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

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

INNER WEST COUNCIL

CITY OF SYDNEY

RANDWICK CITY COUNCIL

BAYSIDE COUNCIL

MARRICKVILLE

TEMPE

MASCOT

ROSEBERY

KENSINGTON

THE AUSTRALIAN GOLF COURSE

KINGSFORD

DACEYVILLE

EASTLAKES

THE LAKES GOLF COURSE

BONNIE DOON GOLF COURSE

EAST LAKES GOLF COURSE

PAGEWOOD

BOTANY

BOTANY BAY

KOGARAH GOLF COURSE

BARTON PARK

SYDNEY AIRPORT

T1 - INTERNATIONAL TERMINAL

T2 - DOMESTIC TERMINAL

T3 - DOMESTIC TERMINAL

TEMPE WETLANDS

TEMPE RECREATION RESERVE

GIOVANNI BRUNNETTI BRIDGE

COOKS RIVER INTERMODAL TERMINAL

SYDNEY PARK

PERRY PARK

BEACONSFIELD WEST SUBSTATION

UNNAMED BRIDGE CROSSING NO.1

LACHLAN SWAMP

ENGINE POND

MILL POND

MILL STREAM

COOKS

WOLLI CREEK

COOKS RIVER

ALEXANDRA CANAL

CANAL

MUDDY CREEK

ILLAWARRA RAIL LINE

SYDENHAM BOTANY RAIL LINE

EAST HILLS RAIL LINE

PORT BOTANY RAIL LINE

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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

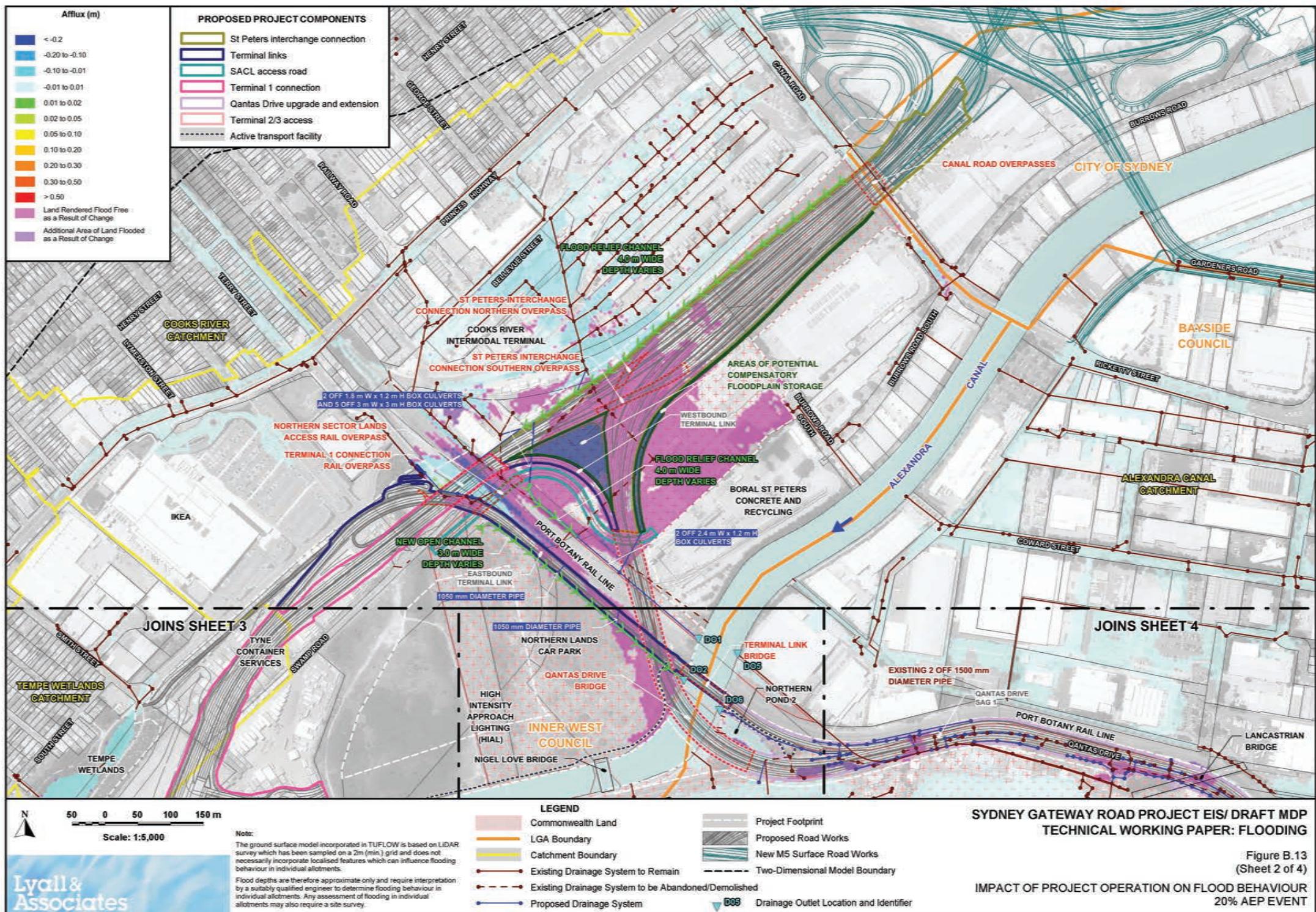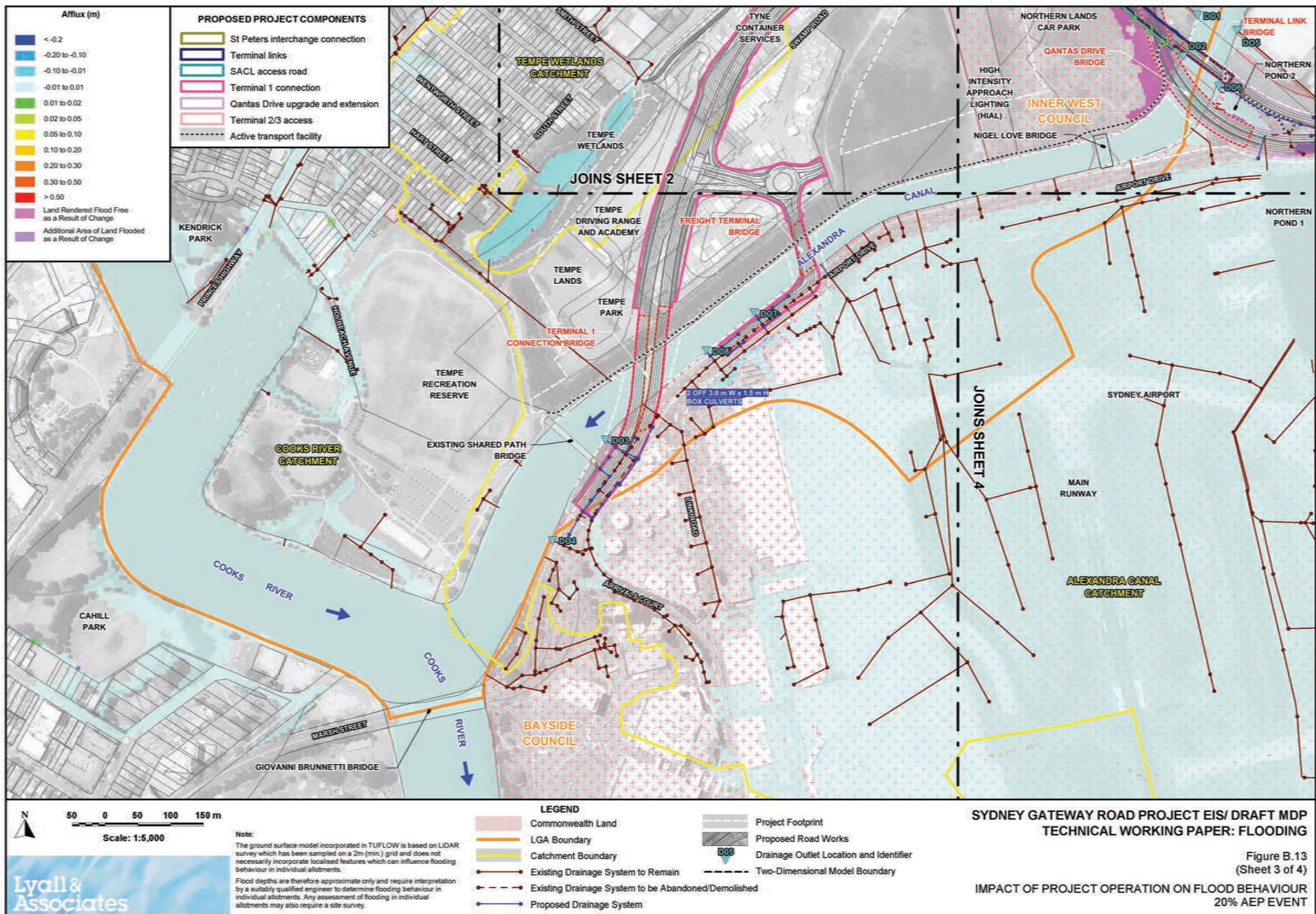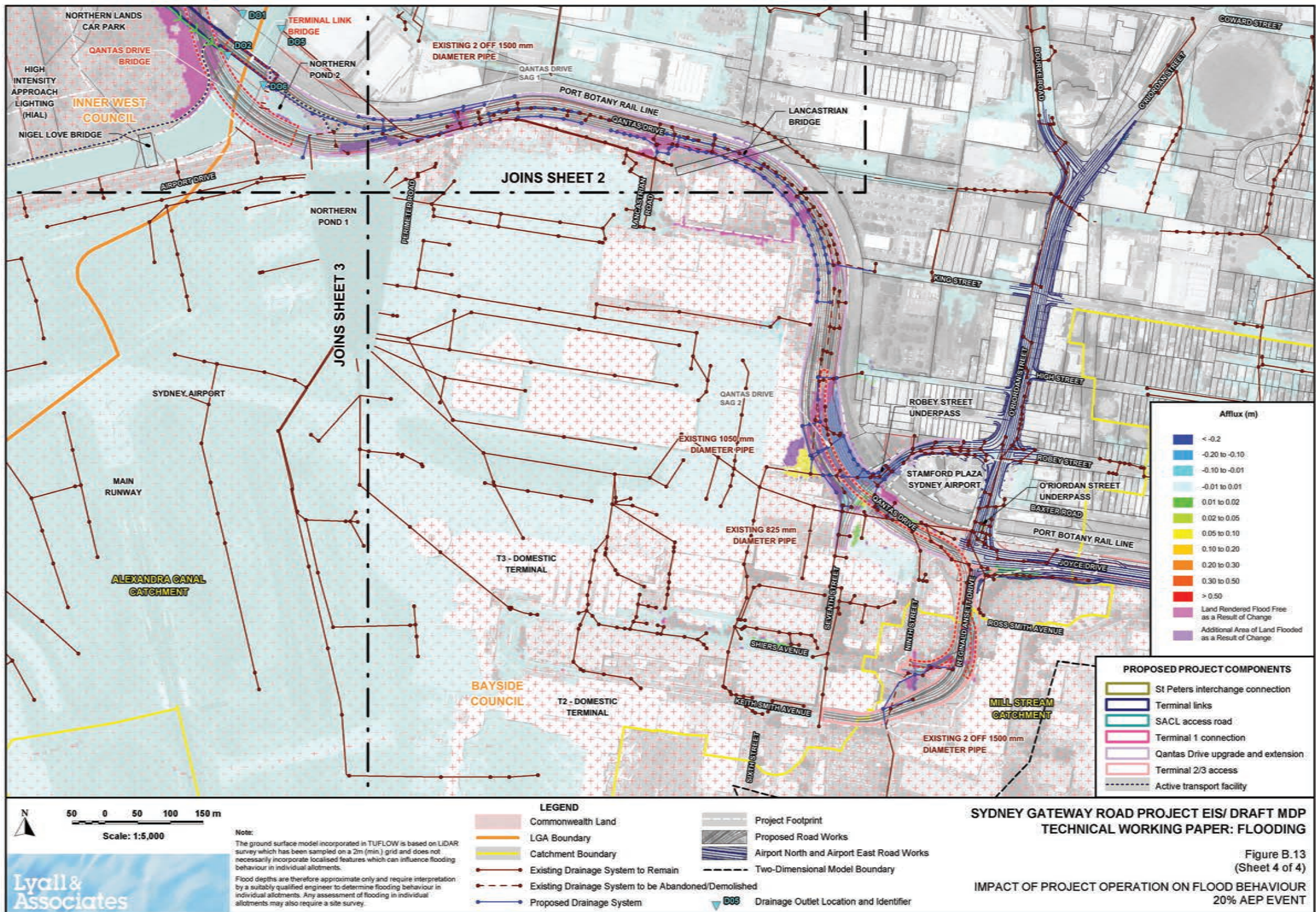200 0 200 400 600 m

Scale: 1:20,000

Lyall & Associates

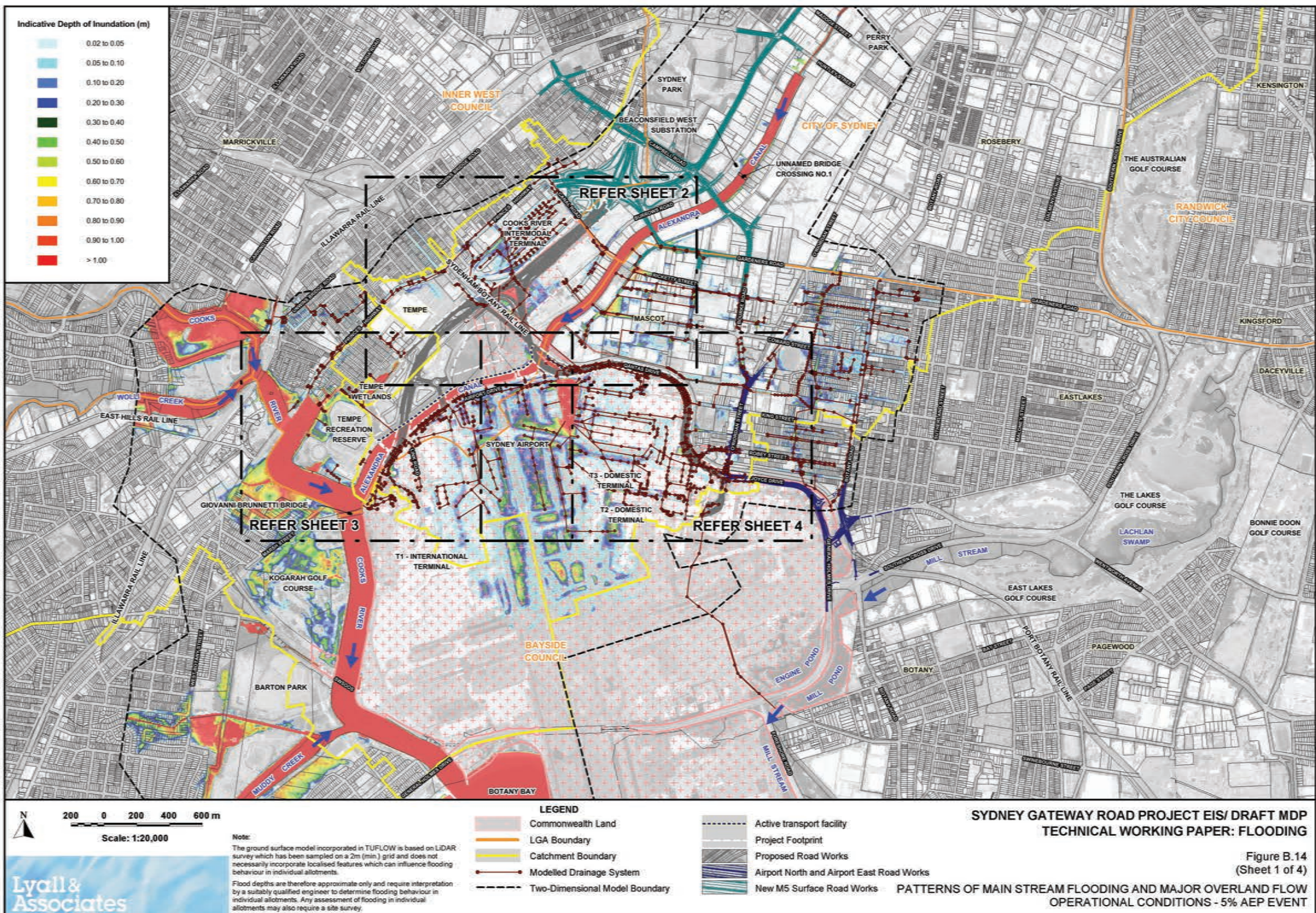**SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP**
TECHNICAL WORKING PAPER: FLOODING

Figure B.13
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
20% 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

PROPOSED PROJECT COMPONENTS

- ▬ St Peters interchange connection
- ▬ Terminal links
- ▬ SACL access road
- ▬ Terminal 1 connection
- ▬ Qantas Drive upgrade and extension
- ▬ Terminal 2/3 access
- ┄ Active transport facility

CANAL ROAD OVERPASSES

CITY OF SYDNEY

BAYSIDE COUNCIL

GARDENERS ROAD

HENRY STREET

GEORGE STREET

RAILWAY ROAD

PRINCES HIGHWAY

BELLEVUE STREET

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

ST PETERS-INTERCHANGE CONNECTION NORTHERN OVERPASS

COOKS RIVER INTERMODAL TERMINAL

ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS

COOKS RIVER CATCHMENT

HENRY STREET

TERRY STREET

WYNDHAM STREET

2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS

NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS

TERMINAL 1 CONNECTION RAIL OVERPASS

IKEA

AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE

WESTBOUND TERMINAL LINK

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

BORAL ST PETERS CONCRETE AND RECYCLING

BURROWS ROAD SOUTH

ALEXANDRA CANAL

RICKETTY STREET

ALEXANDRA CANAL CATCHMENT

2 OFF 2.4 m W x 1.2 m H BOX CULVERTS

NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES

EASTBOUND TERMINAL LINK

1050 mm DIAMETER PIPE

PORT BOTANY RAIL LINE

COWARD STREET

TYNE CONTAINER SERVICES

SWAMP ROAD

1050 mm DIAMETER PIPE

NORTHERN LANDS CAR PARK

QANTAS DRIVE BRIDGE

DO1

DO2

TERMINAL LINK BRIDGE

DO5

EXISTING 2 OFF 1500 mm DIAMETER PIPE

QANTAS DRIVE SAG 1

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

DO6

NORTHERN POND 2

PORT BOTANY RAIL LINE

SMITH STREET

SOUTH STREET

TEMPE WETLANDS

NIGEL LOVE BRIDGE

QANTAS DRIVE

LANCASTRIAN BRIDGE

LEGEND

- ▉ Commonwealth Land
- ▬ LGA Boundary
- ▬ Catchment Boundary
- ▬ Existing Drainage System to Remain
- ┅ Existing Drainage System to be Abandoned/Demolished
- ▬ Proposed Drainage System
- ┅ Project Footprint
- ▨ Proposed Road Works
- ▨ New M5 Surface Road Works
- ┄ Two-Dimensional Model Boundary
- ▽ DO5 Drainage Outlet Location and Identifier

N

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.

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.13
(Sheet 2 of 4)
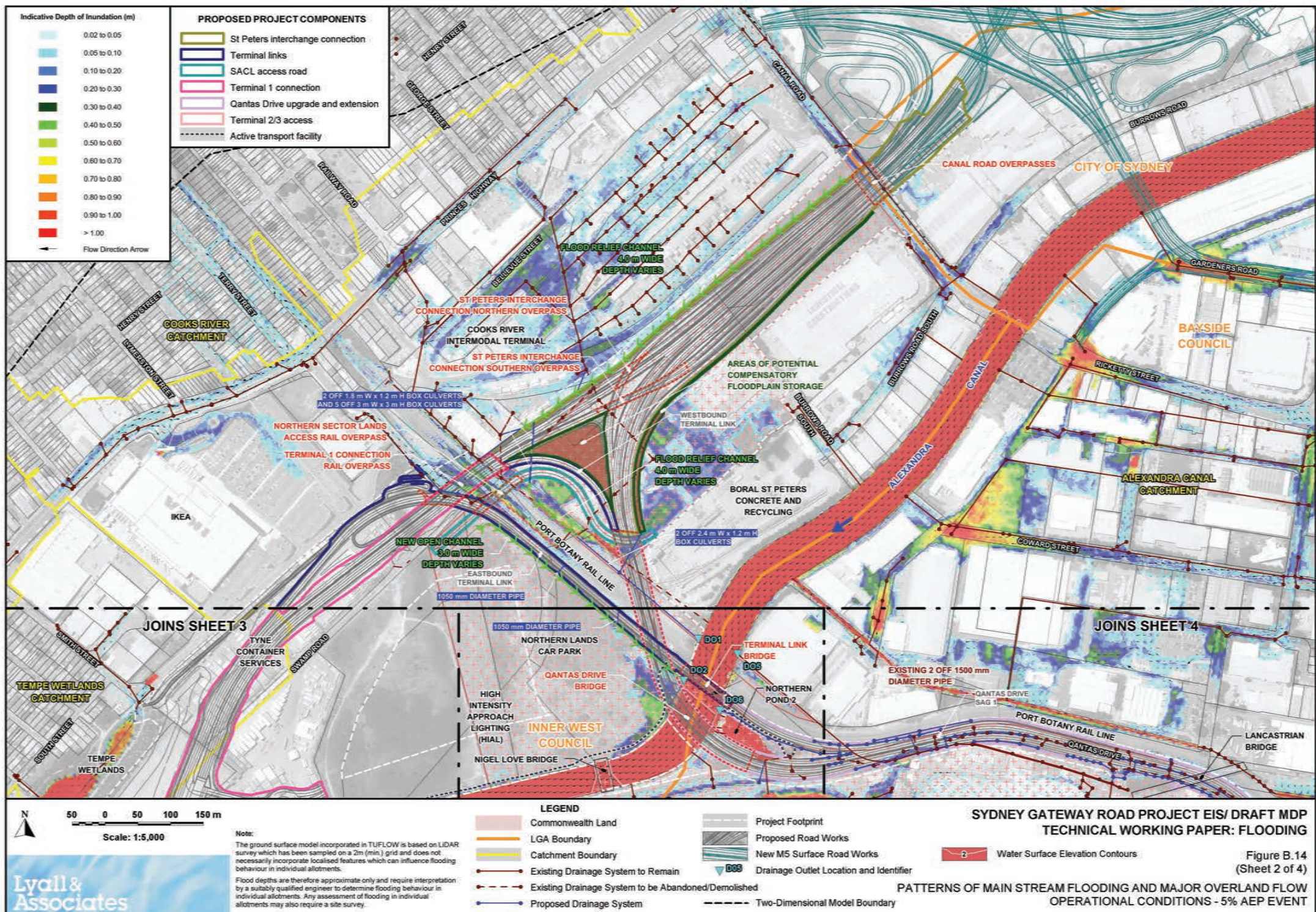
IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
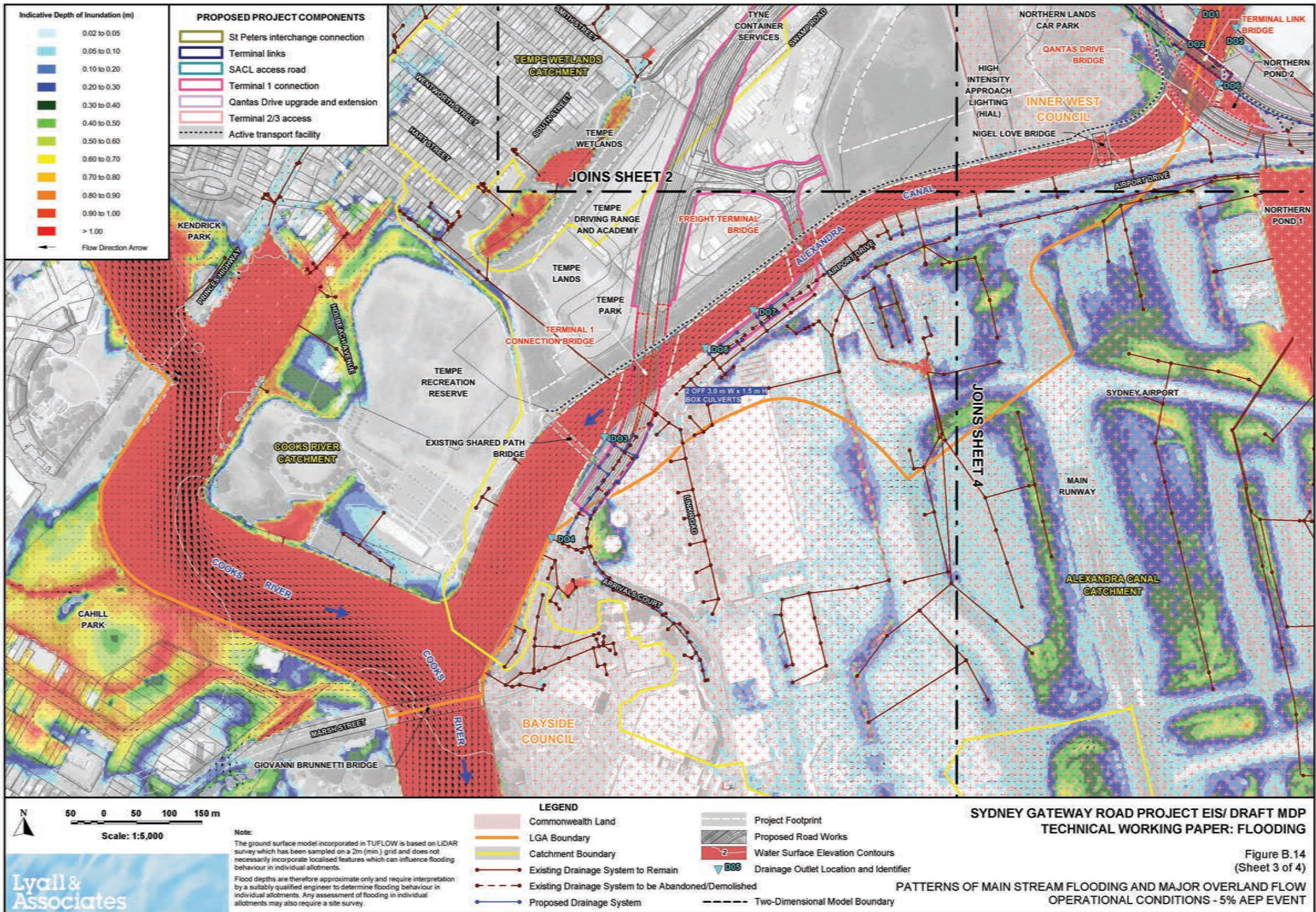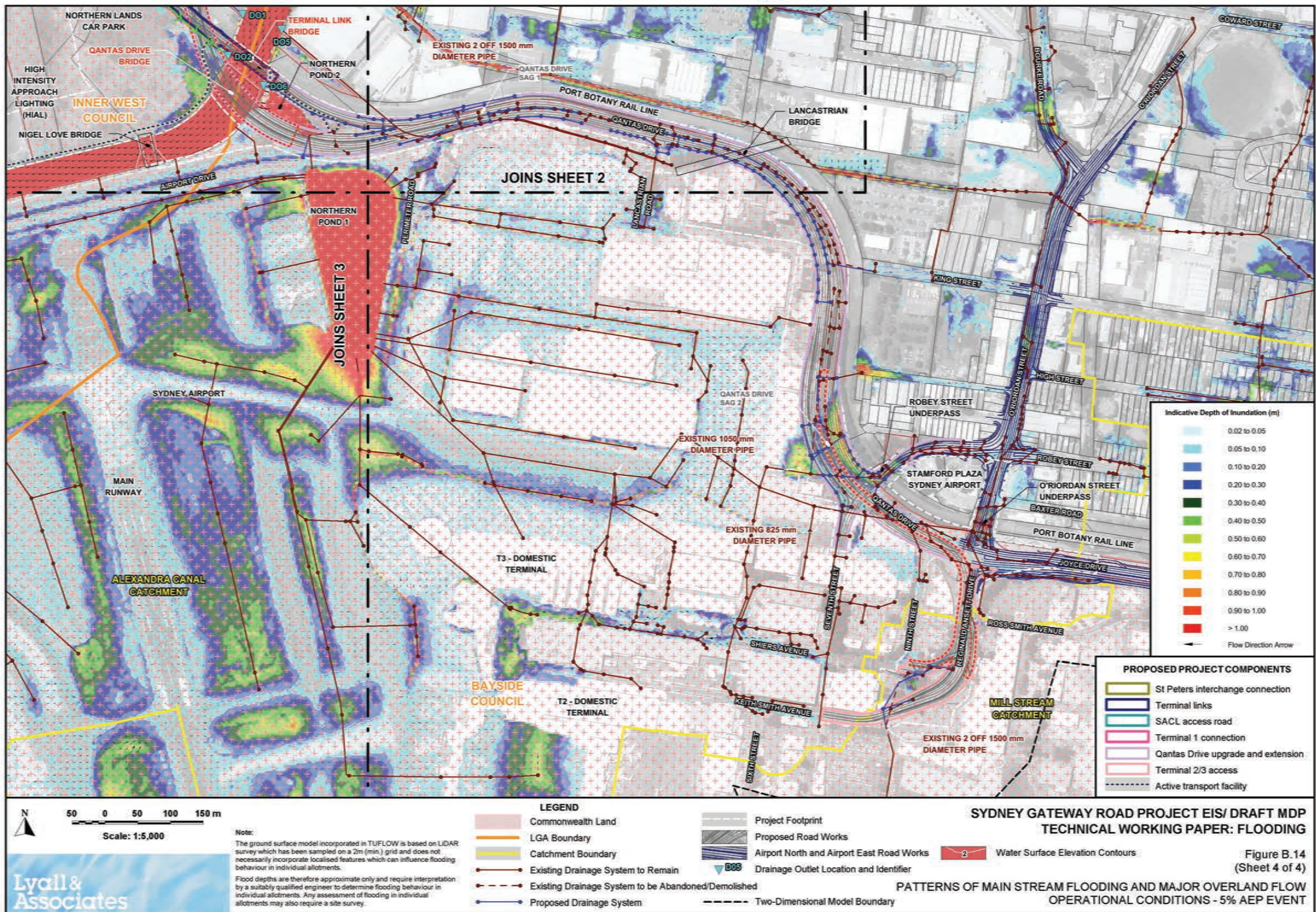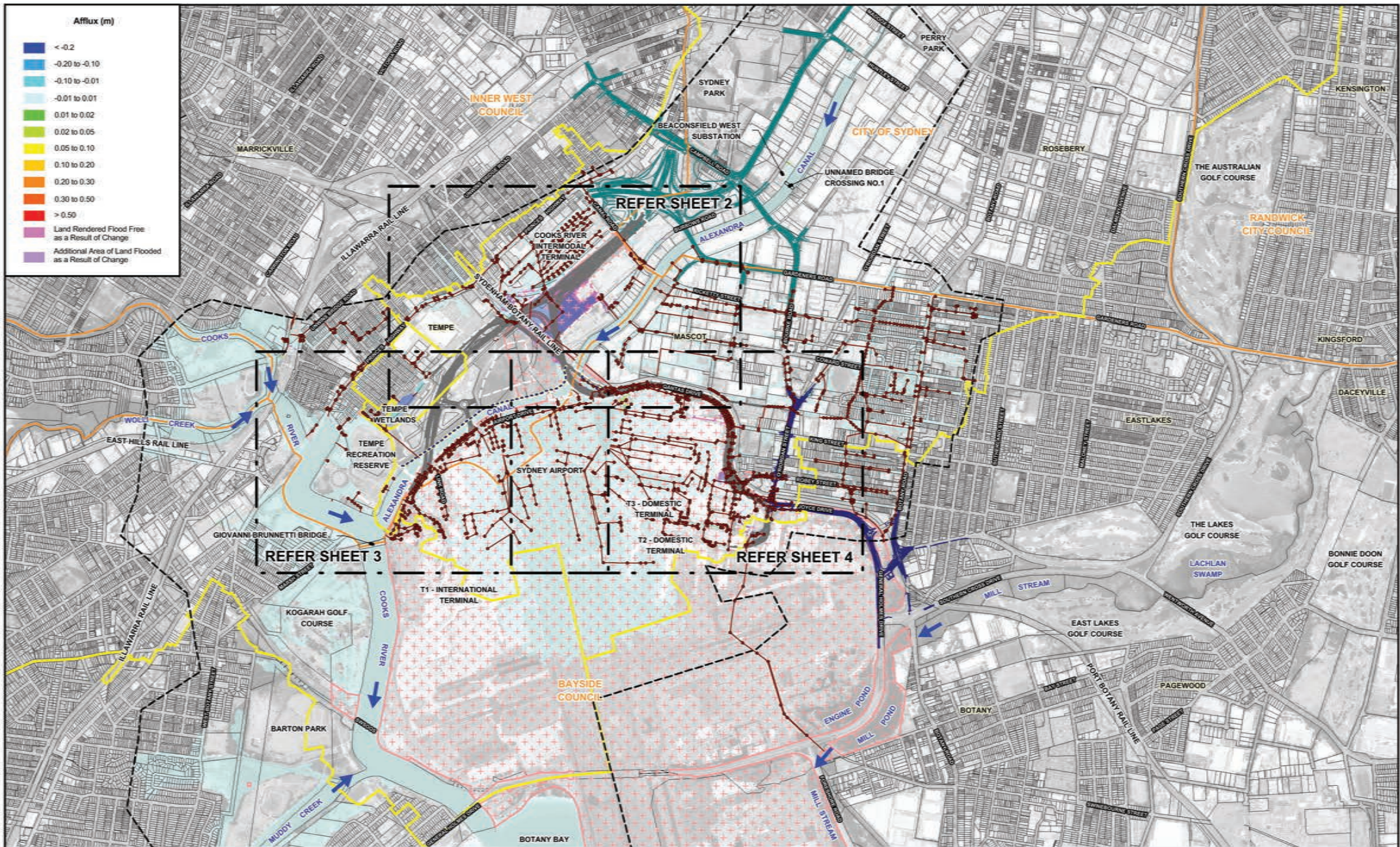20% AEP EVENT

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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

Map labels:

NORTHERN LANDS CAR PARK
TERMINAL LINK BRIDGE
QANTAS DRIVE BRIDGE
NORTHERN POND 2
HIGH INTENSITY APPROACH LIGHTING (HIAL)
INNER WEST COUNCIL
NIGEL LOVE BRIDGE
TYNE CONTAINER SERVICES
SMITH STREET
SWAMP ROAD
TEMPE WETLANDS CATCHMENT
TEMPE WETLANDS
WENTWORTH STREET
SOUTH STREET
HART STREET
JOINS SHEET 2
CANAL
AIRPORT DRIVE
NORTHERN POND 1
TEMPE DRIVING RANGE AND ACADEMY
FREIGHT TERMINAL BRIDGE
ALEXANDRA
AIRPORT DRIVE
TEMPE LANDS
PRINCES HIGHWAY
KENDRICK PARK
TEMPE PARK
TERMINAL 1 CONNECTION BRIDGE
DO7
DO6
HOLBEACH AVENUE
TEMPE RECREATION RESERVE
EXISTING SHARED PATH BRIDGE
2 OFF 3.0 m W x 1.5 m H BOX CULVERTS
SYDNEY AIRPORT
JOINS SHEET 4
COOKS RIVER CATCHMENT
DO3
COOKS RIVER
DO4
LINK ROAD
ALEXANDRA CANAL CATCHMENT
CAHILL PARK
COOKS
ARRIVALS COURT
MAIN RUNWAY
RIVER
MARSH STREET
BAYSIDE COUNCIL
DO5
GIOVANNI BRUNNETTI BRIDGE

Scale bar: N | 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.

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LEGEND

- ■ Commonwealth Land
- — LGA Boundary
- — Catchment Boundary
- •—• Existing Drainage System to Remain
- •--• Existing Drainage System to be Abandoned/Demolished
- •—• Proposed Drainage System
- ▨ Project Footprint
- ▨ Proposed Road Works
- ▽ DO5 Drainage Outlet Location and Identifier
- – – Two-Dimensional Model Boundary

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.13
(Sheet 3 of 4)

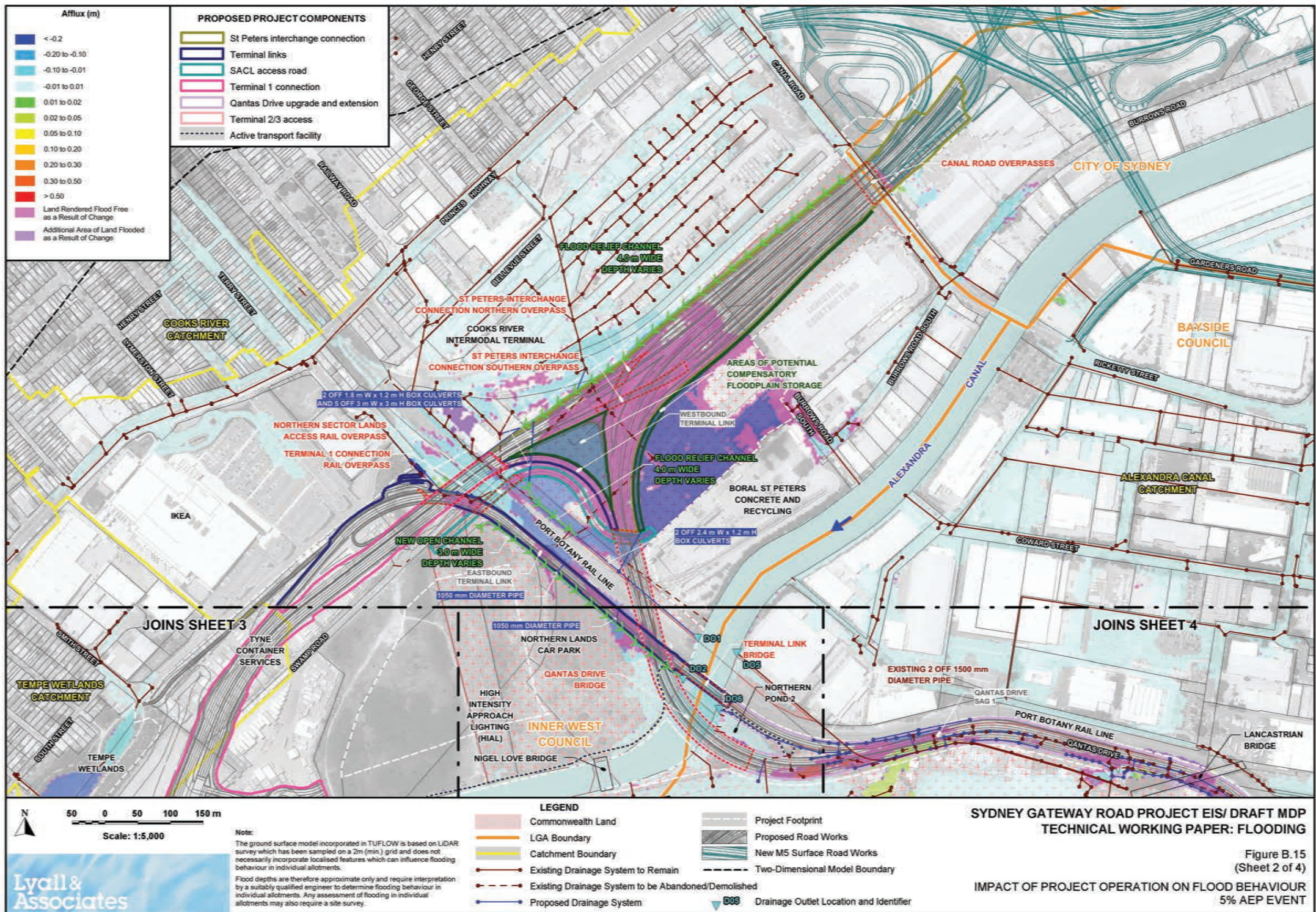IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
20% AEP EVENT
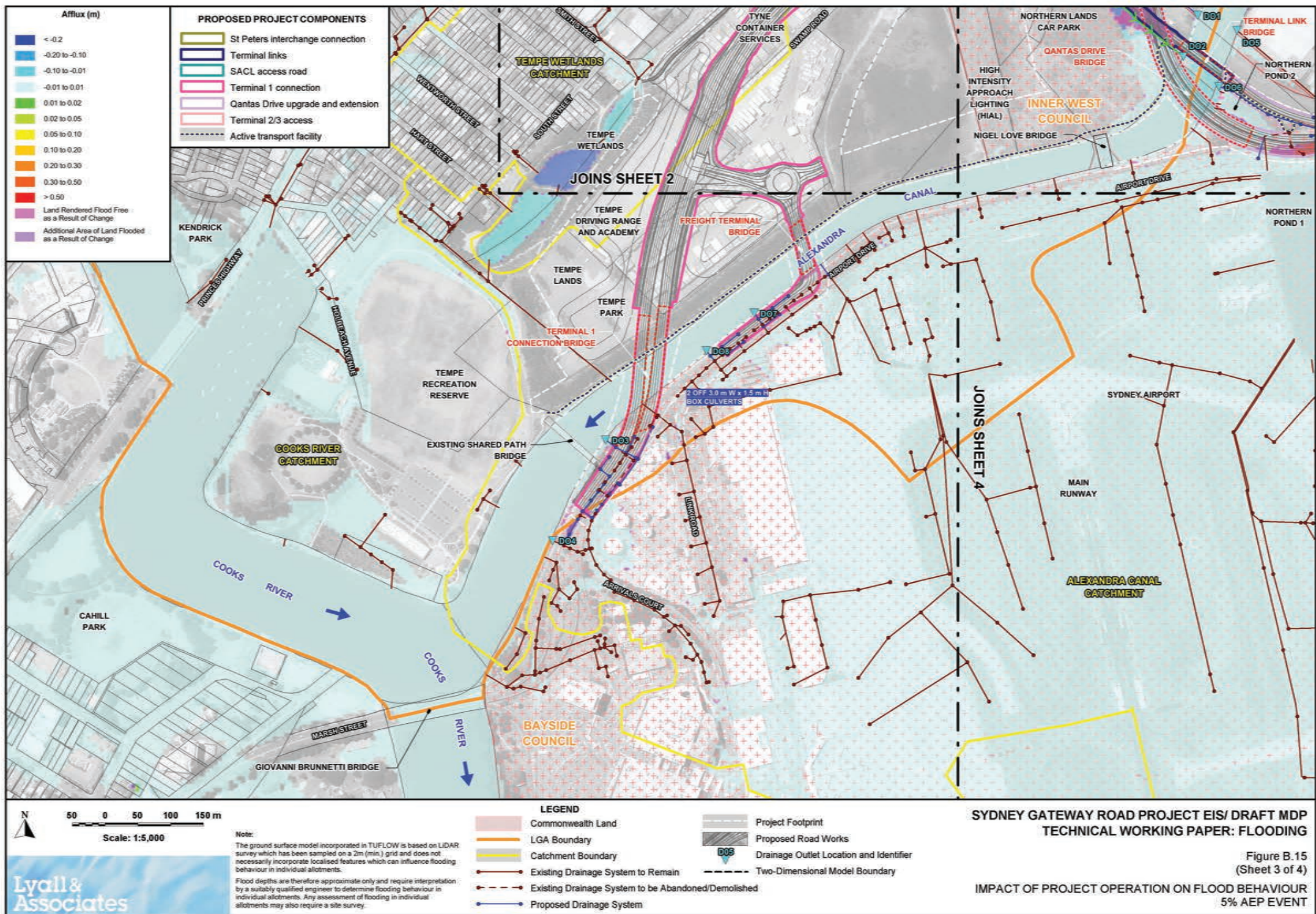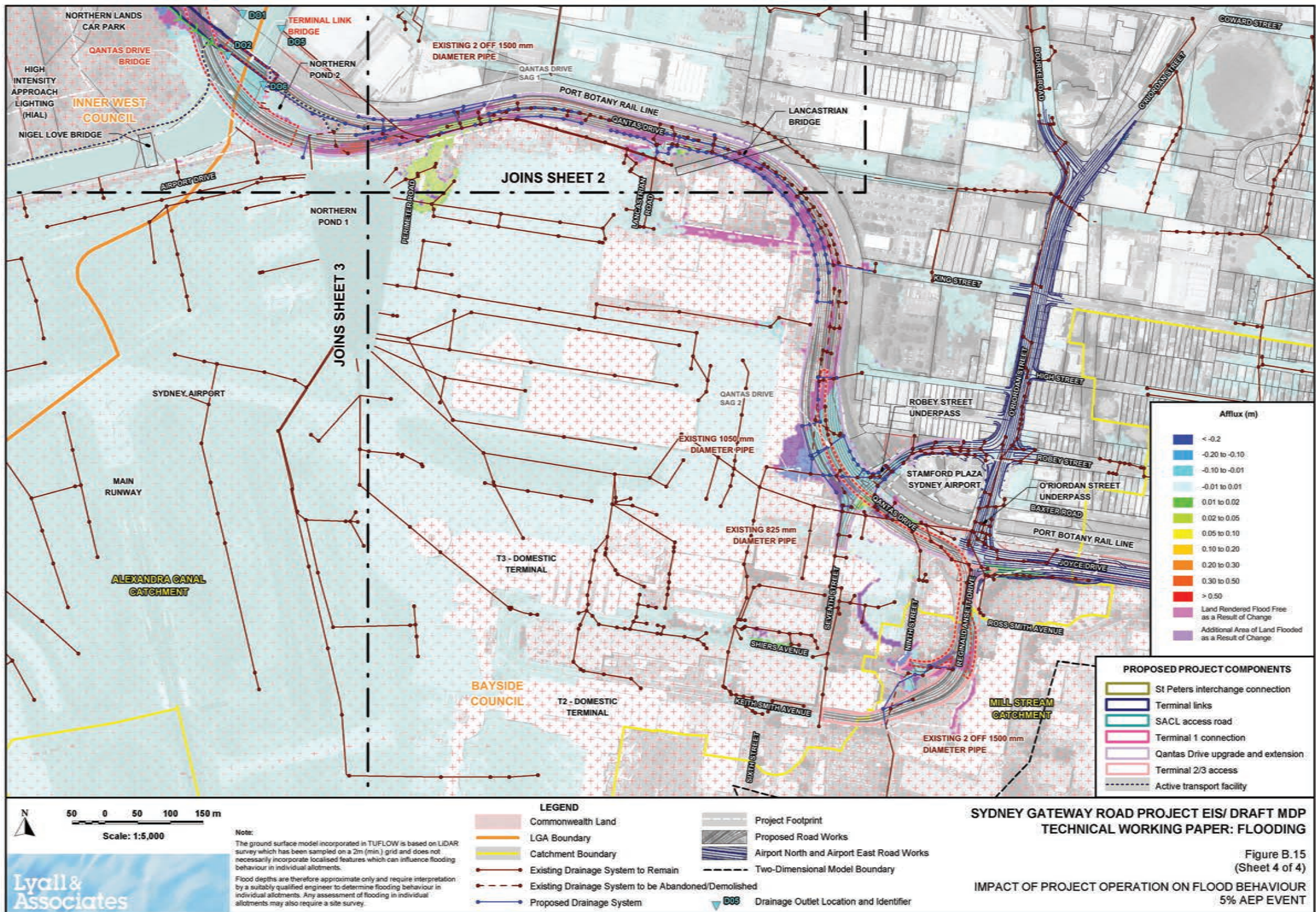
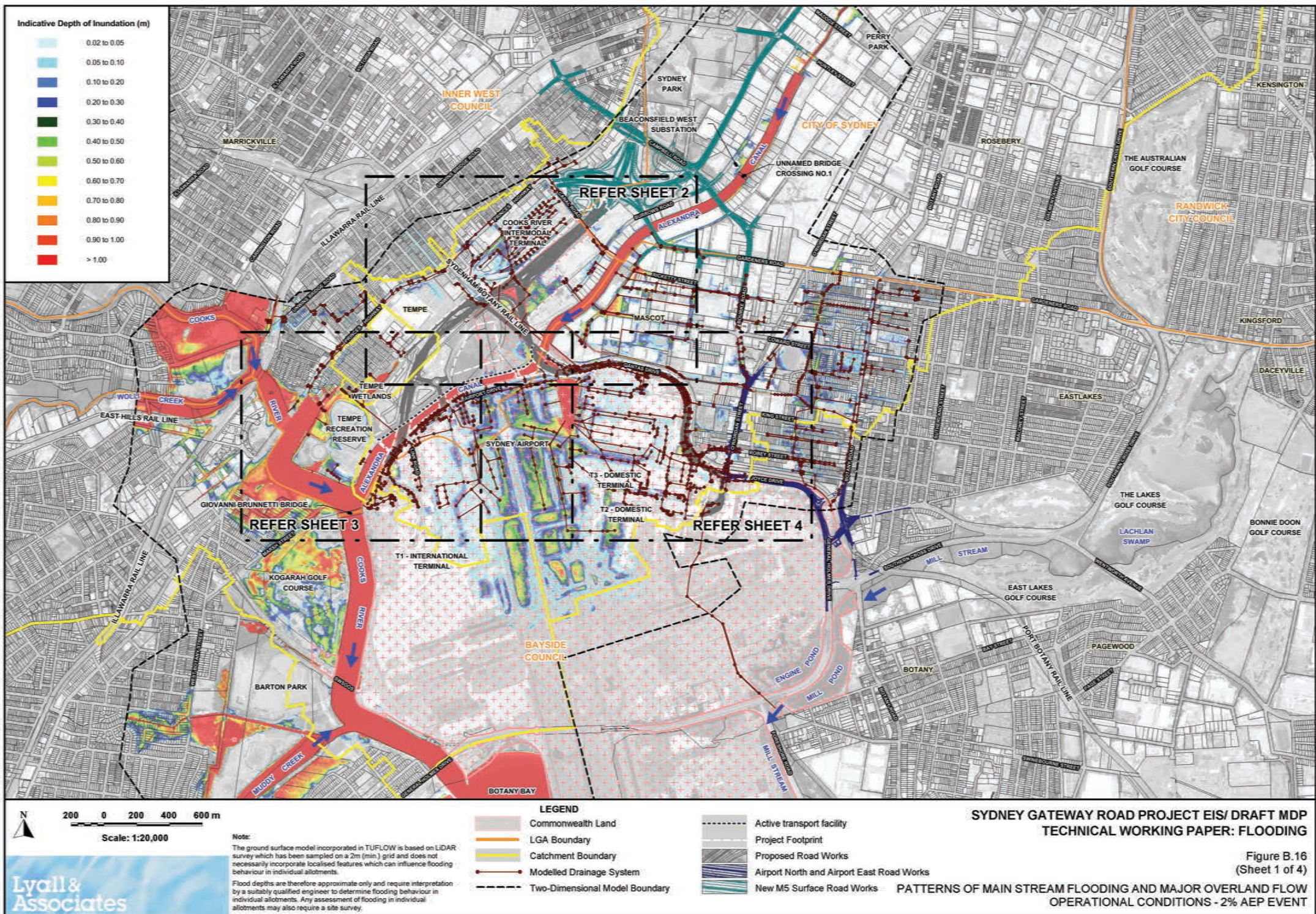SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.13
(Sheet 4 of 4)

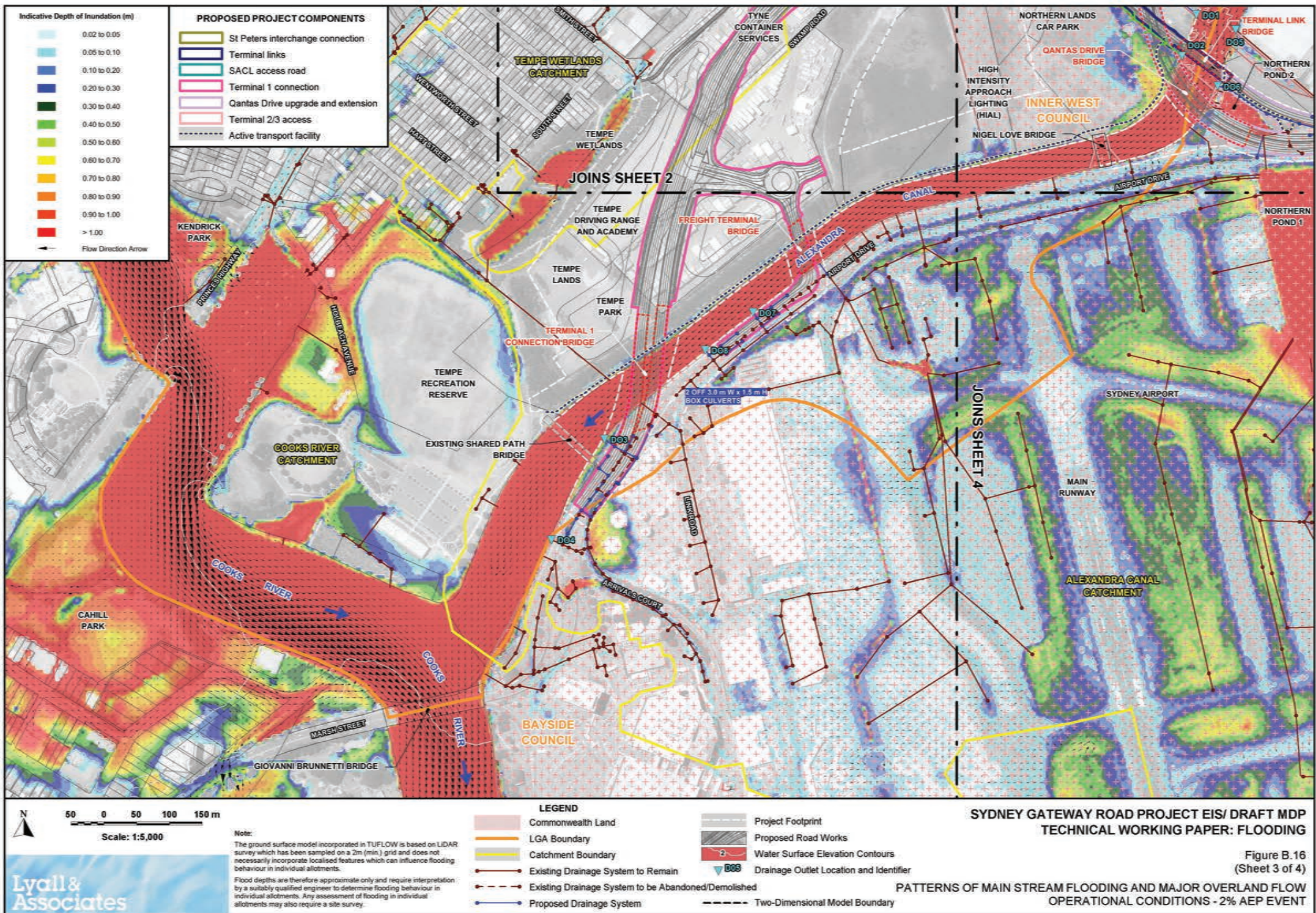IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
20% AEP EVENT

Figure B.14 — Sydney Gateway Road Project EIS/Draft MDP Technical Working Paper: Flooding. Patterns of main stream flooding and major overland flow operational conditions — 5% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- ‑‑‑‑ Active transport facility

CANAL ROAD OVERPASSES
CITY OF SYDNEY
BAYSIDE COUNCIL

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS
COOKS RIVER INTERMODAL TERMINAL
ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS

COOKS RIVER CATCHMENT

AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE
WESTBOUND TERMINAL LINK

2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS

NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS
TERMINAL 1 CONNECTION RAIL OVERPASS

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

BORAL ST PETERS CONCRETE AND RECYCLING

ALEXANDRA CANAL

ALEXANDRA CANAL CATCHMENT

IKEA

NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES
EASTBOUND TERMINAL LINK
PORT BOTANY RAIL LINE
1050 mm DIAMETER PIPE

2 OFF 2.4 m W x 1.2 m H BOX CULVERTS

COWARD STREET

JOINS SHEET 3

TYNE CONTAINER SERVICES
SWAMP ROAD

1050 mm DIAMETER PIPE
NORTHERN LANDS CAR PARK
QANTAS DRIVE BRIDGE

DO1
DO2
DO5
DO6
TERMINAL LINK BRIDGE
NORTHERN POND 2

EXISTING 2 OFF 1500 mm DIAMETER PIPE
QANTAS DRIVE SAG 1

JOINS SHEET 4

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

PORT BOTANY RAIL LINE
QANTAS DRIVE
LANCASTRIAN BRIDGE

TEMPE WETLANDS

RAILWAY ROAD
PRINCES HIGHWAY
BELLEVUE STREET
HENRY STREET
TERRY STREET
WAMBERTON STREET
SMITH STREET
SOUTH STREET
GEORGE STREET
CANAL ROAD
BURROWS ROAD
GARDENERS ROAD
RICKETTY STREET
BURROWS ROAD SOUTH

N
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.

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LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary
- 2 Water Surface Elevation Contours

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.14
(Sheet 2 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 5% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Water Surface Elevation Contours
- Drainage Outlet Location and Identifier
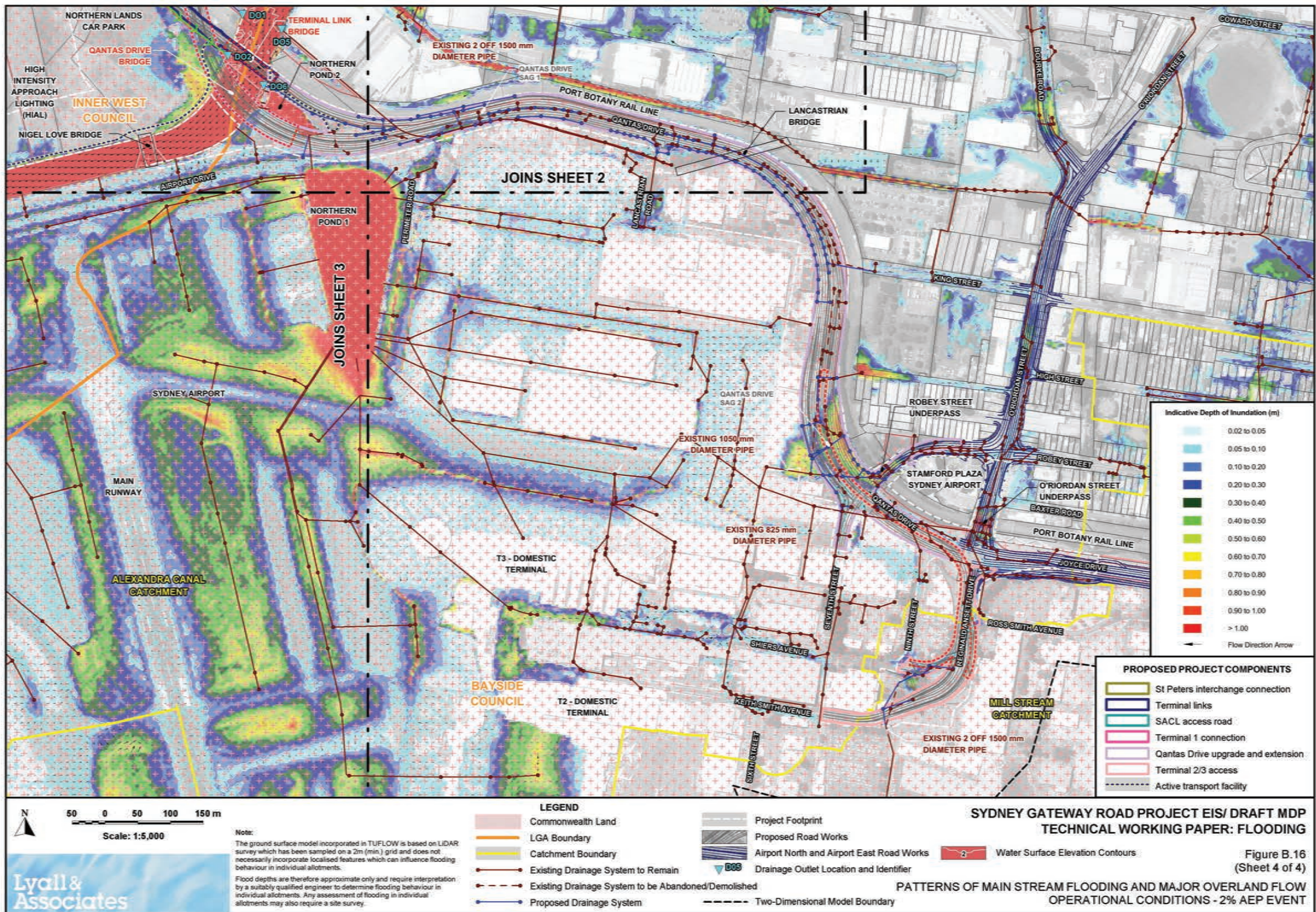- Two-Dimensional Model Boundary
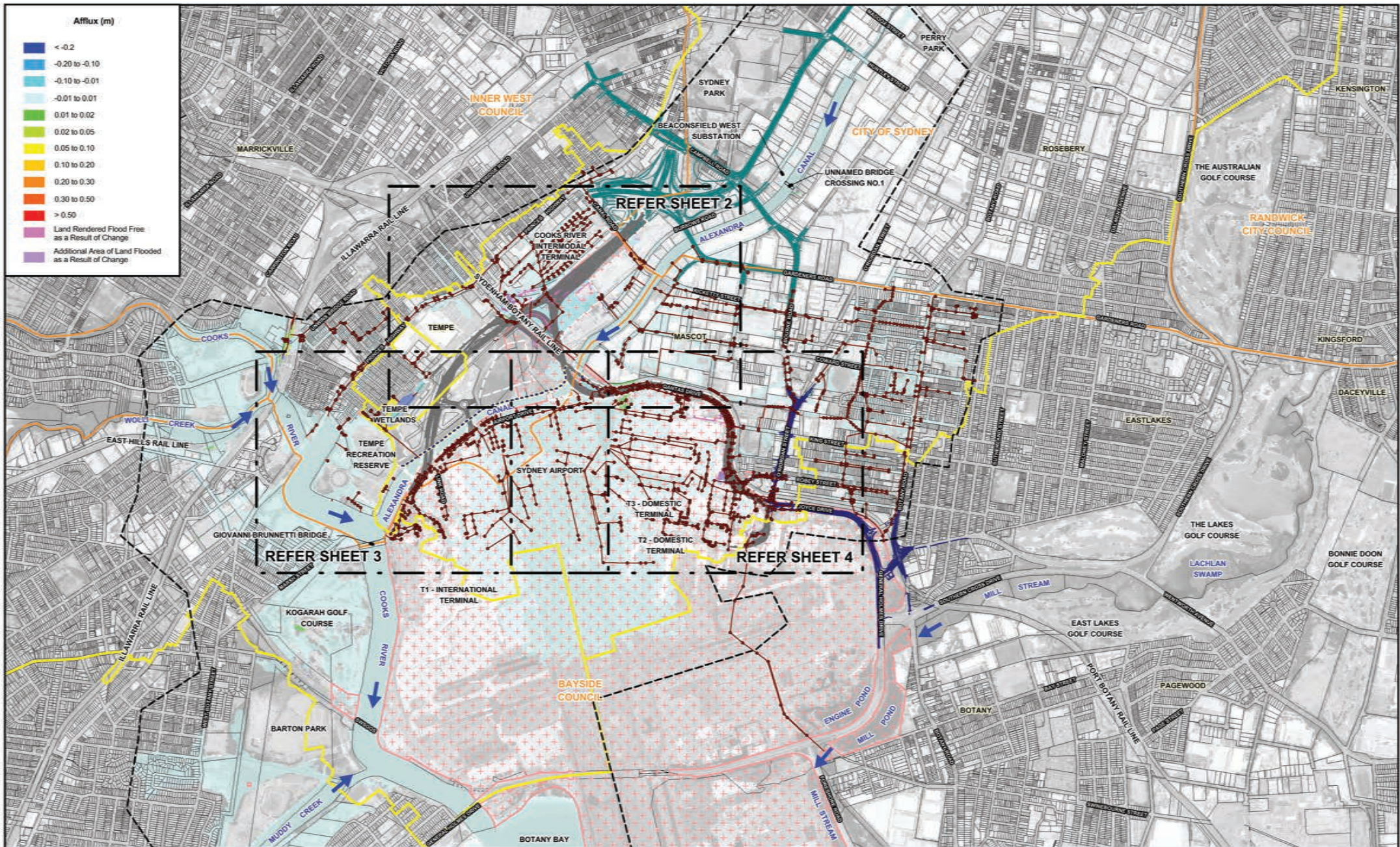
Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.14
(Sheet 3 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 5% AEP EVENT

Figure B.14 (Sheet 4 of 4)
SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING
PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 5% AEP EVENT

Afflux (m)

Color	Range
(dark blue)	< -0.2
(blue)	-0.20 to -0.10
(teal)	-0.10 to -0.01
(light blue)	-0.01 to 0.01
(green)	0.01 to 0.02
(light green)	0.02 to 0.05
(yellow)	0.05 to 0.10
(orange)	0.10 to 0.20
(dark orange)	0.20 to 0.30
(orange-red)	0.30 to 0.50
(red)	> 0.50
(pink)	Land Rendered Flood Free as a Result of Change
(purple)	Additional Area of Land Flooded as a Result of Change

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

INNER WEST COUNCIL

CITY OF SYDNEY

RANDWICK CITY COUNCIL

BAYSIDE COUNCIL

MARRICKVILLE

TEMPE

MASCOT

SYDNEY PARK

BEACONSFIELD WEST SUBSTATION

UNNAMED BRIDGE CROSSING NO.1

ROSEBERY

THE AUSTRALIAN GOLF COURSE

KENSINGTON

KINGSFORD

DACEYVILLE

EASTLAKES

COOKS RIVER INTERMODAL TERMINAL

TEMPE WETLANDS

TEMPE RECREATION RESERVE

SYDNEY AIRPORT

T3 - DOMESTIC TERMINAL

T2 - DOMESTIC TERMINAL

T1 - INTERNATIONAL TERMINAL

GIOVANNI BRUNNETTI BRIDGE

KOGARAH GOLF COURSE

BARTON PARK

THE LAKES GOLF COURSE

BONNIE DOON GOLF COURSE

LACHLAN SWAMP

EAST LAKES GOLF COURSE

ENGINE POND

MILL POND

MILL STREAM

BOTANY

PAGEWOOD

BOTANY BAY

COOKS RIVER

WOLLI CREEK

MUDDY CREEK

ALEXANDRA CANAL

ILLAWARRA RAIL LINE

SYDENHAM BOTANY RAIL LINE

EAST HILLS RAIL LINE

PERRY PARK

LEGEND

(pink fill)	Commonwealth Land
(orange line)	LGA Boundary
(yellow line)	Catchment Boundary
(dotted line)	Modelled Drainage System
(dashed line)	Two-Dimensional Model Boundary
(dashed line)	Active transport facility
(white dashed)	Project Footprint
(grey hatch)	Proposed Road Works
(blue hatch)	Airport North and Airport East Road Works
(teal hatch)	New M5 Surface Road Works

N

Scale: 1:20,000

200 0 200 400 600 m

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.15
(Sheet 1 of 4)

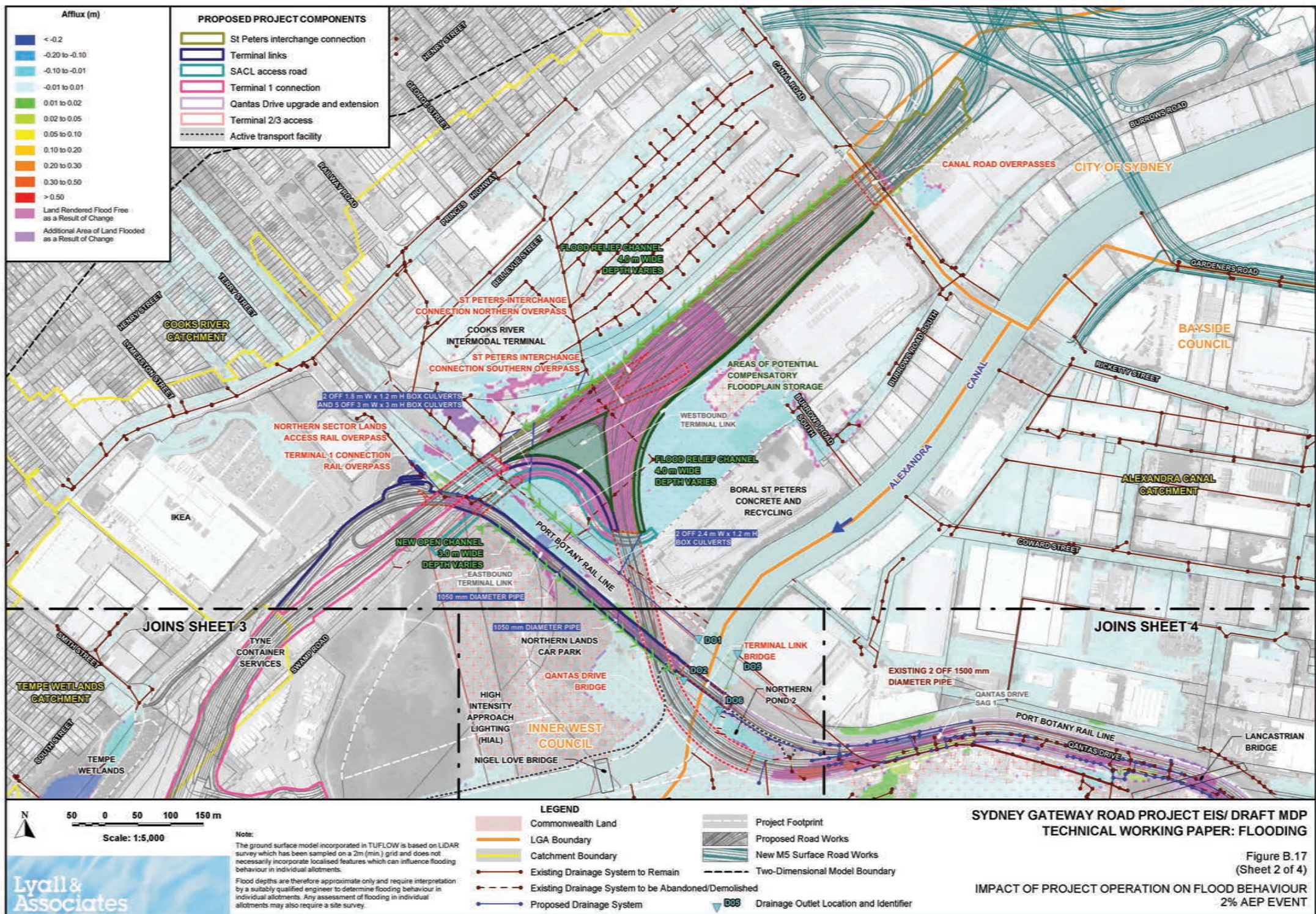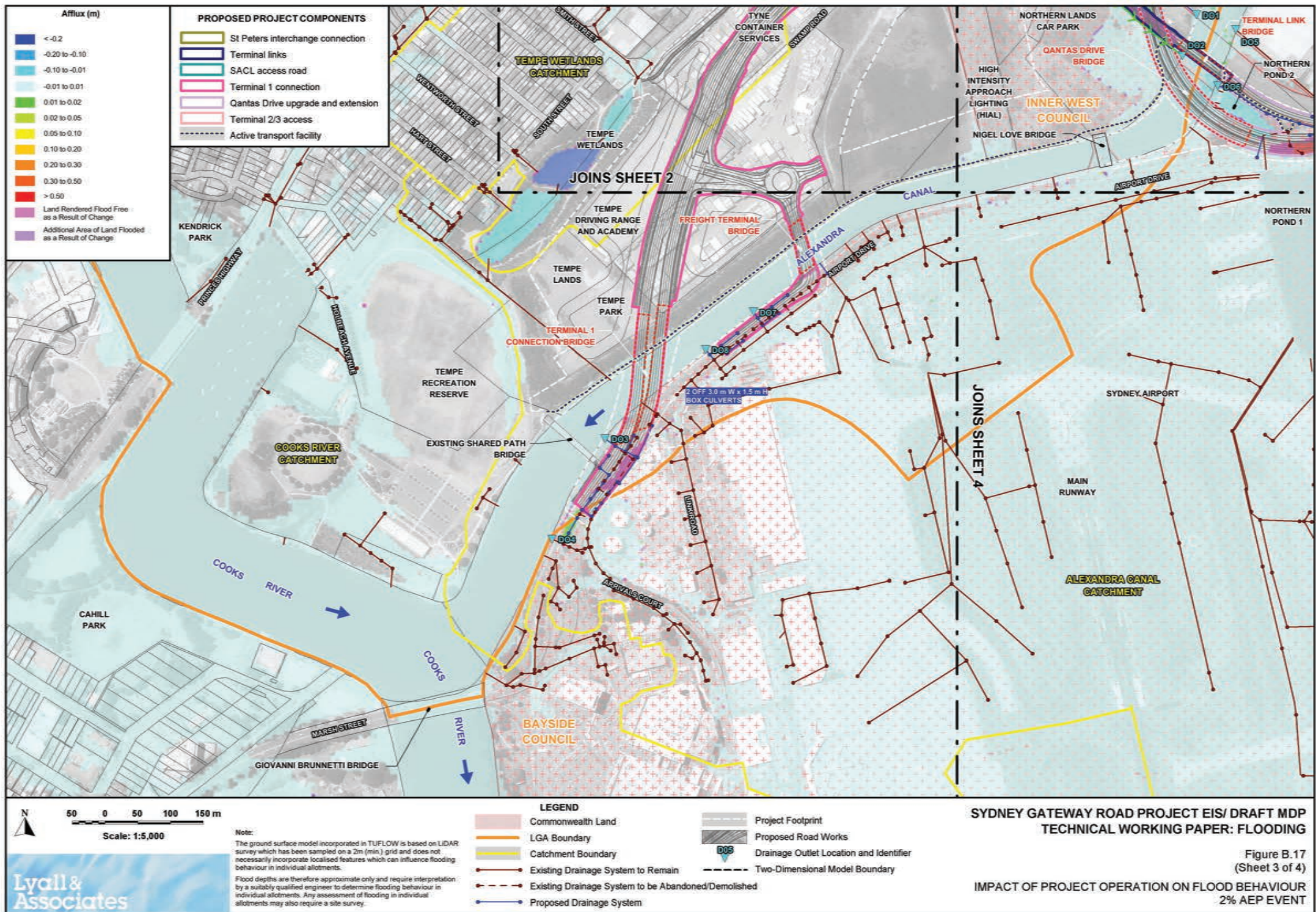IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
5% AEP EVENT

Figure B.15 (Sheet 2 of 4)
IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
5% AEP EVENT

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.15 (Sheet 3 of 4)

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
5% AEP EVENT

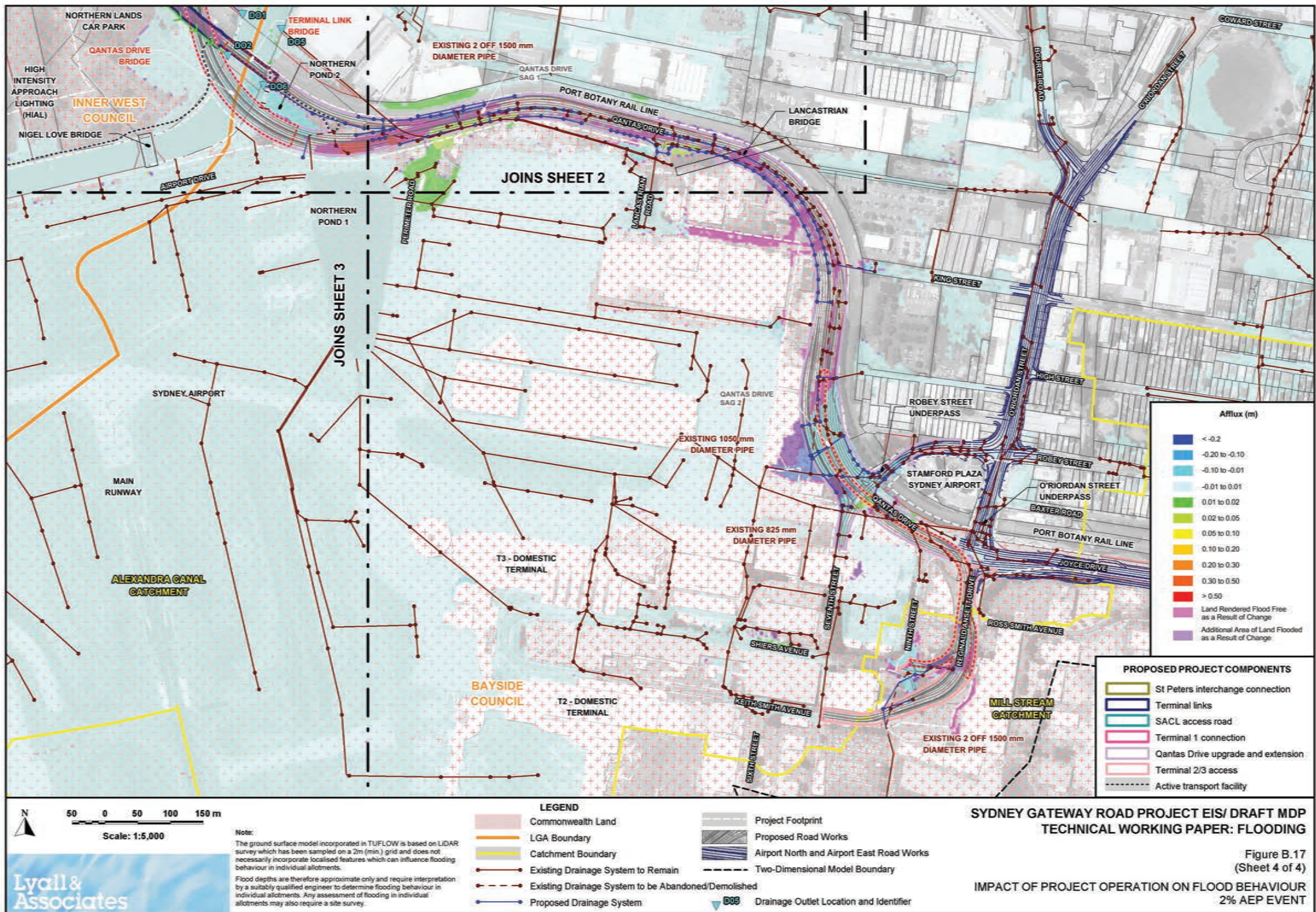SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
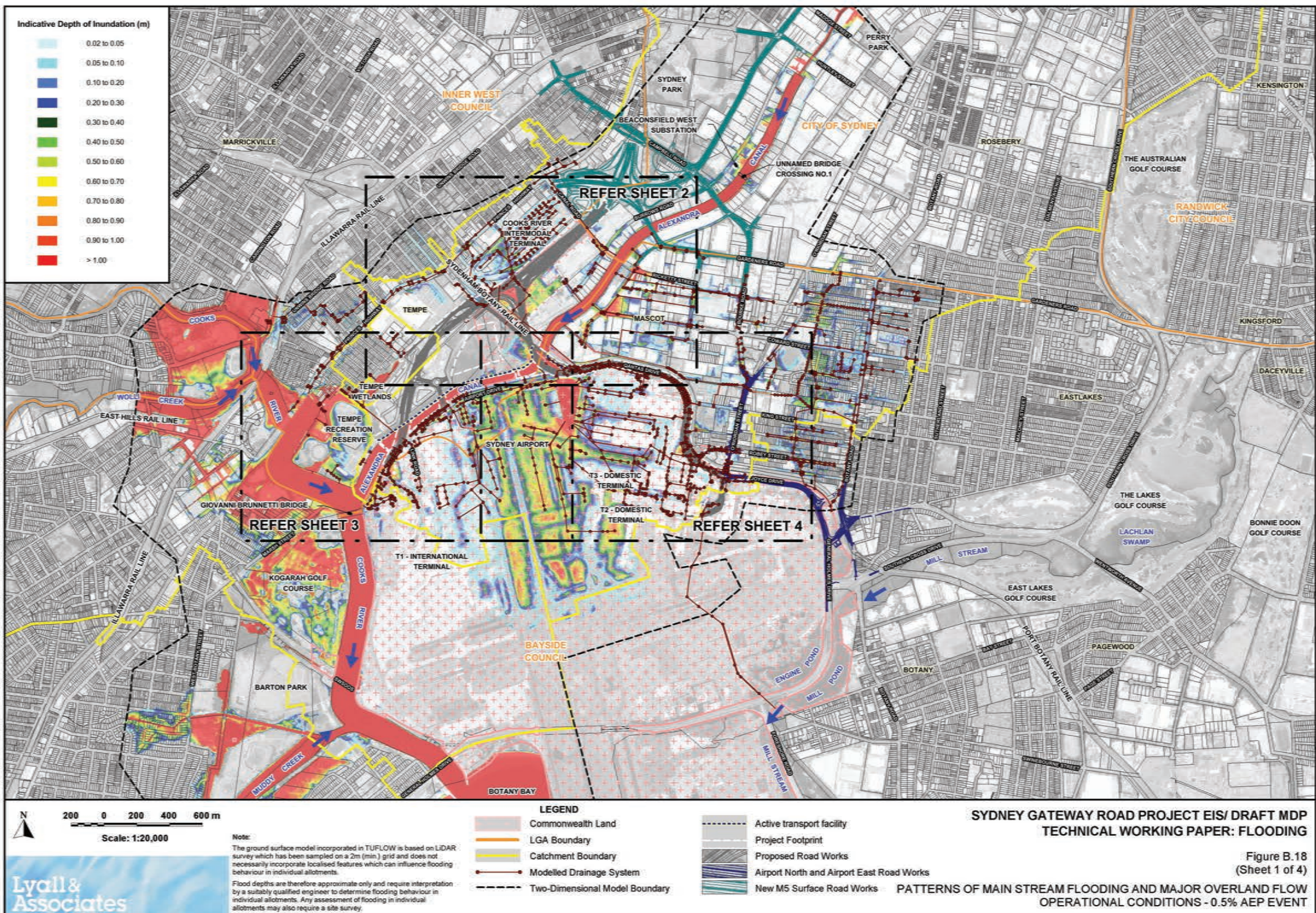TECHNICAL WORKING PAPER: FLOODING

Figure B.15
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
5% 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

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Two-Dimensional Model Boundary
- DO5 Drainage Outlet Location and Identifier

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

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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Indicative Depth of Inundation (m)

Colour	Range
	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

Scale: 1:20,000

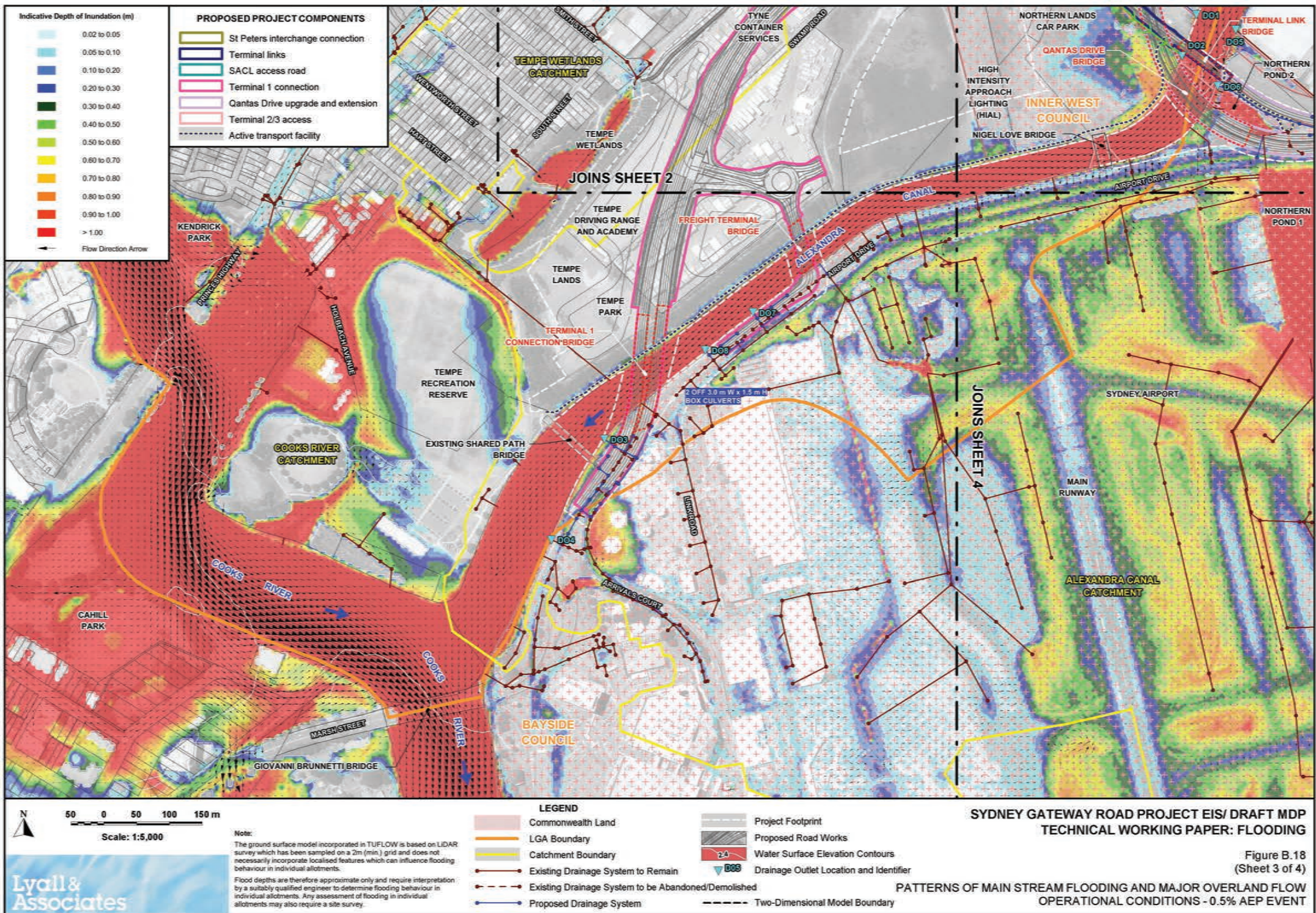200 0 200 400 600 m

N

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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.16
(Sheet 1 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 2% 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

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary
- Water Surface Elevation Contours

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.
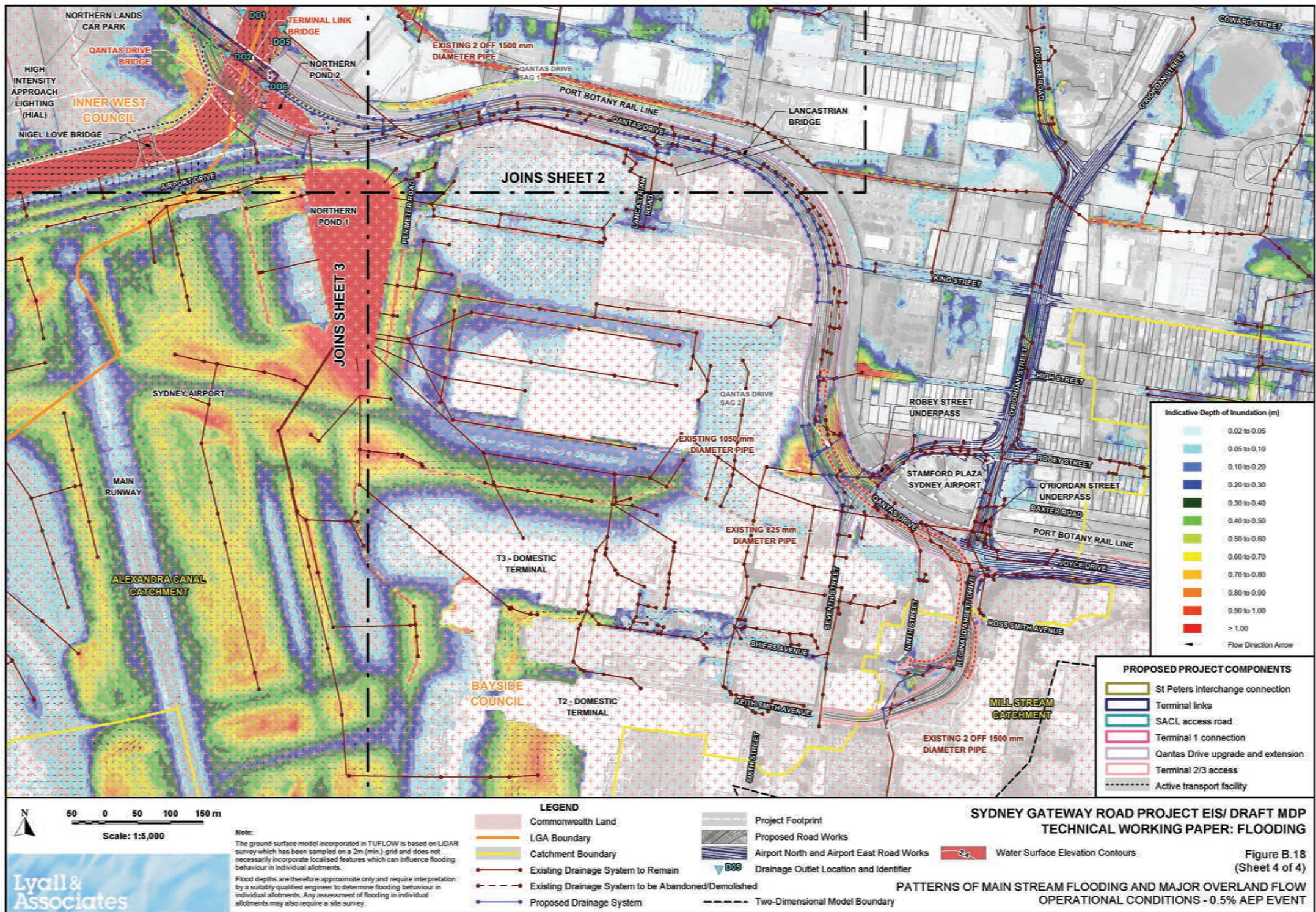
Scale: 1:5,000

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.16
(Sheet 2 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Water Surface Elevation Contours
- Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary

Scale: 1:5,000

50   0   50   100   150 m

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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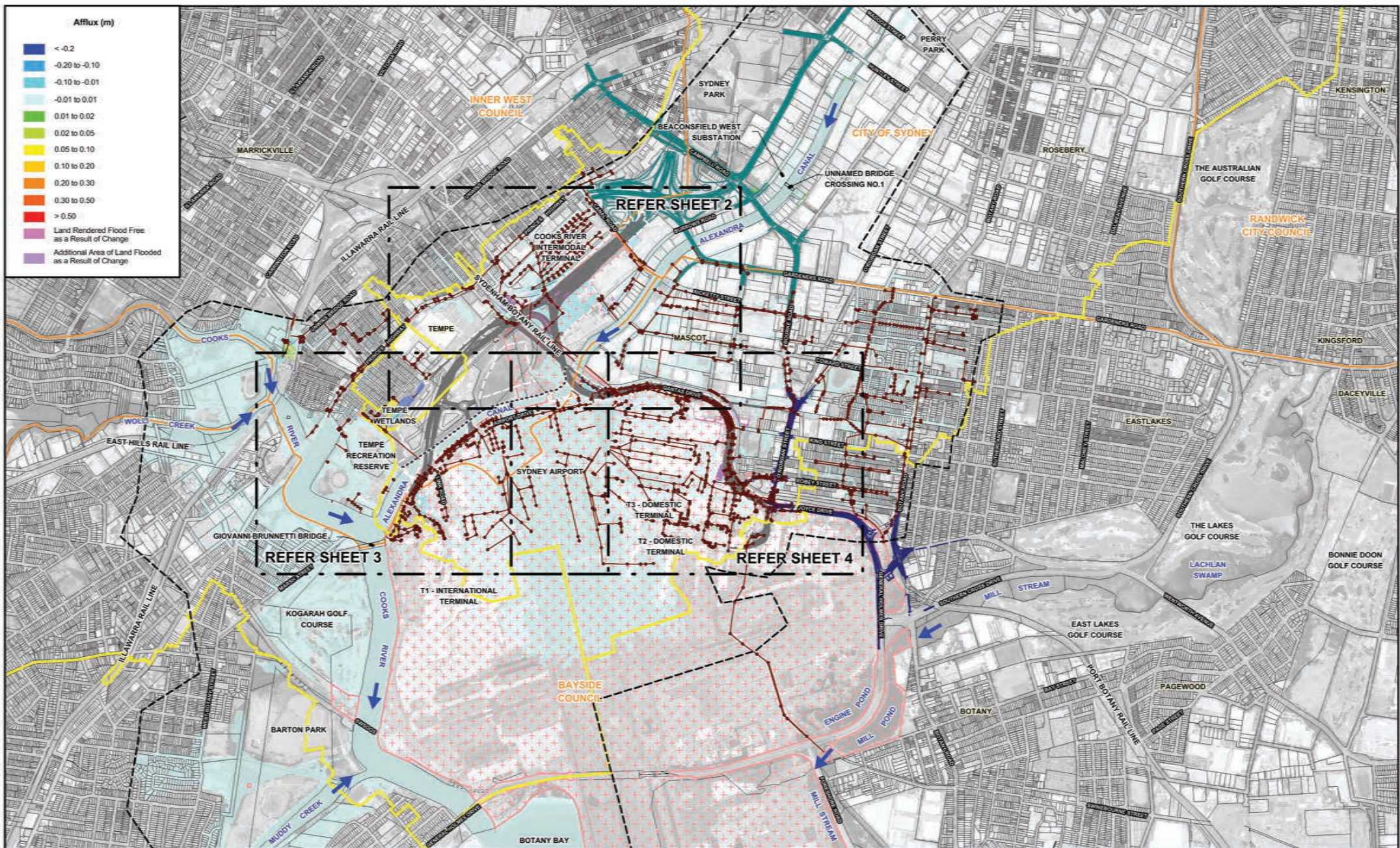
Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.16
(Sheet 3 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Drainage Outlet Location and Identifier
- Water Surface Elevation Contours
- Two-Dimensional Model Boundary
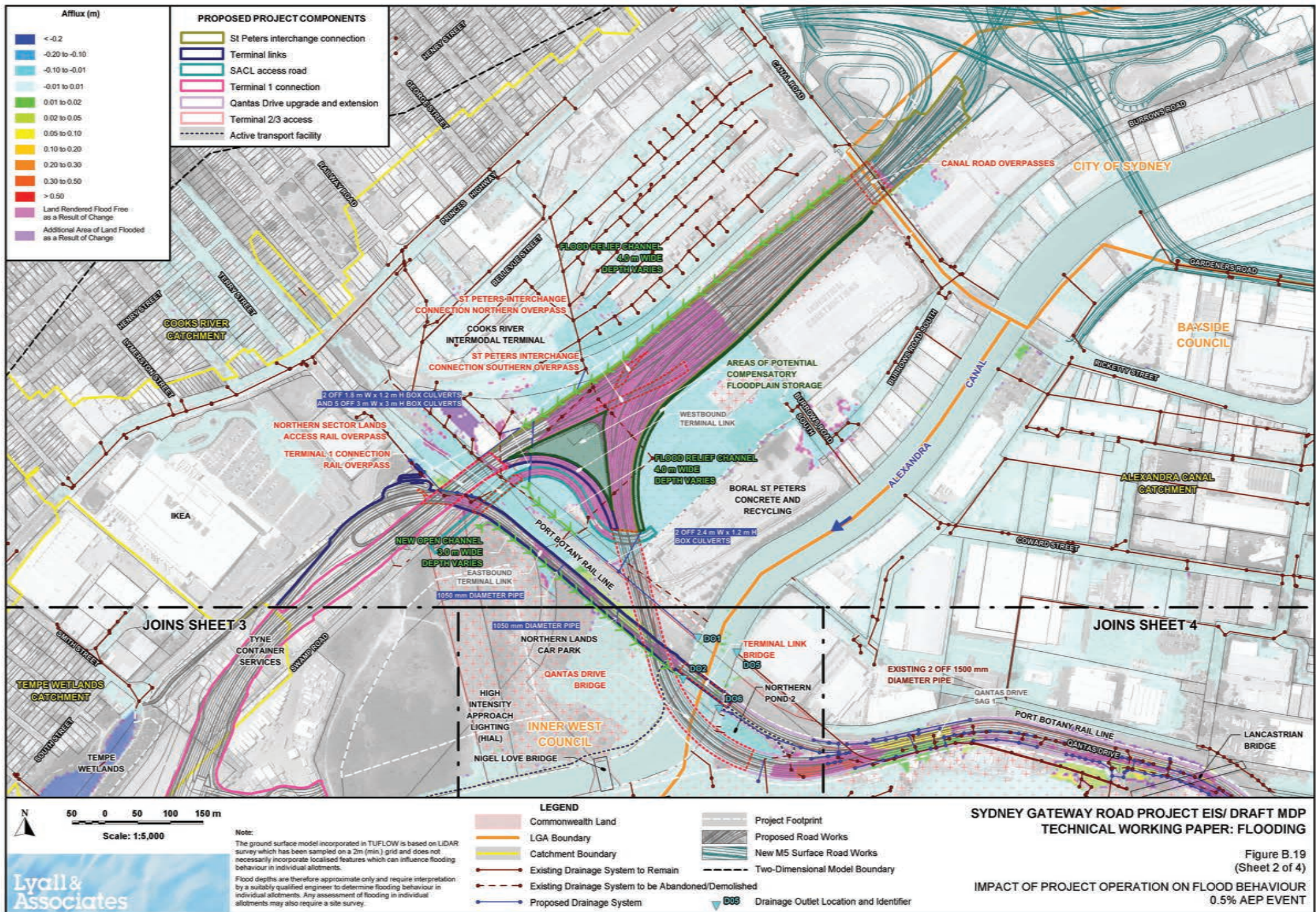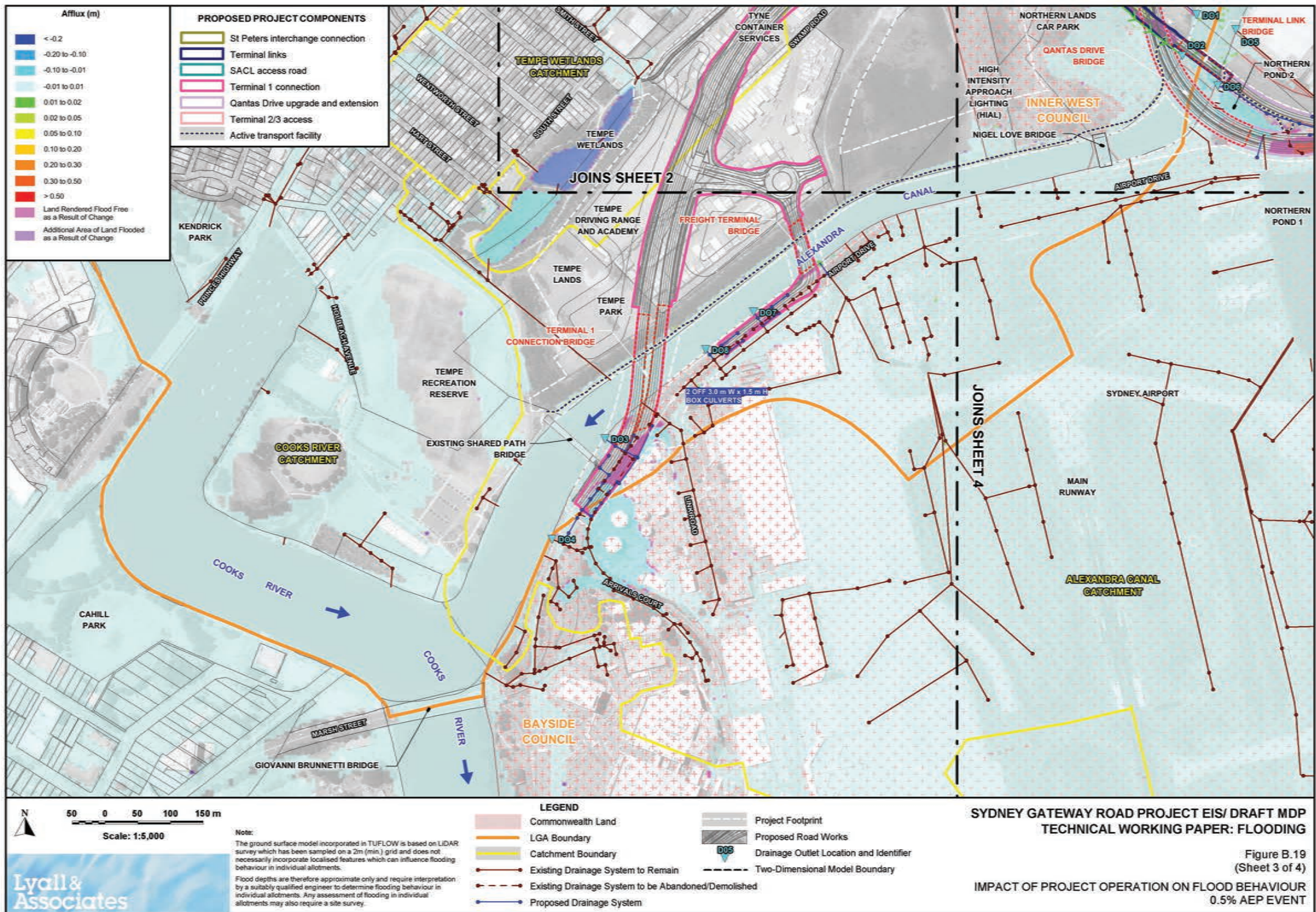
N

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.

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.16
(Sheet 4 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 2% AEP EVENT

Figure B.17
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
2% AEP EVENT

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

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
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works
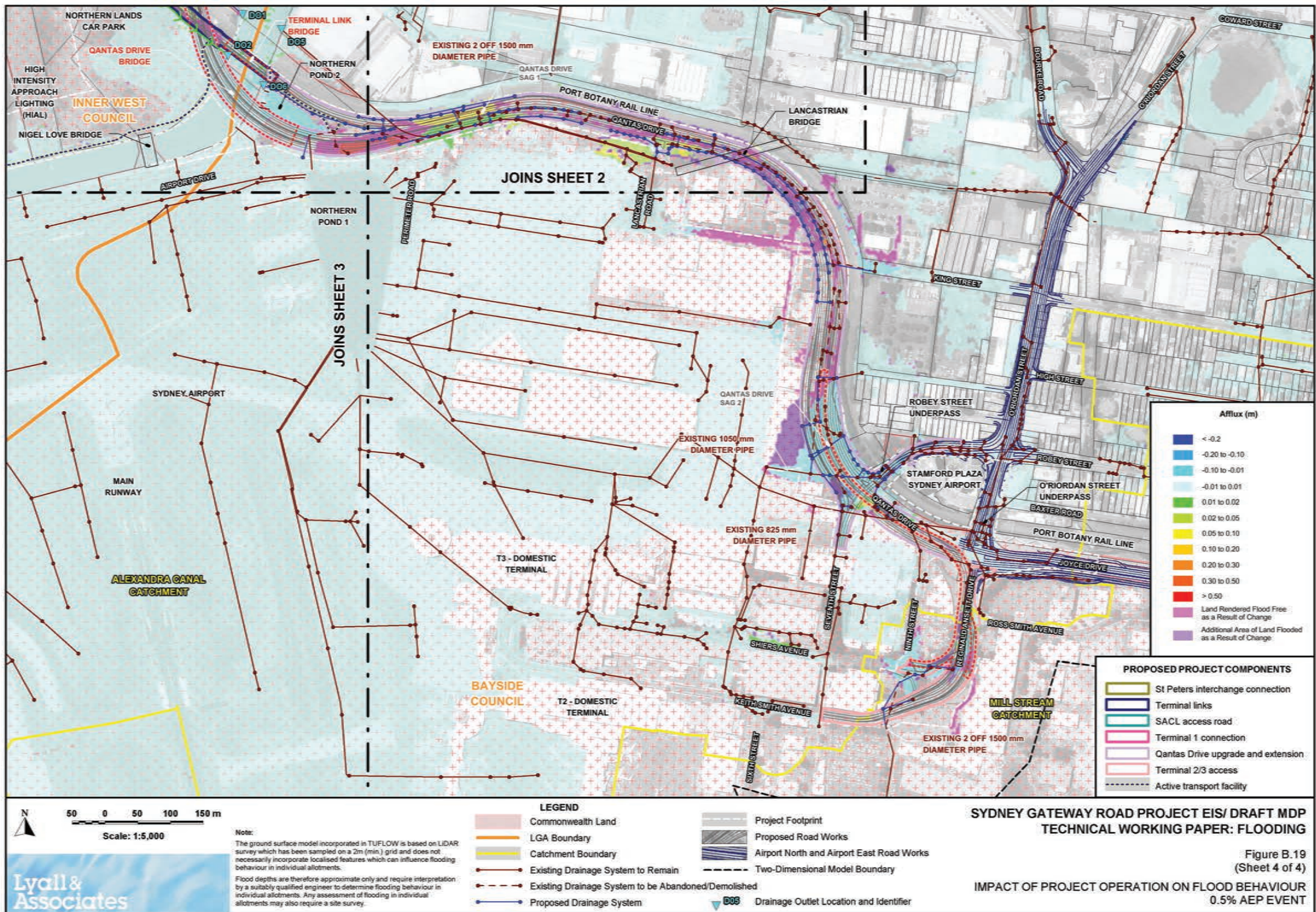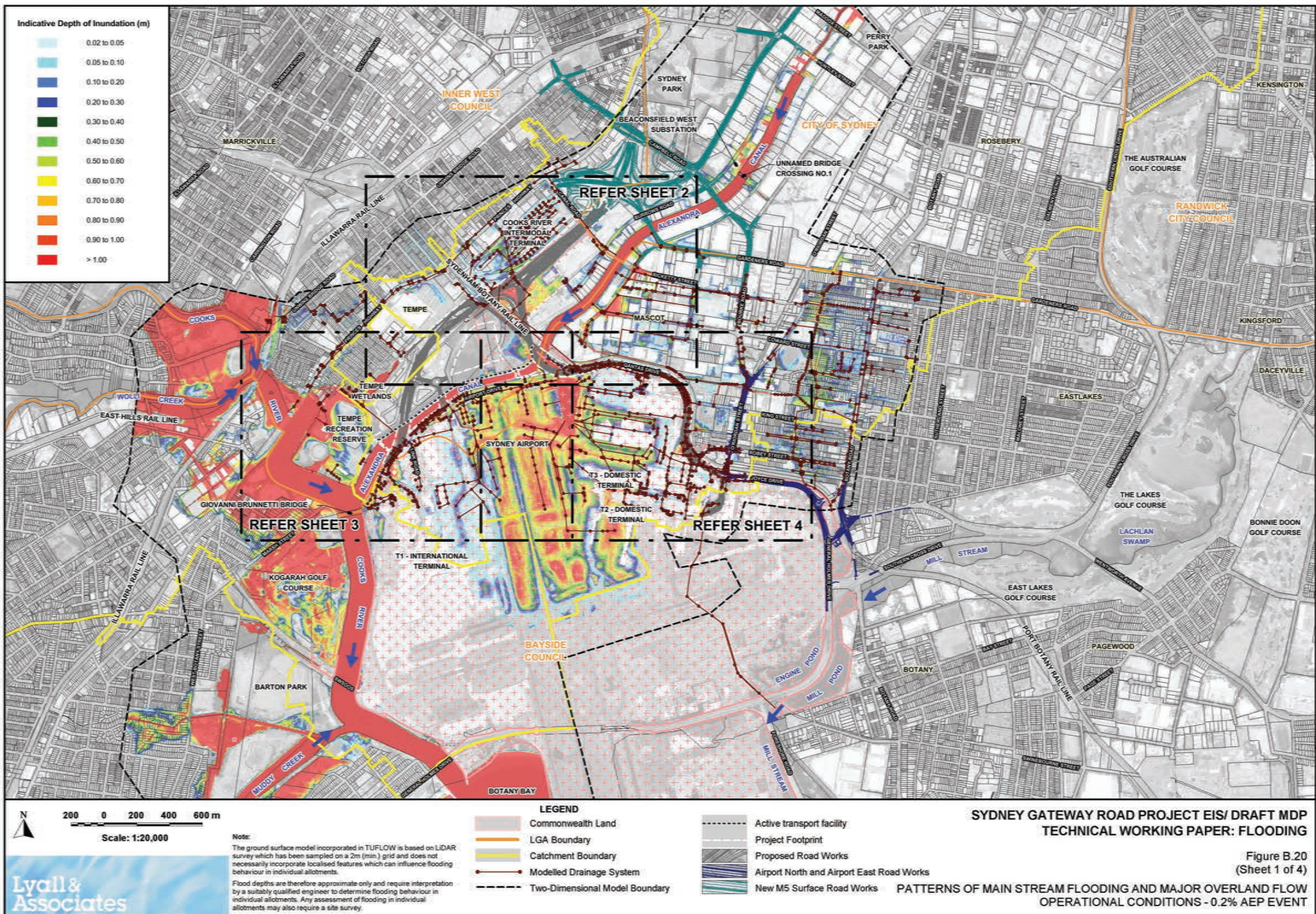
N

200 0 200 400 600 m

Scale: 1:20,000

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.

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Figure B.17 (Sheet 2 of 4) — Sydney Gateway Road Project EIS/ Draft MDP, Technical Working Paper: Flooding. Impact of Project Operation on Flood Behaviour, 2% 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

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- Two-Dimensional Model Boundary
- D05 — Drainage Outlet Location and Identifier

N

Scale: 1:5,000

50 0 50 100 150 m

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.
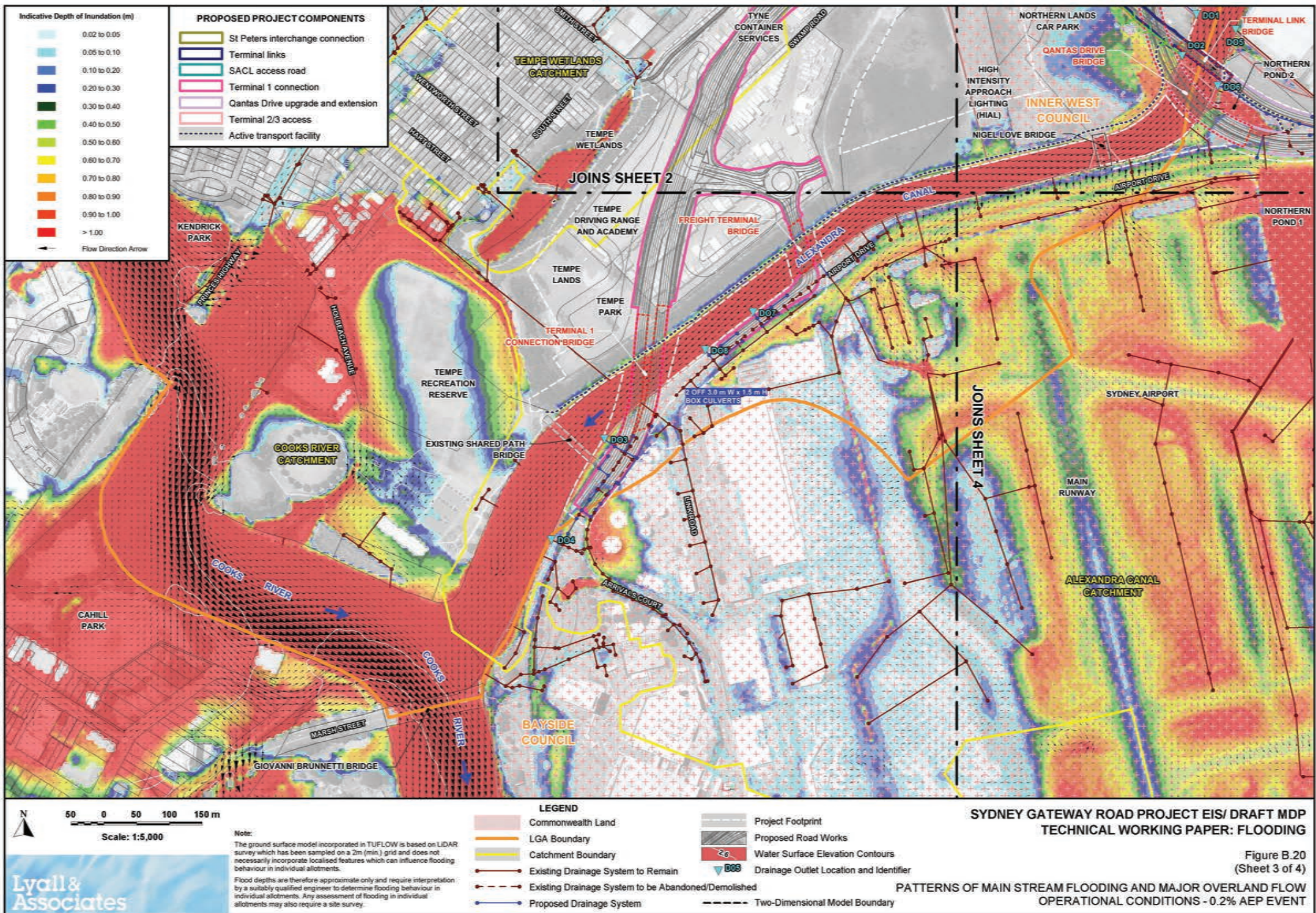
Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.17 (Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
2% AEP EVENT

Map labels: HENRY STREET, GEORGE STREET, RAILWAY ROAD, CANAL ROAD, BURROWS ROAD, CITY OF SYDNEY, CANAL ROAD OVERPASSES, GARDENERS ROAD, BAYSIDE COUNCIL, RICKETTY STREET, ALEXANDRA CANAL CATCHMENT, PRINCES HIGHWAY, BELLEVUE STREET, FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES, ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS, COOKS RIVER INTERMODAL TERMINAL, ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS, AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE, WESTBOUND TERMINAL LINK, BURROWS ROAD SOUTH, ALEXANDRA CANAL, COOKS RIVER CATCHMENT, TERRY STREET, COOKS RIVER CATCHMENT, WILTONIA STREET(?), 2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS, NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS, TERMINAL 1 CONNECTION RAIL OVERPASS, HENRY STREET, IKEA, FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES, BORAL ST PETERS CONCRETE AND RECYCLING, 2 OFF 2.4 m W x 1.2 m H BOX CULVERTS, COWARD STREET, NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES, EASTBOUND TERMINAL LINK, PORT BOTANY RAIL LINE, 1050 mm DIAMETER PIPE, JOINS SHEET 3, TYNE CONTAINER SERVICES, SWAMP ROAD, 1050 mm DIAMETER PIPE, NORTHERN LANDS CAR PARK, QANTAS DRIVE BRIDGE, D01, D02, TERMINAL LINK BRIDGE, D05, JOINS SHEET 4, EXISTING 2 OFF 1500 mm DIAMETER PIPE, QANTAS DRIVE SAG 1, SMITH STREET, TEMPE WETLANDS CATCHMENT, HIGH INTENSITY APPROACH LIGHTING (HIAL), INNER WEST COUNCIL, D06, NORTHERN POND 2, PORT BOTANY RAIL LINE, SOUTH STREET, TEMPE WETLANDS, NIGEL LOVE BRIDGE, QANTAS DRIVE, LANCASTRIAN BRIDGE

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

PROPOSED PROJECT COMPONENTS

- ▭ St Peters interchange connection
- ▭ Terminal links
- ▭ SACL access road
- ▭ Terminal 1 connection
- ▭ Qantas Drive upgrade and extension
- ▭ Terminal 2/3 access
- ---- Active transport facility

LEGEND

- ▨ Commonwealth Land
- — LGA Boundary
- — Catchment Boundary
- •—• Existing Drainage System to Remain
- •--• Existing Drainage System to be Abandoned/Demolished
- •—• Proposed Drainage System
- ▨ Project Footprint
- ▨ Proposed Road Works
- ▽ DO5 Drainage Outlet Location and Identifier
- –·–· Two-Dimensional Model Boundary

N

Scale: 1:5,000

50 0 50 100 150 m

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.17
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Two-Dimensional Model Boundary
- D05 Drainage Outlet Location and Identifier

Note:
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N

Scale: 1:5,000

50   0   50   100   150 m

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.17
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
2% 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

Scale: 1:20,000
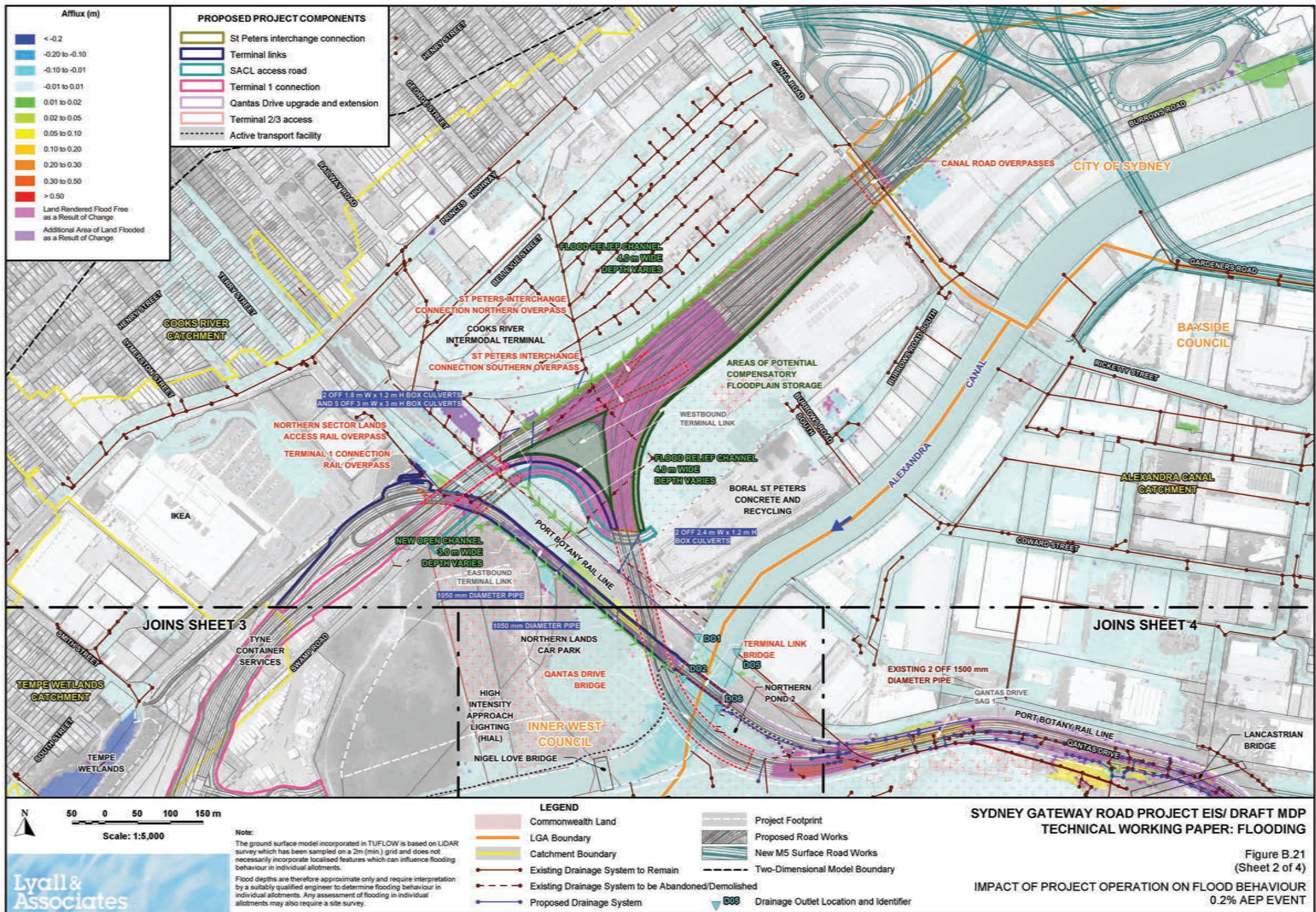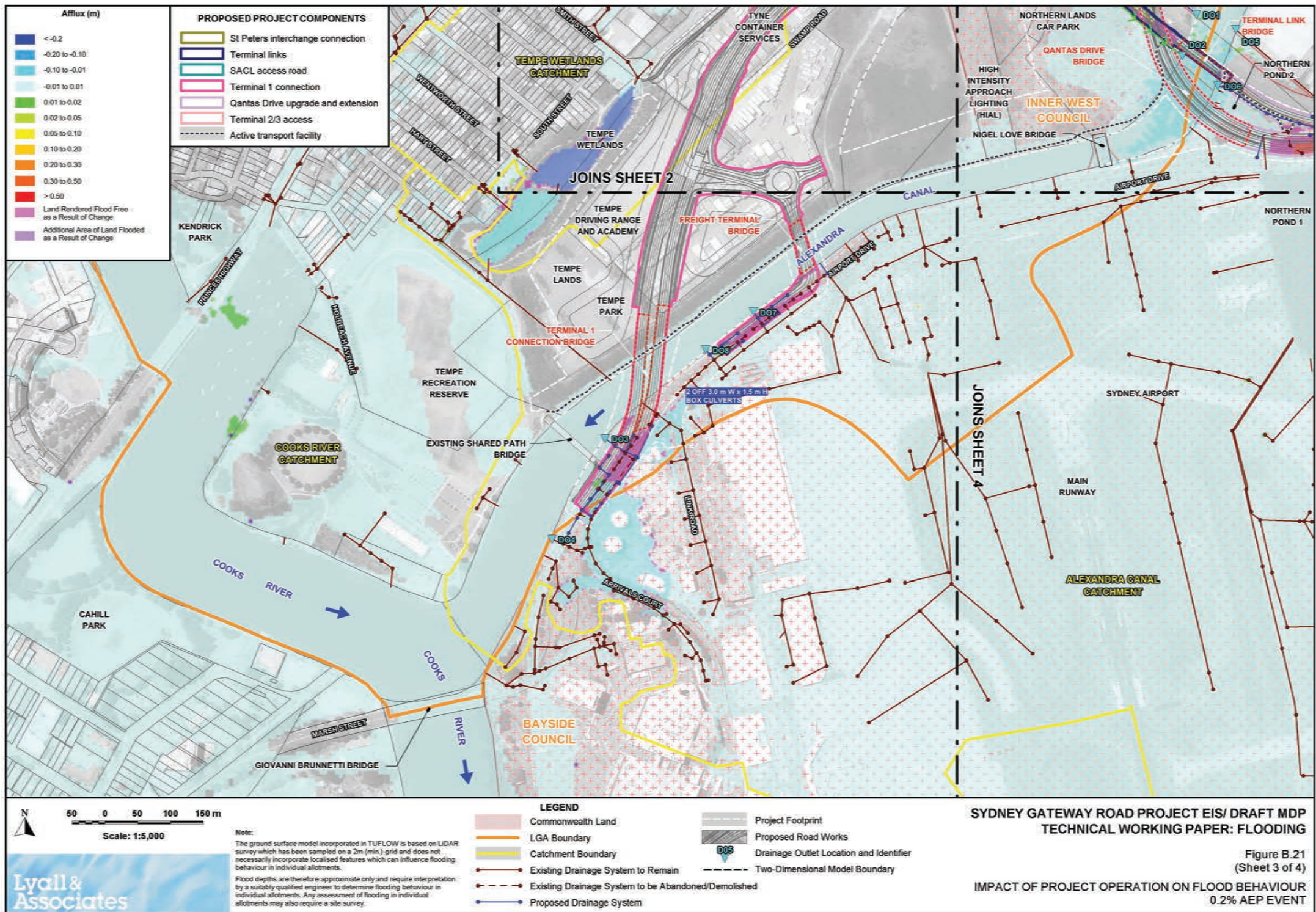
200 0 200 400 600 m

Note:
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LEGEND

	Commonwealth Land
	LGA Boundary
	Catchment Boundary
	Modelled Drainage System
	Two-Dimensional Model Boundary

	Active transport facility
	Project Footprint
	Proposed Road Works
	Airport North and Airport East Road Works
	New M5 Surface Road Works

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.18
(Sheet 1 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.5% AEP EVENT

Figure B.18
(Sheet 2 of 4)

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.5% AEP EVENT

Indicative Depth of Inundation (m)

Color	Depth
	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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- ⋯⋯ Active transport facility

JOINS SHEET 2

JOINS SHEET 4

Labels on map:

TEMPE WETLANDS CATCHMENT
TEMPE WETLANDS
SMITH STREET
TYNE CONTAINER SERVICES
SWAMP ROAD
NORTHERN LANDS CAR PARK
TERMINAL LINK BRIDGE
DO1
DO2
DO5
NORTHERN POND 2
QANTAS DRIVE BRIDGE
HIGH INTENSITY APPROACH LIGHTING (HIAL)
INNER WEST COUNCIL
NIGEL LOVE BRIDGE
AIRPORT DRIVE
WESTMORTH STREET
SOUTH STREET
HART STREET
TEMPE DRIVING RANGE AND ACADEMY
FREIGHT TERMINAL BRIDGE
ALEXANDRA CANAL
NORTHERN POND 1
KENDRICK PARK
PRINCES HIGHWAY
TEMPE LANDS
TEMPE PARK
TERMINAL 1 CONNECTION BRIDGE
DO7
DO8
AIRPORT DRIVE
SYDNEY AIRPORT
HOLBEACH AVENUE
TEMPE RECREATION RESERVE
EXISTING SHARED PATH BRIDGE
2 OFF 3.0 m W x 1.5 m H BOX CULVERTS
DO3
COOKS RIVER CATCHMENT
LINK ROAD
MAIN RUNWAY
CAHILL PARK
COOKS RIVER
DO4
ARRIVALS COURT
ALEXANDRA CANAL CATCHMENT
MARSH STREET
COOKS RIVER
BAYSIDE COUNCIL
DO9
GIOVANNI BRUNNETTI BRIDGE

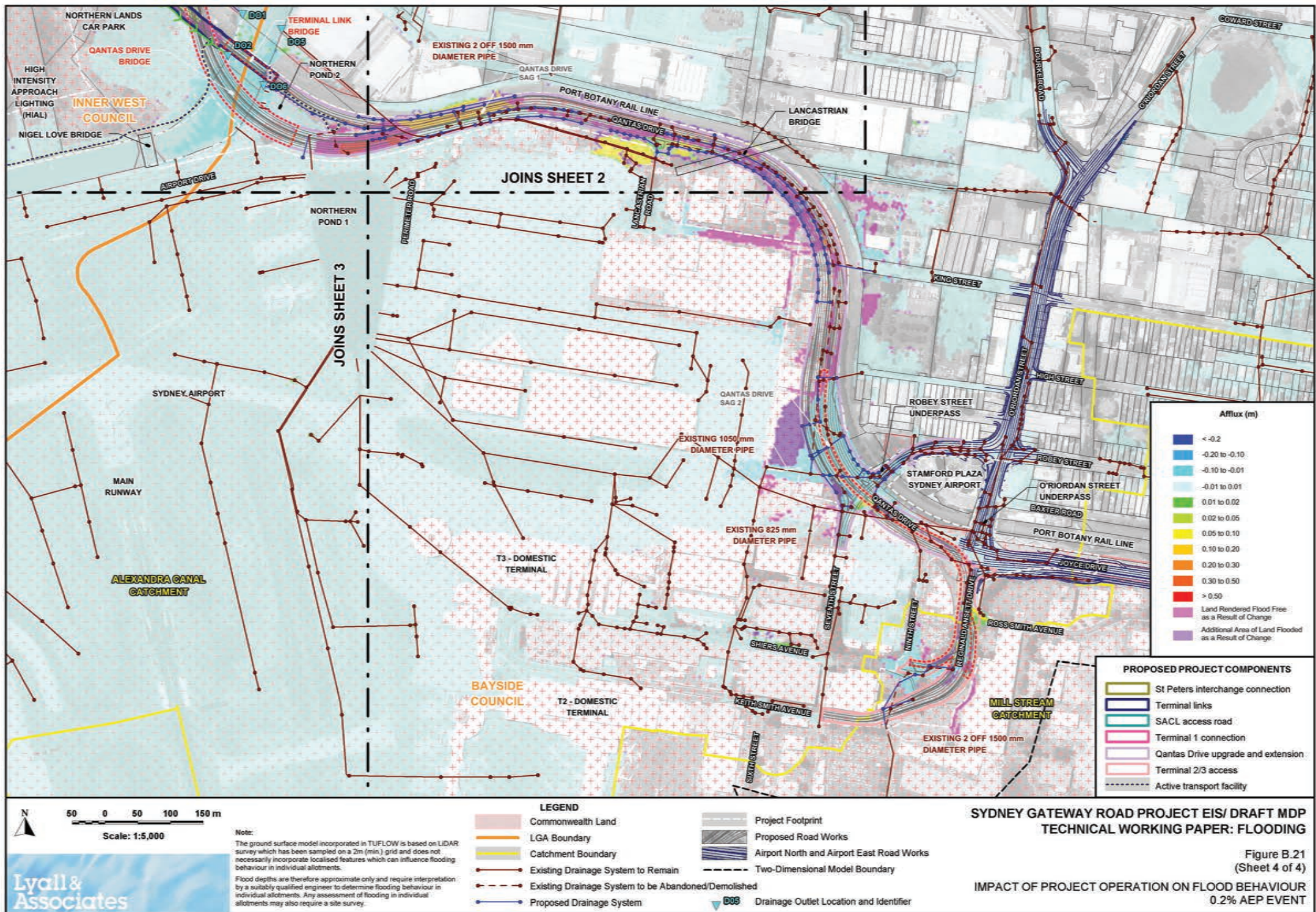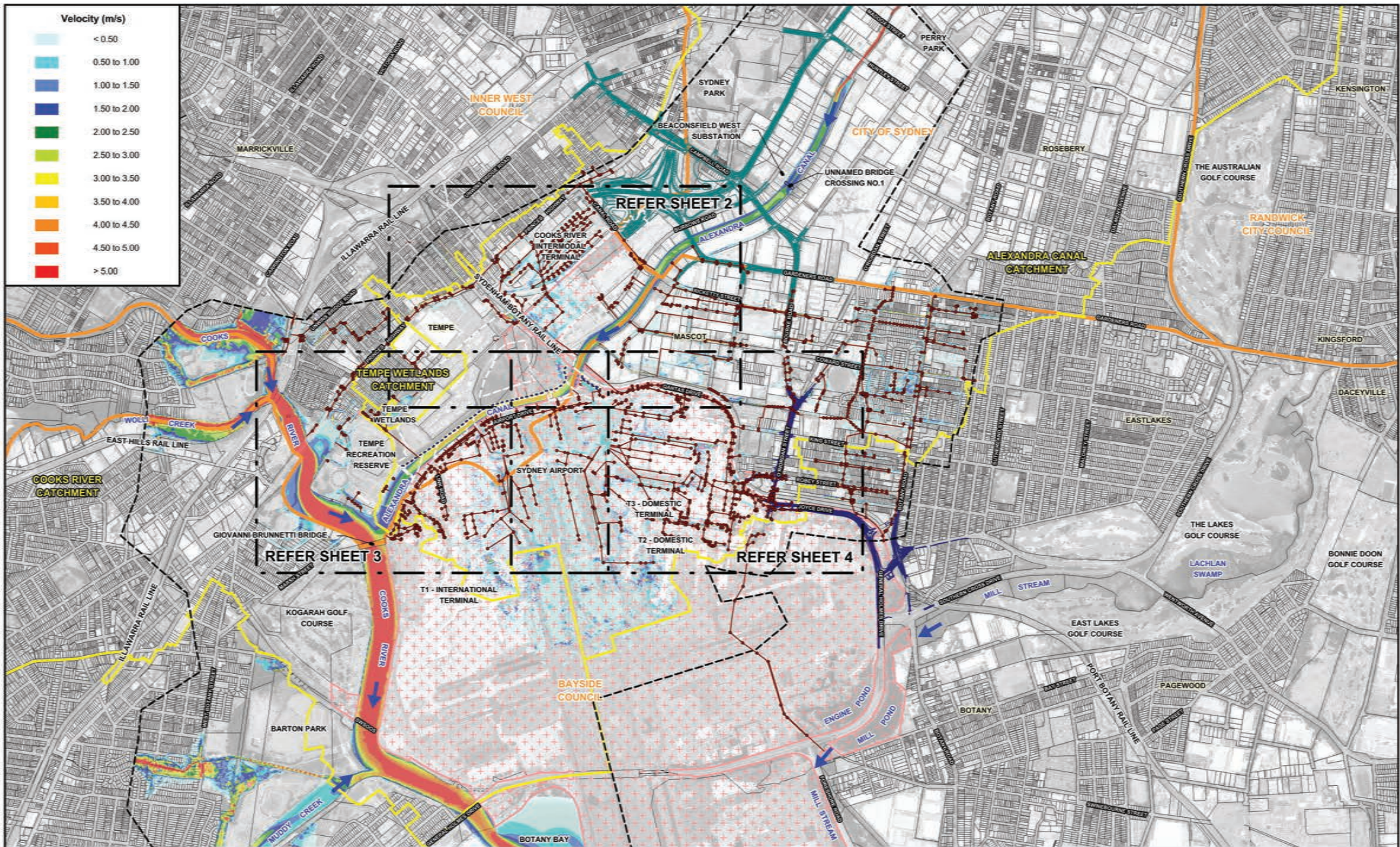**Scale bar:** 50 0 50 100 150 m — Scale 1:5,000

N

Note:
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LEGEND

Commonwealth Land	Project Footprint
LGA Boundary	Proposed Road Works
Catchment Boundary	Water Surface Elevation Contours
Existing Drainage System to Remain	Drainage Outlet Location and Identifier
Existing Drainage System to be Abandoned/Demolished	Two-Dimensional Model Boundary
Proposed Drainage System	

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.18
(Sheet 3 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.5% AEP EVENT

Indicative Depth of Inundation (m)

Colour	Range
	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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- DO5 Drainage Outlet Location and Identifier
- Water Surface Elevation Contours
- Two-Dimensional Model Boundary

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.

Scale: 1:5,000

50 0 50 100 150 m

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.18
(Sheet 4 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.5% AEP EVENT

Figure B.19
(Sheet 1 of 4)

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.5% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- Two-Dimensional Model Boundary
- D05 Drainage Outlet Location and Identifier

N

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

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.19
(Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.5% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.19
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.5% AEP EVENT

NORTHERN LANDS CAR PARK

QANTAS DRIVE BRIDGE

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

DO1
DO2
DO5
DO6

TERMINAL LINK BRIDGE

NORTHERN POND 2

EXISTING 2 OFF 1500 mm DIAMETER PIPE

QANTAS DRIVE SAG 1

QANTAS DRIVE

PORT BOTANY RAIL LINE

LANCASTRIAN BRIDGE

AIRPORT DRIVE

JOINS SHEET 2

NORTHERN POND 1

PERIMETER ROAD

LANCASTRIAN ROAD

JOINS SHEET 3

SYDNEY AIRPORT

QANTAS DRIVE SAG 2

EXISTING 1050 mm DIAMETER PIPE

ROBEY STREET UNDERPASS

KING STREET

BOURKE ROAD

O'RIORDAN STREET

COWARD STREET

HIGH STREET

O'RIORDAN STREET

STAMFORD PLAZA SYDNEY AIRPORT

ROBEY STREET

O'RIORDAN STREET UNDERPASS

BAXTER ROAD

MAIN RUNWAY

ALEXANDRA CANAL CATCHMENT

T3 - DOMESTIC TERMINAL

EXISTING 825 mm DIAMETER PIPE

QANTAS DRIVE

PORT BOTANY RAIL LINE

JOYCE DRIVE

SEVENTH STREET

NINTH STREET

REGINALD ANSETT DRIVE

ROSS SMITH AVENUE

SHIERS AVENUE

BAYSIDE COUNCIL

T2 - DOMESTIC TERMINAL

KEITH SMITH AVENUE

SIXTH STREET

MILL STREAM CATCHMENT

EXISTING 2 OFF 1500 mm DIAMETER PIPE

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

PROPOSED PROJECT COMPONENTS

▭	St Peters interchange connection
▭	Terminal links
▭	SACL access road
▭	Terminal 1 connection
▭	Qantas Drive upgrade and extension
▭	Terminal 2/3 access
▭	Active transport facility

N

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

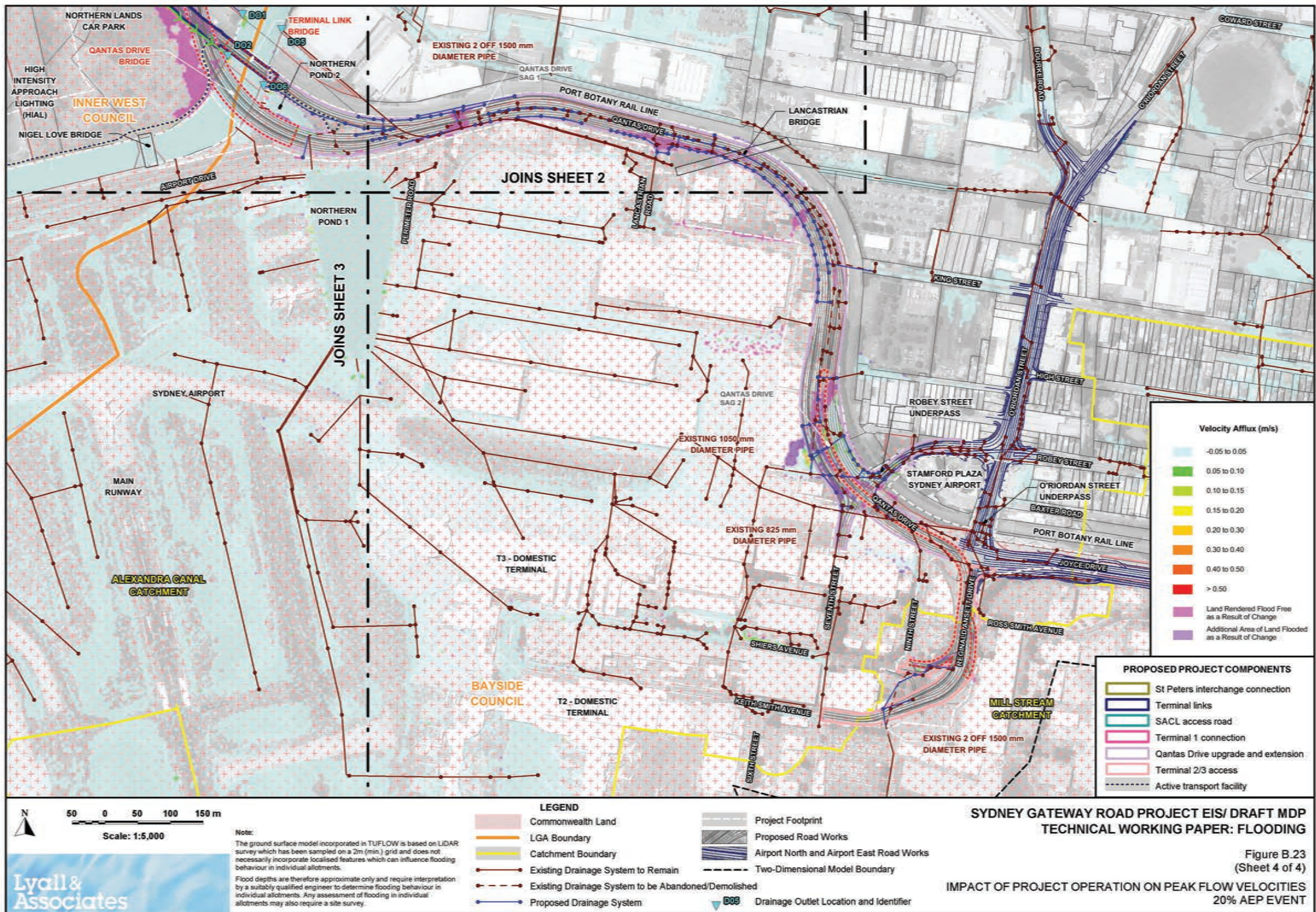|	
▨	Commonwealth Land
—	LGA Boundary
—	Catchment Boundary
•—•	Existing Drainage System to Remain
•--•	Existing Drainage System to be Abandoned/Demolished
•—•	Proposed Drainage System
▨	Project Footprint
▨	Proposed Road Works
▨	Airport North and Airport East Road Works
- - -	Two-Dimensional Model Boundary
▽ DO5	Drainage Outlet Location and Identifier

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.19
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.5% 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

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

N

Scale: 1:20,000

200 0 200 400 600 m

Note:

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.20
(Sheet 1 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

Map labels:

HENRY STREET · GEORGE STREET · CANAL ROAD · BURROWS ROAD · RAILWAY ROAD · PRINCES HIGHWAY · BELLEVUE STREET · CANAL ROAD OVERPASSES · CITY OF SYDNEY · GARDENERS ROAD · FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES · ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS · COOKS RIVER CATCHMENT · HENRY STREET · TERRY STREET · COOKS RIVER INTERMODAL TERMINAL · ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS · BAYSIDE COUNCIL · RICKETTY STREET · IMMERSTON STREET · WATERLOO ROAD · 2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS · AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE · WESTBOUND TERMINAL LINK · BURROWS ROAD SOUTH · BURROWS ROAD SOUTH · NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS · TERMINAL 1 CONNECTION RAIL OVERPASS · FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES · ALEXANDRA CANAL · ALEXANDRA CANAL CATCHMENT · IKEA · BORAL ST PETERS CONCRETE AND RECYCLING · NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES · PORT BOTANY RAIL LINE · 2 OFF 2.4 m W x 1.2 m H BOX CULVERTS · EASTBOUND TERMINAL LINK · COWARD STREET · 1050 mm DIAMETER PIPE · JOINS SHEET 3 · 1050 mm DIAMETER PIPE · NORTHERN LANDS CAR PARK · DO1 · TERMINAL LINK BRIDGE · DO5 · JOINS SHEET 4 · SMITH STREET · TYNE CONTAINER SERVICES · SWAMP ROAD · QANTAS DRIVE BRIDGE · DO2 · DO6 · NORTHERN POND 2 · EXISTING 2 OFF 1500 mm DIAMETER PIPE · QANTAS DRIVE SAG 1 · HIGH INTENSITY APPROACH LIGHTING (HIAL) · INNER WEST COUNCIL · PORT BOTANY RAIL LINE · TEMPE WETLANDS CATCHMENT · SOUTH STREET · TEMPE WETLANDS · NIGEL LOVE BRIDGE · QANTAS DRIVE · LANCASTRIAN BRIDGE

Scale: 1:5,000

50 0 50 100 150 m

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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LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- DO5 — Drainage Outlet Location and Identifier
- 2.6 — Water Surface Elevation Contours
- Two-Dimensional Model Boundary

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.20
(Sheet 2 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- ---- Active transport facility

JOINS SHEET 2

JOINS SHEET 4

TEMPE WETLANDS CATCHMENT

TEMPE WETLANDS

TEMPE DRIVING RANGE AND ACADEMY

TEMPE LANDS

TEMPE PARK

KENDRICK PARK

TEMPE RECREATION RESERVE

COOKS RIVER CATCHMENT

CAHILL PARK

COOKS RIVER

COOKS RIVER

MARSH STREET

GIOVANNI BRUNNETTI BRIDGE

TERMINAL 1 CONNECTION BRIDGE

EXISTING SHARED PATH BRIDGE

2 OFF 3.0 m W x 1.5 m H BOX CULVERTS

ARRIVALS COURT

LINK ROAD

BAYSIDE COUNCIL

SMITH STREET

WENTWORTH STREET

SOUTH STREET

HART STREET

PRINCES HIGHWAY

HOLBEACH AVENUE

TYNE CONTAINER SERVICES

SWAMP ROAD

FREIGHT TERMINAL BRIDGE

ALEXANDRA CANAL

AIRPORT DRIVE

NORTHERN LANDS CAR PARK

QANTAS DRIVE BRIDGE

HIGH INTENSITY APPROACH LIGHTING (HIAL)

NIGEL LOVE BRIDGE

INNER WEST COUNCIL

TERMINAL LINK BRIDGE

NORTHERN POND 2

NORTHERN POND 1

SYDNEY AIRPORT

MAIN RUNWAY

ALEXANDRA CANAL CATCHMENT

DO1, DO2, DO5, DO6, DO7, DO8, DO3, DO4, DO9

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- 2.6 Water Surface Elevation Contours
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary

N

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.

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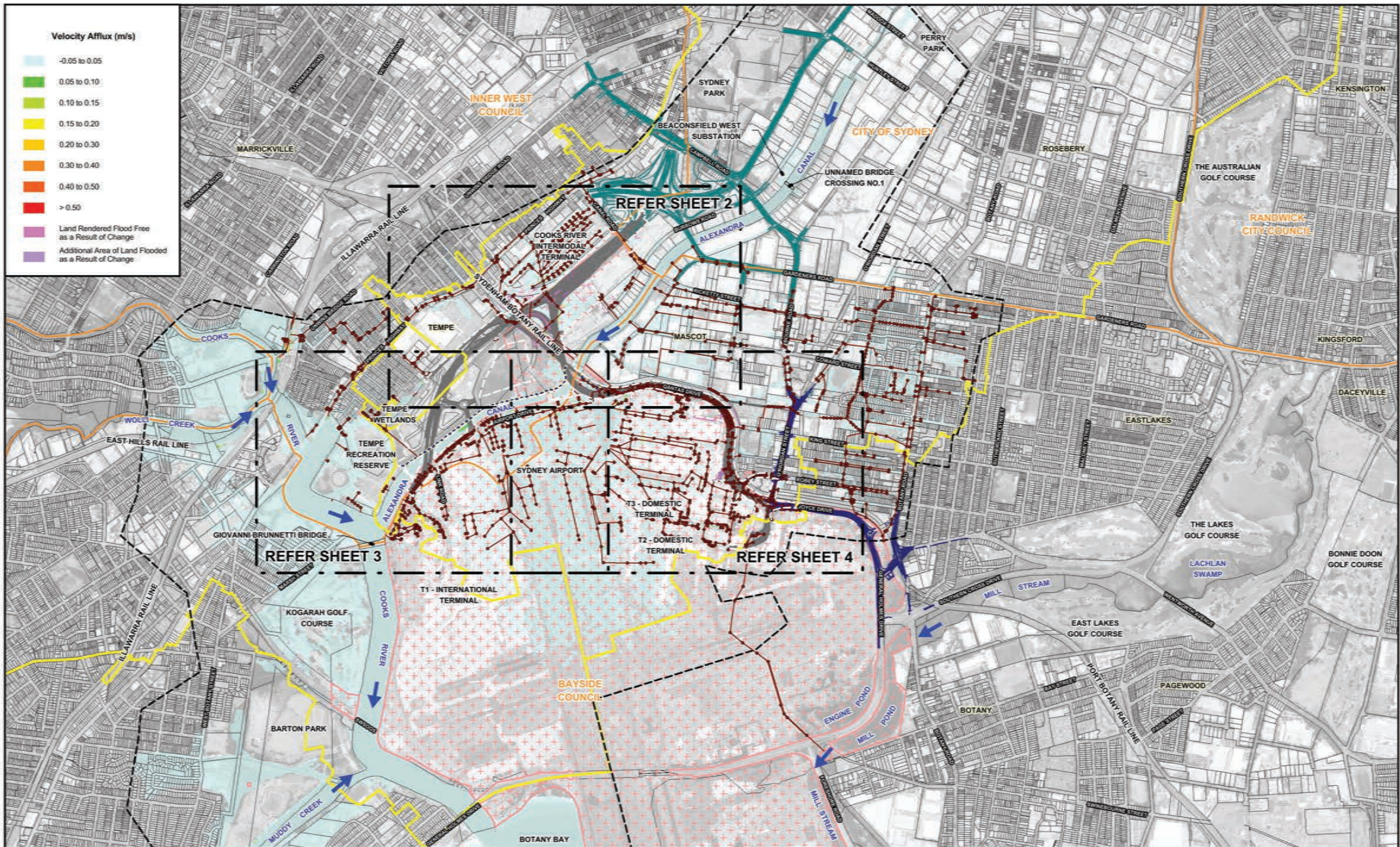
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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.20
(Sheet 3 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.2% AEP EVENT

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

Map labels:
- NORTHERN LANDS CAR PARK
- DO1
- TERMINAL LINK BRIDGE
- DO5
- QANTAS DRIVE BRIDGE
- DO2
- NORTHERN POND 2
- DO3
- COWARD STREET
- EXISTING 2 OFF 1500 mm DIAMETER PIPE
- QANTAS DRIVE SAG 1
- O'RIORDAN STREET
- DOUBLE ROAD
- HIGH INTENSITY APPROACH LIGHTING (HIAL)
- INNER WEST COUNCIL
- QANTAS DRIVE
- PORT BOTANY RAIL LINE
- NIGEL LOVE BRIDGE
- LANCASTRIAN BRIDGE
- AIRPORT DRIVE
- JOINS SHEET 2
- PERIMETER ROAD
- LANCASTRIAN ROAD
- NORTHERN POND 1
- KING STREET
- JOINS SHEET 3
- SYDNEY AIRPORT
- QANTAS DRIVE SAG 2
- HIGH STREET
- ROBEY STREET UNDERPASS
- MAIN RUNWAY
- EXISTING 1050 mm DIAMETER PIPE
- ROBEY STREET
- STAMFORD PLAZA SYDNEY AIRPORT
- O'RIORDAN STREET UNDERPASS
- BAXTER ROAD
- EXISTING 825 mm DIAMETER PIPE
- QANTAS DRIVE
- PORT BOTANY RAIL LINE
- ALEXANDRA CANAL CATCHMENT
- JOYCE DRIVE
- T3 - DOMESTIC TERMINAL
- SEVENTH STREET
- ROSS SMITH AVENUE
- SHIERS AVENUE
- NINTH STREET
- REGINALD ANSETT DRIVE
- BAYSIDE COUNCIL
- T2 - DOMESTIC TERMINAL
- KEITH SMITH AVENUE
- MILL STREAM CATCHMENT
- SIXTH STREET
- EXISTING 2 OFF 1500 mm DIAMETER PIPE

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

N

Note:
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LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Two-Dimensional Model Boundary
- Water Surface Elevation Contours
- DO5 Drainage Outlet Location and Identifier

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.20
(Sheet 4 of 4)

PATTERNS OF MAIN STREAM FLOODING AND MAJOR OVERLAND FLOW
OPERATIONAL CONDITIONS - 0.2% 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

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

INNER WEST COUNCIL

CITY OF SYDNEY

RANDWICK CITY COUNCIL

BAYSIDE COUNCIL

SYDNEY PARK

BEACONSFIELD WEST SUBSTATION

UNNAMED BRIDGE CROSSING NO.1

COOKS RIVER INTERMODAL TERMINAL

PERRY PARK

KENSINGTON

ROSEBERY

THE AUSTRALIAN GOLF COURSE

MARRICKVILLE

ILLAWARRA RAIL LINE

SYDENHAM-BOTANY RAIL LINE

ALEXANDRA CANAL

TEMPE

MASCOT

KINGSFORD

DACEYVILLE

COOKS RIVER

WOLLI CREEK

EAST HILLS RAIL LINE

TEMPE WETLANDS

TEMPE RECREATION RESERVE

SYDNEY AIRPORT

T3 - DOMESTIC TERMINAL

T2 - DOMESTIC TERMINAL

EASTLAKES

THE LAKES GOLF COURSE

LACHLAN SWAMP

BONNIE DOON GOLF COURSE

GIOVANNI BRUNNETTI BRIDGE

ILLAWARRA RAIL LINE

COOKS RIVER

T1 - INTERNATIONAL TERMINAL

KOGARAH GOLF COURSE

MILL STREAM

EAST LAKES GOLF COURSE

PAGEWOOD

BARTON PARK

ENGINE POND

MILL POND

BOTANY

BAY STREET

PORT BOTANY RAIL LINE

MUDDY CREEK

BOTANY BAY

MILL STREAM

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

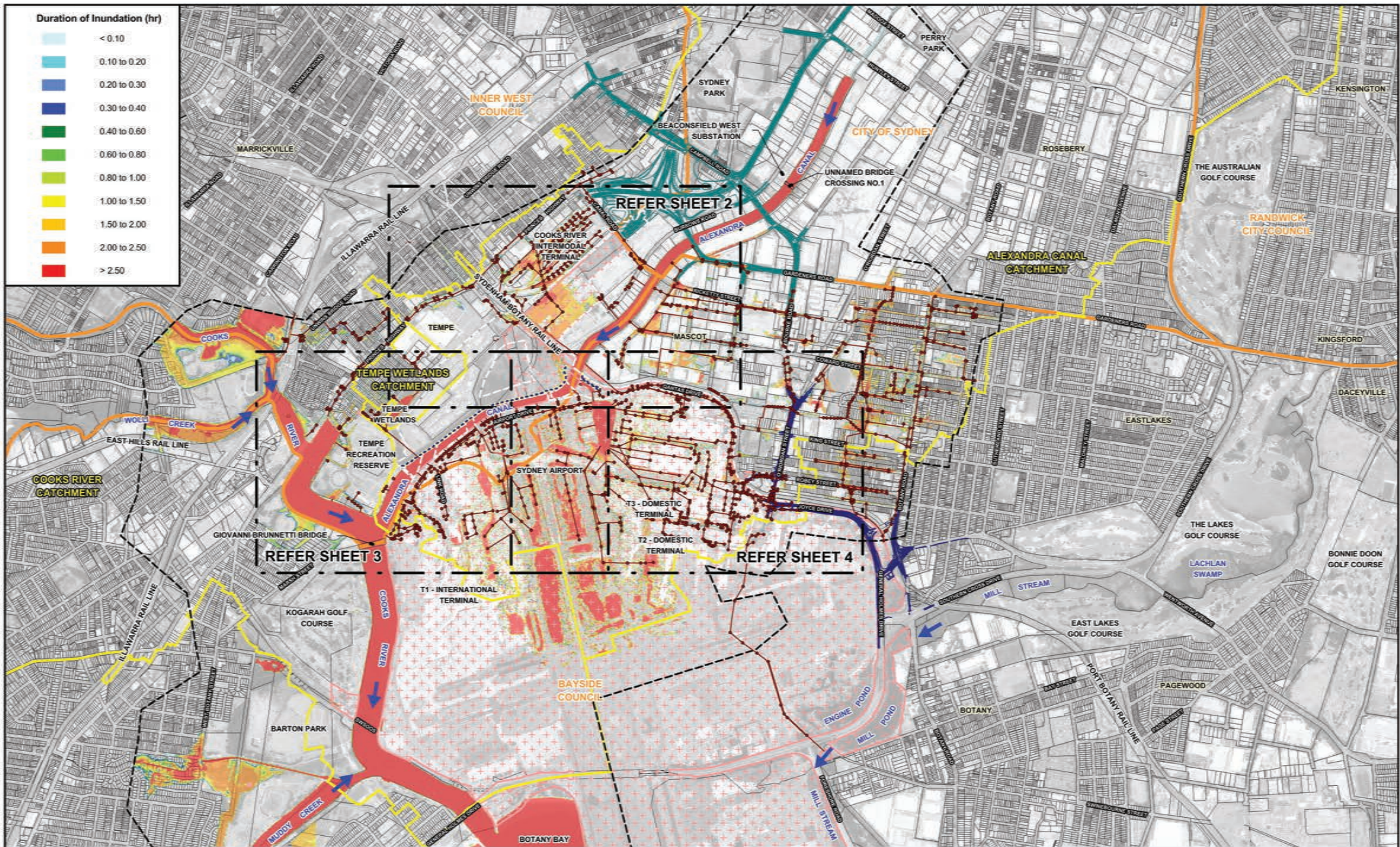N

200 0 200 400 600 m

Scale: 1:20,000

Note:
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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.21
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.2% AEP EVENT

Figure B.21 (Sheet 2 of 4) — Sydney Gateway Road Project EIS/Draft MDP, Technical Working Paper: Flooding. Impact of Project Operation on Flood Behaviour, 0.2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary

Note:
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Scale: 1:5,000

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.21
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.2% 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

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- •—• Existing Drainage System to Remain
- •--• Existing Drainage System to be Abandoned/Demolished
- •—• Proposed Drainage System
- ▽ D05 Drainage Outlet Location and Identifier
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- --- Two-Dimensional Model Boundary

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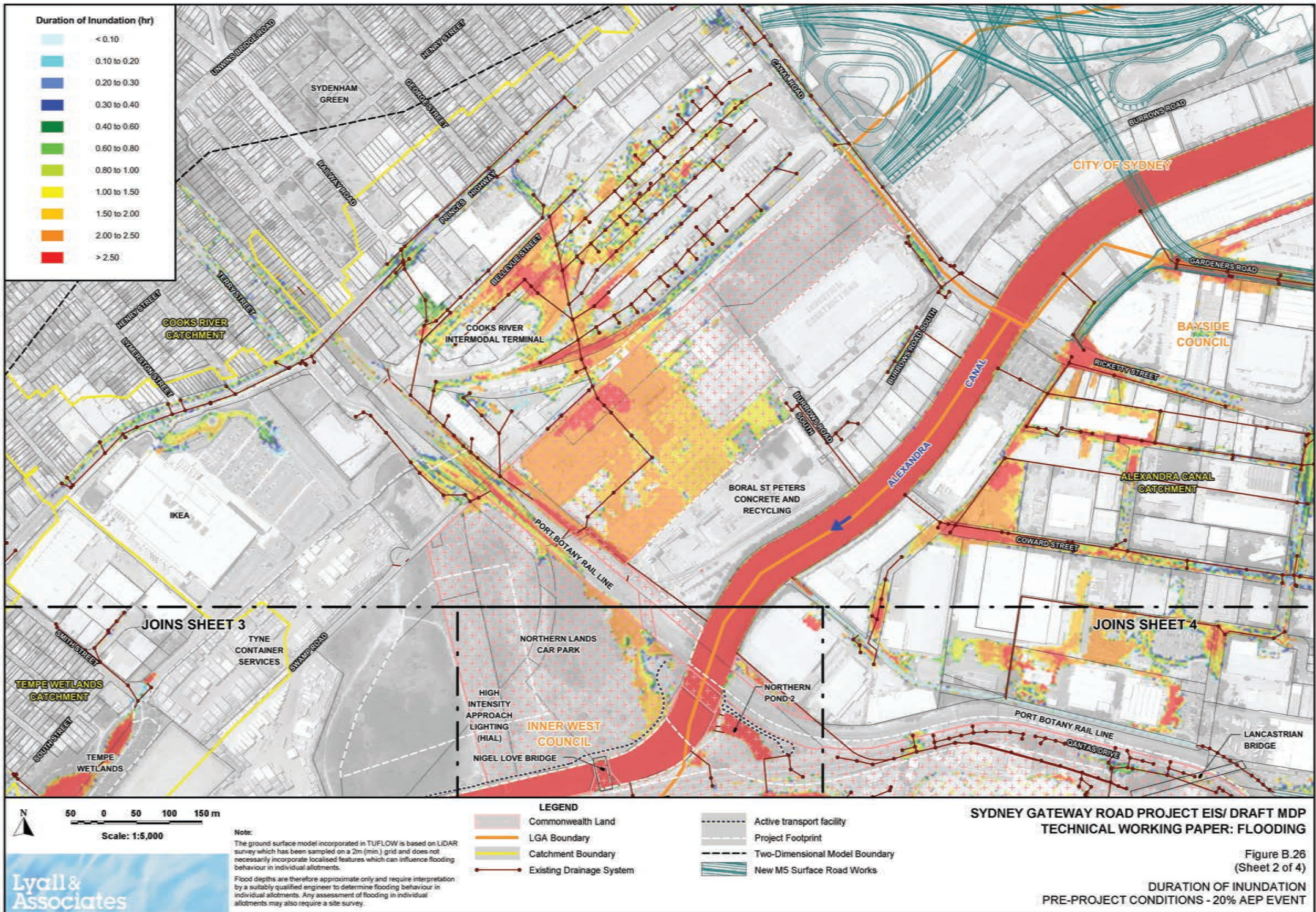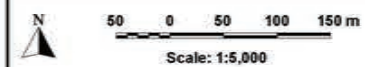
Scale: 1:5,000
50 0 50 100 150 m

Note:
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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.21
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON FLOOD BEHAVIOUR
0.2% AEP EVENT

Velocity (m/s)

	< 0.50
	0.50 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	2.50 to 3.00
	3.00 to 3.50
	3.50 to 4.00
	4.00 to 4.50
	4.50 to 5.00
	> 5.00

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

INNER WEST COUNCIL

CITY OF SYDNEY

RANDWICK CITY COUNCIL

BAYSIDE COUNCIL

SYDNEY PARK

BEACONSFIELD WEST SUBSTATION

UNNAMED BRIDGE CROSSING NO.1

ALEXANDRA CANAL CATCHMENT

COOKS RIVER CATCHMENT

TEMPE WETLANDS CATCHMENT

MARRICKVILLE

ROSEBERY

THE AUSTRALIAN GOLF COURSE

KENSINGTON

KINGSFORD

DACEYVILLE

EASTLAKES

THE LAKES GOLF COURSE

BONNIE DOON GOLF COURSE

LACHLAN SWAMP

EAST LAKES GOLF COURSE

PAGEWOOD

BOTANY

COOKS RIVER INTERMODAL TERMINAL

TEMPE

MASCOT

TEMPE WETLANDS

TEMPE RECREATION RESERVE

SYDNEY AIRPORT

T3 - DOMESTIC TERMINAL

T2 - DOMESTIC TERMINAL

T1 - INTERNATIONAL TERMINAL

GIOVANNI BRUNNETTI BRIDGE

KOGARAH GOLF COURSE

BARTON PARK

COOKS RIVER

WOLLI CREEK

ALEXANDRA CANAL

ILLAWARRA RAIL LINE

EAST HILLS RAIL LINE

SYDENHAM/BOTANY RAIL LINE

ENGINE POND

MILL POND

MILL STREAM

BOTANY BAY

MUDDY CREEK

LEGEND

– – –	Two-Dimensional Model Boundary
	Commonwealth Land
——	LGA Boundary
——	Catchment Boundary
•—•	Existing Drainage System

- - -	Active transport facility
	Project Footprint
	Airport North and Airport East Road Works
	New M5 Surface Road Works

N

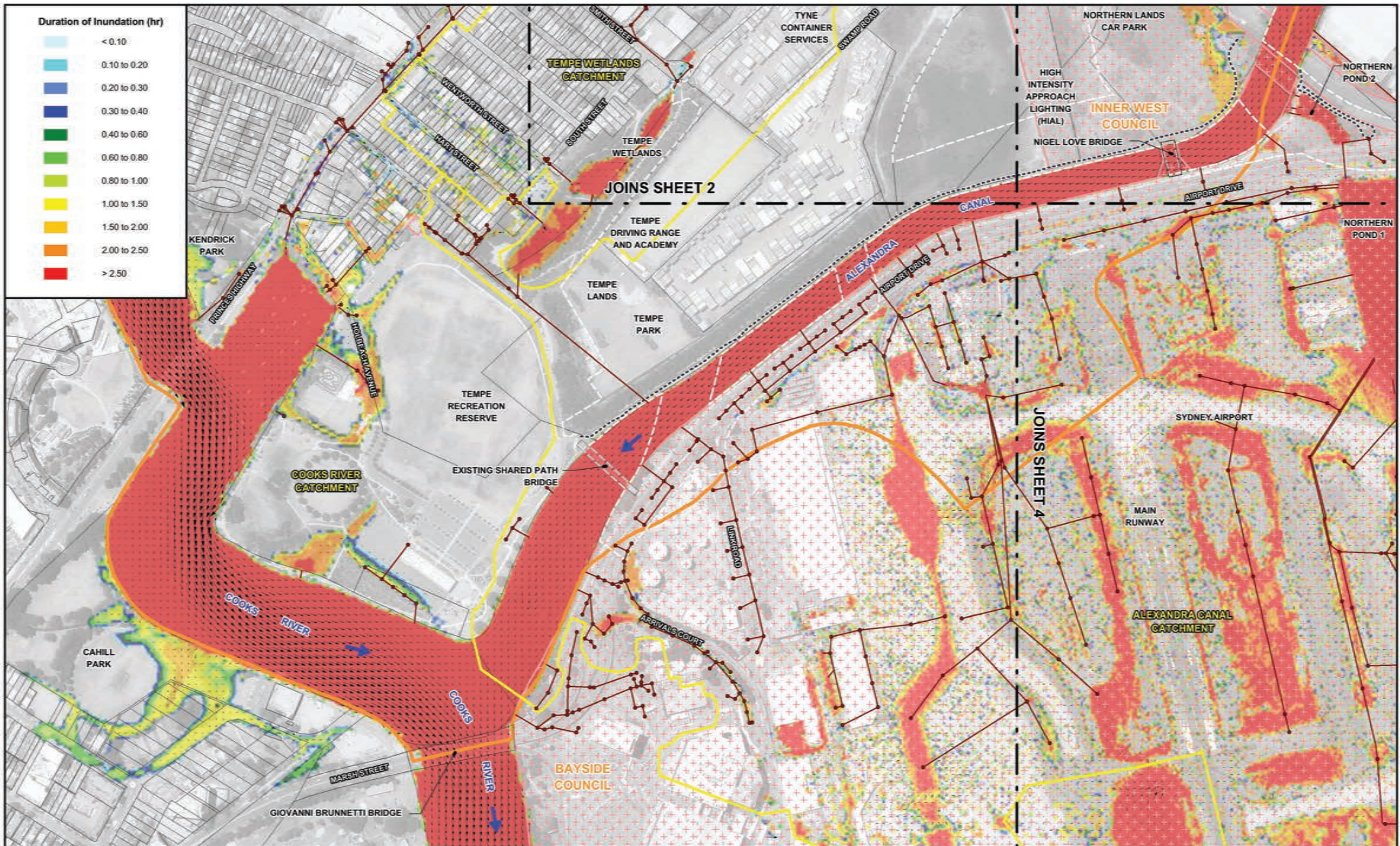| 200 | 0 | 200 | 400 | 600 m |

Scale: 1:20,000

Note:
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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.22
(Sheet 1 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 20% AEP EVENT

Velocity (m/s)

	< 0.50
	0.50 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	2.50 to 3.00
	3.00 to 3.50
	3.50 to 4.00
	4.00 to 4.50
	4.50 to 5.00
	> 5.00
←	Flow Direction Arrow

UNWINS BRIDGE ROAD
HENRY STREET
GEORGE STREET
SYDENHAM GREEN
RAILWAY ROAD
PRINCES HIGHWAY
CANAL ROAD
BURROWS ROAD
CITY OF SYDNEY
GARDENERS ROAD
TERRY STREET
HENRY STREET
COOKS RIVER CATCHMENT
SIMPSON STREET
BELLEVUE STREET
COOKS RIVER INTERMODAL TERMINAL
BURROWS ROAD SOUTH
BURROWS ROAD SOUTH
BAYSIDE COUNCIL
RICKETTY STREET
IKEA
BORAL ST PETERS CONCRETE AND RECYCLING
ALEXANDRA CANAL
ALEXANDRA CANAL CATCHMENT
COWARD STREET
PORT BOTANY RAIL LINE

JOINS SHEET 3
TYNE CONTAINER SERVICES
SWAMP ROAD
NORTHERN LANDS CAR PARK
NORTHERN POND 2
JOINS SHEET 4

TEMPE WETLANDS CATCHMENT
SMITH STREET
SOUTH STREET
TEMPE WETLANDS
HIGH INTENSITY APPROACH LIGHTING (HIAL)
INNER WEST COUNCIL
NIGEL LOVE BRIDGE
PORT BOTANY RAIL LINE
QANTAS DRIVE
LANCASTRIAN BRIDGE

N

Scale: 1:5,000

50 0 50 100 150 m

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

	Commonwealth Land
	LGA Boundary
	Catchment Boundary
•—•	Existing Drainage System
----	Active transport facility
	Project Footprint
—·—	Two-Dimensional Model Boundary
	New M5 Surface Road Works

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.22
(Sheet 2 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 20% AEP EVENT

Lyall & Associates

Velocity (m/s)
- < 0.50
- 0.50 to 1.00
- 1.00 to 1.50
- 1.50 to 2.00
- 2.00 to 2.50
- 2.50 to 3.00
- 3.00 to 3.50
- 3.50 to 4.00
- 4.00 to 4.50
- 4.50 to 5.00
- > 5.00
- ← Flow Direction Arrow

N

Scale 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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- ---- Active transport facility
- Project Footprint
- ---- Two-Dimensional Model Boundary

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.22
(Sheet 3 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 20% AEP EVENT

NORTHERN LANDS
CAR PARK

HIGH
INTENSITY
APPROACH
LIGHTING
(HIAL)

INNER WEST
COUNCIL

NIGEL LOVE BRIDGE

AIRPORT DRIVE

NORTHERN
POND 2

NORTHERN
POND 1

PERIMETER ROAD

PORT BOTANY RAIL LINE

QANTAS DRIVE

LANCASTRIAN
BRIDGE

LANCASTRIAN ROAD

JOINS SHEET 2

JOINS SHEET 3

SYDNEY AIRPORT

MAIN
RUNWAY

ALEXANDRA CANAL
CATCHMENT

BAYSIDE
COUNCIL

T3 - DOMESTIC
TERMINAL

T2 - DOMESTIC
TERMINAL

SHIERS AVENUE

KEITH SMITH AVENUE

SEVENTH STREET

NINTH STREET

SIXTH STREET

COWARD STREET

BOURKE ROAD

O'RIORDAN STREET

KING STREET

HIGH STREET

ROBEY STREET
UNDERPASS

O'RIORDAN STREET

STAMFORD PLAZA
SYDNEY AIRPORT

ROBEY STREET

O'RIORDAN STREET
UNDERPASS

BAXTER ROAD

PORT BOTANY RAIL LINE

QANTAS DRIVE

JOYCE DRIVE

REGINALD ANN STREET

ROSS SMITH AVENUE

MILL STREAM
CATCHMENT

Velocity (m/s)

	< 0.50
	0.50 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	2.50 to 3.00
	3.00 to 3.50
	3.50 to 4.00
	4.00 to 4.50
	4.50 to 5.00
	> 5.00
←	Flow Direction Arrow

LEGEND

N

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
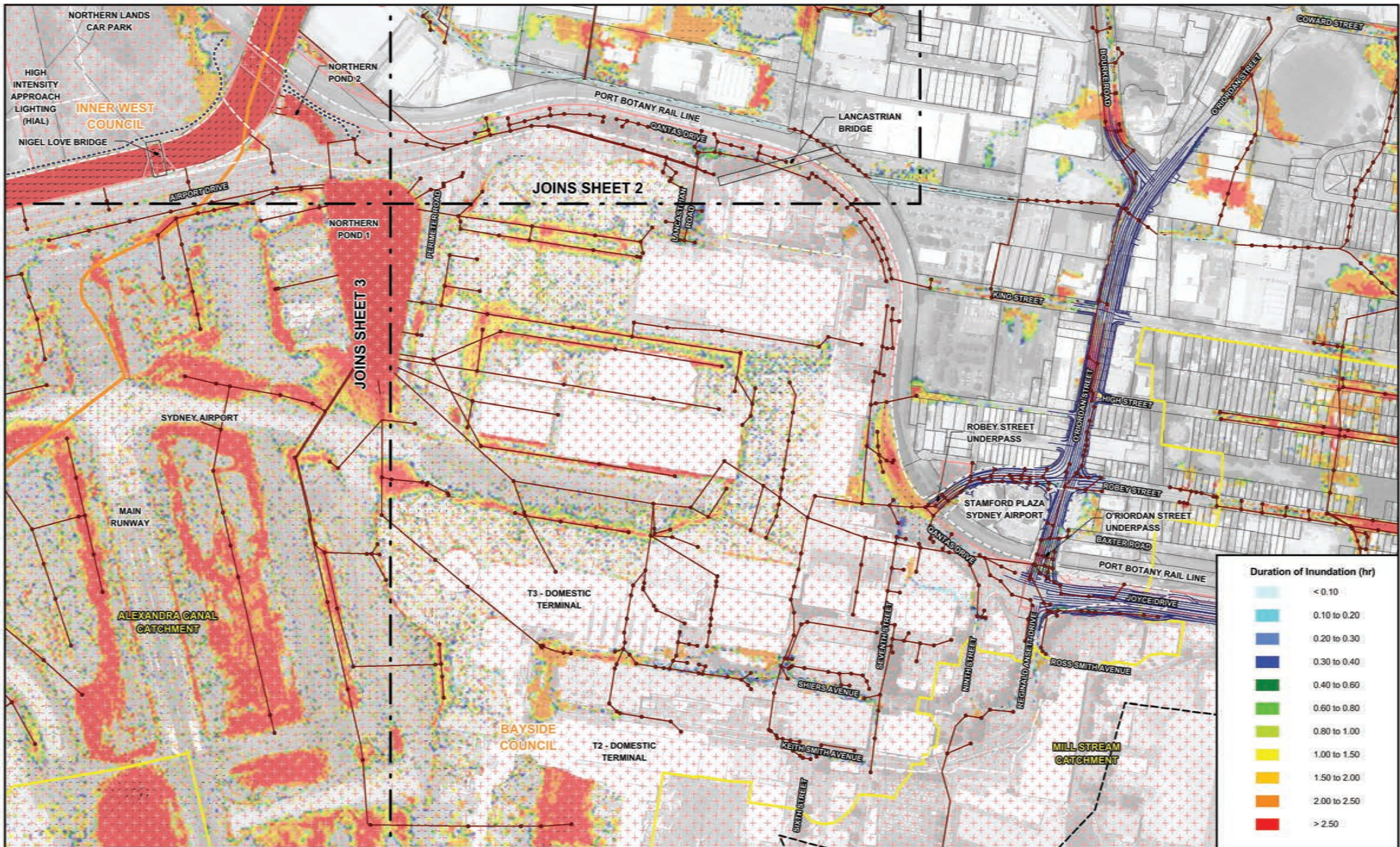allotments may also require a site survey.

	Commonwealth Land
—	LGA Boundary
	Catchment Boundary
•—•	Existing Drainage System

----	Active transport facility
- - -	Project Footprint
— · —	Two-Dimensional Model Boundary
/////	Airport North and Airport East Road Works

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.22
(Sheet 4 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 20% AEP EVENT

Lyall &
Associates

Velocity Afflux (m/s)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

Scale: 1:20,000

200 0 200 400 600 m

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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.23
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
20% AEP EVENT

Lyall & Associates

Velocity Afflux (m/s)

	-0.05 to 0.05
	0.05 to 0.10
	0.10 to 0.15
	0.15 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.50
	> 0.50
	Land Rendered Flood Free as a Result of Change
	Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

HENRY STREET
GEORGE STREET
RAILWAY ROAD
PRINCES HIGHWAY
BELLEVUE STREET
TERRY STREET
HENRY STREET
YMERSTON STREET
SMITH STREET
SOUTH STREET
CANAL ROAD
BURROWS ROAD
GARDENERS ROAD
RICKETTY STREET
COWARD STREET
BURROWS ROAD SOUTH
RICHMOND ROAD SOUTH

CANAL ROAD OVERPASSES
CITY OF SYDNEY
BAYSIDE COUNCIL

COOKS RIVER CATCHMENT

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS

COOKS RIVER INTERMODAL TERMINAL

ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS

AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE

WESTBOUND TERMINAL LINK

2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS

NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS

TERMINAL 1 CONNECTION RAIL OVERPASS

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

BORAL ST PETERS CONCRETE AND RECYCLING

ALEXANDRA CANAL

ALEXANDRA CANAL CATCHMENT

IKEA

2 OFF 2.4 m W x 1.2 m H BOX CULVERTS

NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES

PORT BOTANY RAIL LINE

EASTBOUND TERMINAL LINK

1050 mm DIAMETER PIPE

JOINS SHEET 3

JOINS SHEET 4

1050 mm DIAMETER PIPE

TYNE CONTAINER SERVICES

SWAMP ROAD

NORTHERN LANDS CAR PARK

DO1
DO2
DO5
DO6

TERMINAL LINK BRIDGE

NORTHERN POND 2

EXISTING 2 OFF 1500 mm DIAMETER PIPE

QANTAS DRIVE SAG 1

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

QANTAS DRIVE BRIDGE

INNER WEST COUNCIL

PORT BOTANY RAIL LINE

QANTAS DRIVE

LANCASTRIAN BRIDGE

NIGEL LOVE BRIDGE

TEMPE WETLANDS

N

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.

Lyall & Associates

LEGEND

	Commonwealth Land		Project Footprint
	LGA Boundary		Proposed Road Works
	Catchment Boundary		New M5 Surface Road Works
	Existing Drainage System to Remain		Two-Dimensional Model Boundary
	Existing Drainage System to be Abandoned/Demolished		
	Proposed Drainage System	▽ D05	Drainage Outlet Location and Identifier

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.23
(Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
20% AEP EVENT

Velocity Afflux (m/s)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

JOINS SHEET 2

JOINS SHEET 4

TEMPE WETLANDS CATCHMENT

TEMPE WETLANDS

KENDRICK PARK

TEMPE DRIVING RANGE AND ACADEMY

TEMPE LANDS

TEMPE PARK

TERMINAL 1 CONNECTION BRIDGE

TEMPE RECREATION RESERVE

EXISTING SHARED PATH BRIDGE

COOKS RIVER CATCHMENT

CAHILL PARK

COOKS RIVER

COOKS RIVER

MARSH STREET

GIOVANNI BRUNNETTI BRIDGE

BAYSIDE COUNCIL

ARRIVALS COURT

LINK ROAD

2 OFF 3.0 m W x 1.5 m H BOX CULVERTS

DO3

DO4

DO7

DO8

ALEXANDRA

AIRPORT DRIVE

CANAL

FREIGHT TERMINAL BRIDGE

TYNE CONTAINER SERVICES

SMITH STREET

SWAMP ROAD

WENTWORTH STREET

SOUTH STREET

MARY STREET

PRINCES HIGHWAY

HOLBEACH AVENUE

NORTHERN LANDS CAR PARK

QANTAS DRIVE BRIDGE

HIGH INTENSITY APPROACH LIGHTING (HIAL)

NIGEL LOVE BRIDGE

INNER WEST COUNCIL

DO1

DO2

DO5

TERMINAL LINK BRIDGE

NORTHERN POND 2

NORTHERN POND 1

DO6

AIRPORT DRIVE

SYDNEY AIRPORT

MAIN RUNWAY

ALEXANDRA CANAL CATCHMENT

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- DO5 Drainage Outlet Location and Identifier
- Two-Dimensional Model Boundary

N

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.

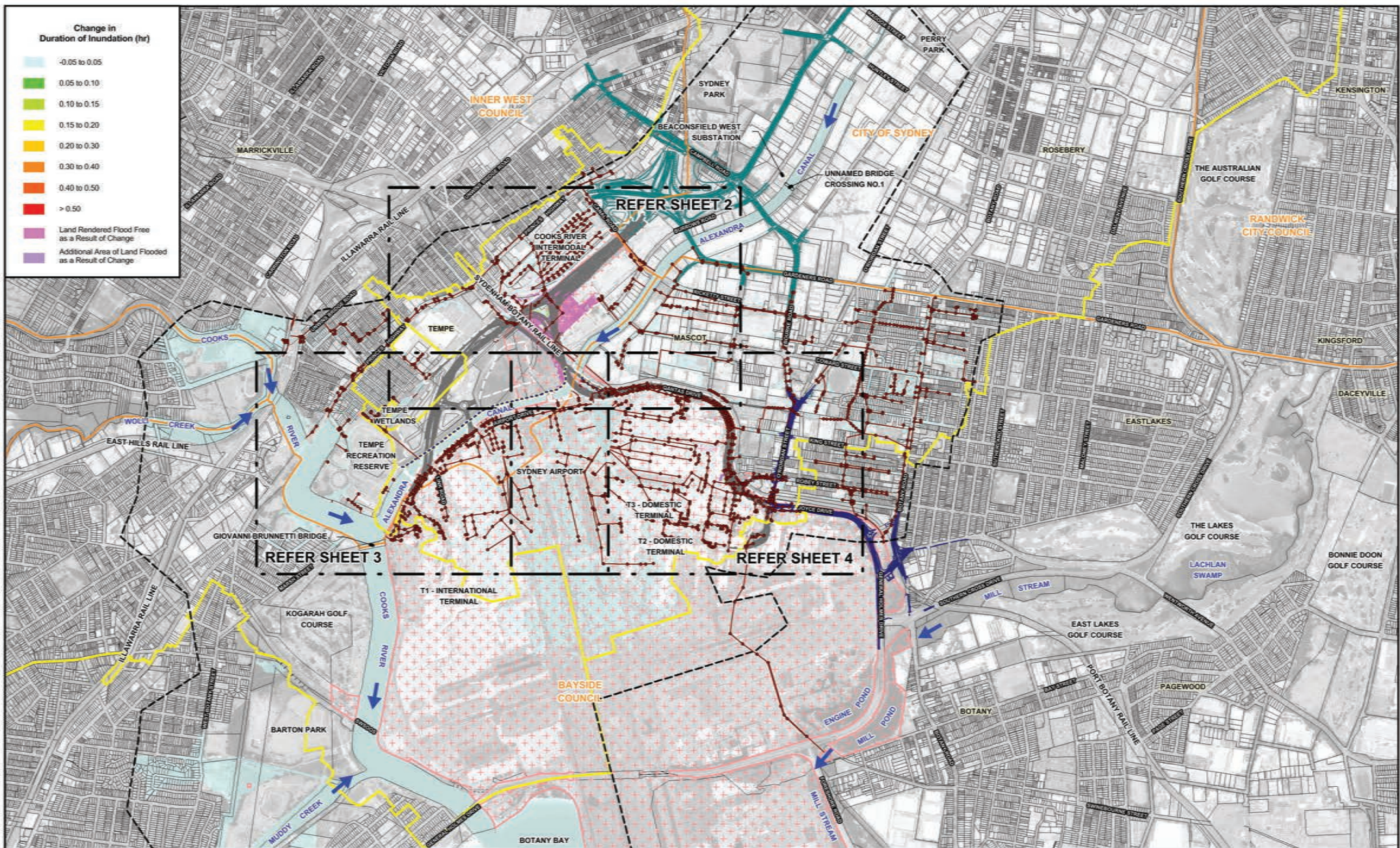Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.23
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
20% AEP EVENT

Velocity Afflux (m/s)
- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Two-Dimensional Model Boundary
- D05 Drainage Outlet Location and Identifier
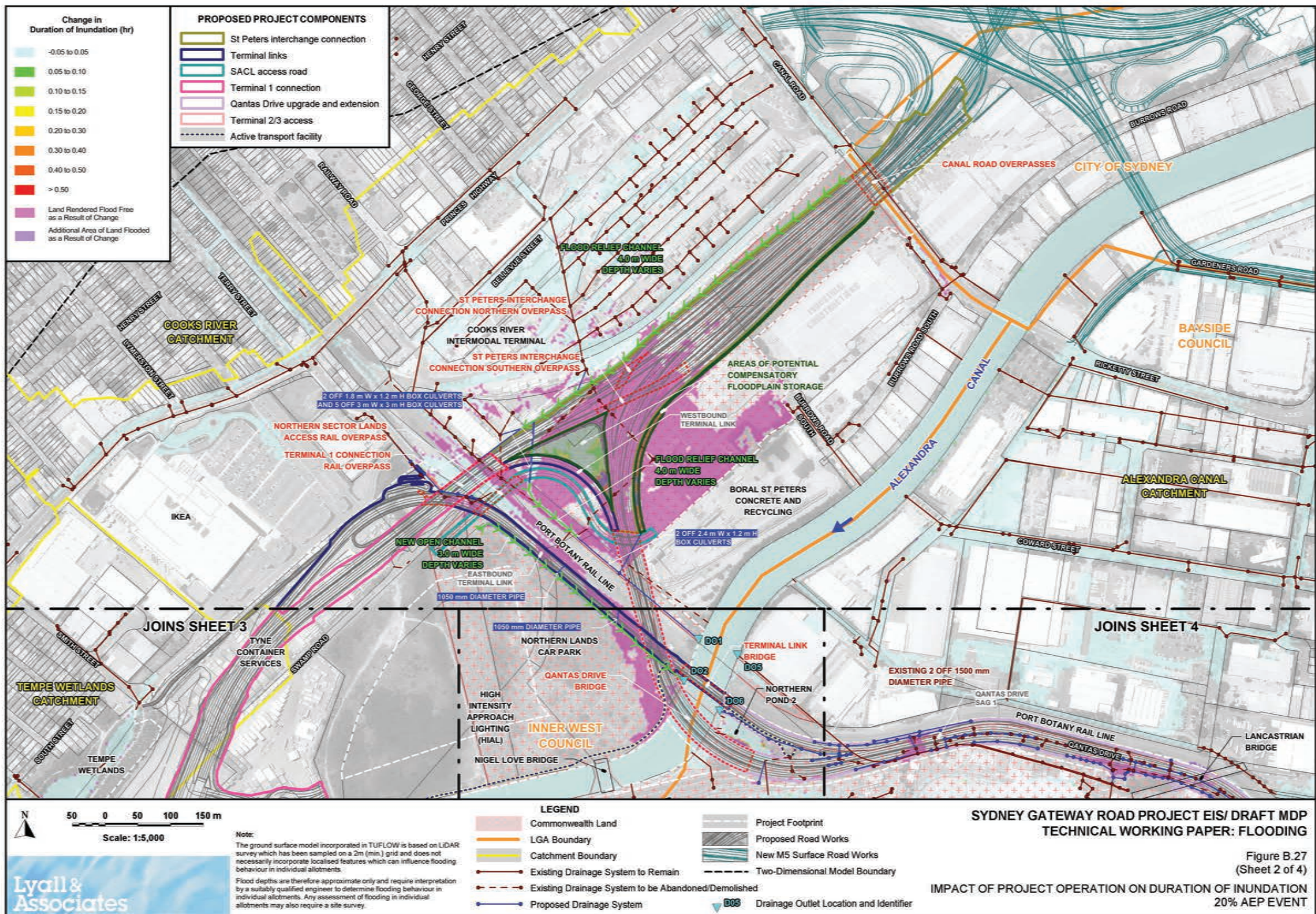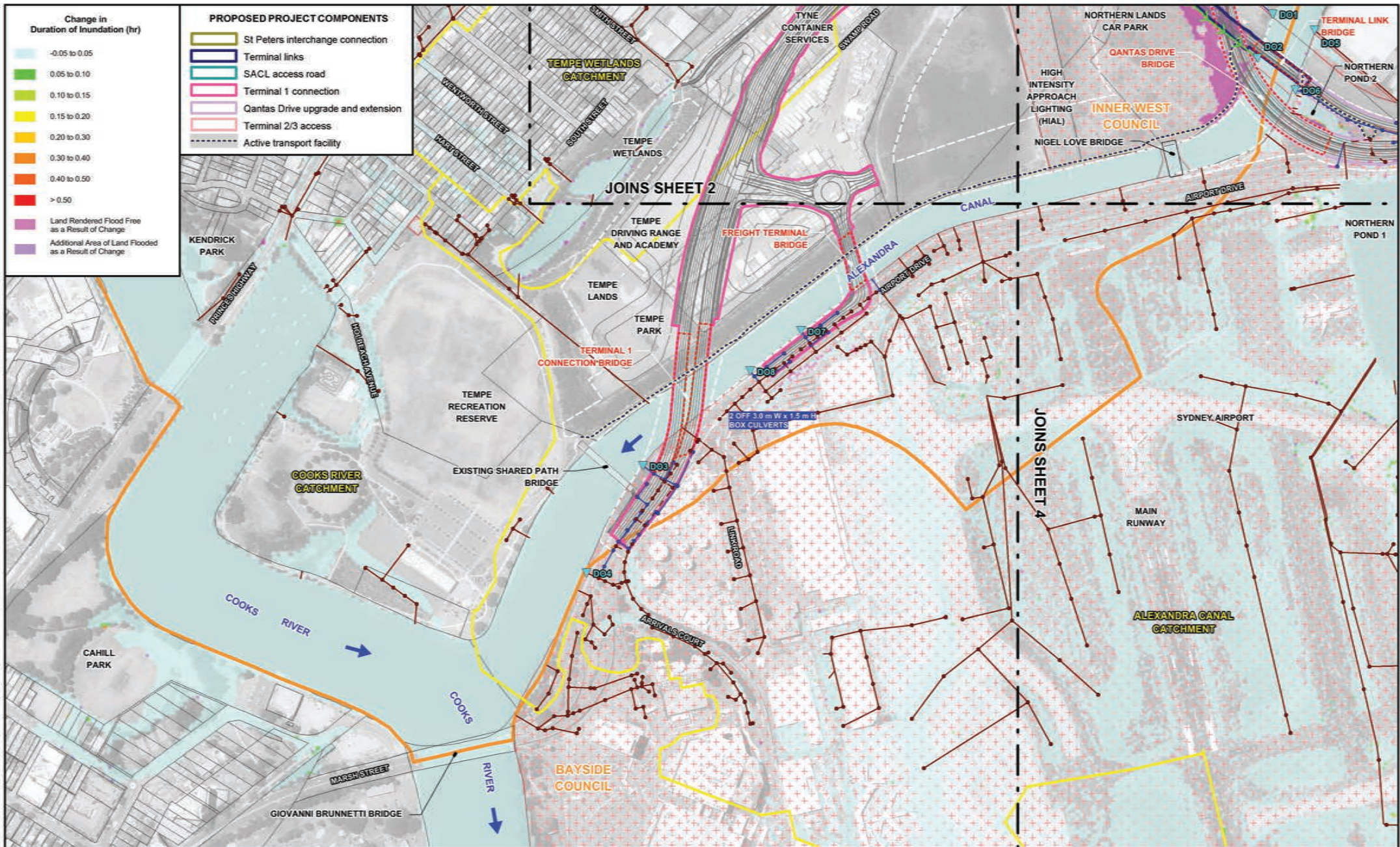
N
50 0 50 100 150 m
Scale: 1:5,000

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.

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Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.23
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
20% AEP EVENT

Velocity (m/s)
- < 0.50
- 0.50 to 1.00
- 1.00 to 1.50
- 1.50 to 2.00
- 2.00 to 2.50
- 2.50 to 3.00
- 3.00 to 3.50
- 3.50 to 4.00
- 4.00 to 4.50
- 4.50 to 5.00
- > 5.00

LEGEND
- Two-Dimensional Model Boundary
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- Active transport facility
- Project Footprint
- Airport North and Airport East Road Works
- New M5 Surface Road Works

Scale: 1:20,000

200 0 200 400 600 m

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.24
(Sheet 1 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Velocity (m/s)
- < 0.50
- 0.50 to 1.00
- 1.00 to 1.50
- 1.50 to 2.00
- 2.00 to 2.50
- 2.50 to 3.00
- 3.00 to 3.50
- 3.50 to 4.00
- 4.00 to 4.50
- 4.50 to 5.00
- > 5.00
- ← Flow Direction Arrow

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- Active transport facility
- Project Footprint
- Two-Dimensional Model Boundary
- New M5 Surface Road Works

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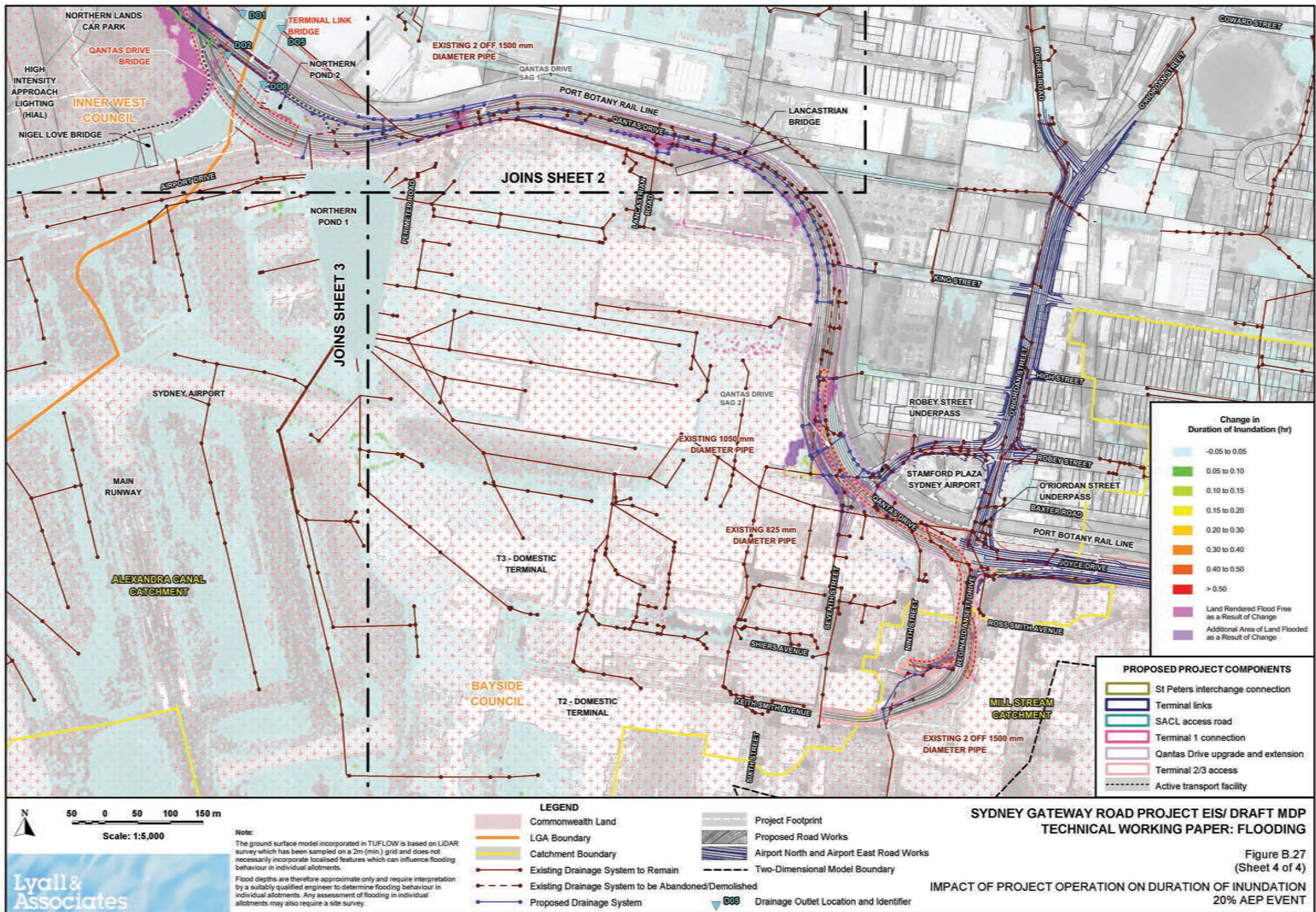
N
50 0 50 100 150 m
Scale: 1:5,000

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.24
(Sheet 2 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Velocity (m/s)
- < 0.50
- 0.50 to 1.00
- 1.00 to 1.50
- 1.50 to 2.00
- 2.00 to 2.50
- 2.50 to 3.00
- 3.00 to 3.50
- 3.50 to 4.00
- 4.00 to 4.50
- 4.50 to 5.00
- > 5.00
- Flow Direction Arrow

TEMPE WETLANDS CATCHMENT

TYNE CONTAINER SERVICES

NORTHERN LANDS CAR PARK

NORTHERN POND 2

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

TEMPE WETLANDS

JOINS SHEET 2

SMITH STREET

WENTWORTH STREET

SOUTH STREET

HART STREET

KENDRICK PARK

PRINCES HIGHWAY

HOLBEACH AVENUE

TEMPE DRIVING RANGE AND ACADEMY

TEMPE LANDS

TEMPE PARK

TEMPE RECREATION RESERVE

EXISTING SHARED PATH BRIDGE

ALEXANDRA CANAL

AIRPORT DRIVE

AIRPORT DRIVE

NORTHERN POND 1

JOINS SHEET 4

SYDNEY AIRPORT

MAIN RUNWAY

ALEXANDRA CANAL CATCHMENT

COOKS RIVER CATCHMENT

COOKS RIVER

CAHILL PARK

LINK ROAD

ARRIVALS COURT

MARSH STREET

COOKS RIVER

GIOVANNI BRUNNETTI BRIDGE

BAYSIDE COUNCIL

N

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
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- Active transport facility
- Project Footprint
- Two-Dimensional Model Boundary

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.24
(Sheet 3 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 1% AEP EVENT

LEGEND

Commonwealth Land
LGA Boundary
Catchment Boundary
Existing Drainage System

Active transport facility
Project Footprint
Two-Dimensional Model Boundary
Airport North and Airport East Road Works

Velocity (m/s)

	< 0.50
	0.50 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	2.50 to 3.00
	3.00 to 3.50
	3.50 to 4.00
	4.00 to 4.50
	4.50 to 5.00
	> 5.00

Flow Direction Arrow

N

Scale: 1:5,000

50 0 50 100 150 m

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.

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.24
(Sheet 4 of 4)

PEAK FLOW VELOCITIES
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Velocity Afflux (m/s)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 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

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
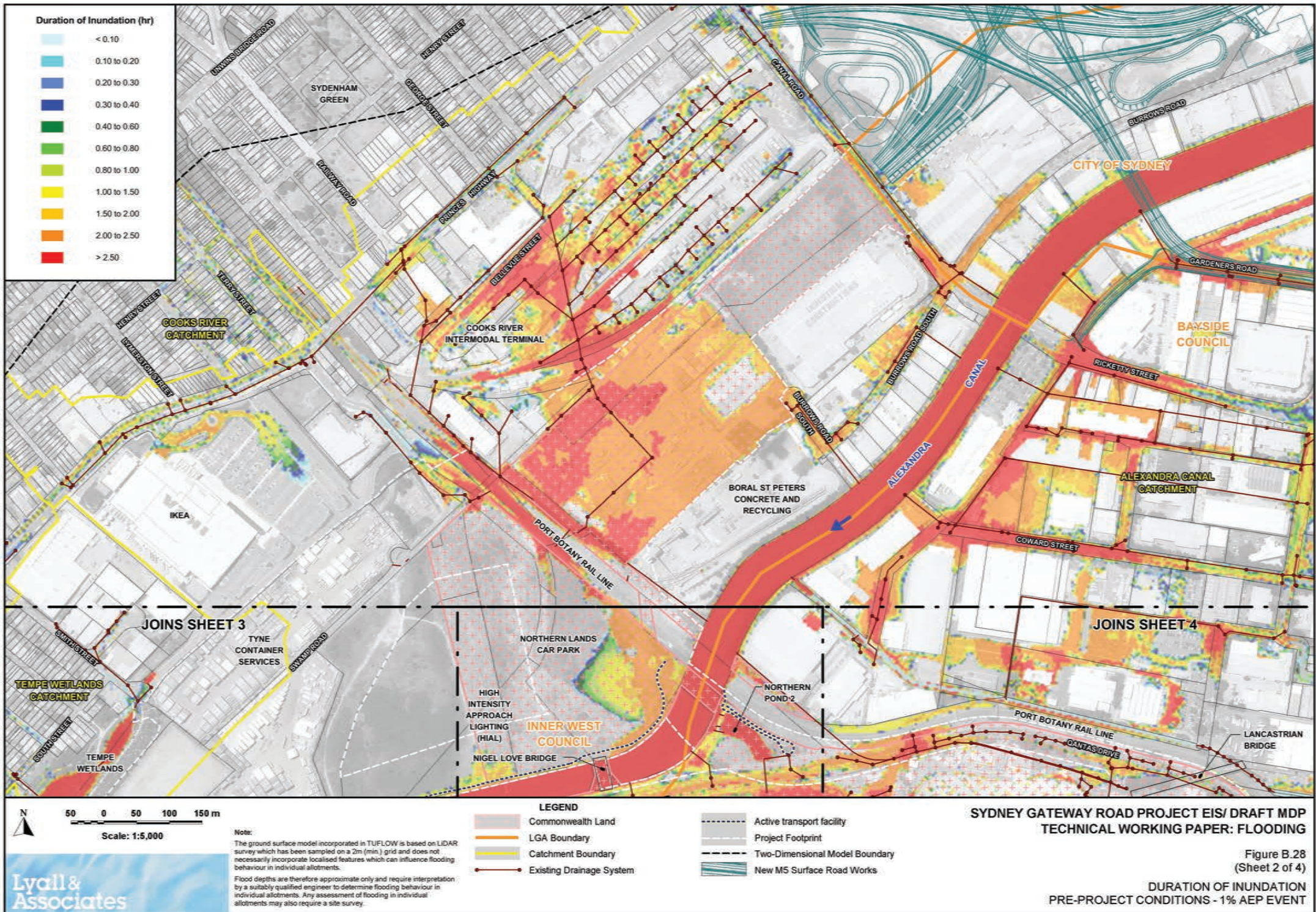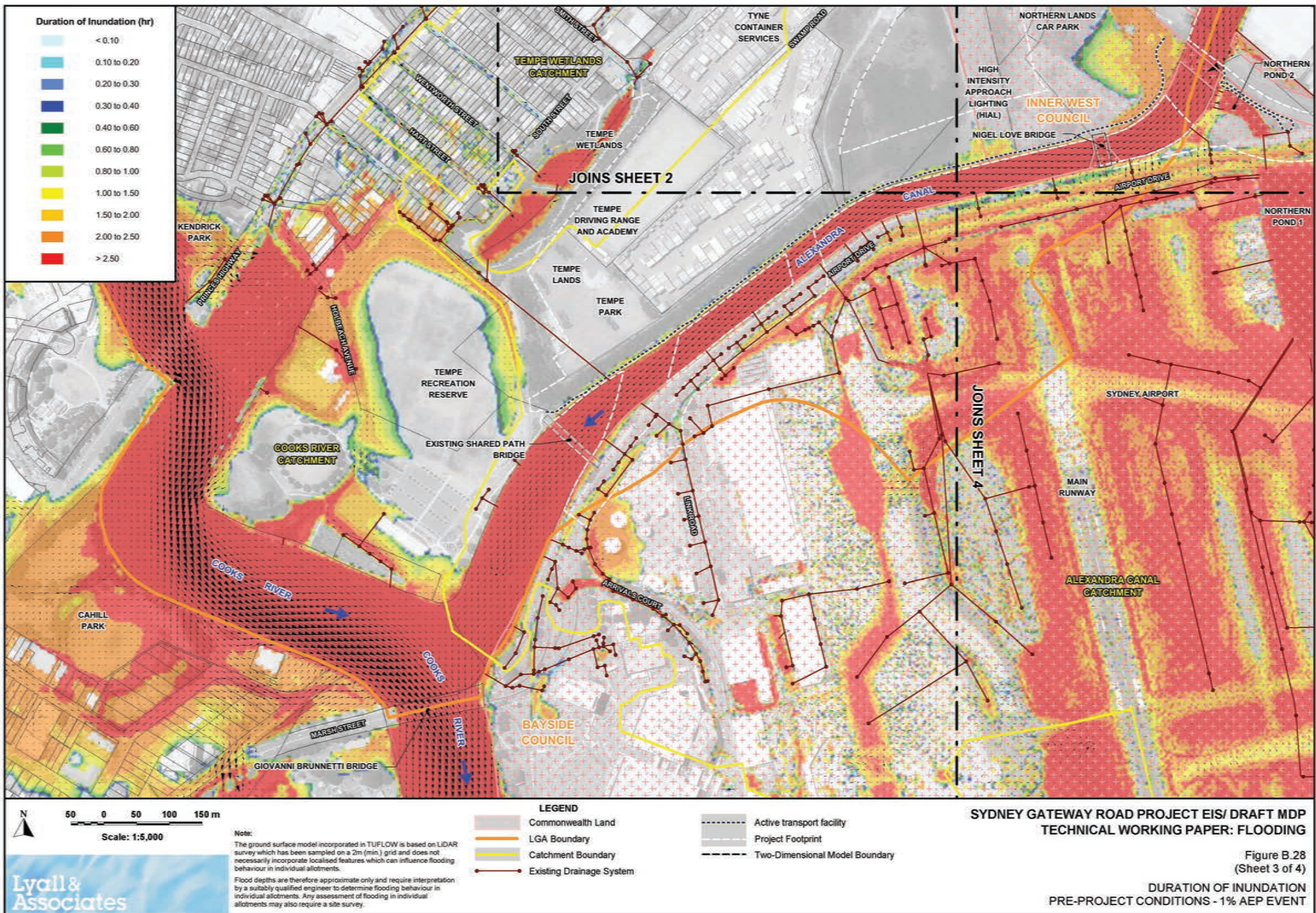- New M5 Surface Road Works

N

200   0   200   400   600 m

Scale: 1:20,000

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.

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.25
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
1% AEP EVENT

Velocity Afflux (m/s)
- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

COOKS RIVER CATCHMENT

CANAL ROAD OVERPASSES

CITY OF SYDNEY

BAYSIDE COUNCIL

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

ST PETERS-INTERCHANGE CONNECTION NORTHERN OVERPASS

COOKS RIVER INTERMODAL TERMINAL

ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS

AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE

WESTBOUND TERMINAL LINK

2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS

NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS

TERMINAL 1 CONNECTION RAIL OVERPASS

FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES

BORAL ST PETERS CONCRETE AND RECYCLING

ALEXANDRA CANAL CATCHMENT

IKEA

NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES

EASTBOUND TERMINAL LINK

1050 mm DIAMETER PIPE

2 OFF 2.4 m W x 1.2 m H BOX CULVERTS

JOINS SHEET 3

TYNE CONTAINER SERVICES

1050 mm DIAMETER PIPE

NORTHERN LANDS CAR PARK

QANTAS DRIVE BRIDGE

DO1

DO2

TERMINAL LINK BRIDGE

DO5

NORTHERN POND 2

DO6

JOINS SHEET 4

EXISTING 2 OFF 1500 mm DIAMETER PIPE

QANTAS DRIVE SAG 1

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

PORT BOTANY RAIL LINE

QANTAS DRIVE

LANCASTRIAN BRIDGE

TEMPE WETLANDS

NIGEL LOVE BRIDGE

LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- Two-Dimensional Model Boundary
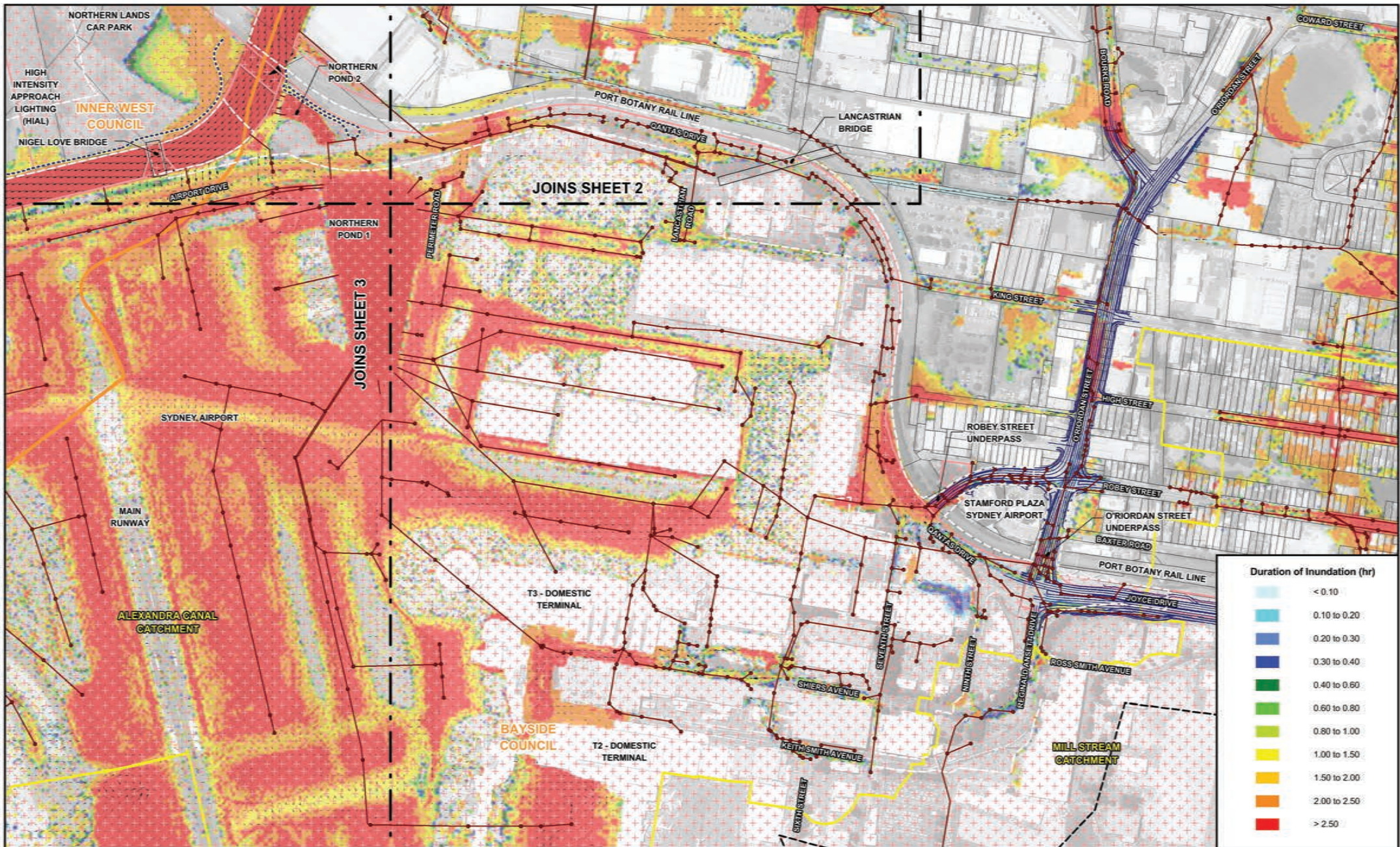- DO5 Drainage Outlet Location and Identifier

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

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.

Lyall & Associates

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.25
(Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
1% AEP EVENT

Velocity Afflux (m/s)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Project Footprint
- Proposed Road Works
- Drainage Outlet Location and Identifier (DO5)
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Two-Dimensional Model Boundary

N

Scale: 1:5,000

50 0 50 100 150 m

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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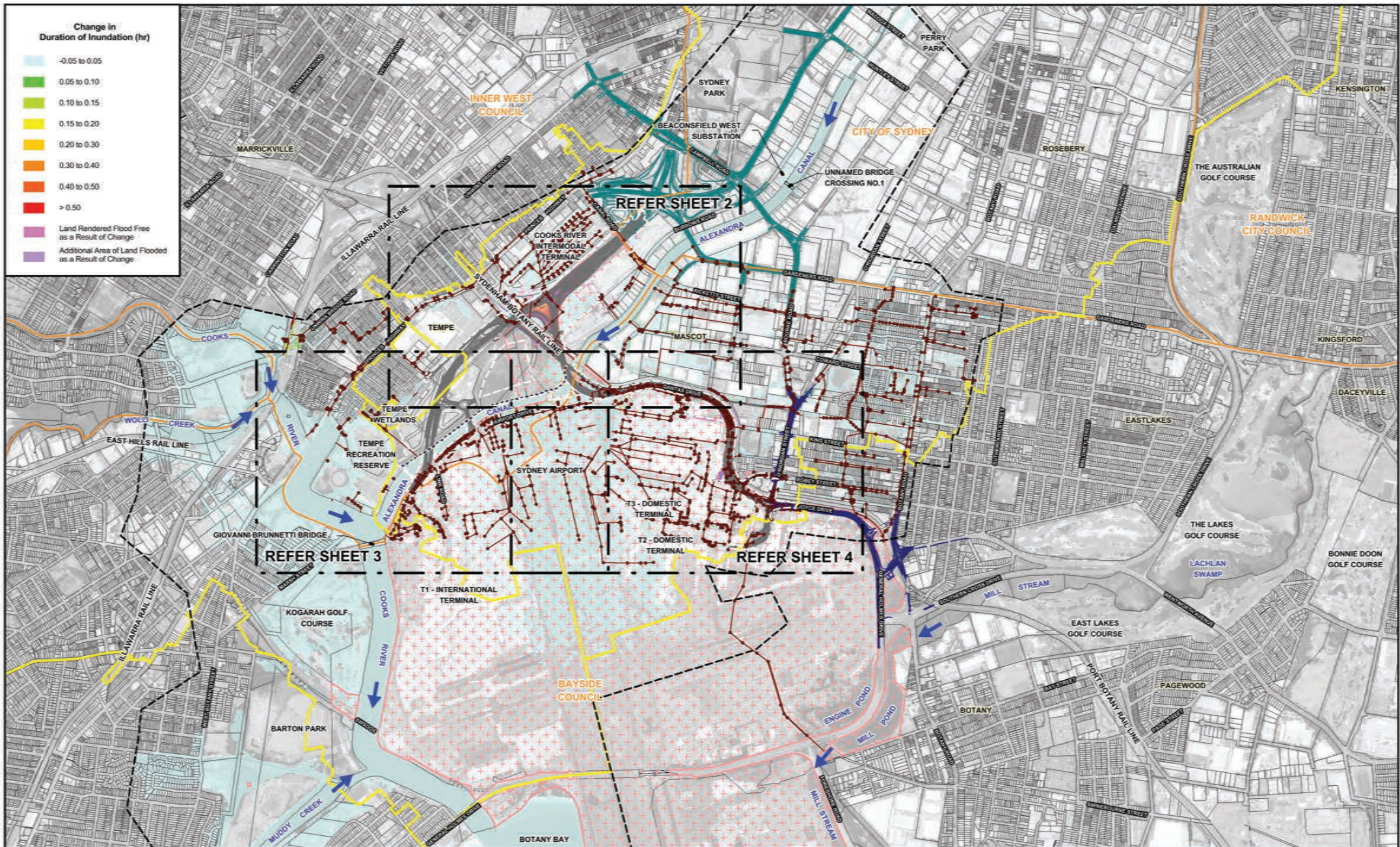
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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.25
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
1% AEP EVENT

LEGEND

Commonwealth Land
LGA Boundary
Catchment Boundary
Existing Drainage System to Remain
Existing Drainage System to be Abandoned/Demolished
Proposed Drainage System
Project Footprint
Proposed Road Works
Airport North and Airport East Road Works
Two-Dimensional Model Boundary
DO5 — Drainage Outlet Location and Identifier

Velocity Afflux (m/s)

-0.05 to 0.05
0.05 to 0.10
0.10 to 0.15
0.15 to 0.20
0.20 to 0.30
0.30 to 0.40
0.40 to 0.50
> 0.50
Land Rendered Flood Free as a Result of Change
Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

St Peters interchange connection
Terminal links
SACL access road
Terminal 1 connection
Qantas Drive upgrade and extension
Terminal 2/3 access
Active transport facility

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.

Scale: 1:5,000

50 0 50 100 150 m

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.25
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON PEAK FLOW VELOCITIES
1% AEP EVENT

Lyall & Associates

Duration of Inundation (hr)
- < 0.10
- 0.10 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.60
- 0.60 to 0.80
- 0.80 to 1.00
- 1.00 to 1.50
- 1.50 to 2.00
- 2.00 to 2.50
- > 2.50

LEGEND
- Two-Dimensional Model Boundary
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- Active transport facility
- Project Footprint
- Airport North and Airport East Road Works
- New M5 Surface Road Works

N

200 0 200 400 600 m

Scale: 1:20,000

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.

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.26
(Sheet 1 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 20% AEP EVENT

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

UNWINS BRIDGE ROAD

HENRY STREET

GEORGE STREET

SYDENHAM GREEN

CANAL ROAD

BURROWS ROAD

CITY OF SYDNEY

RAILWAY ROAD

PRINCES HIGHWAY

BELLEVUE STREET

GARDENERS ROAD

TERRY STREET

HENRY STREET

COOKS RIVER CATCHMENT

COOKS RIVER INTERMODAL TERMINAL

BAYSIDE COUNCIL

SWAMERTON STREET

BURROWS ROAD SOUTH

BURROWS ROAD SOUTH

RICKETTY STREET

BORAL ST PETERS CONCRETE AND RECYCLING

ALEXANDRA CANAL CATCHMENT

IKEA

ALEXANDRA CANAL

PORT BOTANY RAIL LINE

COWARD STREET

JOINS SHEET 3

TYNE CONTAINER SERVICES

SWAMP ROAD

NORTHERN LANDS CAR PARK

JOINS SHEET 4

SMITH STREET

TEMPE WETLANDS CATCHMENT

NORTHERN POND 2

PORT BOTANY RAIL LINE

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

QANTAS DRIVE

LANCASTRIAN BRIDGE

SOUTH STREET

TEMPE WETLANDS

NIGEL LOVE BRIDGE

N

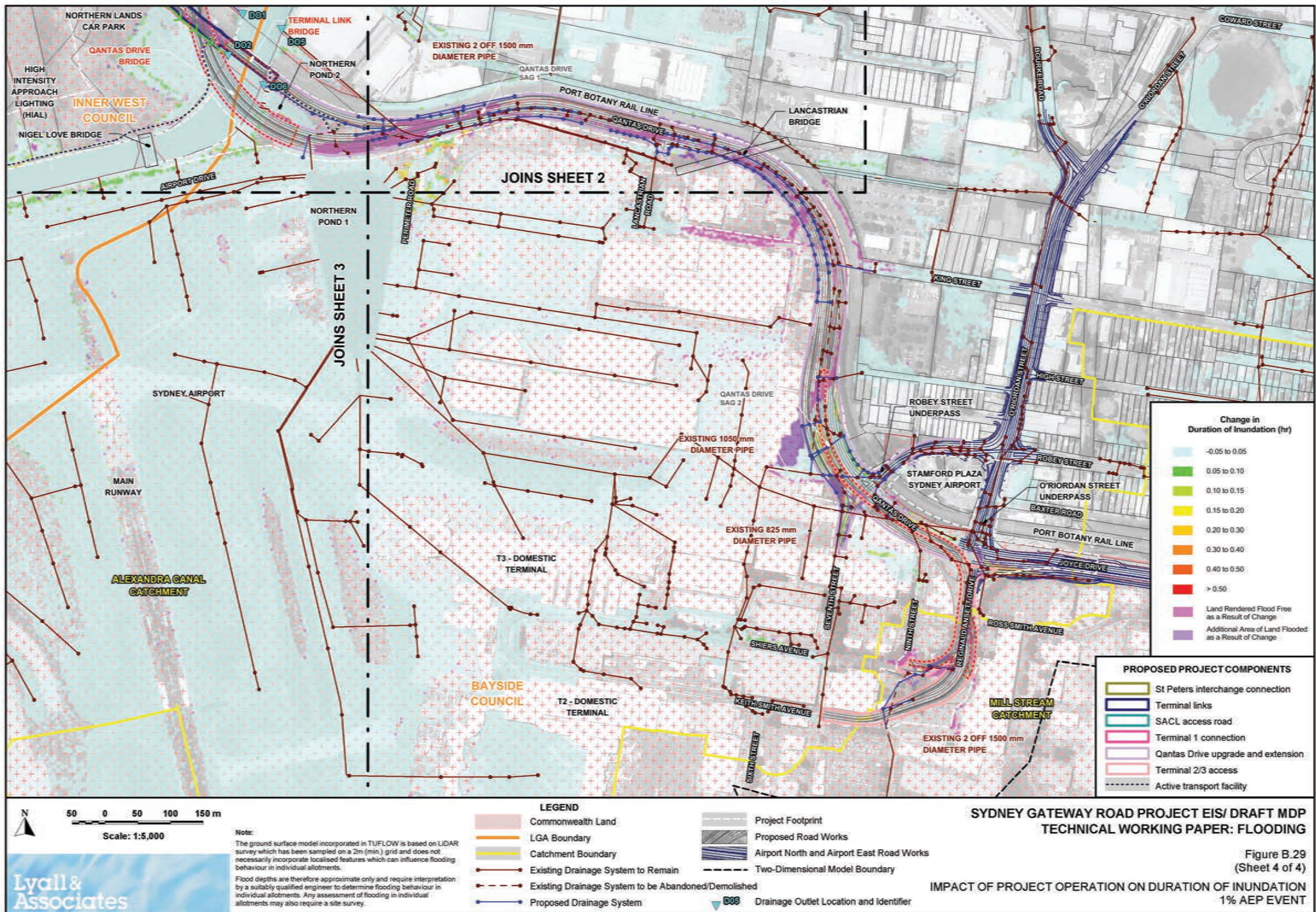| 50 | 0 | 50 | 100 | 150 m |

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.

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LEGEND

	Commonwealth Land	·········	Active transport facility
──	LGA Boundary		Project Footprint
──	Catchment Boundary	─ ─ ─	Two-Dimensional Model Boundary
•─•─•	Existing Drainage System		New M5 Surface Road Works

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.26
(Sheet 2 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 20% AEP EVENT

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

JOINS SHEET 2

JOINS SHEET 4

NORTHERN LANDS CAR PARK

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

NORTHERN POND 2

NORTHERN POND 1

TYNE CONTAINER SERVICES

SWAMP ROAD

SMITH STREET

TEMPE WETLANDS CATCHMENT

TEMPE WETLANDS

WENTWORTH STREET

HART STREET

SOUTH STREET

TEMPE DRIVING RANGE AND ACADEMY

TEMPE LANDS

TEMPE PARK

ALEXANDRA CANAL

AIRPORT DRIVE

SYDNEY AIRPORT

MAIN RUNWAY

KENDRICK PARK

PRINCES HIGHWAY

HOLBEACH AVENUE

TEMPE RECREATION RESERVE

EXISTING SHARED PATH BRIDGE

COOKS RIVER CATCHMENT

LINK ROAD

ALEXANDRA CANAL CATCHMENT

COOKS RIVER

CAHILL PARK

ARRIVALS COURT

COOKS RIVER

MARSH STREET

BAYSIDE COUNCIL

GIOVANNI BRUNNETTI BRIDGE

N

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.

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LEGEND

	Commonwealth Land
—	LGA Boundary
—	Catchment Boundary
•—•	Existing Drainage System
- - -	Active transport facility
	Project Footprint
–·–·–	Two-Dimensional Model Boundary

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.26
(Sheet 3 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 20% AEP EVENT

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.26
(Sheet 4 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 20% AEP EVENT

JOINS SHEET 2

JOINS SHEET 3

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- Active transport facility
- Project Footprint
- Two-Dimensional Model Boundary
- Airport North and Airport East Road Works

N

Scale: 1:5,000

50 0 50 100 150 m

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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Map labels: NORTHERN LANDS CAR PARK, HIGH INTENSITY APPROACH LIGHTING (HIAL), NIGEL LOVE BRIDGE, INNER WEST COUNCIL, NORTHERN POND 2, NORTHERN POND 1, AIRPORT DRIVE, PERIMETER ROAD, PORT BOTANY RAIL LINE, QANTAS DRIVE, LANCASTRIAN BRIDGE, LANCASTRIAN ROAD, COWARD STREET, BOURKE ROAD, O'RIORDAN STREET, KING STREET, HIGH STREET, ROBEY STREET UNDERPASS, ROBEY STREET, STAMFORD PLAZA SYDNEY AIRPORT, O'RIORDAN STREET UNDERPASS, BAXTER ROAD, PORT BOTANY RAIL LINE, JOYCE DRIVE, ROSS SMITH AVENUE, MILL STREAM CATCHMENT, SYDNEY AIRPORT, MAIN RUNWAY, ALEXANDRA CANAL CATCHMENT, T3 - DOMESTIC TERMINAL, T2 - DOMESTIC TERMINAL, BAYSIDE COUNCIL, SHIERS AVENUE, KEITH SMITH AVENUE, SEVENTH STREET, NINTH STREET, REGINALD ANSETT DRIVE, SIXTH STREET

Change in Duration of Inundation (hr)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

Scale: 1:20,000

200 0 200 400 600 m

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.27
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
20% AEP EVENT

Change in Duration of Inundation (hr)
- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS
- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

HENRY STREET
GEORGE STREET
RAILWAY ROAD
CANAL ROAD
BURROWS ROAD
CANAL ROAD OVERPASSES
CITY OF SYDNEY
GARDENERS ROAD
TERRY STREET
BELLEVUE STREET
PRINCES HIGHWAY
FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES
COOKS RIVER CATCHMENT
HENRY STREET
LYMERSTON STREET
ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS
COOKS RIVER INTERMODAL TERMINAL
ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS
AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE
BAYSIDE COUNCIL
RICKETTY STREET
BURROWS ROAD SOUTH
WESTBOUND TERMINAL LINK
ALEXANDRA CANAL
2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS
NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS
TERMINAL 1 CONNECTION RAIL OVERPASS
FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES
ALEXANDRA CANAL CATCHMENT
IKEA
BORAL ST PETERS CONCRETE AND RECYCLING
2 OFF 2.4 m W x 1.2 m H BOX CULVERTS
COWARD STREET
NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES
EASTBOUND TERMINAL LINK
PORT BOTANY RAIL LINE
1050 mm DIAMETER PIPE
JOINS SHEET 3
JOINS SHEET 4
1050 mm DIAMETER PIPE
NORTHERN LANDS CAR PARK
DO1
DO2
TERMINAL LINK BRIDGE
DO5
EXISTING 2 OFF 1500 mm DIAMETER PIPE
TYNE CONTAINER SERVICES
SWAMP ROAD
QANTAS DRIVE BRIDGE
DO8
NORTHERN POND 2
QANTAS DRIVE SAG 1
TEMPE WETLANDS CATCHMENT
SMITH STREET
HIGH INTENSITY APPROACH LIGHTING (HIAL)
INNER WEST COUNCIL
PORT BOTANY RAIL LINE
QANTAS DRIVE
LANCASTRIAN BRIDGE
SOUTH STREET
TEMPE WETLANDS
NIGEL LOVE BRIDGE

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

Note:
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LEGEND
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- Two-Dimensional Model Boundary
- DO5 Drainage Outlet Location and Identifier

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.27
(Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
20% AEP EVENT

Figure B.27
(Sheet 3 of 4)

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
20% AEP EVENT

Change in
Duration of Inundation (hr)

	-0.05 to 0.05
	0.05 to 0.10
	0.10 to 0.15
	0.15 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.50
	> 0.50
	Land Rendered Flood Free as a Result of Change
	Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

	St Peters interchange connection
	Terminal links
	SACL access road
	Terminal 1 connection
	Qantas Drive upgrade and extension
	Terminal 2/3 access
	Active transport facility

N

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

	Commonwealth Land
	LGA Boundary
	Catchment Boundary
	Existing Drainage System to Remain
	Existing Drainage System to be Abandoned/Demolished
	Proposed Drainage System
DO5	Drainage Outlet Location and Identifier
	Project Footprint
	Proposed Road Works
	Airport North and Airport East Road Works
	Two-Dimensional Model Boundary

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.27
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
20% AEP EVENT

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

LEGEND

- – – – Two-Dimensional Model Boundary
- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System
- · · · · Active transport facility
- Project Footprint
- Airport North and Airport East Road Works
- New M5 Surface Road Works

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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Scale: 1:20,000

200 0 200 400 600 m

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.28
(Sheet 1 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

UNWINS BRIDGE ROAD

SYDENHAM GREEN

HENRY STREET

GEORGE STREET

CANAL ROAD

BURROWS ROAD

CITY OF SYDNEY

RAILWAY ROAD

PRINCES HIGHWAY

BELLEVUE STREET

BAYSIDE COUNCIL

TERRY STREET

COOKS RIVER CATCHMENT

COOKS RIVER INTERMODAL TERMINAL

BURROWS ROAD SOUTH

GARDENERS ROAD

HENRY STREET

RICKETTY STREET

EMMERTON STREET

BURROWS ROAD SOUTH

ALEXANDRA CANAL

ALEXANDRA CANAL CATCHMENT

IKEA

BORAL ST PETERS CONCRETE AND RECYCLING

PORT BOTANY RAIL LINE

COWARD STREET

JOINS SHEET 3

TYNE CONTAINER SERVICES

SWAMP ROAD

NORTHERN LANDS CAR PARK

NORTHERN POND 2

JOINS SHEET 4

SMITH STREET

PORT BOTANY RAIL LINE

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

QANTAS DRIVE

LANCASTRIAN BRIDGE

SOUTH STREET

TEMPE WETLANDS

NIGEL LOVE BRIDGE

N

| 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.

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LEGEND

	Commonwealth Land
	LGA Boundary
	Catchment Boundary
•—•—•	Existing Drainage System

········	Active transport facility
	Project Footprint
— · —	Two-Dimensional Model Boundary
	New M5 Surface Road Works

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.28
(Sheet 2 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Lyall & Associates

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

NORTHERN LANDS CAR PARK

NORTHERN POND 2

TYNE CONTAINER SERVICES

SWAMP ROAD

SMITH STREET

TEMPE WETLANDS CATCHMENT

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

SOUTH STREET

WESTWORTH STREET

HART STREET

TEMPE WETLANDS

ALEXANDRA CANAL

AIRPORT DRIVE

NORTHERN POND 1

JOINS SHEET 2

TEMPE DRIVING RANGE AND ACADEMY

ALEXANDRA

AIRPORT DRIVE

KENDRICK PARK

PRINCES HIGHWAY

TEMPE LANDS

TEMPE PARK

MOORABA LANE

JOINS SHEET 4

SYDNEY AIRPORT

TEMPE RECREATION RESERVE

COOKS RIVER CATCHMENT

EXISTING SHARED PATH BRIDGE

LINK ROAD

MAIN RUNWAY

COOKS RIVER

ALEXANDRA CANAL CATCHMENT

CAHILL PARK

ARRIVALS COURT

COOKS RIVER

BAYSIDE COUNCIL

MARSH STREET

GIOVANNI BRUNNETTI BRIDGE

LEGEND

N

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.

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	Commonwealth Land
	LGA Boundary
	Catchment Boundary
	Existing Drainage System

	Active transport facility
	Project Footprint
	Two-Dimensional Model Boundary

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.28
(Sheet 3 of 4)

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Figure B.28 (Sheet 4 of 4)

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

DURATION OF INUNDATION
PRE-PROJECT CONDITIONS - 1% AEP EVENT

Duration of Inundation (hr)

	< 0.10
	0.10 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.60
	0.60 to 0.80
	0.80 to 1.00
	1.00 to 1.50
	1.50 to 2.00
	2.00 to 2.50
	> 2.50

LEGEND

Commonwealth Land
LGA Boundary
Catchment Boundary
Existing Drainage System

Active transport facility
Project Footprint
Two-Dimensional Model Boundary
Airport North and Airport East Road Works

N

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.

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Change in Duration of Inundation (hr)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

REFER SHEET 2

REFER SHEET 3

REFER SHEET 4

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Modelled Drainage System
- Two-Dimensional Model Boundary
- Active transport facility
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- New M5 Surface Road Works

N

200 0 200 400 600 m

Scale: 1:20,000

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.29
(Sheet 1 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
1% AEP EVENT

Change in Duration of Inundation (hr)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

HENRY STREET
CANAL ROAD
BURROWS ROAD
CANAL ROAD OVERPASSES
CITY OF SYDNEY
GARDENERS ROAD
RAILWAY ROAD
GEORGE STREET
PRINCES HIGHWAY
BELLEVUE STREET
FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES
BAYSIDE COUNCIL
COOKS RIVER CATCHMENT
TERRY STREET
HENRY STREET
LYMERSTON STREET
ST PETERS INTERCHANGE CONNECTION NORTHERN OVERPASS
COOKS RIVER INTERMODAL TERMINAL
ST PETERS INTERCHANGE CONNECTION SOUTHERN OVERPASS
AREAS OF POTENTIAL COMPENSATORY FLOODPLAIN STORAGE
WESTBOUND TERMINAL LINK
BURROWS ROAD SOUTH
ALEXANDRA CANAL
RICKETTY STREET
2 OFF 1.8 m W x 1.2 m H BOX CULVERTS AND 5 OFF 3 m W x 3 m H BOX CULVERTS
NORTHERN SECTOR LANDS ACCESS RAIL OVERPASS
TERMINAL 1 CONNECTION RAIL OVERPASS
FLOOD RELIEF CHANNEL 4.0 m WIDE DEPTH VARIES
BORAL ST PETERS CONCRETE AND RECYCLING
BURROWS ROAD SOUTH
ALEXANDRA CANAL CATCHMENT
IKEA
PORT BOTANY RAIL LINE
2 OFF 2.4 m W x 1.2 m H BOX CULVERTS
COWARD STREET
NEW OPEN CHANNEL 3.0 m WIDE DEPTH VARIES
EASTBOUND TERMINAL LINK
1050 mm DIAMETER PIPE
JOINS SHEET 3
JOINS SHEET 4
1050 mm DIAMETER PIPE
DO1
TERMINAL LINK BRIDGE
DO5
EXISTING 2 OFF 1500 mm DIAMETER PIPE
TYNE CONTAINER SERVICES
SWAMP ROAD
NORTHERN LANDS CAR PARK
DO2
QANTAS DRIVE SAG 1
SMITH STREET
QANTAS DRIVE BRIDGE
DO6
NORTHERN POND 2
TEMPE WETLANDS CATCHMENT
HIGH INTENSITY APPROACH LIGHTING (HIAL)
INNER WEST COUNCIL
PORT BOTANY RAIL LINE
SOUTH STREET
TEMPE WETLANDS
NIGEL LOVE BRIDGE
QANTAS DRIVE
LANCASTRIAN BRIDGE

N
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.

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LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- New M5 Surface Road Works
- Two-Dimensional Model Boundary
- DO5 Drainage Outlet Location and Identifier

SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.29
(Sheet 2 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
1% AEP EVENT

Change in Duration of Inundation (hr)

	-0.05 to 0.05
	0.05 to 0.10
	0.10 to 0.15
	0.15 to 0.20
	0.20 to 0.30
	0.30 to 0.40
	0.40 to 0.50
	> 0.50
	Land Rendered Flood Free as a Result of Change
	Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

TYNE CONTAINER SERVICES

SMITH STREET

SWAMP ROAD

NORTHERN LANDS CAR PARK

DO1

TERMINAL LINK BRIDGE

DO2

DO5

NORTHERN POND 2

TEMPE WETLANDS CATCHMENT

WENTWORTH STREET

SOUTH STREET

HART STREET

TEMPE WETLANDS

QANTAS DRIVE BRIDGE

HIGH INTENSITY APPROACH LIGHTING (HIAL)

INNER WEST COUNCIL

NIGEL LOVE BRIDGE

JOINS SHEET 2

TEMPE DRIVING RANGE AND ACADEMY

FREIGHT TERMINAL BRIDGE

CANAL

AIRPORT DRIVE

NORTHERN POND 1

KENDRICK PARK

PRINCES HIGHWAY

TEMPE LANDS

ALEXANDRA

ALEXANDRA DRIVE

DO6

HOLBEACH AVENUE

TEMPE PARK

TERMINAL 1 CONNECTION BRIDGE

DO7

DO8

2 OFF 3.0 m W x 1.5 m H BOX CULVERTS

JOINS SHEET 4

SYDNEY AIRPORT

TEMPE RECREATION RESERVE

EXISTING SHARED PATH BRIDGE

DO3

COOKS RIVER CATCHMENT

MAIN RUNWAY

LINK ROAD

DO4

COOKS RIVER

ALEXANDRA CANAL CATCHMENT

CAHILL PARK

ARRIVALS COURT

COOKS RIVER

BAYSIDE COUNCIL

MARSH STREET

GIOVANNI BRUNNETTI BRIDGE

LEGEND

N

Scale: 1:5,000

50 0 50 100 150 m

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.

	Commonwealth Land
	LGA Boundary
	Catchment Boundary
	Existing Drainage System to Remain
	Existing Drainage System to be Abandoned/Demolished
	Proposed Drainage System
	Project Footprint
	Proposed Road Works
DO5	Drainage Outlet Location and Identifier
	Two-Dimensional Model Boundary

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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.29
(Sheet 3 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
1% AEP EVENT

Change in Duration of Inundation (hr)

- -0.05 to 0.05
- 0.05 to 0.10
- 0.10 to 0.15
- 0.15 to 0.20
- 0.20 to 0.30
- 0.30 to 0.40
- 0.40 to 0.50
- > 0.50
- Land Rendered Flood Free as a Result of Change
- Additional Area of Land Flooded as a Result of Change

PROPOSED PROJECT COMPONENTS

- St Peters interchange connection
- Terminal links
- SACL access road
- Terminal 1 connection
- Qantas Drive upgrade and extension
- Terminal 2/3 access
- Active transport facility

LEGEND

- Commonwealth Land
- LGA Boundary
- Catchment Boundary
- Existing Drainage System to Remain
- Existing Drainage System to be Abandoned/Demolished
- Proposed Drainage System
- Project Footprint
- Proposed Road Works
- Airport North and Airport East Road Works
- Two-Dimensional Model Boundary
- D05 Drainage Outlet Location and Identifier

N

Scale: 1:5,000

50 0 50 100 150 m

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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SYDNEY GATEWAY ROAD PROJECT EIS/ DRAFT MDP
TECHNICAL WORKING PAPER: FLOODING

Figure B.29
(Sheet 4 of 4)

IMPACT OF PROJECT OPERATION ON DURATION OF INUNDATION
1% AEP EVENT

ANNEXURE C
ANALYSIS OF RECORDED RAINFALL DURING STORMS OF
7 SEPTEMBER 2018 AND 28 NOVEMBER 2018

C1.   ANALYSIS OF RECORDED RAINFALL DURING STORM OF SEPTEMBER 2018

C1.1. Overview

A severe thunderstorm hit Sydney on the afternoon of 7 September 2018 that brought heavy rainfall, hail and damaging winds across the city. Flash flooding was reported at a number of locations in Sydney, including the low point in the Robey Street Underpass. **Plate 1** is a photo that was taken during the storm which indicates that the depth of ponding at the low point could have been in the order of 0.2 to 0.3 metres.

An analysis of the rainfall that was recorded at Sydney Airport during the storm is provided in the following section.

Plate 1: Photo taken during storm of 7 September 2018 showing flooding to the low point in the Robey Street Underpass. The water level against the fence that is located to the left of the road indicates that the depth of inundation was likely to have been in the order of 0.2 to 0.3 metres. [Source: Sydney Morning Herald website]

C1.2. Analysis of Recorded Rainfall

Rainfall recorded at the Sydney Airport was obtained from the BoM for the storm which occurred in September 2018 to assess the likely depth of rainfall at Robey Street and to compare it against design rainfall depths for a range of durations.

Figure C1 at the end of this annexure shows the cumulative rainfall depth at Sydney Airport for the period between 21:00 hours on 6 September 2018 and 21:00 hours on 7 September 2018. Steady rain commenced at around 23:30 hours on 6 September 2018 but only lasted for around two hours, resulting in a total rainfall depth of just 3 millimetres. More intense rainfall commenced at around 15:30 hours on 7 September and continued through to around 20:00 hours on the same day. The total depth of rain which fell during this period amounted to 30 millimetres.

Table C1 provides a summary of maximum recorded rainfall depths during the storm of 7 September 2018 for durations ranging between 30 minutes and 6 hours, together with the corresponding AEP of the storm based on a comparison with design rainfall depths that were derived using procedures set out in both ARR 1987 and ARR 2016. **Figure C2** at the end of this annexure shows the same information plotted on a log normal graph along with curves showing the design rainfall depths for a 1 EY storm together with a range of storms with AEP's between 50 and 1 per cent.

The analysis shows that for durations of between 30 minutes and six hours the storm was equivalent to less than a 1 EY event.

TABLE C1
SUMMARY OF MAXIMUM RECORDED RAINFALL INTENSITIES DURING
7 SEPTEMBER 2018 STORM

Duration	Rainfall Intensity (mm/hour)	Equivalent Probability (ARR 1987)	Equivalent Probability (ARR 2016)
30 minutes	28.0	< 1 EY	< 1 EY
1 hour	18.8	< 1 EY	< 1 EY
1.5 hours	13.3	< 1 EY	< 1 EY
2 hours	10.9	< 1 EY	< 1 EY
3 hours	9.1	< 1 EY	< 1 EY
4.5 hours	6.7	< 1 EY	< 1 EY
6 hours	5.0	< 1 EY	< 1 EY

(1) The calculated probability is based on a comparison of recorded rainfall depths with design rainfall depths derived using procedures set out in *Australian Rainfall and Runoff, 1987*.

(2) The calculated probability is based on a comparison of recorded rainfall depths with design rainfall depths derived using procedures set out in *Australian Rainfall and Runoff, 2016*.

C2.   ANALYSIS OF RECORDED RAINFALL DURING STORM OF NOVEMBER 2018

C2.1. Overview

A severe thunderstorm hit Sydney on the morning of 28 September 2018 that brought heavy rainfall across the city. Flash flooding was reported at a number of locations in Sydney, including the low point in the O'Riordan Street Underpass. A video taken of the flooding to the underpass indicates that the depth of ponding at the low point could have been in the order of 0.5 metres.

An analysis of the rainfall that was recorded at Sydney Airport during the storm is provided in the following section.

C2.2.   Analysis of Recorded Rainfall

Rainfall recorded at the Sydney Airport was obtained from the Bureau of Meteorology (**BoM**) for the storm which occurred in November 2018 to assess the likely depth of rainfall at O'Riordan Street and to compare it against design rainfall depths for a range of durations.

Figure C1 at the end of this annexure shows the cumulative rainfall depth at Sydney Airport for the period between 02:00 hours on 28 November 2018 and 02:00 hours on 29 November 2018. Rainfall commenced just after 05:00 hours on 28 November 2018 and the most intense period of rainfall occurred between 06:00 hours and 07:30 hours on 28 November 2018. The total depth of rain which fell during this period amounted to 30 millimetres.

Table C2 over the page provides a summary of maximum recorded rainfall depths during the storm of 28 November 2018 for durations ranging between 30 minutes and six hours, together with the corresponding AEP of the storm based on a comparison with design rainfall depths that were derived using procedures set out in both ARR 1987 and ARR 2016. **Figure C2** at the end of this annexure shows the same information plotted on a log normal graph along with curves showing the design rainfall depths for a 1 EY storm together with a range of storms with AEP's between 50 and 1 per cent.

The analysis shows that for durations of between 30 minutes and six hours the storm was equivalent to less than a 1 EY event.

TABLE C2
SUMMARY OF MAXIMUM RECORDED RAINFALL INTENSITIES DURING
28 NOVEMBER 2018 STORM

Duration	Rainfall Intensity (mm/hour)	Equivalent Probability (ARR 1987)	Equivalent Probability (ARR 2016)
30 minutes	30.4	< 1 EY	< 1 EY
1 hour	28.4	< 1 EY	< 1 EY
1.5 hours	20.9	< 1 EY	< 1 EY
2 hours	16.7	< 1 EY	< 1 EY
3 hours	12.7	< 1 EY	< 1 EY
4.5 hours	10.2	< 1 EY	< 1 EY
6 hours	8.5	< 1 EY	< 1 EY

(1) The calculated probability is based on a comparison of recorded rainfall depths with design rainfall depths derived using procedures set out in ARR 1987.

(2) The calculated probability is based on a comparison of recorded rainfall depths with design rainfall depths derived using procedures set out in ARR 2016.