

# South Murwillumbah Floodplain Risk Management Study & Plan

Final Report  
Volume 2 of 2: Figures



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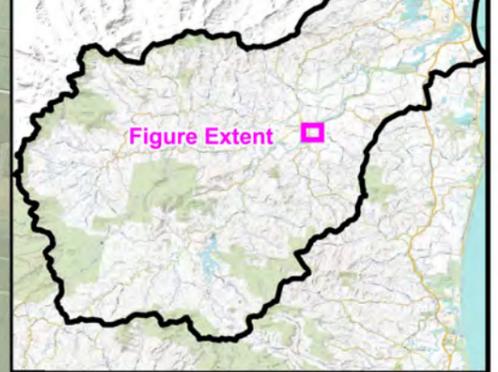
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Tweed River Catchment

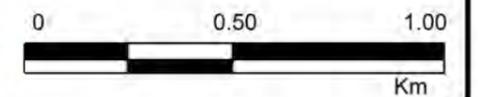


**LEGEND**

 South Murwillumbah Study Area

Notes:

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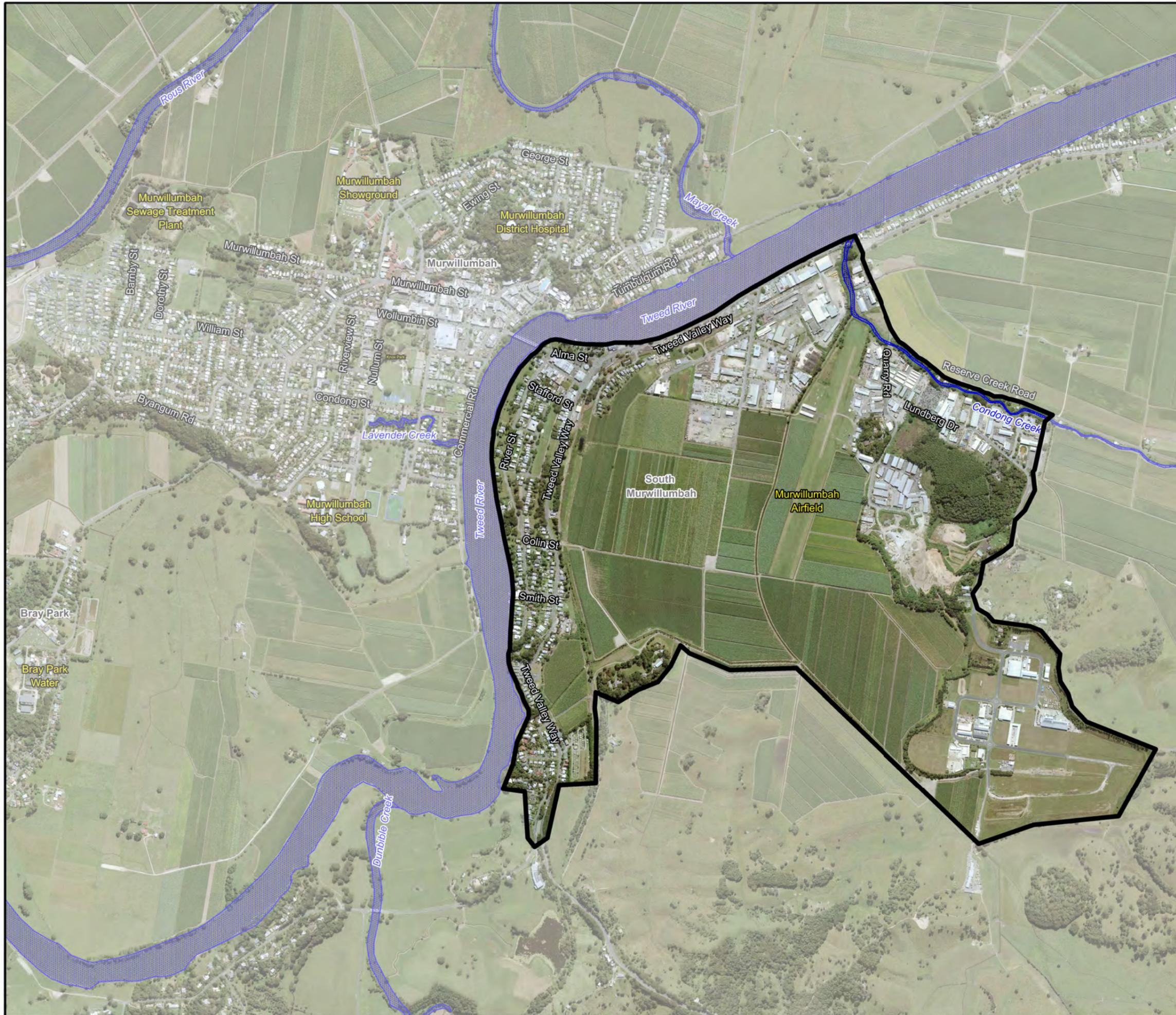


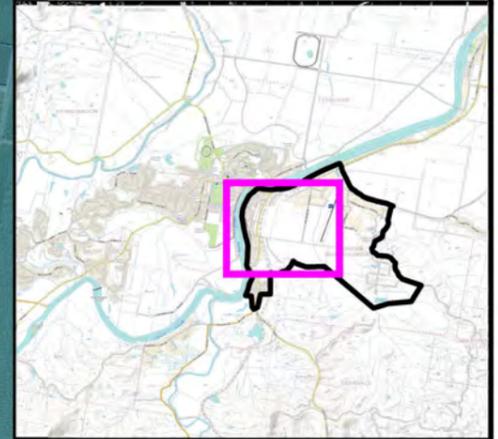
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**South Murwillumbah Study Area**

Prepared By:

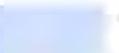
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 1 - South Murwillumbah Study Area.wor

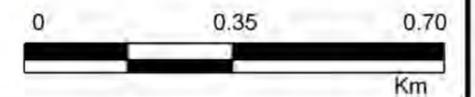




**LEGEND**

-  Hydraulic Structure
-  Flood Storage Basin
-  Floodway
-  Road / Railway
-  Levee
-  Existing 1% AEP Flood Extent

Notes:  
Aerial photograph date: 2016

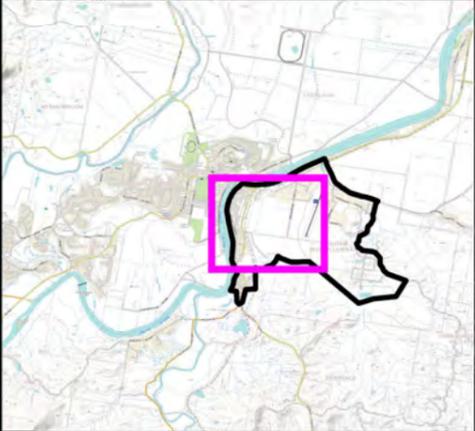


**Figure 2:  
Key Hydraulic Controls**

Prepared By:  
**Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 2 - Key Hydraulic Controls.wor



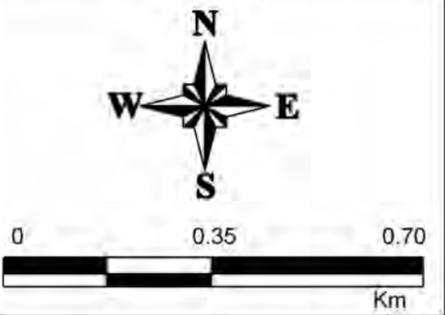


**LEGEND**

Flood Max Elevations (mAHD)

February 1954 Event	January 2013 Event
April 1989 Event	March 2017 Event

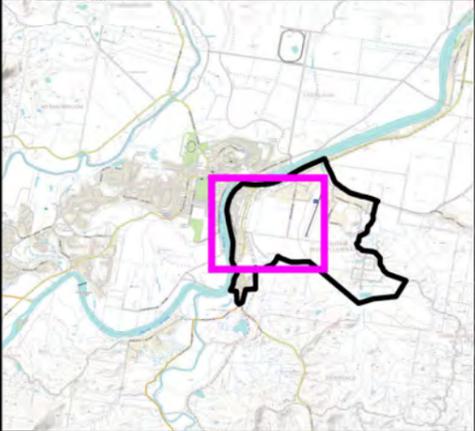
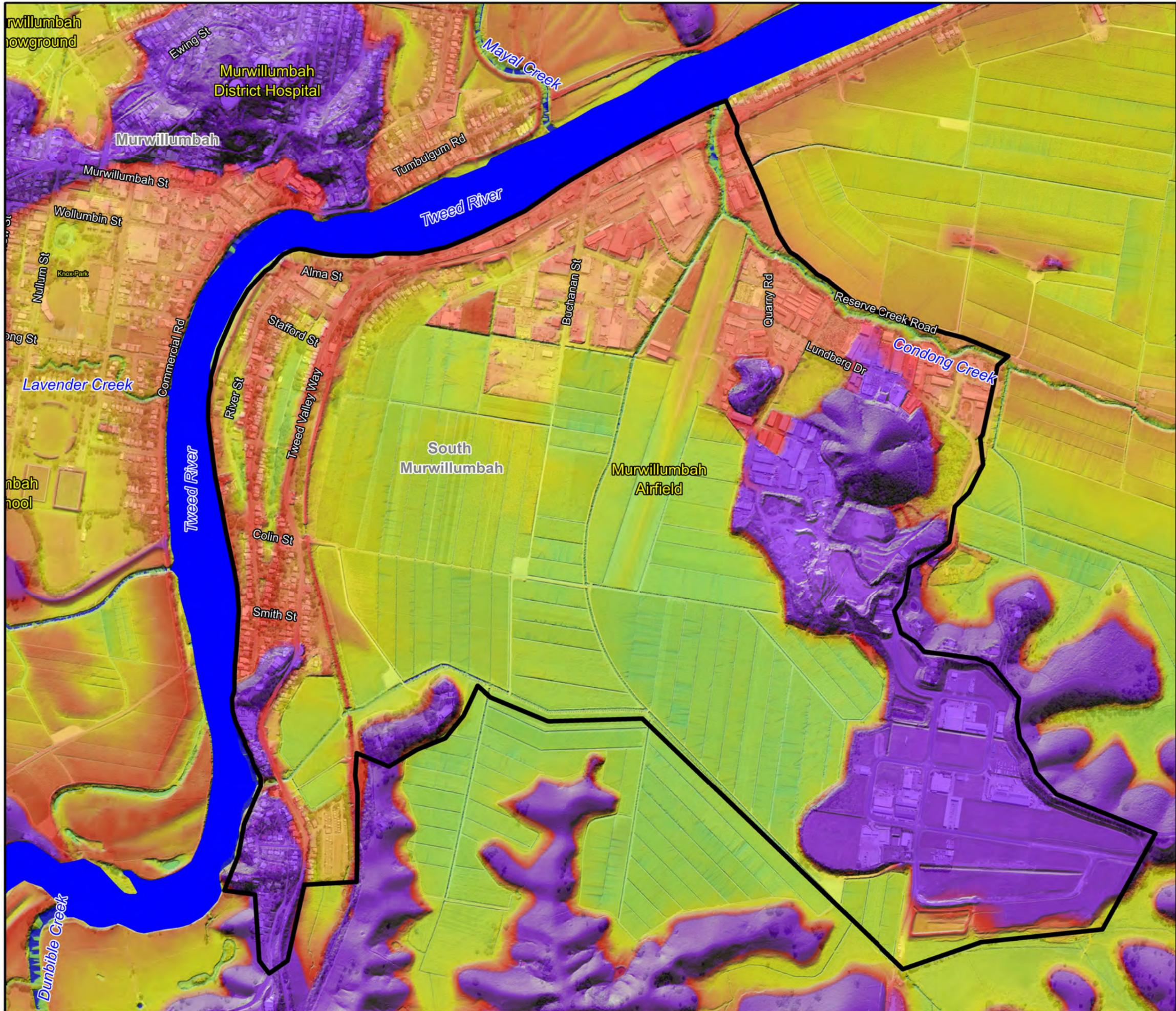
Notes:  
Aerial photograph date: 2016



**Figure 3:  
Historic Flood Marks**

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**Catchment Simulation Solutions**  
 Suite 10.01, 70 Phillip St  
 Sydney, NSW 2000

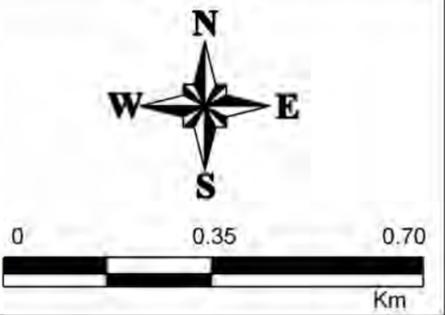
File Name: Figure 3 - Historic Flood Marks.wor



**LEGEND**

- South Murwillumbah Study Area
- Ground Elevation (m AHD)**
- 8.00 and above
- 6.00
- 4.00
- 2.00
- 0.00
- Below 0.00

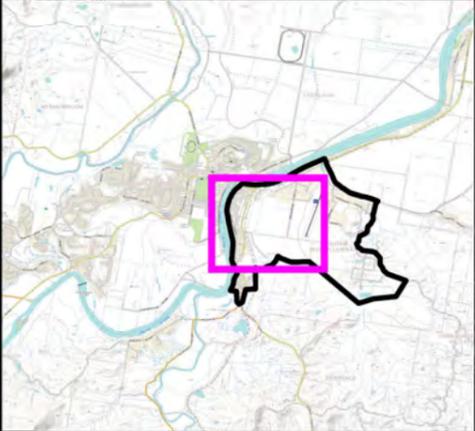
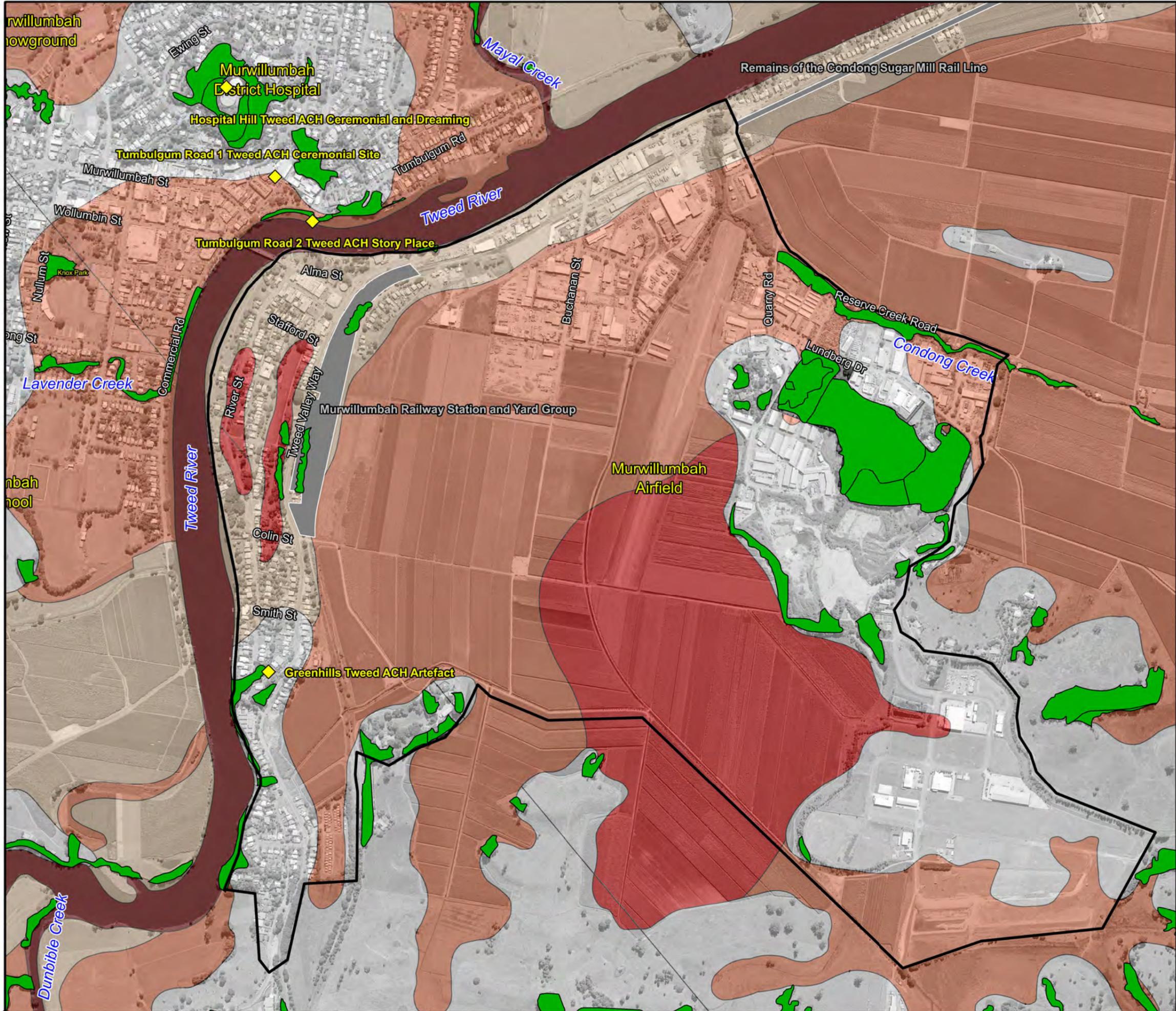
Notes:  
Aerial photograph date: 2016



**Figure 4:**  
**Digital Elevation Model**

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 **Catchment Simulation Solutions**  
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Sydney, NSW 2000

File Name: Figure 4 - Digital Elevation Model.wor



**LEGEND**

- Aboriginal heritage site
- Heritage sites
- Vegetated Areas

**Acid Sulphate Soil Class**

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

**Notes:**  
Aerial photograph date: 2016

**Figure 5:  
Environmental and Heritage  
Constraints**

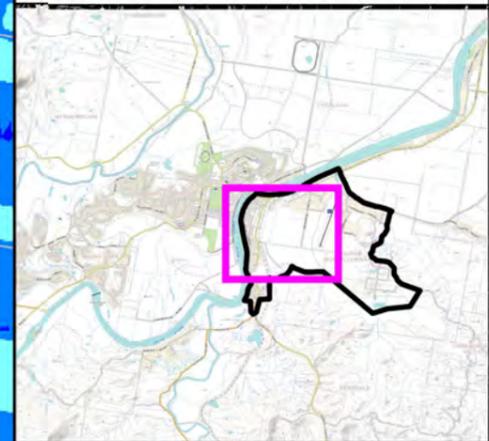
Prepared By:  
**Catchment Simulation Solutions**  
 Suite 10.01, 70 Phillip St  
 Sydney, NSW 2000  
 File Name: Figure 5 - Environmental and Heritage Constraints.wor

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# FLOODWATER DEPTH MAPS

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**LEGEND**

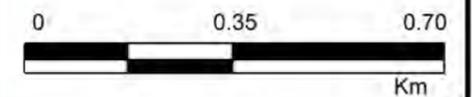
Depths (m)

- < 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 4.0
- 4.0 - 6.0
- > 6.0

● Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

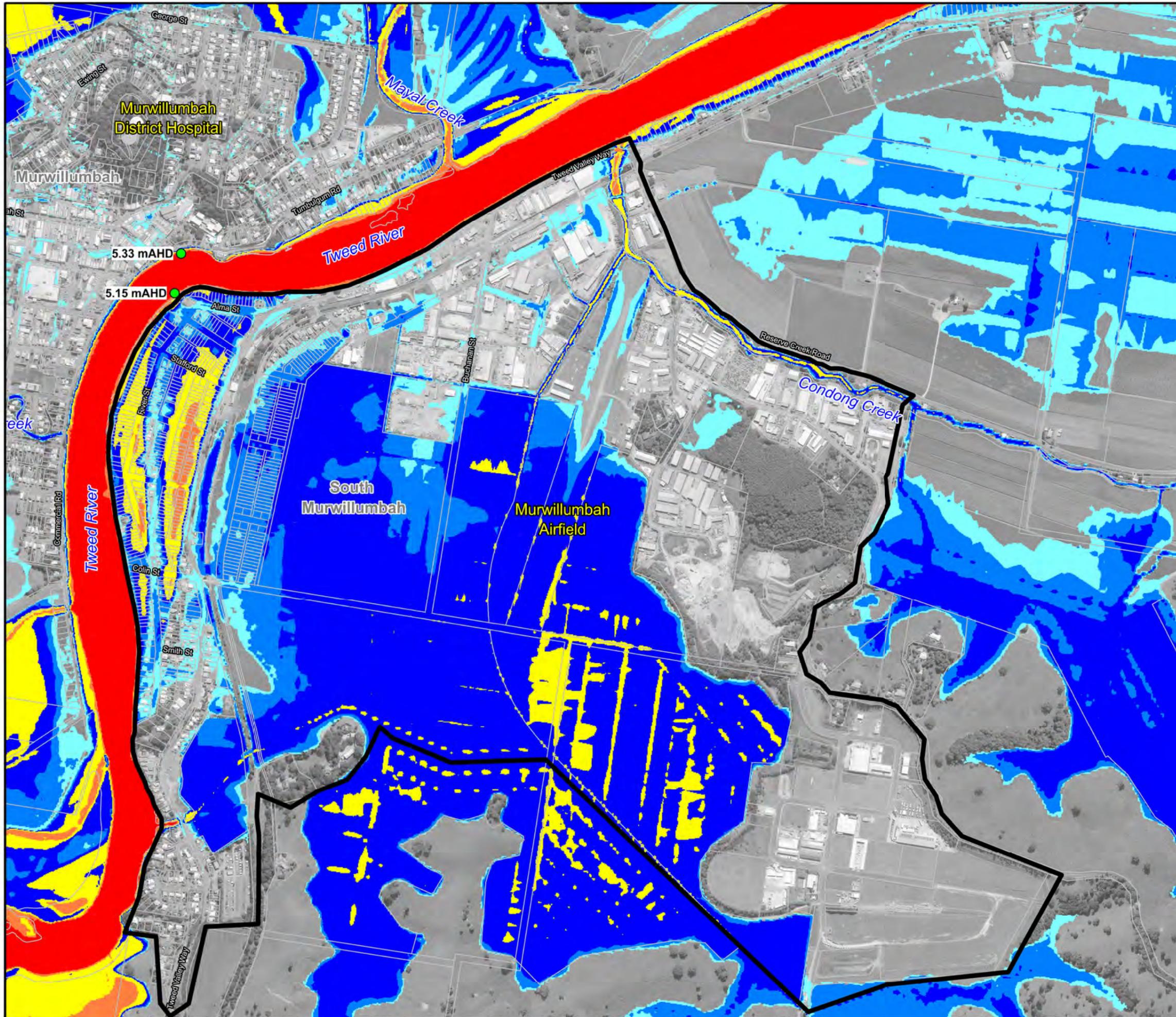


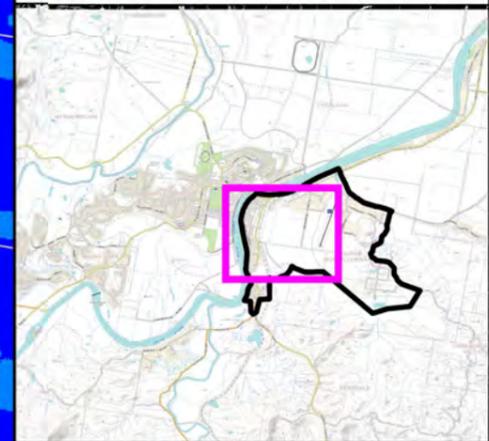
**Figure 6:**  
**Floodwater Depths for the 20% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 6 - Floodwater Depths for the 20% AEP Flood.wor





**LEGEND**

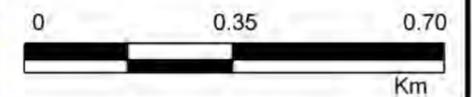
Depths (m)

- < 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 4.0
- 4.0 - 6.0
- > 6.0

● Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

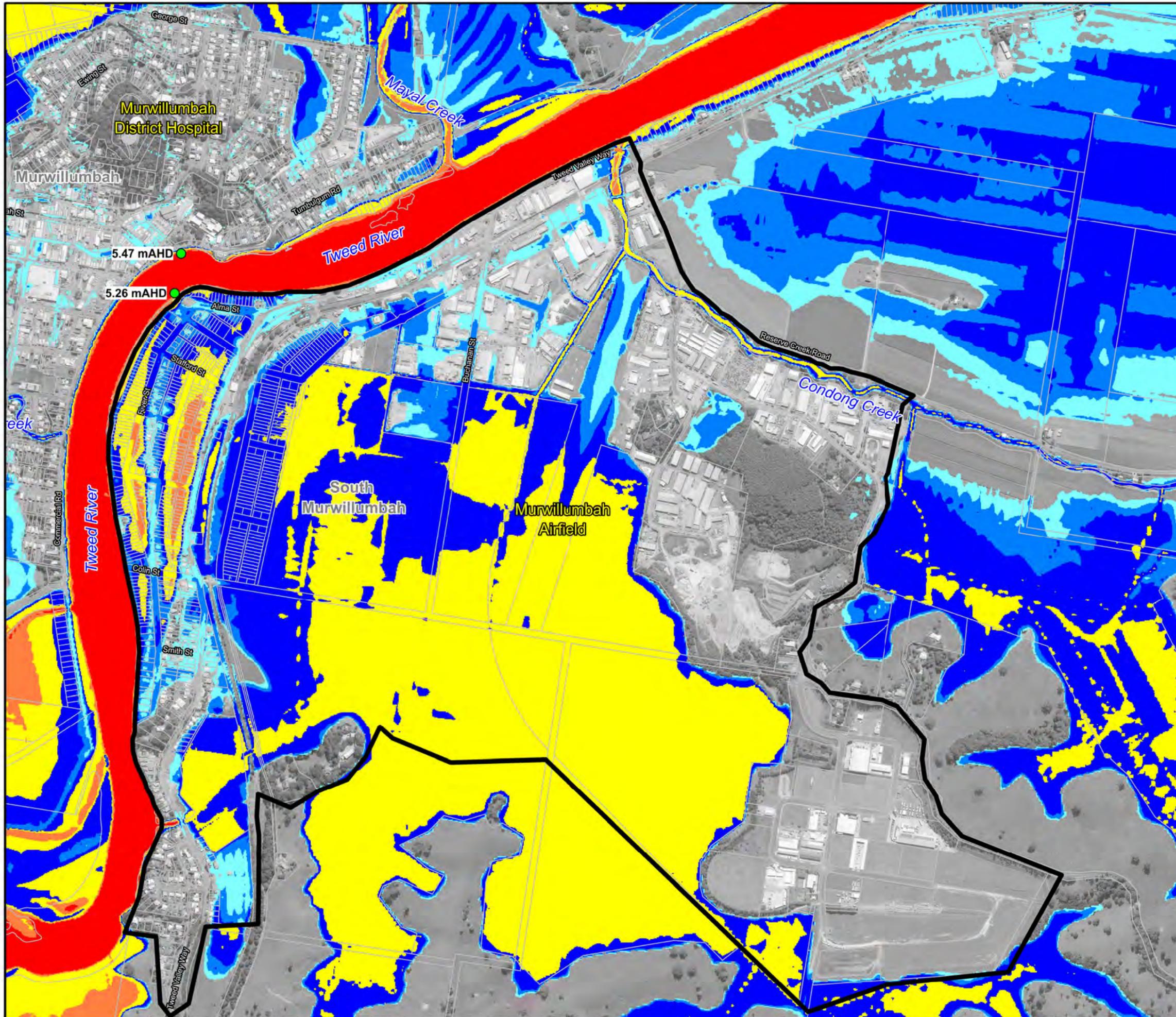


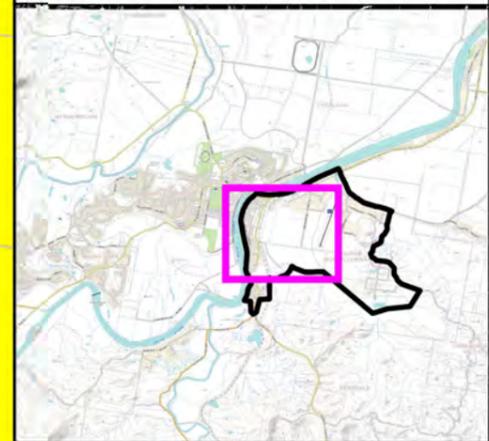
**Figure 7:**  
**Floodwater Depths for the 5% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 7 - Floodwater Depths for the 5% AEP Flood.wor





**LEGEND**

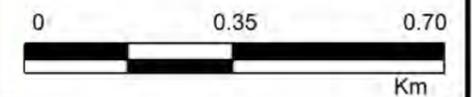
Depths (m)

- < 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 4.0
- 4.0 - 6.0
- > 6.0

● Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

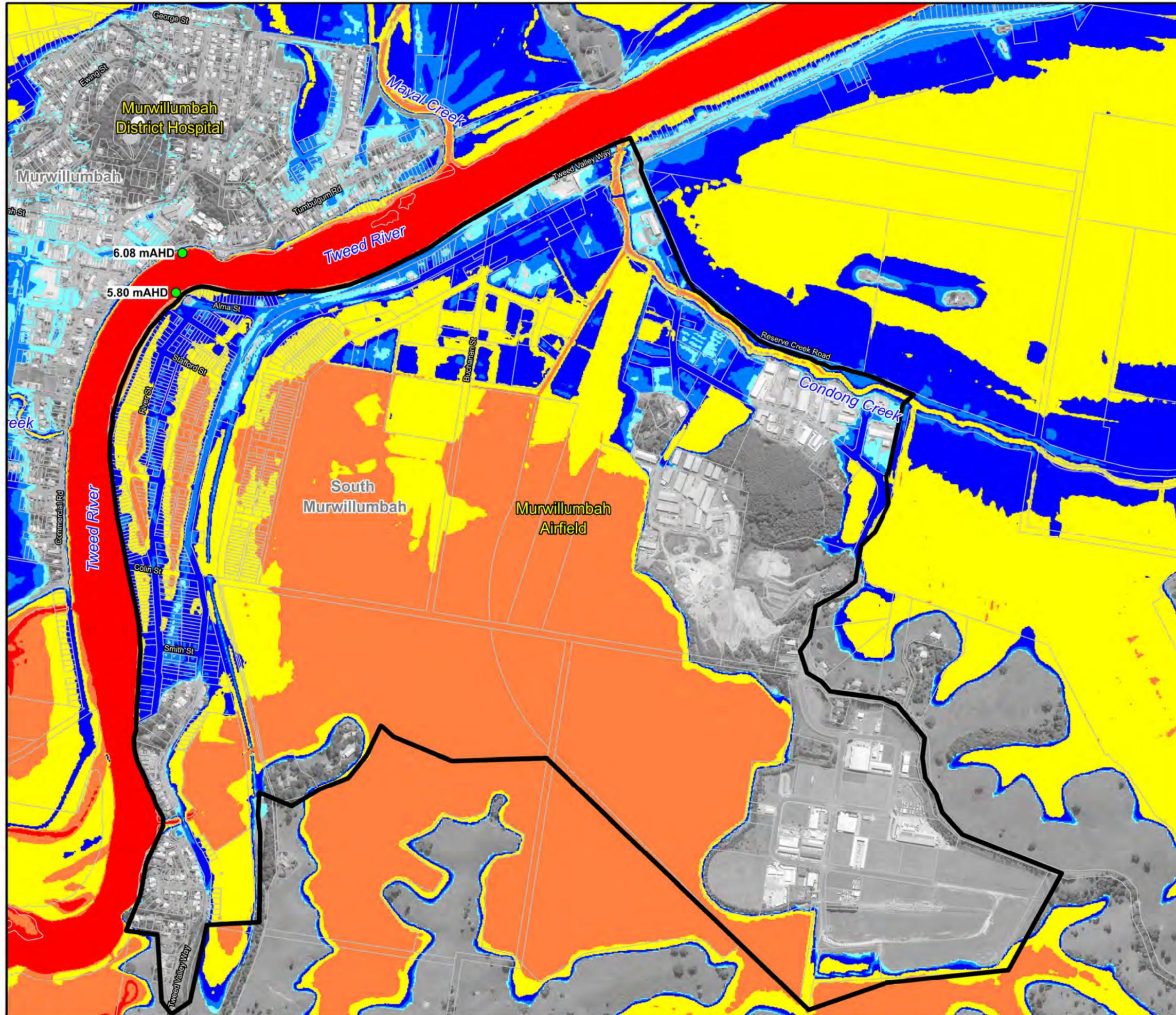


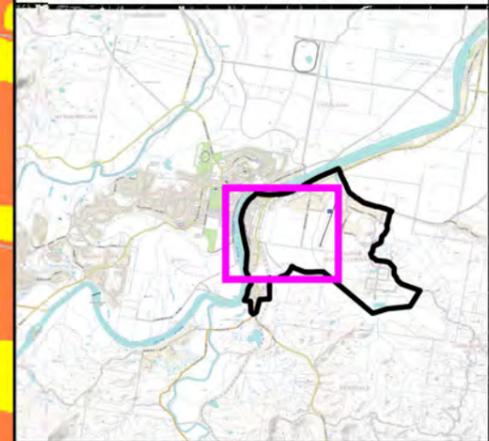
**Figure 8:**  
**Floodwater Depths for the 1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 8 - Floodwater Depths for the 1% AEP Flood.wor





**LEGEND**

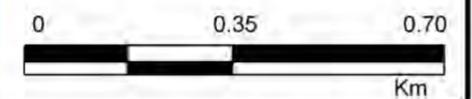
Depths (m)

- < 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 4.0
- 4.0 - 6.0
- > 6.0

- Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

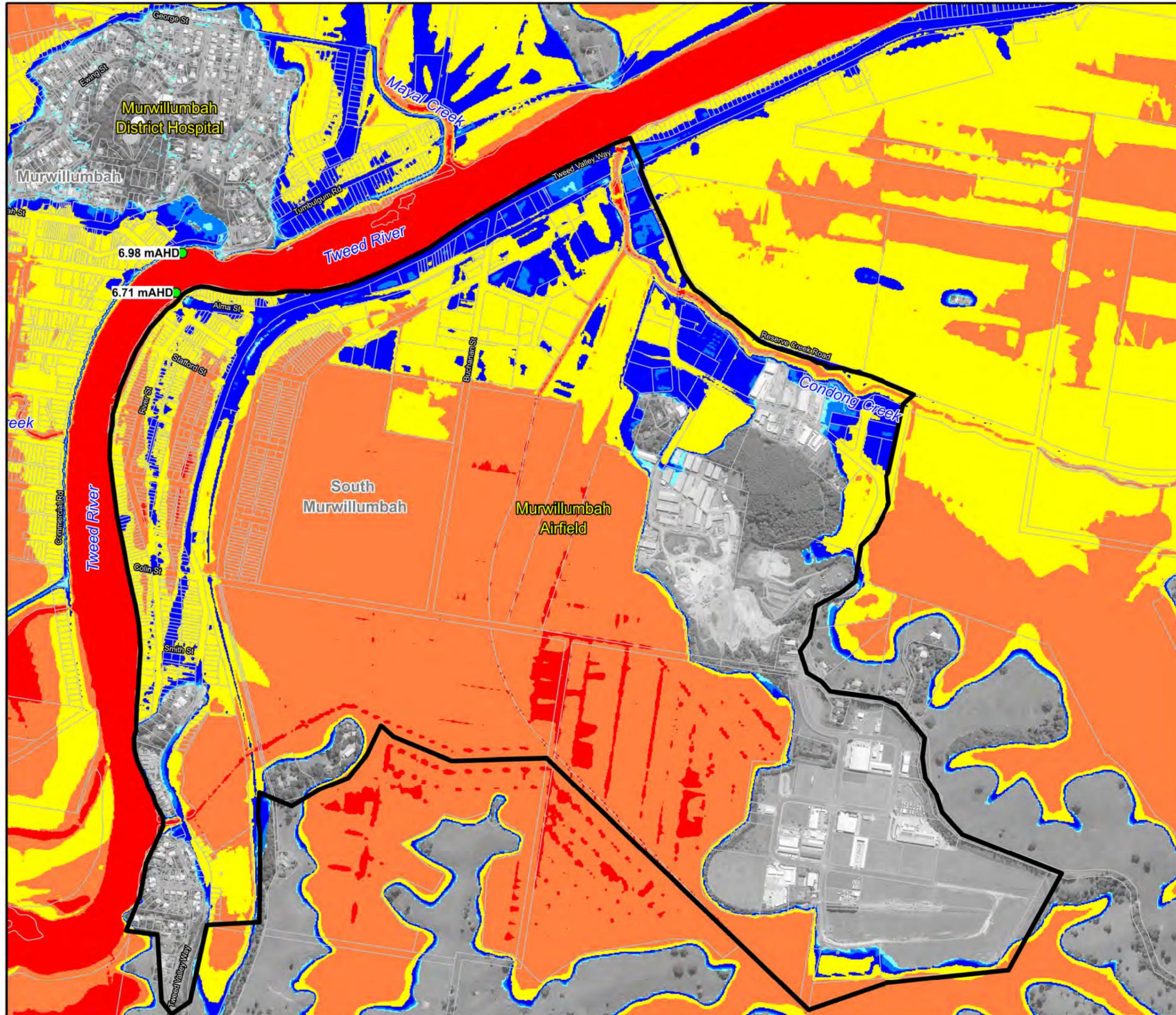


**Figure 9:  
Floodwater Depths for the  
0.2% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 9 - Floodwater Depths for the 0.2% AEP Flood.wor

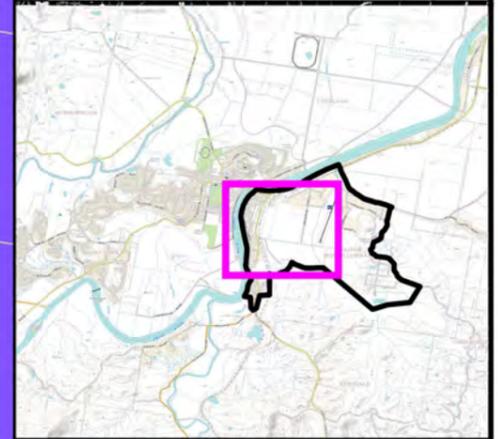


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## FLOOD LEVEL MAPS

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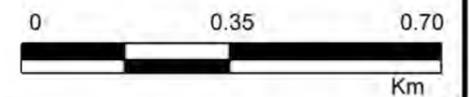
**LEGEND**

Levels (m AHD)

-  Major Contour (1.0 mAHD)
-  Minor Contour (0.5 mAHD)
-  < 2.0
-  5.0
-  2.5
-  6.0
-  3.0
-  8.0
-  3.5
-  10.0
-  4.0
-  >=15.0
-  4.5
-  Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

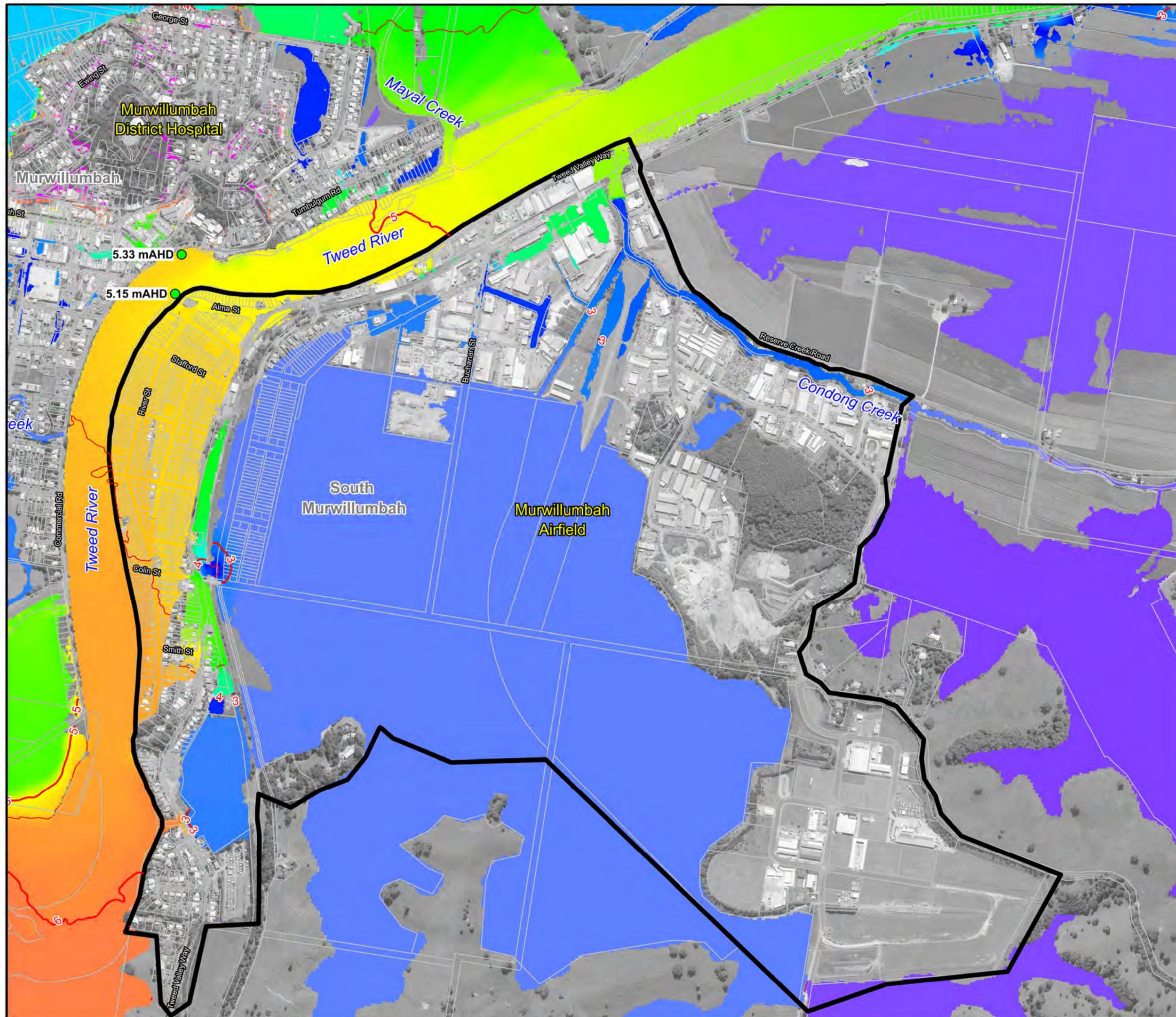


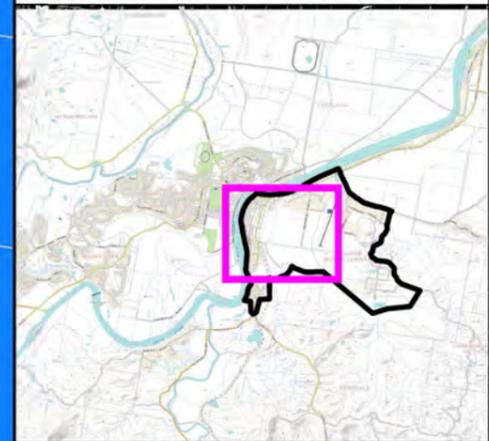
**Figure 10:**  
**Floodwater Levels for the**  
**20% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 10 - Floodwater Levels for the 20% AEP Flood.wor





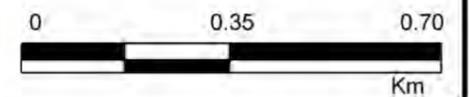
**LEGEND**

Levels (m AHD)

- 2 Major Contour (1.0 mAHD)
- Minor Contour (0.5 mAHD)
- < 2.0
- 2.5
- 3.0
- 3.5
- 4.0
- 4.5
- 5.0
- 6.0
- 8.0
- 10.0
- >=15.0
- Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

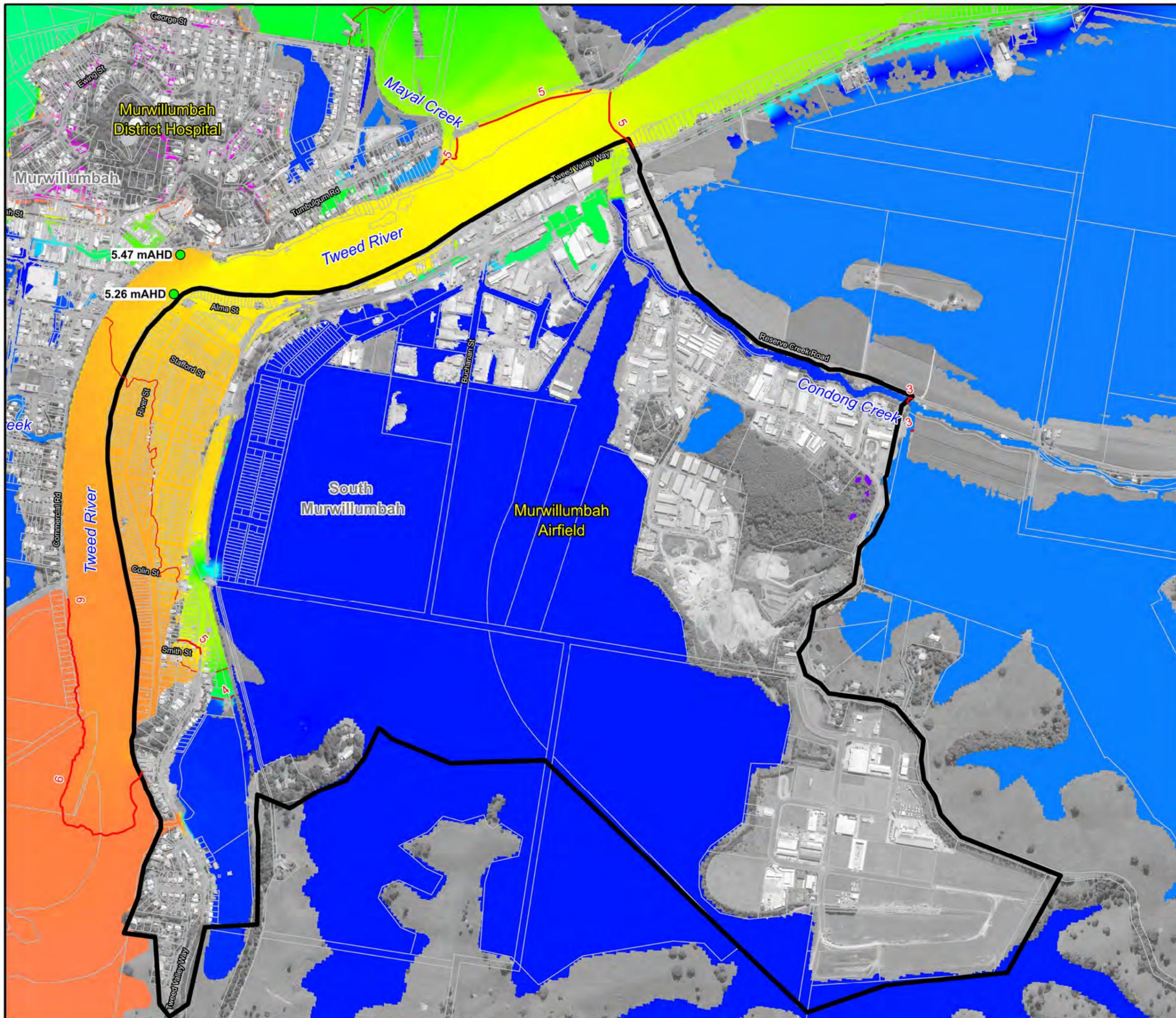


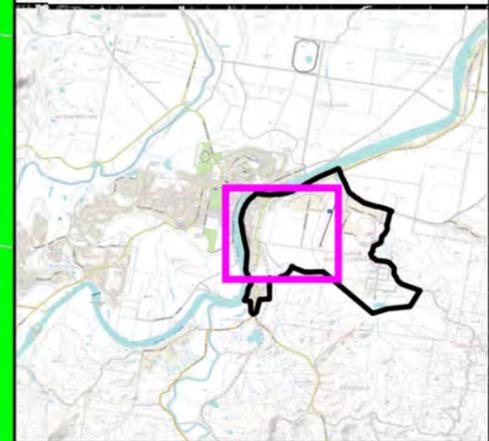
**Figure 11:**  
**Floodwater Levels for the**  
**5% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 11 - Floodwater Levels for the 5% AEP Flood war





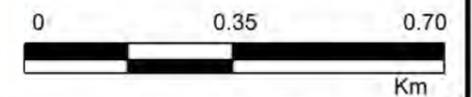
**LEGEND**

Levels (m AHD)

-  Major Contour (1.0 mAHD)
-  Minor Contour (0.5 mAHD)
-  < 2.0
-  5.0
-  2.5
-  6.0
-  3.0
-  8.0
-  3.5
-  10.0
-  4.0
-  >=15.0
-  4.5
-  Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

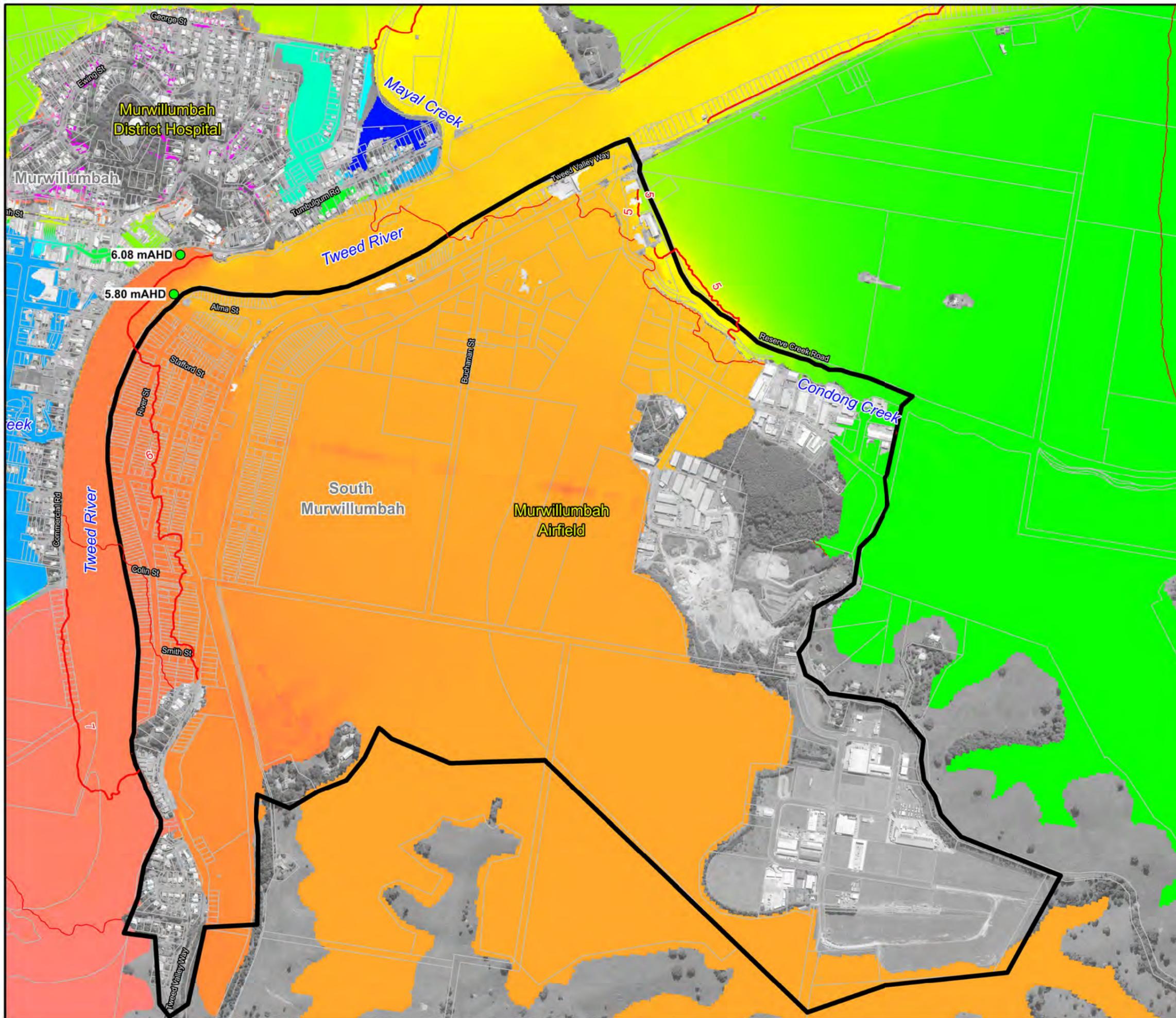


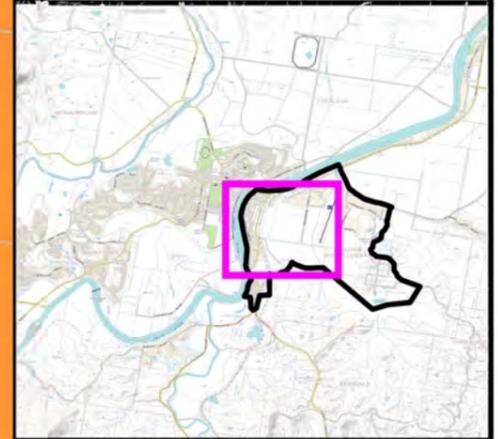
**Figure 12:**  
**Floodwater Levels for the**  
**1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 12 - Floodwater Levels for the 1% AEP Flood.wor





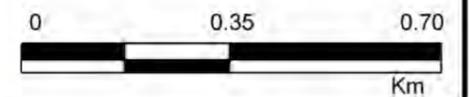
**LEGEND**

Levels (m AHD)

-  Major Contour (1.0 mAHD)
-  Minor Contour (0.5 mAHD)
-  < 2.0
-  2.5
-  3.0
-  3.5
-  4.0
-  4.5
-  5.0
-  6.0
-  8.0
-  10.0
-  >=15.0
-  Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

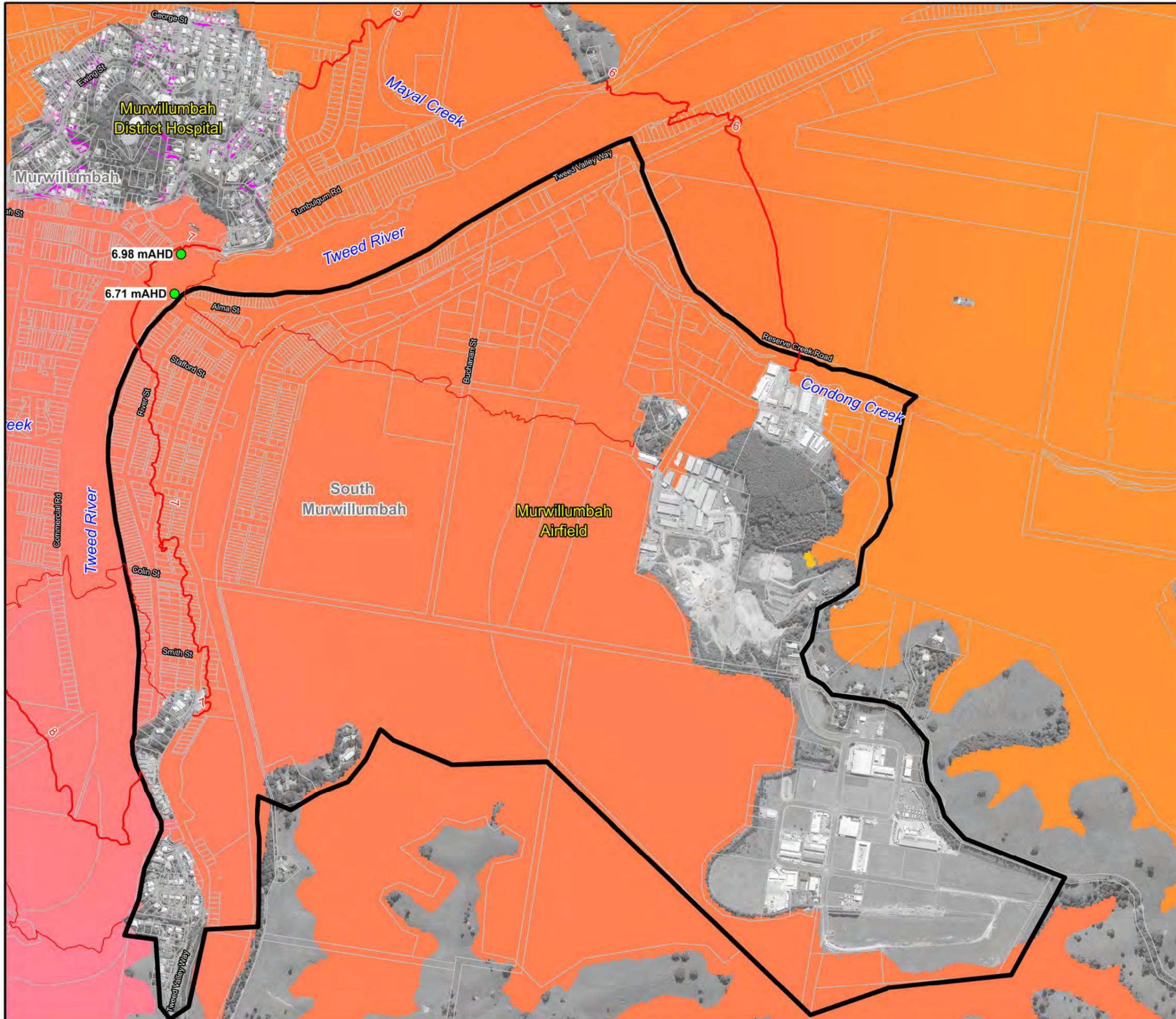


**Figure 13:**  
**Floodwater Levels for the**  
**0.2% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 13 - Floodwater Levels for the 0.2% AEP Flood.war

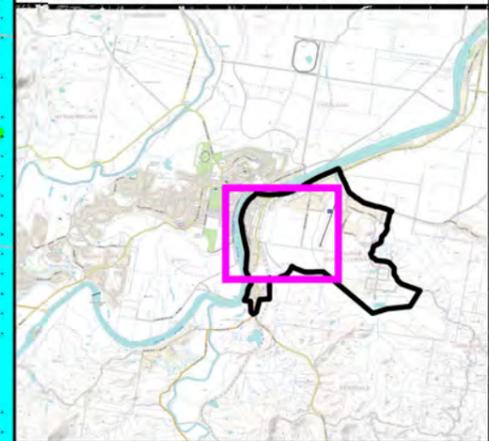


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## FLOODWATER VELOCITY MAPS

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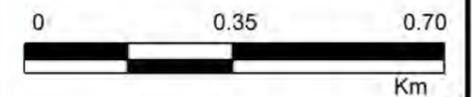


**LEGEND**

- Velocity (m/s)
- 0.0-0.25
  - 0.25 - 0.5
  - 0.5-1.0
  - 1.0-2.0
  - >=2.0
- Peak Water Level at Gauge

Notes:

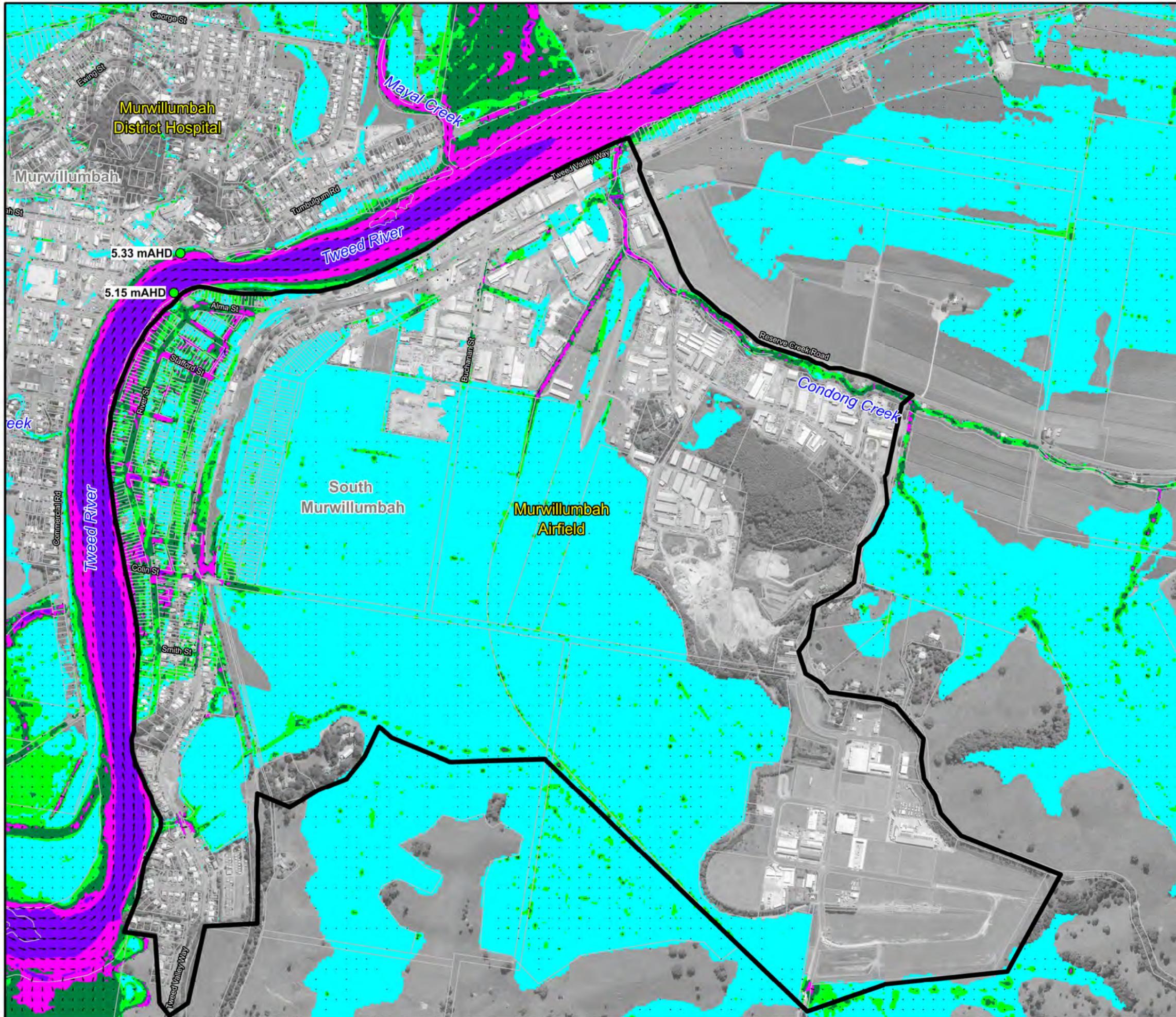
Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

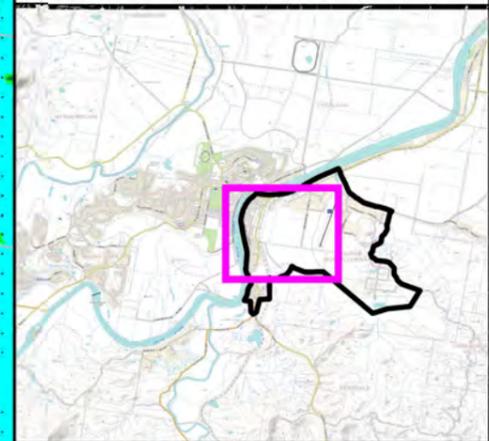


**Figure 14:**  
**Floodwater Velocities for the 20% AEP Flood**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 14 - Floodwater Velocities for the 20% AEP Flood.wor





**LEGEND**

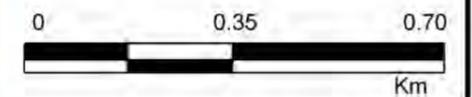
Velocity (m/s)

- 0.0-0.25
- 0.25 - 0.5
- 0.5-1.0
- 1.0-2.0
- $\geq 2.0$

Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

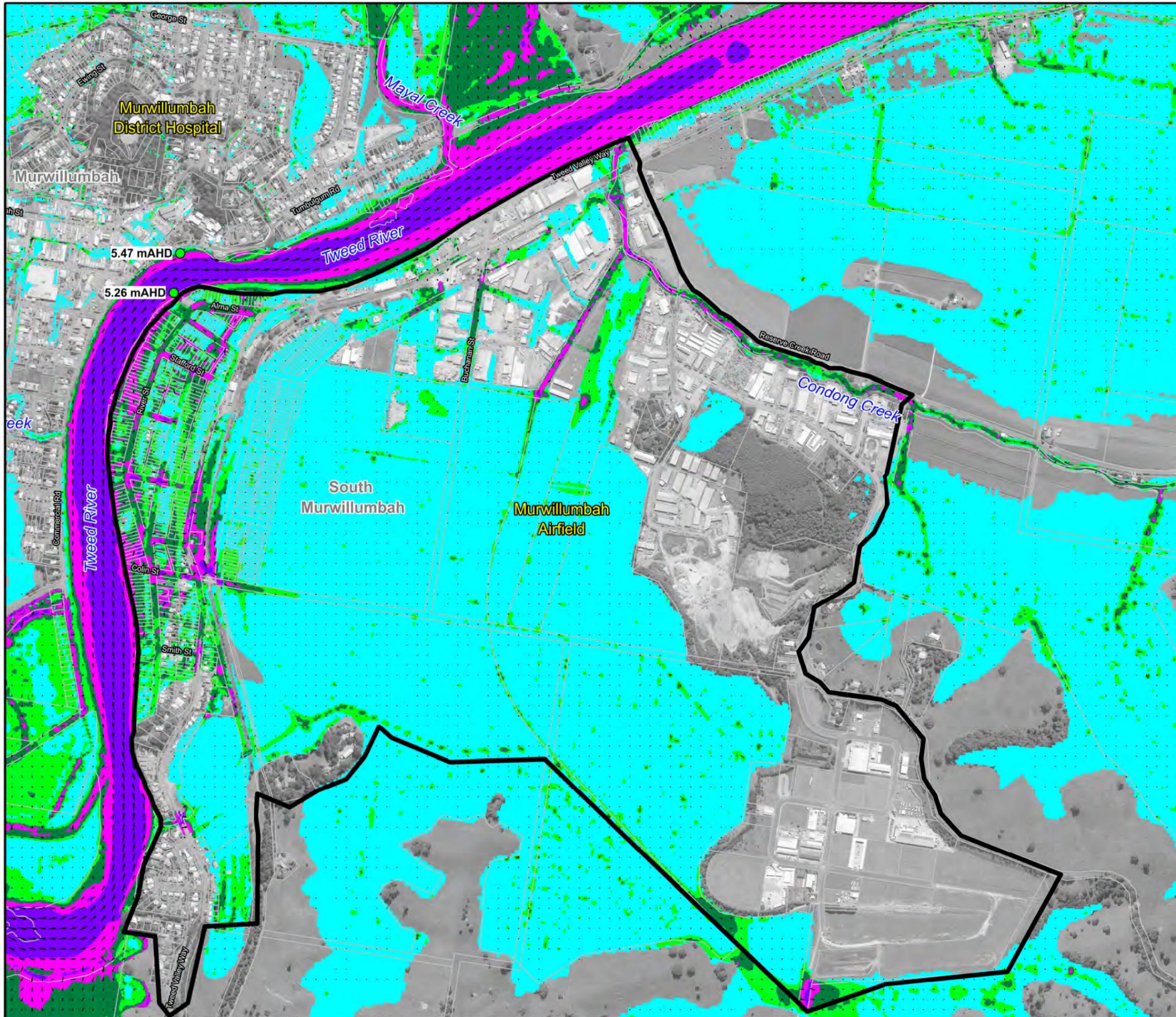


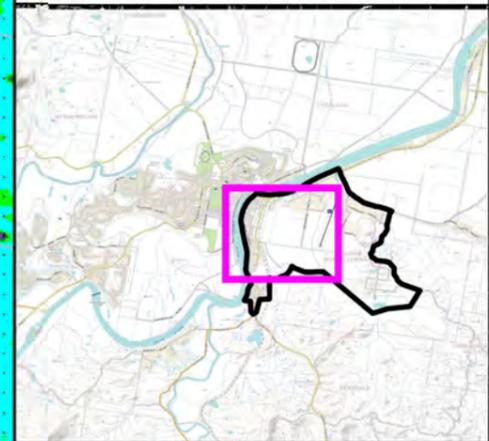
**Figure 15:**  
**Floodwater Velocities for the 5% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 15 - Floodwater Velocities for the 5% AEP Flood.wor



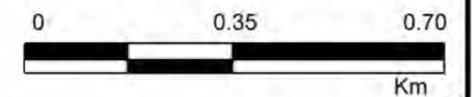


**LEGEND**

- Velocity (m/s)
- 0.0-0.25
  - 0.25 - 0.5
  - 0.5-1.0
  - 1.0-2.0
  - >=2.0
- Peak Water Level at Gauge

Notes:

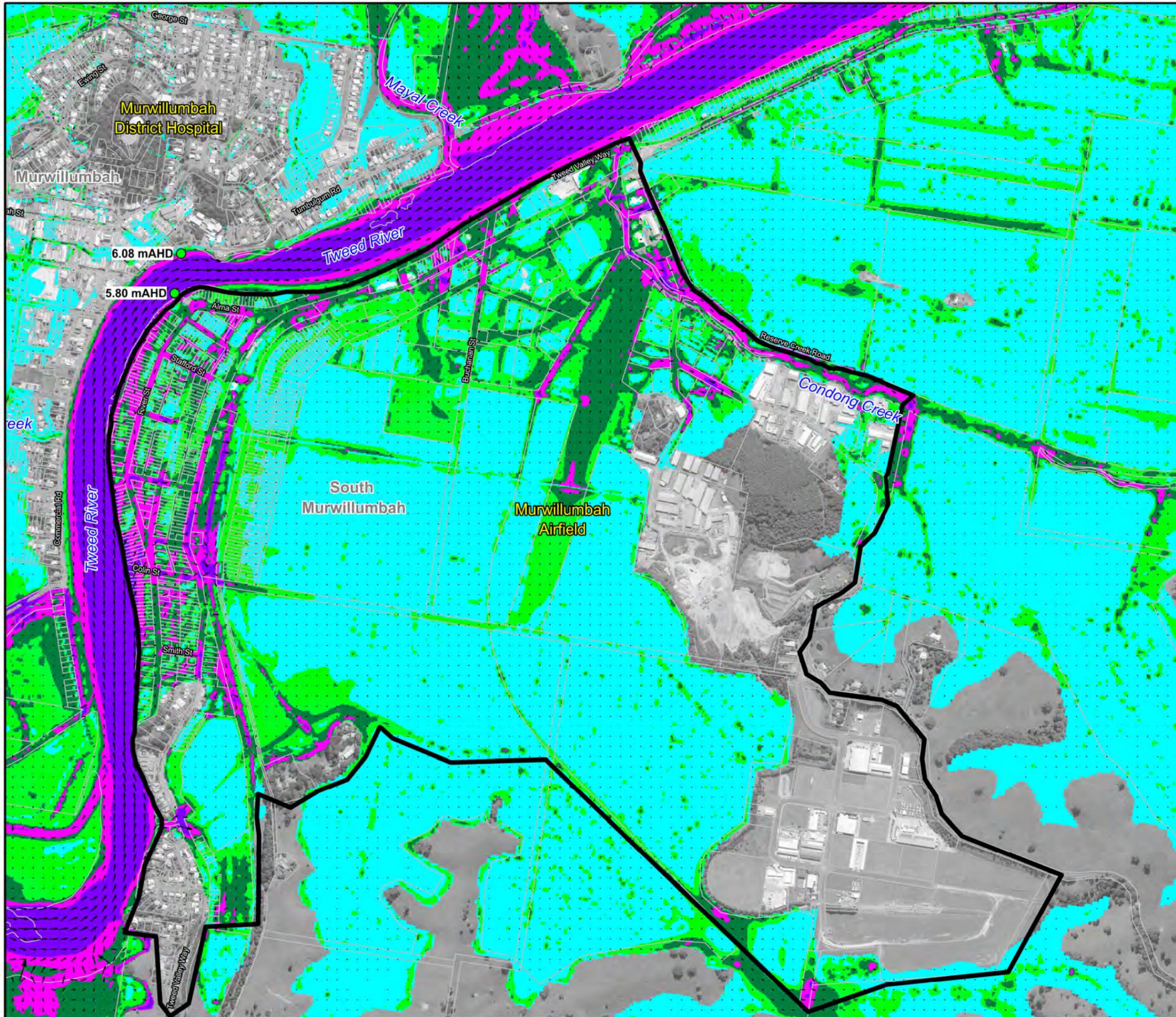
Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

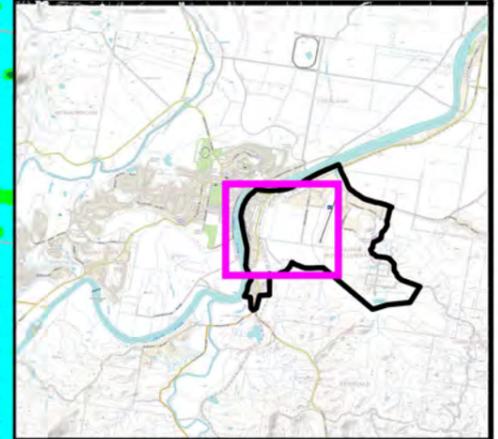


**Figure 16:**  
**Floodwater Velocities for the**  
**1% AEP Flood**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 16 - Floodwater Velocities for the 1% AEP Flood.wor





**LEGEND**

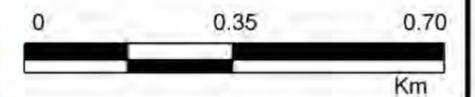
Velocity (m/s)

- 0.0-0.25
- 0.25 - 0.5
- 0.5-1.0
- 1.0-2.0
- $\geq 2.0$

 Peak Water Level at Gauge

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

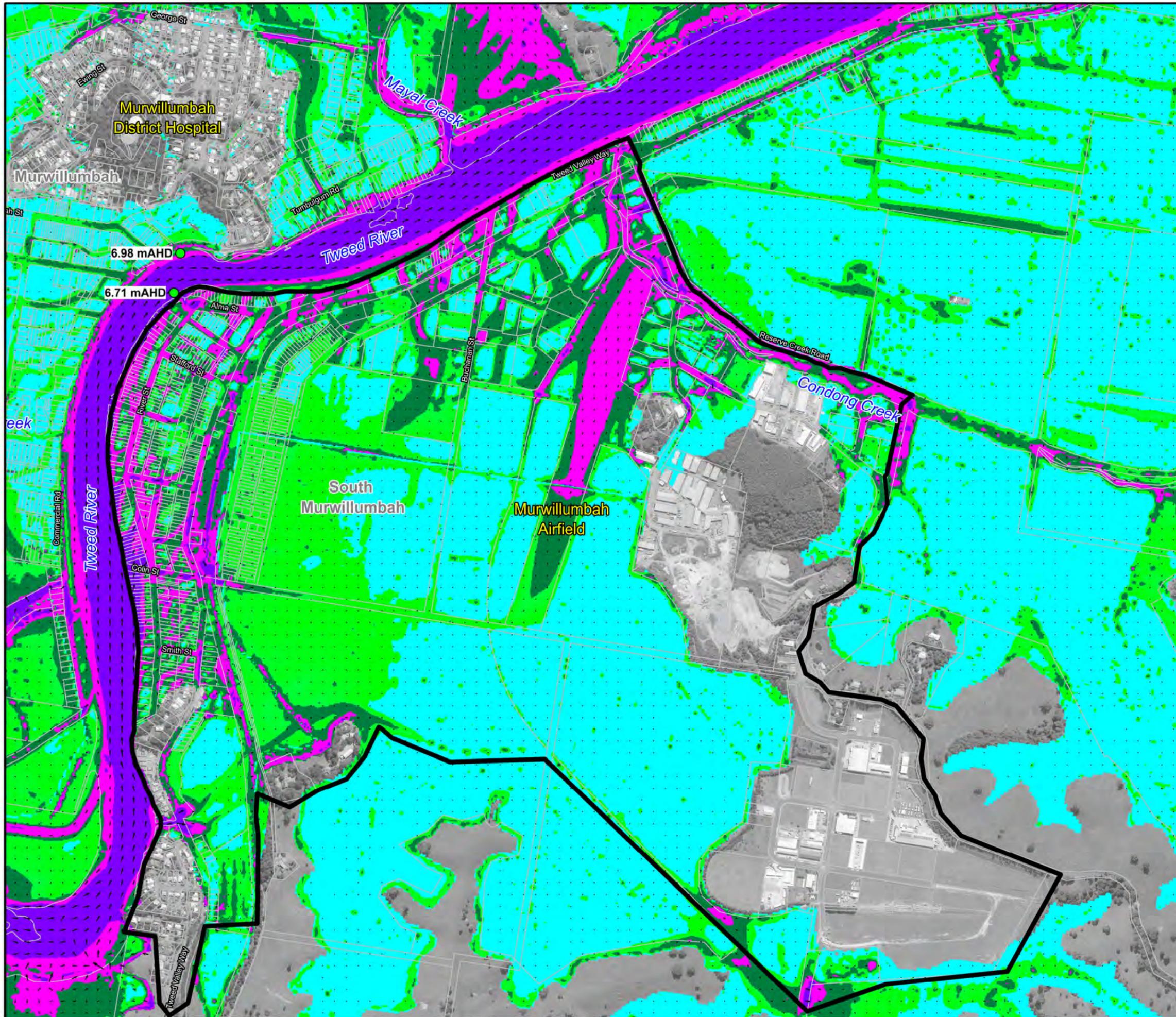


**Figure 17:**  
**Floodwater Velocities for the 0.2% AEP Flood**

Prepared By:

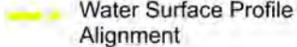
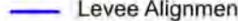
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 17 - Floodwater Velocities for the 0.2% AEP Flood.wor

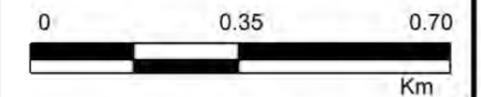




**LEGEND**

-  Water Surface Profile Alignment
-  Levee Alignment
-  Distance Upstream from Condong Creek (m)

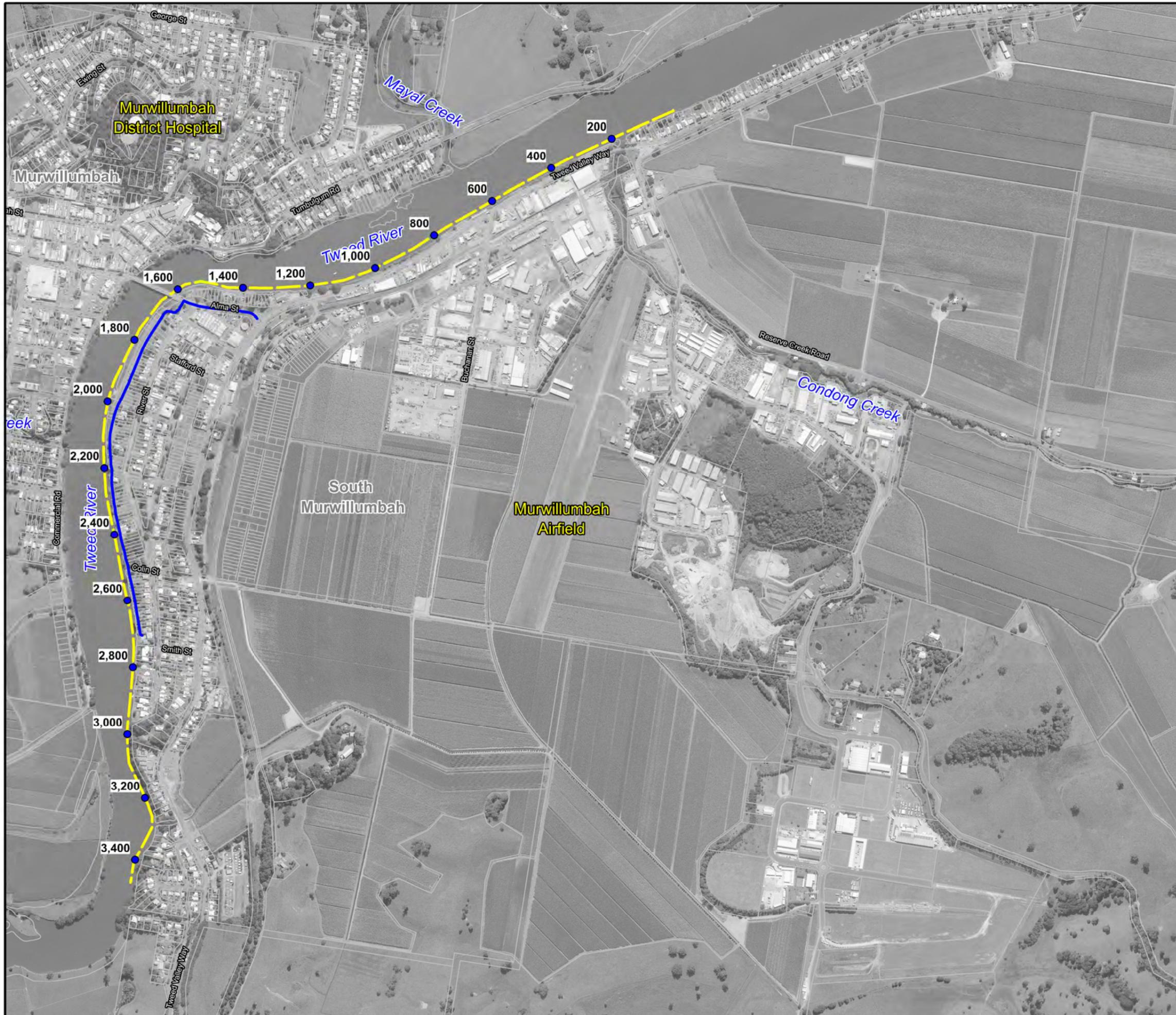
Notes:  
Aerial photograph date: 2016



**Figure 18:  
Floodwater Surface Profiles  
for the Tweed River**

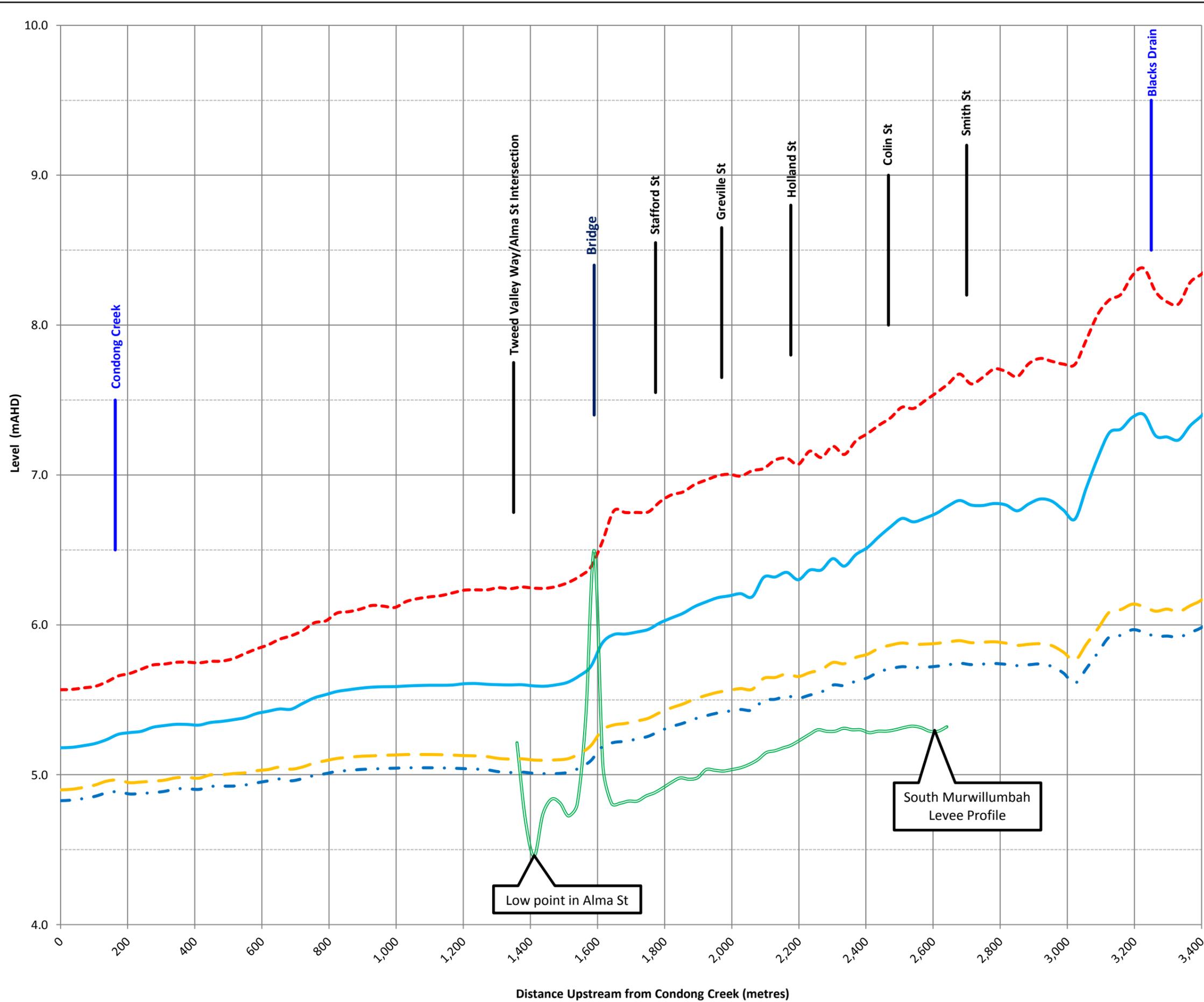
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 18 - Floodwater Surface Profiles for the Tweed River.wor



**LEGEND**

- - - 0.2% AEP
- 1% AEP
- - - 5% AEP
- · - 20% AEP



Notes:

**Figure 18.2:  
Floodwater Surface  
Profiles for the  
Tweed River**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 2.01, 210 George Street  
Sydney, NSW, 2000

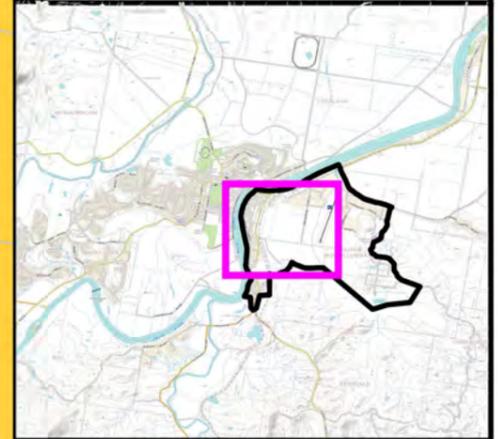
File Name: Water Surface Profile-  
Design1.xlsx

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## FLOOD HAZARD MAPS

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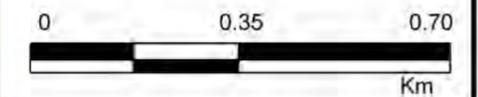
**LEGEND**

Hazard Categories

- H1 - generally safe for people, vehicles and buildings
- H2 - unsafe for small vehicles
- H3 - unsafe for vehicles, children and elderly
- H4 - unsafe for people and vehicles
- H5 - unsafe for people or vehicles. Buildings require special design
- H6 - unsafe for people or vehicles. All buildings vulnerable to failure

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

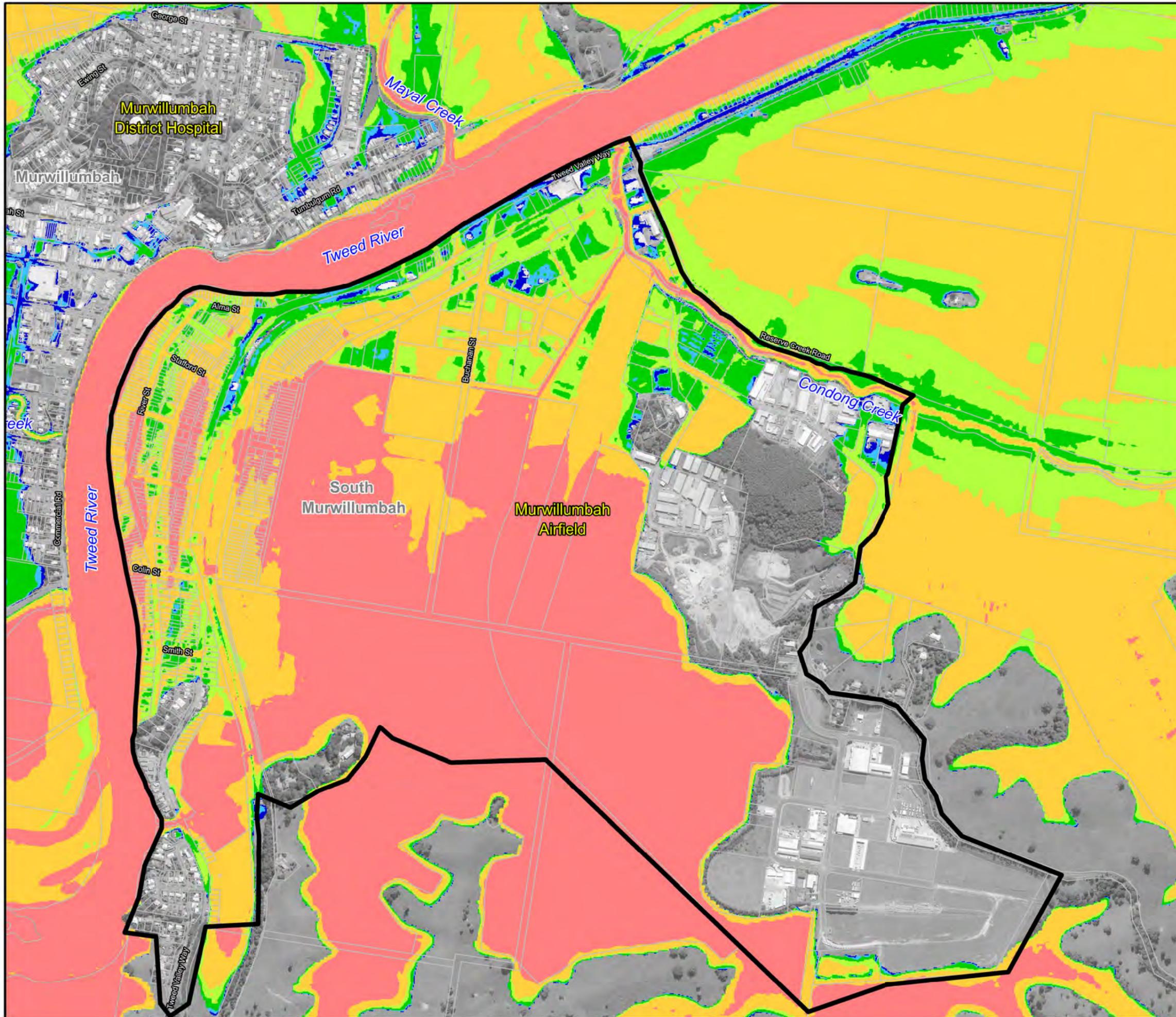


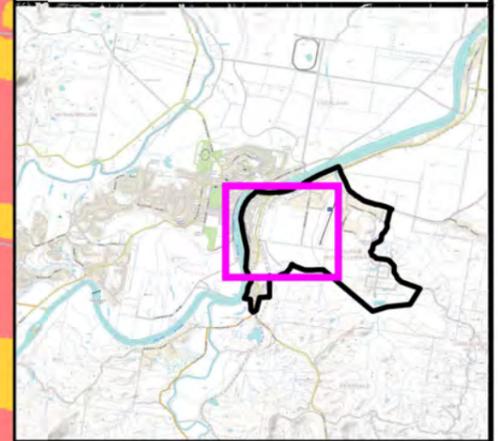
**Figure 19:**  
**Hazard Categories for the**  
**1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 19 - Hazard Categories for the 1% AEP Flood.wor





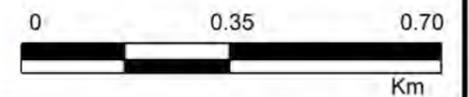
**LEGEND**

Hazard Categories

- H1 - generally safe for people, vehicles and buildings
- H2 - unsafe for small vehicles
- H3 - unsafe for vehicles, children and elderly
- H4 - unsafe for people and vehicles
- H5 - unsafe for people or vehicles. Buildings require special design
- H6 - unsafe for people or vehicles. All buildings vulnerable to failure

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping



**Figure 20:  
Hazard Categories for the  
0.2% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 20 - Hazard Categories for the 0.2% AEP Flood.wor

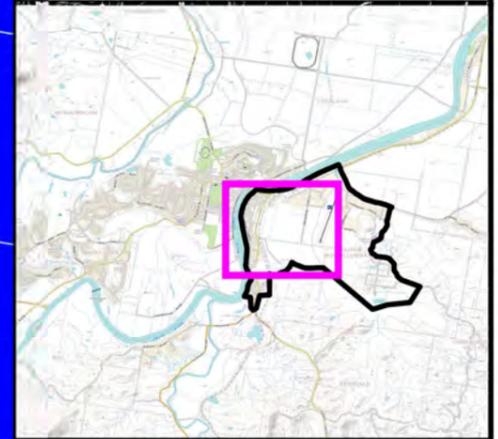


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## HYDRAULIC CATEGORY MAPS

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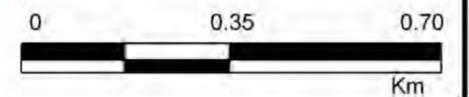


**LEGEND**

- Hydraulic Categories
- Flood Fringe
  - Flood Storage
  - Floodway

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

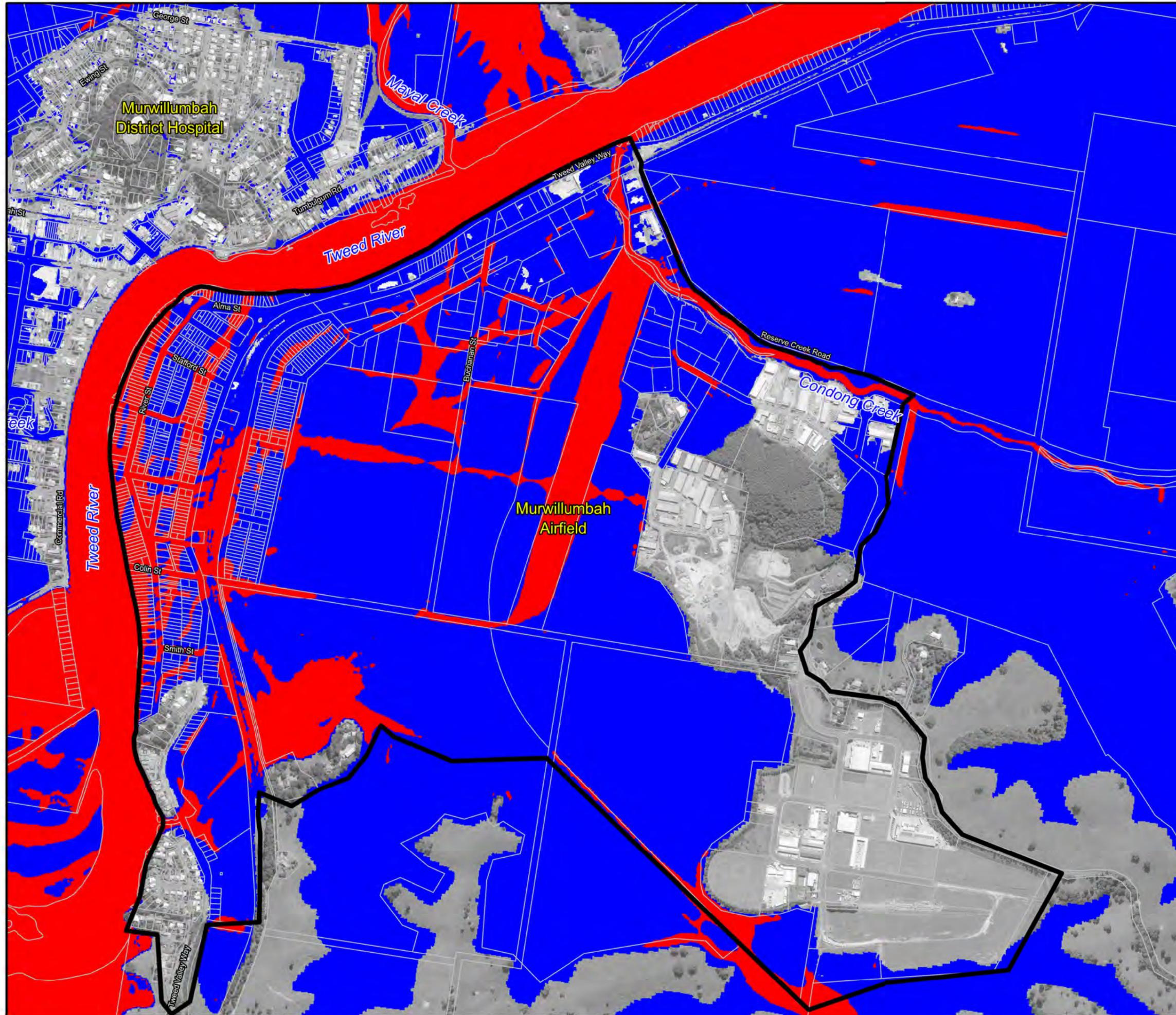


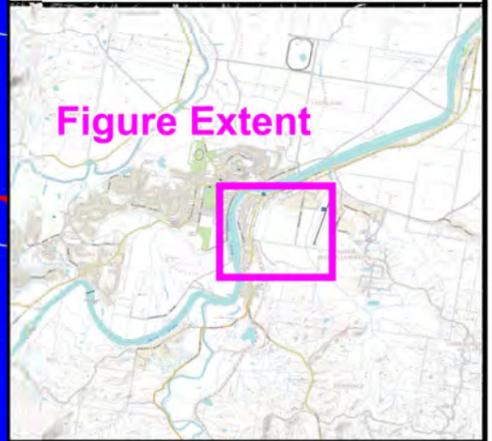
**Figure 21:**  
**Hydraulic Categories for the**  
**1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 21 - Hydraulic Categories for the 1% AEP Flood.war





**LEGEND**

- Hydraulic Categories
- Flood Fringe
  - Flood Storage
  - Floodway

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

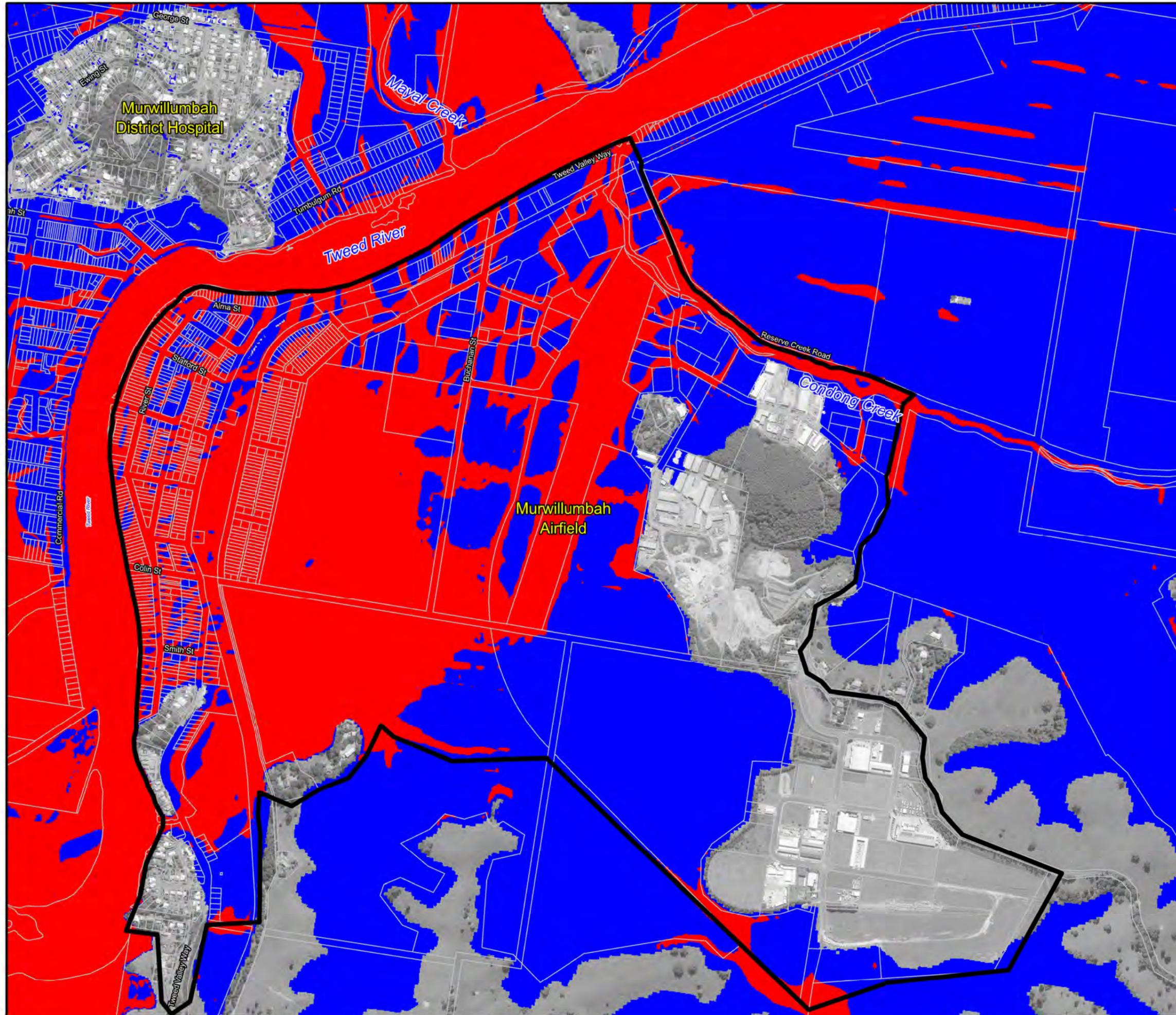


**Figure 22:**  
**Hydraulic Categories**  
**for the 0.2% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Fig22- Hydraulic Categories for 0.2%AEP.wor

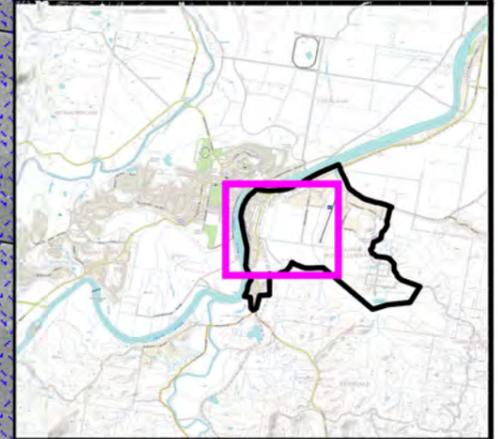


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## EMERGENCY RESPONSE PRECINCT CLASSIFICATIONS

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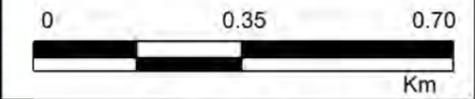




**LEGEND**

- Depths (m)
- Flooded Isolated Submerged
  - Flooded Isolated Elevated
  - Flooded Exit Route Overland Escape Route
  - Flooded Exit Rising Road Egress
  - Indirect Consequences
  - No Flood Impacts
- Depths (m)
- 15 Time of road first cut (hours)
  - 2.5 Duration of inundation (hours)
  - Flood Extent

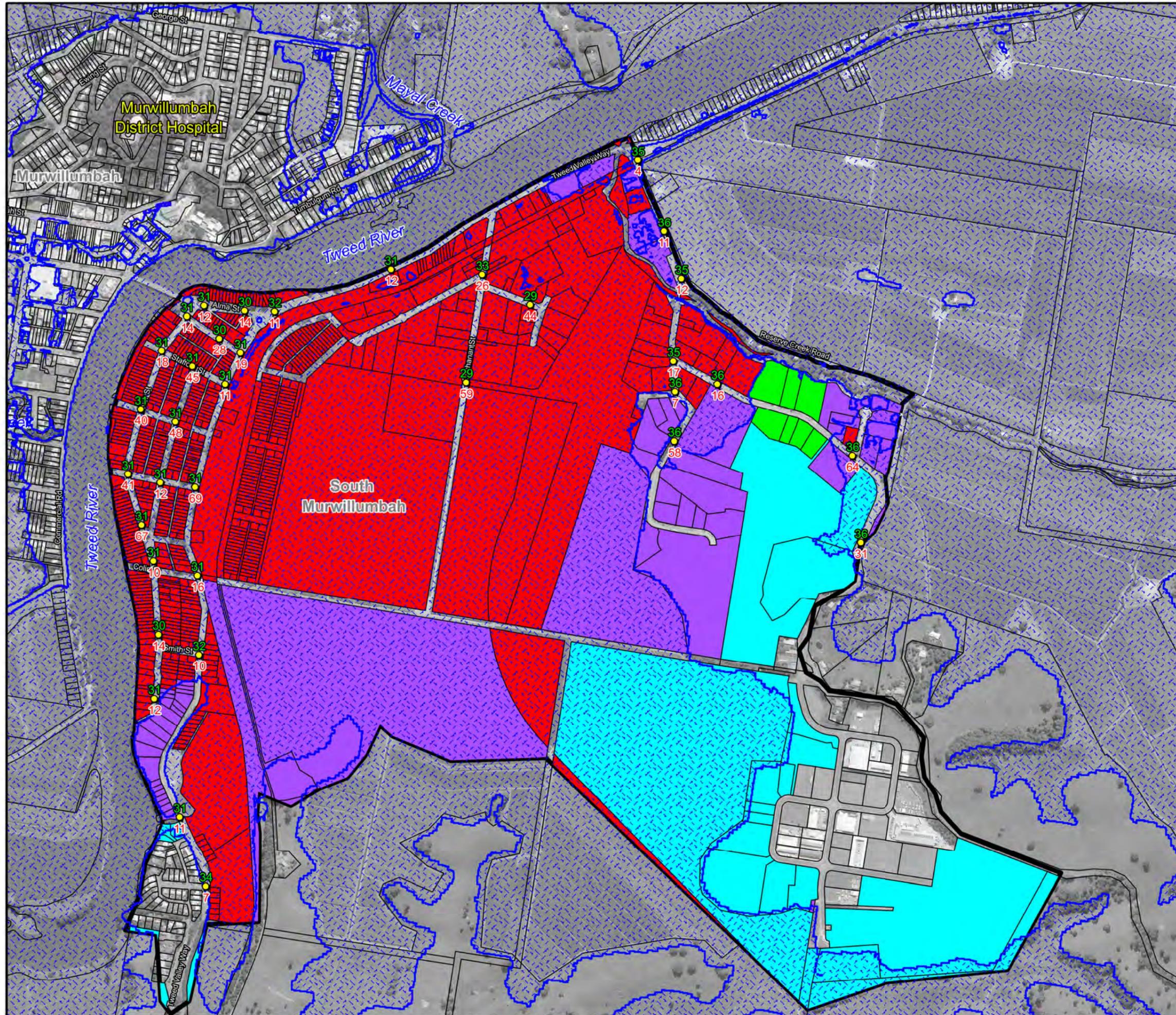
Notes:  
Aerial photograph date: 2016



**Figure 23:  
Emergency Response Precinct  
Classification for the 1% AEP  
Flood**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 23 - Emergency Response Precinct Classification for the 1% AEP Flood.wor

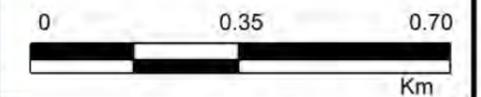




**LEGEND**

- Depths (m)
- Flooded Isolated Submerged
  - Flooded Isolated Elevated
  - Flooded Exit Route Overland Escape Route
  - Flooded Exit Rising Road Egress
  - Indirect Consequences
  - No Flood Impacts
- Depths (m)
- 15 Time of road first cut (hours)
  - 2.5 Duration of inundation (hours)
  - Flood Extent

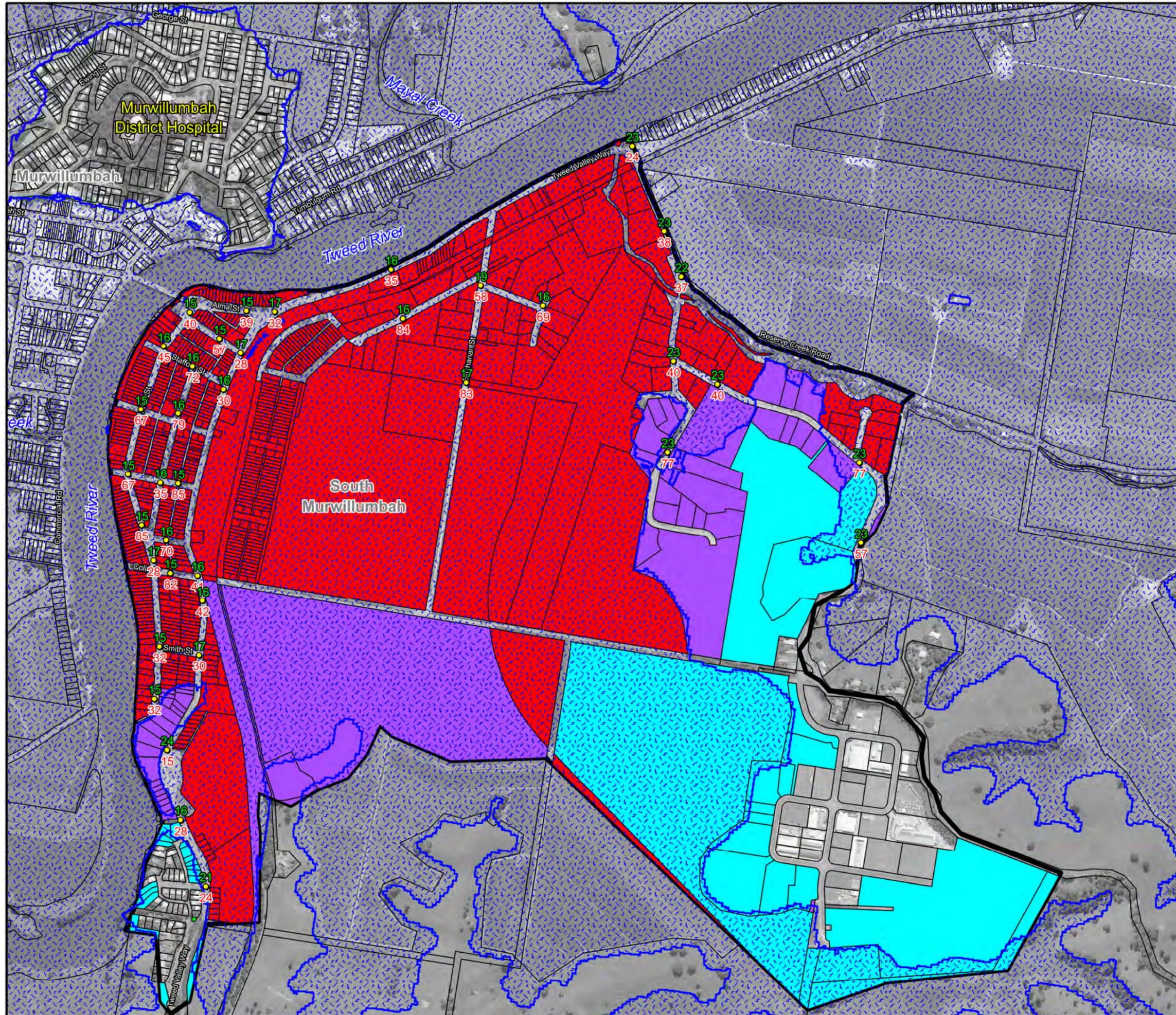
Notes:  
Aerial photograph date: 2016



**Figure 24:**  
**Emergency Response Precinct**  
**Classification for the 0.2% AEP**  
**Flood**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 24 - Emergency Response Precinct Classification for the 0.2% AEP Flood.wor

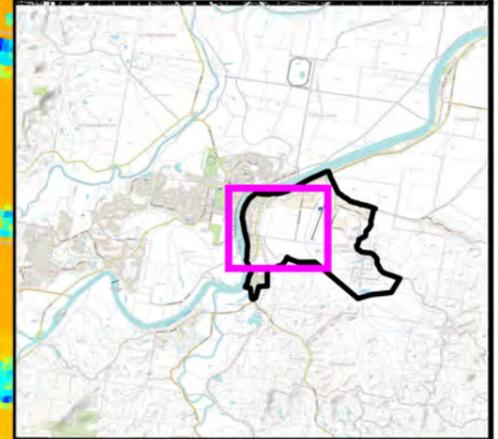


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## DURATION OF INUNDATION MAPS

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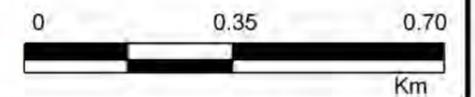
**LEGEND**

Duration of Inundation (Days)



Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

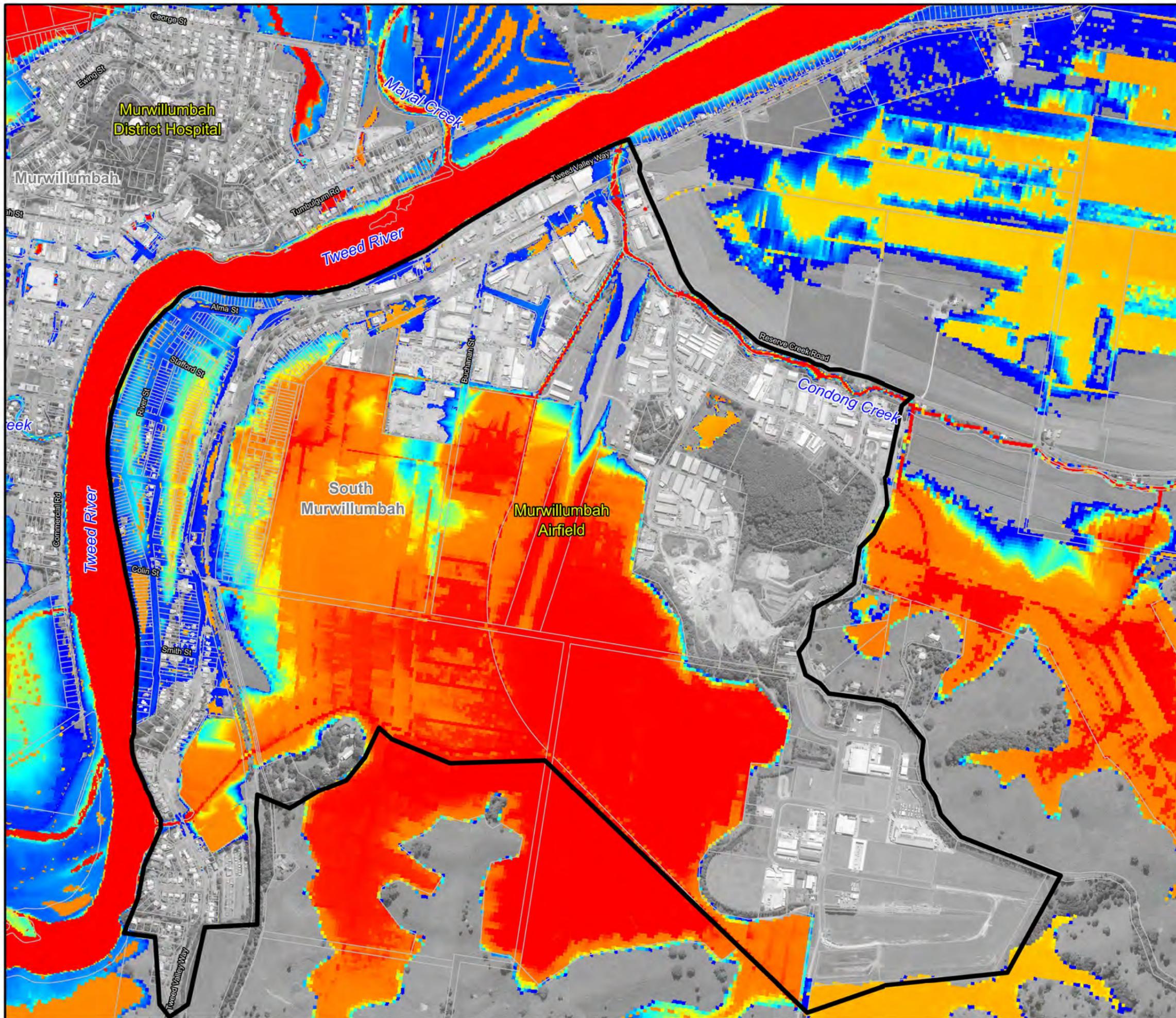


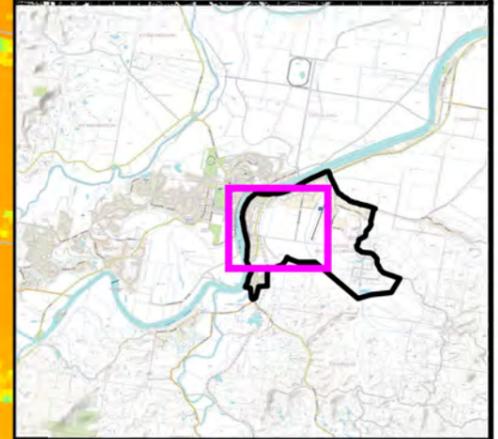
**Figure 25:**  
**Duration of Inundation**  
**for the 20% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 25 - Duration of Inundation for the 20% AEP Flood.wor





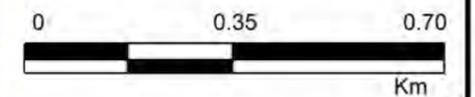
**LEGEND**

Duration of Inundation (Days)

- 1
- 2
- 3
- 4
- >= 5

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

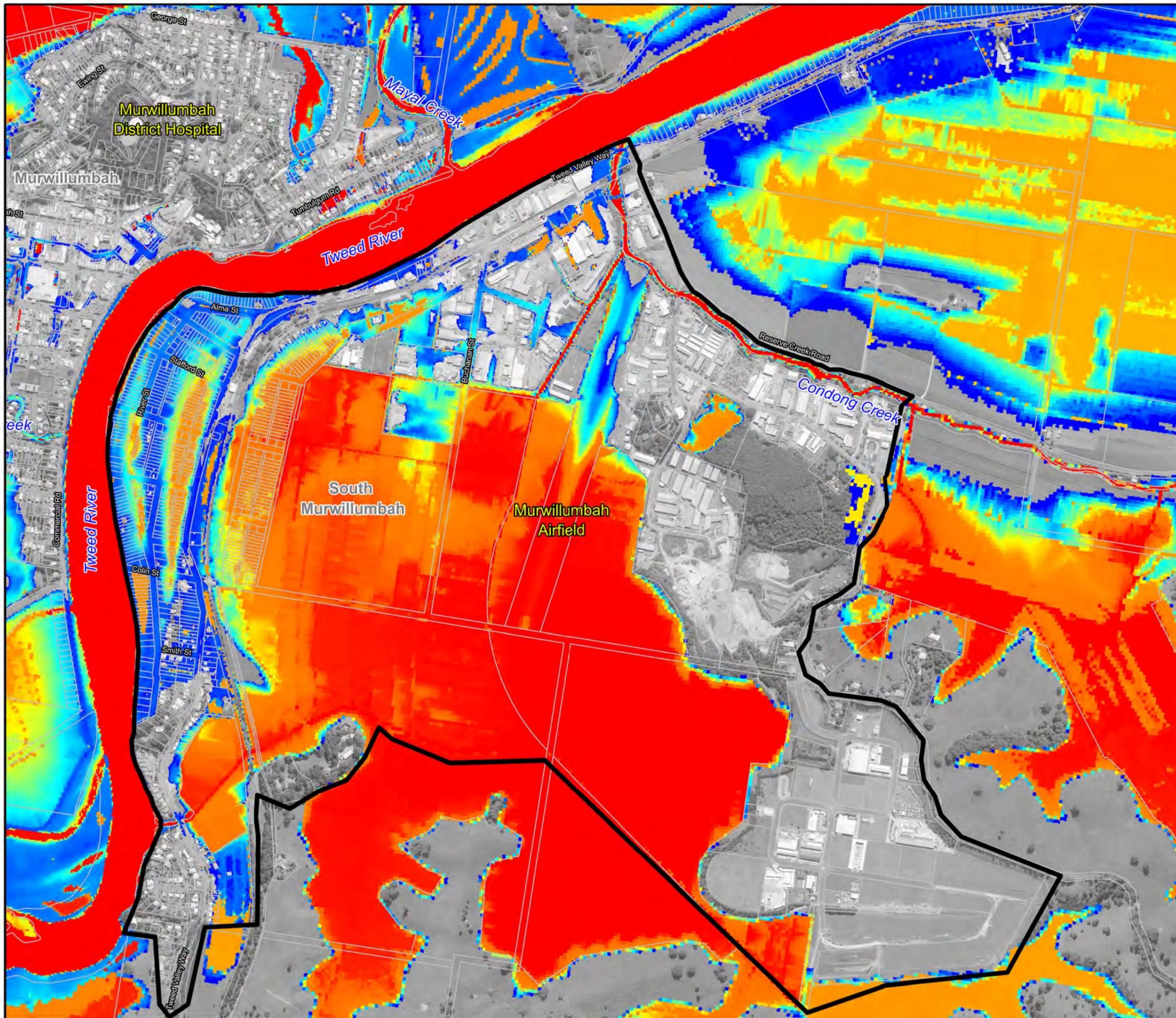


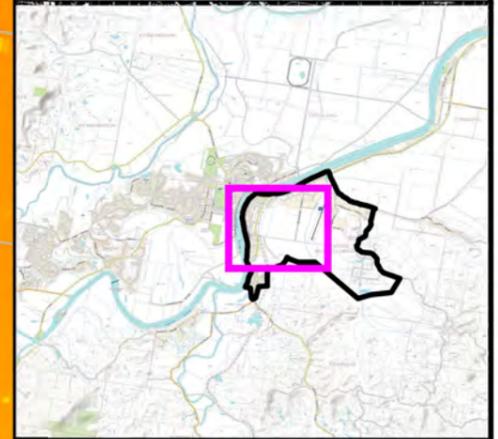
**Figure 26:**  
**Duration of Inundation**  
**for the 5% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 26 - Duration of Inundation for the 5% AEP Flood.wor





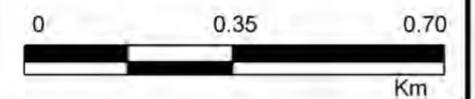
**LEGEND**

Duration of Inundation (Days)



Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

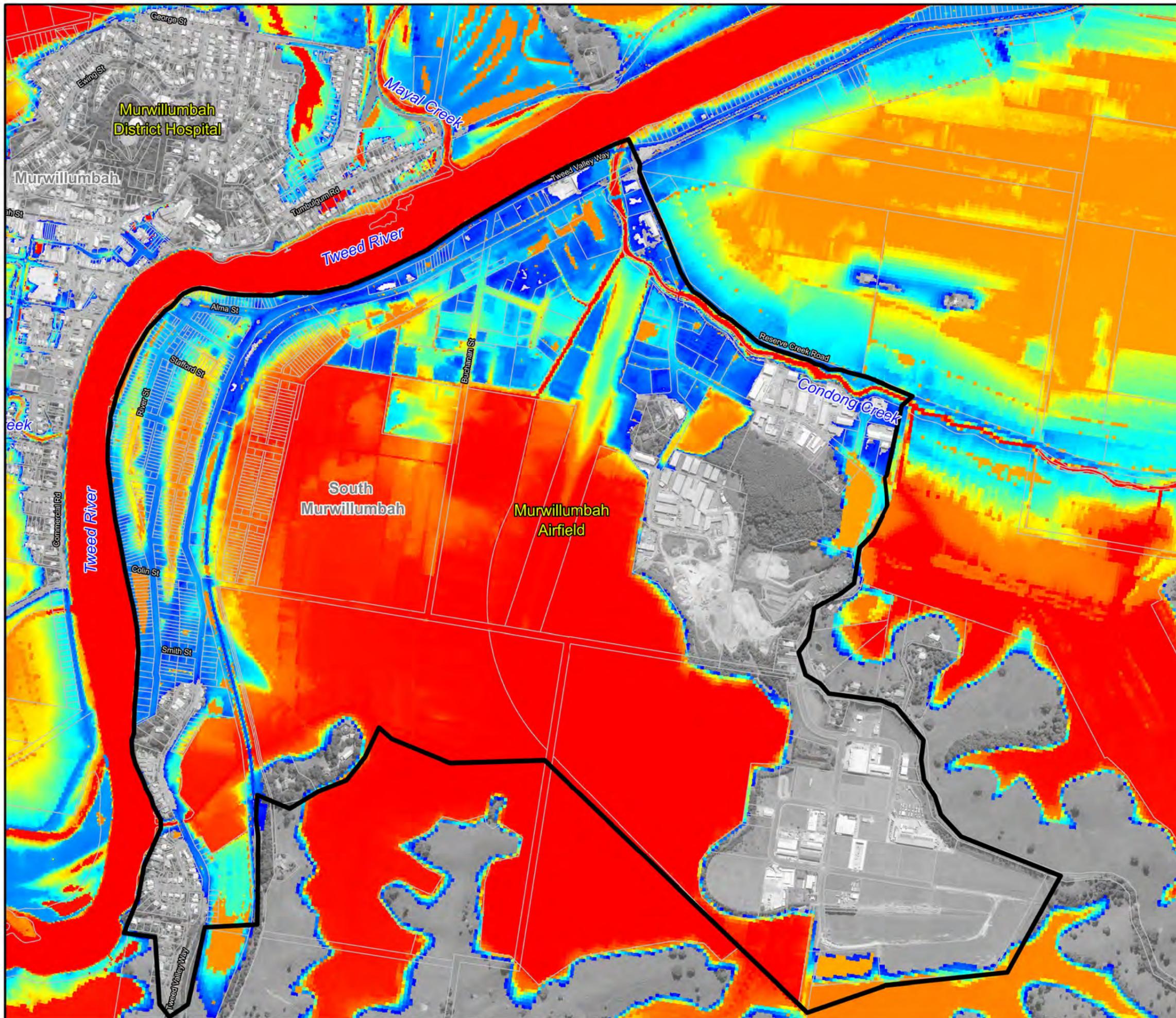


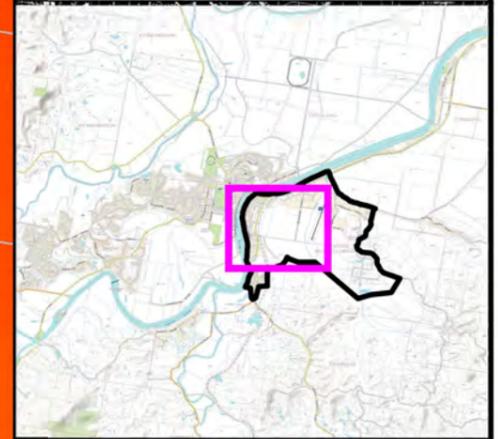
**Figure 27:**  
**Duration of Inundation**  
**for the 1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 27 - Duration of Inundation for the 1% AEP Flood wor





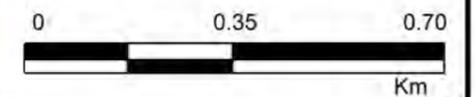
**LEGEND**

Duration of Inundation (Days)

- 1
- 2
- 3
- 4
- >= 5

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

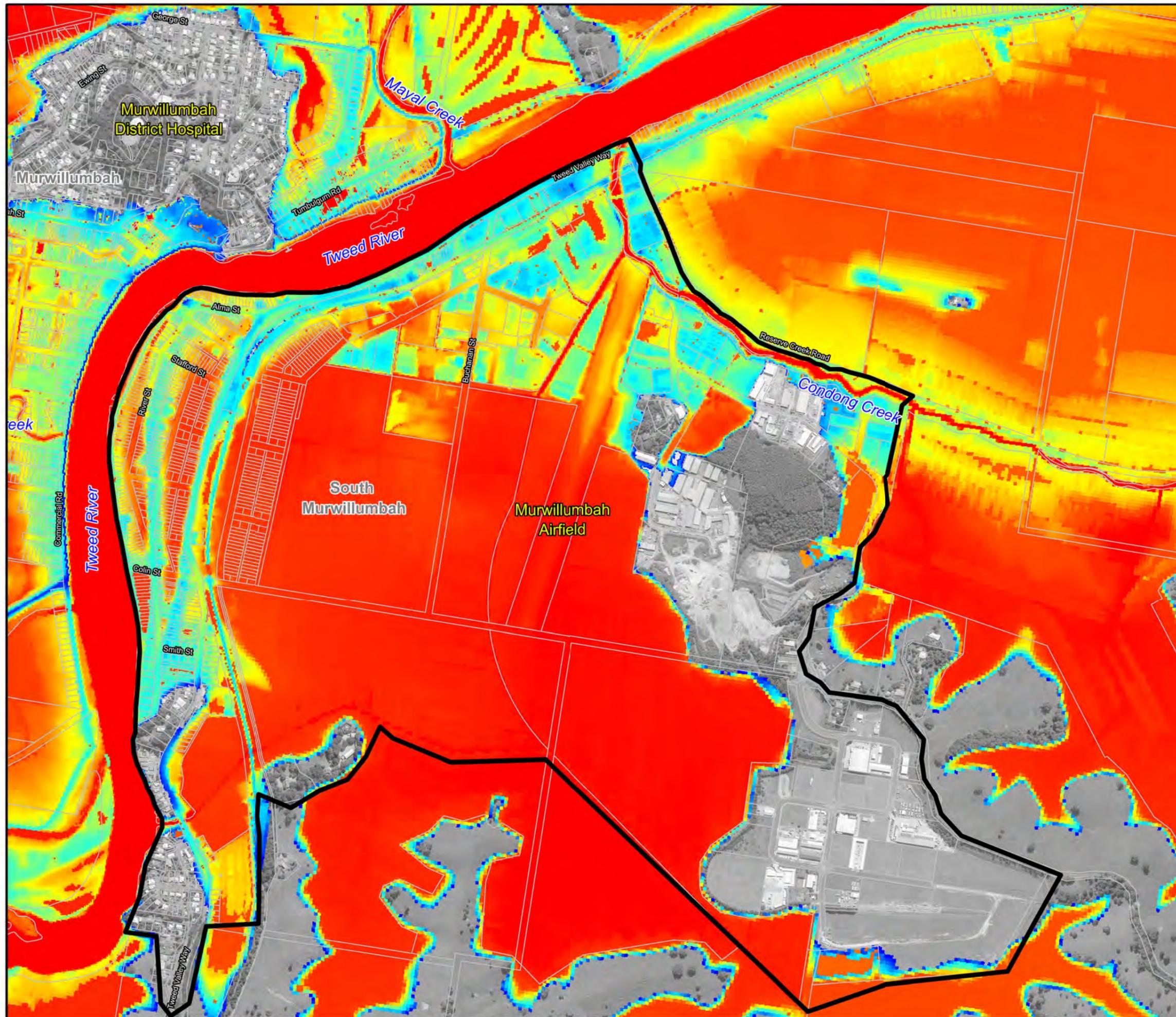


**Figure 28:**  
**Duration of Inundation**  
**for the 0.2% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 28 - Duration of Inundation for the 0.2% AEP Flood.wor

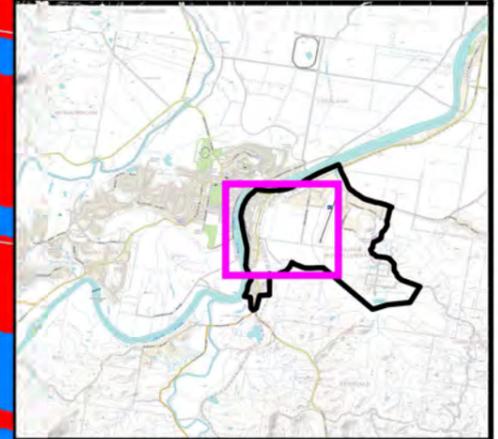


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## MISCELLANEOUS MAPS

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**LEGEND**

- Velocity Depth Product (m<sup>2</sup>/s)
- ≤ 0.3 "Low Flow Area"
  - >0.3 "High Flow Area"

Notes:

Aerial photograph date: 2016  
Only areas exposed to depths of more than 0.15m are shown in the mapping

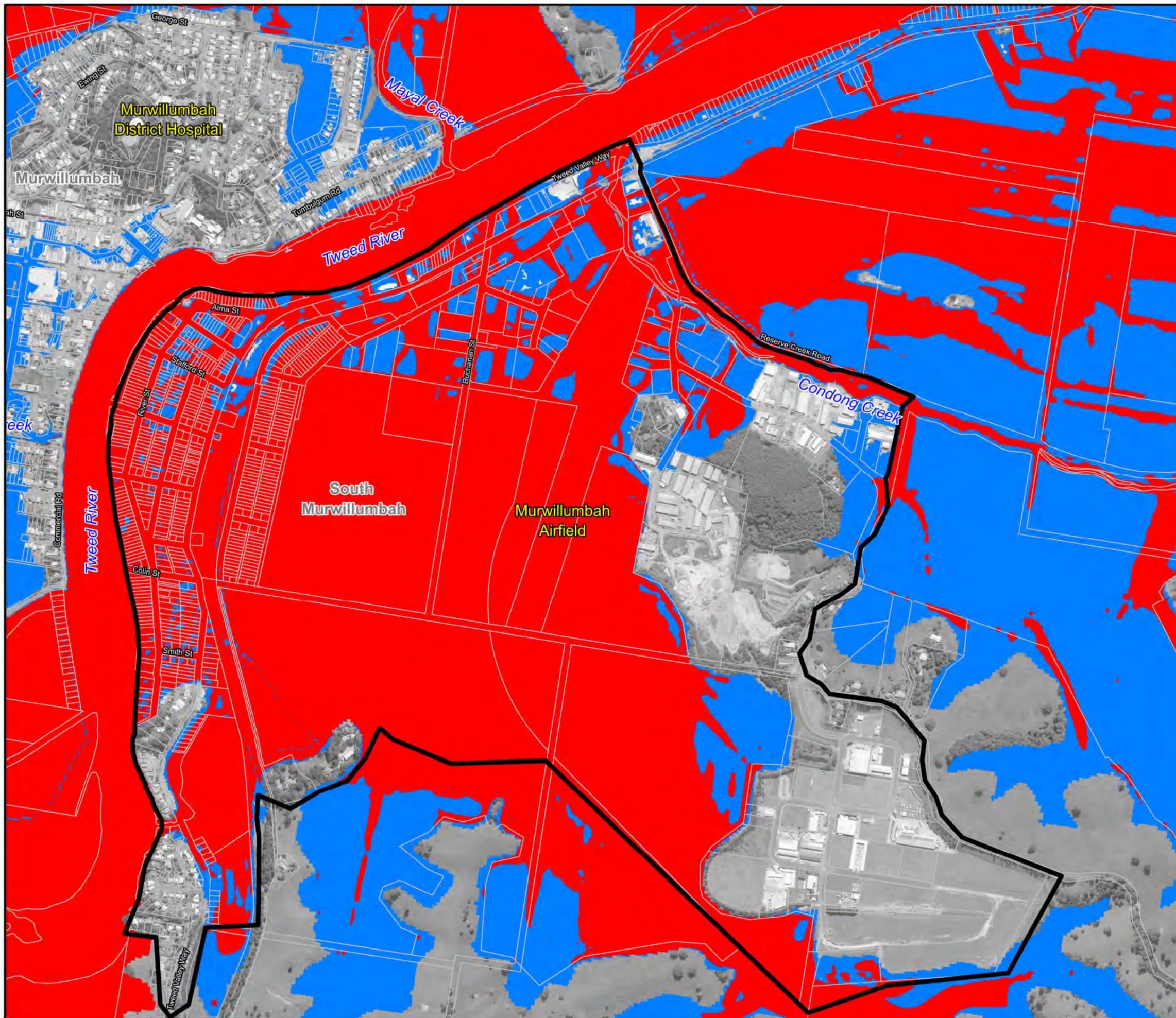


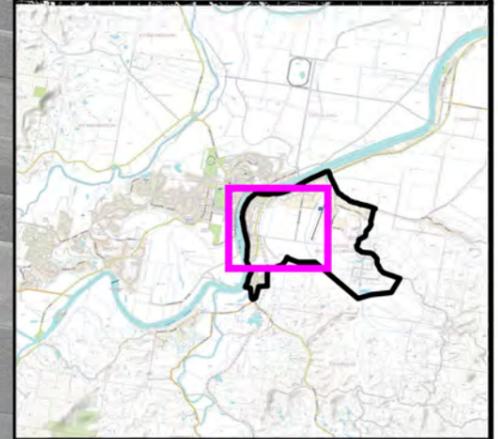
**Figure 29:**  
**High Flow Map for the**  
**1% AEP Flood**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 29 - High Flow Map for the 1% AEP Flood.wor





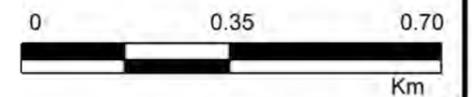
**LEGEND**

Event of First Above Floor Flooding

- 20% AEP
- 5% AEP
- 1% AEP
- 0.2% AEP
- PMF

Notes:

Aerial photograph date: 2016

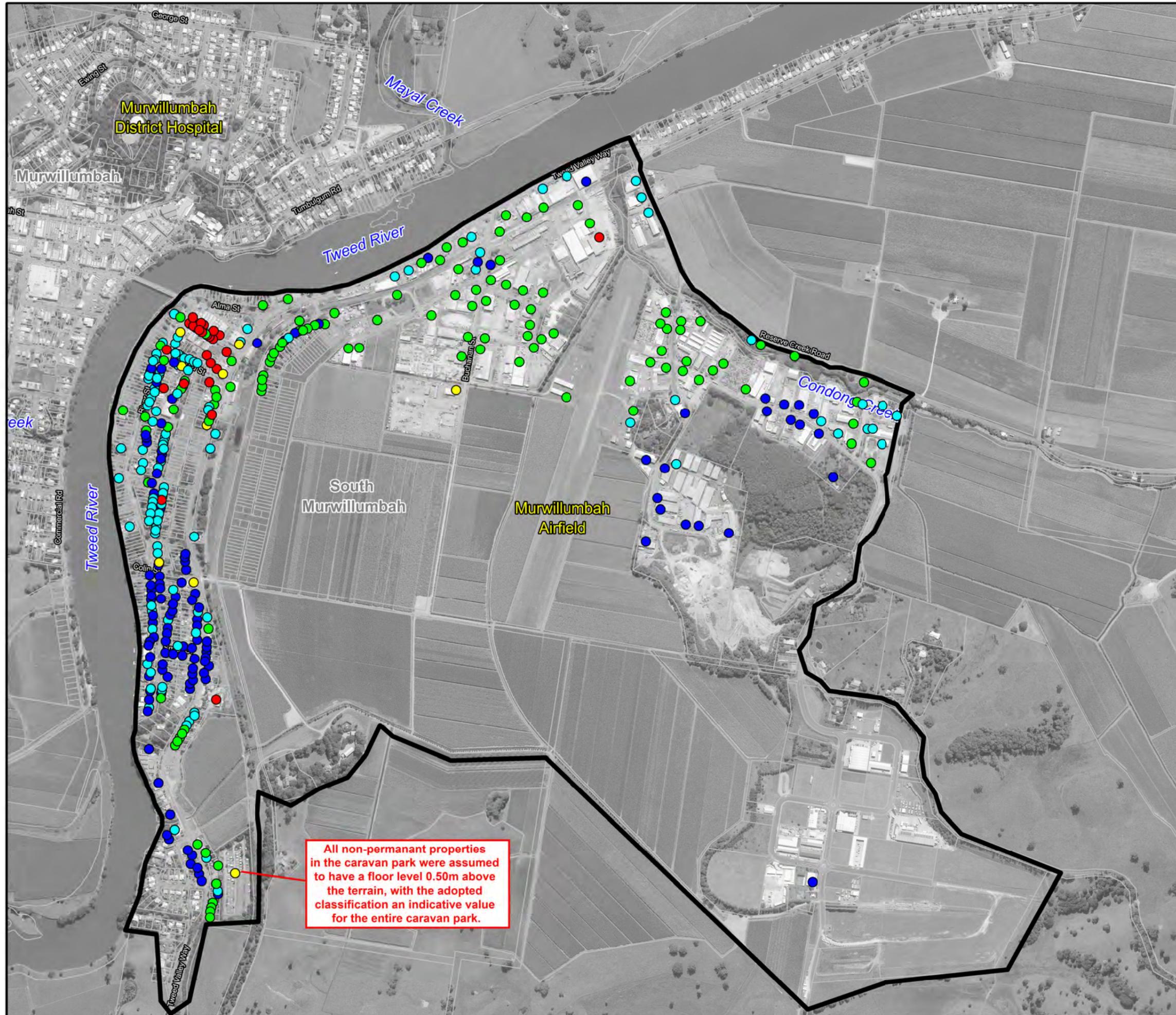


**Figure 30:**  
Frequency of Above Floor Inundation

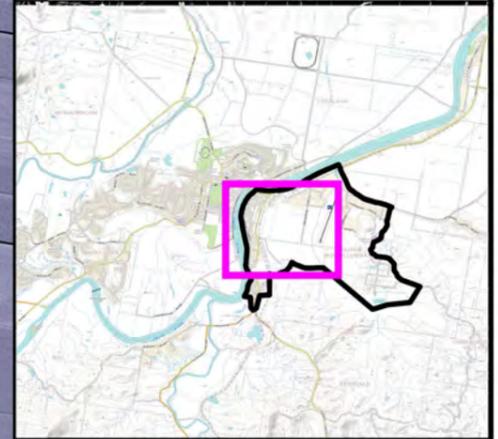
Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 30 - Frequency of Above Floor Inundation.wor



All non-permanent properties in the caravan park were assumed to have a floor level 0.50m above the terrain, with the adopted classification an indicative value for the entire caravan park.

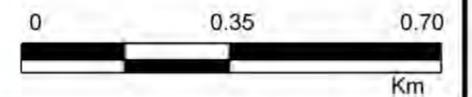


**LEGEND**

- Critical Flood Zone Score
- 1-5
  - 6-10
  - 11-15
  - 16-20
  - >20
  - 1% AEP Flood Extent

Notes:

Aerial photograph date: 2016

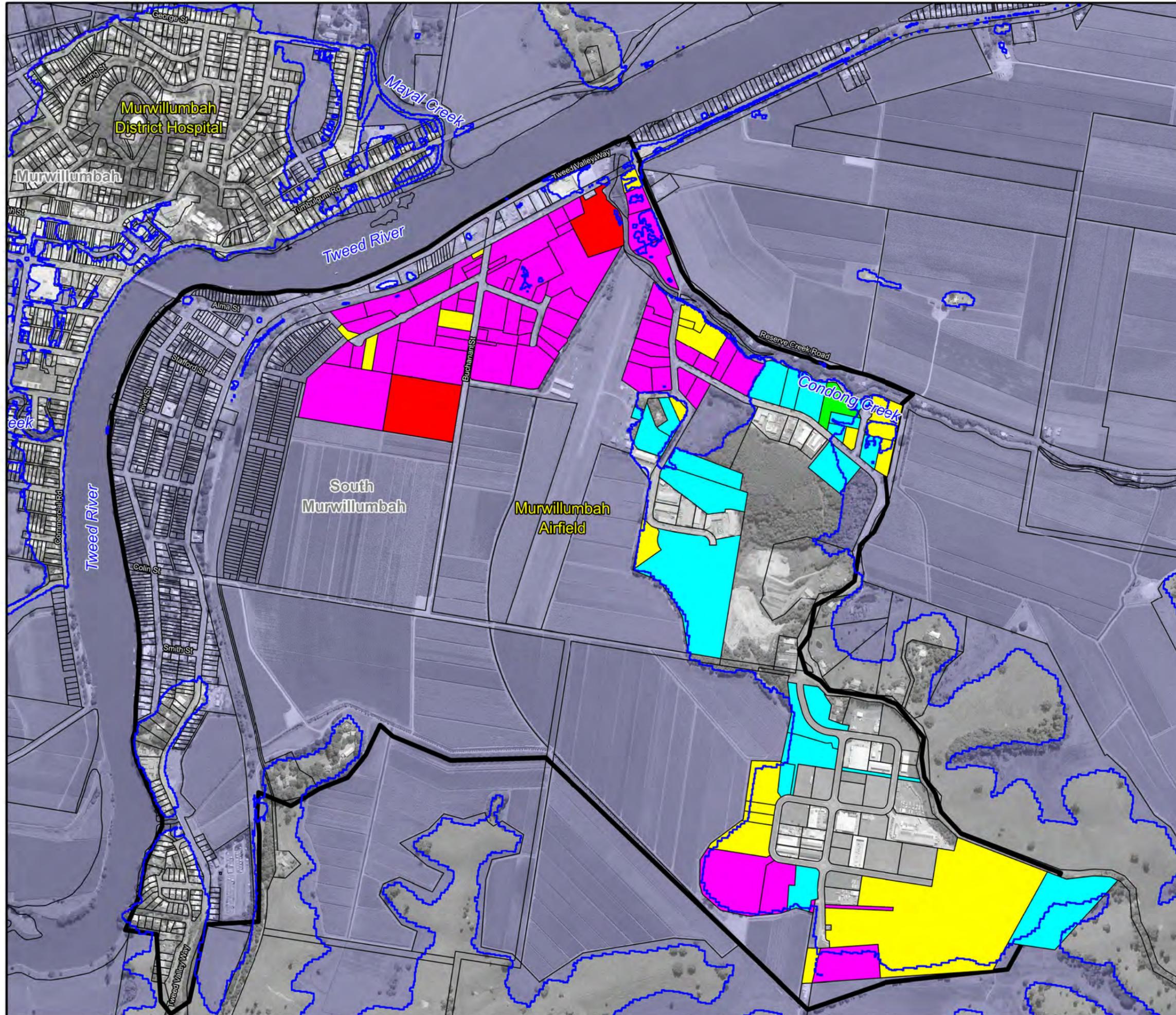


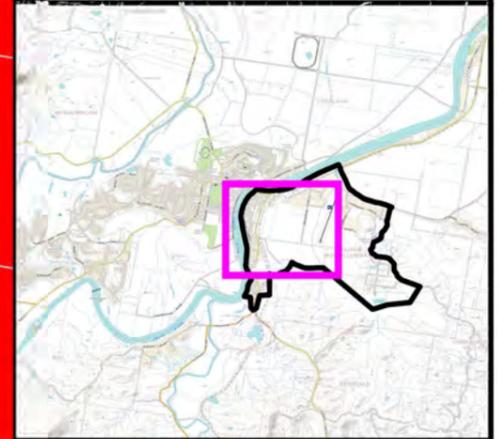
**Figure 31:**  
**Critical Flood Zone**

Prepared By:

 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 31 - Critical Flood Zone.wor

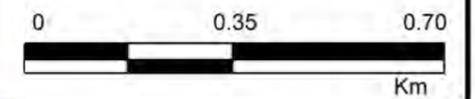




**LEGEND**

- Category 1
  - A
  - B
- Category 2
  - A
  - B
  - C
  - D
  - E
- Category 3
  -
- Category 4
  -
- R2 Land Zone Extent

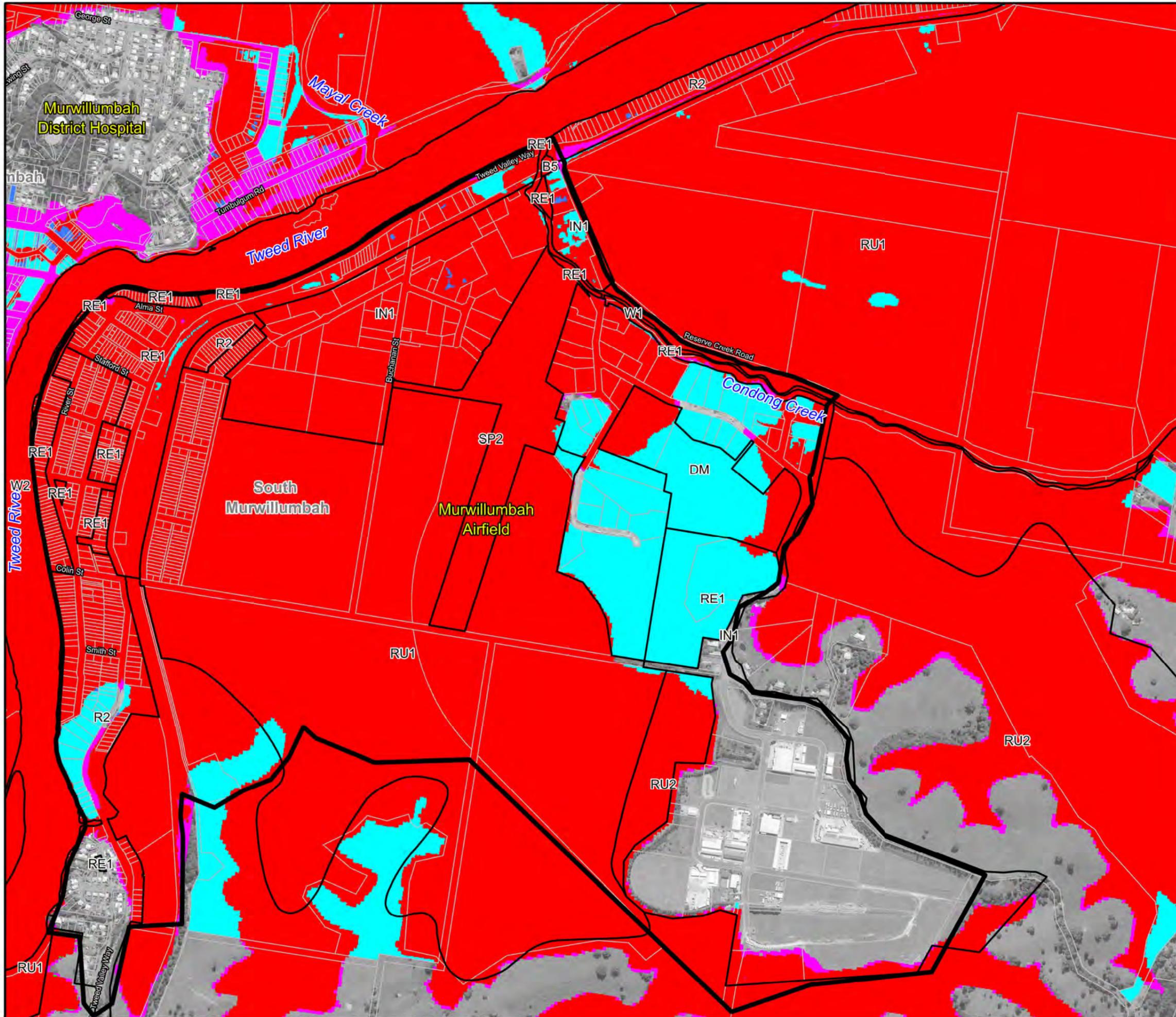
Notes:  
Aerial photograph date: 2016



**Figure 32:  
Flood Planning Category  
Constraint Mapping**

Prepared By:  
**Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 32 - Flood Planning Category Constraint Mapping.wor

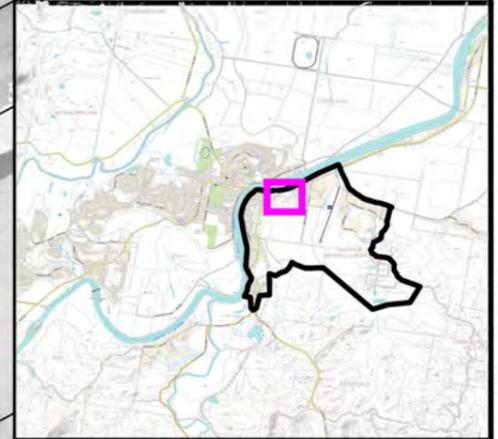


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## CONCEPT DESIGNS FOR FLOOD RISK MANAGEMENT OPTIONS

---

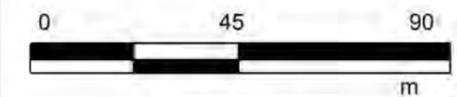




**LEGEND**

-  Extent of Works
-  Terrain Changes
-  Lots to Aquire
-  Existing Building within Acquired Lots
-  Additional Drainage

Notes:  
Aerial photograph date: 2016



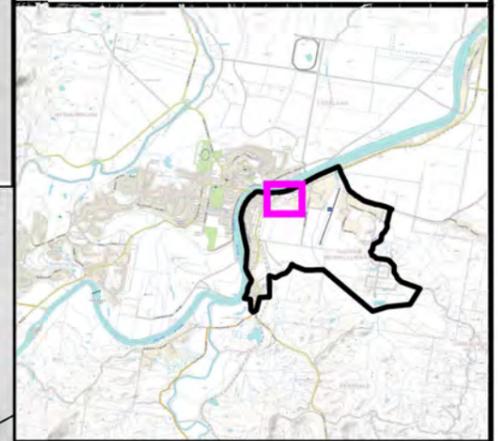
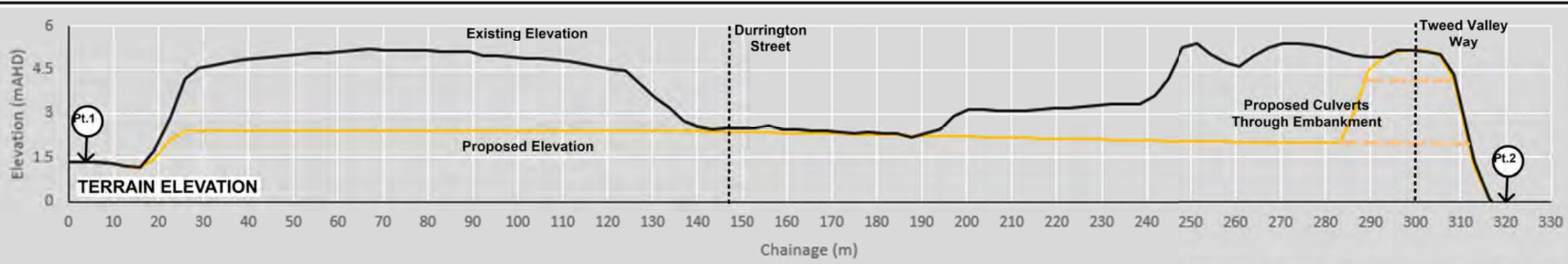
**Figure 33.1:**  
**Concept Design for the**  
**Durrington Street Flow Path**  
**(FM1)**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 33.1 - Concept Design for the Durrington Street Flow Path (FM1).wor



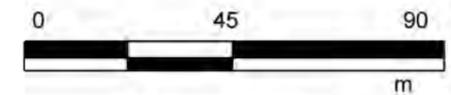
**FOR INFORMATION PURPOSES ONLY**



**LEGEND**

-  Extent of Works
-  4.8 mAHd Design Terrain Level
-  Cross Section
- Depth of Cut**
-  Upto -1.2m
-  -1.2m to -2.4m
-  -2.4m to -3.6m

**Notes:**  
Aerial photograph date: 2016

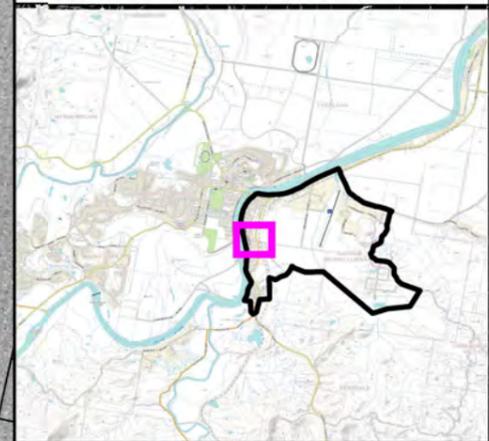


**Figure 33.2:**  
**Concept Design for the Durrington Street Flow Path (FM1)**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 33.2 - Concept Design for the Durrington Street Flow Path (FM1).wor

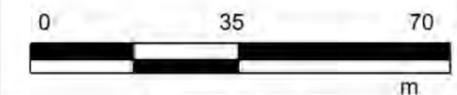
**FOR INFORMATION PURPOSES ONLY**



**LEGEND**

-  Extent of Works
-  Design Terrain Level
-  Terrain Changes
-  Lots to Acquire
-  Existing Building within Acquired Lots
-  Additional Drainage

Notes:  
Aerial photograph date: 2016



**Figure 34.1:**  
**Concept Design for the South Murwillumbah High Flow Bypass Option 1 (FM2)**

Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 34.1 - Concept Design for the South Murwillumbah High Flow Bypass Option 1 (FM2).wor

FOR INFORMATION PURPOSES ONLY

