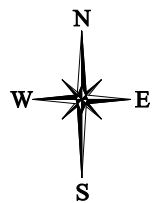


martens



Martens & Associates Pty Ltd ABN 85 070 240 890

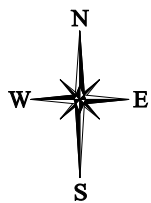
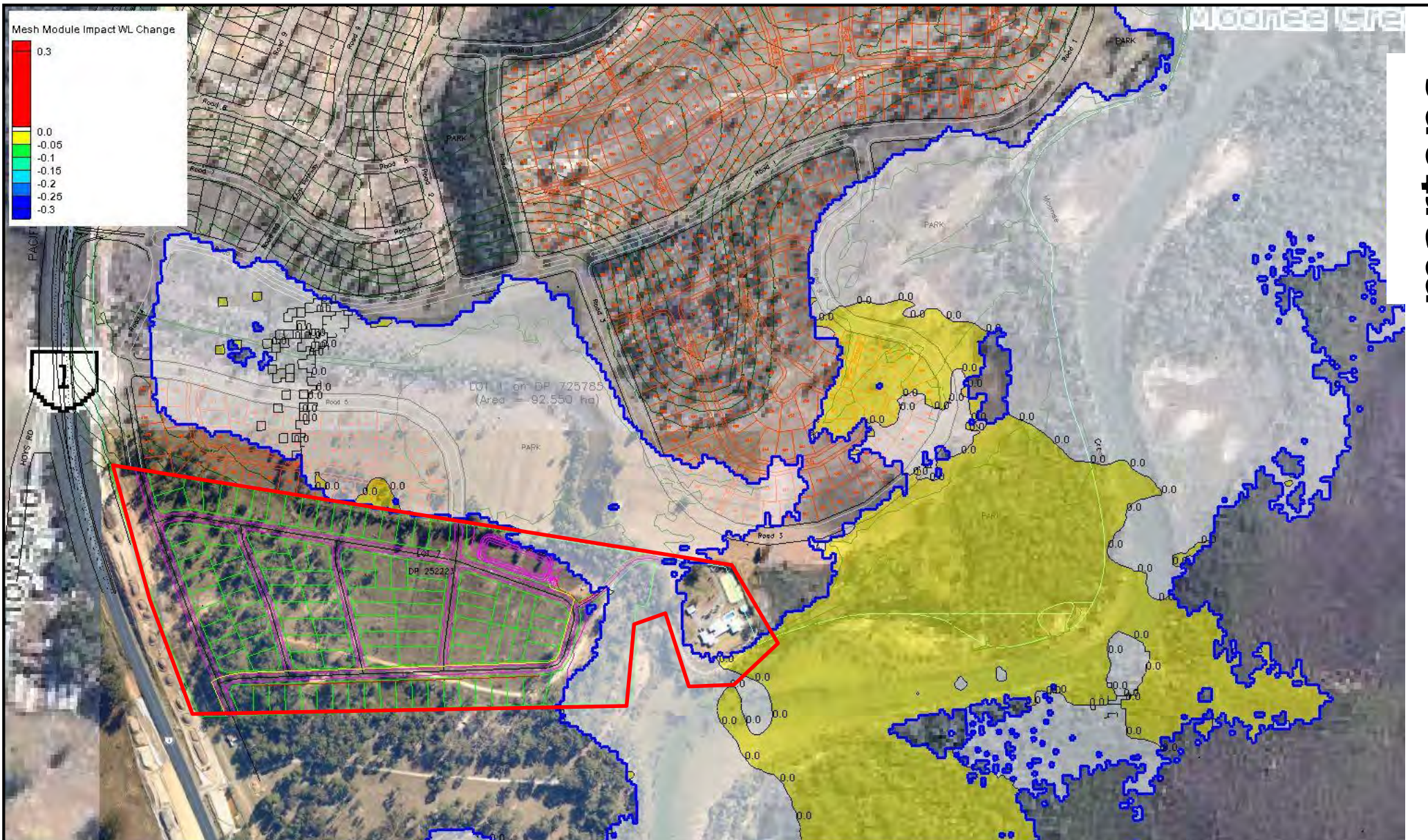
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.06.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

Peak Depth x Velocity – 1 in 100 Year ARI With Climate Change Bucca Creek Flood (Scenario 10) Developed Conditions

FIGURE 68

Job No: P1002663



Martens & Associates Pty Ltd ABN 85 070 240 890

| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

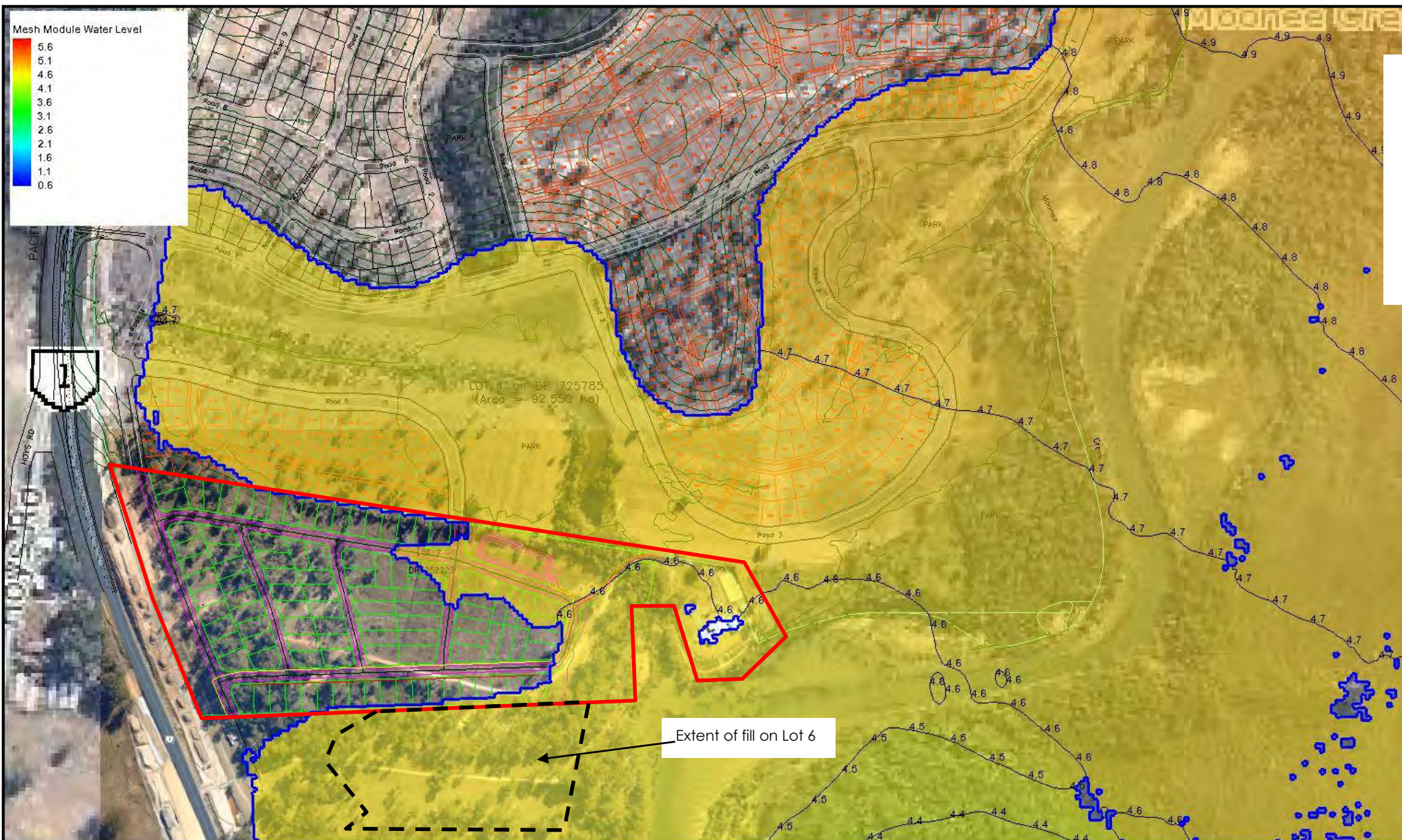
Environment | Water | Wastewater | Geotechnical | Civil | Management

Impact – Change in Peak Water Level – 1 in 100 Year ARI
With Climate Change Bucca Creek Flood (Scenario 10)
Developed vs Existing Conditions

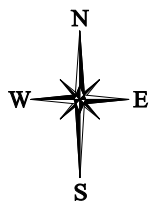
FIGURE 69

Job No: P1002663

martens



martens



Martens & Associates Pty Ltd ABN 85 070 240 890

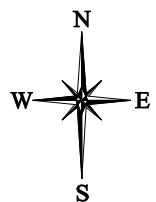
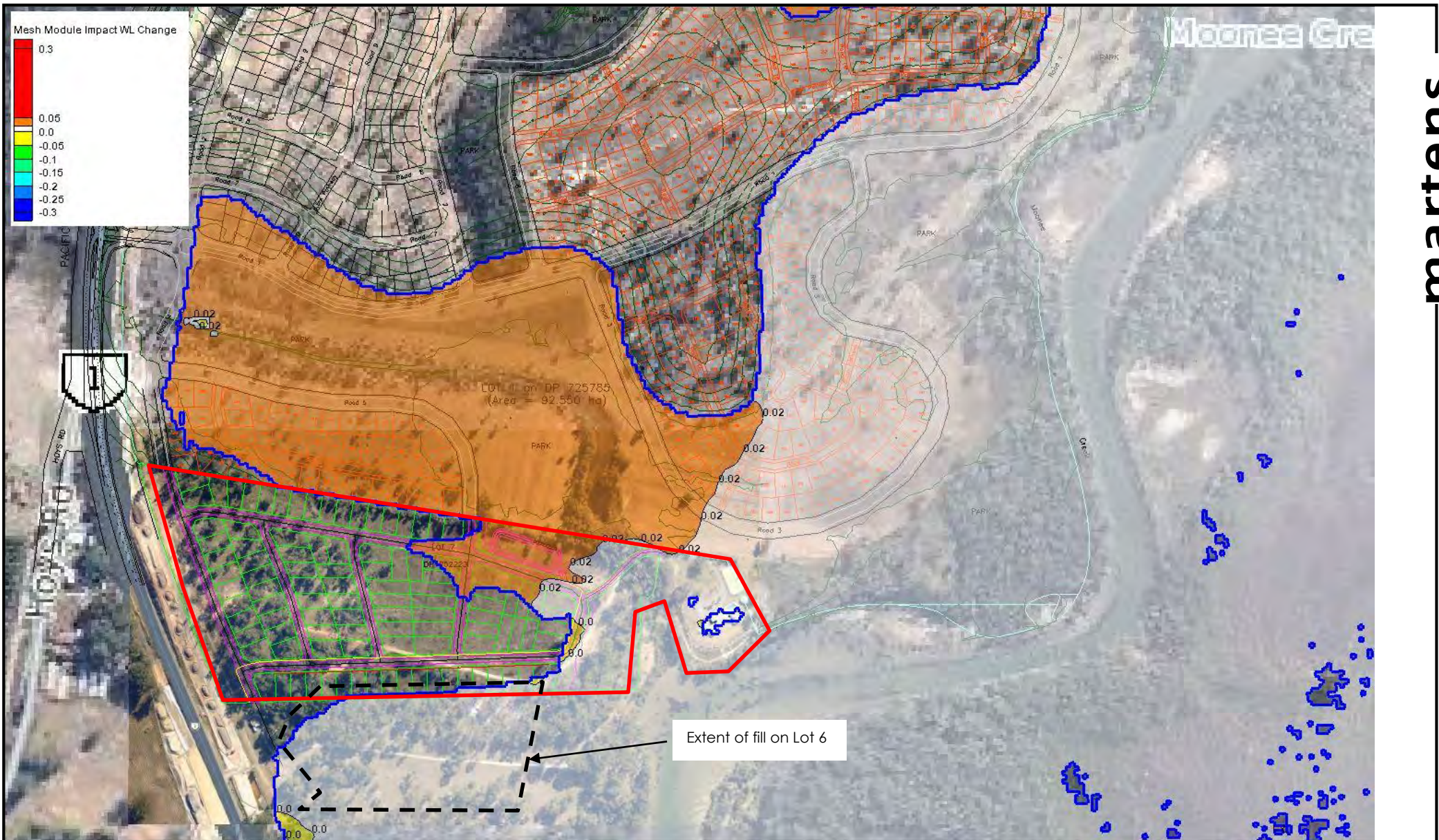
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

Peak Water Level – PMF Moonee Creek Flood (Scenario 4)
Cumulative Impact Analyses

FIGURE 70

Job No: P1002663



Martens & Associates Pty Ltd ABN 85 070 240 890

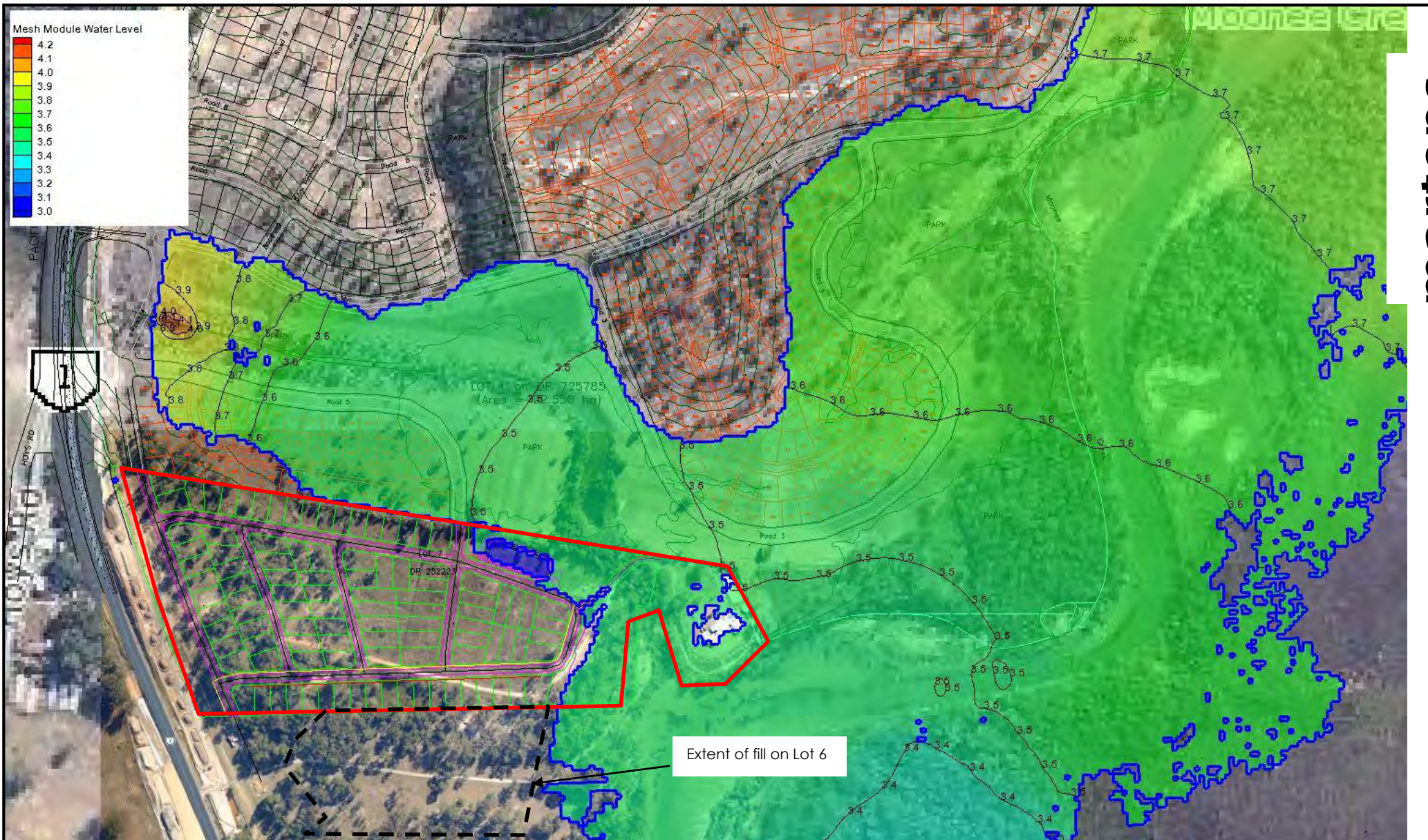
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

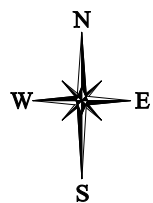
Impact – Change in Peak Water Level – PMF Moonee Creek Flood (Scenario 4) Developed Cumulative Analyses vs Existing Conditions

FIGURE 71

Job No: P1002663



martens



Martens & Associates Pty Ltd ABN 85 070 240 890

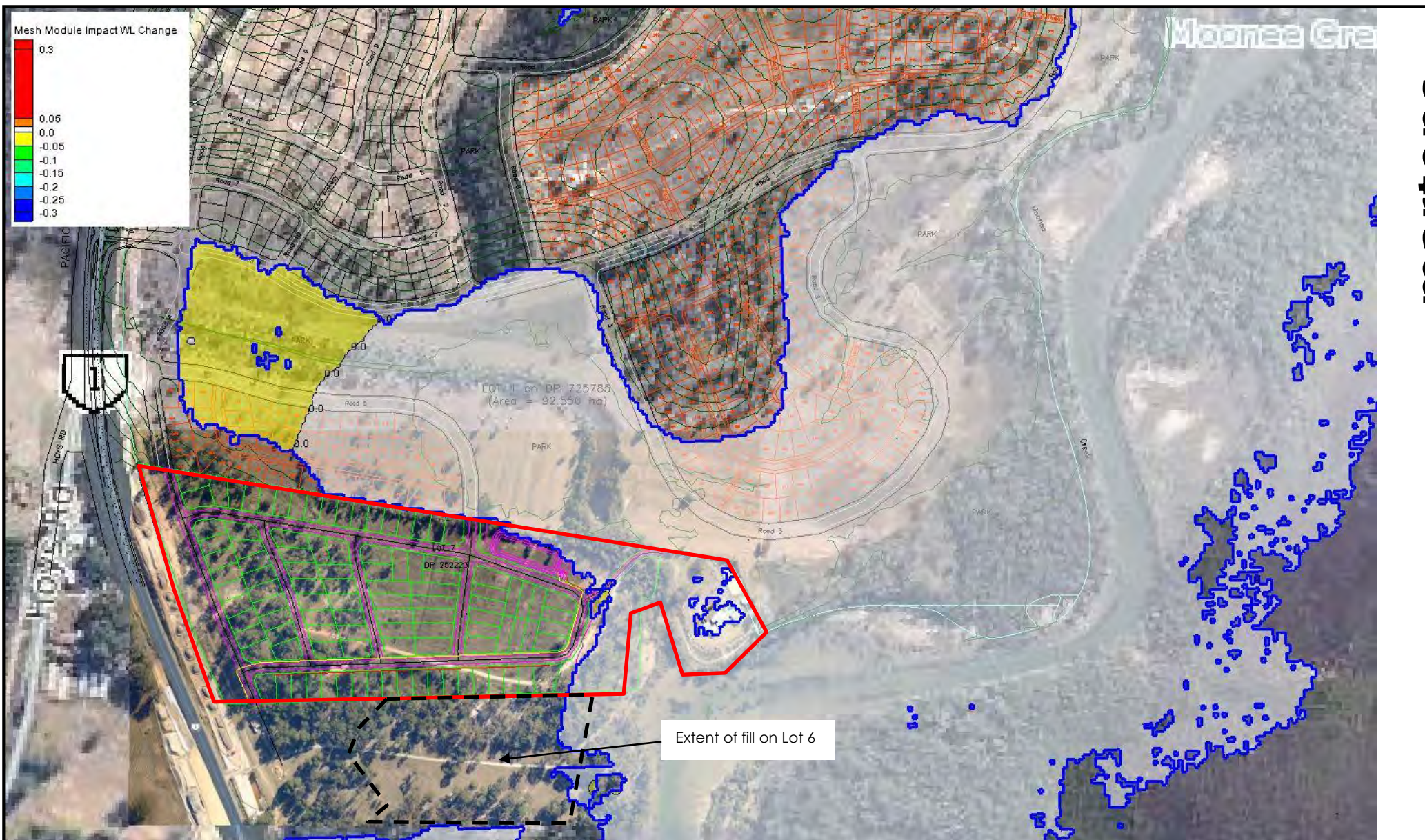
Environment | Water | Wastewater | Geotechnical | Civil | Management

| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

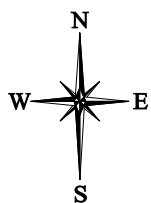
**Peak Water Level – 1 in 100 Year ARI With Climate Change
Moonee Creek Flood (Scenario 5) Cumulative Impact
Analyses**

FIGURE 72

Job No: P1002663

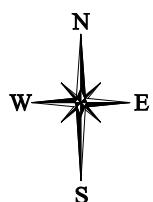


martens



| | | | |
|---|----------|--|------------------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | | Environment Water Wastewater Geotechnical Civil Management | |
| Drawn: | MGD | Impact – Change in Peak Water Level – 1 in 100 Year ARI With Climate Change Moonee Creek Flood (Scenario 5) Developed Cumulative Analyses vs Existing Conditions | FIGURE 73 |
| Approved: | DMM | | |
| Date: | 15.07.22 | | Job No: P1002663 |
| Scale: | nts | | |

8 **Attachment C – Model Set-up**



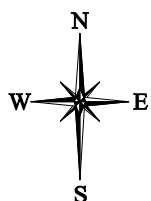
| | |
|--|----------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | |
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydraulic Modelling – Model Extents

FIGURE 74

Job No: P1002663



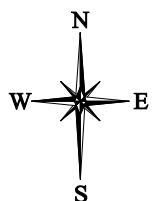
| | |
|--|----------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | |
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

**Hydraulic Modelling – Existing Conditions Mannings
Roughness**

FIGURE 75

Job No: P1002663



| | |
|--|----------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | |
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

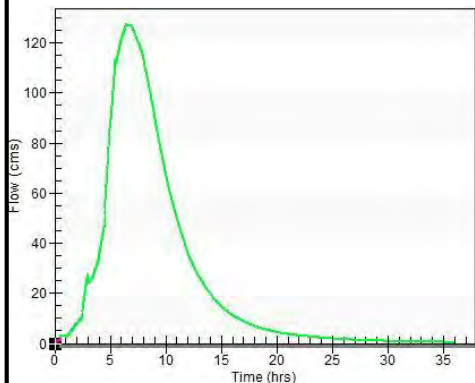
Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydraulic Modelling – Proposed Conditions Mannings
Roughness

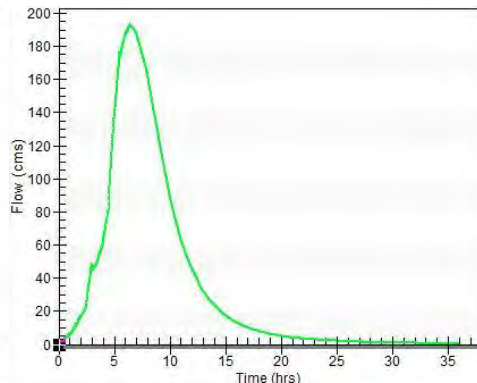
FIGURE 76

Job No: P1002663

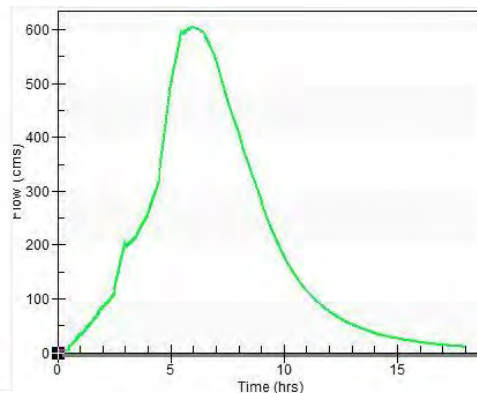
Scenario 1



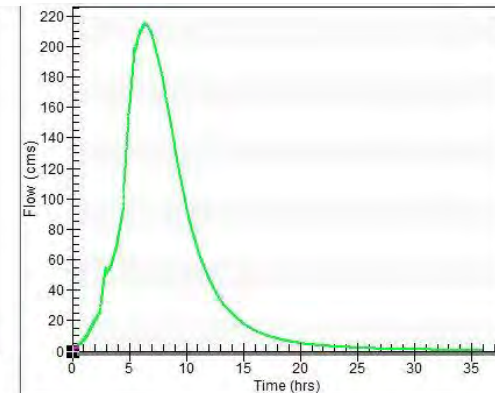
Scenarios 2, 3 and 5



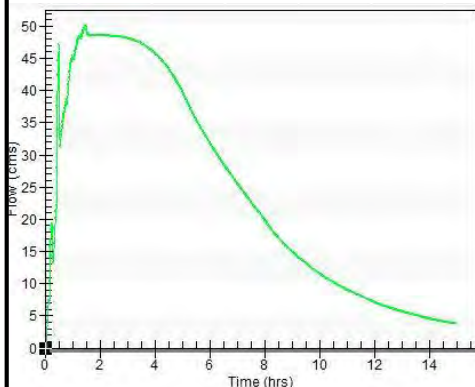
Scenario 4



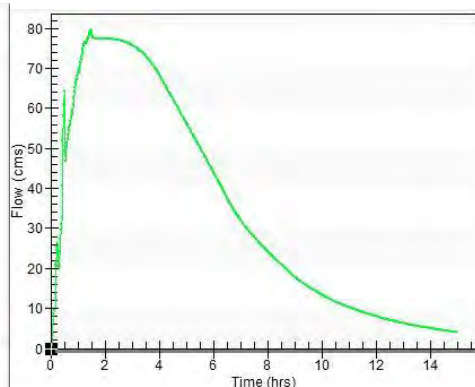
Scenario 5
(rainfall +10%)



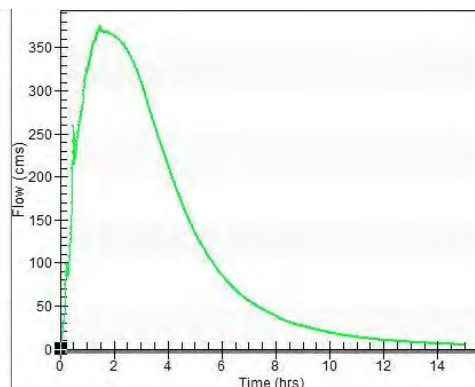
Scenario 6



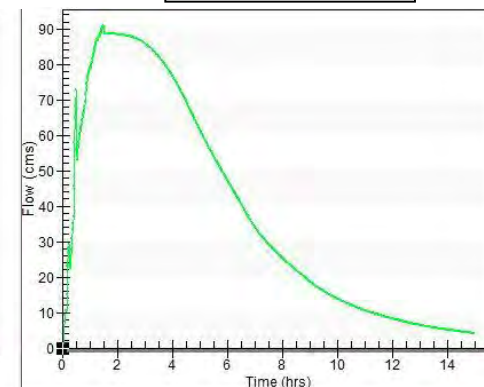
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

Drawn: MGD

Approved: DMM

Date: 15.07.22

Scale: nts

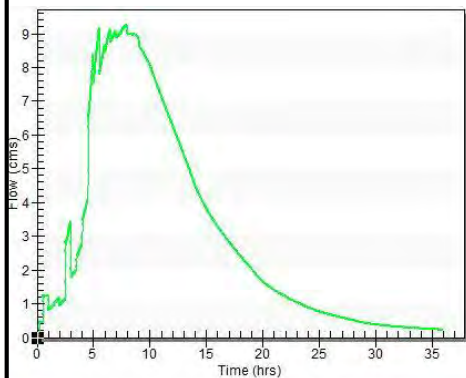
Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydrographs Used in Hydraulic Modelling – Moonee Creek Upper

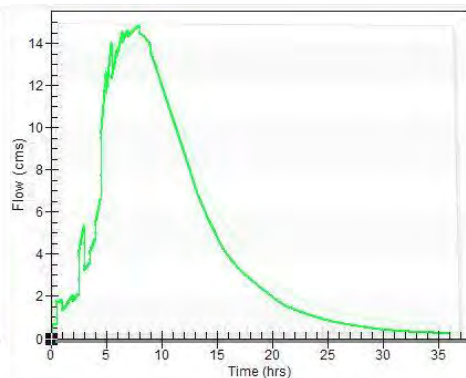
FIGURE 77

Job No: P1002663

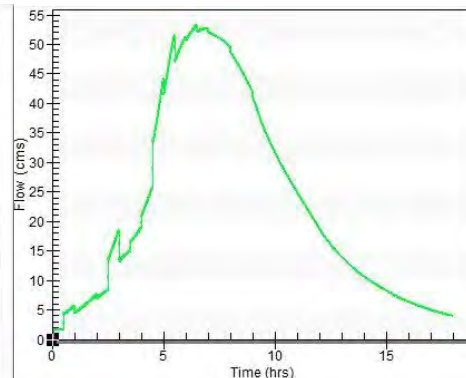
Scenario 1



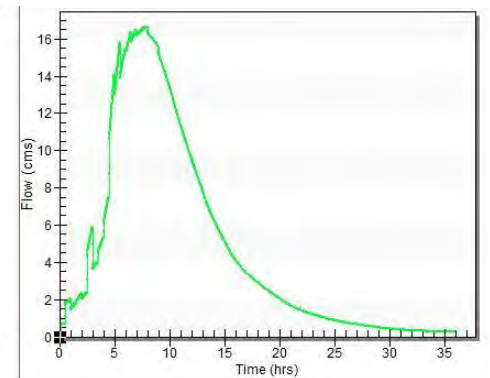
Scenarios 2, 3 and 5



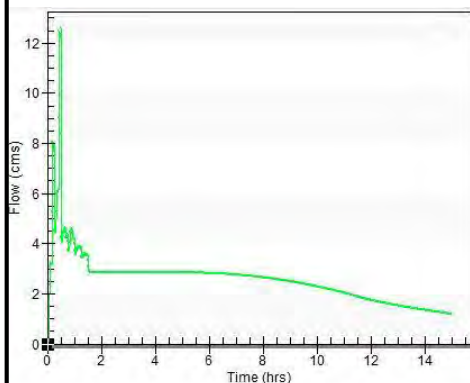
Scenario 4



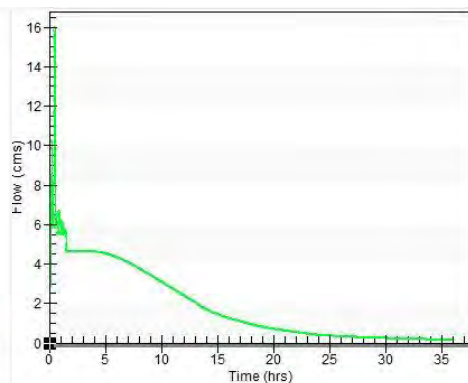
Scenario 5
(rainfall +10%)



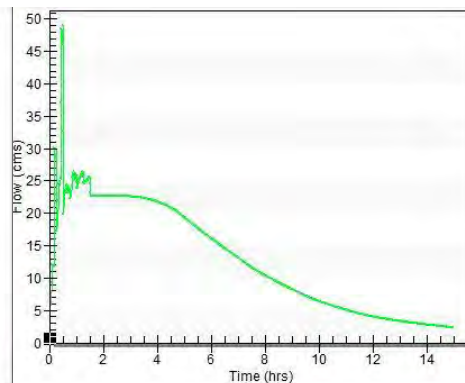
Scenario 6



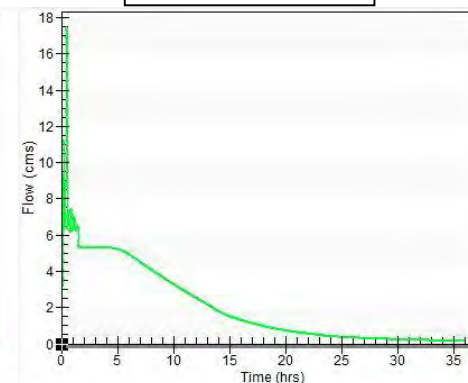
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

Environment | Water | Wastewater | Geotechnical | Civil | Management

Drawn: MGD

Approved: DMM

Date: 15.07.22

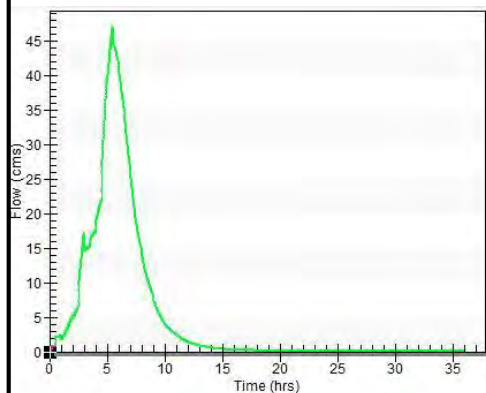
Scale: nts

Hydrographs Used in Hydraulic Modelling – Moonee Creek Lower

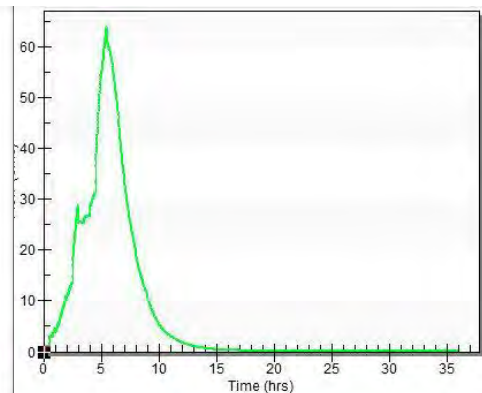
FIGURE 78

Job No: P1002663

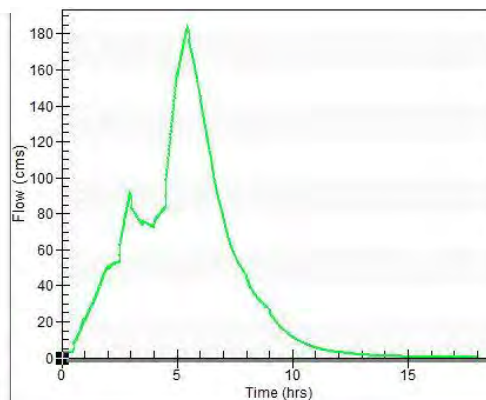
Scenario 1



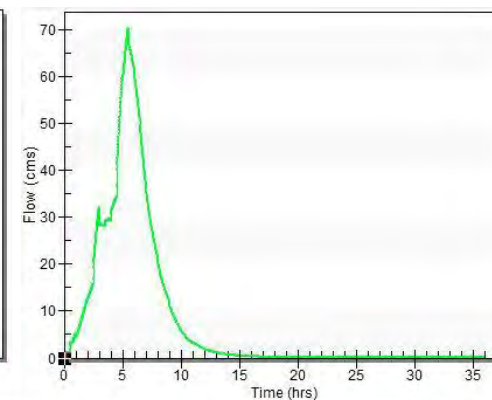
Scenarios 2, 3 and 5



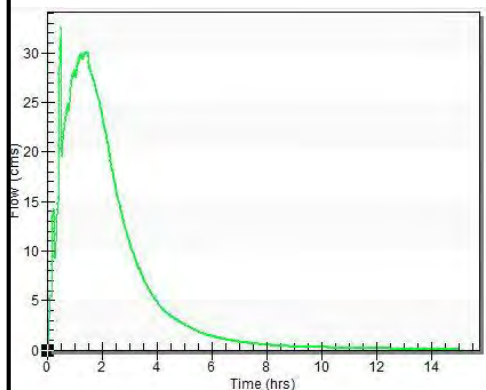
Scenario 4



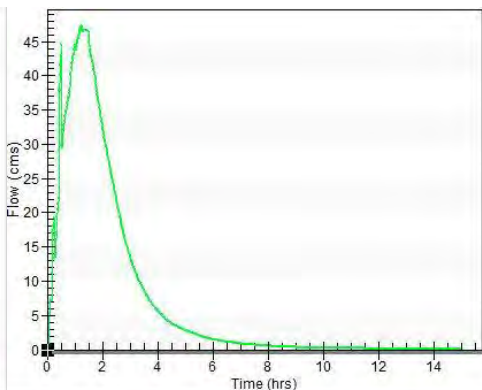
Scenario 5
(rainfall +10%)



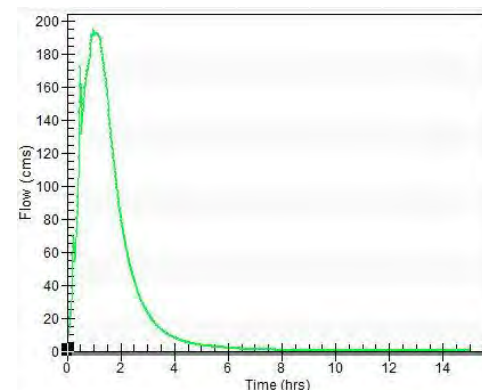
Scenario 6



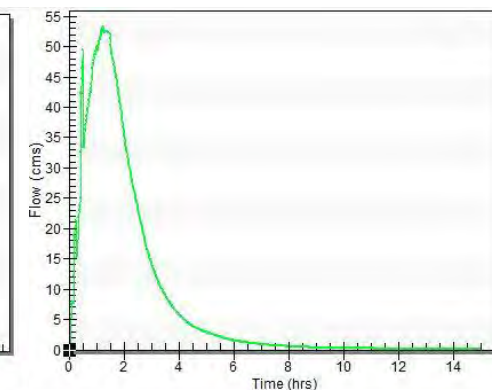
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

Drawn: MGD

Approved: DMM

Date: 15.07.22

Scale: nts

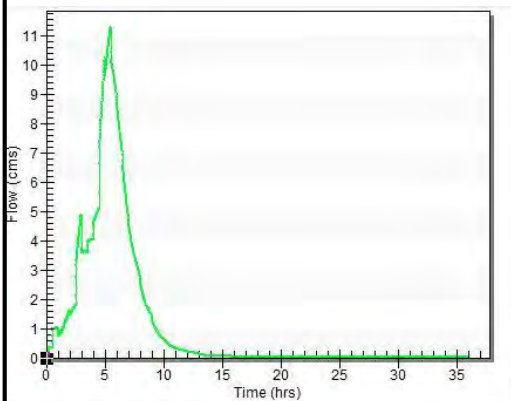
Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydrographs Used in Hydraulic Modelling – Cunninghams Creek

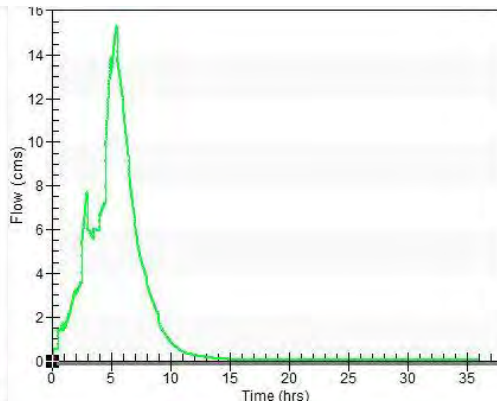
FIGURE 79

Job No: P1002663

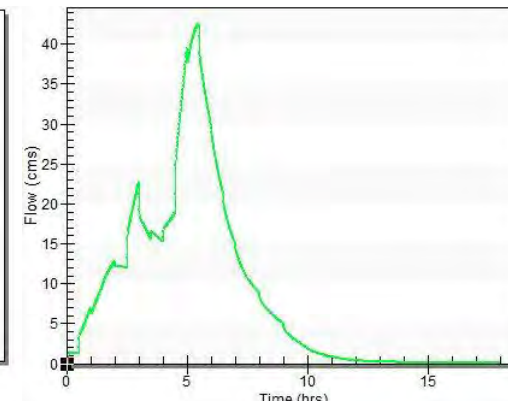
Scenario 1



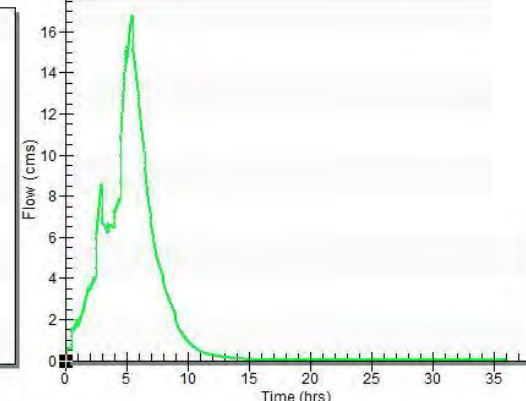
Scenarios 2, 3 and 5



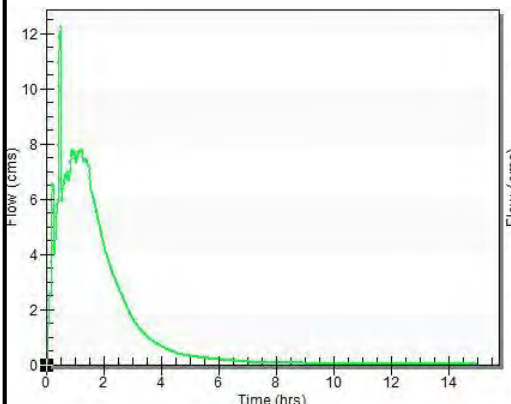
Scenario 4



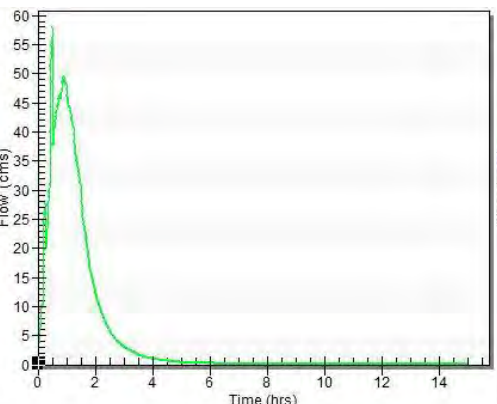
Scenario 5
(rainfall +10%)



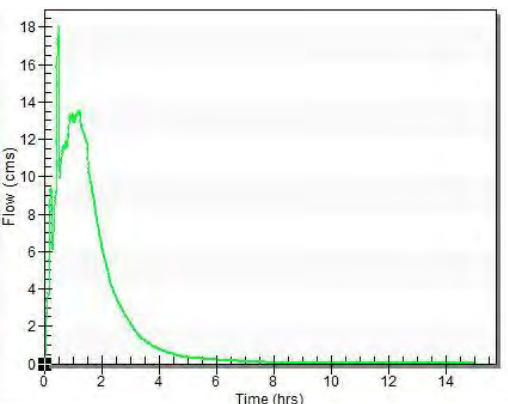
Scenario 6



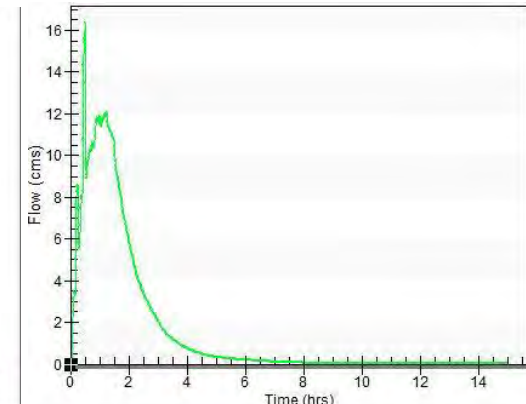
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

Drawn: MGD

Approved: DMM

Date: 15.07.22

Scale: nts

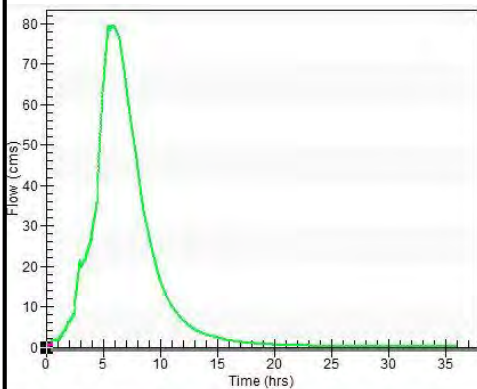
Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydrographs Used in Hydraulic Modelling – Bucca Creek

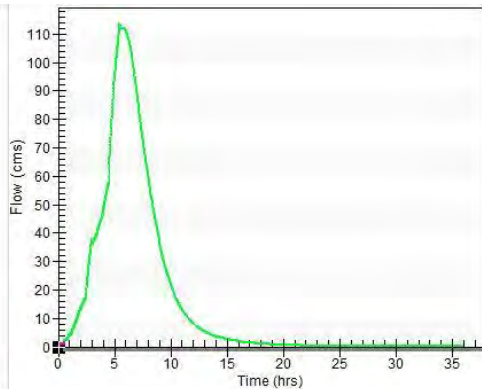
FIGURE 80

Job No: P1002663

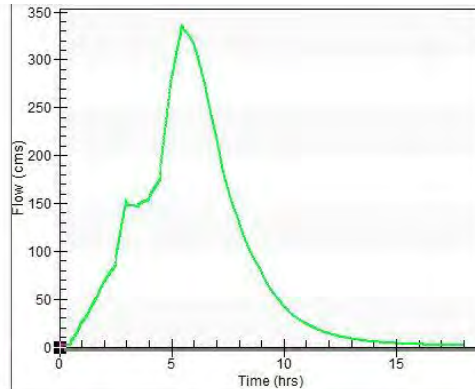
Scenario 1



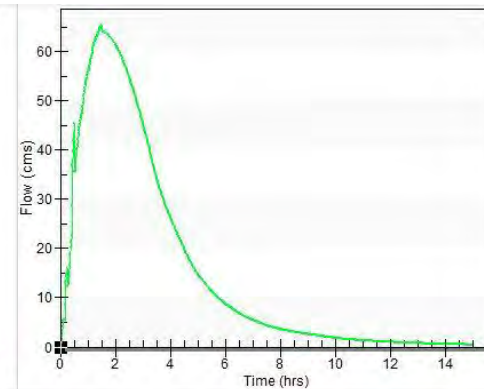
Scenarios 2, 3 and 5



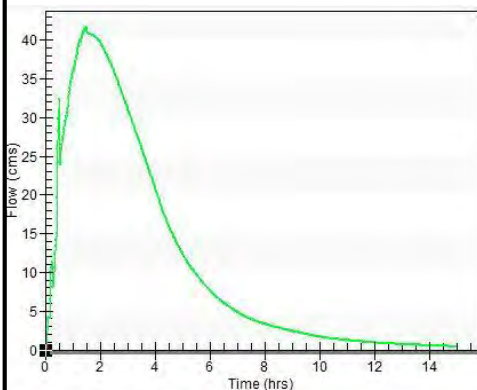
Scenario 4



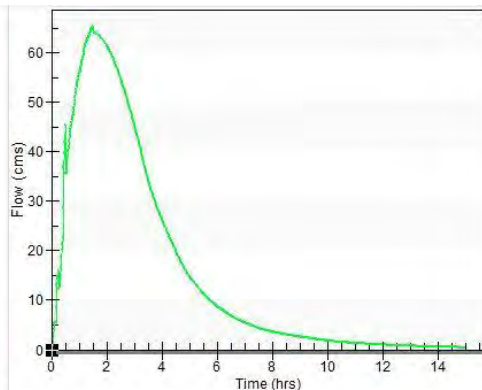
Scenario 5
(rainfall +10%)



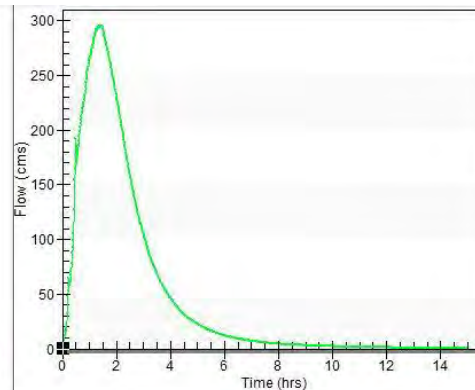
Scenario 6



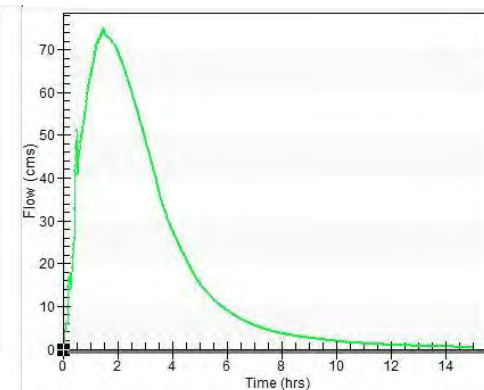
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

Drawn: MGD

Approved: DMM

Date: 15.07.22

Scale: nts

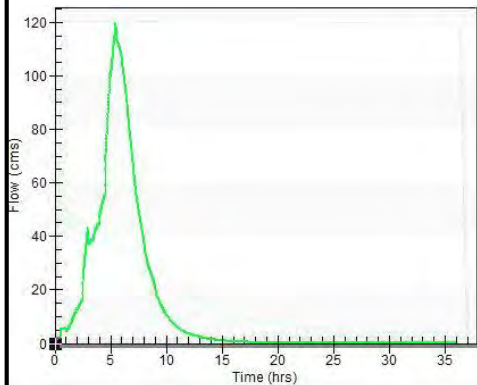
Environment | Water | Wastewater | Geotechnical | Civil | Management

Hydrographs Used in Hydraulic Modelling – Skinners Creek

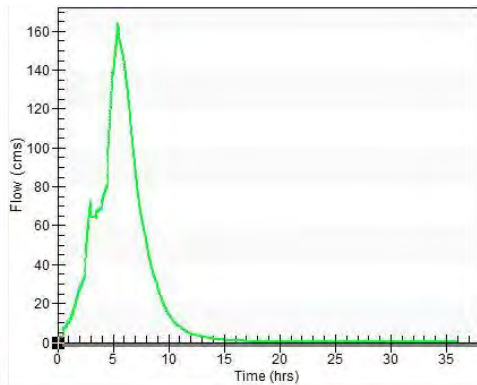
FIGURE 81

Job No: P1002663

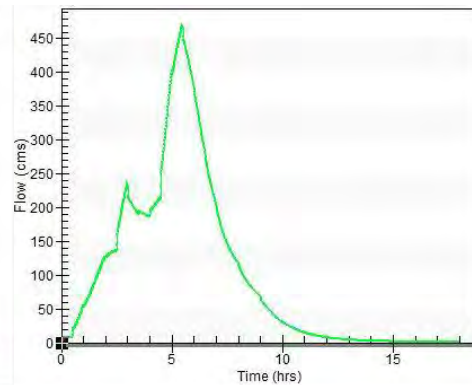
Scenario 1



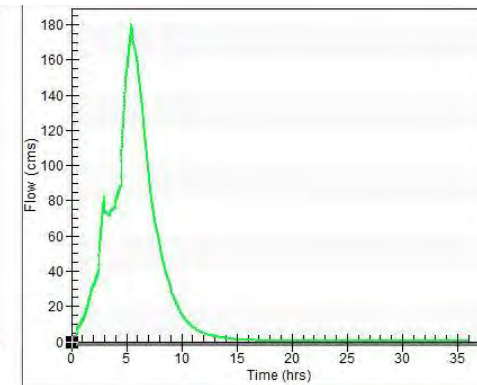
Scenarios 2, 3 and 5



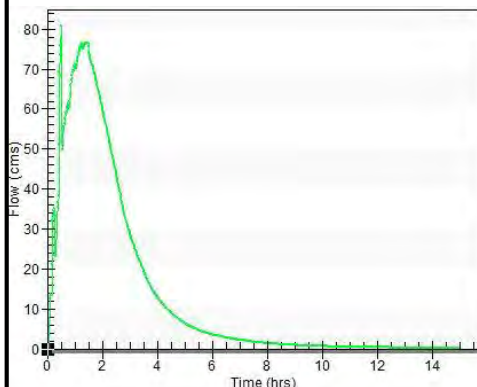
Scenario 4



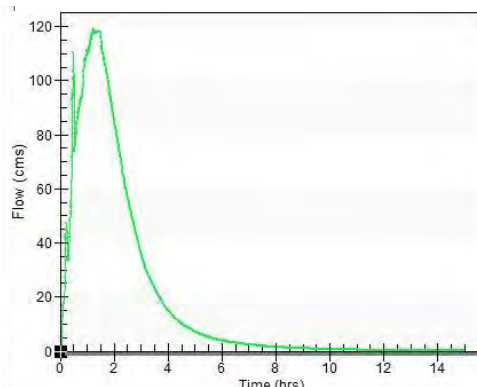
Scenario 5
(rainfall +10%)



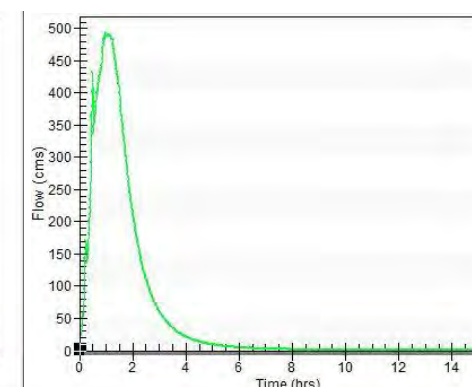
Scenario 6



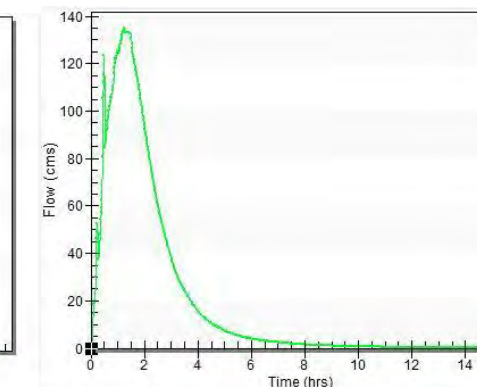
Scenarios 7, 8 and 10



Scenario 9



Scenario 10
(rainfall +10%)



Martens & Associates Pty Ltd ABN 85 070 240 890

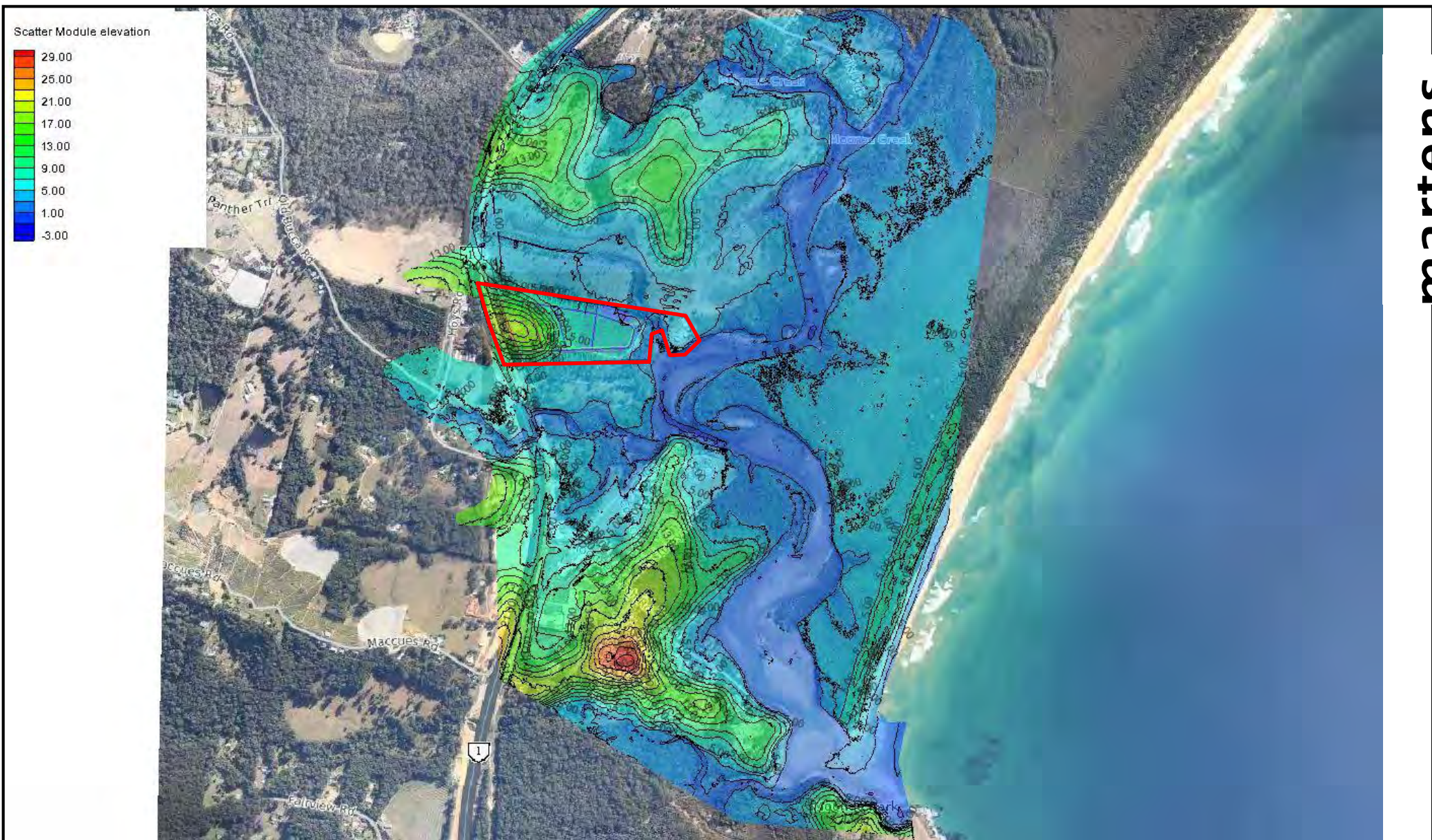
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

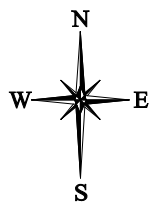
Hydrographs Used in Hydraulic Modelling – Sugar Mill Creek

FIGURE 82

Job No: P1002663

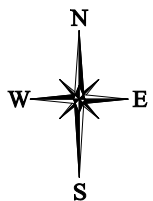
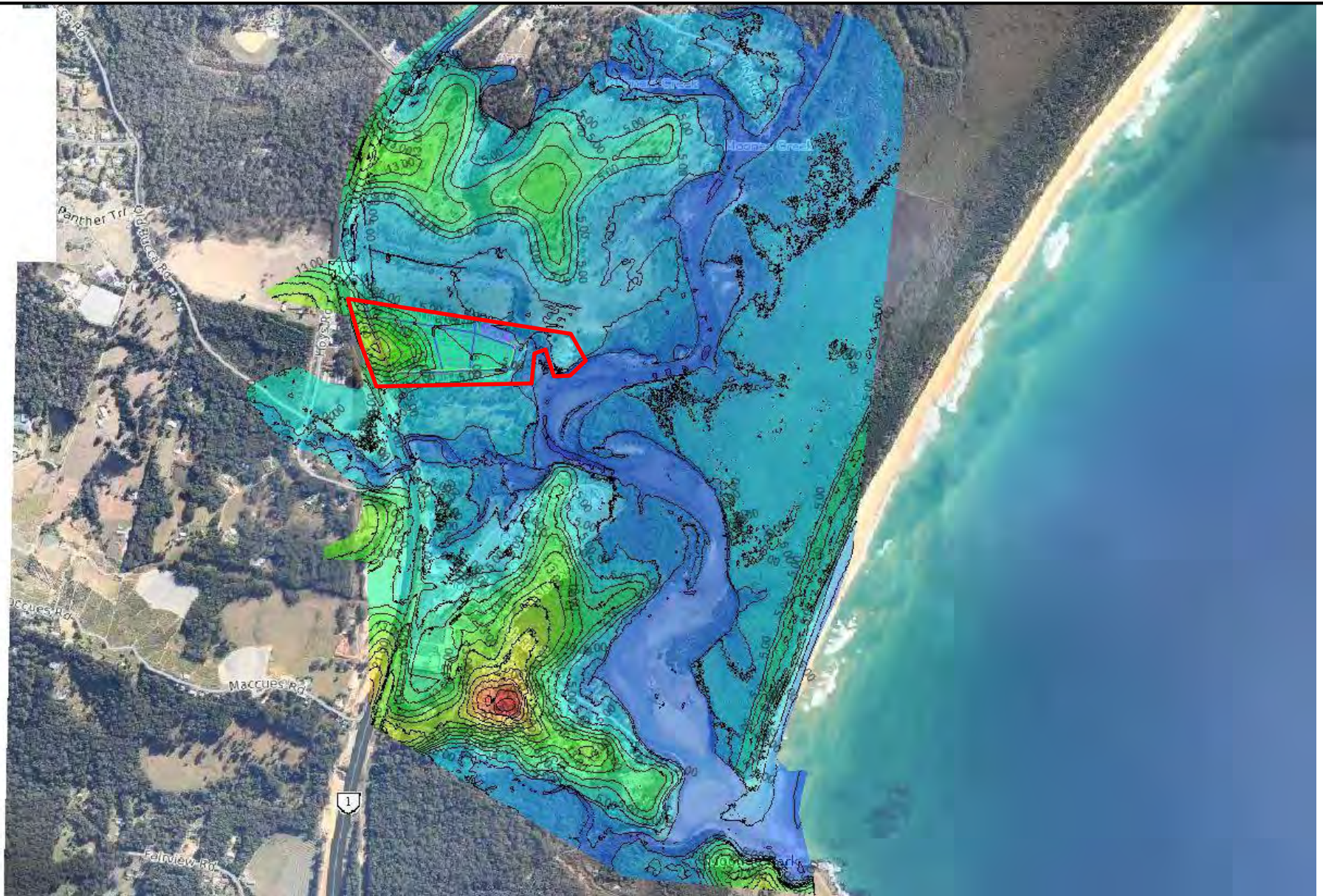
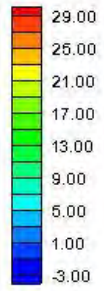


martens



| | | | |
|---|----------|--|------------------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | | Environment Water Wastewater Geotechnical Civil Management | |
| Drawn: | MGD | Model Topography – Existing Conditions | FIGURE 83 |
| Approved: | DMM | | |
| Date: | 15.07.22 | | Job No: P1002663 |
| Scale: | nts | | |

Scatter Module elevation



Martens & Associates Pty Ltd ABN 85 070 240 890

Environment | Water | Wastewater | Geotechnical | Civil | Management

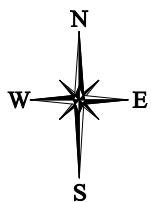
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Model Topography – Developed Conditions

FIGURE 84

Job No: P1002663

martens



Martens & Associates Pty Ltd ABN 85 070 240 890

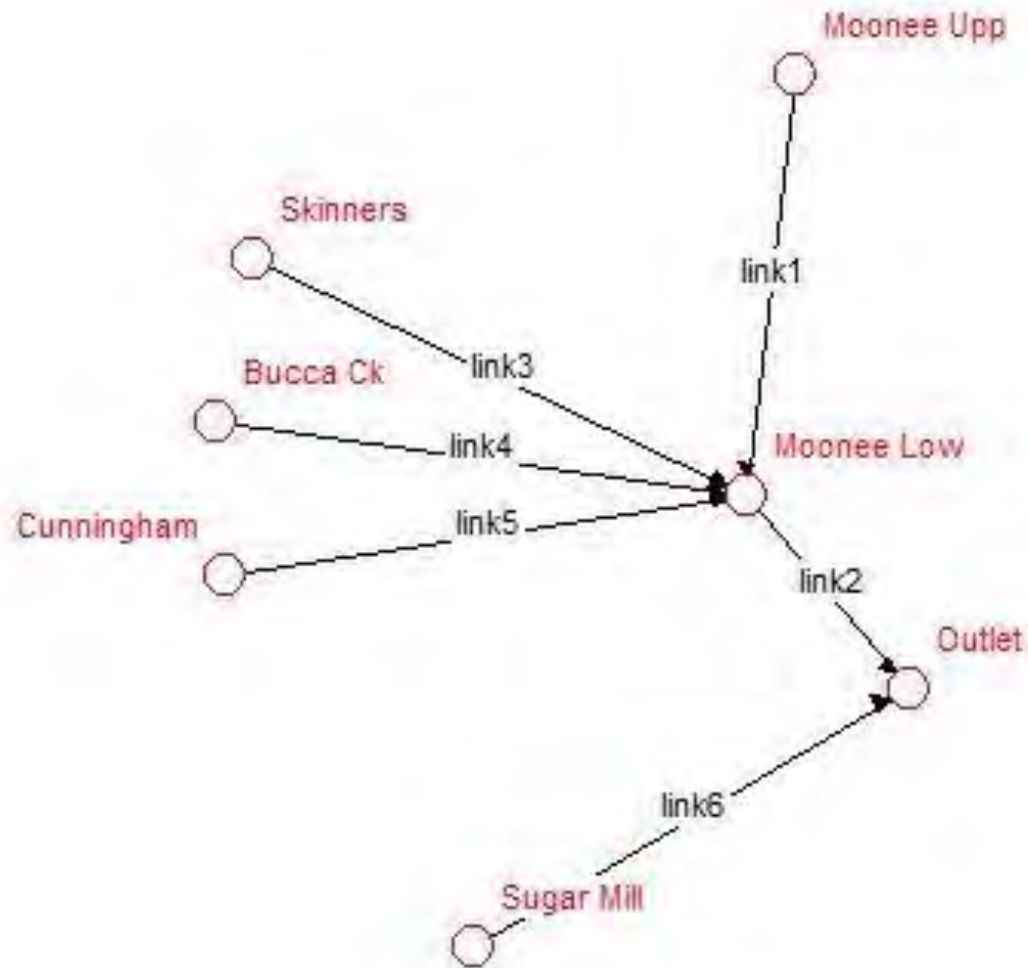
| | |
|-----------|----------|
| Drawn: | MGD |
| Approved: | DMM |
| Date: | 15.07.22 |
| Scale: | nts |

Environment | Water | Wastewater | Geotechnical | Civil | Management

Model Set-up – Design Hydrograph Locations

FIGURE 85

Job No: P1002663



| | | | |
|---|----------|--|------------------|
| Martens & Associates Pty Ltd ABN 85 070 240 890 | | Environment Water Wastewater Geotechnical Civil Management | |
| Drawn: | MGD | Hydrological Modelling – RAFTS Model Set-up | FIGURE 86 |
| Approved: | DMM | | |
| Date: | 15.07.22 | | |
| Scale: | nts | | Job No: P1002663 |

**9 Attachment D – Model Set-up and Results for CLT
(2007) Flood Assessment**

