GS 419097)
WEABONGA (MONOMEETH)
131.4
GLEN MORRISON (MILLBANK)
146
DURI POST OFFICE
133
TAMWORTH (WARRAWEE)
110
BRACKENDALE (LAKESIDE)
108.6
GLEN MORRISON (BRANGA PLAINS)
82
DURI (DUNGOWAN RD)
121.2
LOOMBERAH (PENDENE)
128
DUNGOWAN (RAVENCROFT)
132.4
GOONOO GOONOO CREEK AT TIMBUMBURI (GS 419035)
PEEL RIVER AT DOWNSTREAM CHAFFEY DAM (GS 419045)
NUNDLE (CHAFFEY DAM)
106.4
OGUNBIL (AMAROO)
98.2
GOWRIE NORTH
84.8
GOONOO GOONOO (GOONOO GOONOO CREEK)
133
WERRIS CREEK POST OFFICE
56
GOWRIE SOUTH
92
NIANGALA (MOUNT SANDON)
79.6
NIANGALA (KENTUCKY BLUE)
125.5
NOWENDOC (GREEN HILLS)
79
WOOLOMIN (CULWULLA)
132.4
NUNDLE (BENONI)
79
PEEL RIVER AT TAROONA (GS 419081)
GOWRIE (LALLYBROCH)
65.2
HANGING ROCK (ANDEVA)
67.2
NUNDLE (OLSLAND)
74.4
QUIRINDI POST OFFICE
42.8
QUIRINDI (SPRING VALE)
37
NUNDLE (KEEVA)
104.1
NUNDLE (MALONGA)
57.8
CRAWNEY MOUNTAIN
64.8
LEGEND
Catchment Boundary
RORB Sub-Catchment Identifier
24 Hour Depth of Rainfall (mm) for Rain Day of 29 November 2008
WaterNSW Stream Gauge
BoM Daily Rainfall Station and Recorded Depth (mm)
BoM Pluviograph and Recorded Depth (mm)
N
3 0 3 6 9 km
LEGEND
Tamworth (Oxley Lane) (GS 55327) Pluviograph Assigned to Sub-Catchment
Gowrie North (GS 55194) Pluviograph Assigned to Sub-Catchment
Nundle (Chaffey Dam) (GS 55302) Pluviograph Assigned to Sub-Catchment
Woolbrook (Danglemah Road) (GS 55136) Pluviograph Assigned to Sub-Catchment
Nowendoc (Green Hills) (GS 60104) Pluviograph Assigned to Sub-Catchment
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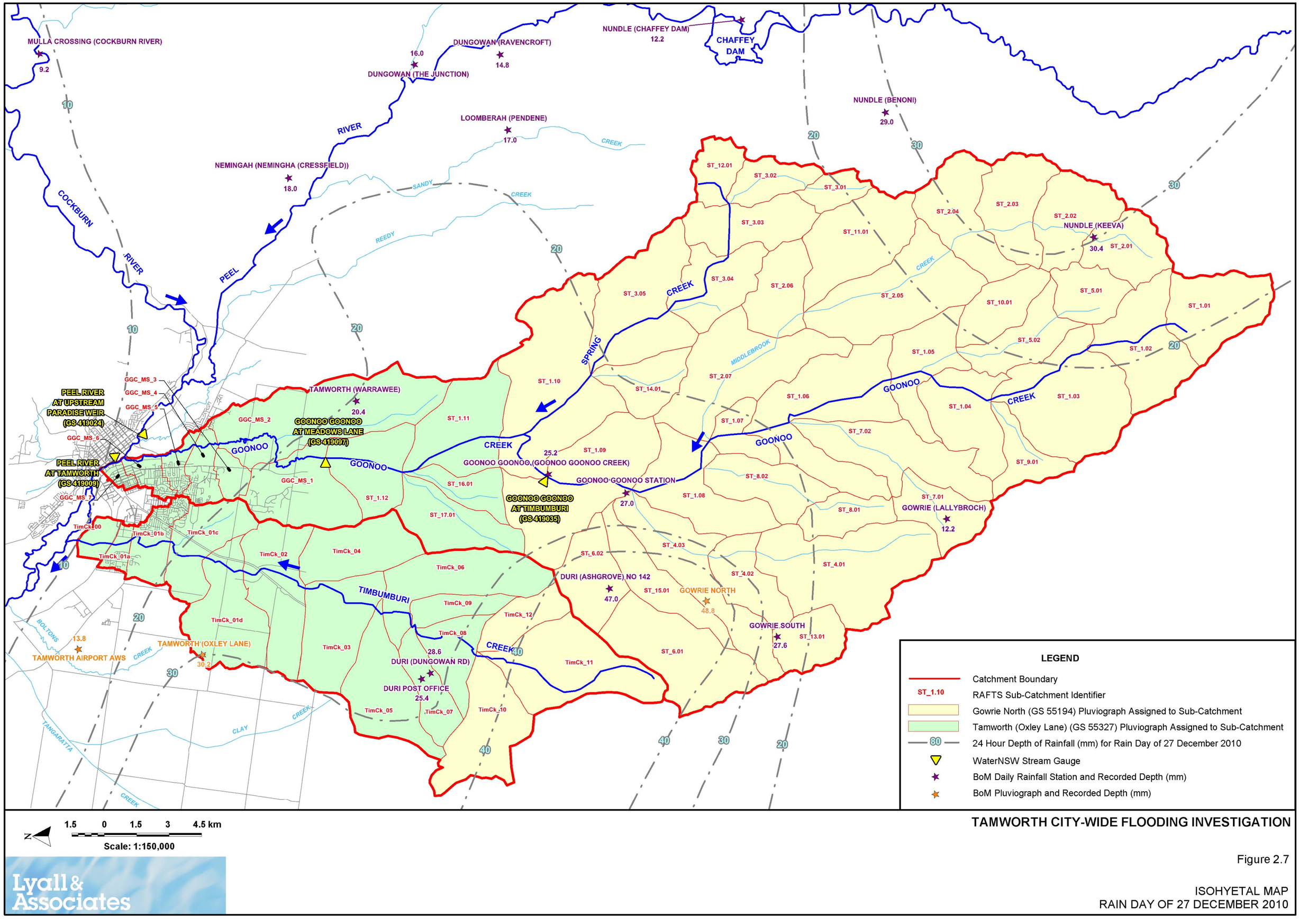
TAMWORTH CITY-WIDE FLOODING INVESTIGATION
Figure 2.6
ISOHYETAL MAP
RAIN DAY OF 29 NOVEMBER 2008



TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.7

ISOHYETAL MAP
RAIN DAY OF 27 DECEMBER 2010

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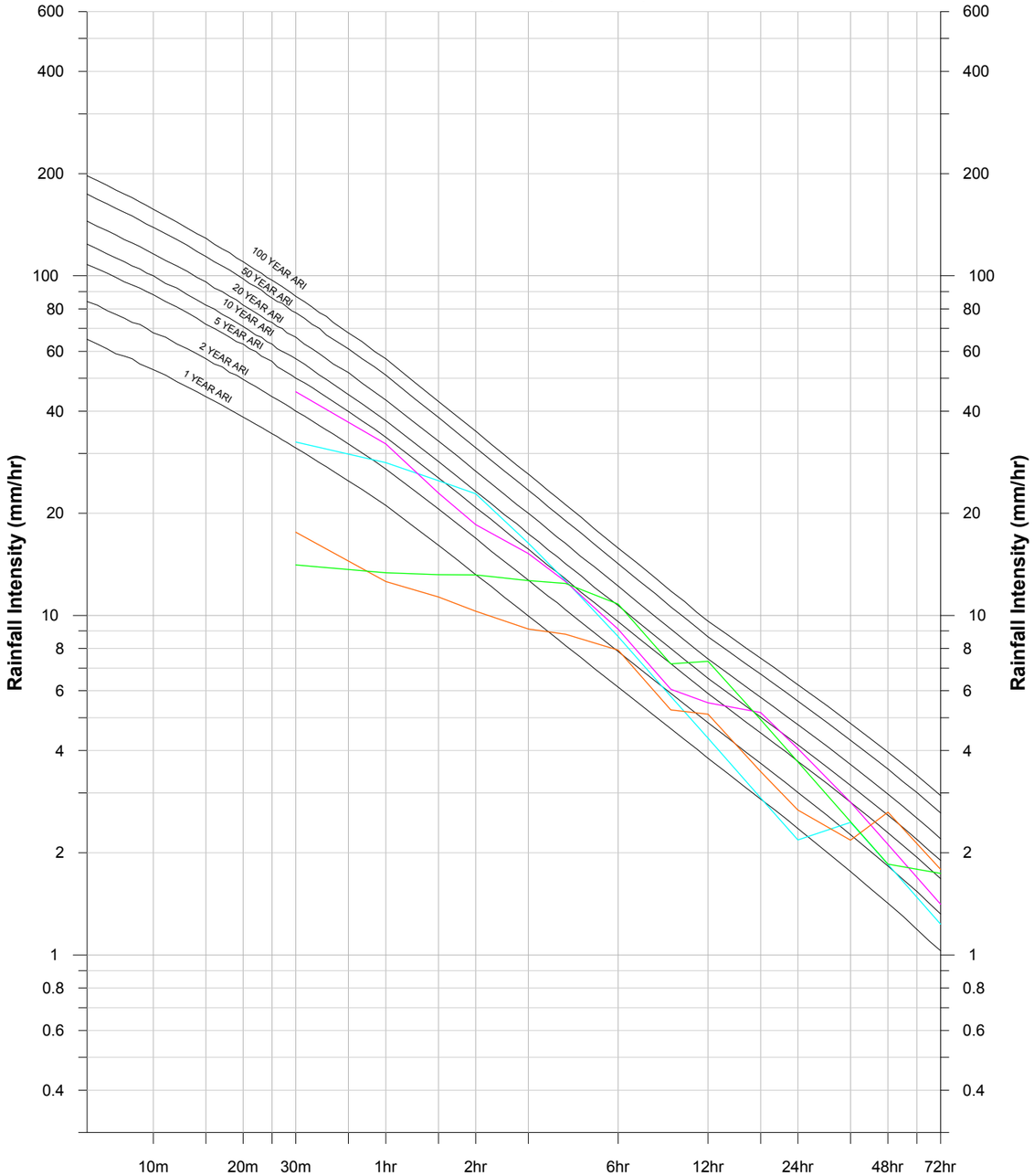
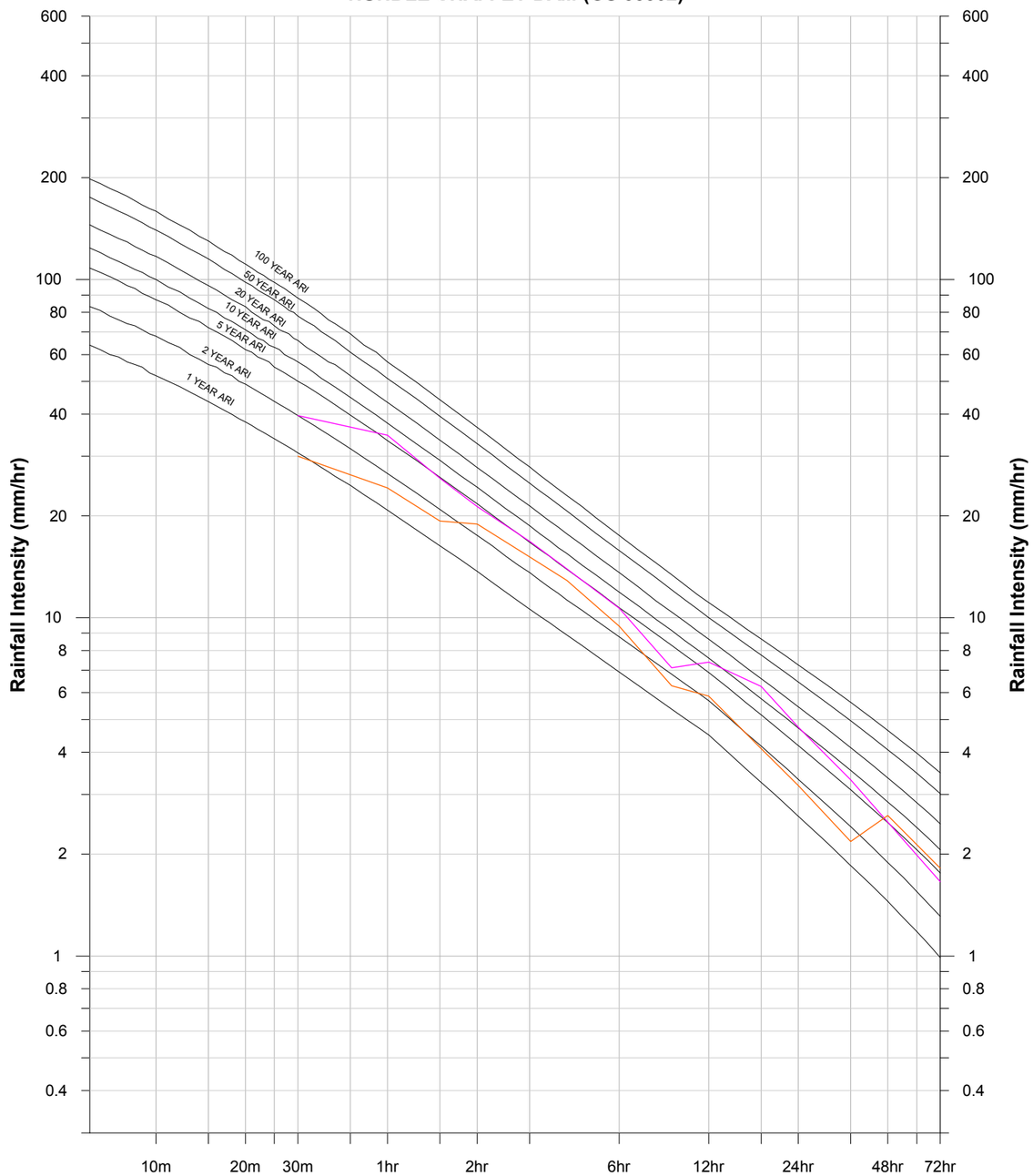
GOWRIE NORTH (GS 55194)



NUNDLE CHAFFEY DAM (GS 55302)



HISTORIC RAINFALL EVENT

- January 1984
- November 2000
- November 2008
- December 2010

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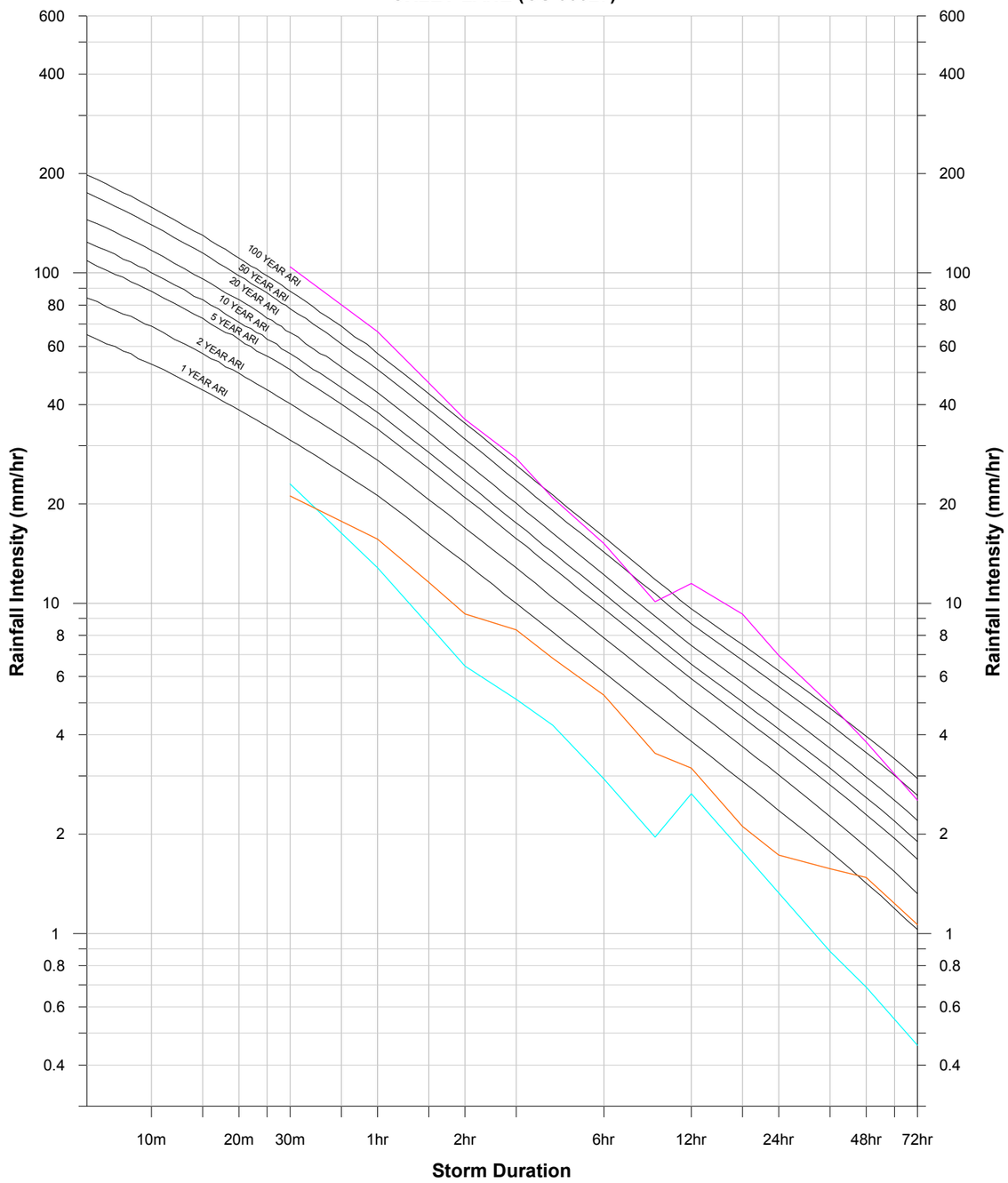
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

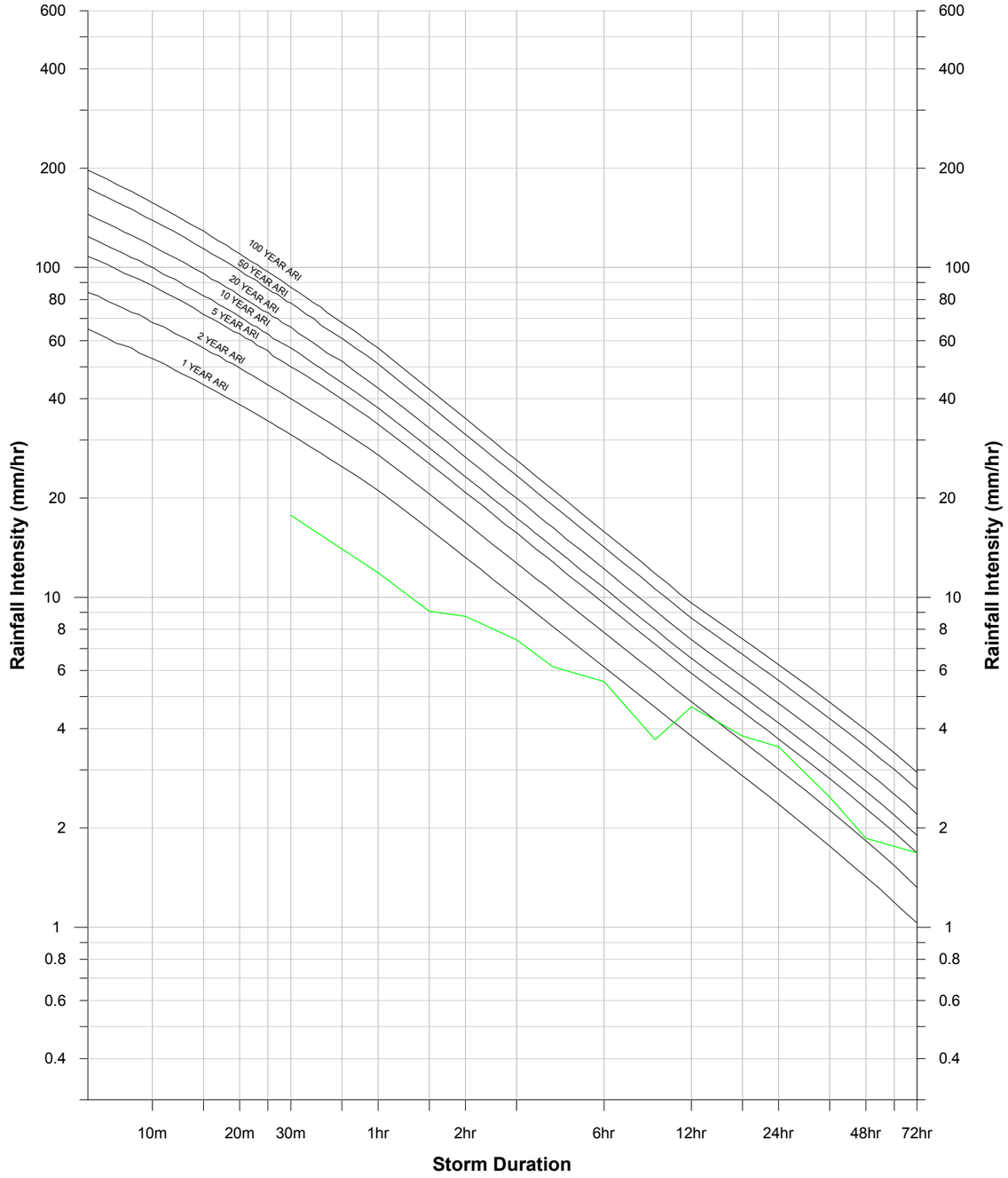
Figure 2.8
(Sheet 1 of 3)

INTENSITY-FREQUENCY-DURATION CURVES
AND HISTORIC RAINFALL

OXLEY LANE (GS 55327)



TAMWORTH AIRPORT (GS 55054)



HISTORIC RAINFALL EVENT

- January 1984
- November 2000
- November 2008
- December 2010

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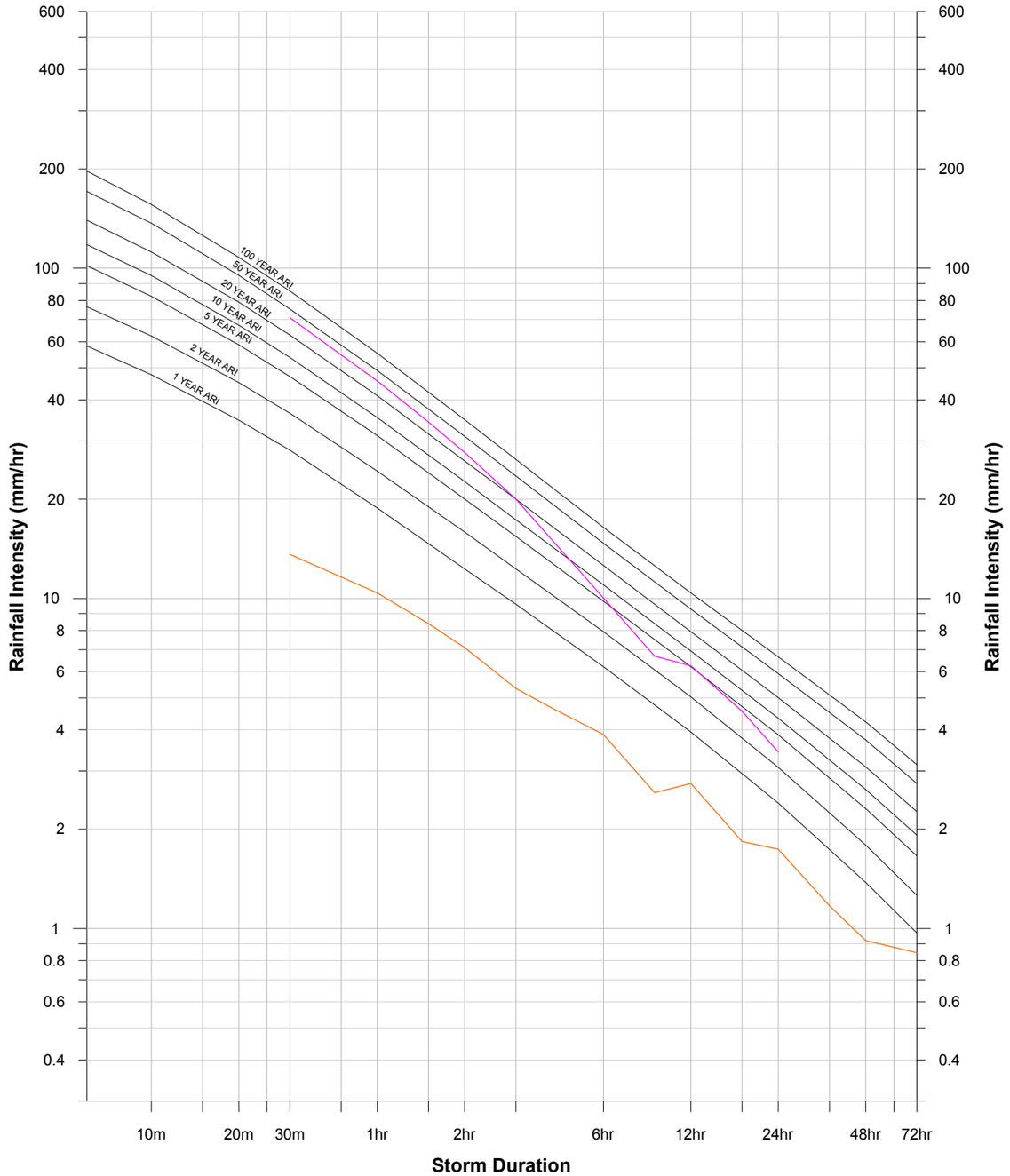
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

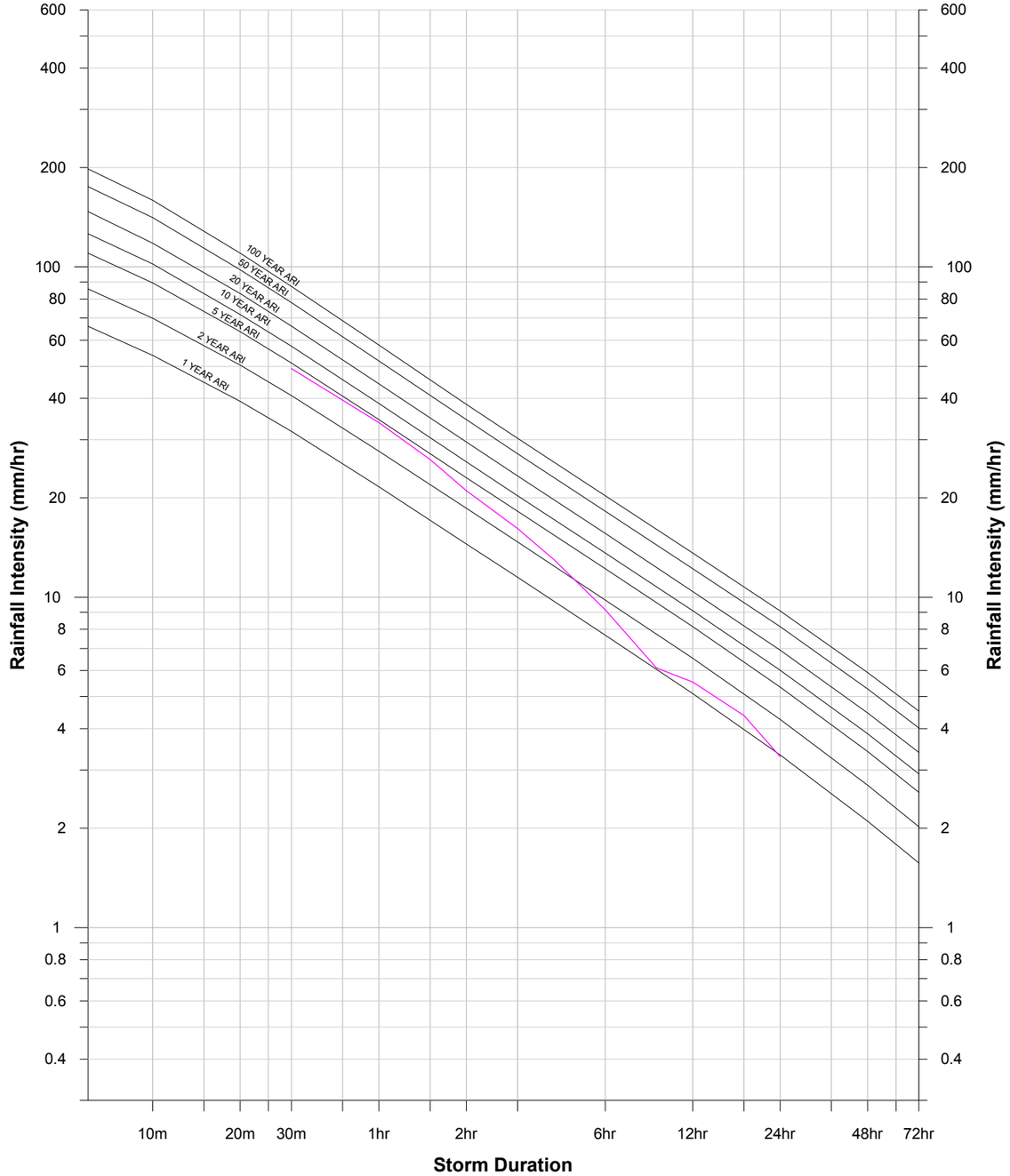
Figure 2.8
(Sheet 2 of 3)

INTENSITY-FREQUENCY-DURATION CURVES
AND HISTORIC RAINFALL

WOOLBROOK (DANGLEMAH ROAD) (GS 55136)



NOWENDOC (GREEN HILLS) (GS 60104)



HISTORIC RAINFALL EVENT

November 2000

November 2008

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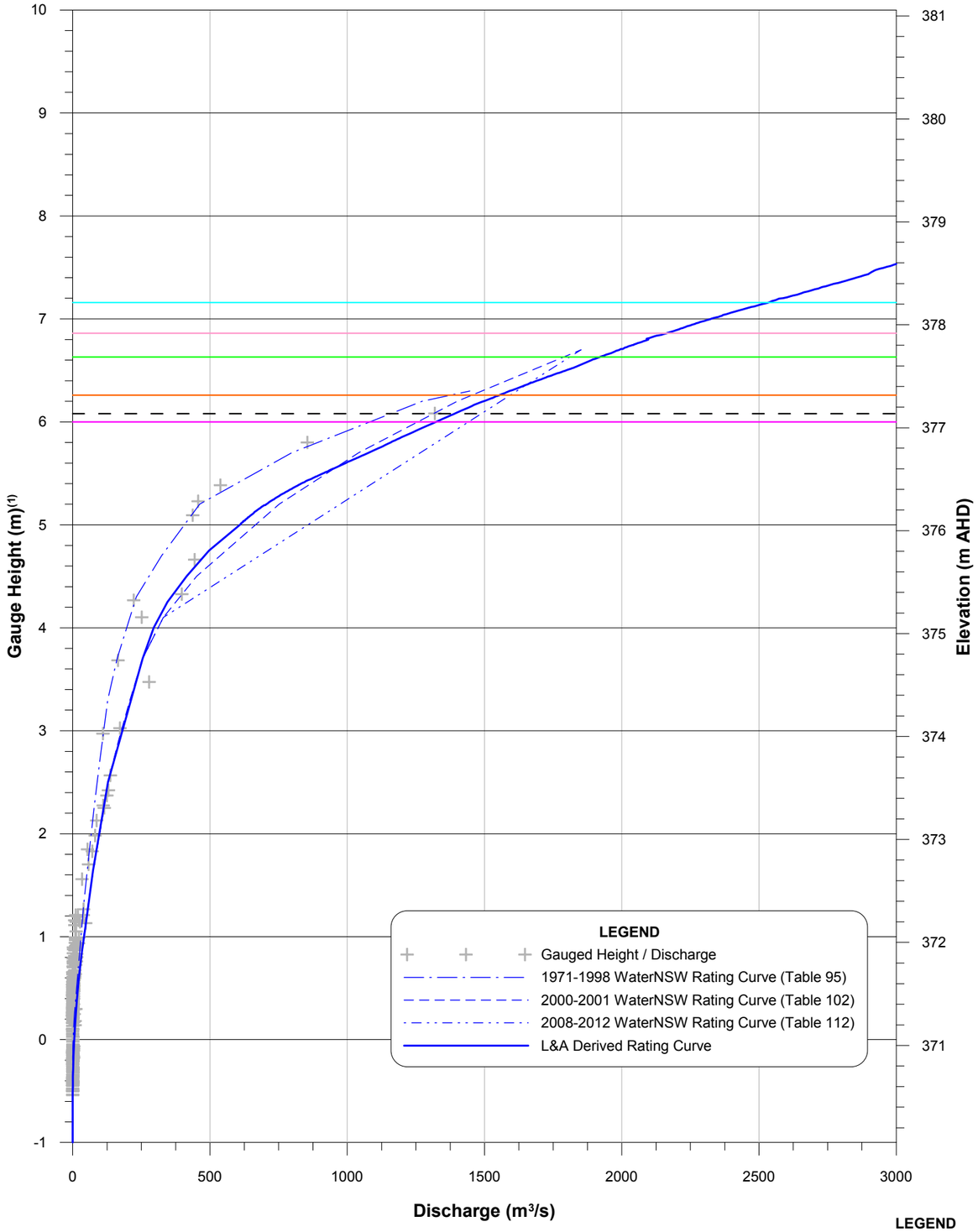
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

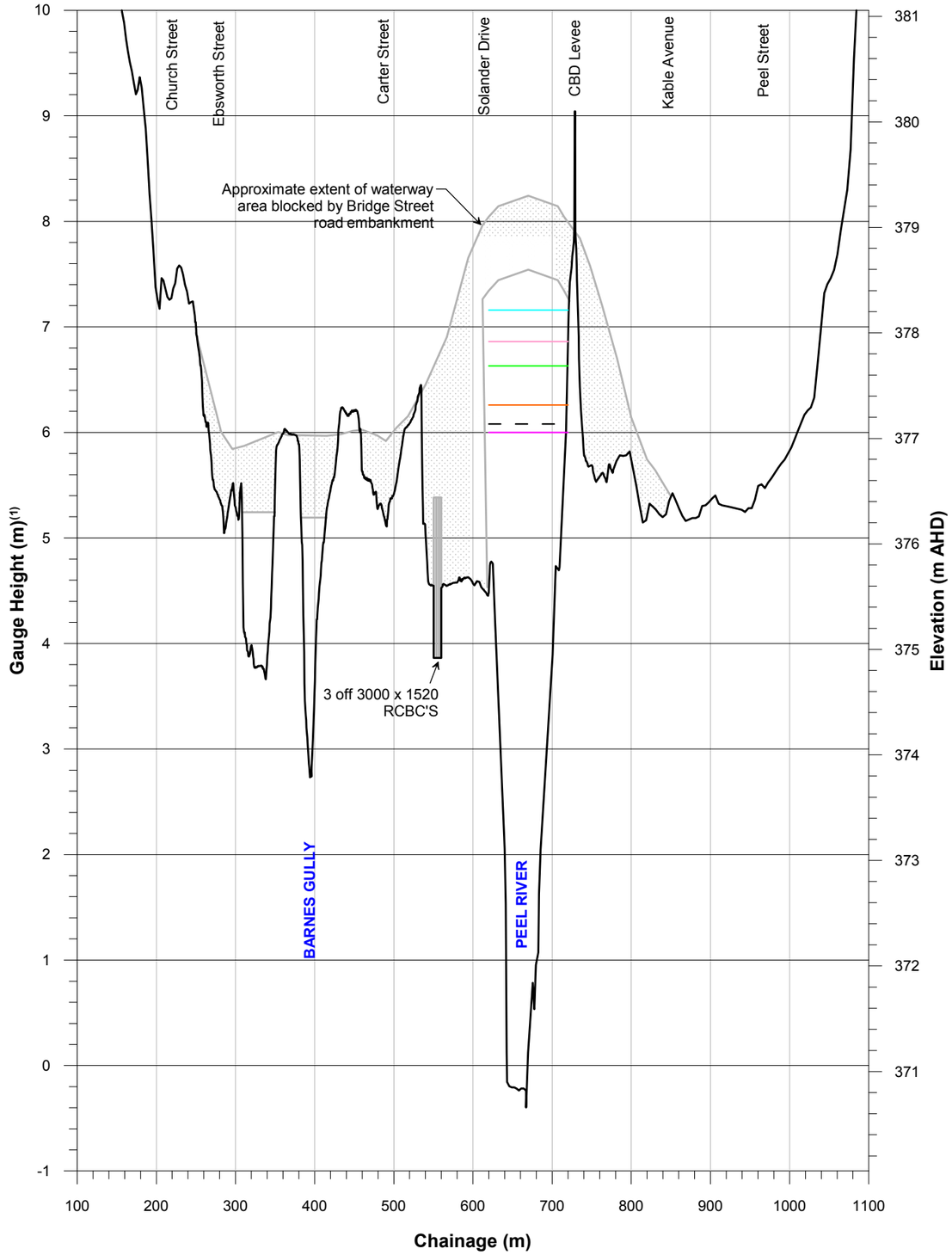
Figure 2.8
(Sheet 3 of 3)

INTENSITY-FREQUENCY-DURATION CURVES
AND HISTORIC RAINFALL

RATING CURVES



CROSS SECTION(2)



LEGEND

- February 1955 Peak Height - 7.16 m (378.22 m AHD)
- January 1962 Peak Height - 6.86 m (377.92 m AHD)
- January 1984 Peak Height - 6.63 m (377.69 m AHD)
- November 2000 Peak Height - 6.26 m (377.32 m AHD)
- November 2008 Peak Height - 6.00 m (377.06 m AHD)
- Max Gauged Height - 6.08 m (377.14 m AHD)

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NOTES:

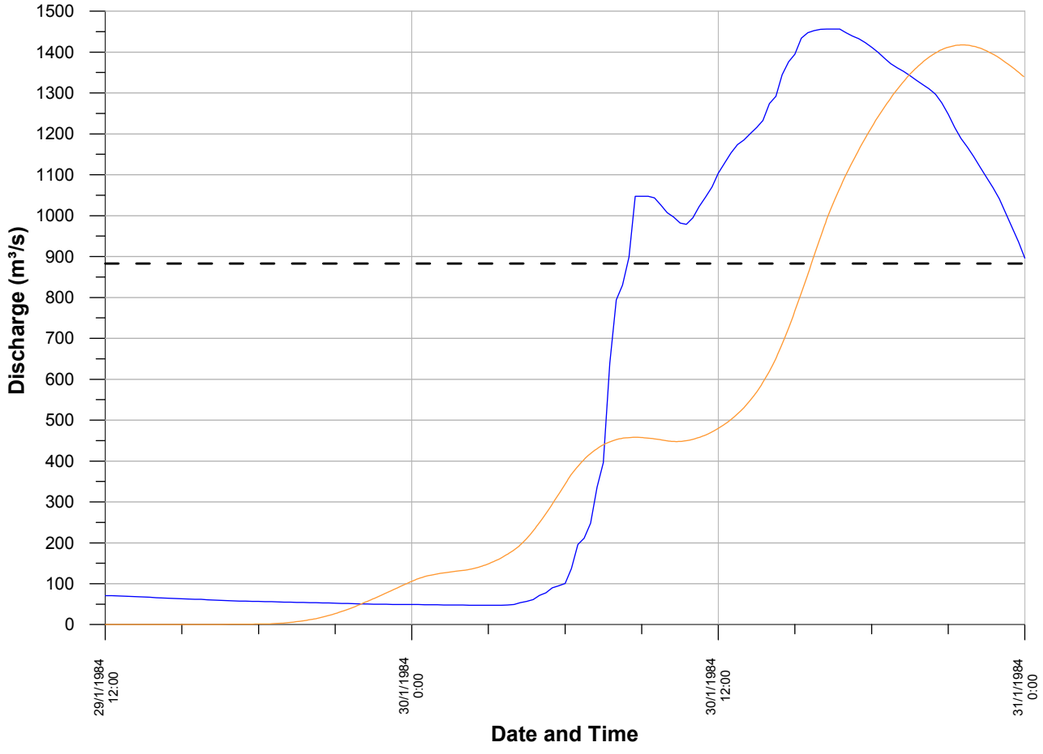
1. Gauge zero = 371.06 m AHD.
2. Cross section derived using LiDAR survey data supplemented by WaterNSW cross section for inbank area of Peel River.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

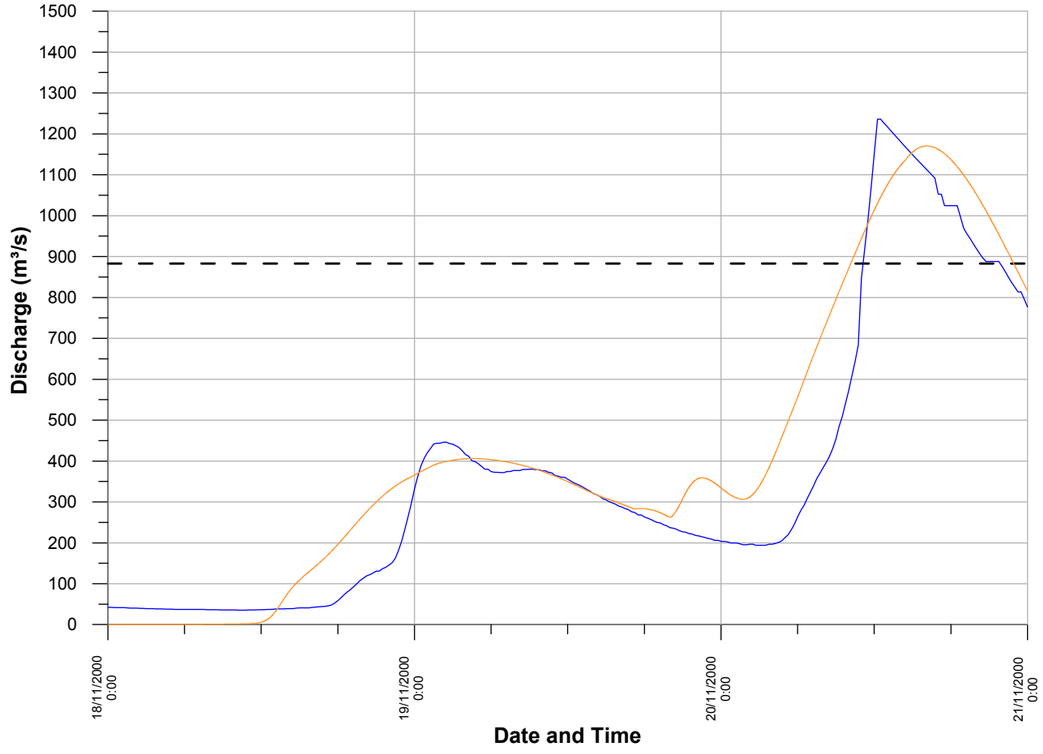
Figure 2.9

RATING CURVES AND CROSS SECTION
PEEL RIVER AT TAMWORTH STREAM GAUGE (GS 419009)

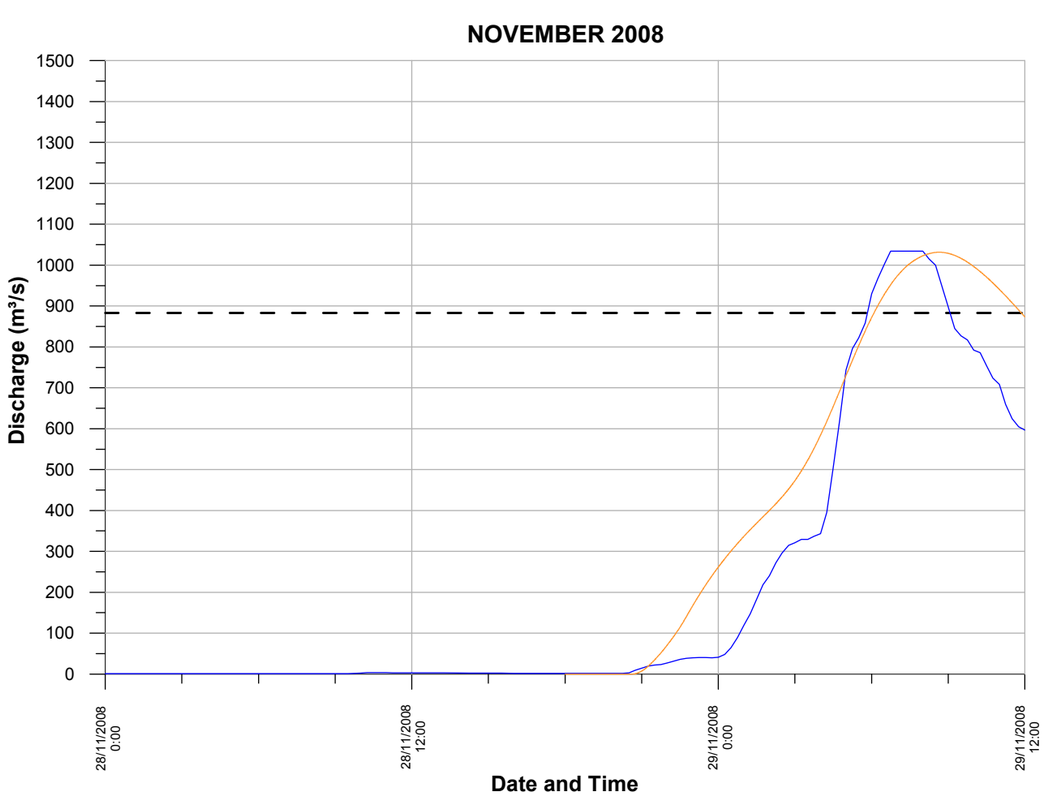
JANUARY 1984



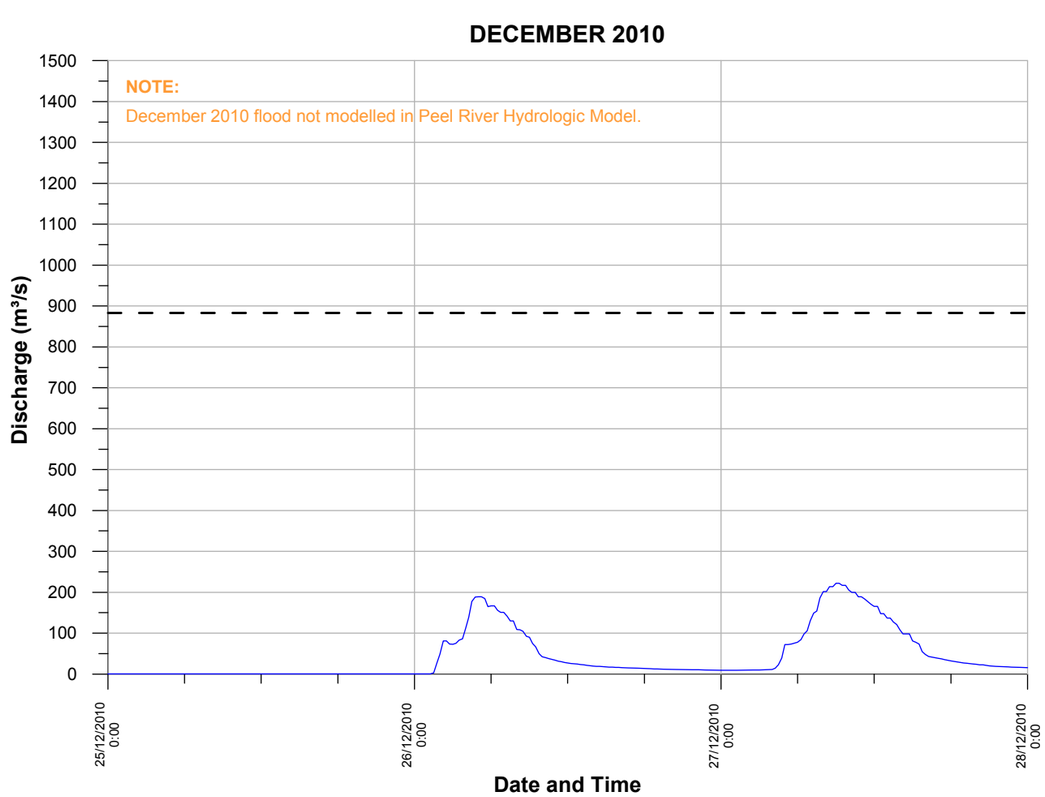
NOVEMBER 2000



NOVEMBER 2008



DECEMBER 2010



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NOTES:

1. Based on WaterNSW Rating Curve that was current at time of flood.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.

LEGEND

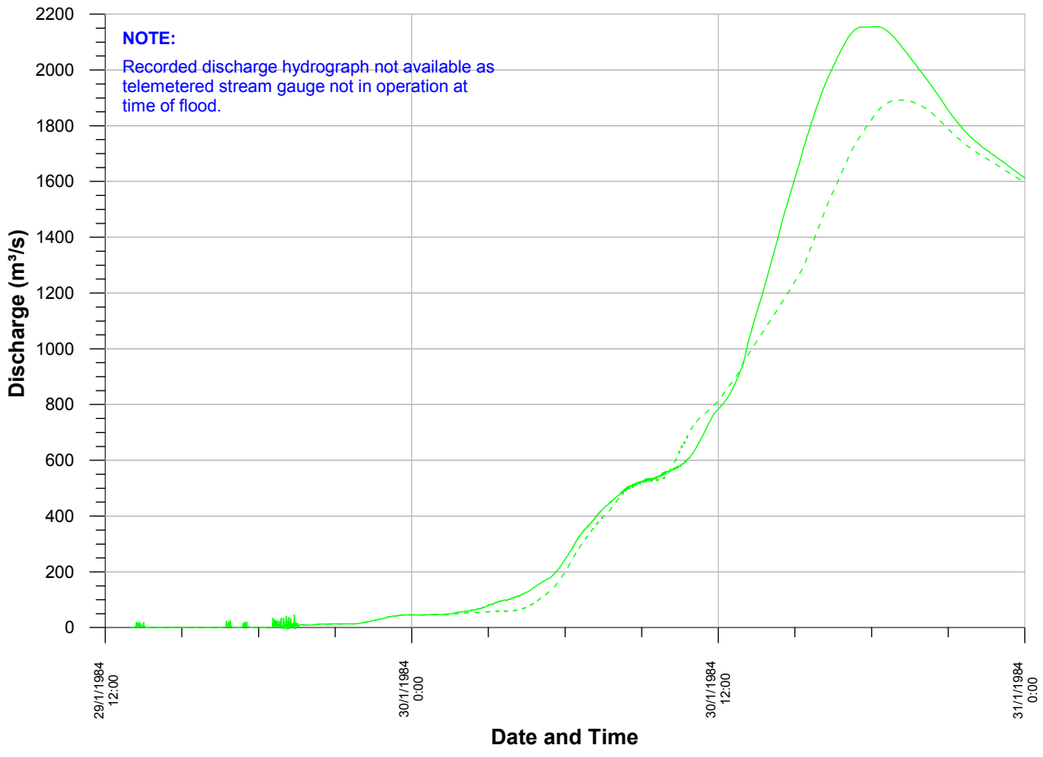
- Recorded (WaterNSW Rating Curve) (1)
- Modelled (Peel River Hydrologic Model)
- Maximum Gauged Discharge at time of Flood (2)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

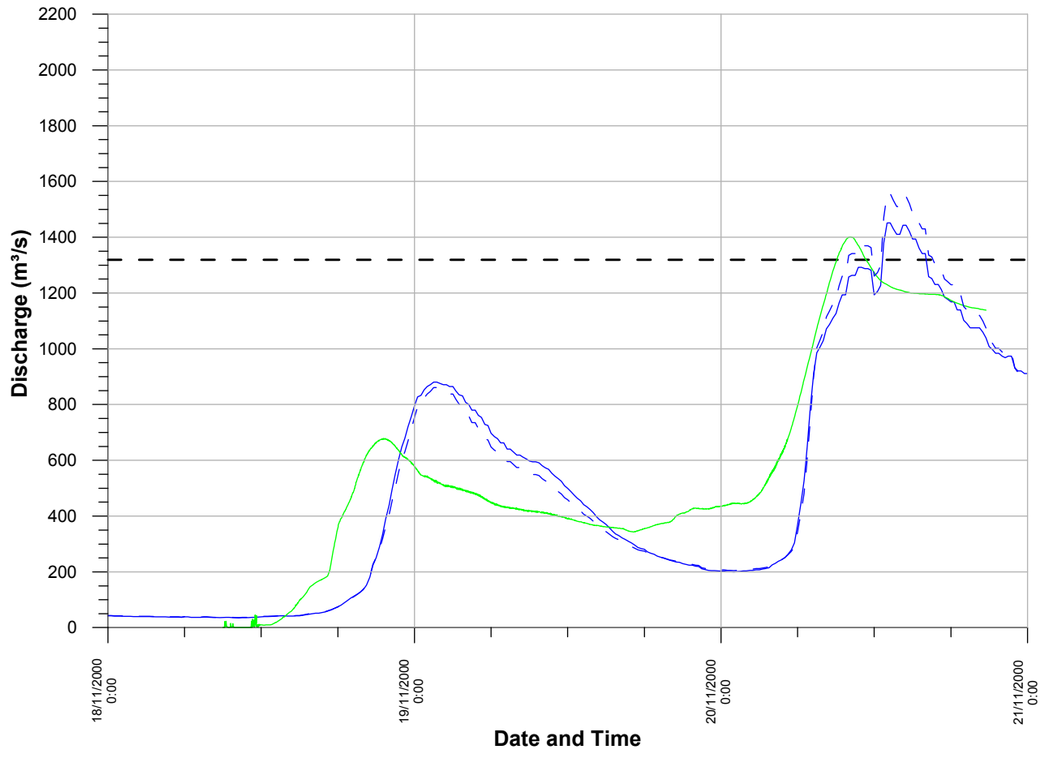
Figure 2.10

DISCHARGE HYDROGRAPHS
PEEL RIVER AT UPSTREAM PARADISE WEIR STREAM GAUGE (GS 419024)

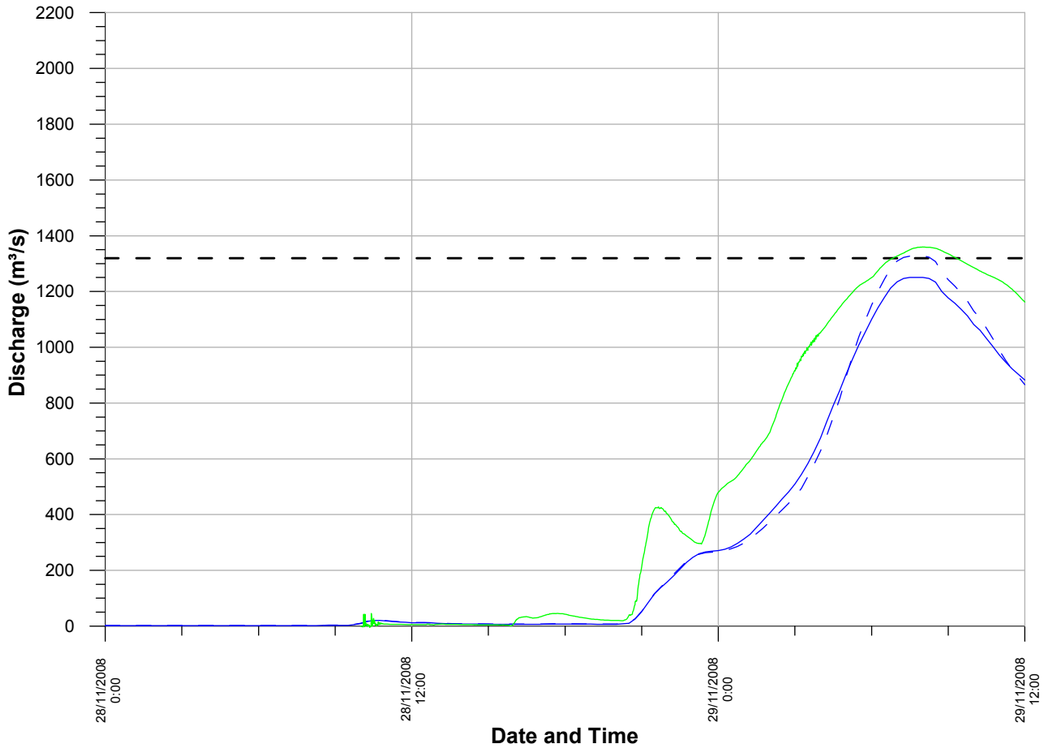
JANUARY 1984[3]



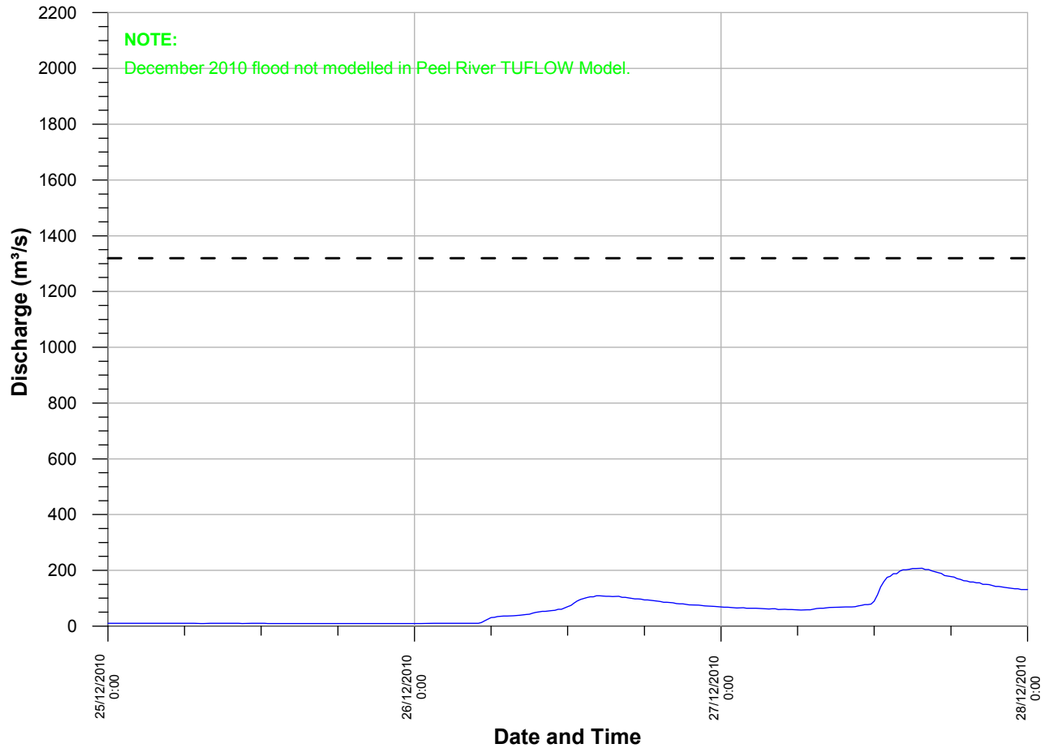
NOVEMBER 2000



NOVEMBER 2008



DECEMBER 2010



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NOTES:

1. Based on WaterNSW Rating Curve that was current at time of flood.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.
3. Solid green line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 1, while dashed green line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 2.

LEGEND

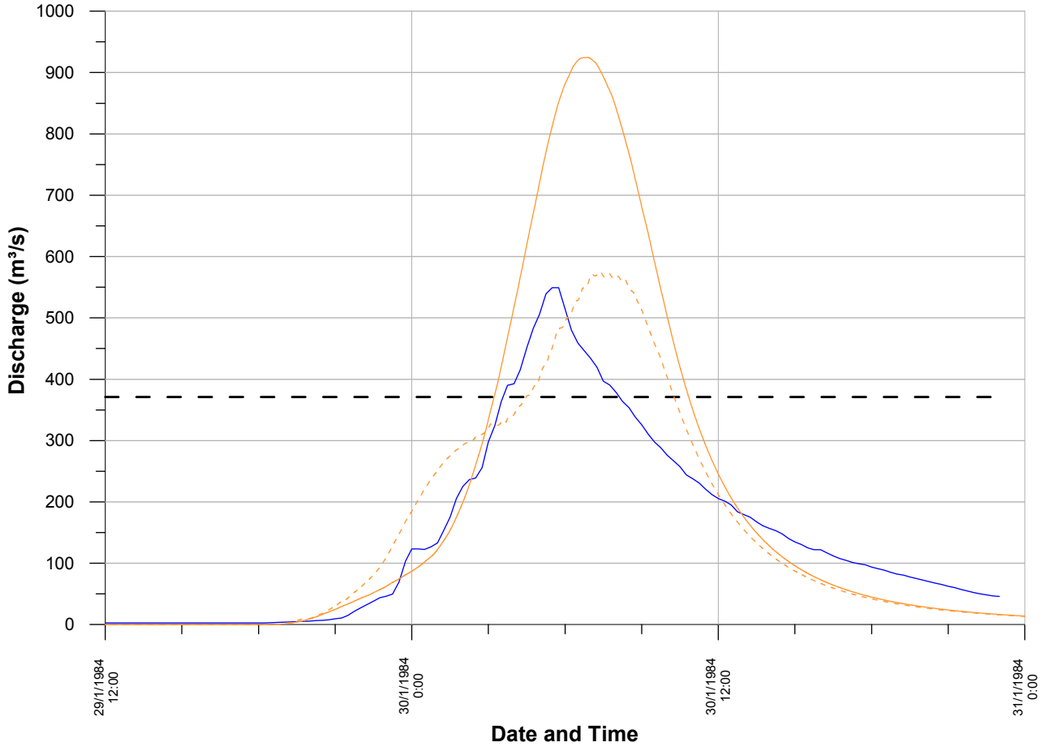
- Recorded (WaterNSW Rating Curve) [1]
- Recorded (L&A Derived Rating Curve)
- Modelled (Peel River TUFLOW Model)
- Maximum Gauged Discharge at time of Flood [2]

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

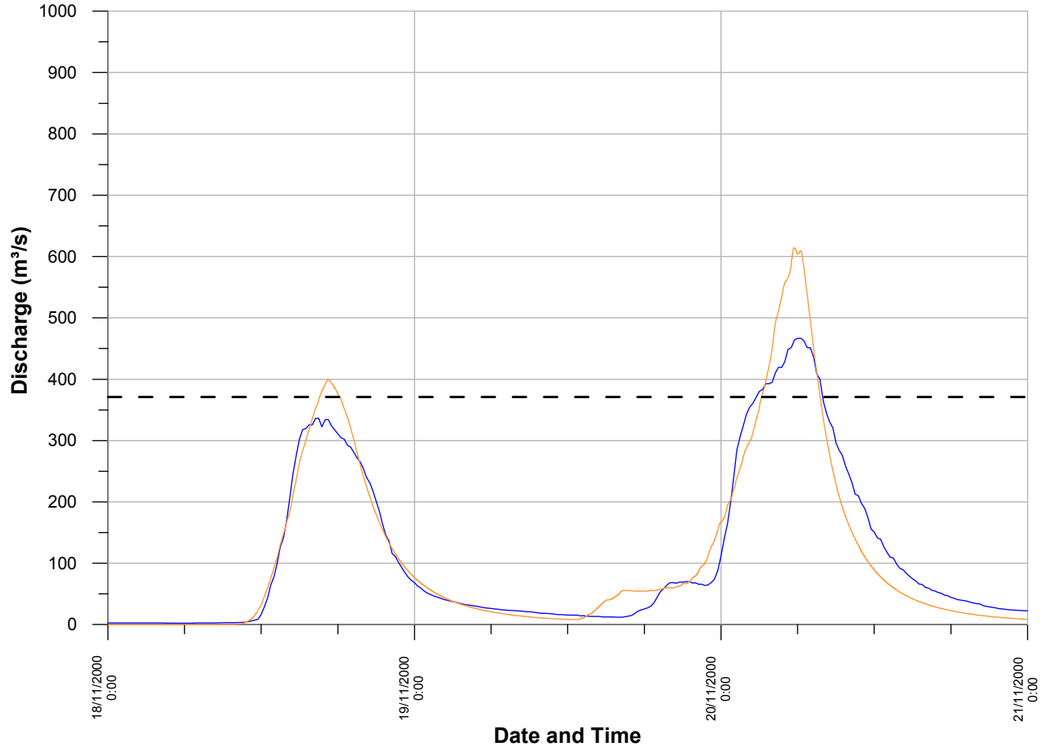
Figure 2.11

DISCHARGE HYDROGRAPHS
PEEL RIVER AT TAMWORTH STREAM GAUGE (GS 419009)

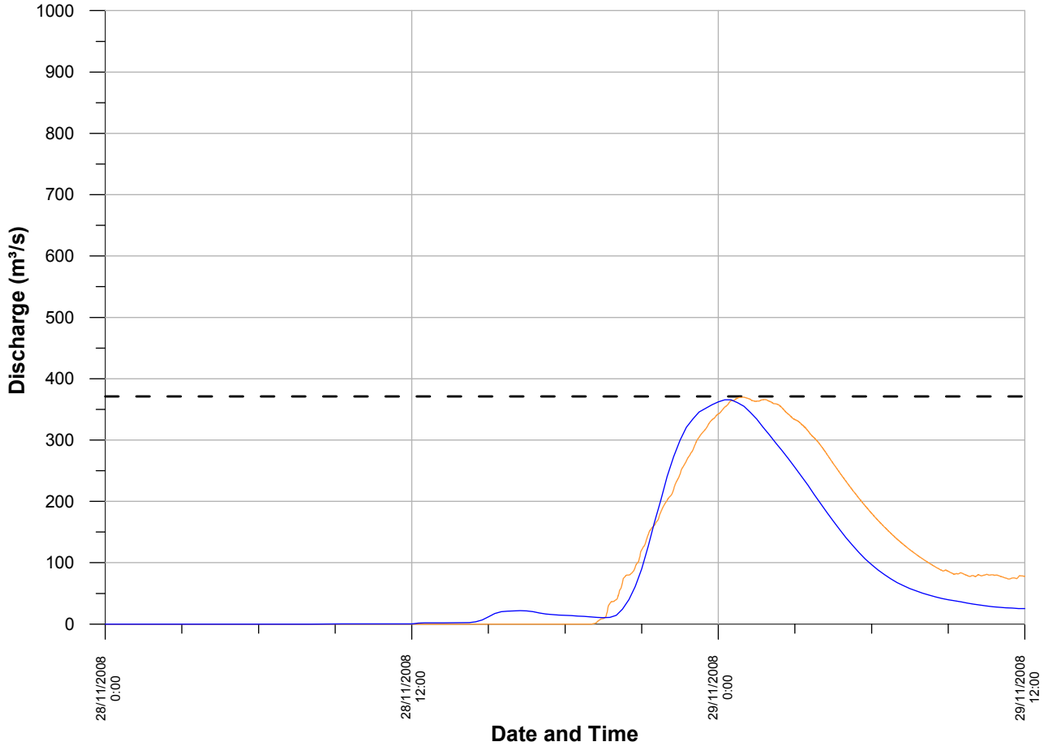
JANUARY 1984[3]



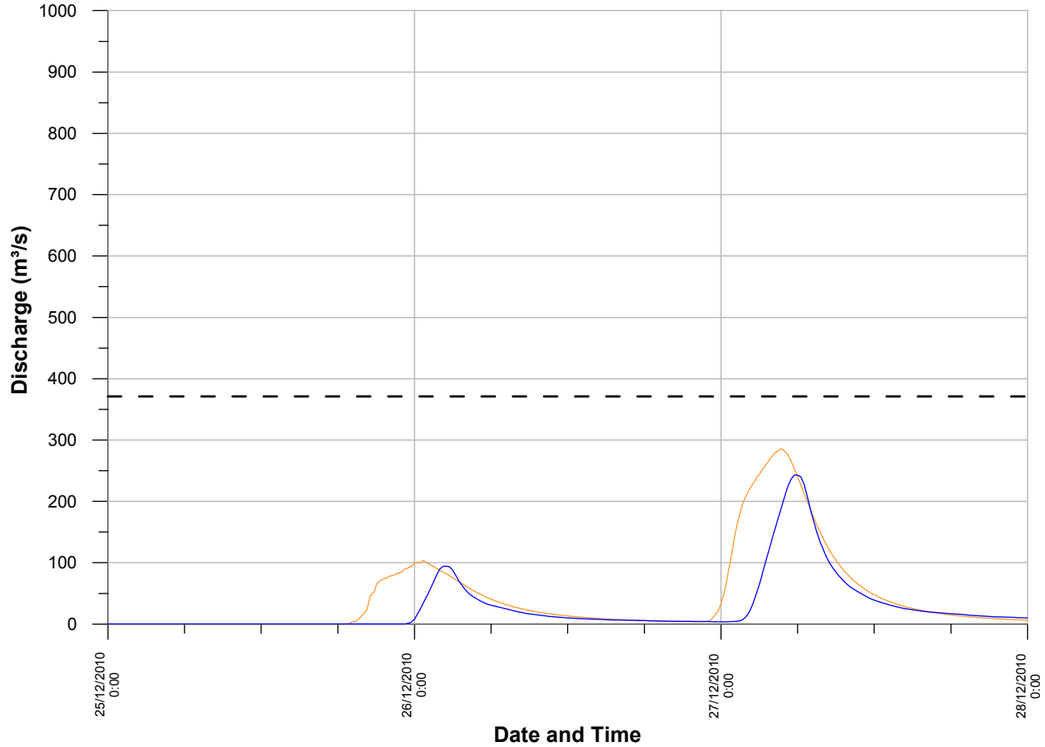
NOVEMBER 2000



NOVEMBER 2008



DECEMBER 2010



Lyall & Associates

NOTES:

1. Based on WaterNSW Rating Curve that was current at time of flood.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.
3. Solid orange line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 1, while dashed orange line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 2.

LEGEND

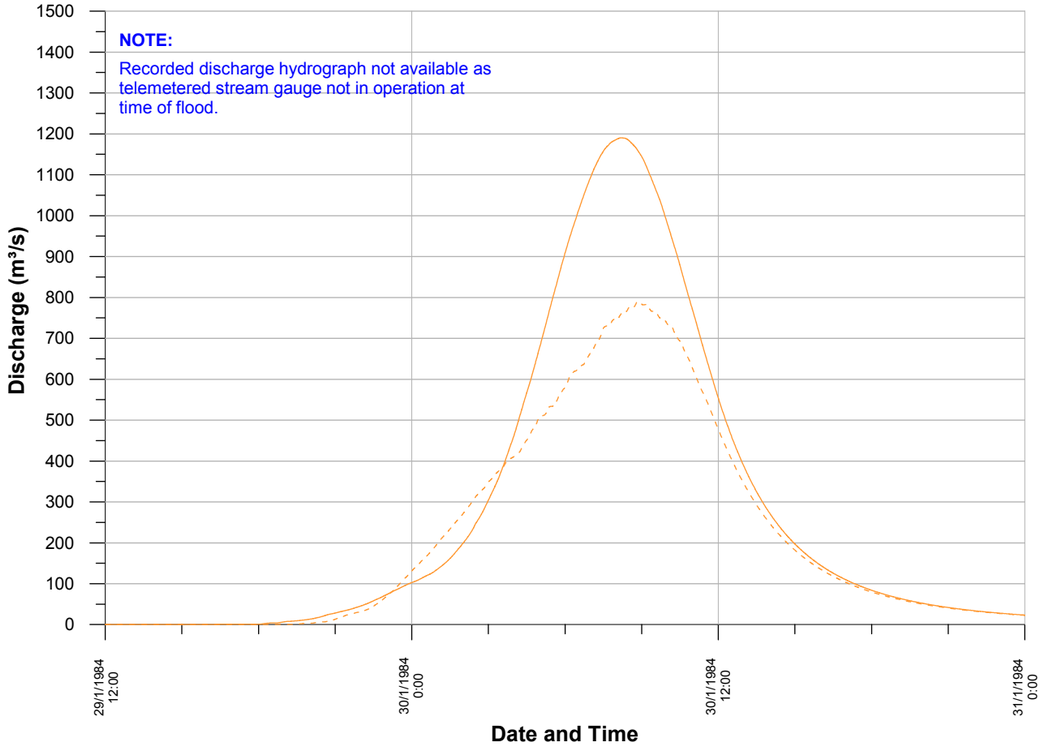
- Recorded (WaterNSW Rating Curve) [1]
- Modelled (Goonoo Goonoo Creek Hydrologic Model)
- Maximum Gauged Discharge at time of Flood [2]

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

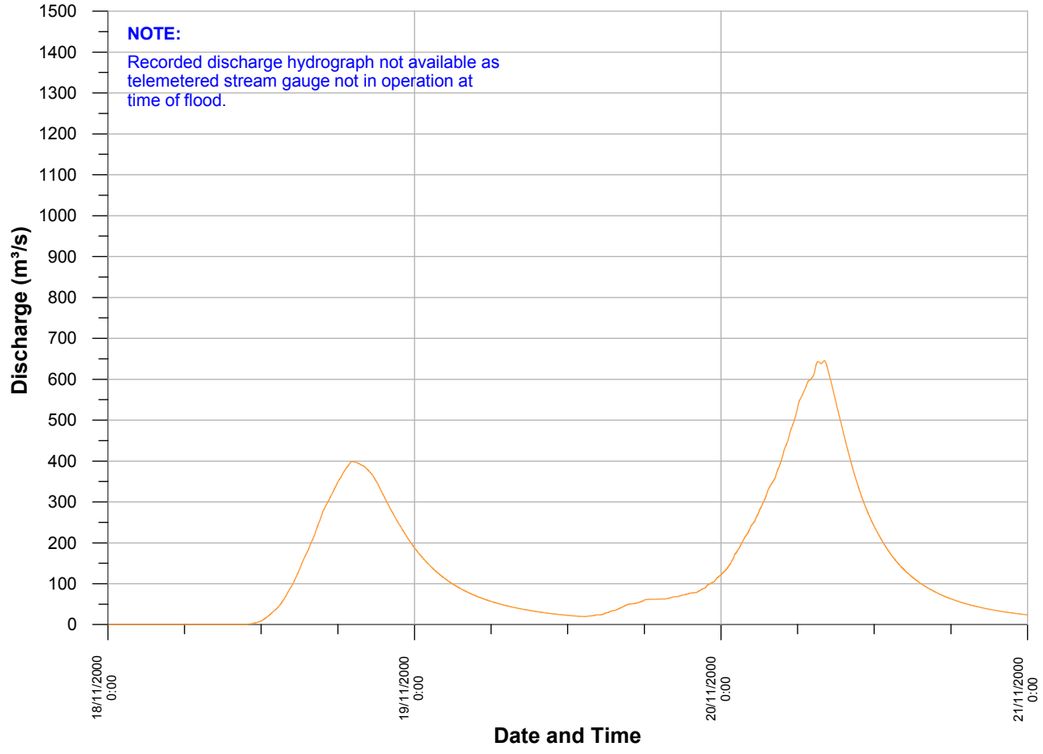
Figure 2.12

DISCHARGE HYDROGRAPHS
GOONOO GOONOO CREEK AT TIMBUMBURI STREAM GAUGE (GS 419035)

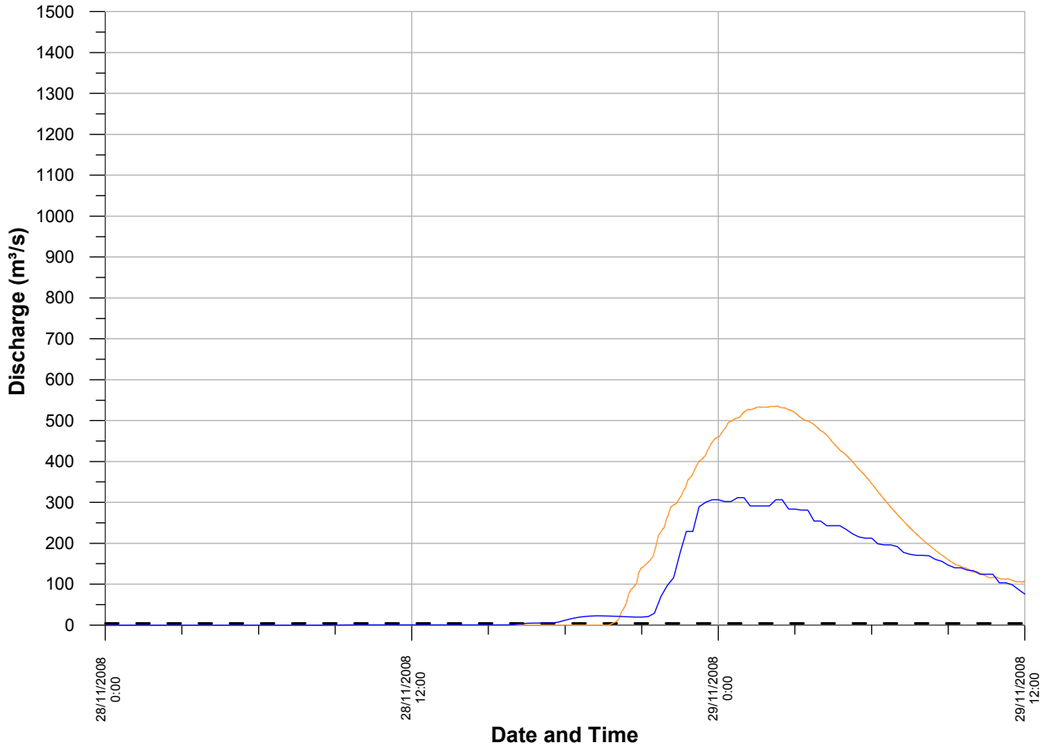
JANUARY 1984[3]



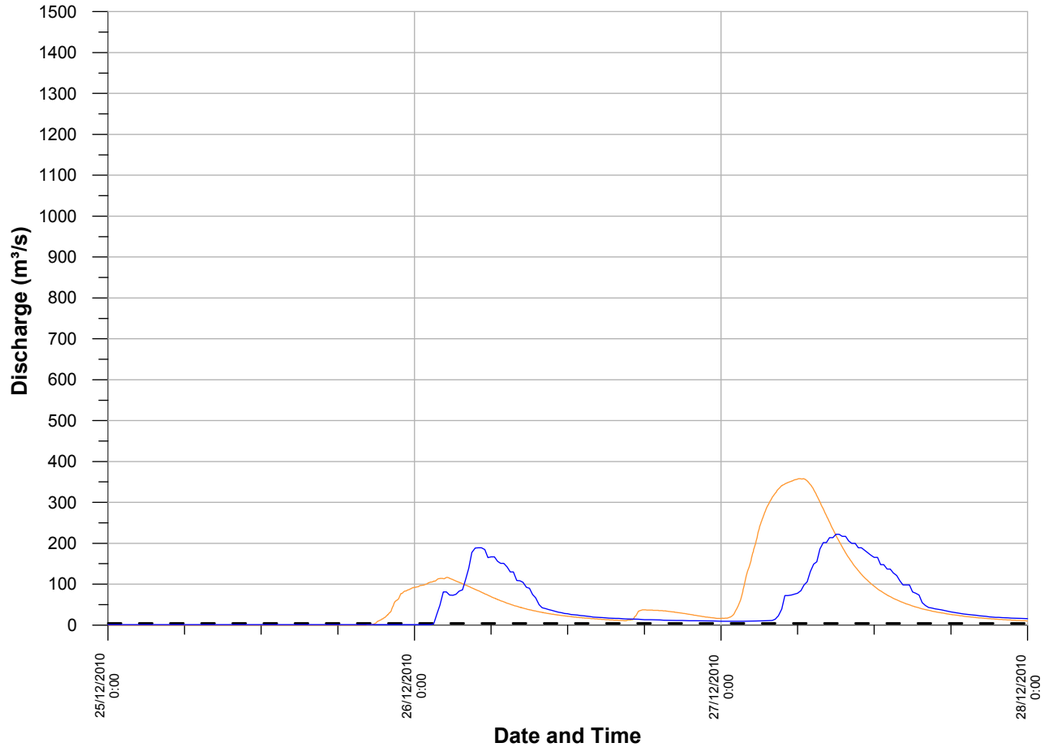
NOVEMBER 2000



NOVEMBER 2008



DECEMBER 2010



Lyall & Associates

NOTES:

1. Based on WaterNSW Rating Curve that was current at time of flood.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.
3. Solid orange line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 1, while dashed orange line shows modelled discharge hydrograph derived using 1984 Rainfall Data Set 2.

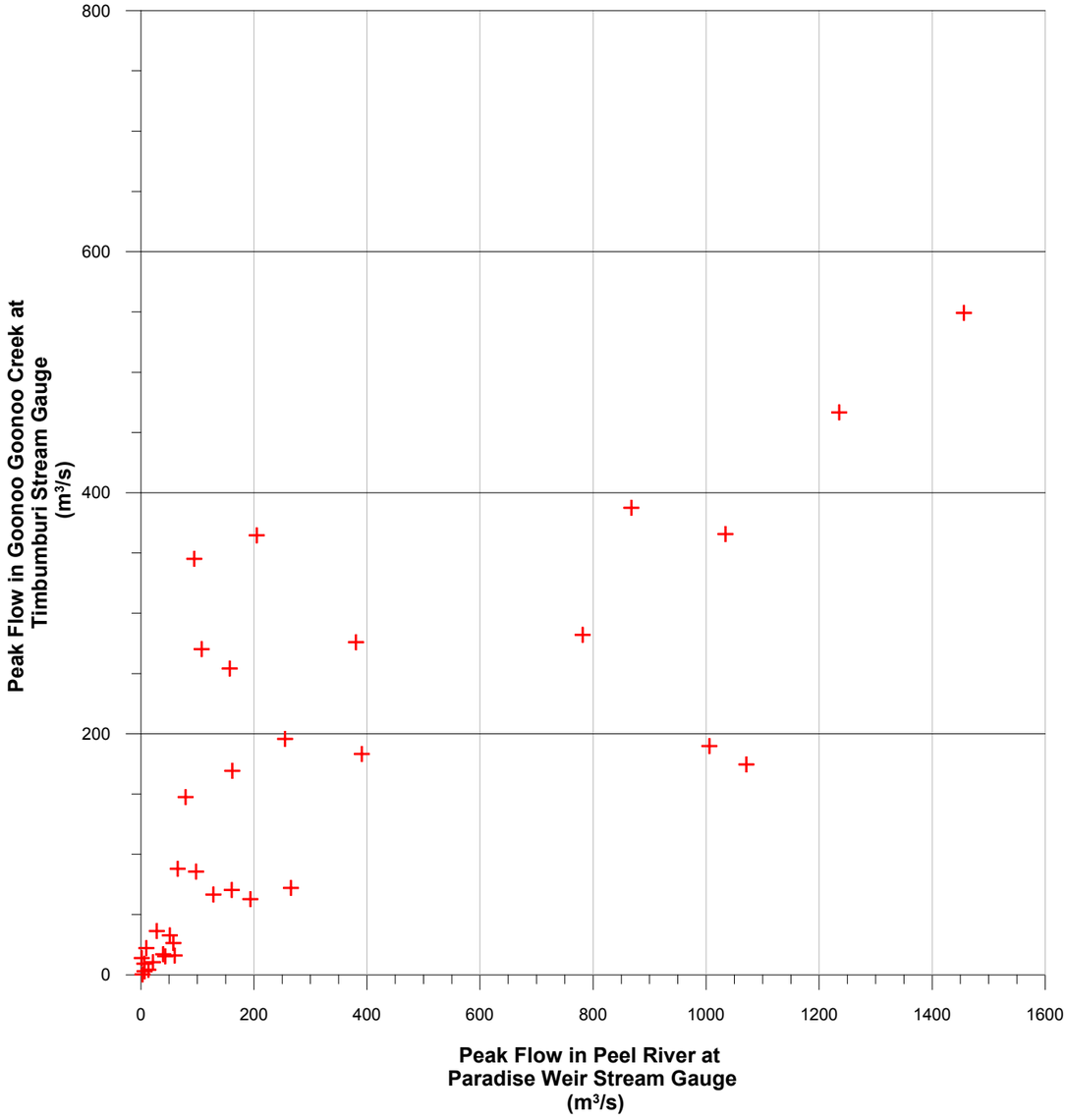
LEGEND

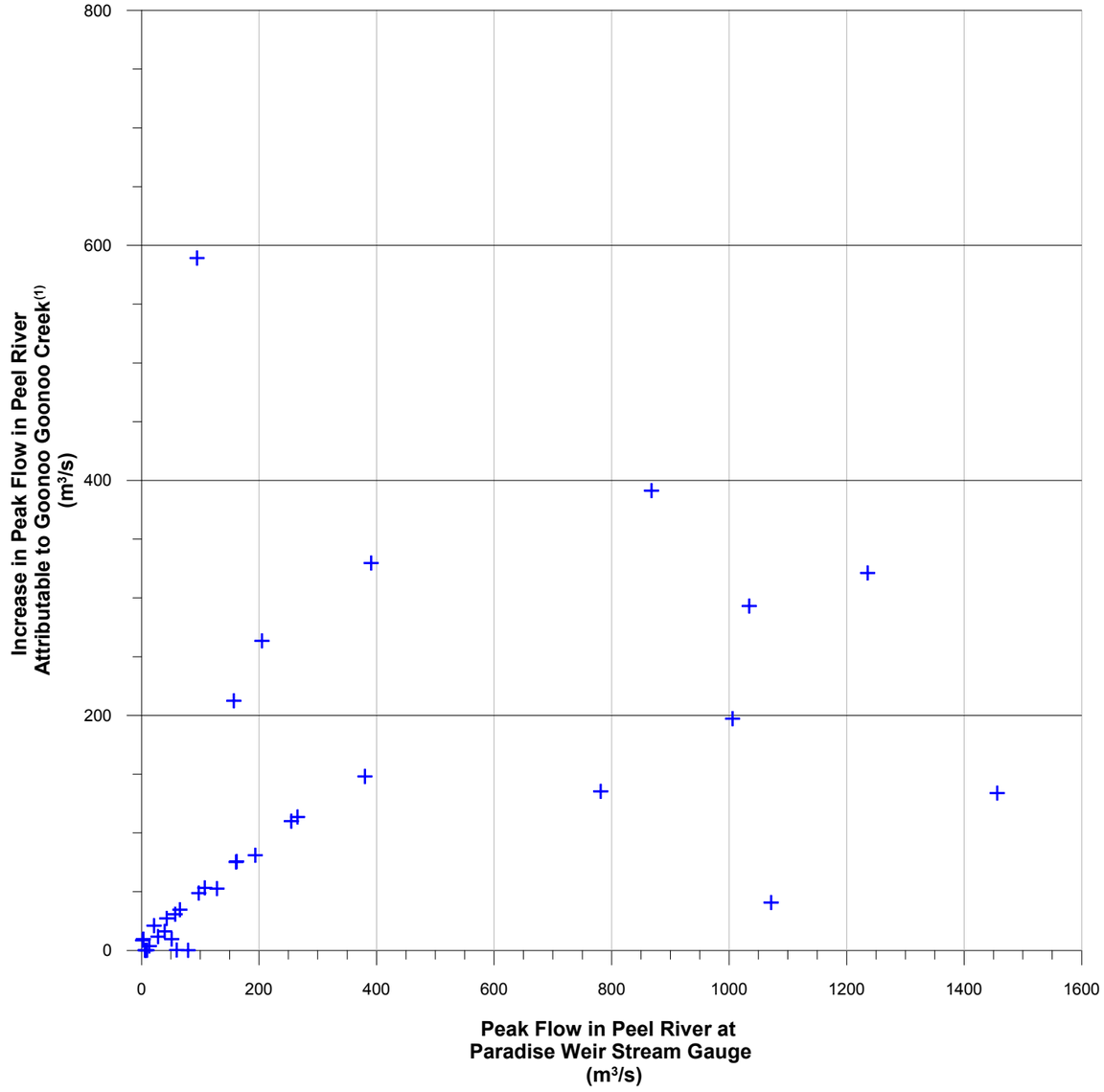
- Recorded (L&A RAFTS Model)
- Recorded (WaterNSW Rating Curve) [1]
- Maximum Gauged Discharge at time of Flood [2]

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.13

DISCHARGE HYDROGRAPHS
GOONOO GOONOO CREEK AT MEADOWS LANE STREAM GAUGE (GS 419097)





Lyall & Associates

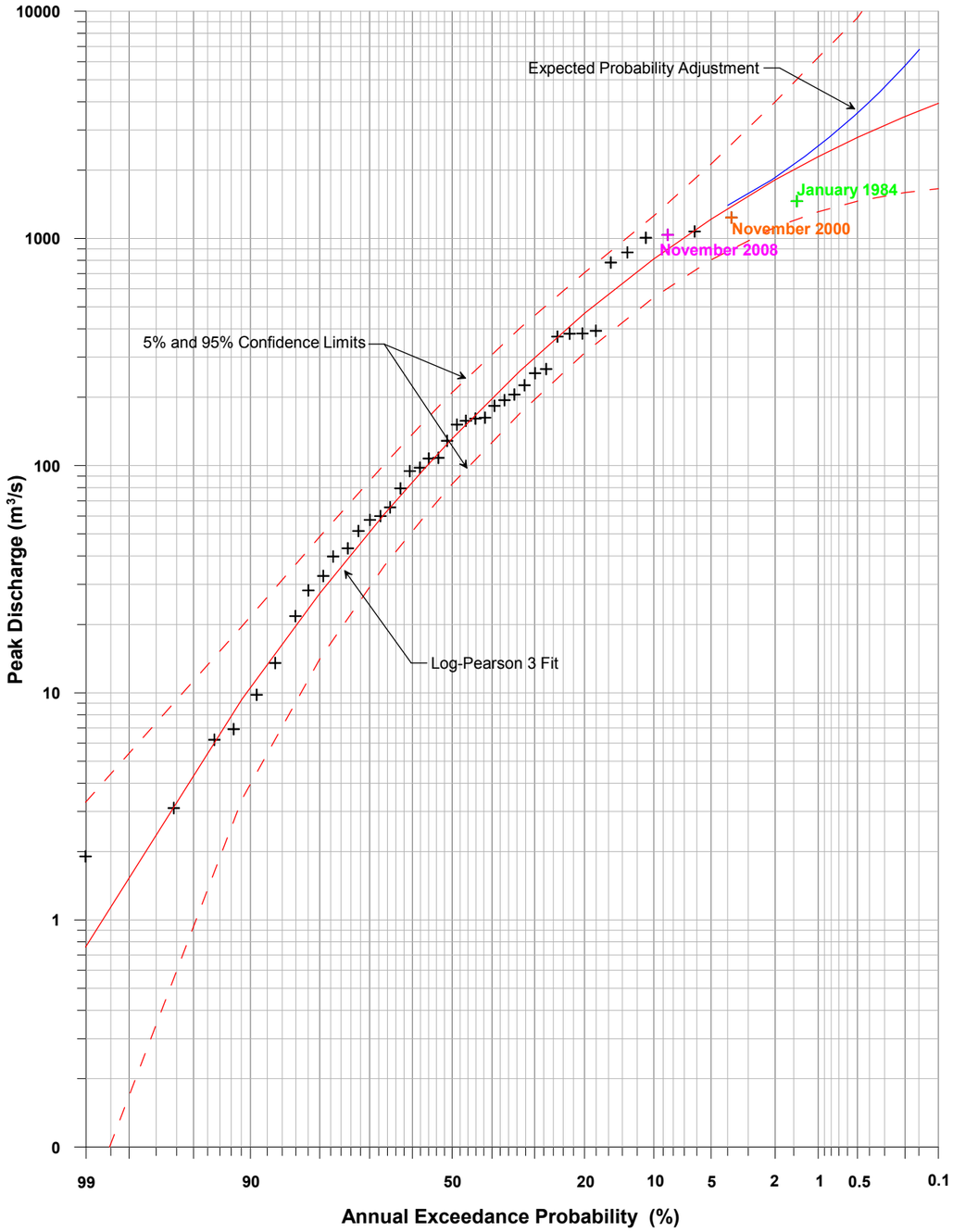
NOTES:

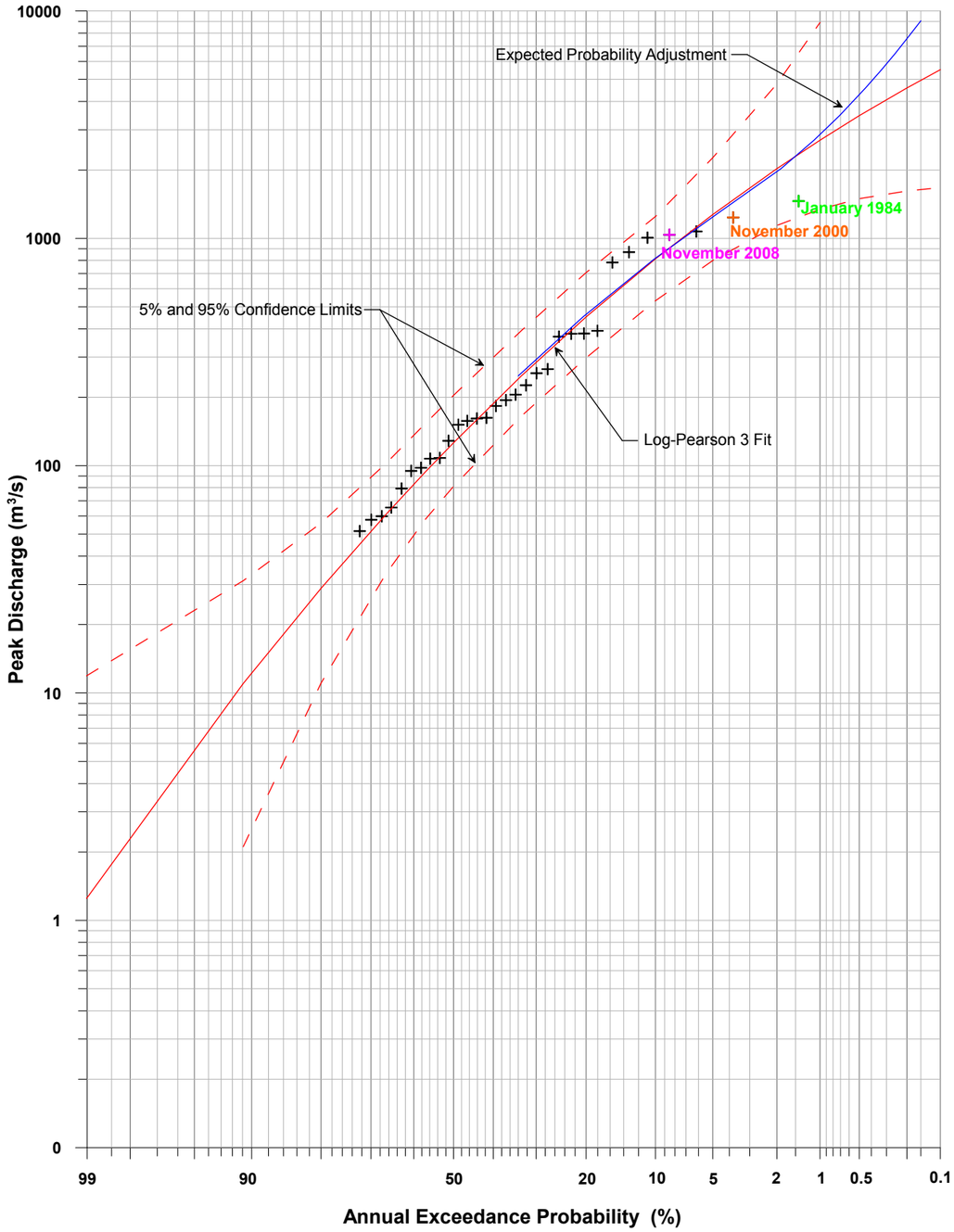
1. Derived by subtracting recorded peak flow in Peel River at Paradise Weir stream gauge from corresponding peak flow in Peel River at Tamworth stream gauge.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.14

COMPARISON OF HISTORIC PEAK FLOWS AT TAMWORTH PEEL RIVER VERSUS GOONOO GOONOO CREEK





Lyall & Associates

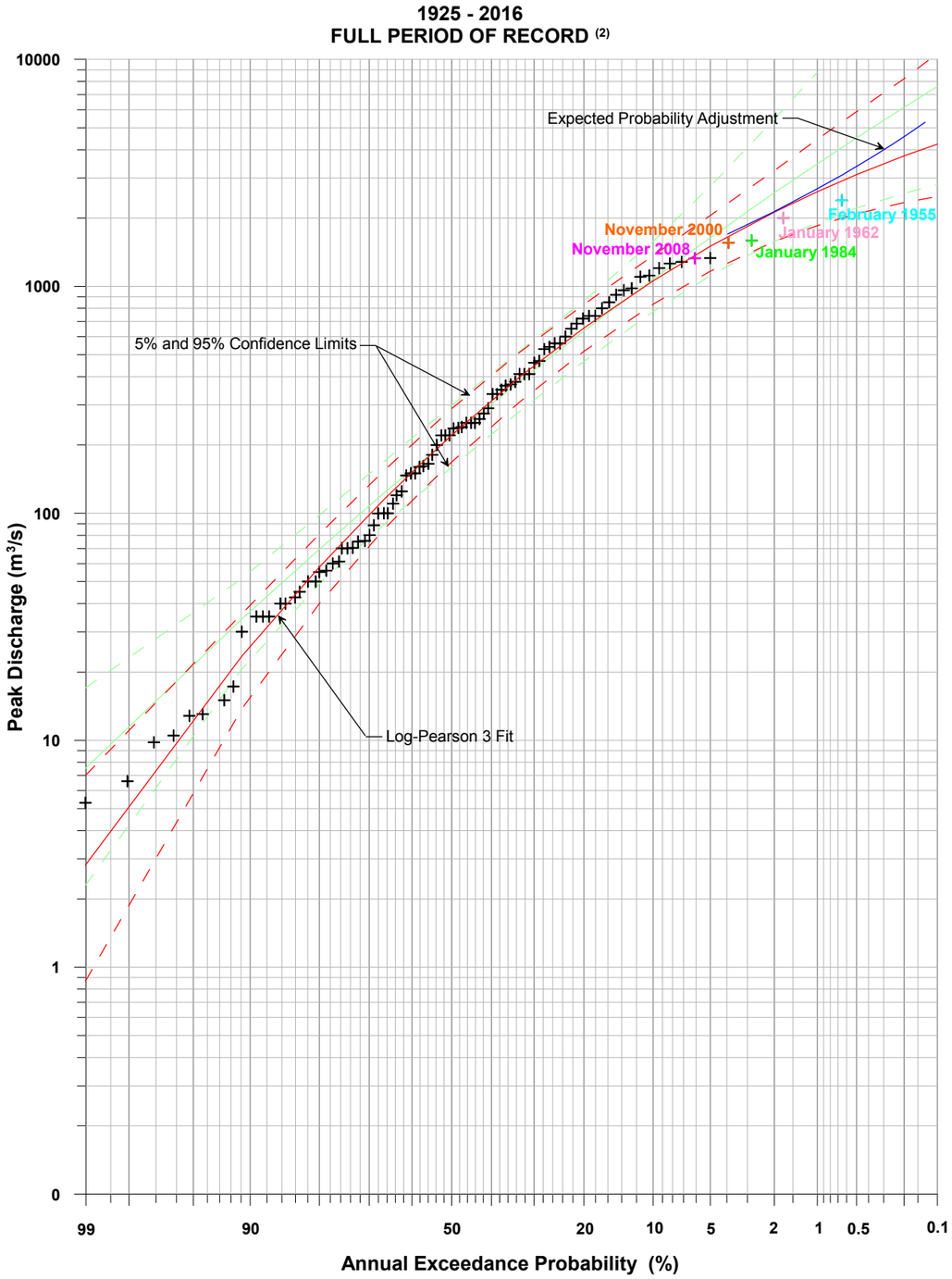
NOTE:

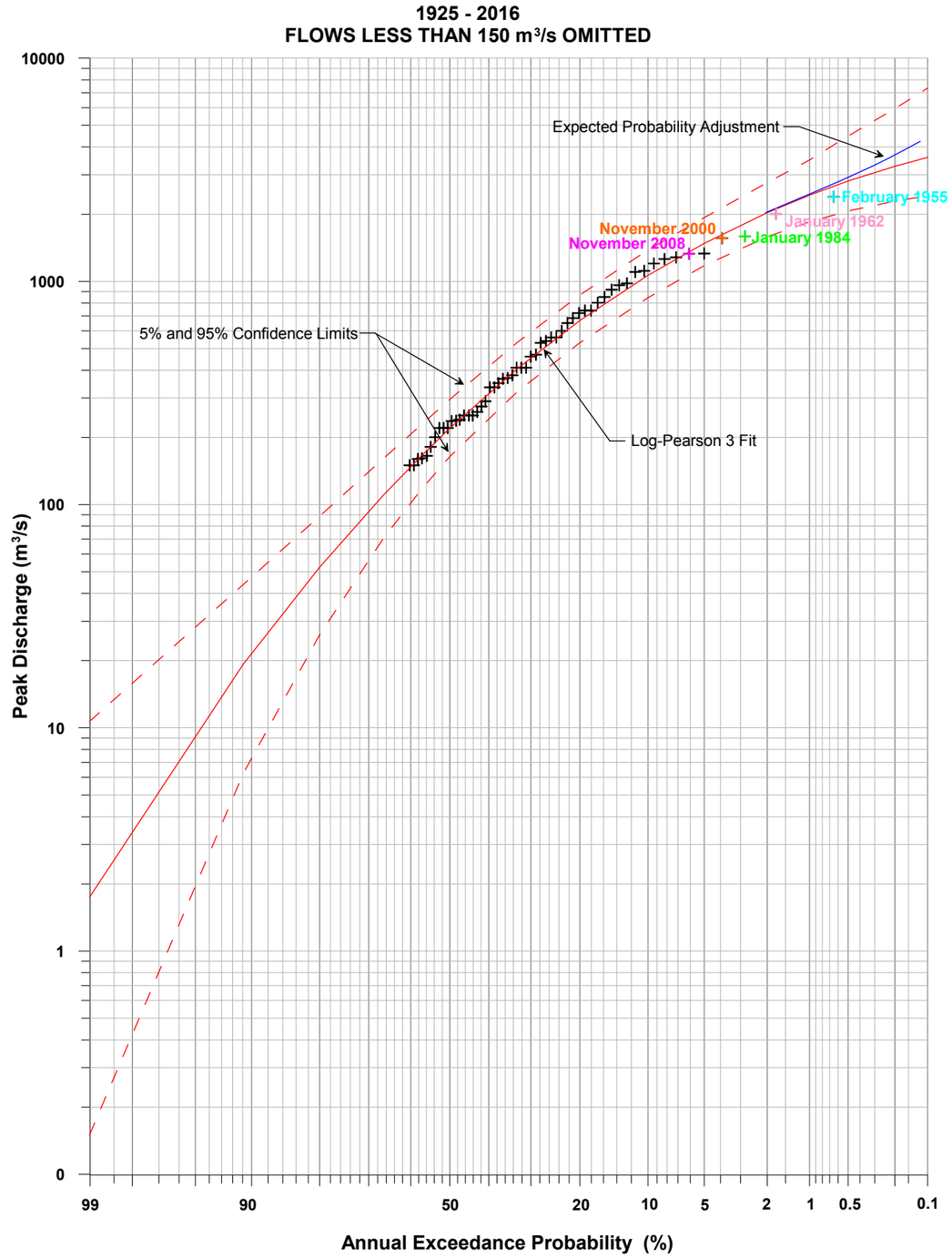
The flood frequency relationships derived for the Peel River at Upstream Paradise Weir stream gauge should be treated with caution given possible inaccuracies in the high flow rating curve.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.15

FLOOD FREQUENCY RELATIONSHIP
LOG-PEARSON 3 ANNUAL SERIES 1975-2016
PEEL RIVER AT UPSTREAM PARADISE WEIR STREAM GAUGE (GS 419024)





Lyall & Associates

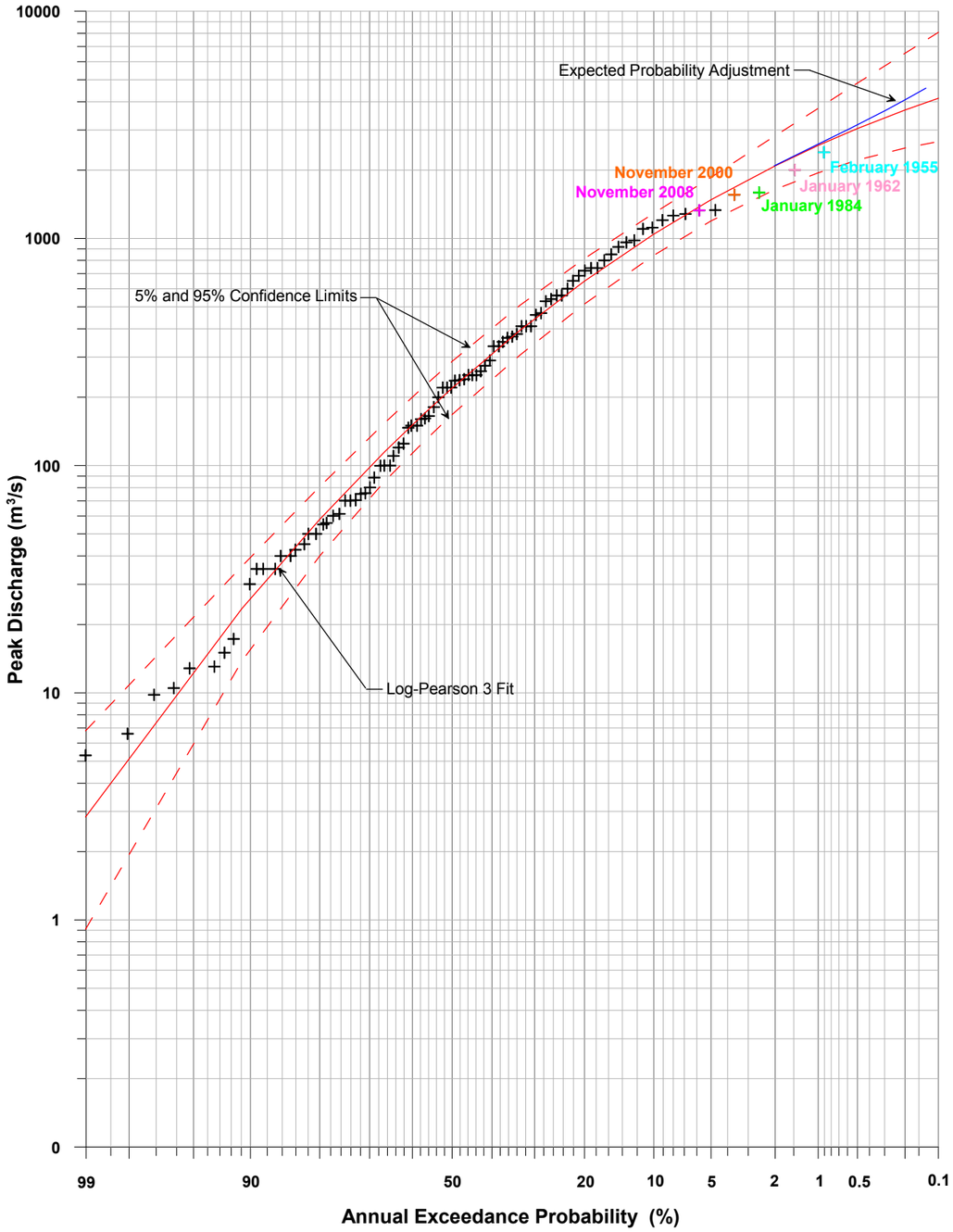
NOTES:

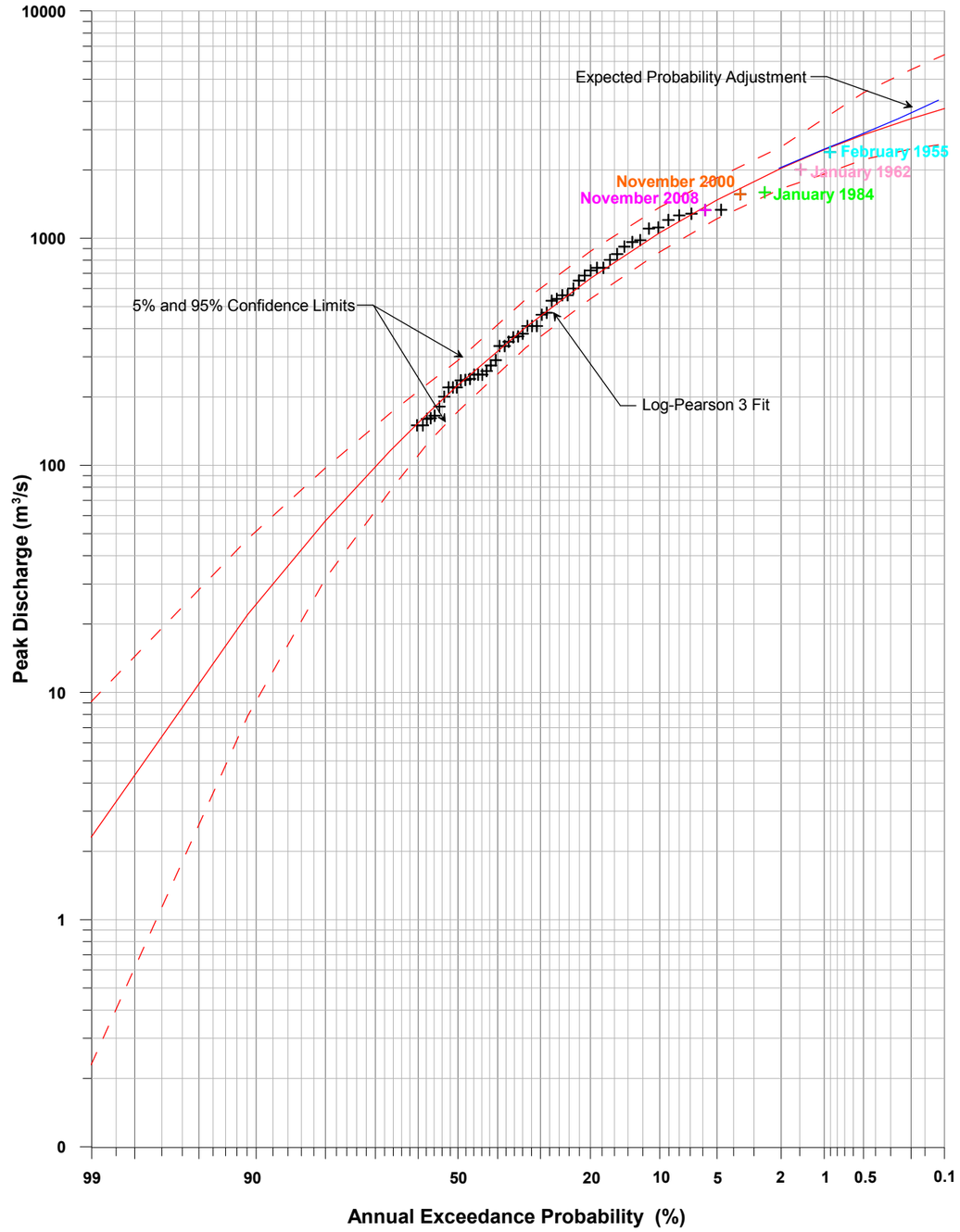
1. The flood frequency relationships derived for the Peel River at Tamworth stream gauge should be treated with caution given possible inaccuracies in the high flow rating curve.
2. Red lines show flood frequency relationship based on full period of record (i.e. 1925-2016), while green lines show flood frequency relationship based on same period of record used in WMA, 1990 (i.e. 1925-1984).

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.16
(Sheet 1 of 2)

FLOOD FREQUENCY RELATIONSHIP
LOG-PEARSON 3 ANNUAL SERIES 1925-2016
PEEL RIVER AT TAMWORTH STREAM GAUGE (GS 419009)





Lyall & Associates

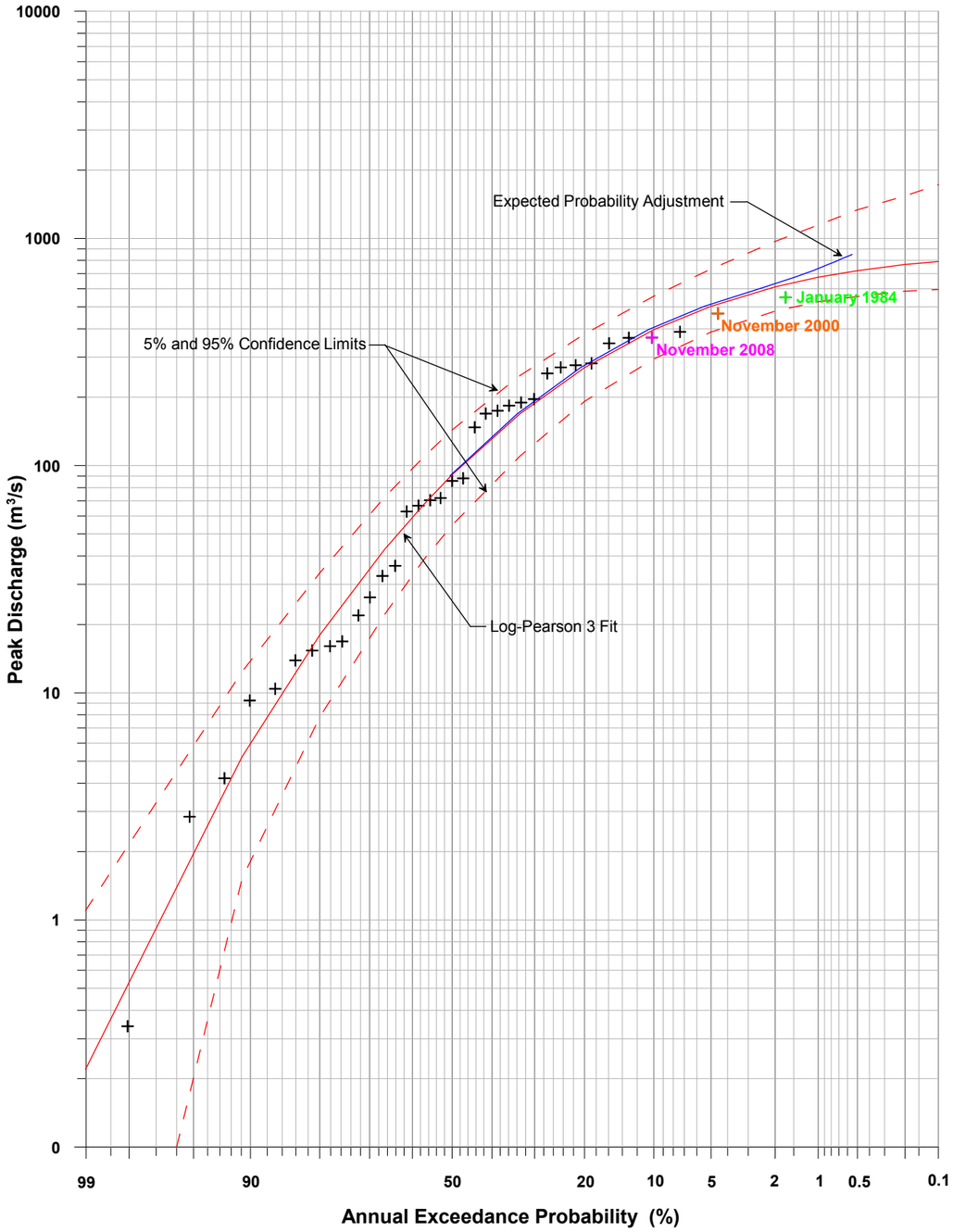
NOTE:

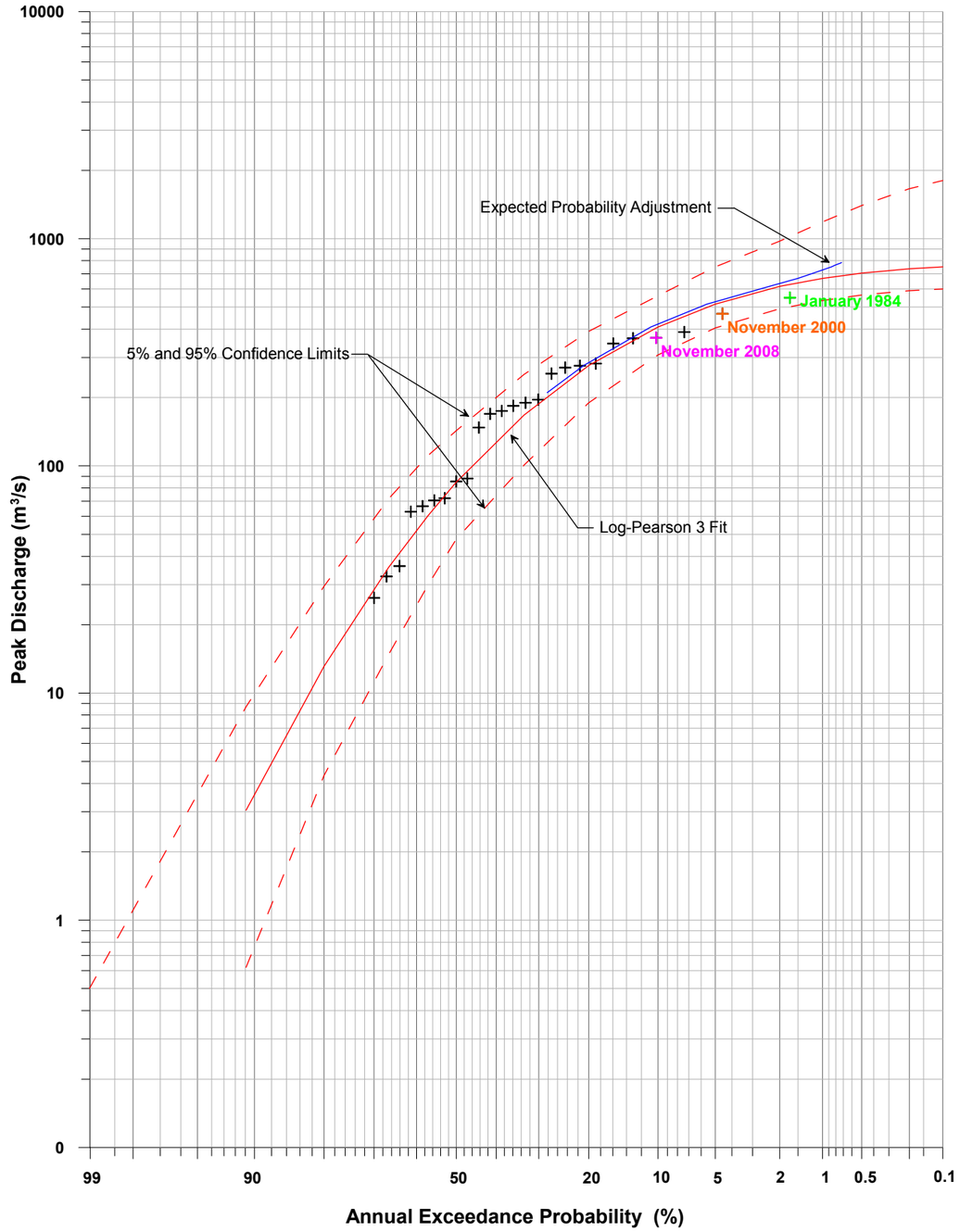
The flood frequency relationships derived for the Peel River at Tamworth stream gauge should be treated with caution given possible inaccuracies in the high flow rating curve.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.16
(Sheet 2 of 2)

FLOOD FREQUENCY RELATIONSHIP
LOG-PEARSON 3 ANNUAL SERIES 1925-2016
PEEL RIVER AT TAMWORTH STREAM GAUGE (GS 419009)





Lyall & Associates

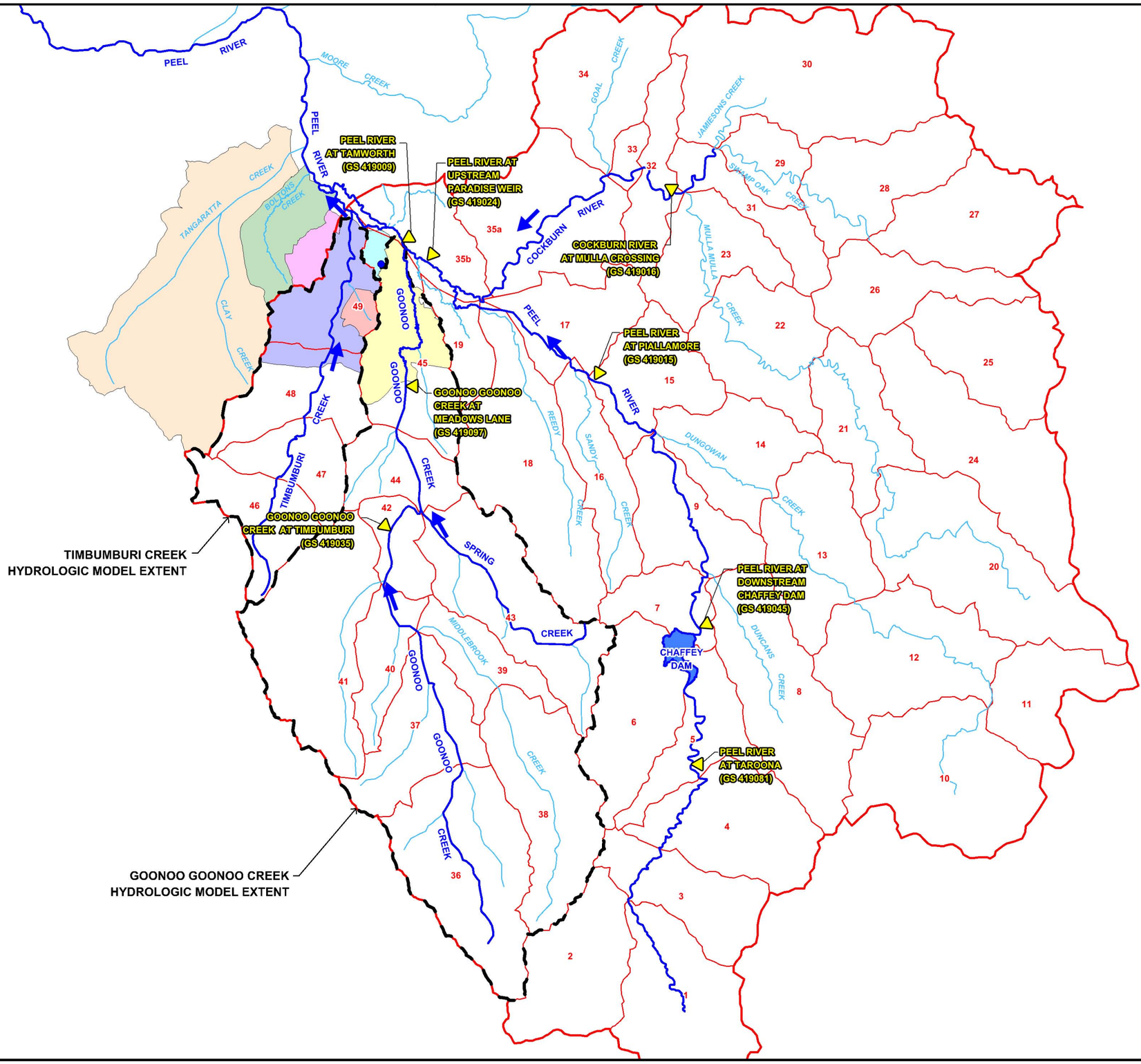
NOTE:

The flood frequency relationships derived for the Goonoo Goonoo Creek at Timbumburi stream gauge should be treated with caution given possible inaccuracies in the high flow rating curve.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 2.17

FLOOD FREQUENCY RELATIONSHIP
LOG-PEARSON 3 ANNUAL SERIES 1982-2016
GOONOO GOONOO CREEK AT TIMBUMBURI STREAM GAUGE (GS 419035)

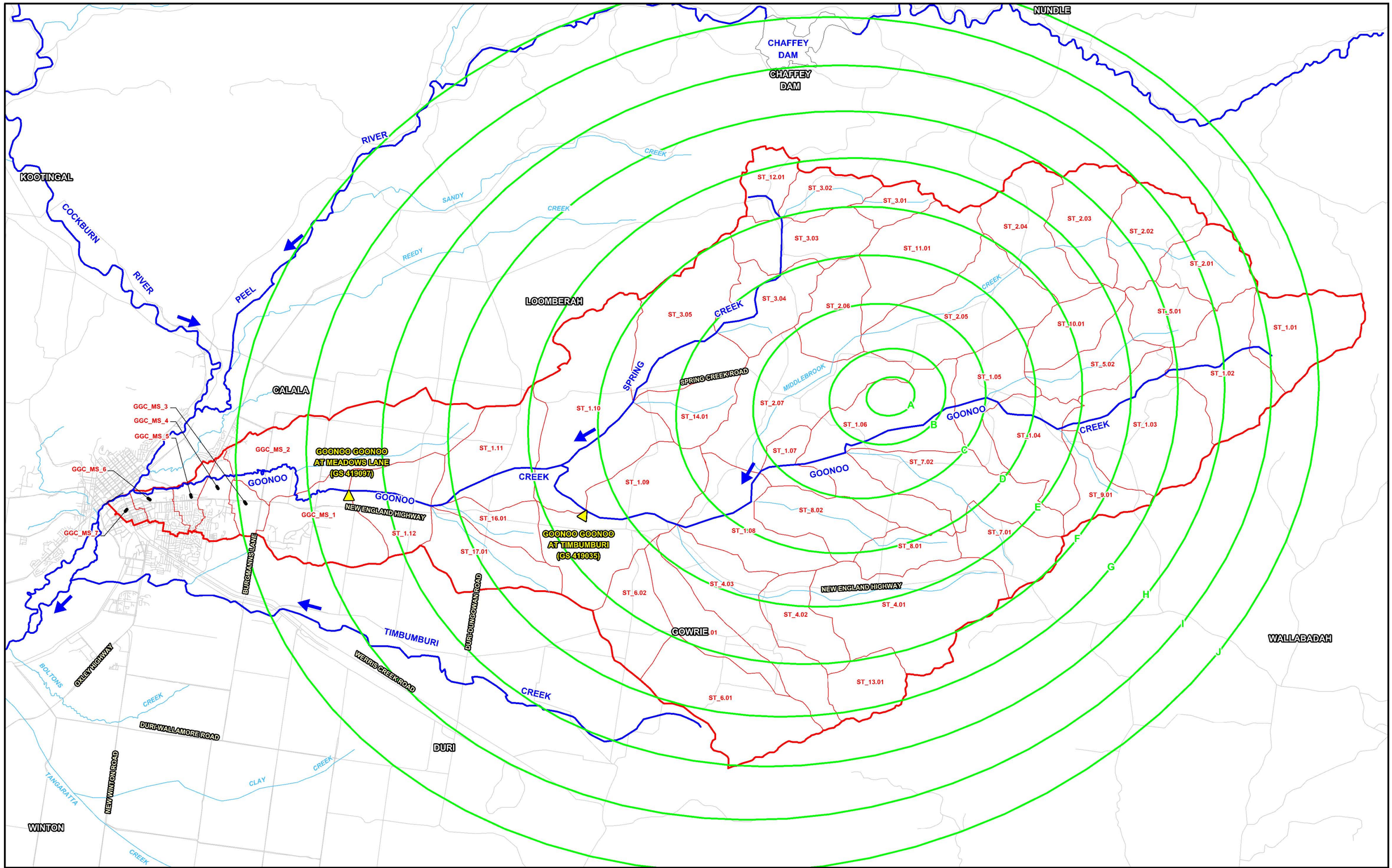


Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.1

EXTENT OF HYDROLOGIC MODELS
AND PEEL RIVER HYDROLOGIC MODEL LAYOUT



1.5 0 1.5 3 4.5 km

Scale: 1:150,000

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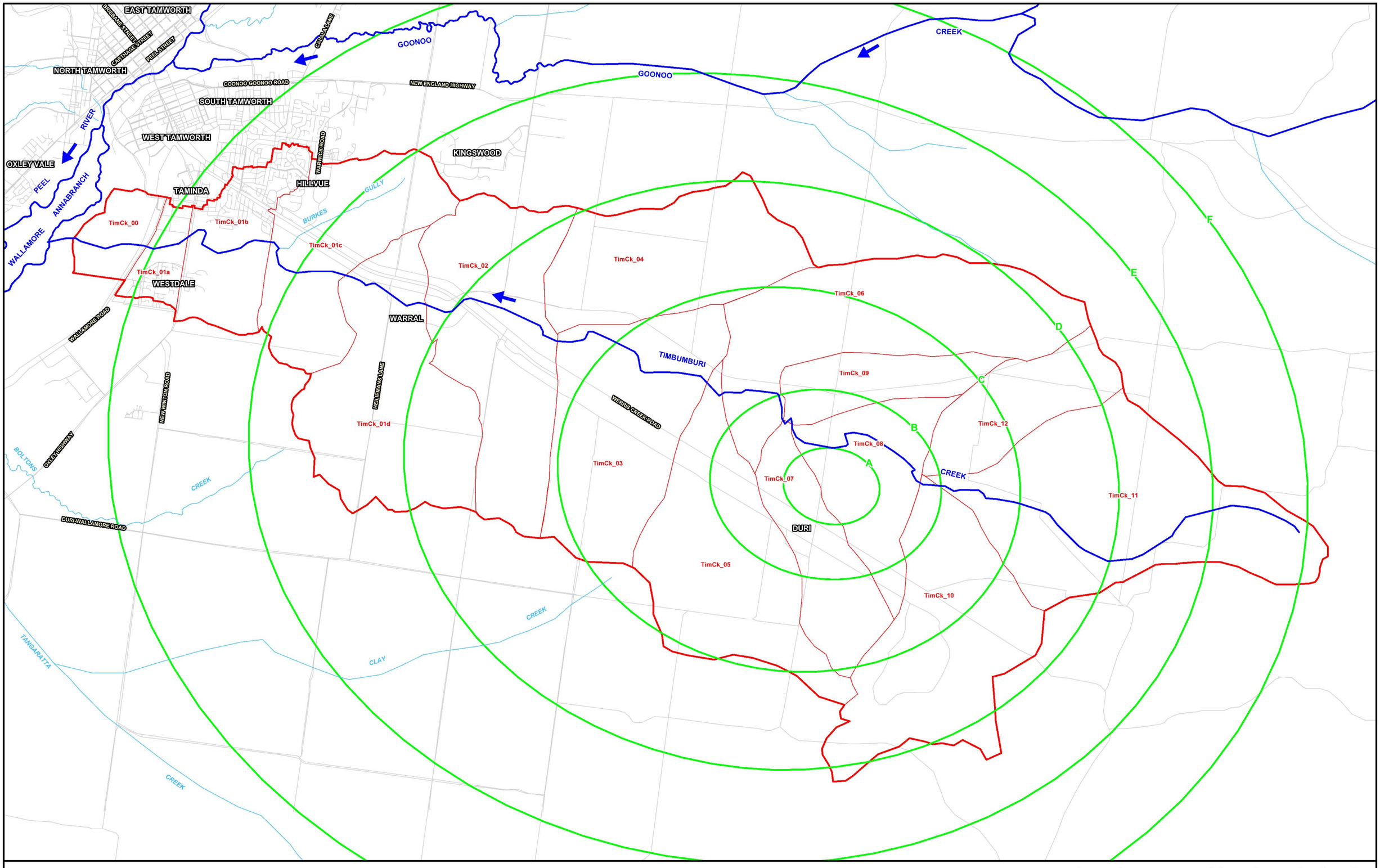
LEGEND

- Catchment Boundary
- A — PMP Ellipse and Identifier
- ST_1.10 — RAFTS Sub-Catchment and Identifier
- WaterNSW Stream Gauge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.2

GOONOO GOONOO CREEK HYDROLOGIC MODEL LAYOUT



N

750 0 750 1500 2250 m

Scale: 1:75,000

LEGEND

- Catchment Boundary
- A — PMP Ellipse and Identifier
- TimCk_03 — RAFTS Sub-Catchment and Identifier

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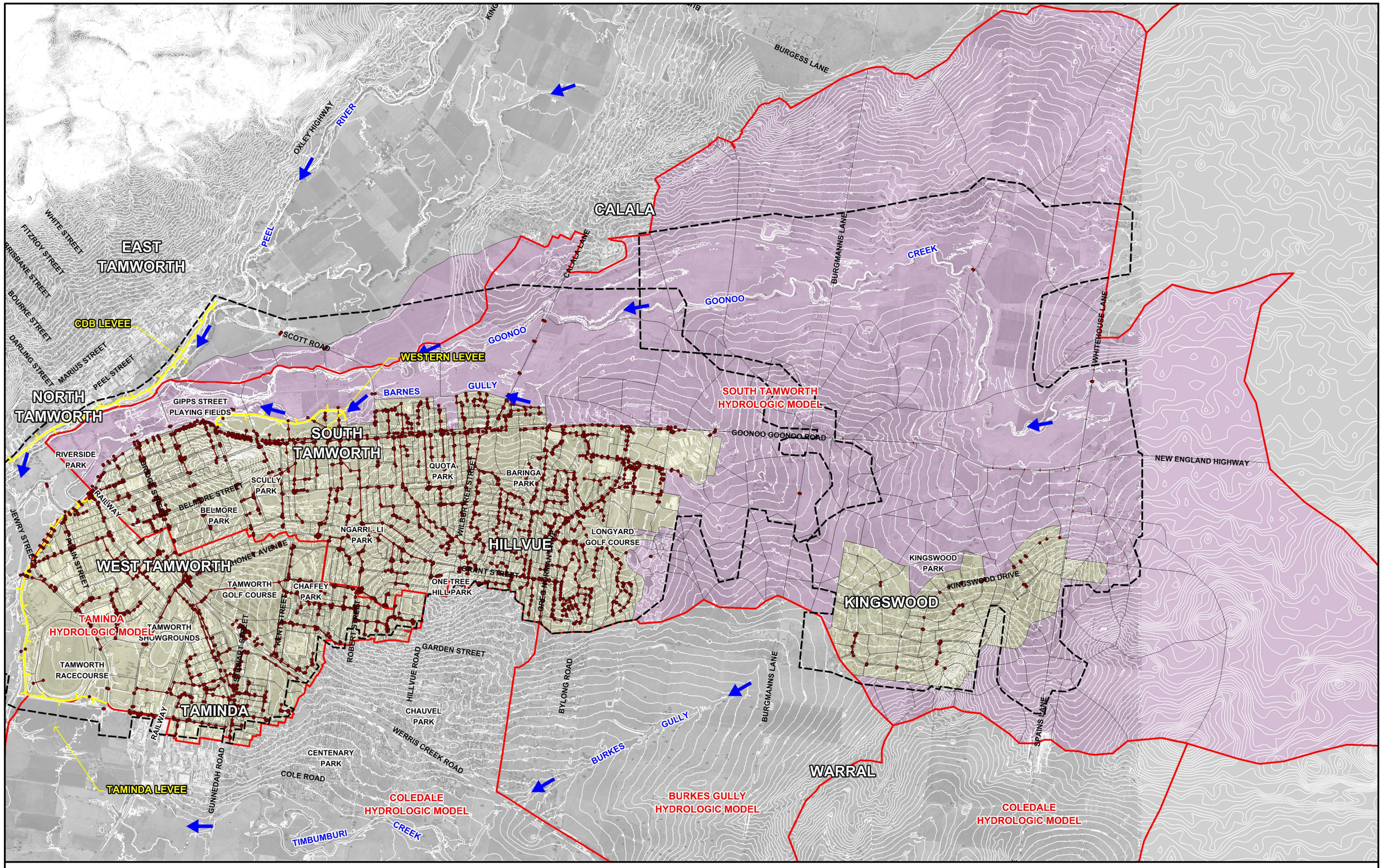
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.3

TIMBUMBURI CREEK HYDROLOGIC MODEL LAYOUT



300 0 300 600 900 m

Scale: 1:30,000

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- DRAINS Sub-Catchment
- RAFTS Sub-Catchment
- Hydrologic Model Boundary and Identifier

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.4

SOUTH TAMWORTH AND TAMINDA HYDROLOGIC MODEL LAYOUT

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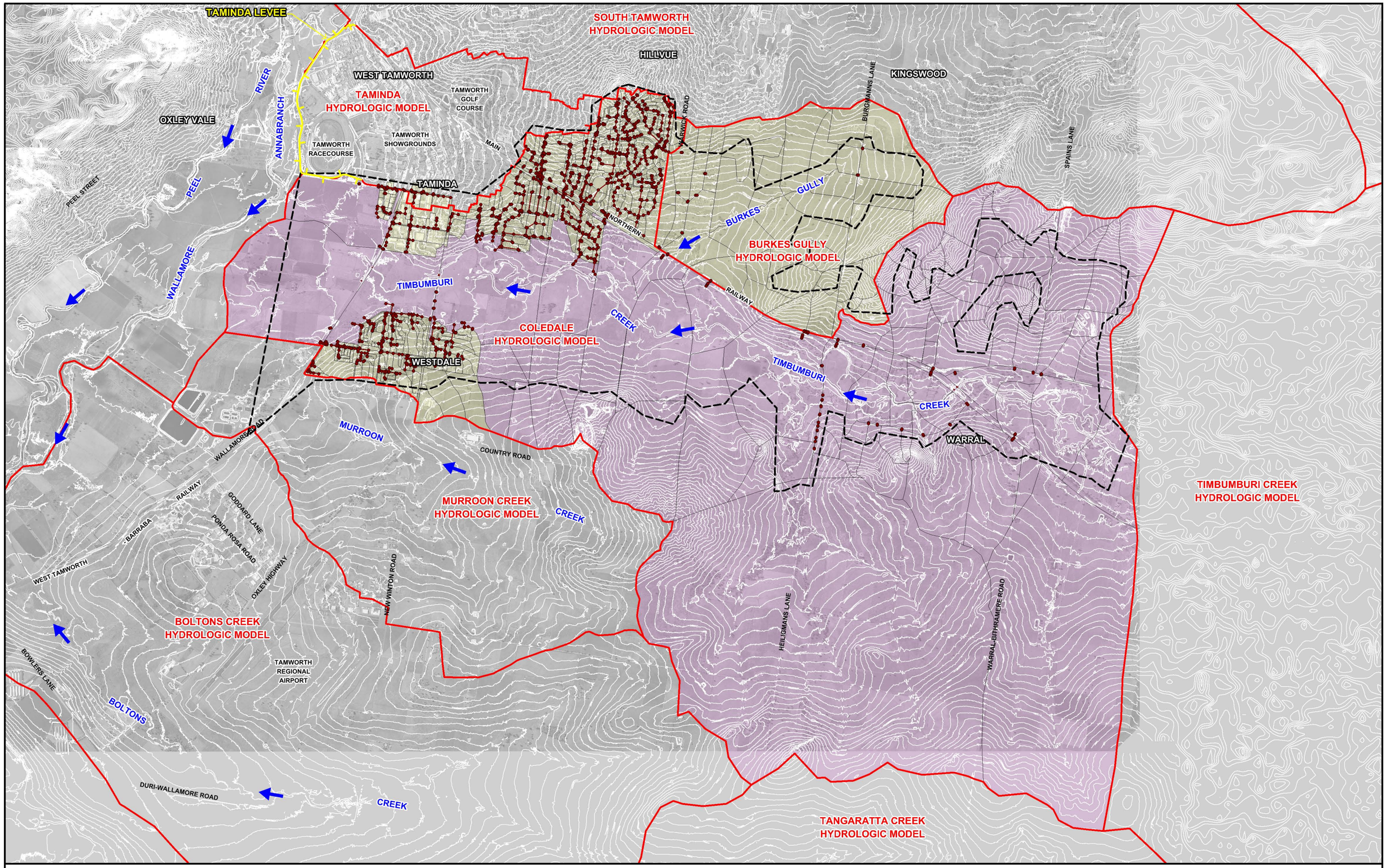

N

400 0 400 800 1200 m

Scale: 1:40,000

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- DRAINS Sub-Catchment
- RAFTS Sub-Catchment
- Hydrologic Model Boundary and Identifier

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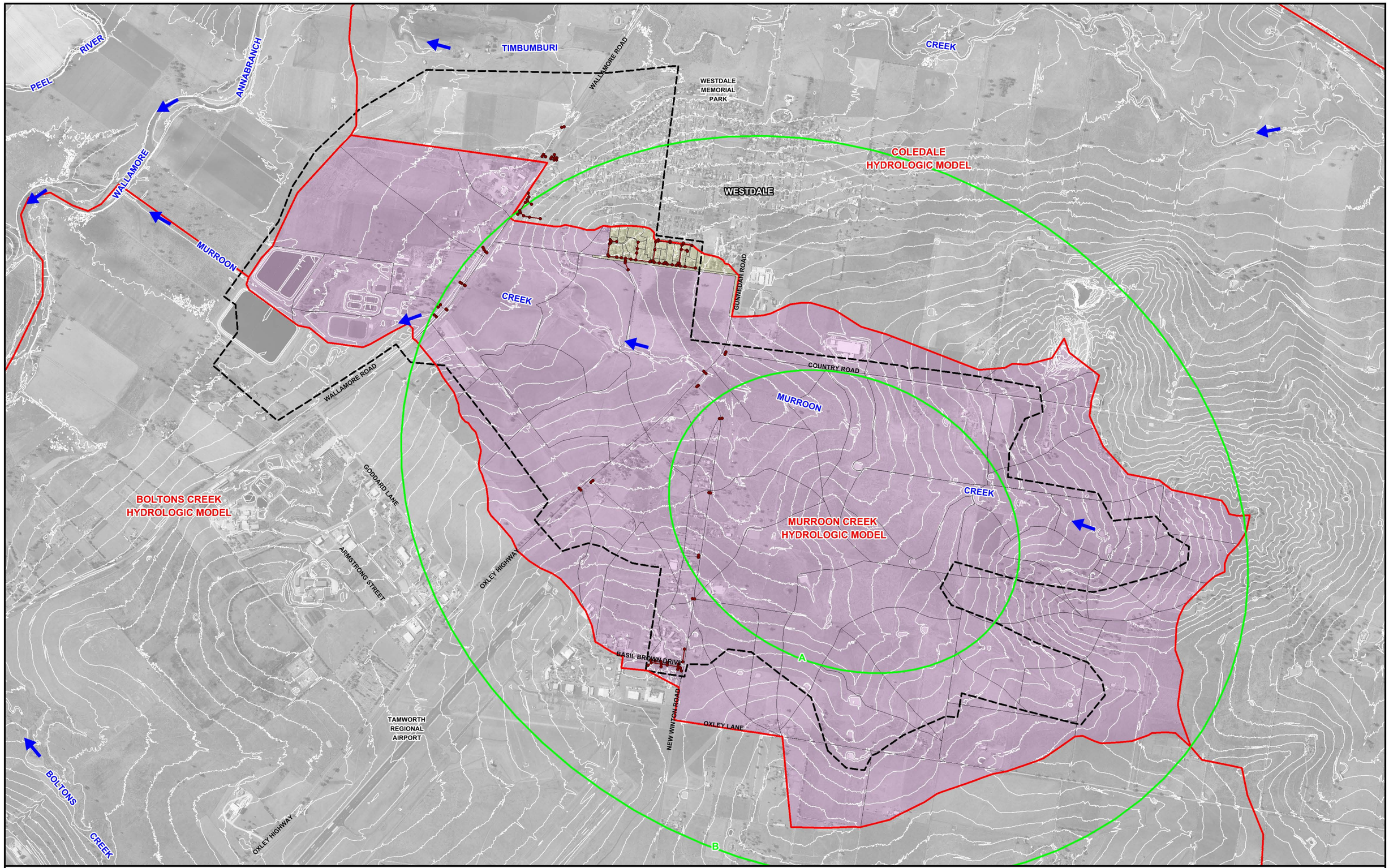
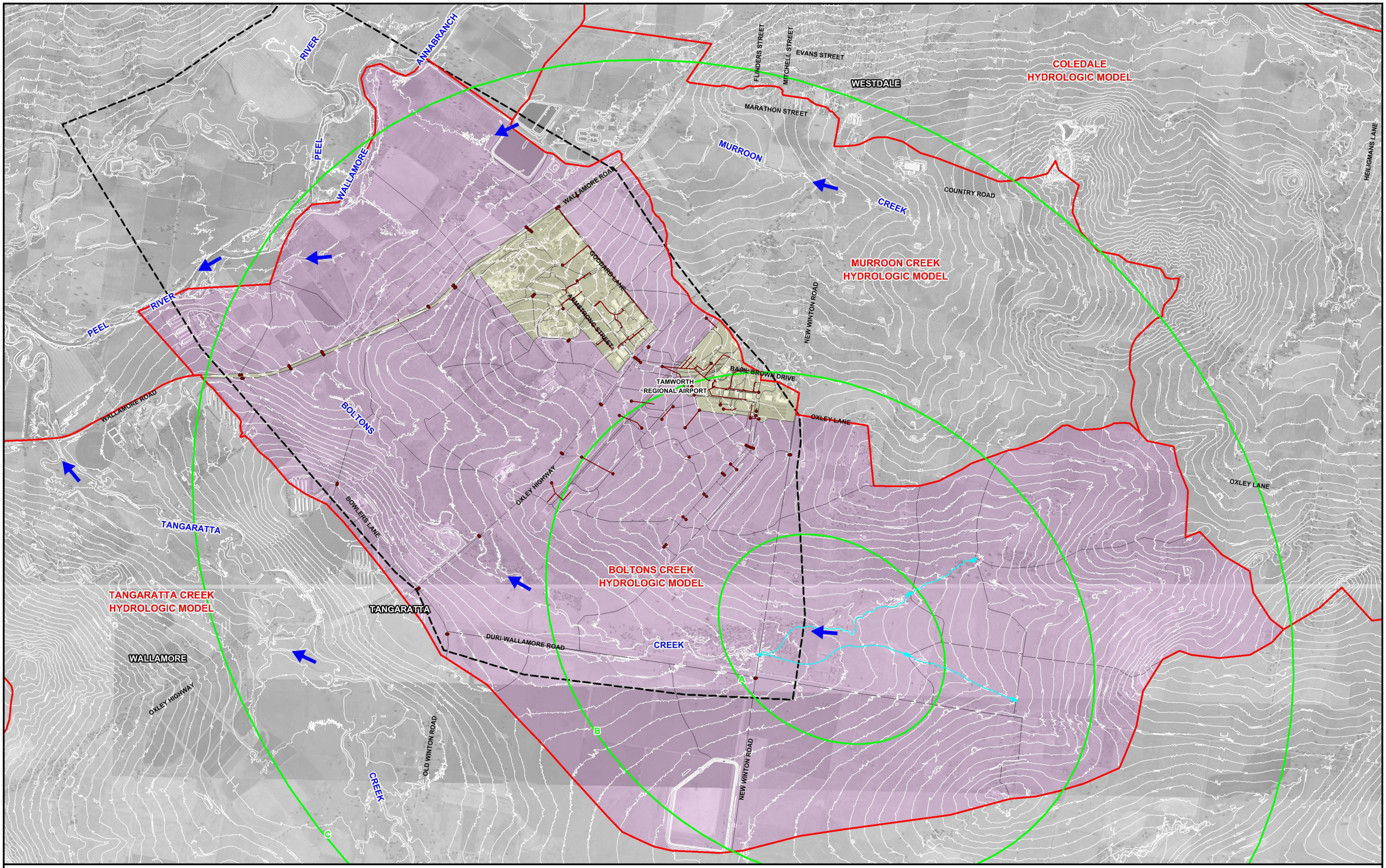
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.5

BURKES GULLY AND COLEDALE HYDROLOGIC MODEL LAYOUT


PEEL RIVER
ANNABRANCH
WALLAMORE
MURROON
TIMBUMBURI
WALLAMORE ROAD
WESTDALE MEMORIAL PARK
CREEK
COLEDALE HYDROLOGIC MODEL
WESTDALE
GUNNEDAH ROAD
CREEK
COUNTRY ROAD
MURROON
WALLAMORE ROAD
BOLTONS CREEK HYDROLOGIC MODEL
GODDARD LANE
ARMSTRONG STREET
OXLEY HIGHWAY
MURROON CREEK HYDROLOGIC MODEL
CREEK
BASIL BROWN DRIVE
NEW WINTON ROAD
OXLEY LANE
A
TAMWORTH REGIONAL AIRPORT
BOLTONS CREEK
OXLEY HIGHWAY
B
N
200 0 200 400 600 m
Scale: 1:20,000
LEGEND
Two-Dimensional Model Boundary
Modelled Stormwater Network
A PMP Ellipse and Identifier
DRAINS Sub-Catchment
RAFTS Sub-Catchment
Hydrologic Model Boundary and Identifier
Lyall & Associates
TAMWORTH CITY-WIDE FLOODING INVESTIGATION
Figure 3.6
MURROON CREEK HYDROLOGIC MODEL LAYOUT



300 0 300 600 900 m

Scale: 1:30,000

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- A — PMP Ellipse and Identifier
- DRAINS Sub-Catchment
- RAFTS Sub-Catchment
- Hydrologic Model Boundary and Identifier
- RAFTS Sub-Catchment Link

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.7

BOLTONS CREEK HYDROLOGIC MODEL LAYOUT

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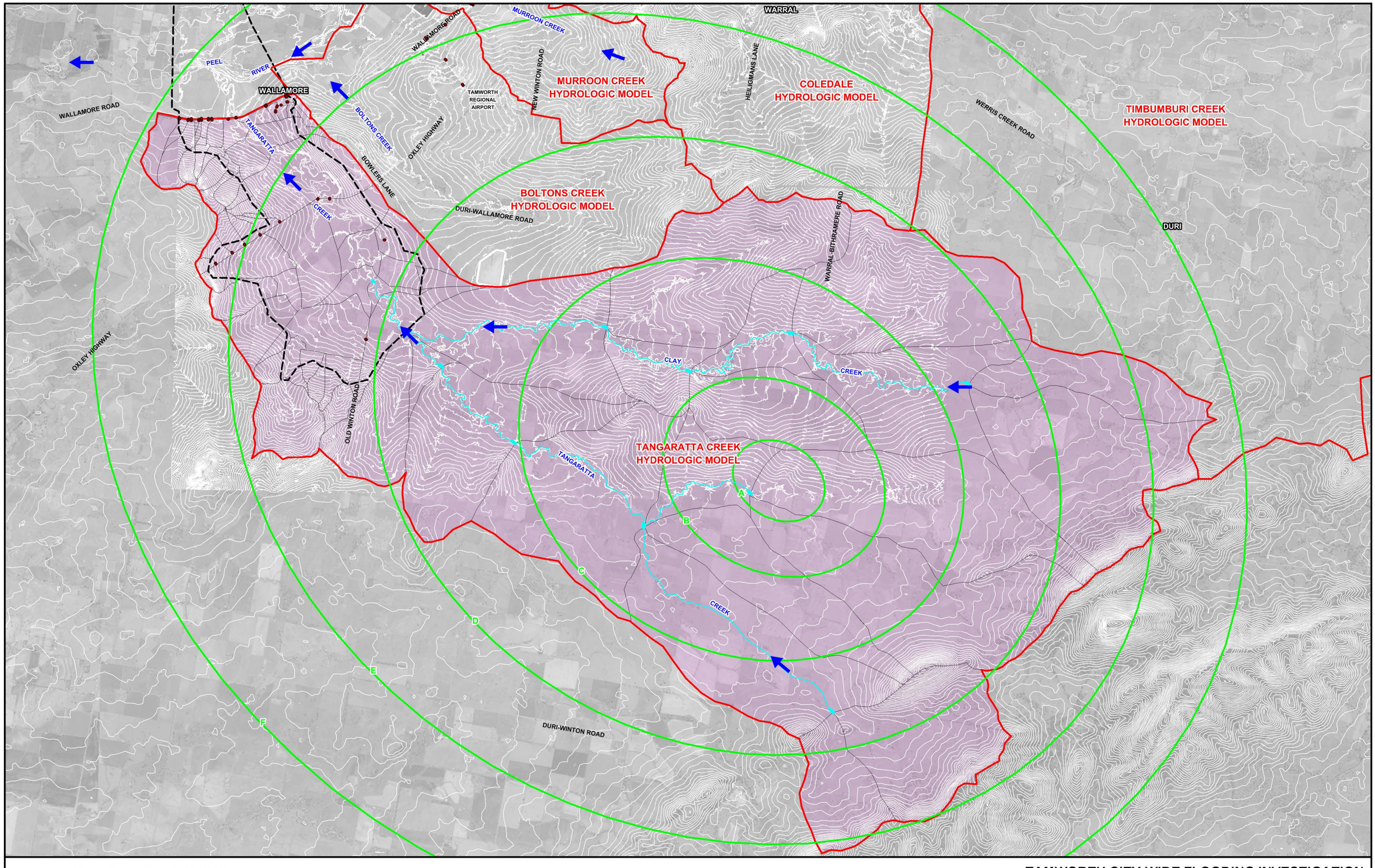


N

750 0 750 1500 2250 m

Scale: 1:75,000

Lyall & Associates

LEGEND

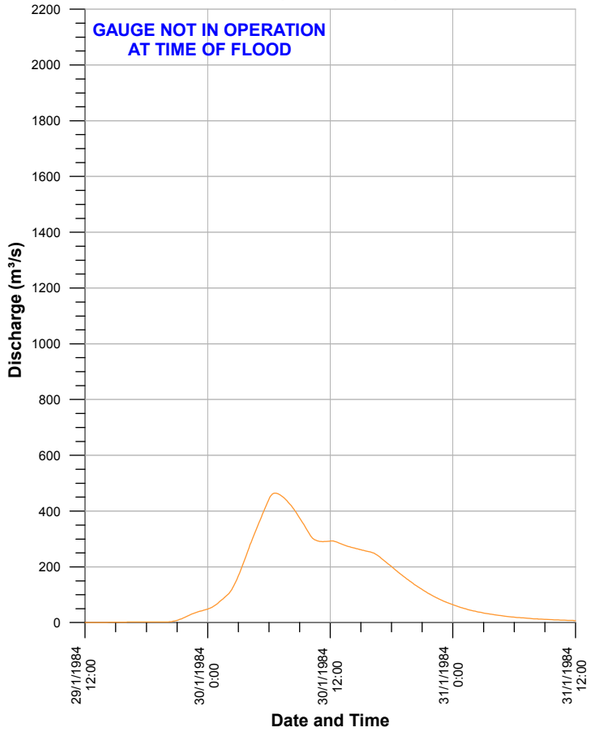
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- A — PMP Ellipse and Identifier
- RAFTS Sub-Catchment
- Hydrologic Model Boundary and Identifier
- RAFTS Sub-Catchment Link

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

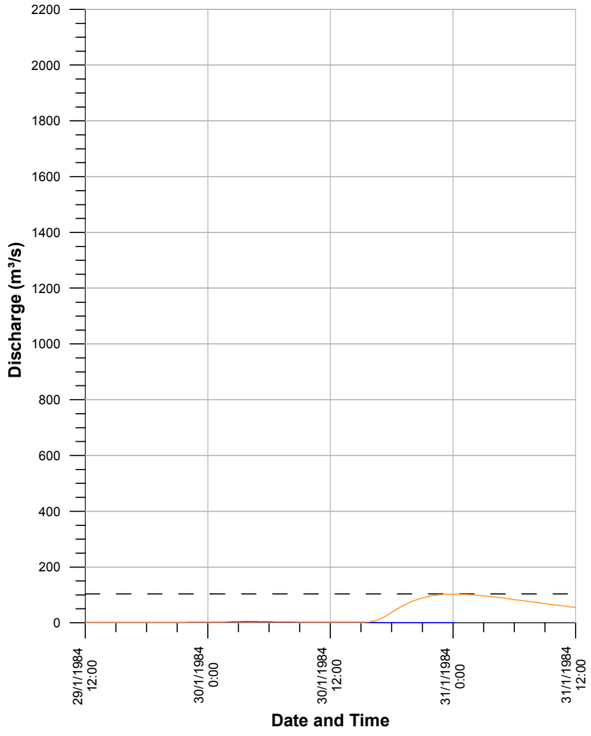
Figure 3.8

TANGARATTA CREEK HYDROLOGIC MODEL LAYOUT

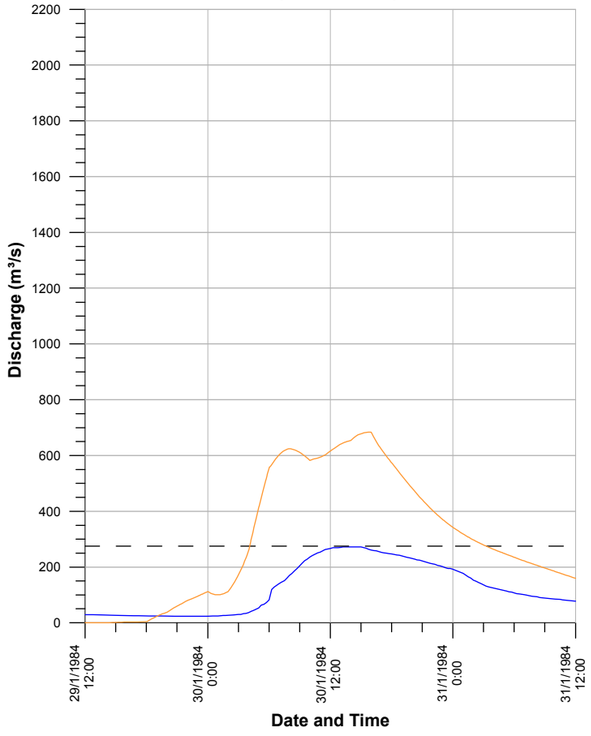
PEEL RIVER AT TAROONA (GS 419081)



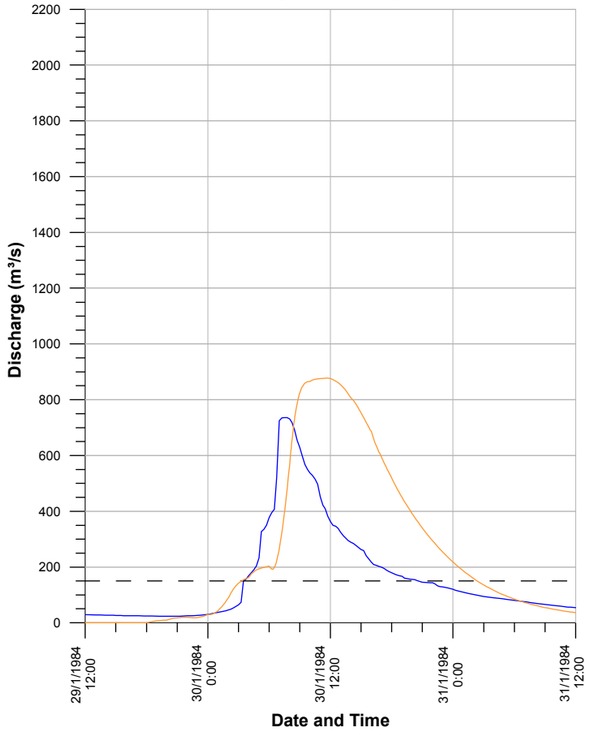
PEEL RIVER AT DS CHAFFEY DAM (GS 419045)



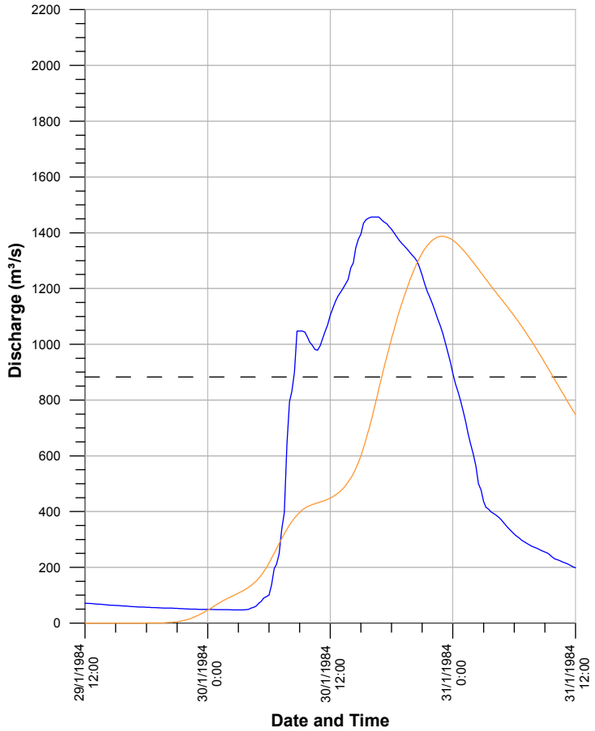
PEEL RIVER AT PIALLAMORE (GS 419015)



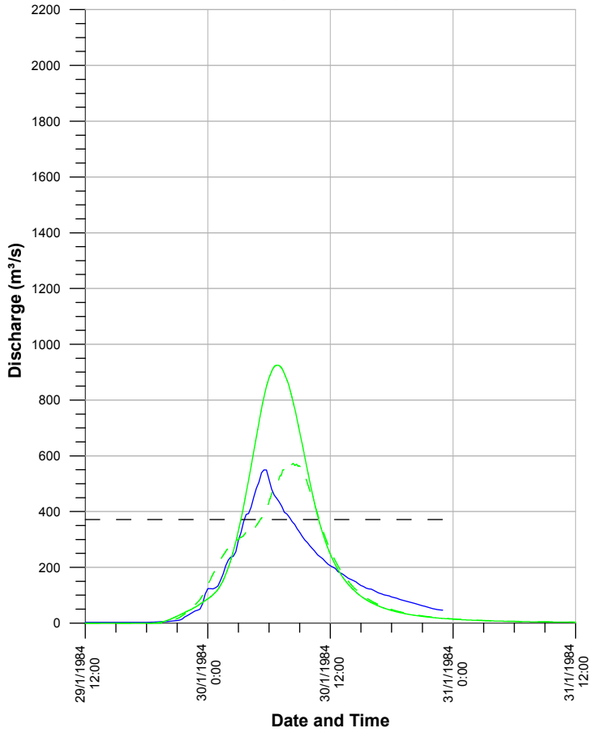
COCKBURN RIVER AT MULLA CROSSING (GS 419016)



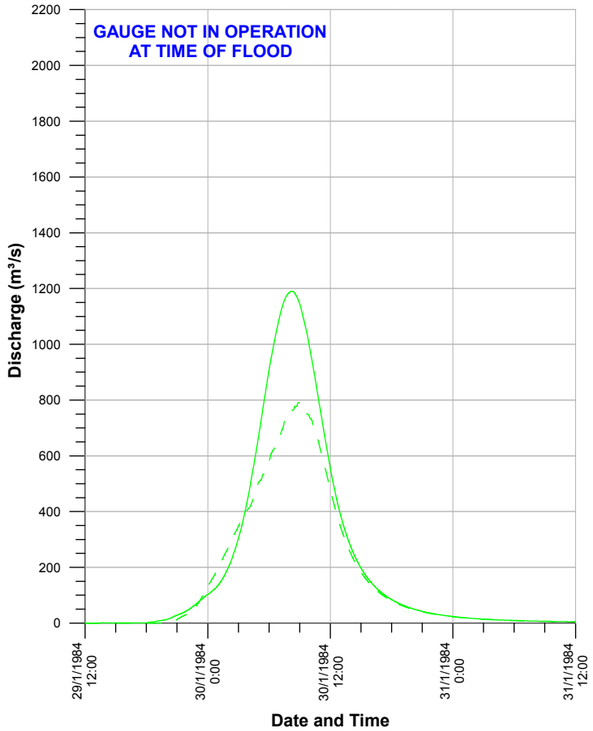
PEEL RIVER AT PARADISE WEIR (GS 419024)



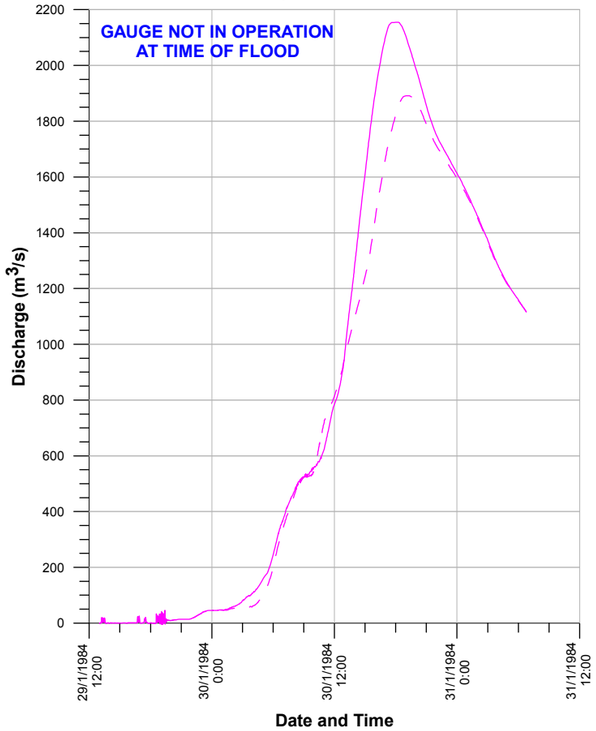
GOONOO GOONOO CREEK AT TIMBUMBURI (GS 419035)



GOONOO GOONOO CREEK AT MEADOWS LANE (GS 419097)



PEEL RIVER AT TAMWORTH (GS 419009)



Lyall & Associates

NOTES:

1. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.
2. Solid lines show modelled discharge hydrograph derived using 1984 Rainfall Data Set 1, while dashed lines show modelled discharge hydrograph derived using 1984 Rainfall Data Set 2.

LEGEND

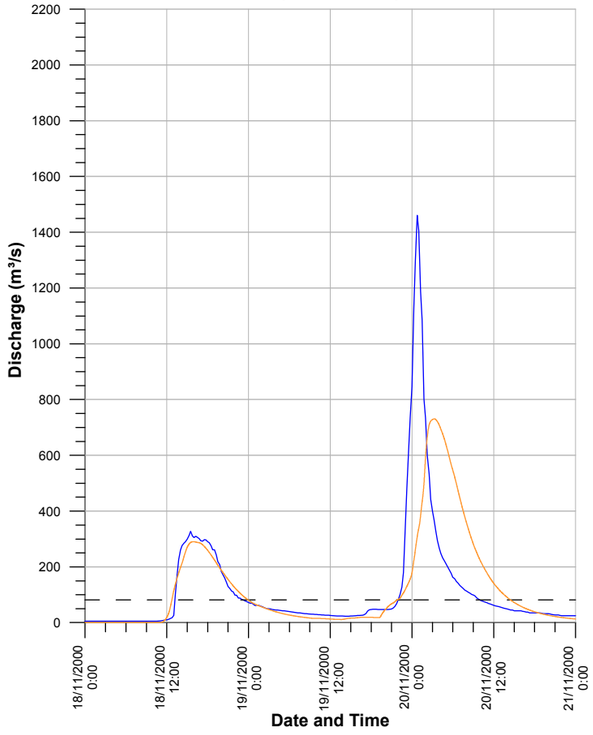
- Recorded (Rating Curve Current at Time of Flood)
- Maximum Gauged Discharge at Time of Flood(1)
- Modelled (Peel River Hydrologic Model [RORB])
- Modelled (Goonoo Goonoo Creek Hydrologic Model [RAFTS])(2)
- Modelled (Peel River Hydraulic Model [TUFLOW])(2)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

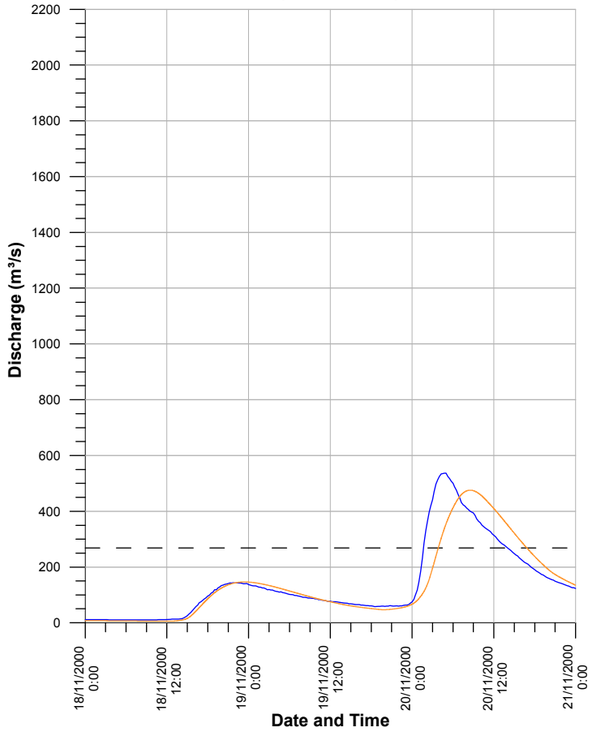
Figure 3.9

RECORDED AND MODELLED DISCHARGE HYDROGRAPHS
JANUARY 1984 FLOOD

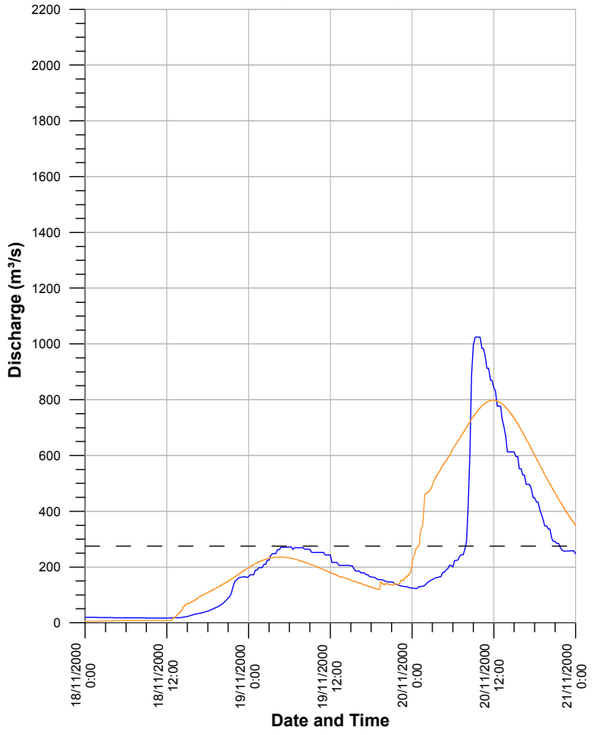
PEEL RIVER AT TAROONA (GS 419081)



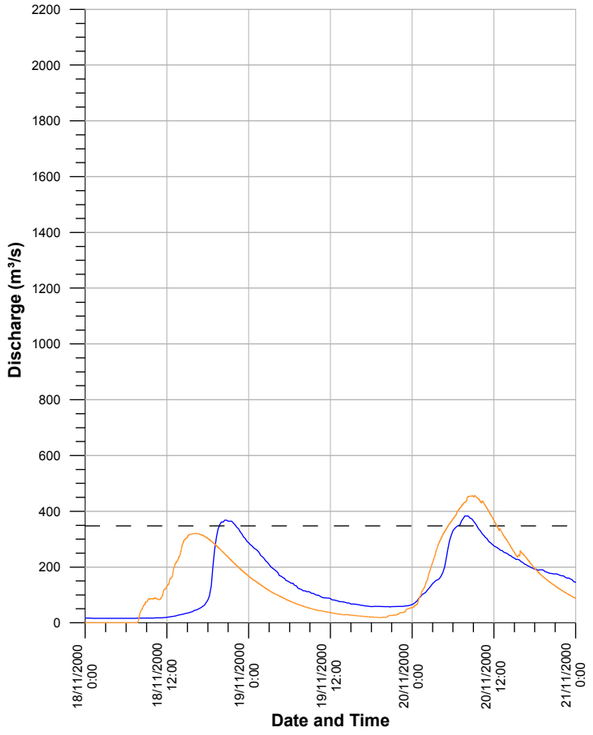
PEEL RIVER AT DS CHAFFEY DAM (GS 419045)



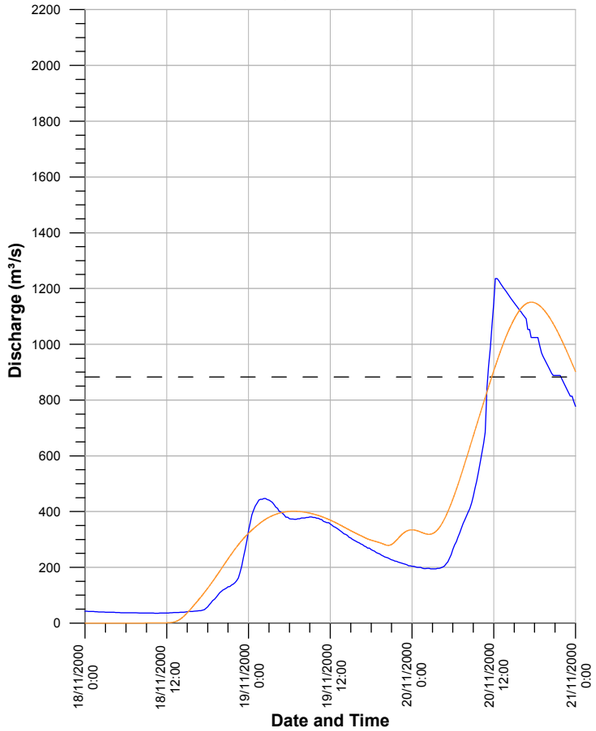
PEEL RIVER AT PIALLAMORE (GS 419015)



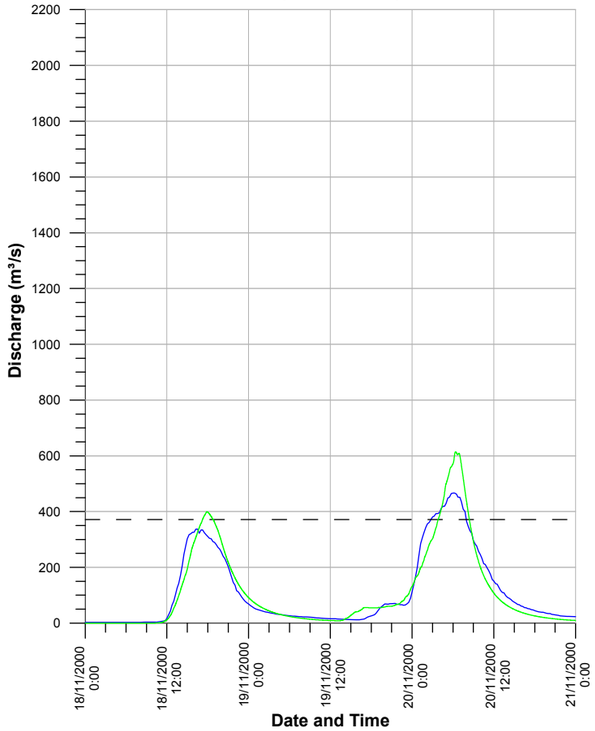
COCKBURN RIVER AT MULLA CROSSING (GS 419016)



PEEL RIVER AT PARADISE WEIR (GS 419024)

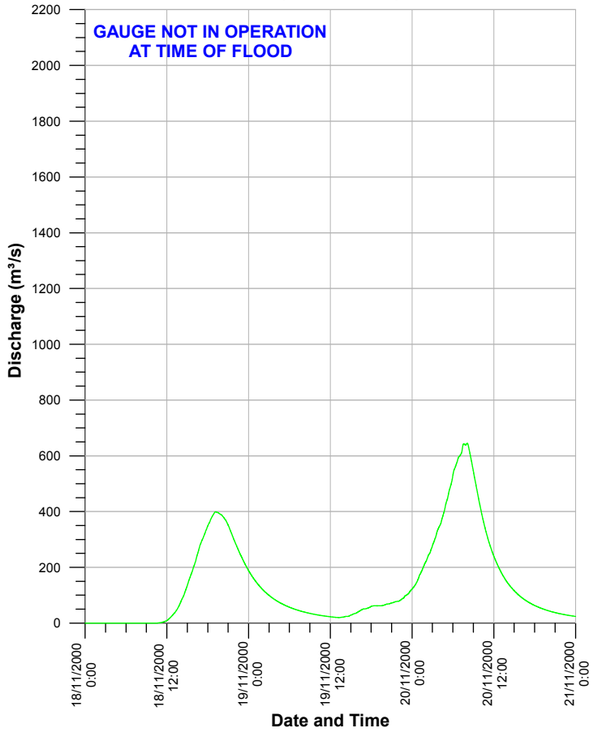


GOONOO GOONOO CREEK AT TIMBUMBURI (GS 419035)

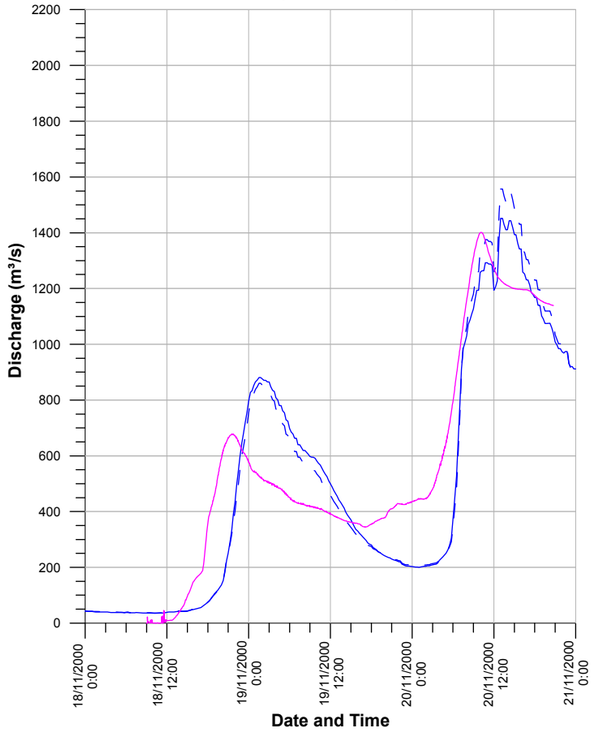


GOONOO GOONOO CREEK AT MEADOWS LANE (GS 419097)

GAUGE NOT IN OPERATION AT TIME OF FLOOD



PEEL RIVER AT TAMWORTH (GS 419009)



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NOTES:

1. Dashed lines represent recorded discharge based on L&A Derived Rating Curve.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.

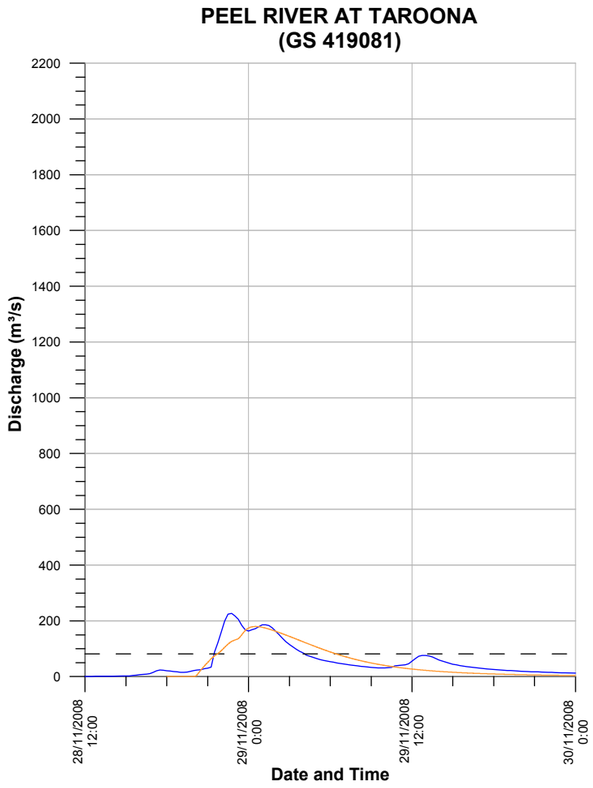
LEGEND

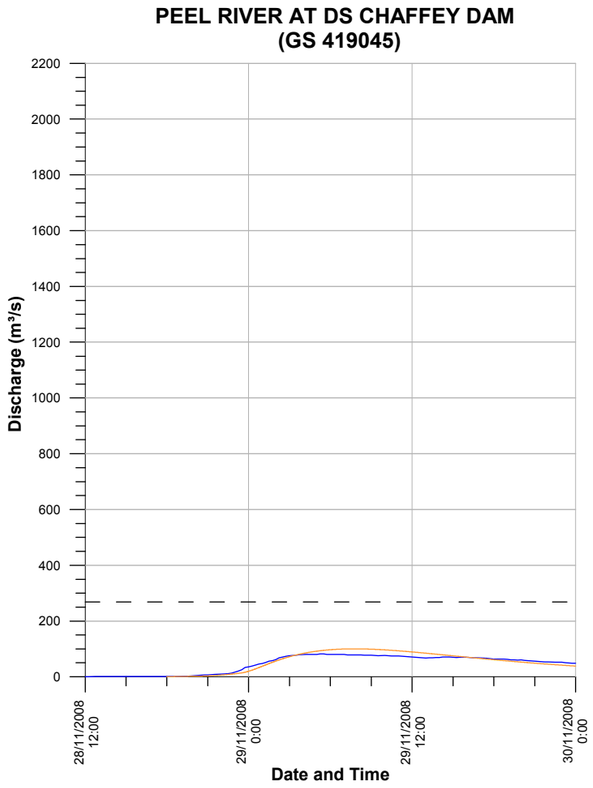
- Recorded (Rating Curve Current at Time of Flood)[1]
- Maximum Gauged Discharge at Time of Flood[2]
- Modelled (Peel River Hydrologic Model [RORB])
- Modelled (Goonoo Goonoo Creek Hydrologic Model [RAFTS])
- Modelled (Peel River Hydraulic Model [TUFLOW])

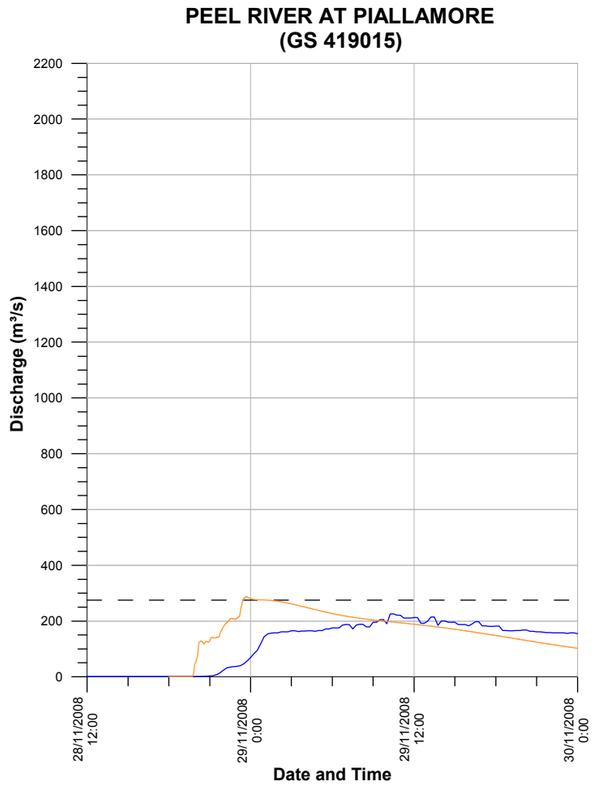
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

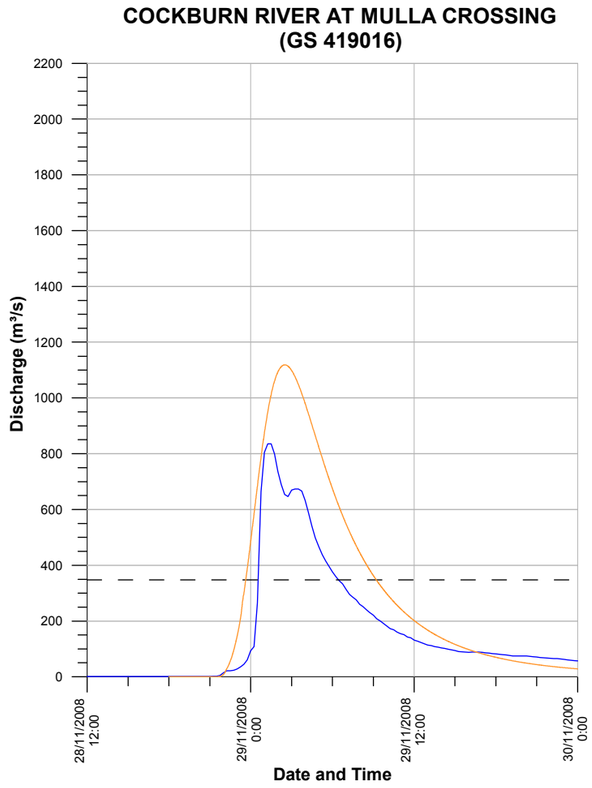
Figure 3.10

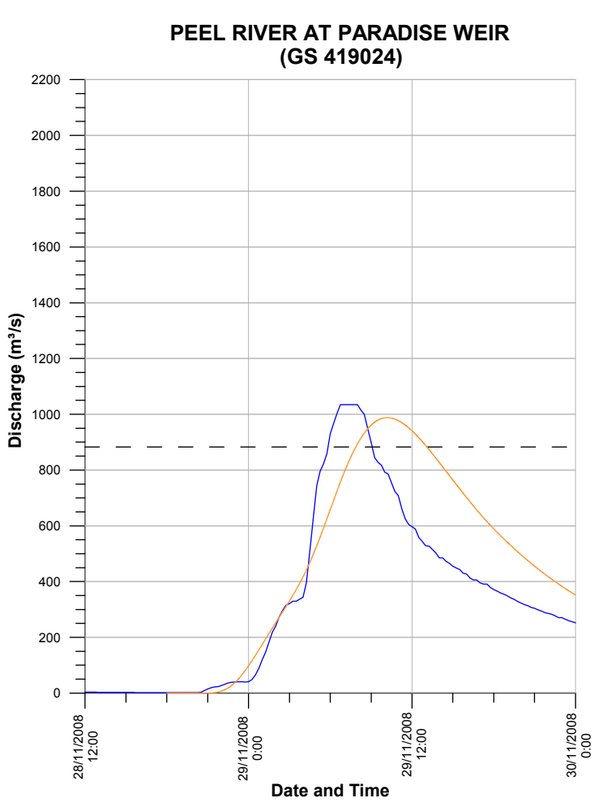
RECORDED AND MODELLED DISCHARGE HYDROGRAPHS
NOVEMBER 2000 FLOOD

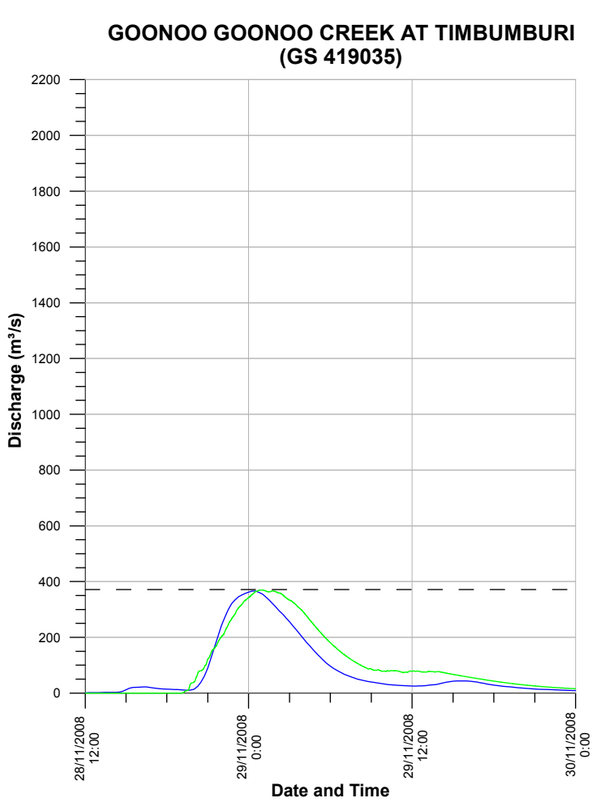


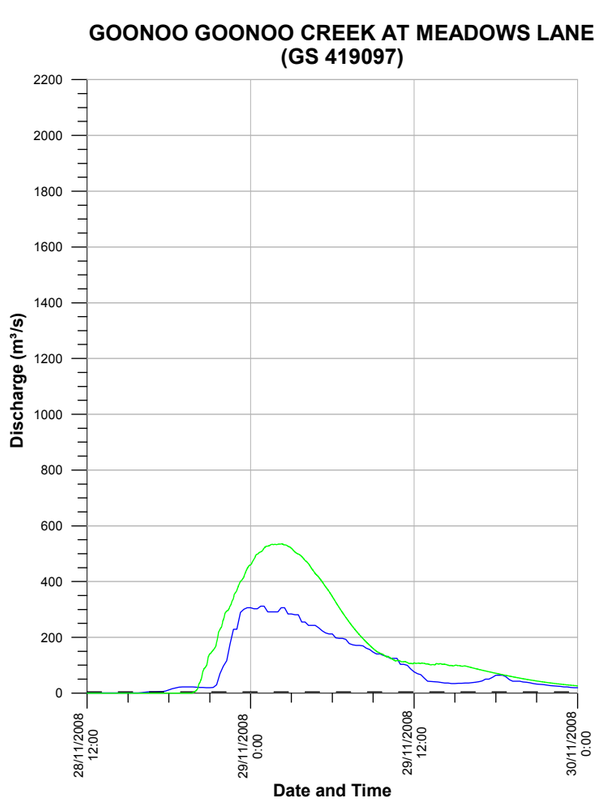


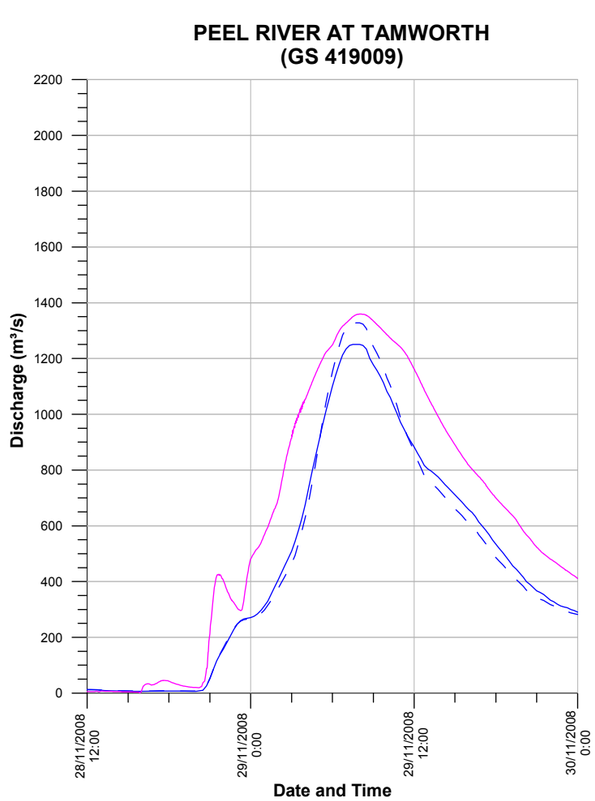












Lyall & Associates

NOTES:

1. Dashed lines represent recorded discharge based on L&A Derived Rating Curve.
2. Discharges above maximum gauged value have been derived by extrapolating the rating curve and therefore may not represent actual recorded values.

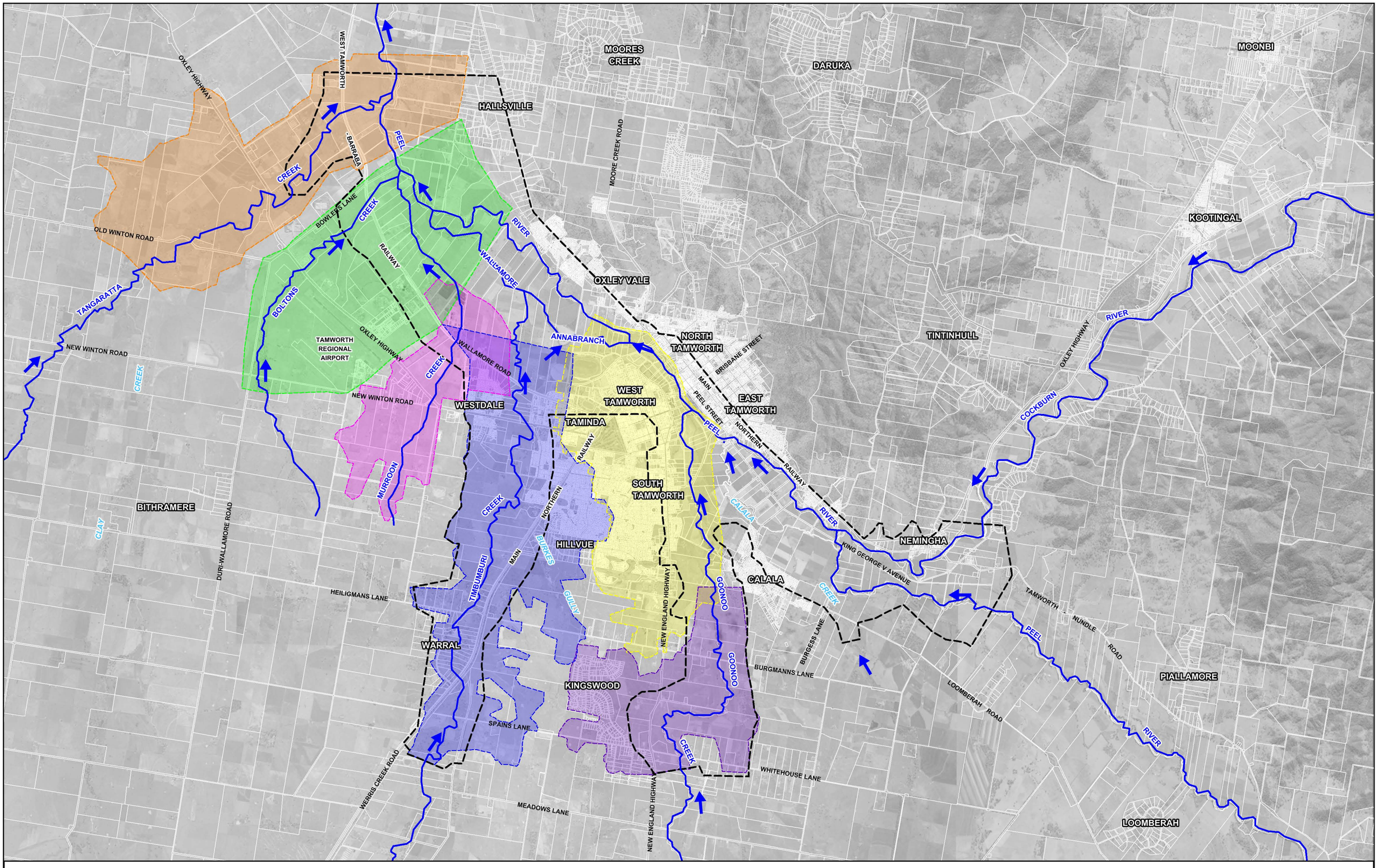
LEGEND

- Recorded (Rating Curve Current at Time of Flood)(1)
- Maximum Gauged Discharge at Time of Flood(2)
- Modelled (Peel River Hydrologic Model [RORB])
- Modelled (Goonoo Goonoo Creek Hydrologic Model [RAFTS])
- Modelled (Peel River Hydraulic Model [TUFLOW])

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 3.11

RECORDED AND MODELLED DISCHARGE HYDROGRAPHS
NOVEMBER 2008 FLOOD



N

0.8 0 0.8 1.6 2.4 km

Scale: 1:80,000

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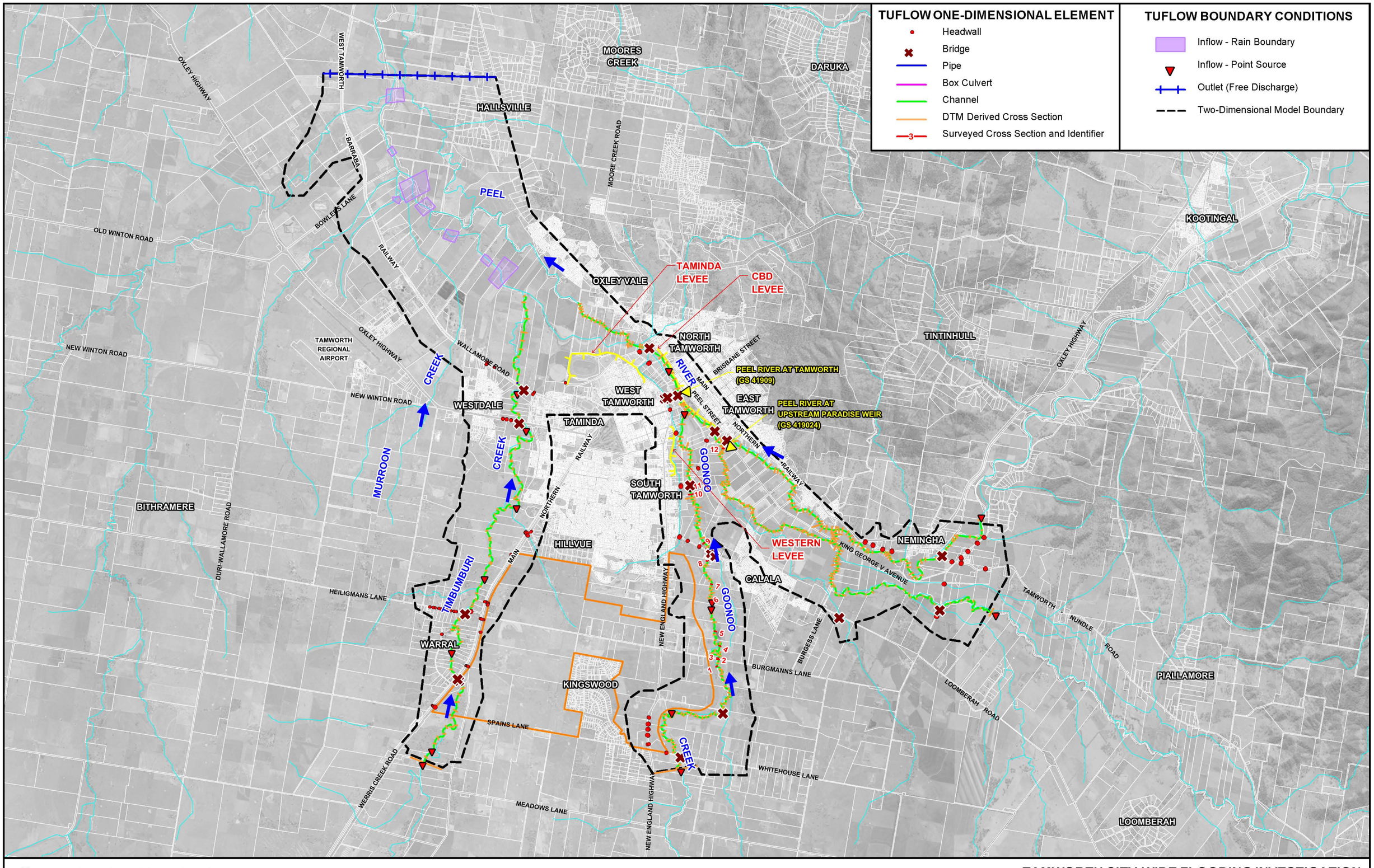
HYDRAULIC MODEL EXTENTS

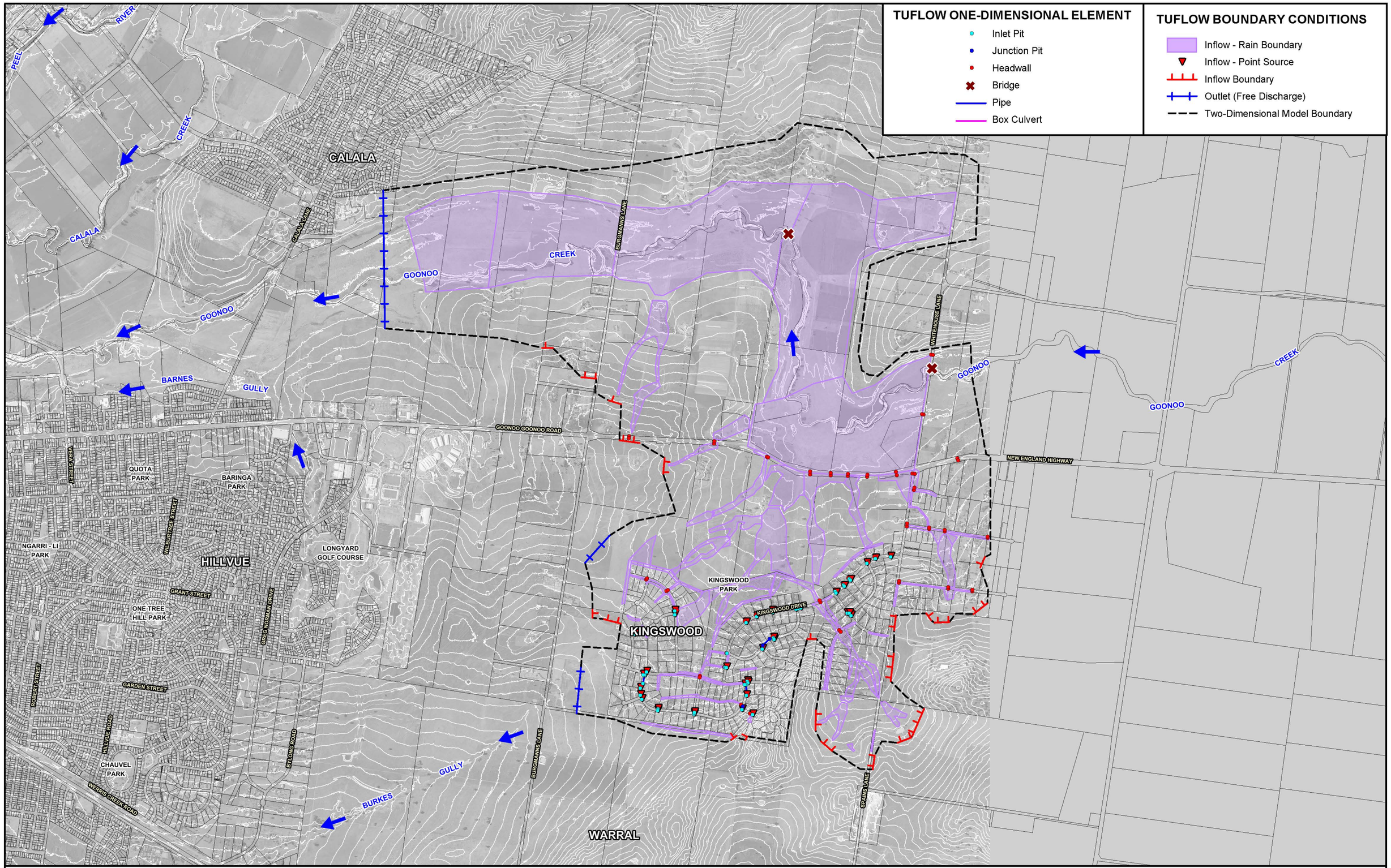
- Peel River
- Boltons Creek
- Coledale
- Kingswood
- Murroon Creek
- South Tamworth
- Tangaratta Creek

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.1

EXTENT OF TUFLOW MODELS


TUFLOW ONE-DIMENSIONAL ELEMENT
Headwall
Bridge
Pipe
Box Culvert
Channel
DTM Derived Cross Section
Surveyed Cross Section and Identifier
TUFLOW BOUNDARY CONDITIONS
Inflow - Rain Boundary
Inflow - Point Source
Outlet (Free Discharge)
Two-Dimensional Model Boundary
MOORES CREEK
DARUKA
HALLSVILLE
WEST TAMWORTH
OXLEY HIGHWAY
BARRABA
BOWLES LANE
PEEL
MOORE CREEK ROAD
OLD WINTON ROAD
RAILWAY
KOOTINGAL
OXLEY VALE
TAMINDA LEVEE
CBD LEVEE
NORTH TAMWORTH
BRISBANE STREET
TINTINHULL
NEW WINTON ROAD
TAMWORTH REGIONAL AIRPORT
OXLEY HIGHWAY
WALLAMORE ROAD
CREEK
RIVER MAIN
PEEL RIVER AT TAMWORTH (GS 41909)
WEST TAMWORTH
EAST TAMWORTH
PEEL RIVER AT UPSTREAM PARADISE WEIR (GS 419024)
PEEL STREET
NORTHERN RAILWAY
WESTDALE
TAMINDA
MURROON CREEK
GOONOO GOONOO CREEK
SOUTH TAMWORTH
BITHRAMERE
DURI-WALLAMORE ROAD
HILLVUE
WESTERN LEVEE
NEMINGHA
KING GEORGE V AVENUE
CALALA
TIMBUMBURI CREEK
MAIN
NEW ENGLAND HIGHWAY
BURGESS LANE
TAMWORTH - NUNDLE ROAD
HEILIGMANS LANE
WARRAL
KINGSWOOD
BURGMANNS LANE
LOOMBERAH ROAD
PIALLAMORE
SPAINS LANE
WERRIS CREEK ROAD
WHITEHOUSE LANE
MEADOWS LANE
LOOMBERAH
N
0.8 0 0.8 1.6 2.4 km
Scale: 1:80,000
LEGEND
Levee
WaterNSW Stream Gauge
TAMWORTH CITY-WIDE FLOODING INVESTIGATION
Figure 4.2
PEEL RIVER TUFLOW MODEL LAYOUT
Lyall & Associates



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TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.3

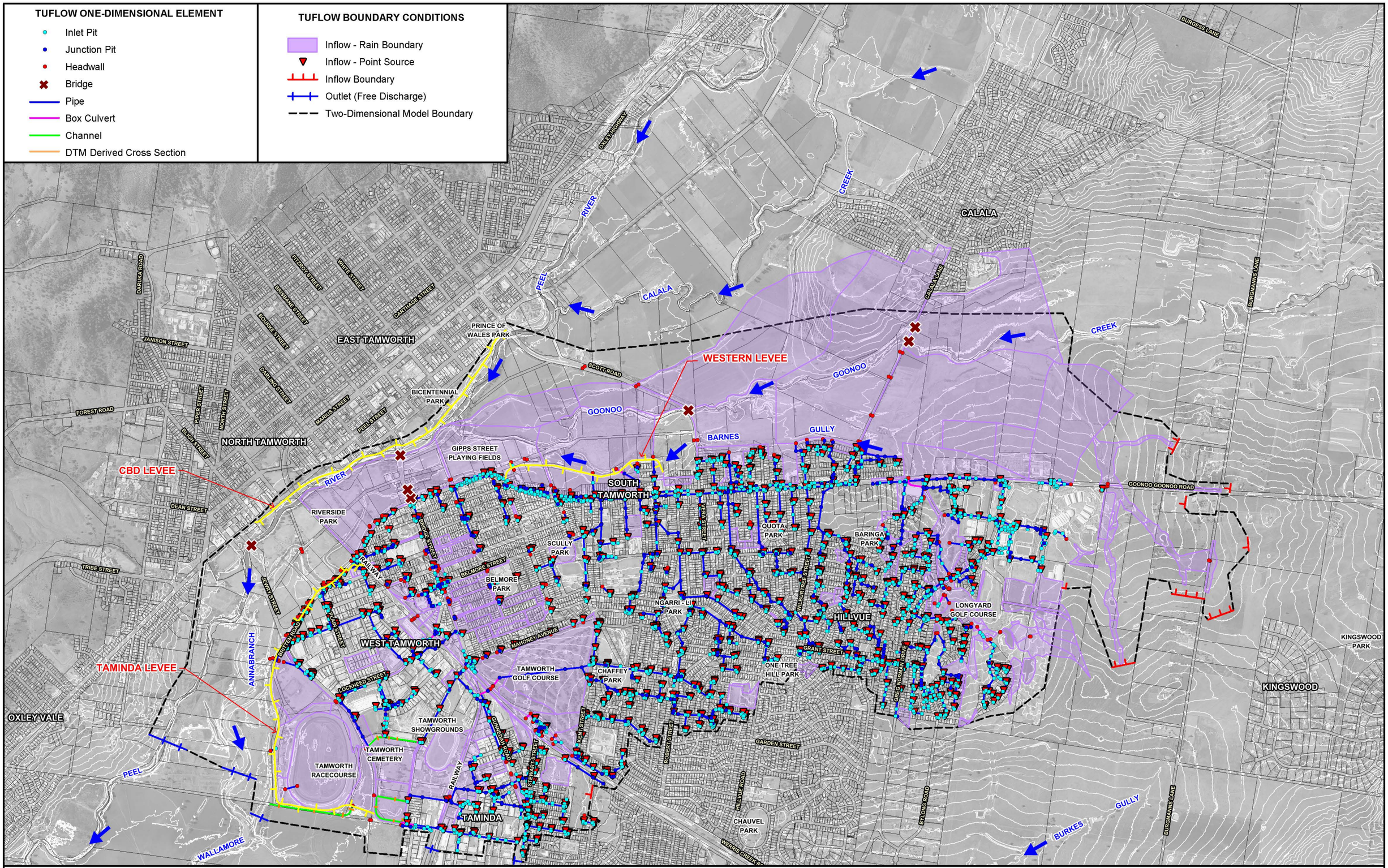
KINGSWOOD TUFLOW MODEL LAYOUT

TUFLOW ONE-DIMENSIONAL ELEMENT

- Inlet Pit
- Junction Pit
- Headwall
- Bridge
- Pipe
- Box Culvert
- Channel
- DTM Derived Cross Section

TUFLOW BOUNDARY CONDITIONS

- Inflow - Rain Boundary
- Inflow - Point Source
- Inflow Boundary
- Outlet (Free Discharge)
- Two-Dimensional Model Boundary



250 0 250 500 750 m

Scale: 1:25,000

LEGEND

Levee

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.4

SOUTH TAMWORTH TUFLOW MODEL LAYOUT

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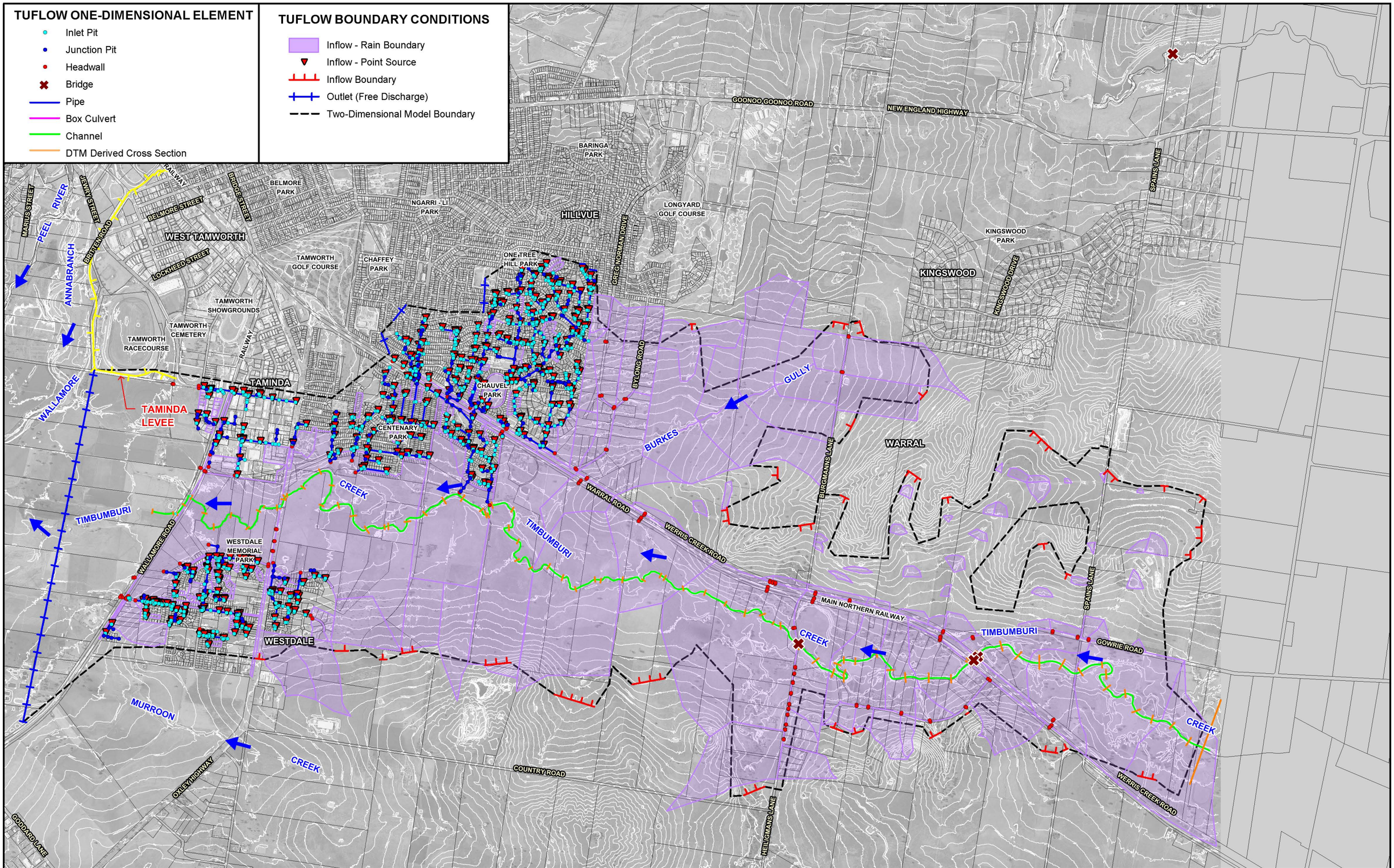
TUFLOW ONE-DIMENSIONAL ELEMENT

- Inlet Pit
- Junction Pit
- Headwall
- Bridge
- Pipe
- Box Culvert
- Channel
- DTM Derived Cross Section

TUFLOW BOUNDARY CONDITIONS

- Inflow - Rain Boundary
- Inflow - Point Source
- Inflow Boundary
- Outlet (Free Discharge)
- Two-Dimensional Model Boundary



N

300 0 300 600 900 m

Scale: 1:30,000

Lyall & Associates

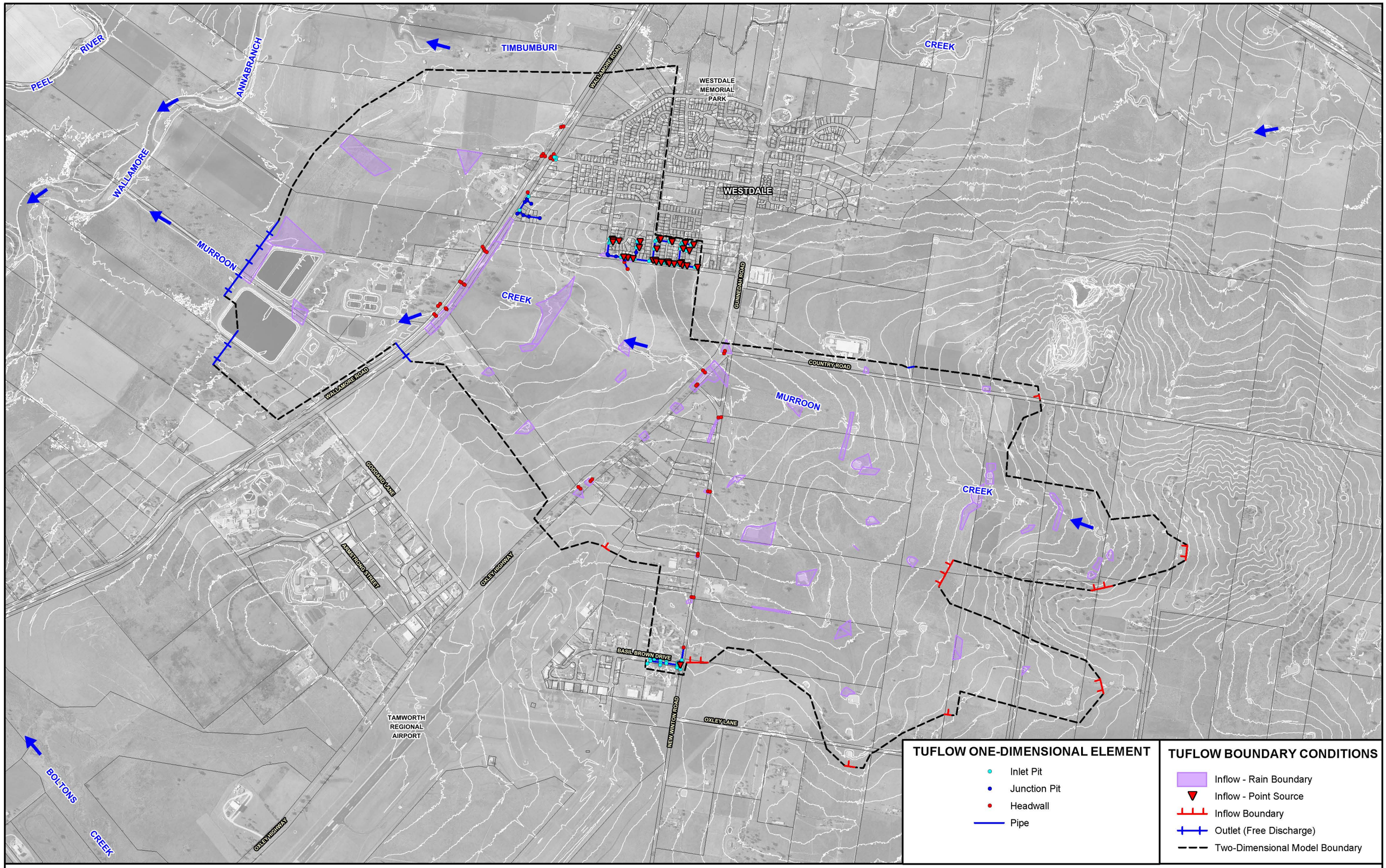
LEGEND

Levee

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.5

COLEDALE TUFLOW MODEL LAYOUT



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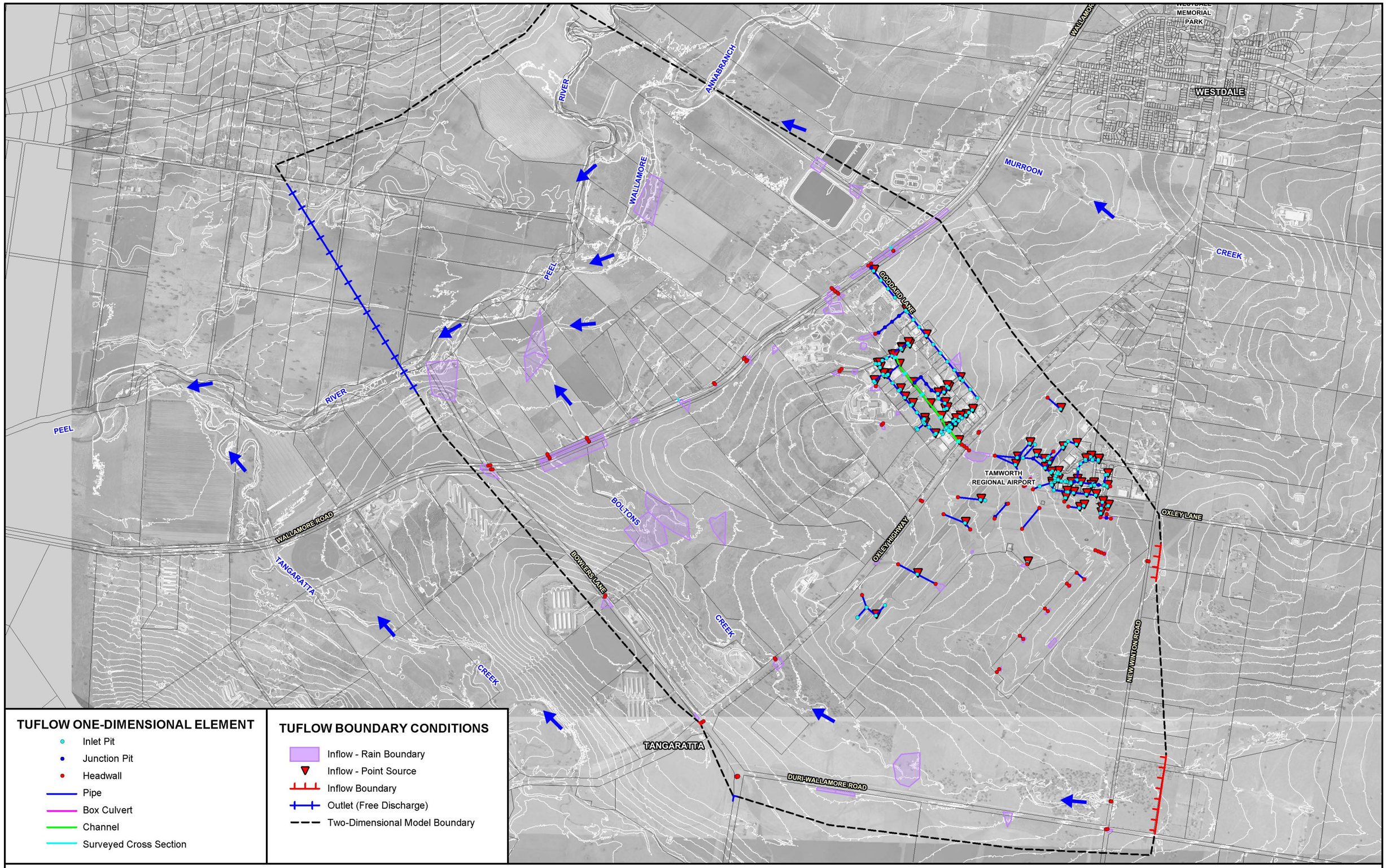
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.6

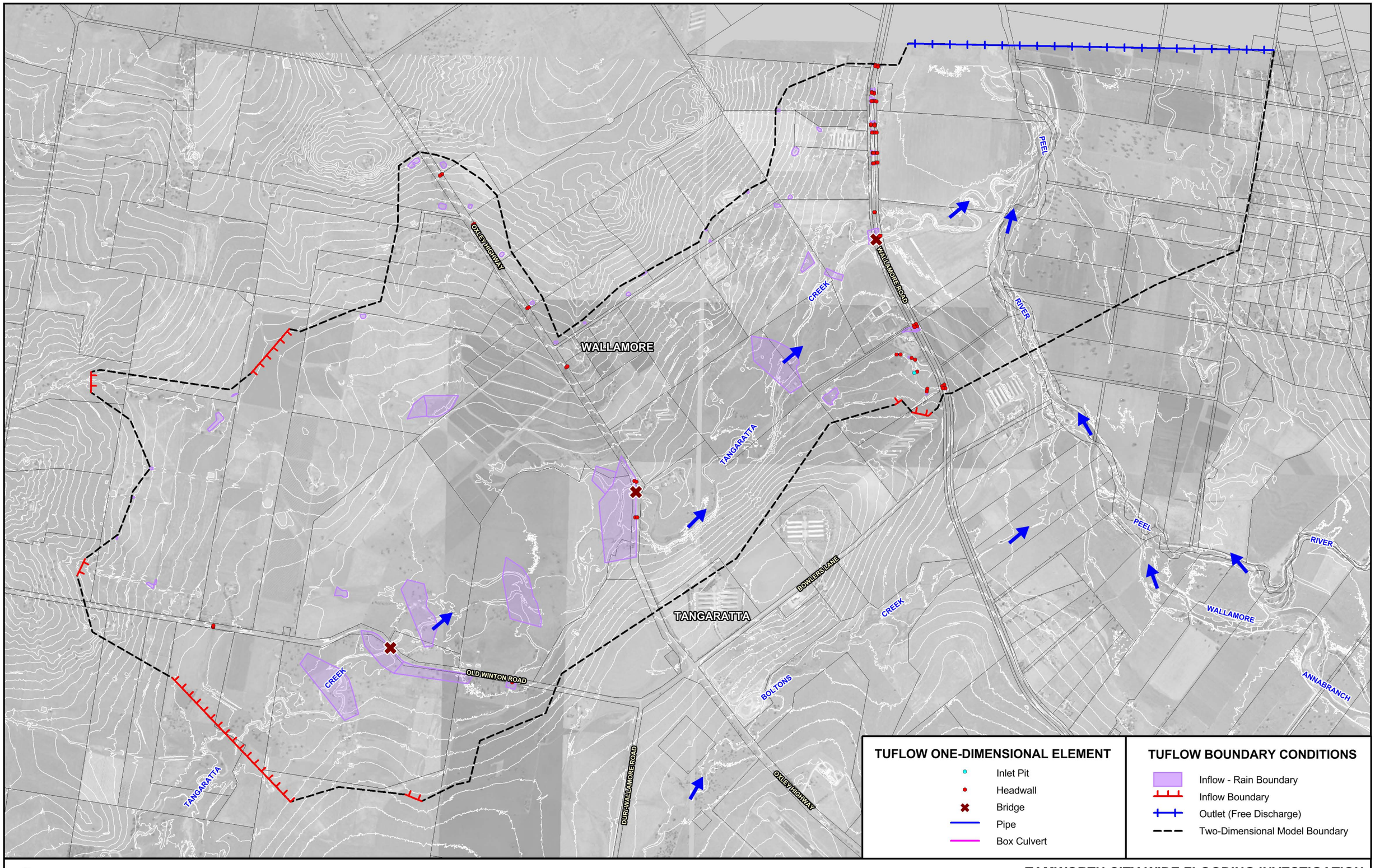
MURROON CREEK TUFLOW MODEL LAYOUT



TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.7

BOLTONS CREEK TUFLOW MODEL LAYOUT



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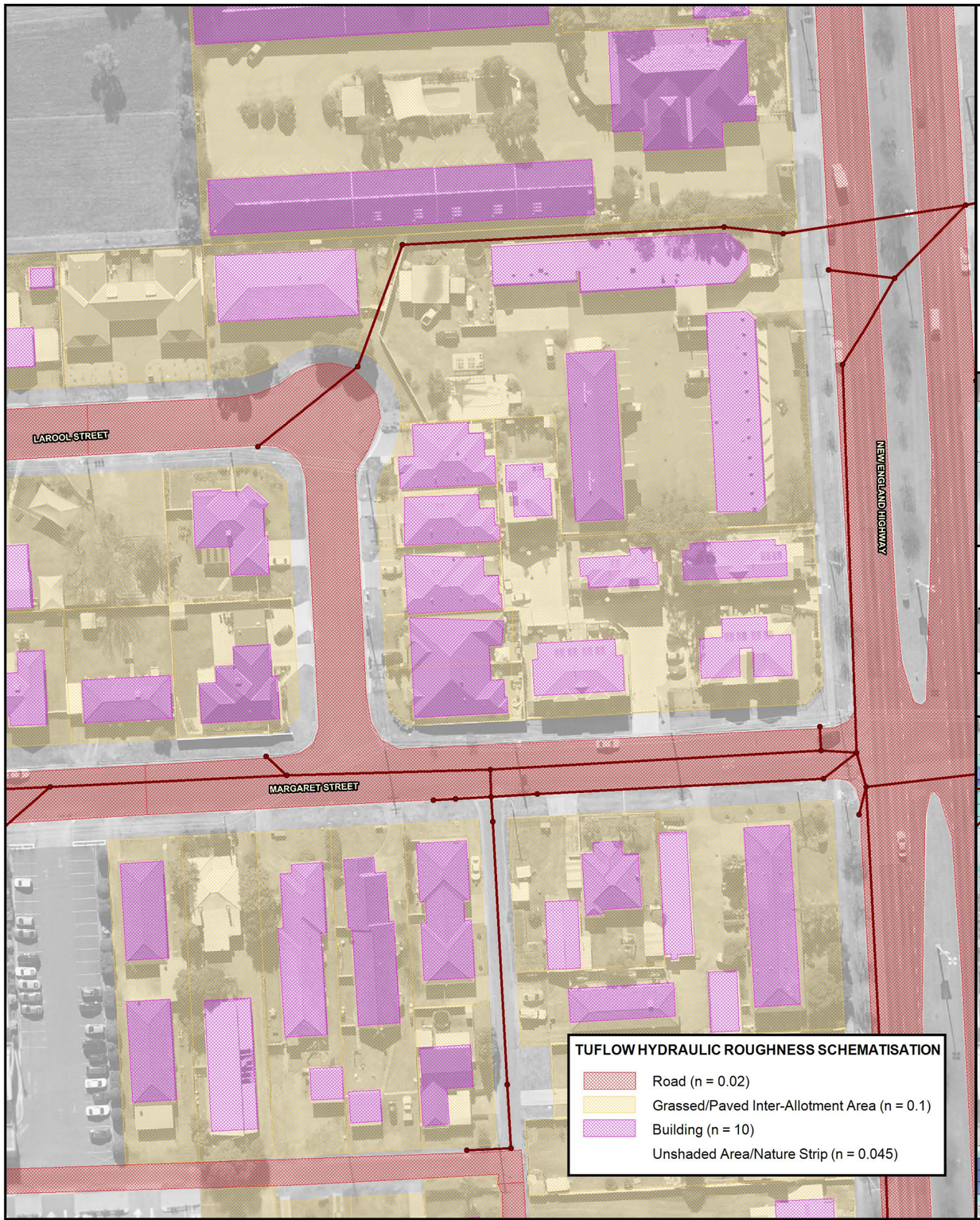
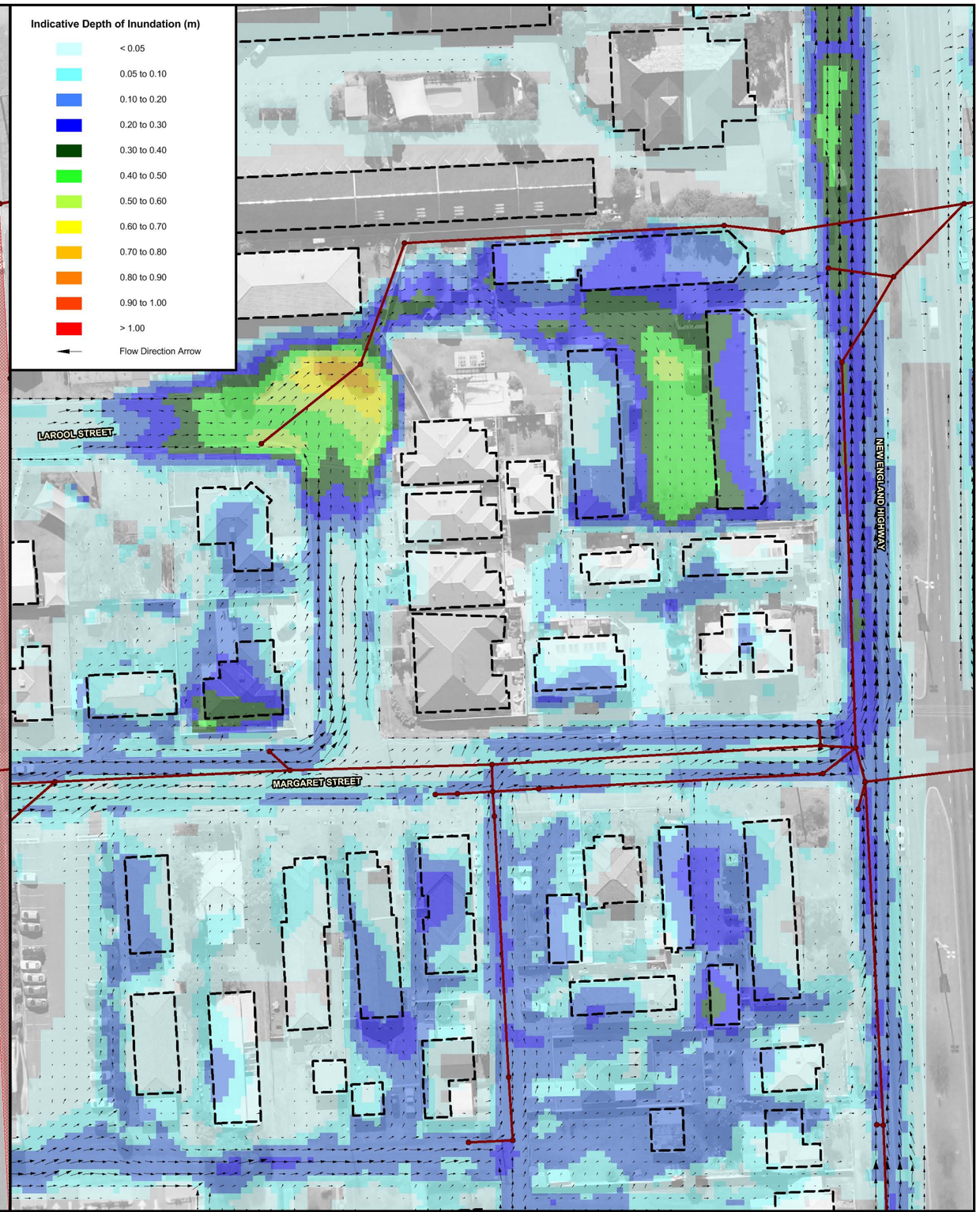
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.8

TANGARATTA CREEK TUFLOW MODEL LAYOUT





N

10 0 10 20 30 m

Scale: 1:1,000

LEGEND

Modelled Stormwater Network

Building Outlines

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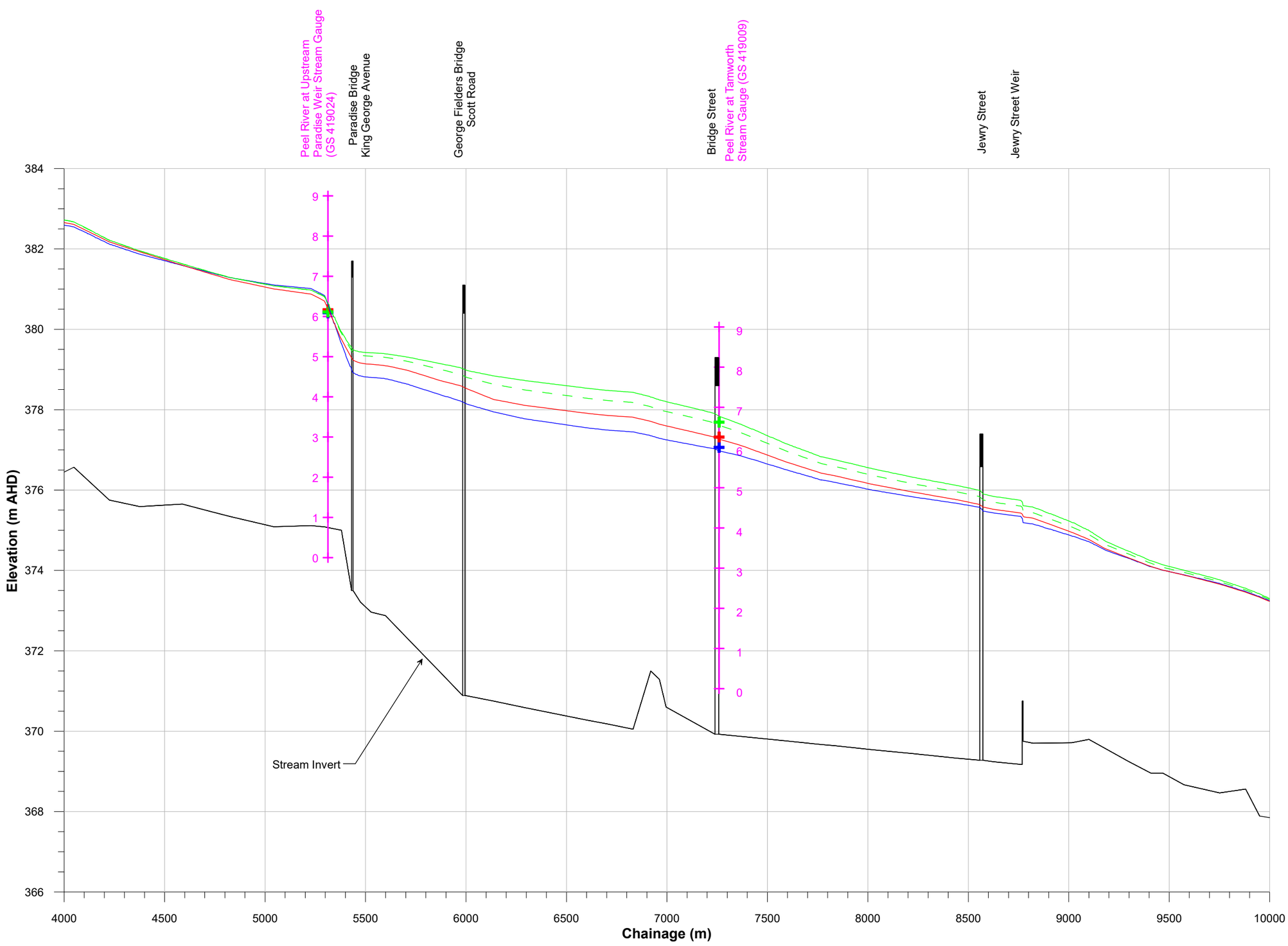
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.9

TUFLOW SCHEMATISATION OF URBANISED AREAS



LEGEND

- January 1984 Gauge Levels
- November 2000 Gauge Levels
- November 2008 Gauge Levels
- January 1984 (1984 Rainfall Data Set 1)
- January 1984 (1984 Rainfall Data Set 2)
- November 2000
- November 2008

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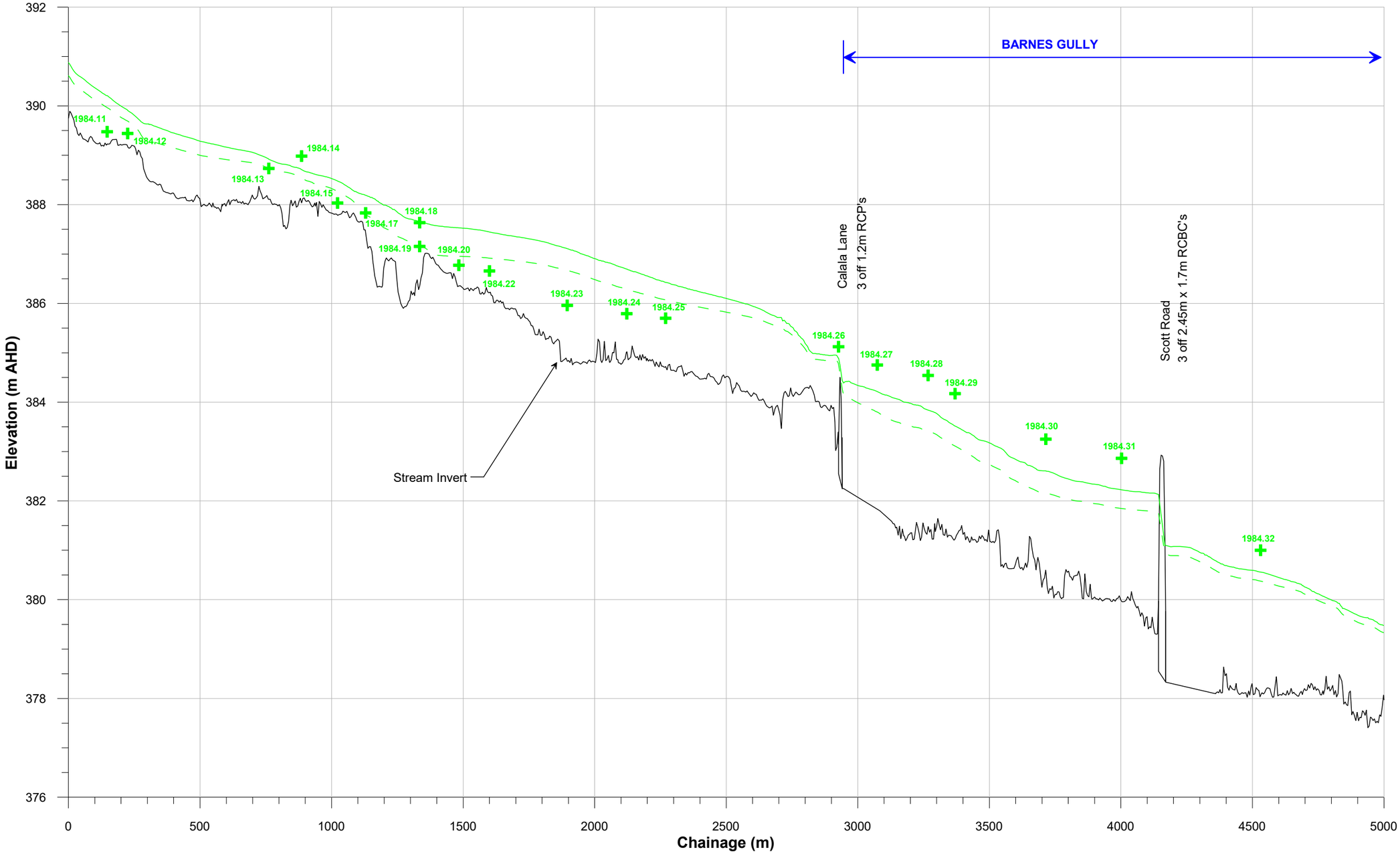
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.10

WATER SURFACE PROFILES - PEEL RIVER
HISTORIC FLOOD EVENTS



NOTE:

Refer **Figure 4.12** for plan location of historic flood marks and alignment of water surface profile.

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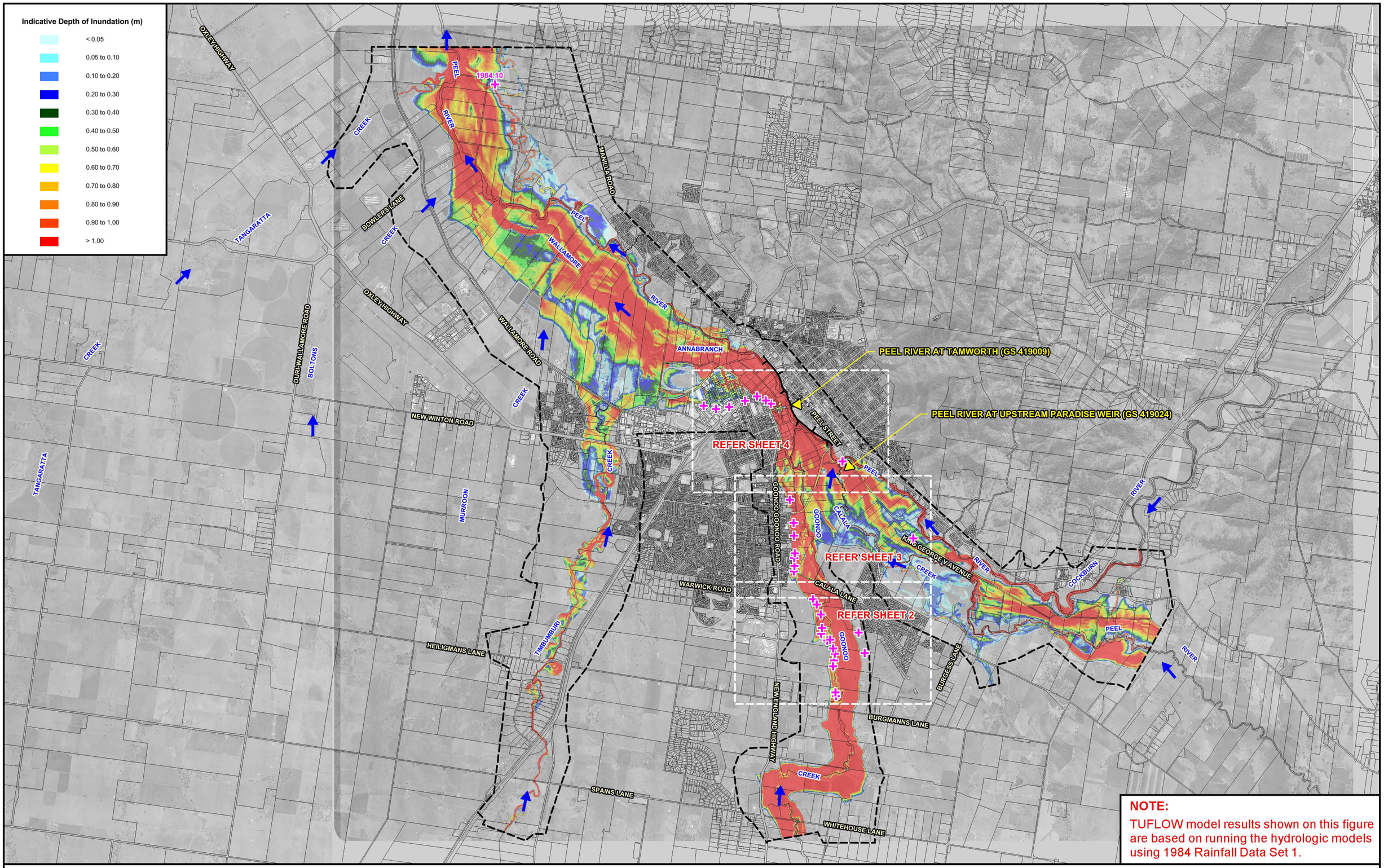
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.11

WATER SURFACE PROFILES - LEFT OVERBANK OF GOONOO GOONOO CREEK
JANUARY 1984 FLOOD



NOTE:
TUFLOW model results shown on this figure are based on running the hydrologic models using 1984 Rainfall Data Set 1.

N

700 0 700 1400 2100 m

Scale: 1:70,000

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

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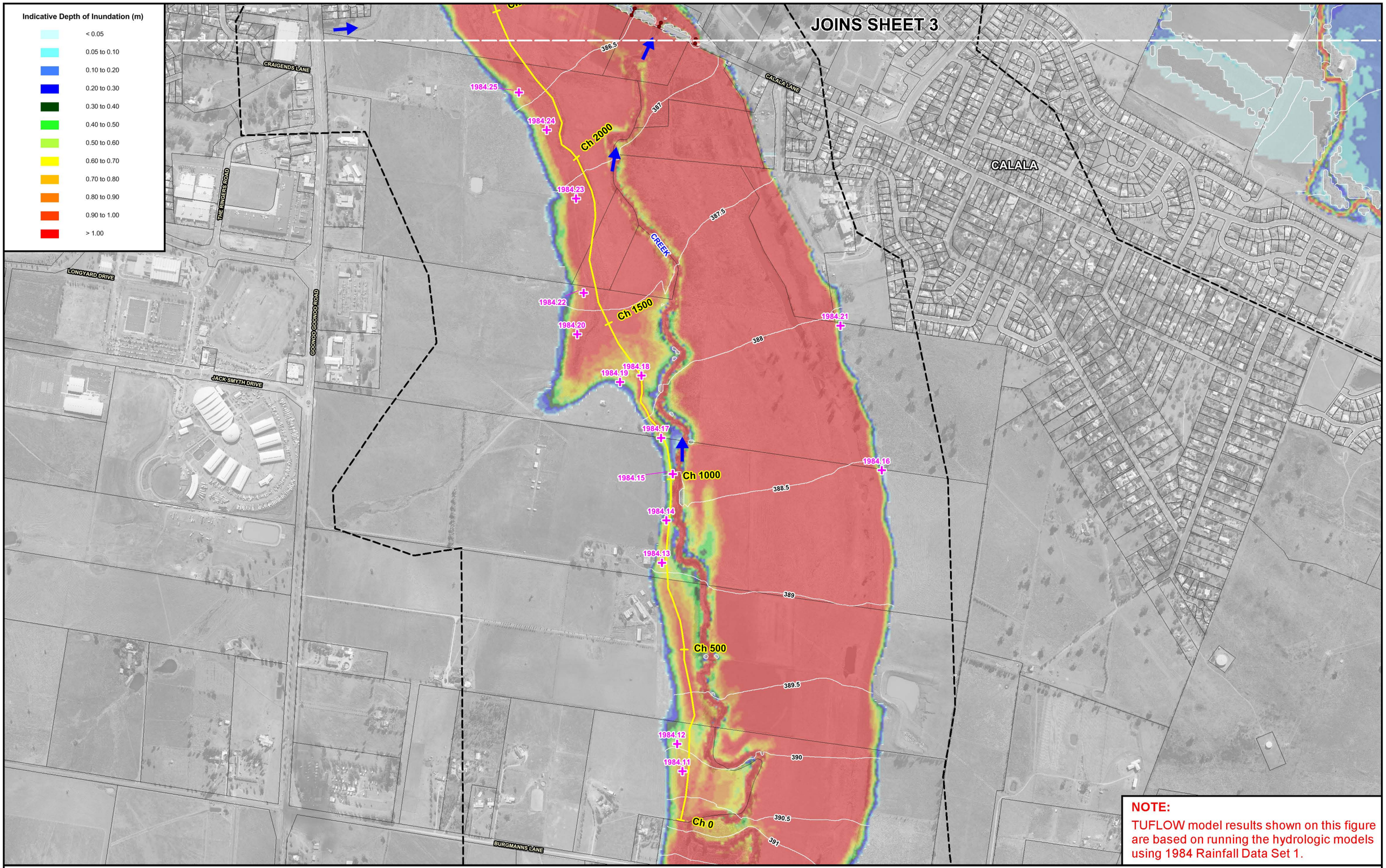
LEGEND

- Two-Dimensional Model Boundary
- Levee
- 1984.10 Flood Mark Location and Identifier
- Stream Gauge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.12
(Sheet 1 of 4)

TUFLOW MODEL RESULTS
JANUARY 1984 FLOOD



NOTE:
TUFLOW model results shown on this figure are based on running the hydrologic models using 1984 Rainfall Data Set 1.

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

LEGEND

- Two-Dimensional Model Boundary
- Levee
- 370 Water Surface Contours (m AHD)
- 1984.12 Flood Mark Location and Identifier
- Ch 500 Alignment and Chainage of Water Surface Profiles (Refer Figure 4.11)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.12
(Sheet 2 of 4)

TUFLOW MODEL RESULTS
JANUARY 1984 FLOOD

JOINS SHEET 4

JOINS SHEET 2

Indicative Depth of Inundation (m)

- < 0.05
- 0.05 to 0.10
- 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:

TUFLOW model results shown on this figure are based on running the hydrologic models using 1984 Rainfall Data Set 1.

N

100 0 100 200 300 m

Scale: 1:10,000

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NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

LEGEND

- Two-Dimensional Model Boundary
- Levee
- 1984.26 — Flood Mark Location and Identifier
- 370 — Water Surface Contours (m AHD)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.12
(Sheet 3 of 4)

TUFLOW MODEL RESULTS
JANUARY 1984 FLOOD

Indicative Depth of Inundation (m)

- < 0.05
- 0.05 to 0.10
- 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

PEEL RIVER AT TAMWORTH (GS 41909)

PEEL RIVER AT UPSTREAM PARADISE WEIR (GS 419024)

1984.01 1984.02 1984.03 1984.04 1984.05 1984.06 1984.07 1984.08 1984.09

TAMINDA
WEST TAMWORTH
RIVERSIDE PARK
EAST TAMWORTH
BICENTENNIAL PARK
TAMWORTH
GIPPS STREET PLAYING FIELDS
PRINCE OF WALES PARK
BELMORE PARK
PARADISE TOURIST PARK
TAMWORTH GOLF COURSE
SCULLY PARK
SOUTH TAMWORTH
CHAFFEY PARK

JOINS SHEET 3

NOTE:
TUFLOW model results shown on this figure are based on running the hydrologic models using 1984 Rainfall Data Set 1.

N

100 0 100 200 300 m

Scale: 1:10,000

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NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

LEGEND

- Two-Dimensional Model Boundary
- Levee
- 1984.03 Flood Mark Location and Identifier
- 370 Water Surface Contours (m AHD)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.12
(Sheet 4 of 4)

TUFLOW MODEL RESULTS
JANUARY 1984 FLOOD

Indicative Depth of Inundation (m)

- < 0.05
- 0.05 to 0.10
- 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

PEEL RIVER AT TAMWORTH (GS 419009)

PEEL RIVER AT UPSTREAM PARADISE WEIR (GS 419024)

N

700 0 700 1400 2100 m

Scale: 1:70,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

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LEGEND

- Two-Dimensional Model Boundary
- Levee
- 2000.03 Flood Mark Location and Identifier
- Stream Gauge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 4.13

TUFLOW MODEL RESULTS
NOVEMBER 2000 FLOOD

Indicative Depth of Inundation (m)

- < 0.05
- 0.05 to 0.10
- 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

PEEL RIVER AT TAMWORTH (GS 419009)

PEEL RIVER AT UPSTREAM PARADISE WEIR (GS 419024)

2008.01

N

700 0 700 1400 2100 m

Scale: 1:70,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 10m 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.

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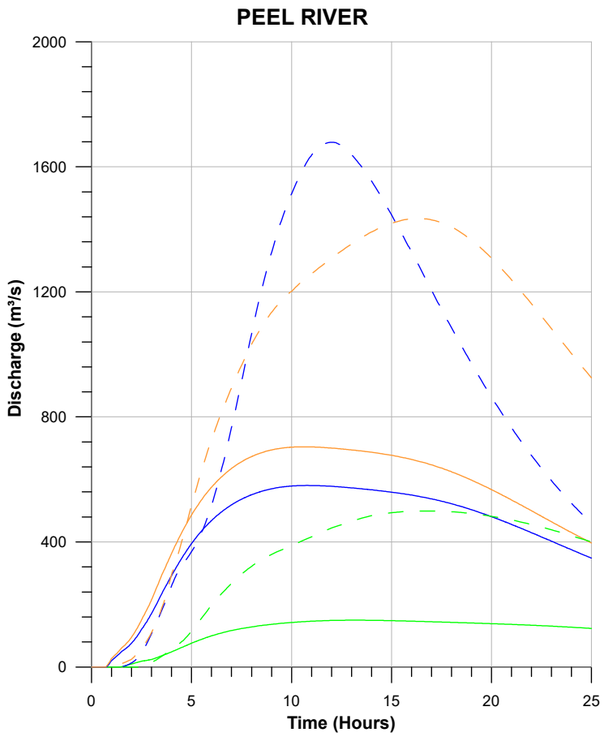
LEGEND

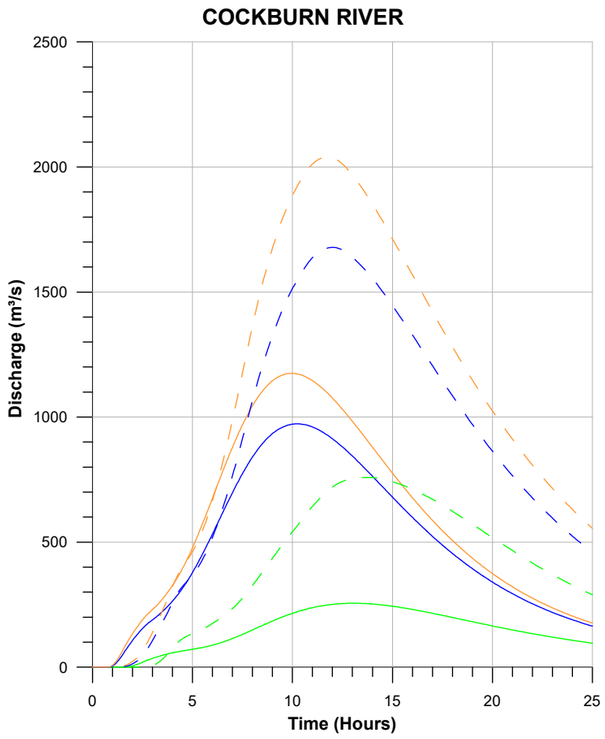
- Two-Dimensional Model Boundary
- Levee
- 2008.01 Flood Mark Location and Identifier
- Stream Gauge

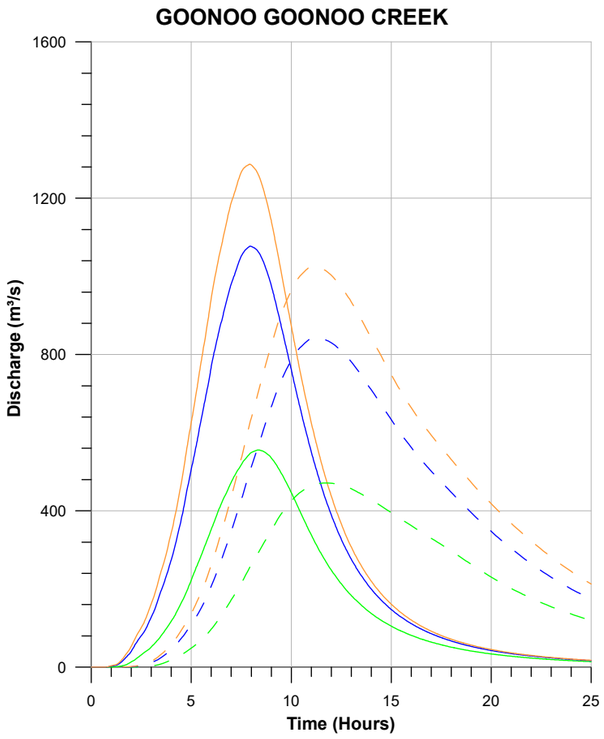
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

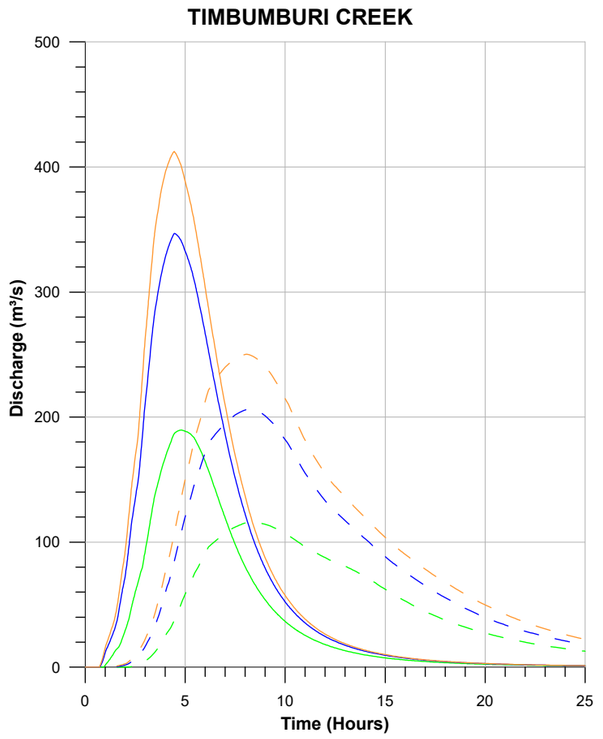
Figure 4.14

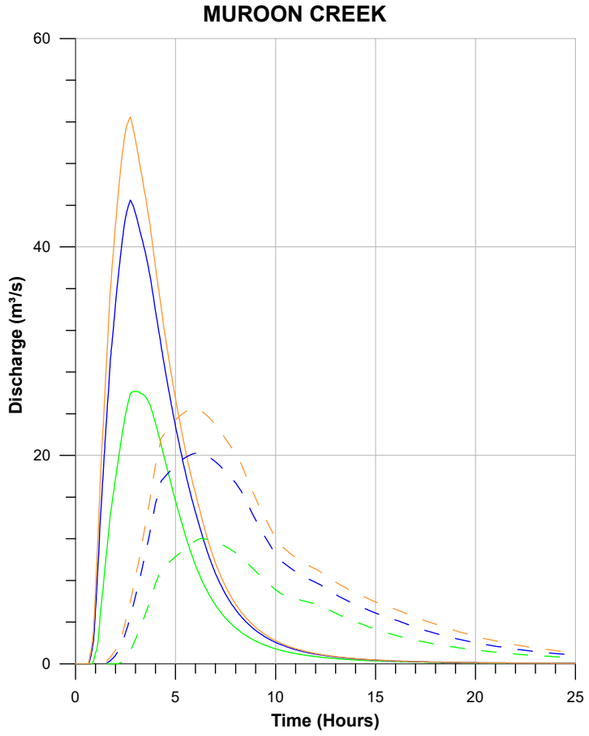
TUFLOW MODEL RESULTS
NOVEMBER 2008 FLOOD

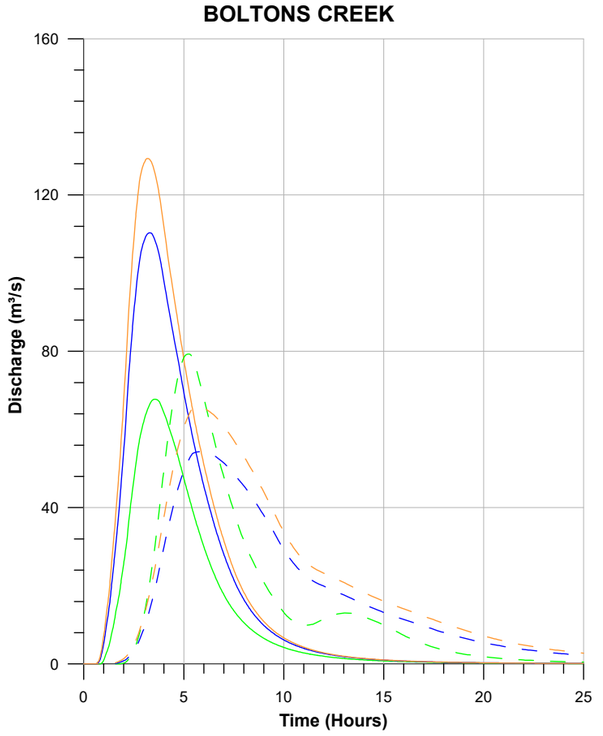


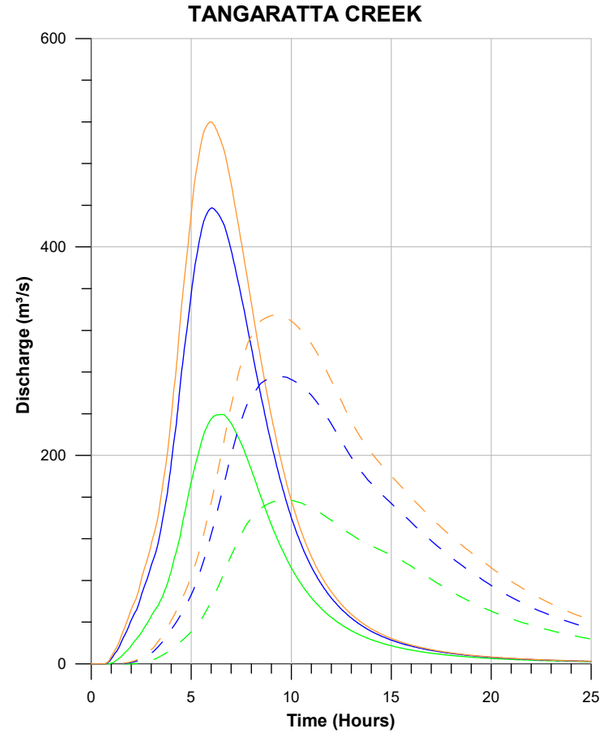












LEGEND

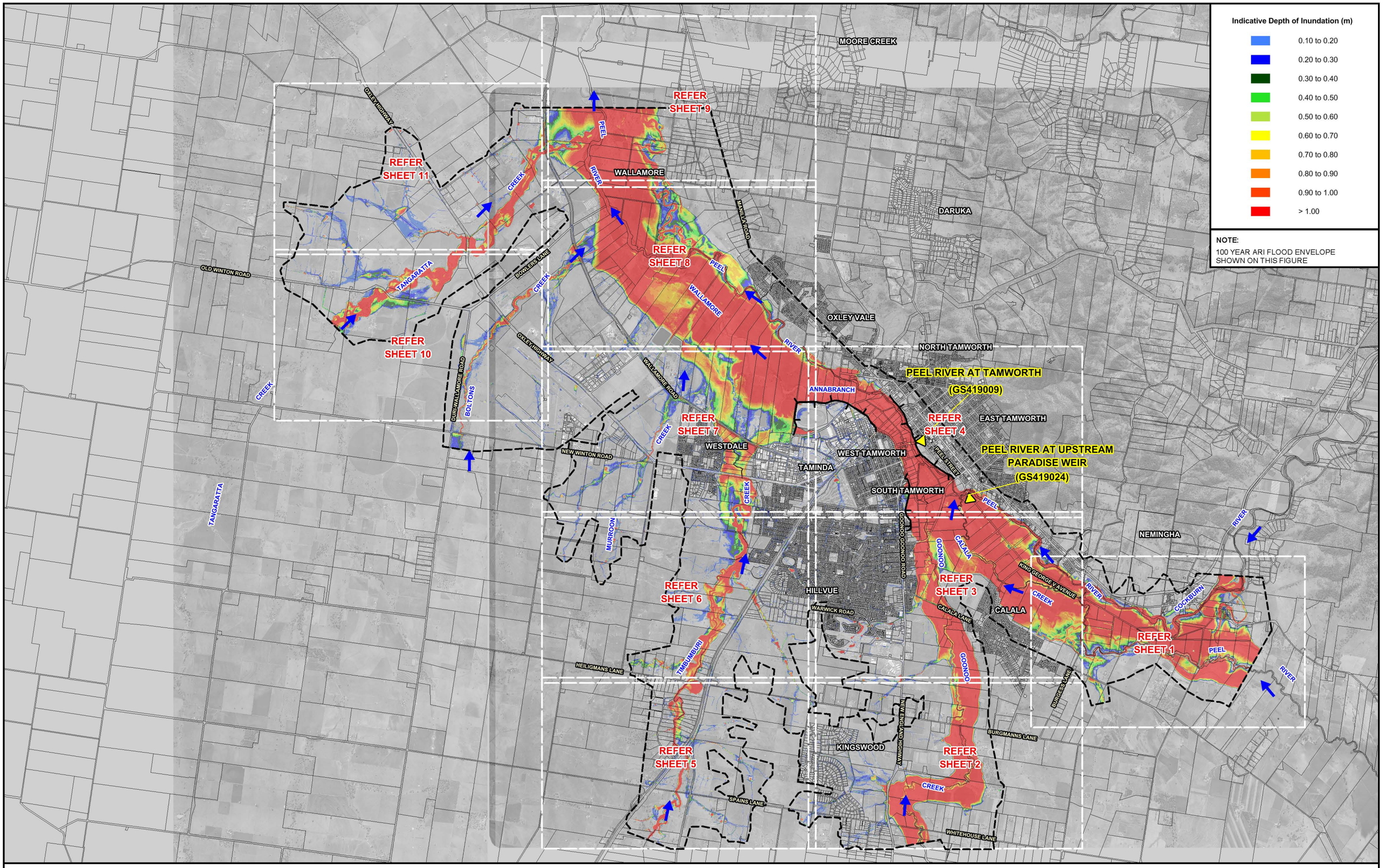
	6 Hour Duration Storm	30 Hour Duration Storm	36 Hour Duration Storm
200 year ARI	———	Not Shown	- - - -
100 year ARI	———	Not Shown	- - - -
20 year ARI	———	- - - -	Not Shown

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 5.1

DESIGN INFLOW HYDROGRAPHS



N

750 0 750 1500 2250 m

Scale: 1:75,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

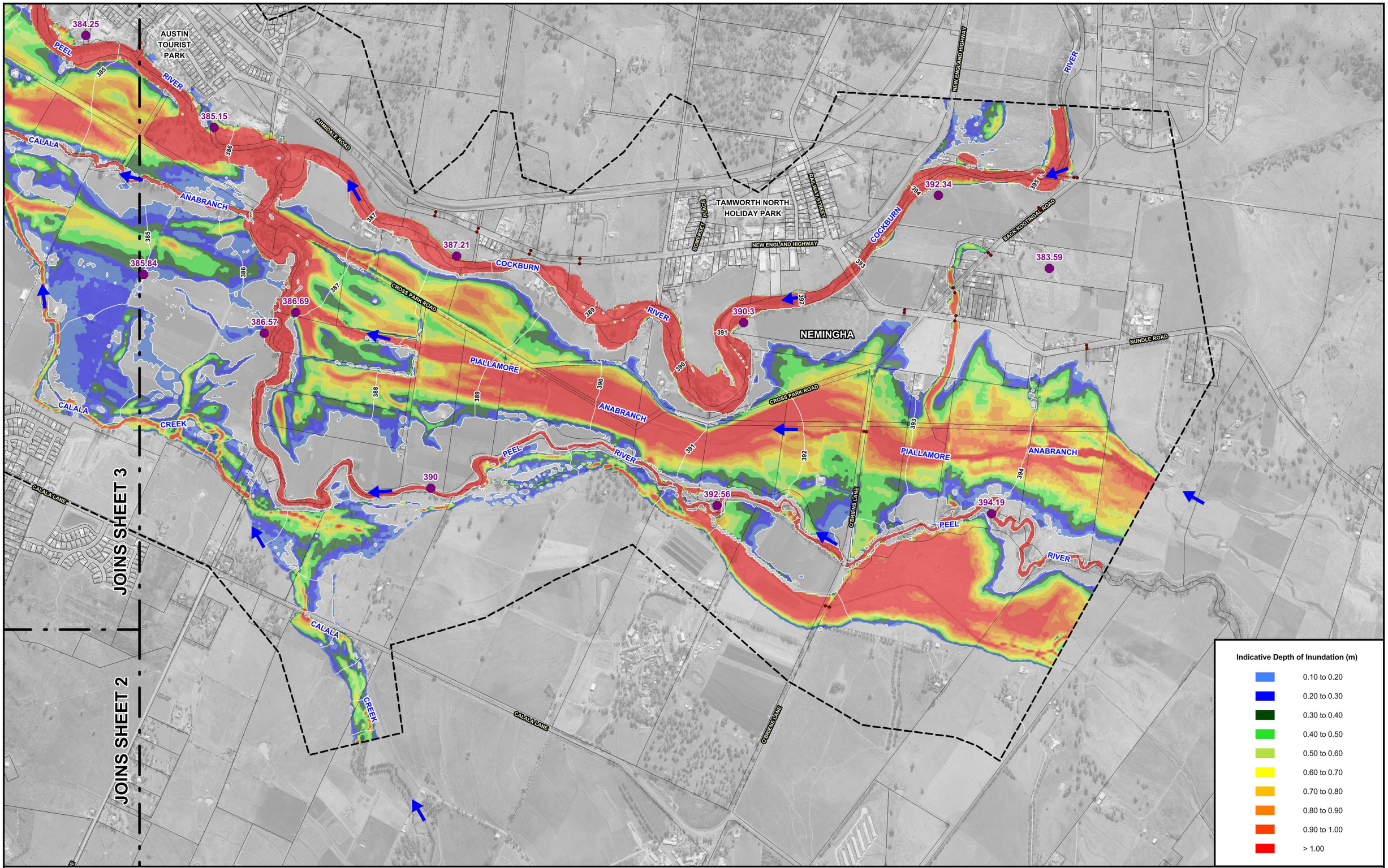
- Two-Dimensional Model Boundary
- Levee
- Stream Gauge

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.1

TUFLOW MODEL RESULTS
KEY PLAN



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 396.74 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 1 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO GOONOO CREEK

389.46

391.95

396.74

388

389

390

391

392

393

394

395

396

397

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

KINGSWOOD

KINGSWOOD PARK

PALMER DRIVE

PAGES LANE

DANDAR CRESCENT

KINGSWOOD ROAD

HERDEN ROAD

ROBERTS ROAD

BURGESS LANE

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

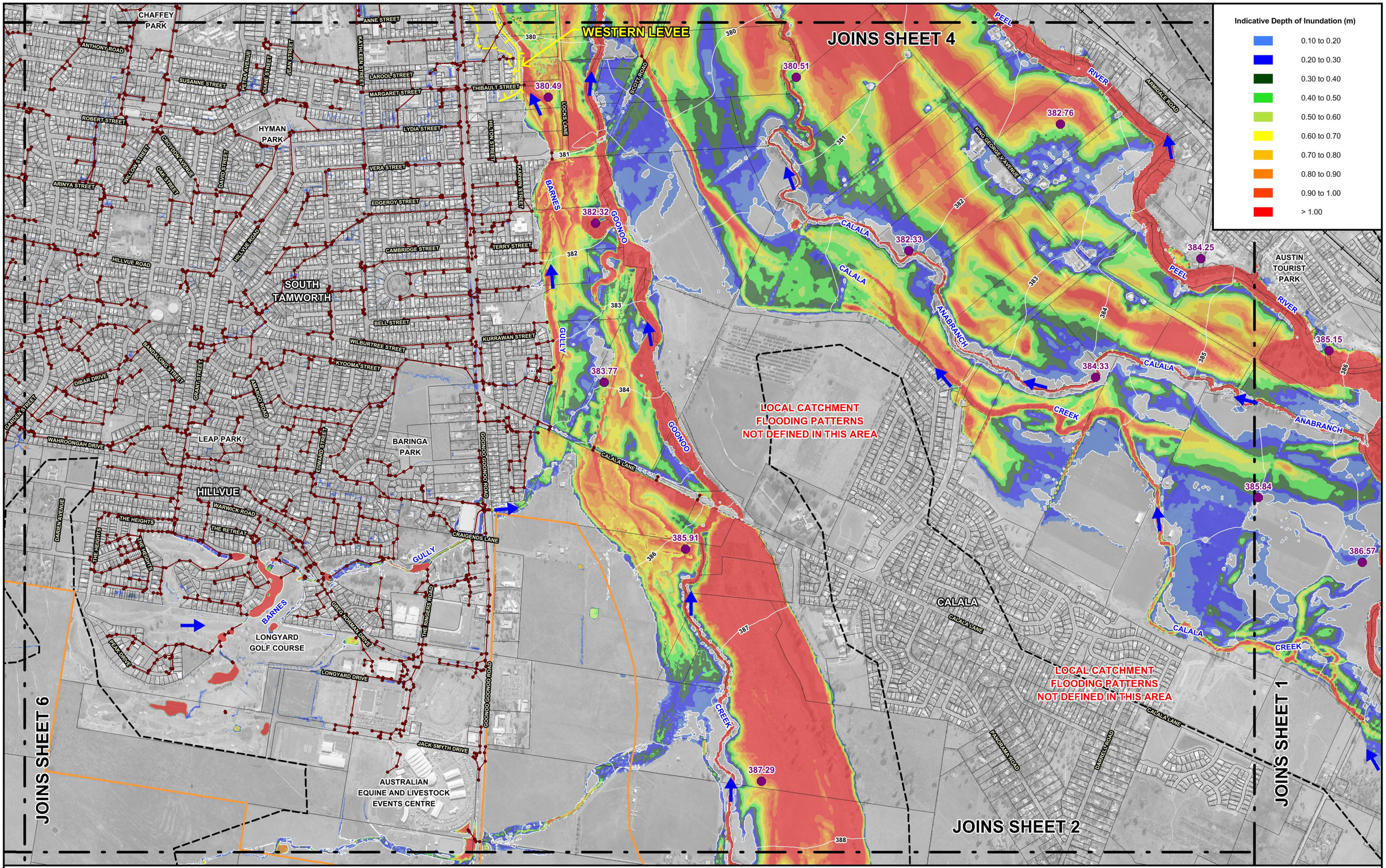
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 396.74 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 2 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

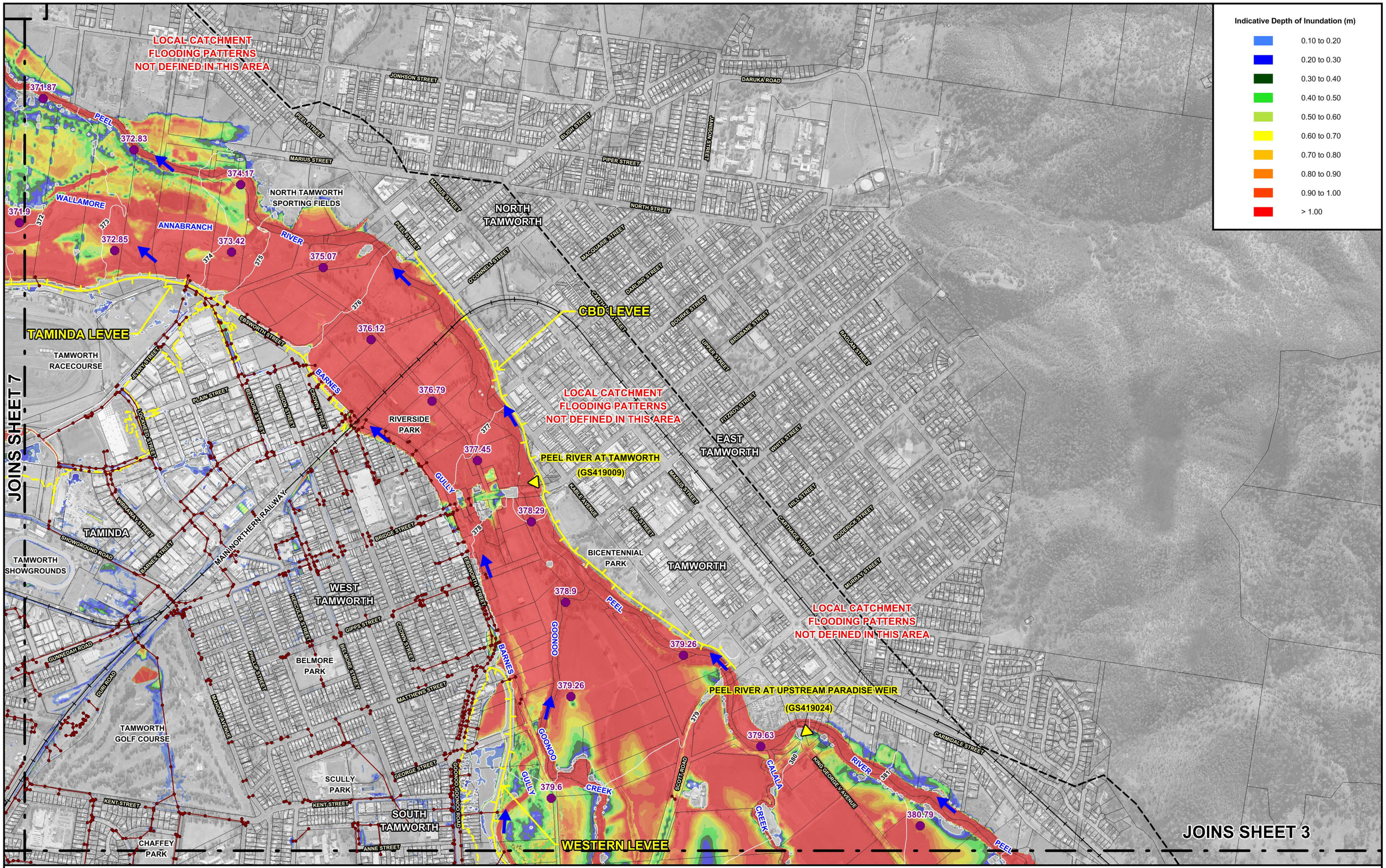
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 387.29 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 3 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

Lyall & Associates

LEGEND

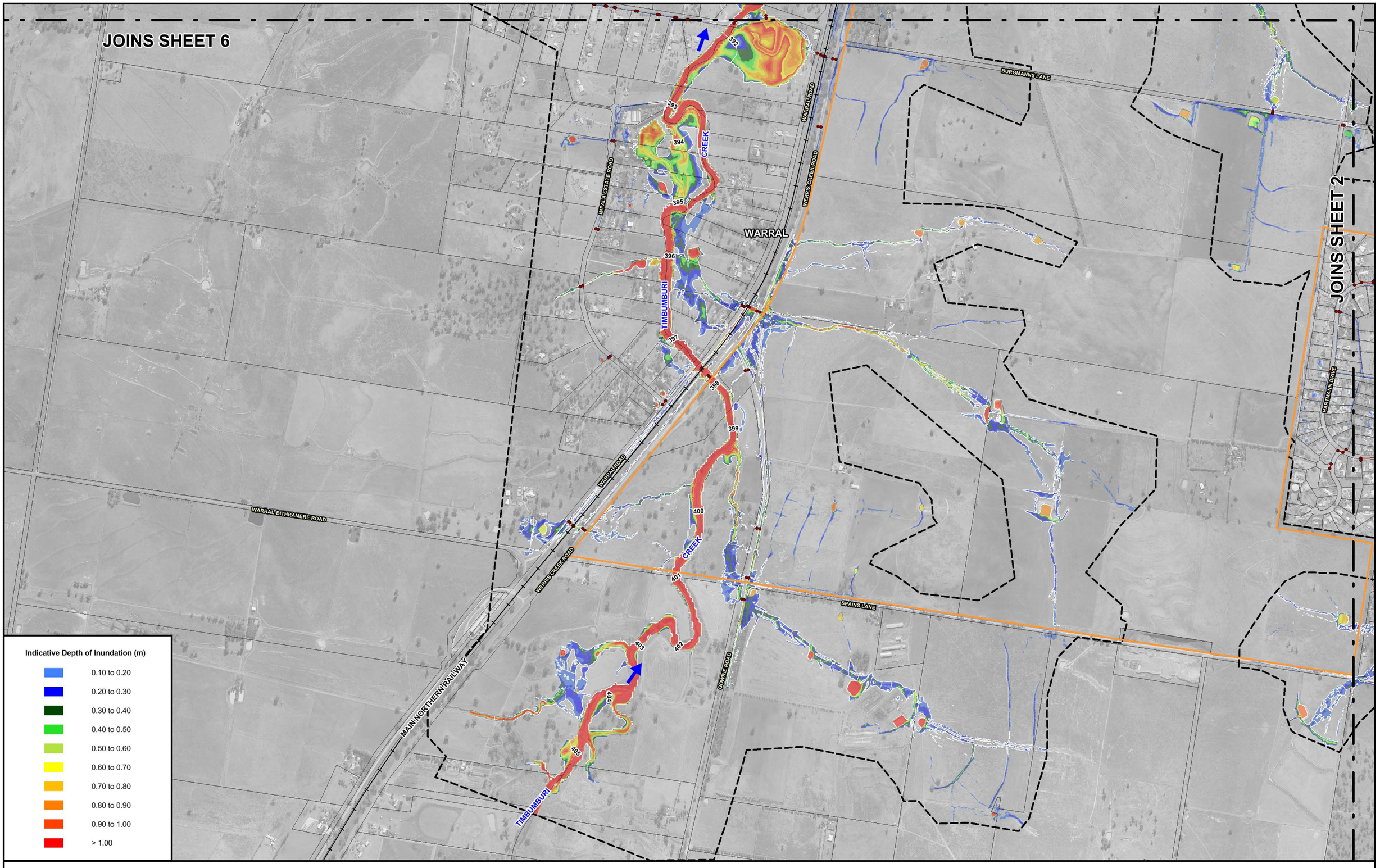
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Stream Gauge
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 4 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

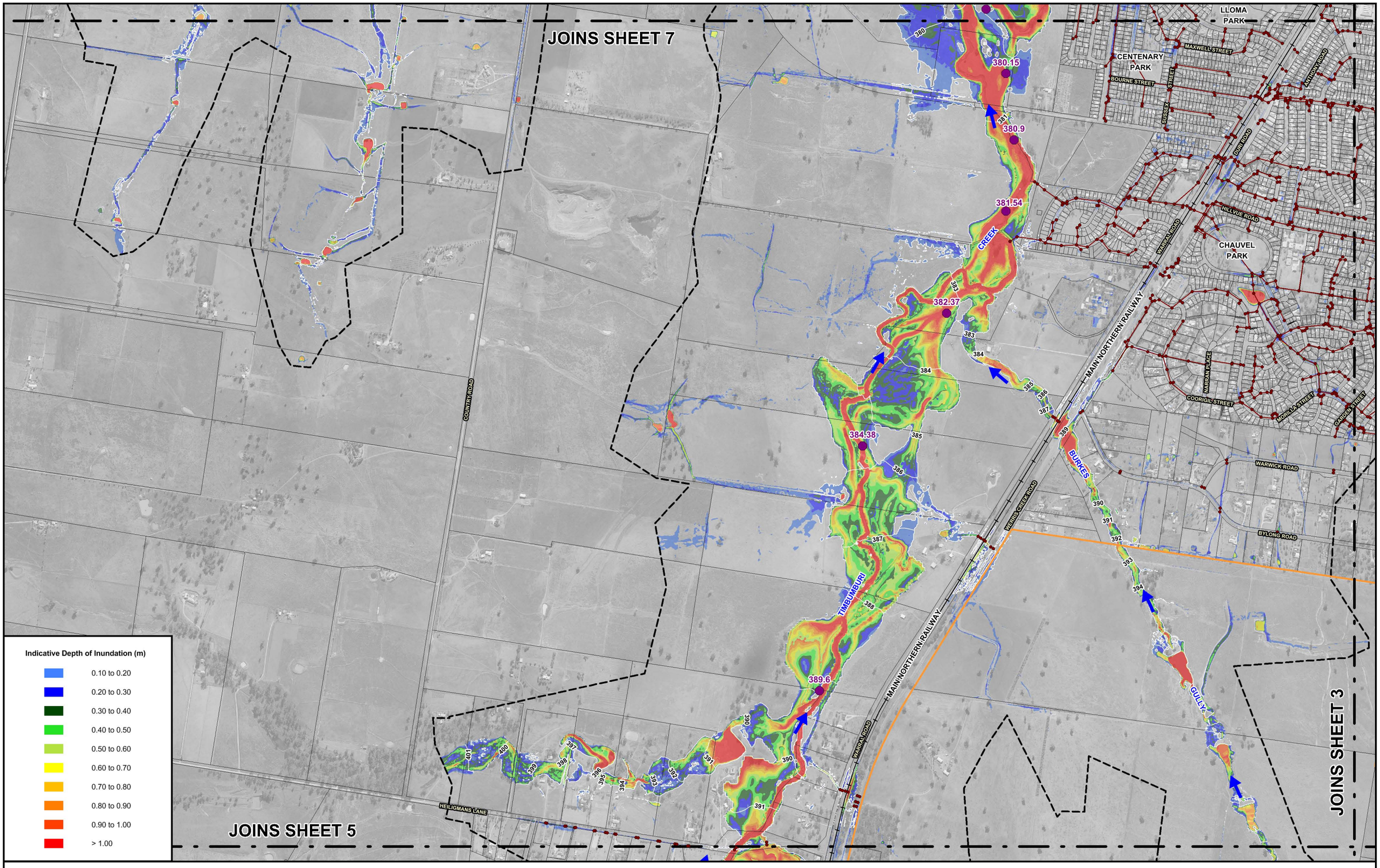
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only) — 370
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 5 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 389.6 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 6 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

TAMWORTH RACECOURSE

TAMWORTH SHOWGROUNDS

WESTDALE

TAMINDA

LLOMA PARK

TAMINDA LEVEE

WALLAMORE ROAD

ANNABRANCH

OXLEY HIGHWAY

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

WEST TAMWORTH-BARABA RAILWAY

CREEK

MURROON CREEK

FLINDERS STREET

MITCHELL STREET

EVANS STREET

MARATHON STREET

JEWRY STREET

NEW WINTON ROAD

GUNNEDAH ROAD

BASIL BROWN DRIVE

OXLEY LANE

COUNTRY ROAD

TIMBUMBURI

CUNNINGHAM STREET

NORLAND CRESCENT

COOK STREET

DAMPIER STREET

COLE ROAD

SMITH STREET

QUINN STREET

SOUTHVIEW STREET

SUE CRES

MARIRA ROAD

369.78

370.08

370.47

371.9

370.41

371.1

370.32

371.78

370.49

373.89

371.92

372.69

373.65

374.11

374.7

374.04

375.79

376.99

377.41

378.67

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 7 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

BOWLERS LANE

MANILLA ROAD

WEST TAMWORTH-BARABA RAILWAY

WALLAMORE ROAD

HIGGINS LANE

OXLEY VALE

PEEL RIVER

CREEK

BOLTONS CREEK

WALLAMORE CREEK

MURROON CREEK

ANNABRANCH

SEWAGE TREATMENT PLANT

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

360.73
362.02
362.03
362.7
362.96
363.68
362.69
363.75
363.64
364.77
365.95
365.29
366.58
368.07
367.67
369.42
366.58
370.01
367.67
369.43
370.5
369.79

362
363
364
365
366
367
368
369
370
371
372
373
374

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

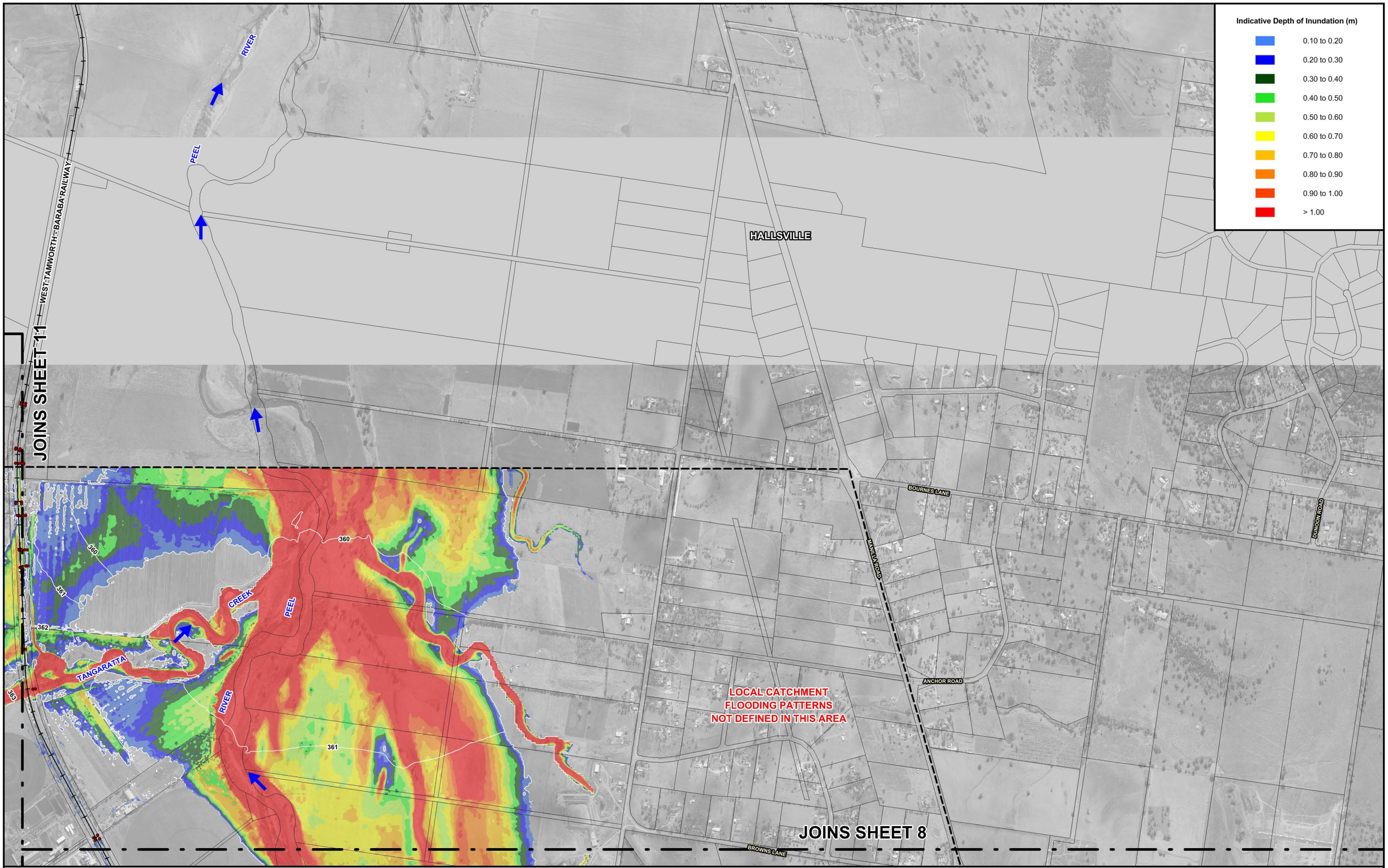
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 367.67 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 8 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 9 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

NEW WINTON ROAD

TANGARATTA CREEK

BOLTONS CREEK

DURI-WALLAMORE ROAD

OXLEY HIGHWAY

BOWLERS LANE

TAMWORTH REGIONAL AIRPORT

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 10 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI

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

GIDLEY SIDING ROAD

ATHOL WALTERS

BYAMEE LANE

OXLEY HIGHWAY

CREEK

TANGARATTA

363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

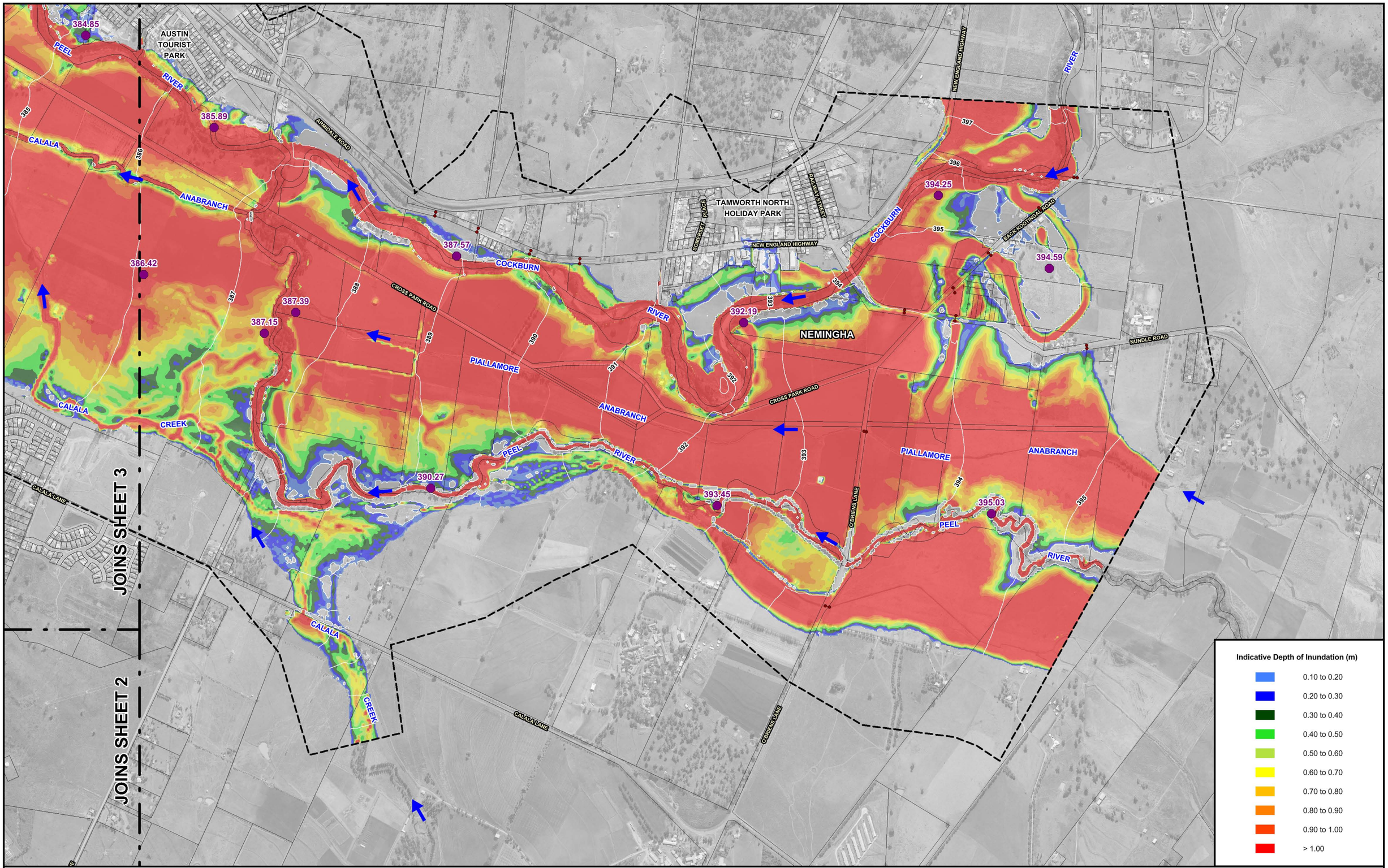
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.2
(Sheet 11 of 11)

TUFLOW MODEL RESULTS
20 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

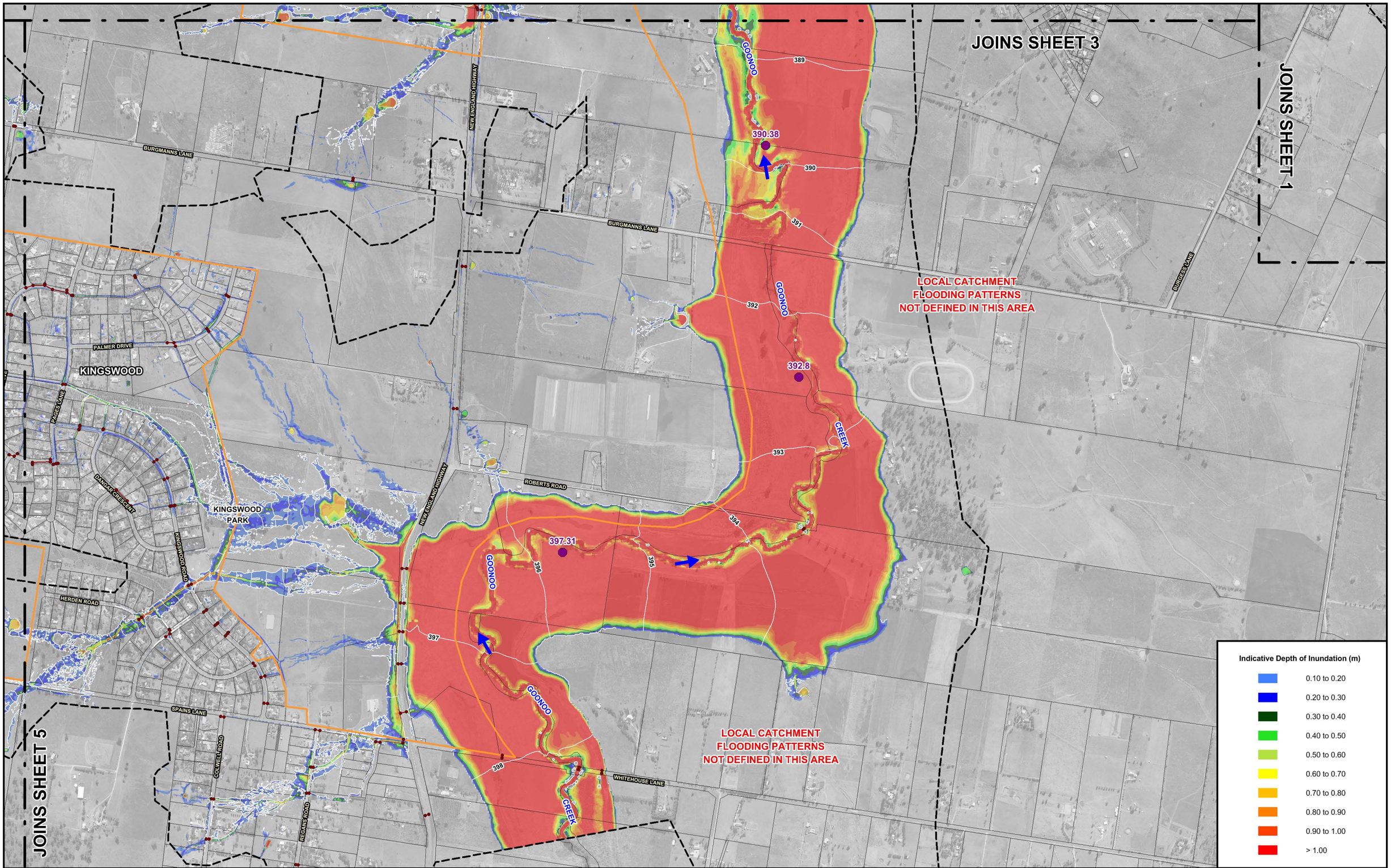
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 396.74 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 1 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

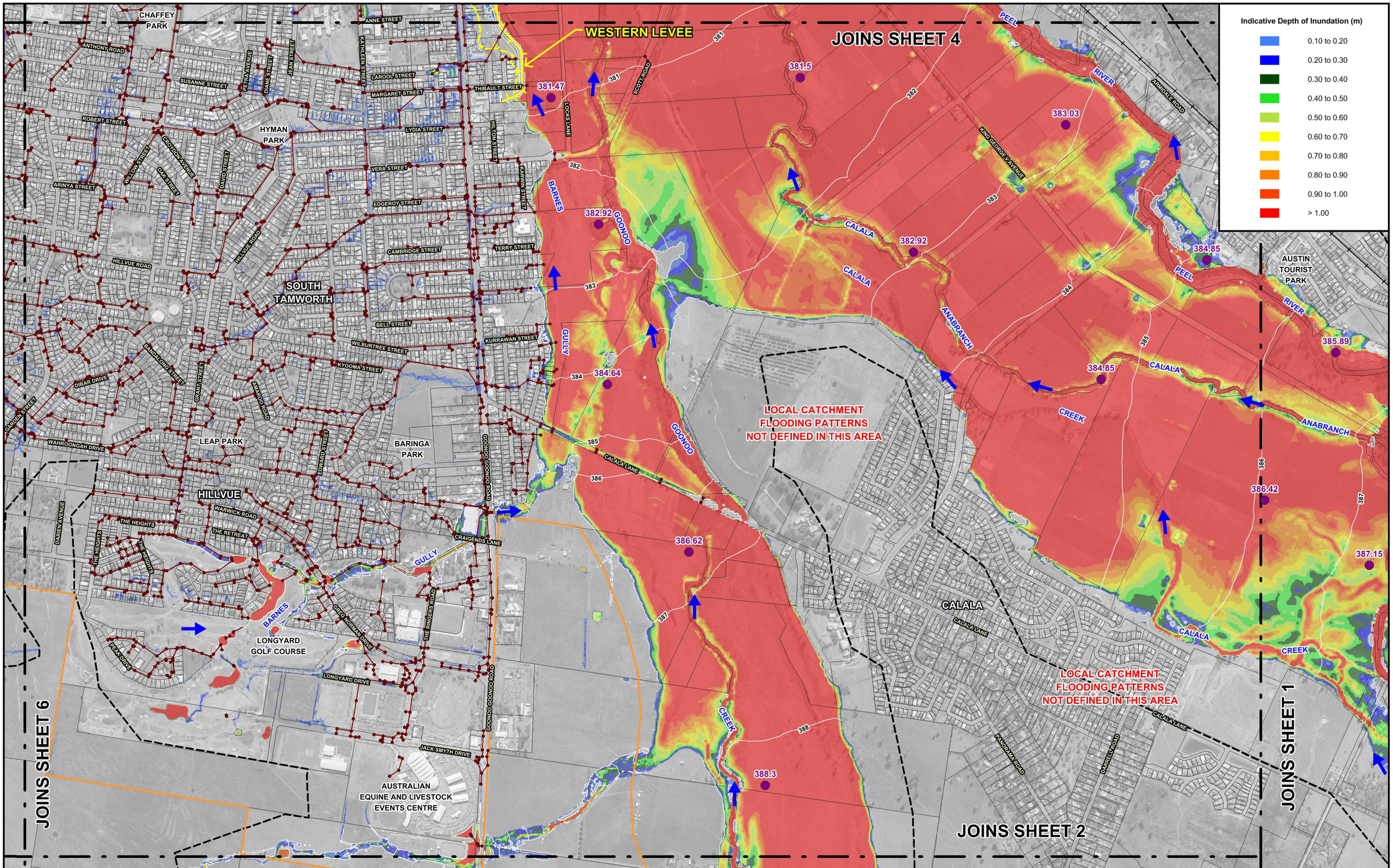
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 396.74 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 2 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

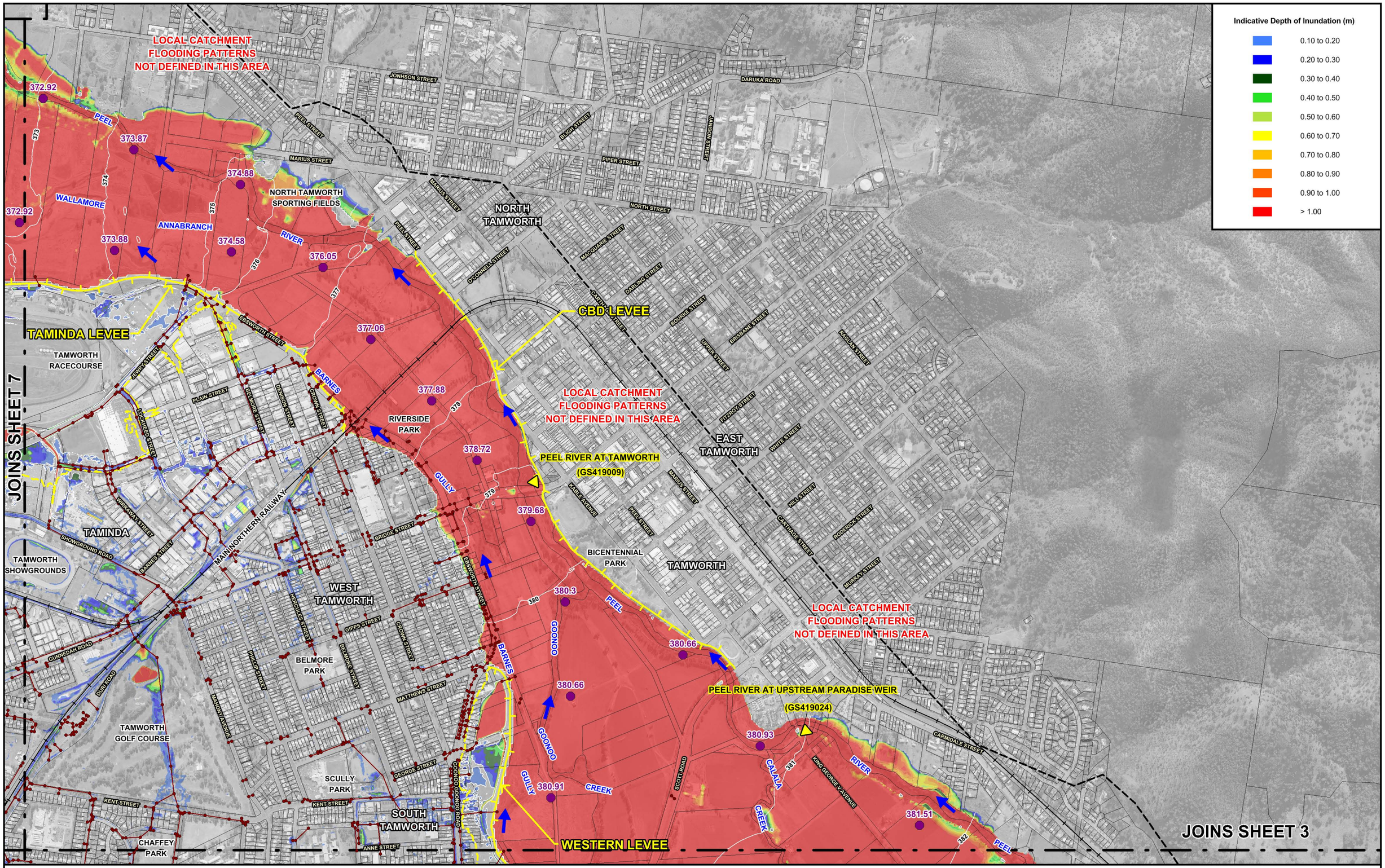
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only) — 370
- South Tamworth Rural Lands Master Plan Area
- 387.29 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 3 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

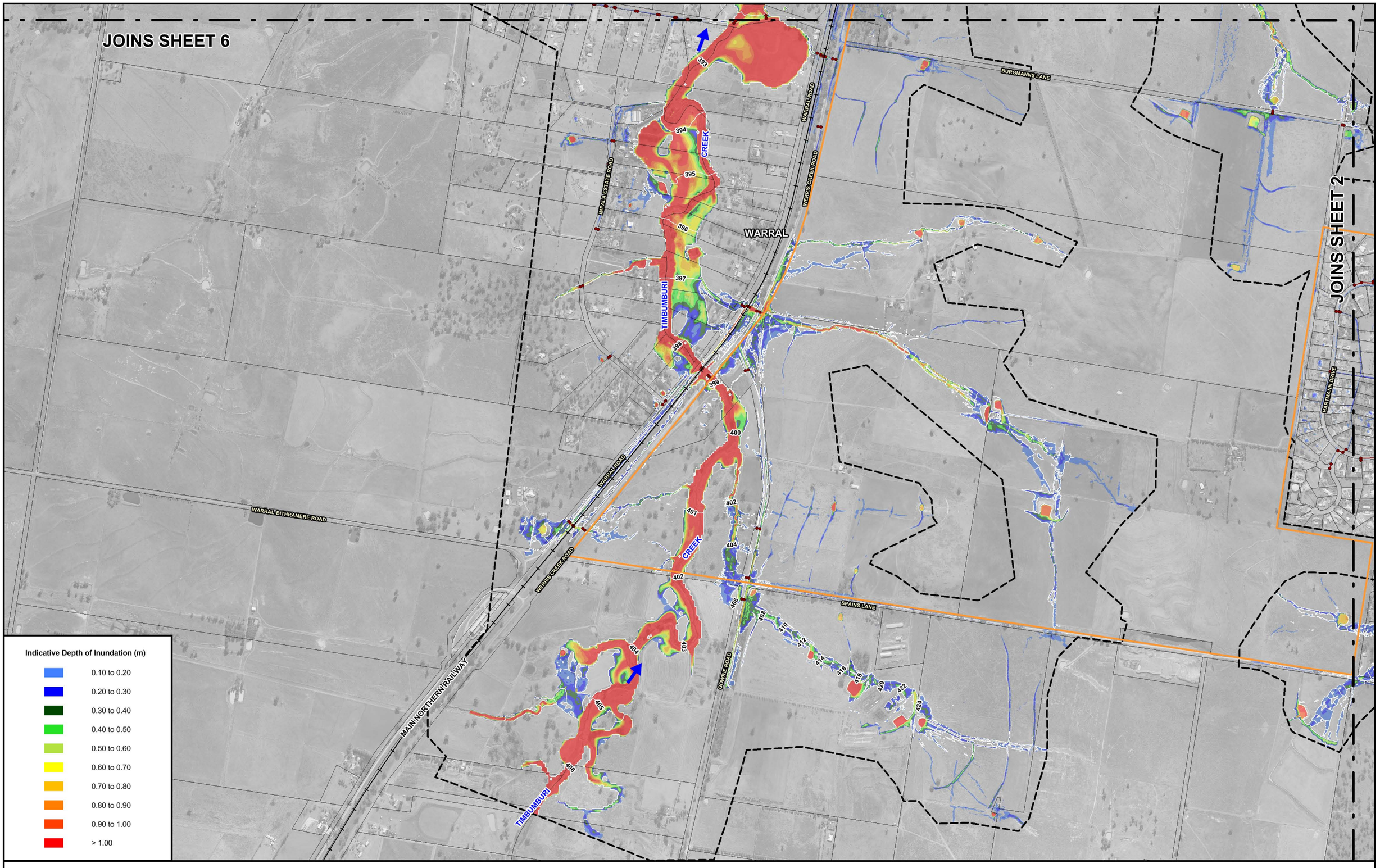
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Stream Gauge
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 4 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only) — 370
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 5 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI

JOINS SHEET 7

JOINS SHEET 5

JOINS SHEET 3

LLOMA PARK

CENTENARY PARK

CHAUVEL PARK

MAIN NORTHERN RAILWAY

COUNTRY ROAD

CREEK

BURKES

TIMBUMBURI

GULLY

MAXWELL STREET

BOURNE STREET

SUSSEX STREET

ARMIDALE ROAD

DURI ROAD

HILLVUE ROAD

WARRAH ROAD

MARGAN PLACE

COORIGIL STREET

MORILLA STREET

CANDEL STREET

WARWICK ROAD

BYLONG ROAD

VIERRIS CREEK ROAD

WARATAH ROAD

HEILIGMANS LANE

380.66

381.58

382.33

383.39

385.62

390.35

380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 389.6 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 6 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

TAMWORTH RACECOURSE

TAMWORTH SHOWGROUNDS

WESTDALE

TAMINDA

LLOMA PARK

TAMINDA LEVEE

WALLAMORE ROAD

ANNABRANCH

CREEK

MURROON CREEK

TIMBUMBURI

WEST TAMWORTH-BARABA RAILWAY

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

OXLEY HIGHWAY

BASIL BROWN DRIVE

NEW WINTON ROAD

OXLEY LANE

GUNNEDAH ROAD

COUNTRY ROAD

FLINDERS STREET

MITCHELL STREET

MARATHON STREET

EVANS STREET

CUNNINGHAM STREET

NORTLAND CRESCENT

COOK STREET

DAMPIER STREET

COLE ROAD

EDITH STREET

QUINN STREET

SOUTHVIEW STREET

SUE CRES

JEWRY STREET

WARRAH ROAD

370.5
370.49
370.94
371.22
372.92
371.04
371.43
370.94
372.14
371.04
374.06
372.19
374.24
372.82
374.79
375.03
374.11
376.19
377.88
378.13
379.35

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Levee

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 7 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

BOWLERS LANE

MANILLA ROAD

WEST TAMWORTH - BARABA RAILWAY

WALLAMORE ROAD

HIGGINS LANE

OXLEY VALE

SEWAGE TREATMENT PLANT

PEEL

RIVER

CREEK

BOLTONS

WALLAMORE CREEK

MURROON CREEK

ANNABRANCH

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

361.42
363
363.02
363.66
364.42
365.38
363.64
364.45
364.44
365.7
367.48
365.72
367.5
368.67
368.65
370.05
367.5
370.53
368.65
370.08
371.24
370.51

361 362 363 364 365 366 367 368 369 370 371 372 373 374

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

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only) — 370
- 367.67 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 8 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI

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

RIVER

PEEL

WEST TAMWORTH - BARABA RAILWAY

HALLSVILLE

JOINS SHEET 11

360

361

362

CREEK

PEEL

TANGARATTA

RIVER

BOURNES LANE

MANILA ROAD

DUNCON ROAD

ANCHOR ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

JOINS SHEET 8

BROWNS LANE

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 9 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

NEW WINTON ROAD

TANGARATTA CREEK

BOLTONS CREEK

BOWLERS LANE

OXLEY HIGHWAY

DURI - WALLAMORE ROAD

TAMWORTH REGIONAL AIRPORT

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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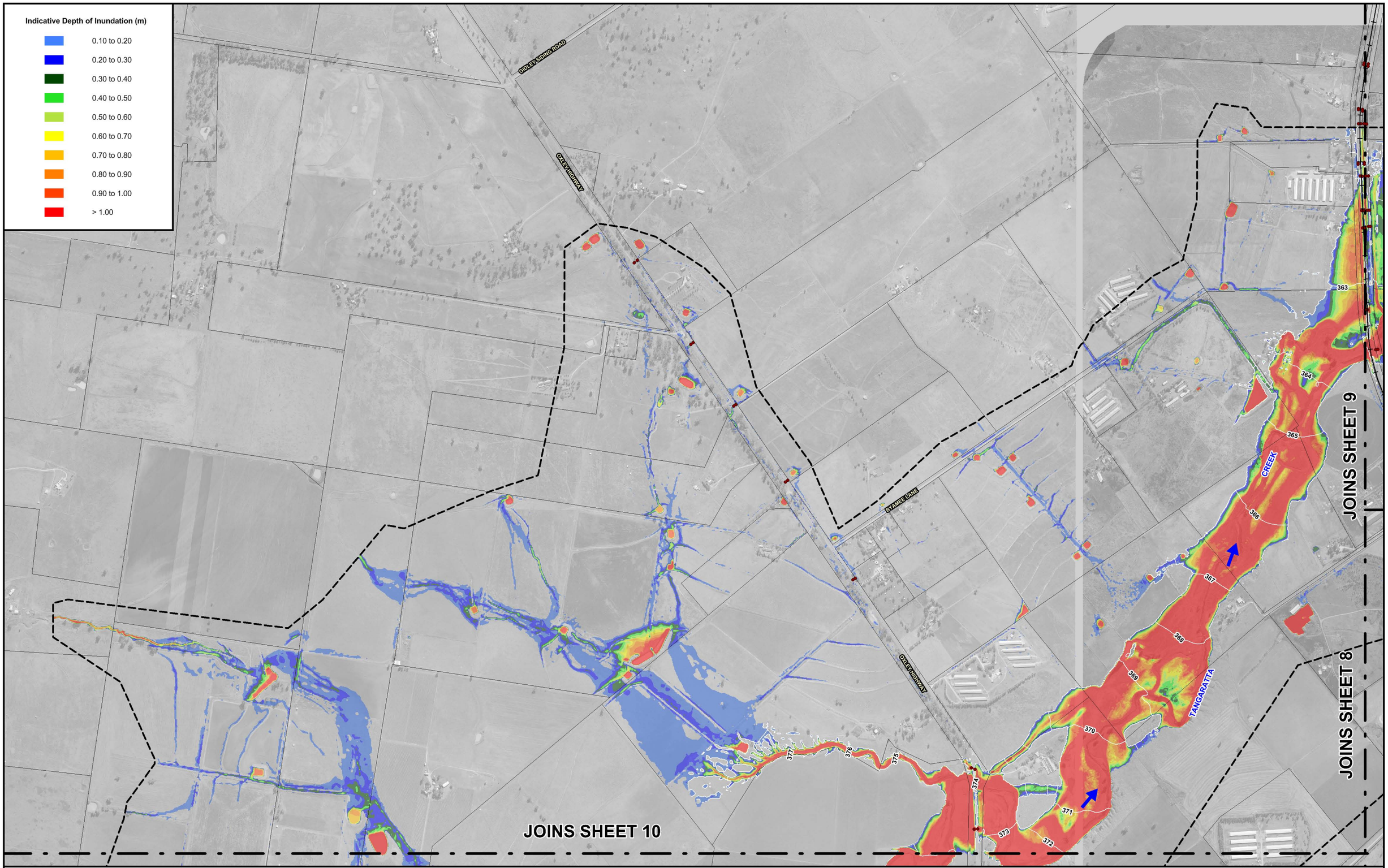
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 10 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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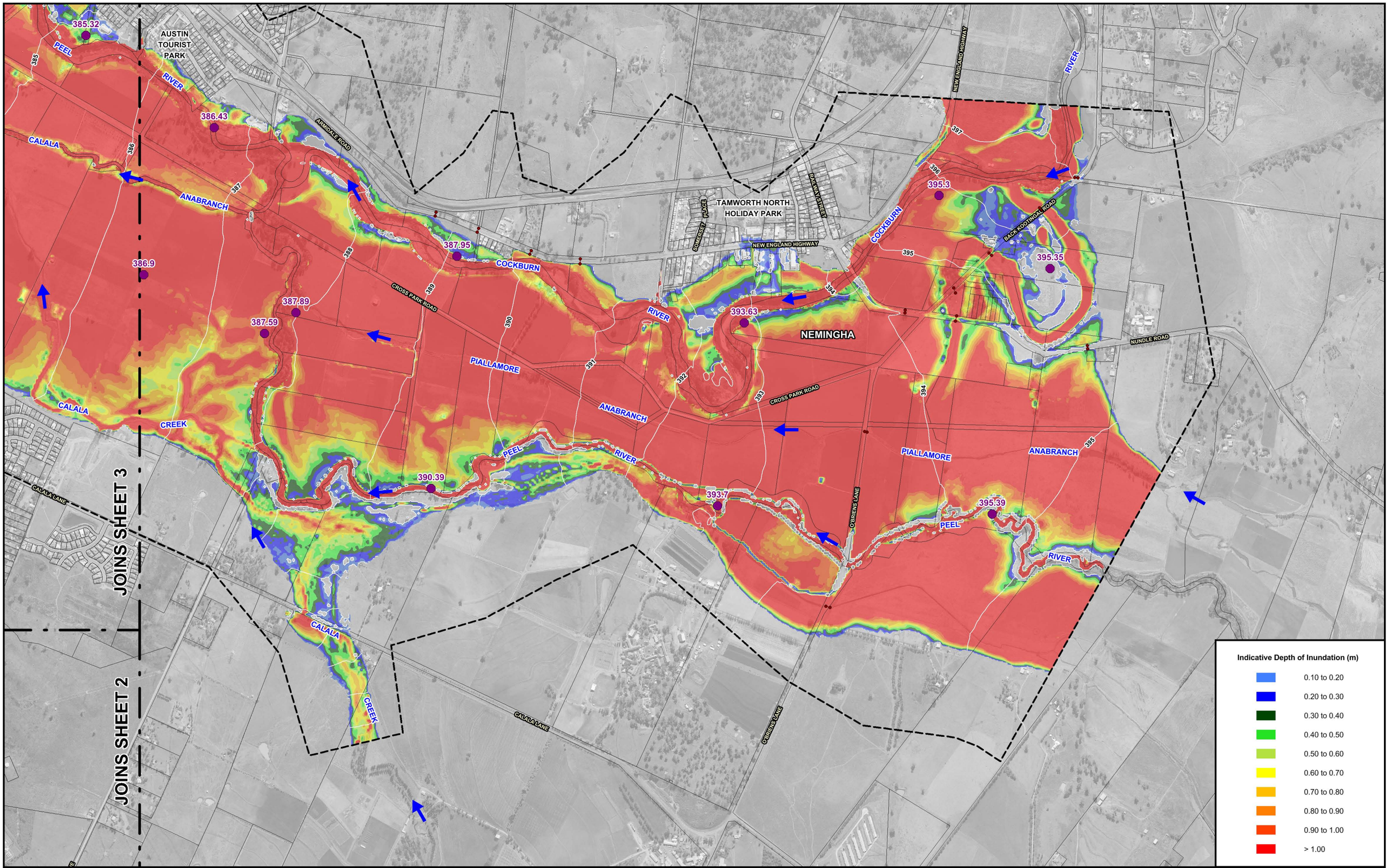
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.3
(Sheet 11 of 11)

TUFLOW MODEL RESULTS
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 397.55 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 1 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

389

390

391

392

393

394

395

396

397

398

390.7

393.11

397.55

CREEK

BURGESS LANE

ROBERTS ROAD

WHITEHOUSE LANE

SPAINS LANE

HERDEN ROAD

KINGSWOOD

KINGSWOOD PARK

PALMER DRIVE

PAGES LANE

DANDAR CRESCENT

KINGSWOOD ROAD

COLWELL ROAD

REGANS ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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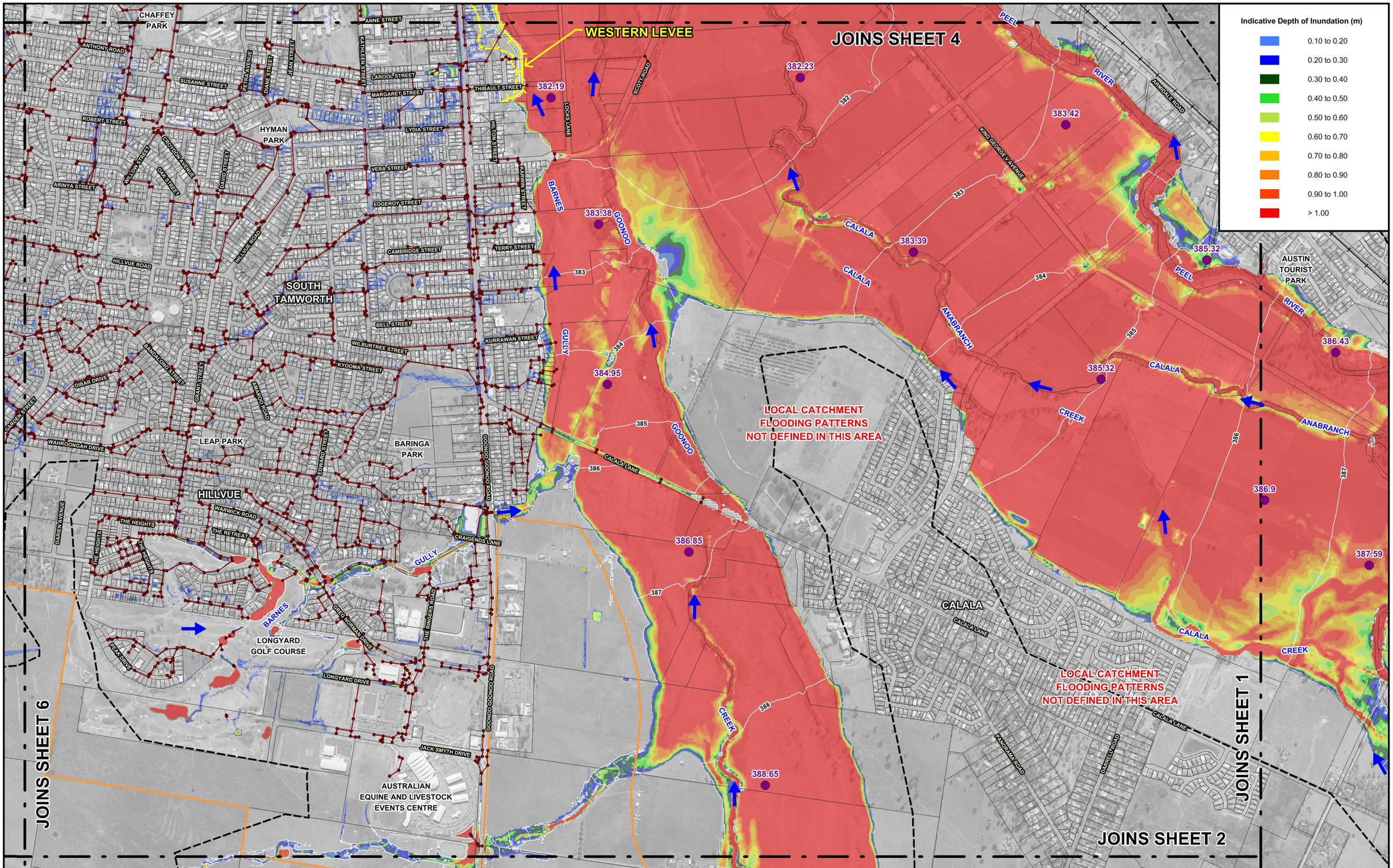
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 397.55 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 2 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

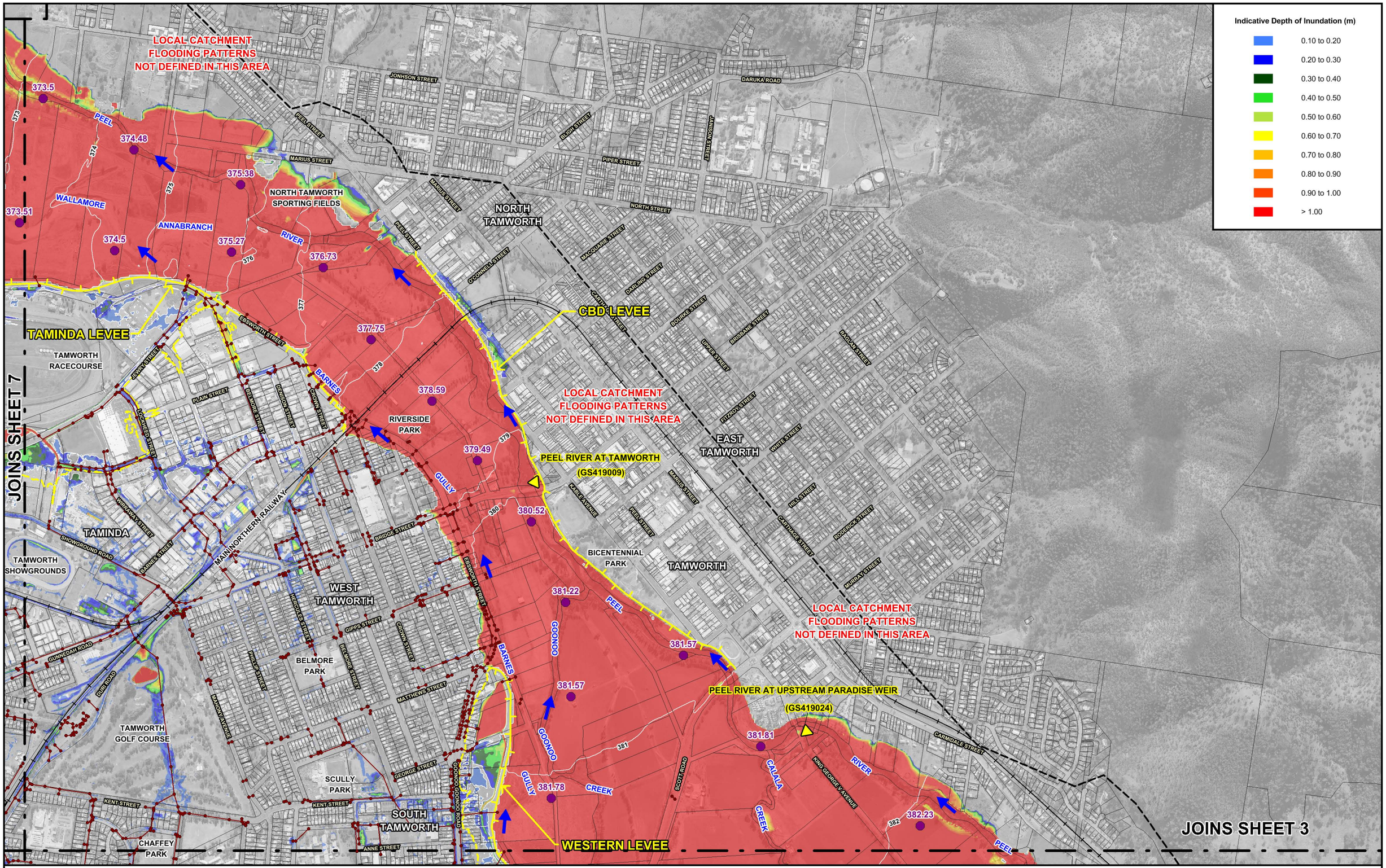
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only) — 370
- 388.65 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- South Tamworth Rural Lands Master Plan Area
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 3 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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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.

LEGEND

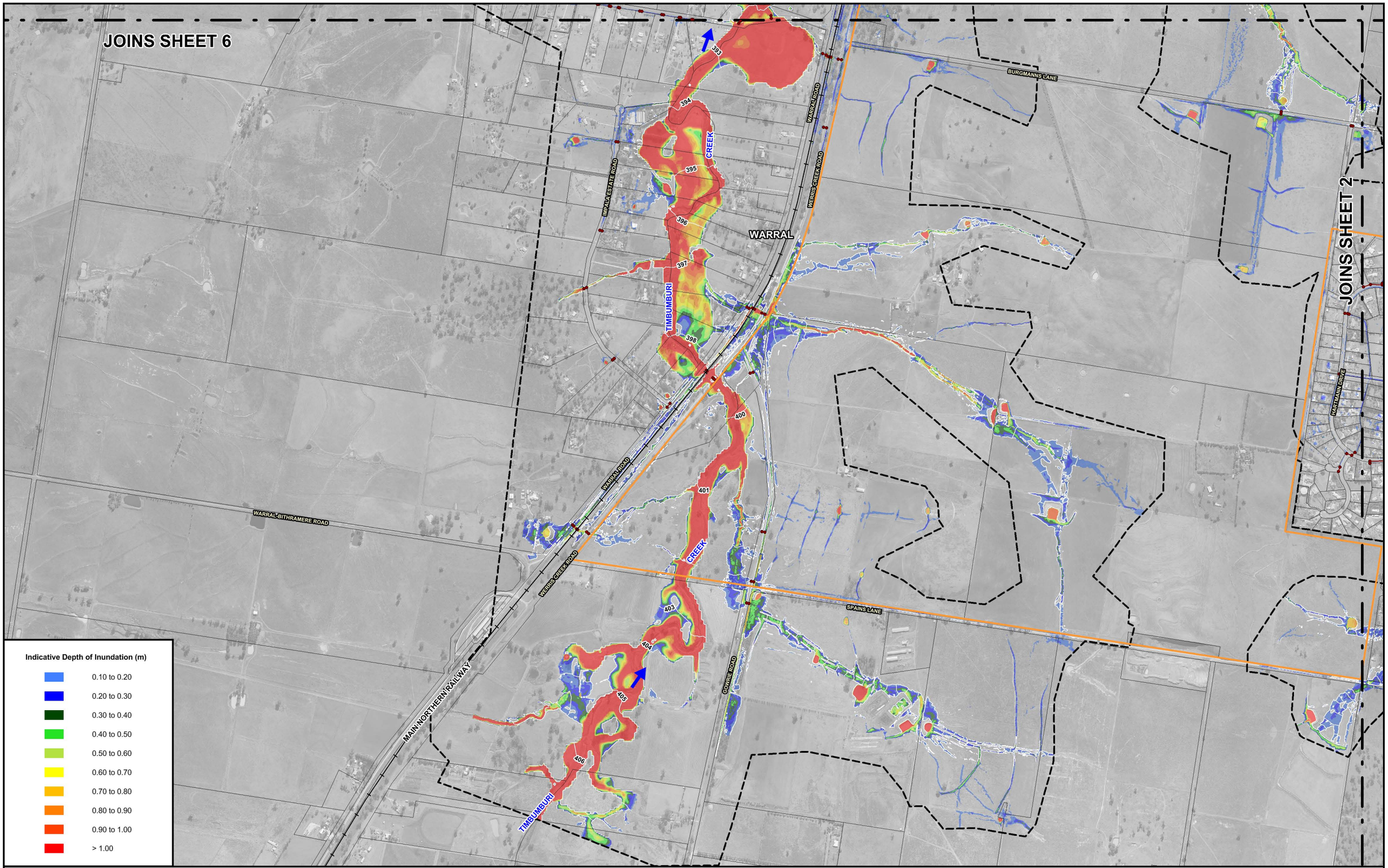
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Stream Gauge
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 4 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



Lyall & Associates

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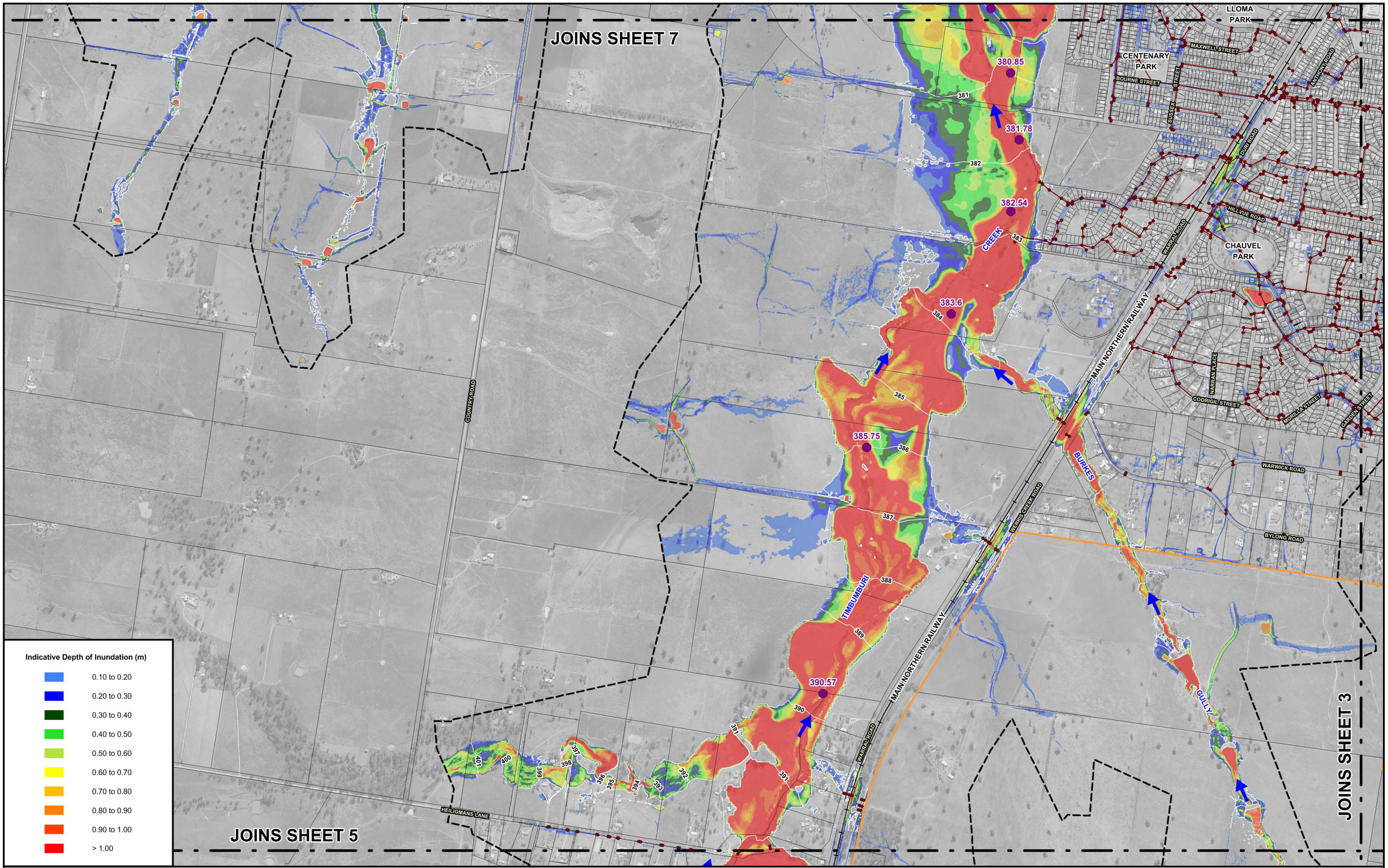
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 5 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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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.

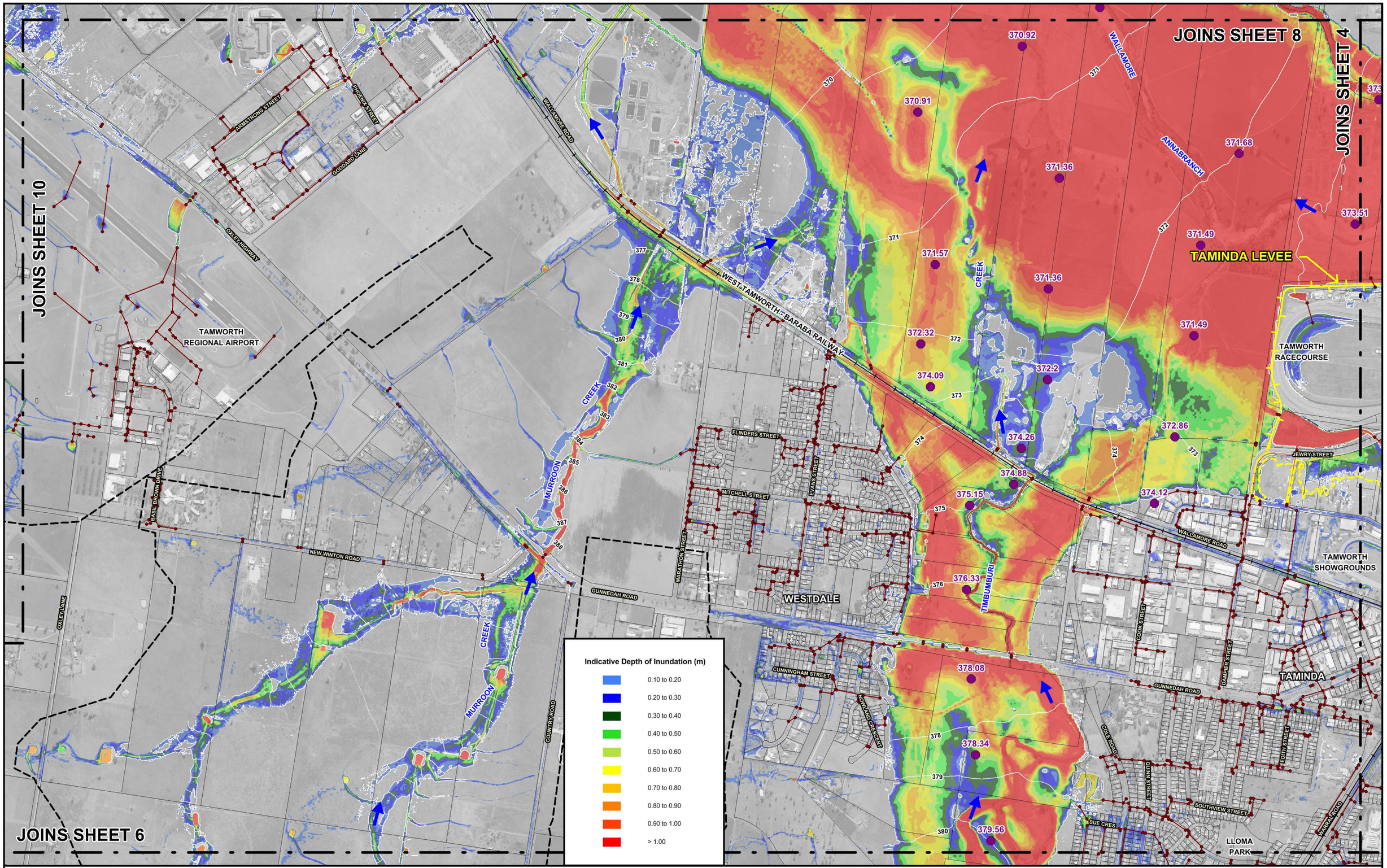
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 385.75 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 6 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 380.79 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Levee

Depths of inundation shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater depths of inundation during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 7 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

BOWLERS LANE

MANILLA ROAD

HIGGINS LANE

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

PEEL RIVER

BOLTONS CREEK

WALLAMORE CREEK

MURROON CREEK

ANNABRANCH

OXLEY VALE

SEWAGE TREATMENT PLANT

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

361.84 363.48 363.51 364.12 364.91 364.11 364.92 364.91 366.16 366.07 368.01 369.14 368.01 366.18 368.02 369.11 369.11 370.48 370.45 370.95 370.94 371.71

363 364 365 366 367 368 369 370 371

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

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

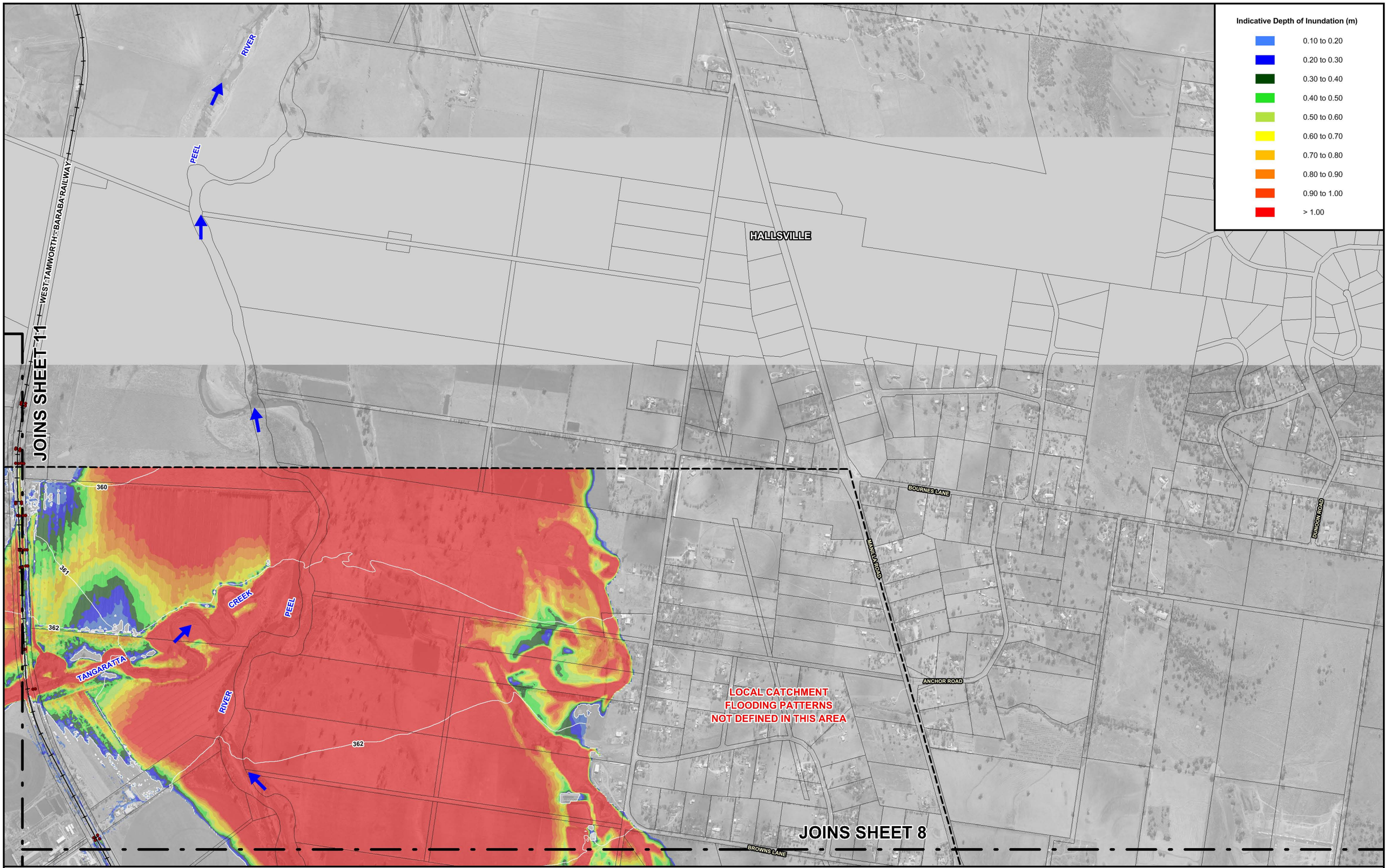
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 369.11 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 8 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 9 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

TANGARATTA CREEK

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS CREEK

TAMWORTH REGIONAL AIRPORT

DURI-WALLAMORE ROAD

NEW WINTON ROAD

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 10 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI

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

GIDLEY SIDING ROAD

ARMIDALE TWO

BYAMEE LANE

OXLEY HIGHWAY

TAMWORTH

CREEK

363

364

365

366

367

368

369

370

371

372

JOINS SHEET 8

JOINS SHEET 9

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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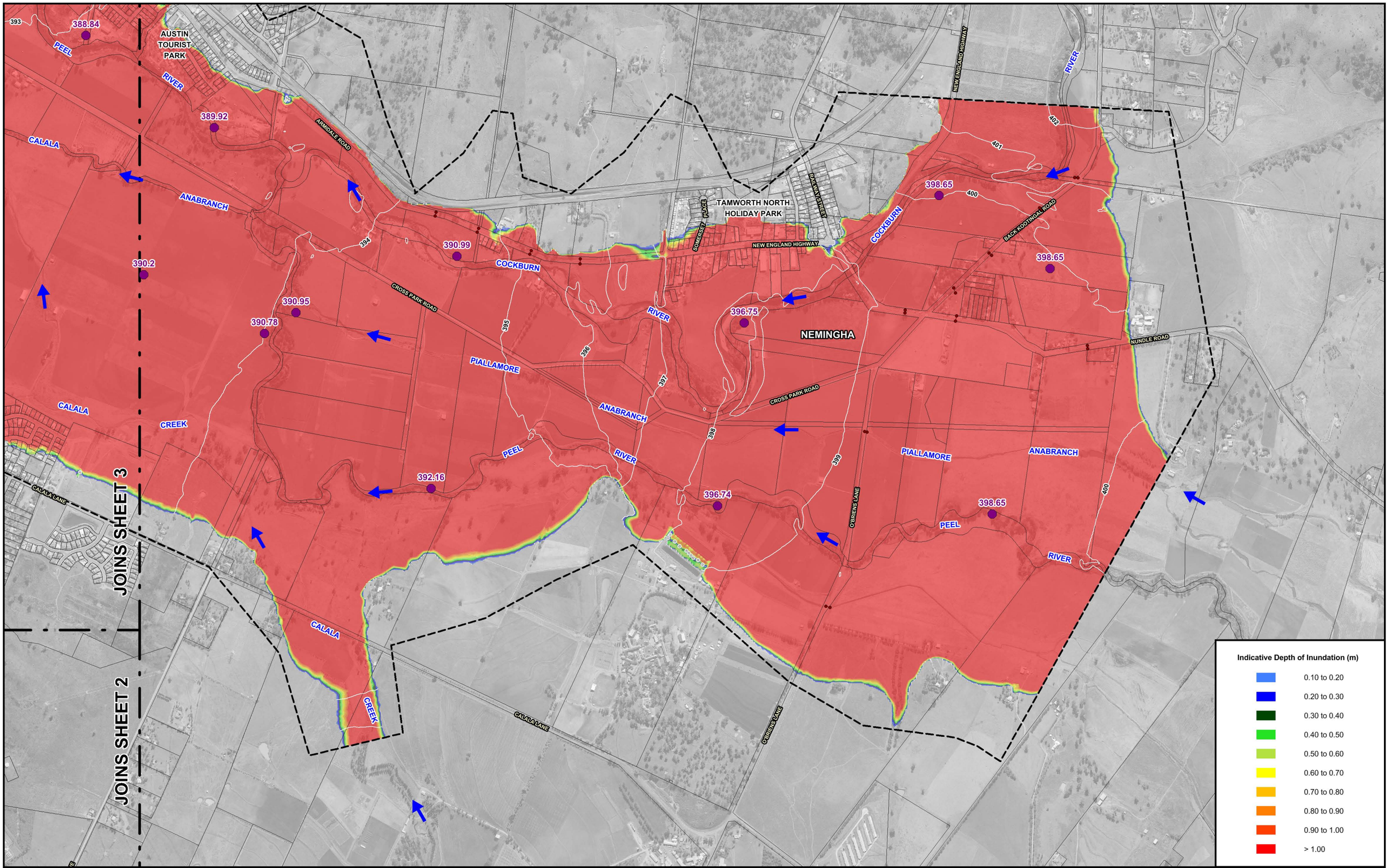
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.4
(Sheet 11 of 11)

TUFLOW MODEL RESULTS
200 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 399.72 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 1 of 11)

TUFLOW MODEL RESULTS
PMF

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO CREEK

393.15

395.46

399.72

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

KINGSWOOD

KINGSWOOD PARK

PALMER DRIVE

PAGES LANE

DANOAR CRESCENT

KINGSWOOD ROAD

HERDEN ROAD

ROBERTS ROAD

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

BURGESS LANE

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

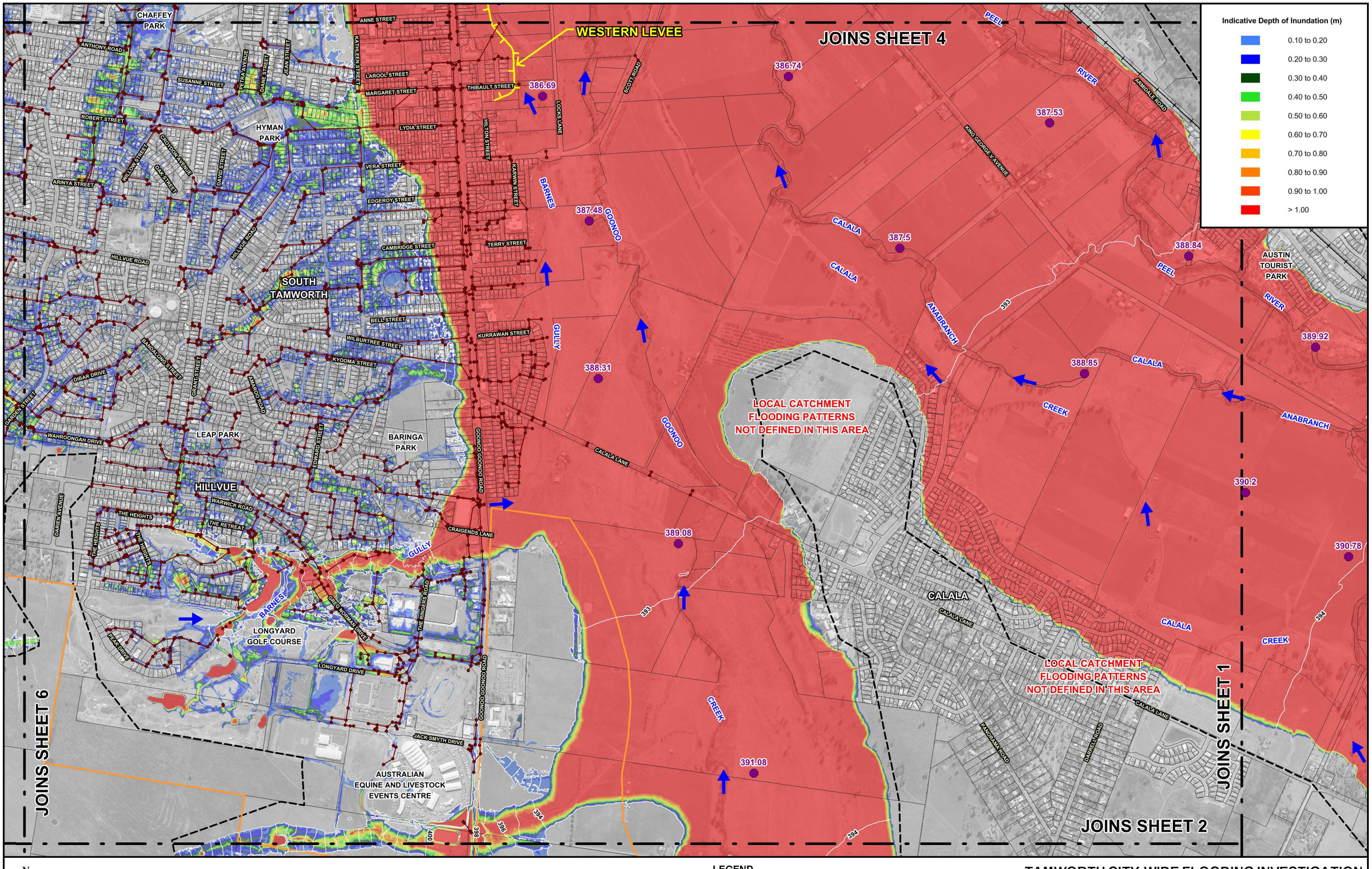
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 399.72 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 2 of 11)

TUFLOW MODEL RESULTS
PMF



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 391.08 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 3 of 11)

TUFLOW MODEL RESULTS
PMF

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

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

JOINS SHEET 7

376.91 | 378.45 | 379.57 | 376.95 | 378.48 | 379.46 | 380.88 | 381.77 | 382.84 | 384.05 | 384.85 | 385.52 | 386.13 | 386.11 | 386.32 | 386.31 | 386.75

PEEL | WALLAMORE | ANNABRANCH | RIVER | PEEL RIVER AT TAMWORTH (GS419009) | PEEL RIVER AT UPSTREAM PARADISE WEIR (GS419024) | GOONOO | GULLY | CREEK | CALALA | CREEK | PEEL

TAMINDA LEVEE | CBD LEVEE | WESTERN LEVEE

NORTH TAMWORTH | NORTH TAMWORTH SPORTING FIELDS | EAST TAMWORTH | TAMWORTH | BICENTENNIAL PARK | TAMWORTH RACECOURSE | TAMINDA | TAMWORTH SHOWGROUNDS | WEST TAMWORTH | BELMORE PARK | TAMWORTH GOLF COURSE | SCULLY PARK | SOUTH TAMWORTH | CHAFFEY PARK | RIVERSIDE PARK

JONHSON STREET | DARUKA ROAD | BUGH STREET | PIPER STREET | GANNON STREET | PEEL STREET | MARIUS STREET | NORTH STREET | MACQUARIE STREET | DARLING STREET | BOURKE STREET | BRISBANE STREET | RAGLAN STREET | UPPER STREET | FITZROY STREET | WHITE STREET | O'CONNELL STREET | CASTLE STREET | EBSWORTH STREET | JEWRY STREET | PLAIN STREET | LOCKHEED STREET | BELMORE STREET | DENISON STREET | BROWN STREET | BARNES | WIRRAWAY STREET | SHOWGROUND ROAD | BARNES STREET | MAIN NORTHERN RAILWAY | BRIDGE STREET | HERCULES STREET | PHILIP STREET | GIPPS STREET | BROWN STREET | GUNNEDAH ROAD | DUBBO ROAD | MATONG AVENUE | MATTHEWS STREET | GEORGE STREET | KENT STREET | ANNE STREET | GOONOO GOONOO ROAD | KABLE AVENUE | HILL STREET | CARTHAGE STREET | RODERICK STREET | MURRAY STREET | CARMICHAEL STREET | KING GEORGE V AVENUE | SCOTT ROAD

JOINS SHEET 3

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

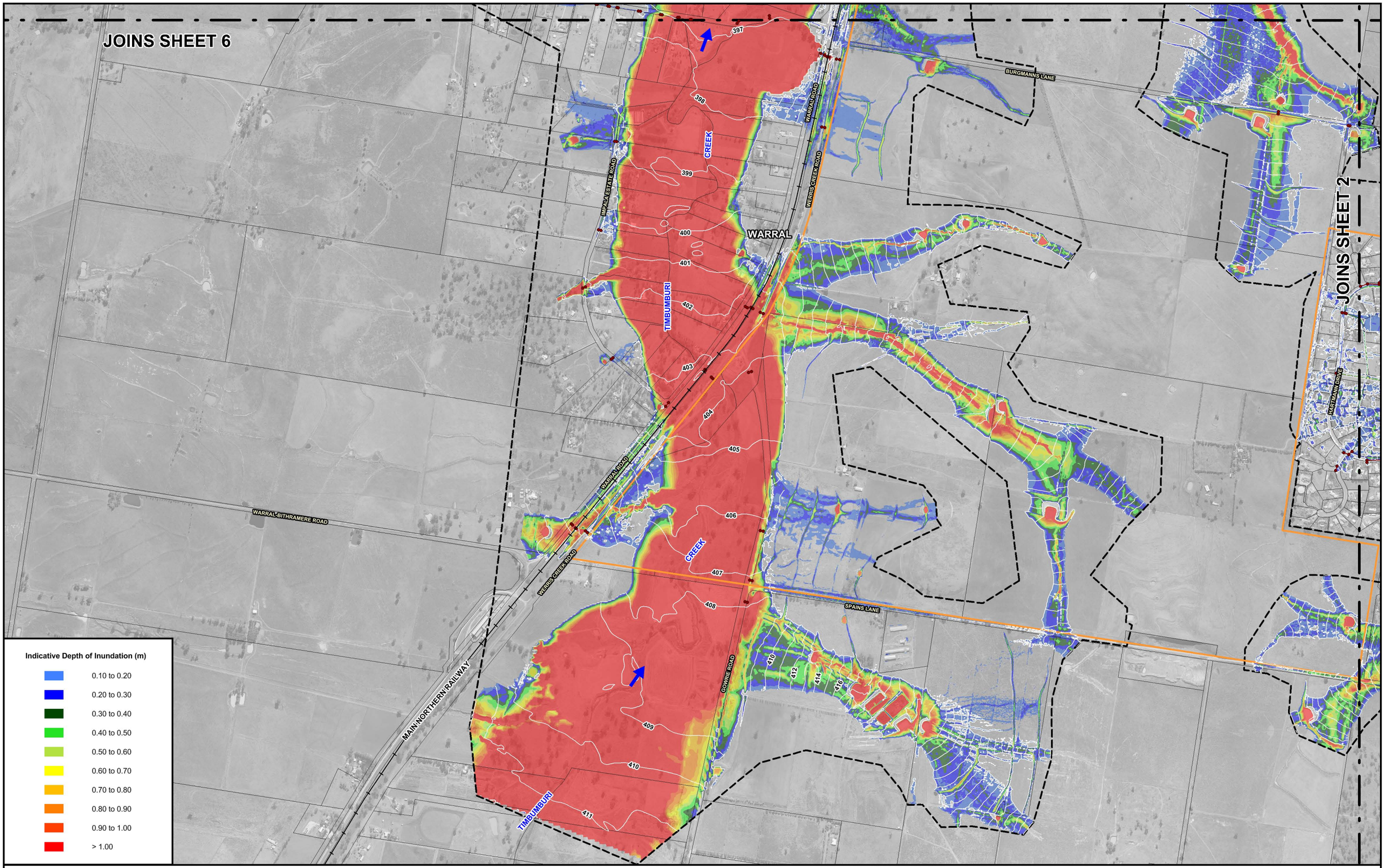
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 386.31 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- Stream Gauge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 4 of 11)

TUFLOW MODEL RESULTS
PMF



NOTE:

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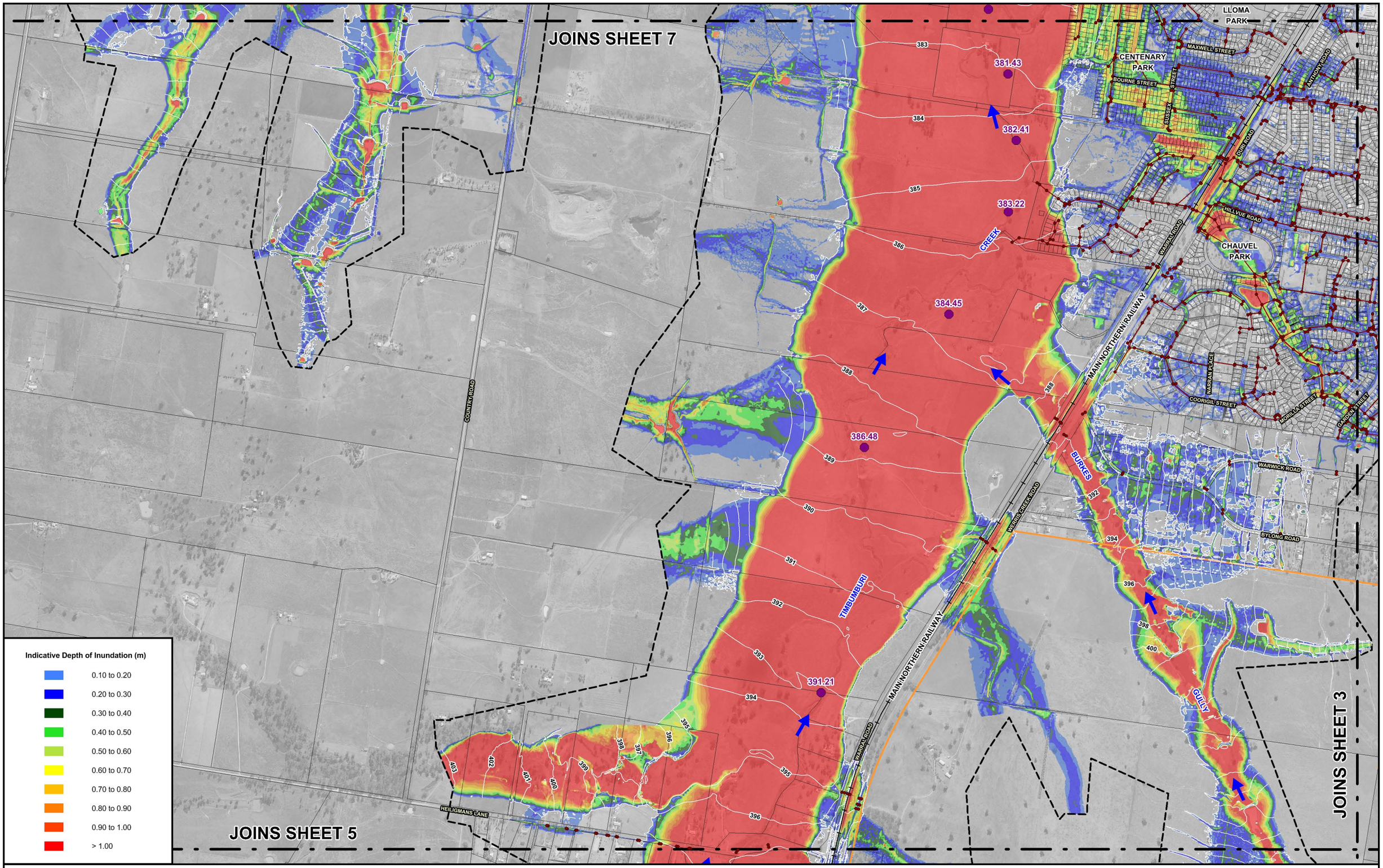
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 5 of 11)

TUFLOW MODEL RESULTS
PMF



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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- South Tamworth Rural Lands Master Plan Area
- 391.21 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 6 of 11)

TUFLOW MODEL RESULTS
PMF

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

OXLEY HIGHWAY

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

CREEK

MURROON CREEK

ANNABRANCH

TAMINDA LEVEE

TAMWORTH RACECOURSE

JEWRY STREET

FLINDERS STREET

MITCHELL STREET

EVANS STREET

MARATHON STREET

BASIL BROWN DRIVE

NEW WINTON ROAD

GUNNEDAH ROAD

COUNTRY ROAD

OXLEY LANE

WESTDALE

TIMBUMBURI

CUNNINGHAM STREET

NORTHLAND CRESCENT

TAMWORTH SHOWGROUNDS

COOK STREET

DAMPER STREET

TAMINDA

COLE ROAD

QUINN STREET

SMITH STREET

SOUTHVIEW STREET

SUE CRES

WAMARA ROAD

LLOMA PARK

373.89

373.82

374.6

374.11

376.95

374.28

374.02

374.11

374.06

374.24

374.37

374.11

374.37

374.19

375.2

375.58

374.68

376.87

378.61

378.98

380.15

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

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 374.06 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 7 of 11)

TUFLOW MODEL RESULTS
PMF

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

OXLEY VALE

SEWAGE TREATMENT PLANT

364.41
366.07
366.16
366.68
367.44
369.04
366.67
367.48
367.48
369.18
371.43
371.41
372.5
369.22
372.45
373.52
371.41
373.98
372.47
373.57
373.96
374.66

PEEL
RIVER
CREEK
BOLTONS
WEST TAMWORTH-BARABA RAILWAY
WALLAMORE ROAD
BROWNS LANE
BOWLERS LANE
MANILLA ROAD
WALLAMORE CREEK
MURROON CREEK
ANNABRANCH
HIGGINS LANE

366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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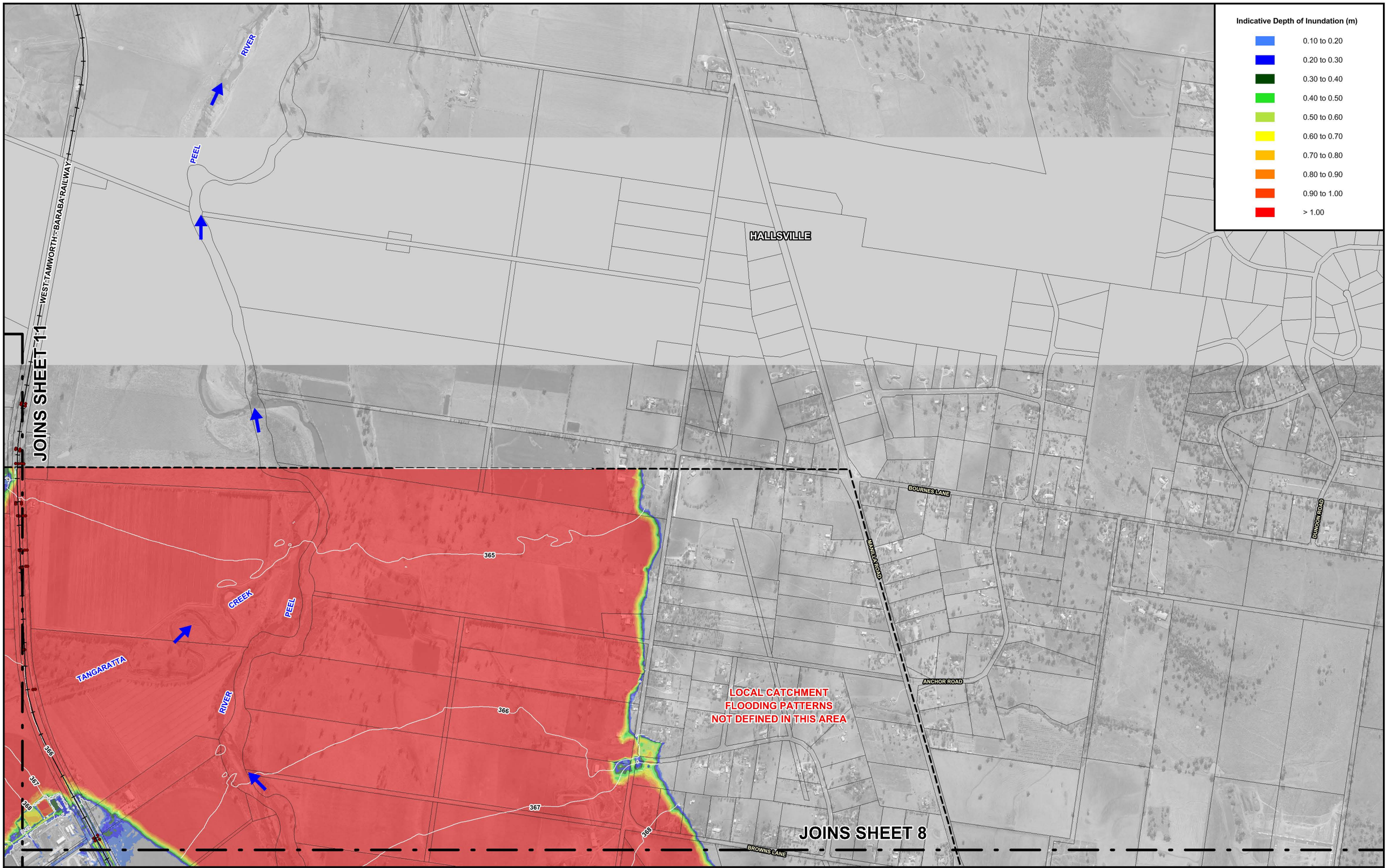
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- 370 Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 369.18 Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 8 of 11)

TUFLOW MODEL RESULTS
PMF



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 9 of 11)

TUFLOW MODEL RESULTS
PMF

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

TANGARATTA CREEK

NEW WINTON ROAD

DURI-WALLAMORE ROAD

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS CREEK

TAMWORTH REGIONAL AIRPORT

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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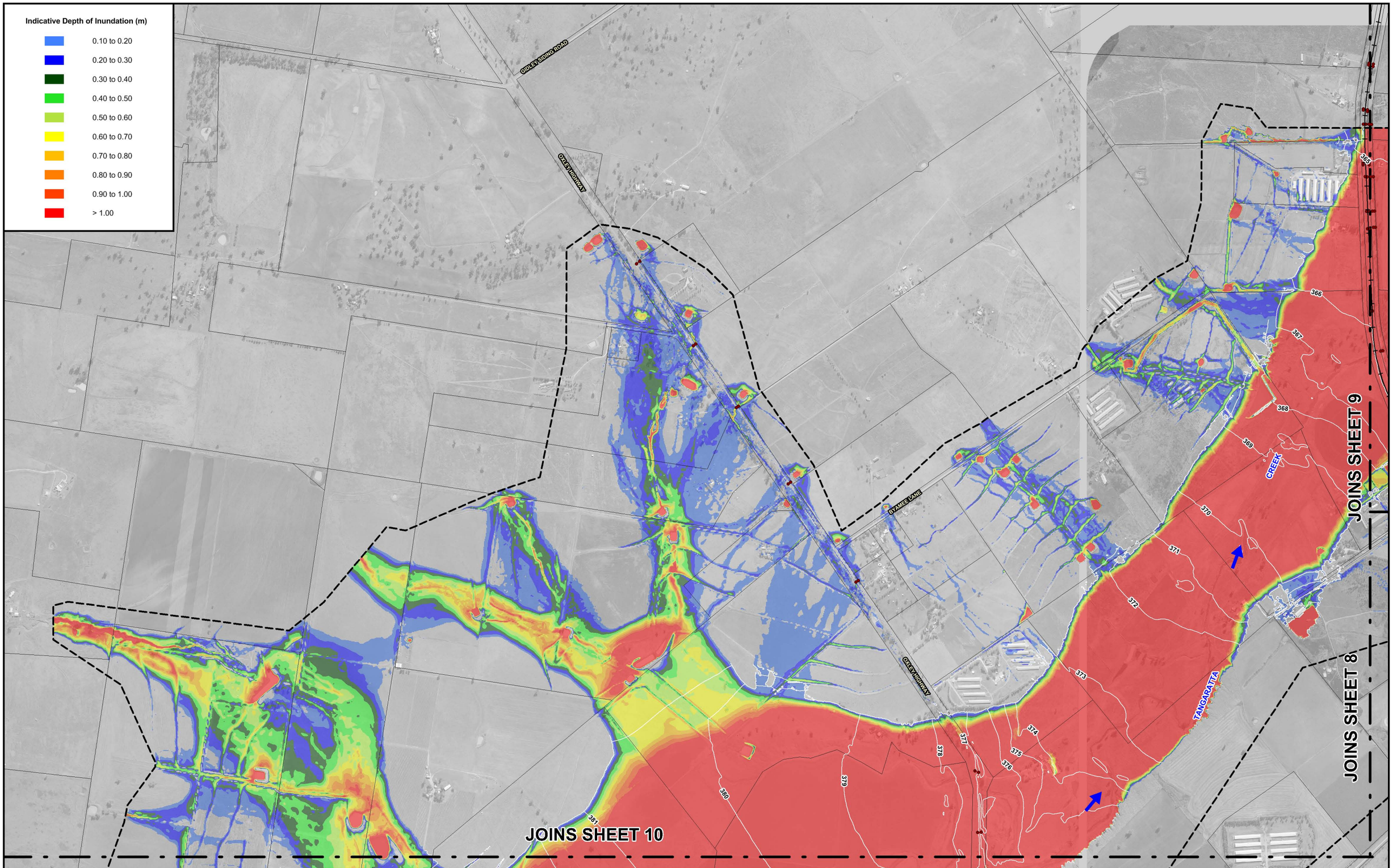
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.5
(Sheet 10 of 11)

TUFLOW MODEL RESULTS
PMF



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

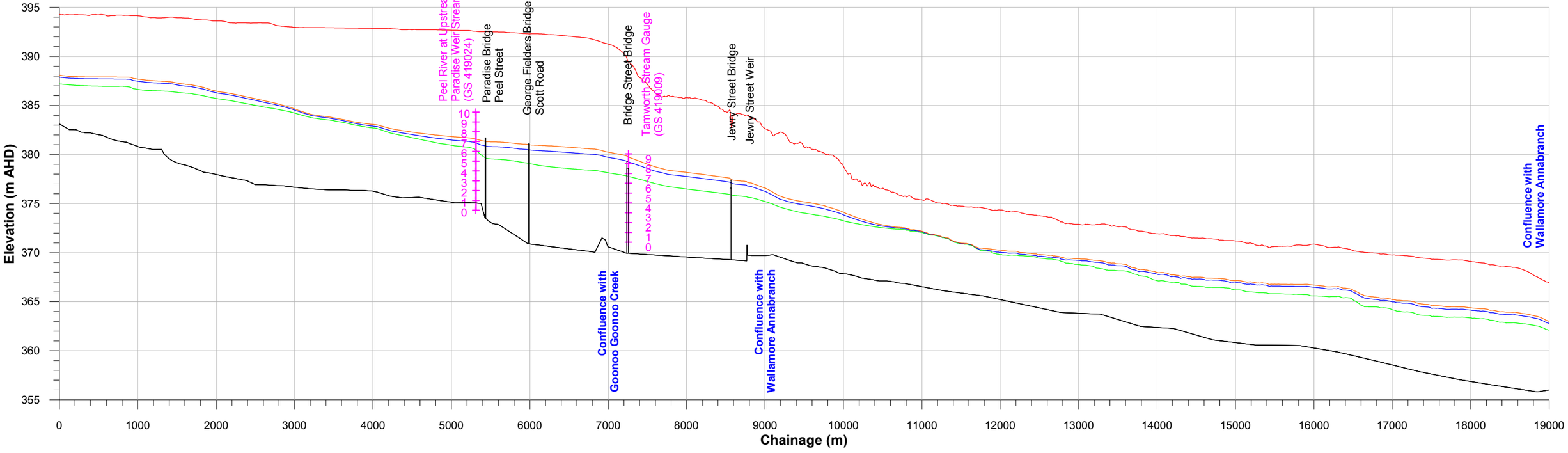
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

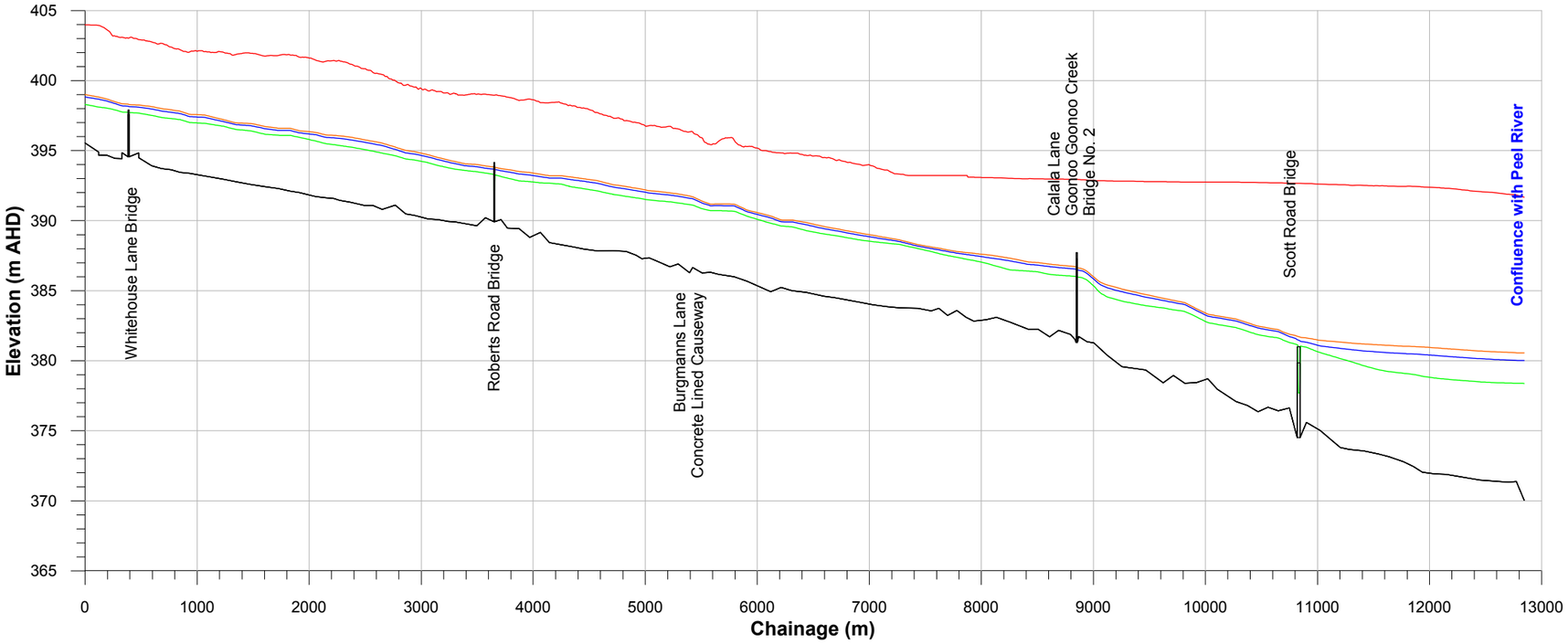
Figure 6.5
(Sheet 11 of 11)

TUFLOW MODEL RESULTS
PMF

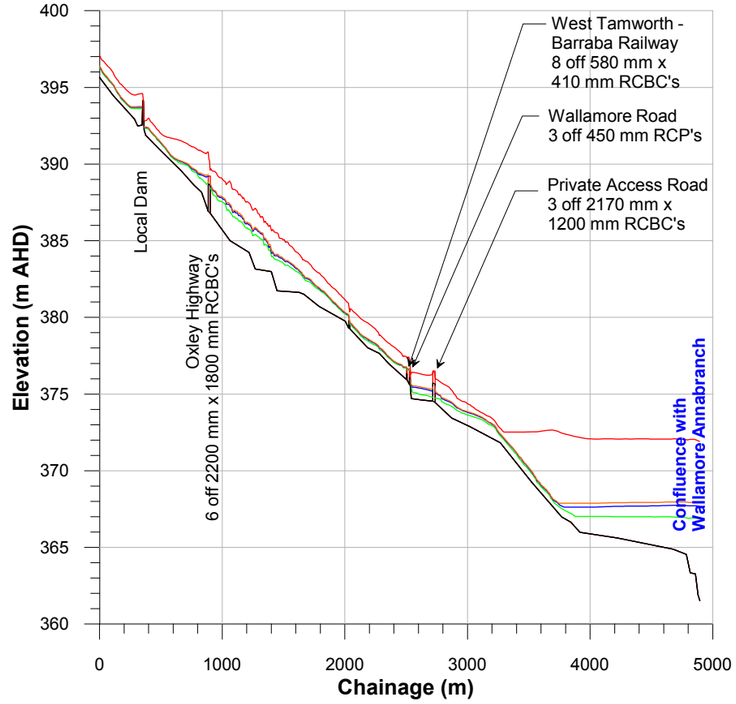
PEEL RIVER



GOONOO GOONOO CREEK



MURROON CREEK



LEGEND

- PMF
- 200 year ARI
- 100 year ARI
- 20 year ARI

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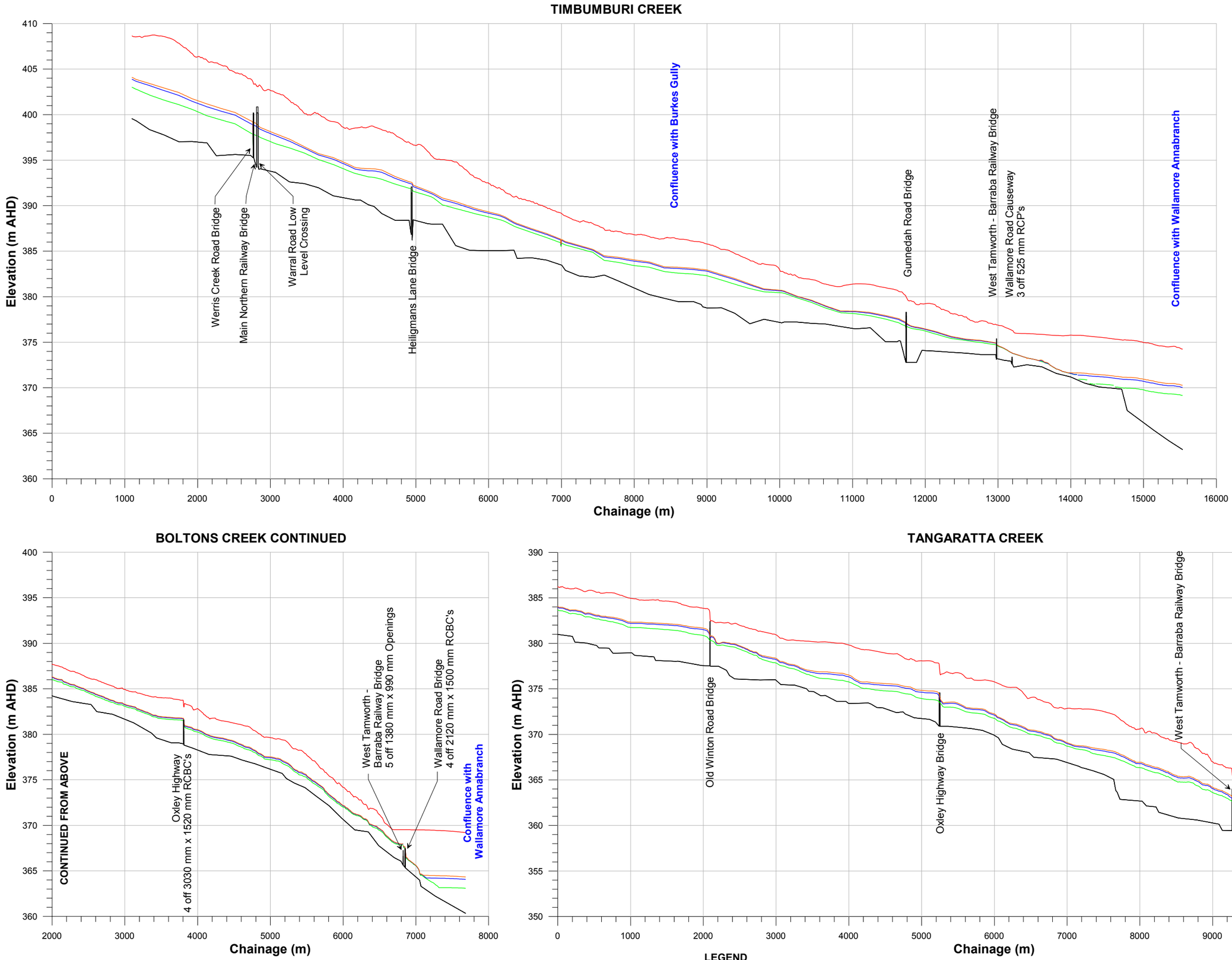
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.6
(Sheet 1 of 2)
DESIGN WATER SURFACE PROFILES



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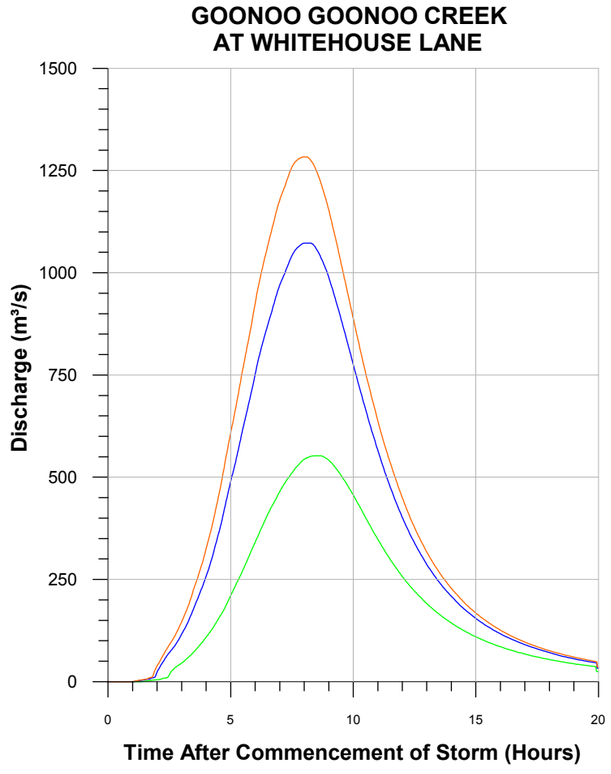
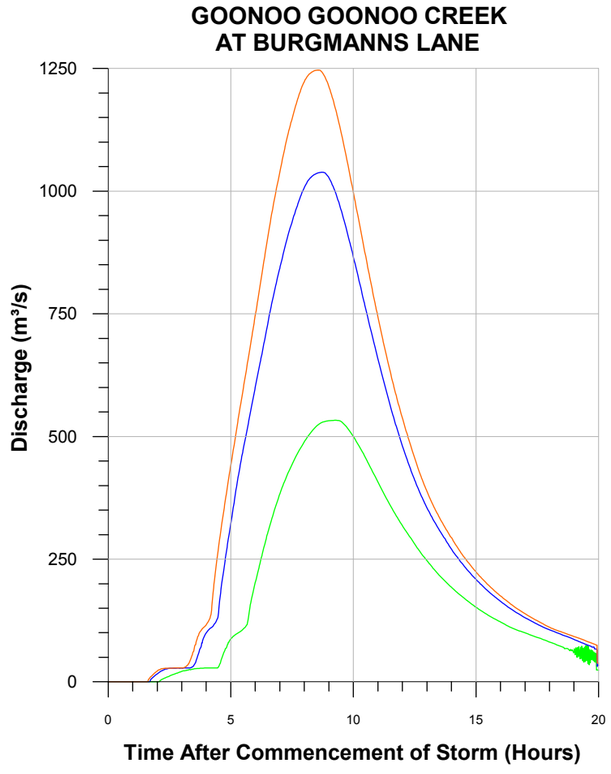
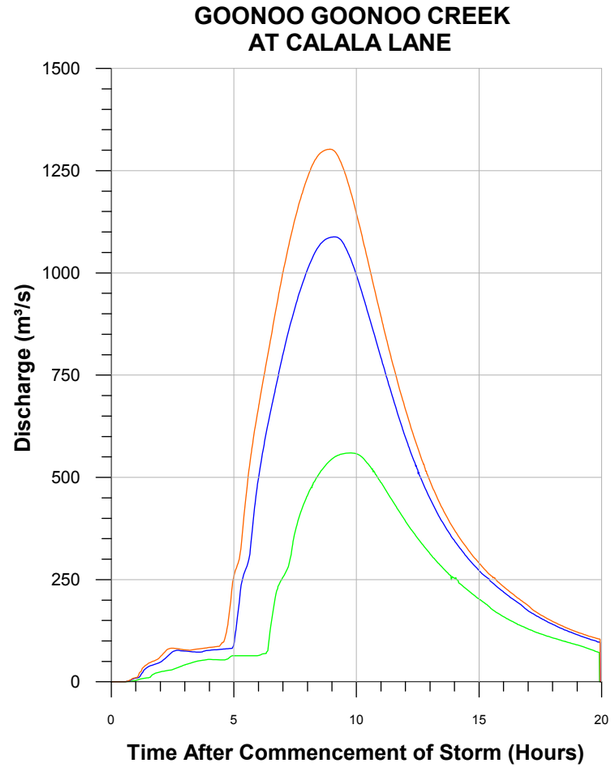
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

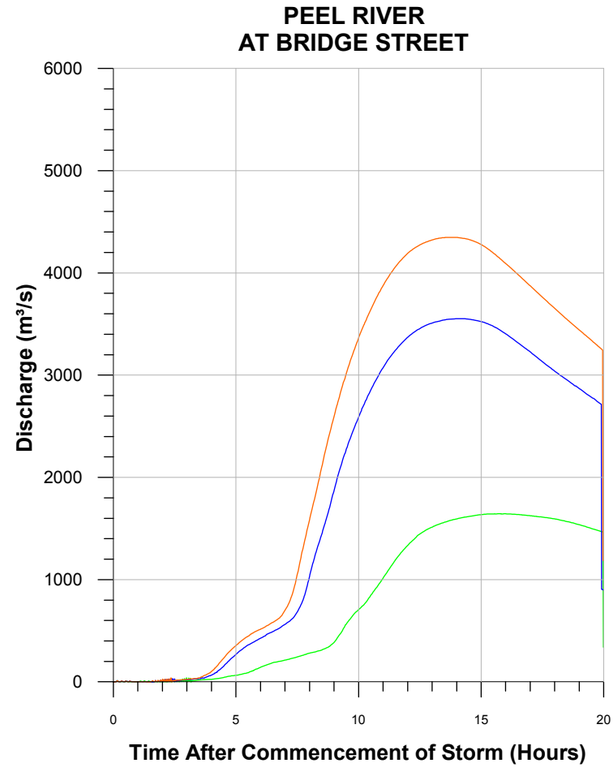
Figure 6.6
(Sheet 2 of 2)

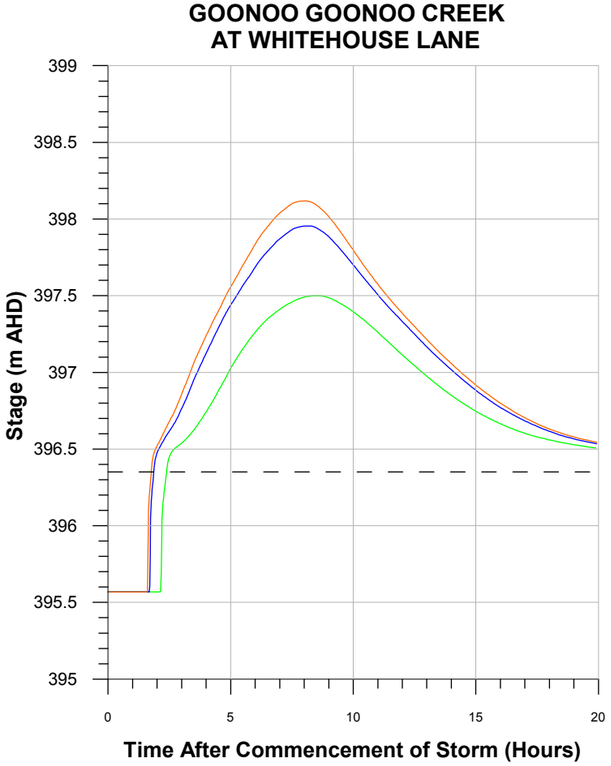
DESIGN WATER SURFACE PROFILES

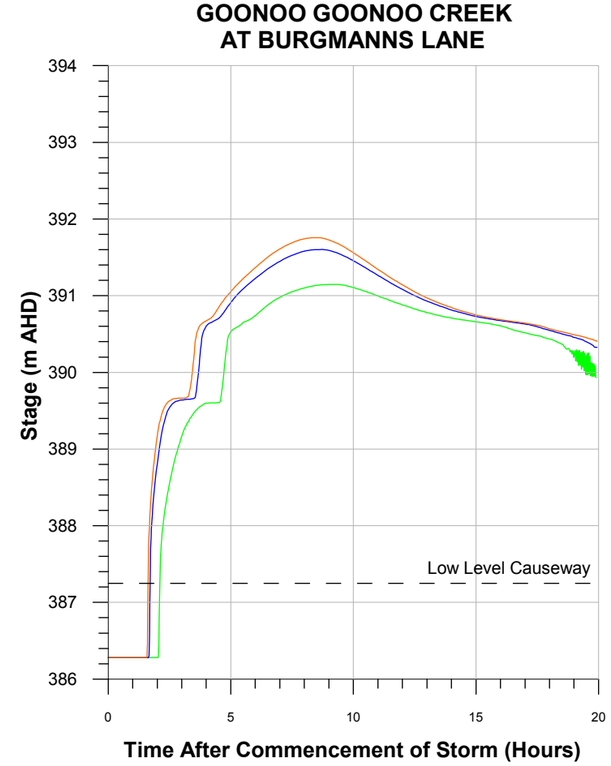


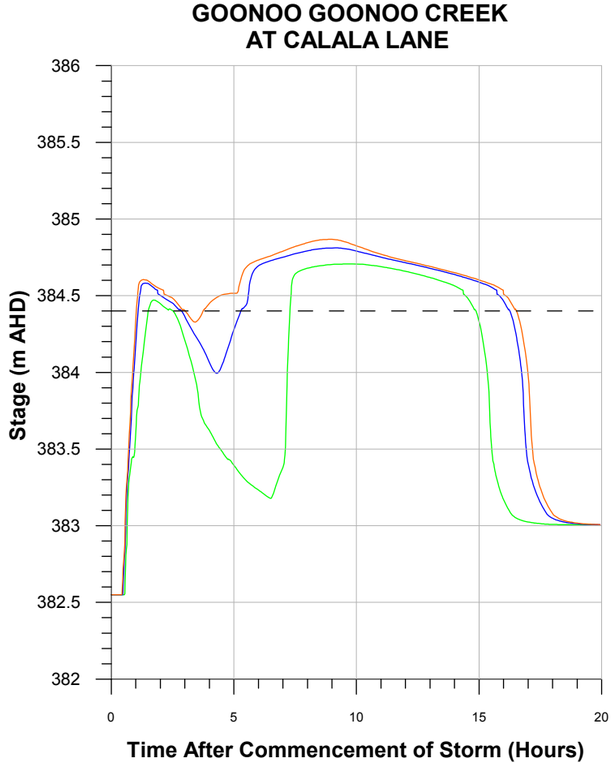


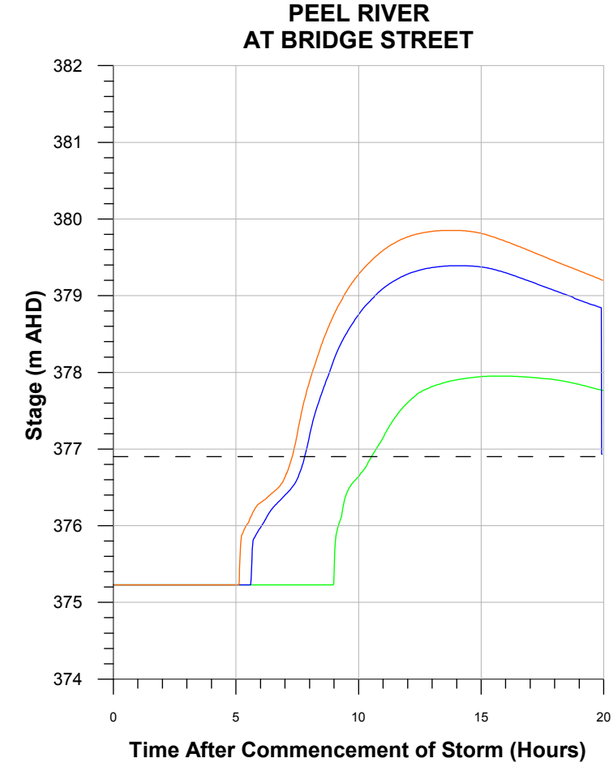












LEGEND

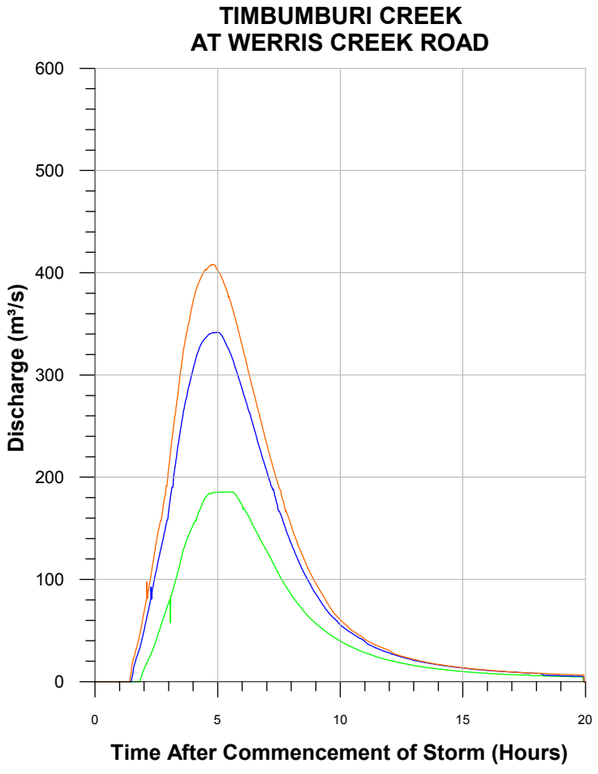
- 200 year ARI
- 100 year ARI
- 20 year ARI
- Low Point in Road

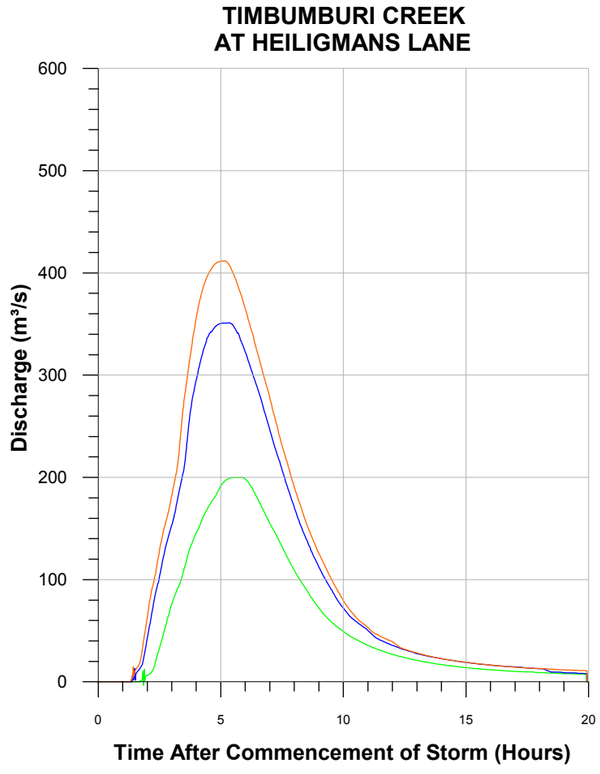
Lyall & Associates

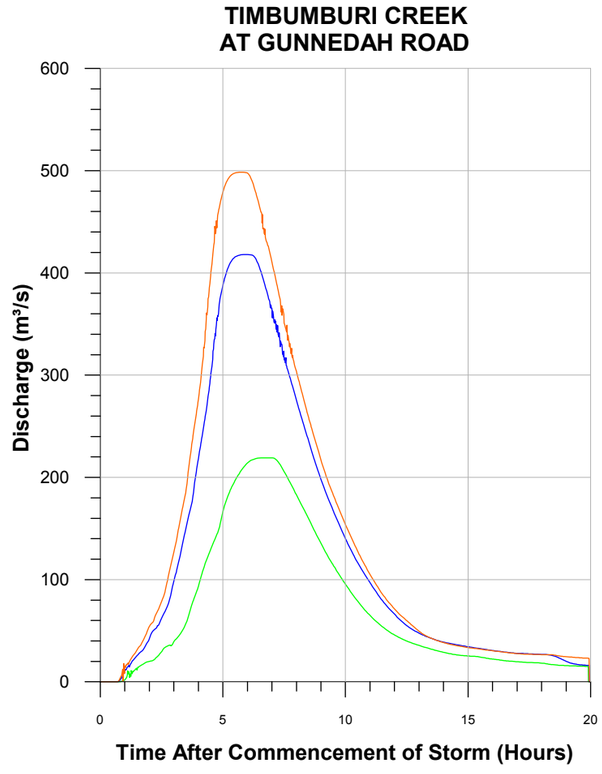
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

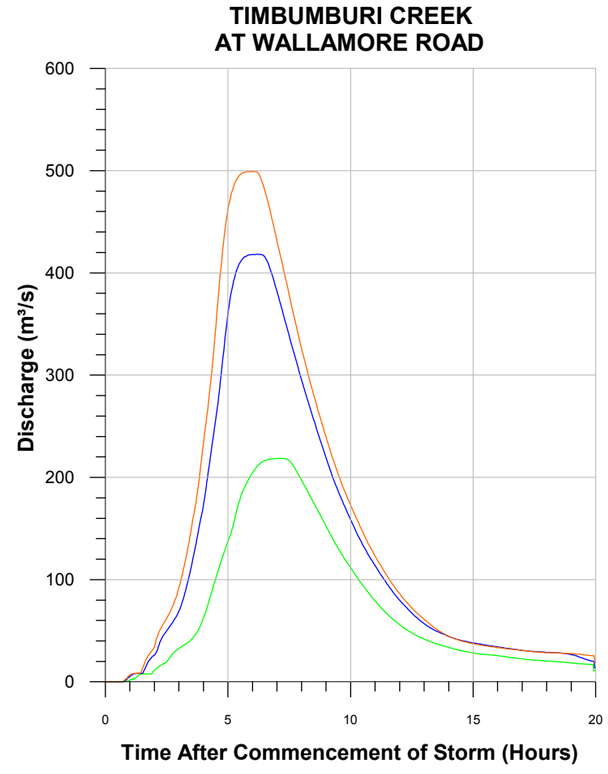
Figure 6.7
(Sheet 1 of 5)

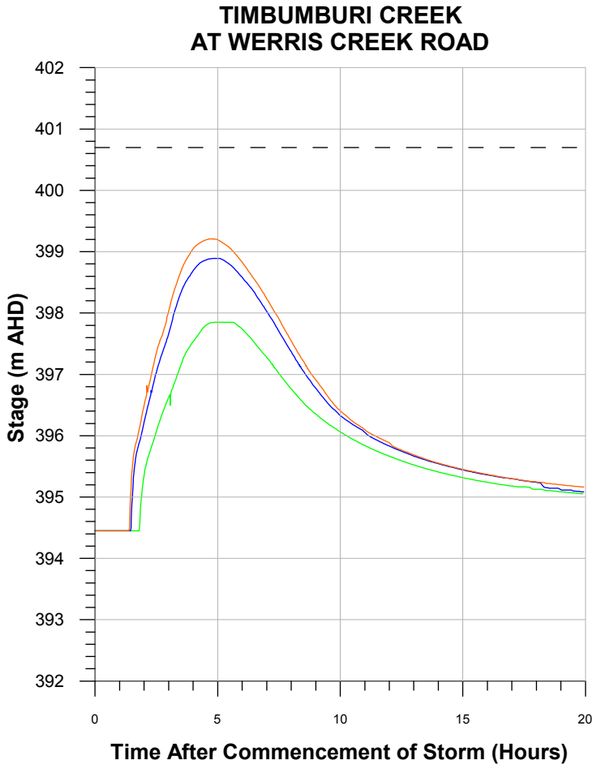
STAGE AND DISCHARGE HYDROGRAPHS
DESIGN FLOOD EVENTS

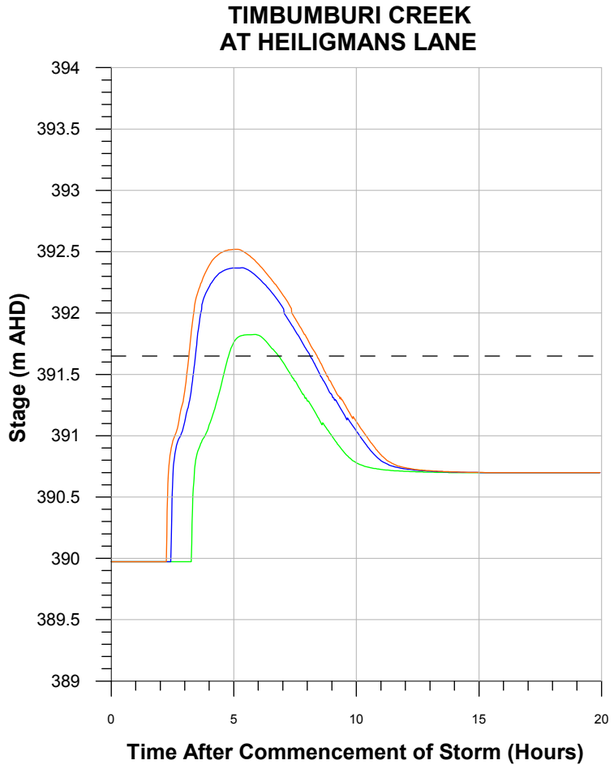


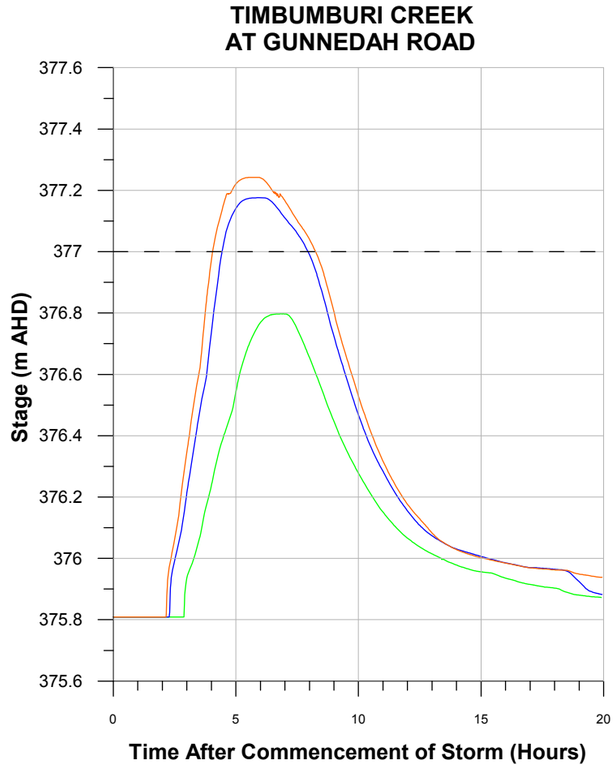


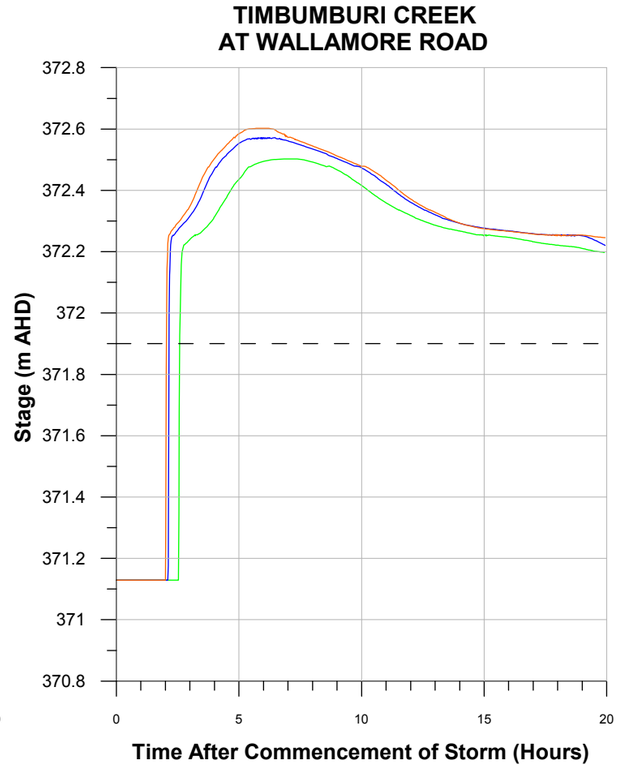












LEGEND

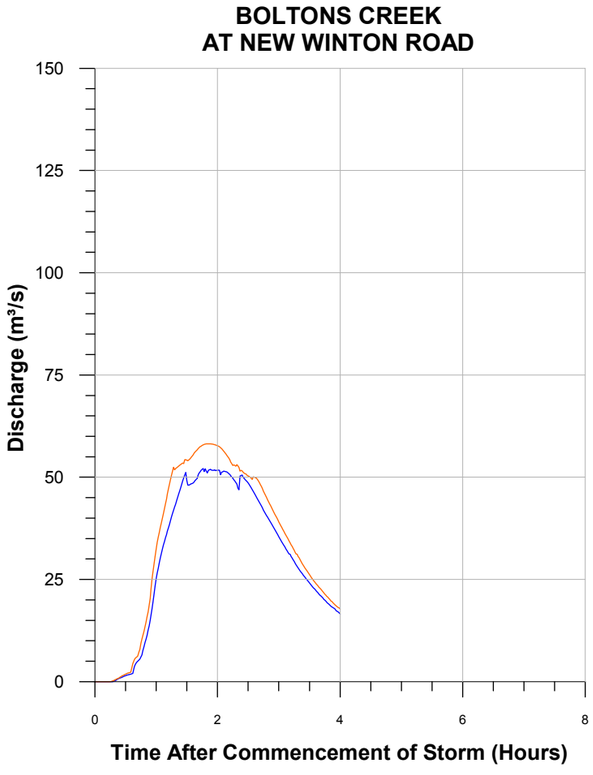
- 200 year ARI
- 100 year ARI
- 20 year ARI
- Low Point in Road

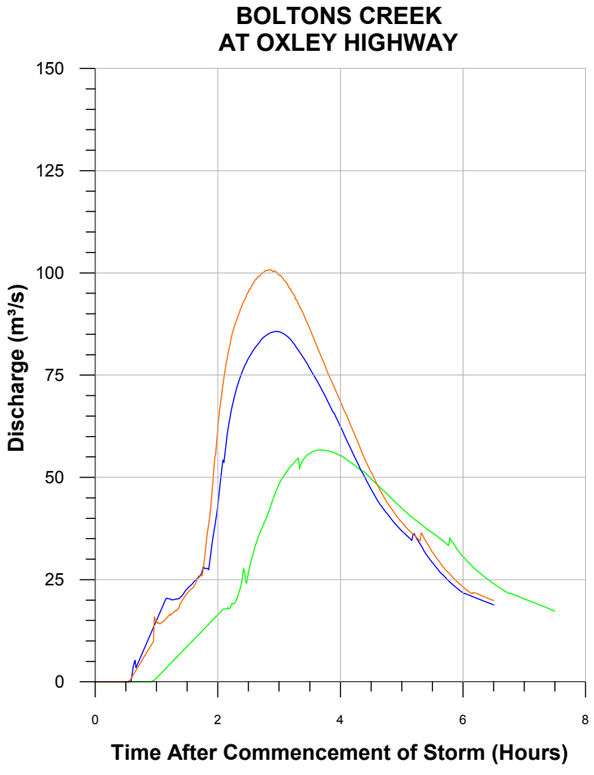
Lyall & Associates

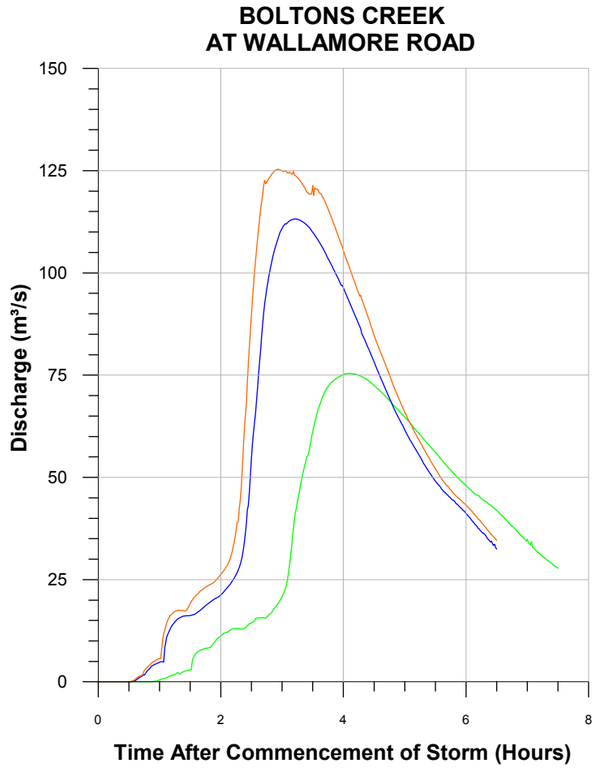
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

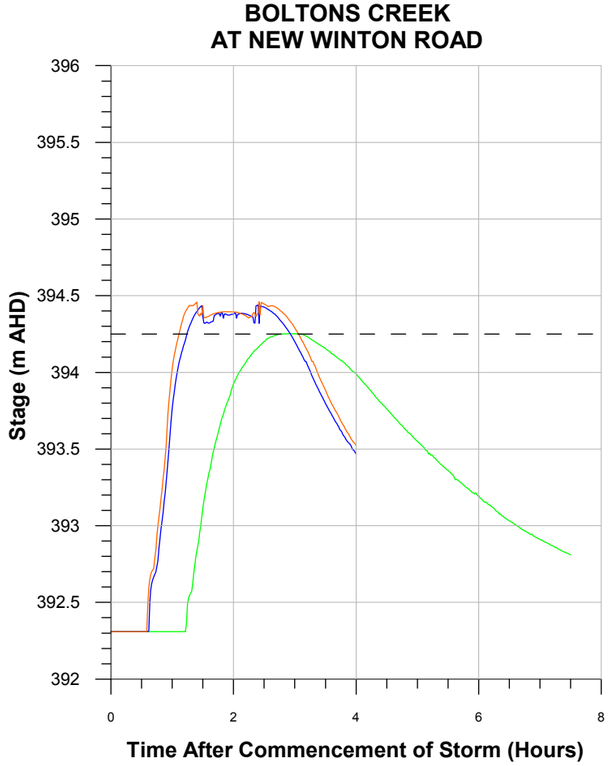
Figure 6.7
(Sheet 2 of 5)

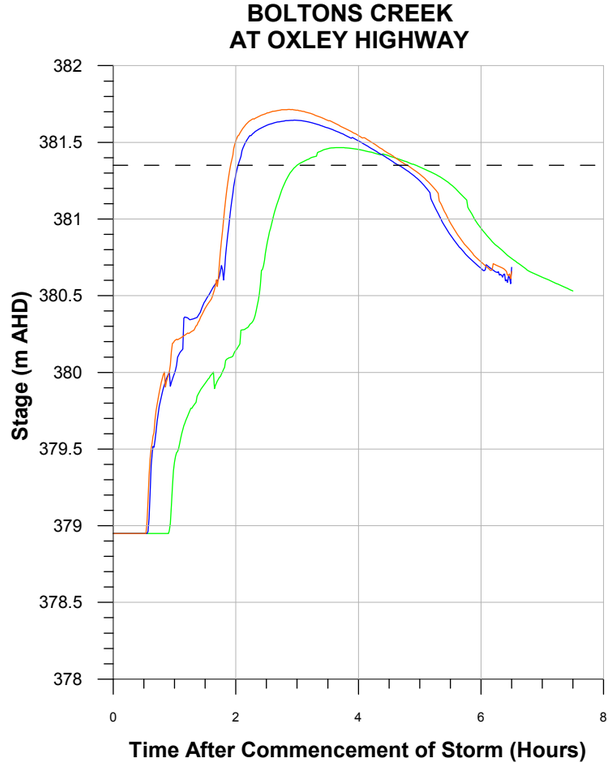
STAGE AND DISCHARGE HYDROGRAPHS
DESIGN FLOOD EVENTS

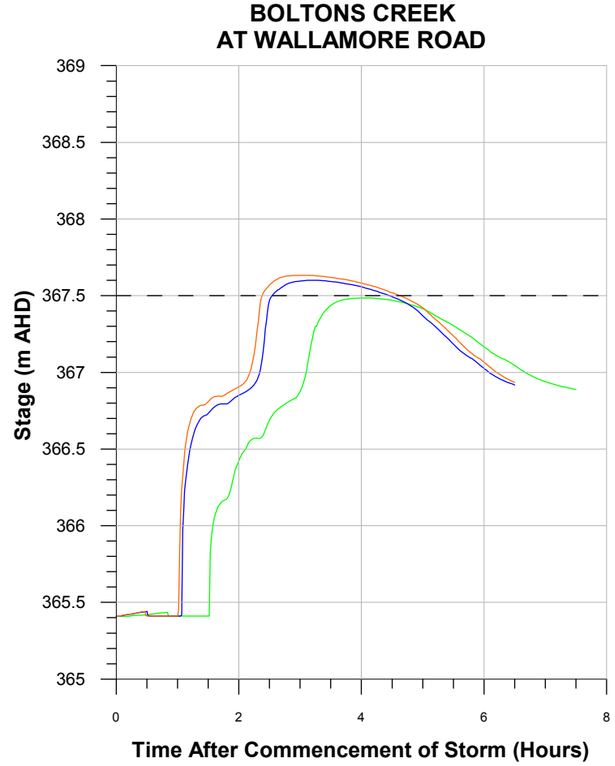












LEGEND

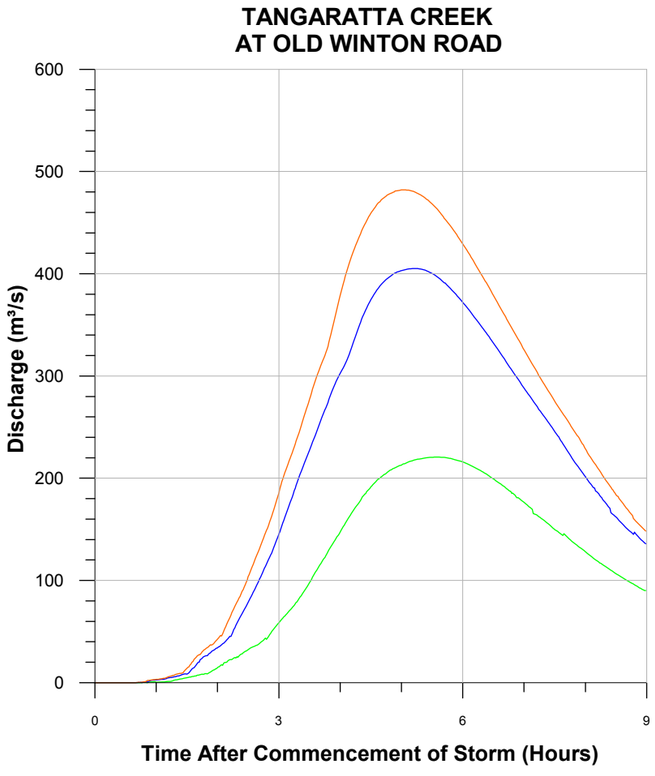
- 200 year ARI
- 100 year ARI
- 20 year ARI
- Low Point in Road

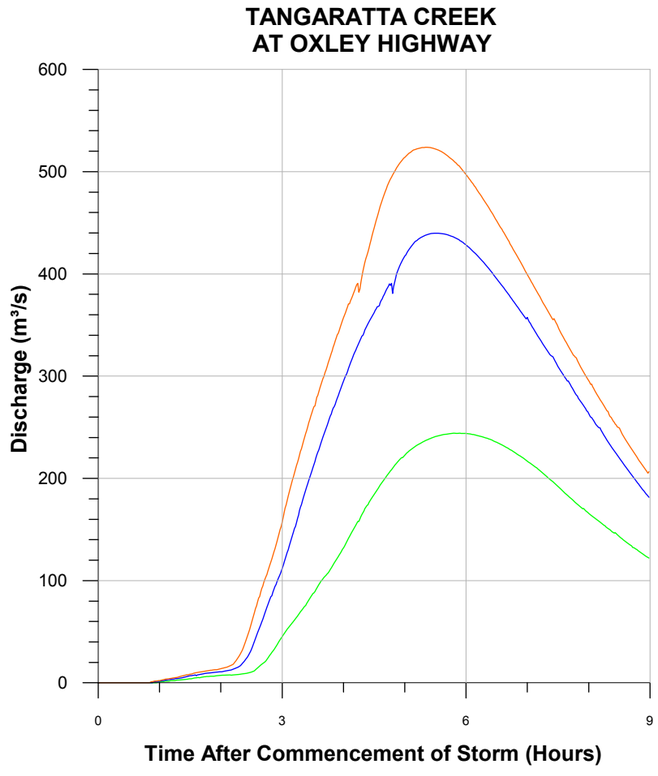
Lyall & Associates

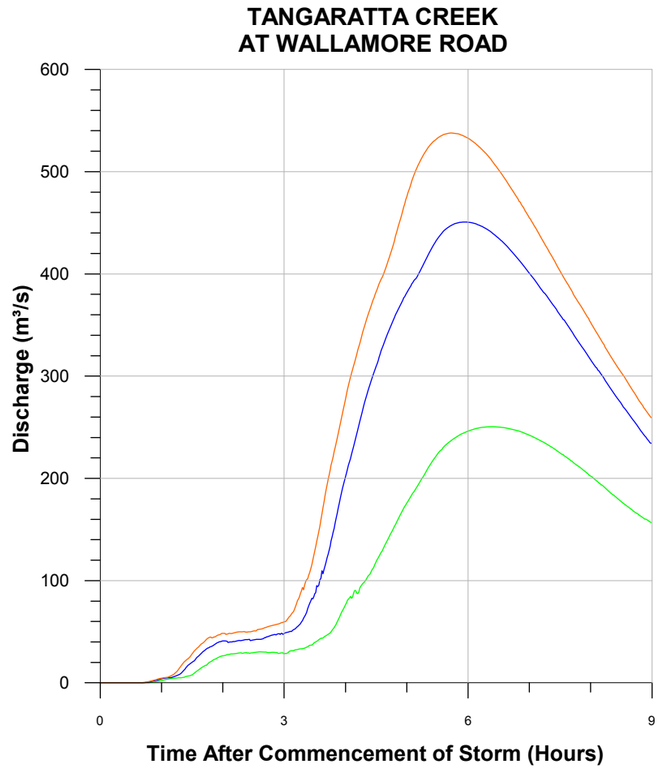
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

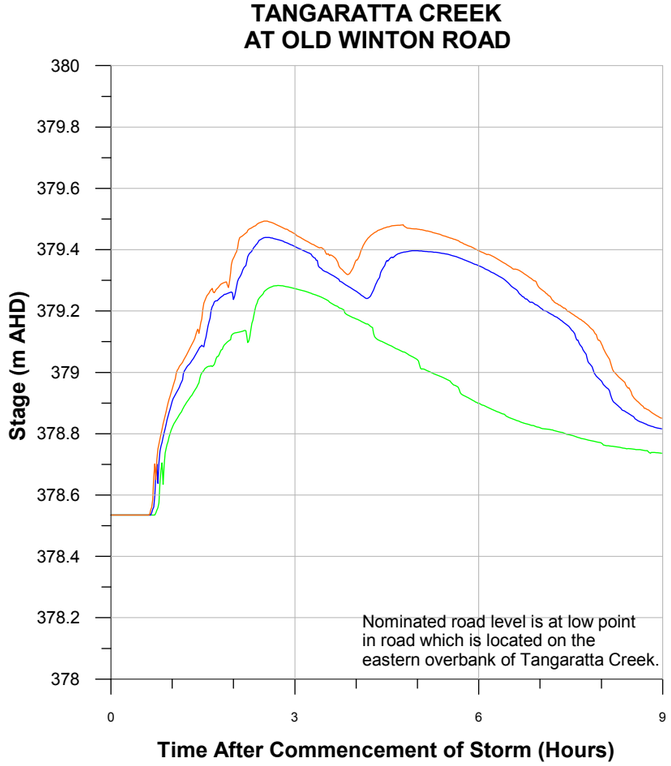
Figure 6.7
(Sheet 3 of 5)

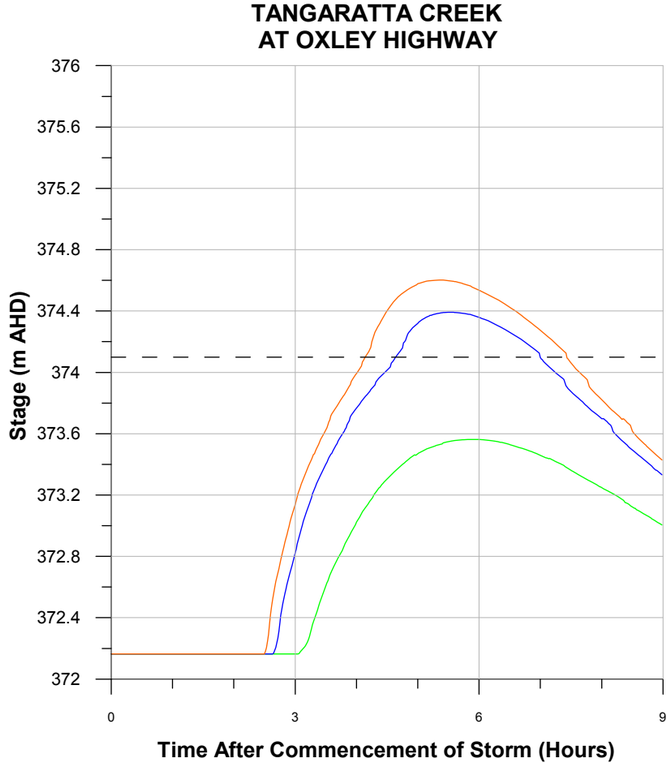
STAGE AND DISCHARGE HYDROGRAPHS
DESIGN FLOOD EVENTS

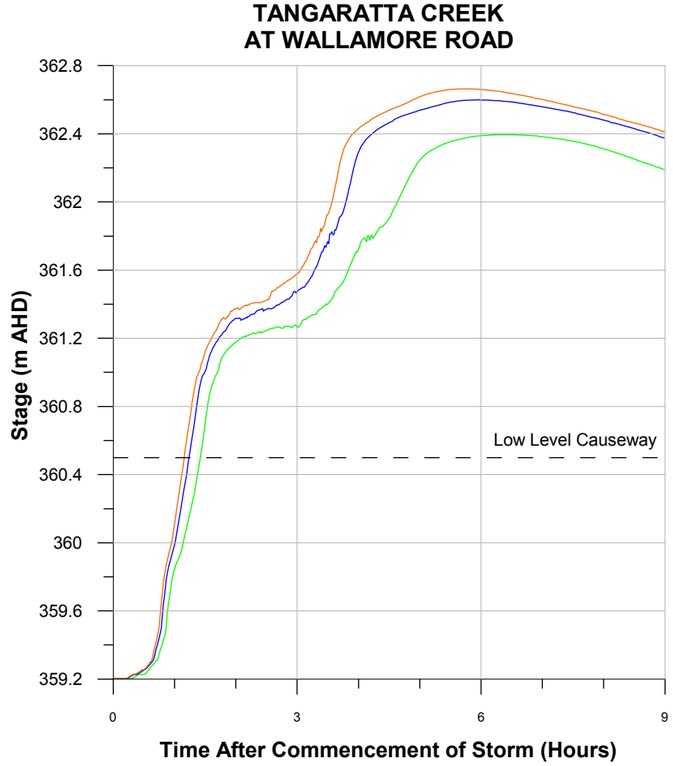












LEGEND

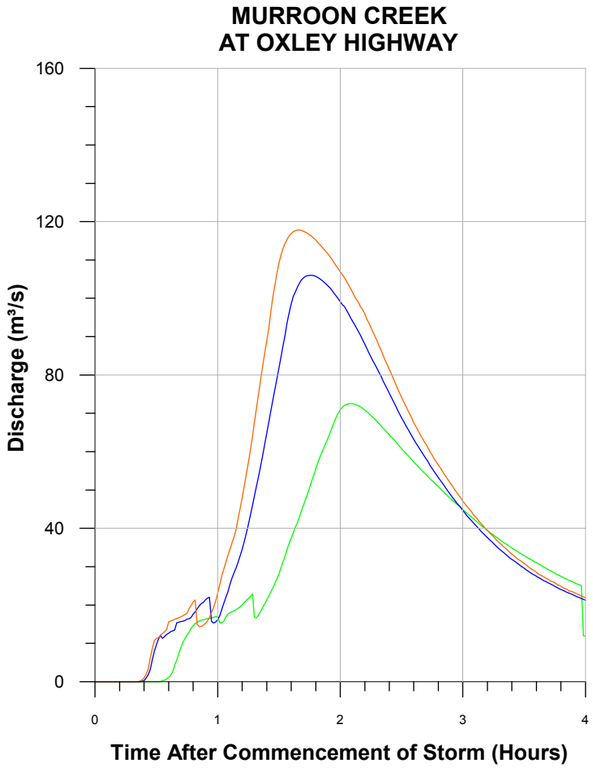
- 200 year ARI
- 100 year ARI
- 20 year ARI
- Low Point in Road

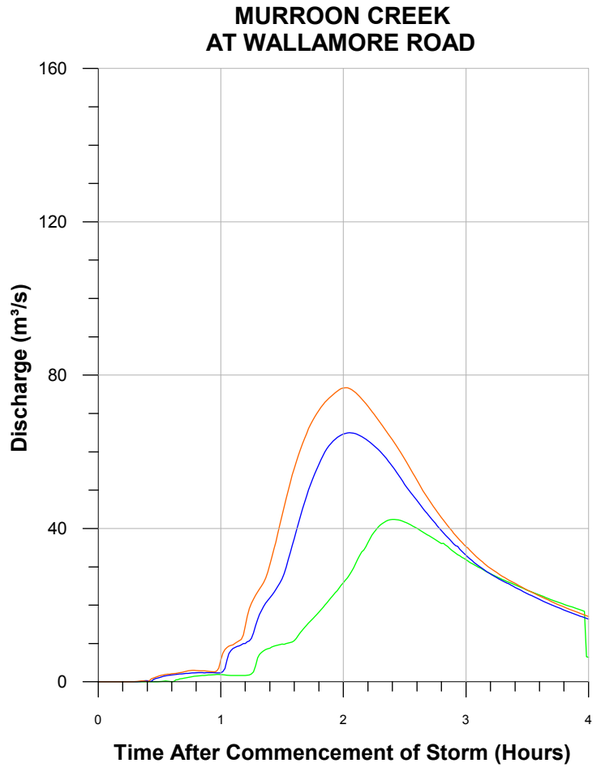
Lyall & Associates

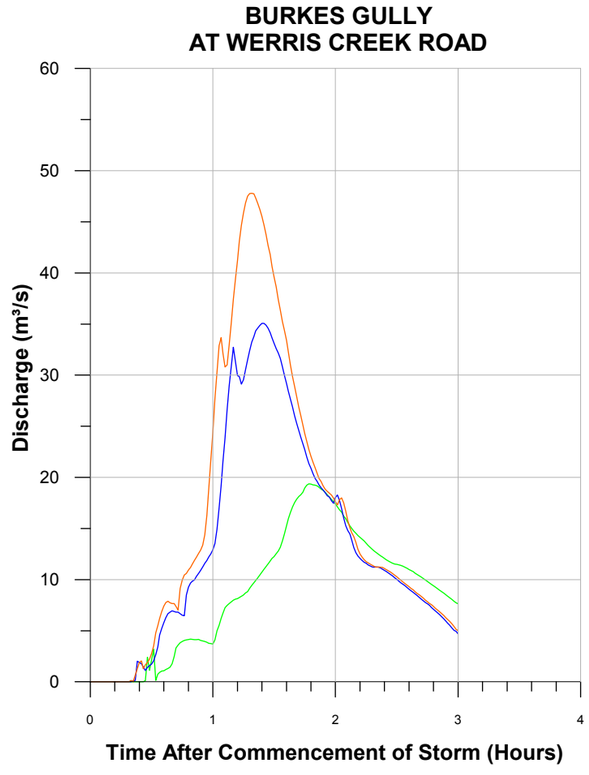
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

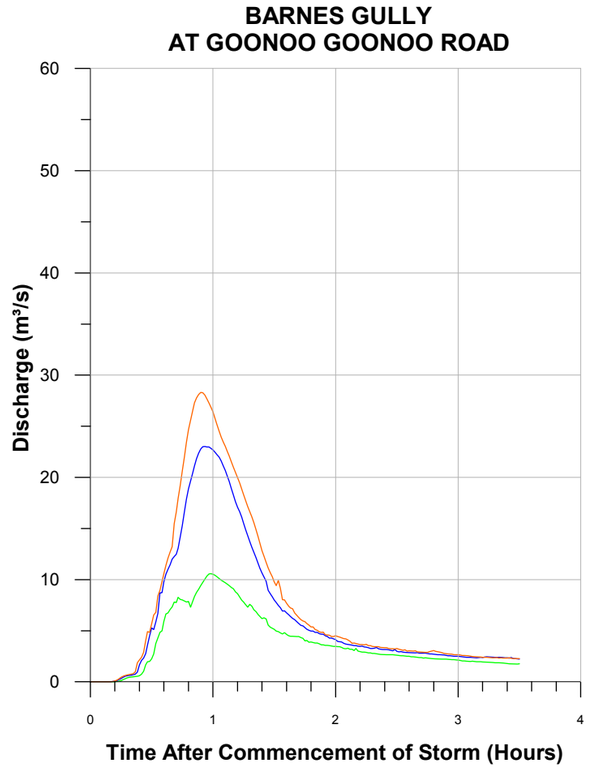
Figure 6.7
(Sheet 4 of 5)

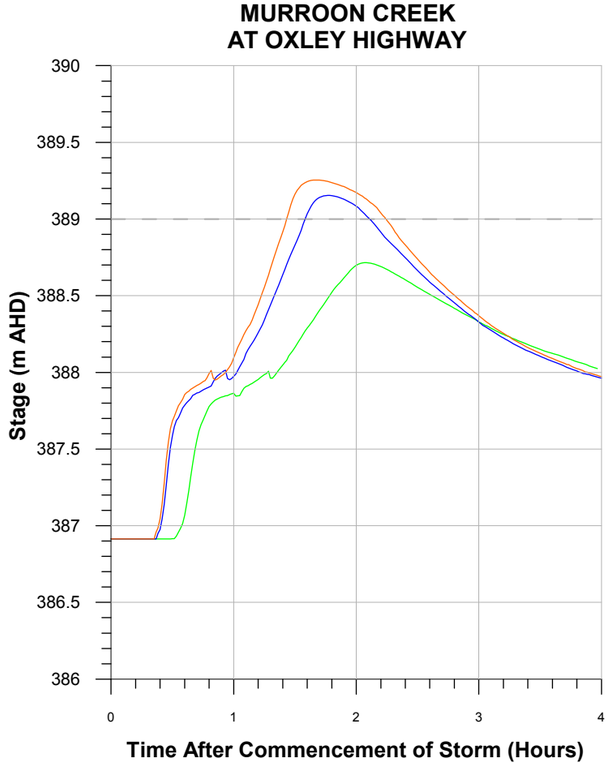
STAGE AND DISCHARGE HYDROGRAPHS
DESIGN FLOOD EVENTS

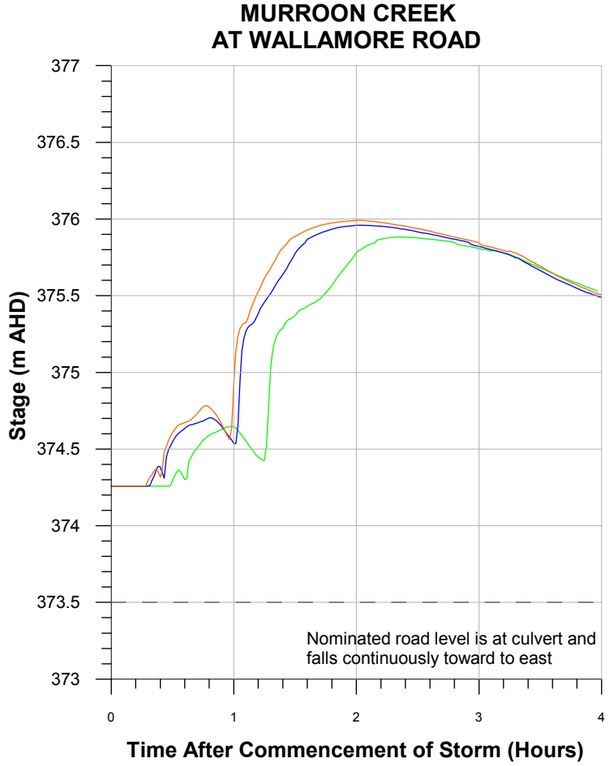


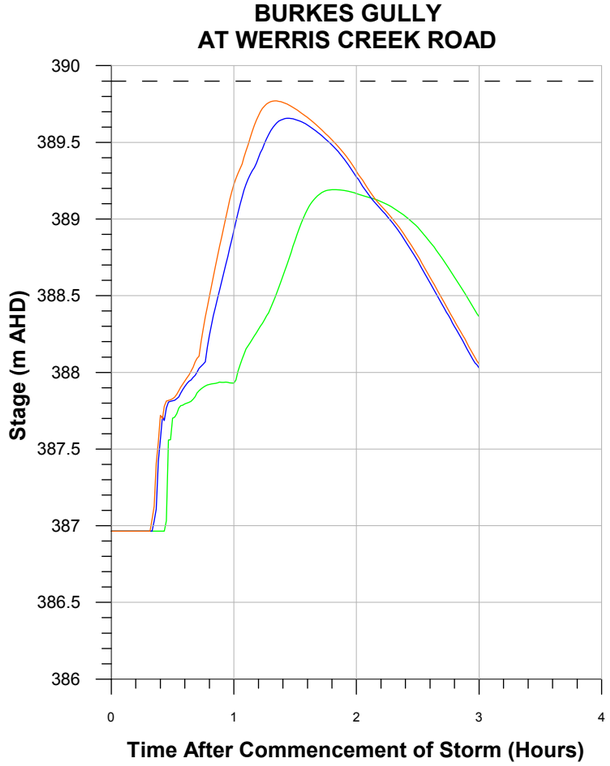


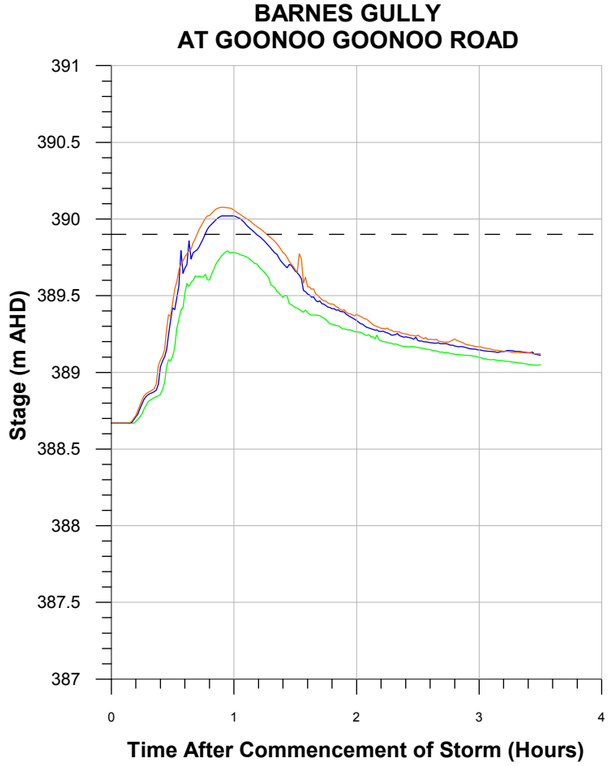












LEGEND

- 200 year ARI
- 100 year ARI
- 20 year ARI
- Low Point in Road

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.7
(Sheet 5 of 5)

STAGE AND DISCHARGE HYDROGRAPHS
DESIGN FLOOD EVENTS

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

INSET

REFER INSET

N

100 0 100 200 300 m

Scale: 1:10,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

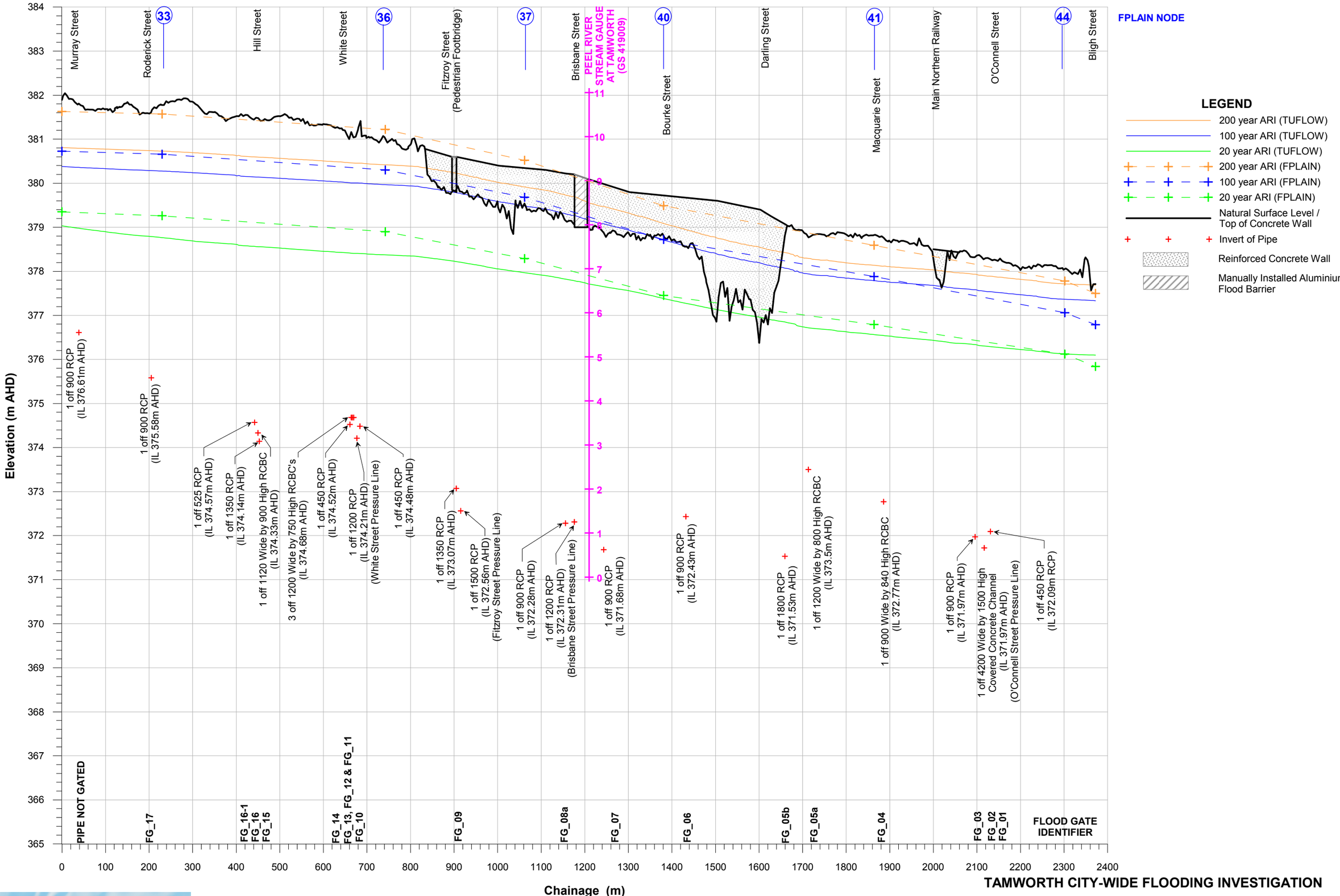
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Water Surface Elevation Contour (m AHD) (Main Stream Flooding Only)
- 379.68 — Peak Flood Level (m AHD) [L&A, 2006] (For Comparative Purposes Only)
- 381.5 — Crest Level of Levee (m AHD)
- 380.4 — Peak Flood Level (m AHD)
- 1.1 — Available Freeboard (m)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.8

AVAILABLE FREEBOARD TO CREST LEVEL OF CITY LEVEES
100 YEAR ARI

CBD LEVEE



Lyall & Associates

NOTES:

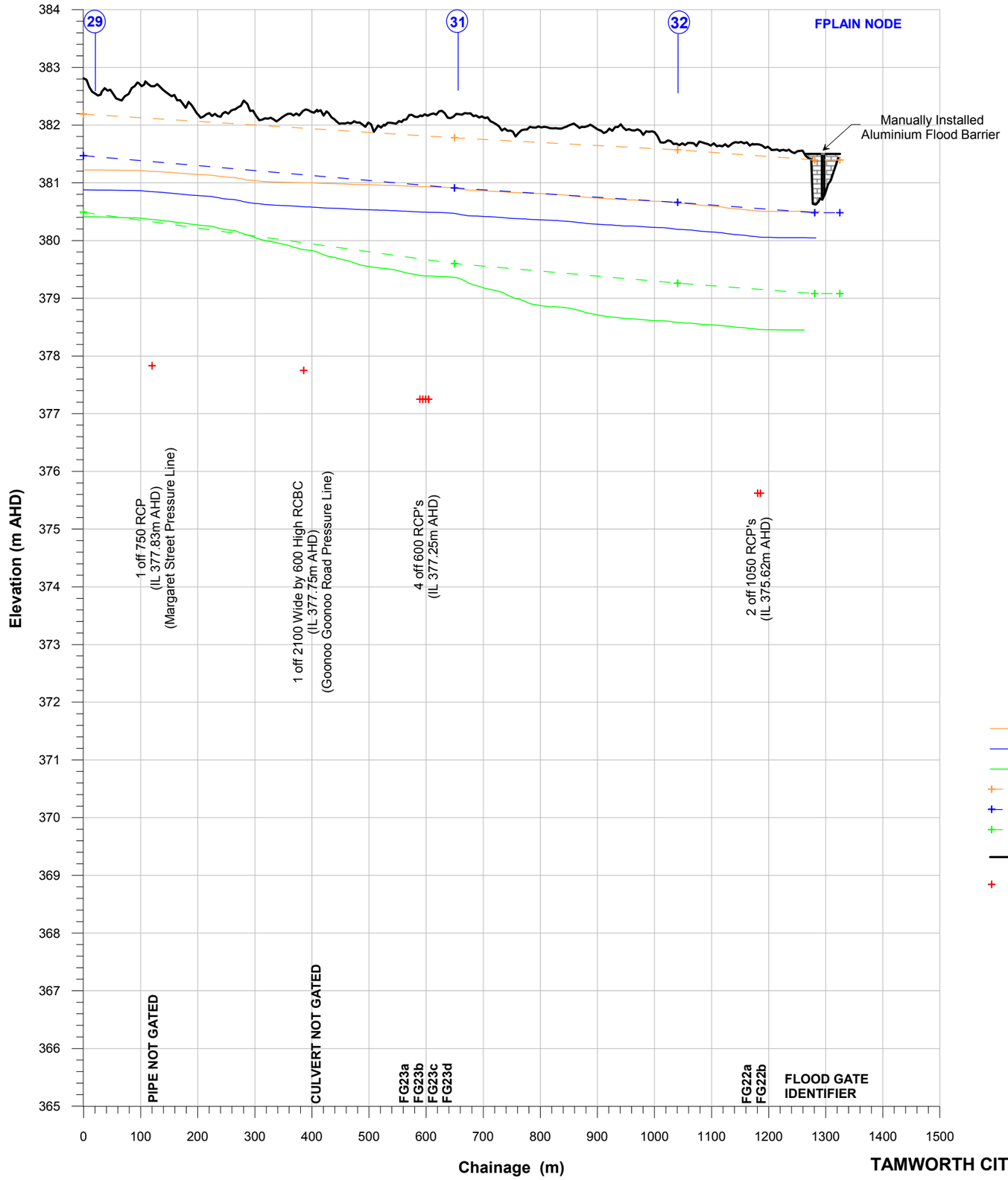
1. Gauge zero on stream gauge is 371.06 m AHD.
2. Source of FPLAIN flood level data: L&A, 2006.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.9
(Sheet 1 of 3)

LONGITUDINAL SECTION ALONG CREST OF CITY LEVEES
DESIGN FLOOD EVENTS

WESTERN LEVEE



TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.9
(Sheet 2 of 3)

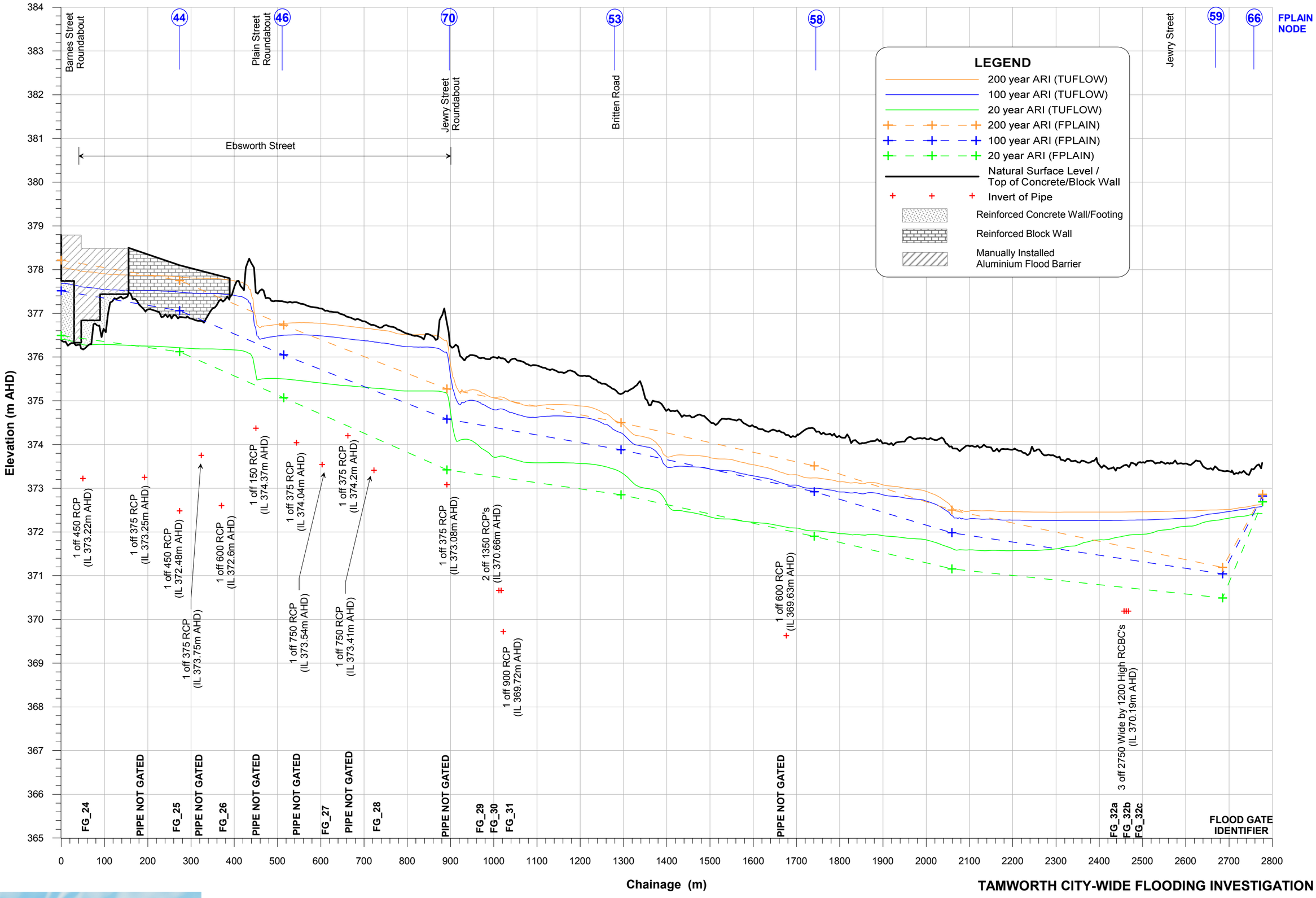
LONGITUDINAL SECTION ALONG CREST OF CITY LEVEES
DESIGN FLOOD EVENTS

Lyall & Associates

NOTES:

1. Source of FPLAIN flood level data: L&A, 2006.

TAMINDA LEVEE



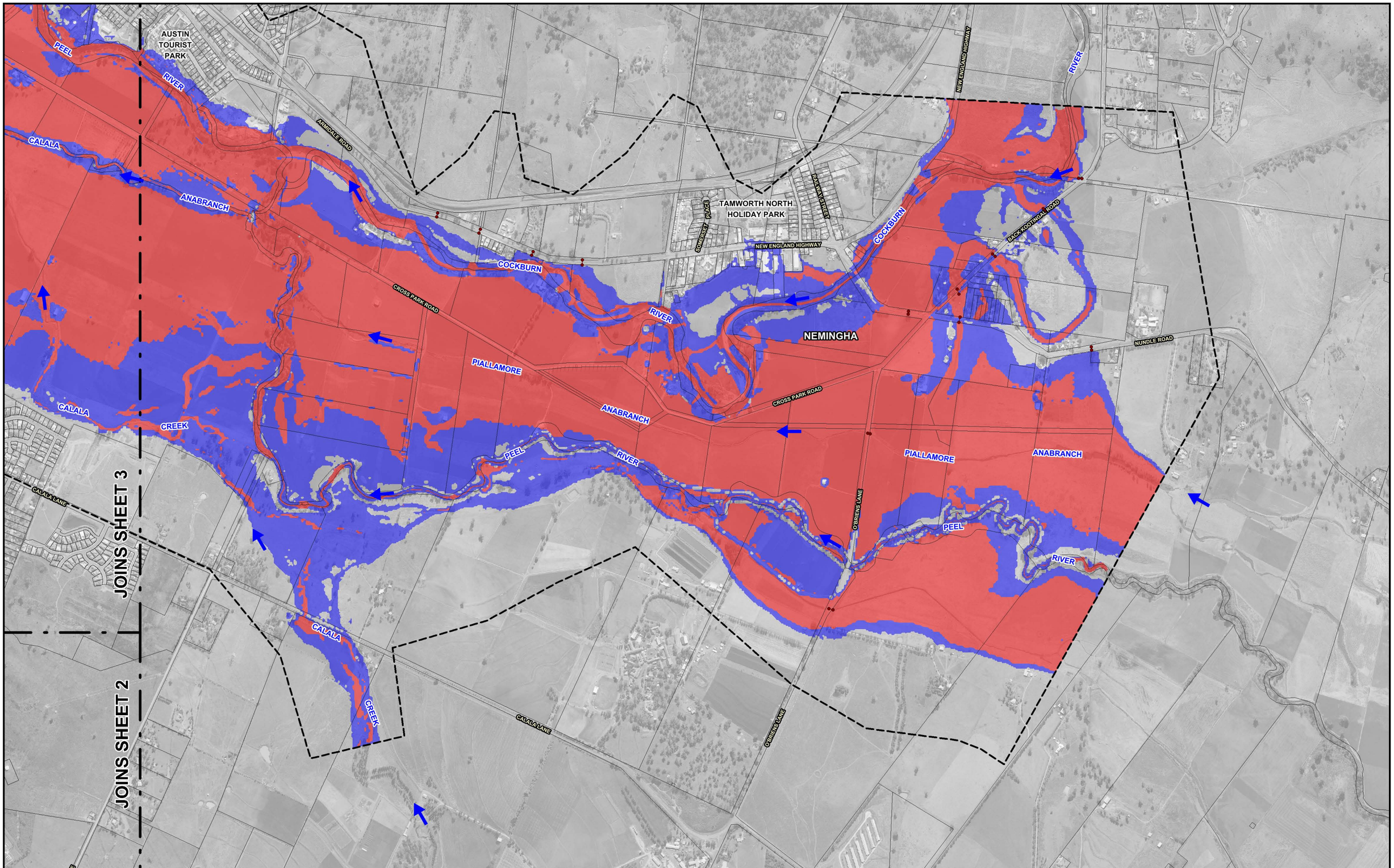
NOTES:

1. Source of FPLAIN flood level data: L&A, 2006.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.9
(Sheet 3 of 3)

LONGITUDINAL SECTION ALONG CREST OF CITY LEVEES
DESIGN FLOOD EVENTS



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 1 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

CREEK

BURGESS LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

PALMER DRIVE

KINGSWOOD

PAGES LANE

DANCAR CRESCENT

KINGSWOOD ROAD

KINGSWOOD
PARK

HERDEN ROAD

ROBERTS ROAD

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

CREEK

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

South Tamworth Rural Lands Master Plan Area

High Provisional Hydraulic Hazard

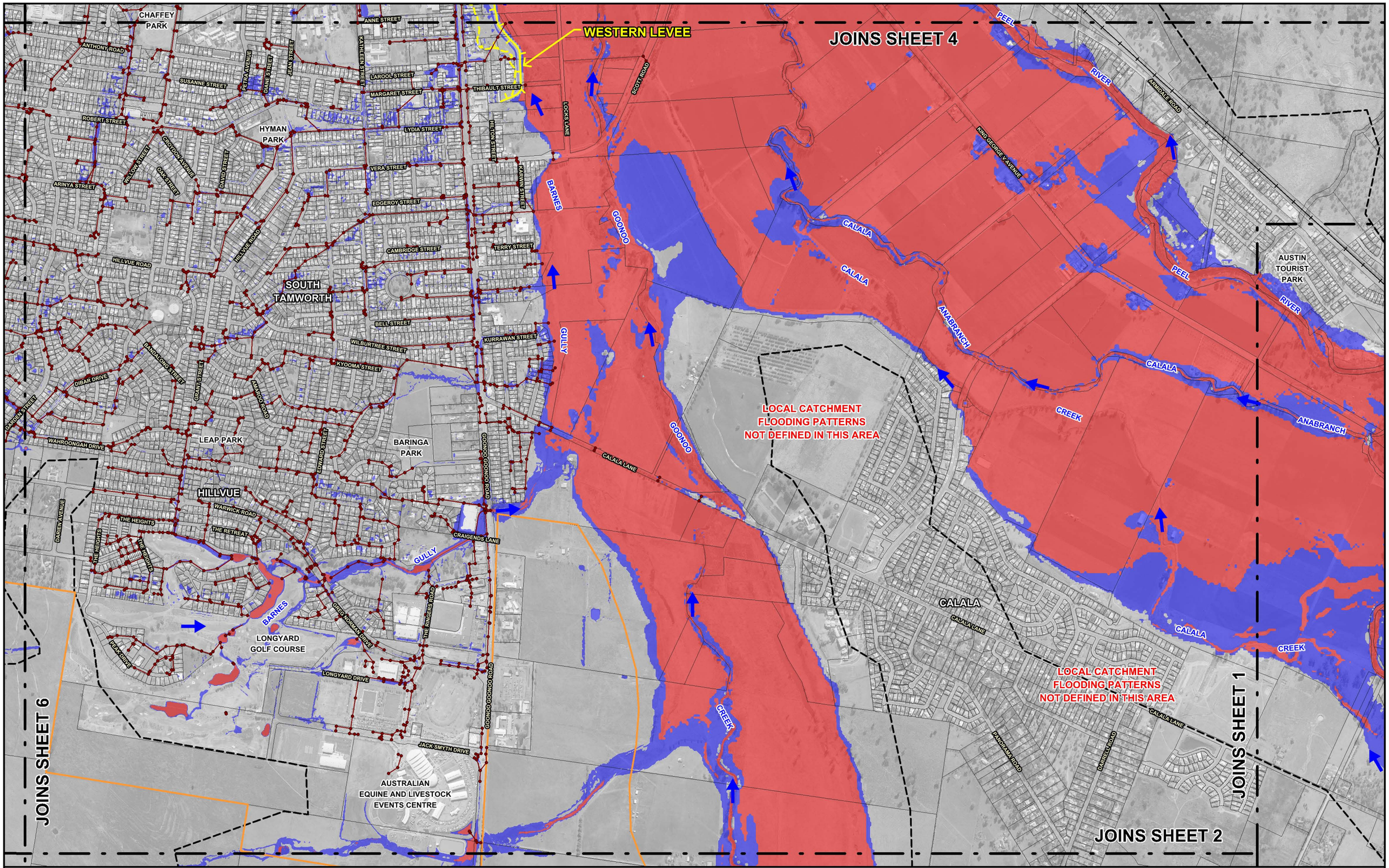
Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 2 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Refer L&A, 2012 for assessed extents of high and low provisional hydraulic hazard in this area.
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard (Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 3 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

JOINS SHEET 7

PEEL

WALLAMORE

ANNABRANCH

RIVER

TAMINDA LEVEE

JOHNSON STREET

PEEL STREET

MARIUS STREET

BLIGH STREET

PIPER STREET

DARUKA ROAD

JANISON STREET

NORTH STREET

NORTH
TAMWORTH

MACQUARIE STREET

O'CONNELL STREET

DARLING STREET

CBD LEVEE

BOURKE STREET

BRISBANE STREET

RAGLAN STREET

UPPER STREET

HARGRAVE STREET

HYDE STREET

EBSWORTH STREET

BARNES

PLAIN STREET

BELMORE STREET

DENMAN STREET

CROWN STREET

LOCKHEED STREET

RIVERSIDE
PARK

LOCAL CATHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

EAST
TAMWORTH

PEEL RIVER AT TAMWORTH
(GS419009)

GULLY

HITCHCOCK STREET

WHITE STREET

MARIUS STREET

KABLE AVENUE

PEEL STREET

HILL STREET

CARTHAGE STREET

ROEBUCK STREET

MURRAY STREET

BICENTENNIAL
PARK

TAMWORTH

TAMWORTH
SHOWGROUNDS

SHOWGROUND ROAD

BARNES STREET

MAIN NORTHERN RAILWAY

BRIDGE STREET

WEST
TAMWORTH

HERCULES STREET

GIPPS STREET

BELMORE
PARK

PHILLIP STREET

MATTHEWS STREET

MANOO AVENUE

GUNNEDAH ROAD

DUNI ROAD

TAMWORTH
GOLF COURSE

SCULLY
PARK

GEORGE STREET

KENT STREET

GOONOO GOONOO ROAD

SOUTH
TAMWORTH

CHAFFEY
PARK

ANNE STREET

GOONOO

GULLY

CREEK

SCOTT ROAD

WESTERN LEVEE

LOCAL CATHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

PEEL RIVER AT UPSTREAM PARADISE WEIR
(GS419024)

CARMICHAEL STREET

CALALA
CREEK

KING GEORGE V AVENUE

RIVER

PEEL

JOINS SHEET 3

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard
  (Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)
- Stream Gauge

Refer L&A, 2012 for assessed extents of high and low provisional hydraulic hazard in this area.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 4 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

JOINS SHEET 6

JOINS SHEET 2

WARRAL

BURGMANNS LANE

WARRAL ROAD

WERRIS CREEK ROAD

IMPALA ESTATE ROAD

TIMBUMBURI CREEK

WARRAL-BITHRAMERE ROAD

MAIN NORTHERN RAILWAY

SPAINS LANE

GOWRIE ROAD

HARTMANN DRIVE

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

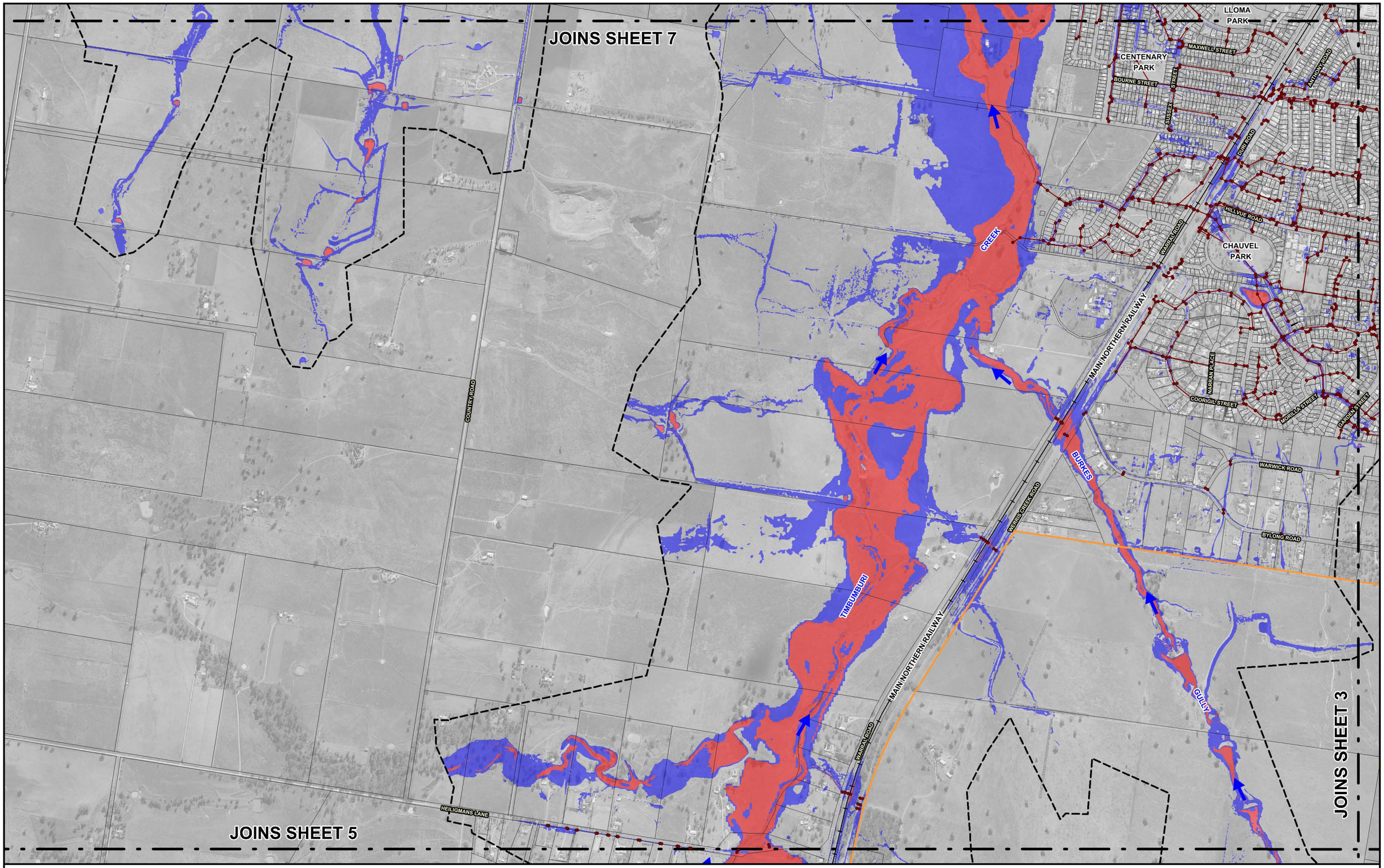
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 5 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 6 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

ARMSTRONG STREET
PHOENIX STREET
GODDARD LANE
WALLAMORE ROAD
OXLEY HIGHWAY
TAMWORTH REGIONAL AIRPORT
BASIL BROWN DRIVE
NEW WINTON ROAD
OXLEY LANE
GUNNEDAH ROAD
COUNTRY ROAD
MURROON CREEK
WEST TAMWORTH–BARABA RAILWAY
FLINDERS STREET
MITCHELL STREET
EVANS STREET
MARATHON STREET
CUNNINGHAM STREET
NORLAND CRESCENT
WESTDALE
TIMBUMBURI
CREEK
ANNABRANCH
WALLAMORE
TAMINDA LEVEE
TAMWORTH RACECOURSE
JEWRY STREET
WALLAMORE ROAD
TAMWORTH SHOWGROUNDS
COOK STREET
DAMPIER STREET
TAMINDA
GUNNEDAH ROAD
COLE ROAD
SMITH STREET
QUINN STREET
SOUTHVIEW STREET
SUE CRES
MARIRA ROAD
LLOMA PARK

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Refer L&A, 2012 for assessed extents of high and low provisional hydraulic hazard in this area.
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard
  (Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 7 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

BOWLERS LANE

PEEL

RIVER

CREEK

BOLTONS

WEST-TAMWORTH-BARABA RAILWAY

WALLAMORE ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

MANILLA ROAD

OXLEY VALE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

PEEL

HIGGINS LANE

WALLAMORE

CREEK

RIVER

SEWAGE
TREATMENT
PLANT

MURROON

ANNABRANCH

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

High Provisional Hydraulic Hazard

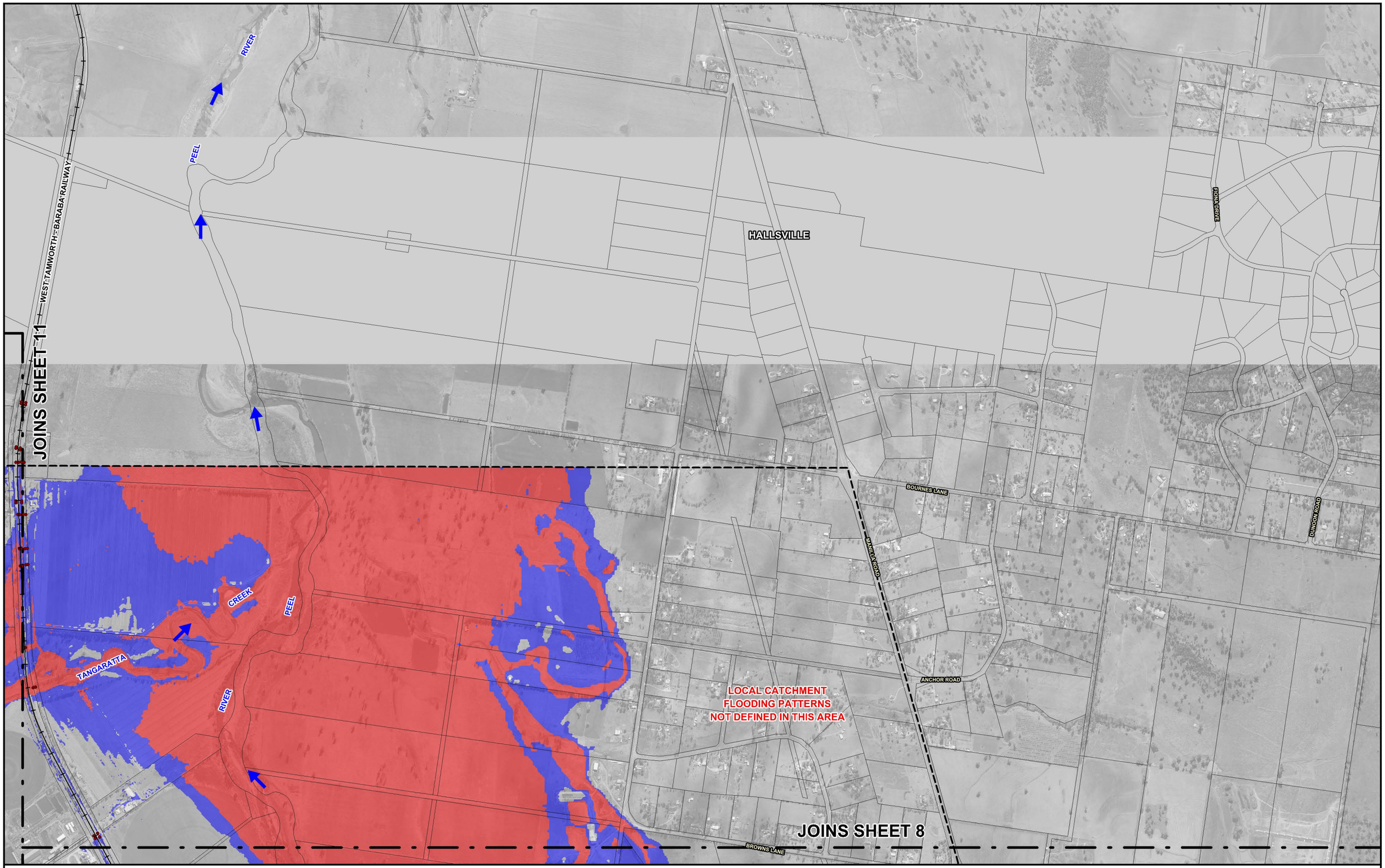
Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 8 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 9 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

TANGARATTA CREEK

OLD WINTON ROAD

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS CREEK

TAMWORTH REGIONAL AIRPORT

DURI-WALLAMORE ROAD

BOLTONS CREEK

NEW WINTON ROAD

DURI-WALLAMORE ROAD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

High Provisional Hydraulic Hazard

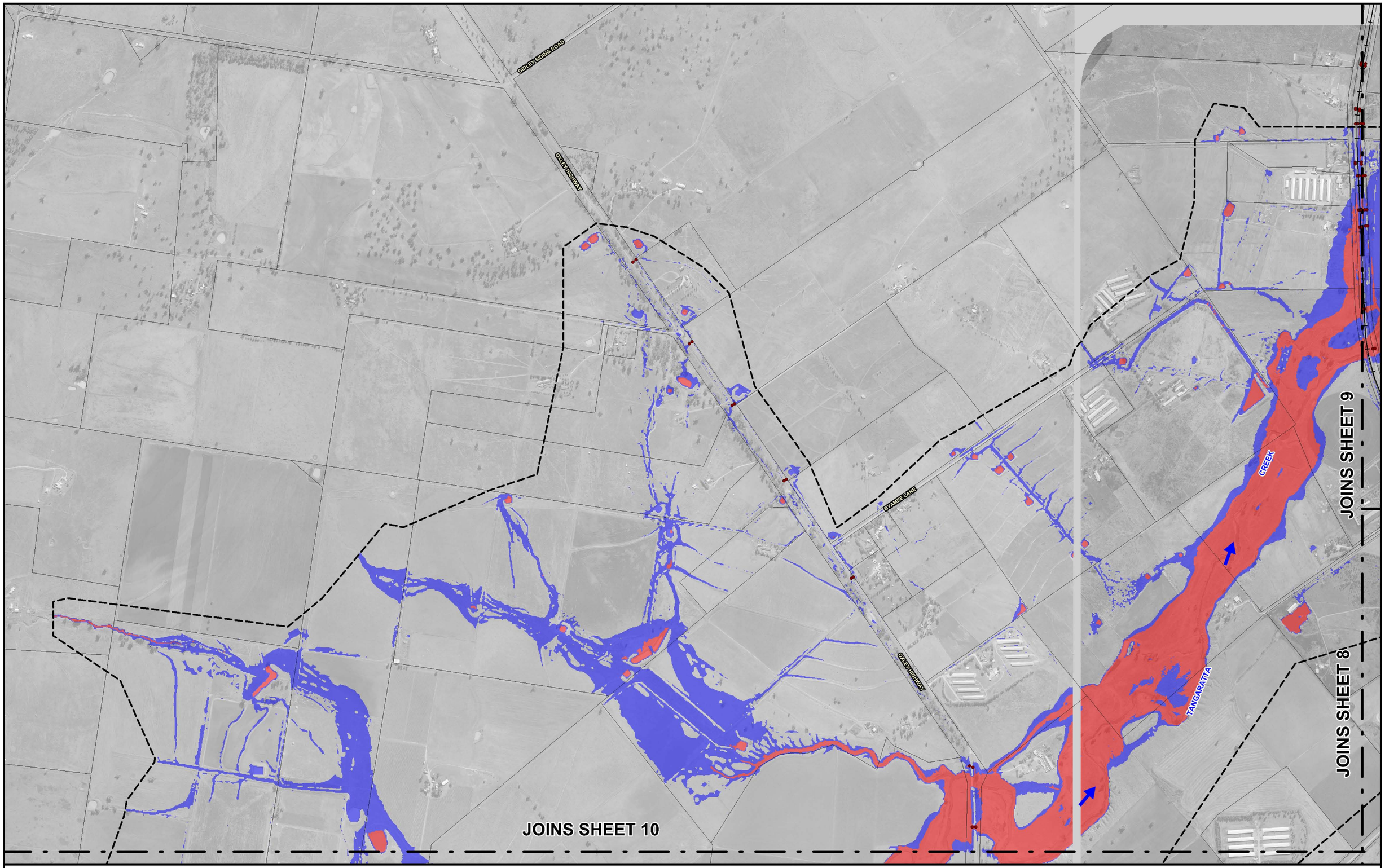
Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 10 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- High Provisional Hydraulic Hazard
- Low Provisional Hydraulic Hazard

(Categories based on Figure L2 of NSW Government's Floodplain Development Manual, 2005)

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.10
(Sheet 11 of 11)

PROVISIONAL FLOOD HAZARD
100 YEAR ARI

AUSTIN TOURIST PARK
PEEL RIVER
CALALA ANABRANCH
ARMIDALE ROAD
TAMWORTH NORTH HOLIDAY PARK
SOMERSET PLACE
RAILWAY STREET
NEW ENGLAND HIGHWAY
COCKBURN RIVER
CROSS PARK ROAD
PIALLAMORE ANABRANCH
NEMINGHA
BACKWOOTINGAL ROAD
NUNDLE ROAD
CALALA CREEK
PEEL RIVER
O'BRIENS LANE
CALALA LANE
JOINS SHEET 3
JOINS SHEET 2

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 1 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

CREEK

BURGESS LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

PALMER DRIVE

KINGSWOOD

PAGES LANE

DANDAR CRESCENT

KINGSWOOD ROAD

KINGSWOOD PARK

HERDEN ROAD

ROBERTS ROAD

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

CREEK

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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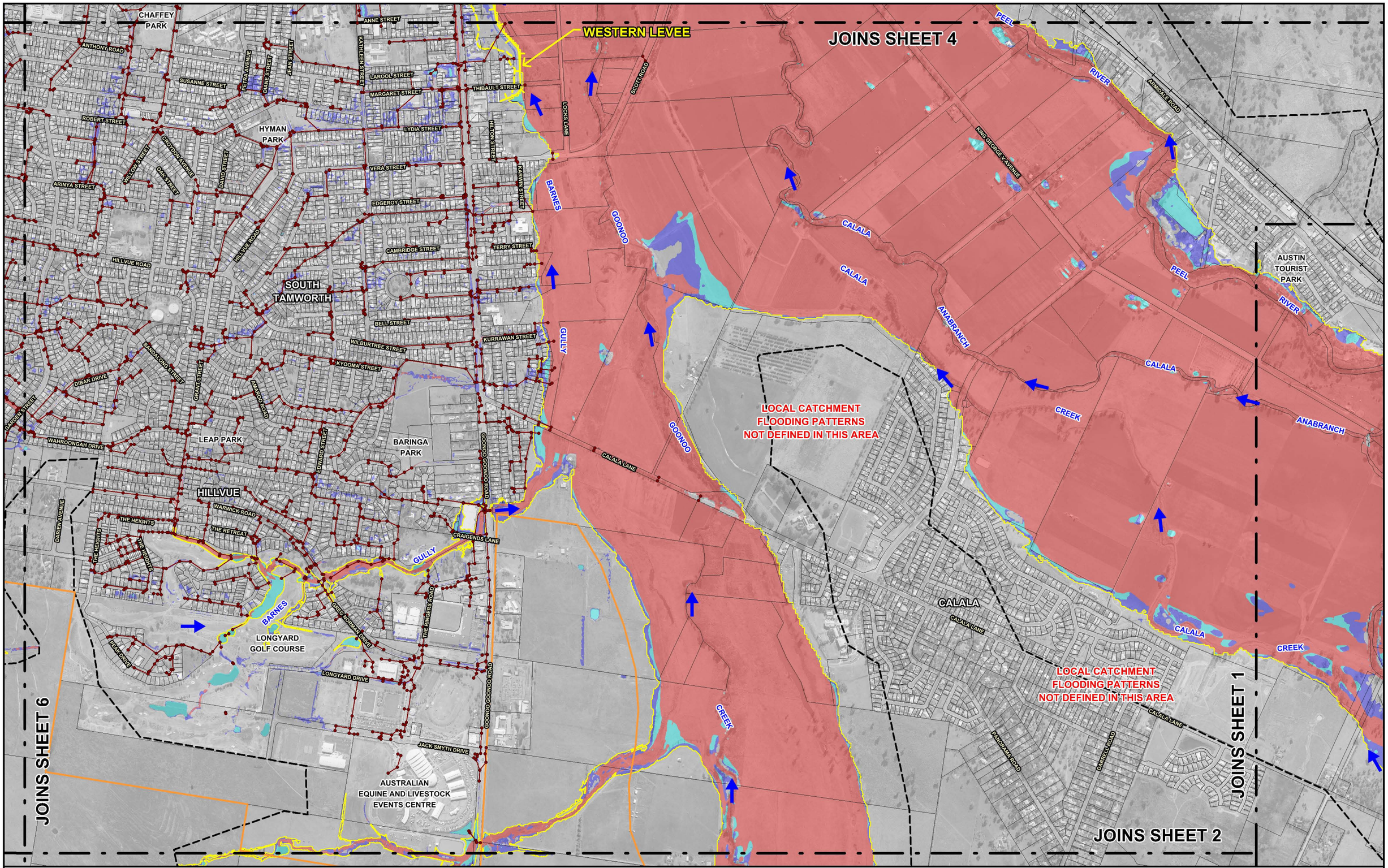
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 2 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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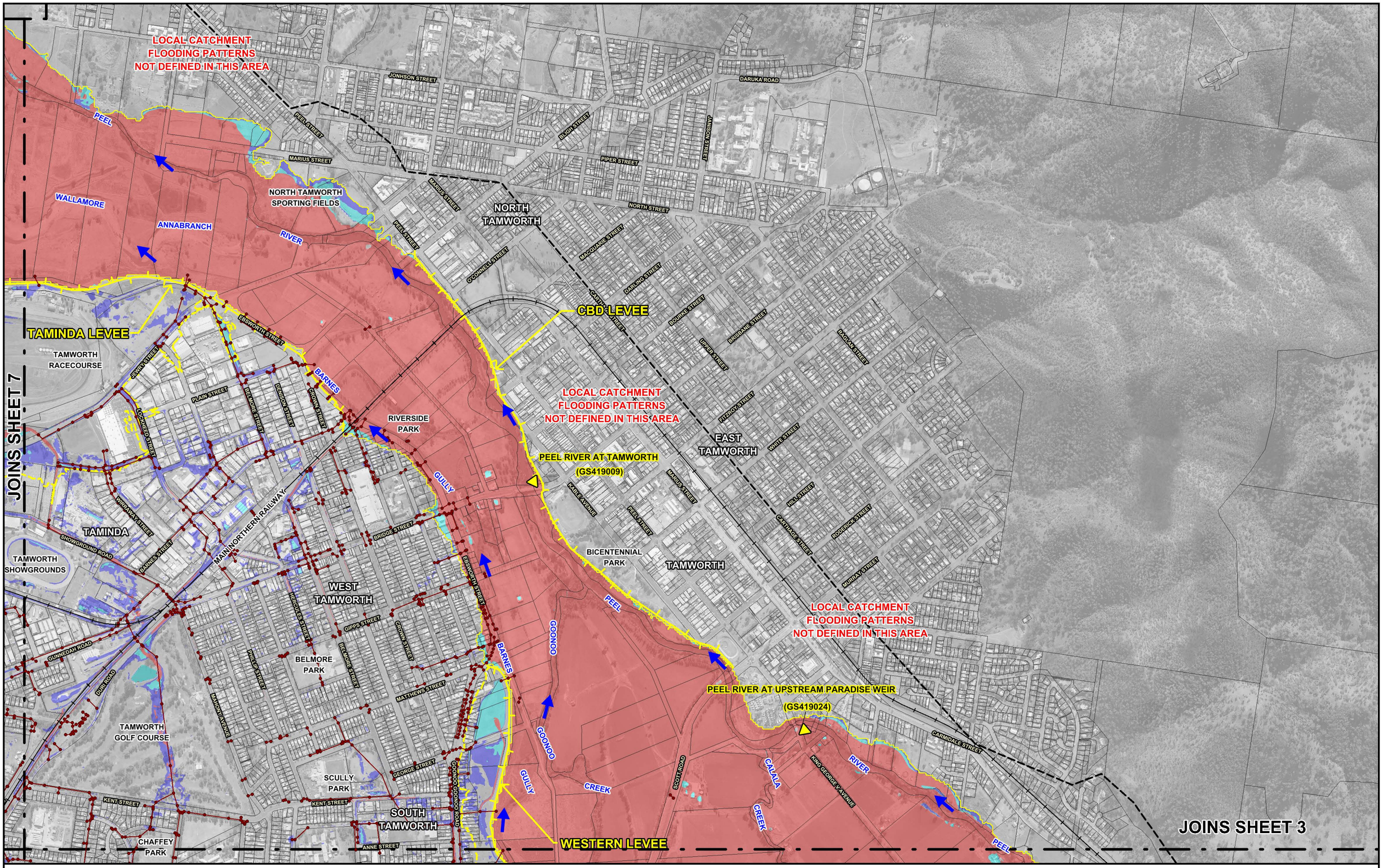
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- South Tamworth Rural Lands Master Plan Area
  There is the potential for this area to function as a flood storage area during periods when heavy rain falls coincident with elevated water levels in the Peel River.
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 3 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

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Lyall & Associates

LEGEND

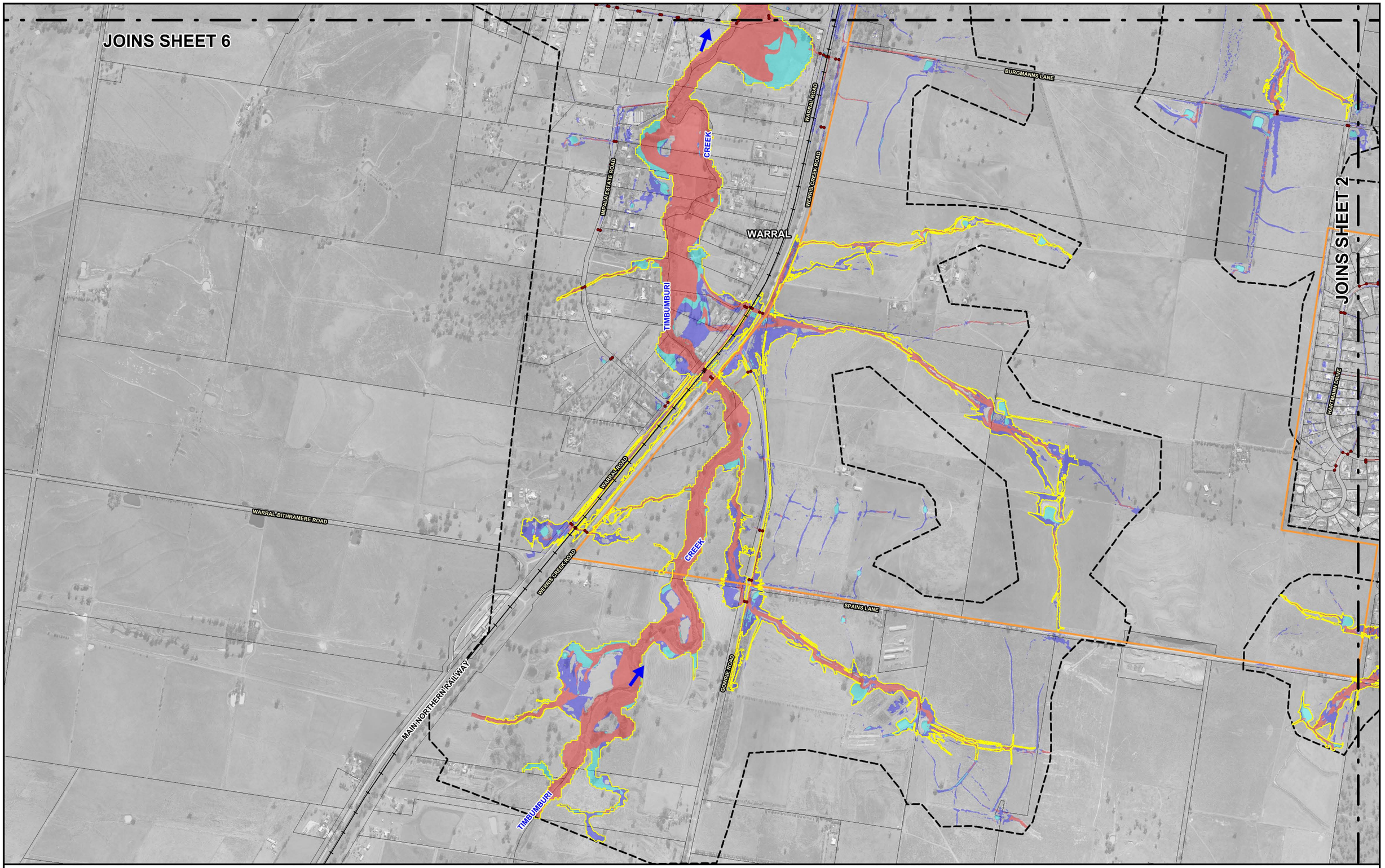
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Stream Gauge
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

There is the potential for this area to function as a flood storage area during periods when heavy rain falls coincident with elevated water levels in the Peel River.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 4 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 5 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI

JOINS SHEET 7

JOINS SHEET 5

JOINS SHEET 3

COUNTRY ROAD

HEILIGMANS LANE

TIMBUMBURI CREEK

GULLY

MAIN NORTHERN RAILWAY

WARRAH ROAD

WERRIS CREEK ROAD

BURKES

LLOMA PARK

CENTENARY PARK

MAXWELL STREET

BOURNE STREET

SUSSEX STREET

DUDLEY ROAD

ANTHONY ROAD

HILLVUE ROAD

CHAUVEL PARK

NARRAN PLACE

COORIGIL STREET

MORILLA STREET

GARDEN STREET

WARWICK ROAD

BYLONG ROAD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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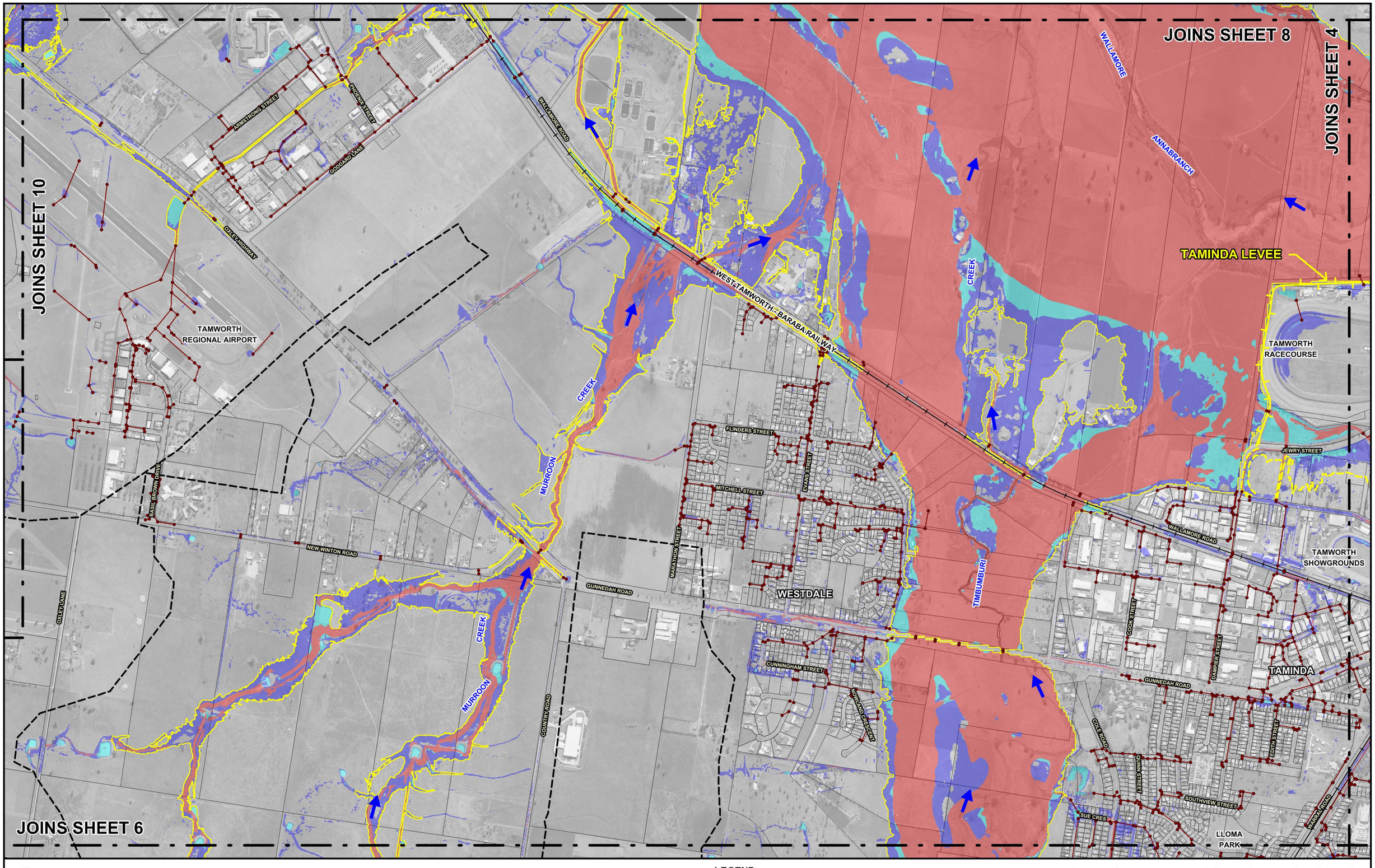
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 6 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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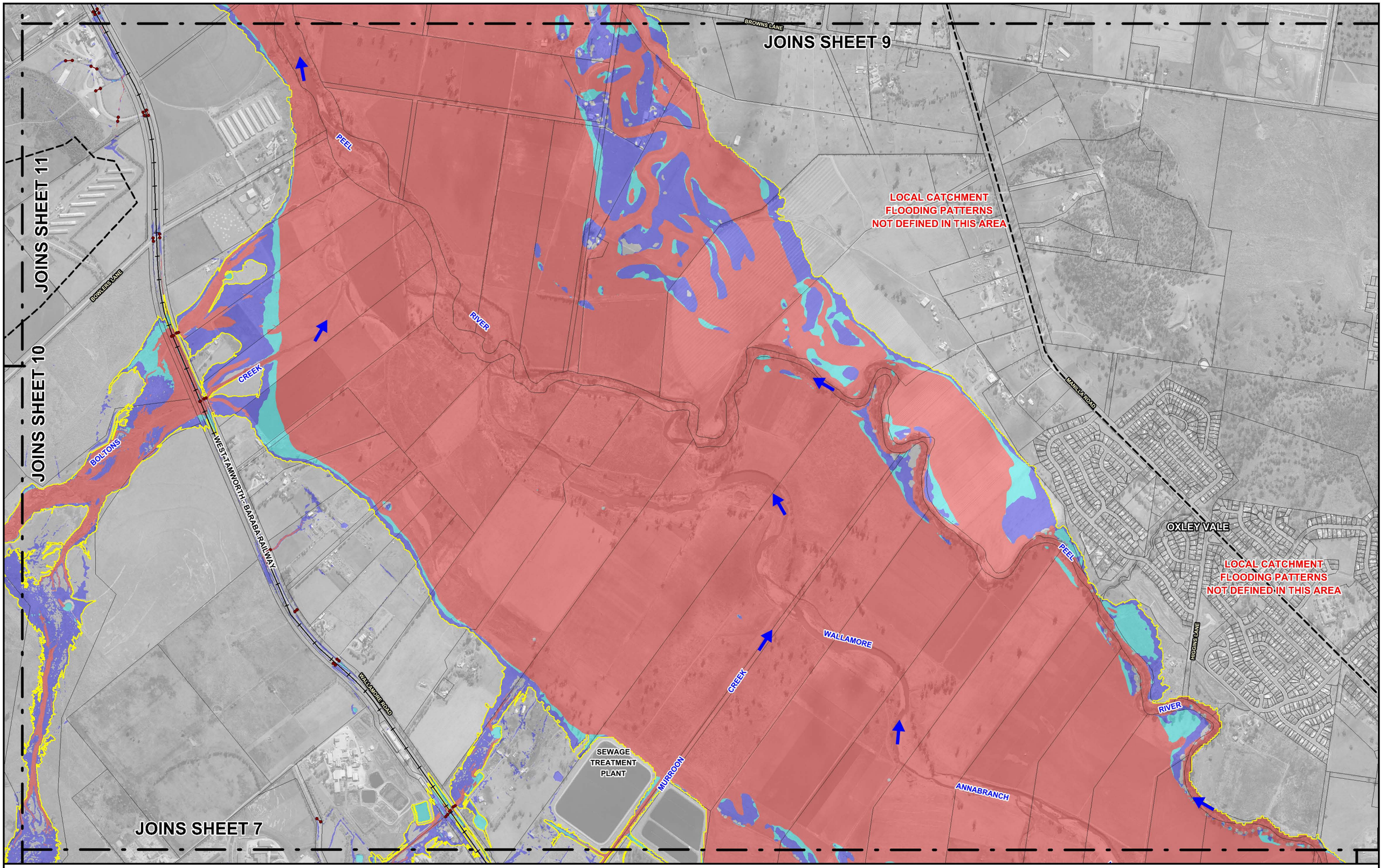
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- There is the potential for this area to function as a flood storage area during periods when heavy rain falls coincident with elevated water levels in the Peel River.
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 7 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 8 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI

RIVER

PEEL

WEST TAMWORTH - BARABA RAILWAY

JOINS SHEET 11

HALLSVILLE

FIONA DRIVE

BOURNES LANE

DUNDON ROAD

MANILLA ROAD

CREEK

PEEL

TANGARATTA

RIVER

ANCHOR ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

JOINS SHEET 8

BROWNS LANE

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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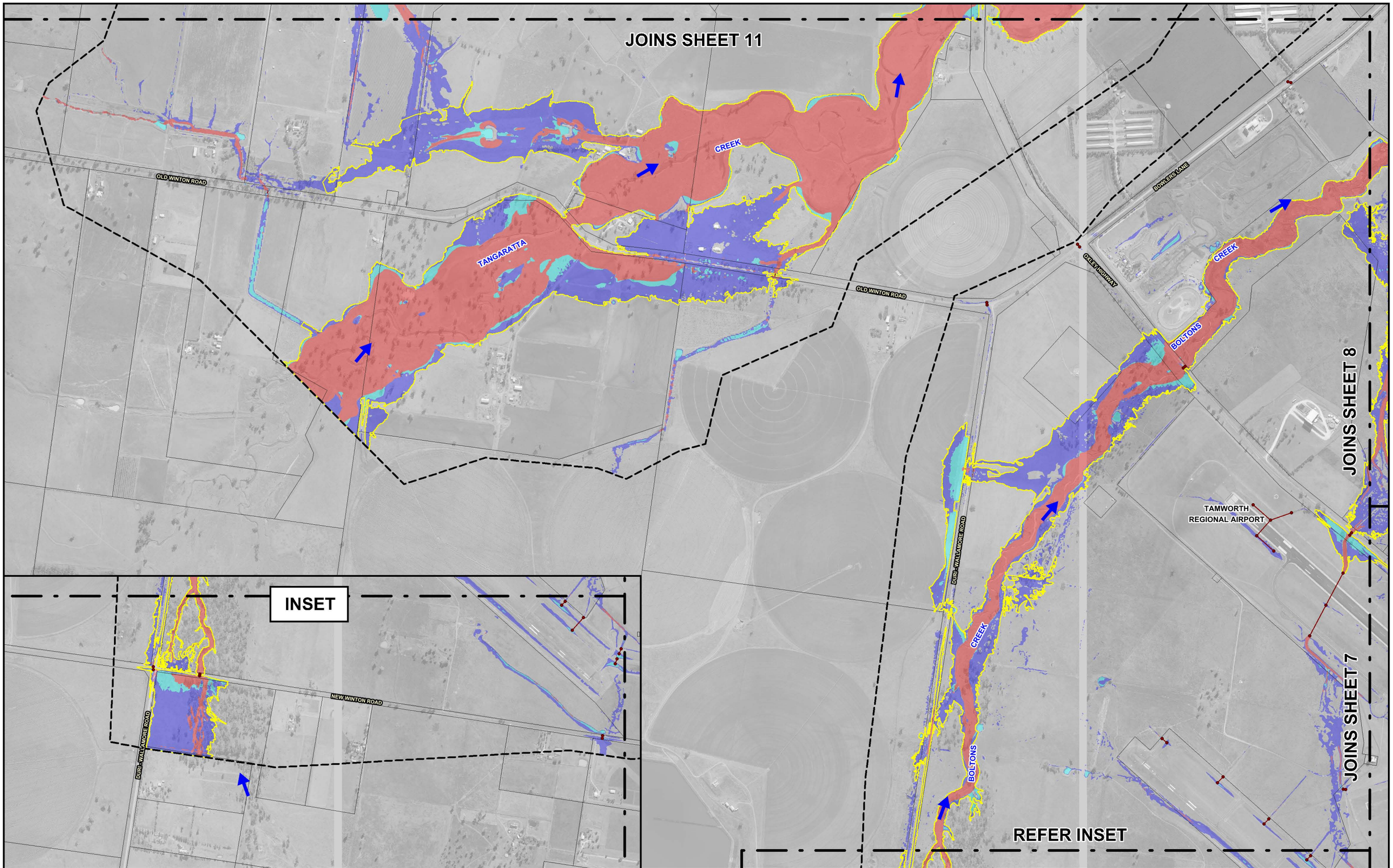
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 9 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Floodway
- Flood Storage
- Flood Fringe
- Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 10 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI

GIDLEY SIDING ROAD

ARMIDALE RD

BYAMEE LANE

OXLEY HIGHWAY

TANGARATTA

CREEK

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

Floodway

Flood Storage

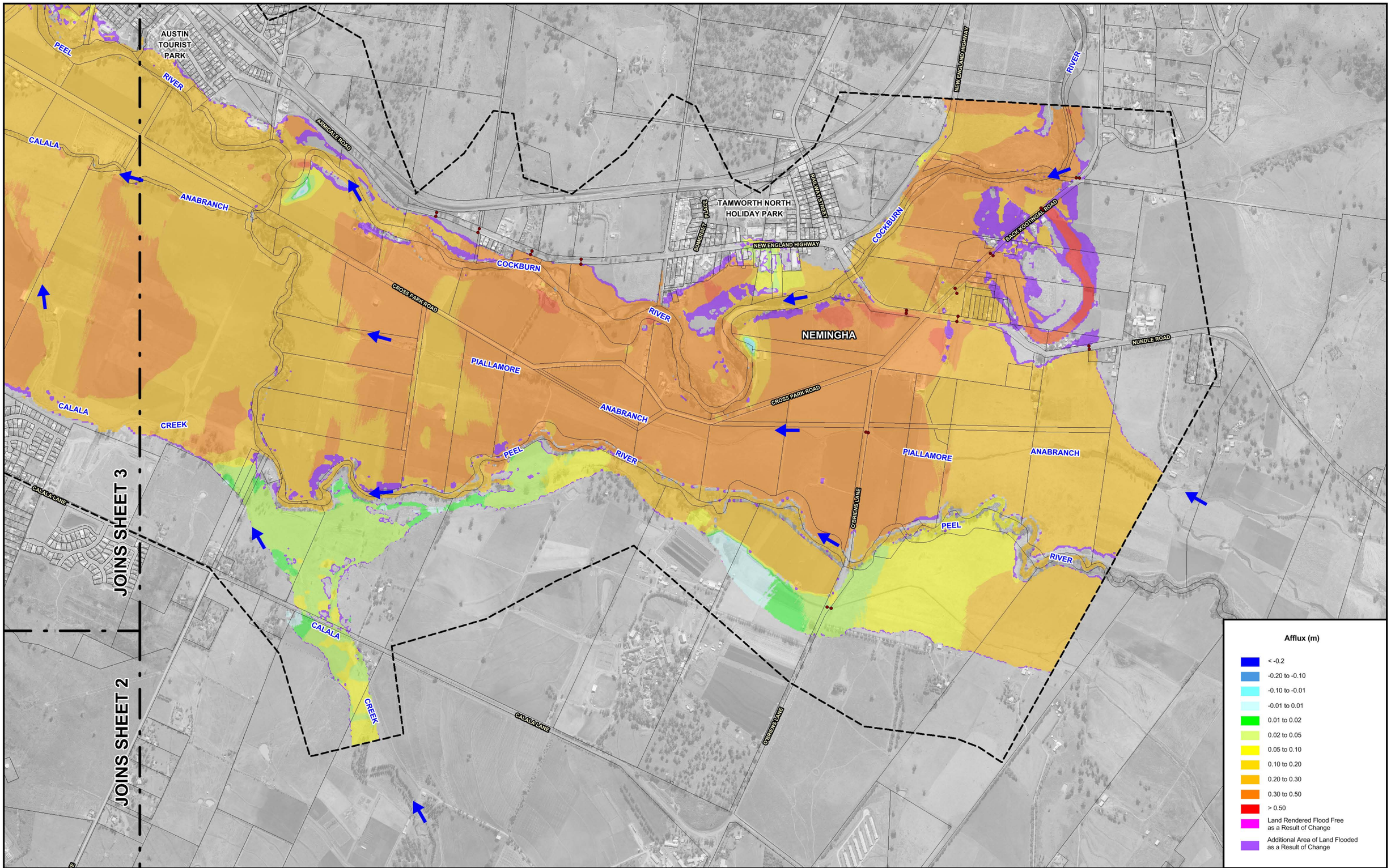
Flood Fringe

Extent of Main Stream and Minor Tributary Flooding

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.11
(Sheet 11 of 11)

HYDRAULIC CATEGORISATION OF FLOODPLAIN
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 1 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

CREEK

BURGESS LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

PALMER DRIVE

KINGSWOOD

PAGES LANE

DANCAR CRESCENT

KINGSWOOD ROAD

KINGSWOOD
PARK

HERDEN ROAD

ROBERTS ROAD

NEW ENGLAND HIGHWAY

GOONOO

GOONOO

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

CREEK

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

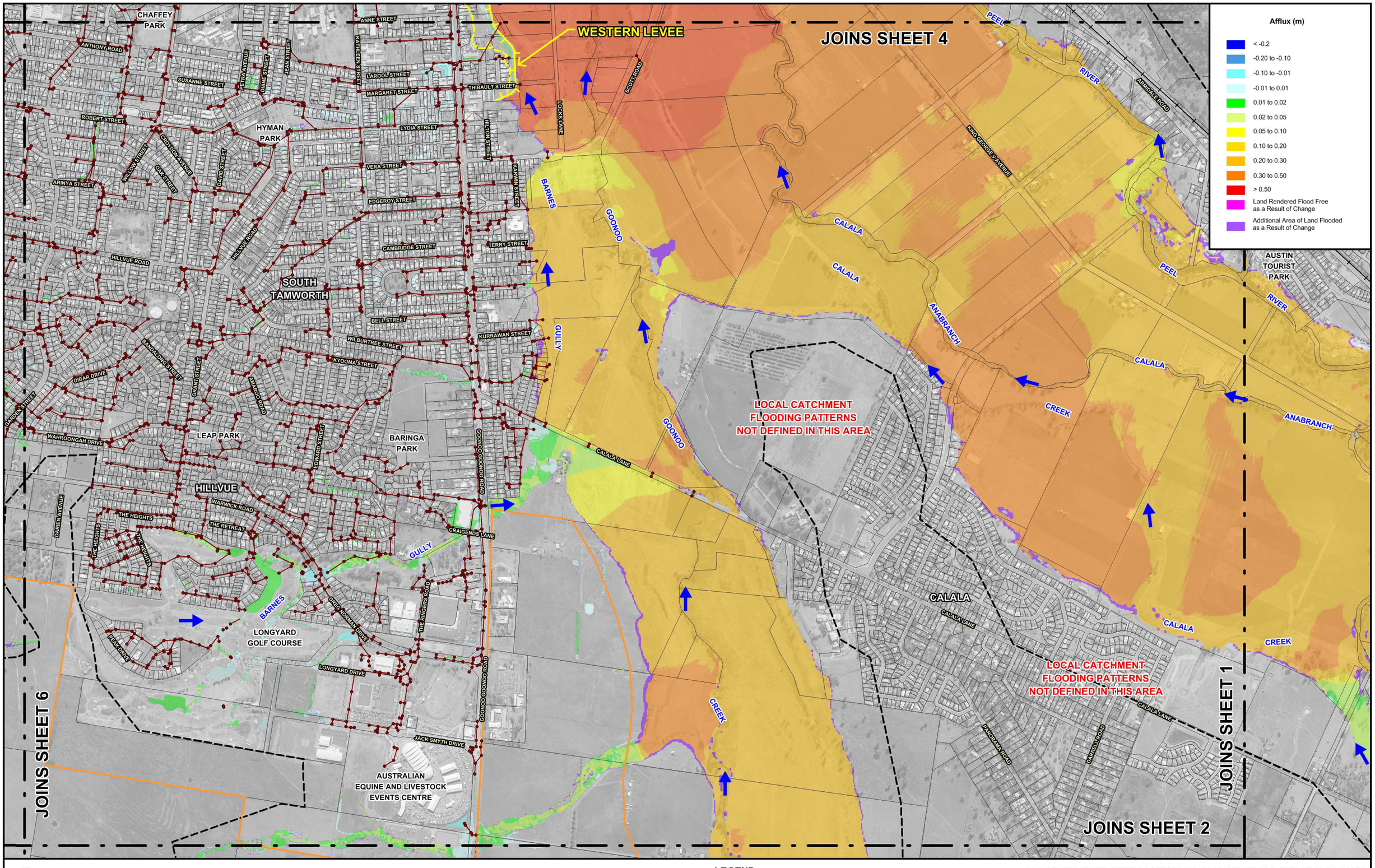
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 2 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

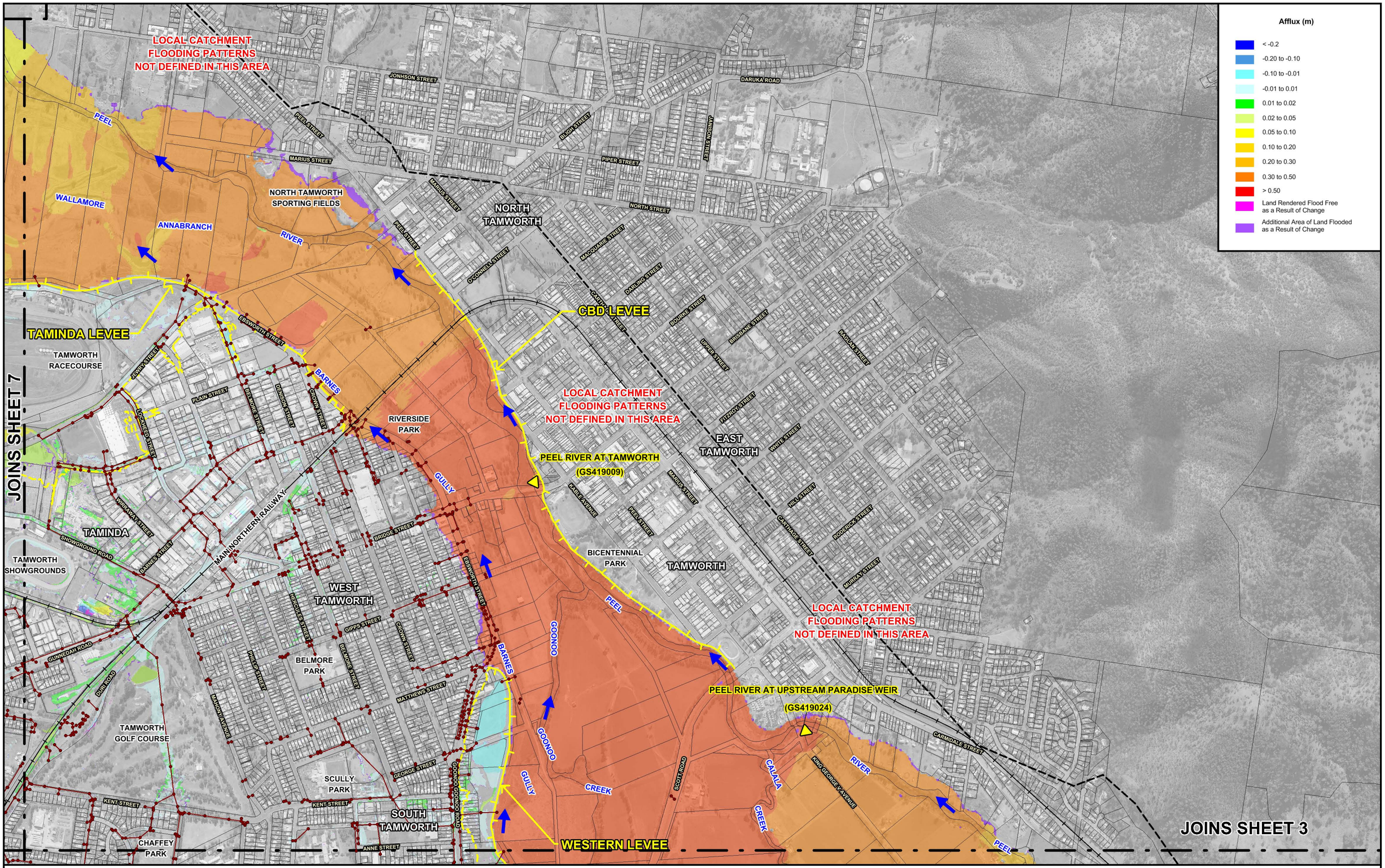
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- South Tamworth Rural Lands Master Plan Area

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 3 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 4 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI

JOINS SHEET 6

JOINS SHEET 2

BURGMANNS LANE

WARRAL

IMPALA ESTATE ROAD

WARRAL ROAD

WERRIS CREEK ROAD

CREEK

TIMBUMBURI

HARTMANN DRIVE

WARRAL-BITHRAMERE ROAD

MAIN NORTHERN RAILWAY

GOWRIE ROAD

SPAINS LANE

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

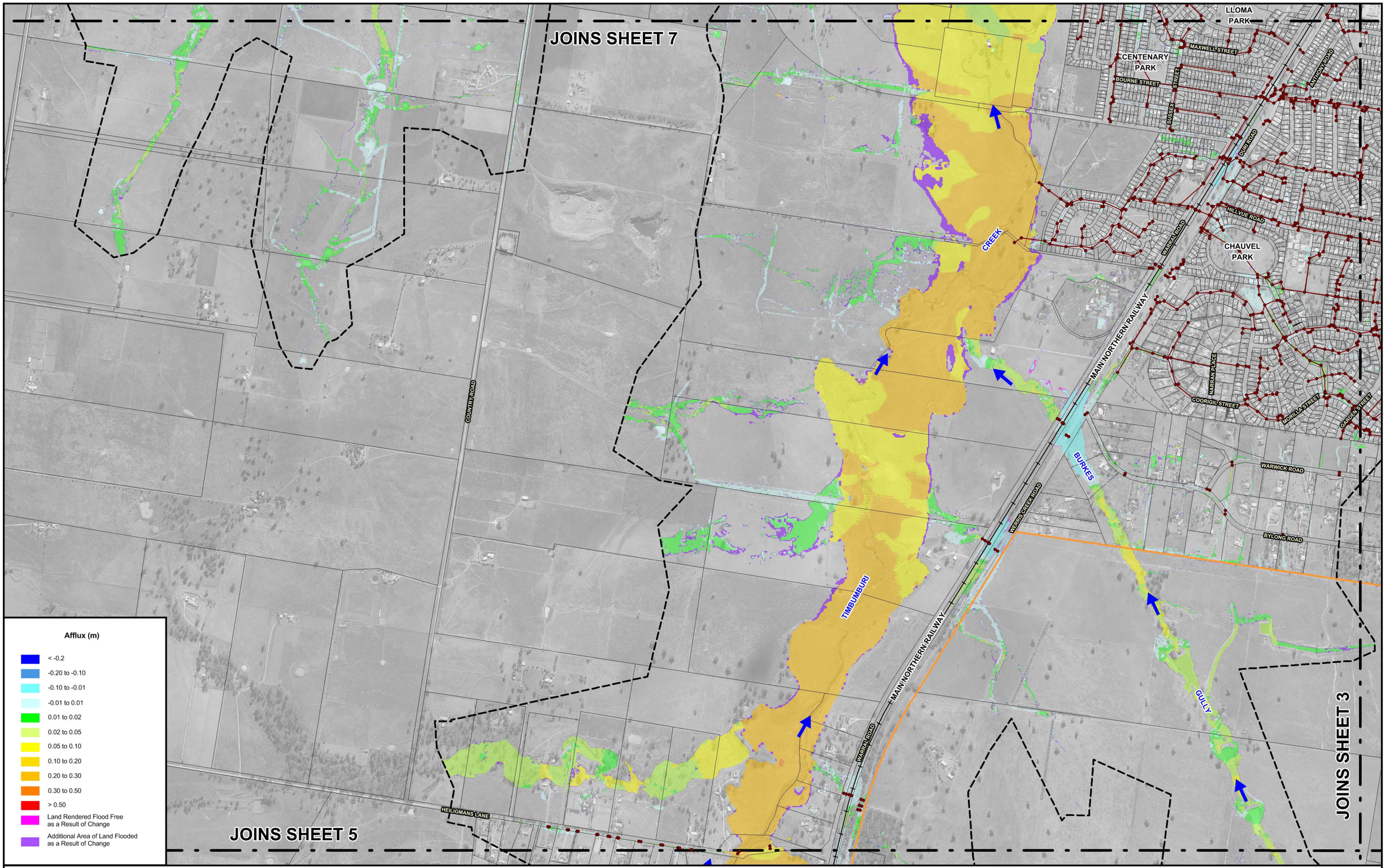
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 5 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 6 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

TAMINDA LEVEE

TAMWORTH RACECOURSE

TAMWORTH SHOWGROUNDS

WESTDALE

TAMINDA

LLOMA PARK

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

OXLEY HIGHWAY

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

ANNABRANCH

CREEK

MURROON

FLINDERS STREET

MITCHELL STREET

EVANS STREET

MARATHON STREET

JEWRY STREET

TIMBUMBURI

BASIL BROWN DRIVE

NEW WINTON ROAD

GUNNEDAH ROAD

OXLEY LANE

COUNTRY ROAD

CUNNINGHAM STREET

NORLAND CRESCENT

COOK STREET

DAMPIER STREET

GOLE ROAD

EDITH STREET

QUINN STREET

SOUTHVIEW STREET

SUE CRES

WARRAH ROAD

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

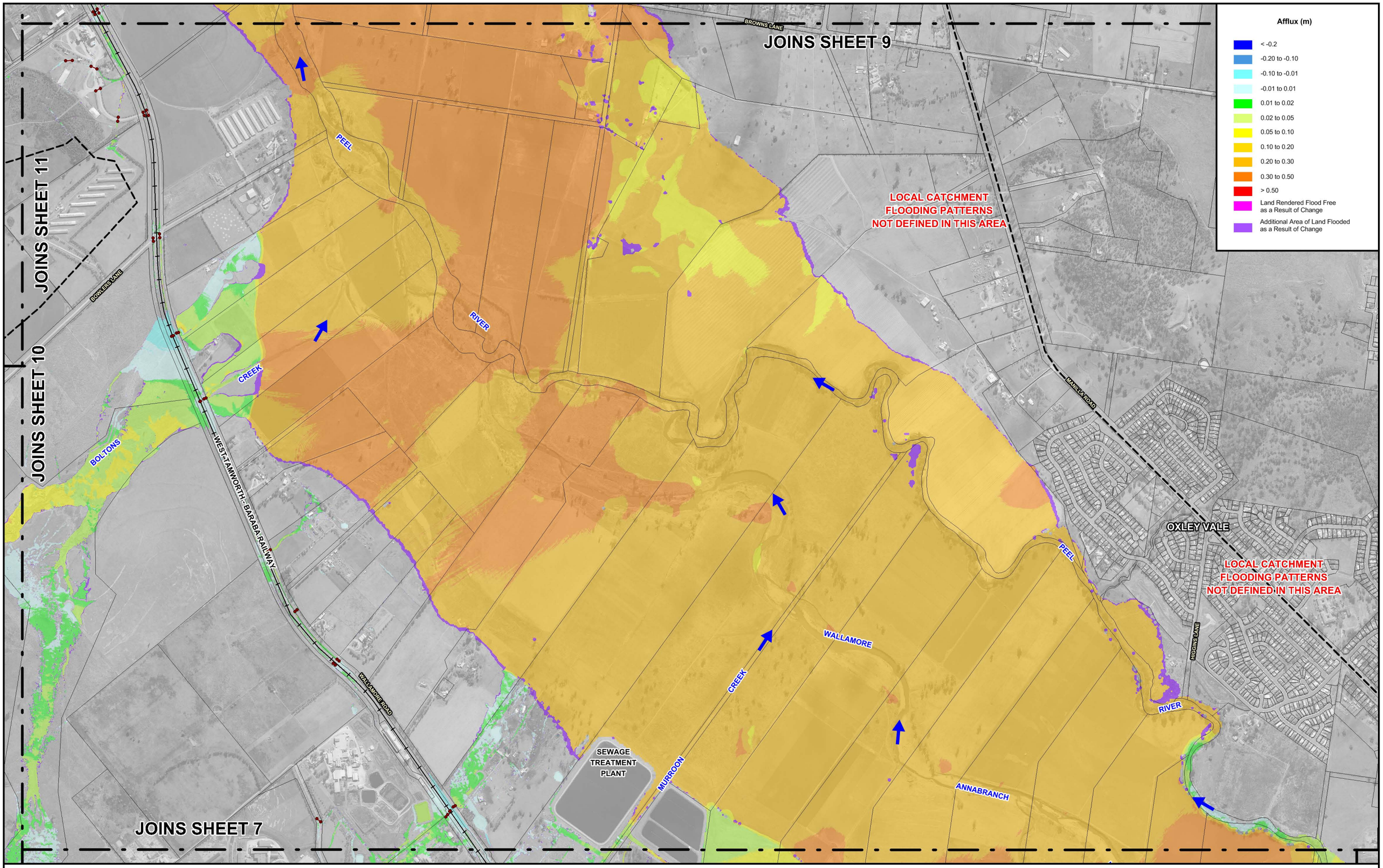
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 7 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

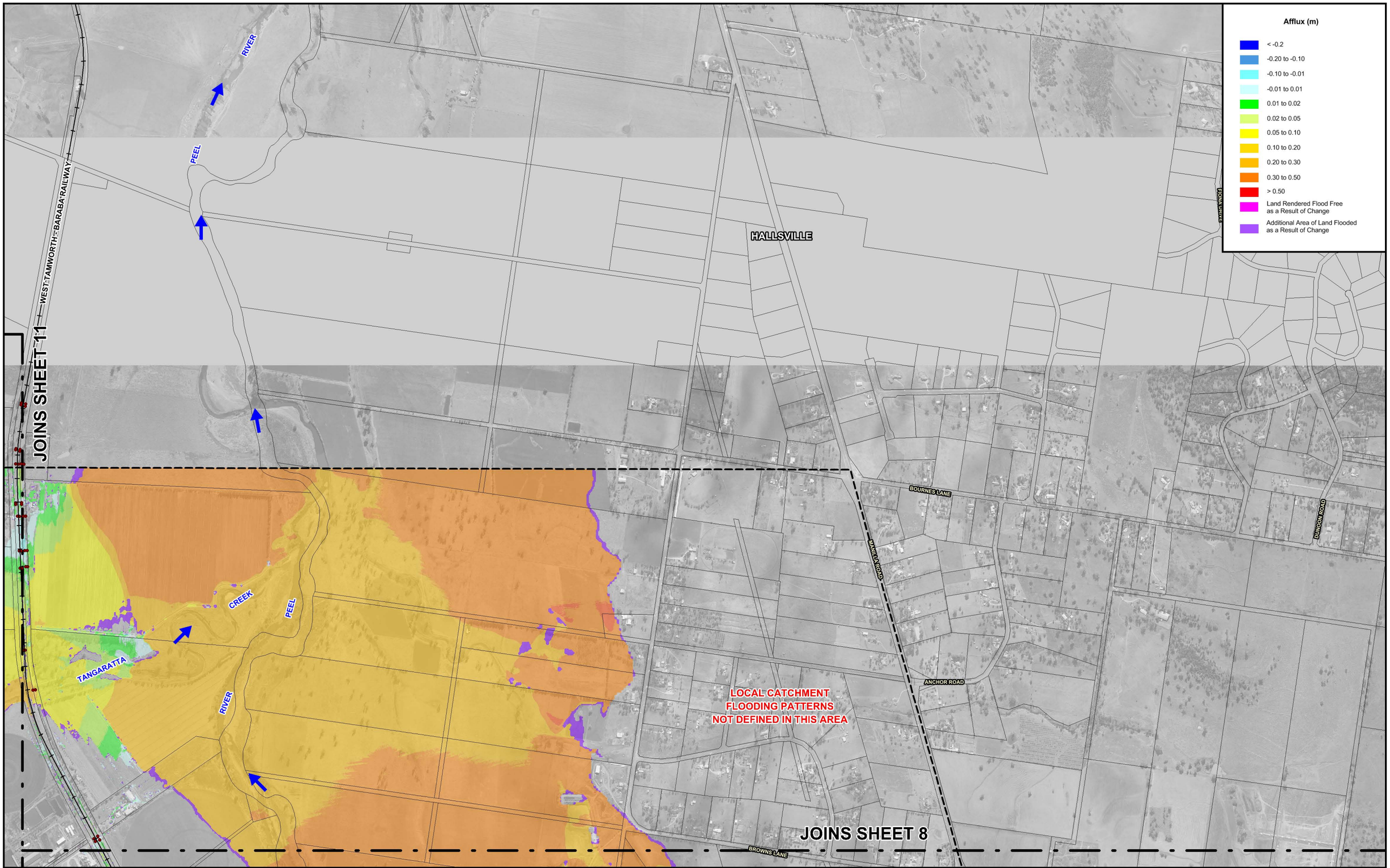
Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 8 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 9 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

NEW WINTON ROAD

TANGARATTA CREEK

BOLTONS CREEK

DURI - WALLAMORE ROAD

OXLEY HIGHWAY

BOWLERS LANE

TAMWORTH REGIONAL AIRPORT

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 10 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI

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

GIDLEY SIDING ROAD

ARMIDALE RD

BYAMEE LANE

CREEK

OXLEY HIGHWAY

TANGARATTA

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

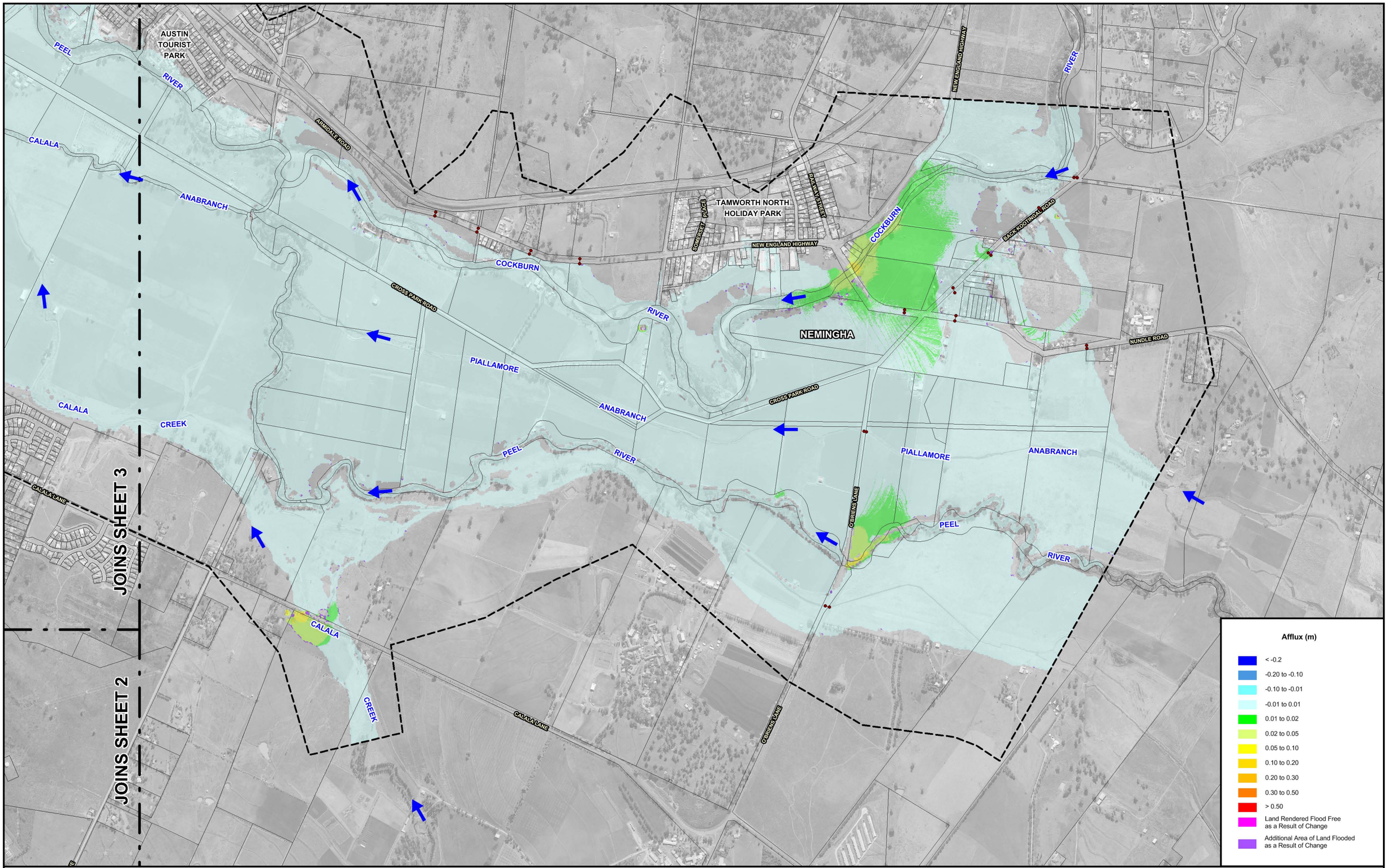
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.12
(Sheet 11 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 20% INCREASE IN HYDRAULIC ROUGHNESS VALUES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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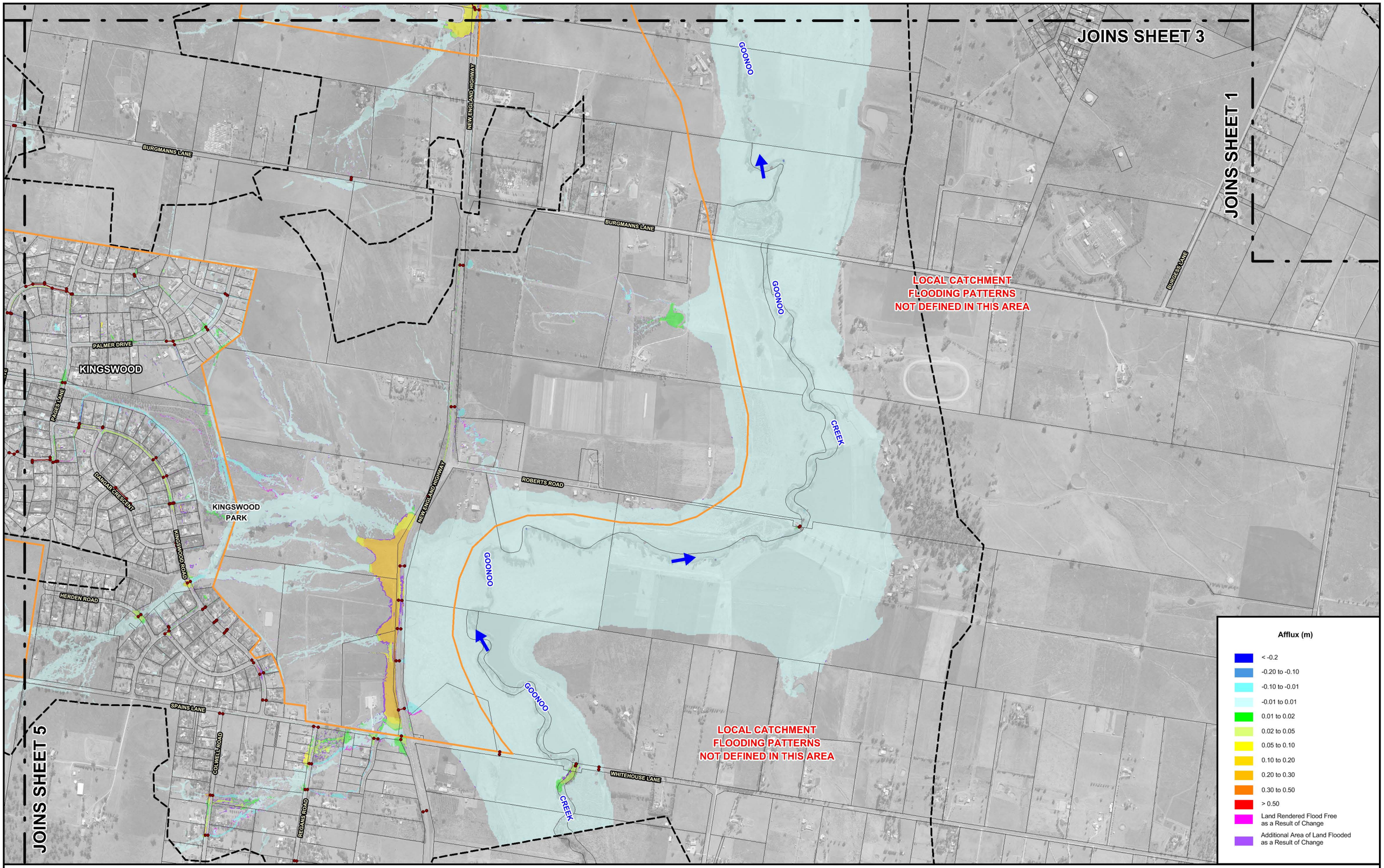
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 1 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

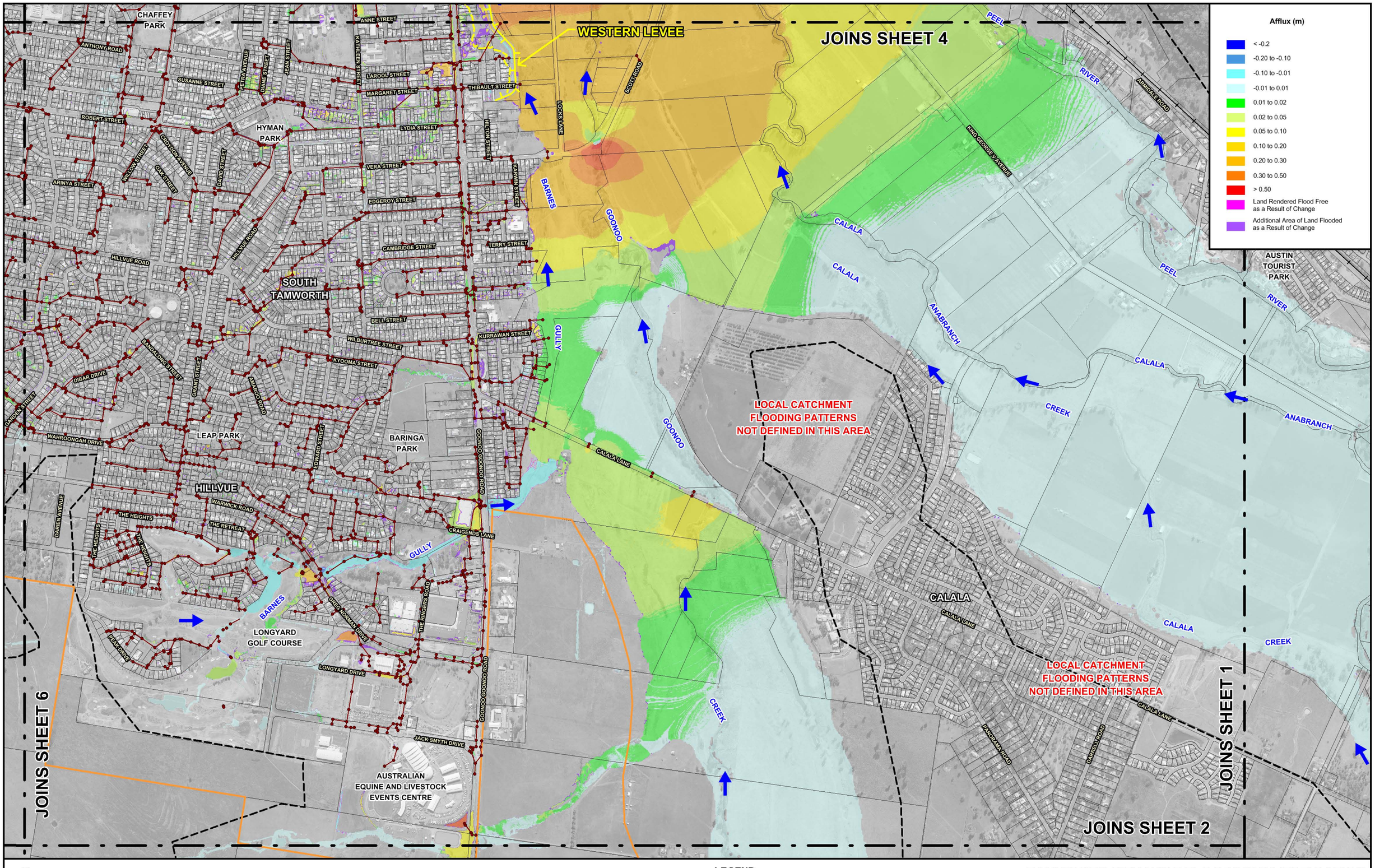
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 2 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- South Tamworth Rural Lands Master Plan Area

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 3 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI

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

LOCAL CATCHMENT FLOODING PATTERNS NOT DEFINED IN THIS AREA

JOINS SHEET 7

JOINS SHEET 3

TAMINDA LEVEE

CBD LEVEE

WESTERN LEVEE

PEEL RIVER AT TAMWORTH (GS419009)

PEEL RIVER AT UPSTREAM PARADISE WEIR (GS419024)

NORTH TAMWORTH SPORTING FIELDS

NORTH TAMWORTH

EAST TAMWORTH

BICENTENNIAL PARK

TAMWORTH

TAMWORTH RACECOURSE

RIVERSIDE PARK

TAMINDA

TAMWORTH SHOWGROUNDS

WEST TAMWORTH

BELMORE PARK

TAMWORTH GOLF COURSE

SCULLY PARK

SOUTH TAMWORTH

CHAFFEY PARK

PEEL

WALLAMORE

ANNABRANCH

RIVER

BARNES

GULLY

GOONOO

GOONOO CREEK

CALALA CREEK

JONHSON STREET

PEEL STREET

MARIUS STREET

BLIGH STREET

DARUKA ROAD

JANNISON STREET

PIPER STREET

NORTH STREET

MACQUARIE STREET

O'CONNELL STREET

DARLING STREET

CASTLE STREET

BOURKE STREET

BRISBANE STREET

RAGLAN STREET

UPPER STREET

FITZROY STREET

WHITE STREET

HILL STREET

CARTHAGE STREET

RODERICK STREET

MURRAY STREET

CARMIDALE STREET

KING GEORGE V AVENUE

SOUTH ROAD

EBSWORTH STREET

JEWRY STREET

PLAIN STREET

BELMORE STREET

DENISON STREET

CROWN STREET

LOCKHEED STREET

WIRRAWAY STREET

SHOWGROUND ROAD

BARNES STREET

MAIN NORTHERN RAILWAY

BRIDGE STREET

HERCULES STREET

GIPPS STREET

PHILLIP STREET

MATTHEWS STREET

MARROWAVENUE

GEORGE STREET

GOONOO GOONOO ROAD

KENT STREET

ANNE STREET

GUNNEDAH ROAD

DUBI ROAD

MABLE AVENUE

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Stream Gauge

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 4 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI

JOINS SHEET 6

JOINS SHEET 2

WARRAL

BURGMANNS LANE

WARRAL ROAD

WEBBS CREEK ROAD

IMPALA ESTATE ROAD

CREEK

TIMBUMBURI

HARTMANN DRIVE

WARRAL-BITHRAMERE ROAD

MAIN NORTHERN RAILWAY

GOWRIE ROAD

SPAINS LANE

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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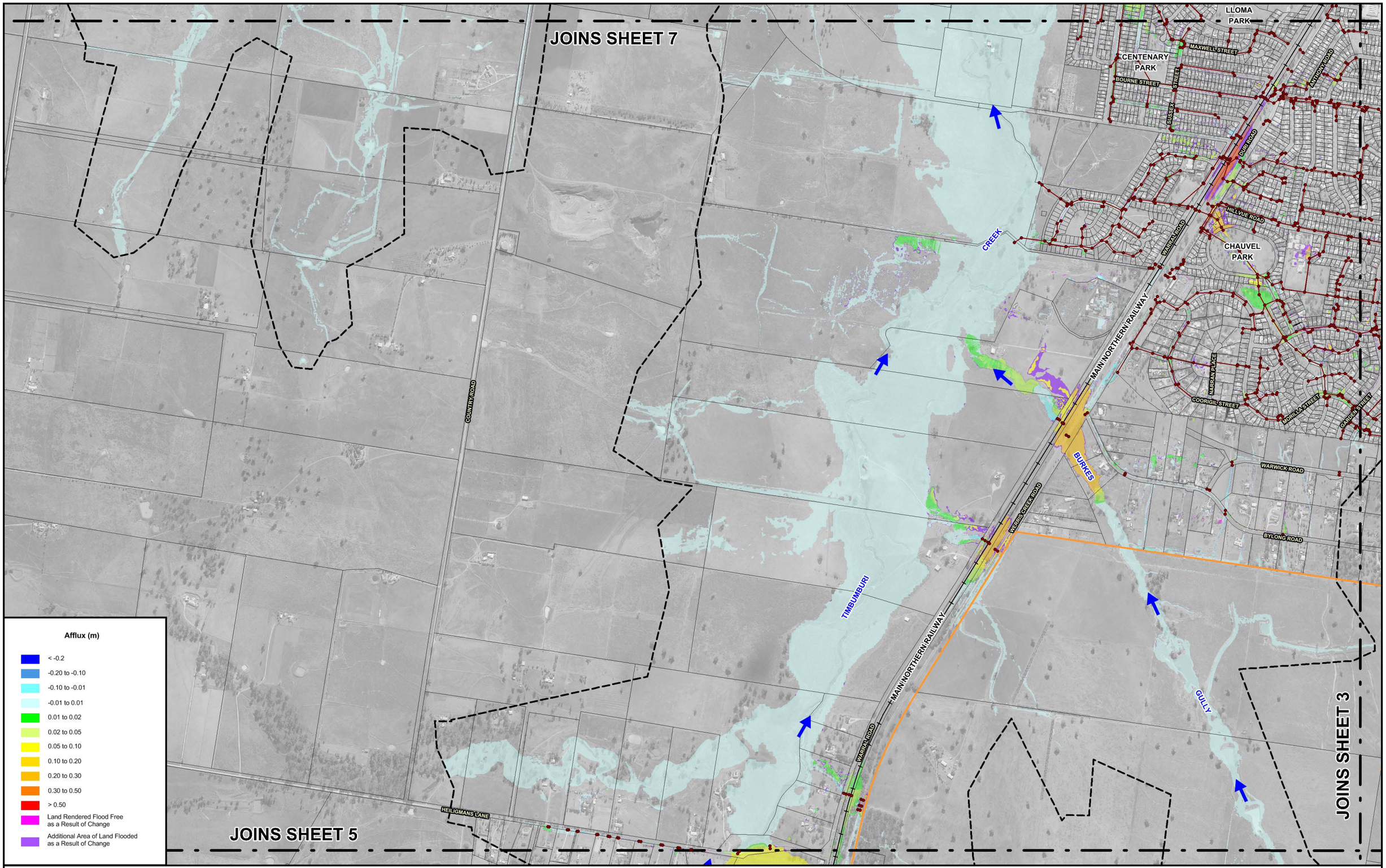
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 5 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



Lyall & Associates

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 6 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 10

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

TAMWORTH RACECOURSE

TAMWORTH SHOWGROUNDS

WESTDALE

TAMINDA

LLOMA PARK

TAMINDA LEVEE

WALLAMORE

ANNABRANCH

CREEK

MURROON

TIMBUMBURI

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

OXLEY HIGHWAY

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

FLINDERS STREET

EVANS STREET

MITCHELL STREET

MARATHON STREET

JEWRY STREET

BASIL BROWN DRIVE

NEW WINTON ROAD

GUNNEDAH ROAD

OXLEY LANE

COUNTRY ROAD

CUNNINGHAM STREET

NORLAND CRESCENT

COOK STREET

DAMPIER STREET

COLE ROAD

QUINN STREET

BOWN STREET

SOUTHVIEW STREET

SUE CRES

WARRAL ROAD

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 7 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

PEEL

RIVER

BOWLERS LANE

CREEK

BOLTONS

WEST-TAMWORTH-BARABA RAILWAY

WALLAMORE ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

MANILLA ROAD

OXLEY VALE

PEEL

HIGGINS LANE

RIVER

WALLAMORE

CREEK

MURROON

ANNABRANCH

SEWAGE
TREATMENT
PLANT

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

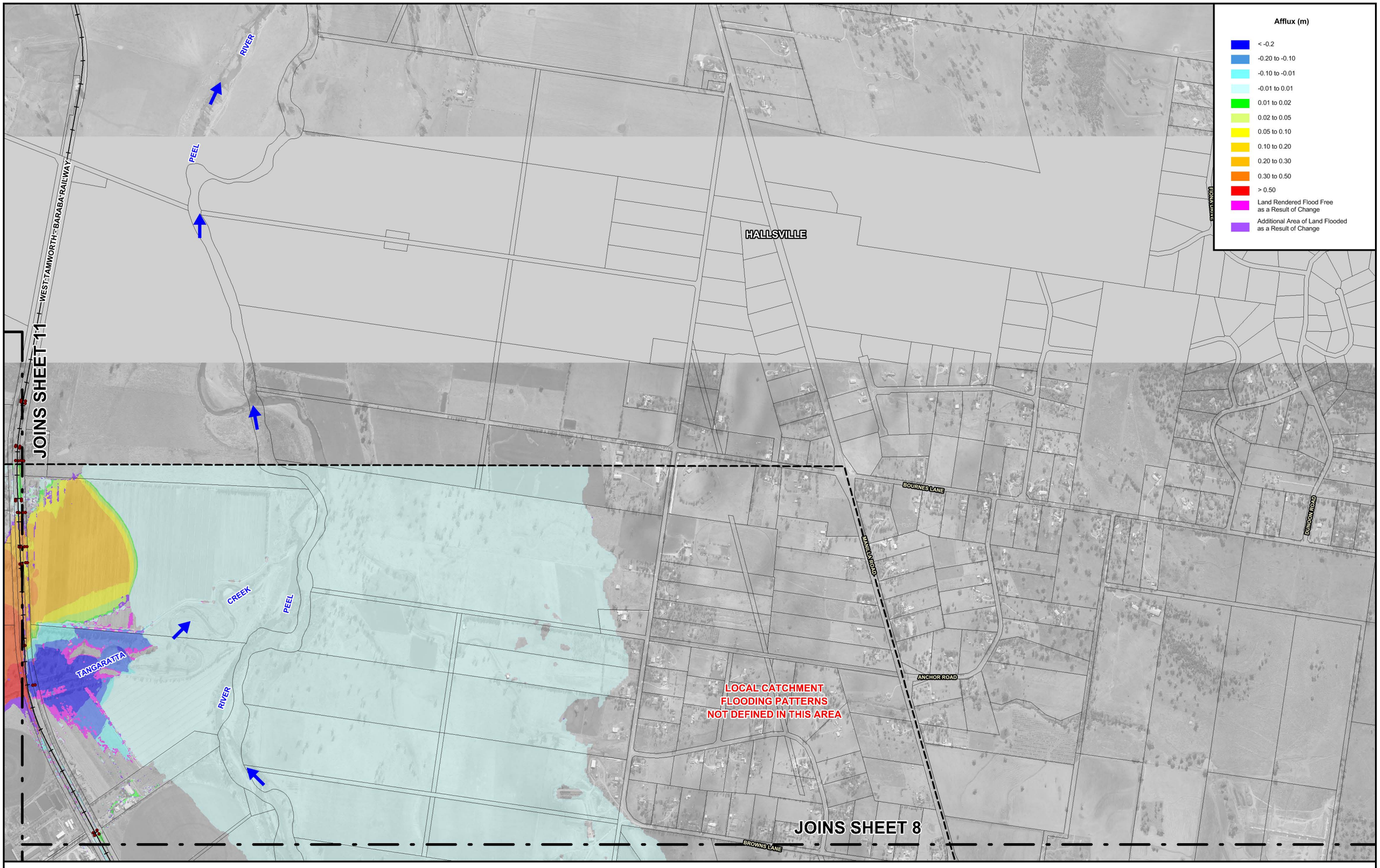
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 8 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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LEGEND

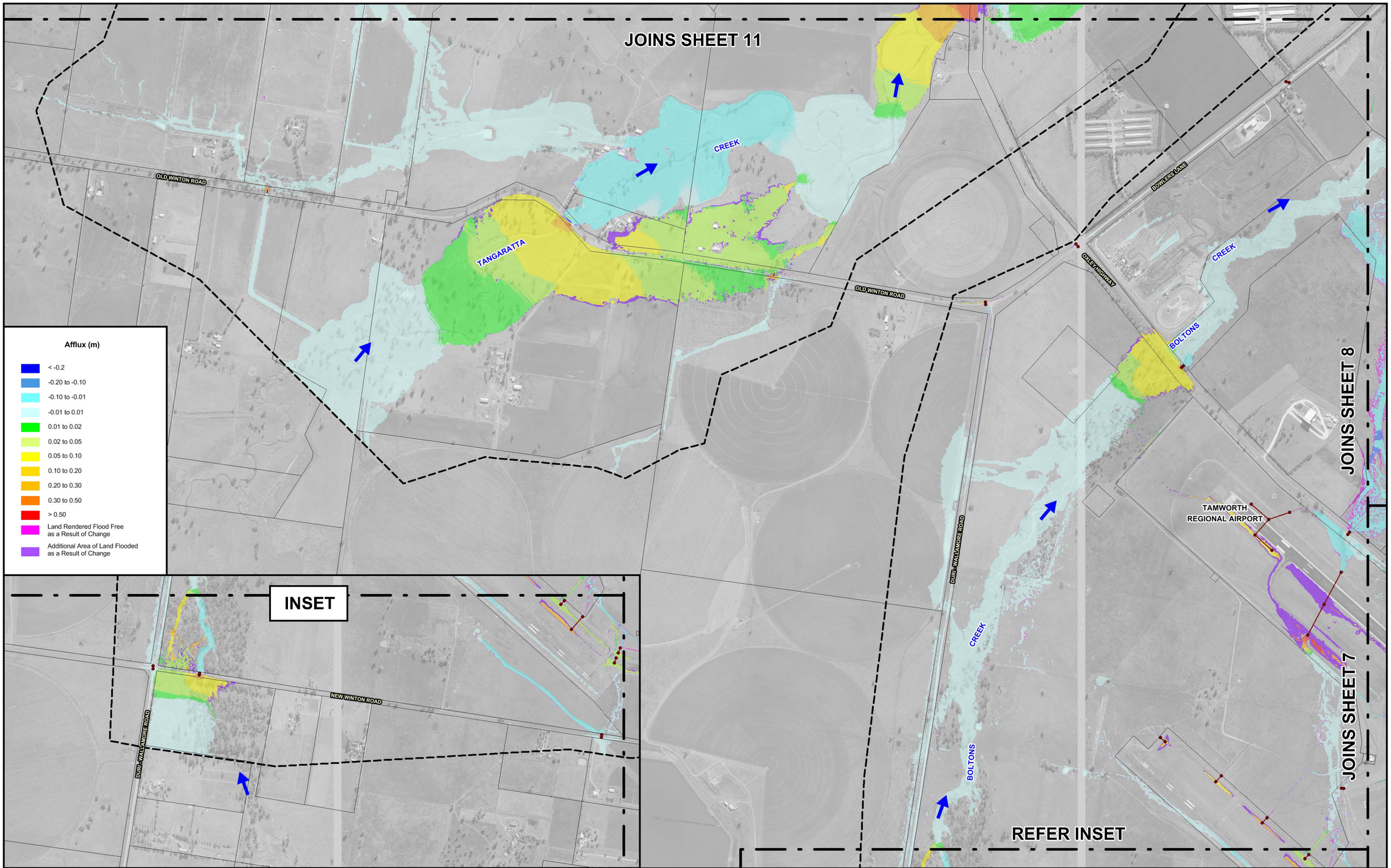
Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 9 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 10 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI

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

GIDLEY SIDING ROAD

ARMIDALE RD

BYAMEE LANE

CREEK

OXLEY HIGHWAY

TANGARATTA

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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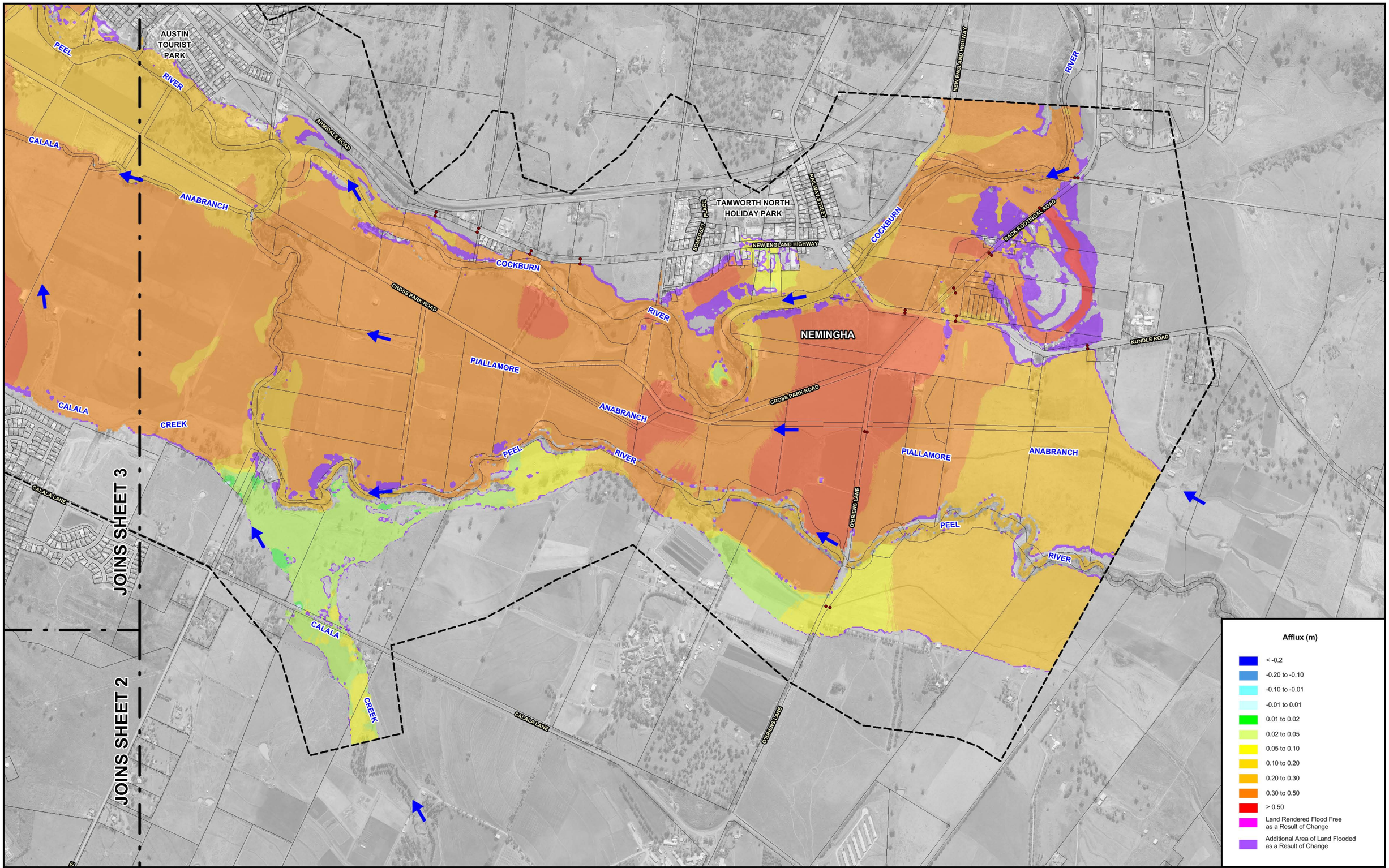
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.13
(Sheet 11 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO A PARTIAL BLOCKAGE OF HYDRAULIC STRUCTURES
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

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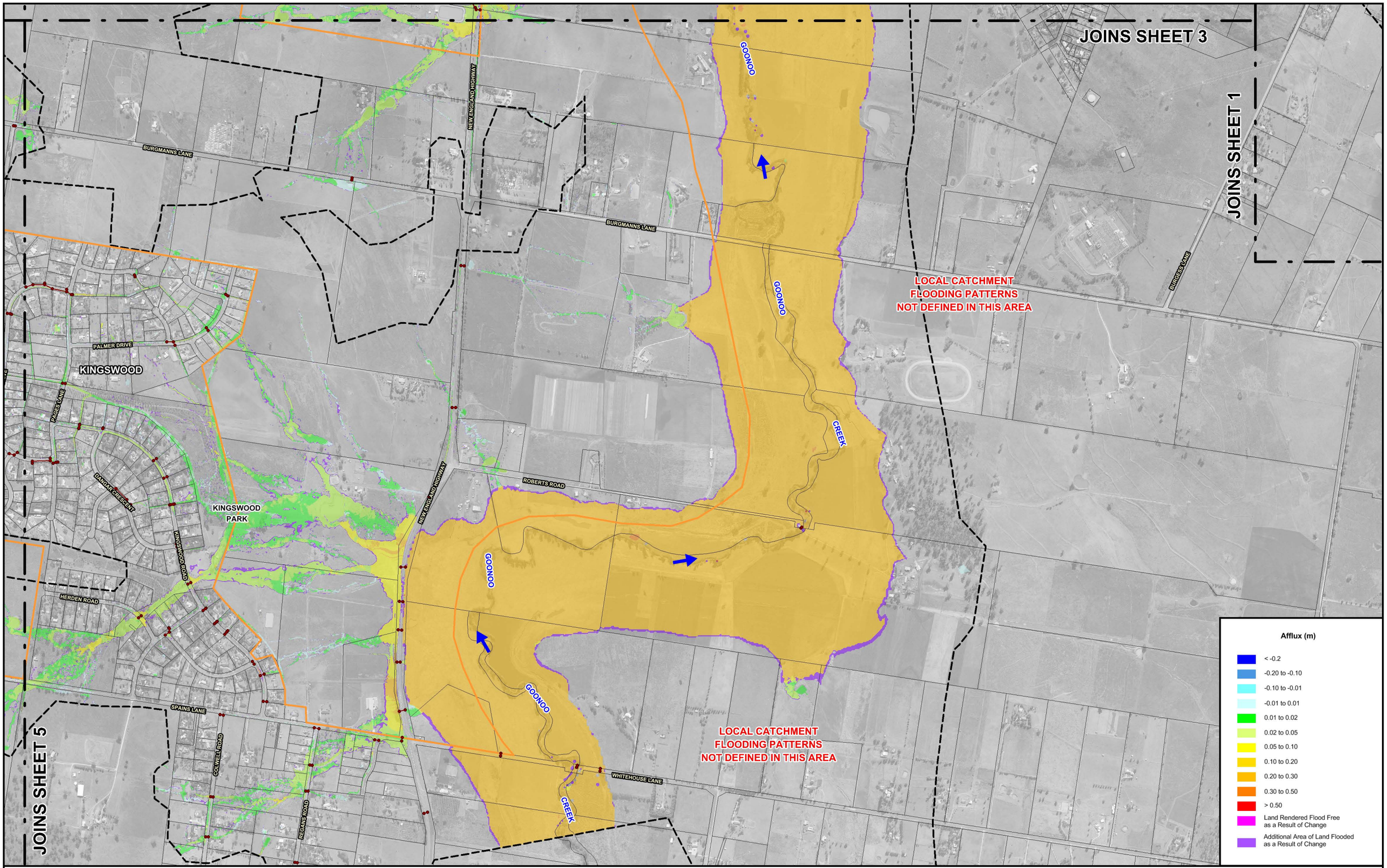
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 1 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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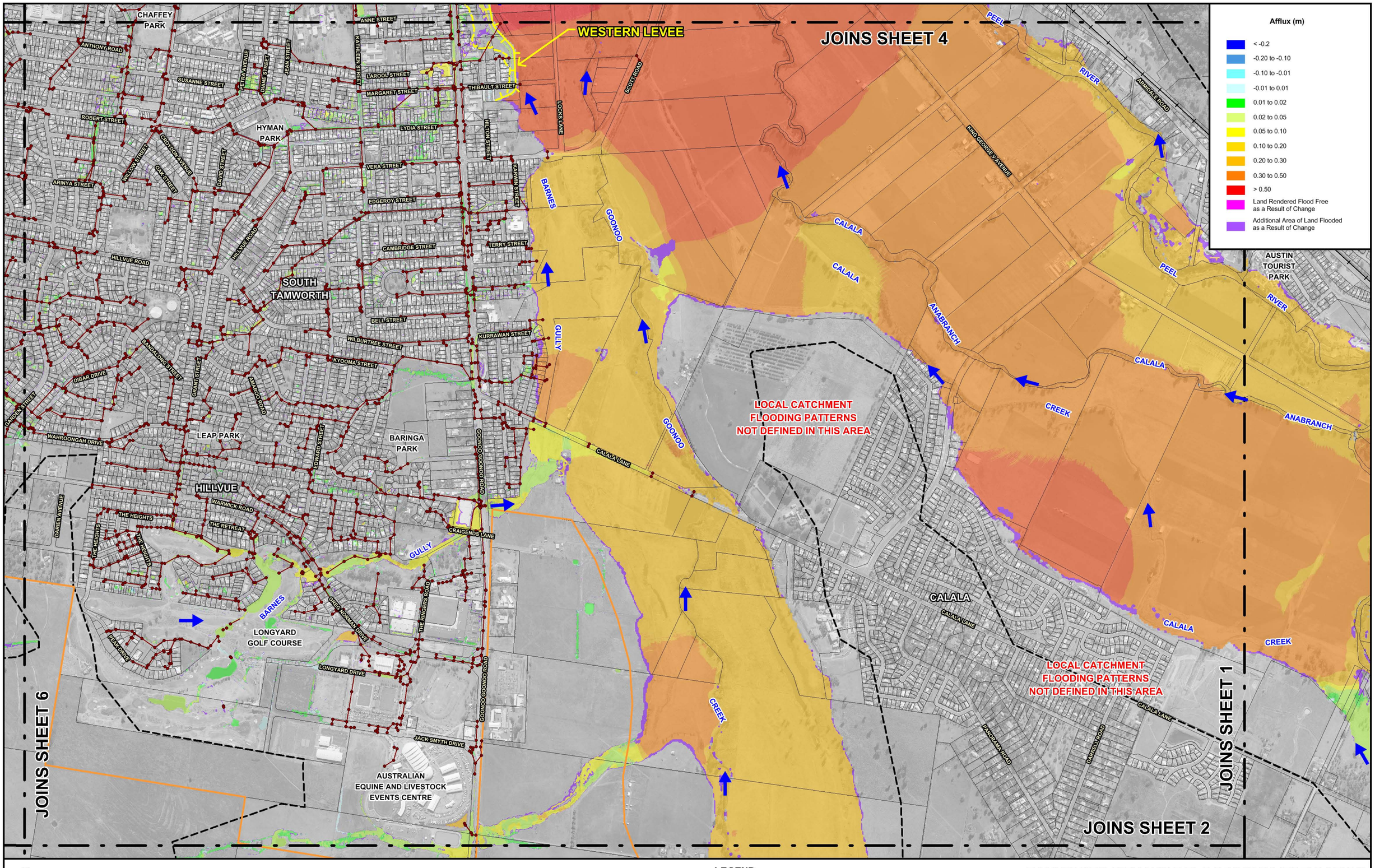
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 2 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

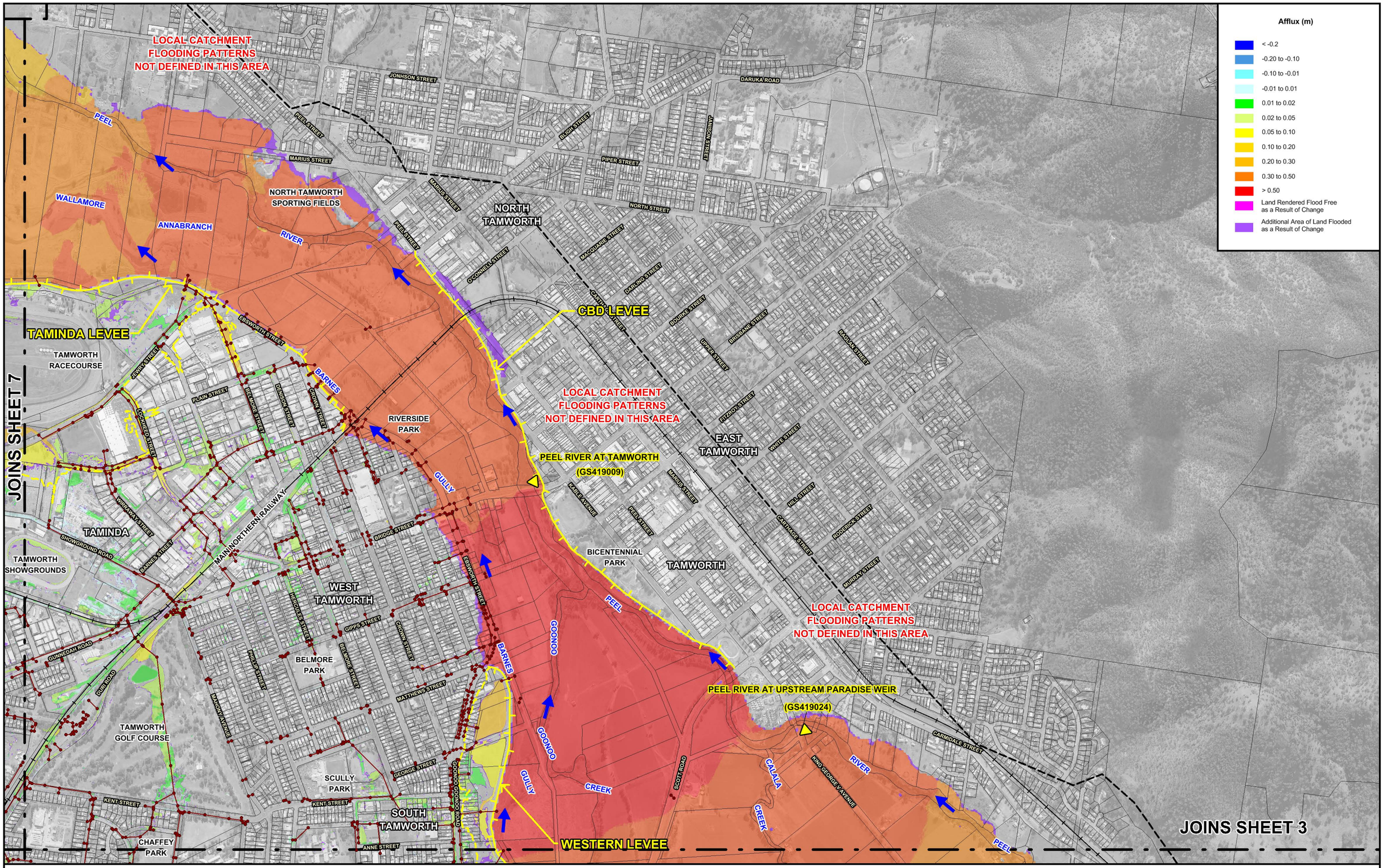
- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- South Tamworth Rural Lands Master Plan Area

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 3 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Stream Gauge

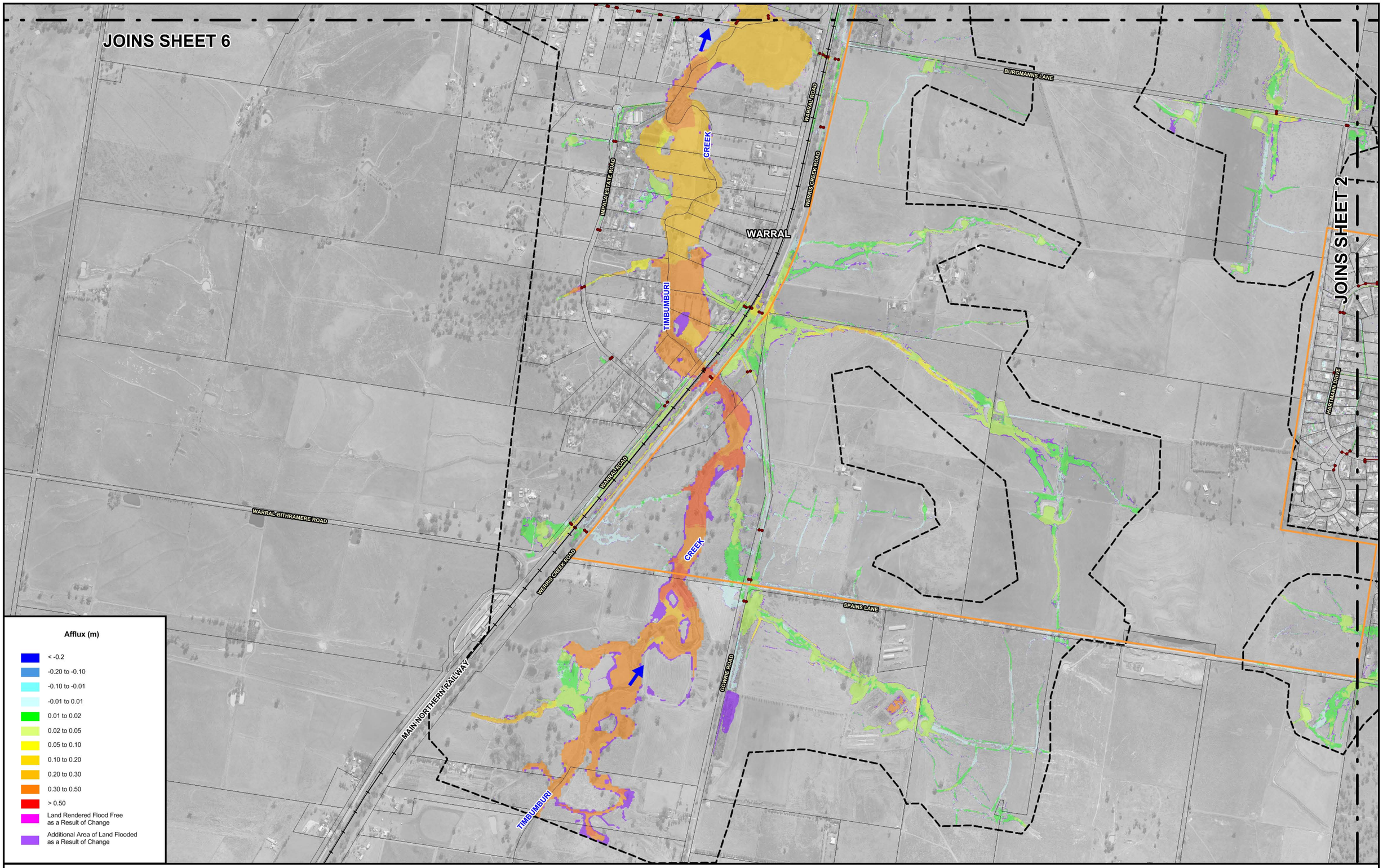
Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 4 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 5 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI

JOINS SHEET 7

JOINS SHEET 5

JOINS SHEET 3

LLOMA PARK

CENTENARY PARK

MAXWELL STREET

BOURNE STREET

SUSSEX STREET

ARMIDALE ROAD

DUMARESQ ROAD

HILLVUE ROAD

CHAUVEL PARK

WARRAH ROAD

MAIN NORTHERN RAILWAY

MARGAN PLACE

GOORIGIL STREET

MORILLA STREET

CANDEL STREET

WARWICK ROAD

BYLONG ROAD

VERRIS CREEK ROAD

COUNTRY ROAD

CREEK

BURKES

TIMBUMBURI

GULLY

HEILIGMANS LANE

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 6 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

ARMSTRONG STREET
PHOENIX STREET
GODDARD LANE
OXLEY HIGHWAY
WAITAMORE ROAD
WEST TAMWORTH - BARABA RAILWAY
WALLAMORE
ANNABRANCH
CREEK
TAMINDA LEVEE
TAMWORTH REGIONAL AIRPORT
TAMWORTH RACECOURSE
JEWRY STREET
BASIL BROWN DRIVE
MURROON
CREEK
FLINDERS STREET
EVANS STREET
MITCHELL STREET
MARATHON STREET
NEW WINTON ROAD
GUNNEDAH ROAD
WALLAMORE ROAD
TAMWORTH SHOWGROUNDS
WESTDALE
TIMBUMBURI
COOK STREET
DAMPIER STREET
TAMINDA
CUNNINGHAM STREET
NORTHMORE CRESCENT
GUNNEDAH ROAD
OXLEY LANE
MURROON
CREEK
COUNTRY ROAD
COLE ROAD
QUINN STREET
EDITH STREET
SOUTHVIEW STREET
SUE CRES
WARRAH ROAD
LLOMA PARK

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

150 0 150 300 450 m

Scale: 1:15,000

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NOTE:

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee

Impacts shown in this area assume the flood gates are in their fully open position with no coincident flooding in the Peel River and its major tributaries. This area is potentially subject to greater impacts during periods when intense rainfall occurs coincident with the flood gates in their fully closed position. Refer findings of L&A, 2012 for details.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 7 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

BROWNS LANE

BOWLERS LANE

PEEL

RIVER

CREEK

BOLTONS

WEST TAMWORTH-BARABA RAILWAY

WALLAMORE ROAD

MANILLA ROAD

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

OXLEY VALE

HIGGINS LANE

WALLAMORE

CREEK

SEWAGE
TREATMENT
PLANT

MURROON

ANNABRANCH

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

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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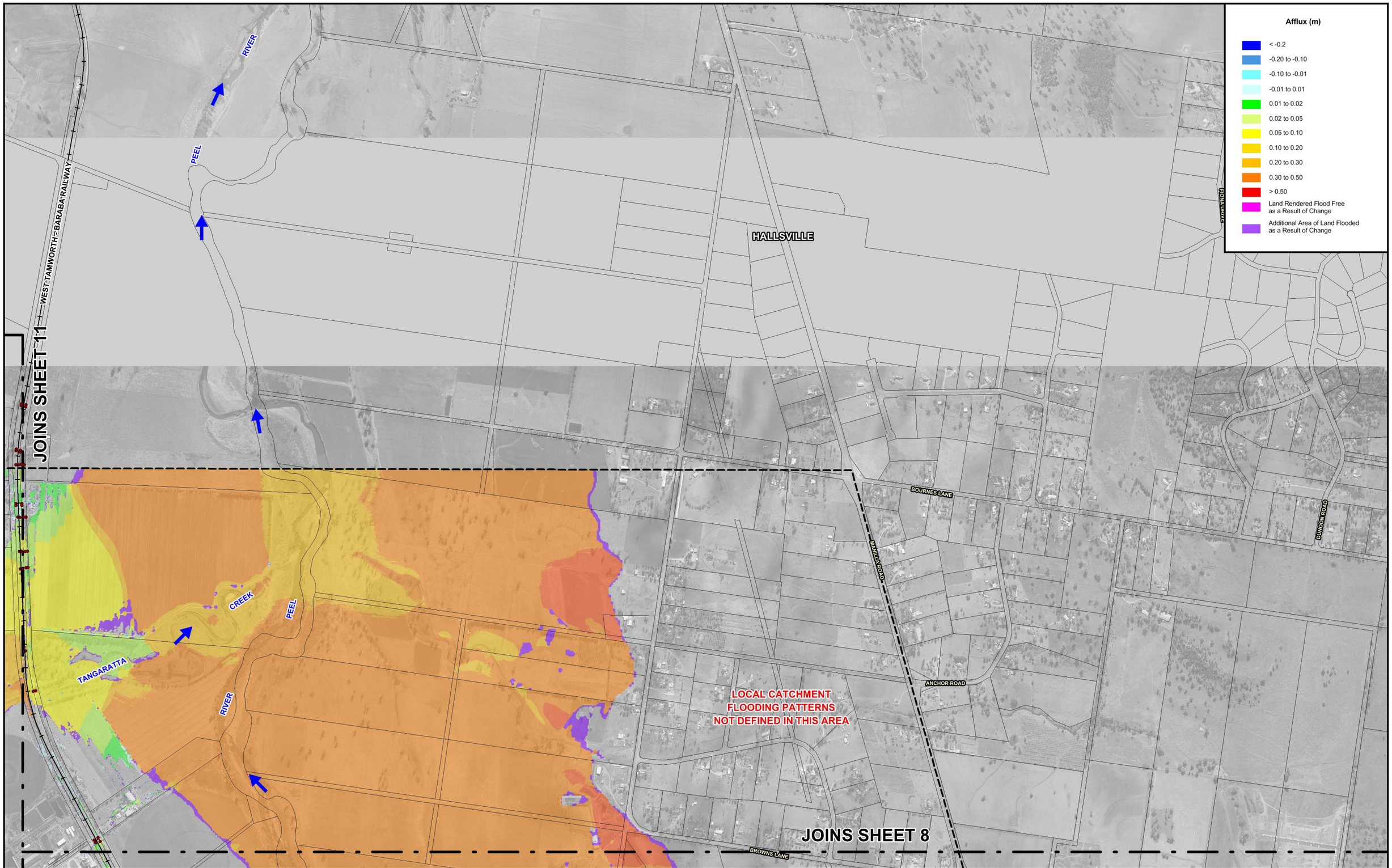
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 8 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



N

150 0 150 300 450 m

Scale: 1:15,000

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LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 9 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

NEW WINTON ROAD

TANGARATTA CREEK

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS CREEK

DURI-WALLAMORE ROAD

TAMWORTH REGIONAL AIRPORT

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

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150 0 150 300 450 m

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 10 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI

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

GIDLEY SIDING ROAD

ARMIDALE RD

BYAMEE LANE

CREEK

OXLEY HIGHWAY

TANGARATTA

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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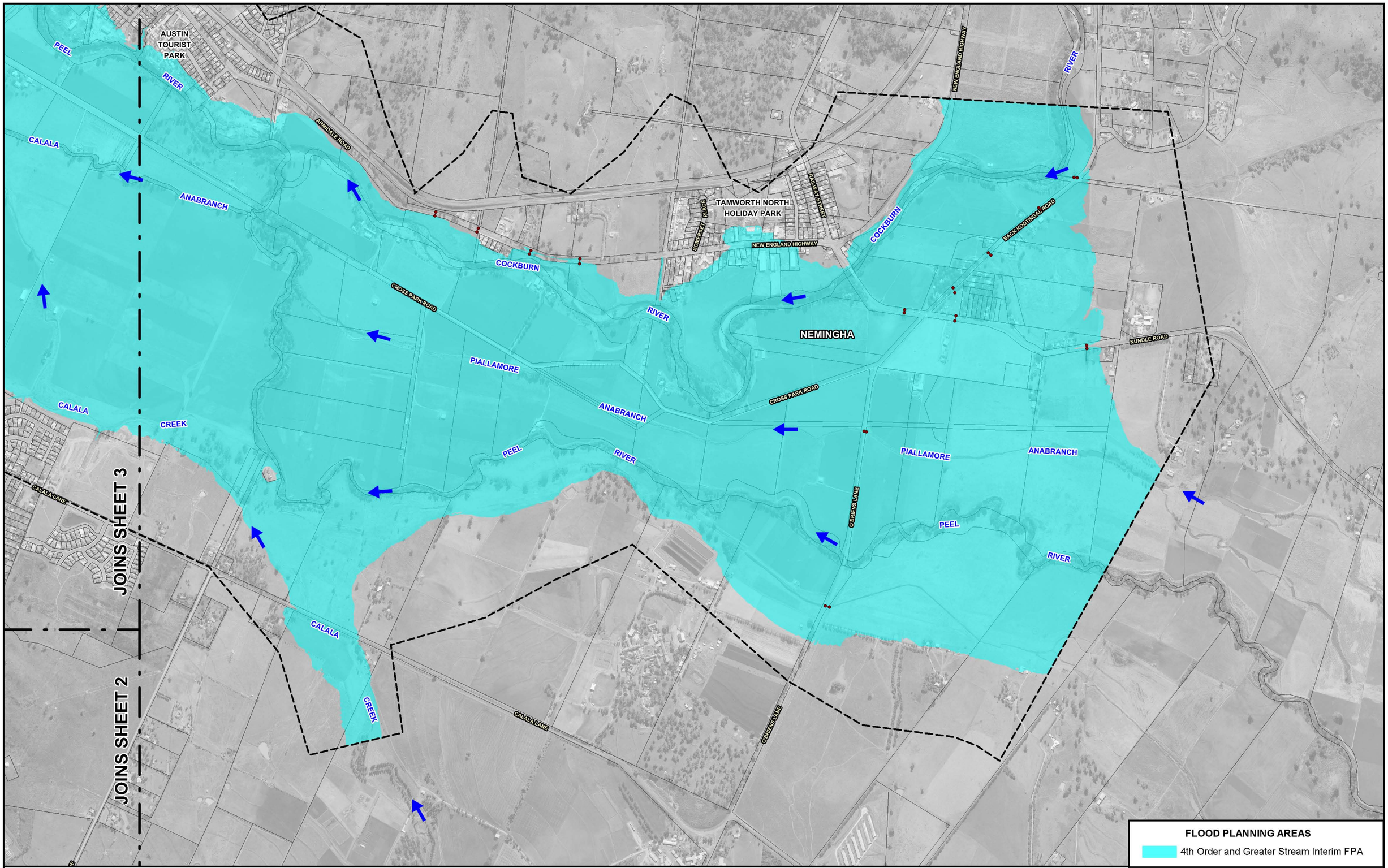
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.14
(Sheet 11 of 11)

SENSITIVITY OF FLOOD BEHAVIOUR TO 10% INCREASE IN RAINFALL INTENSITY
100 YEAR ARI



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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 1 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

JOINS SHEET 3

JOINS SHEET 1

JOINS SHEET 5

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO CREEK

BURGESS LANE

PALMER DRIVE

KINGSWOOD

PAGES LANE

DANOAR CRESCENT

KINGSWOOD ROAD

KINGSWOOD PARK

ROBERTS ROAD

HERDEN ROAD

SPAINS LANE

COLWELL ROAD

REGANS ROAD

WHITEHOUSE LANE

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

LOCAL CATCHMENT
FLOODING PATTERNS
NOT DEFINED IN THIS AREA

FLOOD PLANNING AREAS

- 1st Order and Minor Stream Interim FPA
- 2nd Order Stream Interim FPA
- 4th Order and Greater Stream Interim FPA
- Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

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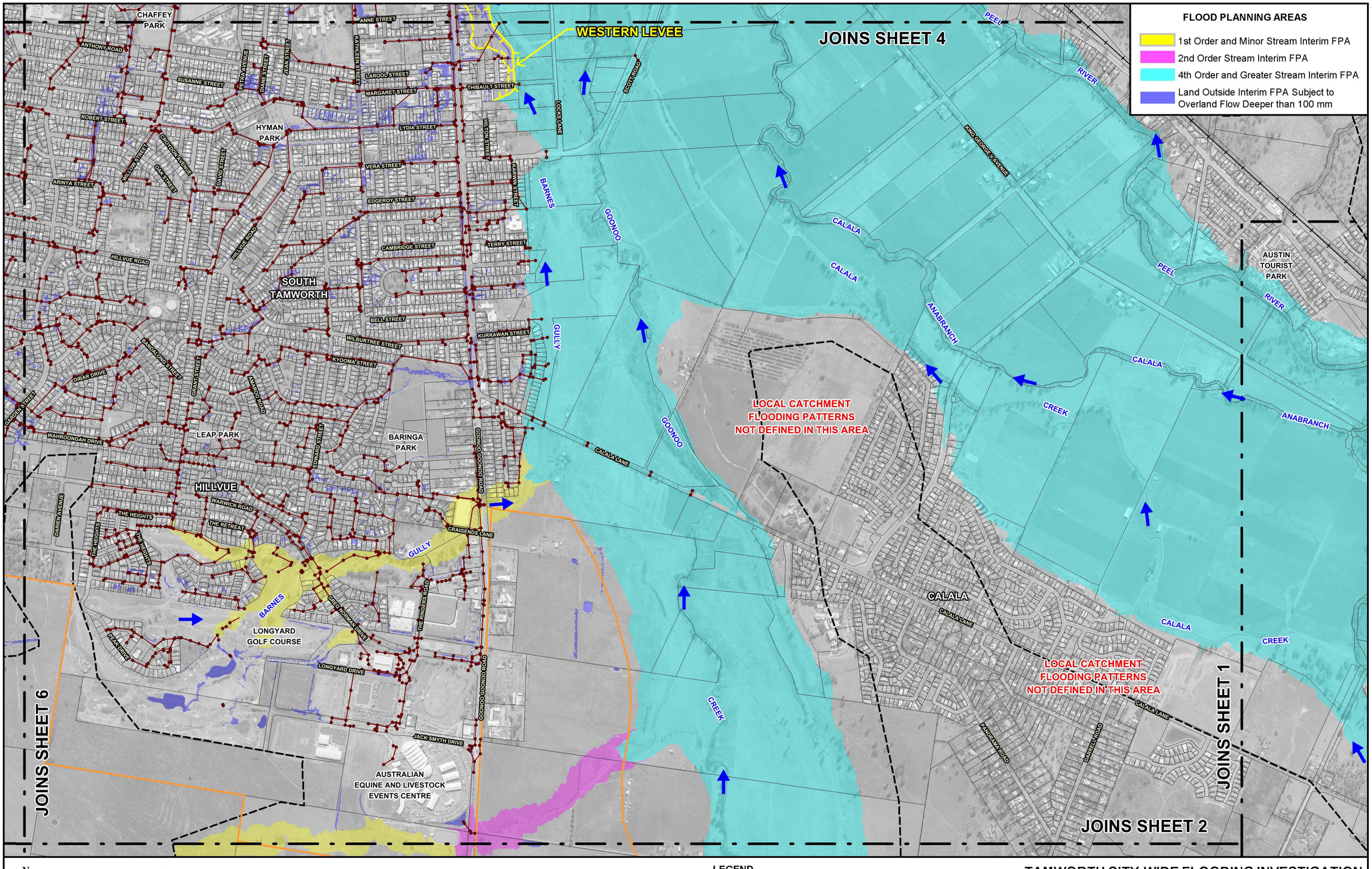
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 2 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY



N

150 0 150 300 450 m

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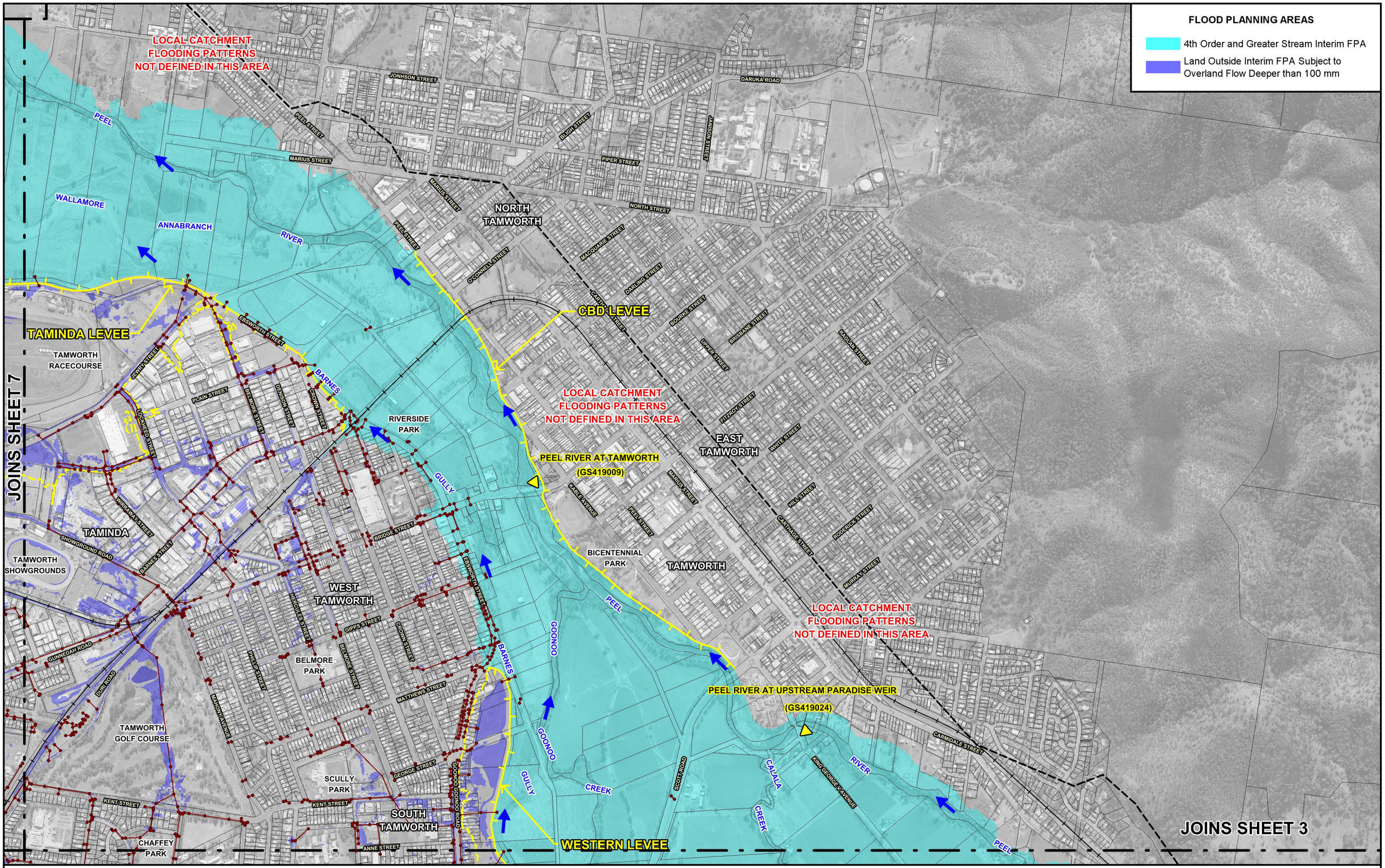
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area
- Levee
- Refer L&A, 2012 for assessed extent of FPA in this area.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 3 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY



N

150 0 150 300 450 m

Scale: 1:15,000

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Stream Gauge
- Refer L&A, 2012 for assessed extent of FPA in this area.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 4 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

JOINS SHEET 6

JOINS SHEET 2

WARRAL

BURGMANNS LANE

WARRALROAD

WEBRIS CREEK ROAD

IMPALA ESTATE ROAD

CREEK

TIMBUMBURI

HARTMANN DRIVE

WARRAL-BITHRAMERE ROAD

SPAINS LANE

GOWRIE ROAD

MAIN NORTHERN RAILWAY

FLOOD PLANNING AREAS

- 1st Order and Minor Stream Interim FPA
- 2nd Order Stream Interim FPA
- 3rd Order Stream Interim FPA
- Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

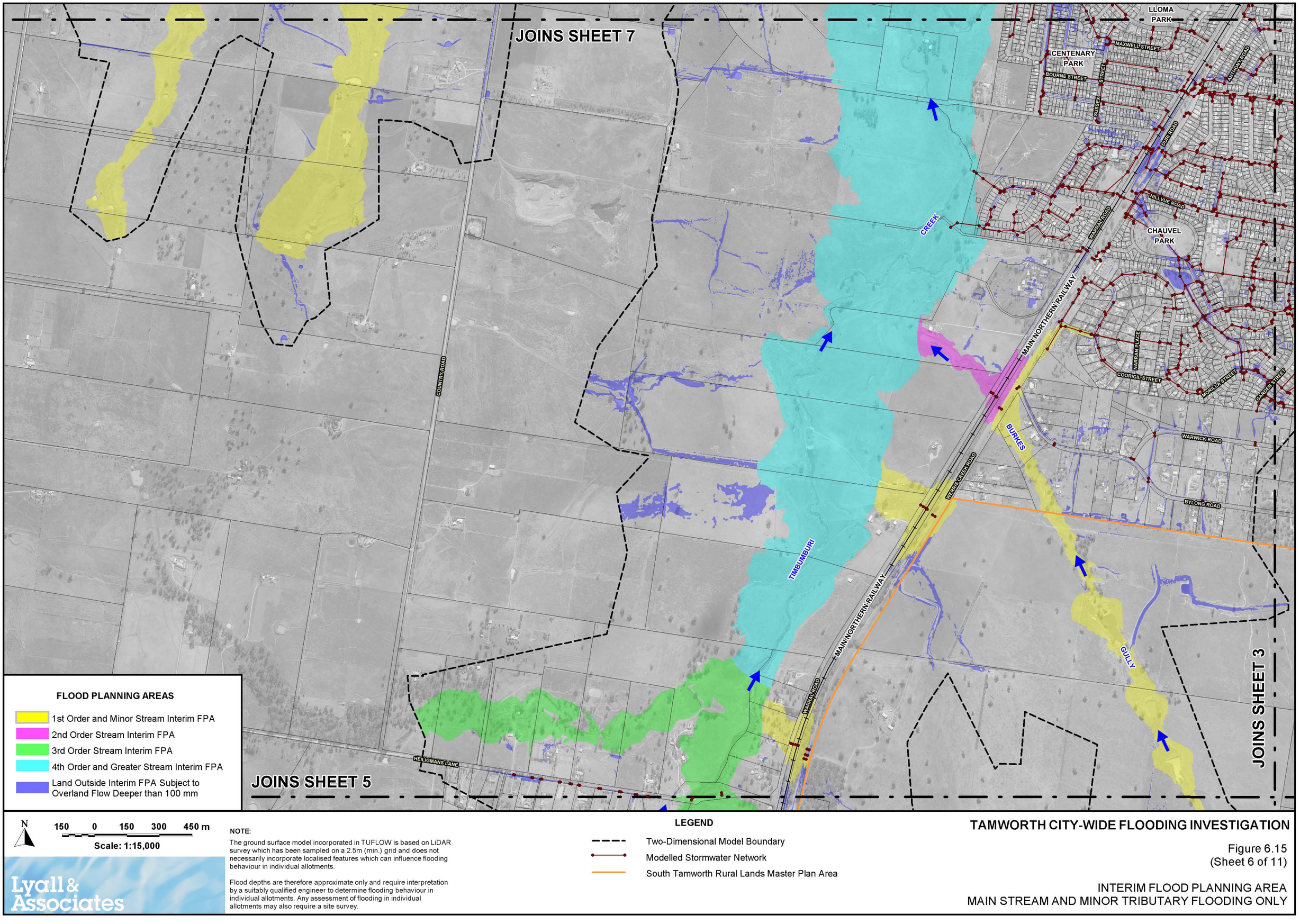
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- South Tamworth Rural Lands Master Plan Area

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 5 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY


JOINS SHEET 7
JOINS SHEET 5
JOINS SHEET 3
LLOMA PARK
CENTENARY PARK
MAXWELL STREET
BOURNE STREET
SUSSEX STREET
ARMIDALE ROAD
DUKE ROAD
HILLVUE ROAD
CHAUVEL PARK
WARRAH ROAD
MAIN NORTHERN RAILWAY
MARGAN PLACE
COORIGIL STREET
MORILLA STREET
CANDEL STREET
WARWICK ROAD
BYLONG ROAD
WERRIS CREEK ROAD
COUNTRY ROAD
CREEK
BURKES
TIMBUMBURI
WARRAH ROAD
MAIN NORTHERN RAILWAY
GULLY
HEILIGMANS LANE
FLOOD PLANNING AREAS
1st Order and Minor Stream Interim FPA
2nd Order Stream Interim FPA
3rd Order Stream Interim FPA
4th Order and Greater Stream Interim FPA
Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm
N
150 0 150 300 450 m
Scale: 1:15,000
Lyall & Associates
NOTE:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.
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LEGEND
Two-Dimensional Model Boundary
Modelled Stormwater Network
South Tamworth Rural Lands Master Plan Area
TAMWORTH CITY-WIDE FLOODING INVESTIGATION
Figure 6.15
(Sheet 6 of 11)
INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

JOINS SHEET 10

JOINS SHEET 8

JOINS SHEET 4

JOINS SHEET 6

TAMWORTH REGIONAL AIRPORT

TAMINDA LEVEE

TAMWORTH RACECOURSE

TAMWORTH SHOWGROUNDS

WESTDALE

TAMINDA

LLOMA PARK

ARMSTRONG STREET

PHOENIX STREET

GODDARD LANE

OXLEY HIGHWAY

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

ANNABRANCH

CREEK

MURROON

TIMBUMBURI

FLINDERS STREET

MITCHELL STREET

EVANS STREET

MARATHON STREET

CUNNINGHAM STREET

NORTLAND CRESCENT

JEWRY STREET

COOK STREET

DAMPIER STREET

GUNNEDAH ROAD

COLE ROAD

EDITH STREET

QUINN STREET

SOUTHVIEW STREET

SUE CRES

WARRA ROAD

OXLEY LANE

R SOIL BROWN DRIVE

NEW WINTON ROAD

COUNTRY ROAD

FLOOD PLANNING AREAS

- 1st Order and Minor Stream Interim FPA
- 2nd Order Stream Interim FPA
- 3rd Order Stream Interim FPA
- 4th Order and Greater Stream Interim FPA
- Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

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The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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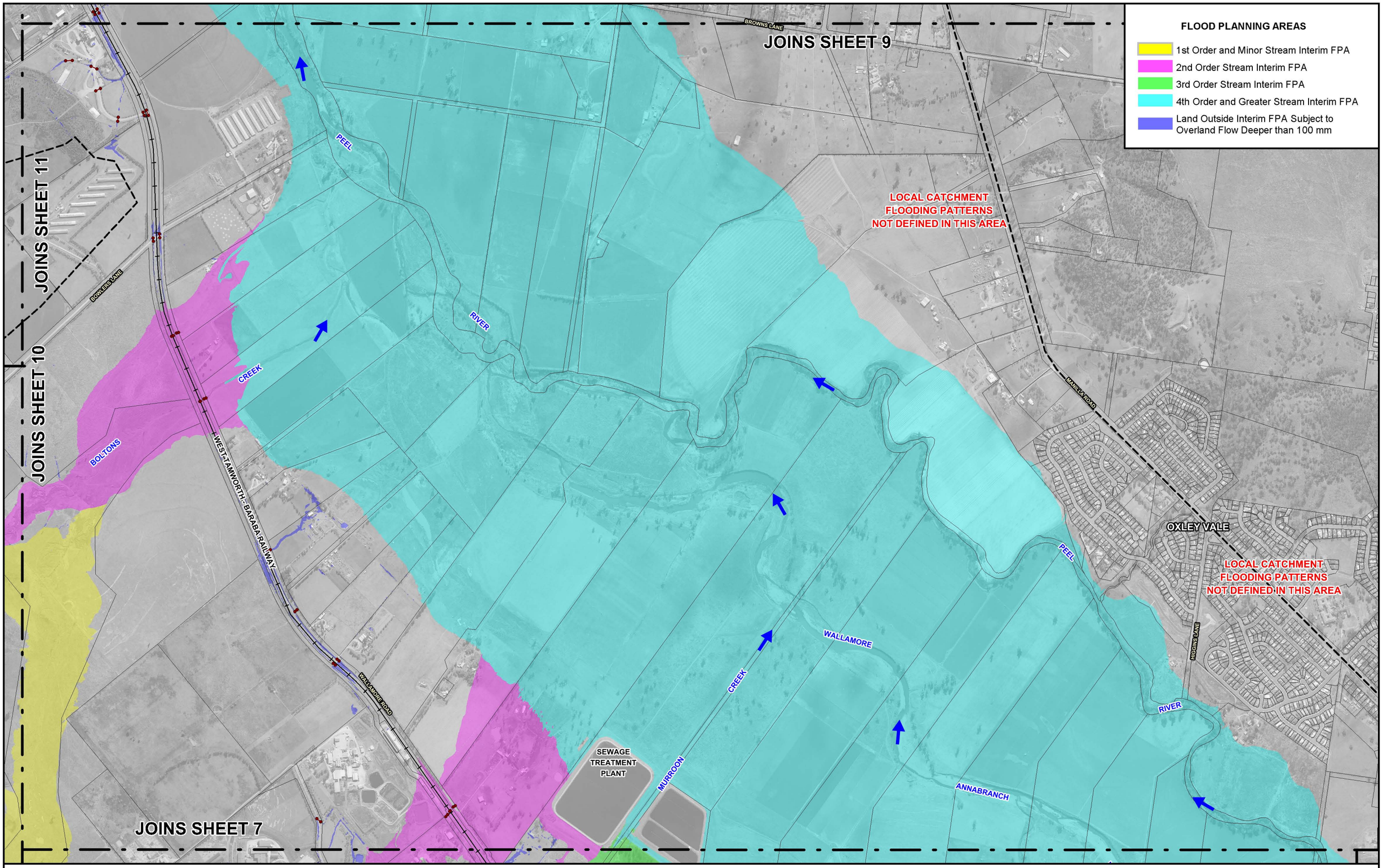
LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network
- Levee
- Refer L&A, 2012 for assessed extent of FPA in this area.

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 7 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY



N

150 0 150 300 450 m

Scale: 1:15,000

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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Lyall & Associates

LEGEND

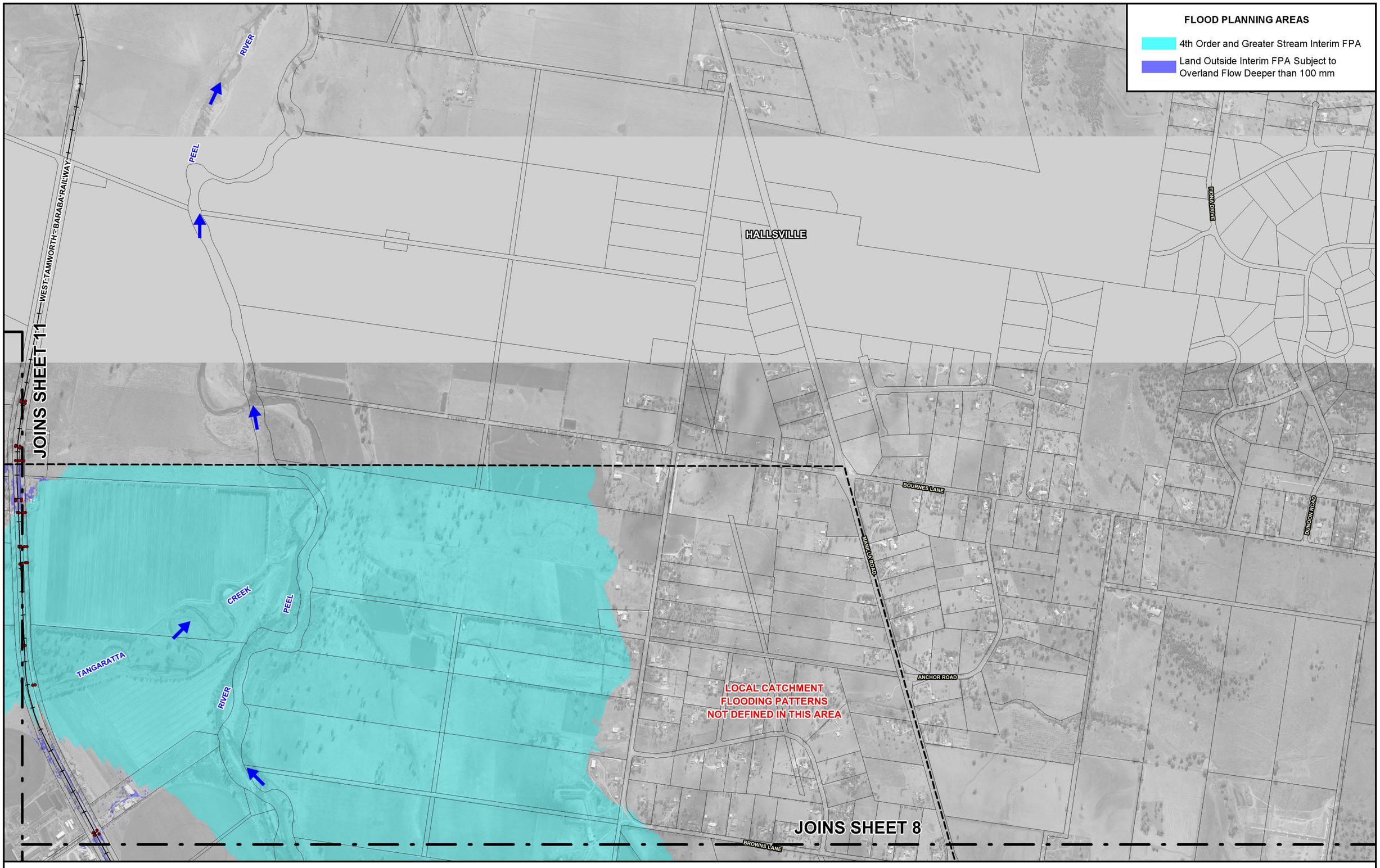
Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 8 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

Two-Dimensional Model Boundary

Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 9 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

REFER INSET

INSET

OLD WINTON ROAD

TANGARATTA CREEK

OLD WINTON ROAD

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS CREEK

TAMWORTH REGIONAL AIRPORT

DURI - WALLAMORE ROAD

CREEK

BOLTONS

NEW WINTON ROAD

DURI - WALLAMORE ROAD

FLOOD PLANNING AREAS

- 1st Order and Minor Stream Interim FPA
- 2nd Order Stream Interim FPA
- 4th Order and Greater Stream Interim FPA
- Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

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LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 10 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

FLOOD PLANNING AREAS

- 2nd Order Stream Interim FPA
- 4th Order and Greater Stream Interim FPA
- Land Outside Interim FPA Subject to Overland Flow Deeper than 100 mm

GIDLEY SIDING ROAD

ARMIDALE RD

BYAMEE LANE

OXLEY HIGHWAY

CREEK

TANGARATTA

JOINS SHEET 9

JOINS SHEET 8

JOINS SHEET 10

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

NOTE:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2.5m (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.

LEGEND

- Two-Dimensional Model Boundary
- Modelled Stormwater Network

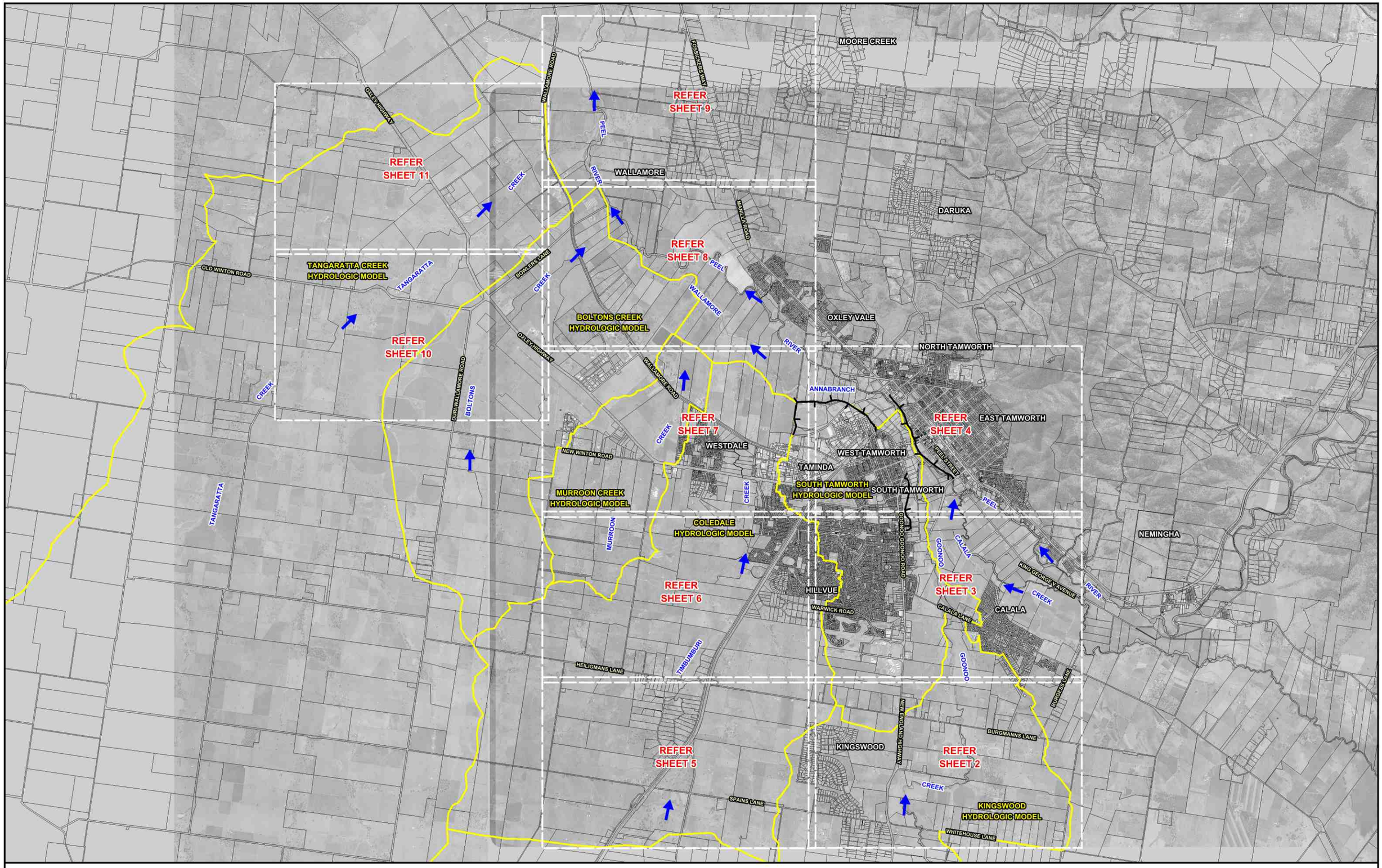
TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Figure 6.15
(Sheet 11 of 11)

INTERIM FLOOD PLANNING AREA
MAIN STREAM AND MINOR TRIBUTARY FLOODING ONLY

APPENDIX B

FIGURES SHOWING LAYOUT OF EXISTING DRAINAGE SYSTEM AT TAMWORTH



N

750 0 750 1500 2250 m

Scale: 1:75,000

Lyall & Associates

LEGEND

Hydrologic Model Boundary and Identifier

Levee

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 1 of 11

KEY PLAN

JOINS SHEET 3

COLEDALE HYDROLOGIC MODEL

SOUTH TAMWORTH HYDROLOGIC MODEL

KINGSWOOD HYDROLOGIC MODEL

BURGMANNS LANE

NEW ENGLAND HIGHWAY

GOONOO

GOONOO CREEK

BURGMANNS LANE CONCRETE LINED CAUSEWAY

PALMER DRIVE

PAGES LANE

DANCAR CRESCENT

KINGSWOOD ROAD

KINGSWOOD PARK

ROBERTS ROAD

NEW ENGLAND HIGHWAY

GOONOO

GOONOO CREEK

WHITEHOUSE LANE

SPAINS LANE

COLWELL ROAD

REGANS ROAD

JOINS SHEET 5

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 2 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 4

CHAFFEY PARK

HYMAN PARK

COLEDALE HYDROLOGIC MODEL

SOUTH TAMWORTH

LEAP PARK

BARINGA PARK

HILLVUE

LONGYARD GOLF COURSE

AUSTRALIAN EQUINE AND LIVESTOCK EVENTS CENTRE

SOUTH TAMWORTH HYDROLOGIC MODEL

KINGSWOOD HYDROLOGIC MODEL

CALALA

WESTERN LEVEE

GOONOO GOONOO CREEK BRIDGE No.2

GOONOO GOONOO CREEK BRIDGE No.1

MAIN NORTHERN RAILWAY

JOINS SHEET 6

JOINS SHEET 2

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

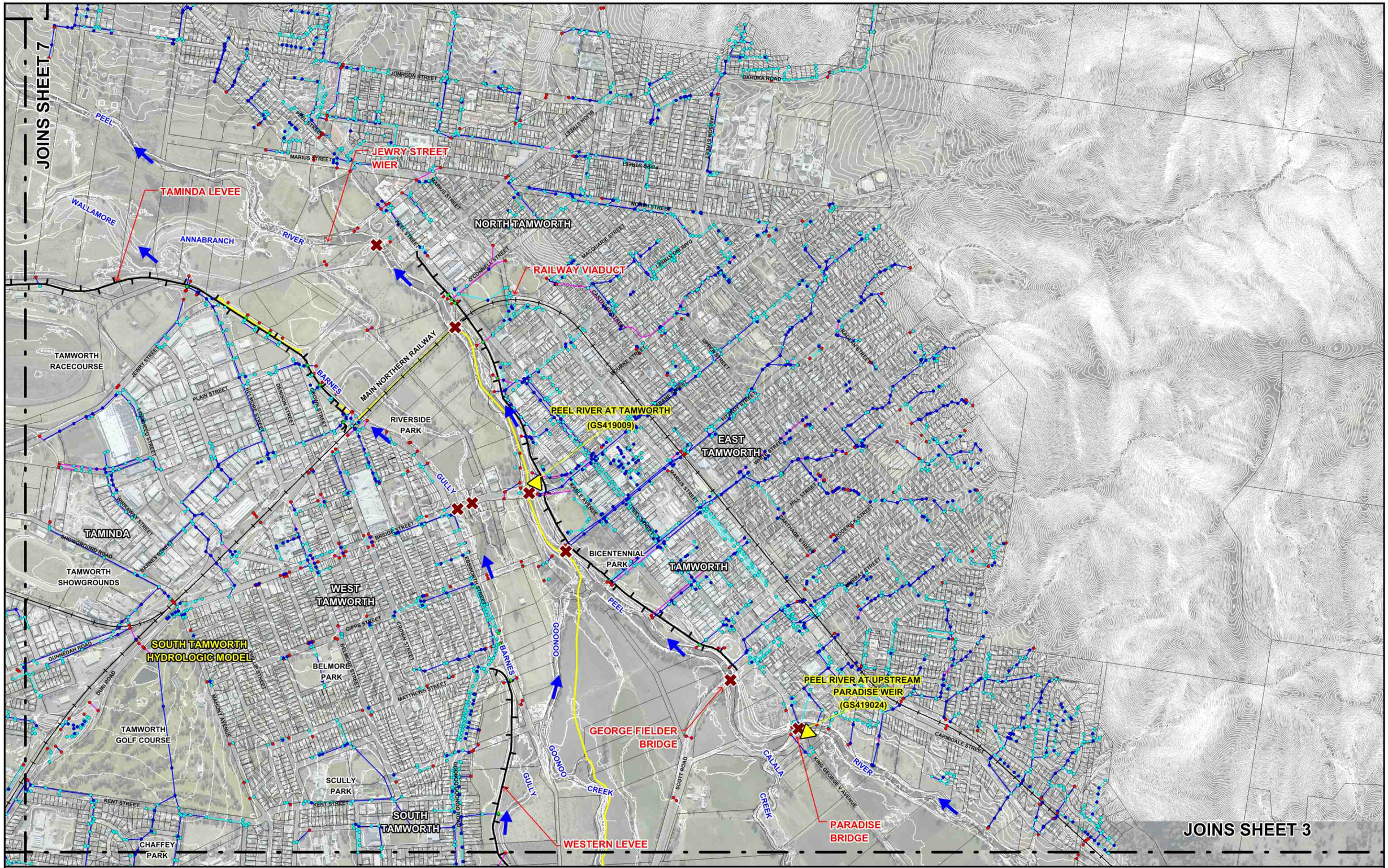
LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Levee
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 3 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH



N

150 0 150 300 450 m

Scale: 1:15,000

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Flood Gate
- Headwall
- Stream Gauge
- Levee
- Hydrologic Model Boundary and Identifier
- Bridge

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 4 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 6

BURGMANNS LANE

WARRAL

IMPALA ESTATE ROAD

CREEK

WERRIS CREEK ROAD

TIMBUMBURI

WARRAL ROAD LOW LEVEL CROSSING

COLEDALE HYDROLOGIC MODEL

MAIN NORTHERN RAILWAY

HARTMANN DRIVE

WARRAL-BITHRAMERE ROAD

WARRALL ROAD

WERRIS CREEK ROAD

CREEK

SPAINS LANE

GOWRIE ROAD

TIMBUMBURI

KINGSWOOD HYDROLOGIC MODEL

JOINS SHEET 2

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 5 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 7

MURROON CREEK
HYDROLOGIC MODEL

COLEDALE
HYDROLOGIC MODEL

LLOMA
PARK

CENTENARY
PARK

CHAUVEL PARK

MORILLA STREET
DETENTION BASIN

WARRAL ROAD
CAUSEWAY

COUNTRY ROAD

CREEK

BURKES

TIMBUMBURI

MAIN NORTHERN RAILWAY

GULLY

JOINS SHEET 5

JOINS SHEET 3

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 6 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 8

JOINS SHEET 10

JOINS SHEET 4

JOINS SHEET 6

BOLTONS CREEK HYDROLOGIC MODEL

MURROON CREEK HYDROLOGIC MODEL

SOUTH TAMWORTH HYDROLOGIC MODEL

COLEDALE HYDROLOGIC MODEL

TAMWORTH REGIONAL AIRPORT DETENTION BASIN

TAMWORTH REGIONAL AIRPORT

TAMINDA LEVEE

WALLAMORE ROAD CAUSEWAY

TAMWORTH RACECOURSE

WESTDALE MEMORIAL PARK

WESTDALE

TAMINDA

LLOMA PARK

ARMSTRONG STREET

GODDARD LANE

OXLEY HIGHWAY

BASIL BROWN DRIVE

NEW WINTON ROAD

OXLEY LANE

GUNNEDAH ROAD

COUNTRY ROAD

MURROON CREEK

WALLAMORE ROAD

WEST TAMWORTH - BARABA RAILWAY

ANNABRANCH

FLINDERS STREET

EVANS STREET

MITCHELL STREET

MARATHON STREET

TIMBUMBURI

GOWLAND CRESCENT

GOWRY STREET

DAMPIER STREET

SOUTHVIEW STREET

MACGREGOR STREET

MARSHALL ROAD

GOLF ROAD

N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Flood Gate
- Headwall
- Stream Gauge
- Levee
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 7 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 9

JOINS SHEET 11

JOINS SHEET 10

JOINS SHEET 7

TANGARATTA CREEK HYDROLOGIC MODEL

BOLTONS CREEK HYDROLOGIC MODEL

MURROON CREEK HYDROLOGIC MODEL

BROWNS LANE

BOWLERS LANE

PEEL

RIVER

CREEK

BOLTONS

WEST TAMWORTH - BARABA RAILWAY

WALLAMORE ROAD

MANILLA ROAD

OXLEY VALE

WALLAMORE

MURROON CREEK

ANNABRANCH

HUGHES DRIVE

N

150 0 150 300 450 m

Scale: 1:15,000

LEGEND

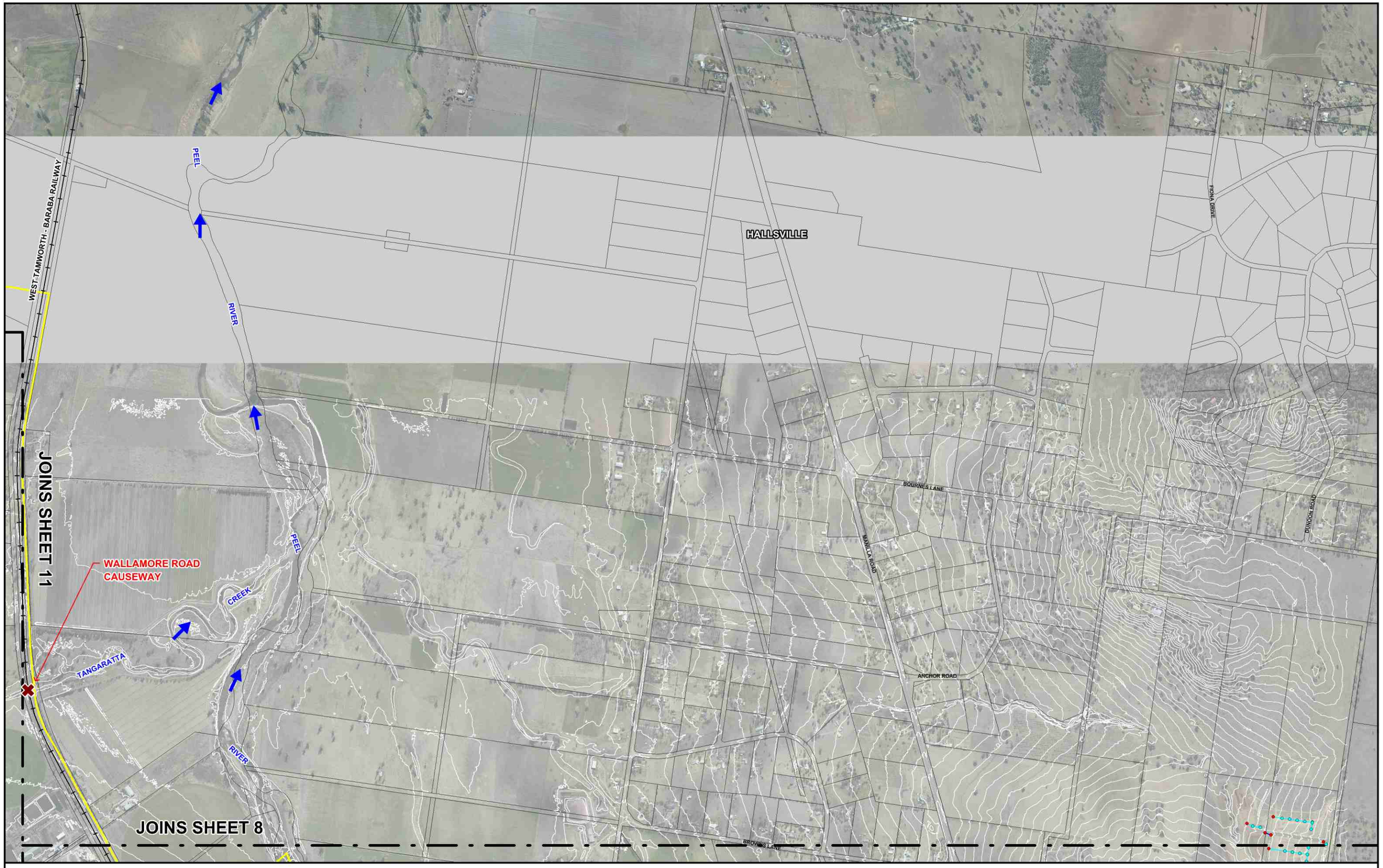
- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Hydrologic Model Boundary and Identifier

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 8 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH



N

150 0 150 300 450 m

Scale: 1:15,000

Lyall & Associates

LEGEND

- Pipe (Diameter < 450 mm)
- Pipe (Diameter ≥ 450 mm)
- Box Culvert
- Junction Pit
- Inlet Pit
- Headwall
- Hydrologic Model Boundary and Identifier
- Bridge

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 9 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH

JOINS SHEET 11

JOINS SHEET 8

JOINS SHEET 7

JOINS INSET

OLD WINTON ROAD

NEW WINTON ROAD

TANGARATTA

CREEK

TANGARATTA CREEK
HYDROLOGIC MODEL

BOWLERS LANE

OXLEY HIGHWAY

BOLTONS

CREEK

DURI - WALLAMORE ROAD

BOLTONS CREEK
HYDROLOGIC MODEL

TAMWORTH
REGIONAL AIRPORT

INSET

N

150 0 150 300 450 m

Scale: 1:15,000

LEGEND

Pipe (Diameter ≥ 450 mm)

Box Culvert

Headwall

Hydrologic Model Boundary and Identifier

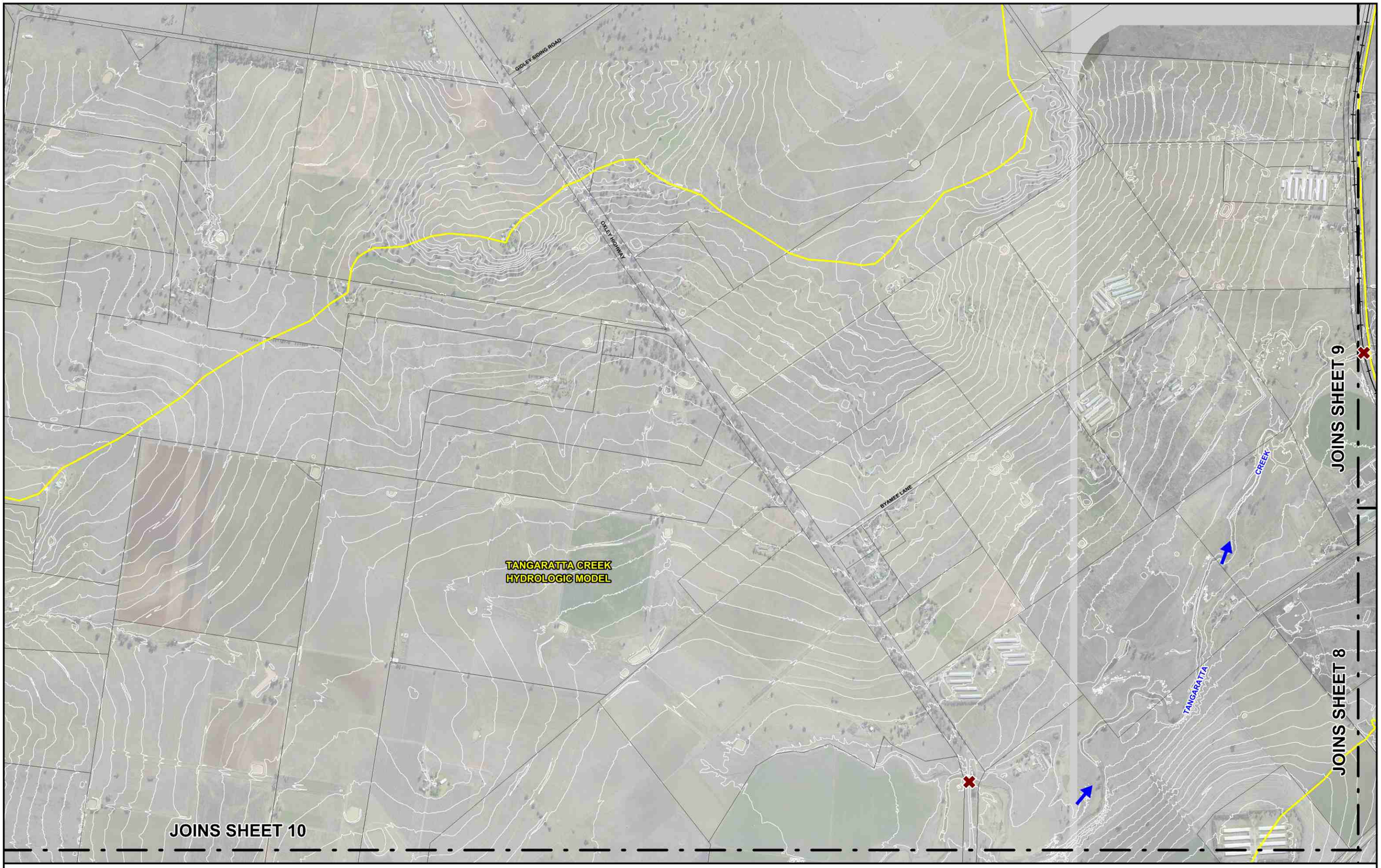
Bridge

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 10 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH



N

150 0 150 300 450 m

Scale: 1:15,000

LEGEND

Hydrologic Model Boundary and Identifier

Bridge

Lyall & Associates

TAMWORTH CITY-WIDE FLOODING INVESTIGATION

Sheet 11 of 11

EXISTING DRAINAGE SYSTEM AT TAMWORTH