

Appendix M – Comprehensive Water Sensitive Cities Strategy Information

This section contains more comprehensive information on the overall strategy at a catchment and sub-catchment level.

The **first map** shows the RORB subarea (sub-catchment) spill volumes for the 5 yr and 20 yr rainfall events.

The **second map** shows the potential street storage volumes (excluding public open space) for the sub-catchments.

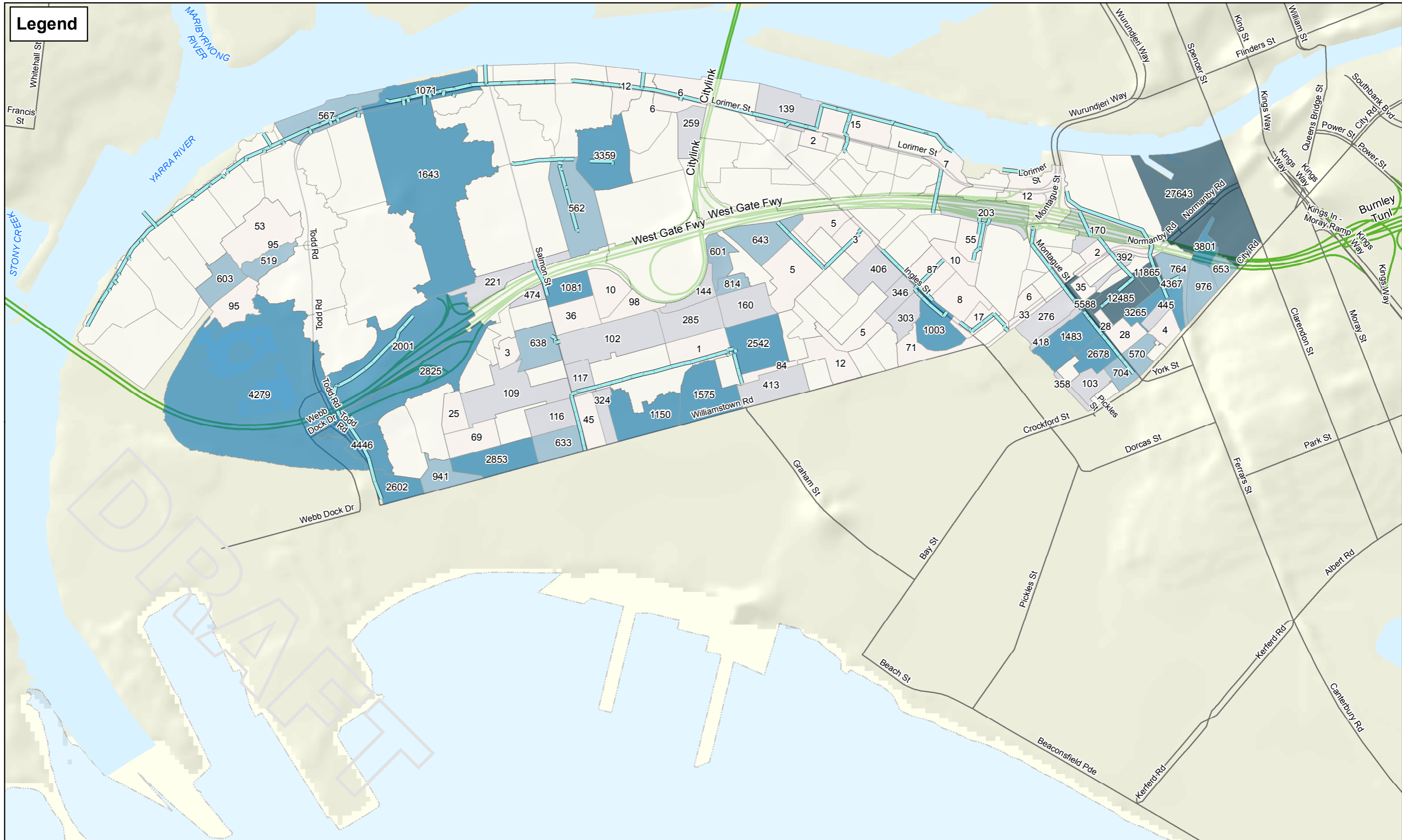
The **third map** shows the location of potential open space storages and indicates which are close to groundwater.

The **fourth and fifth maps** are flood depth maps, using the potential street storage volumes (excluding public open space). This demonstrates where storage in the streets, without pipe upgrades or storage in the open spaces, is or is not effective.

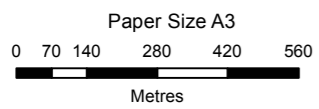
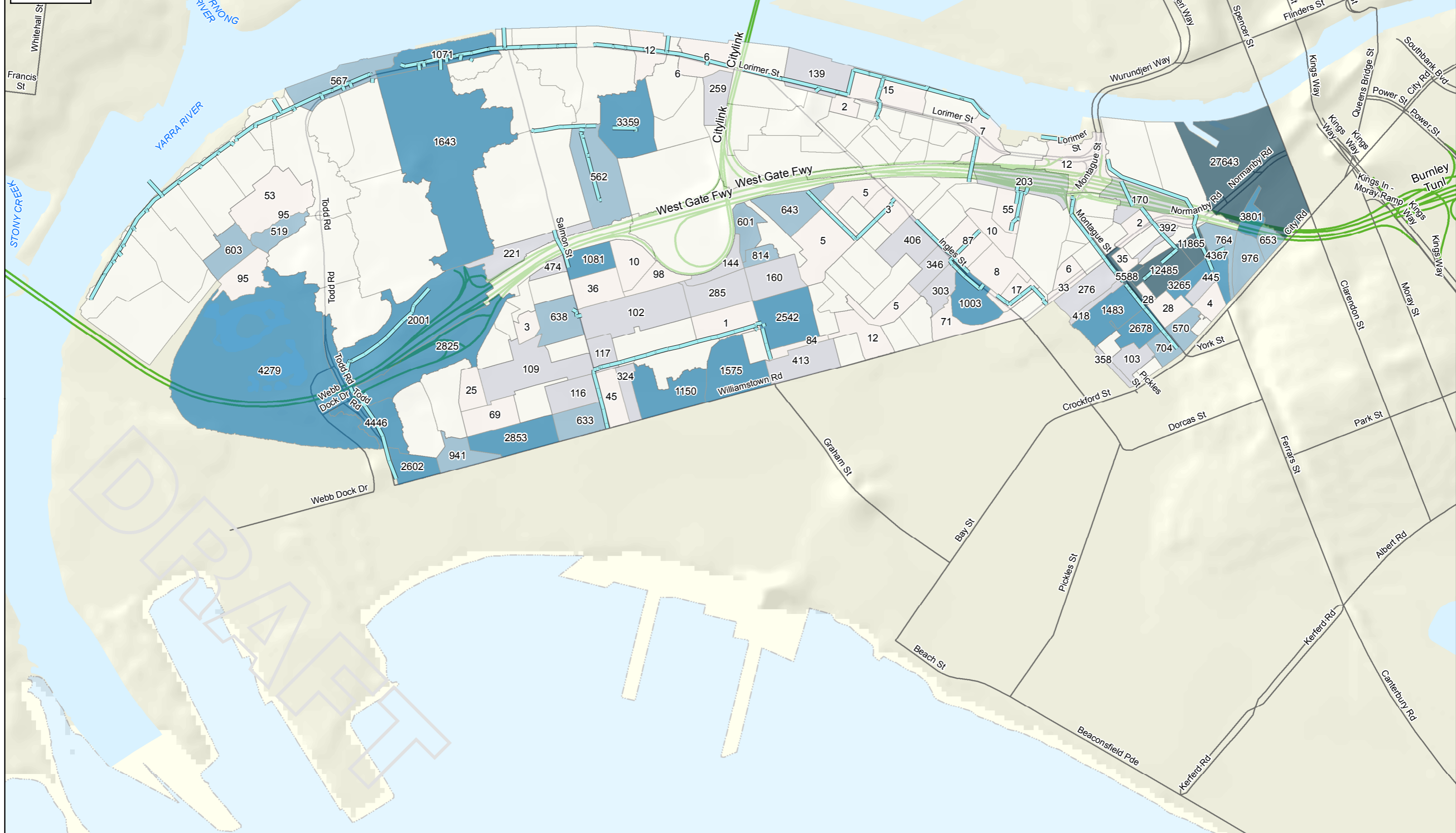
The **sixth and seventh maps** are flood depth maps, using the assumed required storage volumes to capture the spills (regardless of whether in streets or open spaces). This shows where storages are, or are not, effective. These results demonstrate that storages are effective everywhere except in Montague, which is relatively low lying and is also influenced by the adjacent Hannah St Main Drain catchment in South Melbourne.

The **final set of maps** show a comprehensive view of the proposed drainage infrastructure at Fishermans Bend, catchment by catchment. These show the infrastructure (levee, pump stations, new pipes, upgraded/duplicated pipes), the areas with potential for distributed storage (streets with the linear storage rate represented by colour banding, and location of new/existing open space), with areas below an elevation of 1.4m AHD also shown.

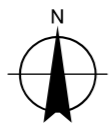
The sub-catchment areas are also represented, with two numbers shown: (1) the modelled rainwater tank flood storage volume, and (2) the storage volume required to capture the 20 year spill volume. The sub-catchment unique IDs are also shown, and an accompanying MS Excel Table will be provided with all the relevant volumes (above what is shown on the maps).



Legend



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

	Proposed Pipes		501 - 1000
	0 - 100		1001 - 5000
	101 - 500		5001 - 27643
	0		0

SubArea Spill Volumes (20 year ARI)



MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

**Required storage volumes to achieve
20-year ARI level of service**

Job Number | 31-36555
Revision | C
Date | 27/11/2018

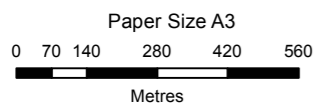
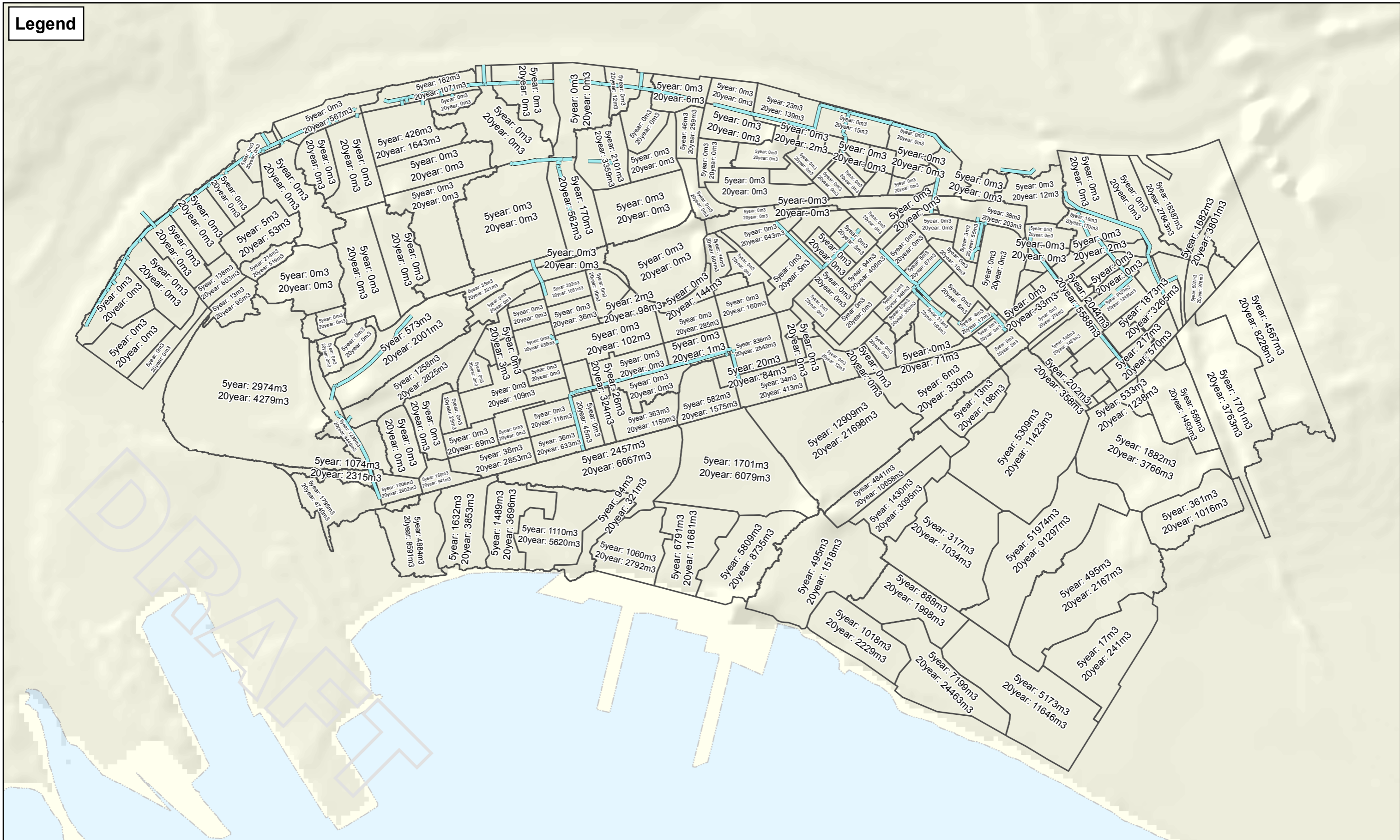
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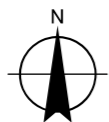
Data source: VicMap, 2017; Melbourne Water, LIDAR, Precinct Boundaries, 2018. Created by: SPLaird

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Legend



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

- Proposed Pipes
- SubArea Spill Volumes



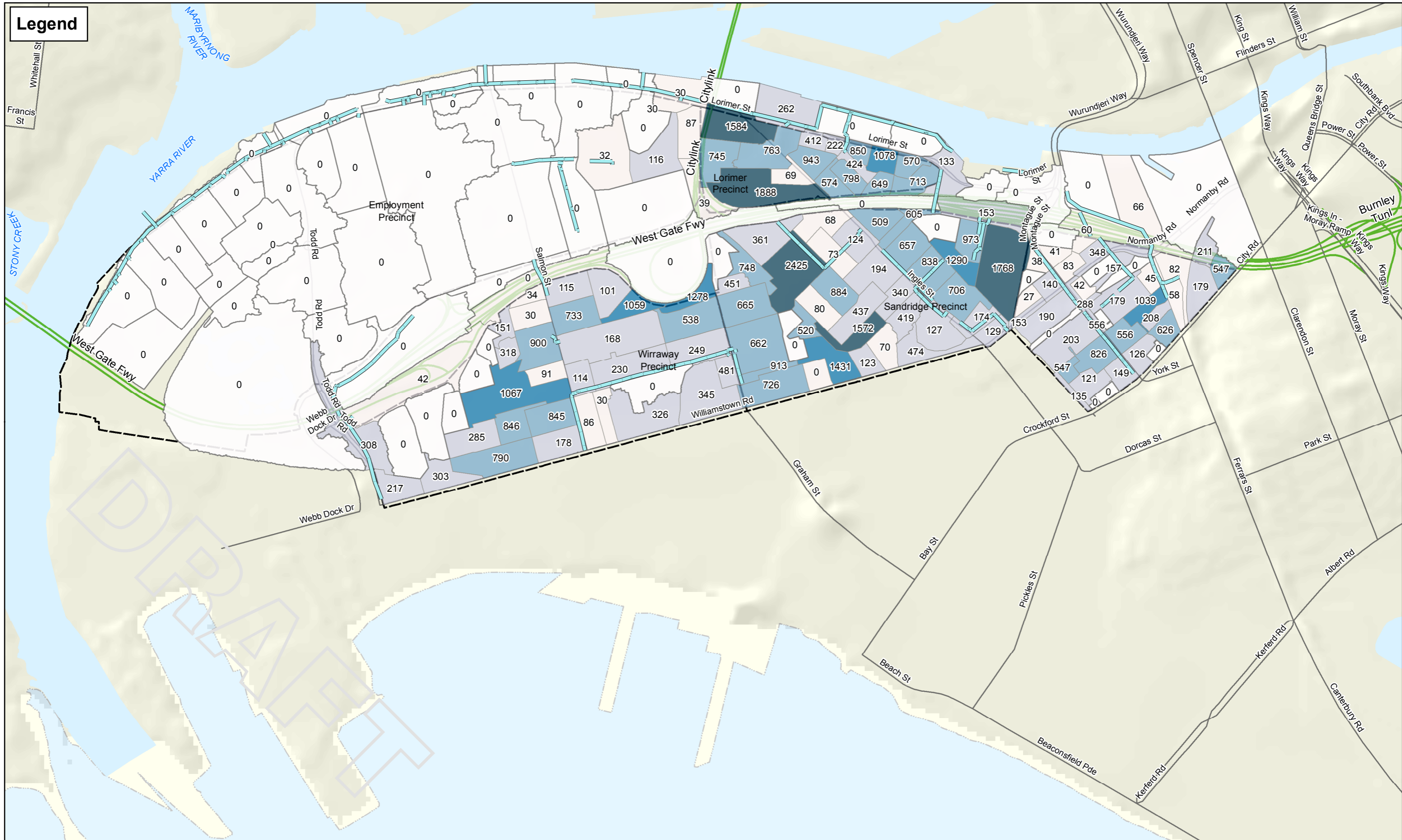
MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Sub Area Spill Volumes

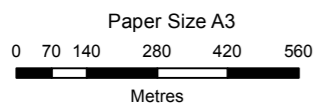
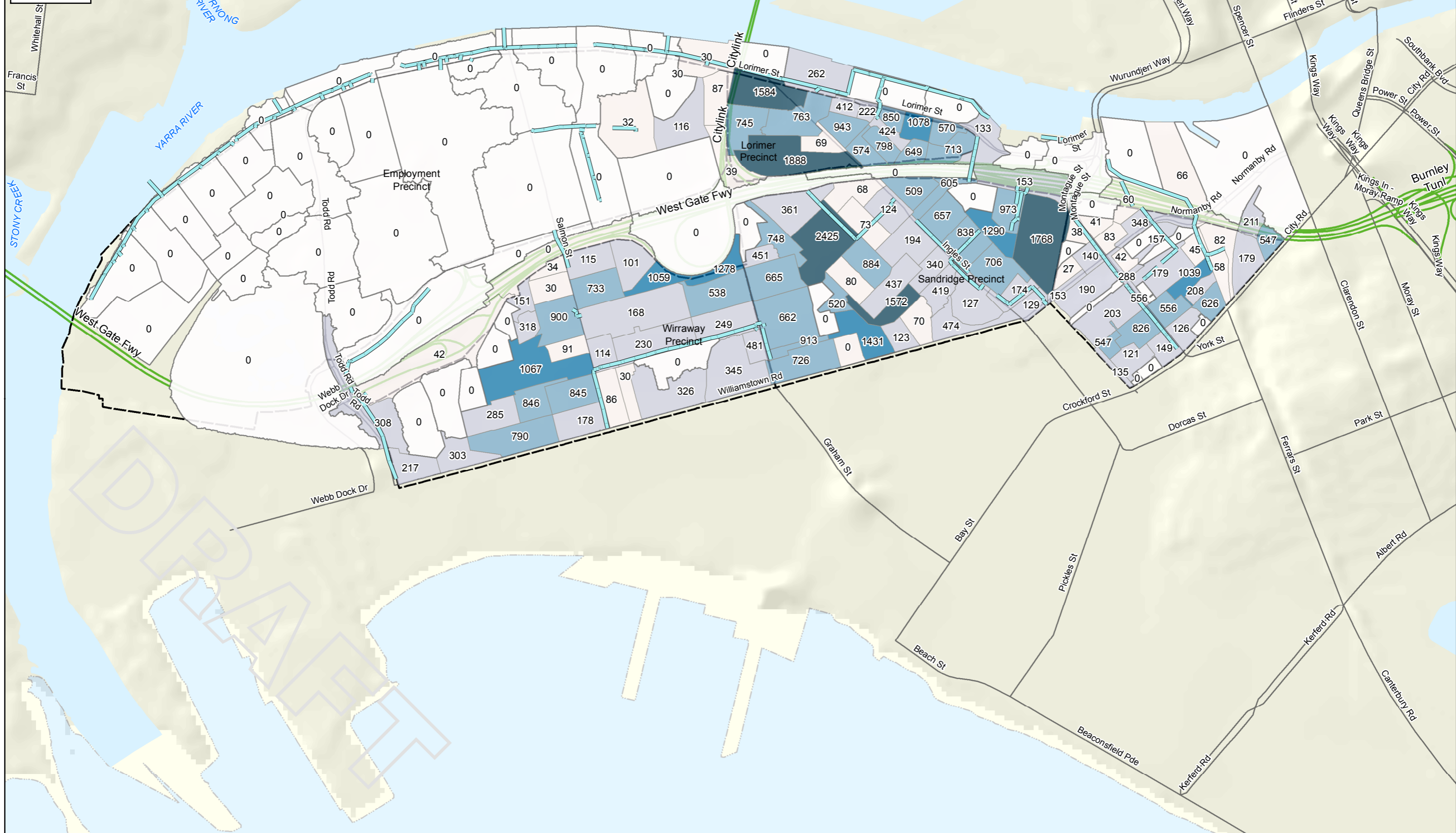
Job Number | 31-36555
Revision | B
Date | 23/11/2018

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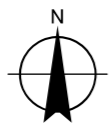
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Data source: VicMap, 2017; Melbourne Water, LIDAR, Precinct Boundaries, 2018. Created by: SPLaird



Legend



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

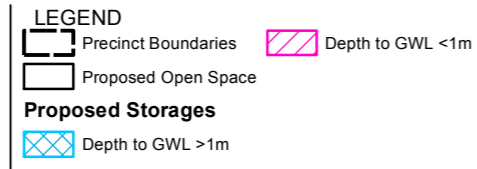
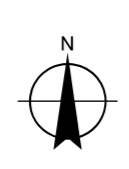
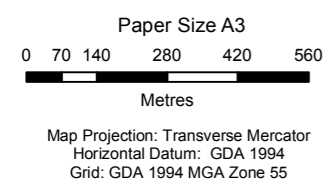
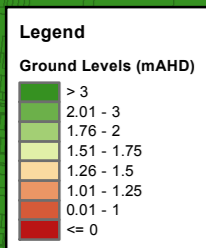
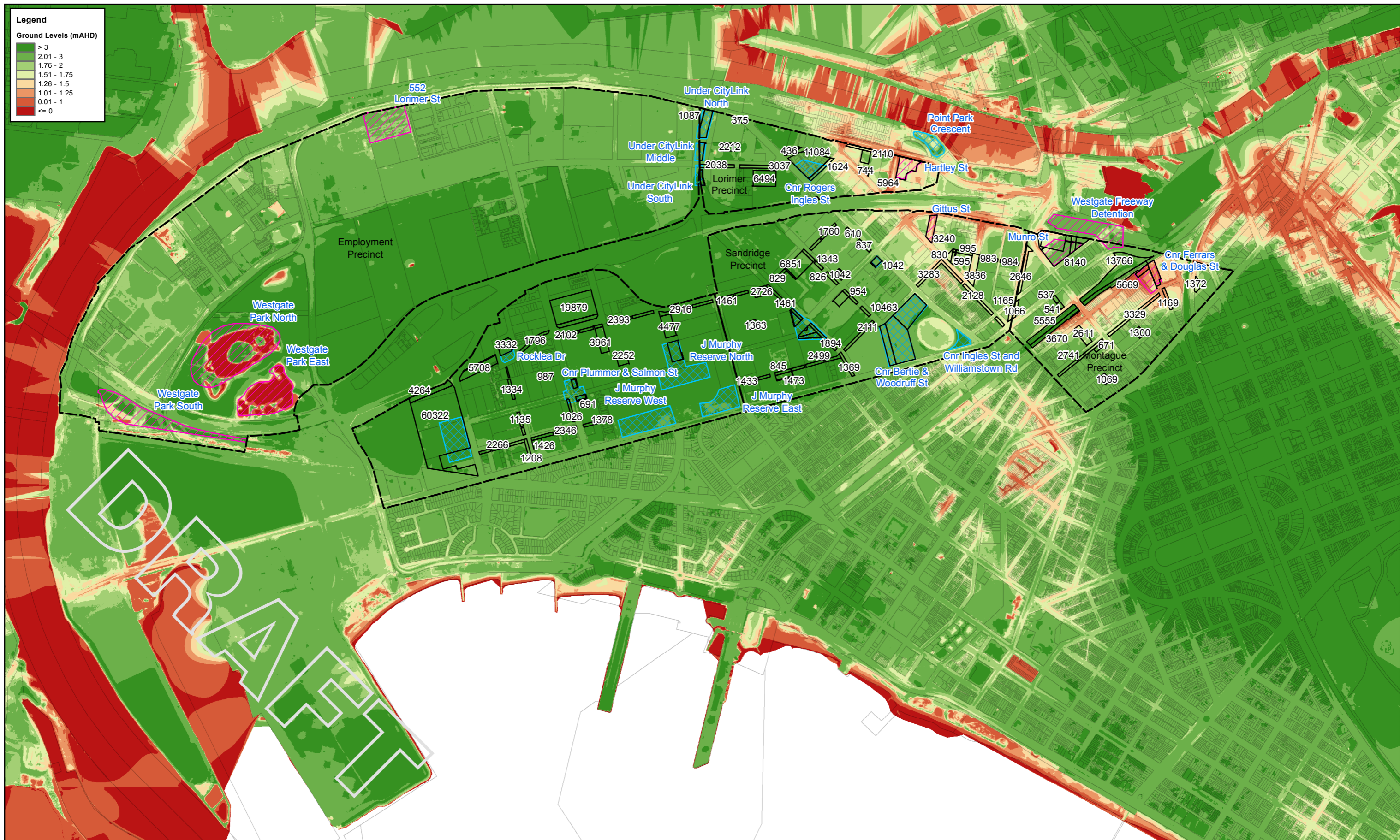
- Proposed Pipes
- Precinct Boundaries
- Available street storage volumes (m3)**
- 1 - 100
- 101 - 500
- 501 - 1000
- 1001 - 1500
- 1501 - 2500
- 0



MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Available street storage volumes

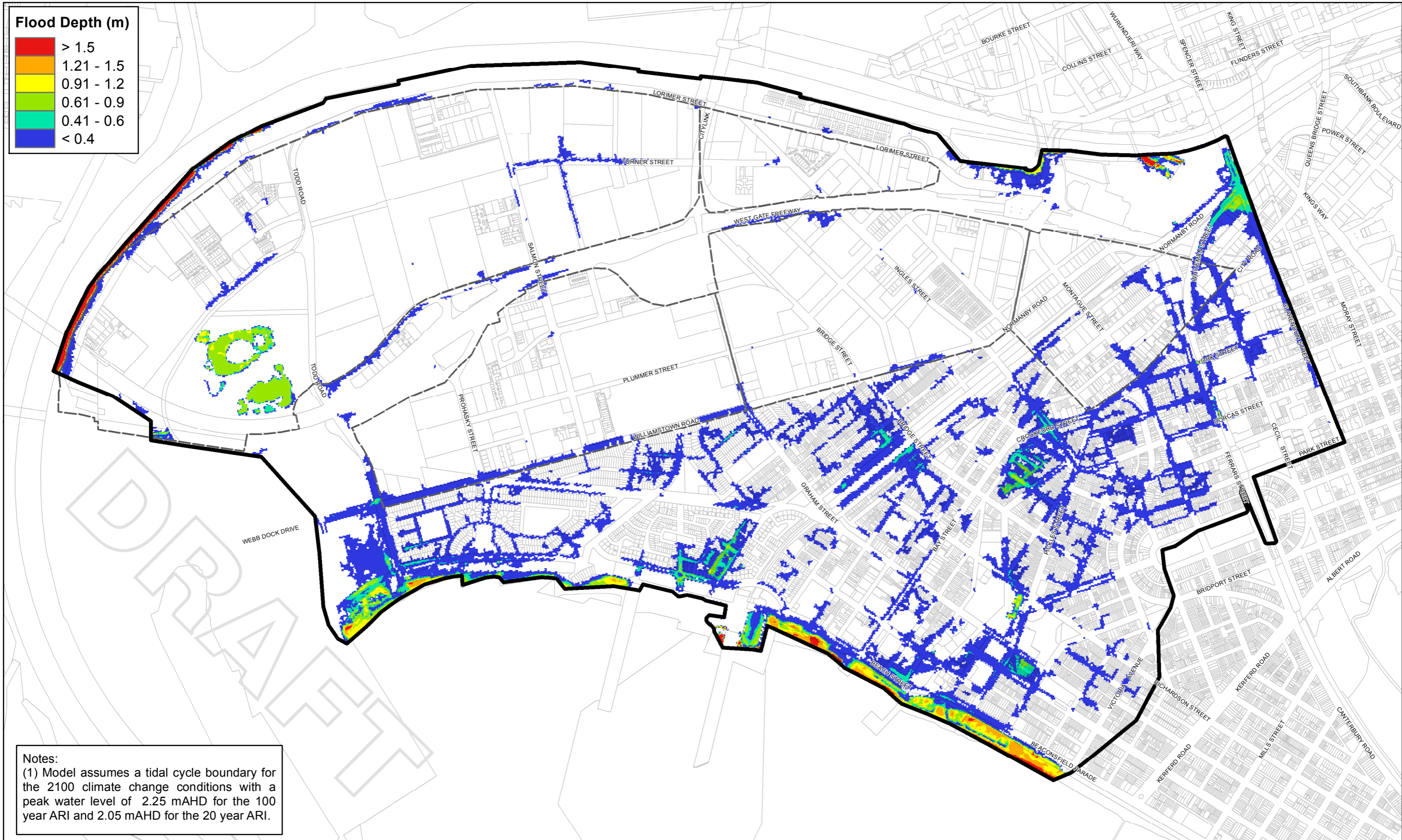
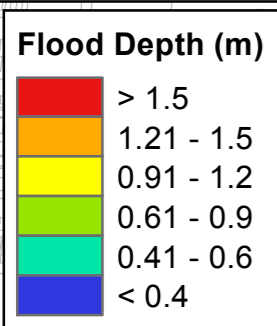
Job Number | 31-36555
Revision | C
Date | 27/11/2018



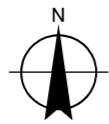
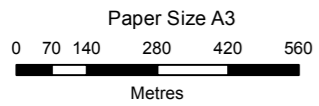
MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

**Distributed Storages & LiDAR
& Proposed Open Spaces**

Job Number | 31-36555
Revision | B
Date | 06/12/2018



Notes:
 (1) Model assumes a tidal cycle boundary for the 2100 climate change conditions with a peak water level of 2.25 mAHD for the 100 year ARI and 2.05 mAHD for the 20 year ARI.



LEGEND

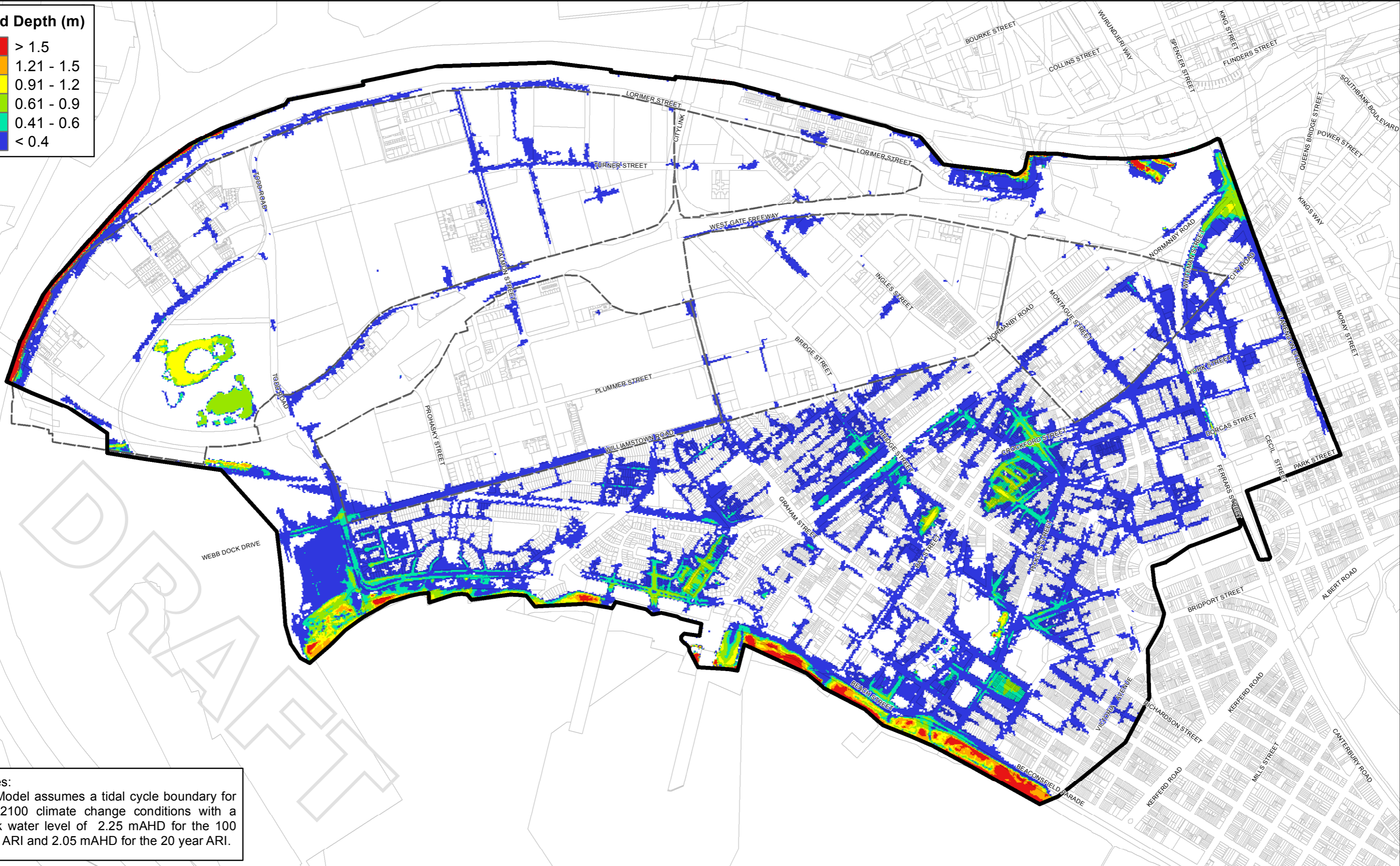
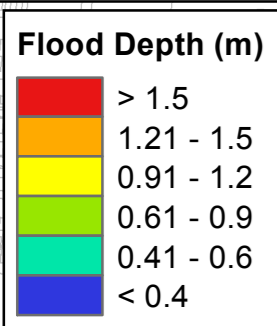
- Model Boundary
- Precinct Boundaries



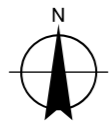
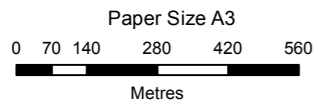
MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Realistic street storages
20 year ARI

Job Number | 31-36555
 Revision | A
 Date | 18/12/2018



Notes:
 (1) Model assumes a tidal cycle boundary for the 2100 climate change conditions with a peak water level of 2.25 mAHD for the 100 year ARI and 2.05 mAHD for the 20 year ARI.



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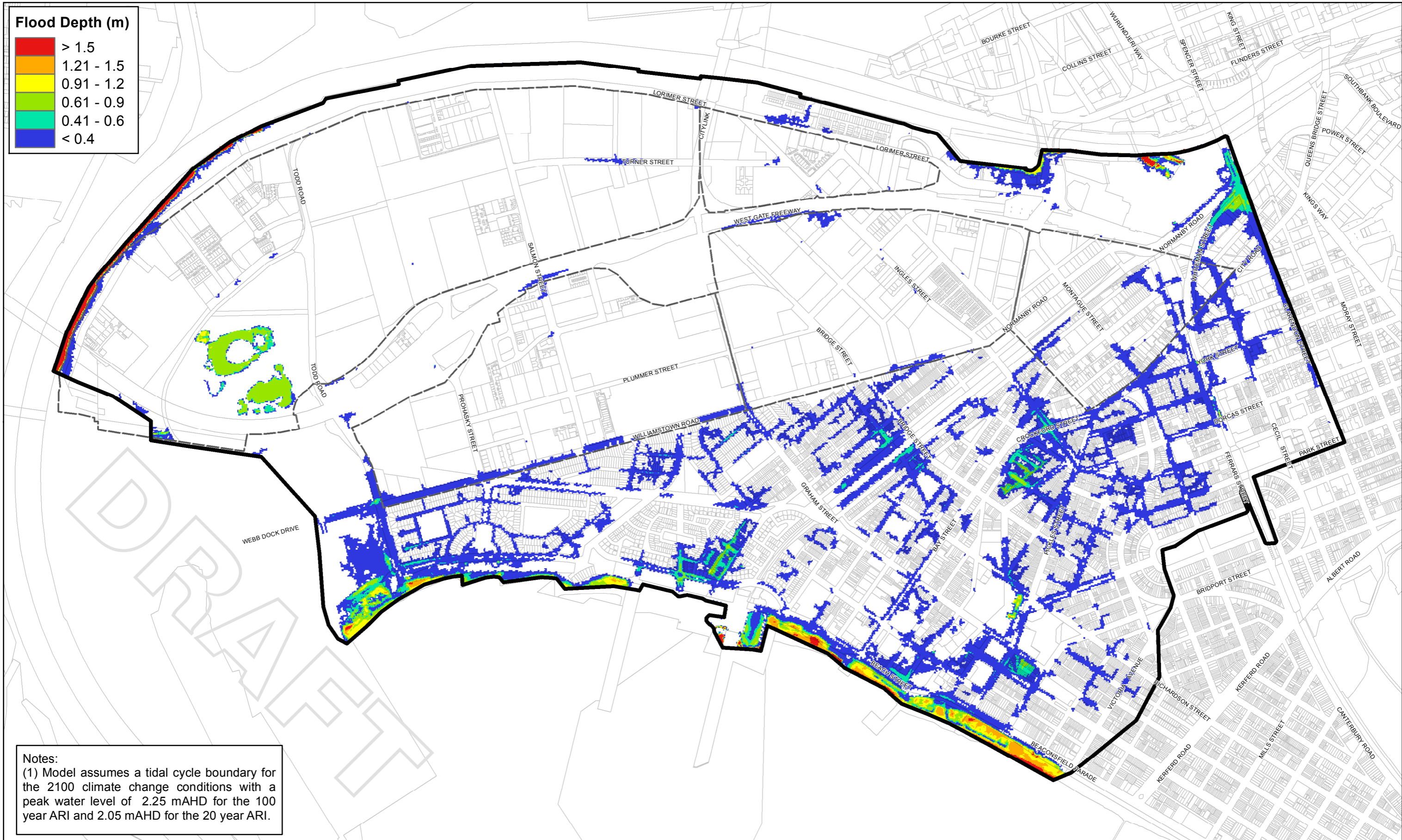
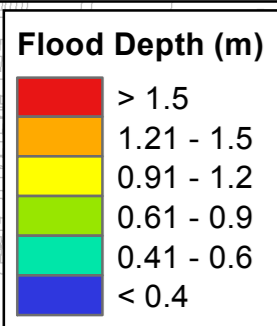
- Model Boundary
- Precinct Boundaries



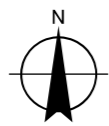
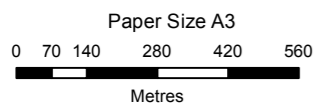
MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Realistic street storages
 100 year ARI

Job Number	31-36555
Revision	A
Date	18/12/2018



Notes:
 (1) Model assumes a tidal cycle boundary for the 2100 climate change conditions with a peak water level of 2.25 mAHD for the 100 year ARI and 2.05 mAHD for the 20 year ARI.



LEGEND

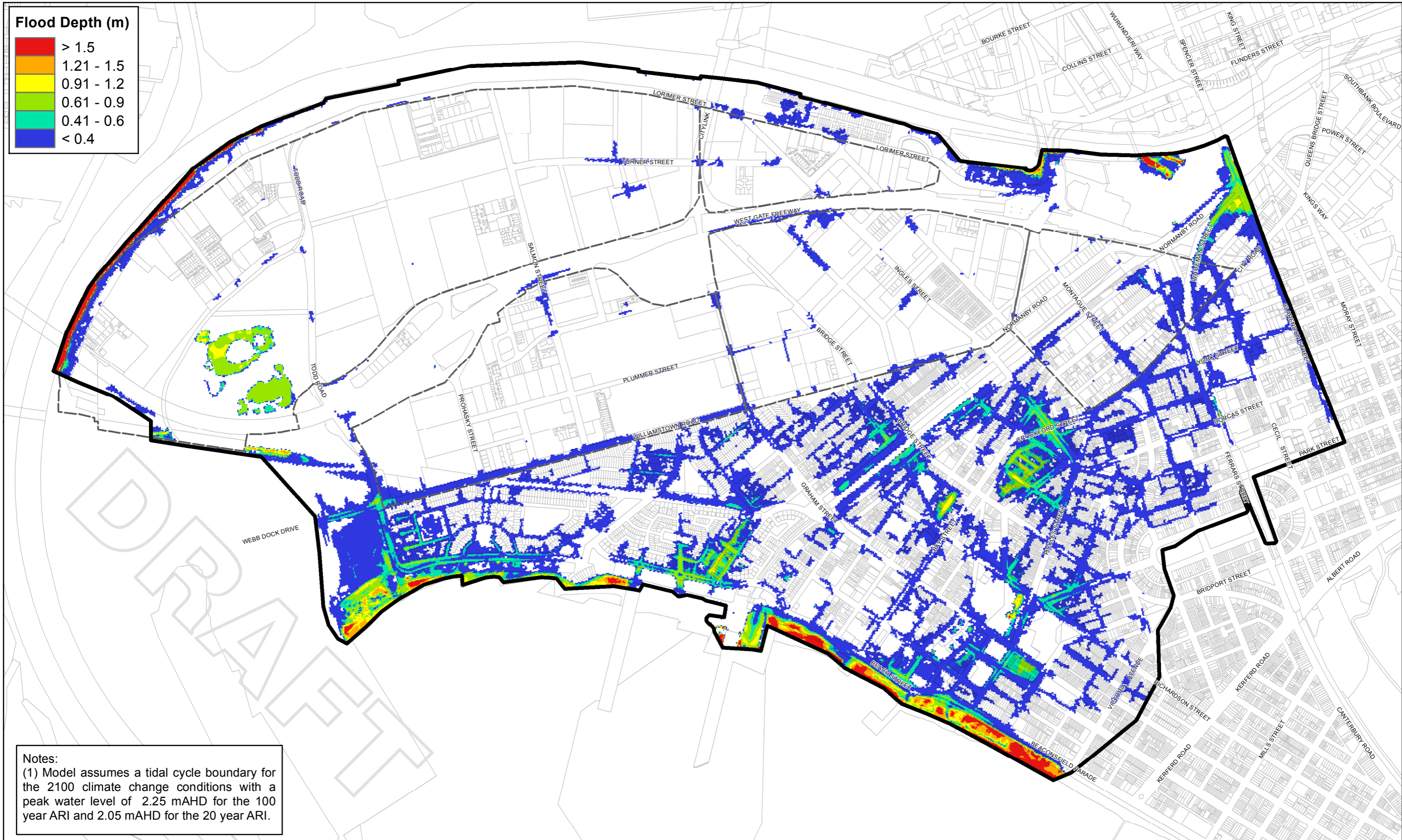
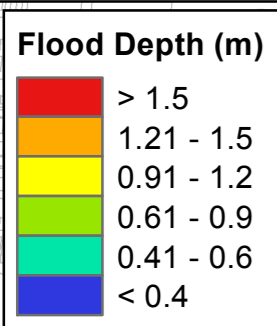
- Model Boundary
- Precinct Boundaries



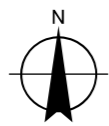
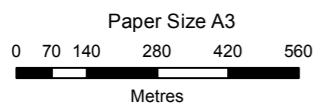
MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

**Maximised street storages
 20 year ARI**

Job Number | 31-36555
 Revision | A
 Date | 18/12/2018



Notes:
 (1) Model assumes a tidal cycle boundary for the 2100 climate change conditions with a peak water level of 2.25 mAHD for the 100 year ARI and 2.05 mAHD for the 20 year ARI.



LEGEND

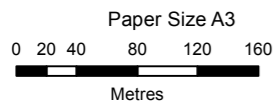
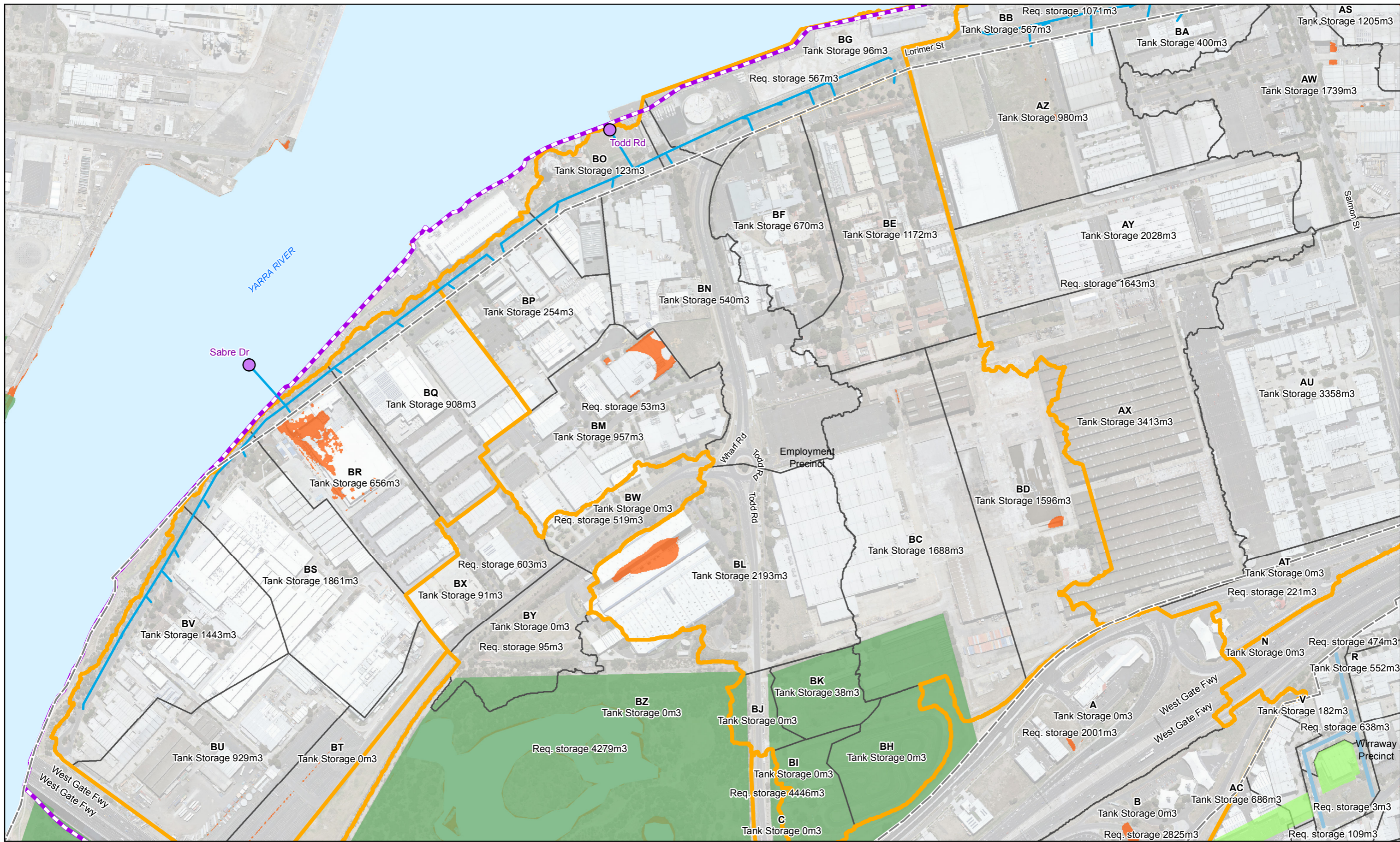
- Model Boundary
- Precinct Boundaries



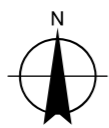
MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

**Maximised street storages
 100 year ARI**

Job Number | 31-36555
 Revision | A
 Date | 18/12/2018



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



LEGEND

- Precinct Boundaries
- Proposed Open Space
- Surface Elevation >1.4m AHD
- Surface Elevation <1.4m AHD

- Proposed Pump Stations
- Proposed Levee
- Precinct Boundaries

- Proposed Pipes**
- Duplicate / Upgrade
 - New
 - Existing Open Space Areas

- Storage Potential (m³/m)**
- 0.09 - 0.50
 - 0.51 - 1.00
 - 1.01 - 1.50
 - 1.51 - 3.00
 - 3.01 - 4.00
 - 4.01 - 6.35



MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Job Number | 31-36555
 Revision | A
 Date | 05/04/2019

Proposed Drainage Infrastructure

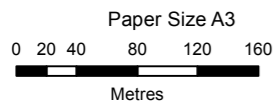
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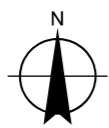
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Data source: DELWP, VicMap, CIP Imagery (Jan 2017), Precinct Boundaries, 2018; CoPP/CoMMWC, Existing Drainage Network, 2018; Created by: splaird



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

- Precinct Boundaries
- Proposed Open Space
- >1.4m AHD
- <1.4m AHD

- Proposed Levee
- Precinct Boundaries

Proposed Pipes

- Duplicate / Upgrade
- New
- Existing Open Space Areas

- Storage Potential (m³/m)**
- 0.09 - 0.50
 - 0.51 - 1.00
 - 1.01 - 1.50
 - 1.51 - 3.00
 - 3.01 - 4.00
 - 4.01 - 6.35



MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

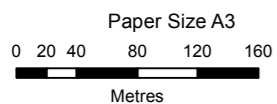
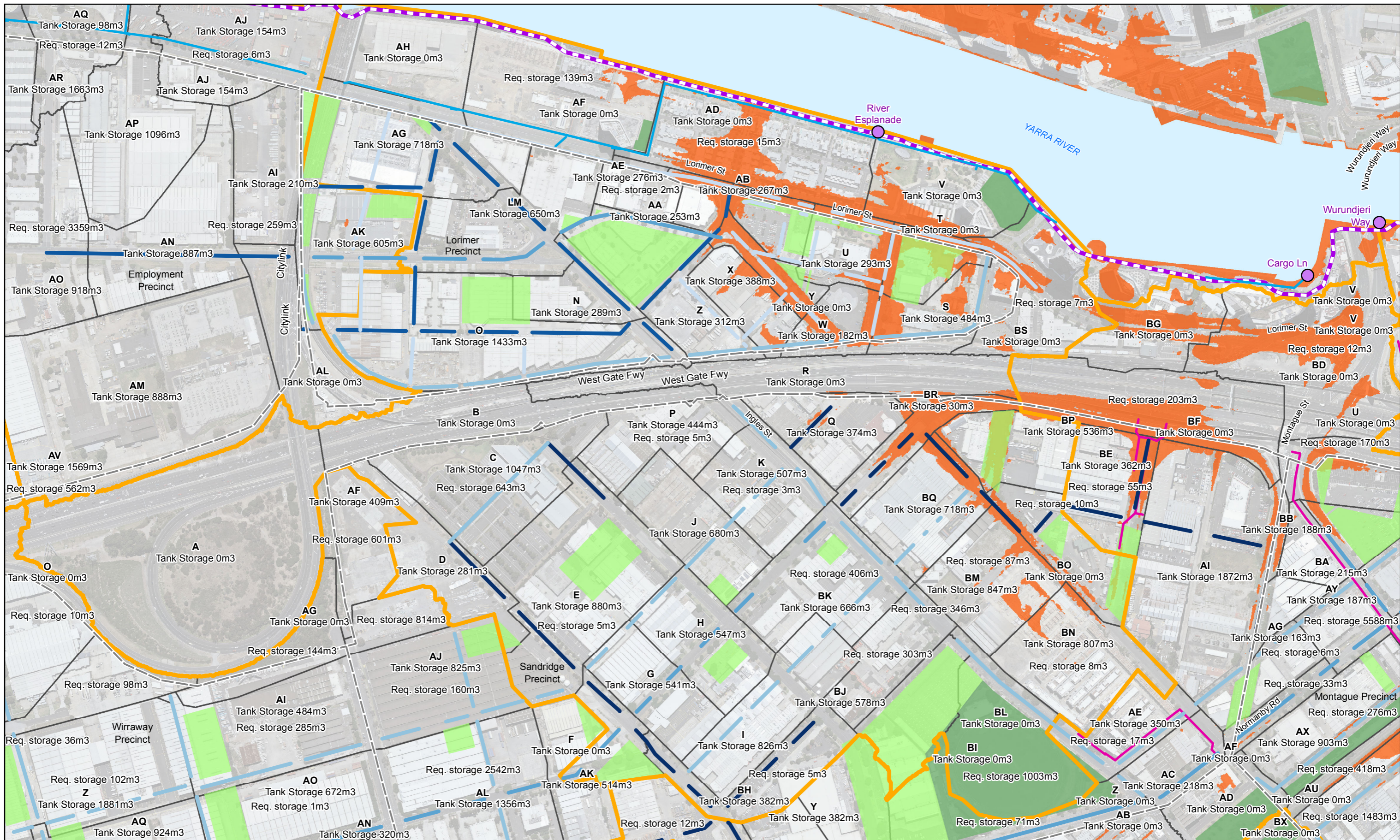
Job Number | 31-36555
Revision | A
Date | 05/04/2019

Proposed Drainage Infrastructure

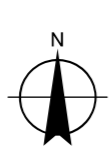
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Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



LEGEND
 Precinct Boundaries
 Proposed Open Space
Surface Elevation
 >1.4m AHD
 <1.4m AHD

Proposed Pump Stations
 Proposed Levee
 Precinct Boundaries

Proposed Pipes
 Duplicate / Upgrade
 New
 Existing Open Space Areas

Storage Potential (m3/m)
 0.09 - 0.50
 0.51 - 1.00
 1.01 - 1.50
 1.51 - 3.00
 3.01 - 4.00
 4.01 - 6.35



MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Job Number | 31-36555
 Revision | A
 Date | 05/04/2019

Proposed Drainage Infrastructure

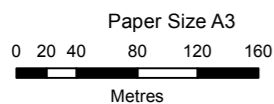
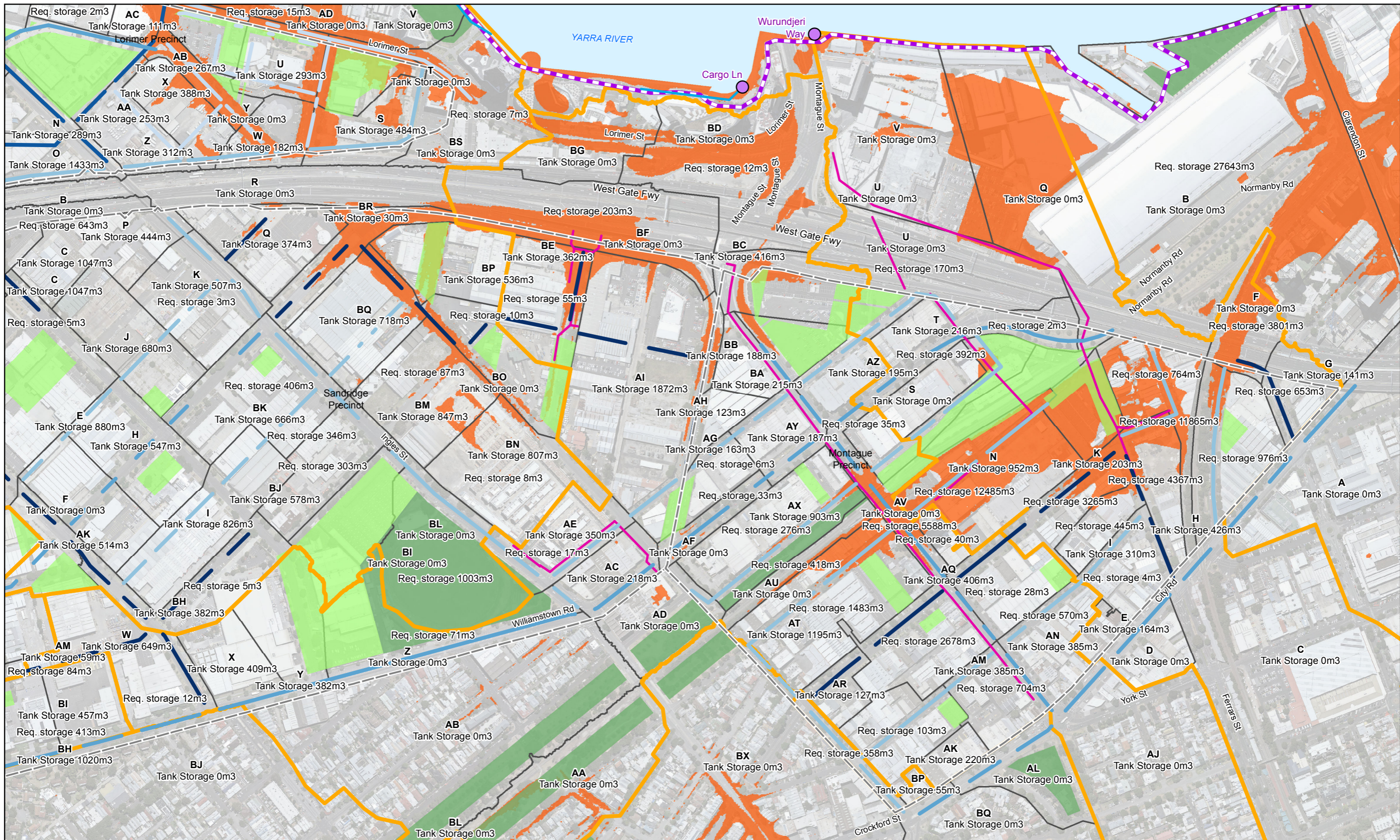
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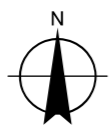
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Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



LEGEND

- Precinct Boundaries
- Proposed Open Space
- Surface Elevation**
- >1.4m AHD
- <1.4m AHD
- Proposed Pump Stations
- Proposed Levee
- Precinct Boundaries

Proposed Pipes

- Duplicate / Upgrade
- New
- Existing Open Space Areas

Storage Potential (m3/m)

- 0.09 - 0.50
- 0.51 - 1.00
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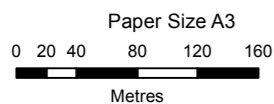
MELBOURNE WATER
 FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Proposed Drainage Infrastructure

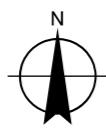
Job Number | 31-36555
 Revision | A
 Date | 05/04/2019

Appendix M4

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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

- Precinct Boundaries
- Proposed Open Space
- Surface Elevation
- >1.4m AHD
- <1.4m AHD
- Proposed Pump Stations
- Proposed Levee
- Precinct Boundaries

Proposed Pipes

- Duplicate / Upgrade
- New
- Existing Open Space Areas

Storage Potential (m³/m)

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- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 3.00
- 3.01 - 4.00
- 4.01 - 6.35



MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Job Number | 31-36555
Revision | A
Date | 05/04/2019

Proposed Drainage Infrastructure

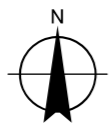
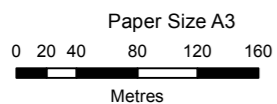
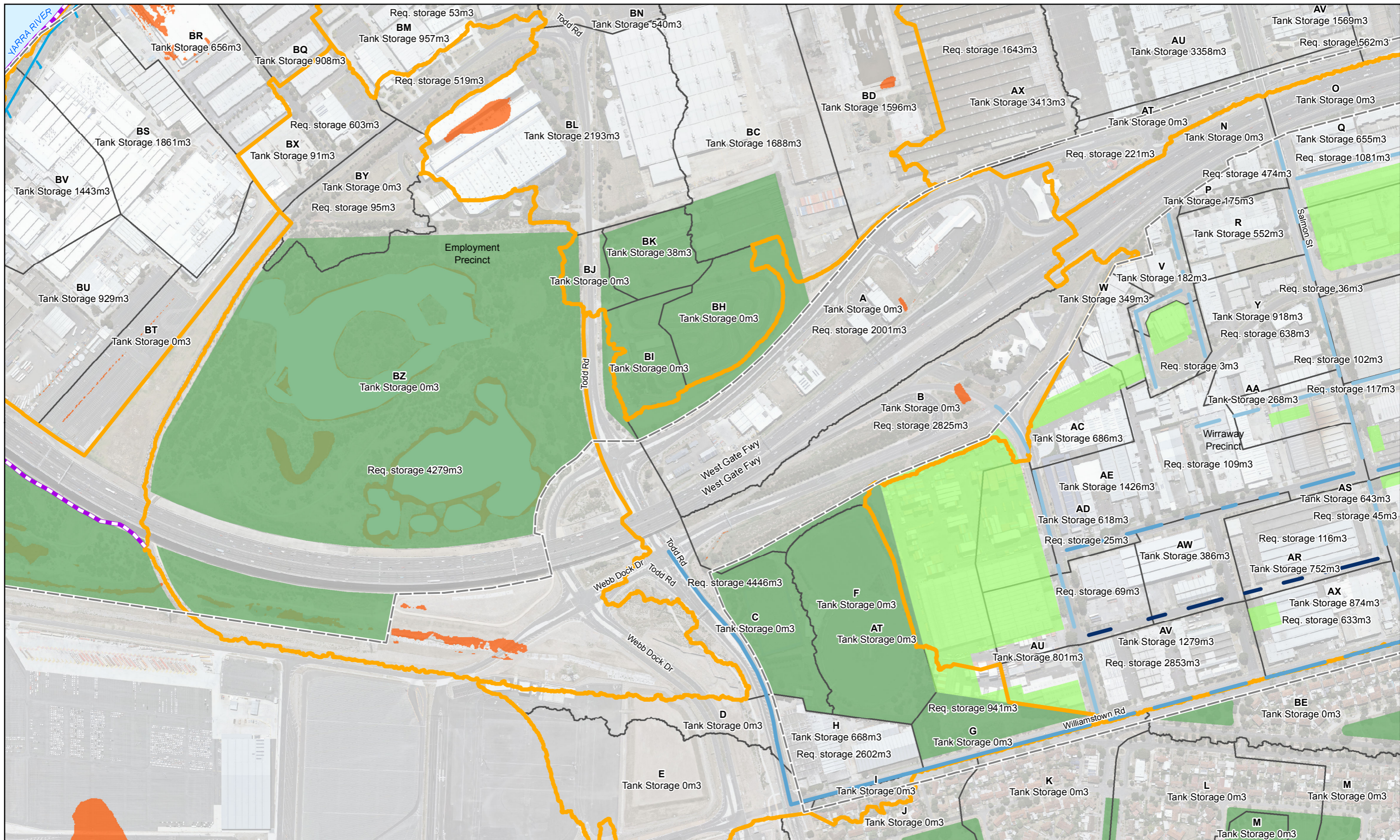
Appendix M5

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G:\31\36555\GIS\Maps\Working\3136555_Fishermans_Bend_A3L.mxd

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Data source: DELWP, VicMap, CIP Imagery (Jan 2017), Precinct Boundaries, 2018; CoPP/CoMMWC, Existing Drainage Network, 2018; Created by: splaird



LEGEND		Proposed Pipes		Storage Potential (m³/m)	
Precinct Boundaries	Proposed Pump Stations	Duplicate / Upgrade	0.09 - 0.50	3.01 - 4.00	
Proposed Open Space	Proposed Levee	New	0.51 - 1.00	4.01 - 6.35	
Precinct Boundaries	Precinct Boundaries	Existing Open Space Areas	1.01 - 1.50		
>1.4m AHD			1.51 - 3.00		
<1.4m AHD					



MELBOURNE WATER
FISHERMANS BEND WATER SENSITIVE DRAINAGE & FLOOD STRATEGY

Job Number | 31-36555
Revision | A
Date | 05/04/2019

Proposed Drainage Infrastructure

Appendix M6