Pambula River, Pambula Lake and Yowaka River Flood Study

Final Report

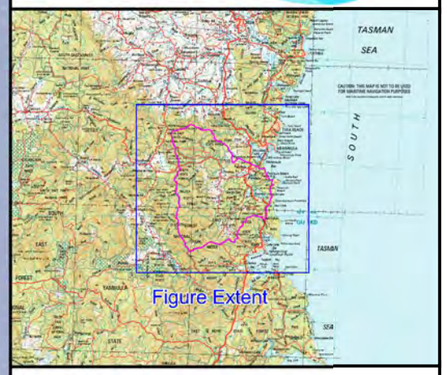
Volume 2 of 2: Figures

Revision 3
May 2021

Catchment Simulation Solutions

FIGURES

bega valley shire council



LEGEND

- Catchment Boundary
- Watercourse
- Major Road

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:100,000 (at A3)

0 2.5 5.0 Km

Figure 1:
Pambula River, Pambula Lake and Yowaka River Catchment

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

File Name: Locality Area.qgs

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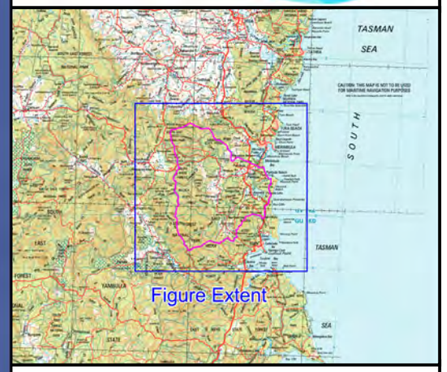

Myrtle Mountain
Tura Beach
Merimbula
Pambula
Pambula Beach
Wyndham
MOUNT DARRAGH ROAD
South Pambula
Lochiel
Greigs Flat
Broadwater
NETHERCOTE ROAD
BACK CREEK ROAD
Burragate
Nethercote
PRINCES HIGHWAY
Eden
Towamba

LEGEND

Ground Surface Elevation (mAHD)

=< 0	50
2	75
4	100
6	150
8	200
10	250
20	300
30	400
40	>= 500

Notes:
Aerial photograph: Google Satellite 2019

N
W E
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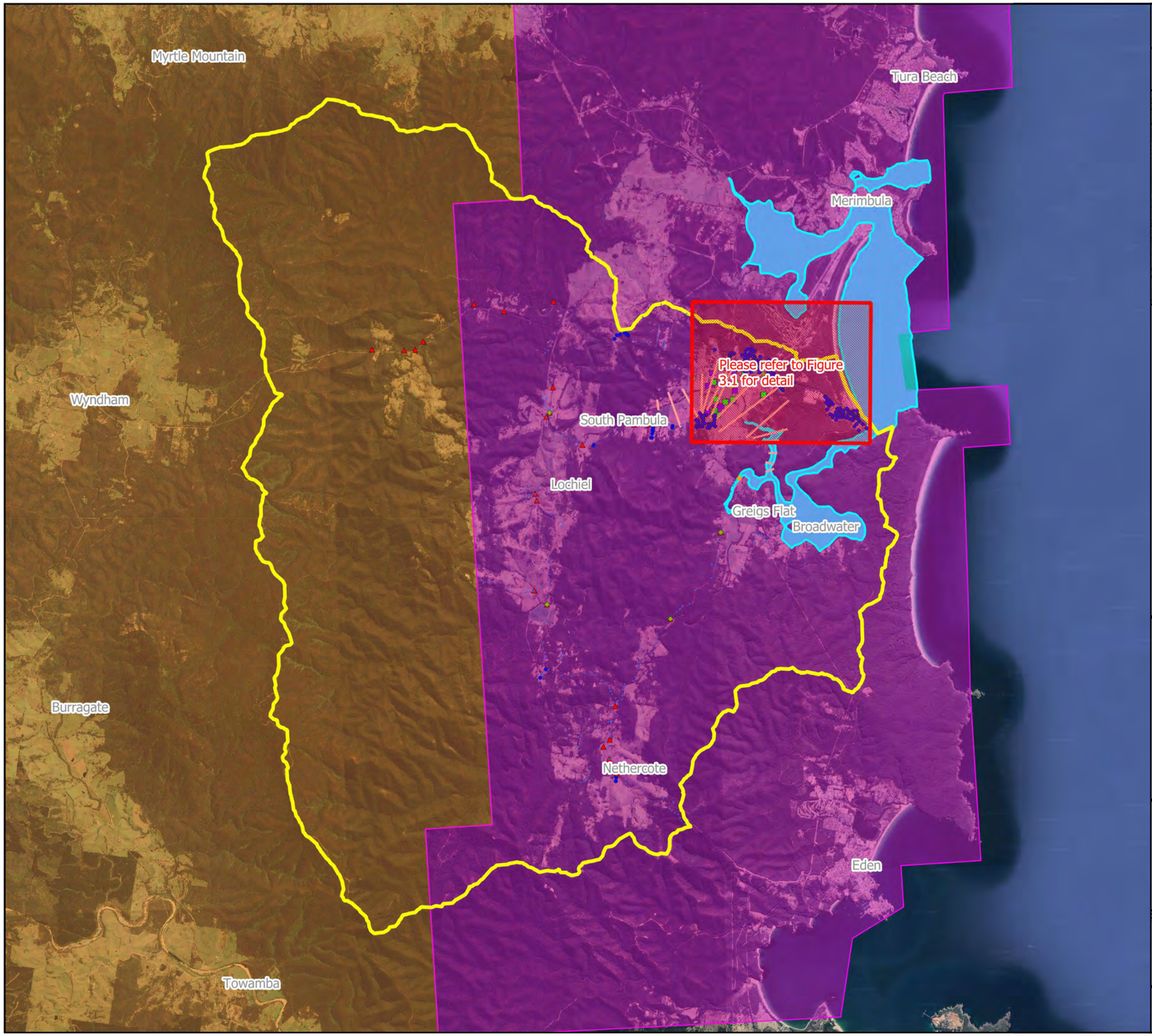
Scale 1:100,000 (at A3)

0 2.5 5.0
Km

Figure 2:
Digital Elevation Model

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

File Name: Locality AreaDigital Elevation Model.qgs



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LEGEND

Plans
- Council drainage Plans
- RMS Plans

Survey
- Hydrosurvey Extent (2003)
- 2018 LiDAR Extent
- 2013 LiDAR Extent
- Cross Sections from Pambula River Data Assessment Study (1990)

Structures
- Stormwater Pipe/ Culvert
- Stormwater Pit
- Bridge

Recorded Flood Marks
- 1985
- Other

N
W E
S

Scale 1:100,000 (at A3)

0 2.5 5.0

Km

Figure 3:
Existing Datasets

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Catchment Simulation Solutions
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Sydney, NSW 2000

File Name: Extent of available data.qgs

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Pambula

Pambula Beach

LEGEND

Plans
- Council drainage Plans
- RMS Plans

Survey
- Hydrosurvey Extent (2003)
- 2018 LiDAR Extent
- 2013 LiDAR Extent
- Cross Sections from Pambula River Data Assessment Study (1990)

Structures
- Stormwater Pipe/ Culvert
- Stormwater Pit
- Bridge

Recorded Flood Marks
- 1985
- Other

N
W E
S

Scale 1:15,000 (at A3)

0 0.5 1.0
Km

Figure 3.1:
Existing Datasets

Prepared By:
Catchment Simulation Solutions
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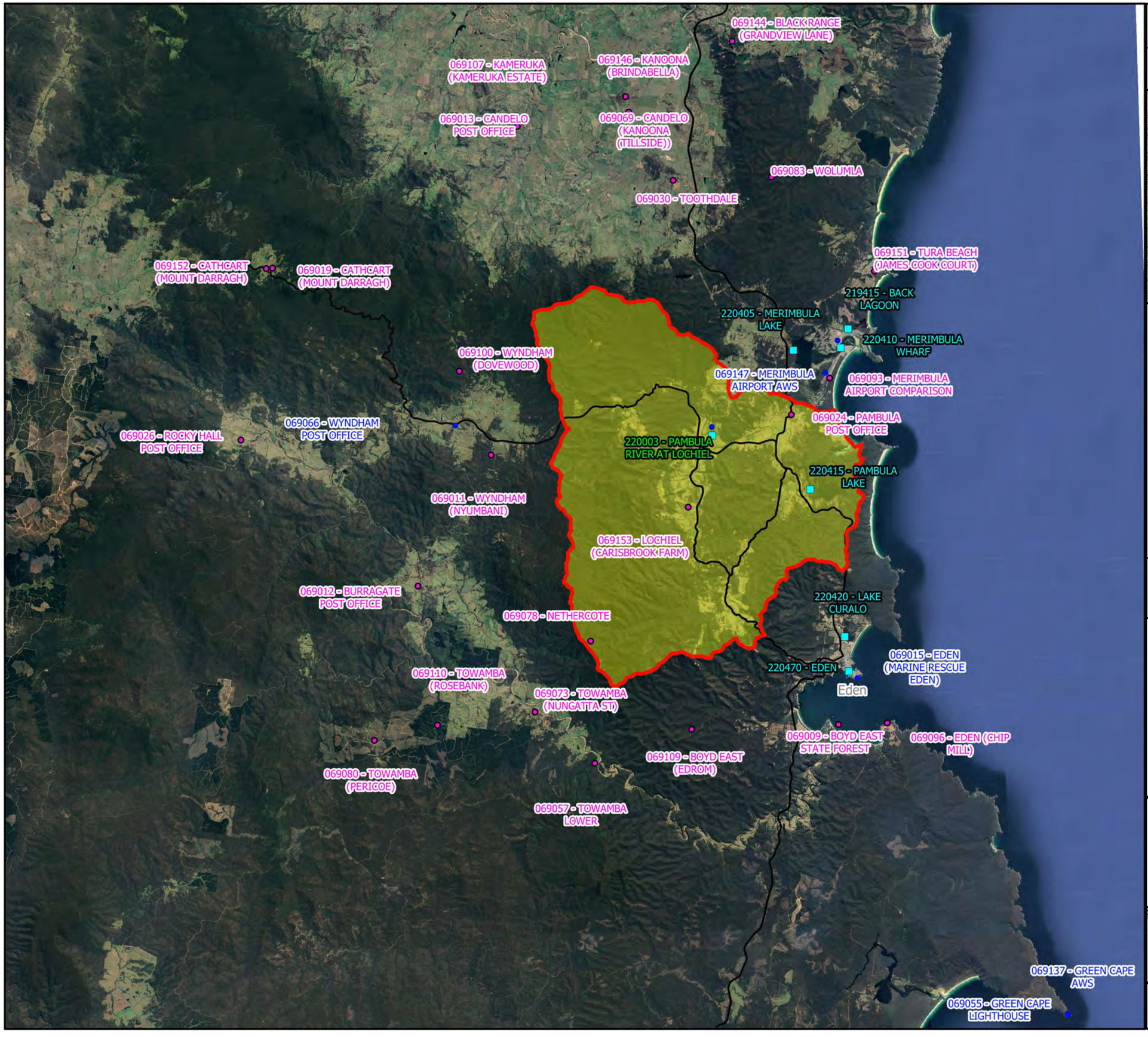
Sydney, NSW 2000

File Name: Extent of available data.qgs



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LEGEND

- Catchment
- Major Roads

Rain Gauges
- Daily
- Continous

Stream Gauges
- Water Level
- Water Level and Flow

Notes:
Aerial photograph: Google Satellite 2019

N
W E
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Scale 1:200,000 (at A3)

0 5.0 10.0

Km

Figure 4:
Location of Rainfall and Stream Gauges

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Sydney, NSW 2000

File Name: location of Rainfall Stream Gauges .qgs

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Myrtle Mountain
Tura Beach
Merimbula
Pambula
Pambula Beach
Wyndham
South Pambula
Lochiel
Greigs Flat
Broadwater
Burragate
Nethercote
Eden
Towamba

LEGEND

- Long Grass
- Short Grass
- Dense Trees
- Watercourse
- Sand
- Wetlands/Mangroves
- Concrete
- Paved Road
- Gravel Road
- Building

Notes:
Aerial photograph: Google Satellite 2019

N
W E
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Scale 1:100,000 (at A3)

0 2.5 5.0
Km

Figure 5: Remote Sensing Land Use Map

Prepared By:
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Sydney, NSW 2000

File Name: Remote Sensing.qqs

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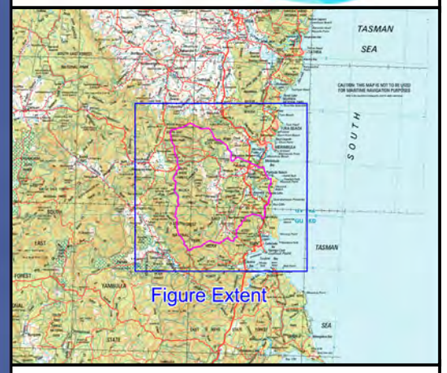

LEGEND

- Surveyed Structure
- Field Measured Structure

Notes:
Aerial photograph: Google Satellite 2019

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W E
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Scale 1:100,000 (at A3)

0 2.5 5.0
Km

Figure 6:
Additional Information Collected for Study

Prepared By:
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Sydney, NSW 2000

File Name: Additional Information Collected for Study.qgs

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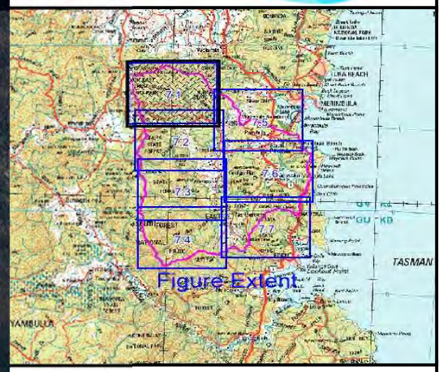

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

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W E
S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.1
XP-RAFTS Model Layout

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

File Name: Figure 7 XP-RAFTS Model Layout.qgs

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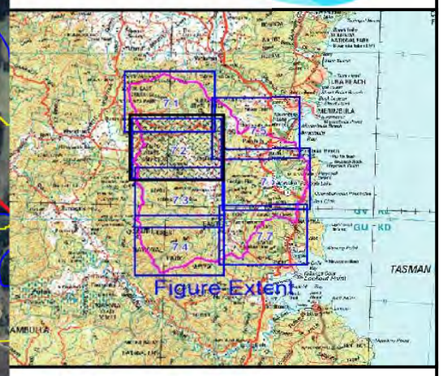

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.2
XP-RAFTS Model Layout

Prepared By:
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File Name: Figure 7 XP-RAFTS Model Layout.qgs

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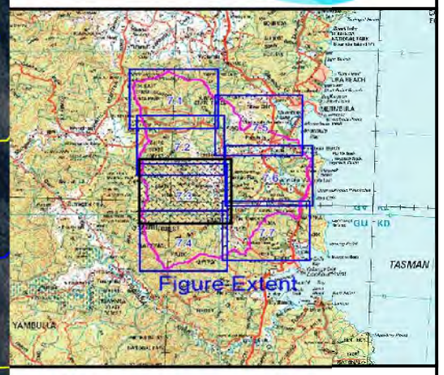

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

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W E
S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.3
XP-RAFTS Model Layout

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Sydney, NSW 2000

File Name: Figure 7 XP-RAFTS Model Layout.qgs

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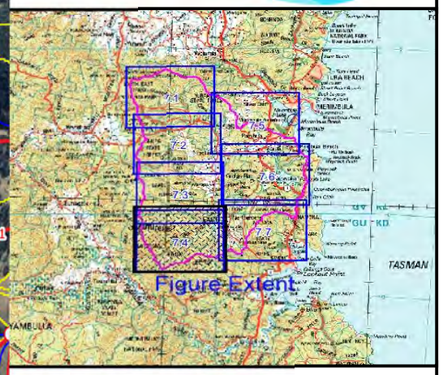

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.4
XP-RAFTS Model Layout

Prepared By:
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Sydney, NSW 2000

File Name: Figure 7 XP-RAFTS Model Layout.qgs

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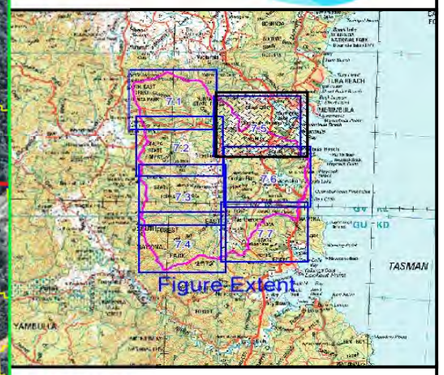

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

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S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.5
XP-RAFTS Model Layout

Prepared By:
Catchment Simulation Solutions
Suite 1C.01, 70 Phillip St
Sydney, NSW 2000

File Name: Figure 7 XP-RAFTS Model Layout.qgs

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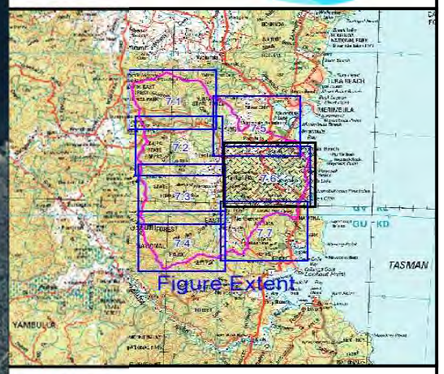

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

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Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.6
XP-RAFTS Model Layout

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File Name: Figure 7 XP-RAFTS Model Layout.qgs

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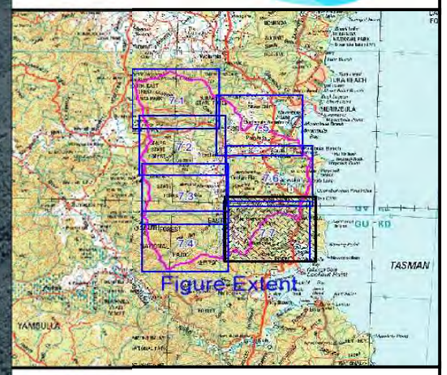

LEGEND

- Subcatchment Boundaries
- XP - RAFTS Node
- XP - RAFTS Link
- Streams
- Major Roads

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:32,000 (at A3)

0 0.75 1.5

Figure 7.7
XP-RAFTS Model Layout

Prepared By:
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File Name: Figure 7 XP-RAFTS Model Layout.qgs

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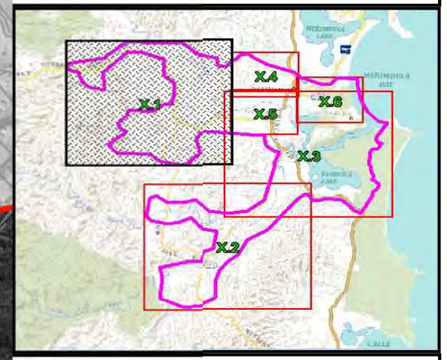


LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 150.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

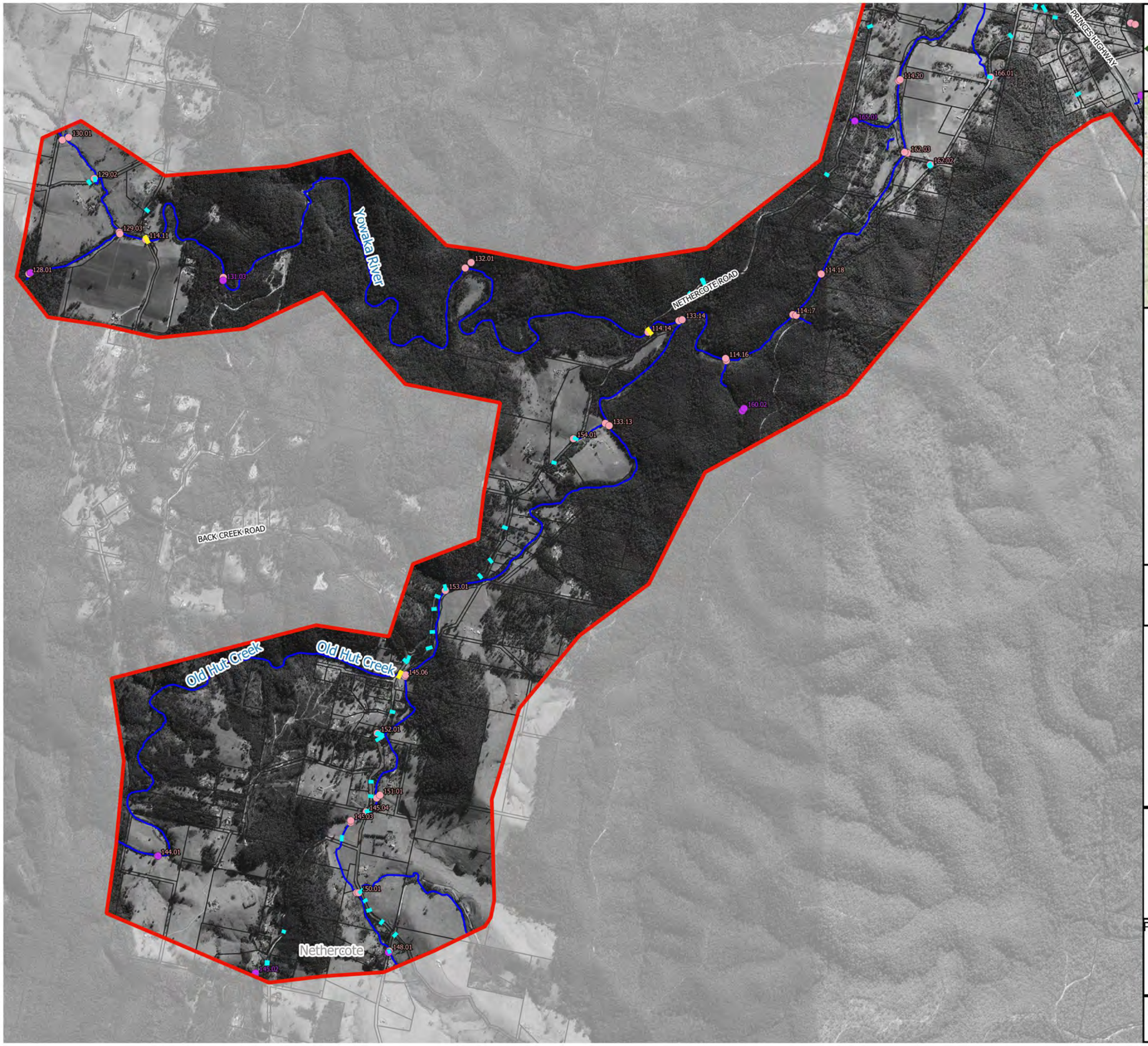
Scale 1:27,000 (at A3)

0 0.75 1.5

Figure 8.1
TUFLOW Model Layout

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

File Name:Figure 8 TUFLOW Model Layout



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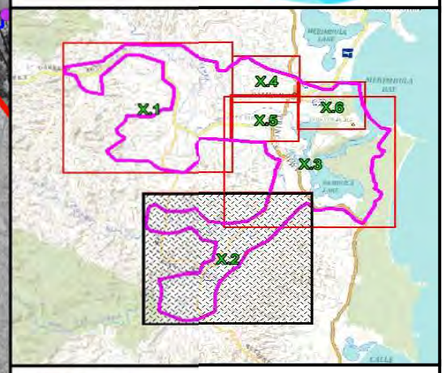

LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 150.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:27,000 (at A3)

0 0.75 1.5

Figure 8.2
TUFLOW Model Layout

Prepared By:

CatchmentSimulation Solutions
Suite 10.01, 70 Phillip St
Sydney, NSW 2000

File Name:Figure 8 TUFLOW Model Layout

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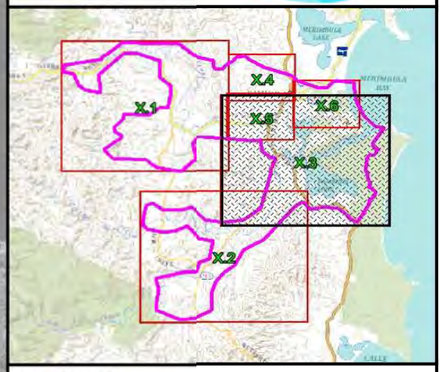


LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 160.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

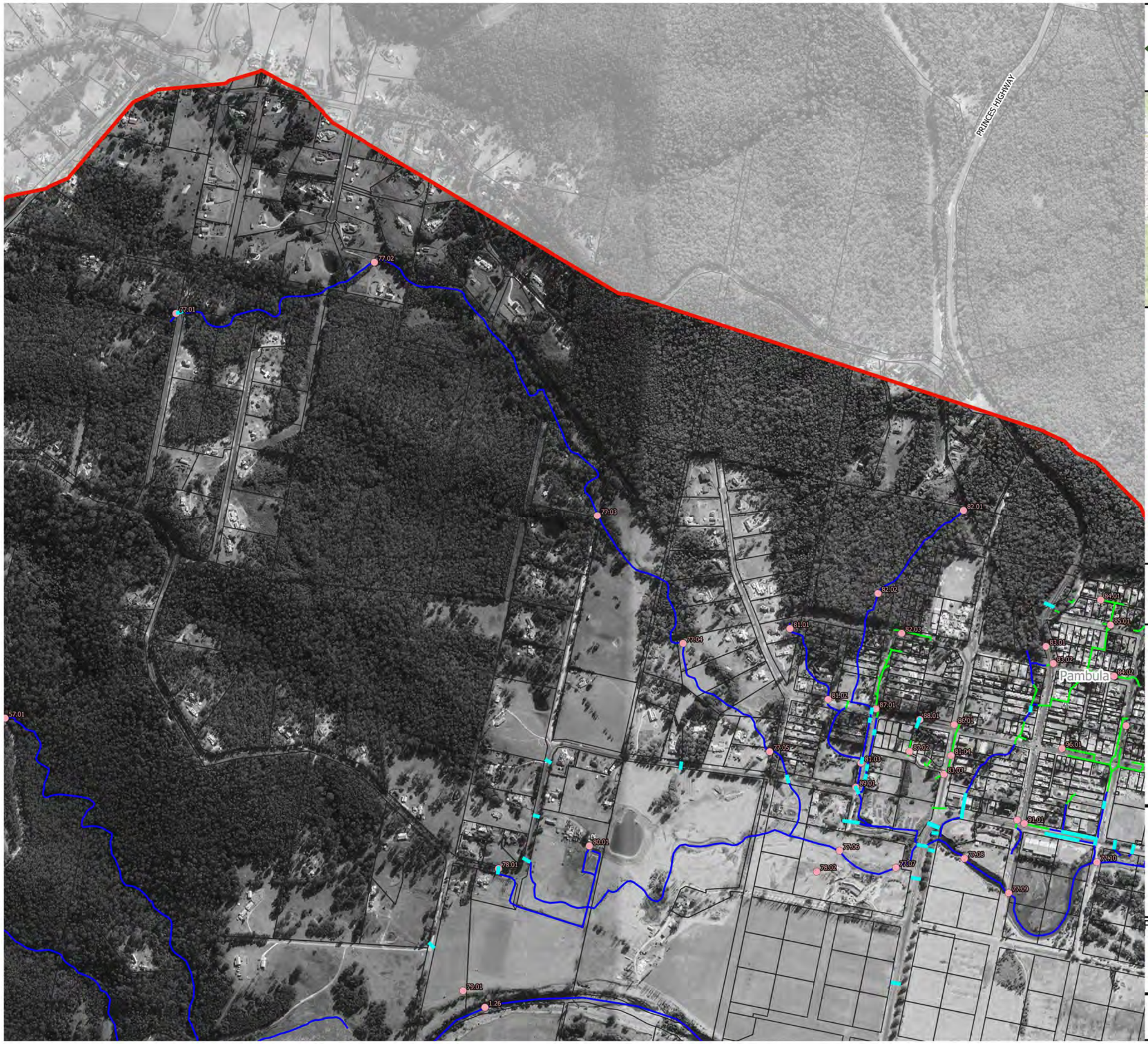
Scale 1:27,000 (at A3)

0 0.75 1.5

Figure 8.3
TUFLOW Model Layout

Prepared By:
CatchmentSimulation Solutions
Suite 10.01, 70 Phillip St
Sydney, NSW 2000

File Name:Figure 8 TUFLOW Model Layout



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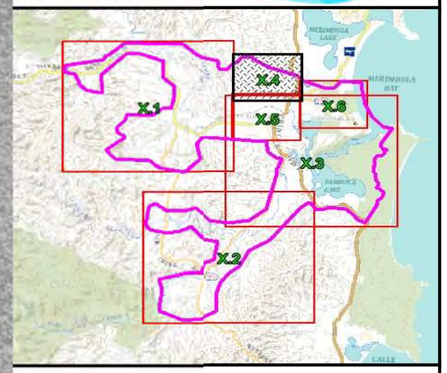

LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 150.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:10,000 (at A3)

0 0.3 0.6

Figure 8.4
TUFLOW Model Layout

Prepared By:
Catchment Simulation Solutions
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Sydney, NSW 2000

File Name:Figure 8 TUFLOW Model Layout

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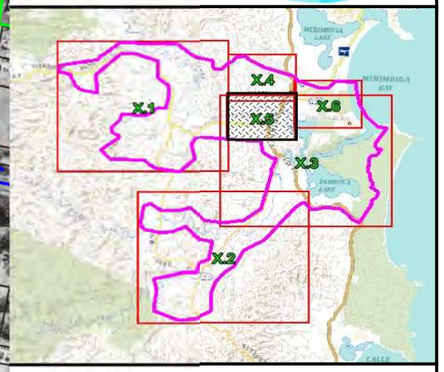

LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 180.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:10,000 (at A3)

0 0.3 0.6

Figure 8.5
TUFLOW Model Layout

Prepared By:

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

File Name:Figure 8 TUFLOW Model Layout

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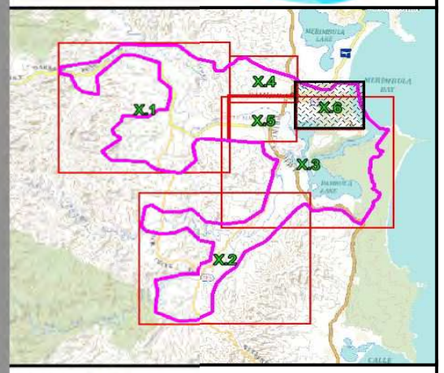

LEGEND

- TUFLOW Model Extent
- Gully Lines

Hydraulic Structures

- Culverts
- Bridges

Boundary Conditions

- Downstream Stage Boundary
- 100.1 Total Inflow Location
- 150.1 Local Inflow Location

Stormwater

- Stormwater Pipe

Notes:
Aerial photograph: Google Satellite 2019

N
W E
S

Scale 1:10,000 (at A3)

0 0.3 0.6

Figure 8.6
TUFLOW Model Layout

Prepared By:

Catchment Simulation Solutions
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Sydney, NSW 2000

File Name:Figure 8 TUFLOW Model Layout