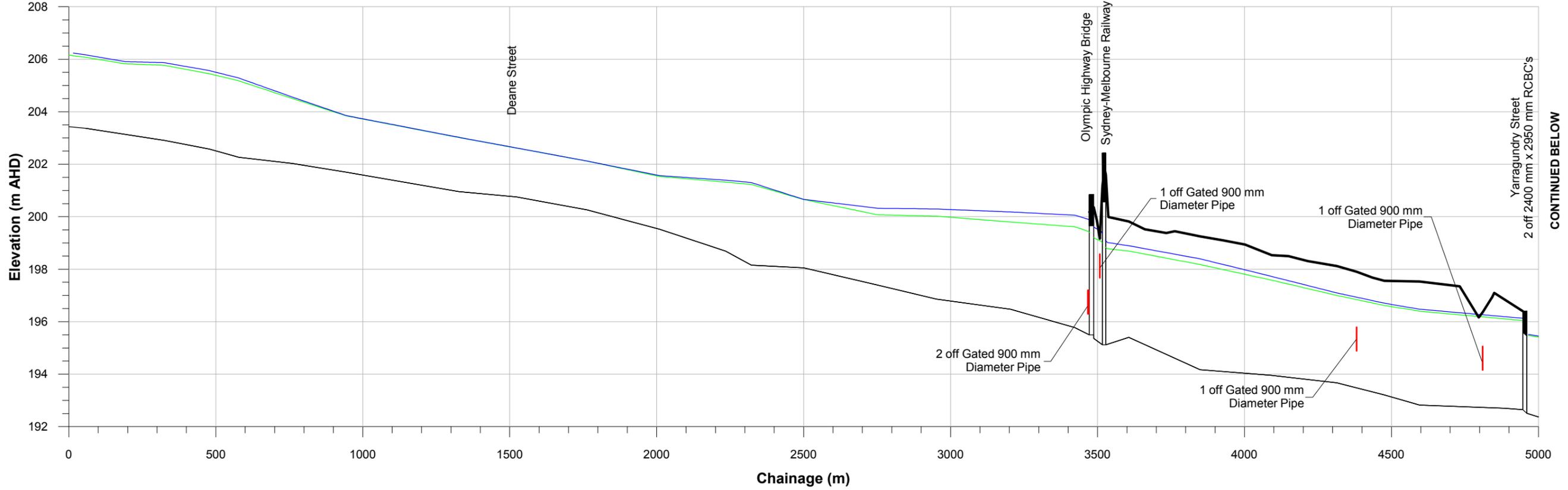
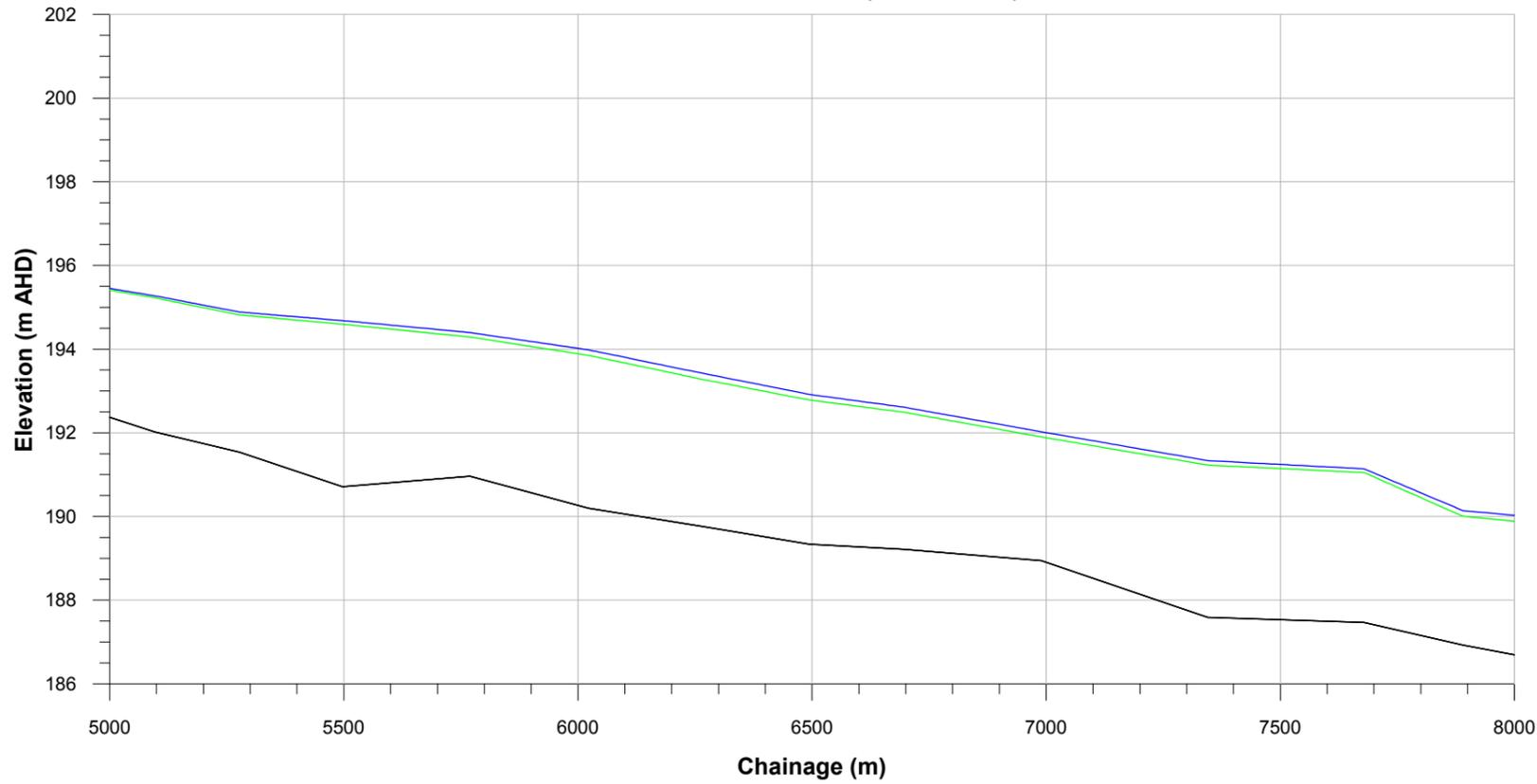


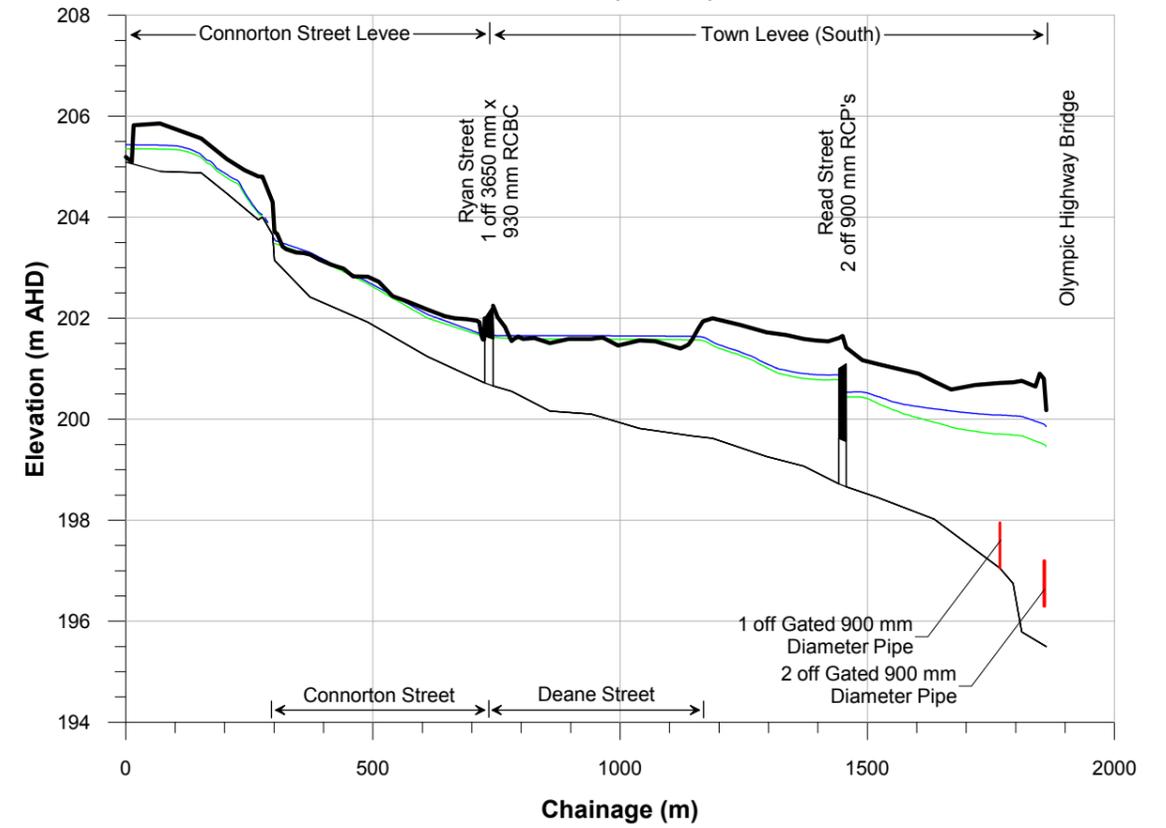
MAIN ARM OF SANDY CREEK



MAIN ARM OF SANDY CREEK (CONTINUED)



CONNORTON STREET LEVEE AND TOWN LEVEE (SOUTH)

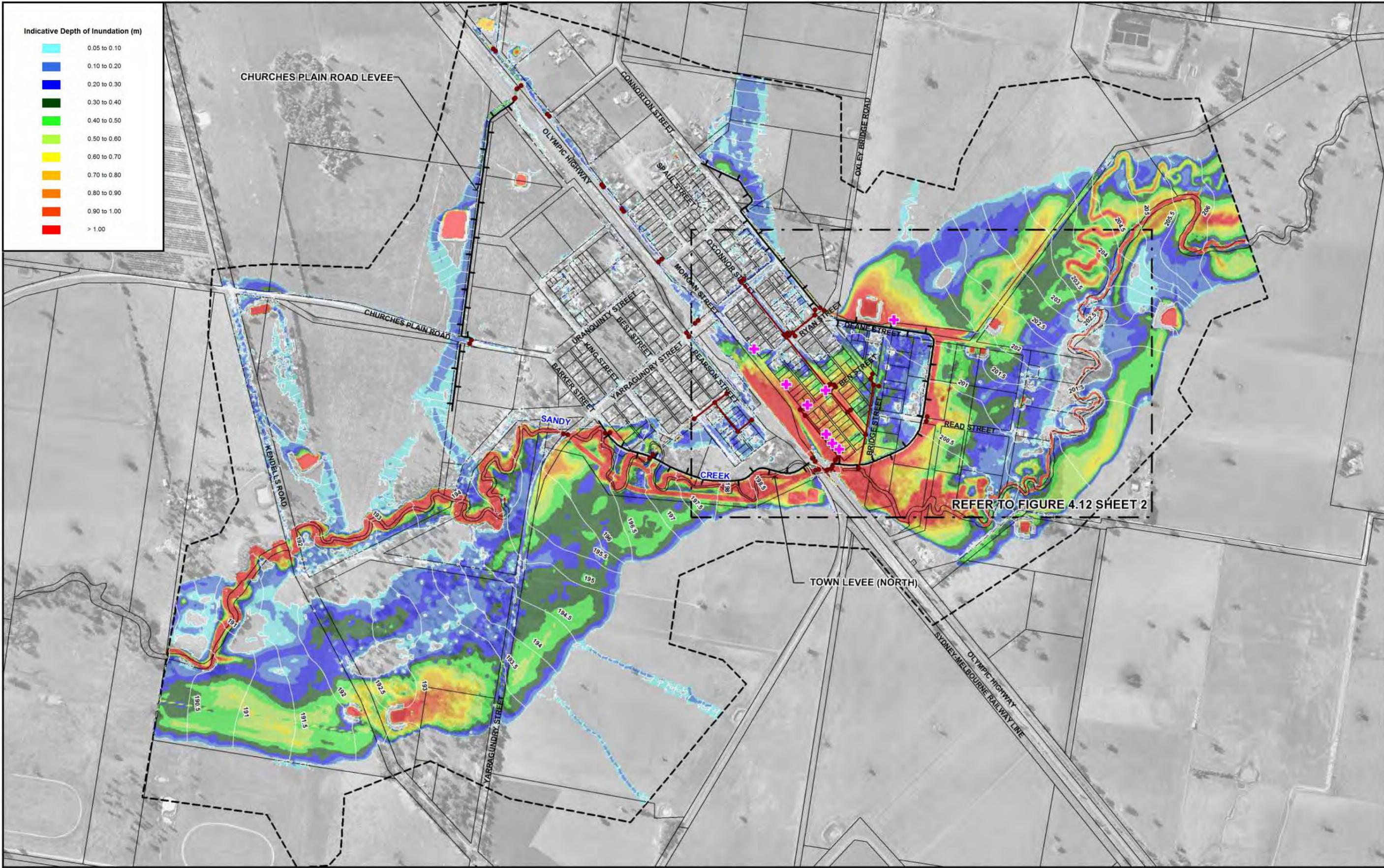


- LEGEND**
- October 2010 Flood
 - March 2012 Flood
 - Crest Level of Adjacent Levee

**TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS**

Figure 4.11

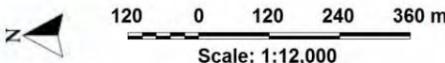
SANDY CREEK HISTORIC WATER SURFACE PROFILES



Indicative Depth of Inundation (m)

- 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

REFER TO FIGURE 4.12 SHEET 2



NOTE:
The extent and depths of flooding shown were determined from airborne laser scanning survey and are approximate only. The extent of inundation in individual allotments near the flood fringe should be confirmed by site specific survey.

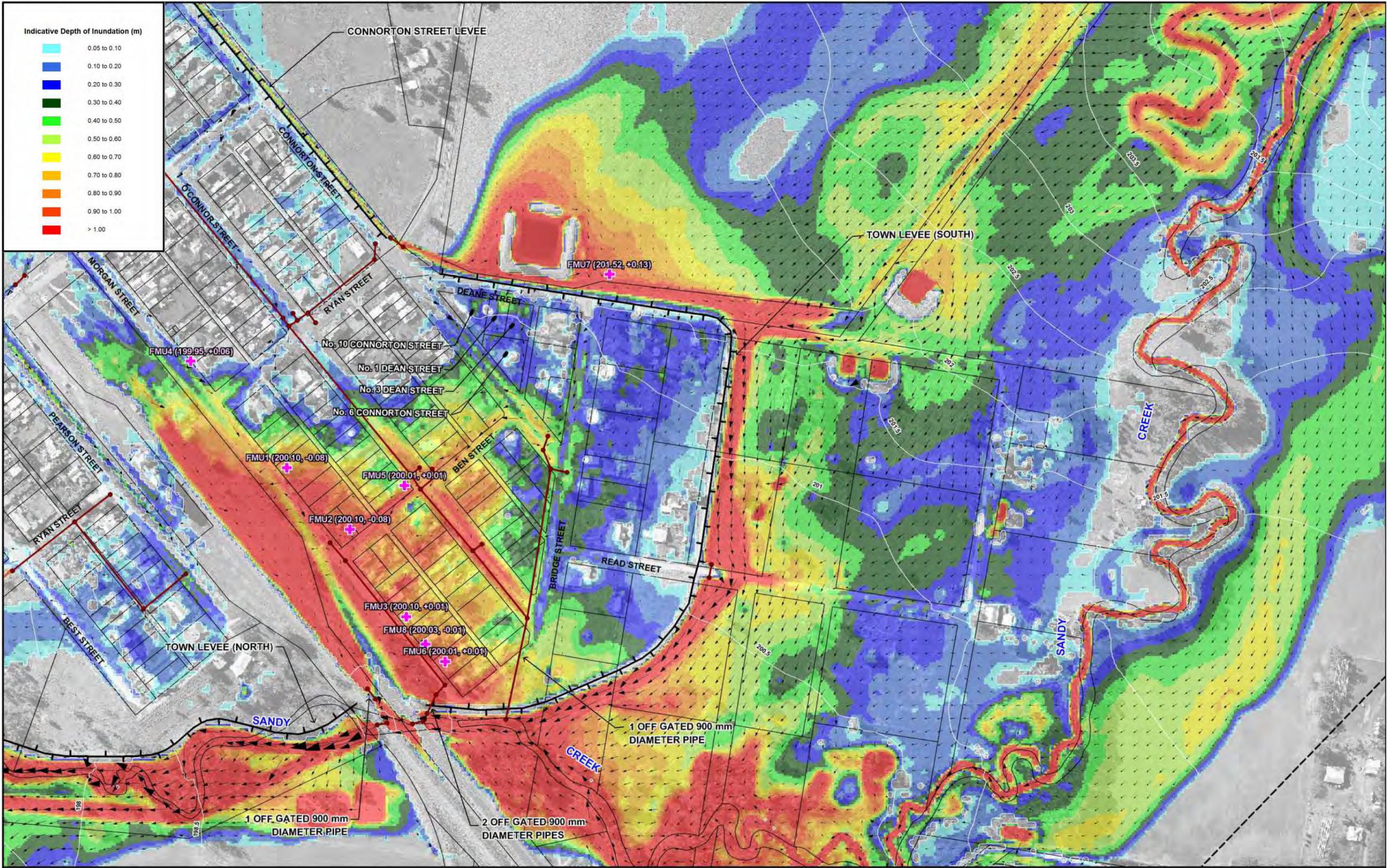
LEGEND

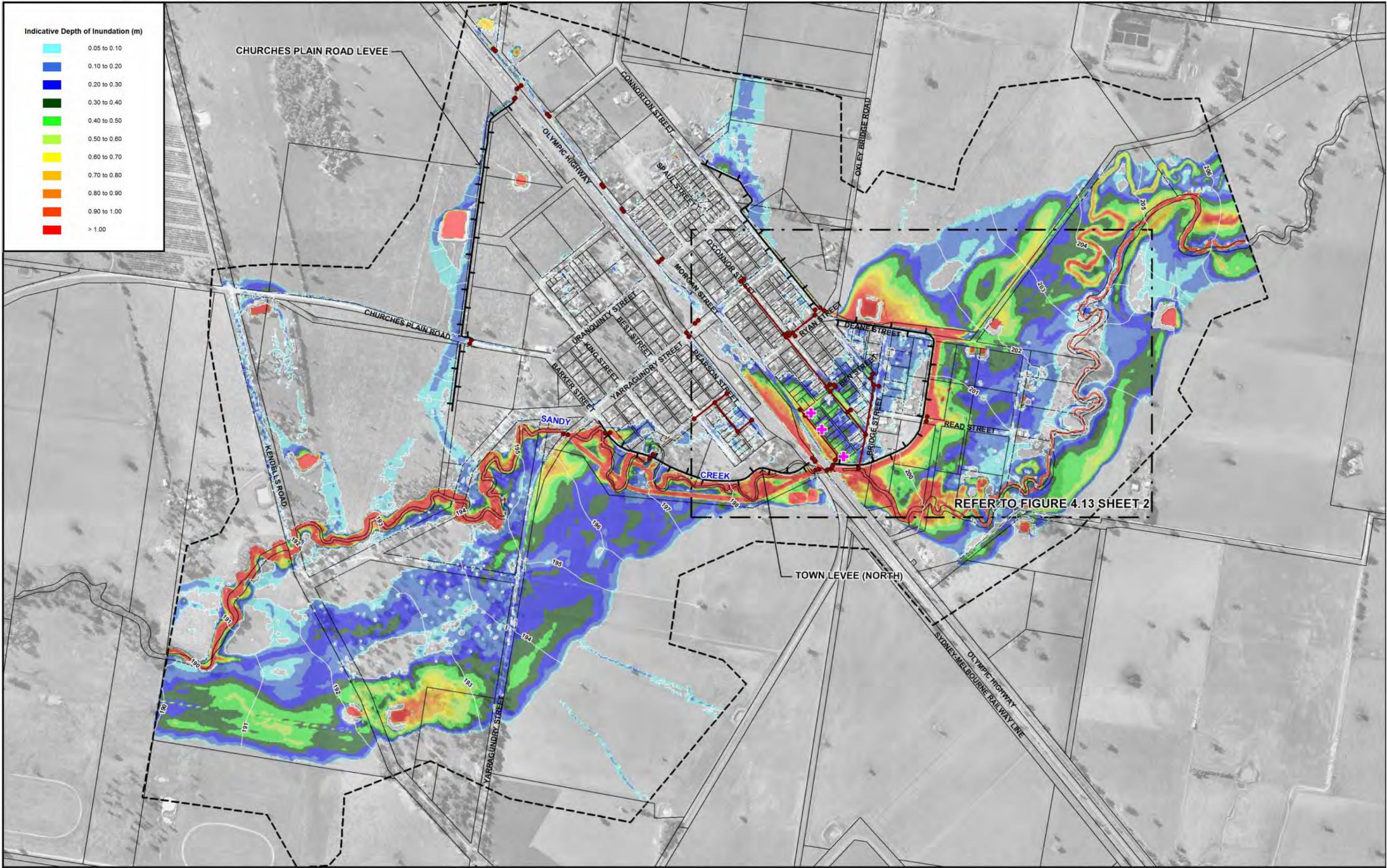
- Modelled Stormwater Network
- Two-Dimensional Model Boundary
- Water Surface Contours (m AHD) (Mainstream Flooding Only)
- + Flood Mark Location
- |— Alignment of Existing Levee

TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS

Figure 4.12
Sheet 1 of 2

URANQUINTY TUFLOW MODEL RESULTS
OCTOBER 2010 FLOOD



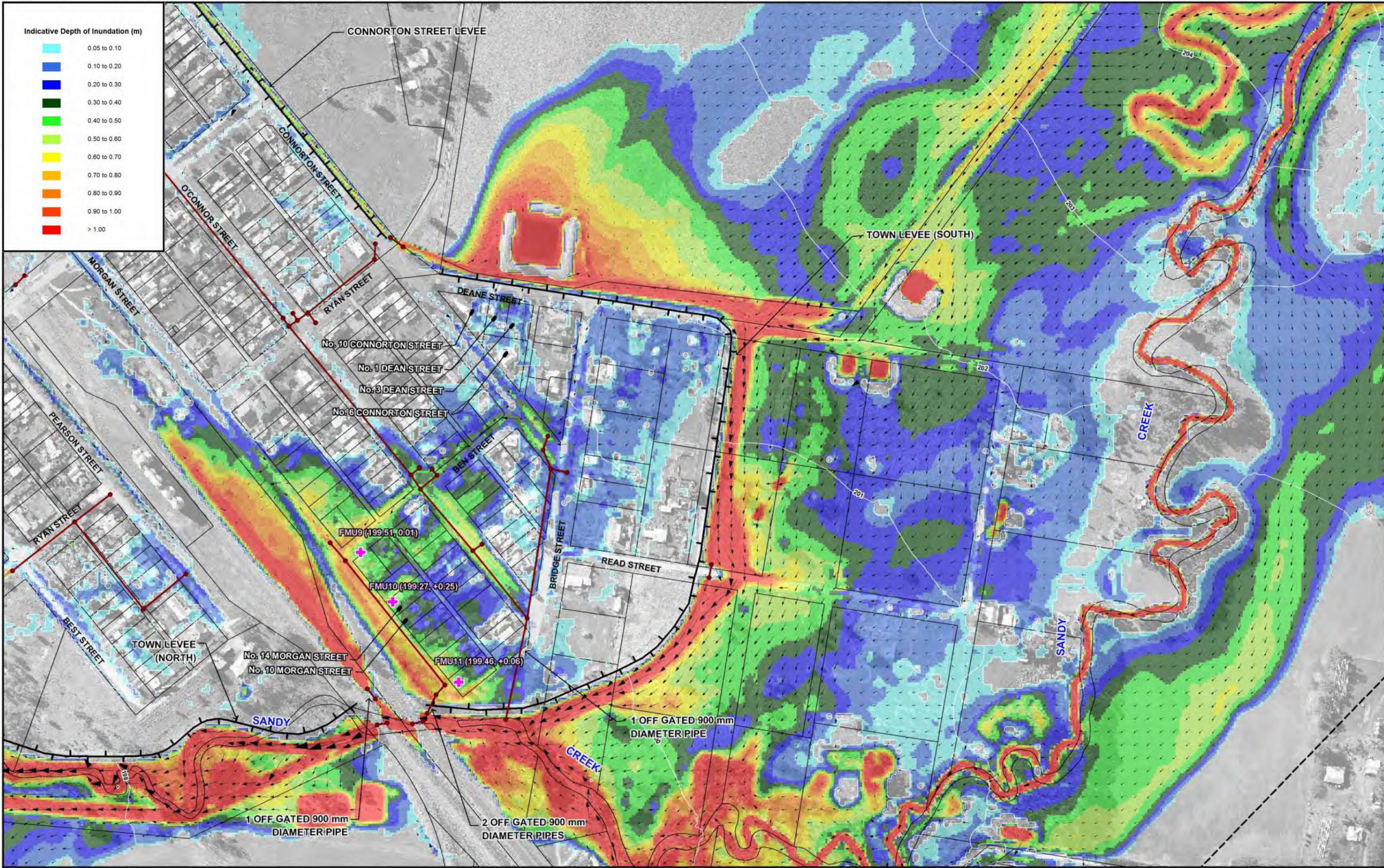


REFER TO FIGURE 4.13 SHEET 2

**TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS**

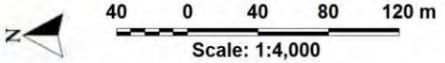
Figure 4.13
(Sheet 1 of 2)

URANQUINTY TUFLOW MODEL RESULTS
MARCH 2012 FLOOD



Indicative Depth of Inundation (m)

- 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

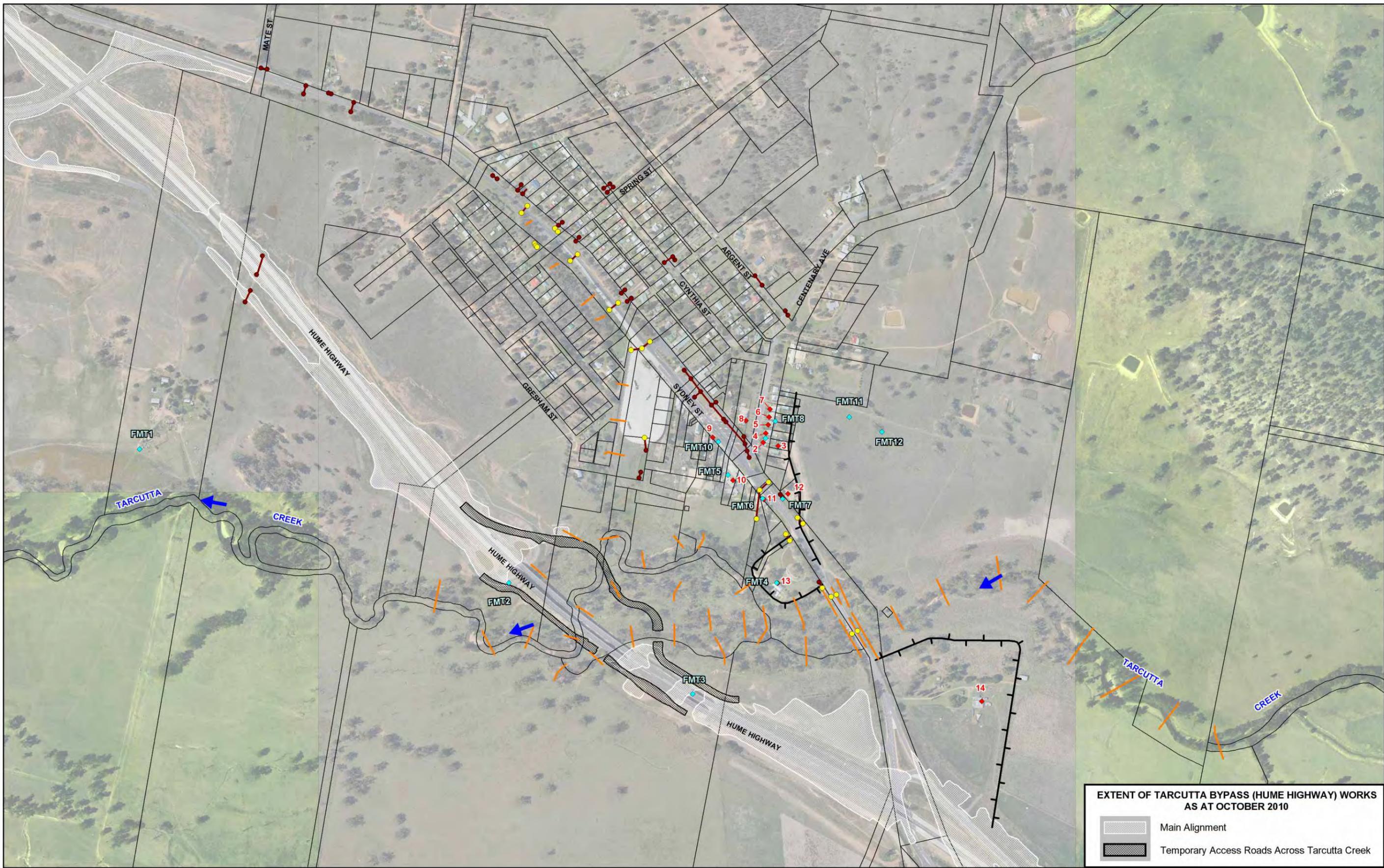


NOTE:
 The extent and depths of flooding shown were determined from airborne laser scanning survey and are approximate only. The extent of inundation in individual allotments near the flood fringe should be confirmed by site specific survey.

- LEGEND**
- Modelled Stormwater Network
 - - - Two-Dimensional Model Boundary
 - Water Surface Contours (m AHD) (Mainstream Flooding Only)
 - |— Alignment of Existing Levee
 - FMU9 (199.51, -0.01) [Surveyed Flood Level (m AHD), Modelled Difference(m)]
 - + Flood Mark Location
 - [Note: Negative difference indicates modelled level lower than recorded]

**TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
 DEVELOPMENT AND TESTING OF FLOOD MODELS**

APPENDIX A – FIGURES SHOWING EXTENT OF FIELD SURVEY DATA



EXTENT OF TARCUTTA BYPASS (HUME HIGHWAY) WORKS AS AT OCTOBER 2010

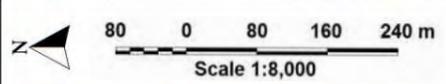
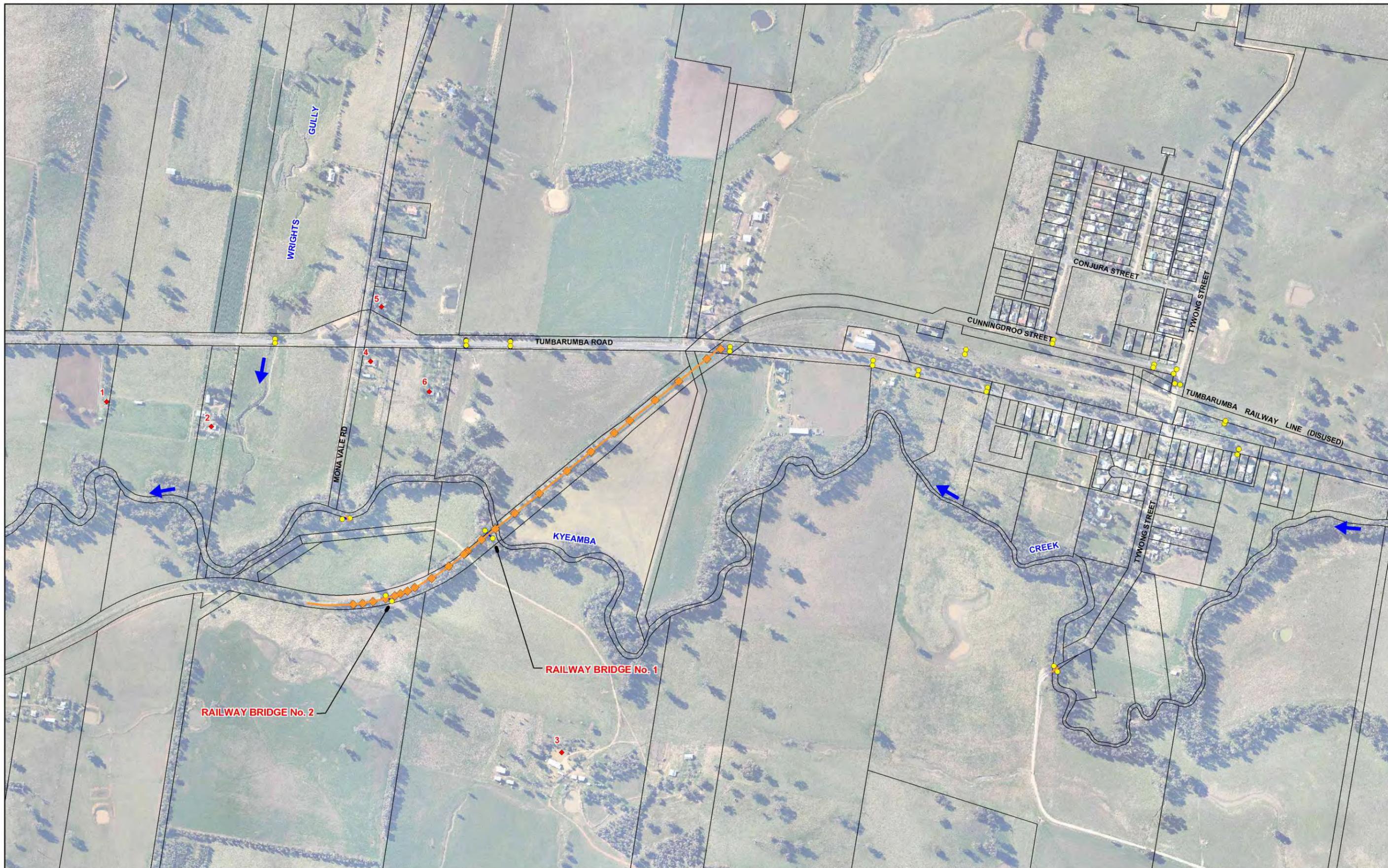
 Main Alignment
 Temporary Access Roads Across Tarcutta Creek

80 0 80 160 240 m
Scale 1:8,000

LEGEND

 Surveyed Flood Marks (RMS) - October 2010
 Stormwater Drainage Network (Not Surveyed)
 Levee
 Surveyed Property and Identifier
 Surveyed Drainage Structure
 Surveyed Cross-section

**TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS**

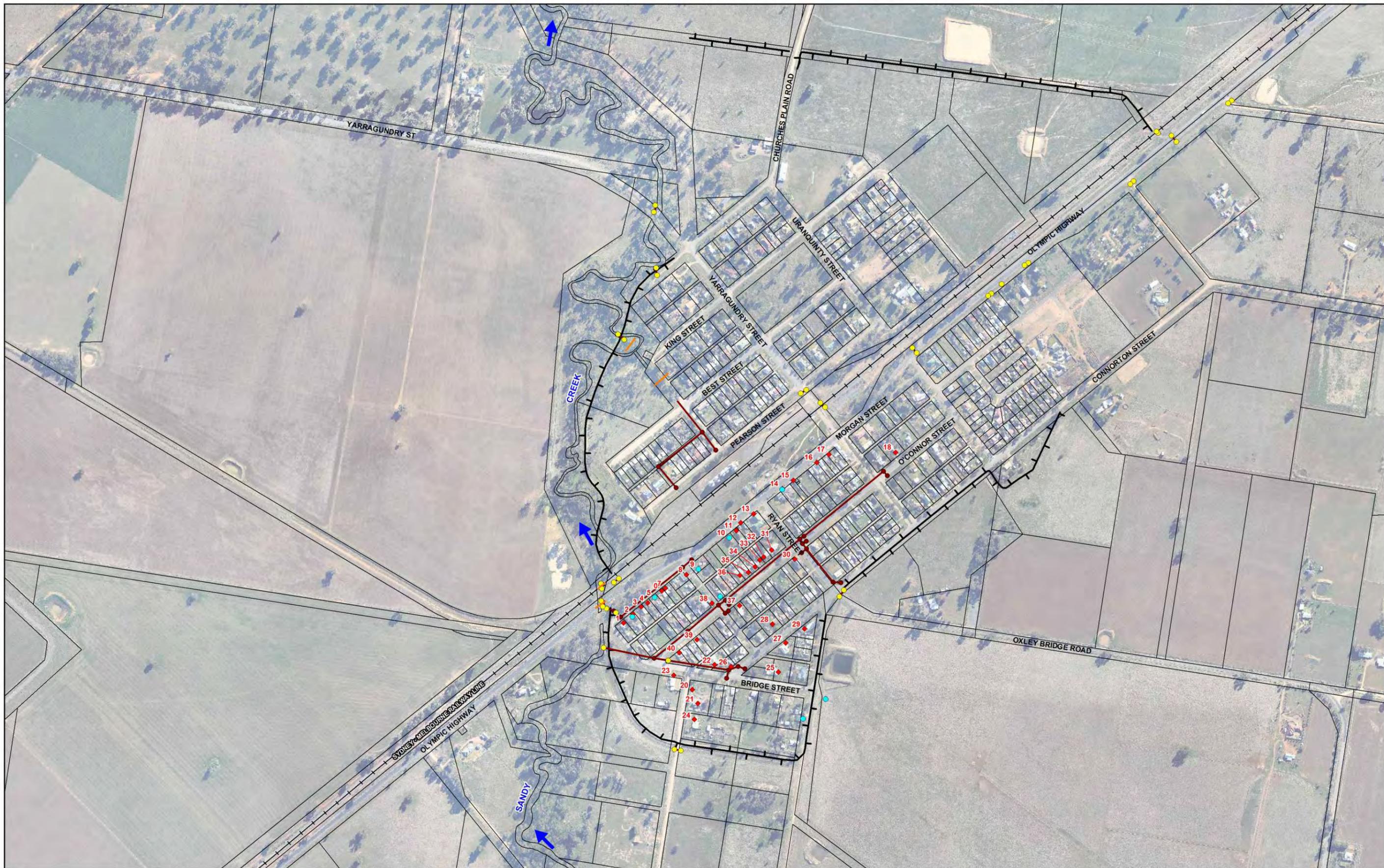


LEGEND

- ◆ 4 Surveyed Property and Identifier
- Surveyed Drainage Structure
- Surveyed Cross-section

**TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS**

Figure A2



LEGEND

- Stormwater Drainage Network (Not Surveyed)
- ◆ 17 Surveved Property and Identifier
- ┌┐ Levee
- Surveved Drainage Structure
- Surveved Flood Mark (WWCC) October 2010 Flood
- Surveved Cross-section

TARCUTTA, LADYSMITH AND URANQUINTY FLOOD STUDIES
DEVELOPMENT AND TESTING OF FLOOD MODELS

Scale: 1:8,000



Figure A3

SURVEY DATA AT URANQUINTY

APPENDIX B – PLATES SHOWING HISTORIC FLOODING IN TARCUTTA

 <p>Southern side of Tarcutta Creek Bridge, Tarcutta 7:57am, Sat. 16.10.2010</p>	 <p>7:57am, Saturday, 16.10.2010 Therese Noonan's Lucerne Flats, under water. 16/10/2010 07:57</p>	 <p>Tarcutta Hotel, Saturday 16.10.2010 16/10/2010 08:02</p>	
<p>Plate 1 - Southern Side of Tarcutta Creek Bridge (16/10/10 07:57) (Source: Alma Anderson)</p>	<p>Plate 2 - Therese Noonan's Lucerne Flats Under Water (16/10/10 07:57) (Source: Alma Anderson)</p>	<p>Plate 3 – Tarcutta Hotel (16/10/10 08:02) (Source: Alma Anderson)</p>	<p>Plate 4 - Peak Flood Level in Horse and Jockey Hotel, Sydney Street (228.317 m AHD) (16/10/10) (Source: Leonie Anderson)</p>
	 <p>Highway Closed at Tarcutta, Sat 16.10.2010 16/10/2010 07:58</p>	 <p>Road Closed in Tarcutta, 8.02 am, Sat. 16.10.2010 16/10/2010 08:02</p>	
<p>Plate 5 - Floodwaters Behind Horse and Jockey Hotel, Sydney Street (16/10/10) (Source: Leonie Anderson)</p>	<p>Plate 6 - Highway Closed at Tarcutta (16/10/10 07:58) (Source: Alma Anderson)</p>	<p>Plate 7 - Highway Closed in Tarcutta (16/10/10 08:02) (Source: Alma Anderson)</p>	<p>Plate 8 - Floodwater in Riverina Water Treatment Plant (16/10/10) (Source: Leonie Anderson)</p>
			
<p>Plate 9 – Tarcutta Creek Upstream of Sydney Street Bridge No. 1 (16/10/10) (Source: Leonie Anderson)</p>	<p>Plate 10 – Tarcutta Creek Downstream of Sydney Street Bridge No. 1 (16/10/10) (Source: Leonie Anderson)</p>	<p>Plate 11 – Floodwater on Floodplain South of Tarcutta Levee (06/12/10 06:35) (Source: Corey Parnaby)</p>	<p>Plate 12 - Pumping Out at Tarcutta Hotel (06/12/10 06:54) (Source: Corey Parnaby)</p>

<p>Plate 13 – Tarcutta Manual Gauge at Flood Peak (01/03/12 22:46) (Source: Matt Burgess)</p>	<p>Plate 14 – Tarcutta Manual Gauge Between Flood Peaks (02/03/12 14:49) (Source: Matt Burgess)</p>	<p>Plate 15 - Downstream of Hume Highway Bridge No. 2 (02/03/12 12:20) (Source: Corey Parnaby)</p>	<p>Plate 16 - Behind Tarcutta Hotel (02/03/12 14:43) (Source: Corey Parnaby)</p>
<p>Plate 17 - Tarcutta Creek, Upstream Side of Sydney Street from Right Bank (02/03/12 15:19) (Source: Corey Parnaby)</p>	<p>Plate 18 - Water Ponding in Front of No. 6 Centenary Avenue (04/03/12 12:38) (Source: Corey Parnaby)</p>	<p>Plate 19 - Water Ponding in No. 6 Centenary Avenue (04/03/12 12:39) (Source: Corey Parnaby)</p>	<p>Plate 20 - Tarcutta Manual Gauge Just After Flood Peak (04/03/12 14:03) (Source: Matt Burgess)</p>
<p>Plate 21 - Water Ponding in front of Tarcutta Hotel (04/03/12 13:53) (Source: Matt Burgess)</p>	<p>Plate 22 – Water Ponding in Riverina Water Treatment Plant (04/03/12 13:56) (Source: Matt Burgess)</p>	<p>Plate 23 – Floodwater Surrounding Former 'Tarcutta Inn' (04/03/12 13:59) (Source: Matt Burgess)</p>	<p>Plate 24 - Downstream of Sydney Street Bridge No. 1 Towards Former 'Tarcutta Inn' (04/03/12 14:32) (Source: Matt Burgess)</p>



Plate 25 - Upstream of Sydney Street Bridges No. 1 and 2
(04/03/12 14:04)
(Source: Matt Burgess)



Plate 26 - Floodplain Between Sydney Street and Hume Highway (04/03/12 14:31)
(Source: Matt Burgess)



Plate 27 - Floodplain Downstream of Hume Highway
(04/03/12 14:29)
(Source: Matt Burgess)



Plate 28 - Downstream Side of Hume Highway Bridge No. 2
(04/03/12 11:51)
(Source: Corey Parnaby)



Plate 29 - Overland Flow in Argent Street (No Date)
(Source: Bob Belling)

APPENDIX C – PLATES SHOWING HISTORIC FLOODING IN URANQUINTY

<p>Plate 1 - Water Behind Deane Street Dam (15/10/10 16:50) (Source: Mick Baker)</p>	<p>Plate 2 - View Across Deane Street (Levee) Opposite No. 10 Connorton Street (15/10/10 17:40) (Source: Bewsher, 2011)</p>	<p>Plate 3 - Key Street and Deane Street Intersection Looking South (15/10/10) (Source: Belinda McMahon)</p>	<p>Plate 4 - View Northwest from Deane Street Towards No. 1 Deane Street (15/10/10 17:35) (Source: Bewsher, 2011)</p>
<p>Plate 5 - View Southwest Towards No. 3 Deane Street (15/10/10 17:40) (Source: Bewsher, 2011)</p>	<p>Plate 6 - Ponding in Front of No. 10 Connorton Street (15/10/10 17:00) (Source: Mick Baker)</p>	<p>Plate 7 - View Southwest Towards No. 10 Connorton Street, Showing Flow from Deane Street at Rear of House to Connorton Street at Front of House (15/10/10 18:30) (Source: Bewsher, 2011)</p>	<p>Plate 8 - Connorton Street and Ben Street Intersection (15/10/10) (Source: Owen Kelly)</p>
<p>Plate 9 - Looking North Along Bridge Street Towards Deane Street (15/10/10) (Source: Terry Micahalanney)</p>	<p>Plate 10 - Ponding in Front of No. 22 Bridge Street (15/10/10) (Source: Terry Micahalanney)</p>	<p>Plate 11 - Backyard of No. 4 Ben Street (15/10/10) (Source: Owen Kelly)</p>	<p>Plate 12 - View Northeast Along Connorton Street from Corner of Ben and Connorton Streets (15/10/10 16:55) (Source: Bewsher, 2011)</p>

<p>Plate 13 - View Northwest Along Ben Street from Corner of Ben and Connorton Streets (15/10/10 16:55) (Source: Bewsher, 2011)</p>	<p>Plate 14 - View Southwest Along O'Connor Street from Corner of O'Connor and Ryan Streets at Flood Peak (No Date) (Source: Bewsher, 2011)</p>	<p>Plate 15 - Peak Water Level on Fence of No. 2 Morgan Street (15/10/10) (Source: Jenny Azar)</p>	<p>Plate 16 - Peak Water Level on No. 2 Morgan Street (15/10/10) (Source: Jenny Azar)</p>
<p>Plate 17 - Olympic Highway and Yarragundry Street Intersection looking East (17/10/10 approx 14:00) (Source: Dean Heffernan)</p>	<p>Plate 18 - On Footpath in Front of Uranquinty Hotel Looking West (No Date) (Source: Bewsher, 2011)</p>	<p>Plate 19 - Flooding at No. 24 Morgan Street to About Floor Level; Note Bow Wave Caused by Boat (15/10/10 approx. 16:40) (Source: Bewsher, 2011)</p>	<p>Plate 20 - Flooding at No. 12 Ben Street to About Up to Base of Windows, Even Though Floor is Well Raised (15/10/10 approx. 16:40) (Source: Bewsher, 2011)</p>
<p>Plate 21 - Connorton Street Looking South Along Channel Next to Levee Around Neighbourhood Centre (15/10/10) (Source: Belinda McMahon)</p>	<p>Plate 22 - Channel on Southern Side and Running Parallel to Connorton Street (15/10/10) (Source: Belinda McMahon)</p>	<p>Plate 23 - Front Yard of No. 37 Connorton Street Looking North (15/01/10 14:00 (After Peak)) (Source: Mark Burge)</p>	<p>Plate 24 - Front Yard of No. 37 Connorton Street Looking South (15/01/10 14:00 (After Peak)) (Source: Mark Burge)</p>

<p>Plate 25 - Water Ponding in Backyard of No. 37 Connorton Street (15/01/10 14:00 (After Peak)) (Source: Mark Burge)</p>	<p>Plate 26 - Receding Floodwaters in Sandy Creek at Olympic Highway (04/03/12 18:00) (Source: Greg Gilmour)</p>	<p>Plate 27 - Upstream Side of Olympic Highway Bridge Over Sandy Creek (04/03/12 08:50) (Source: Greg Gilmour)</p>	<p>Plate 28 - Railway Bridge Over Sandy Creek (04/03/12 08:50) (Source: Greg Gilmour)</p>
<p>Plate 29 - Olympic Highway Bridge Looking South (04/03/12 09:00) (Source: Jenny Azar)</p>	<p>Plate 30 - Levee Next to Bridge Street and O'Connor Street Intersection Looking South (04/03/12 08:50) (Source: Greg Gilmour)</p>	<p>Plate 31 - Reid Street Looking East Along Levee (04/03/12 08:50) (Source: Greg Gilmour)</p>	<p>Plate 32 - 1 Key Street Looking South Across Floodplain (04/03/12 05:00) (Source: Mick Baker)</p>
<p>Plate 33 - Uranquinty Hotel Looking South Along Olympic Highway (04/03/12 07:05) (Source: Mick Baker)</p>	<p>Plate 34 - Ryan Street and Olympic Highway Intersection Looking South (04/03/12 07:05) (Source: Mick Baker)</p>	<p>Plate 35 - Deane Street and Bridge Street Intersection Looking South (04/03/12 08:30) (Source: Greg Gilmour)</p>	<p>Plate 36 - Deane Street and Bridge Street Intersection Looking North (04/03/12 08:30) (Source: Greg Gilmour)</p>

<p>Plate 37 - O'Connor Street and Bridge Street Intersection Looking North (04/03/12 08:40) (Source: Greg Gilmour)</p>	<p>Plate 38 - Backwater Along Morgan Street Towards O'Connor Street (04/03/12 08:40) (Source: Greg Gilmour)</p>	<p>Plate 39 - Water Ponding in Morgan Street (04/03/12 08:50) (Source: Greg Gilmour)</p>	<p>Plate 40 - Flooding in Morgan Street (04/03/12 09:00) (Source: Jenny Azar)</p>
<p>Plate 41 - In Front of No. 2 Morgan Street Looking West (04/03/12 09:30) (Source: Jenny Azar)</p>	<p>Plate 42 - In Front of No. 2 Morgan Street Looking North (04/03/12 09:30) (Source: Jenny Azar)</p>	<p>Plate 43 - Ponding Behind Levee in Morgan Street (04/03/12 09:45) (Source: Jenny Azar)</p>	<p>Plate 44 - Water Behind Dam East of Key Street (04/03/12 10:05) (Source: Mick Baker)</p>
<p>Plate 45 - Sandbags Along Deane Street Looking East (04/03/12 10:20) (Source: Mick Baker)</p>	<p>Plate 46 - Sandbags Across Deane Street (04/03/12 10:25) (Source: Mick Baker)</p>	<p>Plate 47 - Temporary Levee Constructed on Deane Street (04/03/12 10:26) (Source: Mick Baker)</p>	<p>Plate 48 - Key Street Culvert Looking South (04/03/12 10:10) (Source: Mick Baker)</p>

			
<p>Plate 49 - O'Connor Street and Bridge Street Intersection Looking North (04/03/12 10:35) (Source: Mick Baker)</p>	<p>Plate 50 - O'Connor Street and Ben Street Intersection Looking West (04/03/12 10:45) (Source: Mick Baker)</p>	<p>Plate 51 - O'Connor Street and Ben Street Intersection Uranquinty Looking South (04/03/2012 10:25) (Source: Dean Heffernan)</p>	<p>Plate 52 - Corner O'Connor and Ben Streets Uranquinty Looking West (04/03/2012 10:25) (Source: Dean Heffernan)</p>