

**LEGEND**

- Extent of Works
- Design Terrain Level
- Cross Section

**Depth of Fill**

- Upto 1.5m
- 1.5m to 3.0m
- 3.0m to 4.5m

**Depth of Cut**

- Upto -1.5m
- 1.5m to -3.0m
- 3.0m to -4.5m

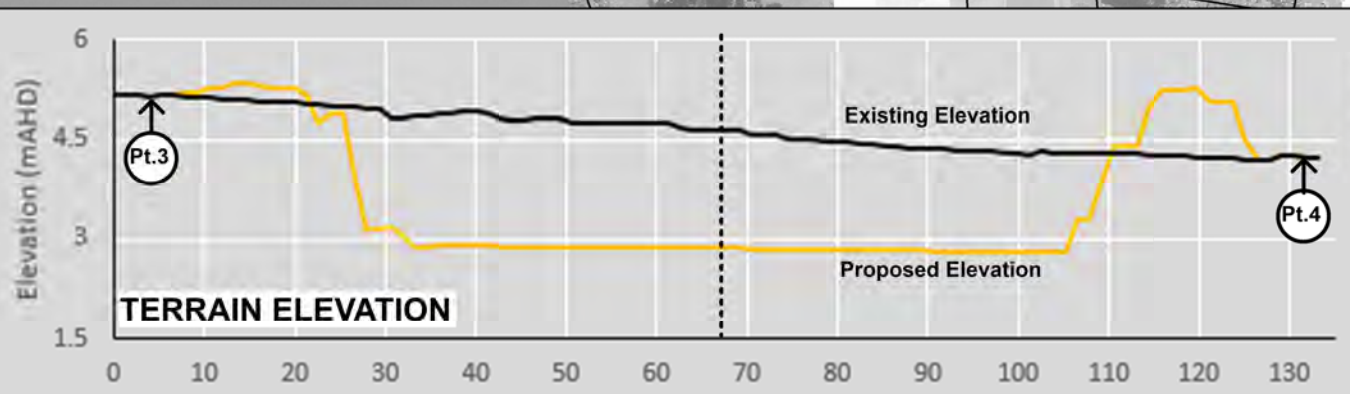
**Notes:**  
Aerial photograph date: 2016



**Figure 34.2:**  
**Concept Design for the South Murwillumbah High Flow Bypass Option 1 (FM2)**

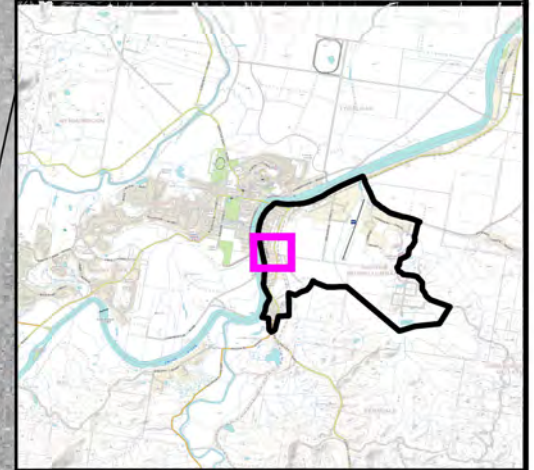
Prepared By:  
**Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 34.2 - Concept Design for the South Murwillumbah High Flow Bypass Option 1 (FM2).war



FOR INFORMATION PURPOSES ONLY

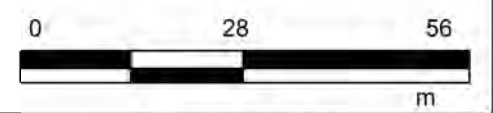




**LEGEND**

-  Extent of Works
-  4.6 m AHD Design Terrain Level
-  Terrain Changes
-  Lots to Acquire
-  Existing Building within Acquired Lots

Notes:  
Aerial photograph date: 2016



**Figure 35.1:**  
**Concept Design for the South Murwillumbah High Flow Bypass Option 2 (FM3)**

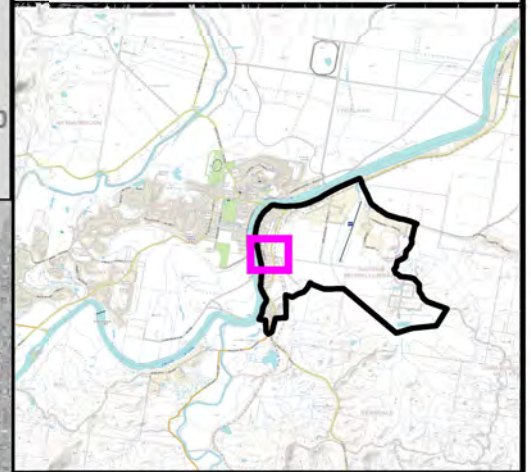
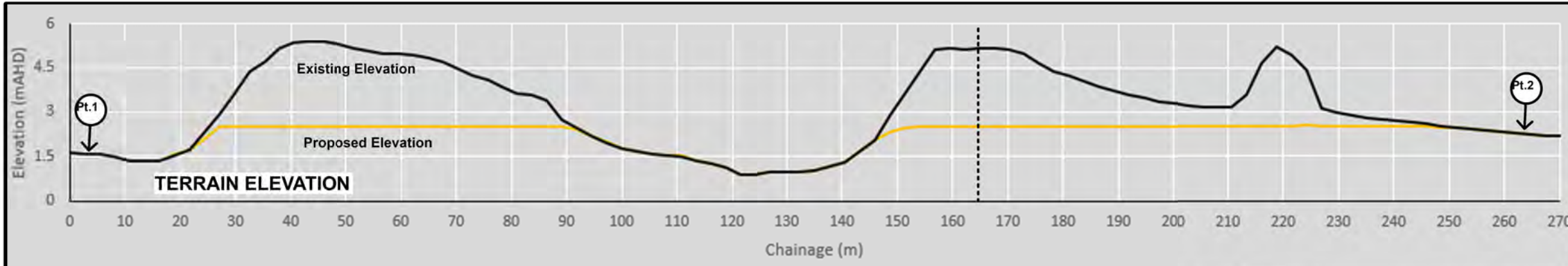
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 35.1 - Concept Design for the South Murwillumbah High Flow Bypass Option 2 (FM3).wor









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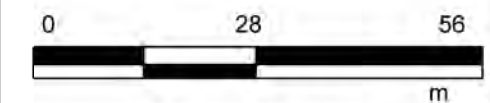




**LEGEND**

-  Extent of Works
-  4.6 m AHD Design Terrain Level
-  Cross Section
- Depth of Cut**
-  Upto -1.5m
-  -1.5m to -3.0m
-  -3.0m to -4.5m

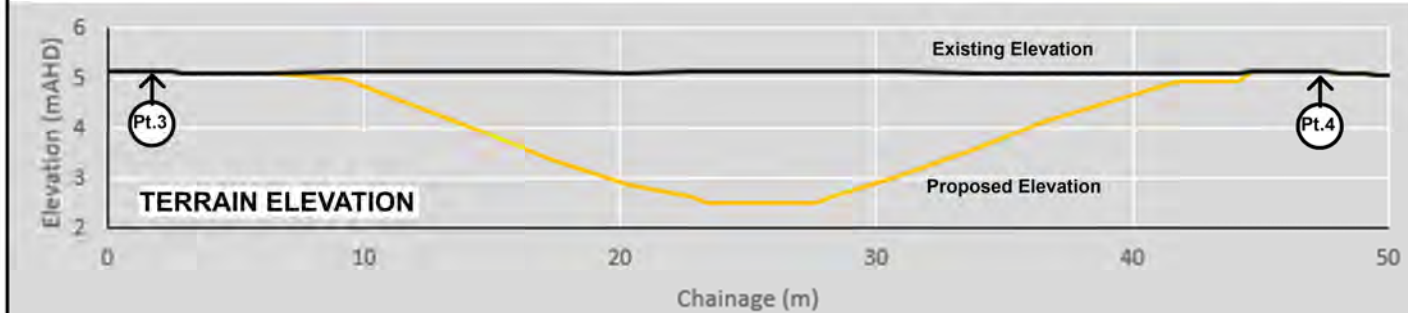
**Notes:**  
Aerial photograph date: 2016



**Figure 35.2:**  
**Concept Design for the South Murwillumbah High Flow Bypass Option 2 (FM3)**

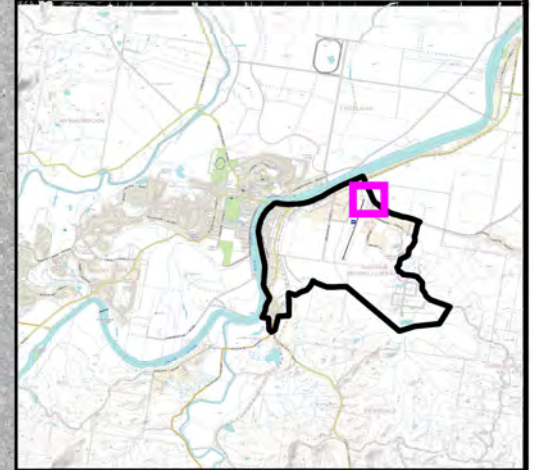
Prepared By:  
**Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 35.2 - Concept Design for the South Murwillumbah High Flow Bypass Option 2 (FM3) wor



FOR INFORMATION PURPOSES ONLY

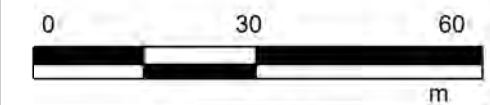




**LEGEND**

-  Extent Of Works
- Depth of Cut
  -  Up to -1.0m
  -  -1.0m to -2.0m
  -  Over -2.0m

Notes:  
Aerial photograph date: 2016



**Figure 36:**  
**Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd (FM4)**

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

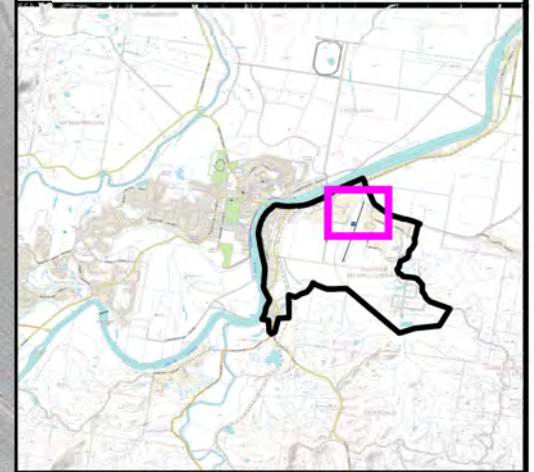
File Name: Figure 36 - Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd (FM4).wor

Lower terrain to 3.5m AHD





QUARRY ROAD

FOR INFORMATION PURPOSES ONLY

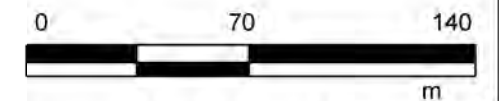





**LEGEND**

-  Extent Of Works
-  Terrain Changes
-  Properties Identified for Earthworks
-  Buildings To Be Removed

Notes:  
Aerial photograph date: 2016



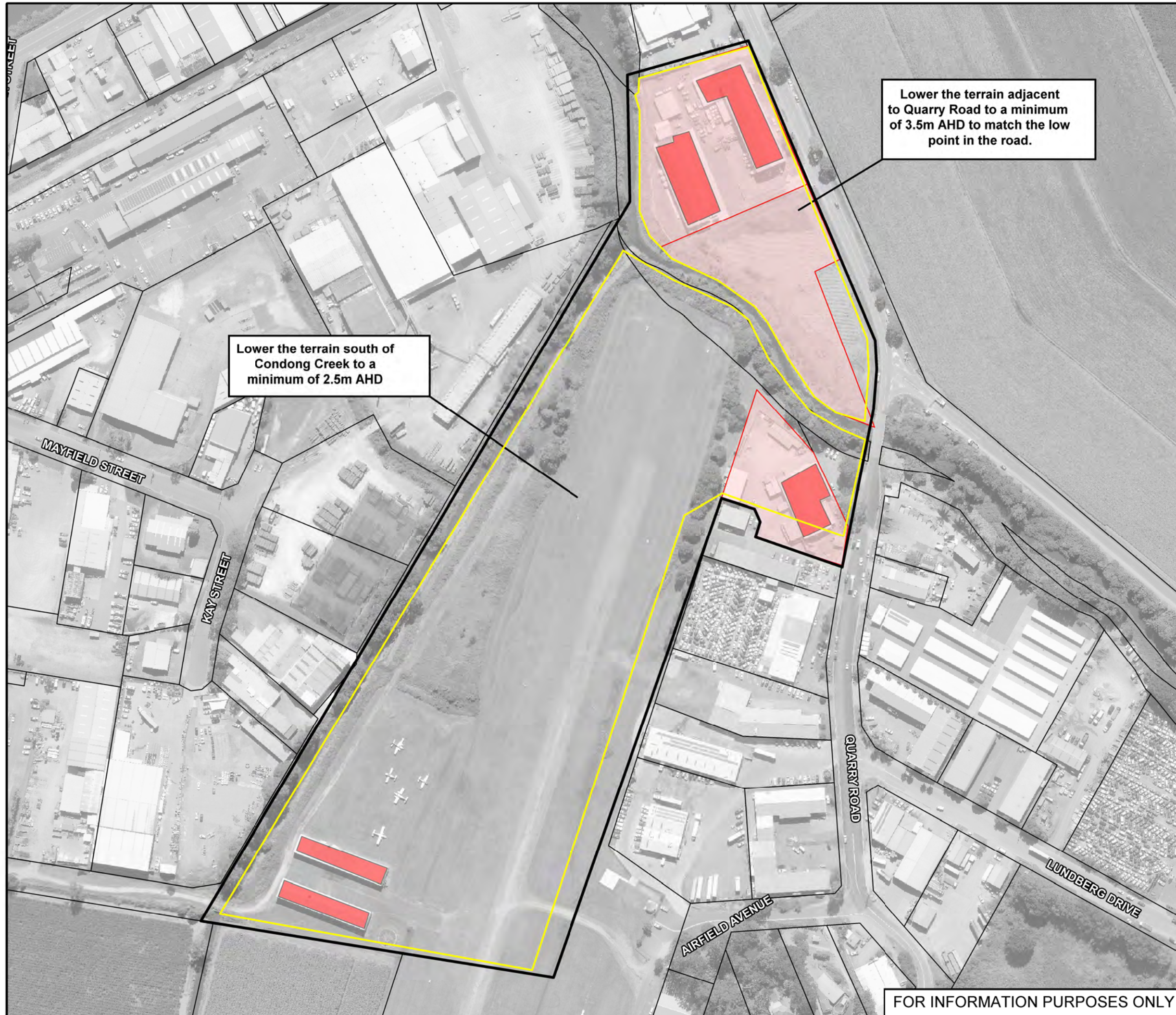
**Figure 37.1: Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd, airfield and two adjoining lots (FM5)**

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

File Name: Figure 37.1 - Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd plus airfield and two adjoining lots (FM5).wor

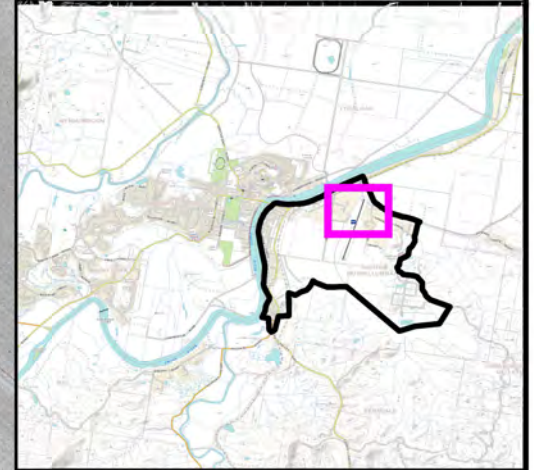
Lower the terrain adjacent to Quarry Road to a minimum of 3.5m AHD to match the low point in the road.

Lower the terrain south of Condong Creek to a minimum of 2.5m AHD




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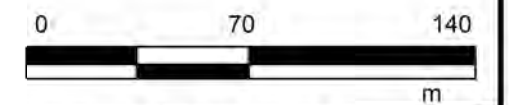





**LEGEND**

-  Extent of Works
- Depth of Cut
  -  Upto -1.0m
  -  -1.0m to -2.0m
  -  -2.0m to -3.0m

Notes:  
Aerial photograph date: 2016



**Figure 37.2: Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd, airfield and two adjoining lots (FM5)**

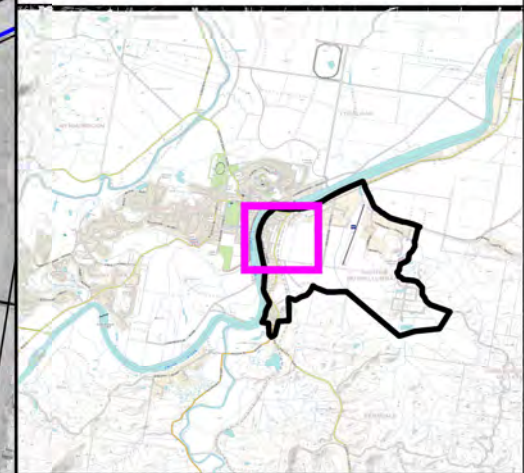
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 37.2 - Concept Design for the Earthworks across Lot 4 DP 591604 Quarry Rd plus airfield and two adjoining lots (FM5).wor



FOR INFORMATION PURPOSES ONLY

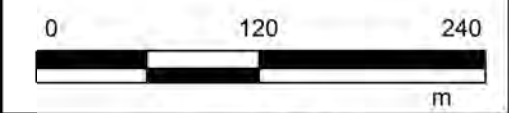





**LEGEND**

-  Extent Of Works
-  Terrain Changes
-  Properties Identified for Purchase
-  Buildings To Be Removed
- Stormwater Network Updates**
-  Pipes to be retained
-  Pipes to be removed
-  Pipes to be modified

Notes:  
Aerial photograph date: 2016



**Figure 38.1:**  
**Concept Design for Terrain Modifications Between River Street and Tweed River (FM6)**

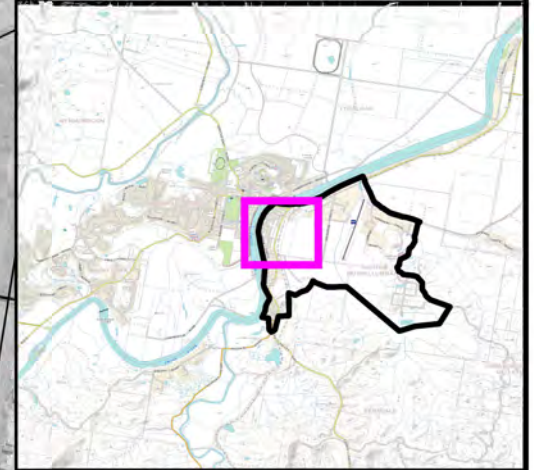
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 38.1 - Concept Design for Terrain Modifications between River Street and Tweed River (FM6).wor










FOR INFORMATION PURPOSES ONLY

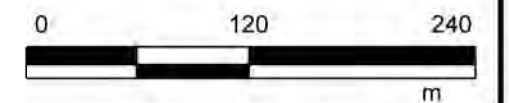





**LEGEND**

-  Extent of Works
- Depth of Fill**
-  Upto 1.5m
-  1.5m to 3.0m
-  3.0m to 4.5m
- Depth of Cut**
-  Upto -1.5m
-  -1.5m to -3.0m
-  -3.0m to -4.5m

Notes:  
Aerial photograph date: 2016



**Figure 38.2:**  
**Concept Design for Terrain Modifications Between River Street and Tweed River (FM6)**

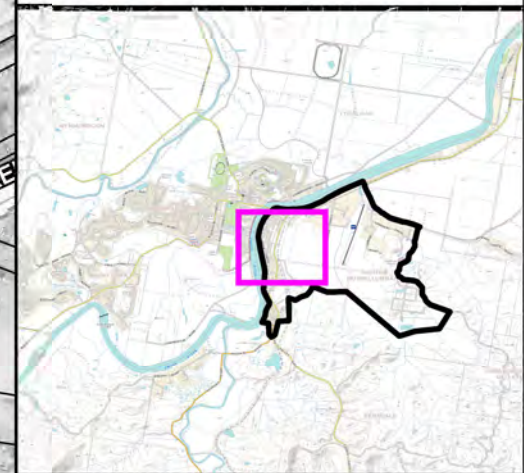
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 38.2 - Concept Design for Terrain Modifications between River Street and Tweed River (FM6).wor







FOR INFORMATION PURPOSES ONLY

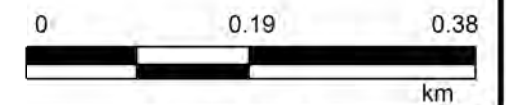





**LEGEND**

-  Extent of Works
-  Existing Levee Alignment
-  New Spillway Area
-  Existing Stream Gauges

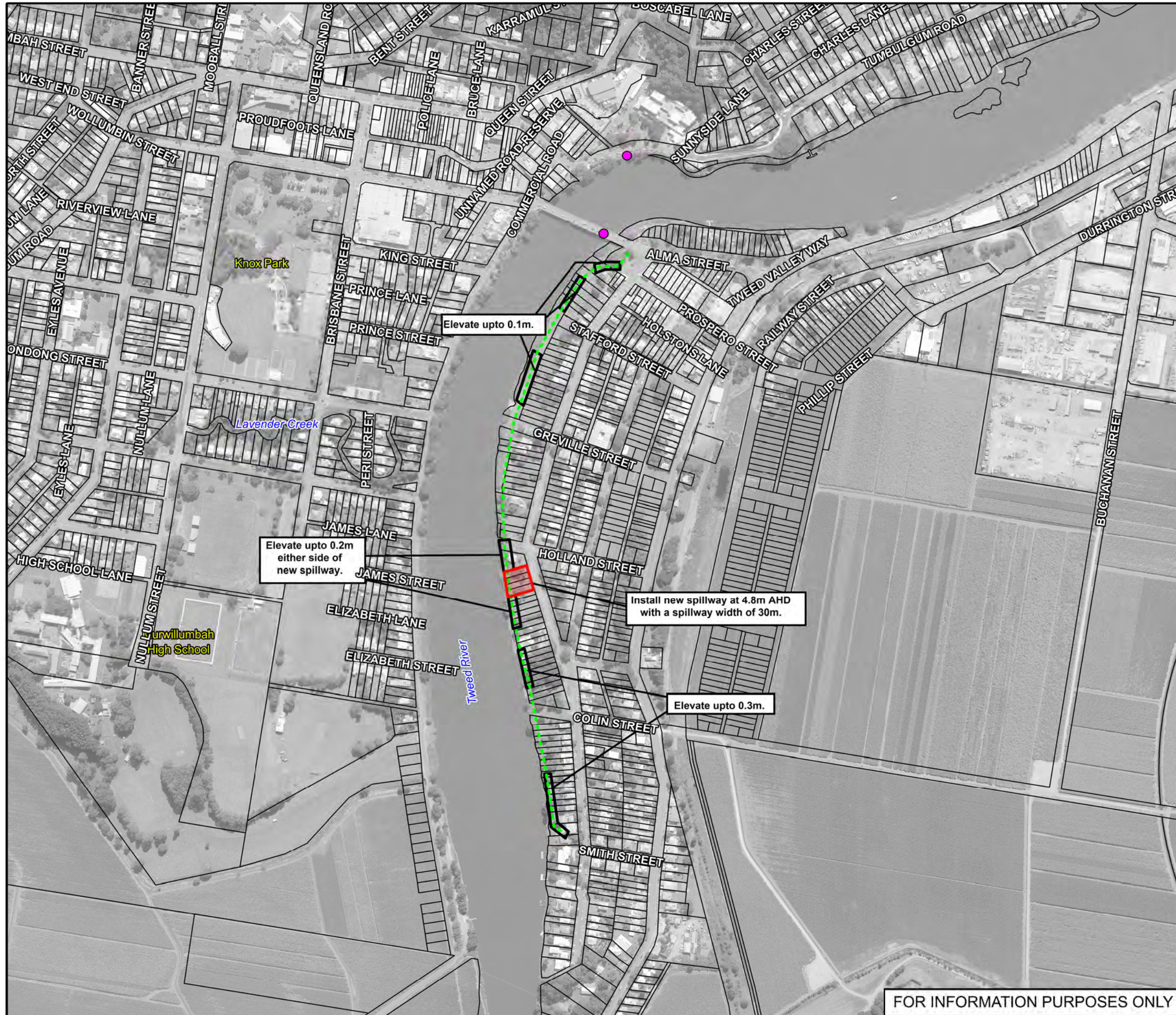
Notes:  
Aerial photograph date: 2016



**Figure 39.1:  
Concept Design for the South  
Murwillumbah Levee  
Rehabilitation (FM7)**

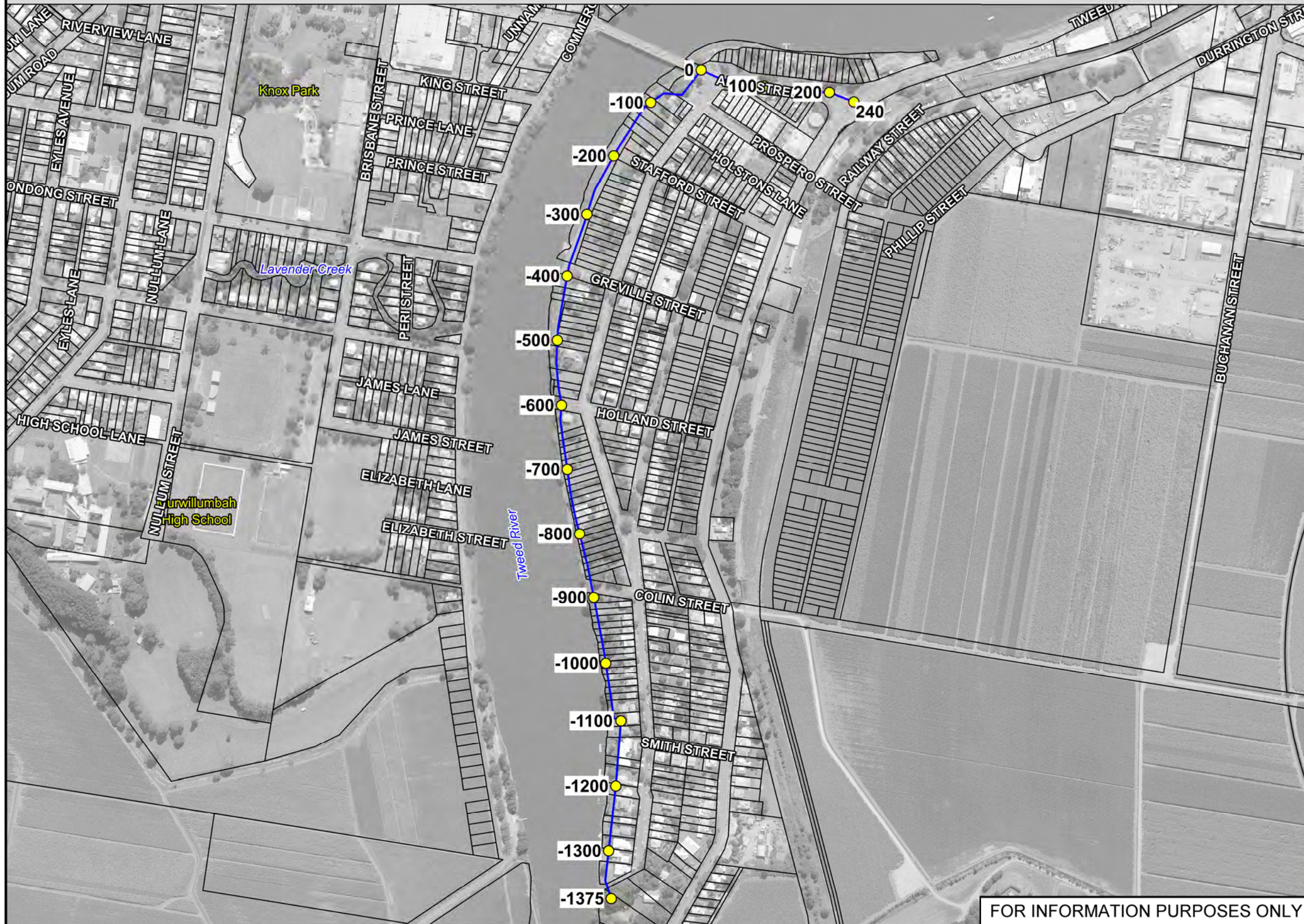
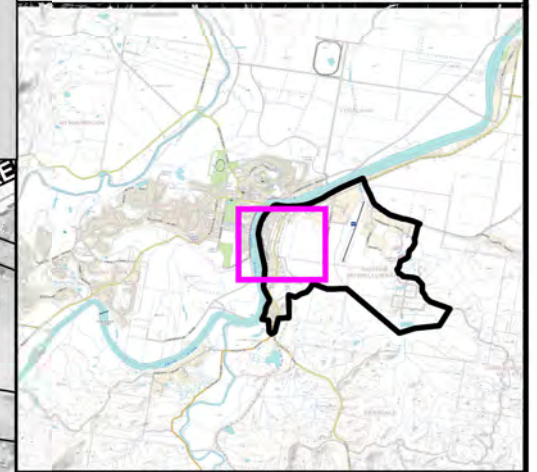
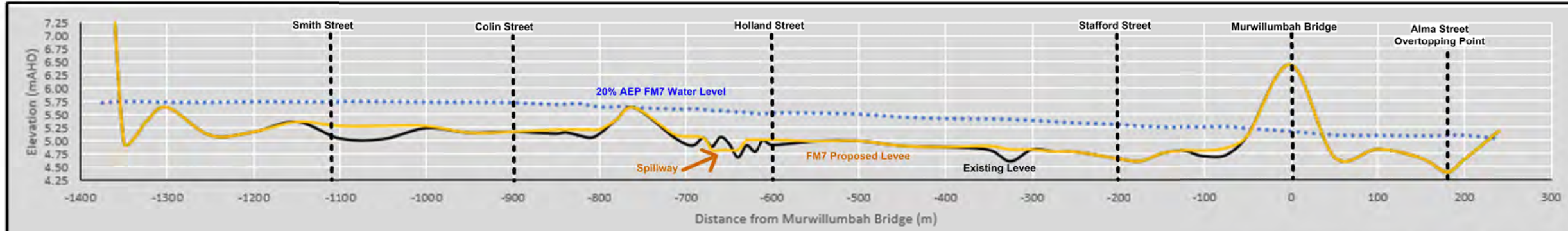
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 39.1 - Concept Design for the South Murwillumbah Levee Rehabilitation (FM7)



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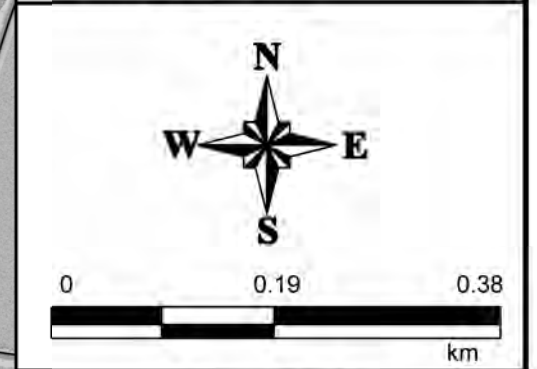




**LEGEND**

- Profile Alignment
- Distance from Murwillumbah Bridge (m)

**Notes:**  
Aerial photograph date: 2016



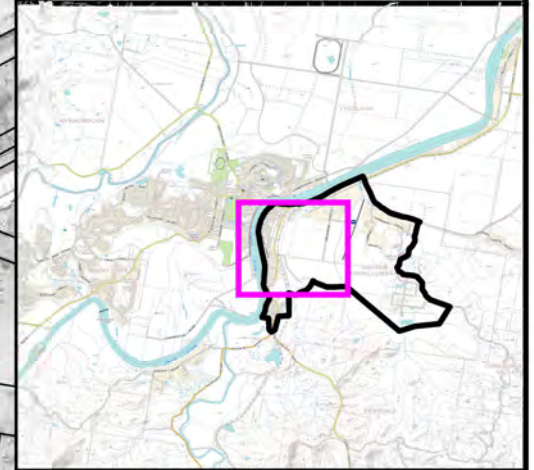
**Figure 39.2:**  
**Concept Design for the South Murwillumbah Levee Rehabilitation (FM7)**

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











File Name: Figure 39.2 - Concept Design for the South Murwillumbah Levee Rehabilitation (FM7)

FOR INFORMATION PURPOSES ONLY

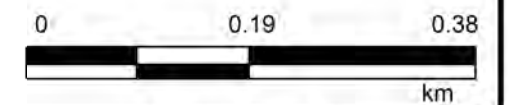





**LEGEND**

-  New Spillway Area
  -  New levee extension
  -  Extent of Alma Street raised
  -  Extent of CBD Levee raised
- Changes to Existing Level (m)
-  +0.3
  -  +0.4
  -  +0.5
  -  +0.6
  -  +0.7
  -  +0.8

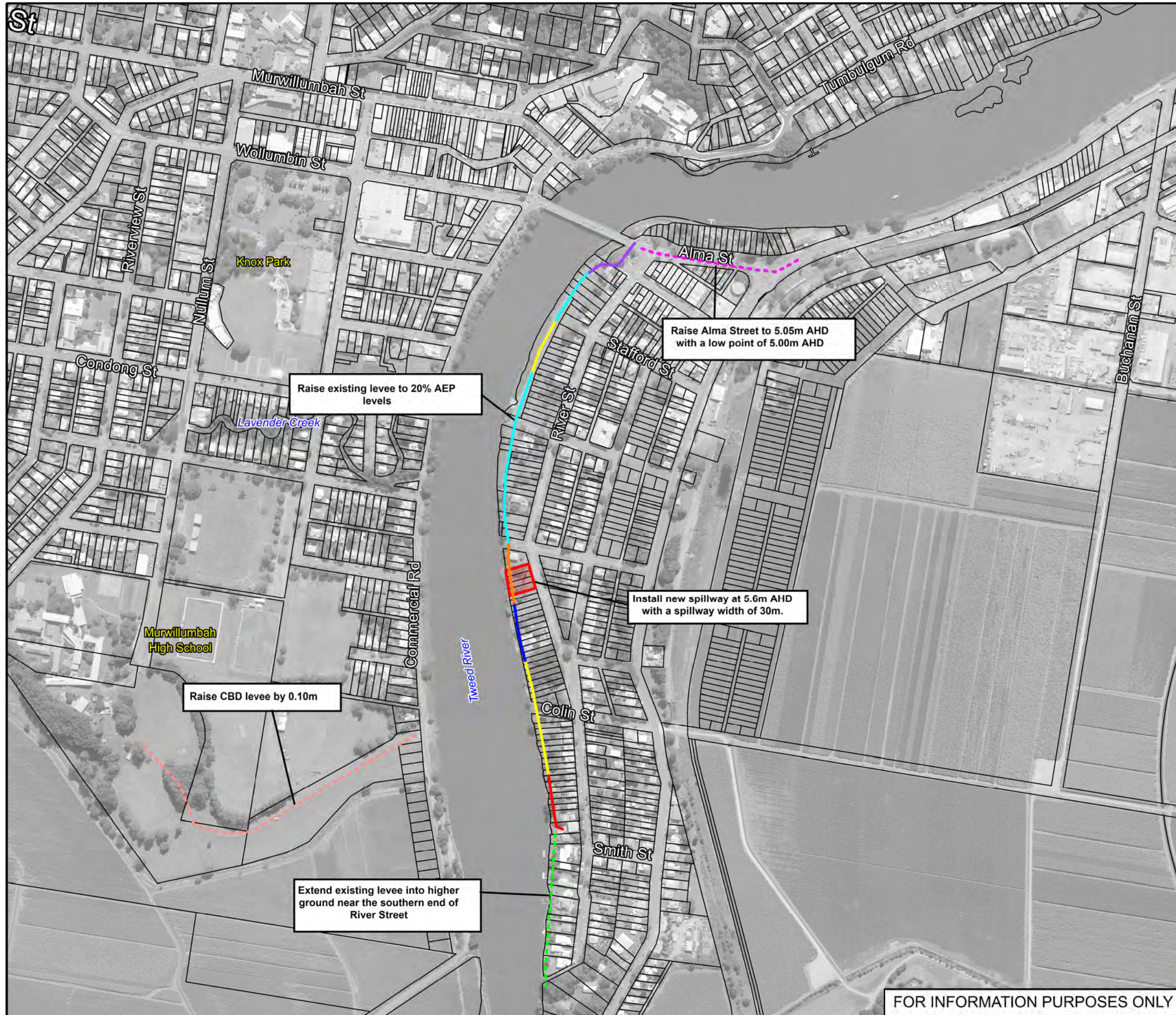
Notes:  
Aerial photograph date: 2016



**Figure 40.1:**  
**Concept Design for Raising the South Murwillumbah Levee to 20% AEP and Raising Height of the CBD Levee (FM8)**

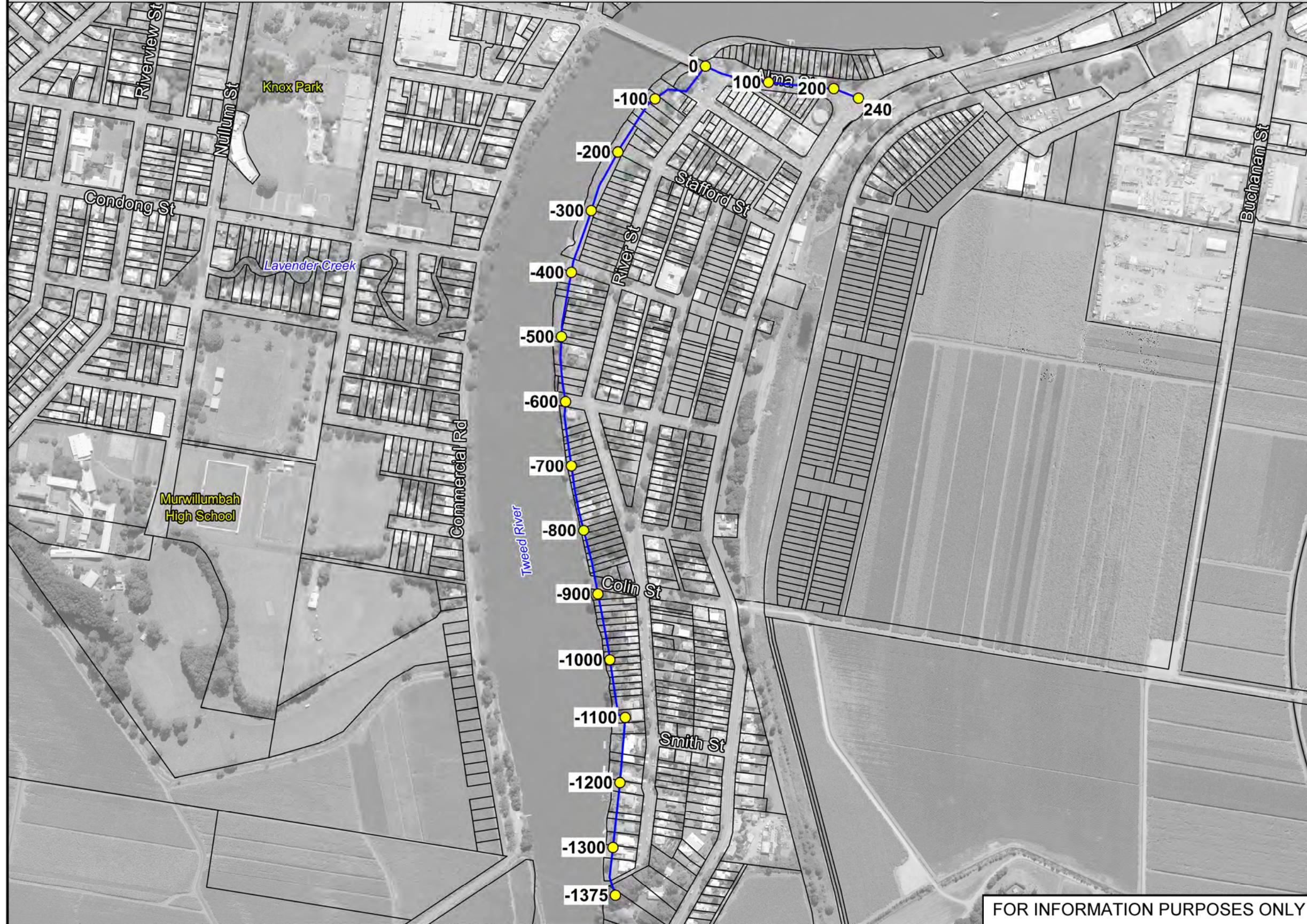
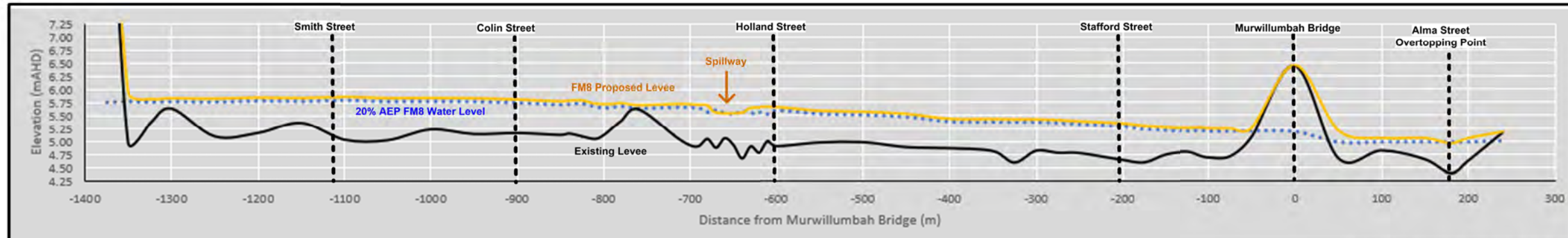
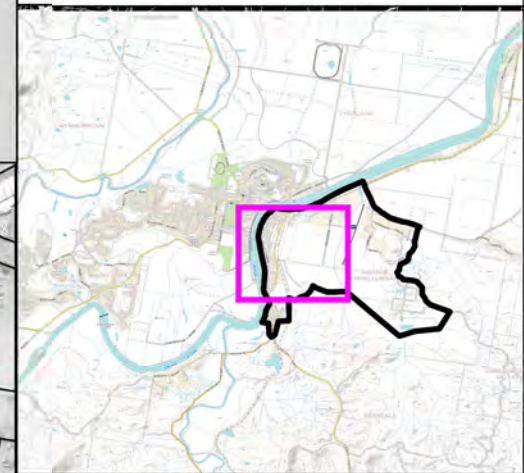
Prepared By:  
 **Catchment Simulation Solutions**  
Suite 10.01, 70 Phillip St  
Sydney, NSW 2000

File Name: Figure 40.1 - Concept Design for Raising the South Murwillumbah Levee to 20% AEP (FM8).wor



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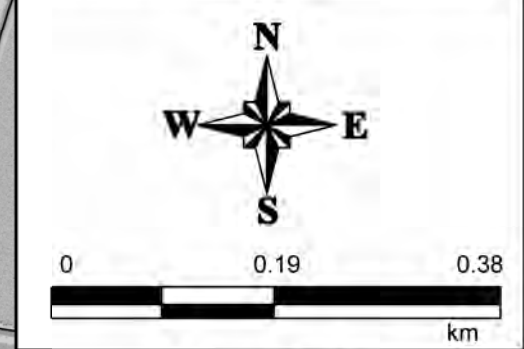




**LEGEND**

- Profile Alignment
- Distance from Murwillumbah Bridge (m)

**Notes:**  
Aerial photograph date: 2016



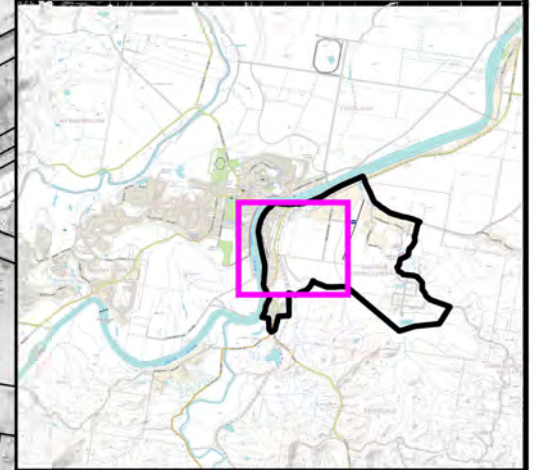
**Figure 40.2:**  
**Concept Design for Raising the South Murwillumbah Levee to 20% AEP and Raising Height of the CBD Levee (FM8)**

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











File Name: Figure 40.2 - Concept Design for Raising the South Murwillumbah Levee to 20% AEP (FM8).wor

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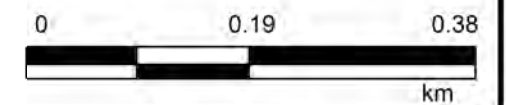




**LEGEND**

-  New Spillway Area
  -  New levee extension
  -  Extent of Alma Street raised
  -  Extent of CBD Levee raised
- Changes to Existing Level (m)
-  +0.5
  -  +0.6
  -  +0.7
  -  +0.8
  -  +0.9
  -  +1.0

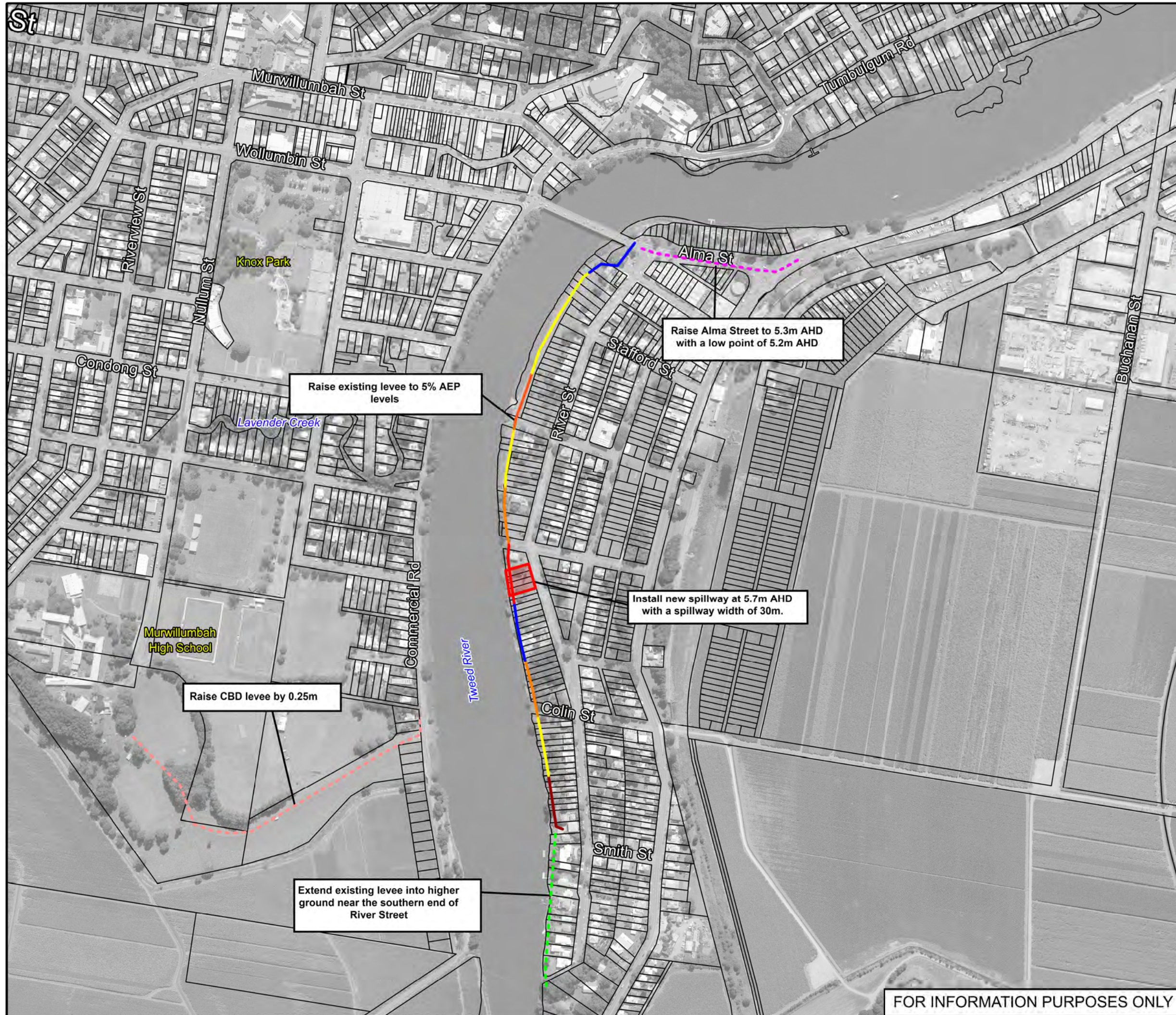
Notes:  
Aerial photograph date: 2016



**Figure 41.1:**  
**Concept Design for Raising the South Murwillumbah Levee to 5% AEP and Raising Height of the CBD Levee (FM9)**

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

File Name: Figure 41.1 - Concept Design for Raising the South Murwillumbah Levee to 5% AEP (FM9).wor



Raise existing levee to 5% AEP levels

Raise Alma Street to 5.3m AHD with a low point of 5.2m AHD

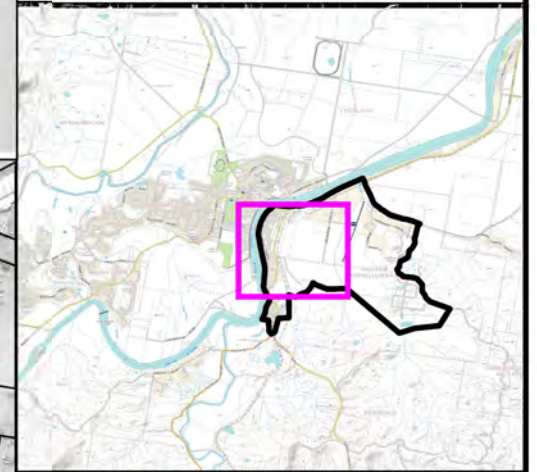
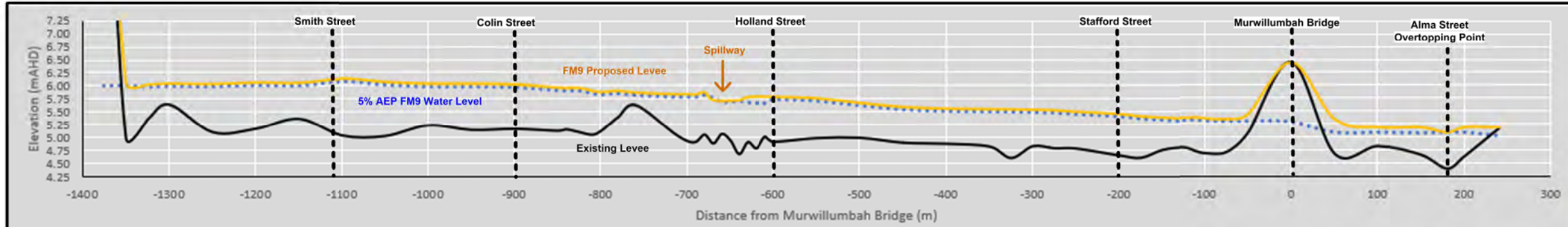
Install new spillway at 5.7m AHD with a spillway width of 30m.

Raise CBD levee by 0.25m

Extend existing levee into higher ground near the southern end of River Street

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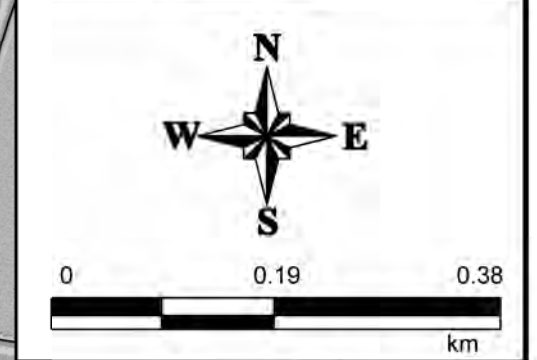




**LEGEND**

- Profile Alignment
- Distance from Murwillumbah Bridge (m)

**Notes:**  
Aerial photograph date: 2016



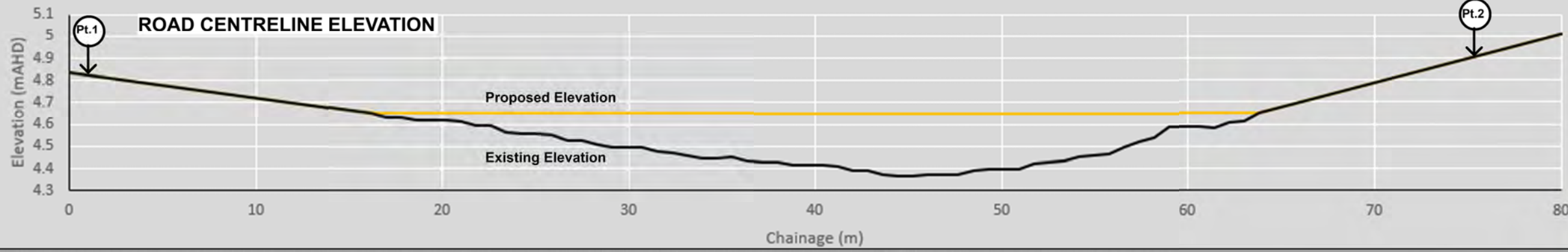
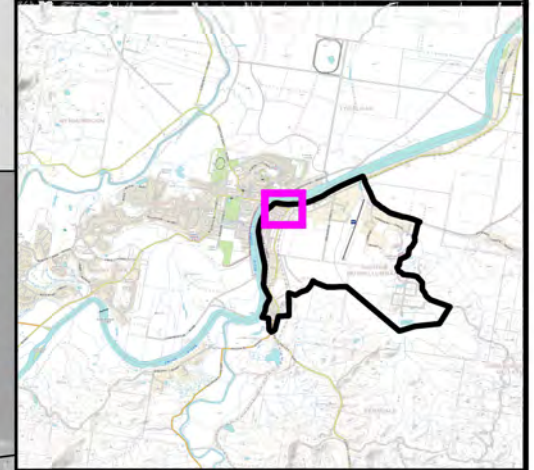
**Figure 41.2:**  
**Concept Design for Raising the South Murwillumbah Levee to 5% AEP and Raising Height of the CBD Levee (FM9)**

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

File Name: Figure 41.2 - Concept Design for Raising the South Murwillumbah Levee to 5% AEP (FM9).wor

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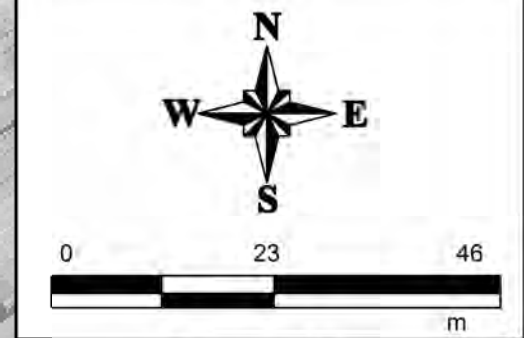




**LEGEND**

-  Extent of Works
-  Road Centreline
- Depth of Fill
  -  Upto 0.1m
  -  0.1m to 0.2m
  -  0.2m to 0.3m

Notes:  
Aerial photograph date: 2016



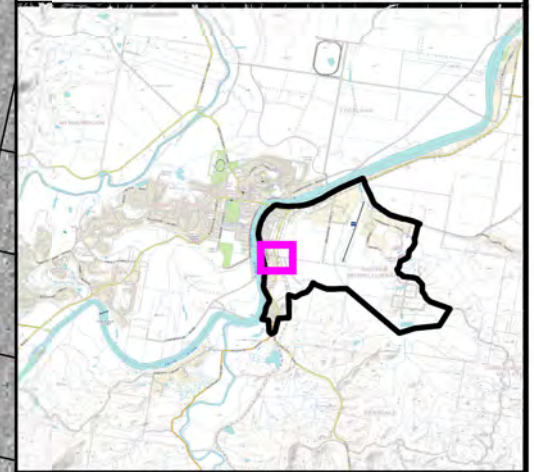
**Figure 42:**  
**Concept Design for the**  
**Alma Street Modifications**  
**(FM10)**

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

File Name: Figure 41 - Concept Design for the Alma Street Modifications.wor

FOR INFORMATION PURPOSES ONLY

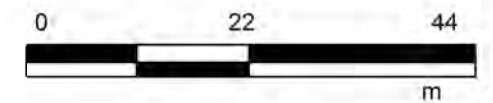





**LEGEND**

-  Extent of Works
-  2.6 mAHD Design Terrain Level
- Depth of Cut**
-  Upto -1.0m
-  -1.0m to -2.0m
-  -2.0m to -3.0m

Notes:  
Aerial photograph date: 2016



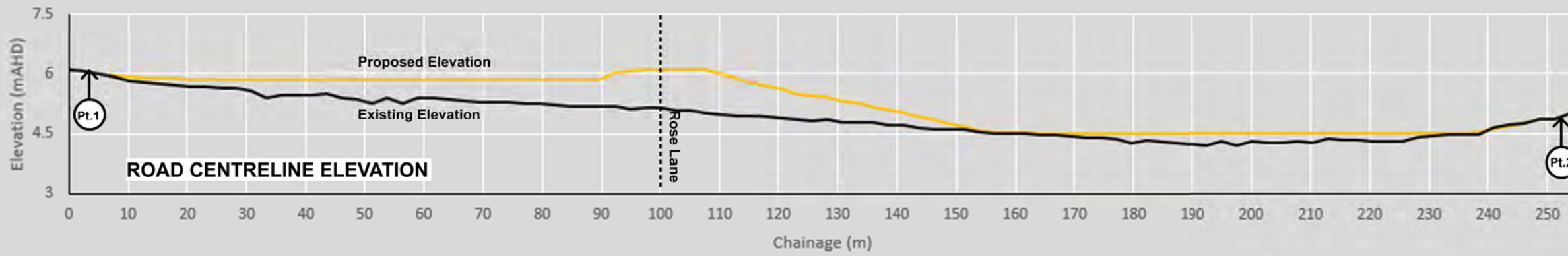
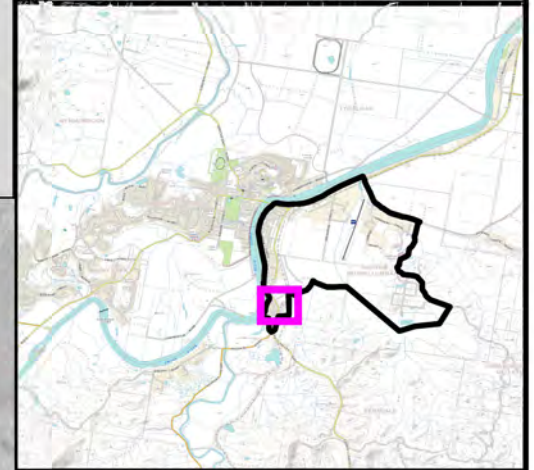
**Figure 43:  
Concept Design to  
Modify the Railway  
Embankment (FM11)**

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

File Name: Figure 43 - Concept Design to Modify the Railway Embankment (FM11).wor



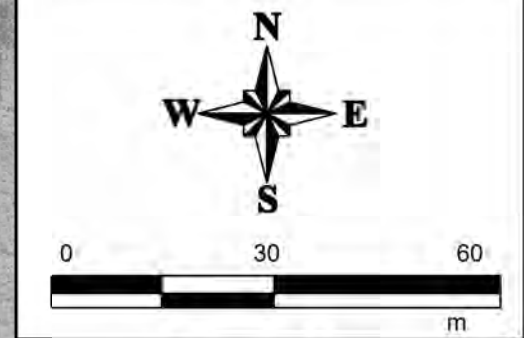




**LEGEND**

- Extent of Works
- Design Terrain Level
- Road Centreline
- Depth of Fill**
- Upto 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m

**Notes:**  
Aerial photograph date: 2016



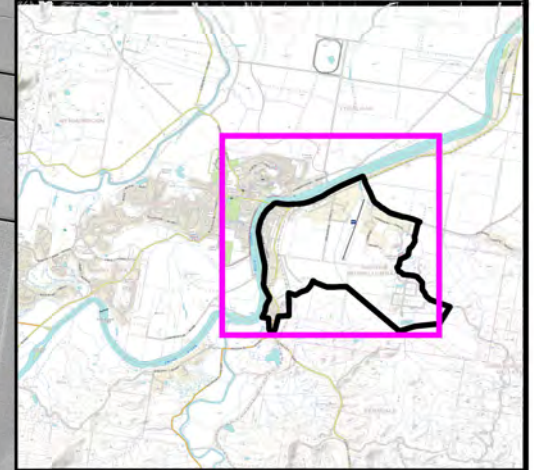
**Figure 44:**  
**Concept Design to Elevate Tweed Valley Way (FM12)**

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

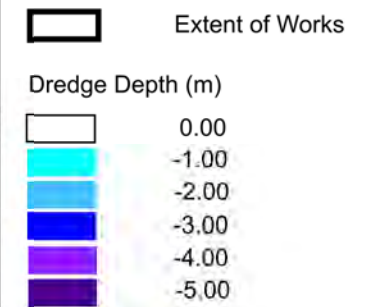
File Name: Figure 44 - Concept Design to Elevate Tweed Valley Way (FM12).wor

**FOR INFORMATION PURPOSES ONLY**

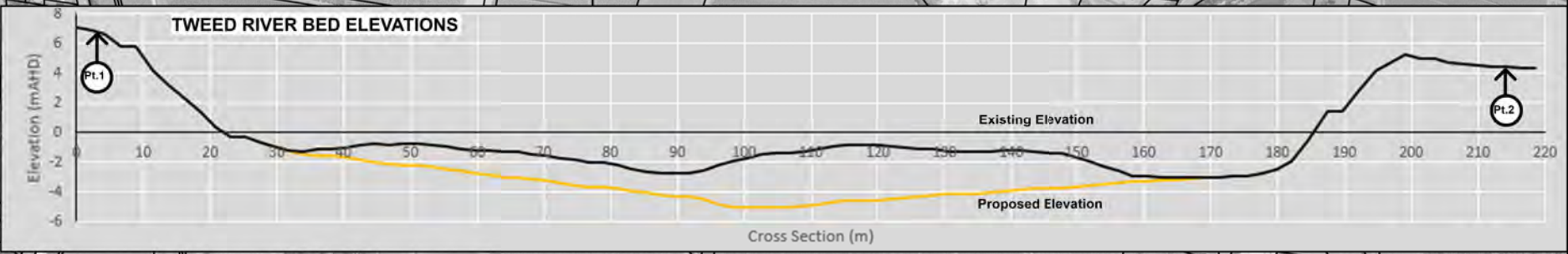




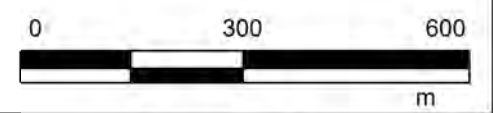
**LEGEND**




Dredging to primarily target "shallow" sections of riverbed upstream of the bridge



Notes:  
Aerial photograph date: 2016



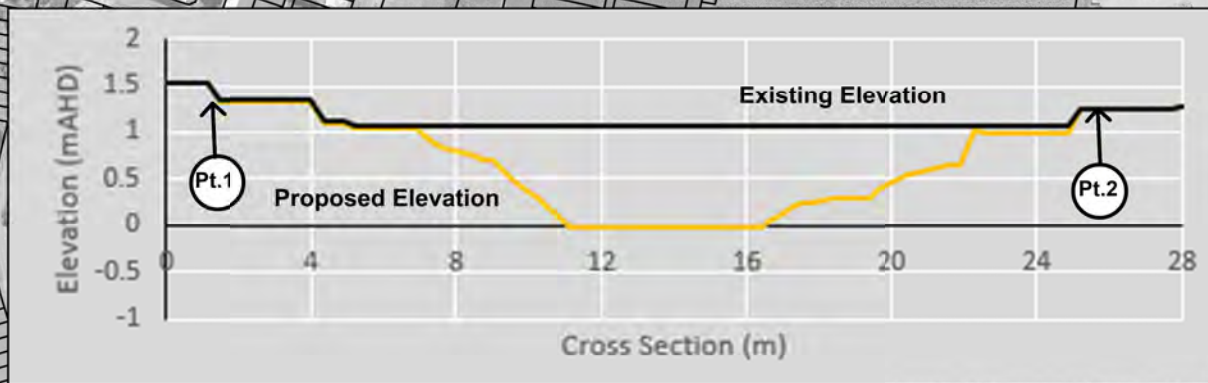
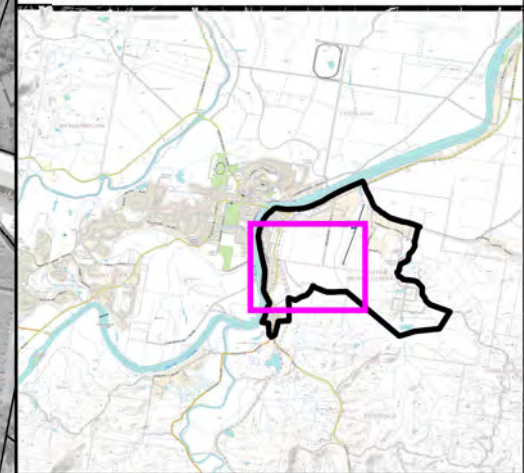
**Figure 45:  
Concept Design for  
Tweed River Dredging  
(FM13)**

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

File Name: Figure 45 - Concept Design for Tweed River Dredging (FM13).wor

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New channel would be created to link existing Blacks Drain Channel with Condong Creek Channel

The existing channel would be enlarged with a smaller low flow channel and a higher flow bench on either side to convey large events and provide maintenance access.

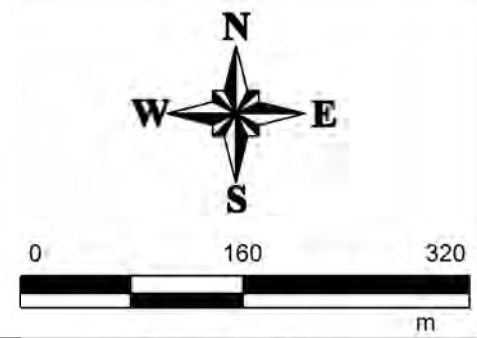
The existing gap in the railway embankment would be widened to match the updated channel width

Widen the existing inlet

**LEGEND**

-  Extent of Works
-  Existing Channel
-  Channel Modifications
-  Terrain Changes

Notes:  
Aerial photograph date: 2016



**Figure 46:**  
**Concept Design for Blacks Drain Modifications (FM14)**

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File Name: Figure 46 - Concept Design for Blacks Drain Modifications (FM14).wor

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