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Project: Gracemere Catchments
Flood Study

Hydrologic and Hydraulic Modelling
Report:
Volume 2 Mapping

Reference: 225315
Prepared for:
Rockhampton Regional
Council
Revision: 2
10 May 2013



Document Control Record

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Report Title		Hydrologic and Hydraulic Modelling Report: Volume 2 Mapping				
Document ID		Project Number		225315		
File Path		Livelihood: P:\SWM\Work\225315 Gracemere Catchments\Study Outputs\Reports\225315 Report Final Rev2 A3 Figures.docx				
Client		Rockhampton Regional Council		Client Contact		Angus Russell
Rev	Date	Revision Details/Status	Prepared by	Author	Verifier	Approver
0	7 February 2012	Draft	C Smyth	T Campbell	M Gould	T Graham
1	18 July 2012	Final	C Smyth	T Campbell	M Gould	T Graham
2	10 May 2013	Printed Final	C Smyth	T Campbell	M Gould	T Graham
Current Revision		2				

Approval							
Author Signature				Approver Signature			
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Gracemere Catchments Flood Study

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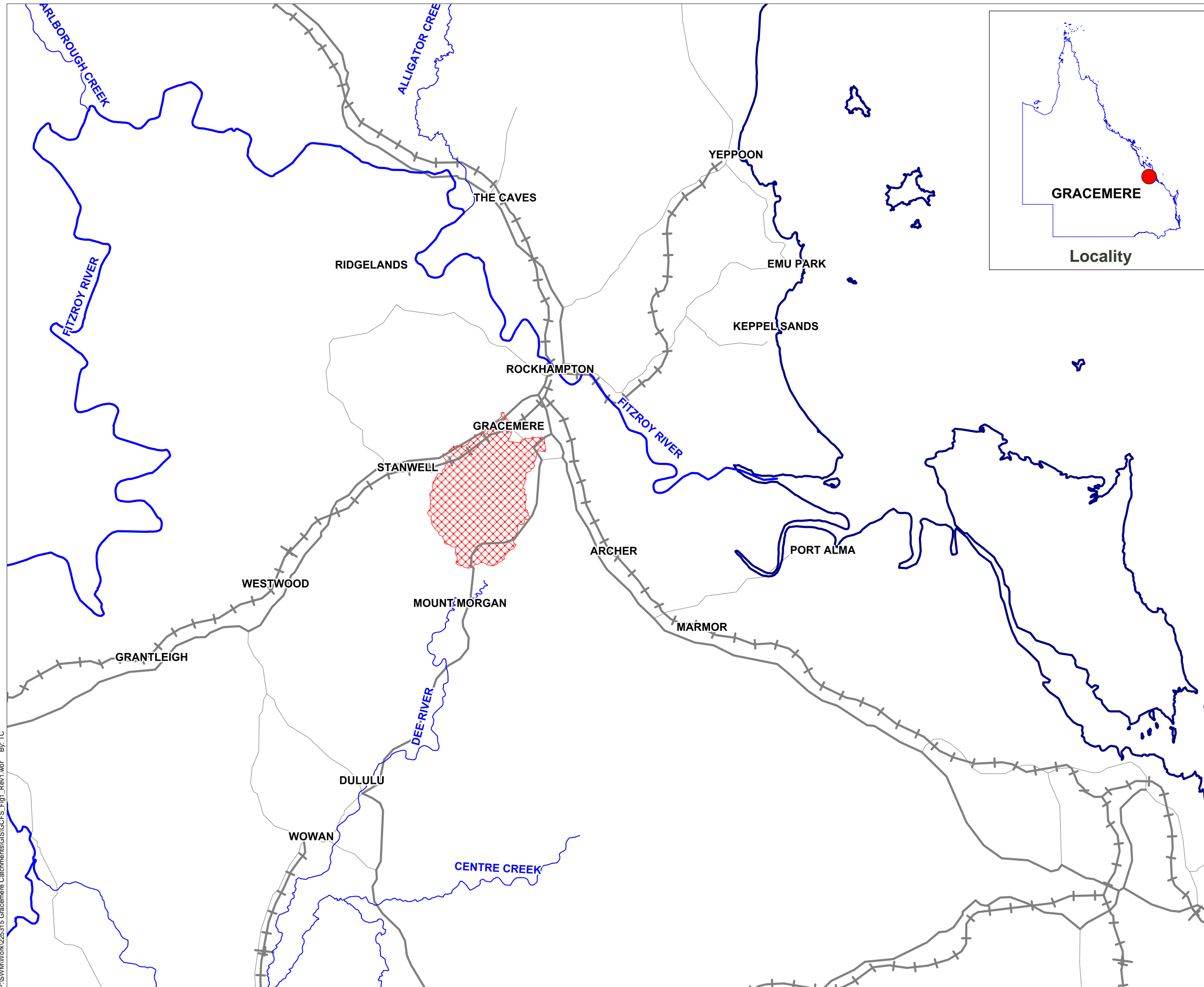
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Figure 21 | 50 Year ARI Peak Hazards







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Figure 24 | 100 Year ARI Peak Hazards



Legend

-  Catchment
-  Coastline
-  Fitzroy River
-  Major Waterways
-  Railways
-  Main Roads

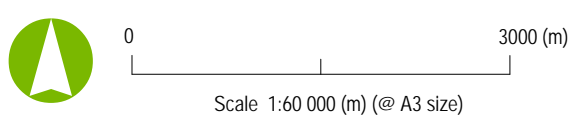
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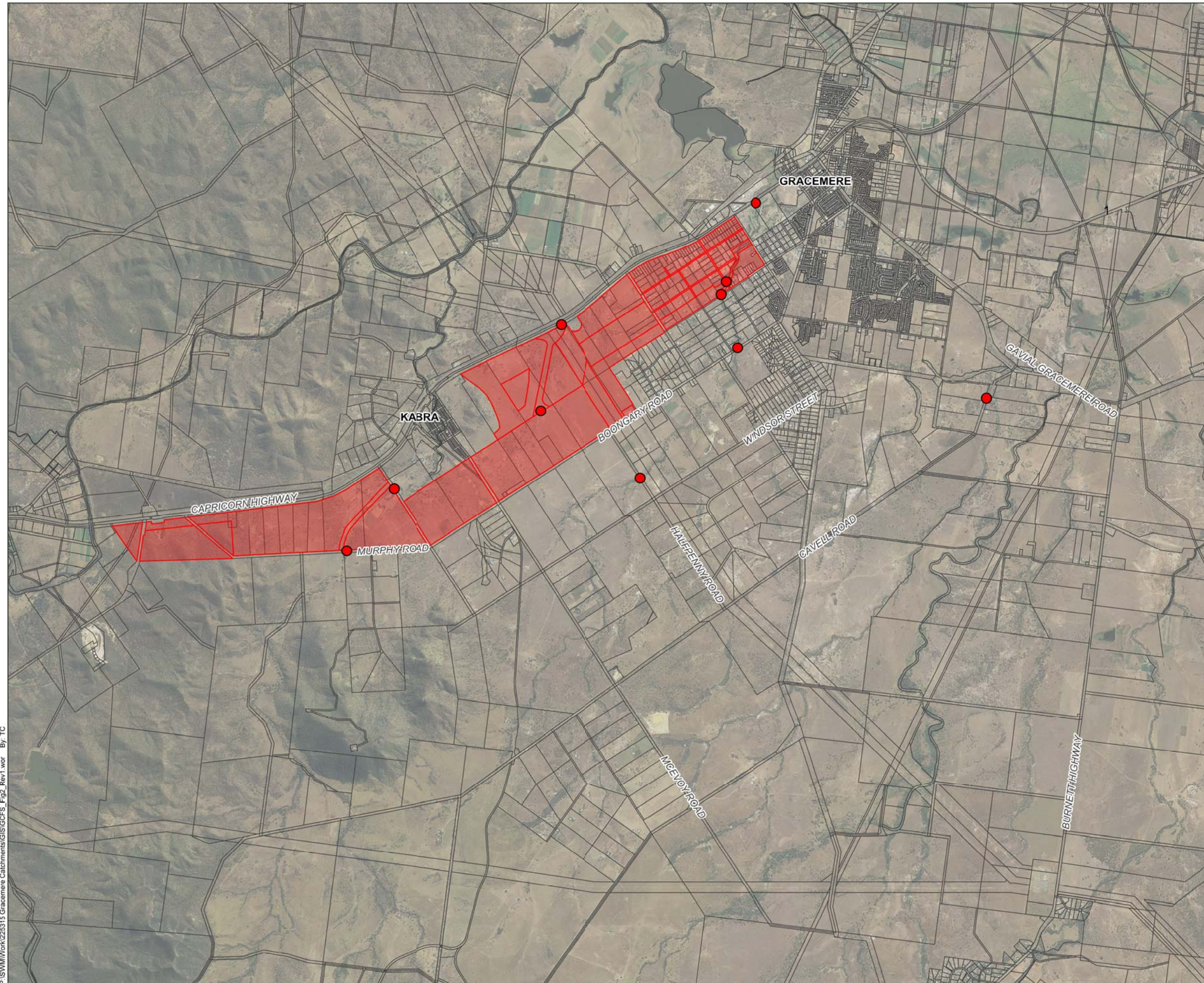
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Projection: MGA Zone 56



Legend

- Proposed Development Area
- Proposed Strategic Road Crossing
- Cadastre

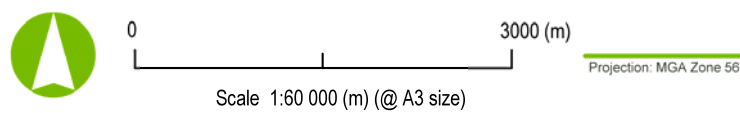
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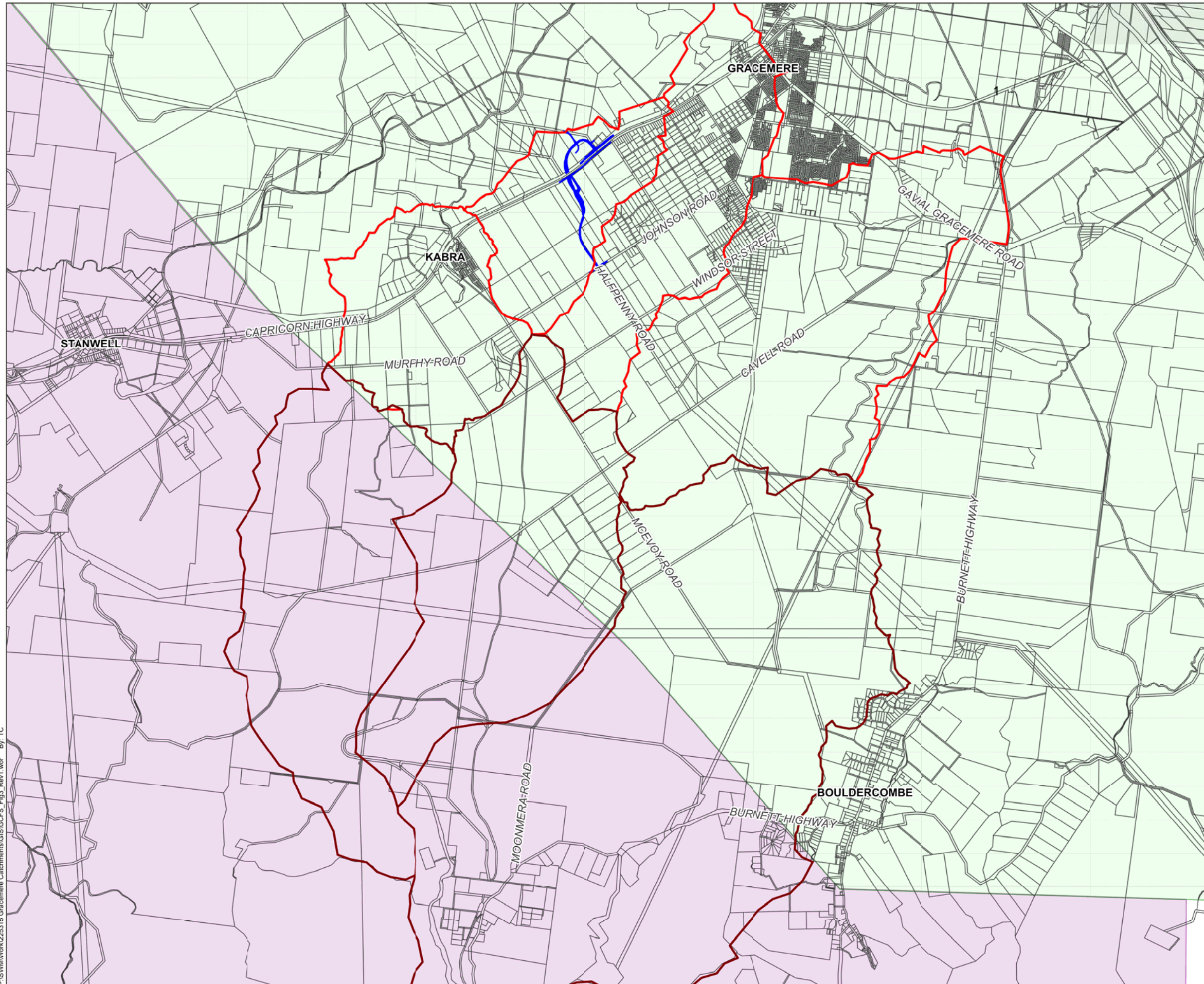
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





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Legend

-  LIDAR Data Extents
-  DERM Contour Extents
-  Overpass Data Extents
-  RAFTS Model Extents
-  TUFLOW Model Extents
-  Cadastre

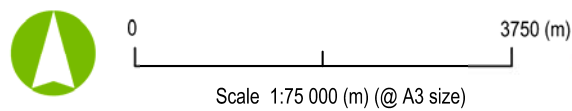
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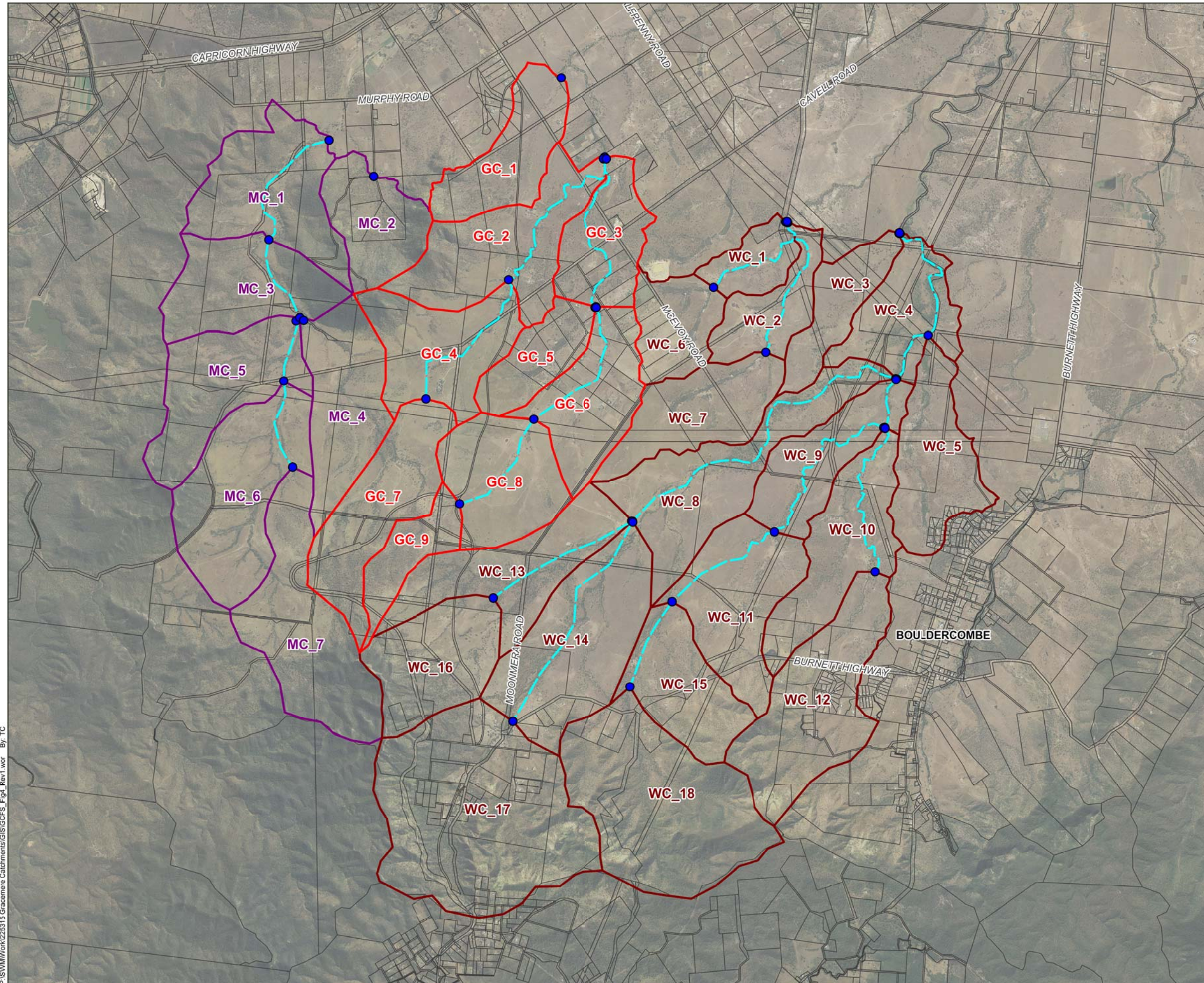
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Projection: MGA Zone 56



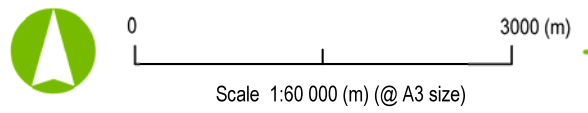
Legend

- Gracemere Creek Sub-Catchments
- Middle Creek Sub-Catchments
- Washpool Creek Sub-Catchments
- Node
- Link
- Cadastre

- Notes:**
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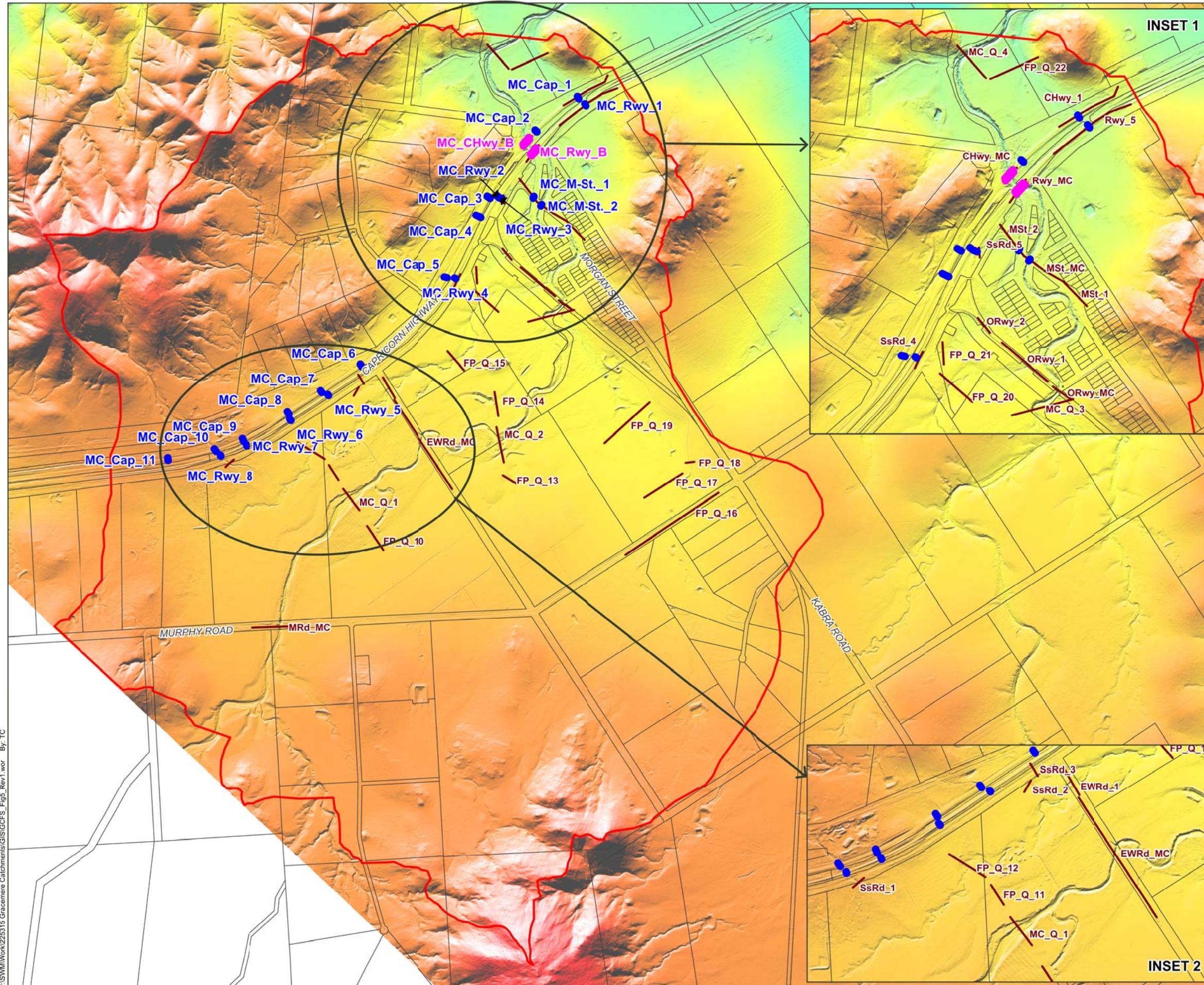
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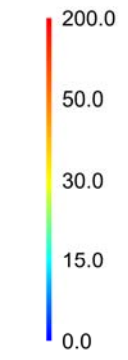
Gracemere Catchments Flood Study
Figure 4 - Hydrologic Model Layout



Legend

- TUFLOW Model Boundary
- Culvert
- Bridge
- Discharge Reporting Location
- Cadastre

Elevation (m AHD)



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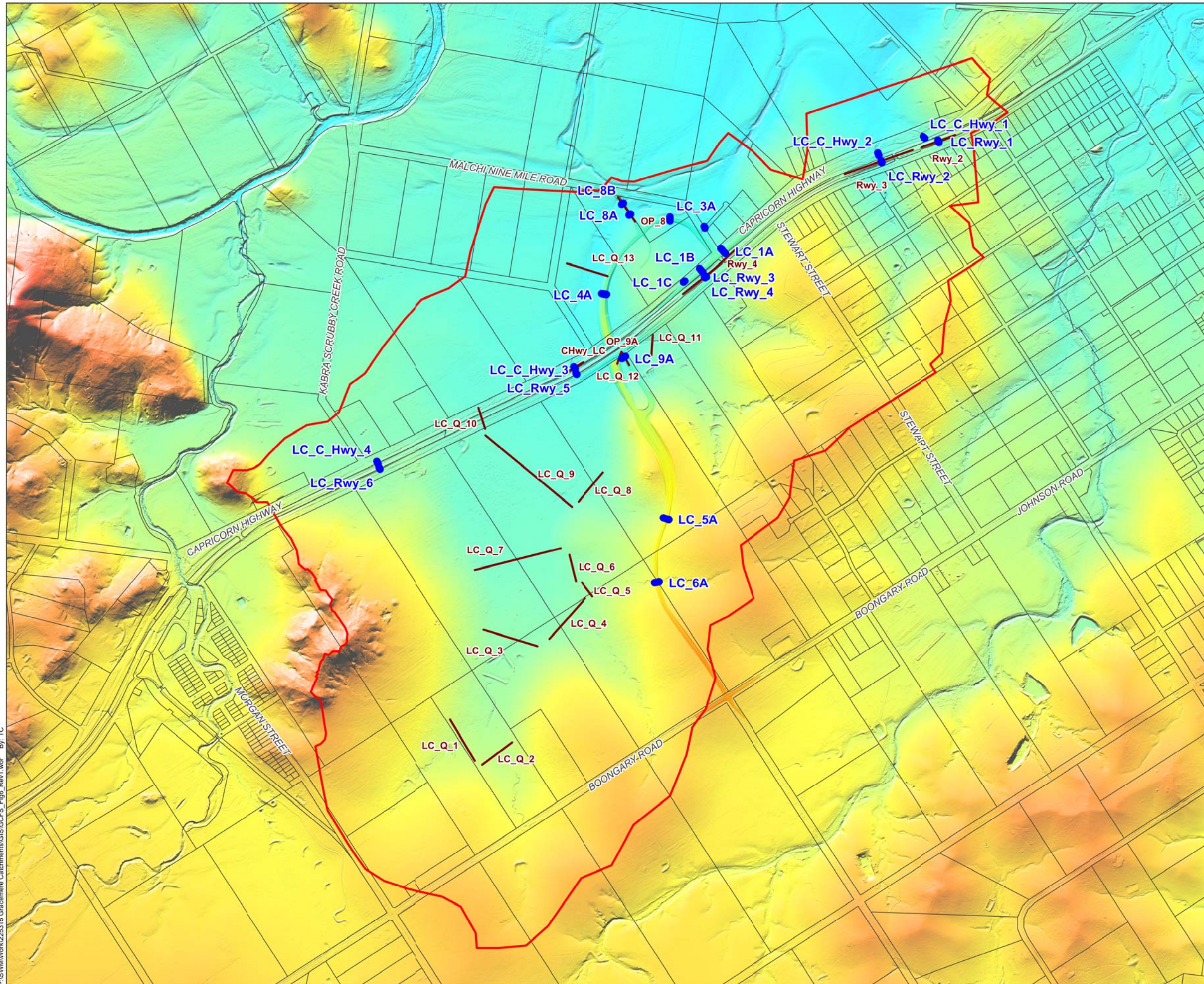
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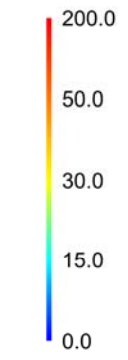
Gracemere Catchments Flood Study
Figure 5 - Hydraulic Model Layout
Middle Creek



Legend

-  TUFLOW Model Boundary
-  Culvert
-  Bridge
-  Discharge Reporting Location
-  Cadastre

Elevation (m AHD)



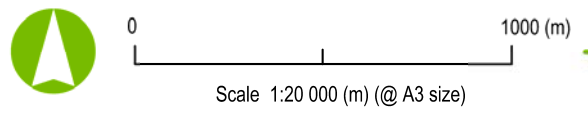
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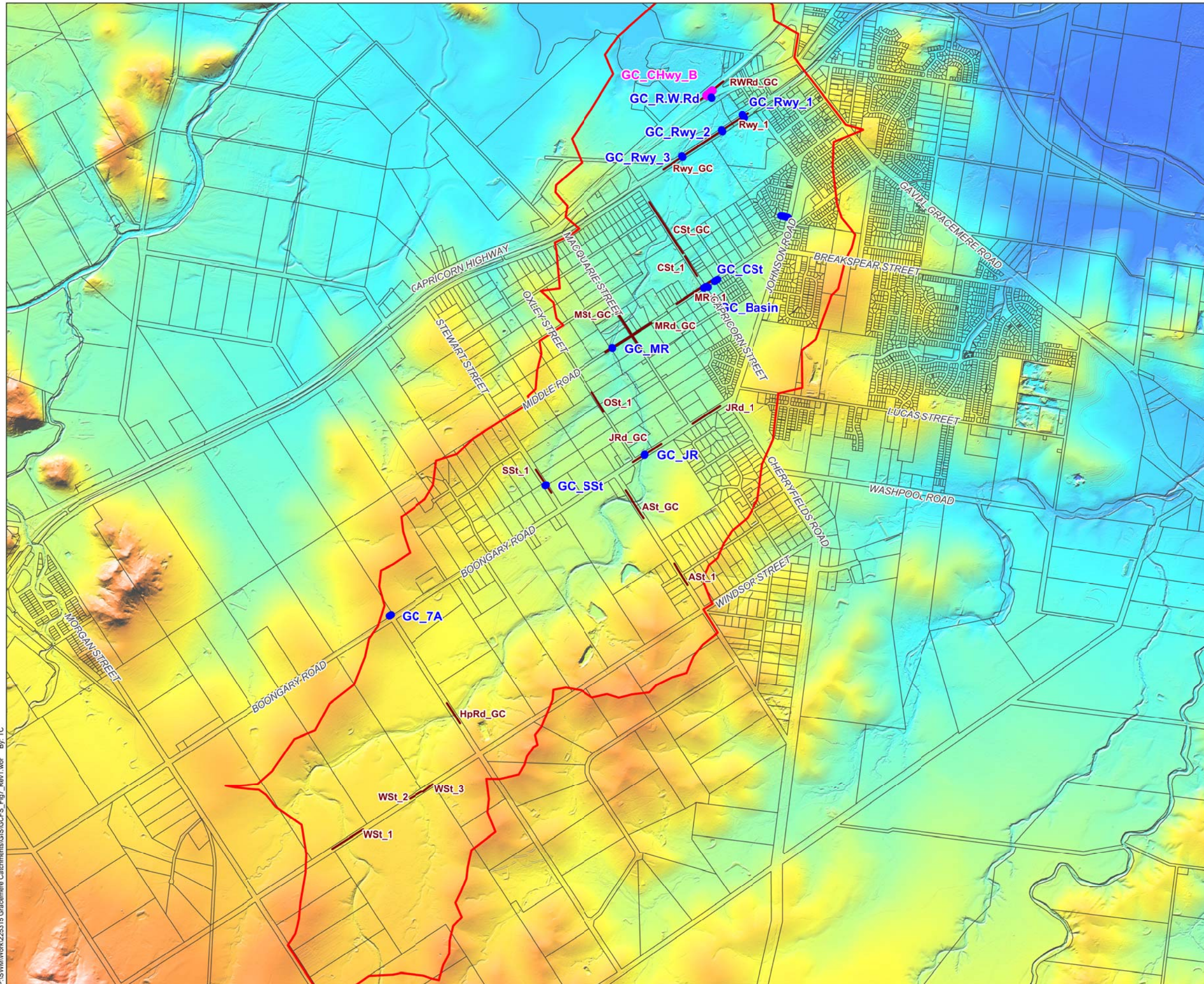
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Projection: MGA Zone 56

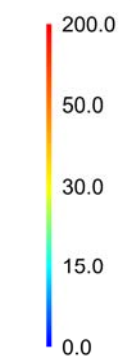
Gracemere Catchments Flood Study
Figure 6 - Hydraulic Model Layout
Local Catchment



Legend

- TUFLOW Model Boundary
- Culvert
- Bridge
- Discharge Reporting Location
- Cadastre

Elevation (m AHD)



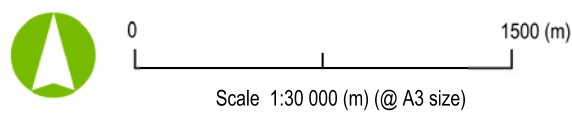
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Version: 1

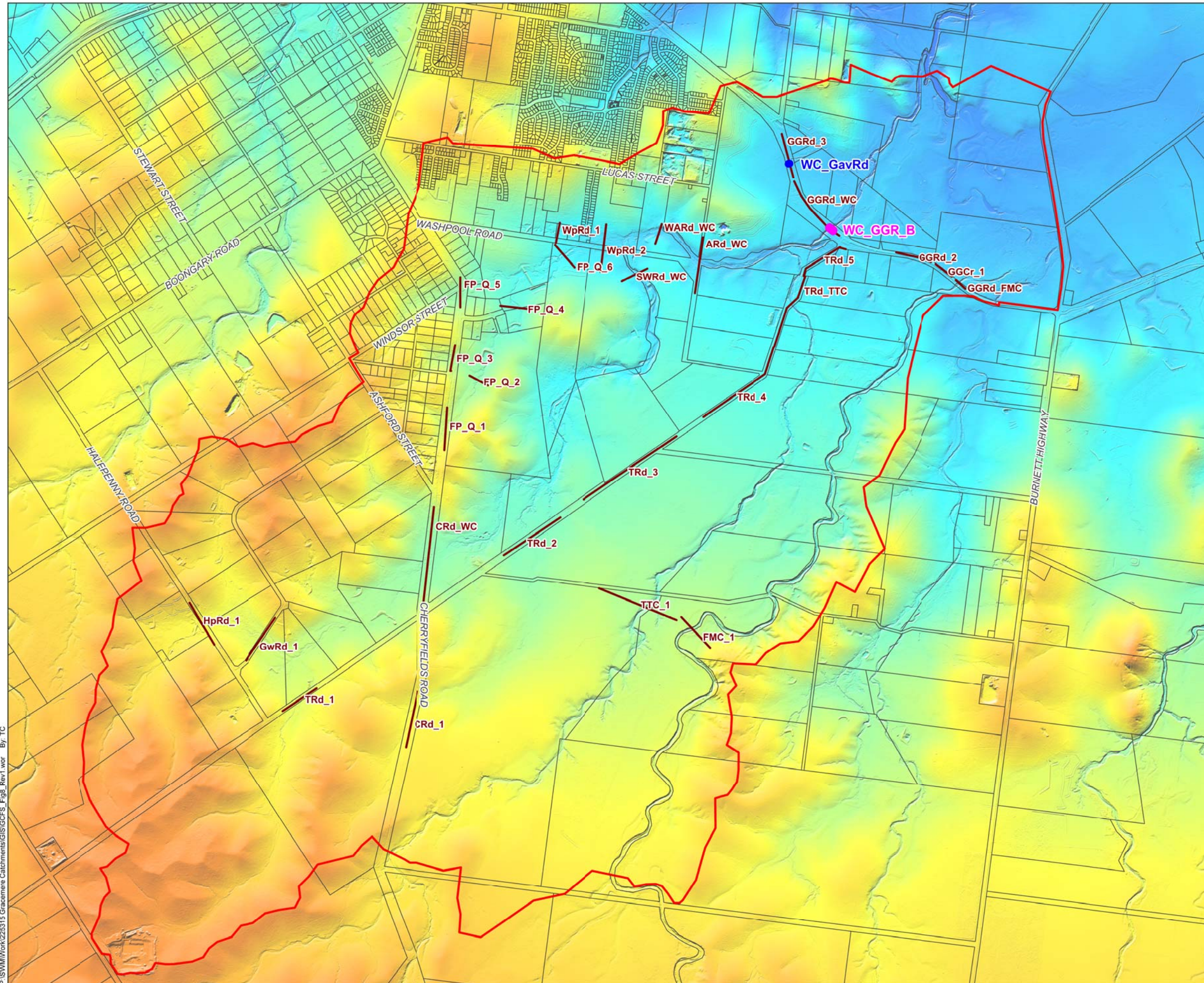
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Projection: MGA Zone 56

Gracemere Catchments Flood Study

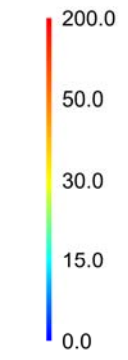
**Figure 7 - Hydraulic Model Layout
Gracemere Creek**



Legend

- TUFLOW Model Boundary
- Culvert
- Bridge
- Discharge Reporting Location
- Cadastre

Elevation (m AHD)



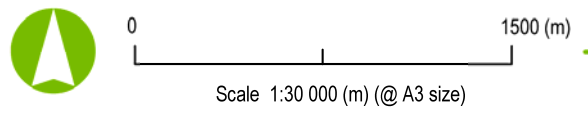
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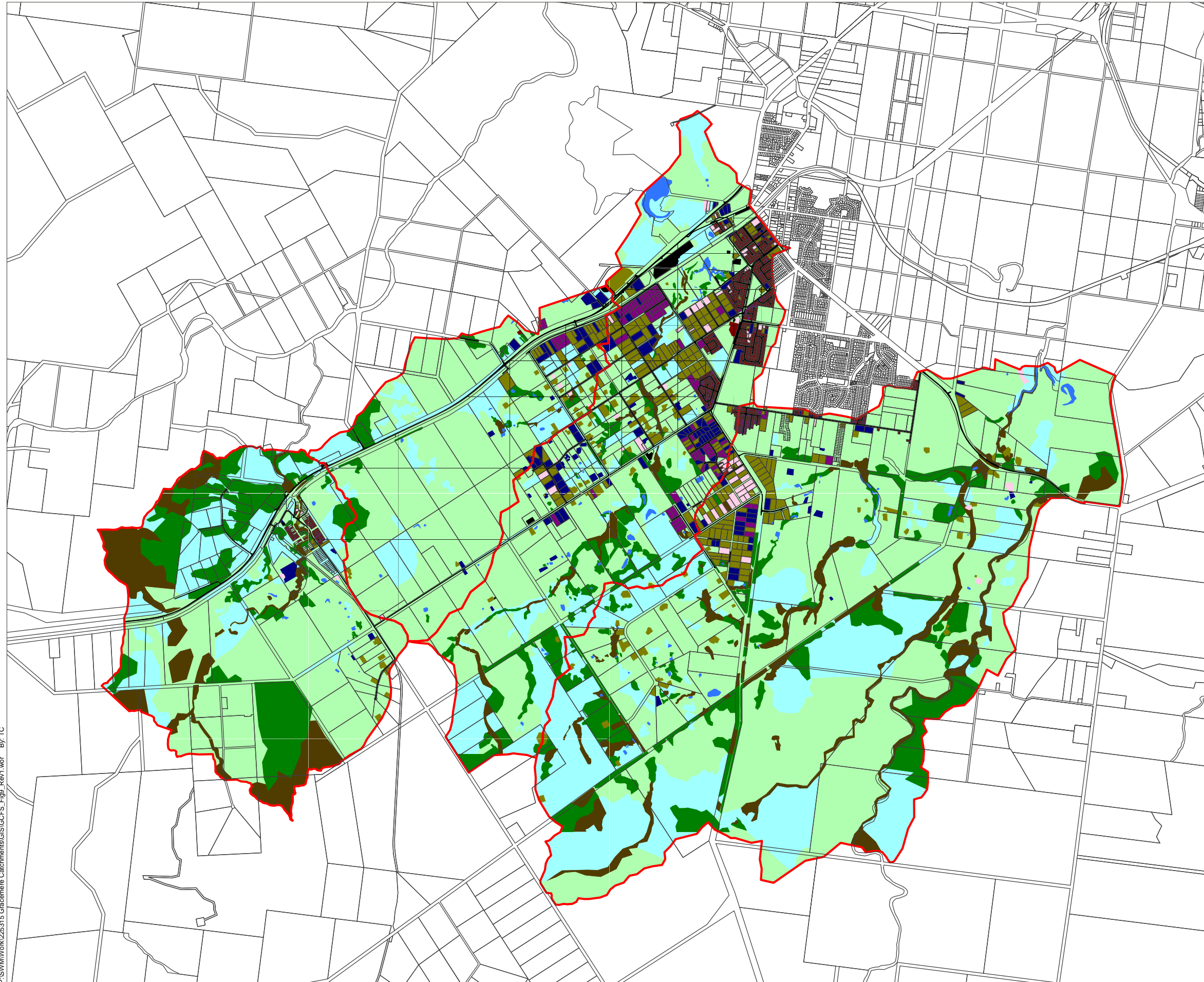
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Projection: MGA Zone 56

Gracemere Catchments Flood Study

Figure 8 - Hydraulic Model Layout Washpool Creek



Legend

-  Cadastre
-  Hydraulic Model Boundary
-  Low Density Vegetation
-  Medium Density Vegetation
-  High Density Vegetation
-  Cleared Undeveloped Land
-  Grassed Land
-  Developed Land, Unvegetated
-  Rural Residential Lots - Low Density Vegetation
-  Rural Residential Lots - High Density Vegetation
-  Residential Lots
-  Roads and Other Impervious Surfaces
-  Permanent Surface Water

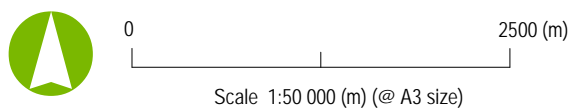
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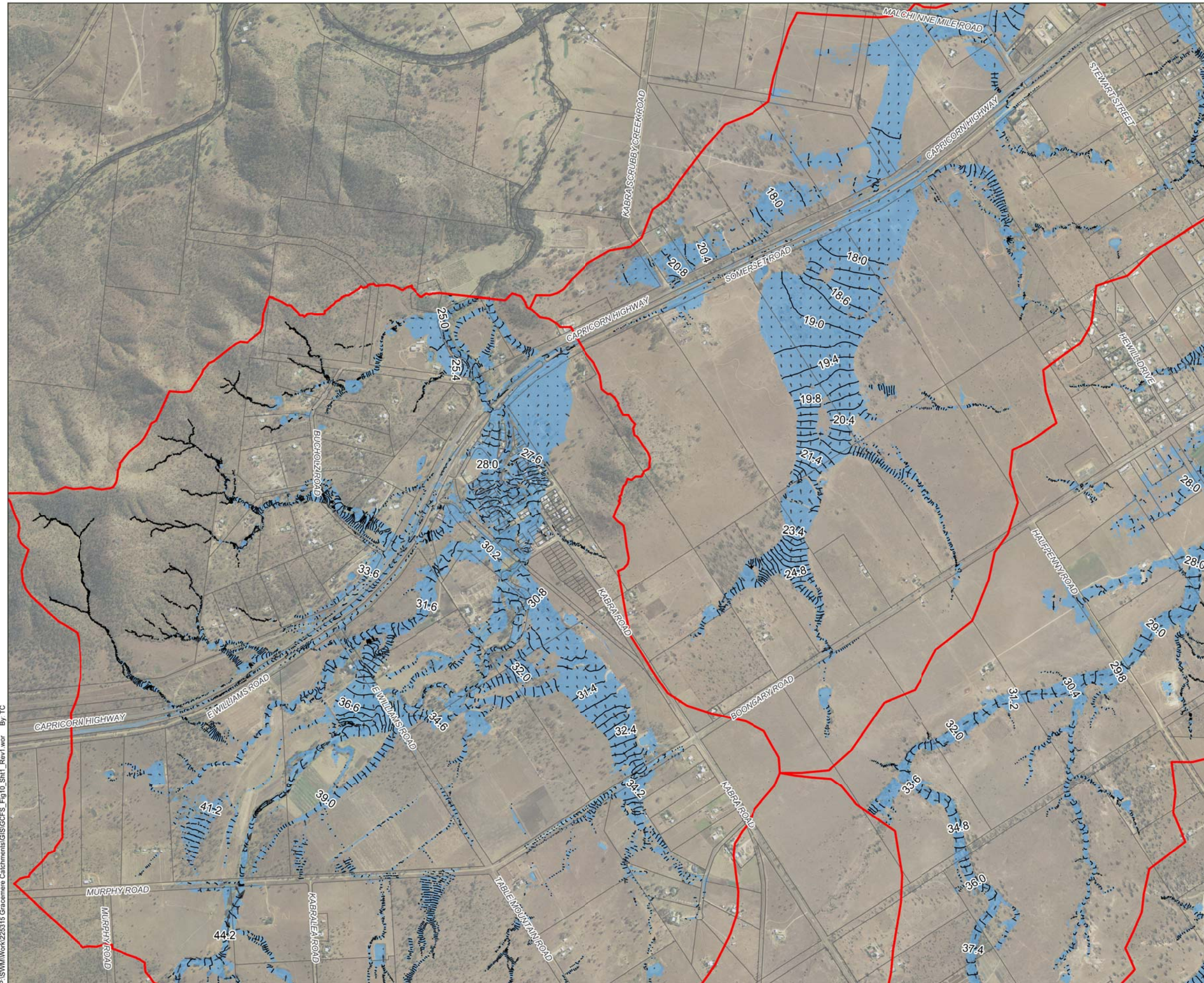
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Projection: MGA Zone 56



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

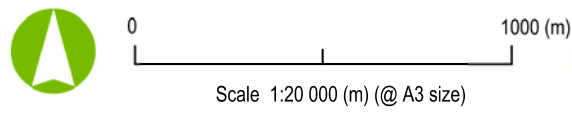
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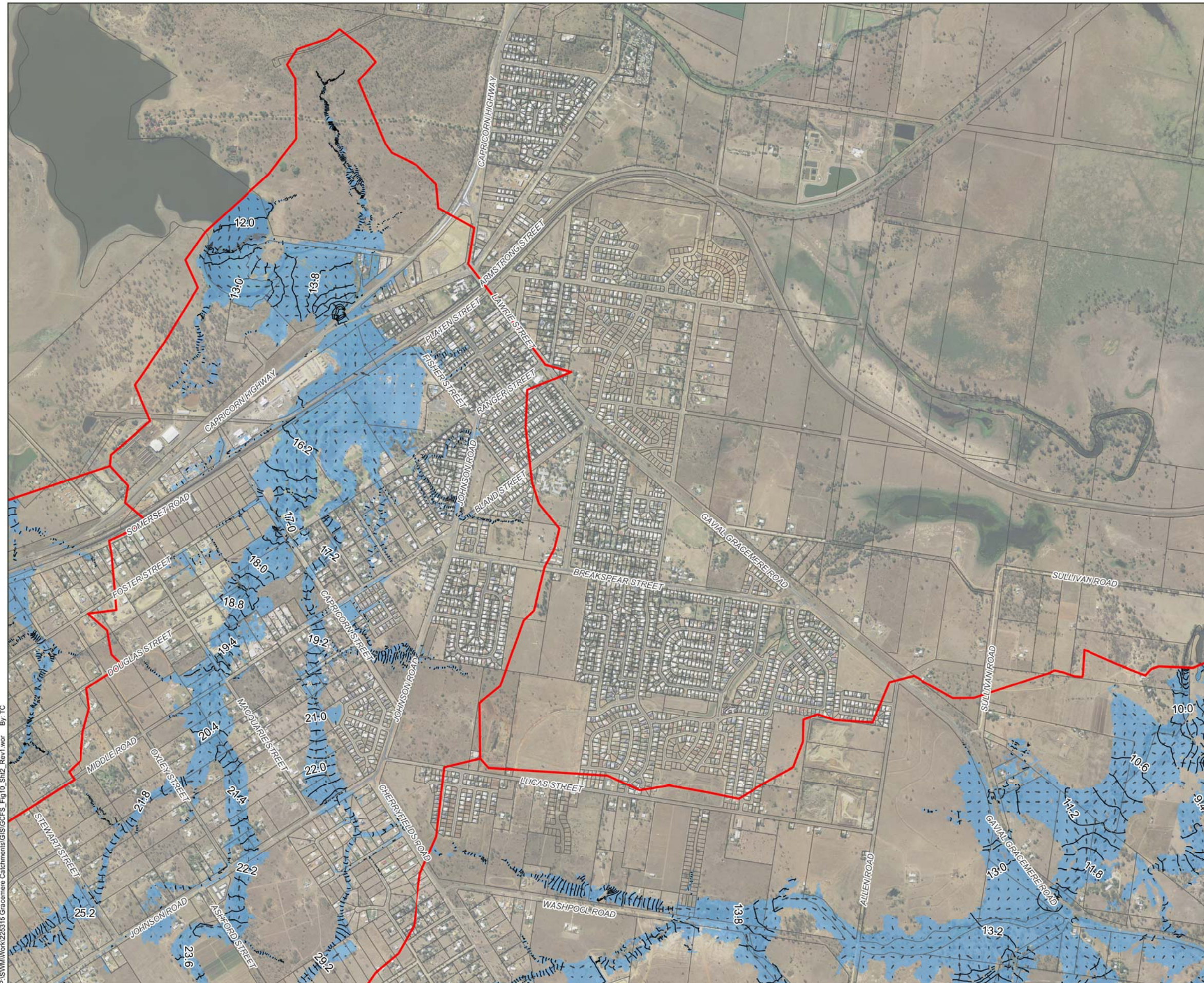
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Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 10: Sheet 1 - 5 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents
- Inundation Extents
- 0.2m (AHD) Peak Water Surface Elevation Contour
- Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

- Notes:**
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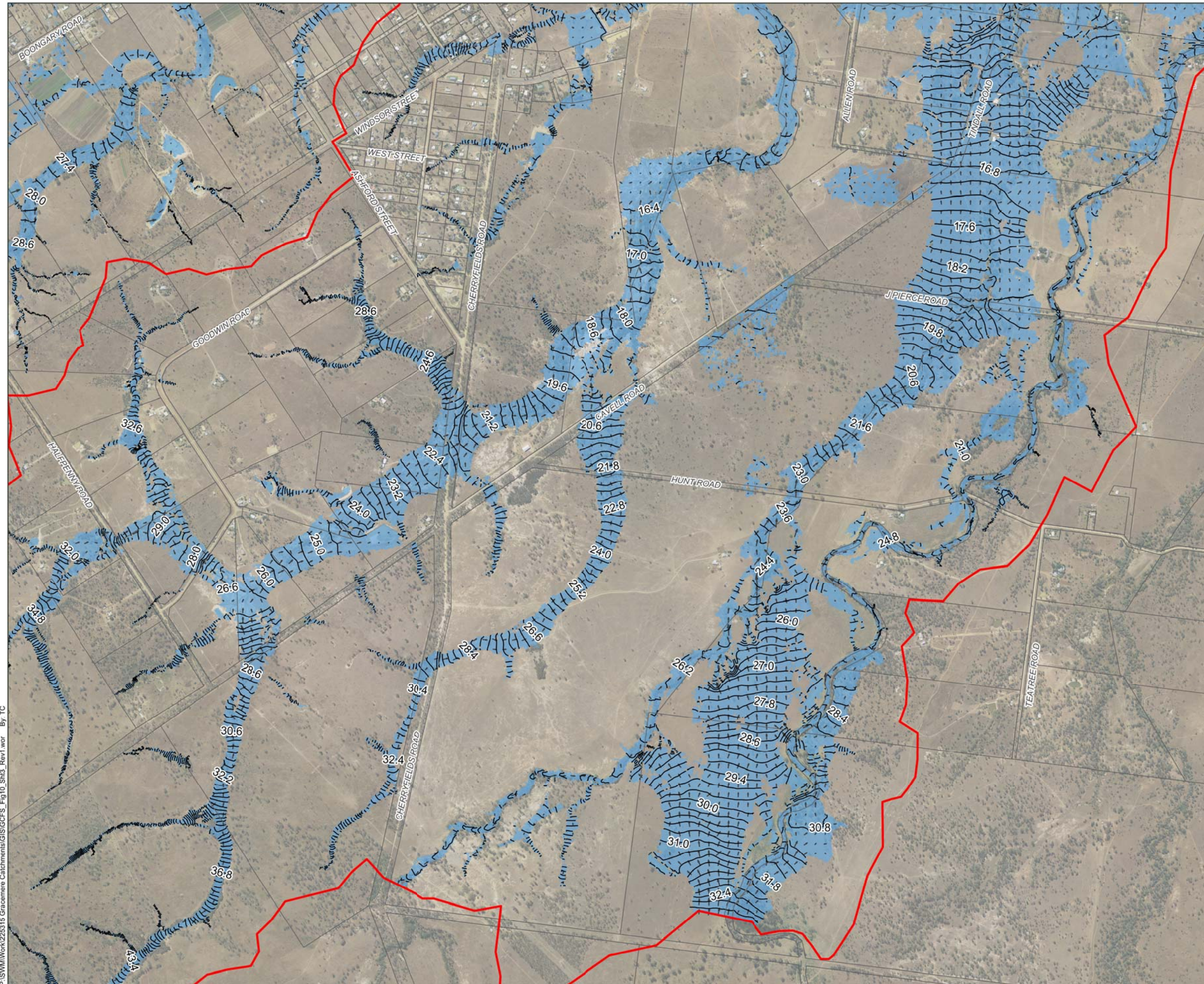
Date: 31/03/2012 Version: 1

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

Scale 1:20 000 (m) (@ A3 size)

Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 10: Sheet 2 - 5 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

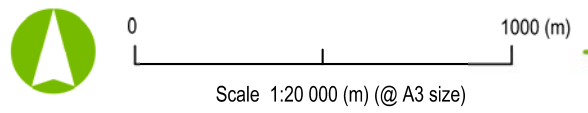
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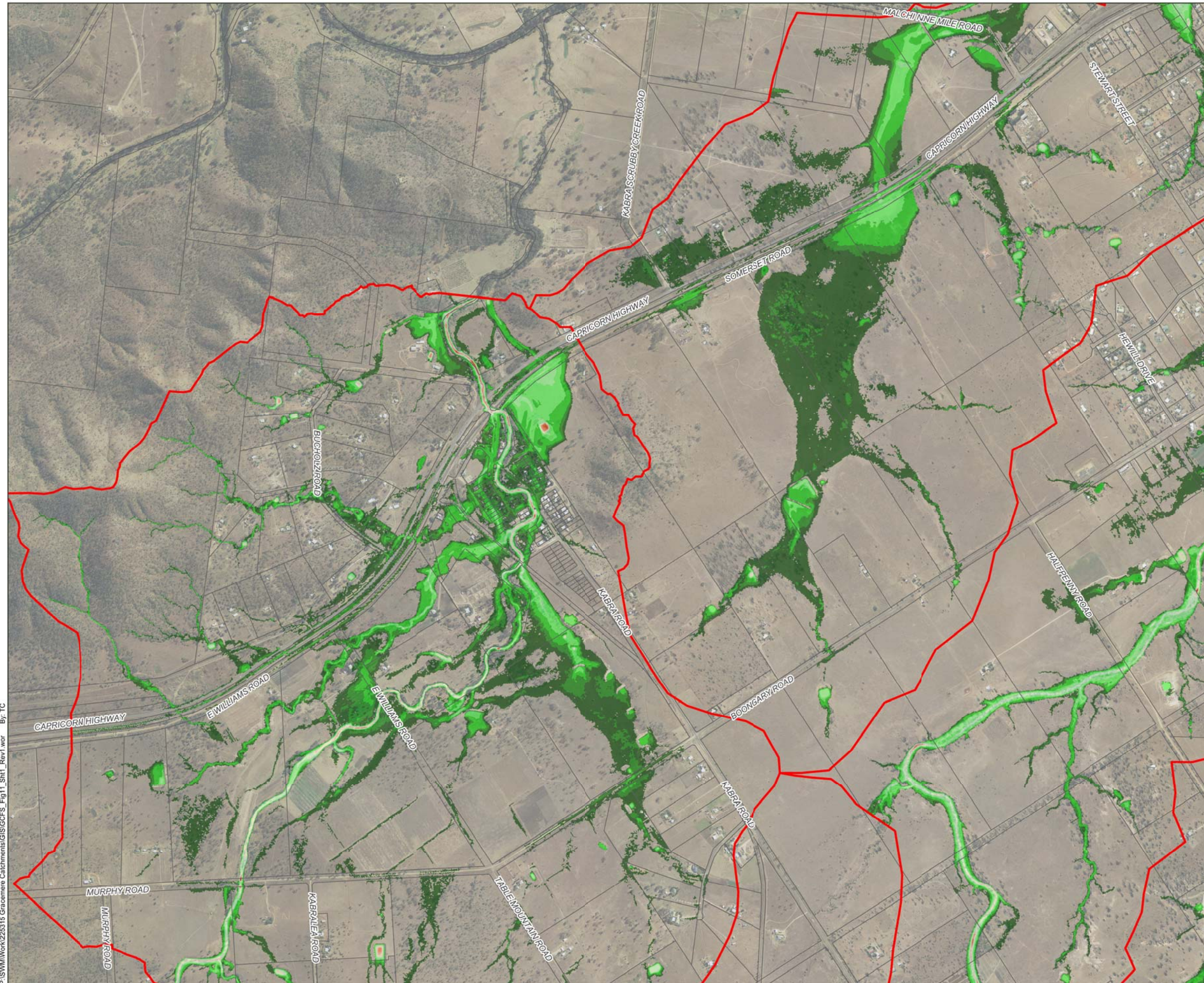
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Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 10: Sheet 3 - 5 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | | | |
|--|------------|--|------------|
| | 0.0 to 0.3 | | 2.5 to 3.0 |
| | 0.3 to 0.5 | | 3.0 to 3.5 |
| | 0.5 to 1.0 | | 3.5 to 4.0 |
| | 1.0 to 1.5 | | 4.0 to 4.5 |
| | 1.5 to 2.0 | | 4.5 to 5.0 |
| | 2.0 to 2.5 | | > 5.0 |

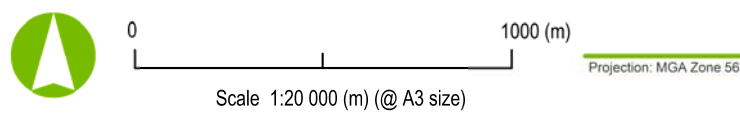
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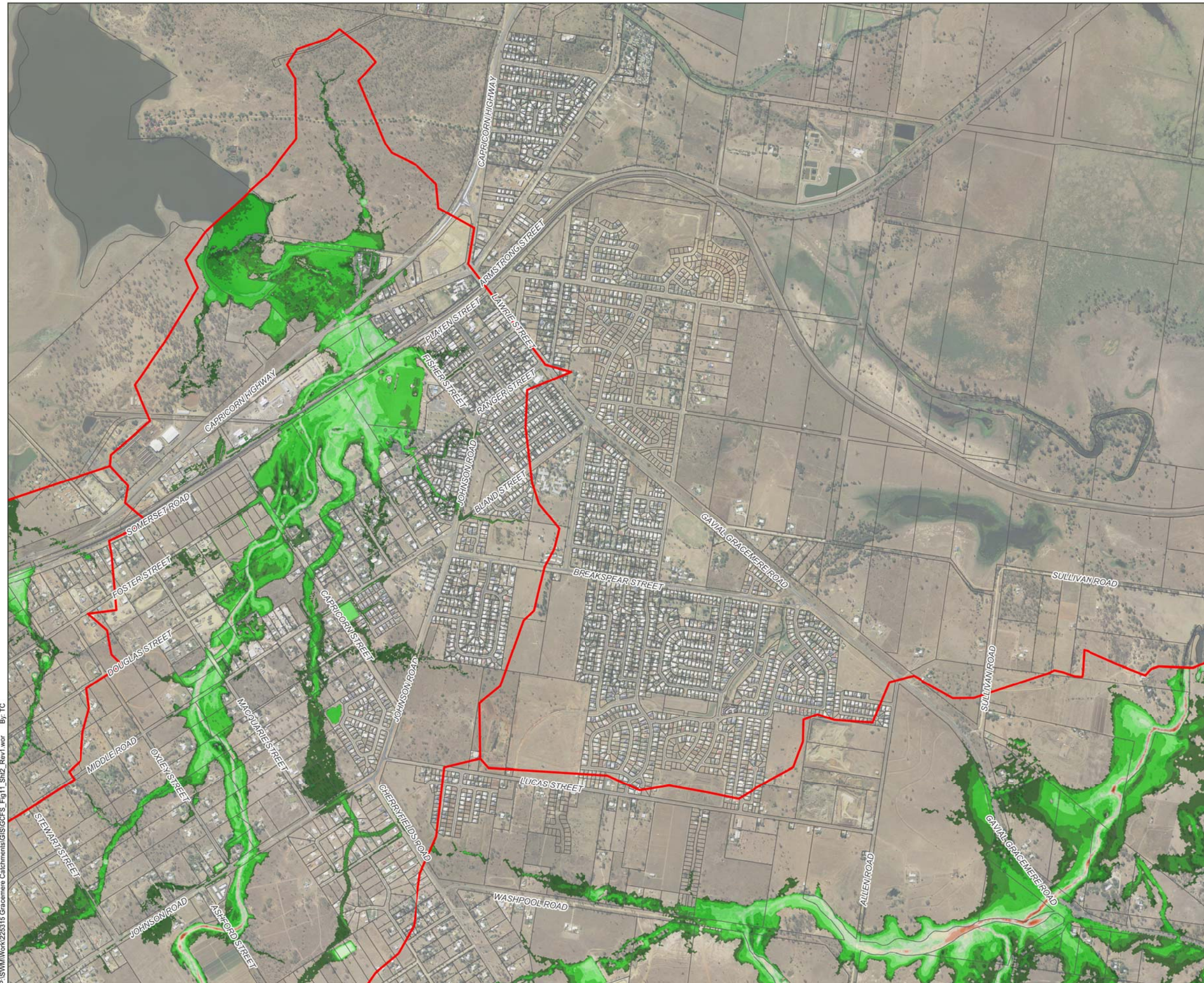
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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

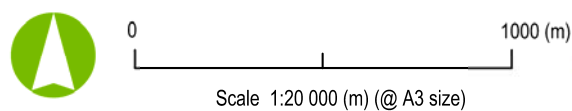
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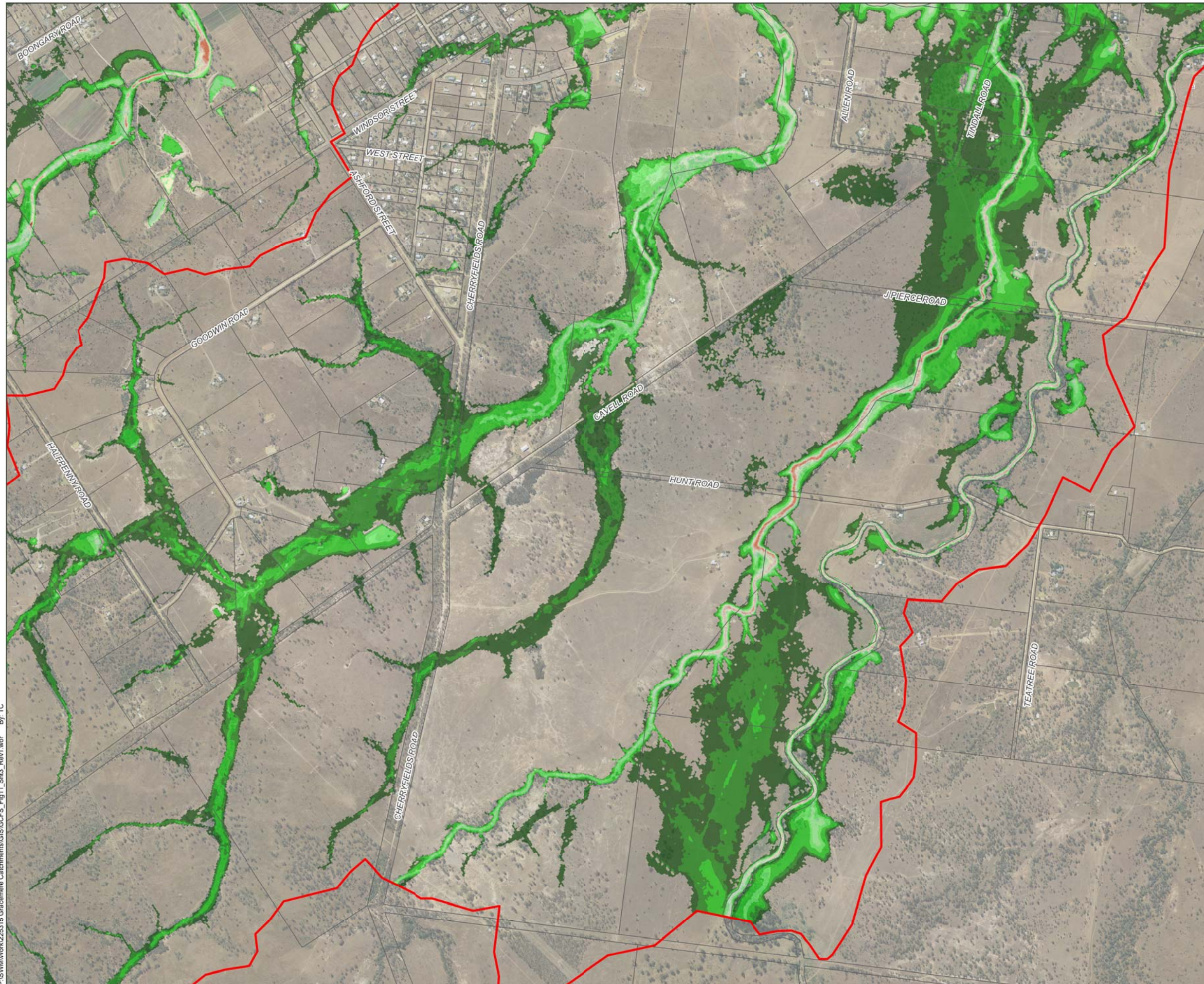
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Version: 1

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Projection: MGA Zone 56



Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | | | |
|--|------------|--|------------|
| | 0.0 to 0.3 | | 2.5 to 3.0 |
| | 0.3 to 0.5 | | 3.0 to 3.5 |
| | 0.5 to 1.0 | | 3.5 to 4.0 |
| | 1.0 to 1.5 | | 4.0 to 4.5 |
| | 1.5 to 2.0 | | 4.5 to 5.0 |
| | 2.0 to 2.5 | | > 5.0 |

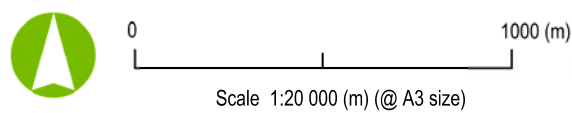
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

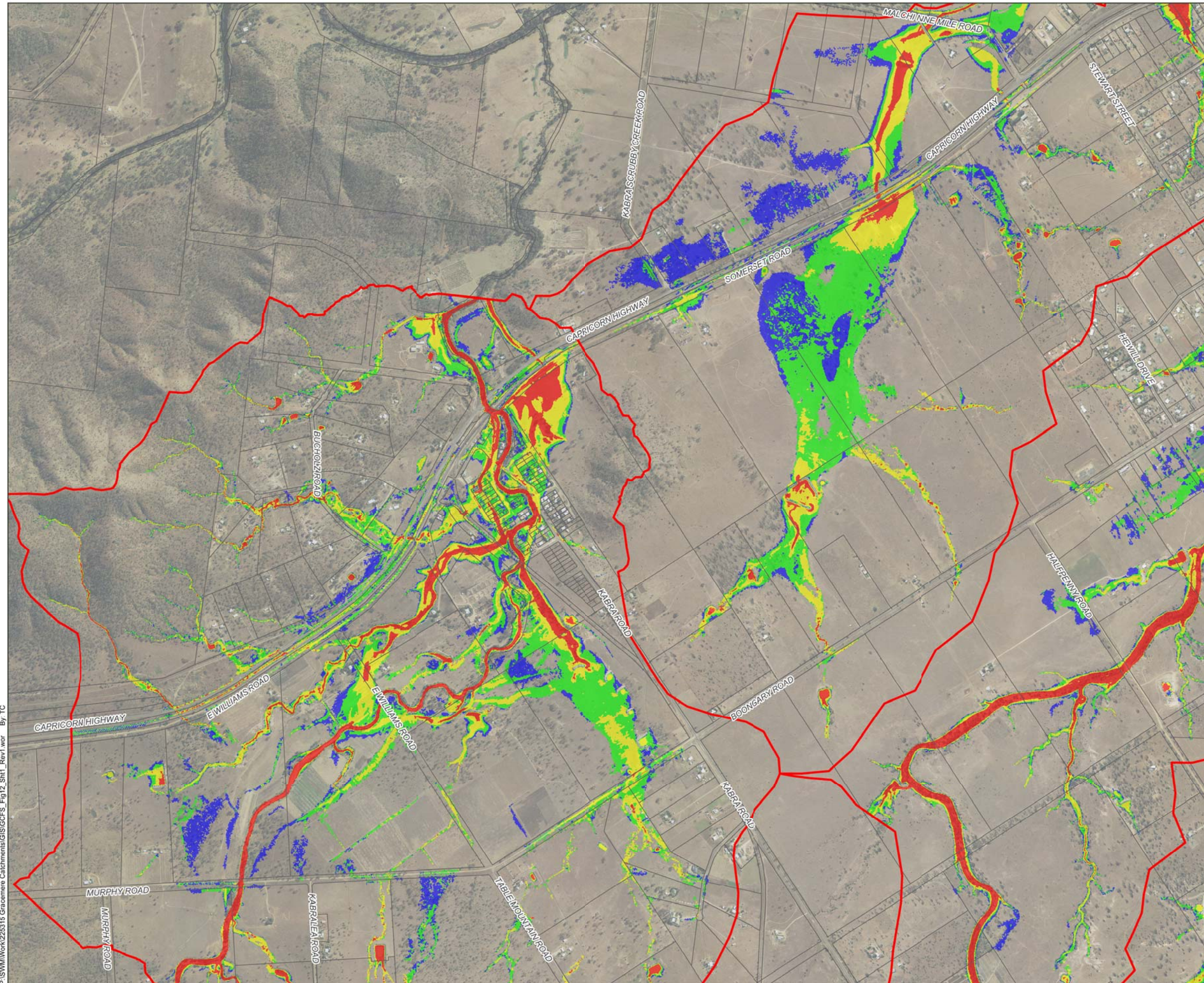
Version: 1

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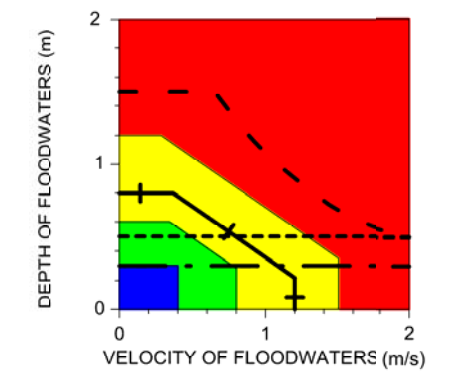
Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 11: Sheet 3 - 5 Year ARI Peak Depths



Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

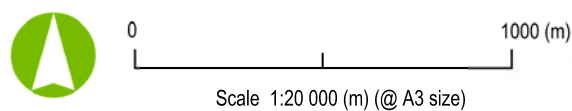
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

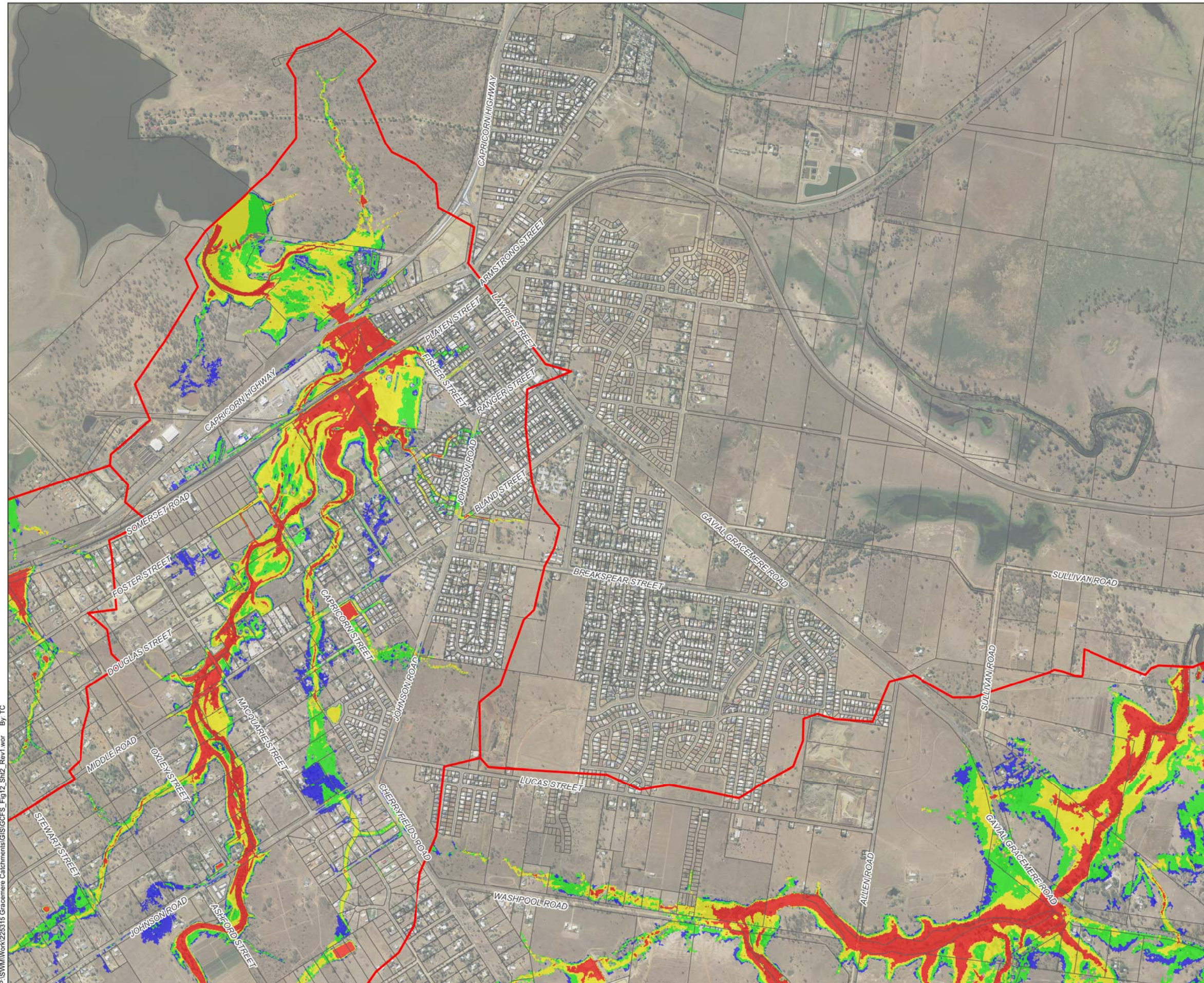
Date: 31/03/2012

Version: 1

P:\SWM\Work\22315 Gracemere Catchments\GIS\GCFS_Fig12_Sht1_Rev1.wor By: TC

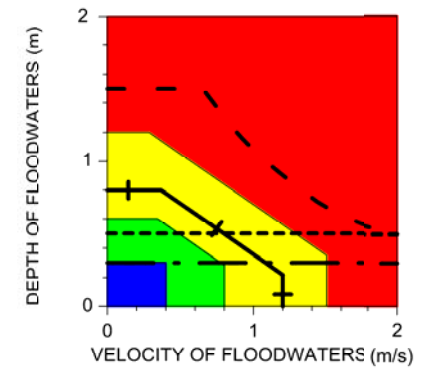


Projection: MGA Zone 56



Legend

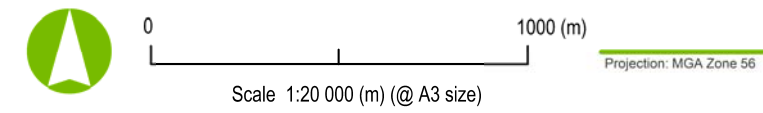
- Cadastre
- TUFLOW Model Extents



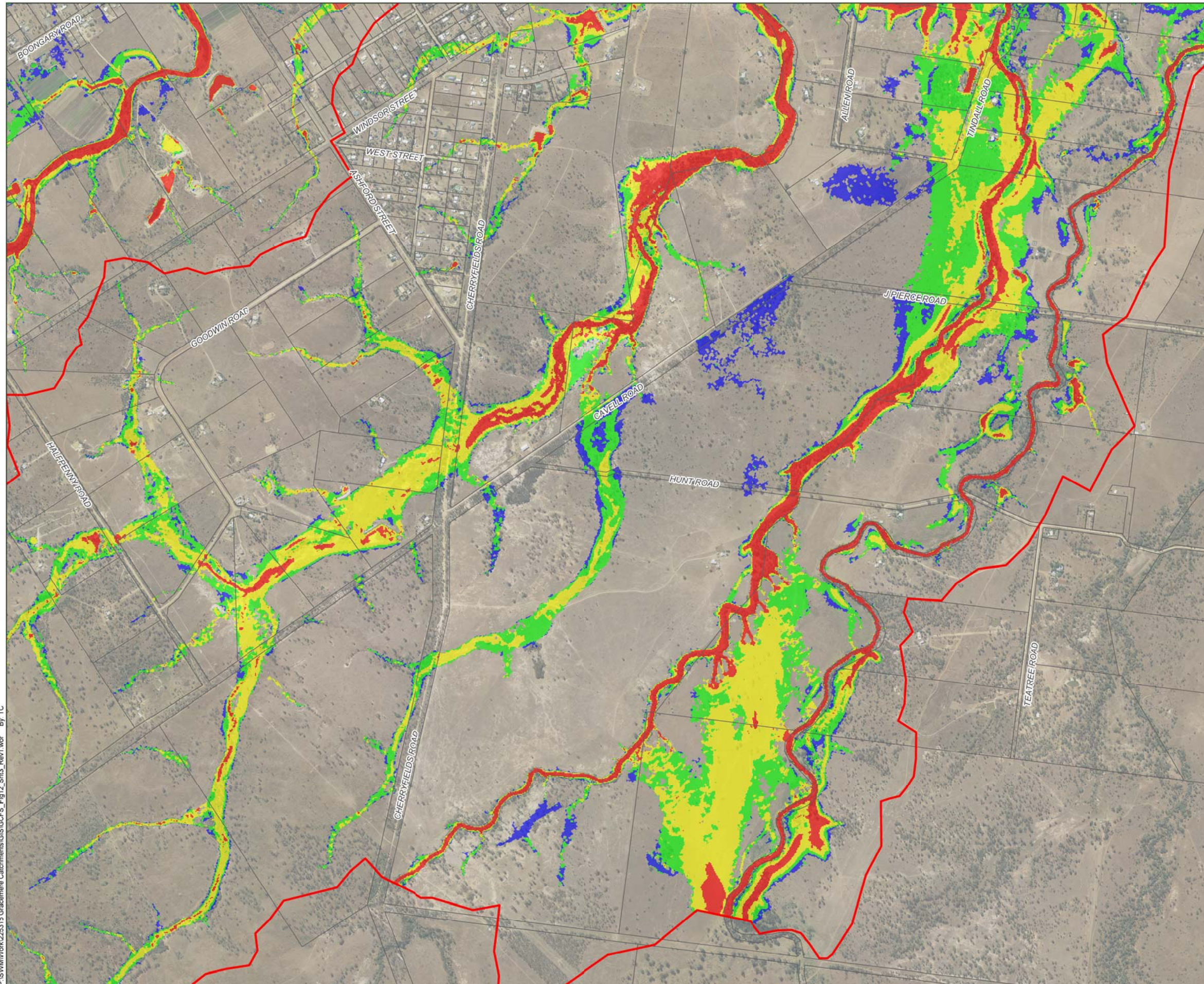
Hazard Categories		Hazard Thresholds	
	Extreme		Safe to Use Small Cars
	High		Safe to Use 4WDs
	Medium		Wading Limit - Children
	Low		Wading Limit - Adults

- Notes:**
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1

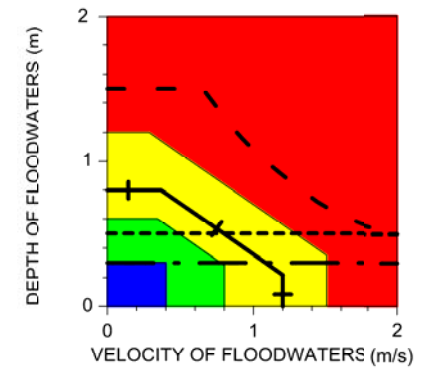


Gracemere Catchments Flood Study
Figure 12: Sheet 2 - 5 Year ARI Peak Hazards



Legend

- Cadastre
- TUFLOW Model Extents

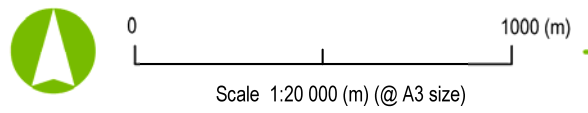


Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

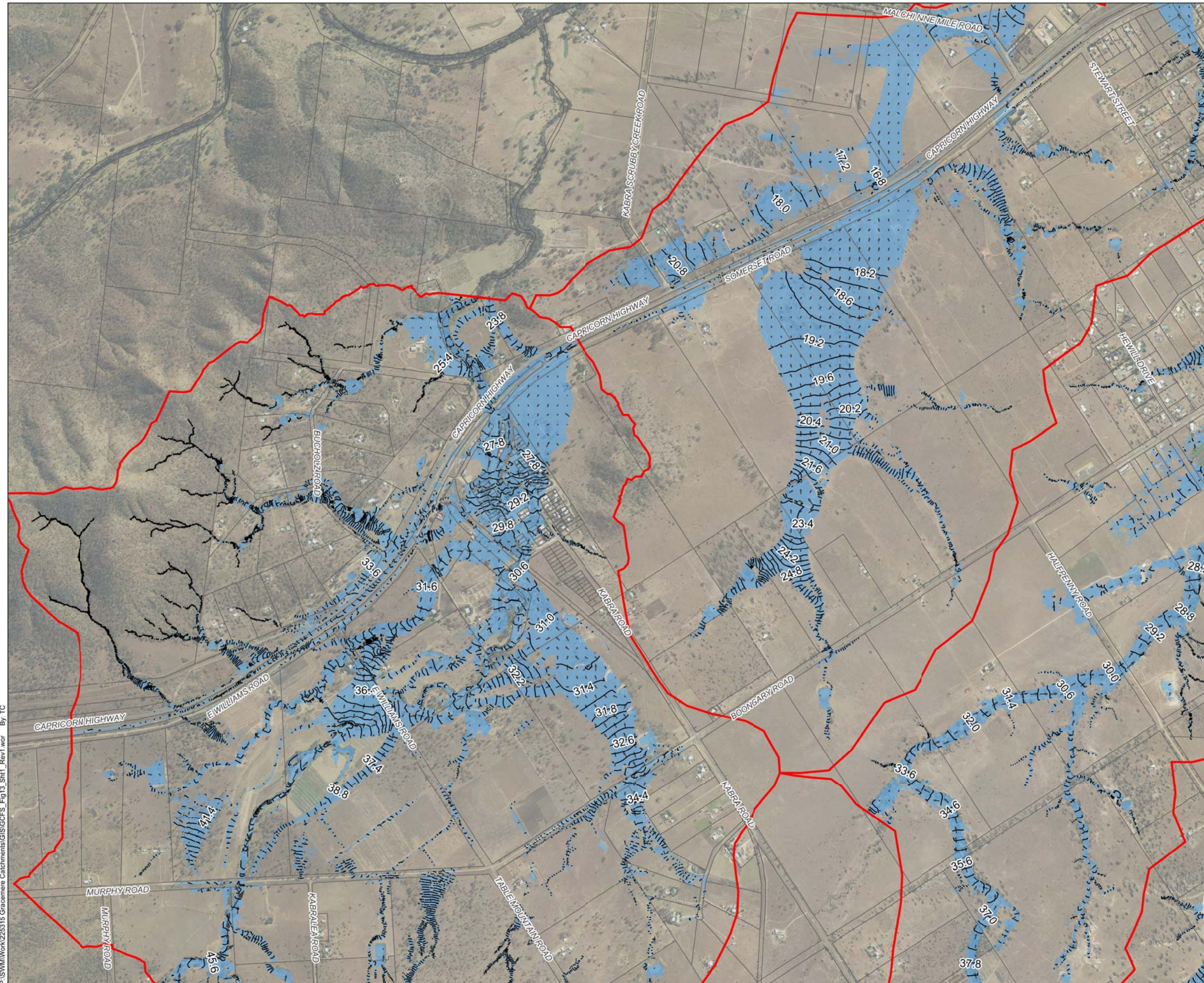
- Notes:**
- This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 - This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 - This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1






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Projection: MGA Zone 56



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

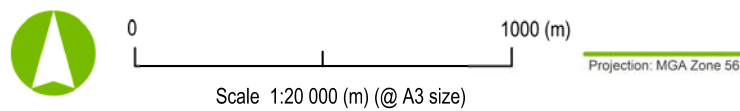
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

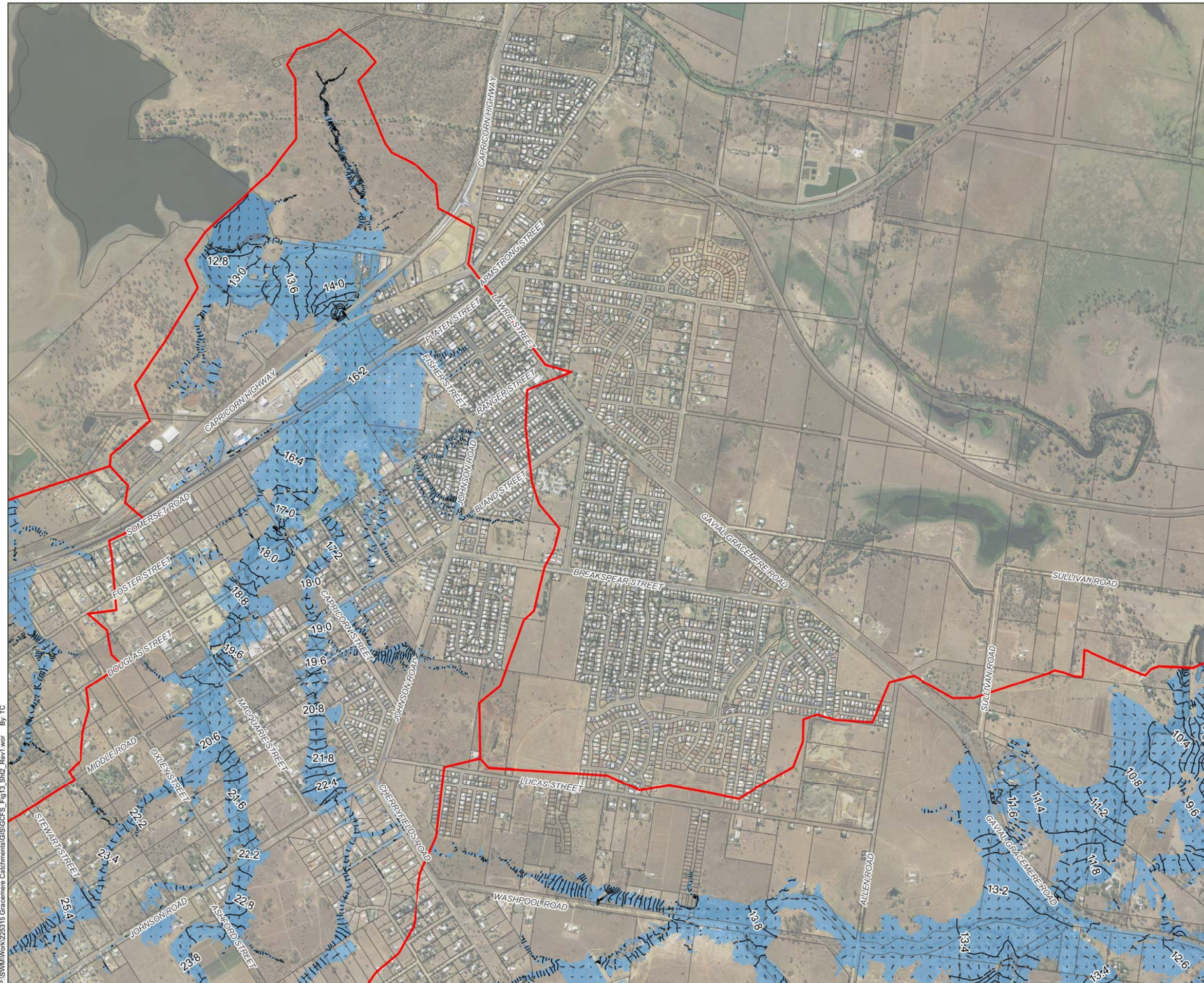
Version: 1

P:\SWM\Work\22315 Gracemere Catchments\GIS\GCFS_Fig13_Sht1_Rev1.wor By: TC








Gracemere Catchments Flood Study

Figure 13: Sheet 1 - 10 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

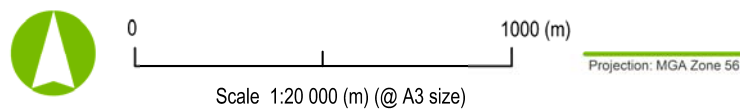
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

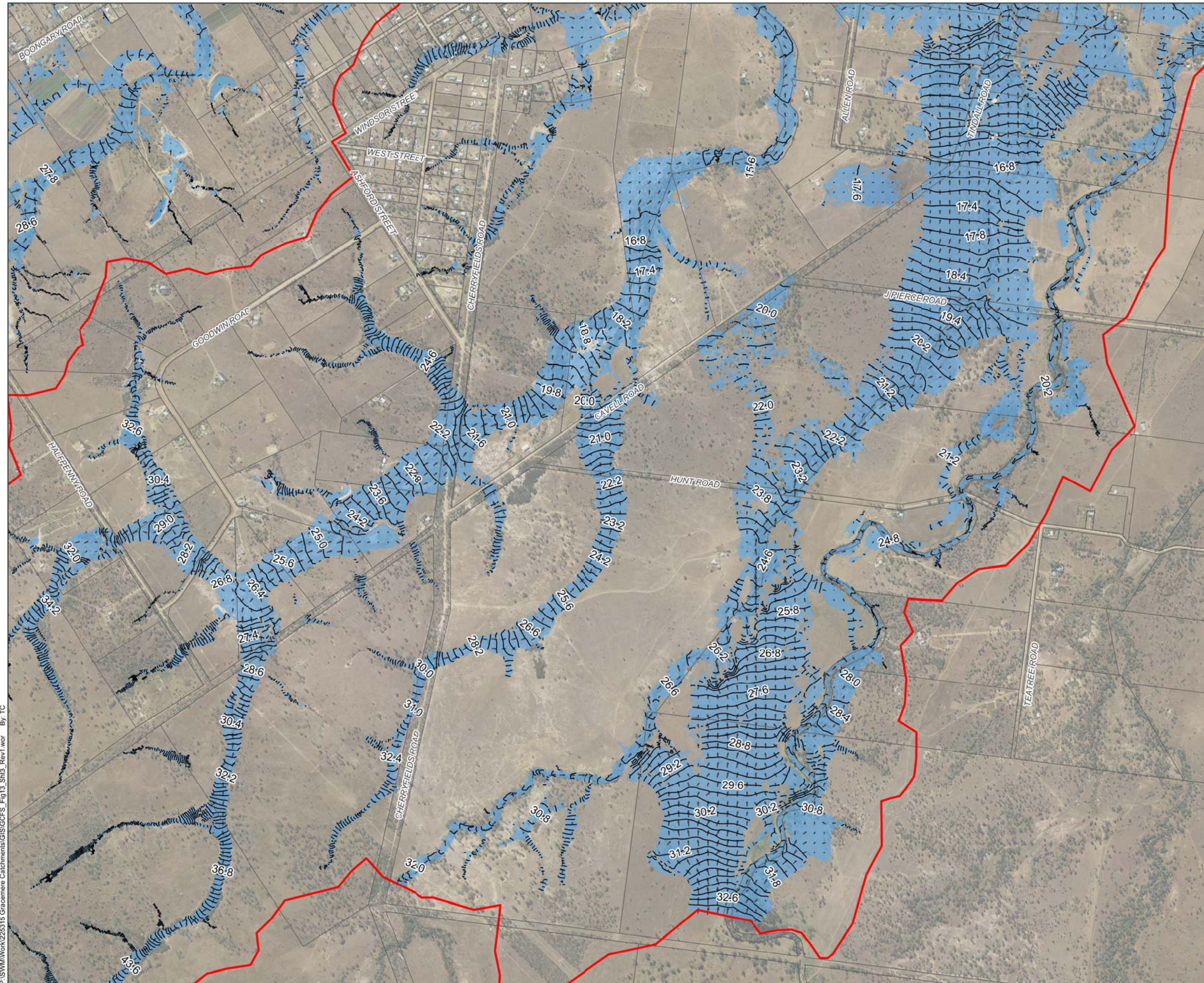
Version: 1

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Gracemere Catchments Flood Study

Figure 13: Sheet 2 - 10 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities

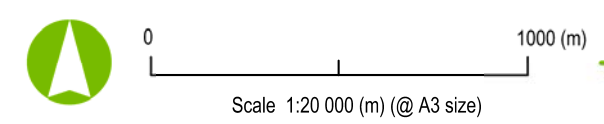


Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

- Notes:**
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

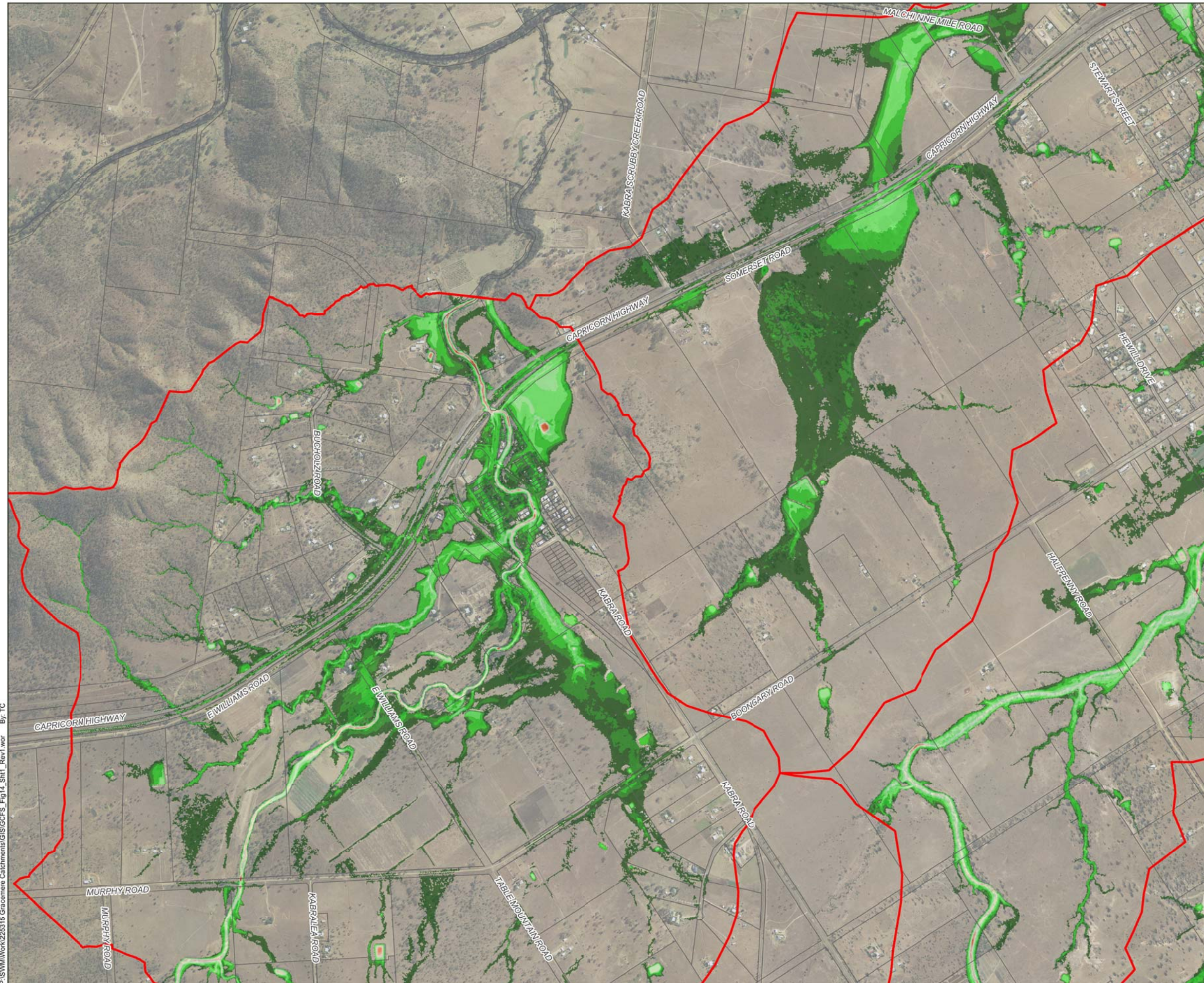
Date: 31/03/2012 Version: 1



Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 13: Sheet 3 - 10 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities

P:\SWM\Work\22315 Gracemere Catchments\GIS\GCFS_Fig13_Sht3_Rev1.wor By: TC



Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | |
|------------|------------|
| 0.0 to 0.3 | 2.5 to 3.0 |
| 0.3 to 0.5 | 3.0 to 3.5 |
| 0.5 to 1.0 | 3.5 to 4.0 |
| 1.0 to 1.5 | 4.0 to 4.5 |
| 1.5 to 2.0 | 4.5 to 5.0 |
| 2.0 to 2.5 | > 5.0 |

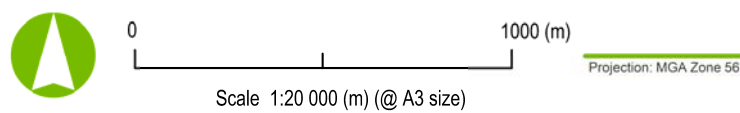
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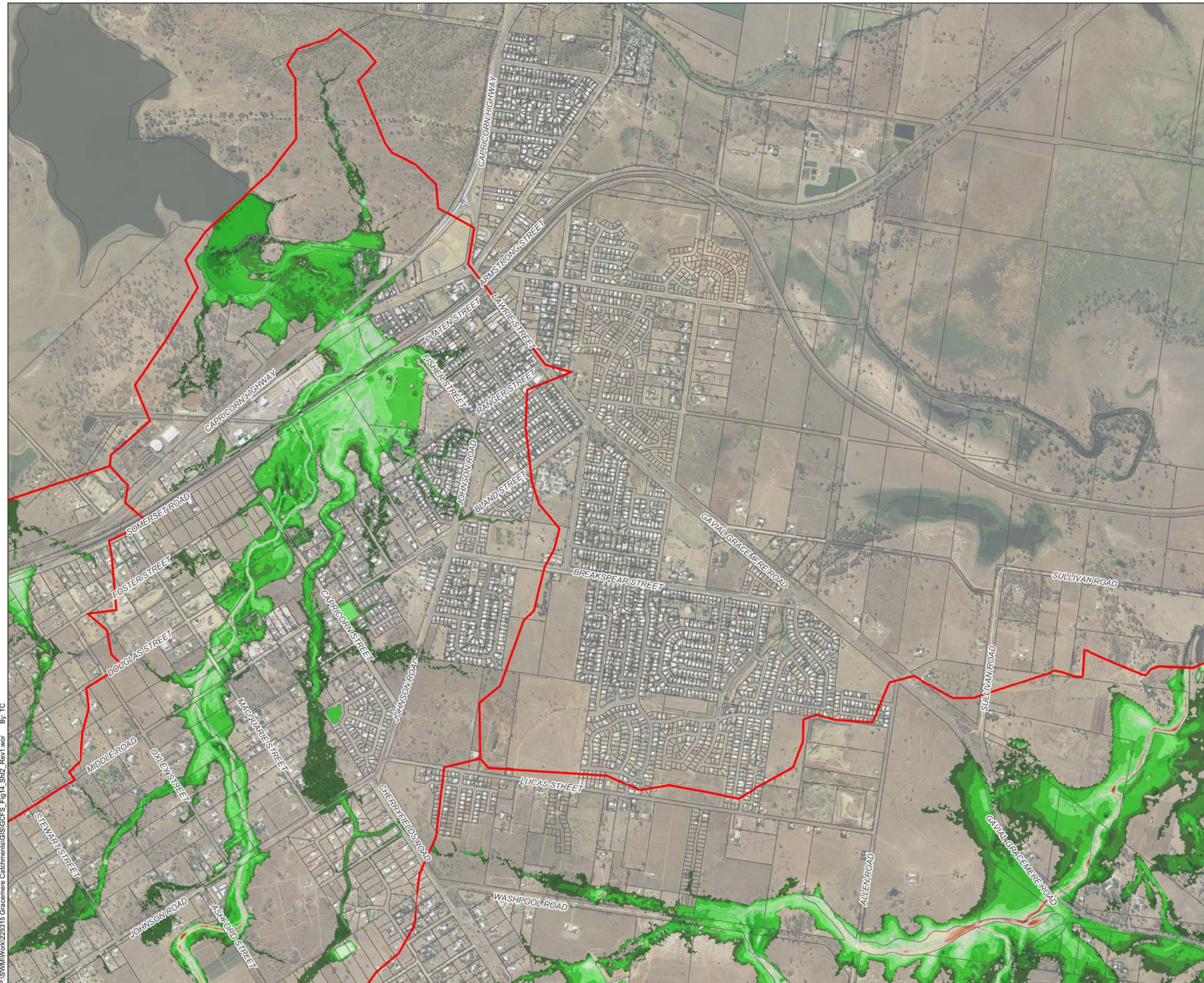
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

Version: 1

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Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | |
|------------|------------|
| 0.0 to 0.3 | 2.5 to 3.0 |
| 0.3 to 0.5 | 3.0 to 3.5 |
| 0.5 to 1.0 | 3.5 to 4.0 |
| 1.0 to 1.5 | 4.0 to 4.5 |
| 1.5 to 2.0 | 4.5 to 5.0 |
| 2.0 to 2.5 | > 5.0 |

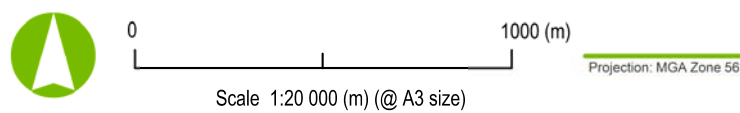
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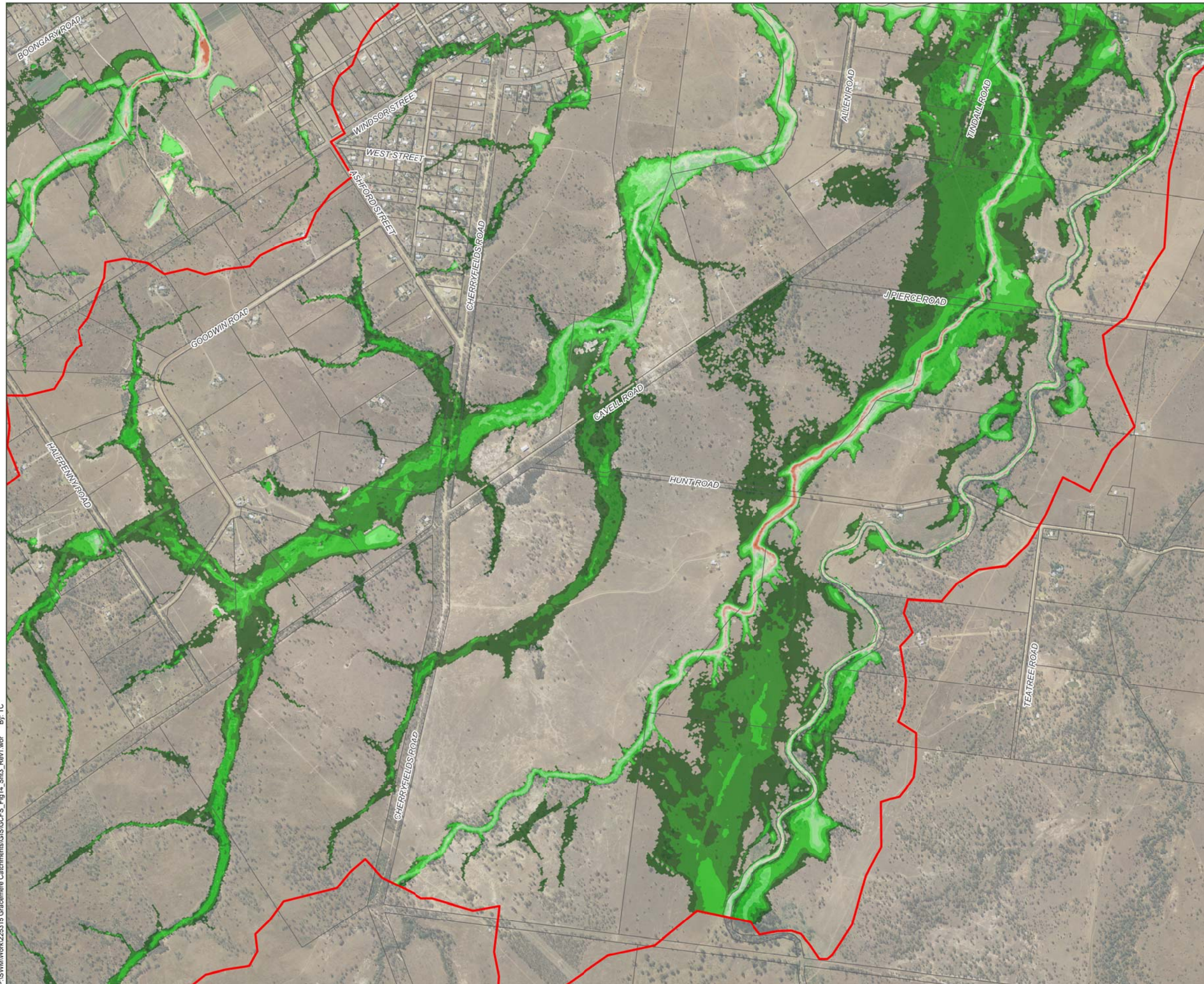
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012



Version: 1

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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

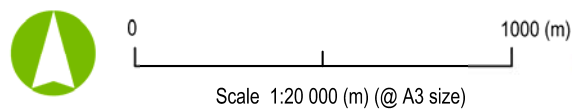
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1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

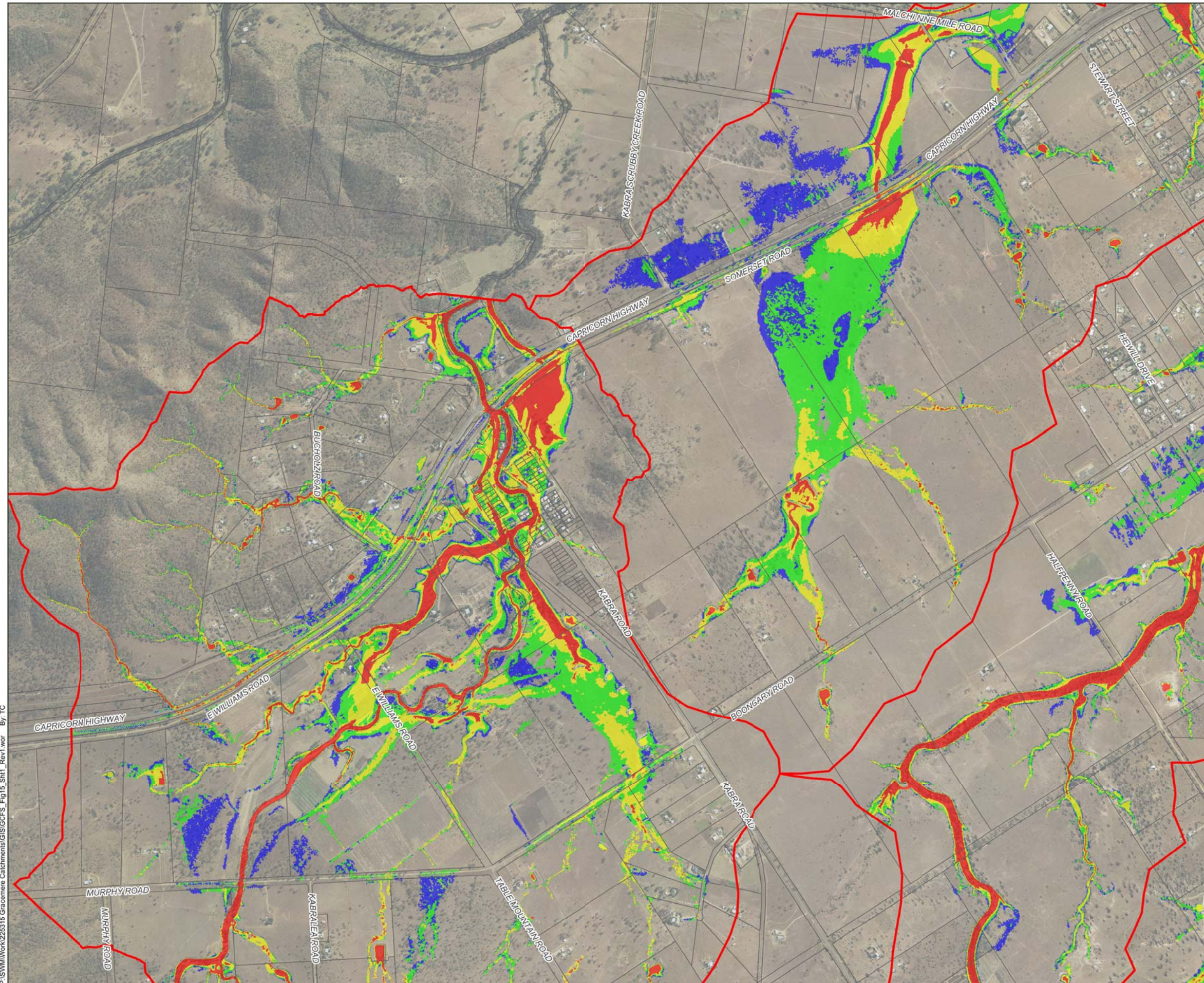
Date: 31/03/2012

Version: 1

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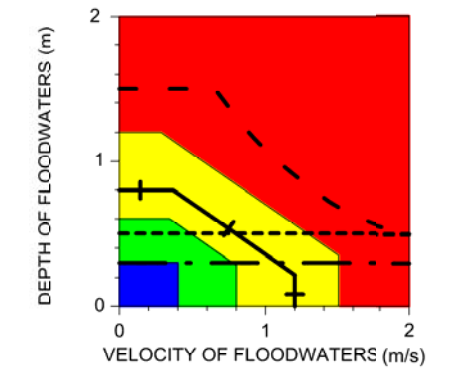


Projection: MGA Zone 56



Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

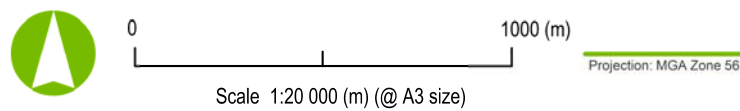
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1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

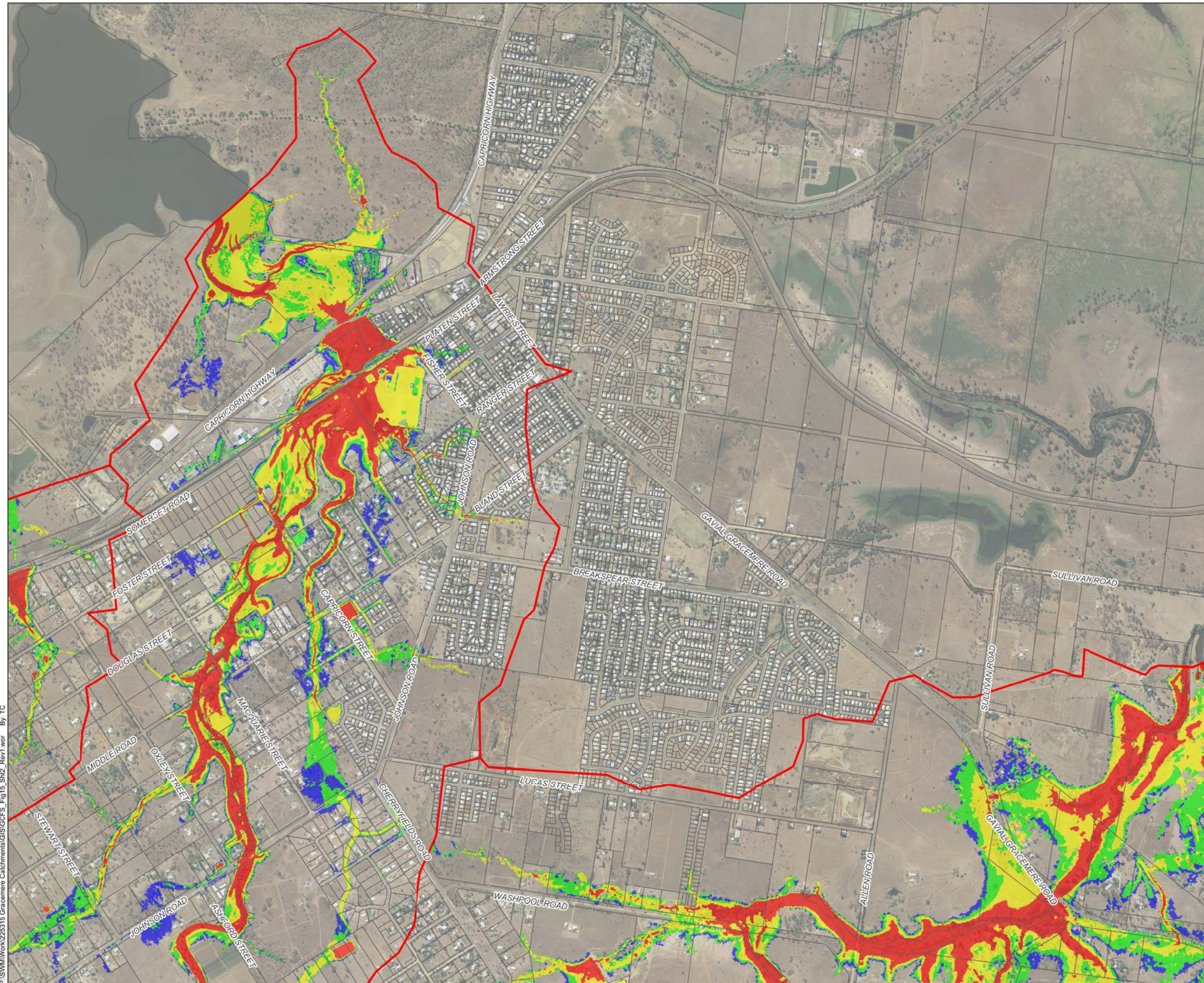
Date: 31/03/2012

Version: 1

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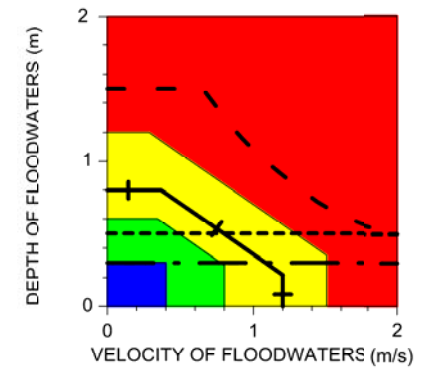


Gracemere Catchments Flood Study
Figure 15: Sheet 1 - 10 Year ARI Peak Hazards



Legend

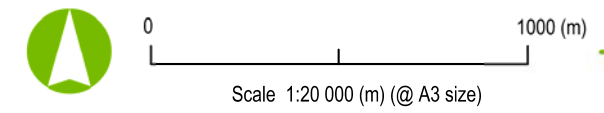
- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

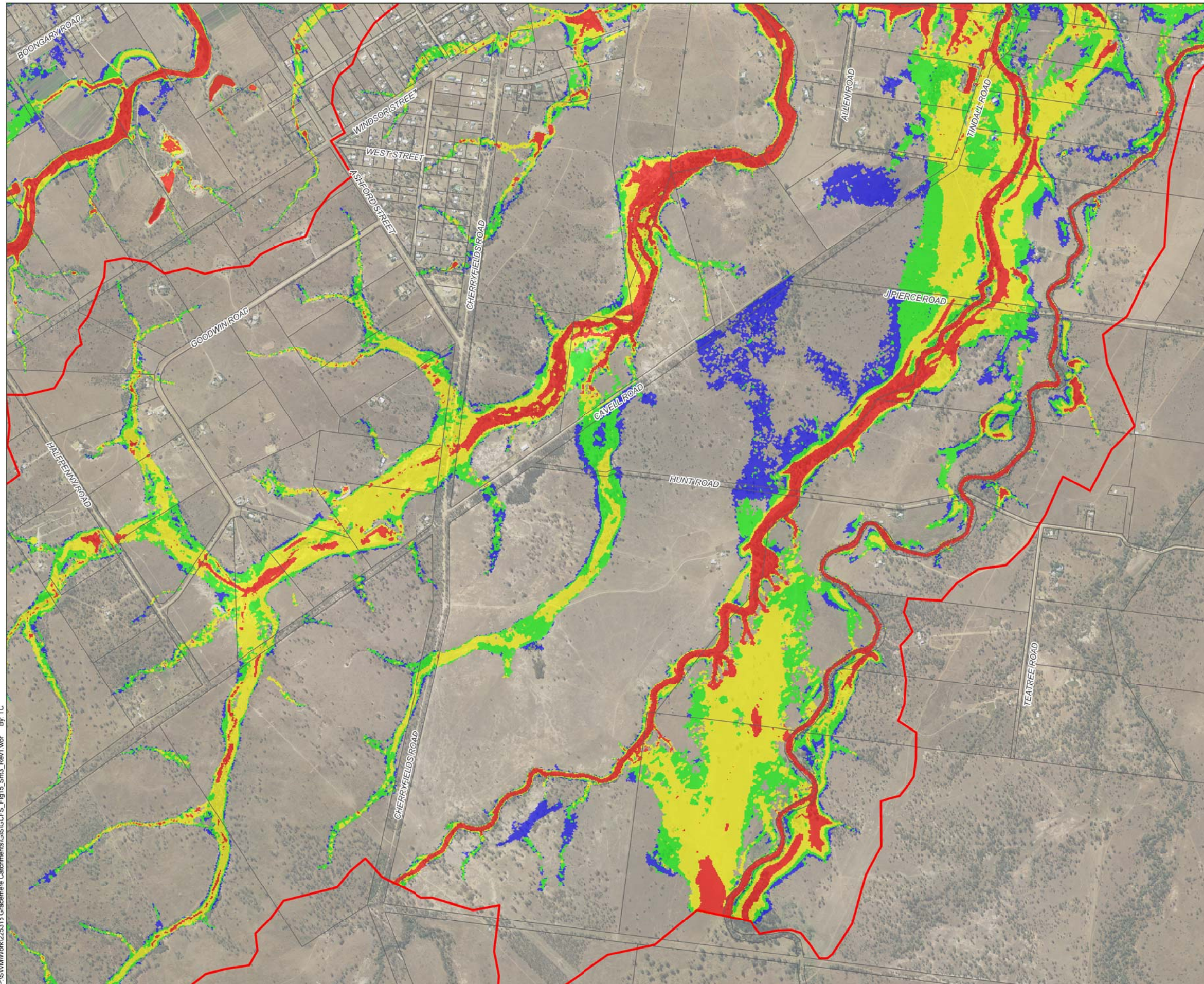
- Notes:**
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1



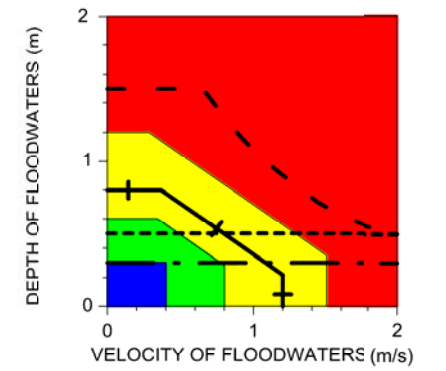
Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 15: Sheet 2 - 10 Year ARI Peak Hazards



Legend

- Cadastre
- TUFLOW Model Extents

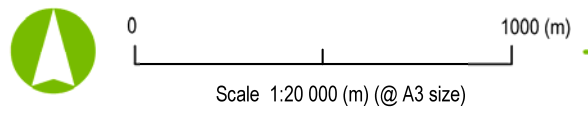


Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

- Notes:**
- This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 - This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 - This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

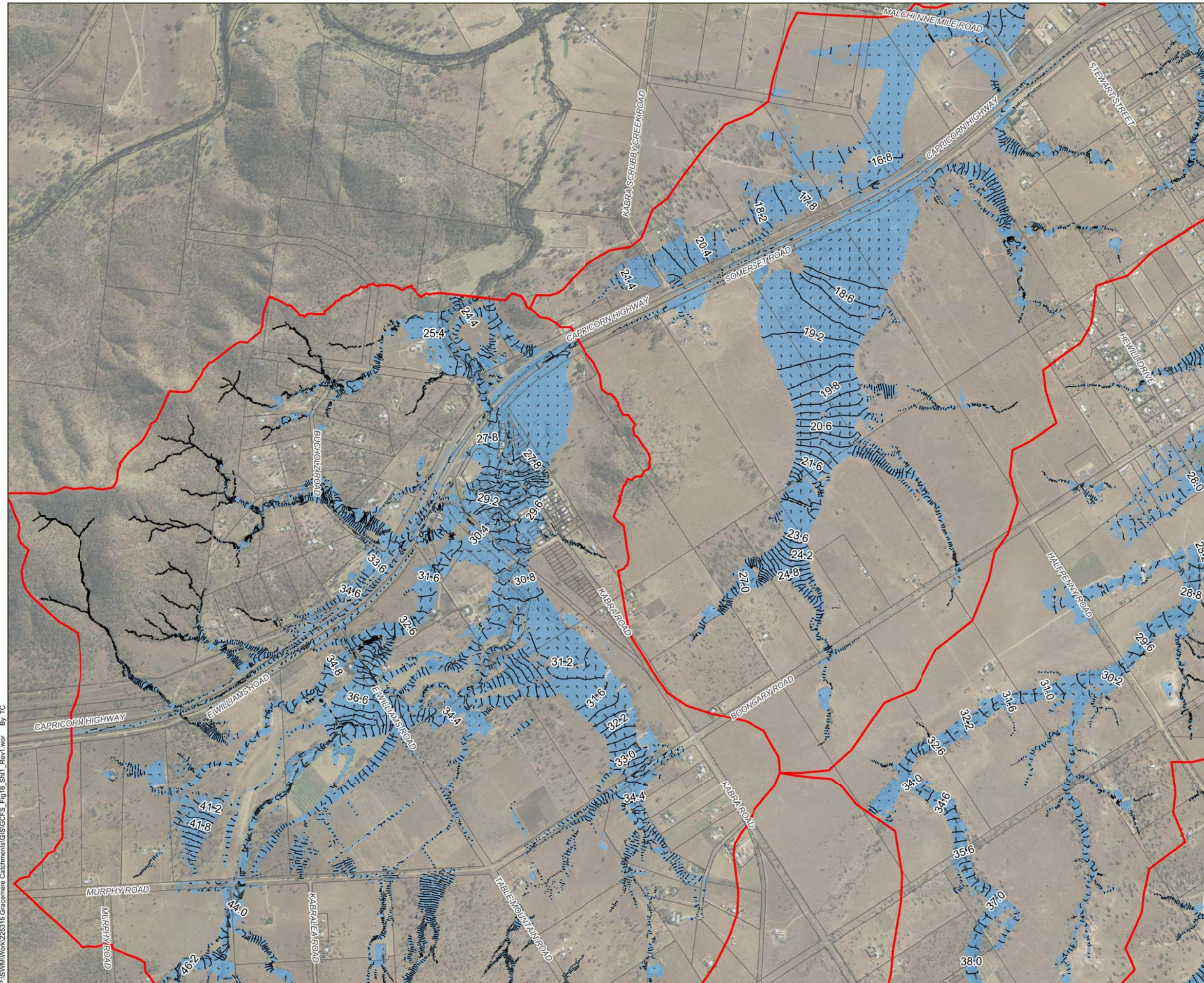
Date: 31/03/2012 Version: 1

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




Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 15: Sheet 3 - 10 Year ARI Peak Hazards



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

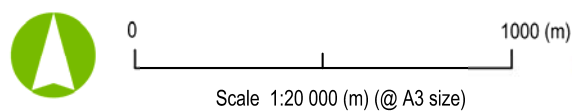
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

Version: 1

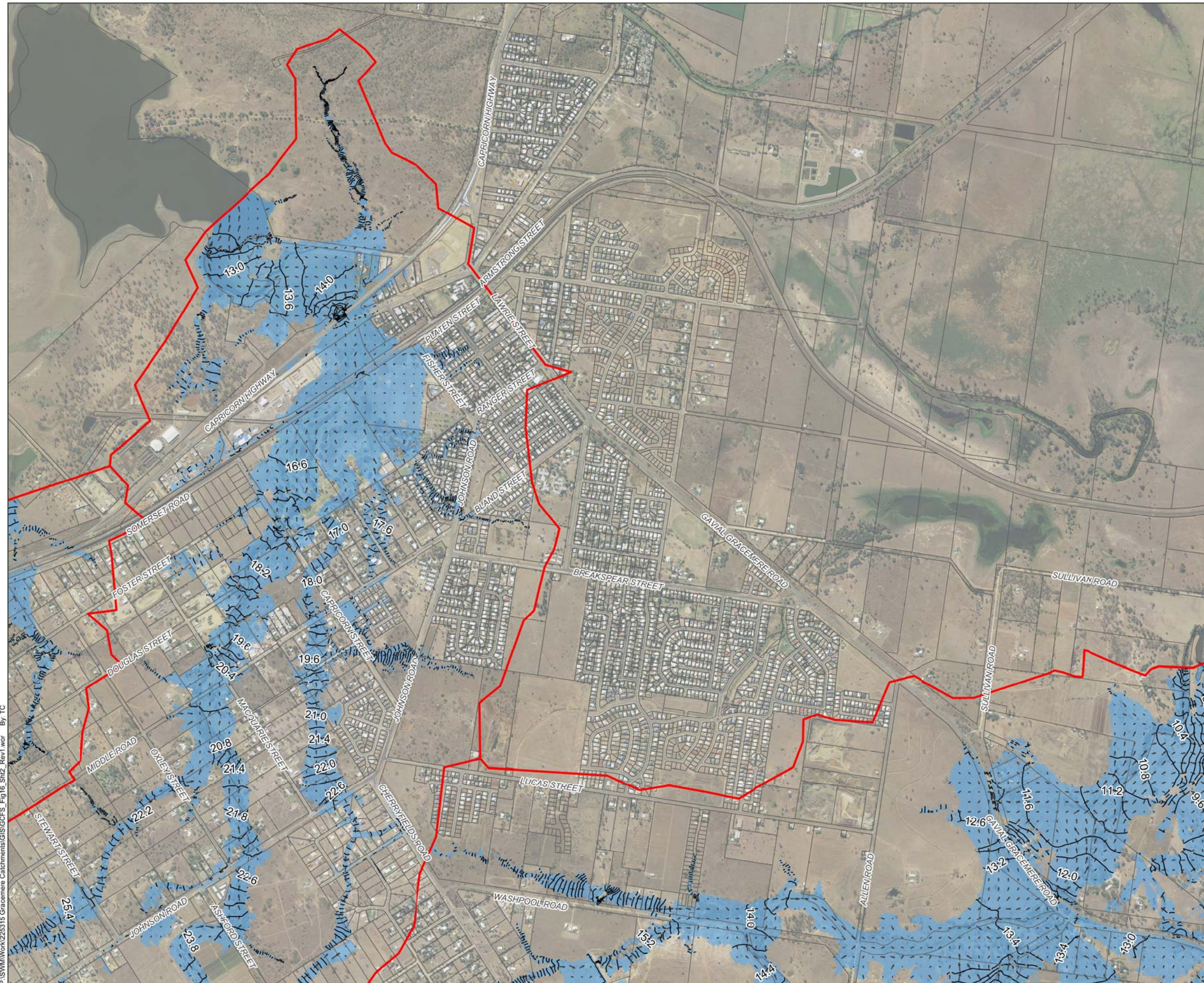
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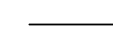

Projection: MGA Zone 56

Gracemere Catchments Flood Study

Figure 16: Sheet 1 - 20 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities

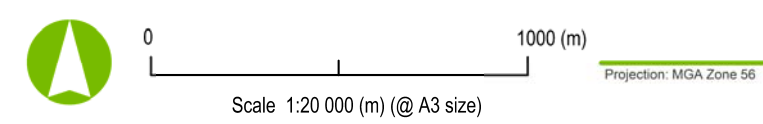


Legend

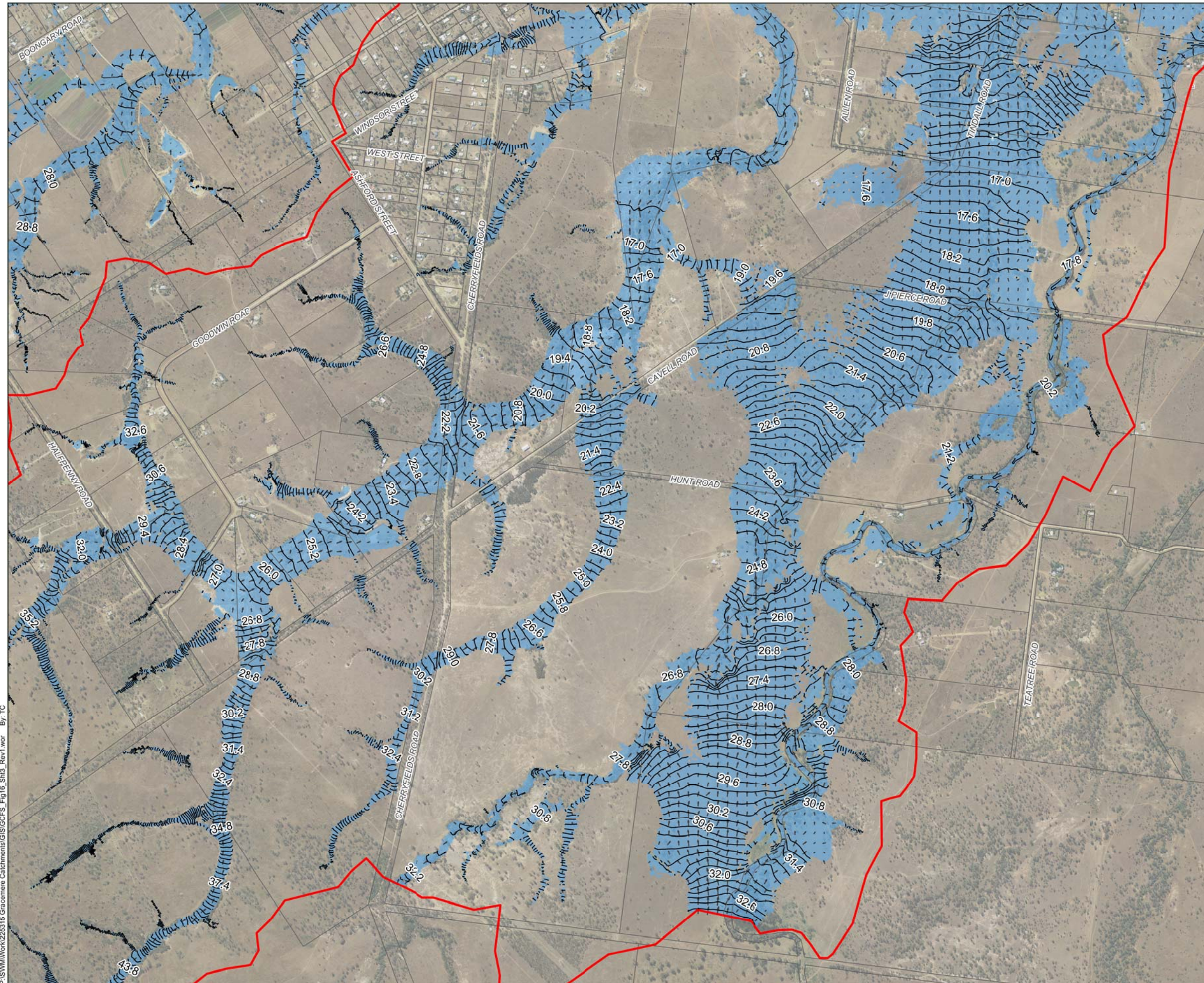
-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

- Notes:**
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1



Gracemere Catchments Flood Study
Figure 16: Sheet 2 - 20 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents
- Inundation Extents
- 0.2m (AHD) Peak Water Surface Elevation Contour
- Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

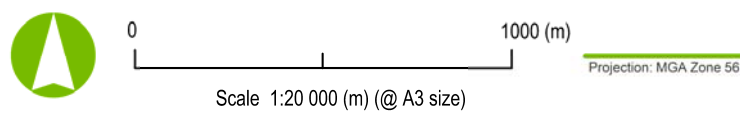
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

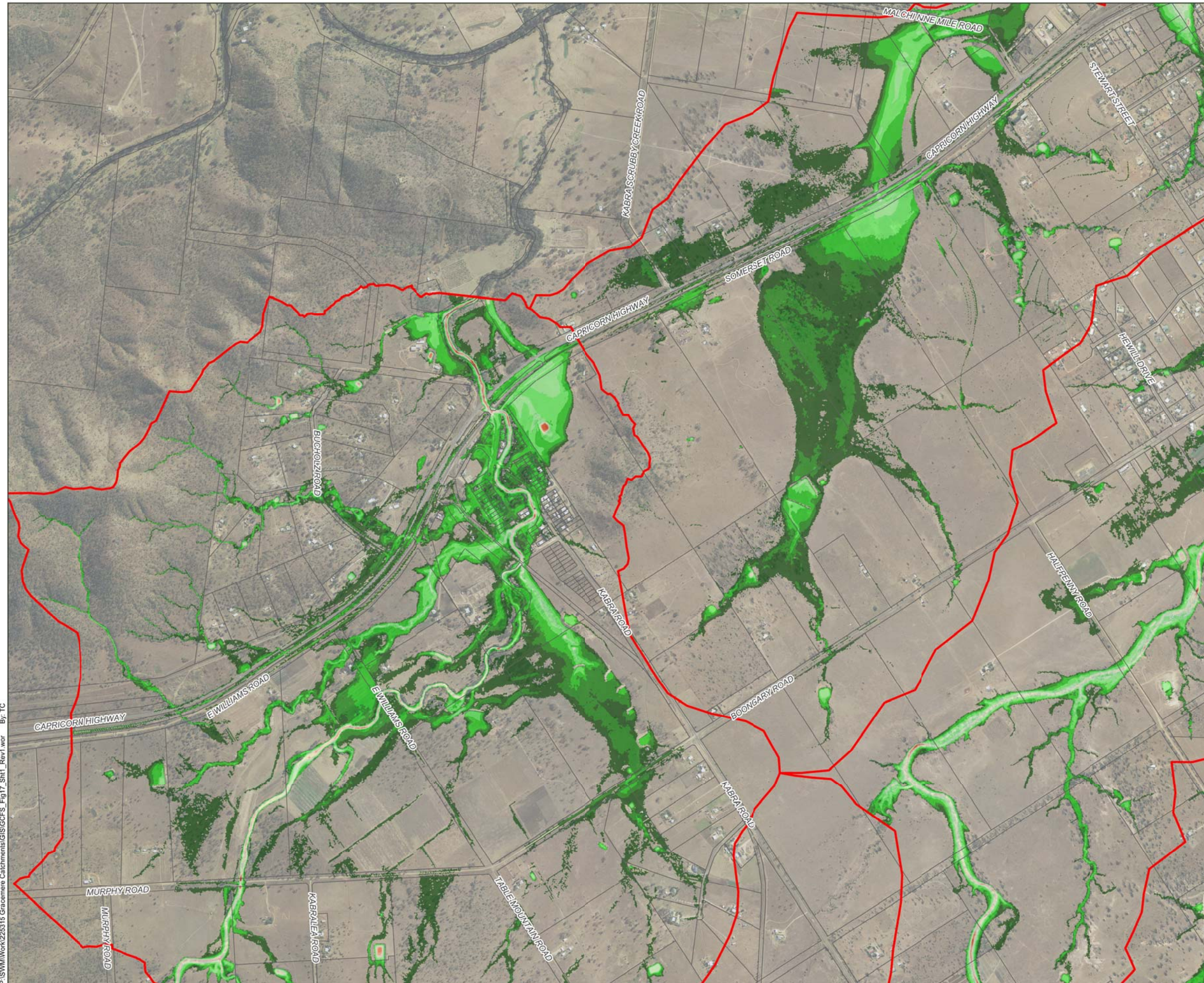
Version: 1

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Gracemere Catchments Flood Study

Figure 16: Sheet 3 - 20 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | |
|------------|------------|
| 0.0 to 0.3 | 2.5 to 3.0 |
| 0.3 to 0.5 | 3.0 to 3.5 |
| 0.5 to 1.0 | 3.5 to 4.0 |
| 1.0 to 1.5 | 4.0 to 4.5 |
| 1.5 to 2.0 | 4.5 to 5.0 |
| 2.0 to 2.5 | > 5.0 |

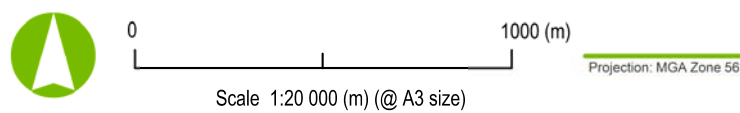
Notes:

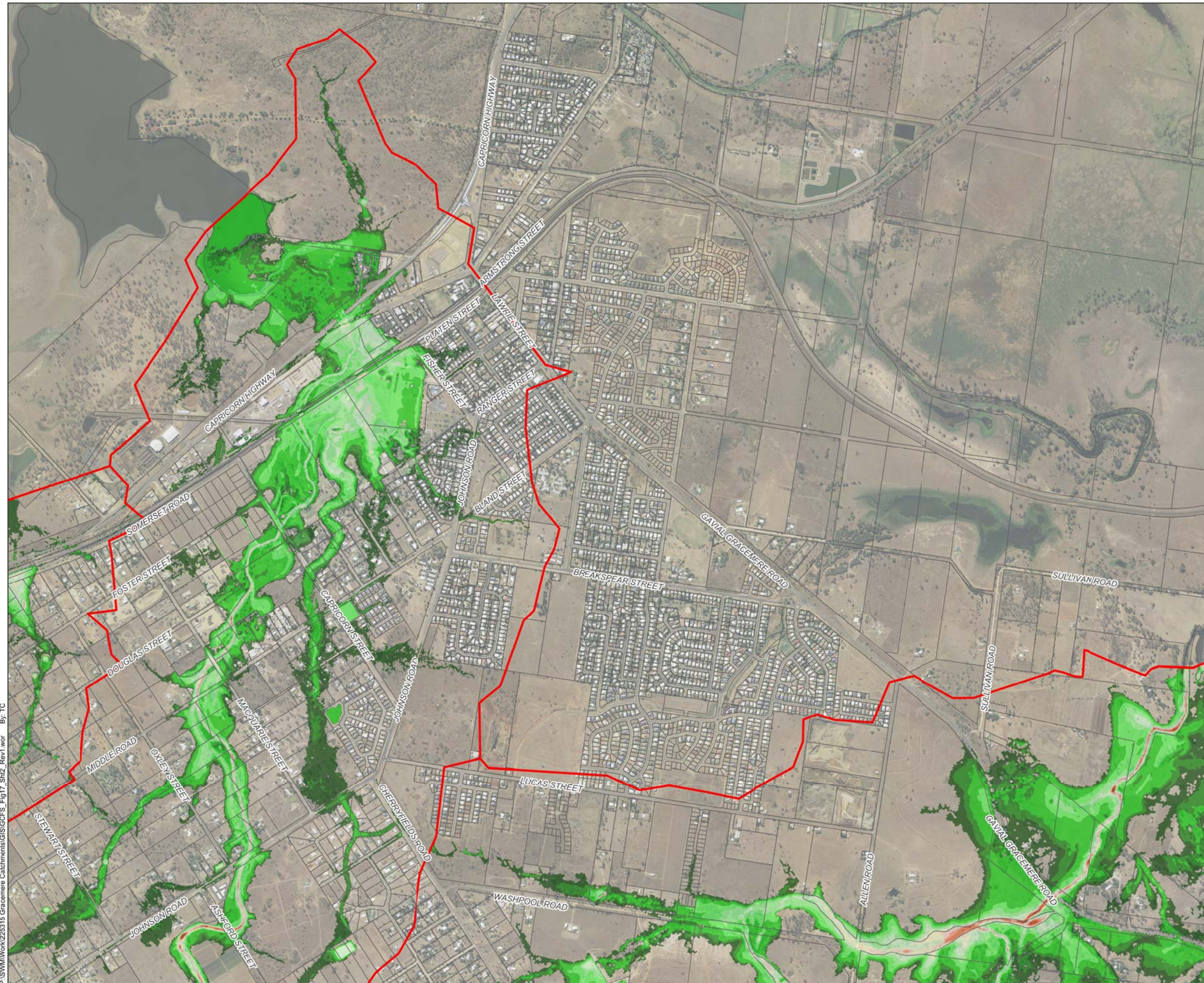
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012



Version: 1

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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

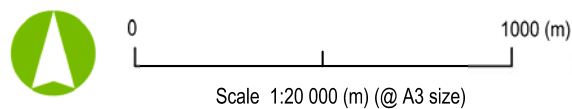
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

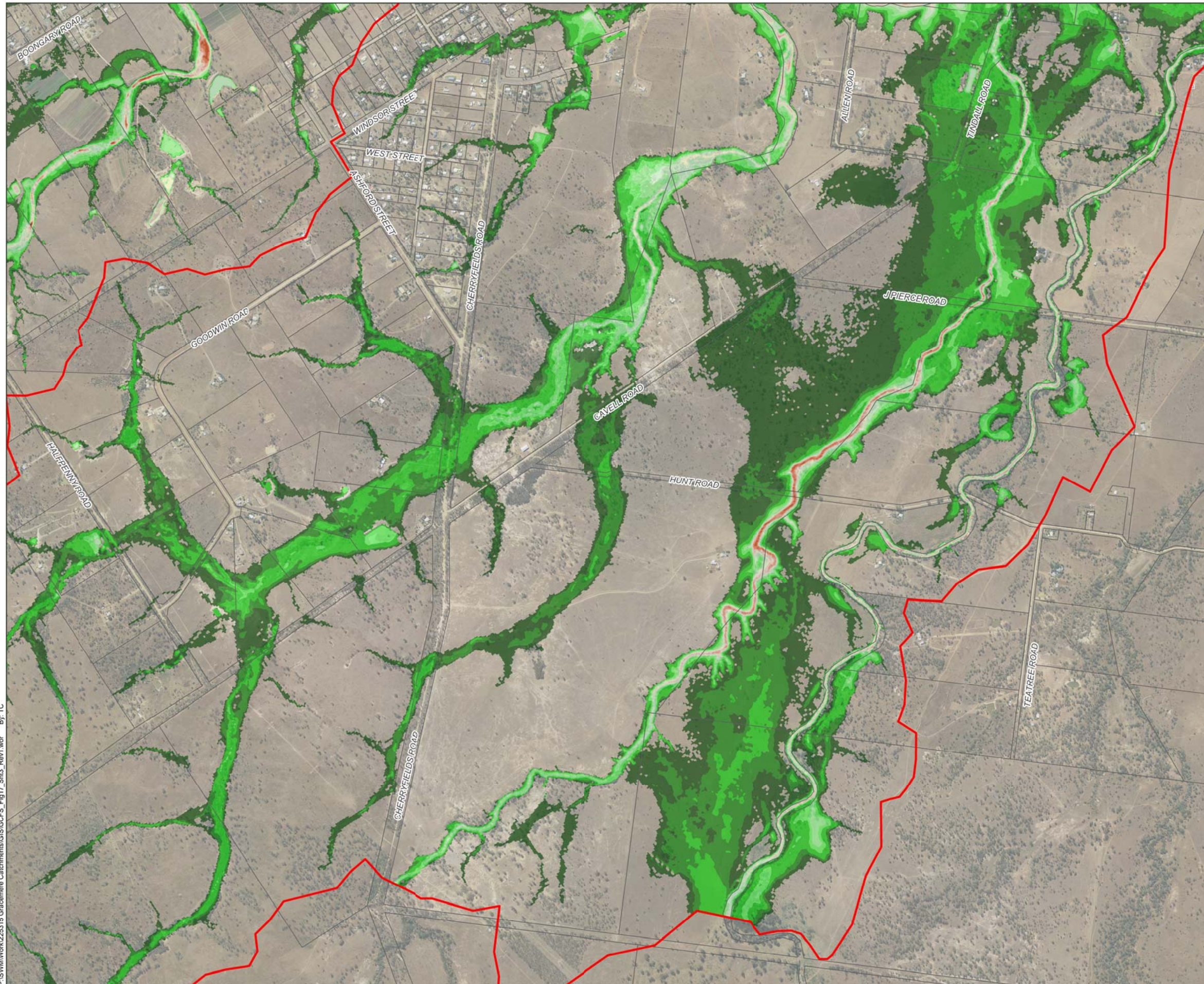
Date: 31/03/2012

Version: 1



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Projection: MGA Zone 56



Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

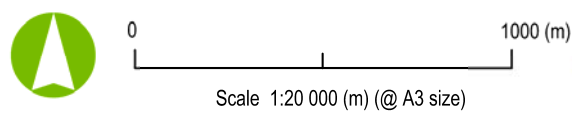
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

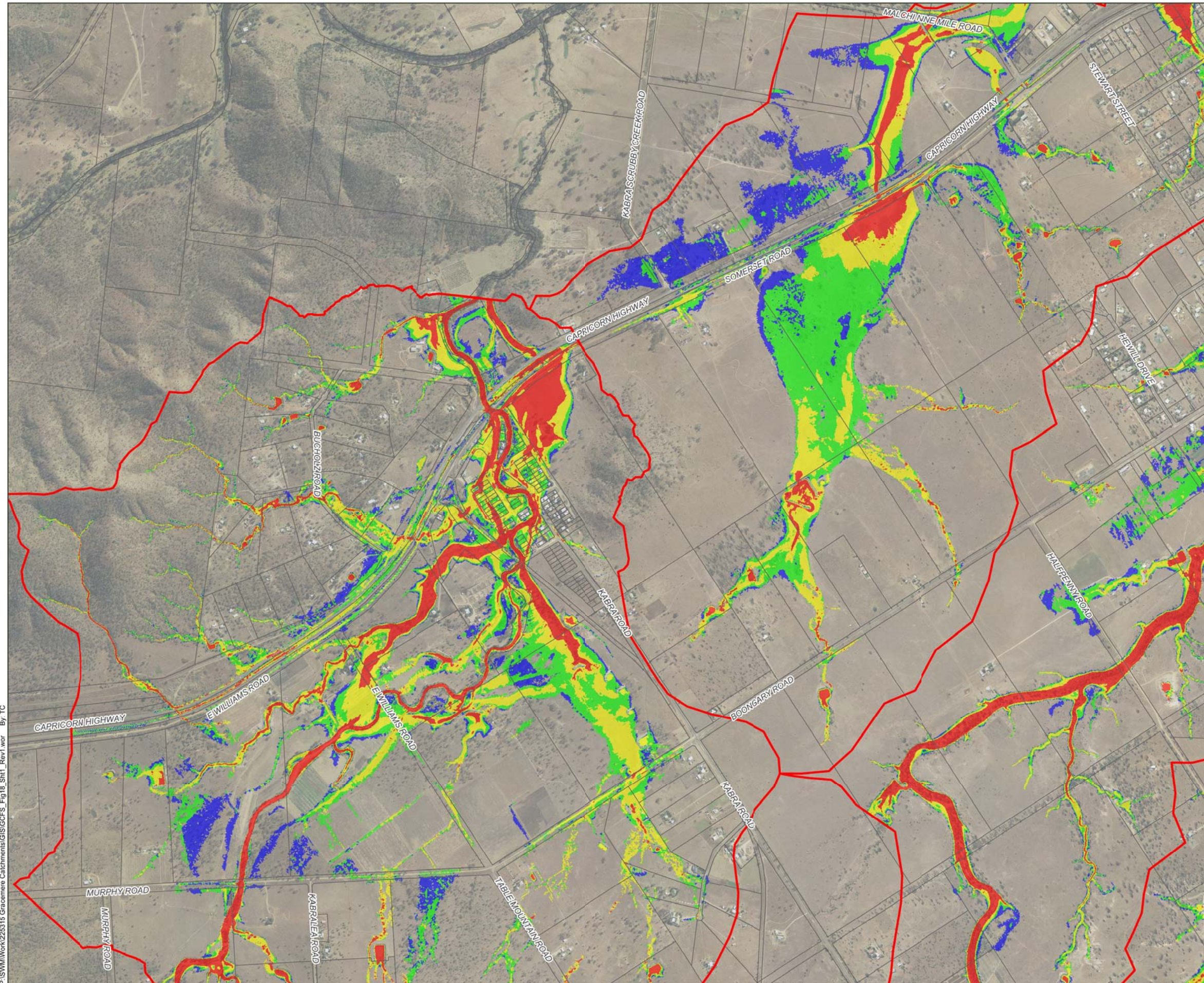
Date: 31/03/2012

Version: 1

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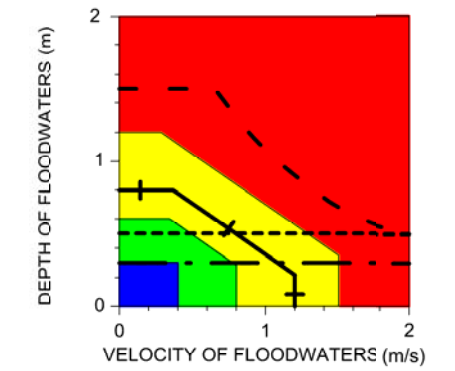


Projection: MGA Zone 56



Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

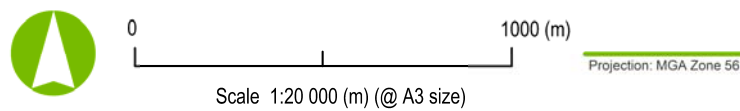
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1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

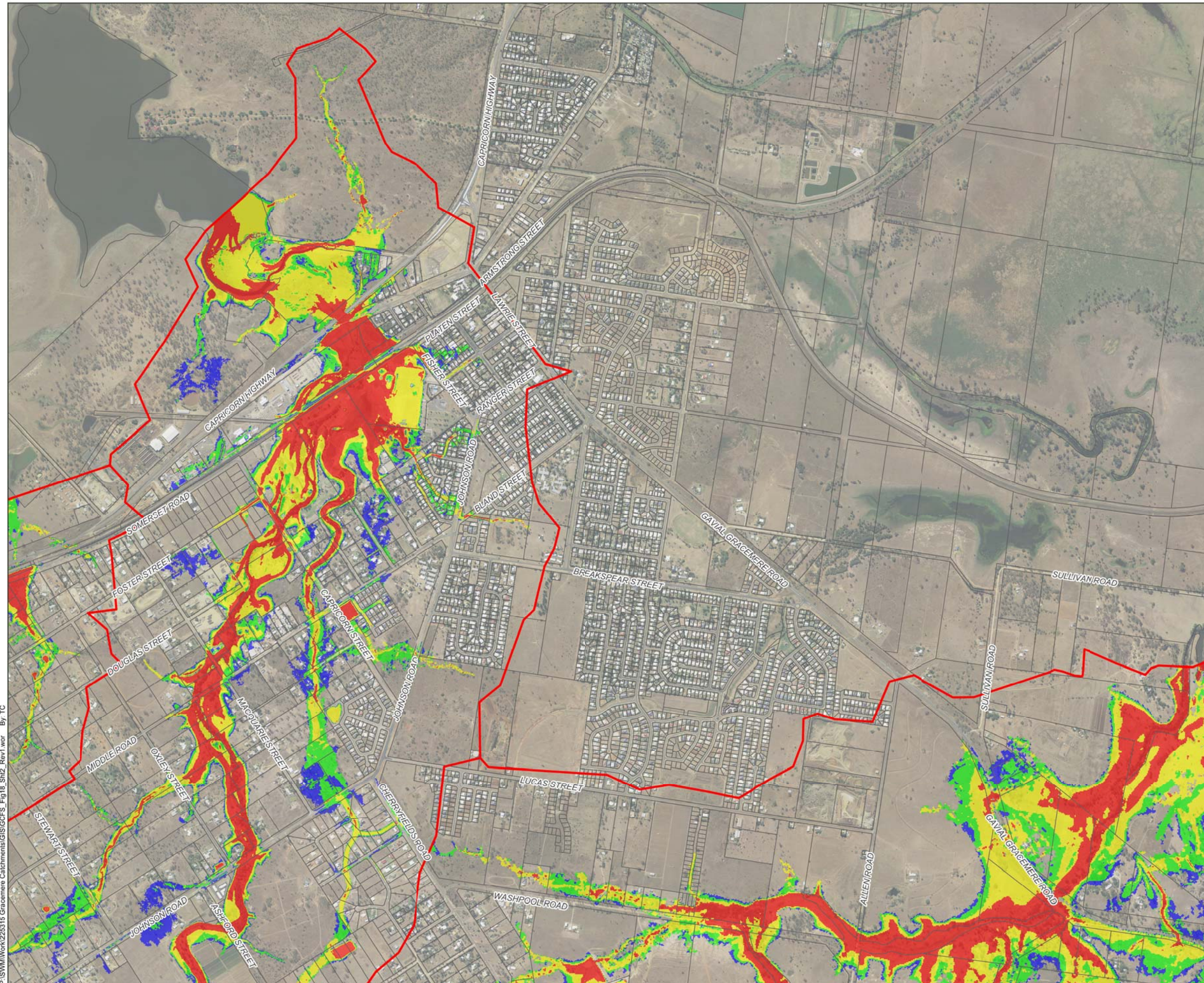
Date: 31/03/2012

Version: 1

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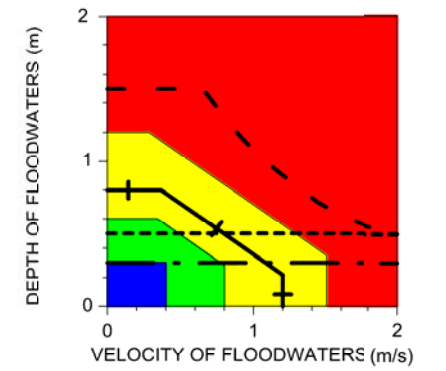


Gracemere Catchments Flood Study
Figure 18: Sheet 1 - 20 Year ARI Peak Hazards



Legend

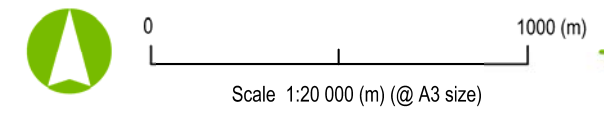
- Cadastre
- TUFLOW Model Extents



Hazard Categories		Hazard Thresholds	
	Extreme		Safe to Use Small Cars
	High		Safe to Use 4WDs
	Medium		Wading Limit - Children
	Low		Wading Limit - Adults

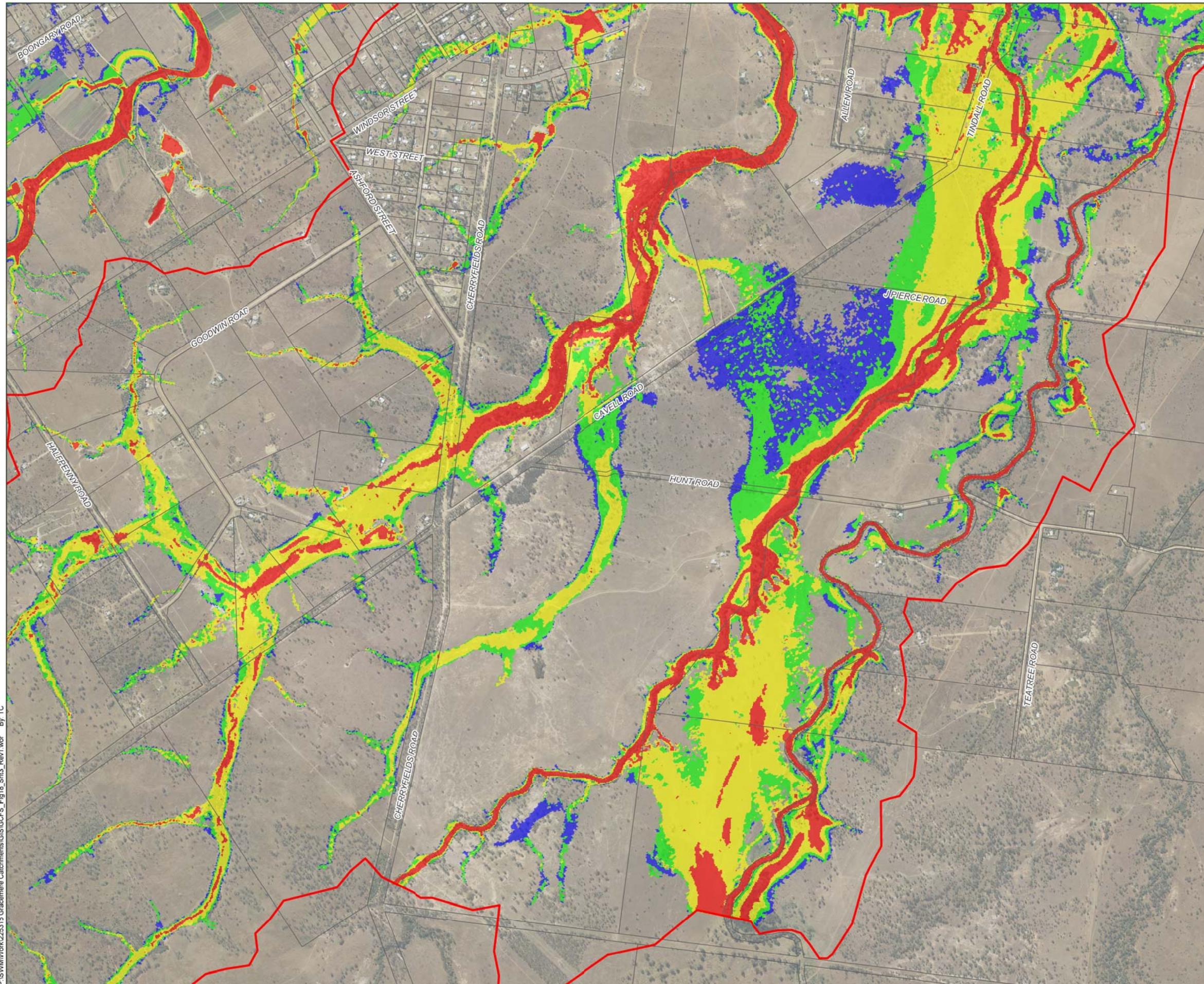
- Notes:**
- This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 - This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 - This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1



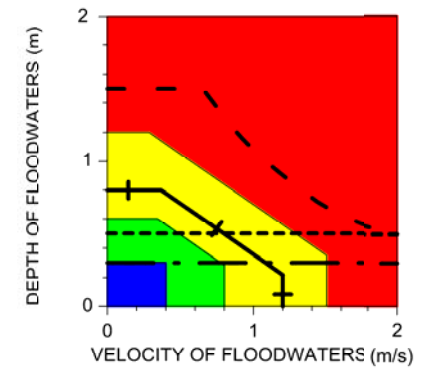
Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 18: Sheet 2 - 20 Year ARI Peak Hazards



Legend

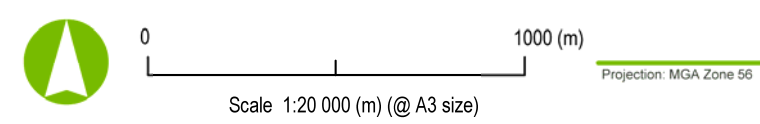
- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

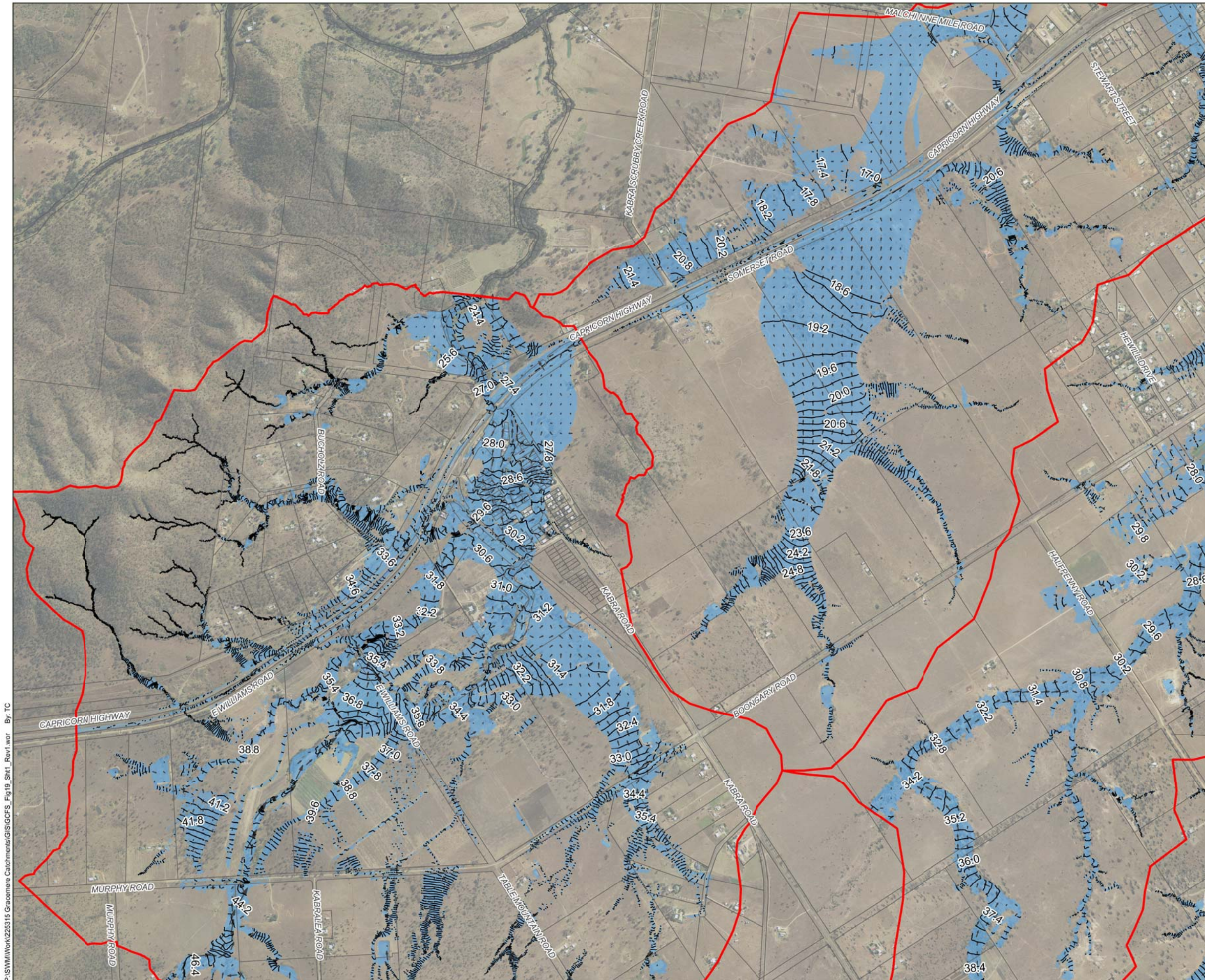
- Notes:**
- This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 - This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 - This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1



Gracemere Catchments Flood Study
Figure 18: Sheet 3 - 20 Year ARI Peak Hazards

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Legend

- Cadastre
- TUFLOW Model Extents
- Inundation Extents
- 0.2m (AHD) Peak Water Surface Elevation Contour
- Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

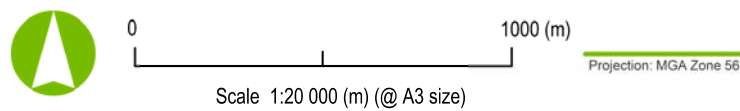
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

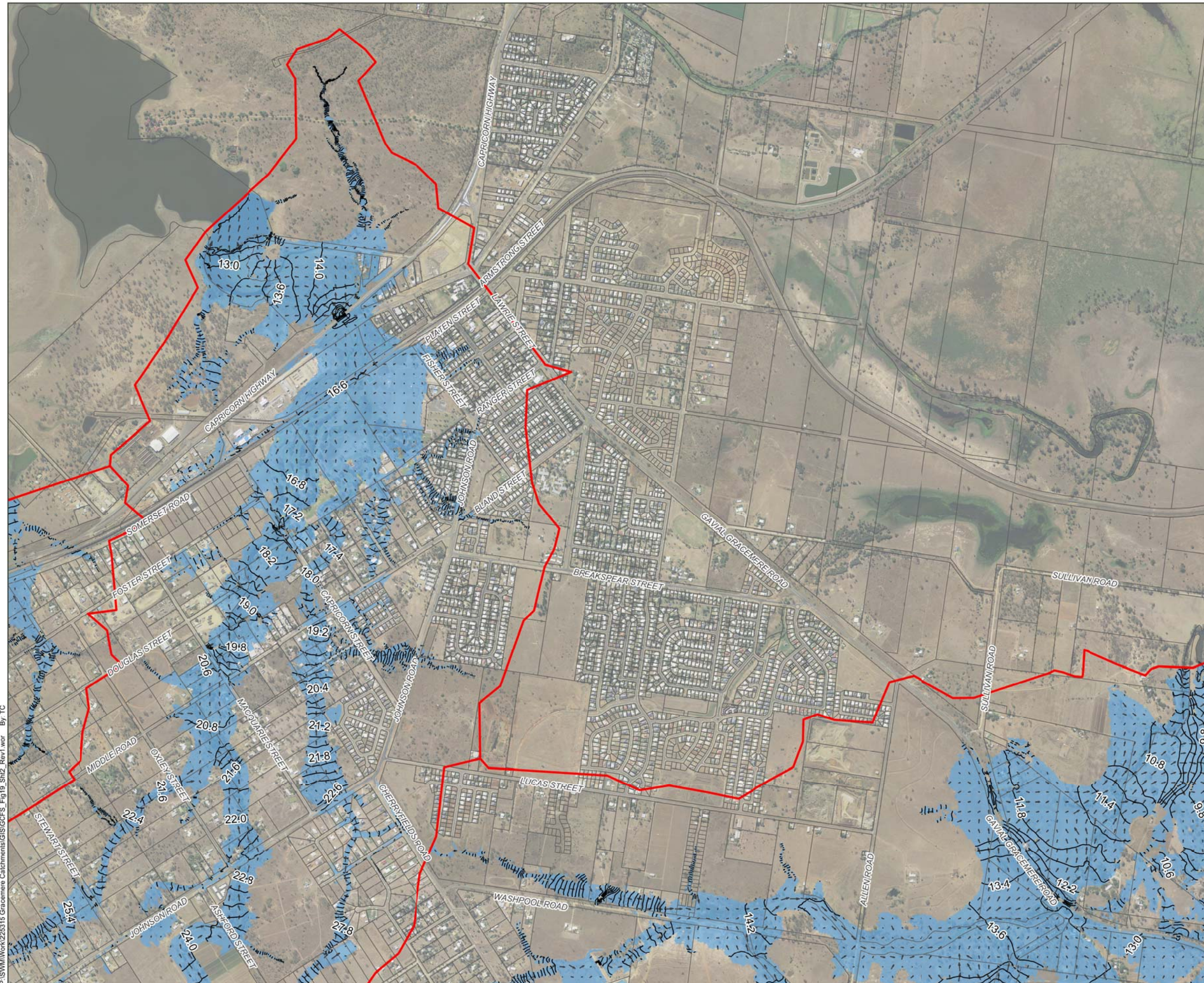
Version: 1

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




Gracemere Catchments Flood Study

Figure 19: Sheet 1 - 50 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

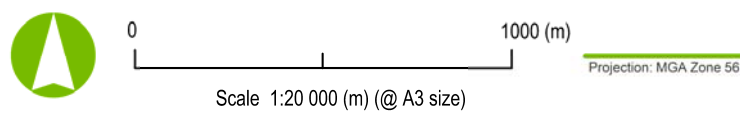
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

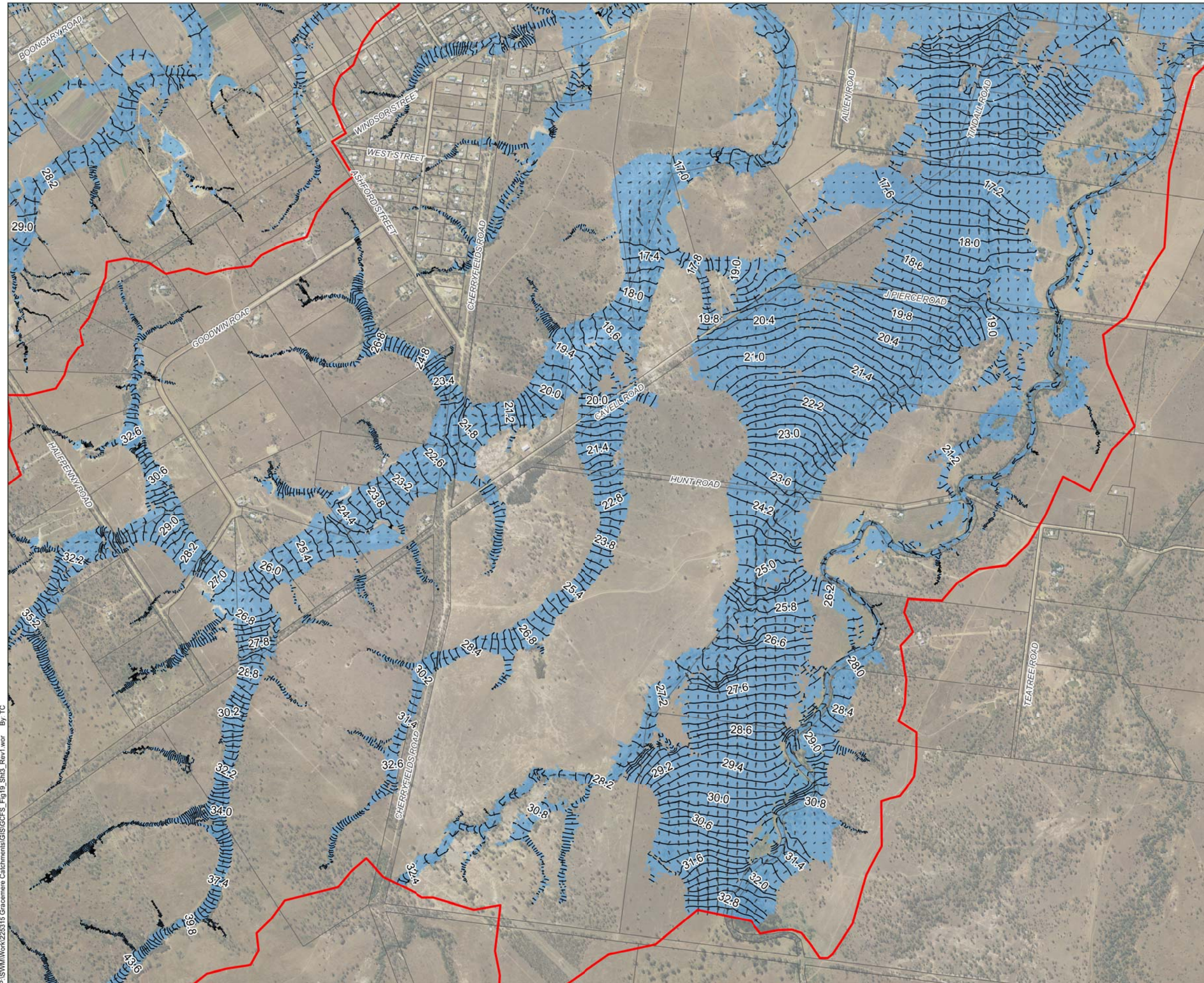
Version: 1

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Gracemere Catchments Flood Study

Figure 19: Sheet 2 - 50 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents
- Inundation Extents
- 0.2m (AHD) Peak Water Surface Elevation Contour
- Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

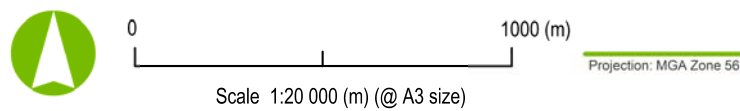
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

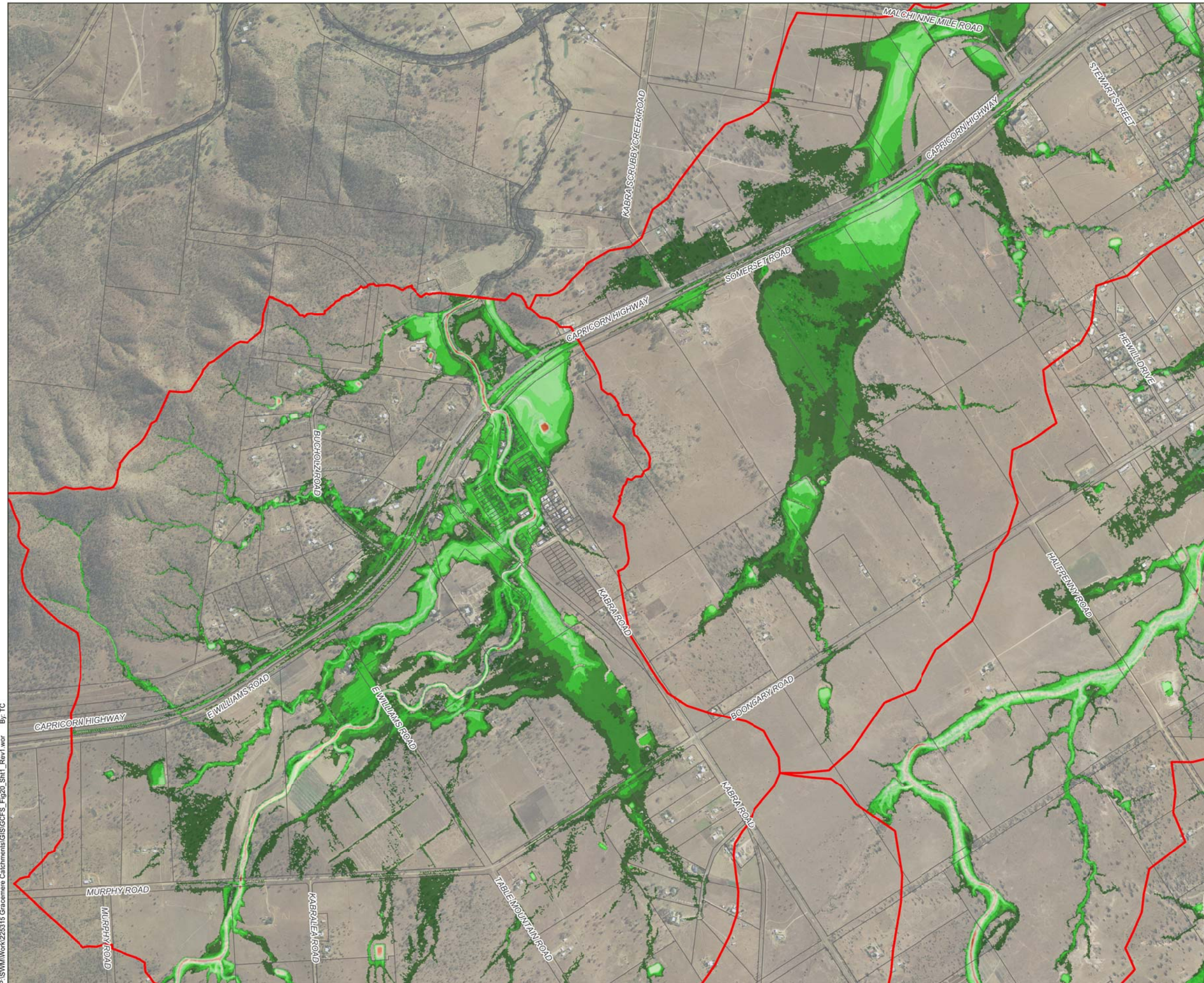
Version: 1

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Gracemere Catchments Flood Study













Figure 19: Sheet 3 - 50 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

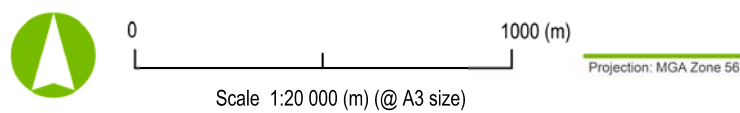
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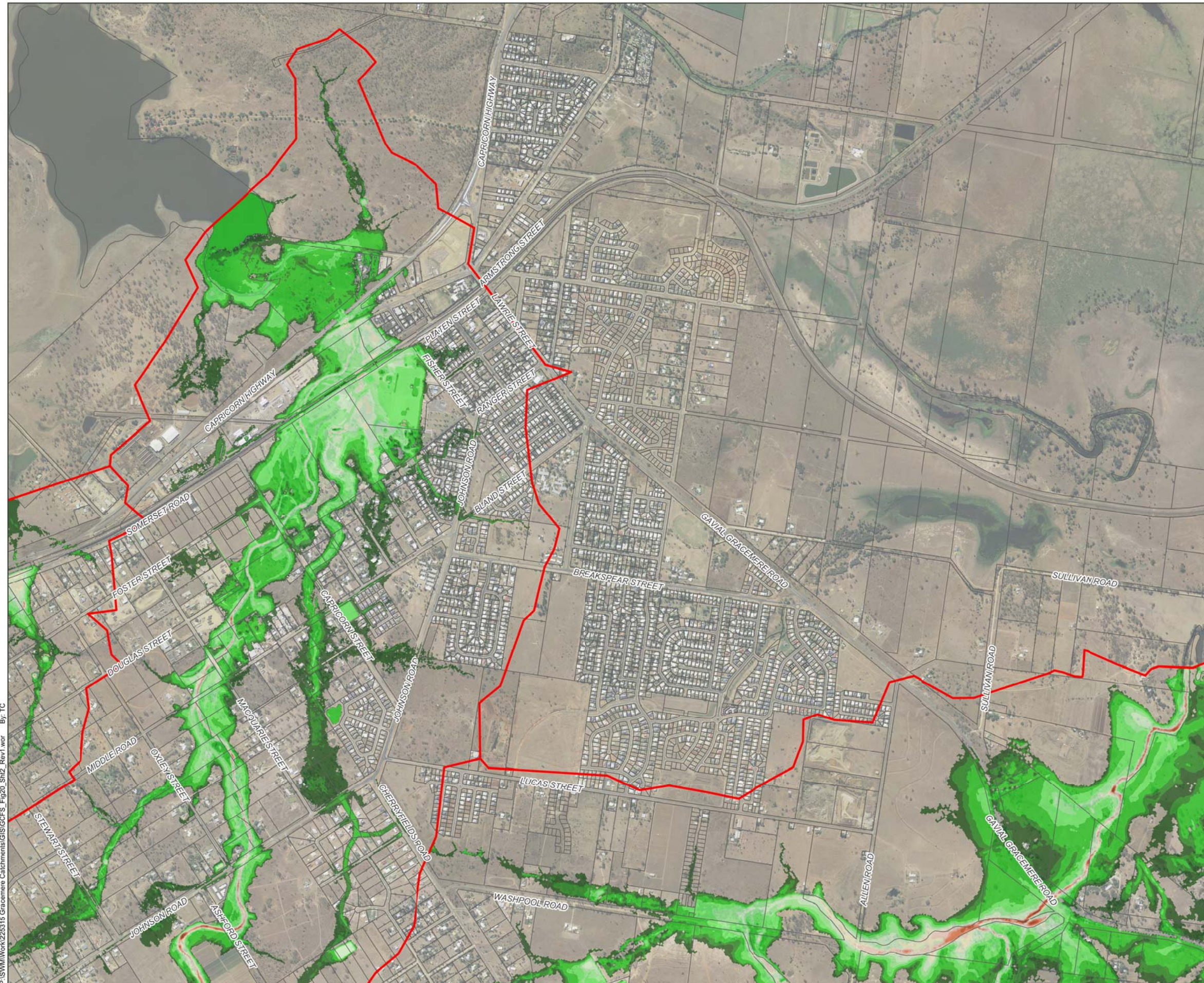
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
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3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012



Version: 1

P:\SWM\Work\22315 Gracemere Catchments\GIS\GCFS_Fig20_Sht1_Rev1.wor By: TC

















Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

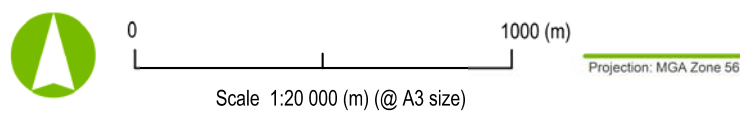
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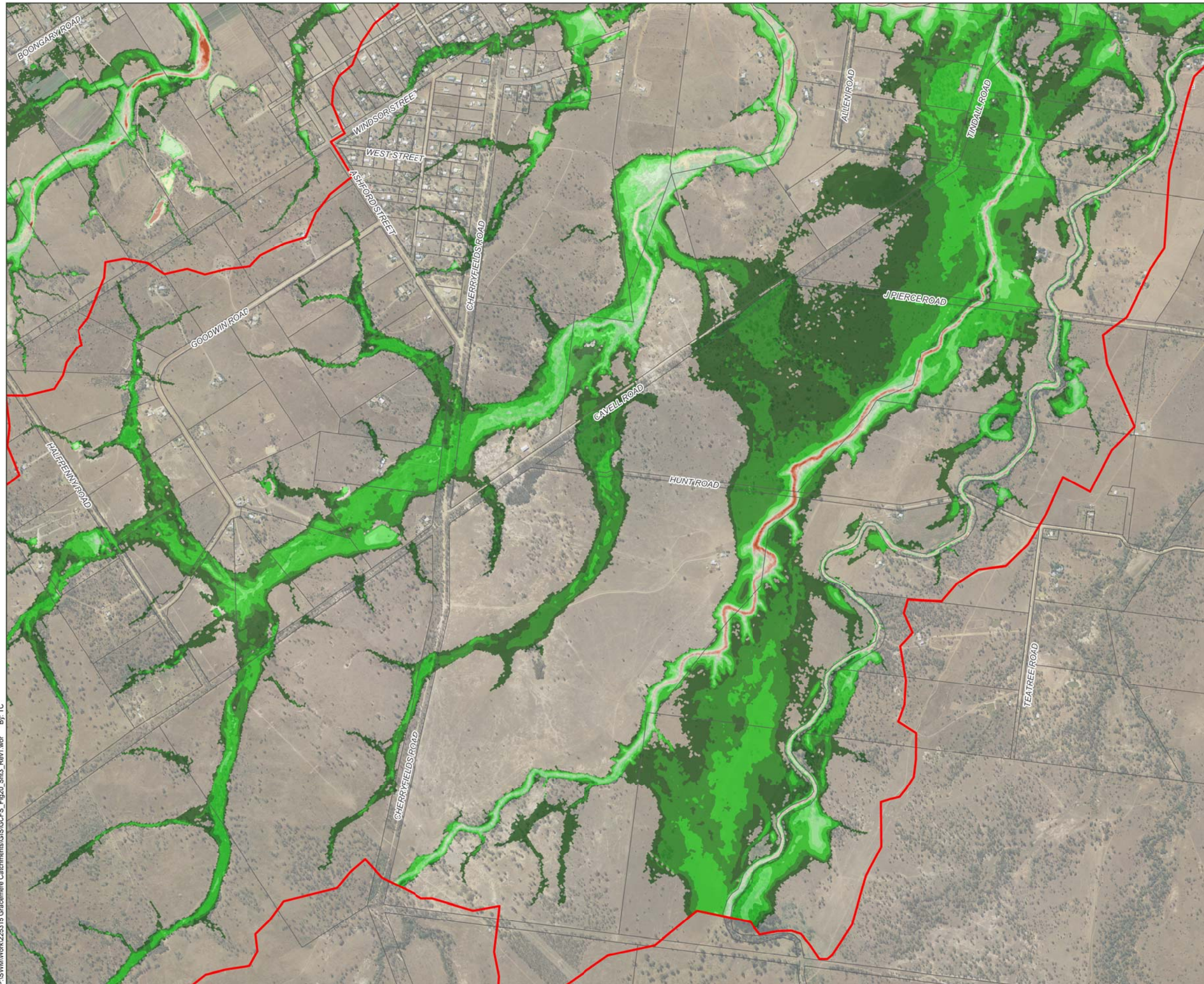
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012



Version: 1

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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

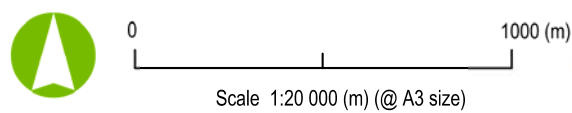
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3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

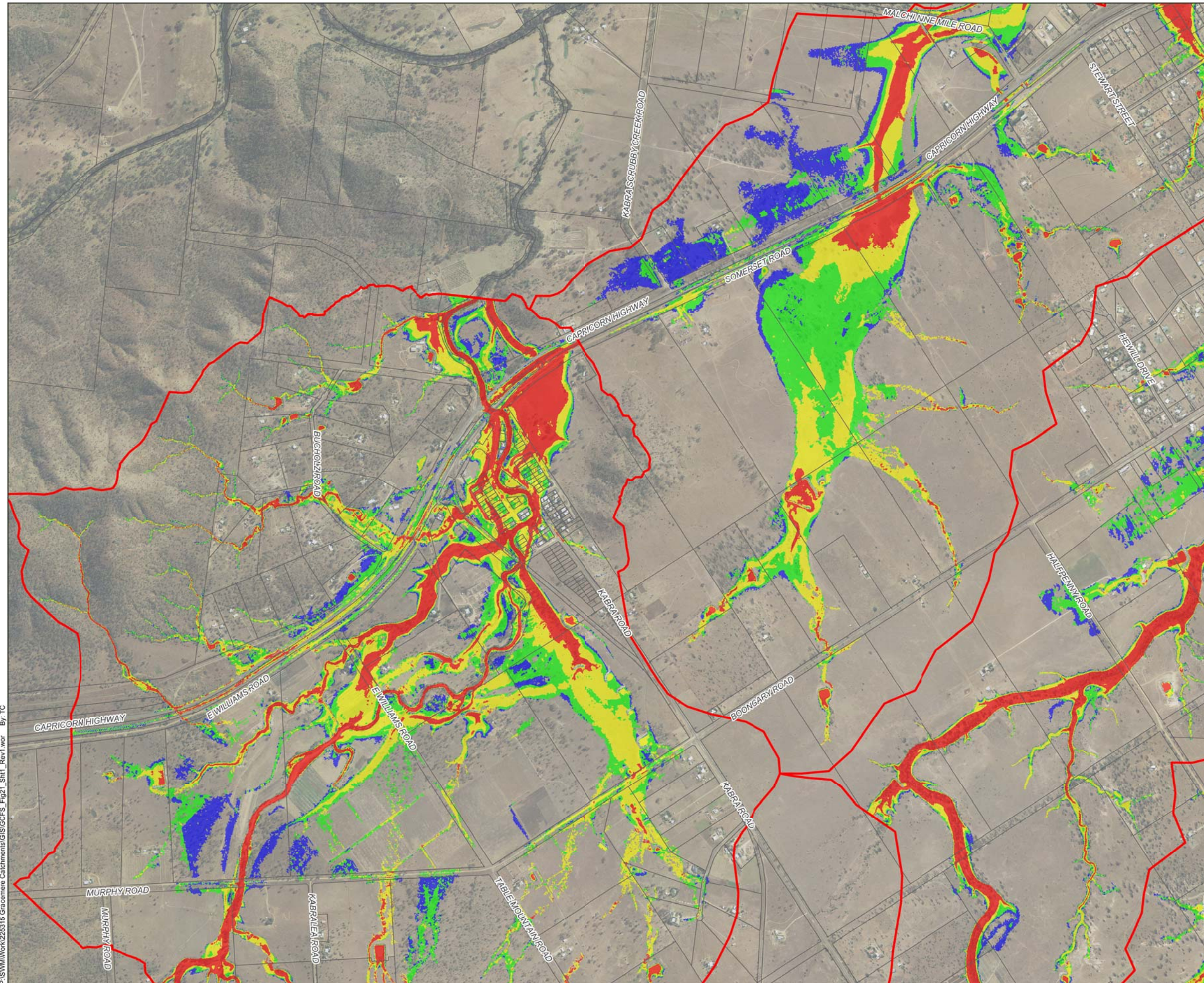
Date: 31/03/2012

Version: 1

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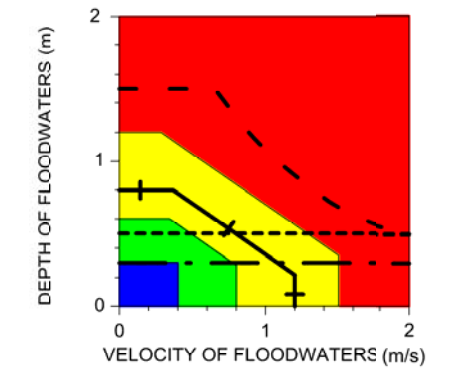


Projection: MGA Zone 56



Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

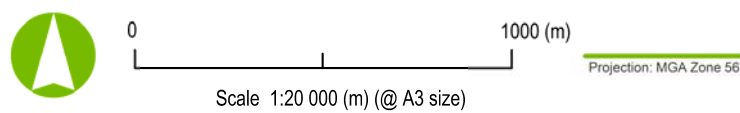
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
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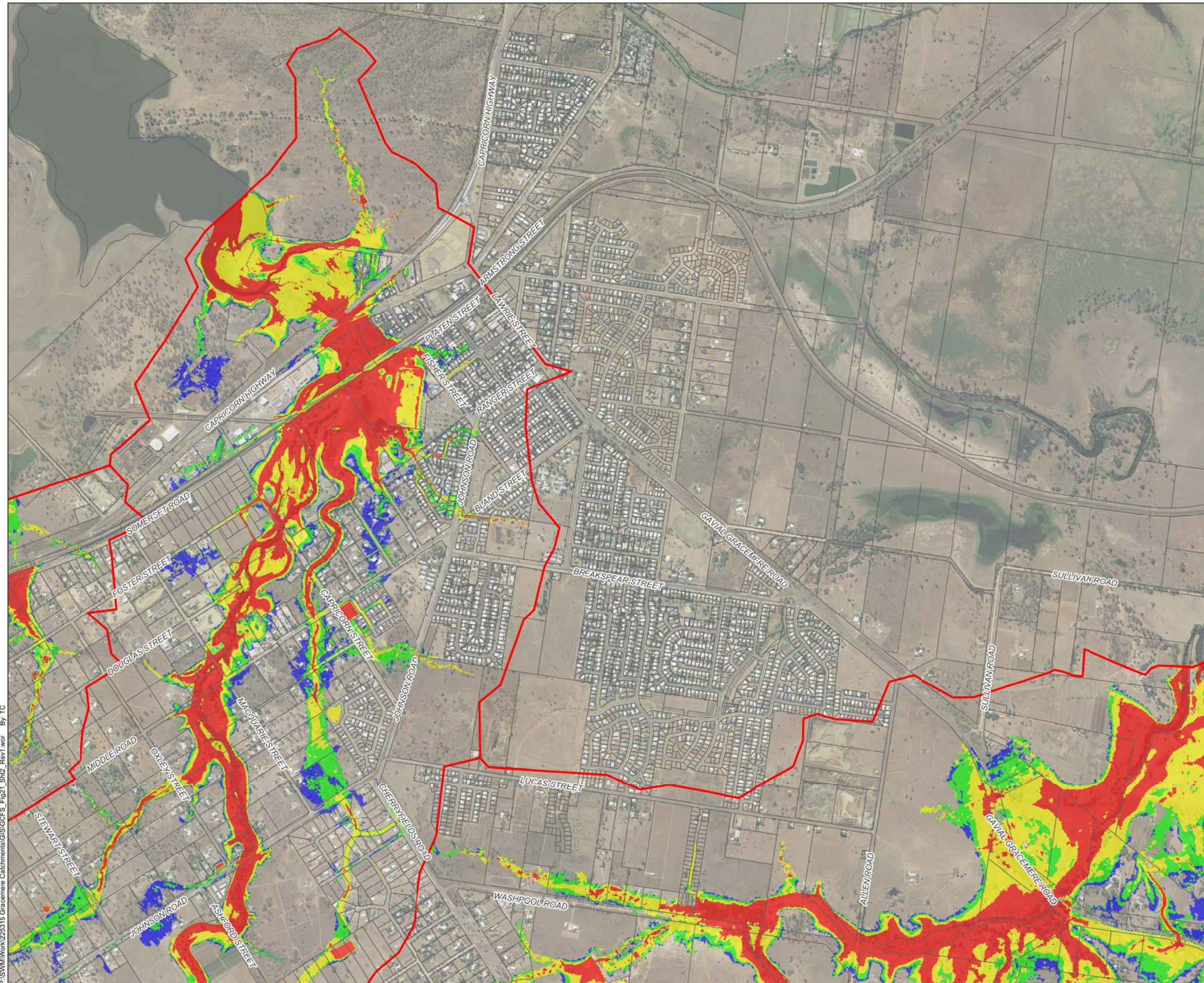
Date: 31/03/2012

Version: 1

P:\SWM\Work\22315 Gracemere Catchments\GIS\GCFS_Fig21_Sht1_Rev1.wor By: TC

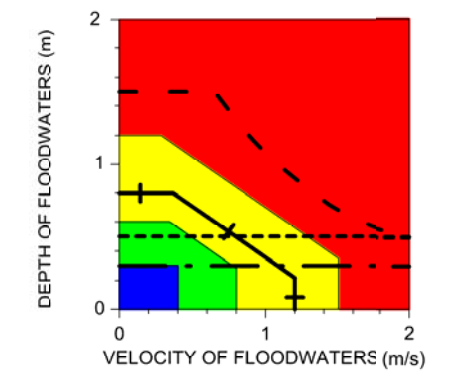


Gracemere Catchments Flood Study
Figure 21: Sheet 1 - 50 Year ARI Peak Hazards



Legend

- Cadastre
- TUFLOW Model Extents



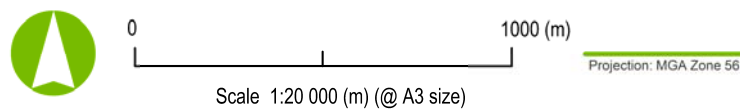
Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

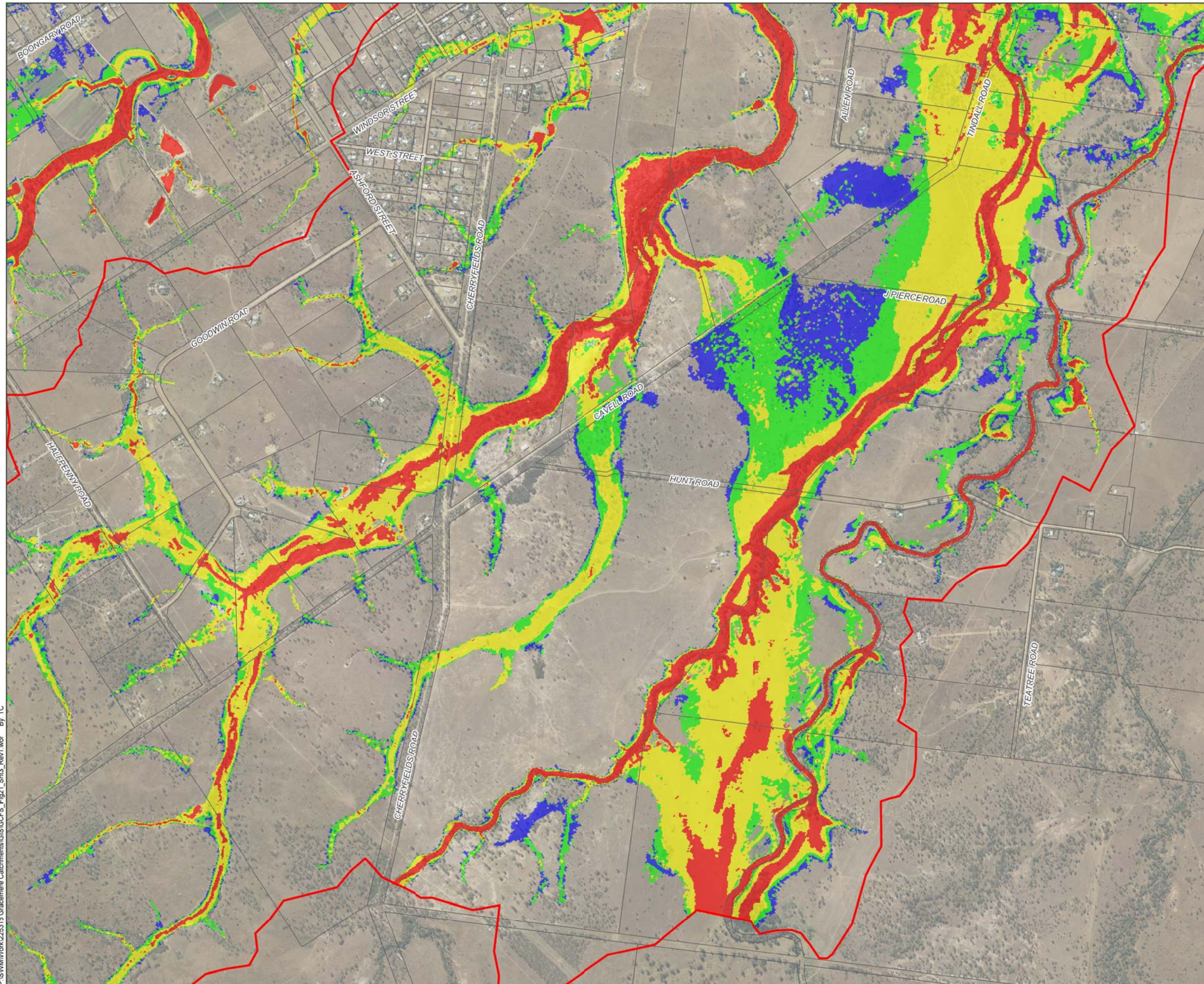
Date: 31/03/2012

Version: 1



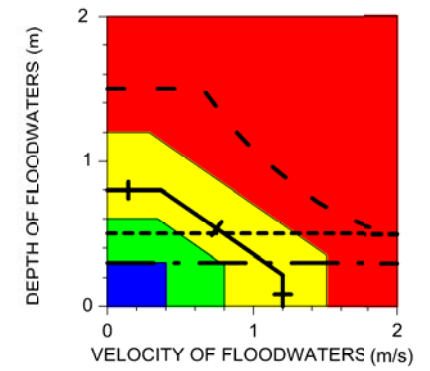
Gracemere Catchments Flood Study
Figure 21: Sheet 2 - 50 Year ARI Peak Hazards

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Legend

- Cadastre
- TUFLOW Model Extents

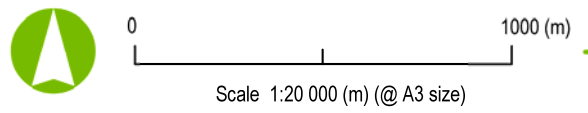


Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

- Notes:**
- This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 - This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 - This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

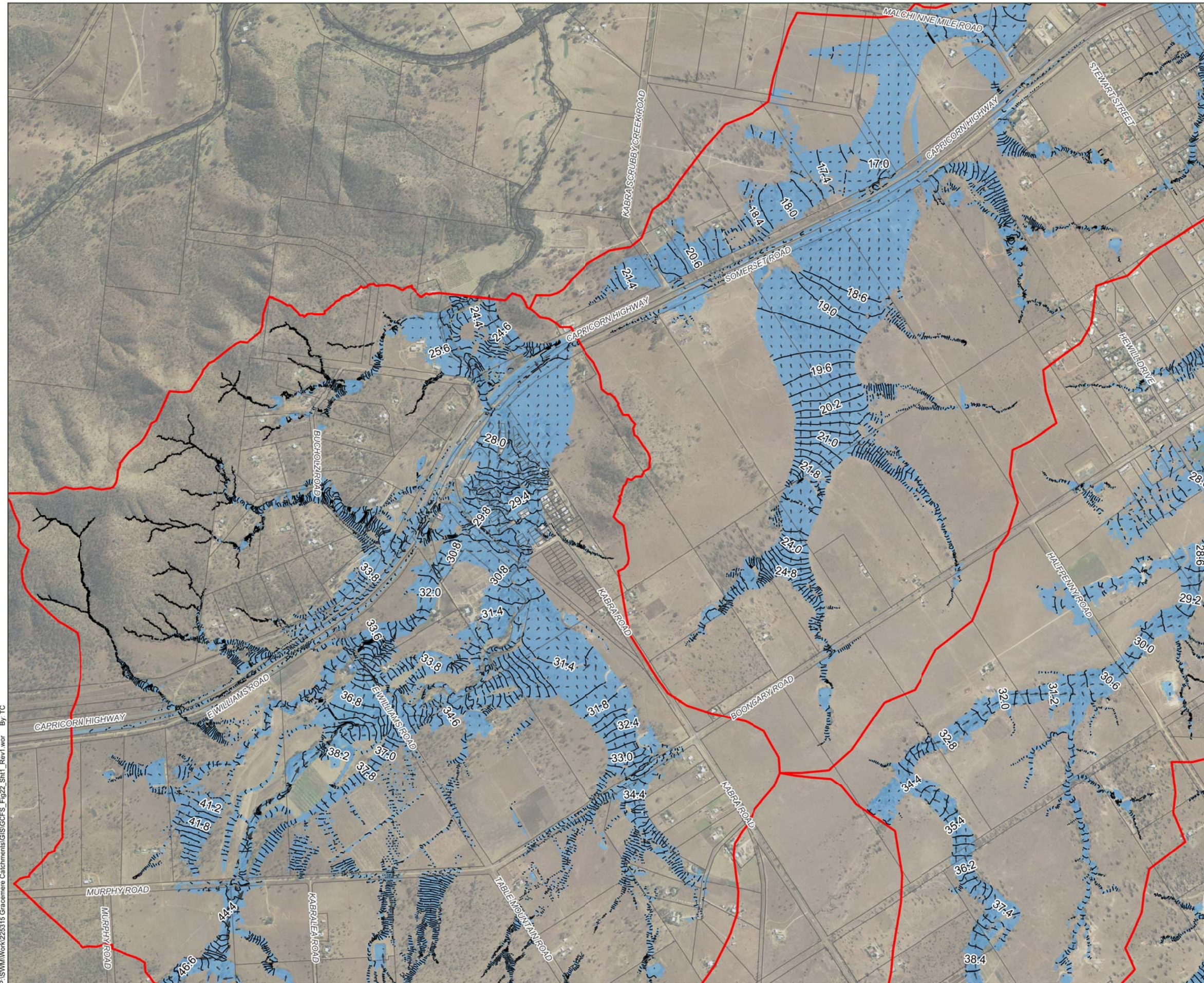
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Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 21: Sheet 3 - 50 Year ARI Peak Hazards



Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

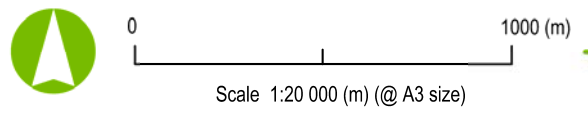
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012

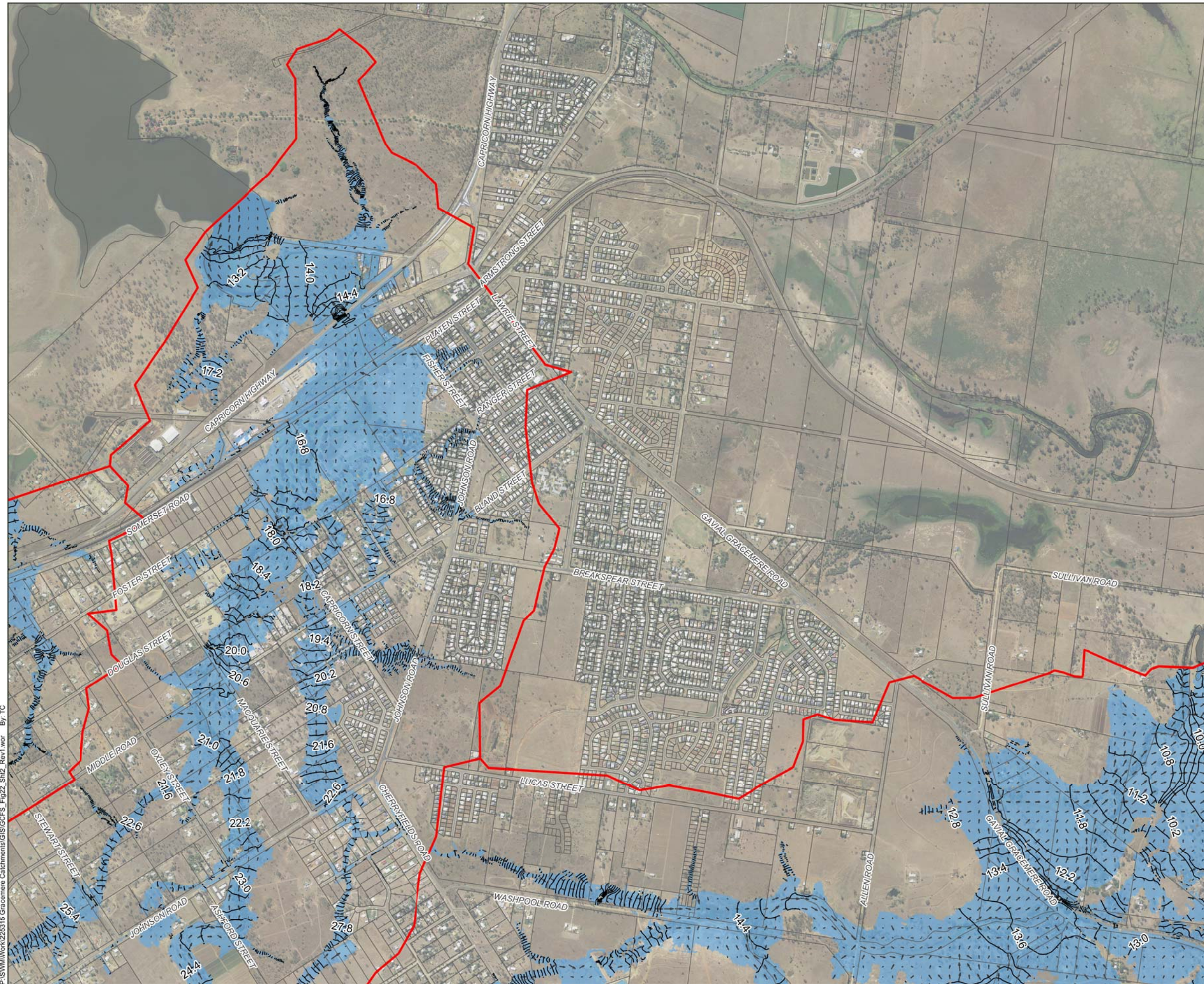
Version: 1

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Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 22: Sheet 1 - 100 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents
- Inundation Extents
- 0.2m (AHD) Peak Water Surface Elevation Contour
- Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

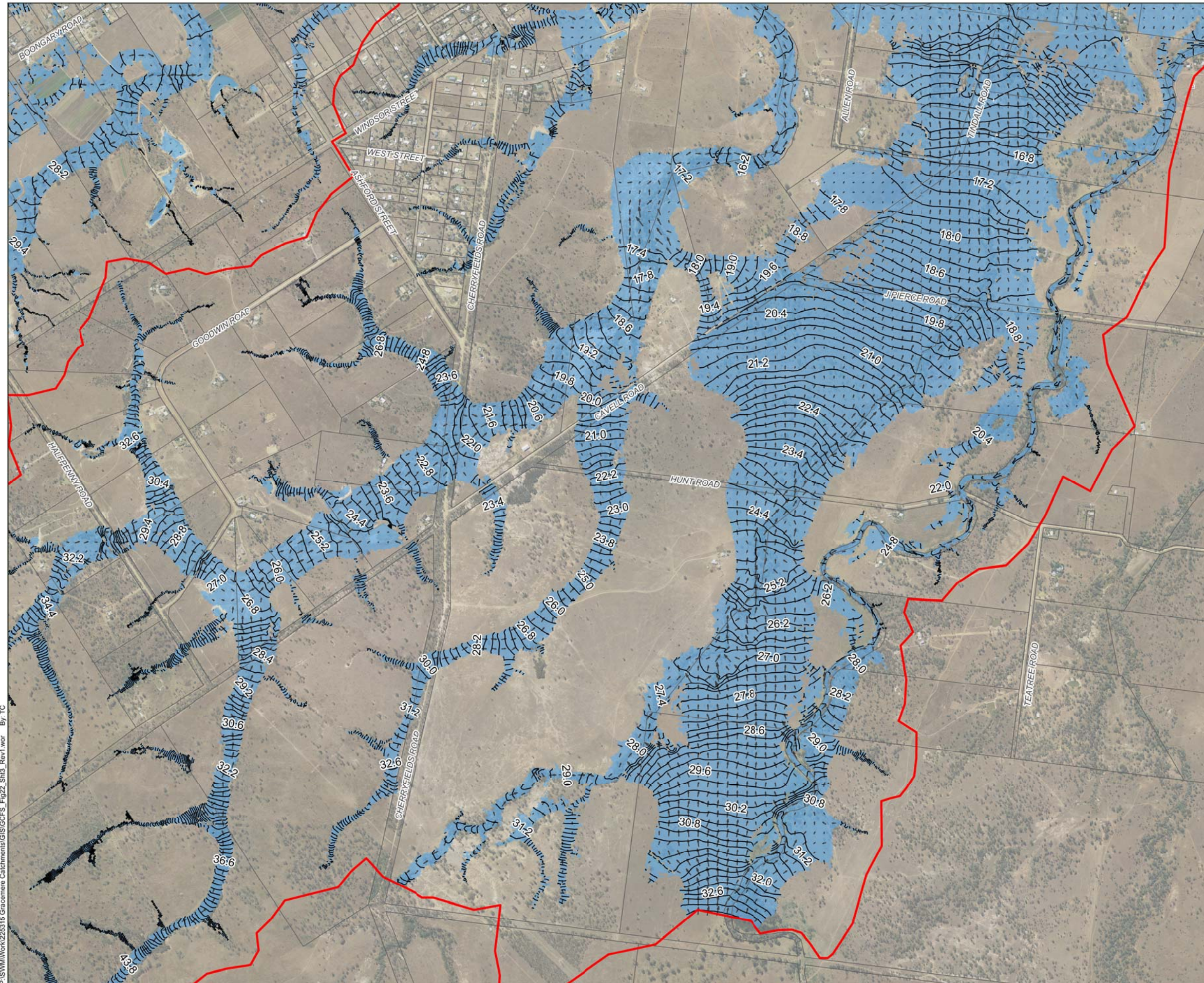
- Notes:**
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
 2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
 3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012 Version: 1






0 1000 (m)
Scale 1:20 000 (m) (@ A3 size)
Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 22: Sheet 2 - 100 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities

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Legend

-  Cadastre
-  TUFLOW Model Extents
-  Inundation Extents
-  0.2m (AHD) Peak Water Surface Elevation Contour
-  Velocity Vector
- represents velocity at time of peak water level
- reference vector = 9 m/s

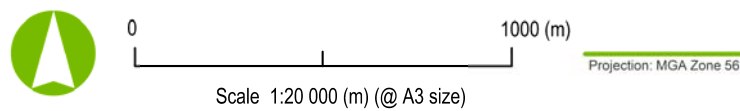
Notes:

1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
2. This mapping considers local catchment flooding only. No consideration of Neerkol Creek or Padgoe Lagoon flooding has been made.
3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

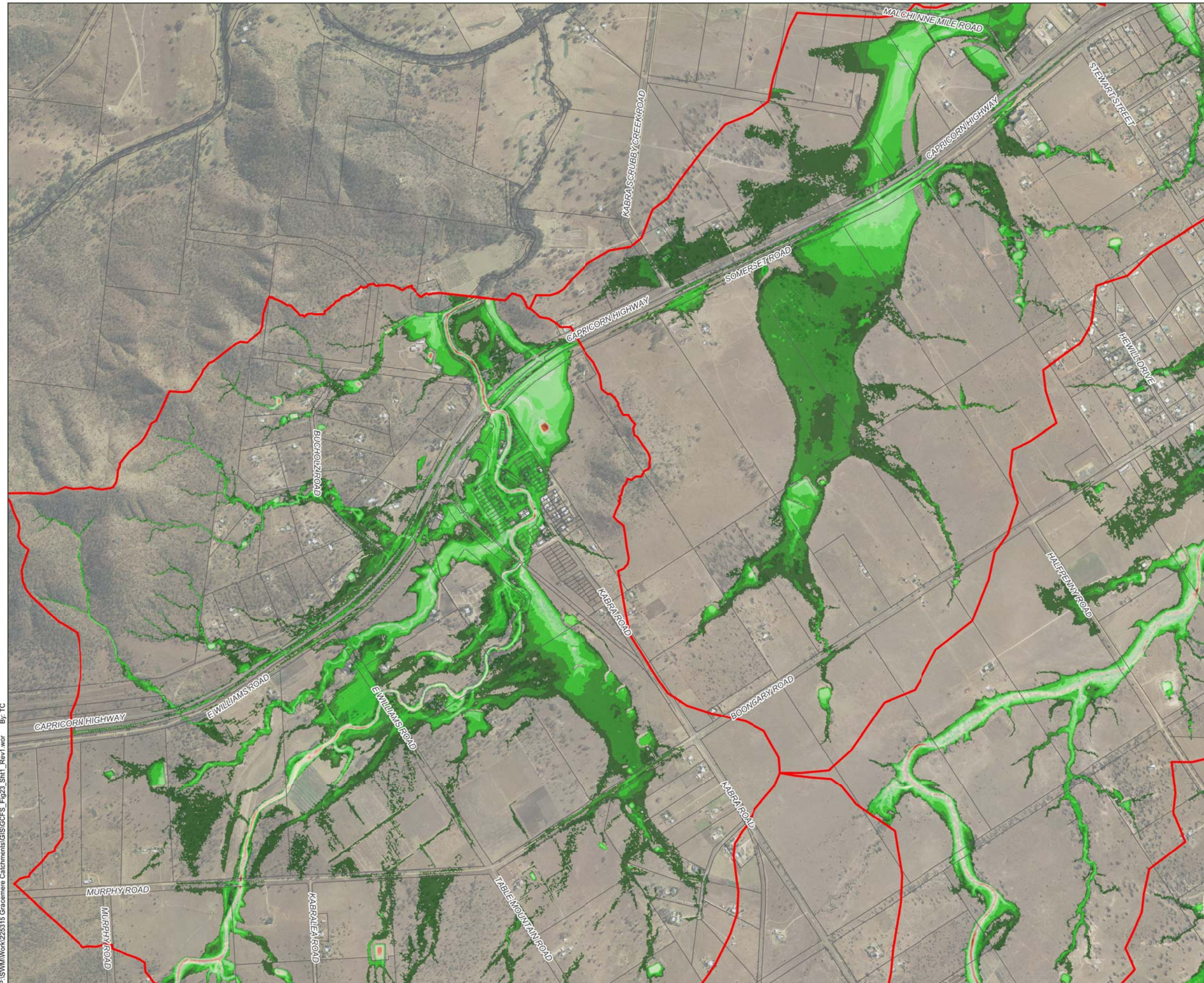
Date: 31/03/2012

Version: 1

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Gracemere Catchments Flood Study
Figure 22: Sheet 3 - 100 Year ARI Inundation Extents, Peak Water Surface Elevations and Velocities



Legend

- Cadastre
- TUFLOW Model Extents

Depth (m)

- | | | | |
|--|------------|--|------------|
| | 0.0 to 0.3 | | 2.5 to 3.0 |
| | 0.3 to 0.5 | | 3.0 to 3.5 |
| | 0.5 to 1.0 | | 3.5 to 4.0 |
| | 1.0 to 1.5 | | 4.0 to 4.5 |
| | 1.5 to 2.0 | | 4.5 to 5.0 |
| | 2.0 to 2.5 | | > 5.0 |

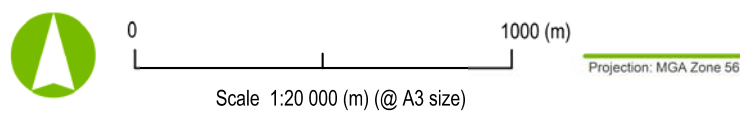
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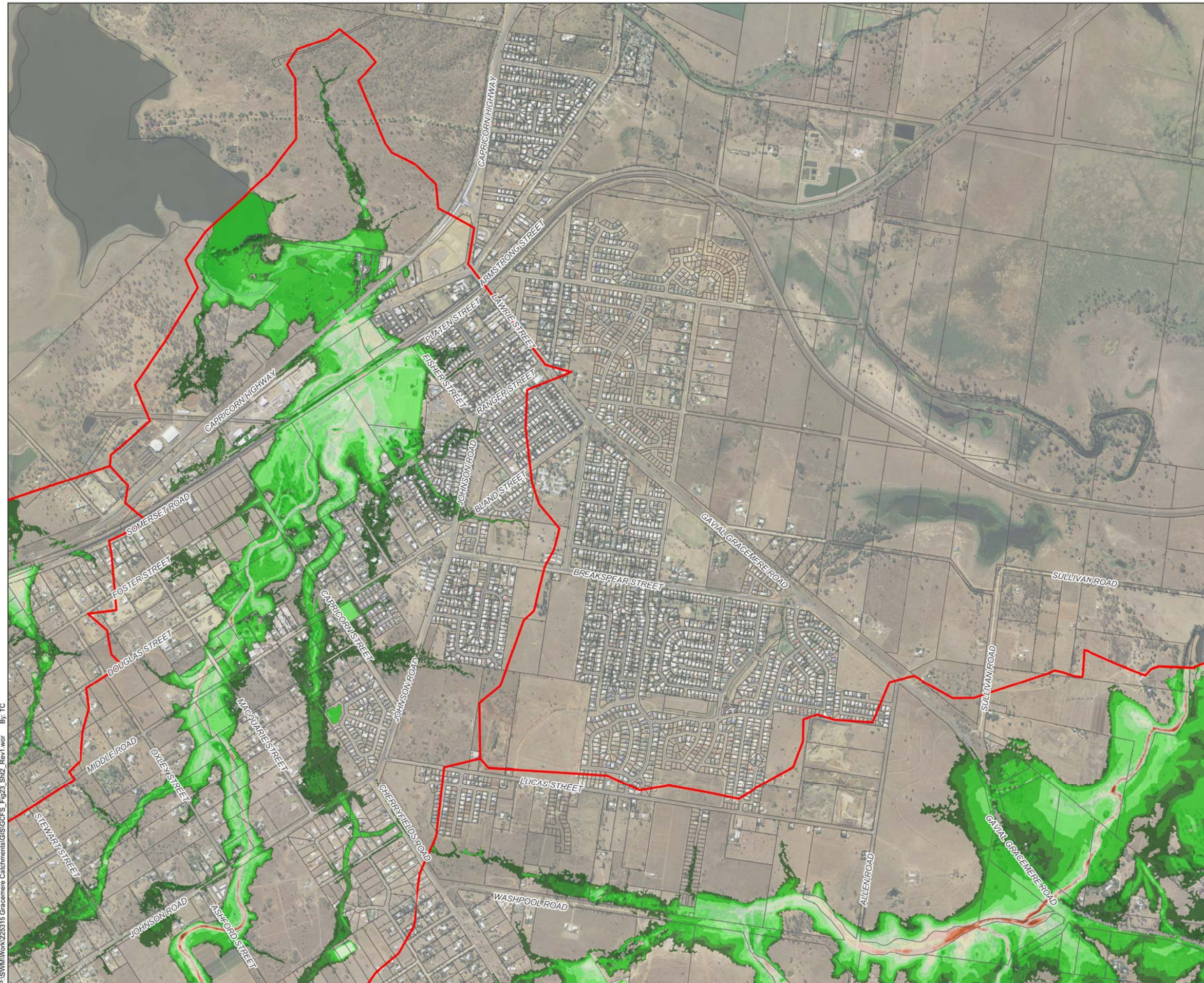
1. This map must not be used without consideration of, or reference to, the Explanatory Notes and Disclaimers which are provided on the Gracemere Catchments Flood Study Figure 25 so as to understand the important limitations and conditions on such use.
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3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

Date: 31/03/2012



Version: 1

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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

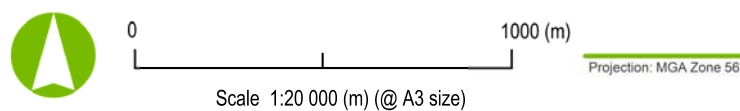
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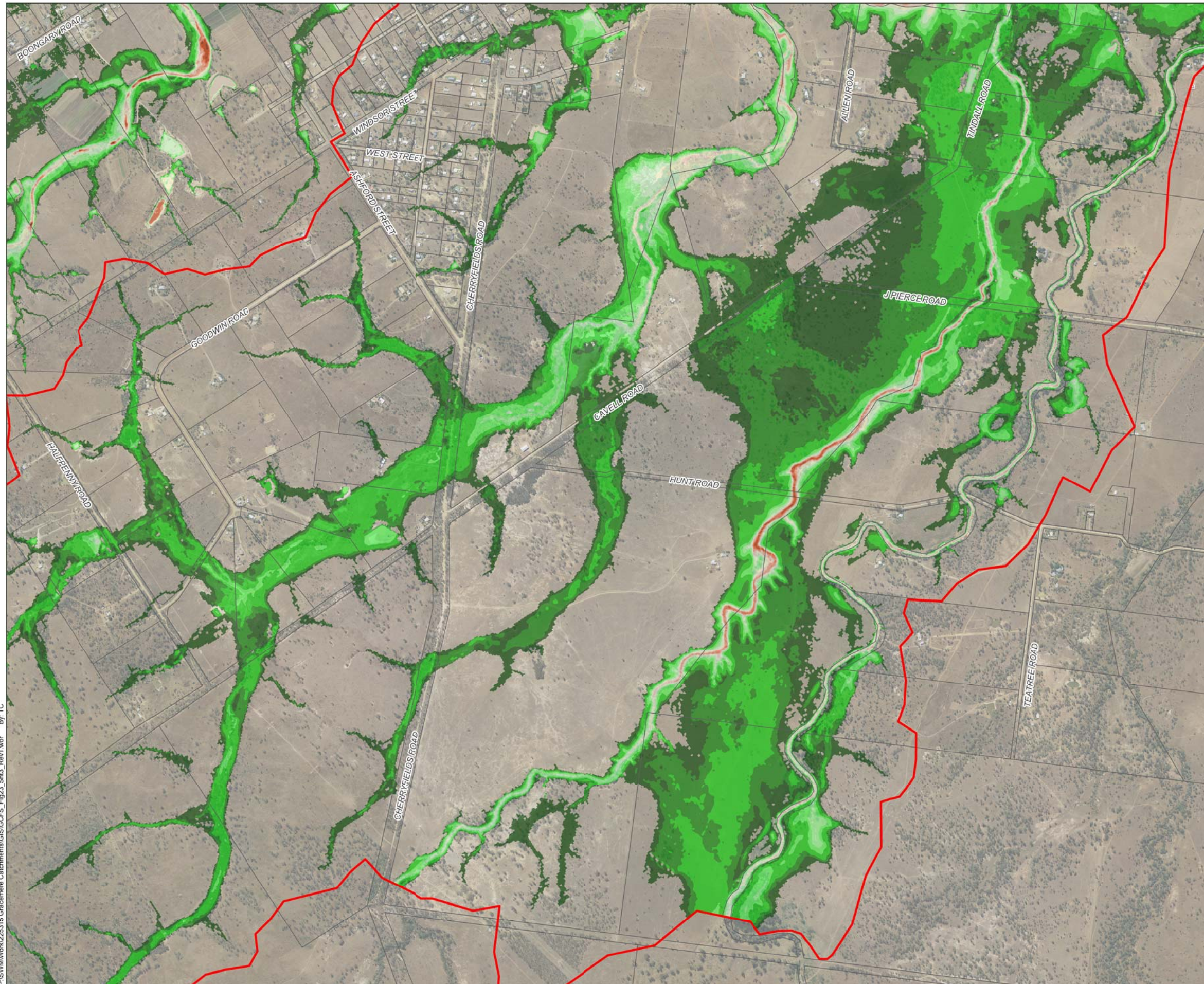
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3. This mapping shows inundation within the Gracemere Catchments Flood Study TUFLOW model extents only. Flood inundation continues beyond the downstream extents of this mapping.

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





Legend

-  Cadastre
-  TUFLOW Model Extents

Depth (m)

- | | |
|--|--|
|  0.0 to 0.3 |  2.5 to 3.0 |
|  0.3 to 0.5 |  3.0 to 3.5 |
|  0.5 to 1.0 |  3.5 to 4.0 |
|  1.0 to 1.5 |  4.0 to 4.5 |
|  1.5 to 2.0 |  4.5 to 5.0 |
|  2.0 to 2.5 |  > 5.0 |

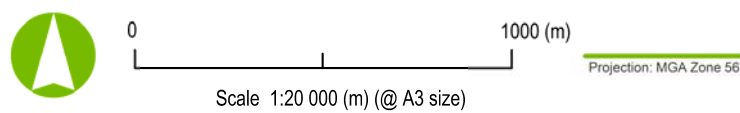
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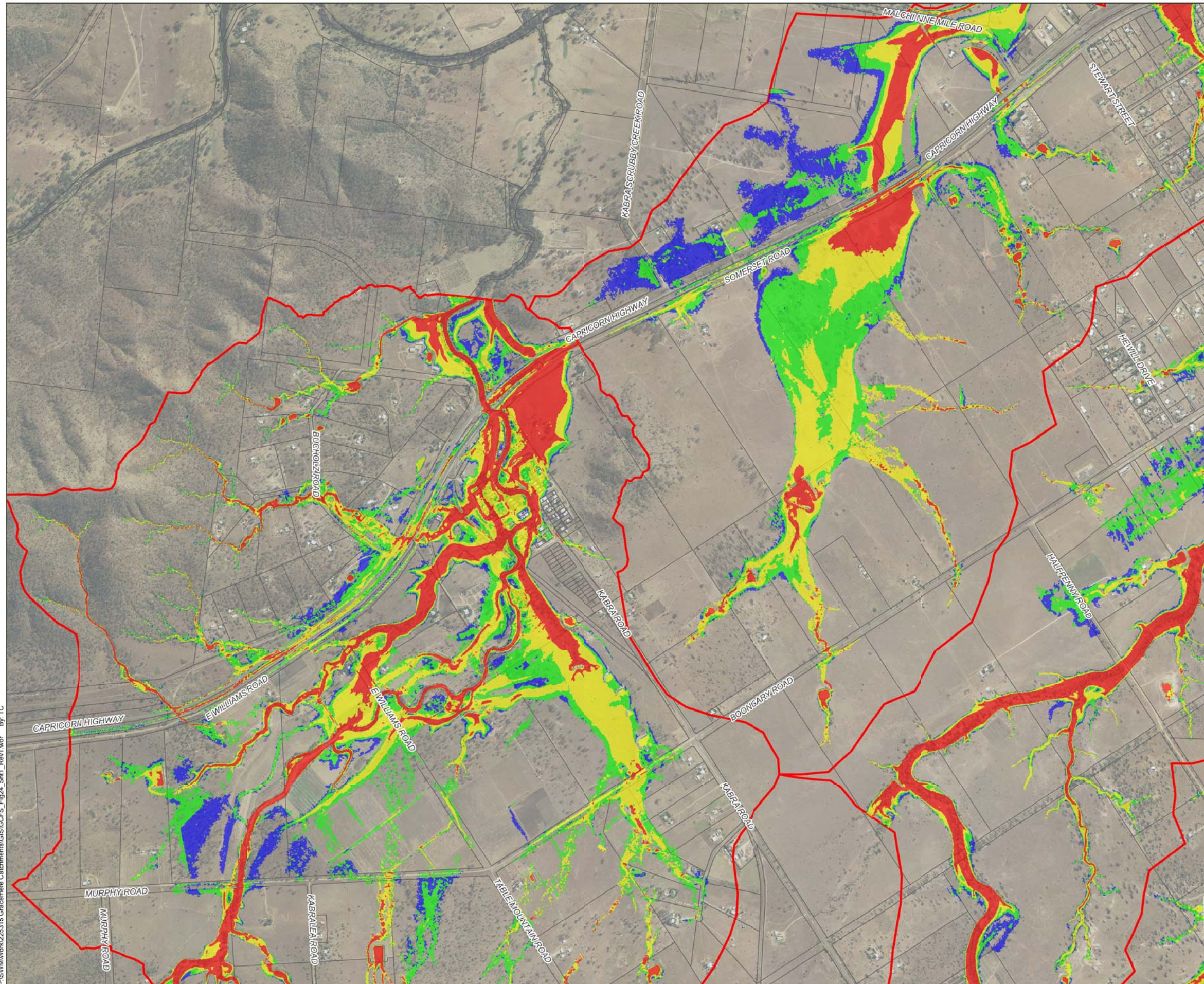
Date: 31/03/2012

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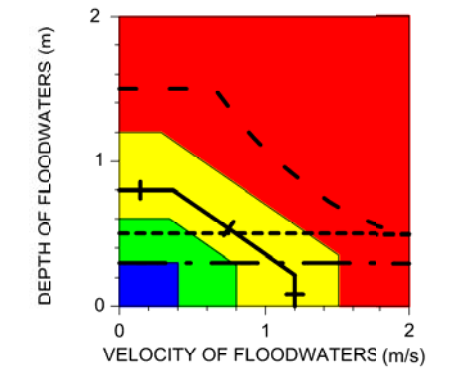


Gracemere Catchments Flood Study
Figure 23: Sheet 3 - 100 Year ARI Peak Depths



Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

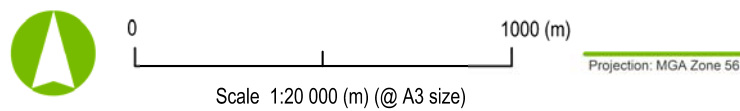
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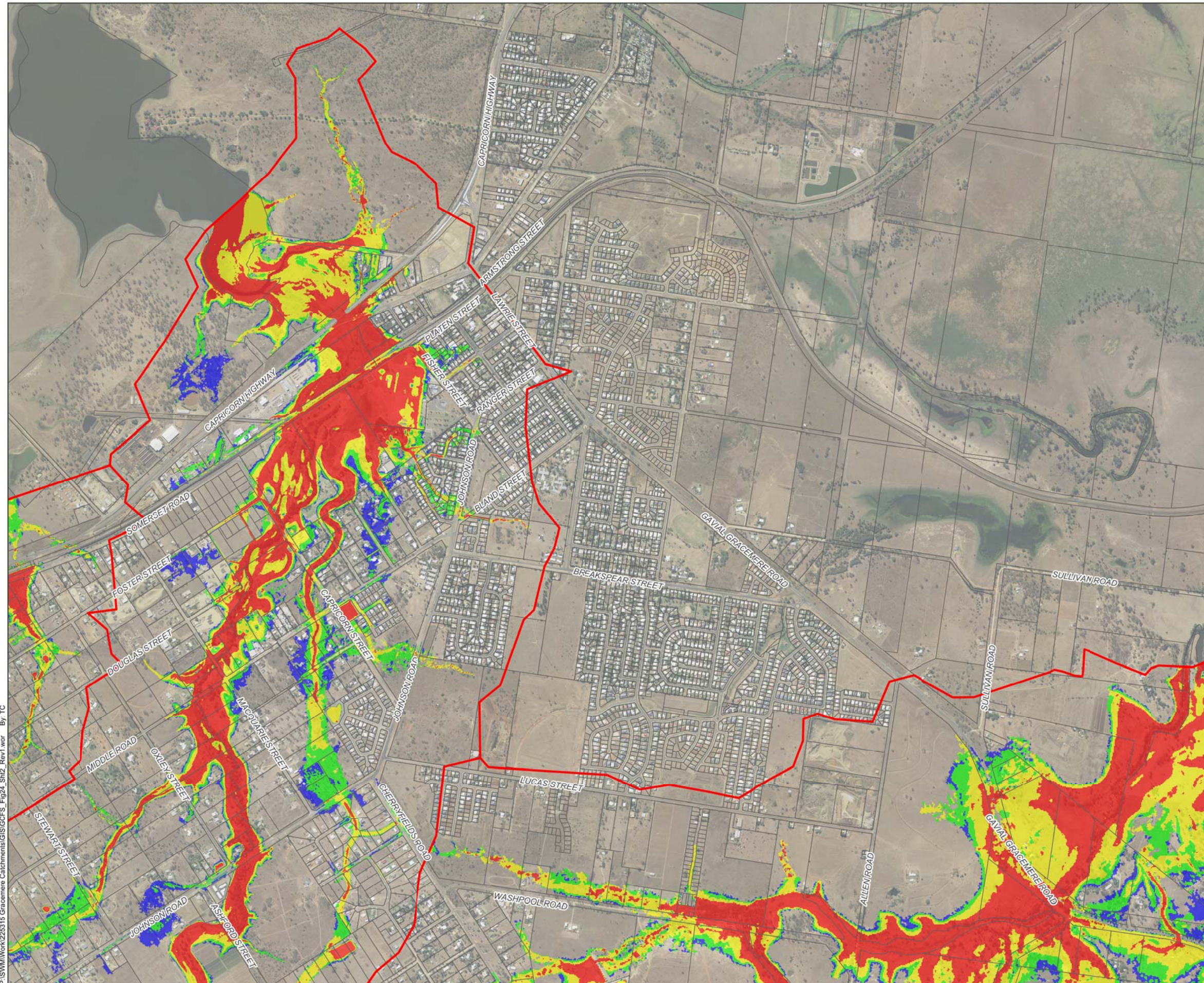
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Date: 31/03/2012

Version: 1

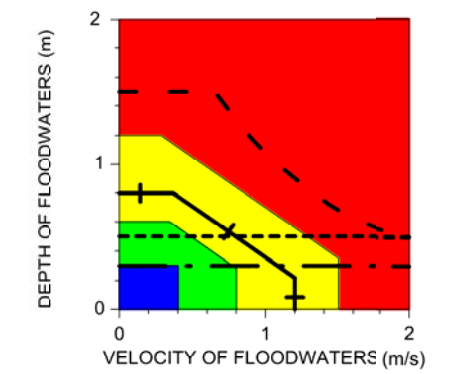
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Legend

- Cadastre
- TUFLOW Model Extents



Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

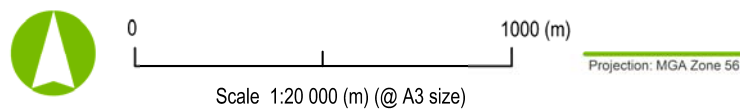
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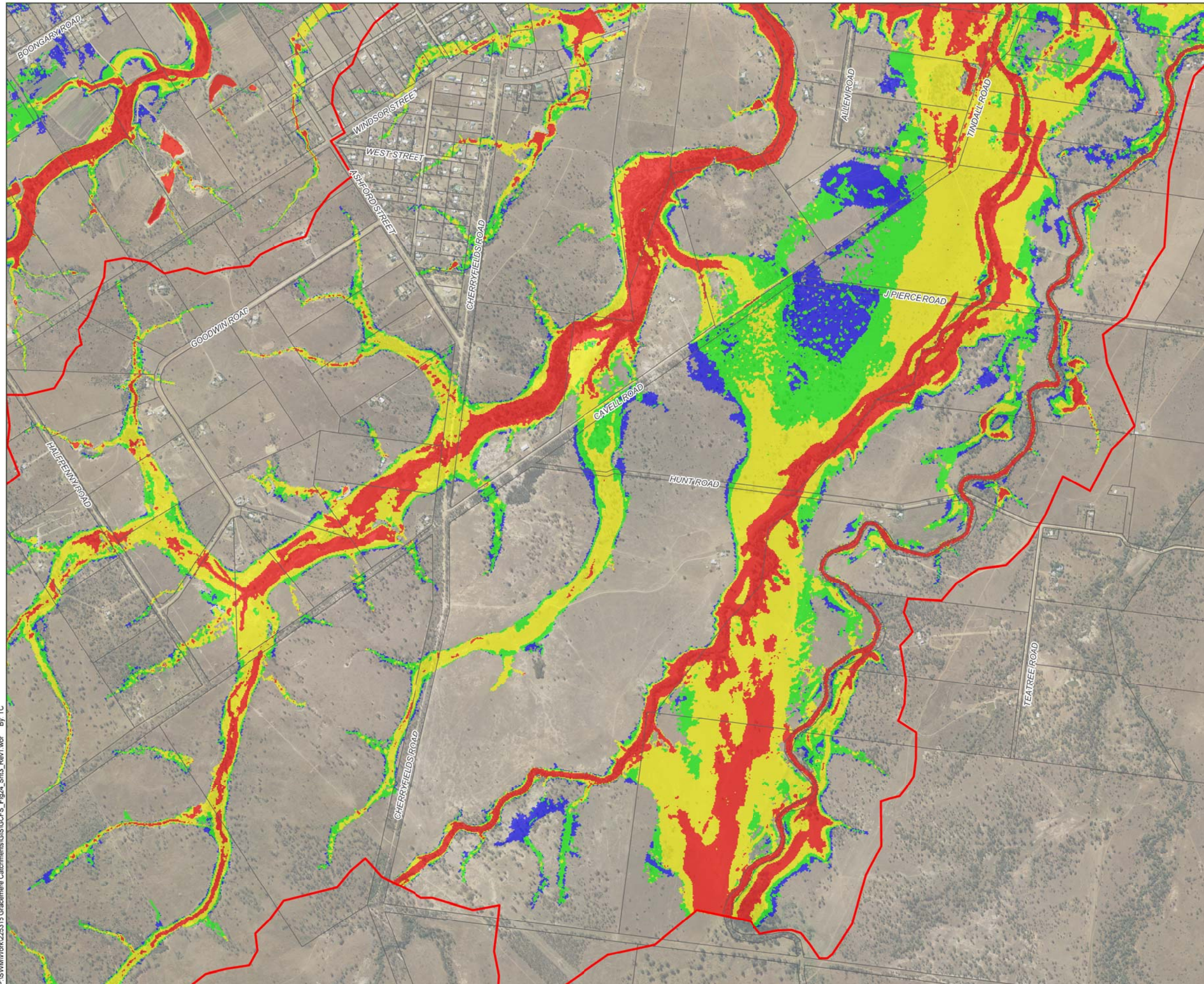
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Version: 1

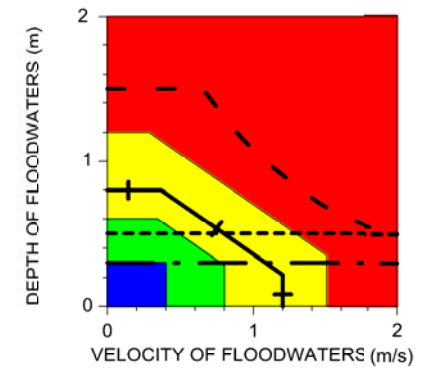
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Legend

- Cadastre
- TUFLOW Model Extents

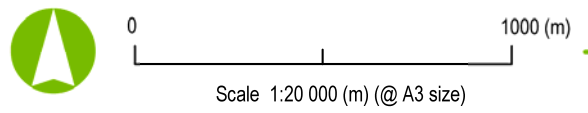


Hazard Categories	Hazard Thresholds
Extreme	Safe to Use Small Cars
High	Safe to Use 4WDs
Medium	Wading Limit - Children
Low	Wading Limit - Adults

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Projection: MGA Zone 56

Gracemere Catchments Flood Study
Figure 24: Sheet 3 - 100 Year ARI Peak Hazards

This mapping was developed to represent flooding in the Gracemere Creek, Middle Creek, Washpool Creek, Teatree Creek and Four Mile Creek catchments. It also represents flooding in the local catchments between Gracemere and Middle Creeks. Flooding continues beyond these downstream extents. No consideration of coincident flooding in Neerkol Creek or Padgole Lagoon has been made.

The topographic data used in preparation of the hydraulic model and this mapping was based upon the best information available as at September 2011 and relied upon LiDAR survey captured in June 2009. No bathymetric data was included.

The results presented in this mapping are based upon model results from the Gracemere Catchments Flood Study RAFTS and TUFLOW models as at March 2012.

Information presented in this mapping is indicative only and may vary, depending upon the level of catchment and floodplain development. Filling of land or excavation and levelling may alter the ground levels locally at any time, whilst errors may also occur from place to place in the local ground elevation data from which the data has been developed.

The hydraulic model results presented in this mapping are based upon 5m and 10m grid hydraulic models. This model resolution may not be representative of features such as small, local drainage channels.

Flood hazard assessments have been based upon consideration of flood depths and velocities only. No consideration of evacuation times has been included.

These maps were produced to accompany the Gracemere Catchments Flood Study Report. Detailed information regarding the model setup and modelling methodology is available in this report.

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Legend

Notes:

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