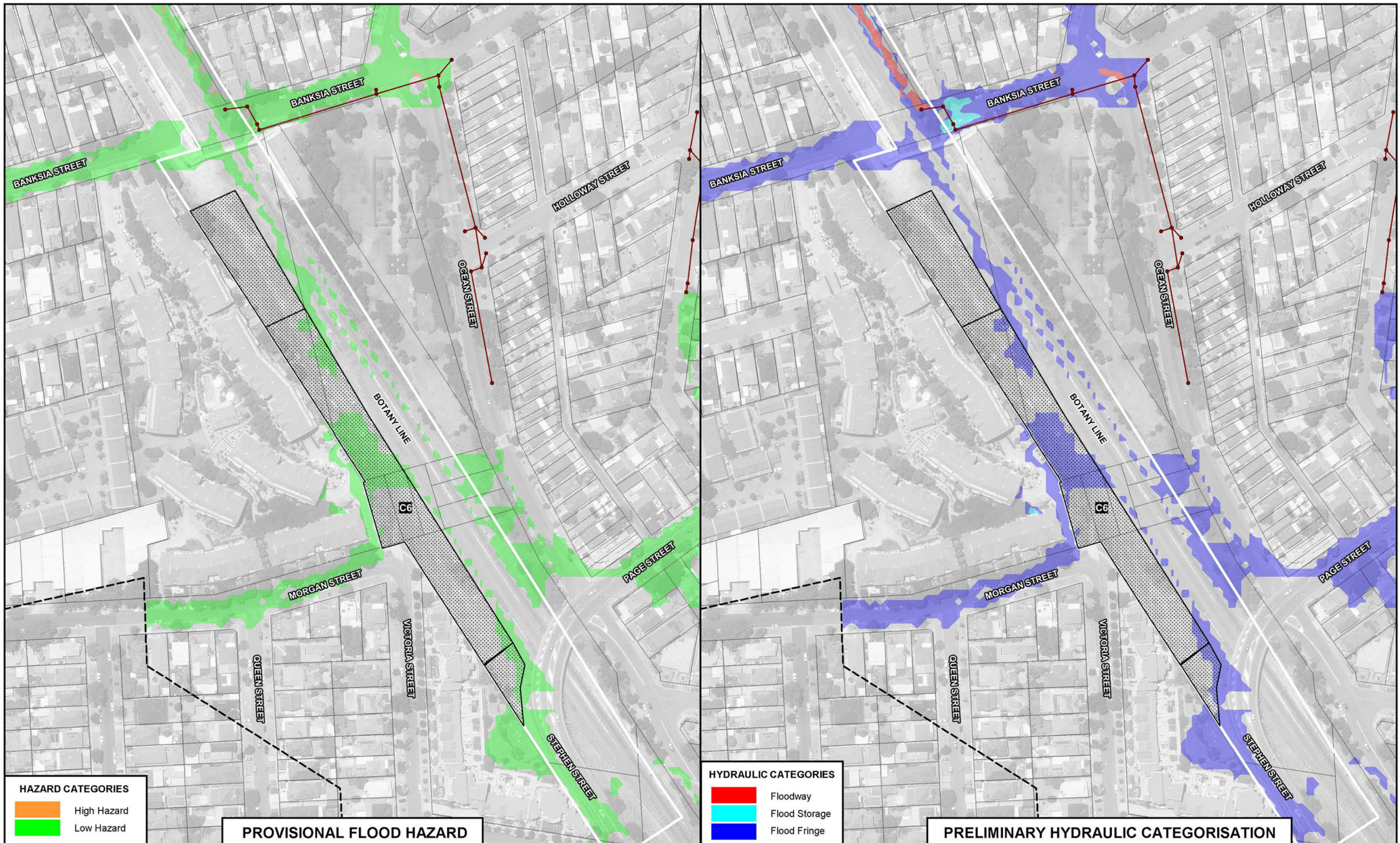
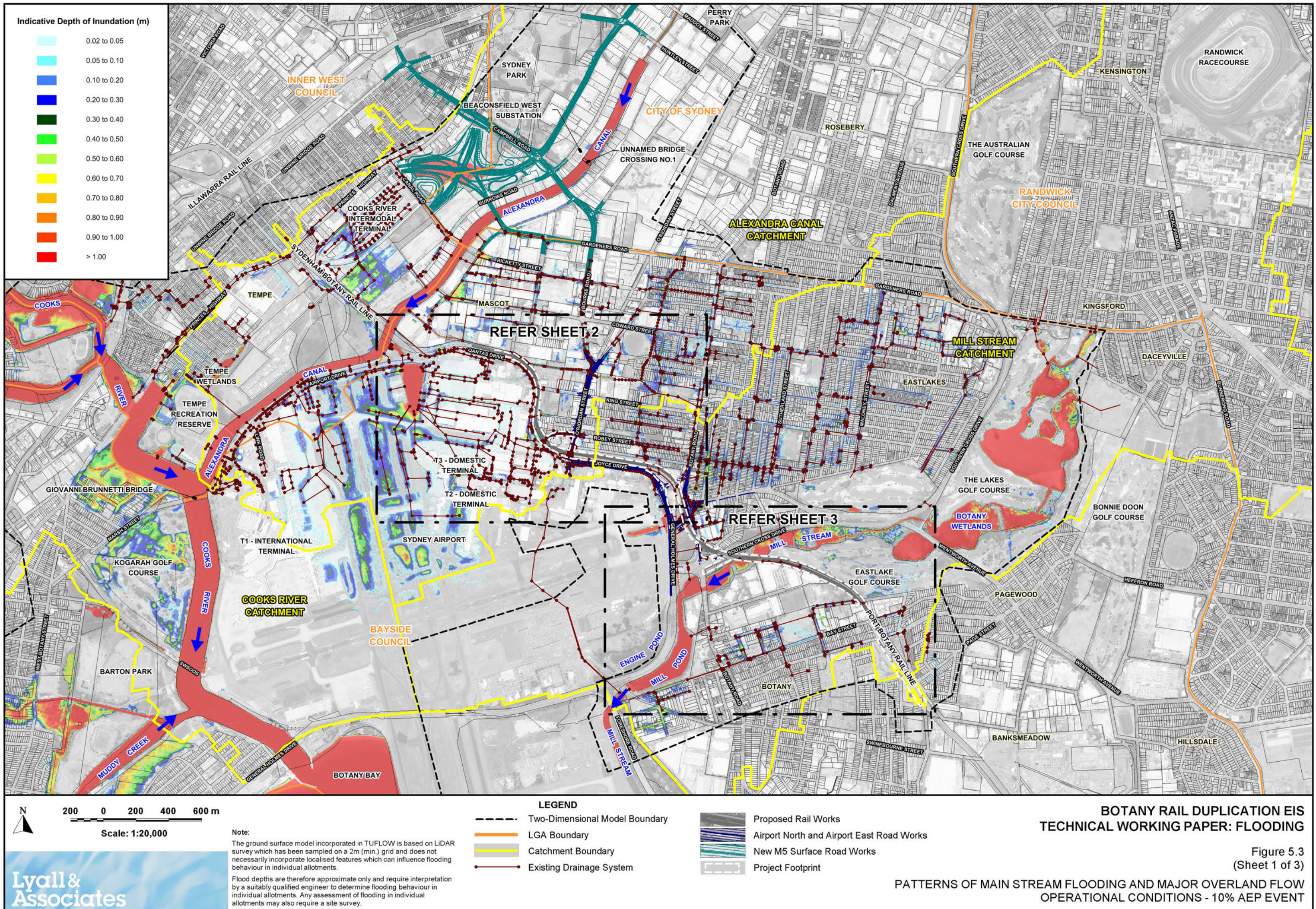


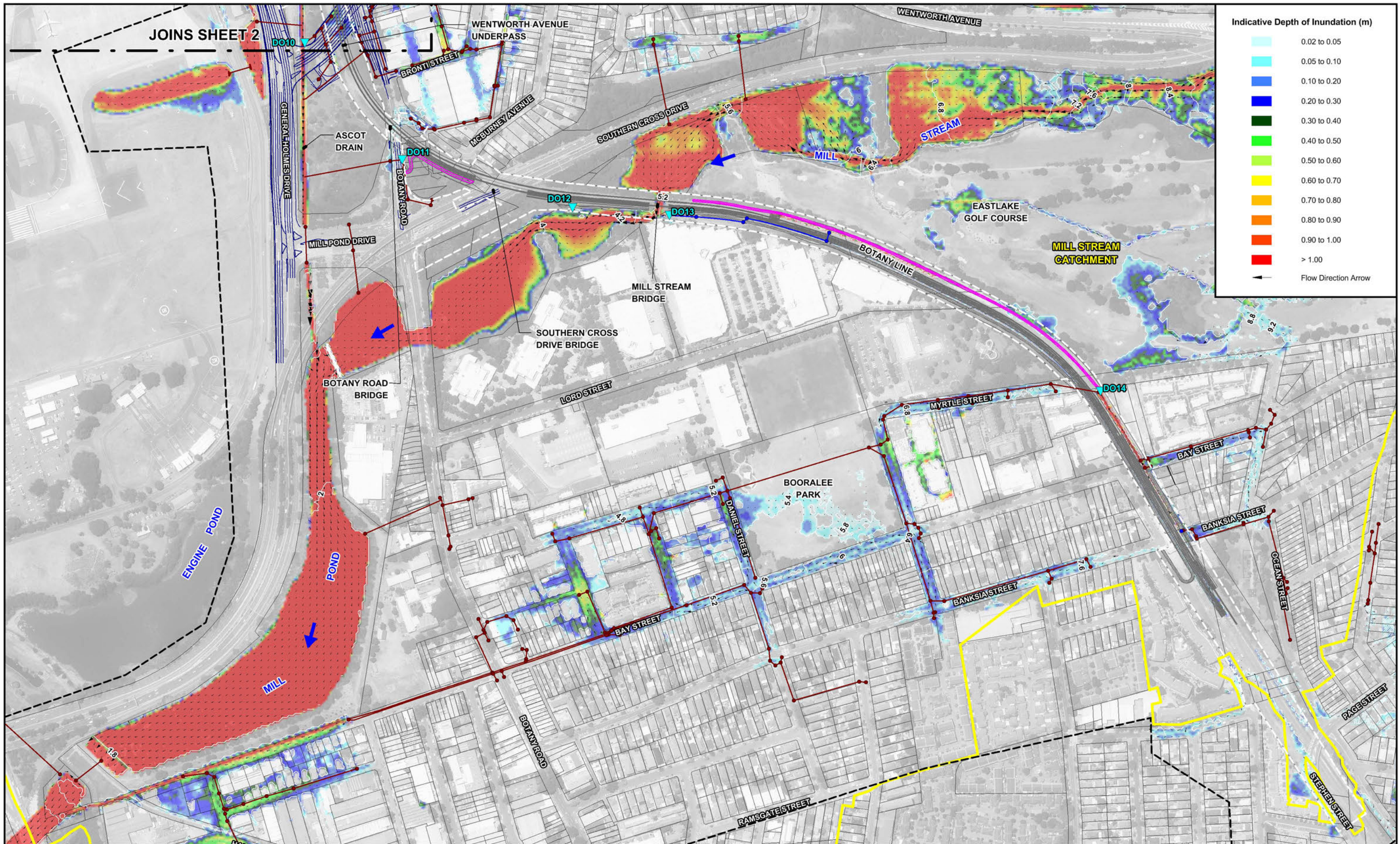


**BOTANY RAIL DUPLICATION EIS
TECHNICAL WORKING PAPER: FLOODING**

Figure 5.2
(Sheet 6 of 6)

PROVISIONAL FLOOD HAZARD AND PRELIMINARY HYDRAULIC CATEGORISATION OF FLOODPLAIN
IN VICINITY OF PROPOSED CONSTRUCTION COMPOUNDS - 1% AEP EVENT

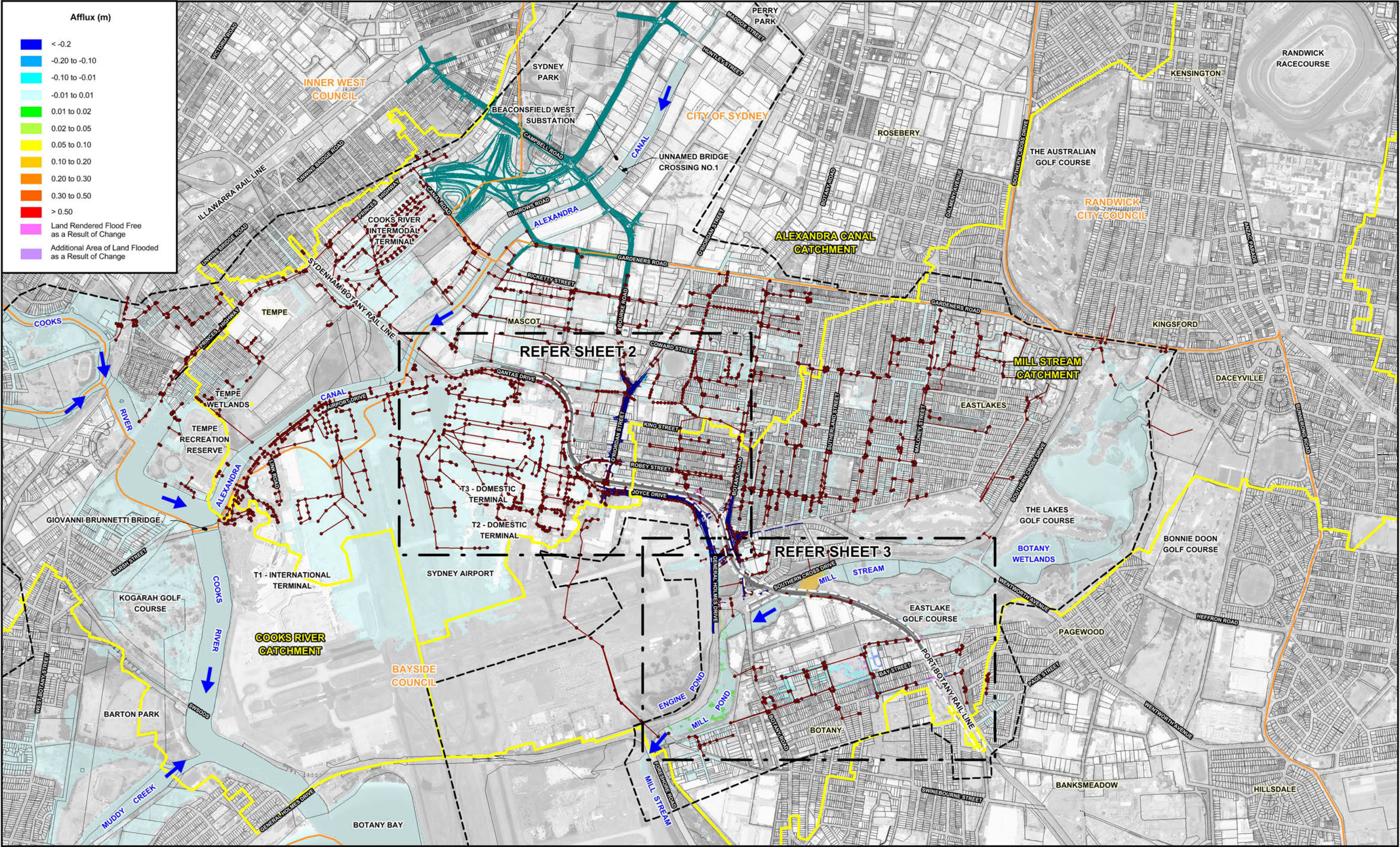


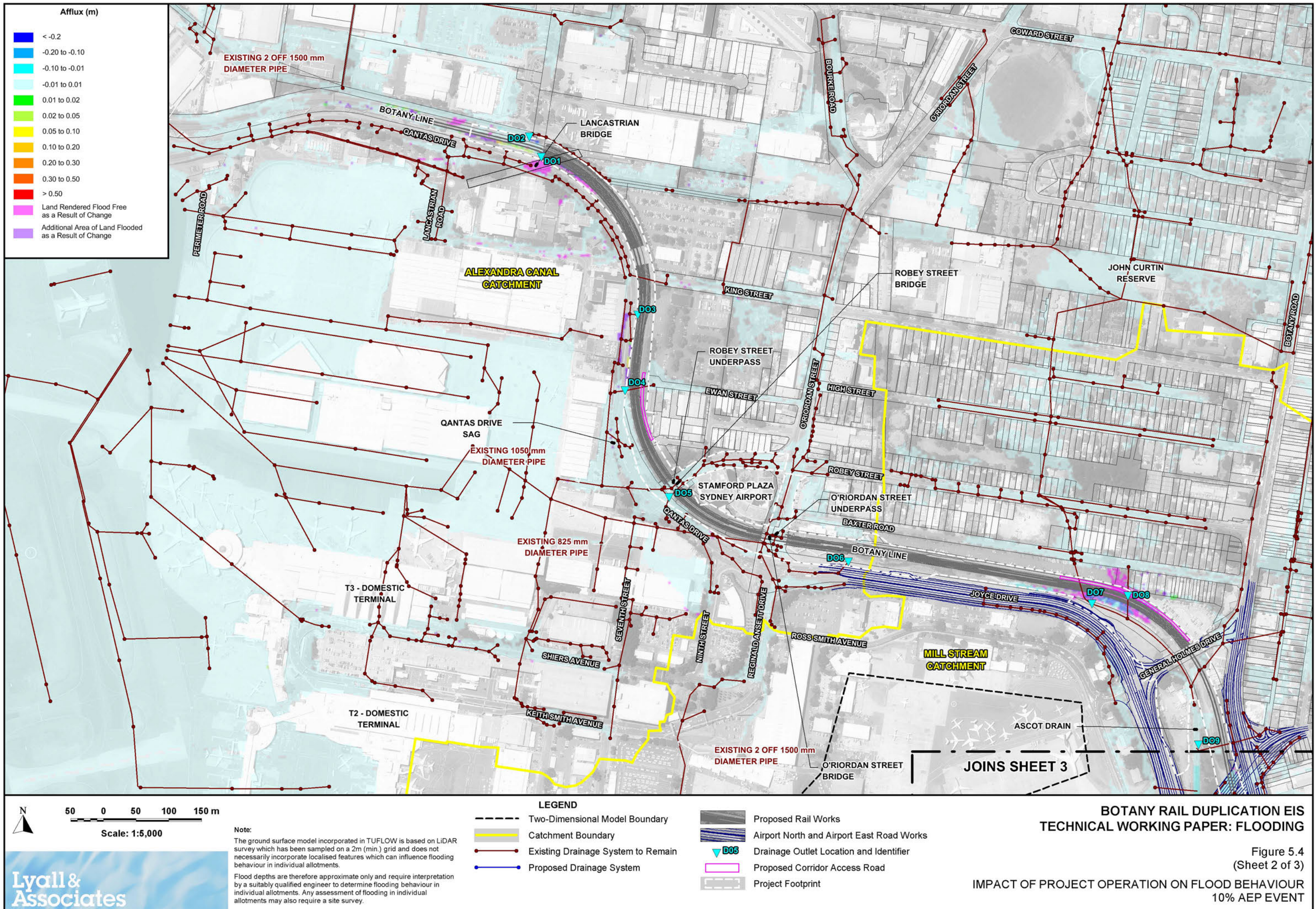


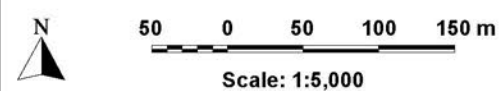
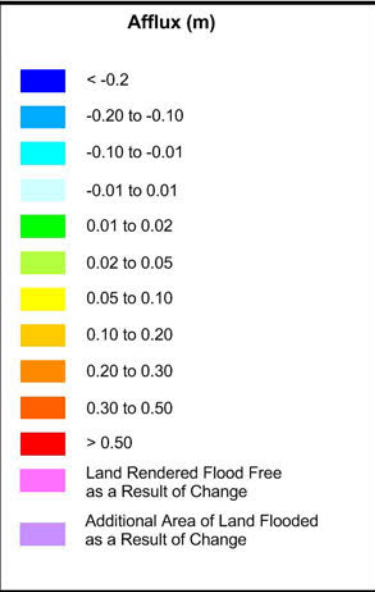
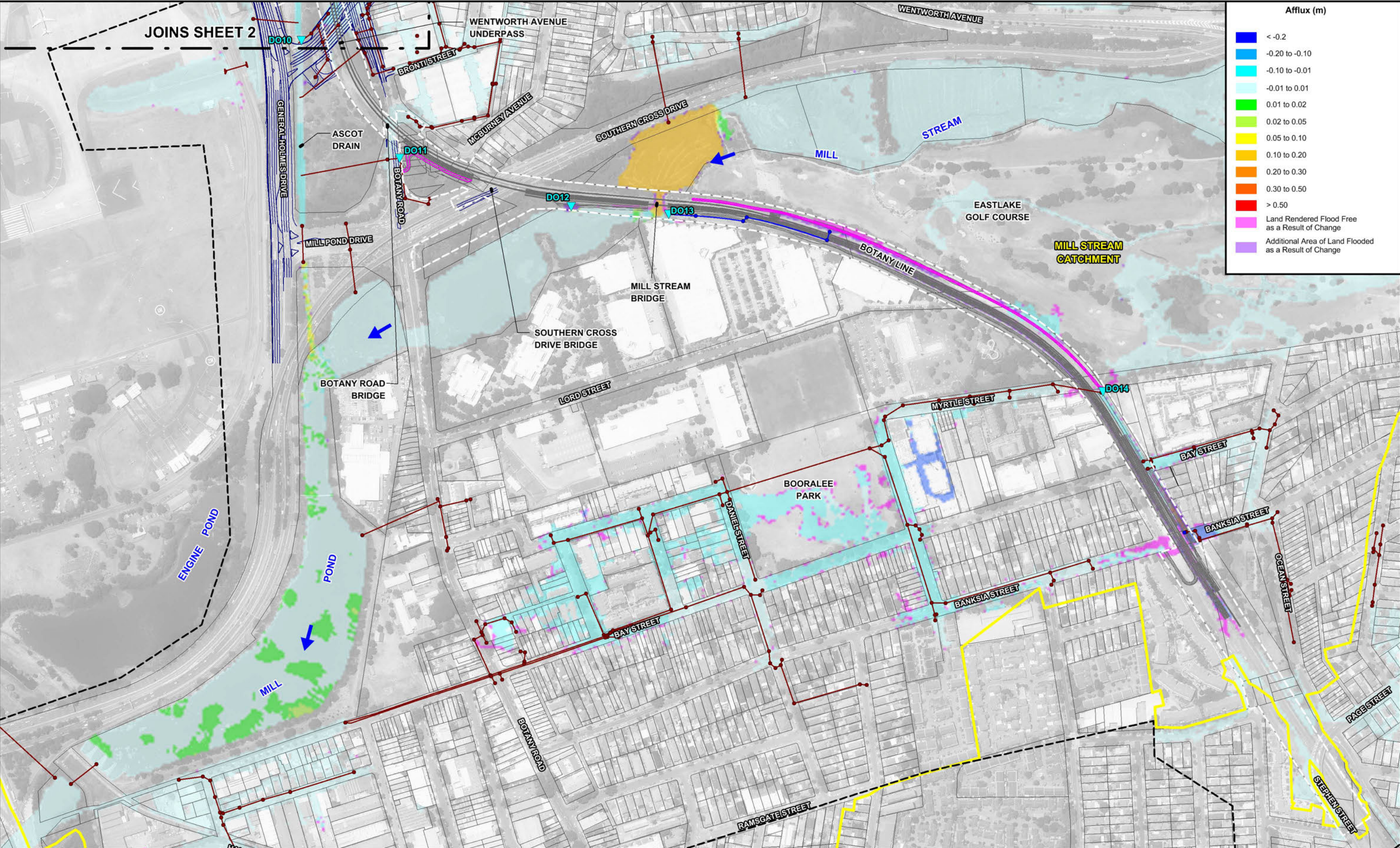
BOTANY RAIL DUPLICATION EIS TECHNICAL WORKING PAPER: FLOODING

Figure 5.3
(Sheet 3 of 3)

**PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 10% AEP EVENT**







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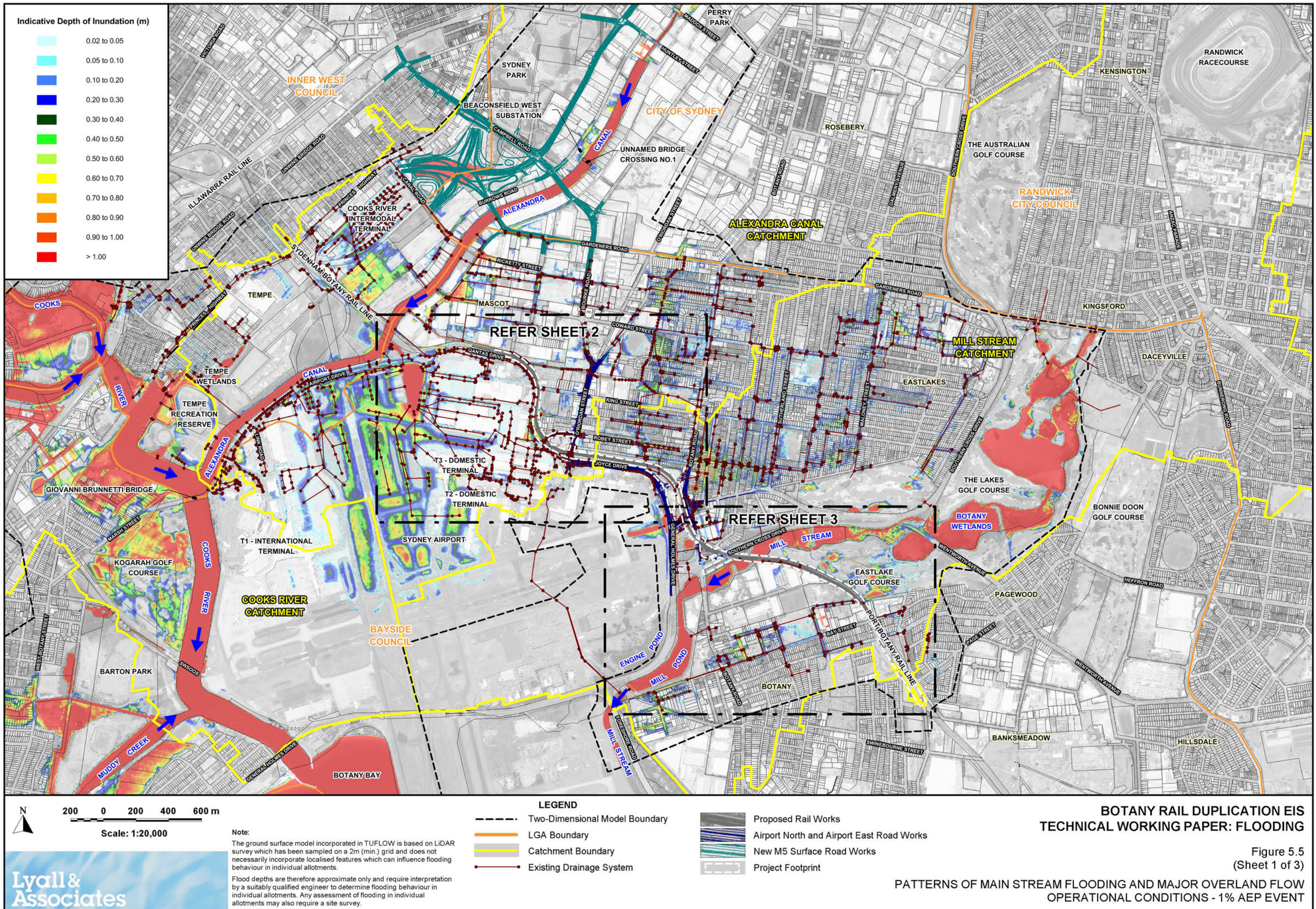
Note:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.
Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

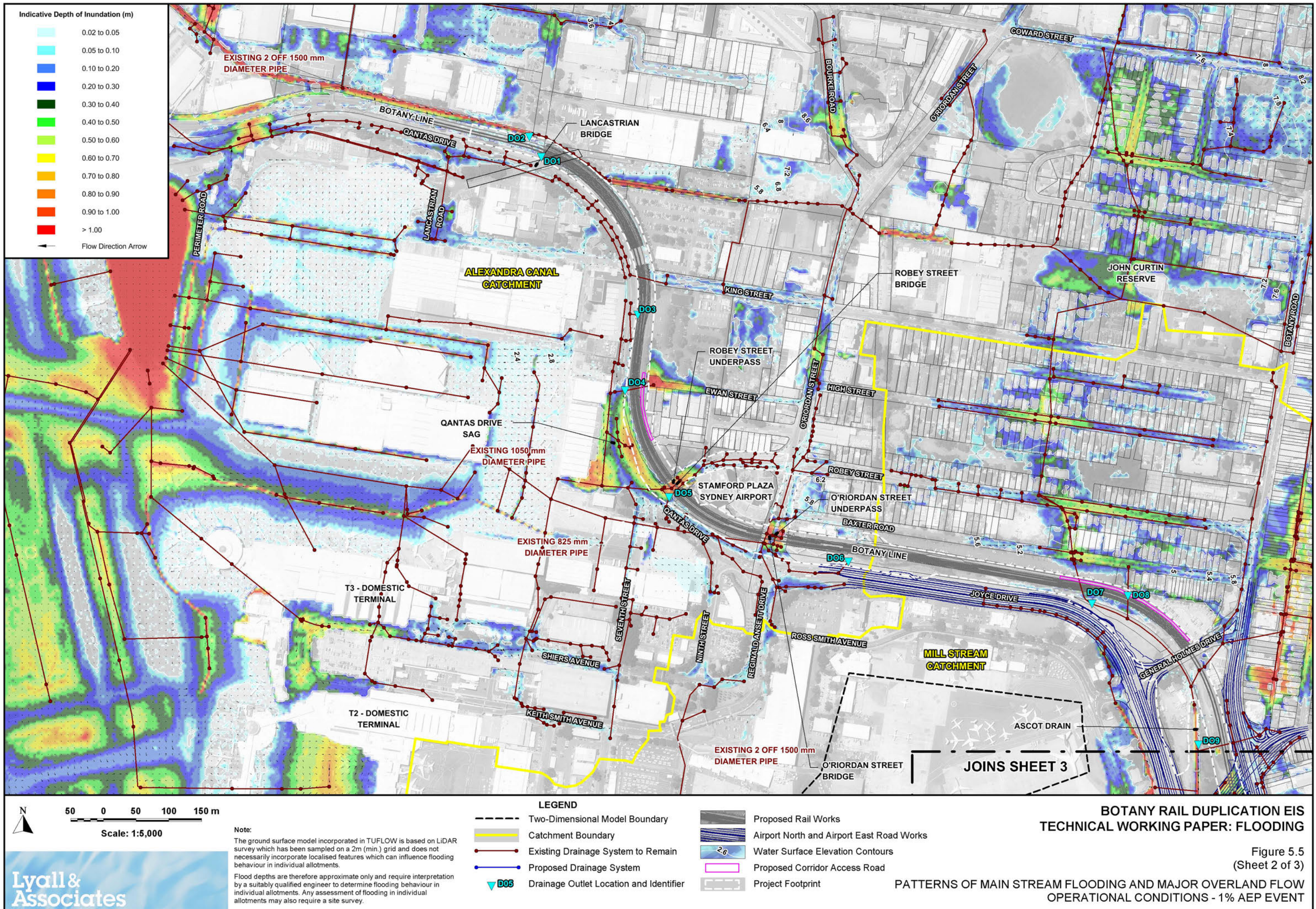
- LEGEND
- Two-Dimensional Model Boundary
 - Catchment Boundary
 - Existing Drainage System to Remain
 - Proposed Drainage System

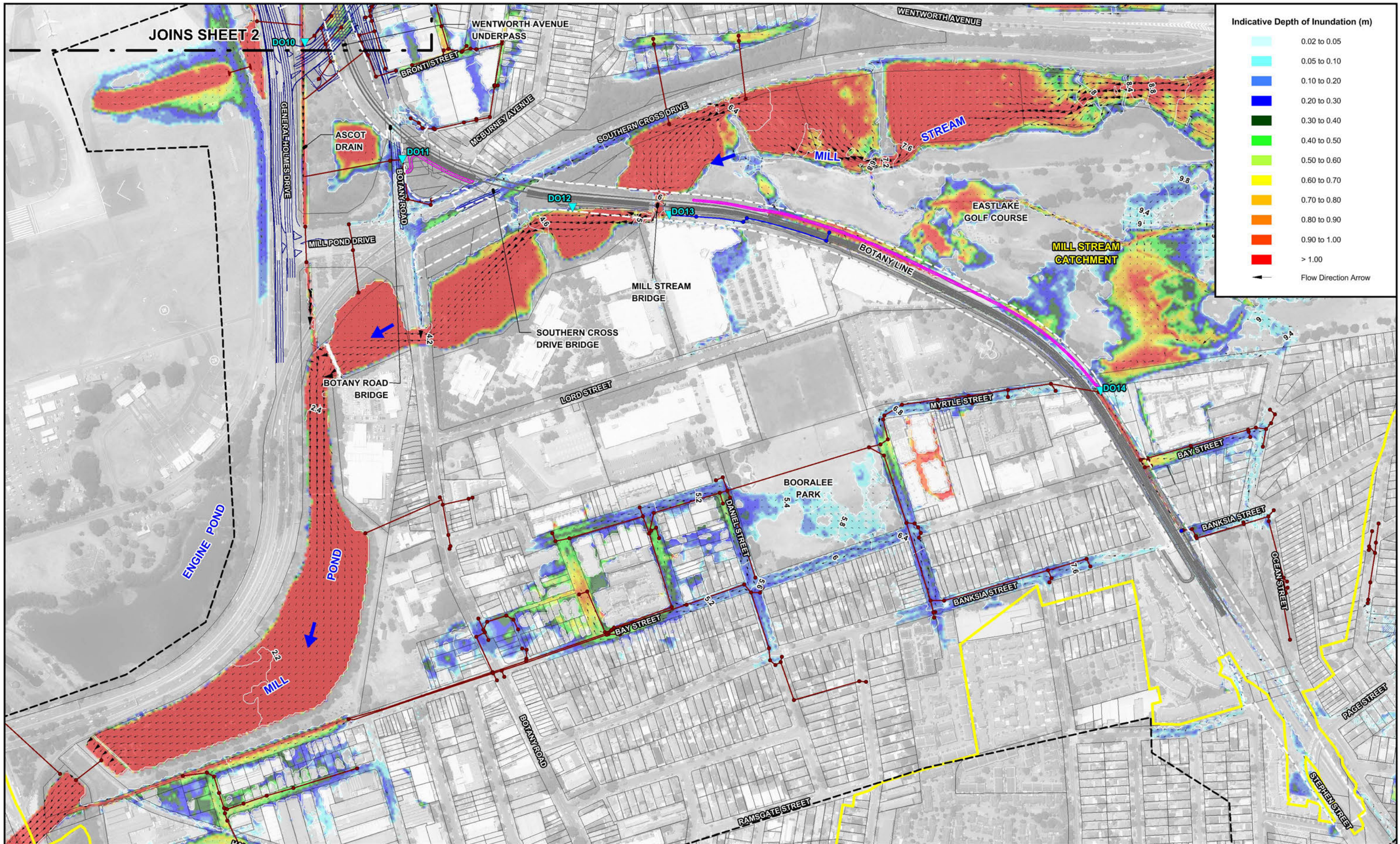
- Proposed Rail Works
- Airport North and Airport East Road Works
- Drainage Outlet Location and Identifier
- Proposed Corridor Access Road
- Project Footprint

BOTANY RAIL DUPLICATION EIS TECHNICAL WORKING PAPER: FLOODING

Figure 5.4
(Sheet 3 of 3)
IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
10% AEP EVENT







Indicative Depth of Inundation (m)

- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- 0.50 to 0.60
- 0.60 to 0.70
- 0.70 to 0.80
- 0.80 to 0.90
- 0.90 to 1.00
- > 1.00

Flow Direction Arrow



Note:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.
Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

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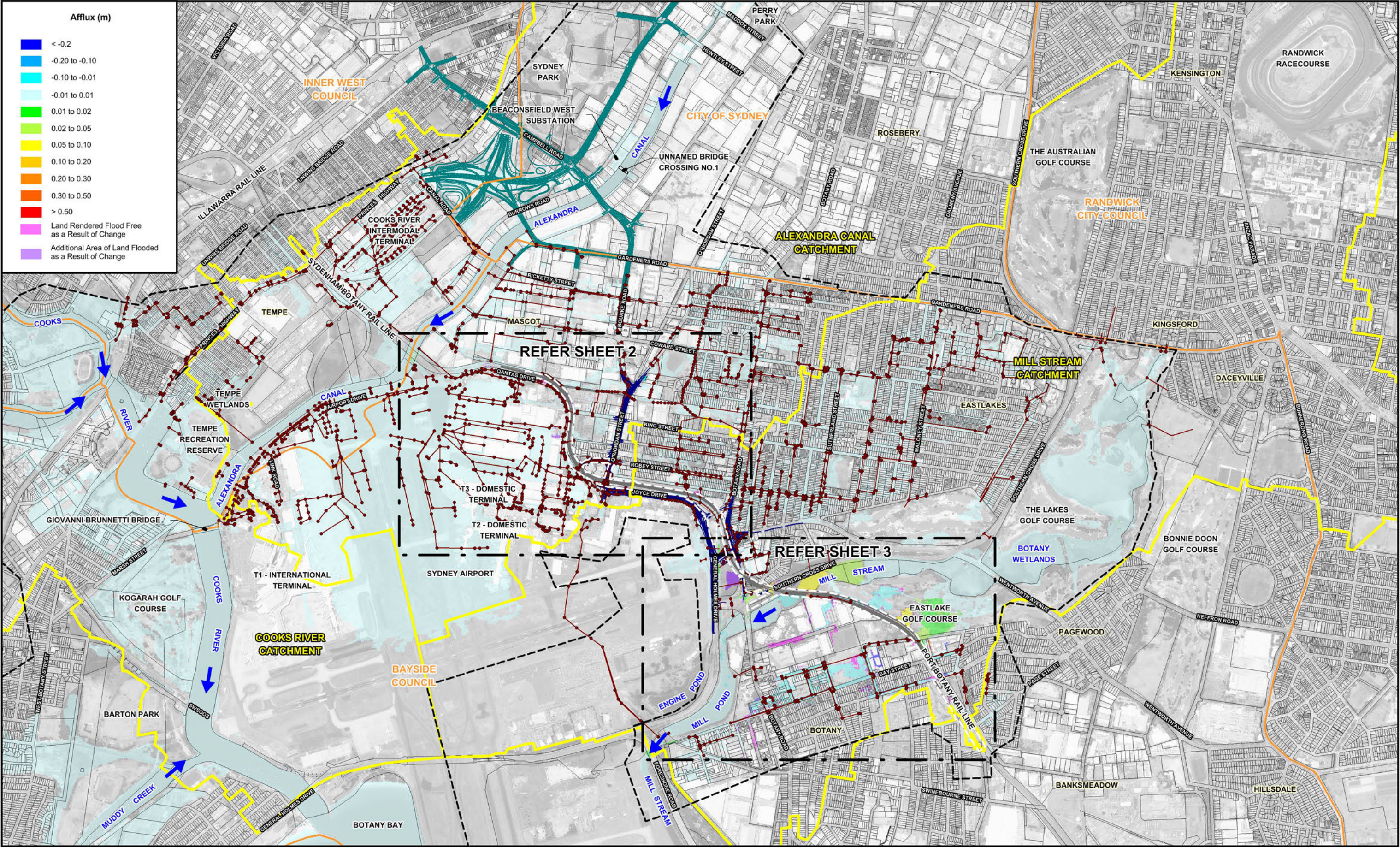
- LEGEND**
- Two-Dimensional Model Boundary
 - Catchment Boundary
 - Existing Drainage System to Remain
 - Proposed Drainage System
 - Drainage Outlet Location and Identifier

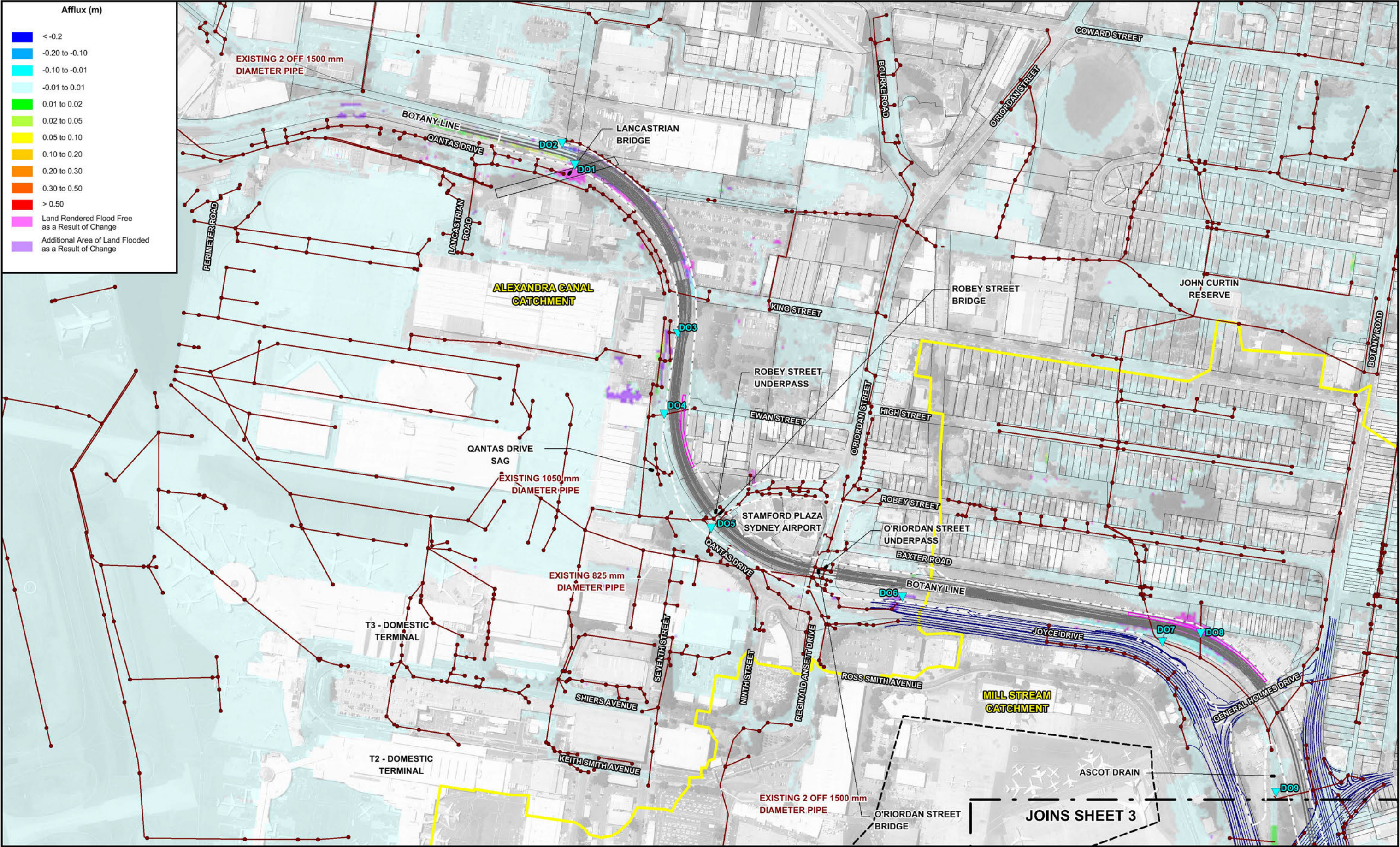
- Proposed Rail Works
- Airport North and Airport East Road Works
- Water Surface Elevation Contours
- Proposed Corridor Access Road
- Project Footprint

BOTANY RAIL DUPLICATION EIS TECHNICAL WORKING PAPER: FLOODING

Figure 5.5
(Sheet 3 of 3)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 1% AEP EVENT





Afflux (m)

- < -0.2
- 0.20 to -0.10
- 0.10 to -0.01
- 0.01 to 0.01
- 0.01 to 0.02
- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.50
- > 0.50

Land Rendered Flood Free as a Result of Change

Additional Area of Land Flooded as a Result of Change

LEGEND

- Two-Dimensional Model Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Proposed Drainage System
- Proposed Rail Works
- Airport North and Airport East Road Works
- Drainage Outlet Location and Identifier
- Proposed Corridor Access Road
- Project Footprint

BOTANY RAIL DUPLICATION EIS

TECHNICAL WORKING PAPER: FLOODING

Figure 5.6
(Sheet 2 of 3)

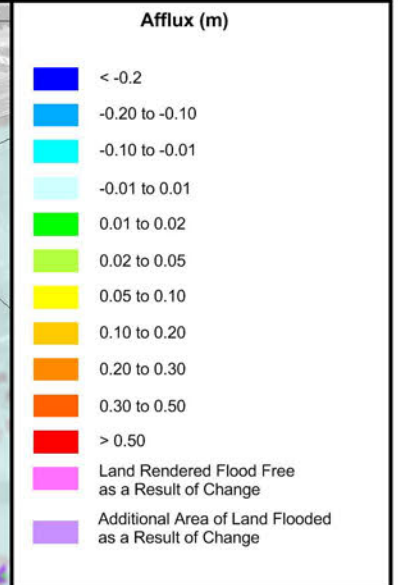
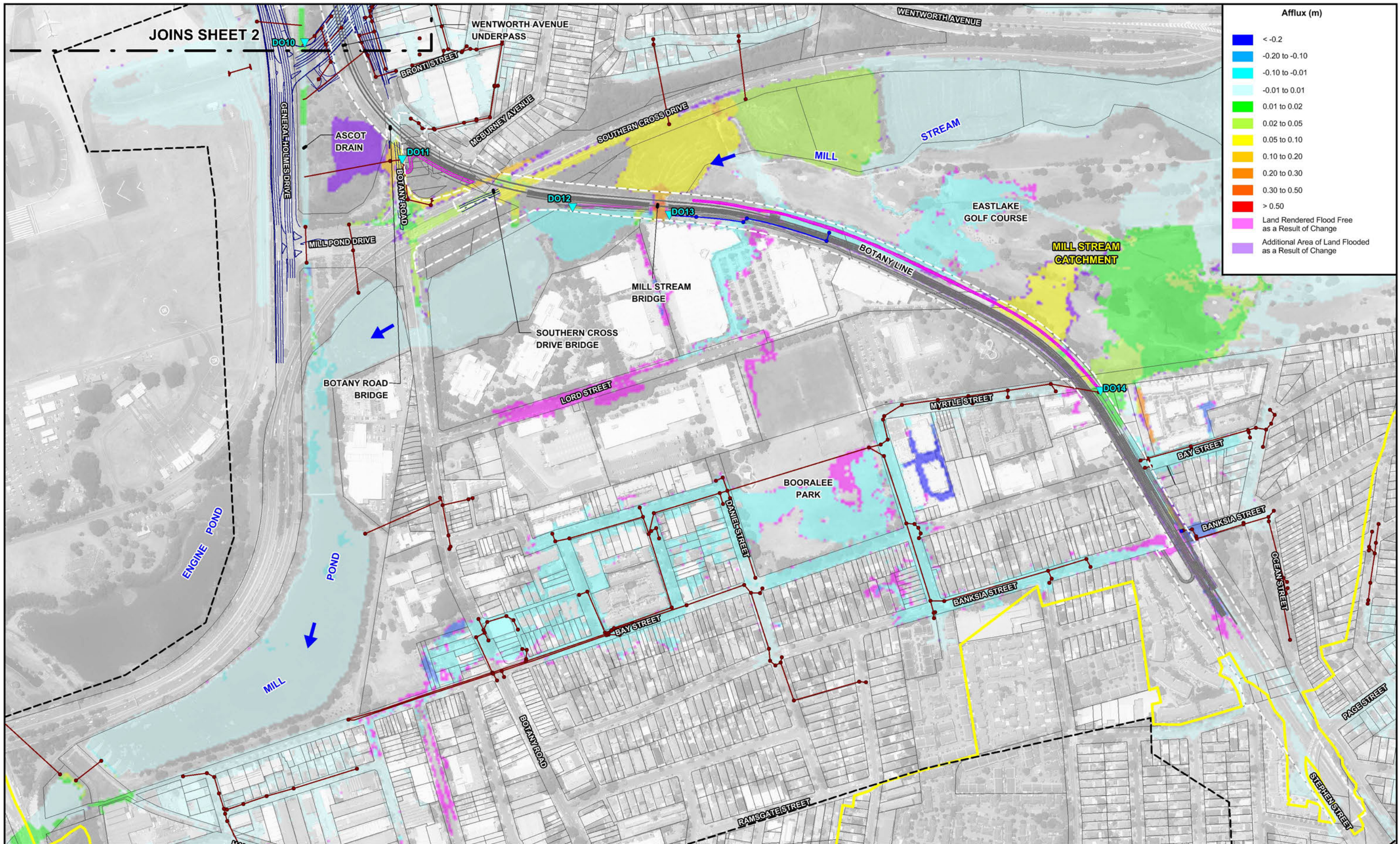
IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
1% AEP EVENT

Note:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

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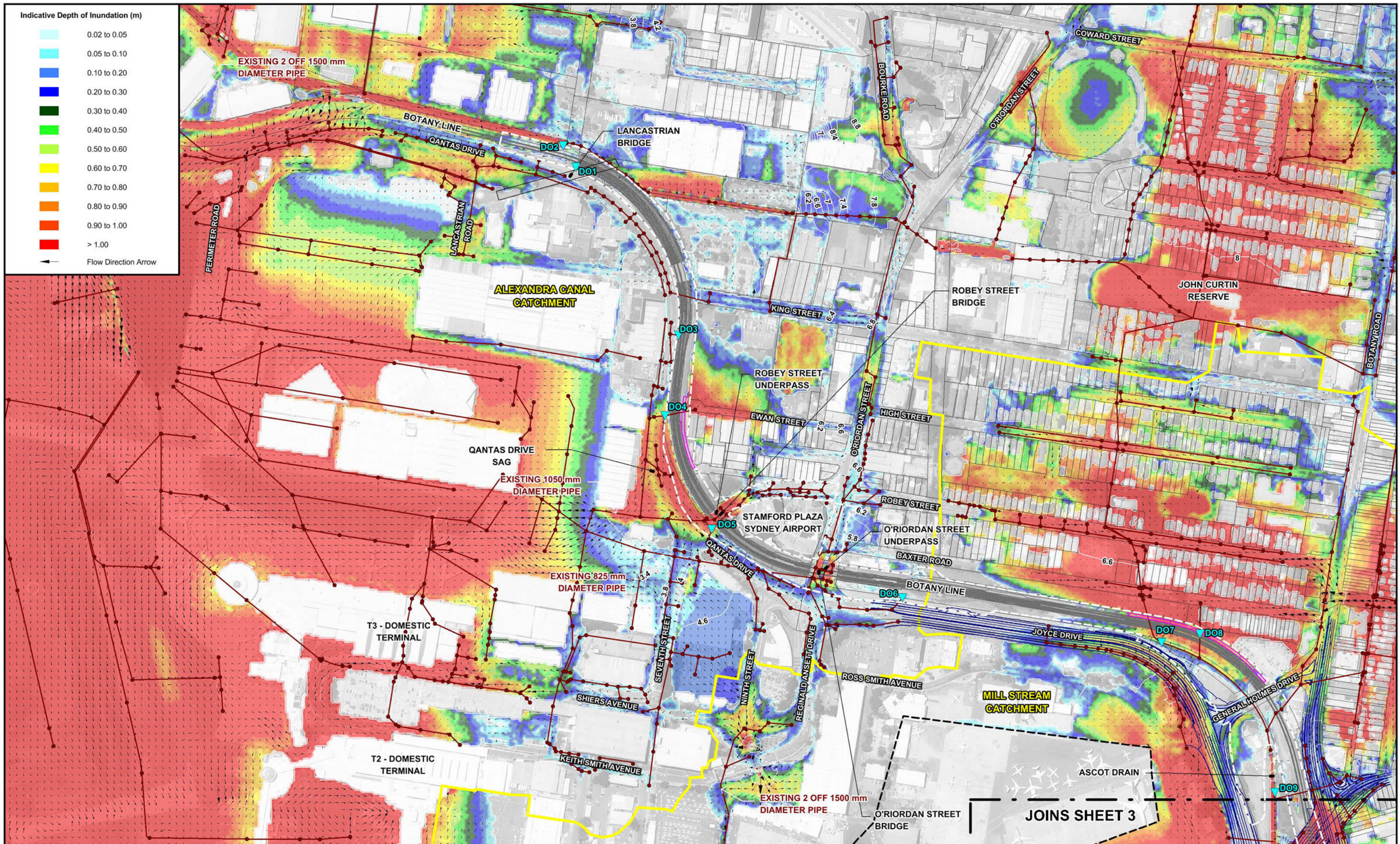
Note:
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Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

- LEGEND**
- Two-Dimensional Model Boundary
 - Catchment Boundary
 - Existing Drainage System to Remain
 - Proposed Drainage System

- Proposed Rail Works
- Airport North and Airport East Road Works
- Drainage Outlet Location and Identifier
- Proposed Corridor Access Road
- Project Footprint

**BOTANY RAIL DUPLICATION EIS
TECHNICAL WORKING PAPER: FLOODING**

Figure 5.6
(Sheet 3 of 3)
IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
1% AEP EVENT



Scale: 1:5,000

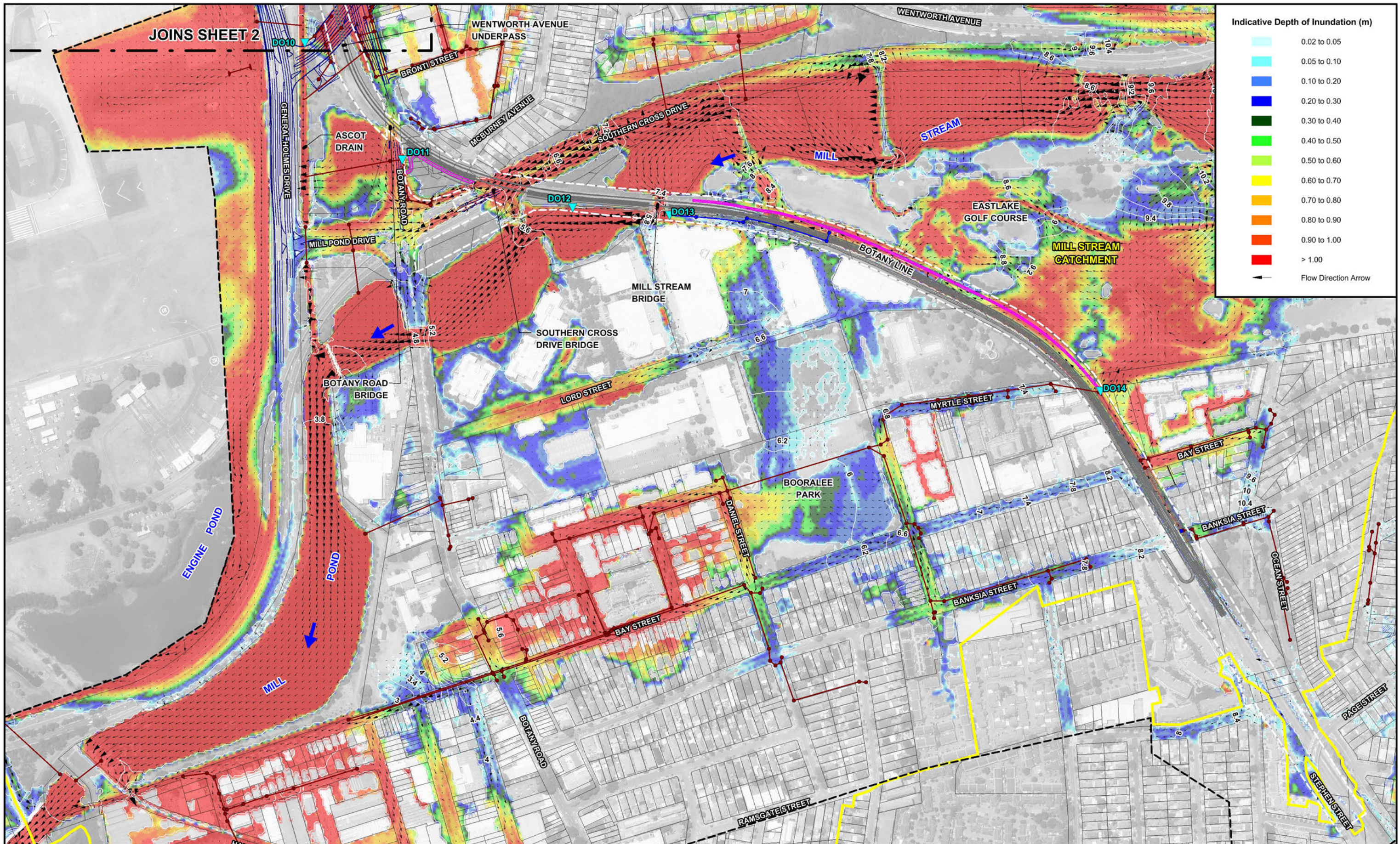
Lyall & Associates

Note:
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BOTANY RAIL DUPLICATION EIS TECHNICAL WORKING PAPER: FLOODING

Figure 5.7
(Sheet 2 of 3)

**PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - PMF EVENT**



Indicative Depth of Inundation (m)

- 0.02 to 0.05
- 0.05 to 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- 0.50 to 0.60
- 0.60 to 0.70
- 0.70 to 0.80
- 0.80 to 0.90
- 0.90 to 1.00
- > 1.00

Flow Direction Arrow



50 0 50 100 150 m
Scale: 1:5,000

Note:

The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.

Flood depths are therefore approximate only and require interpretation by a suitably qualified engineer to determine flooding behaviour in individual allotments. Any assessment of flooding in individual allotments may also require a site survey.

LEGEND

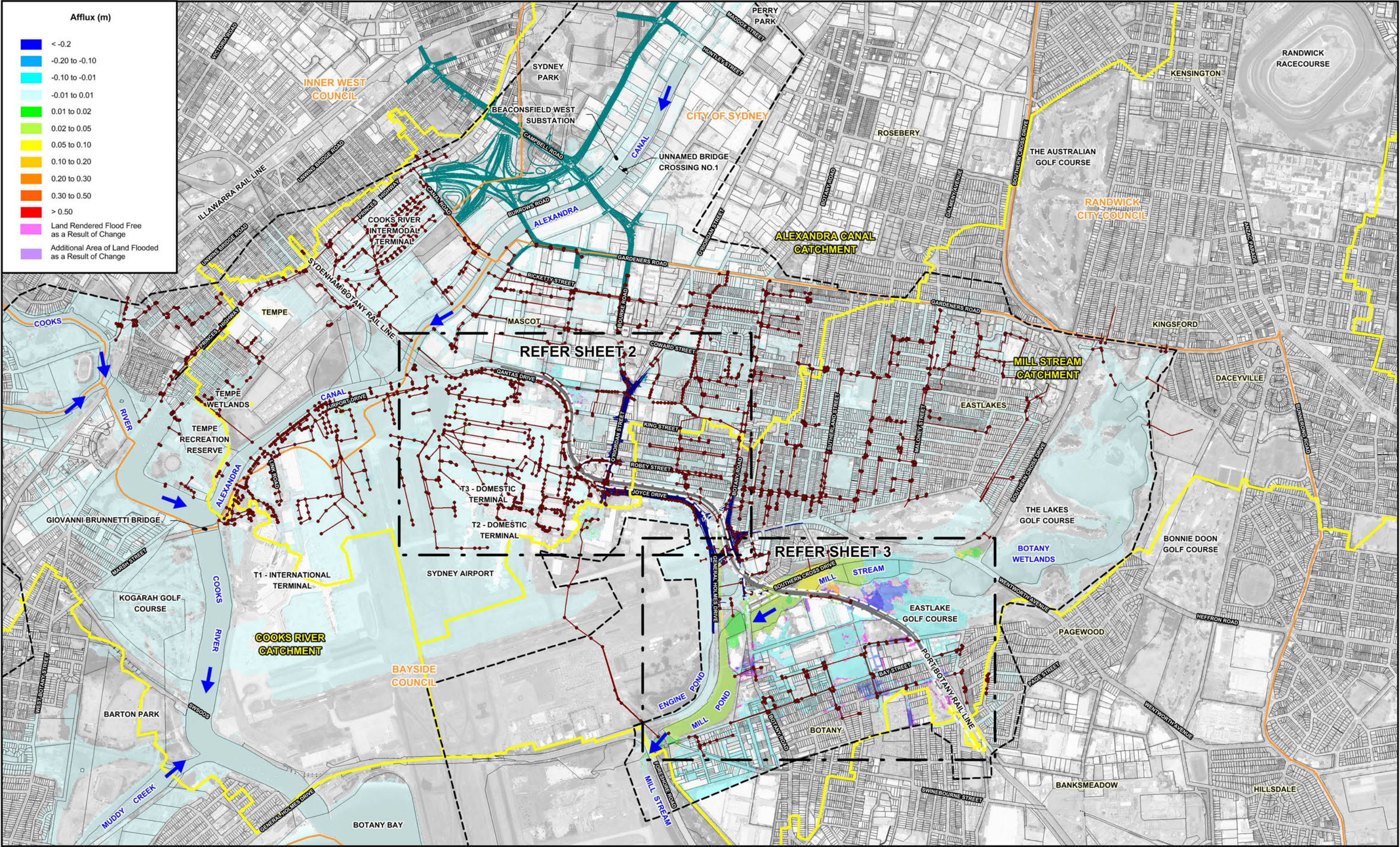
- Two-Dimensional Model Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Proposed Drainage System
- Drainage Outlet Location and Identifier

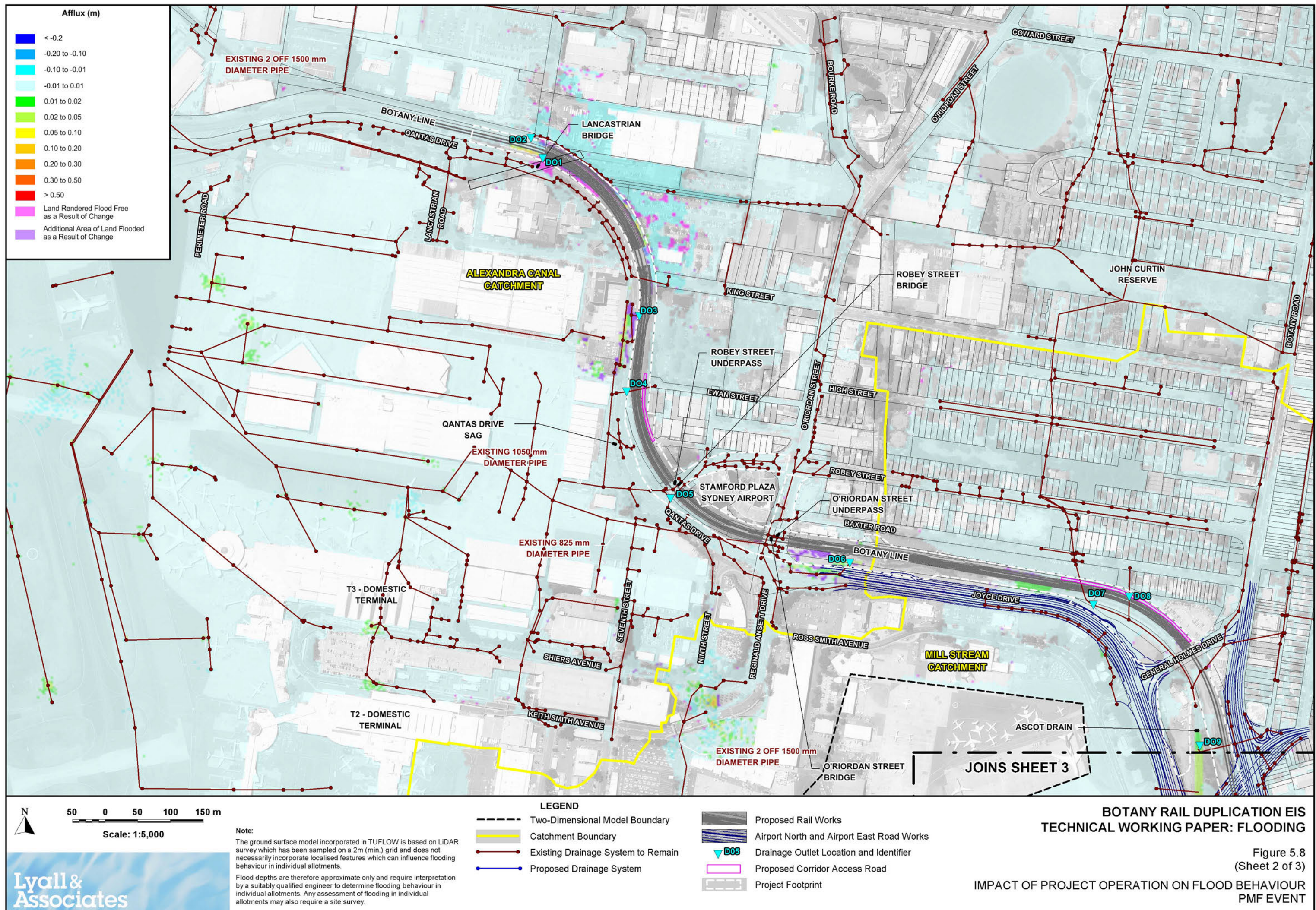
- Proposed Rail Works
- Airport North and Airport East Road Works
- Water Surface Elevation Contours
- Proposed Corridor Access Road
- Project Footprint

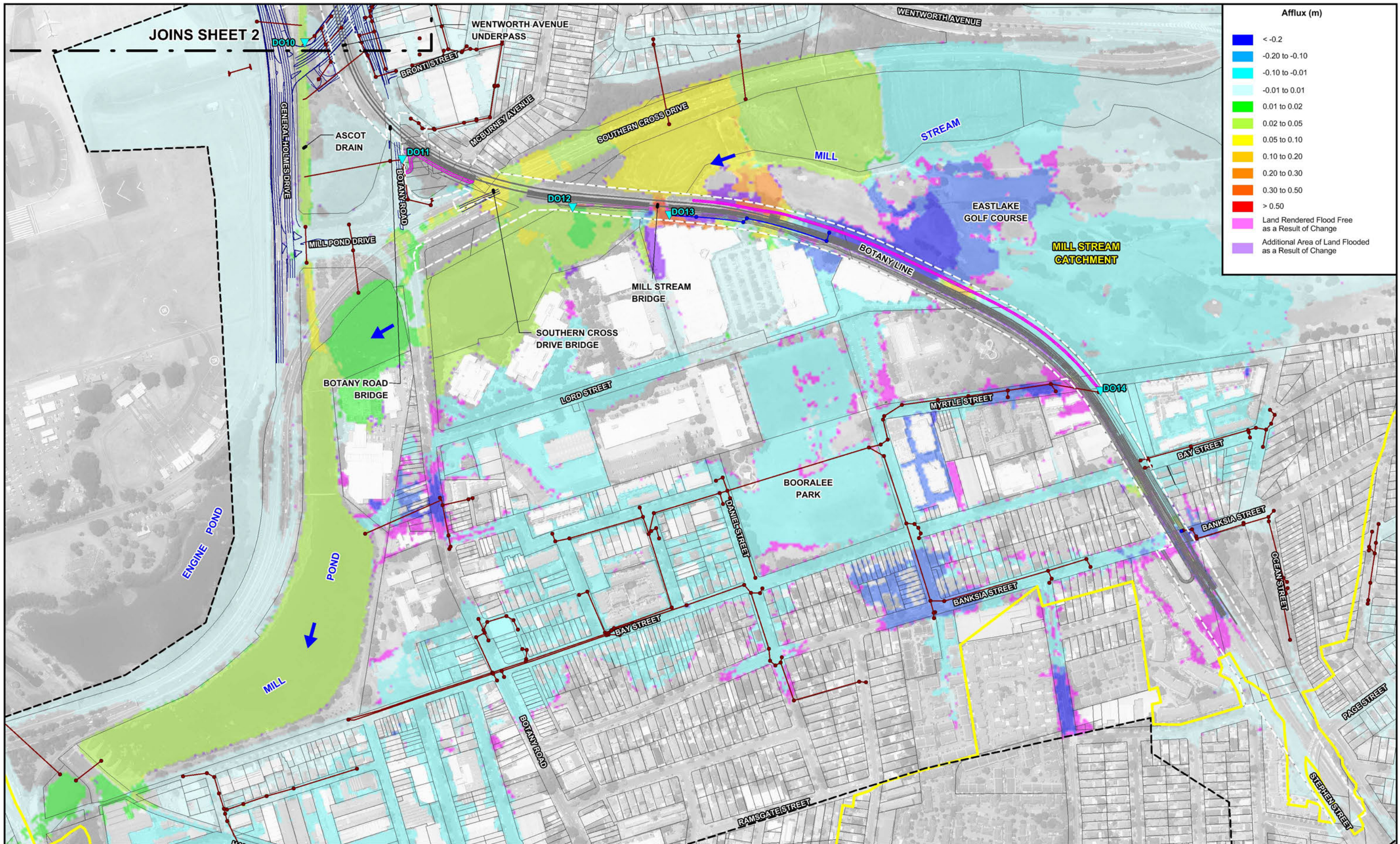
BOTANY RAIL DUPLICATION EIS TECHNICAL WORKING PAPER: FLOODING

Figure 5.7
(Sheet 3 of 3)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - PMF EVENT







Scale: 1:5,000

Note:
The ground surface model incorporated in TUFLOW is based on LiDAR survey which has been sampled on a 2m (min.) grid and does not necessarily incorporate localised features which can influence flooding behaviour in individual allotments.
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BOTANY RAIL DUPLICATION EIS **TECHNICAL WORKING PAPER: FLOODING**

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
PMF EVENT

Figure 5.8
(Sheet 3 of 3)