Reconstruct Swale 3 and extend to Caalong Creek alongside STP

Reconstruct Swale 2 at shallower grade

Reconstruct Swale 1 at shallower grade

Reconstruct as culvert to swale 3

Widen Hoddle St

Pit & pipe upgrade

Construct new basin with outlet pipe to Caalong Creek

WEST STREET

BURRAWANG STREET

WALLANAGUNDA STREET

CAALONG STREET

NORTH STREET

HODDLE STREET

SOUTH STREET

2.1 x 0.6 2.1 x 0.6 0.6 0.45 (0.375 0.45 0.525 0.45 0.375 0.75 0.75 0.375 0.375 0.375 0.375 0.525 0.45 0.375 0.375 0.9 0.9 0.9 0.75 0.6 0.525 0.45 0.375

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- 0.375 Proposed Pipe diameter (m)
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY

N W E S

Scale 1: 2,500 @ A3

100 0 m

Figure 7-1
Robertson Village Overland Flow Study

Flood Mitigation Option Scenario A (Hoddle Street Opt 1 + New Basin)

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-1__Flood_Mitigation_ScenA_B

Reconstruct Swale 3 and extend to Caalong Creek alongside STP

Reconstruct Swale 2 at shallower grade

Reconstruct Swale 1 at shallower grade

Upgrade culvert crossing to swale 4 (rail)

Reconstruct as culvert to swale 3

Widen Hoddle St

Pit & pipe upgrade

WEST STREET

BURRAWANG STREET

WALLANAGUNDA STREET

CAALONG STREET

NORTH STREET

HODDLE STREET

SOUTH STREET

3 x 1.05
2.1 x 0.6
2.1 x 0.6
0.6
0.45
0.375
0.45
0.525
0
0.45
0.375
0.75
0.375
0.375
0.375
0.375
0.525
0.45
0.375
0.375

File Name: 110164_Fig_7-2__Flood_Mitigation_ScenB_B

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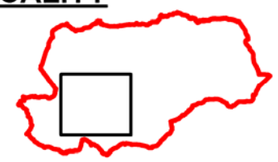
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- 0.375 Proposed Pipe diameter (m)

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 2,500 @ A3

100 0 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Figure 7-2
Robertson Village Overland Flow Study

Flood Mitigation Option Scenario B (Hoddle Street Opt 2 + Culvert Crossing)

Date : 21/09/2016 Issue : B

Upgrade road swales

Construct new diversion channel and flood protection mound.

Construct mound/wall alongside swale

Raise flood protection mound

Construct flood protection mound

Pit & pipe upgrade

Construct new outlet pipe from ponding area

Construct new swale and pipe crossing

HIGH STREET
DEVONSHIRE ROAD
CAALONG CREEK
MAY STREET
CAALONG STREET
SHACKLETON WAY
WEST STREET
BURRAWANG ST
NORTH STREET
WALLAGUNDA STREET
YARRANGA STREET
MERYLA STREET
MAIN STREET
CAMP STREET
HODDLE STREET
SOUTH STREET
CRESCENT
ARMSTRONG
CHARLOTTE STREET
BELMORE FALLS ROAD
MISSINGHAM PARK
EAST STREET

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- 0.375 Proposed Pipe diameter (m)

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

N W E S

Scale 1: 9,000 @ A3

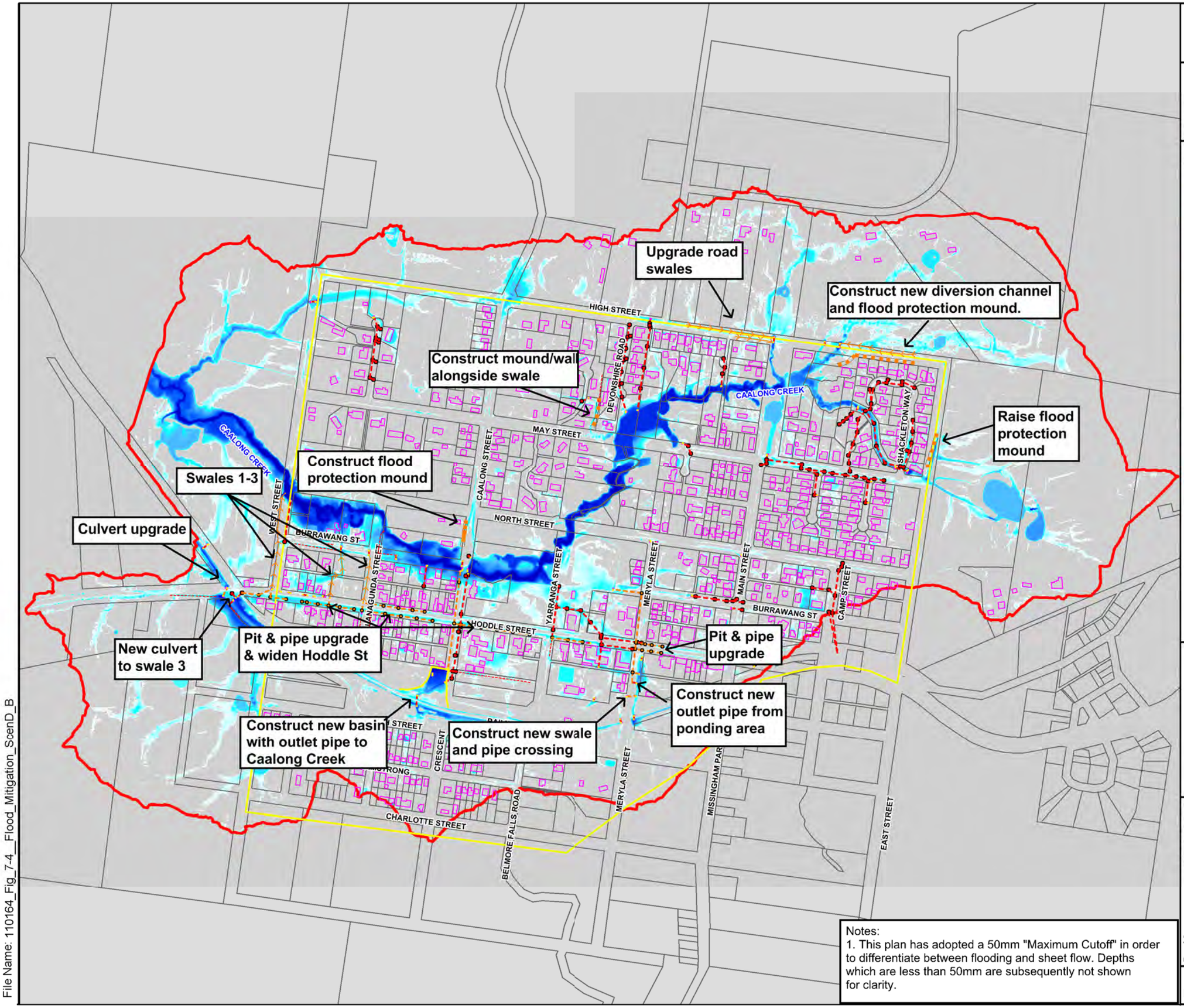
200 0 200 m

Figure 7-3
Robertson Village Overland Flow Study

Flood Mitigation Option Scenario C (Northern & Southern Upgrades)

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-3__Flood_Mitigation_ScenC_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- 0.375 Proposed Pipe diameter (m)
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Figure 7-4
Robertson Village Overland Flow Study

Flood Mitigation Option Scenario D (Combined Upgrades)

Date : 21/09/2016 Issue : B

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

File Name: 110164_Fig_7-4__Flood_Mitigation_ScenD_B

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

WEST STREET
BURRAWANG STREET
CAALONG STREET
WALLANAGUNDA STREET
HODDLE STREET
RAILWAY
SASSAFRAS WAY

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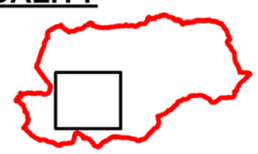
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-5
Robertson Village Overland Flow Study

Scenario A
(Hoddle St Opt 1 + New Basin)
Flood Depth & Velocities
1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-5__ScenA_1% AEP_Dep_Close_Up_B

WEST STREET

BURRAWANG STREET

WALLANAGUNDA STREET

HODDLE STREET

CAALONG STREET

RAILWAY

SASSAFRAS WAY

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

Existing Stormwater

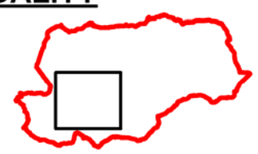
Proposed Swale

Proposed Stormwater

Proposed Mound

Proposed Detention Basin

LOCALITY



N W E S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-6
Robertson Village Overland Flow Study

Scenario A
(Hoddle St Opt 1 + New Basin)
Flood Difference
1% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-6__ScenA_1% AEP_Flood_Diff_Close_Up_C

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

WEST STREET
BURRAWANG STREET
WALLANAGUNDA STREET
CAALONG STREET
HODDLE STREET
RAILWAY
SASSAFRAS WAY

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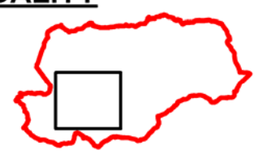
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-7
Robertson Village Overland Flow Study

Scenario A
Hoddle St Opt 1 + New Basin
Flood Depth & Velocities
20% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-7__ScenA_20% AEP_Dep_Close_Up_B

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

Existing Stormwater

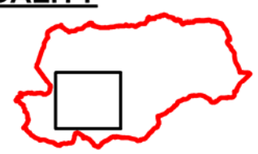
Proposed Swale

Proposed Stormwater

Proposed Mound

Proposed Detention Basin

LOCALITY



N W E S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-8
Robertson Village Overland Flow Study

Scenario A
(Hoddle St Opt 1 + New Basin)
Flood Difference
20% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-8__ScenA_20% AEP_Flood_Diff_Close_Up_C

WEST STREET

NORTH STREET

BURRAWANG STREET

WALLANAGUNDA STREET

HODDLE STREET

RAILWAY

SASSAFRAS WAY

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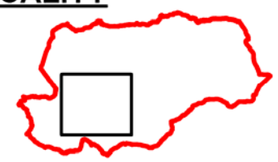
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 2,000 @ A3

50 0 50 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Figure 7-9
Robertson Village Overland Flow Study

Scenario B
(Hoddle St Opt 2 + Culvert Crossing)
Flood Depth & Velocities
1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-9__ScenB_1% AEP_Flood_Depth_B

WEST STREET

NORTH STREET

BURRAWANG STREET

WALLANAGUNDA STREET

HODDLE STREET

RAILWAY

SASSAFRAS WAY

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

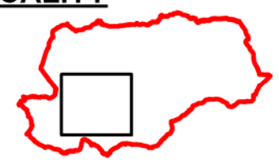
Existing Stormwater

Proposed Swale

Proposed Stormwater

Proposed Mound

LOCALITY



N

W E

S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-10
Robertson Village Overland Flow Study

Scenario B (Hoddle St Opt 2 + Culvert Crossing) Flood Difference 1% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-10__ScenB_1% AEP_Flood_Diff_C

WEST STREET

NORTH STREET

BURRAWANG STREET

WALLANAGUNDA STREET

HODDLE STREET

RAILWAY

SASSAFRAS WAY

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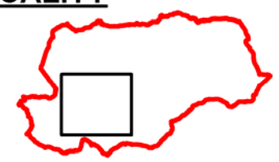
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N

W E

S

Scale 1: 2,000 @ A3

50 0 50 m

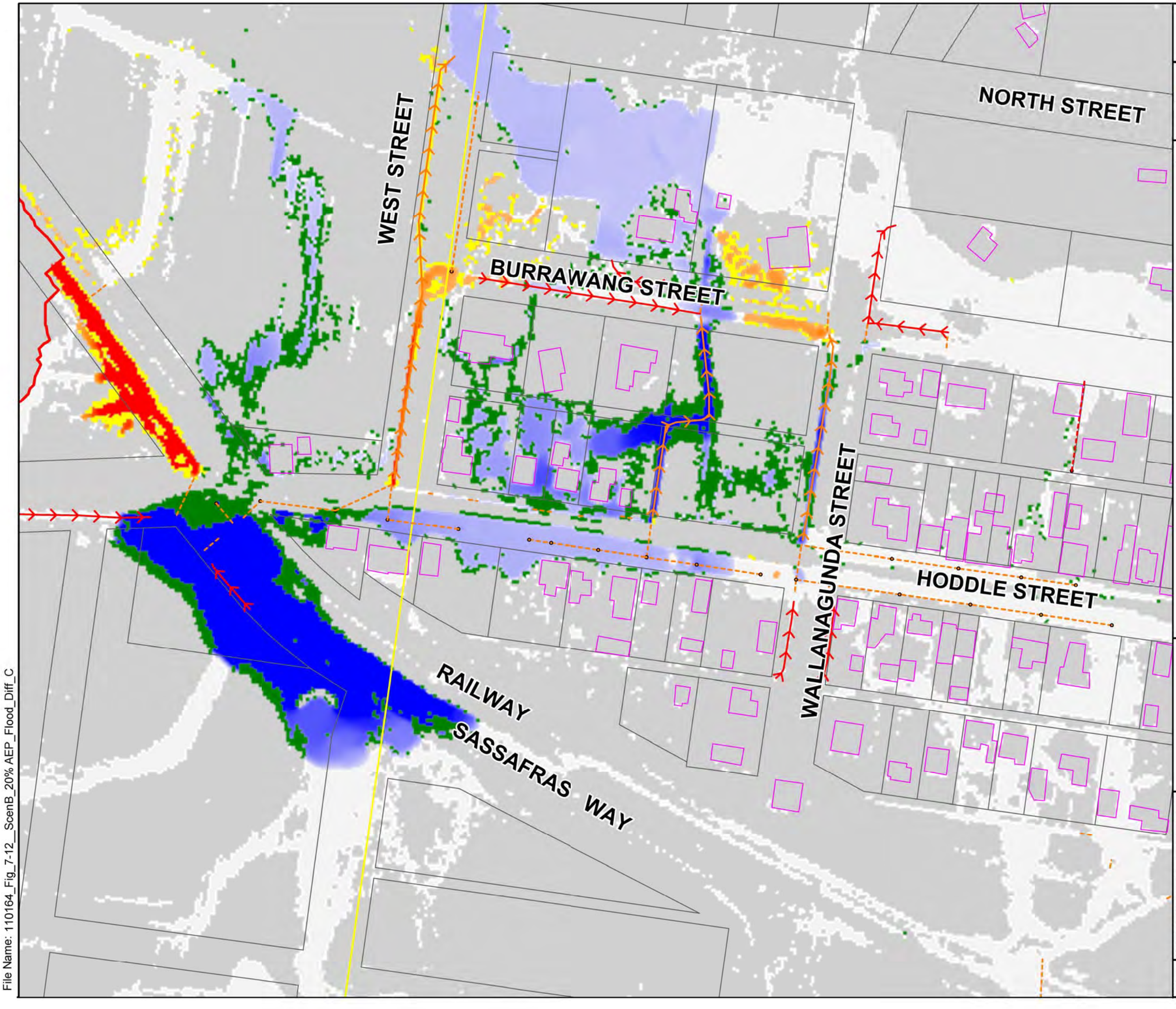
Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Figure 7-11
Robertson Village Overland Flow Study

Scenario B
(Hoddle St Opt 2 + Culvert Crossing)
Flood Depth & Velocities
20% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-11__ScenB_20% AEP_Flood_Depth_B



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F 02 4721 7638 E jwp@jwprince.com.au

LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

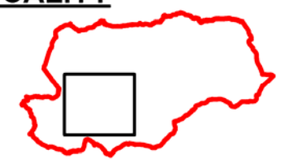
Existing Stormwater

Proposed Swale

Proposed Stormwater

Proposed Mound

LOCALITY



N W E S

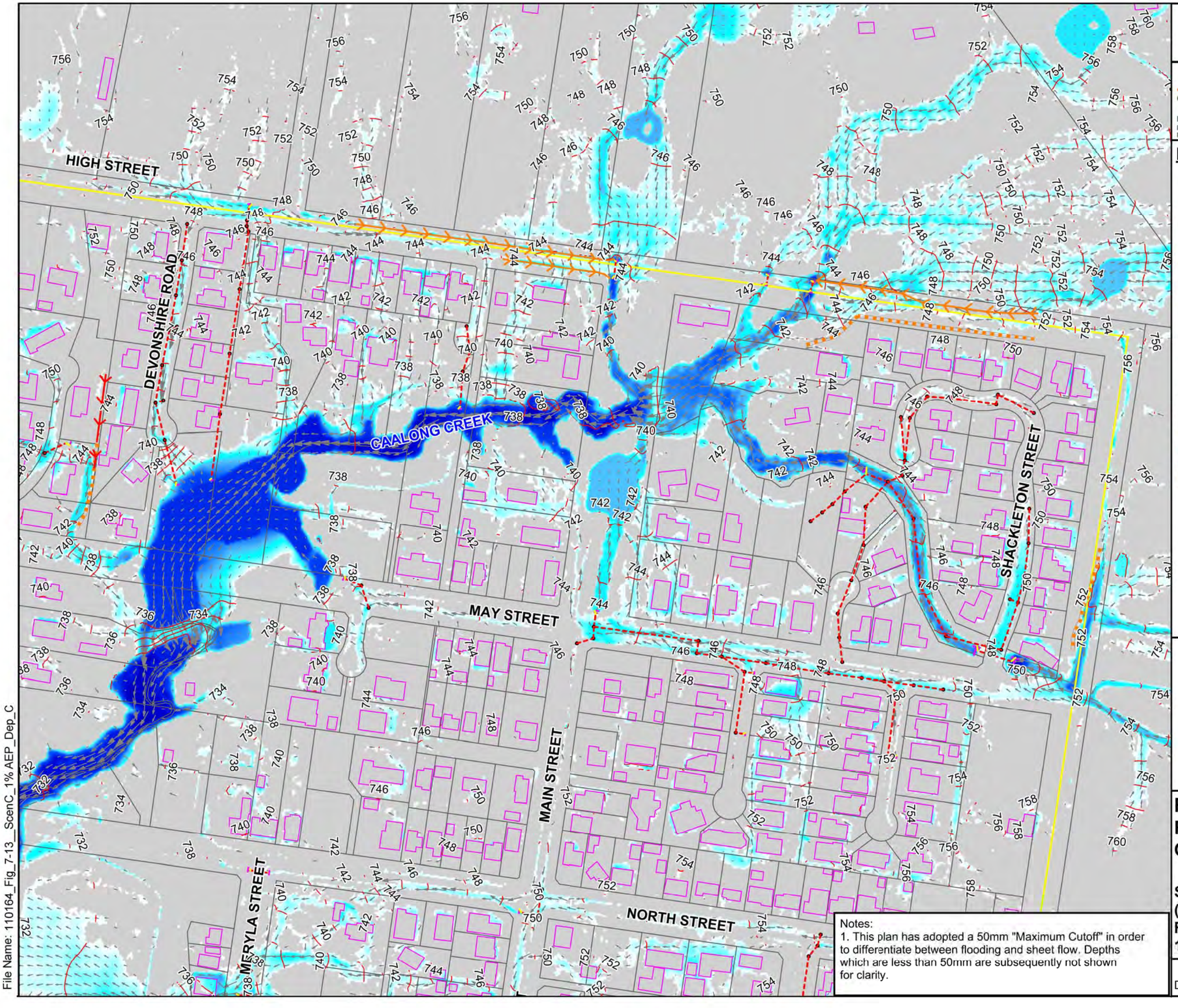
Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-12
Robertson Village Overland Flow Study
Scenario B
(Hoddle St Opt 2 + Culvert Crossing)
Flood Difference
20% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-12__ScenB_20% AEP_Flood_Diff_C



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F 02 4721 7638 E jwp@jwprince.com.au

LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY

N W E S

Scale 1: 3,000 @ A3

100 0 m

Figure 7-13
Robertson Village Overland Flow Study

Scenario C (Northern) Flood Depth & Velocities 1% AEP

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-13__ScenC_1% AEP_Dep_C

HIGH STREET
DEVONSHIRE ROAD
CAALONG CREEK
SHACKLETON STREET
MAY STREET
MAIN STREET
NORTH STREET
MERYLA STREET

WINGECARRIBEE SHIRE COUNCIL

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

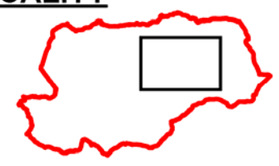
Existing Stormwater

Proposed Swale

Proposed Stormwater

Proposed Mound

LOCALITY



N
W E
S

Scale 1: 3,000 @ A3

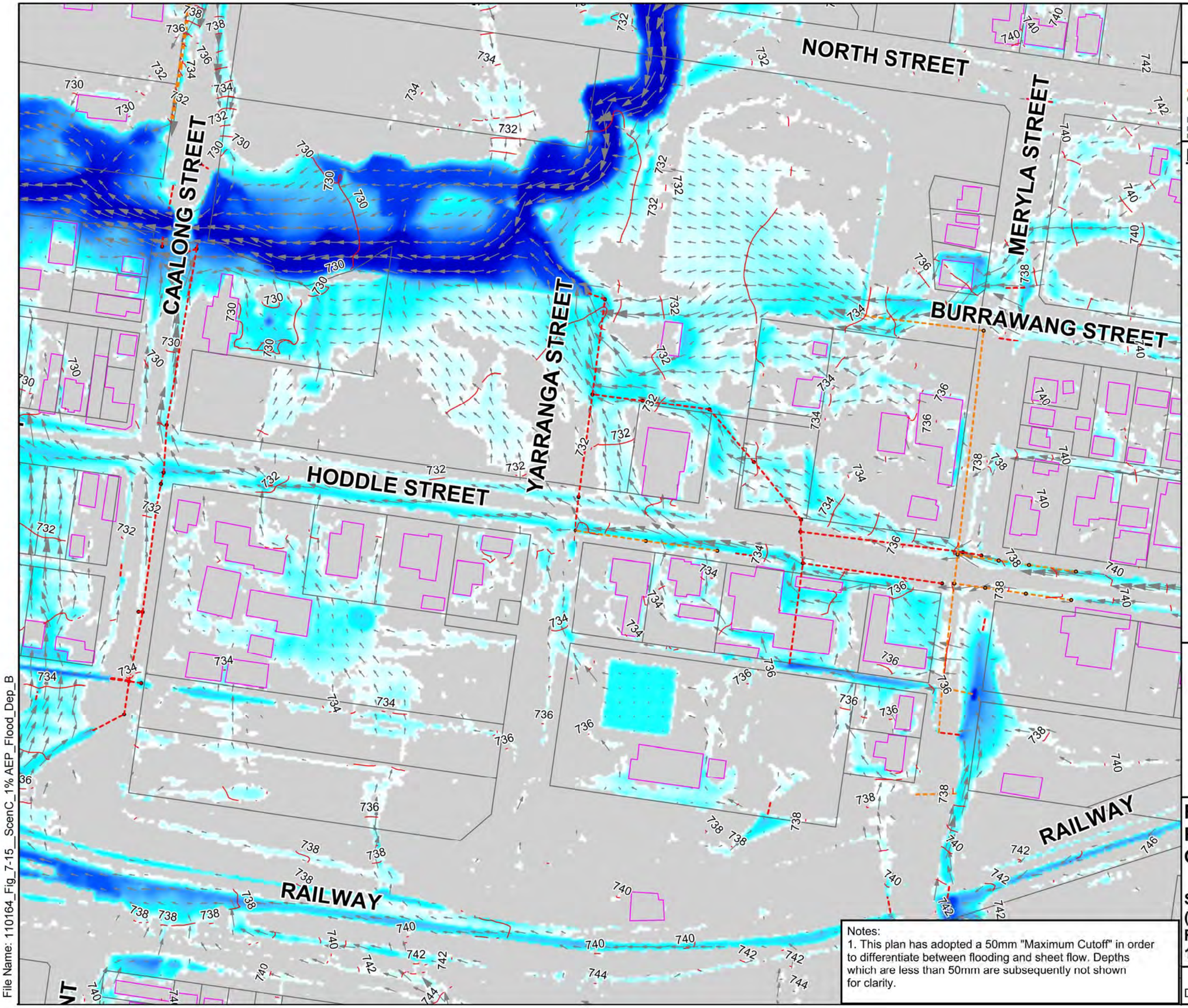
100 0 m

Figure 7-14
Robertson Village Overland Flow Study

Scenario C
(Northern)
Flood Difference
1% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-14__ScenC_1% AEP_Flood_Diff_C



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY

N
W E
S

Scale 1: 2,000 @ A3

50 0 50 m

Figure 7-15
Robertson Village Overland Flow Study

Scenario C (Southern) Flood Depth & Velocities 1% AEP

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-15__ScenC_1% AEP_Flood_Dep_B

NORTH STREET

CAALONG STREET

MERYLA STREET

BURRAWANG STREET

YARRANGA STREET

HODDLE STREET

RAILWAY

RAILWAY

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

AREAS NOW FLOOD FREE FOR MODELLED EVENT

AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT

Robertson Village Study Area

TUFLOW Boundary

Existing Road Swale

Existing Stormwater

Proposed Swale

Proposed Stormwater

Proposed Mound

LOCALITY

N

W E

S

Scale 1: 2,000 @ A3

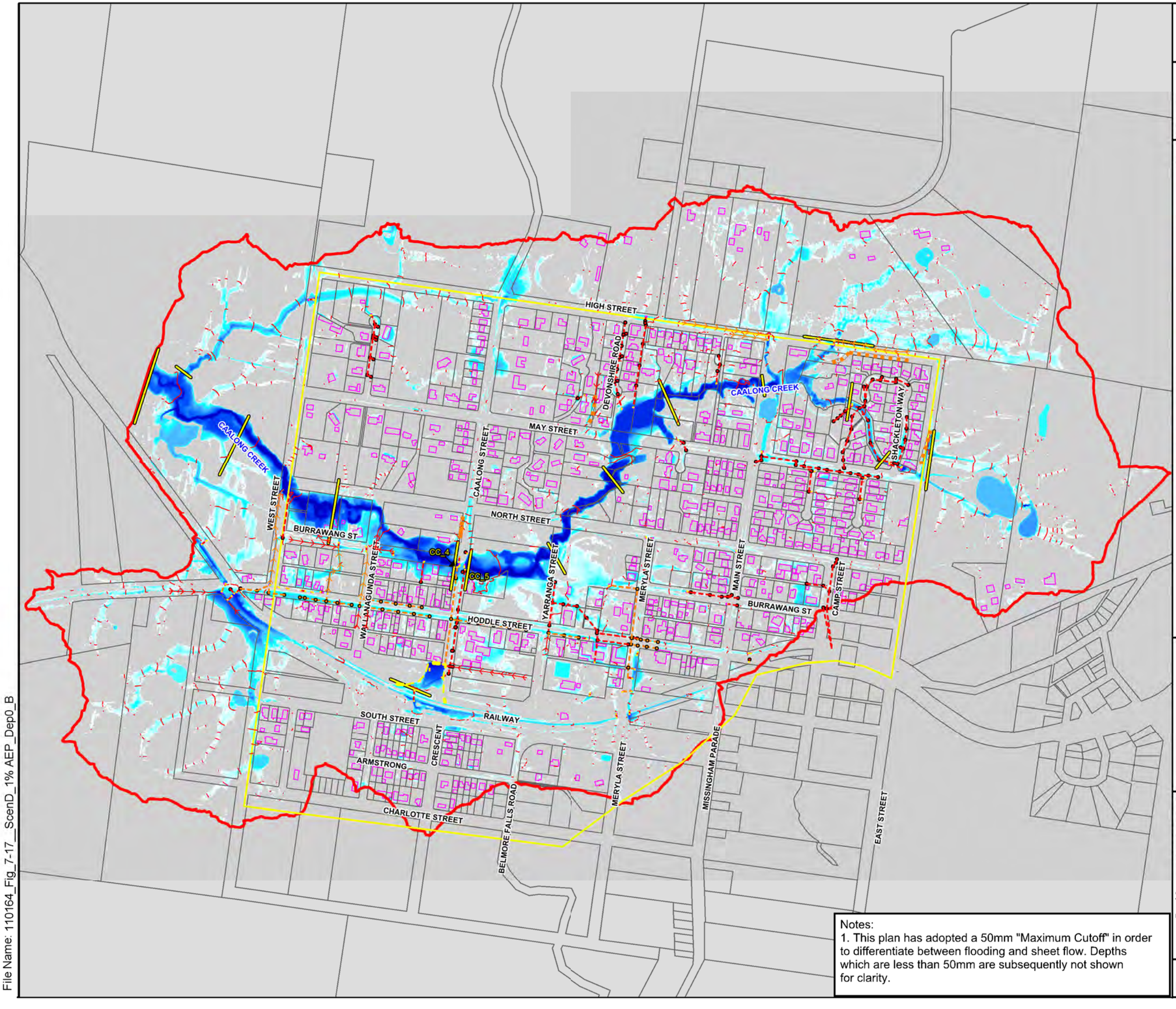
50 0 50 m

Figure 7-16
Robertson Village Overland Flow Study

Scenario C
(Southern)
Flood Difference
1% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-16__ScenC_1% AEP_Flood_Diff_C



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

N W E S

Scale 1: 9,000 @ A3

200 0 200 m

Figure 7-17
Robertson Village Overland Flow Study

Scenario D
(Combined Upgrades)
Flood Depth
1% AEP

Date : 21/09/2016 Issue : B

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

File Name: 110164_Fig_7-17__ScenD_1% AEP_Dep0_B

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

HIGH STREET
MAY STREET
CAALONG STREET
NORTH STREET
WEST STREET
BURRAWANG STREET
CAALONG CREEK

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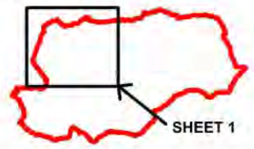
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 3,500 @ A3

100 0 m

Figure 7-18
Robertson Village Overland Flow Study

Scenario D (Sheet 1 of 4)
(Combined Upgrades)
Flood Depth & Velocities
1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-18__ScenD_1% AEP_Dep1_B

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

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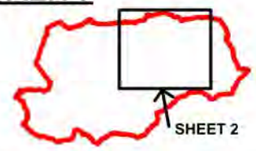
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 3,500 @ A3

100 0 m

Figure 7-19
Robertson Village Overland Flow Study

Scenario D (Sheet 2 of 4)
(Combined Upgrades)
Flood Depth & Velocities
1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-19__ScenD_1% AEP_Dep2_B

WEST STREET
BURRAWANG STREET
NORTH STREET
WALLANAGUNDA STREET
HODDLE STREET
HODDLE STREET
YARRANGA STREET
RAILWAY
SASSAFRAS WAY
SOUTH STREET
RAILWAY
CRESCENT
ARMSTRONG
CHARLOTTE STREET

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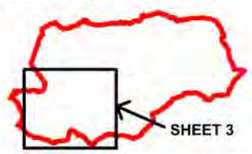
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N
W E
S

Scale 1: 3,500 @ A3

100 0 m

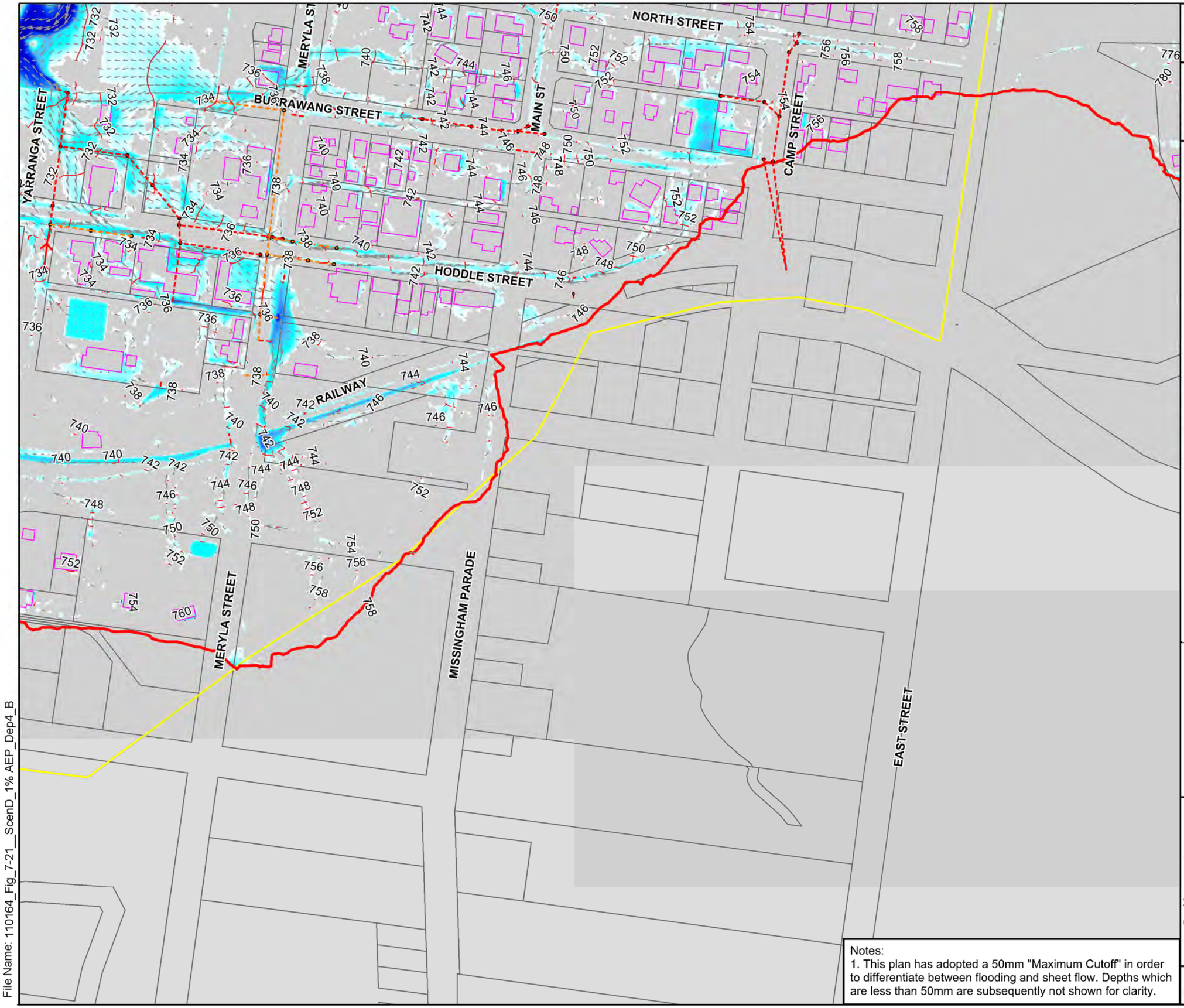
Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Figure 7-20
Robertson Village Overland Flow Study

Scenario D (Sheet 3 of 4)
(Combined Upgrades)
Flood Depth & Velocities
1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-20__ScenD_1% AEP_Dep3_B



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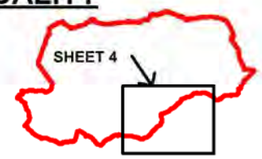
LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Velocity Vectors
- 2m Flood Height Contour
- Proposed Detention Basin

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

LOCALITY



N W E S

Scale 1: 3,500 @ A3

100 0 m

Figure 7-21
Robertson Village Overland Flow Study

Scenario D (Sheet 4 of 4)
(Combined Upgrades)
Flood Depth & Velocities
1% AEP

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-21__ScenD_1% AEP_Dep4_B

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LEGEND

FLOOD LEVEL INCREASE (m)

-0.2+	-0.02 to 0.02
-0.18	0.02
-0.16	0.04
-0.14	0.06
-0.12	0.08
-0.10	0.10
-0.08	0.12
-0.06	0.14
-0.04	0.16
-0.02	0.18+

- **AREAS NOW FLOOD FREE FOR MODELLED EVENT**
- **AREAS NOW FLOOD AFFECTED FOR MODELLED EVENT**
- Robertson Village Study Area
- TUFLOW Boundary
- Existing Road Swale
- Existing Stormwater
- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Proposed Detention Basin

N W E S

Scale 1: 9,000 @ A3

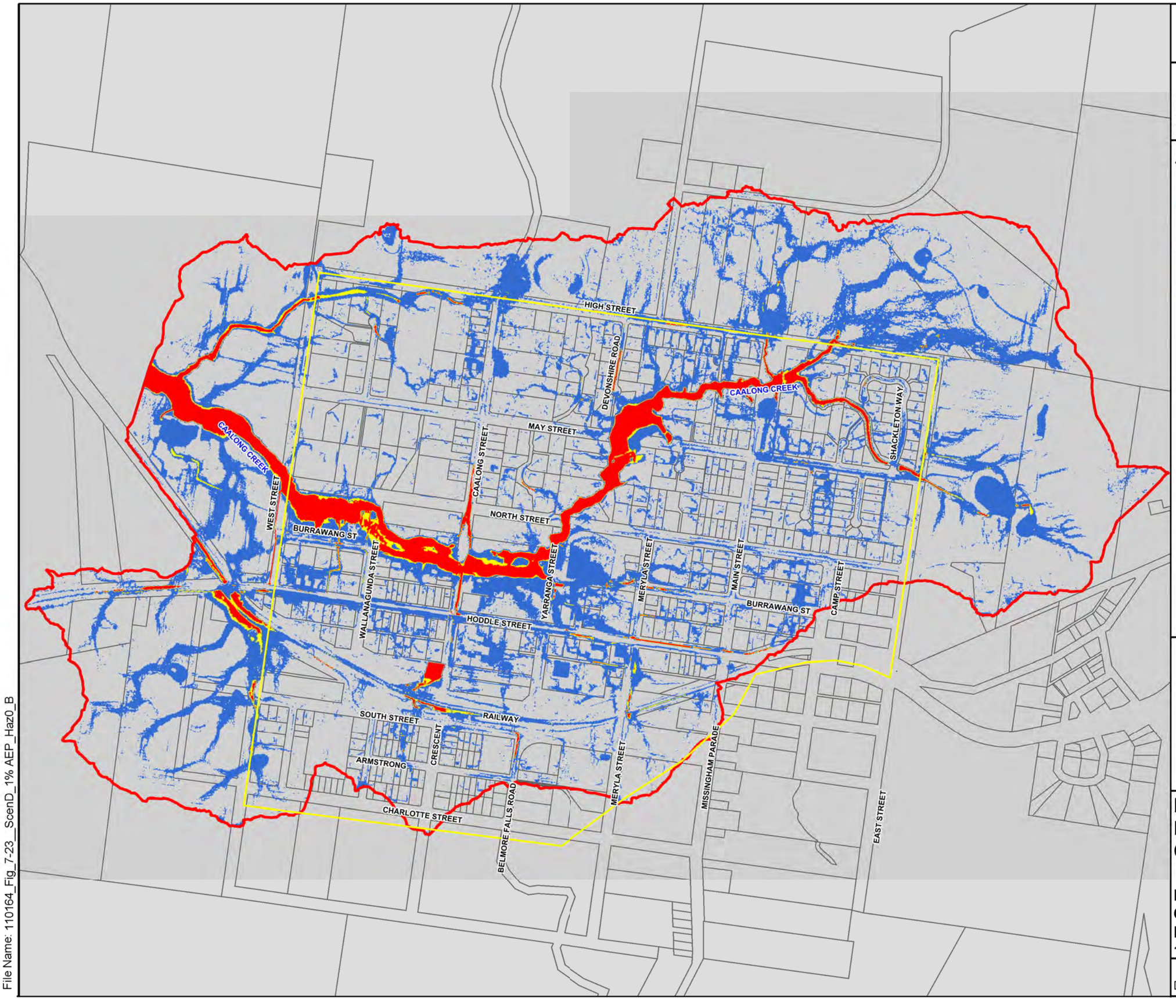
200 0 200 m

Figure 7-22
Robertson Village Overland Flow Study

Scenario D
(Combined Upgrades)
Flood Difference
1% AEP

Date : 21/09/2016 Issue : C

File Name: 110164_Fig_7-22__ScenD_1% AEP_Flood_Diff_C



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

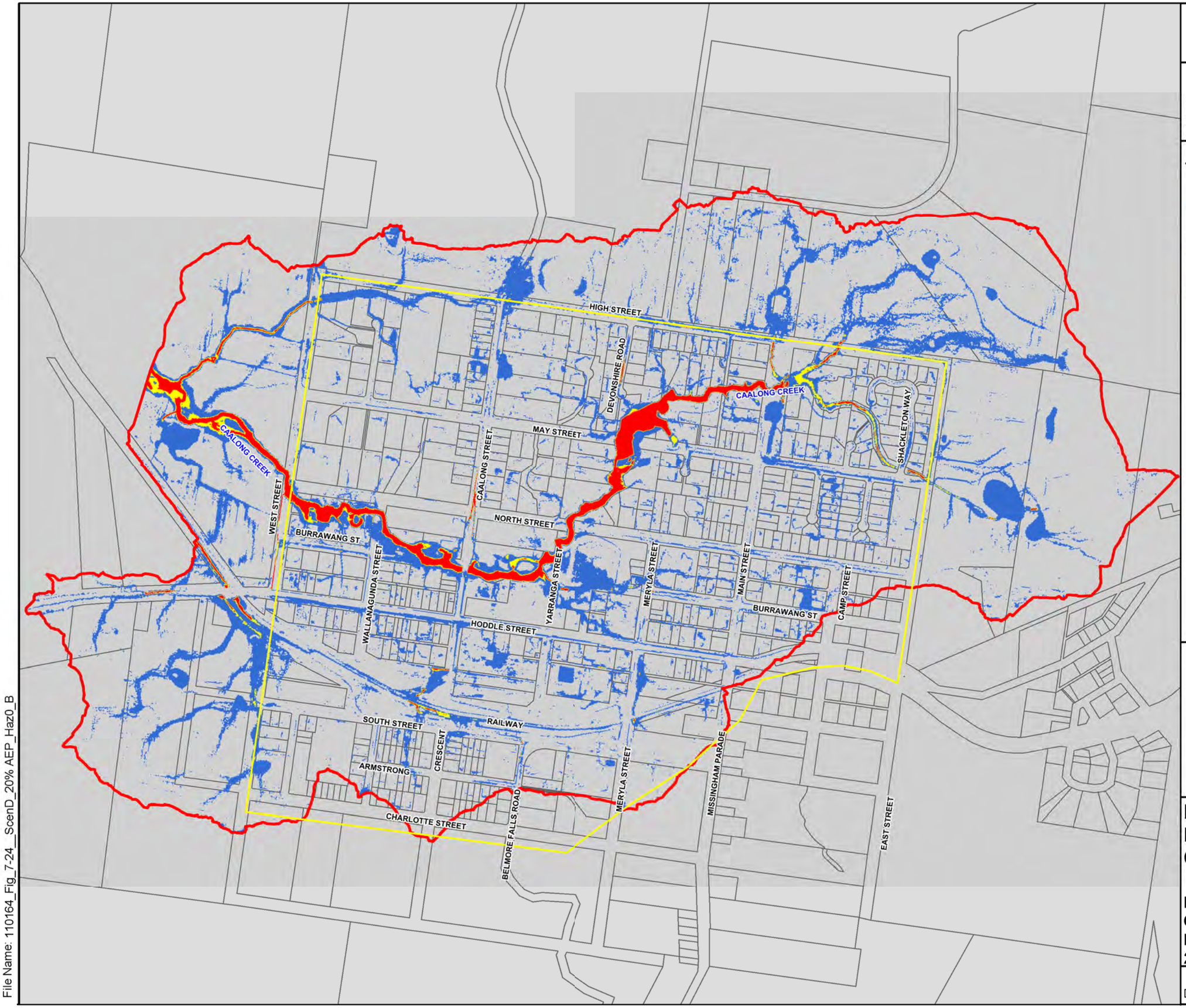
200 0 200 m

Figure 7-23
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-23__ScenD_1% AEP_Haz0_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Figure 7-24
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 20% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-24__ScenD_20% AEP_Haz0_B

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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

HIGH STREET
DEVONSHIRE ROAD
CAALONG CREEK
SHACKLETON WAY
MAY STREET
CAALONG STREET
WEST STREET
NORTH STREET
BURRAWANG ST
WALLANAGUNDA STREET
YARRANGA STREET
MERYLA STREET
MAIN STREET
CAMP STREET
HODDLE STREET
SOUTH STREET
RAILWAY
CRESCENT
ARMSTRONG
CHARLOTTE STREET
BELMORE FALLS ROAD
MISSINGHAM PARADE
EAST STREET

N
W E
S

Scale 1: 9,000 @ A3

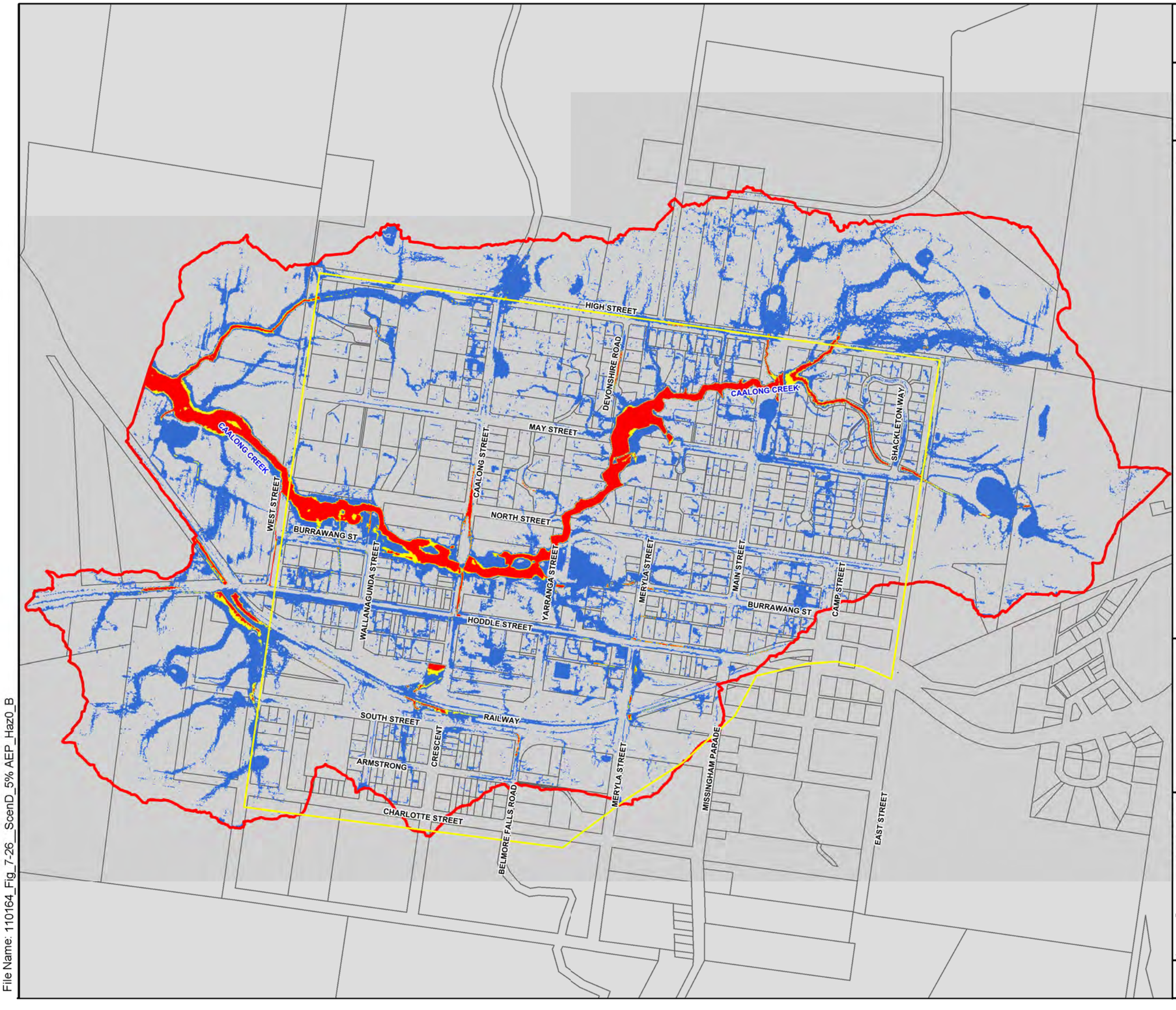
200 0 200 m

Figure 7-25
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 10% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-25__ScenD_10% AEP_Haz0_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

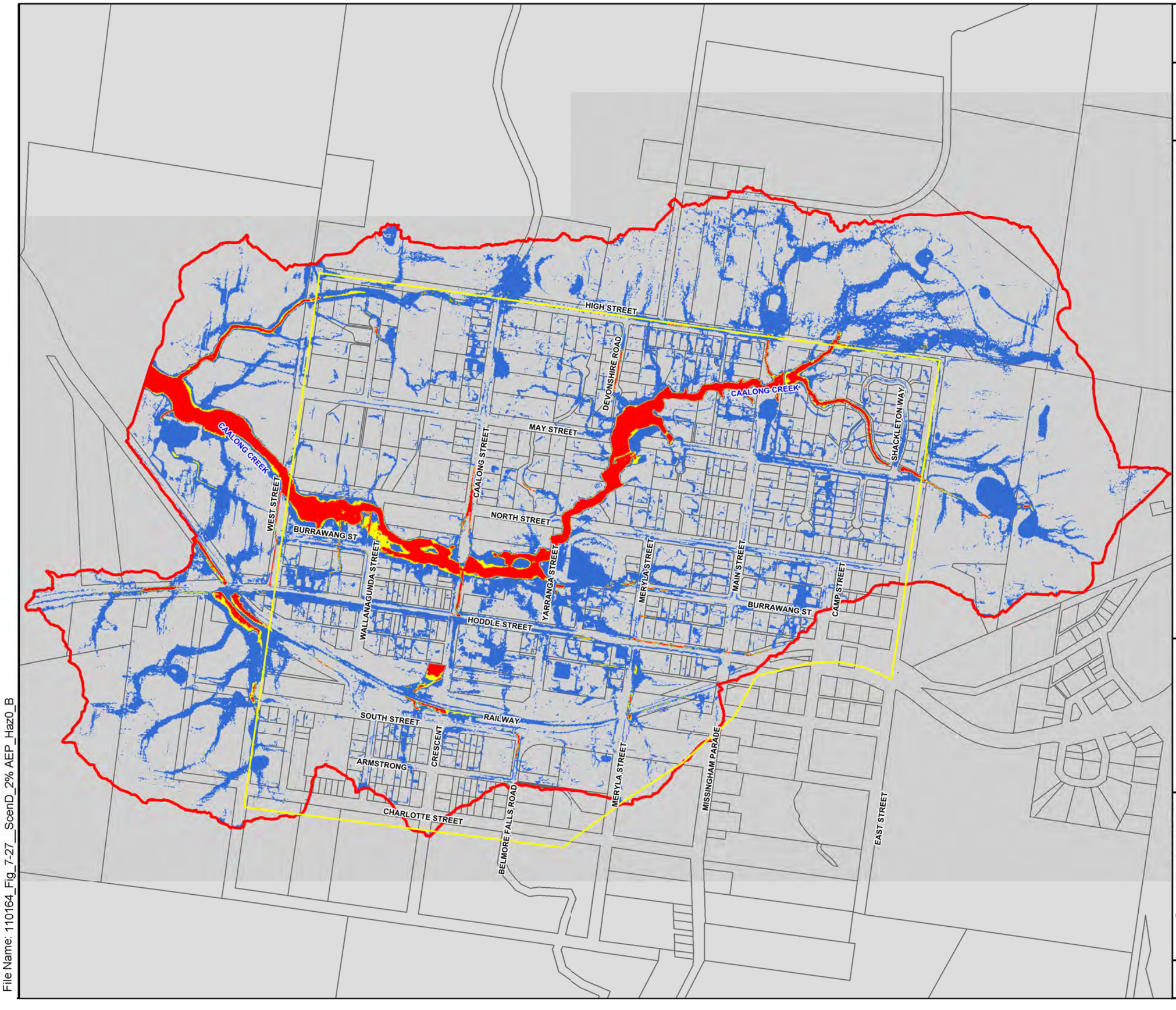
200 0 200 m

Figure 7-26
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 5% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-26__ScenD_5% AEP_Haz0_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

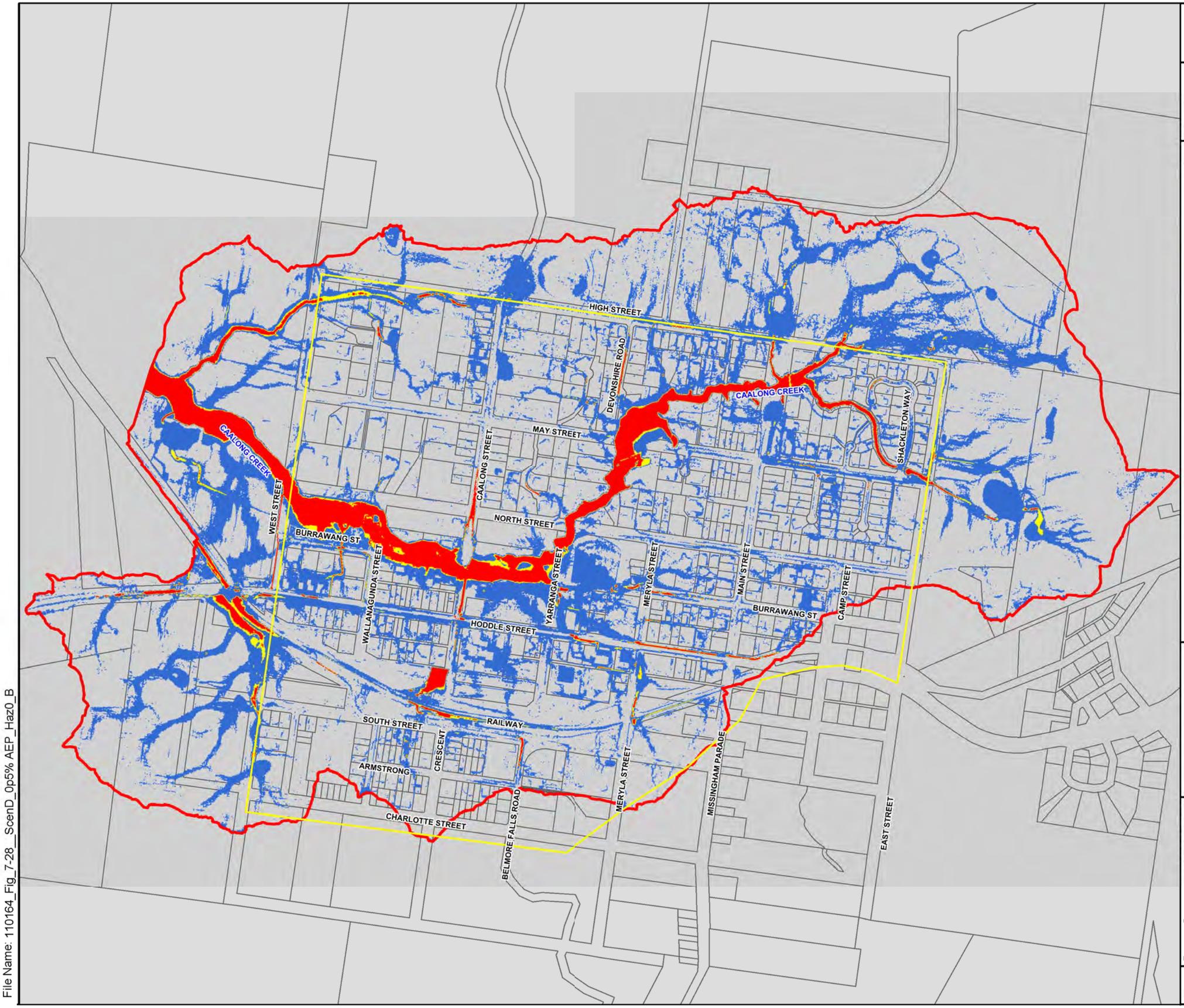
200 0 200 m

Figure 7-27
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 2% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-27__ScenD_2% AEP_Haz0_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

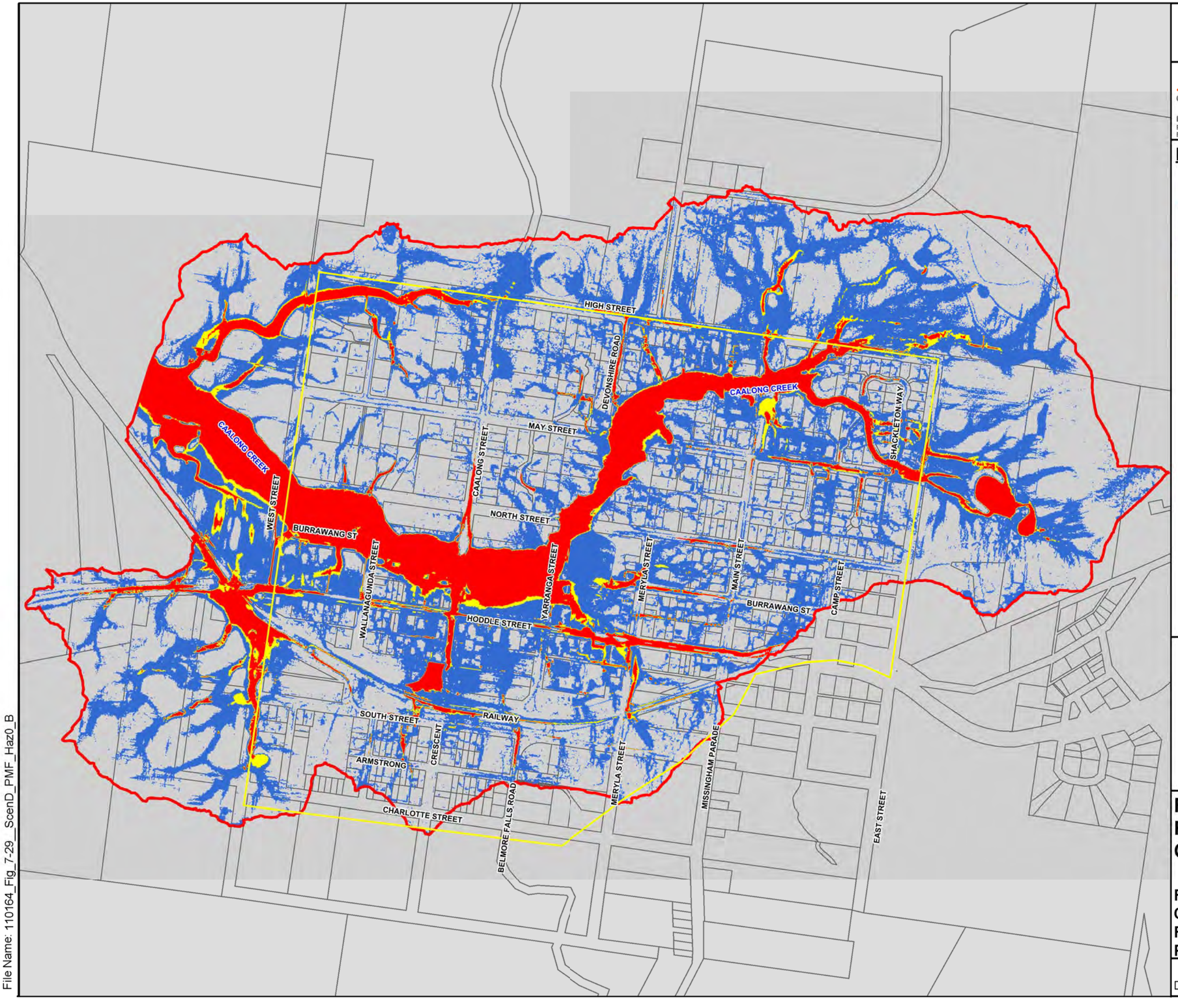
200 0 200 m

Figure 7-28
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map 0.5% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-28__ScenD_0p5%_AEP_Haz0_B



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F 02 4721 7638 E jwp@jwprince.com.au

LEGEND

- Robertson Village Study Area
- TUFLOW Boundary

HAZARD CATEGORISATION

- Low Hazard
- Transition Hazard
- High Hazard

N
W E
S

Scale 1: 9,000 @ A3

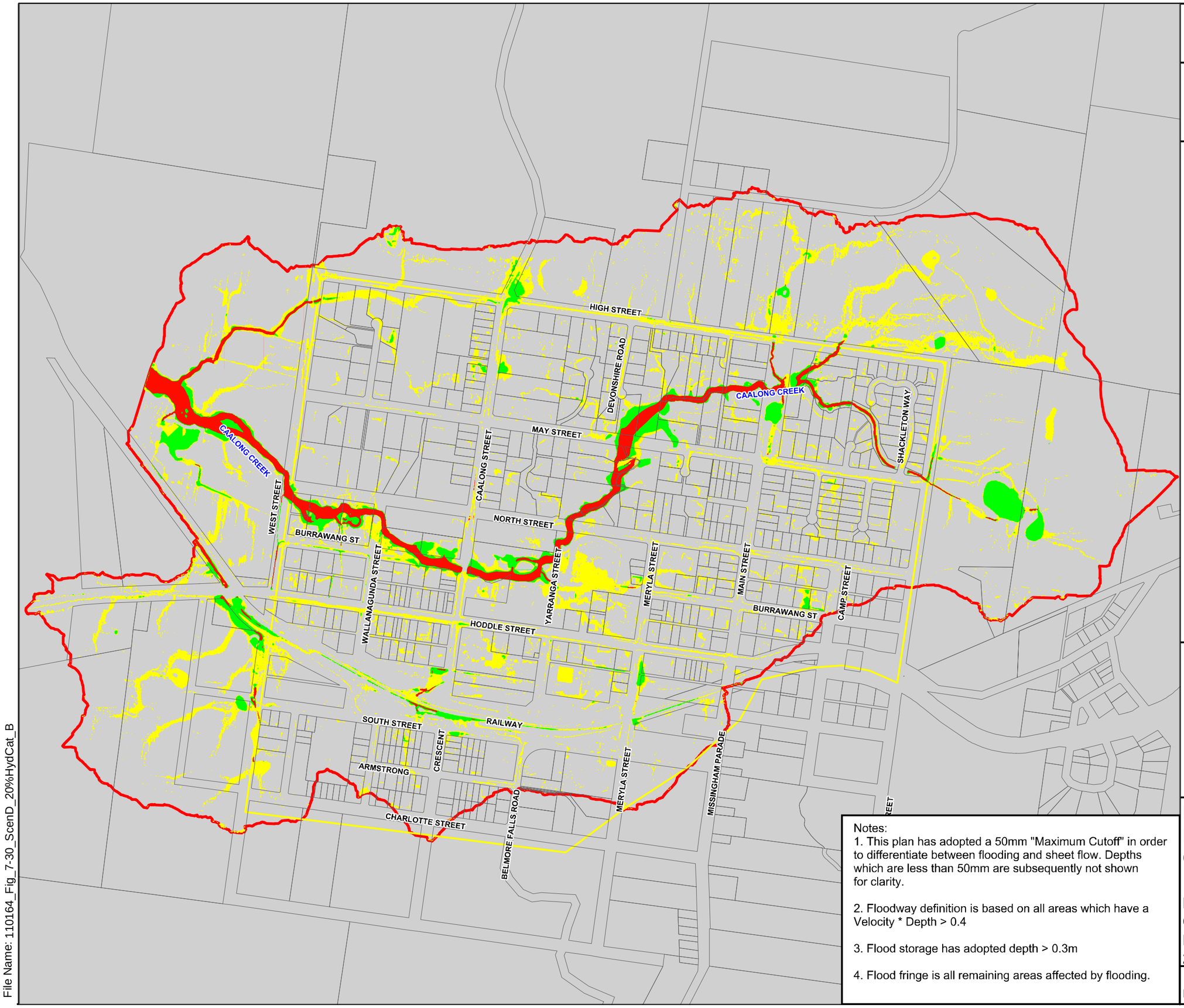
200 0 200 m

Figure 7-29
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Flood Hazard Map PMF Event

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-29__ScenD_PMF_Haz0_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

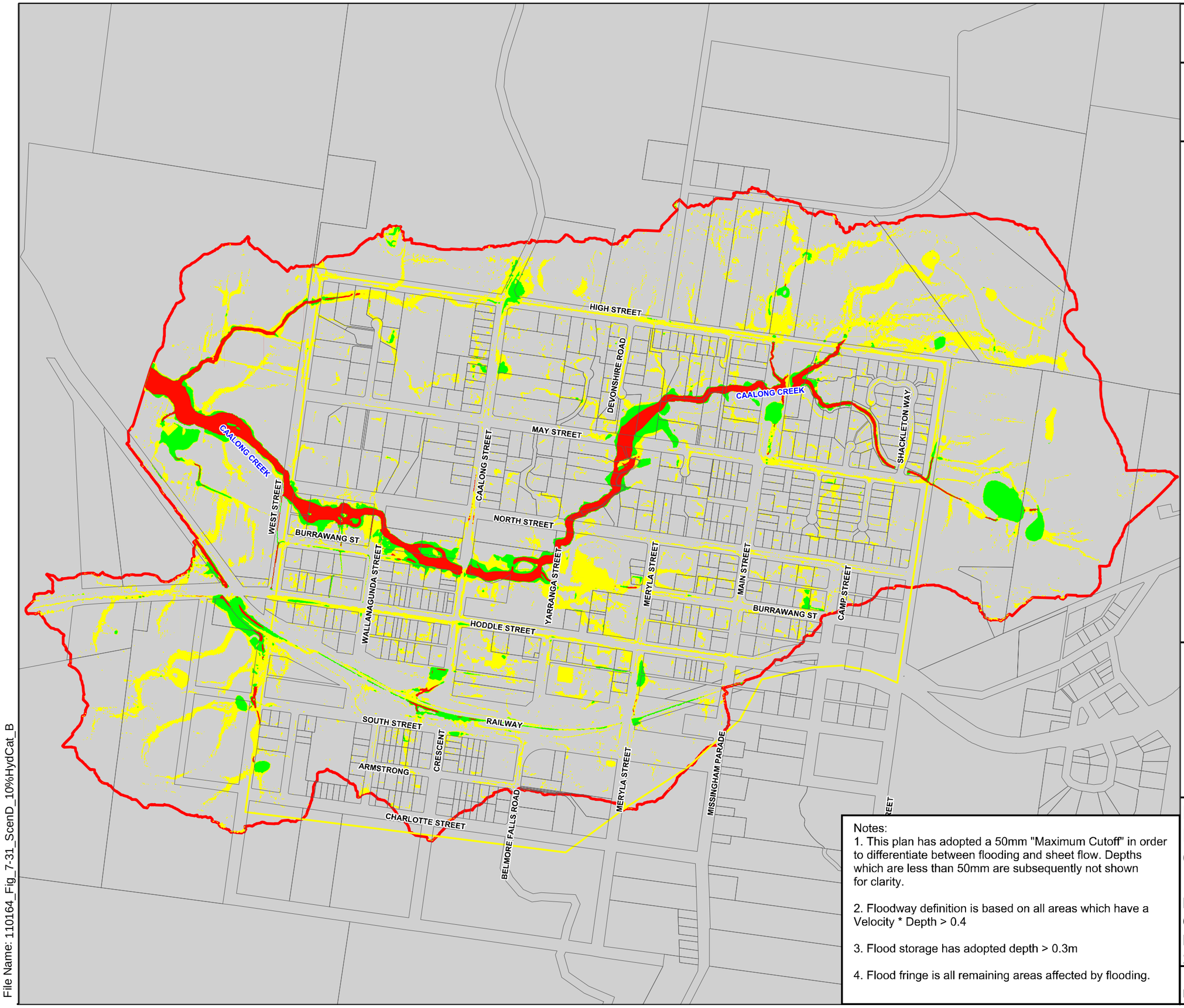
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-30
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades)
Hydraulic Category
20% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-30_ScenD_20%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N W E S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

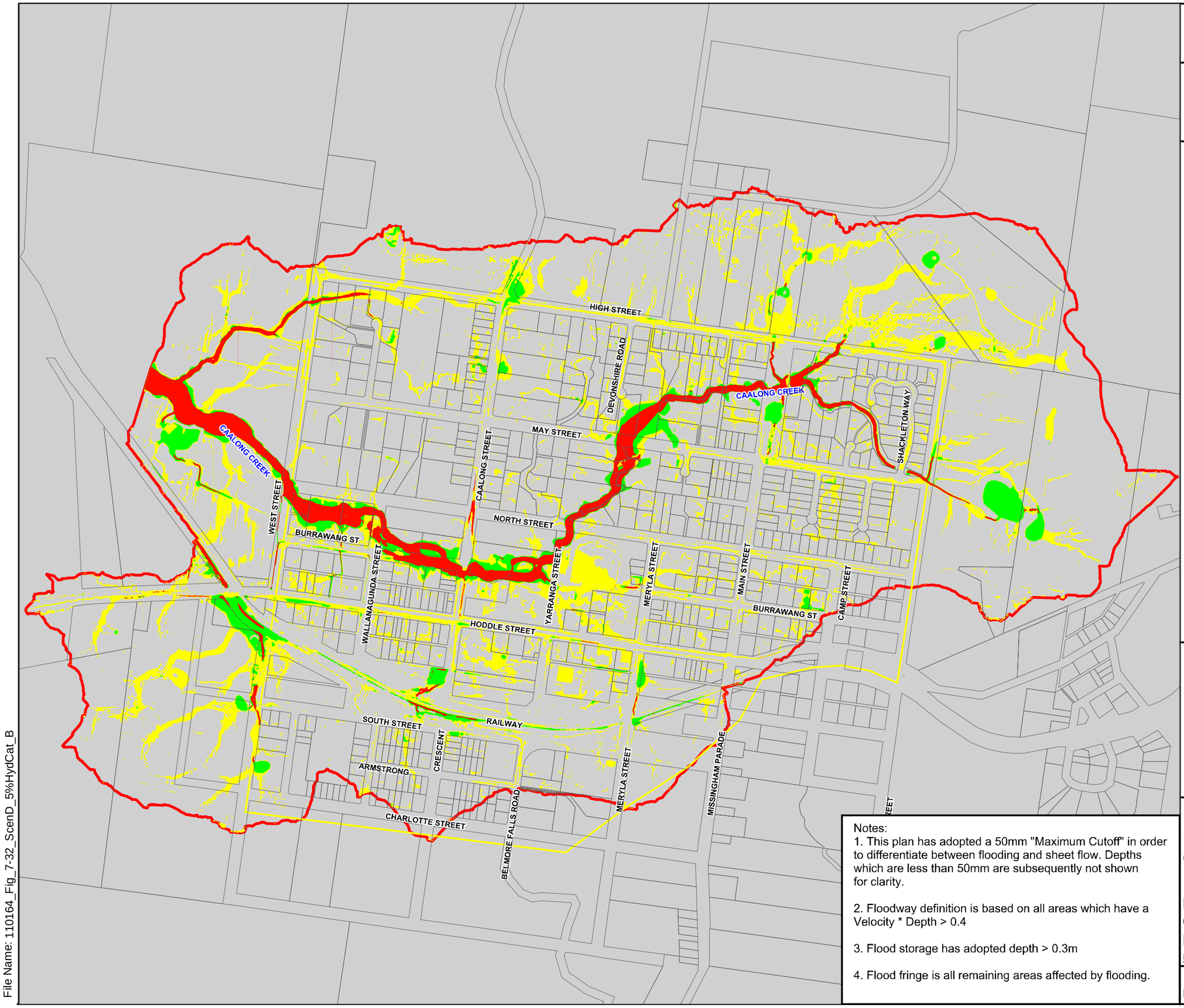
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-31
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Hydraulic Category 10% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-31_ScenD_10%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N W E S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

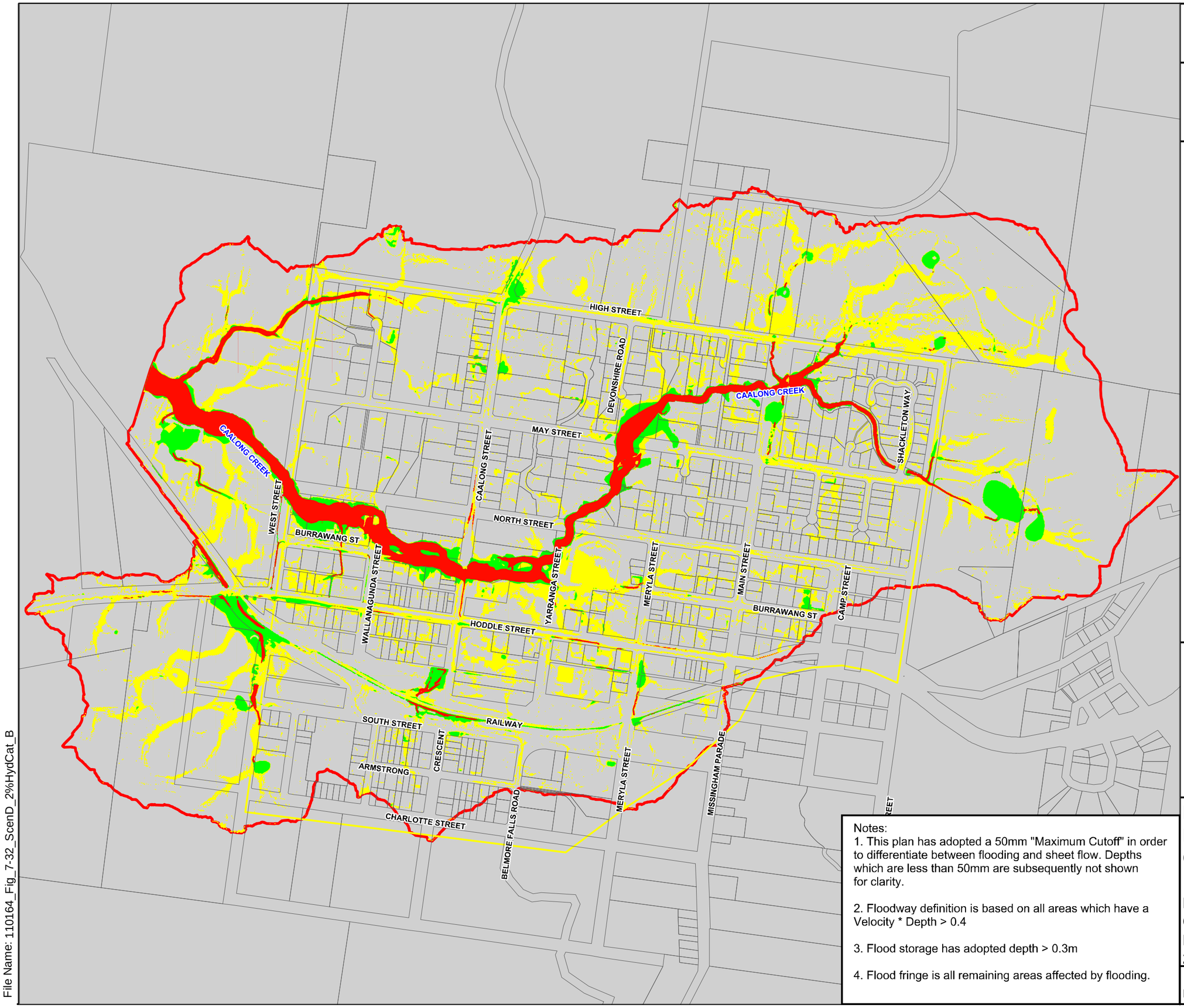
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-32
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Hydraulic Category 5% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-32_ScenD_5%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N W E S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

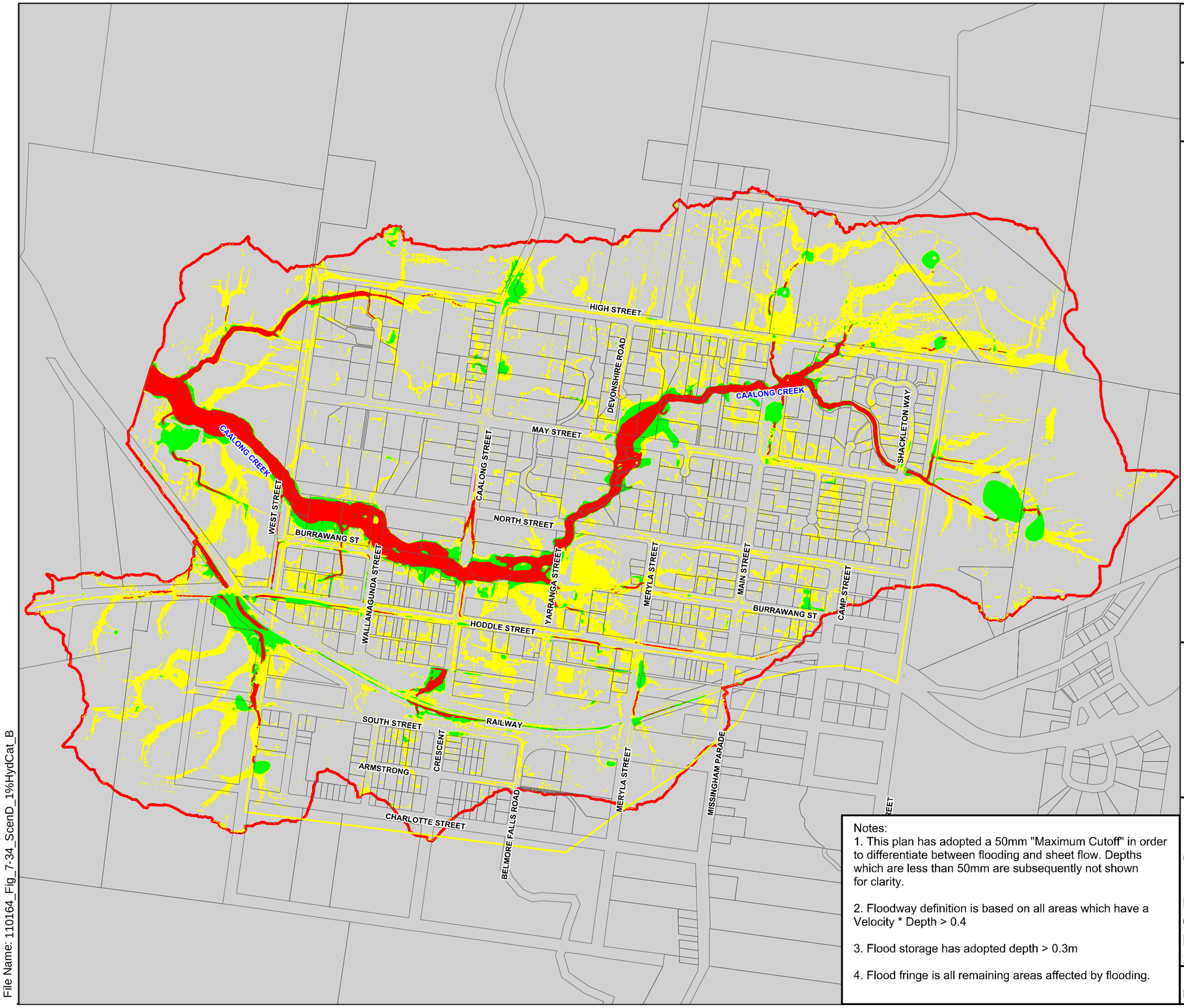
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-33
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Hydraulic Category 2% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-32_ScenD_2%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

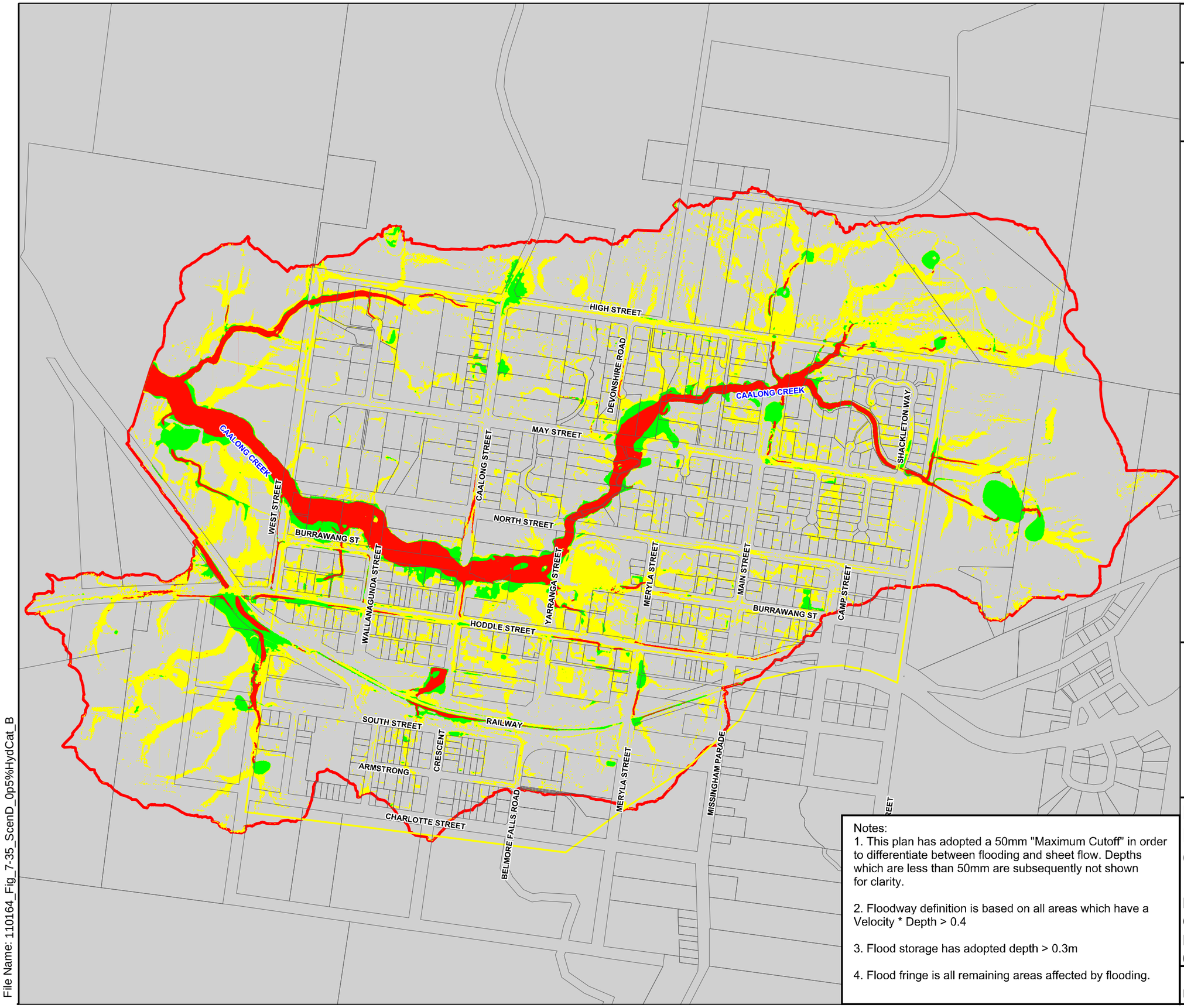
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-34
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Hydraulic Category 1% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-34_ScenD_1%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

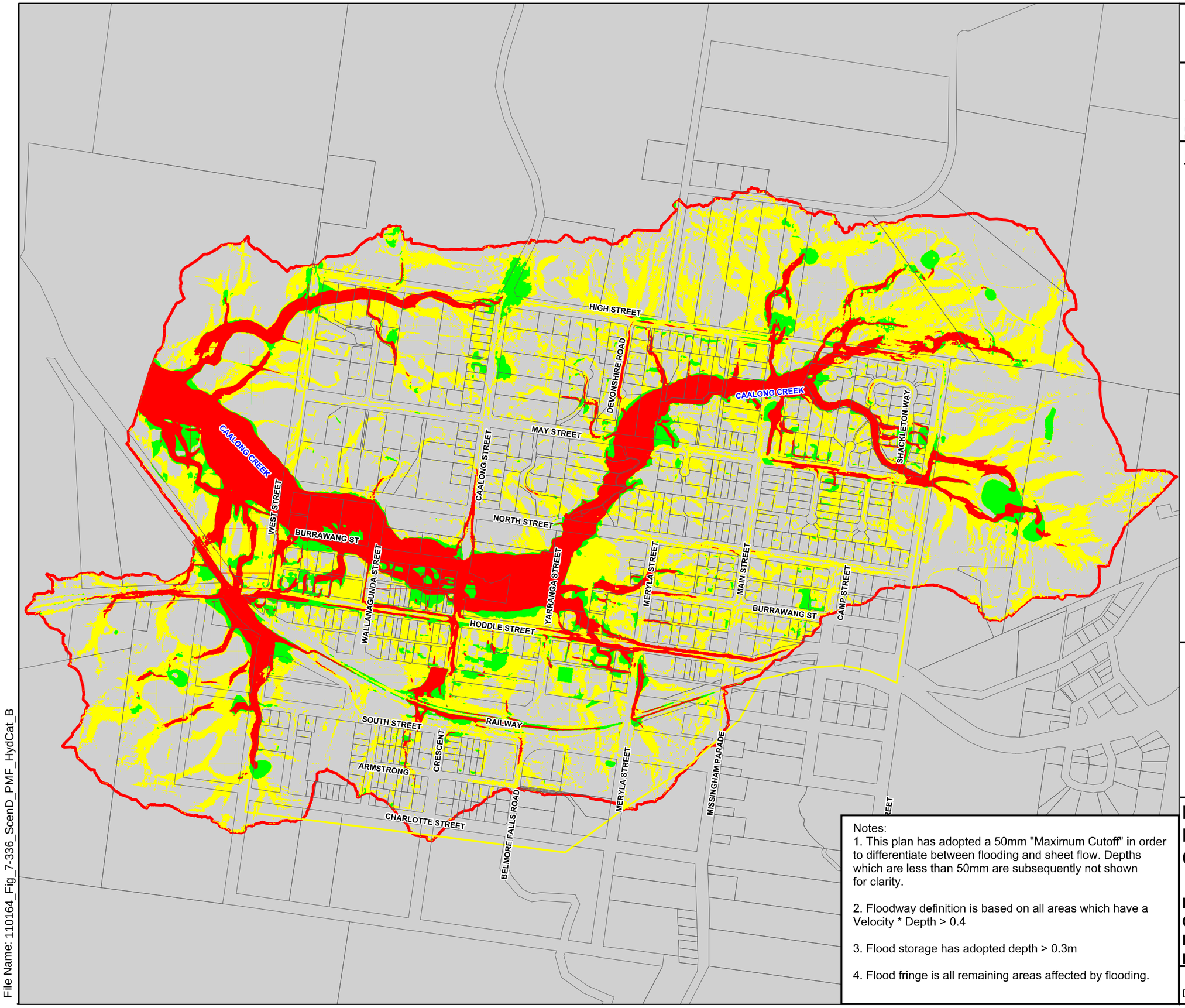
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-35
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades)
Hydraulic Category
0.5% AEP

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-35_ScenD_0p5%HydCat_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- Floodway (V*d > 0.4)
- Flood Storage (d > 0.3m)
- Flood Fringe

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Floodway definition is based on all areas which have a Velocity * Depth > 0.4

3. Flood storage has adopted depth > 0.3m

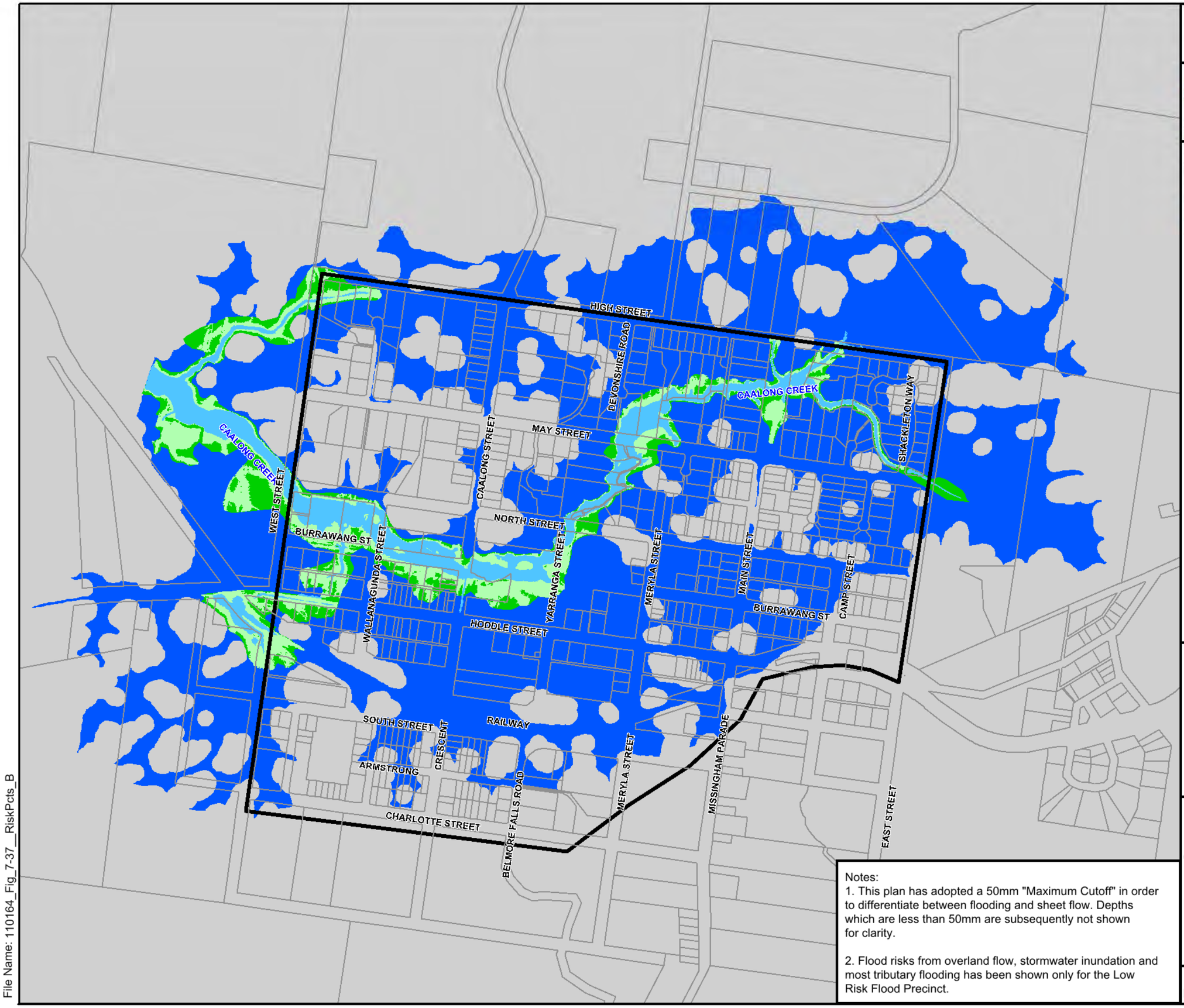
4. Flood fringe is all remaining areas affected by flooding.

Figure 7-36
Robertson Village Overland Flow Study

Final (Scenario D - Combined Upgrades) Hydraulic Category PMF

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-336_ScenD_PMF_HydCat_B



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LEGEND

- Robertson Village Study Area
- Cadastral Boundary
- High Flood Risk Precinct
- Medium Flood Risk Precinct
- Fringe Low Flood Risk Precinct
- Low Flood Risk Precinct

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

Figure 7-37
Robertson Village Overland Flow Study

Flood Risk Precincts

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

2. Flood risks from overland flow, stormwater inundation and most tributary flooding has been shown only for the Low Risk Flood Precinct.

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-37__RiskPcts_B

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LEGEND

- Robertson Village Study Area
- Cadastral Boundary
- Flood Planning Level Contour (0.5 m)
- Flood Planning Level Contour (5 m)
- Flood Planning Area (1% AEP + 0.5 m freeboard)
- Low Flood Risk Precinct

HIGH STREET
DEVONSHIRE ROAD
CAALONG STREET
MAY STREET
CAALONG CREEK
SHACKLETON WAY
WEST STREET
NORTH STREET
BURRAWANG ST
WALLANAGUNDA STREET
YARRANGA STREET
MERYLA STREET
MAIN STREET
CAMP STREET
HODDLE STREET
SOUTH STREET
CRESCENT
RAILWAY
ARMSTRONG
CHARLOTTE STREET
BELMORE FALLS ROAD
MISSINGHAM PARADE
EAST STREET
725
730
735
740
745
750
755

N
W E
S

Scale 1: 9,000 @ A3

200 0 200 m

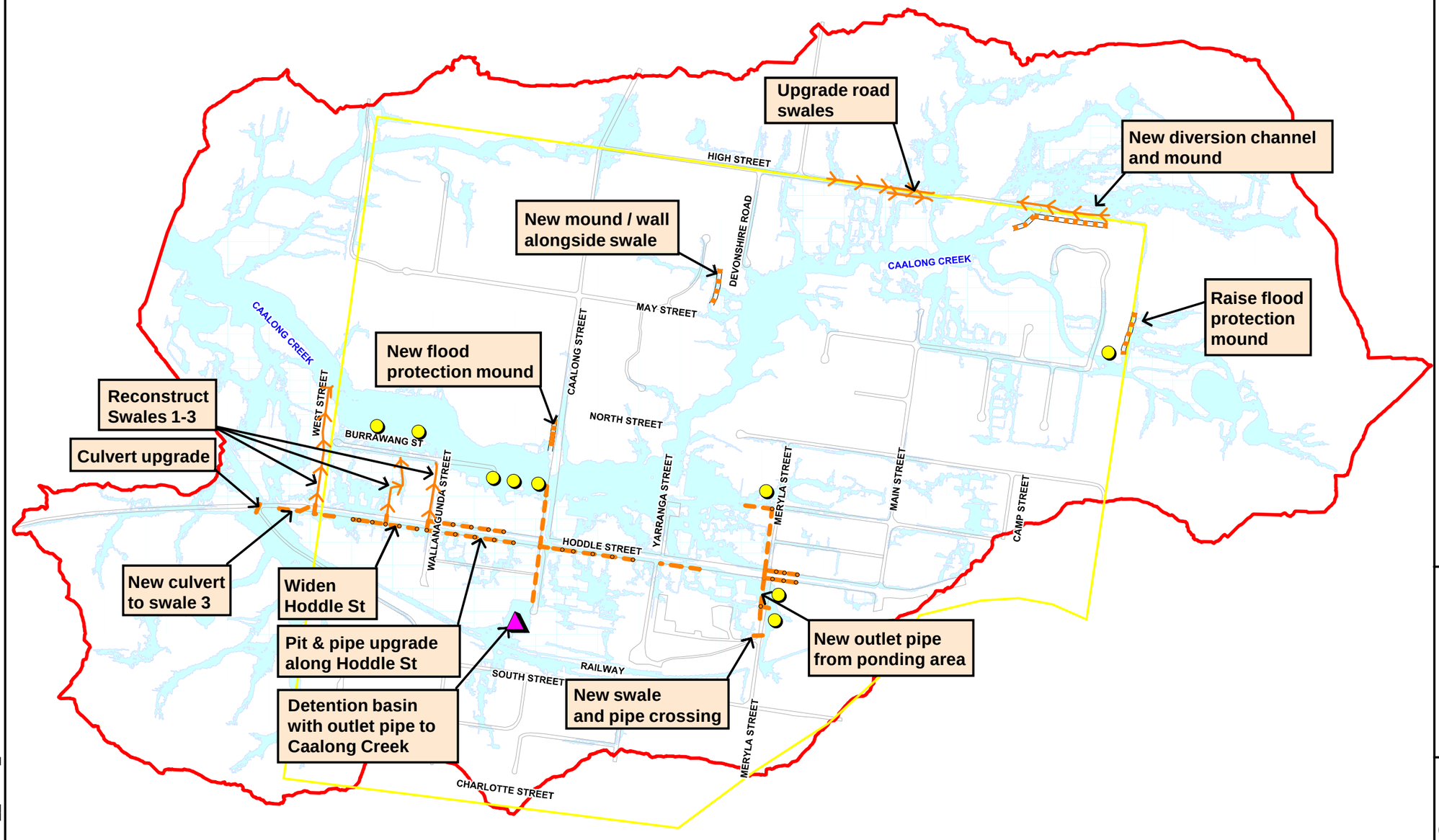
Figure 7-38
Robertson Village Overland Flow Study

Flood Planning Area

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-38_FPA_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- 1% AEP Flood Extent

FLOOD MODIFICATION MEASURES

- Proposed Swale
- Proposed Stormwater
- Proposed Mound
- Proposed Detention Basin

PROPERTY MODIFICATION MEASURES

- Possible Voluntary Purchase

N W E S

Scale 1: 9,000 @ A3

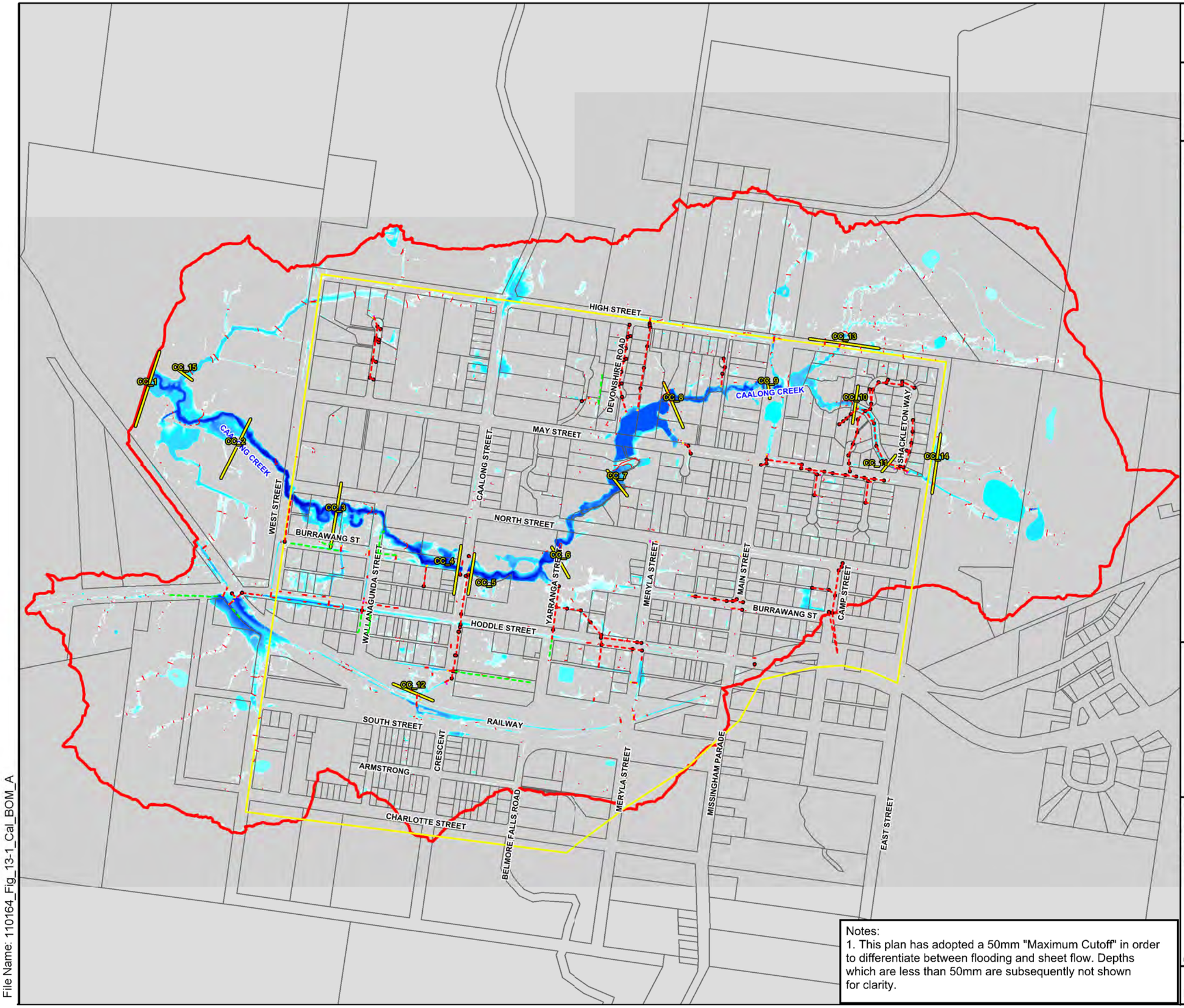
200 0 200 m

Figure 7-39
Robertson Village Overland Flow Study

Floodplain Risk Management Plan

Date : 21/09/2016 Issue : B

File Name: 110164_Fig_7-39__FRMP_B



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LEGEND

- Robertson Village Study Area
- TUFLOW Boundary
- PO Line - Flow Comparison
- Road Swale
- Existing Stormwater
- 2m Flood Height Contour

FLOOD DEPTH (m)

- 0.0 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- 0.2 to 0.35
- 0.35 to 0.5
- 0.5+

N W E S

Scale 1: 9,000 @ A3

200 0 200 m

Notes:
1. This plan has adopted a 50mm "Maximum Cutoff" in order to differentiate between flooding and sheet flow. Depths which are less than 50mm are subsequently not shown for clarity.

Figure 13-1
Robertson Village Overland Flow Study

Existing (Overall) Flood Depth Historical Flood Event (4 - 6 June 2016)

Date : 21/09/2016 Issue : A

File Name: 110164_Fig_13-1_Cal_BOM_A