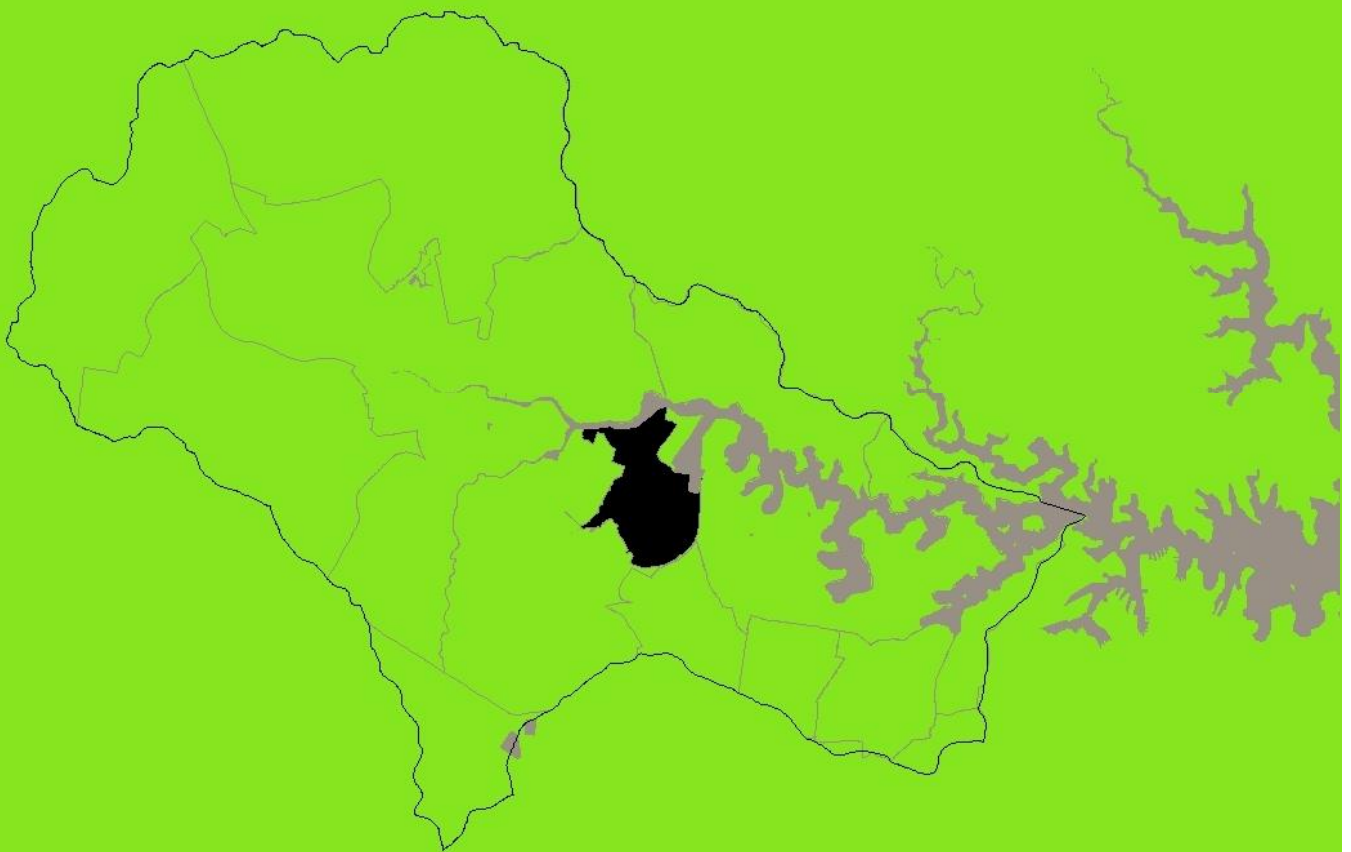


# Sydney Olympic Park



## 9.6 Sydney Olympic Park

### 9.6.1 Stormwater Management and GPTs

The majority of Sydney Olympic Park is located along the lower reaches of the Haslams and Powells Creek catchments, and is subject to impacts associated with stormwater runoff originating from beyond the boundary and jurisdiction of the park.

The stormwater system at Sydney Olympic Park incorporates the use of numerous constructed wetlands and 40 GPTs. Floating booms have also been installed on Powells and Haslams Creeks to capture litter that originates from the catchment upstream of Sydney Olympic Park.

In the 2006-07 reporting period, approximately 23 tonnes of litter were recovered from these booms, which contributed to a total of 180 tonnes of litter, vegetation and sediment were removed from GPTs.

In the SoE section of SOPA's 2009 Annual Report reporting period, four new stormwater litter booms were added to the existing eight in creeks around the Park. This is potentially reflected in the 78 tonnes of litter removed during 2008-09 compared to 45 tonnes in 2007-09. Waste removed from GPTs and CDS units were reported as 141 tonnes and 127 tonnes for the 2007-08 and 2008-09 (respectively).

Collectively waste and litter removed from waterways in the Park, over the past three reporting periods has incrementally increased in volume:

- 180 tonnes in 2006-07;
- 186 tonnes in 2007-08; and
- 205 tonnes in 2008-09

### 9.6.2 Seawalls

Approximately 2.2 km of seawalls were assessed within the tidal waterways of Sydney Olympic Park (Table 9-29), of which, two distinct seawall sections have been highly prioritised in terms of condition, and risks to assets and public safety (Table 9-30).

Table 9-29. Seawalls assessed within Sydney Olympic Park

Asset Name	Locality	Condition	Length (m)	Existing Habitat
SOPA_S01	Homebush Bay	Failed	10.9	Rocky substrate and mangroves
SOPA_S02	Homebush Bay	Failed	20.5	Rubble substrate and mangroves
SOPA_S03	River South	Good	986.0	Rocky substrate
SOPA_S04	River South	Good	68.9	Rubble substrate, sessile invertebrates
SOPA_S05	River South	Good	131.0	Rubble substrate, sessile invertebrates
SOPA_S06	River South	Good	265.6	Rubble substrate, sessile invertebrates, sandy beach, intermittently vegetated with mangroves
SOPA_S07	River South	Good	430.5	Rubble substrate, intermittent mangroves, muddy low tide terrace
SOPA_S08	River South	Good	261.4	Mangroves, muddy low tide terrace
			<b>2,174.8</b>	

Table 9-30. High Priority seawalls assessed within Sydney Olympic Park

Asset	Length (m)	Cost range for traditional engineered seawall replacement <sup>20</sup>		Habitat Creation Option <sup>21</sup>
		(\$3,000/lineal m)	(\$5,000/lineal m)	
SOPA_S01	10.9	\$32,576.86	\$54,294.76	Artificial reef habitat
SOPA_S02	20.5	\$61,436.74	\$102,394.57	Artificial reef habitat

GIS layers provided for the study area indicating the location of canals included the reach of Haslams Creek (downstream of the M4 Motorway and upstream of the Hills Road culvert). This creek reach, referred to by SOPA as Haslams Creek Flats, was restored to a more natural creek-line as part of the site's redevelopment for the 2000 Sydney Olympic Games. The former canal is now a much longer, meandering watercourse which is bounded on both sides by terraced gabion basket seawalls. Varying widths of fill within the terraced seawalls now contains established saltmarsh vegetation. Table 9-31 summarises the condition assessment of the gabion seawalls in Haslams Flats, which are categorised under 'Canals' within the project GIS database.

Table 9-31. Gabion basket seawalls located within Haslams Creek, Sydney Olympic Park.

Asset name	Length (m)	Condition
HAS_E01	34.1	Good
HAS_E02	19.2	Poor
HAS_E03	673.6	Good
HAS_E04	129.4	Good
HAS_E05	242.3	Good
HAS_W01	83.2	Good
HAS_W02	836.3	Good
HAS_W03	344.3	Good
HAS_W04	40.0*	Good

\*Actual length of HAS\_W04 is 390.6, only 40m is located in Sydney Olympic Park

### 9.6.3 Facilities

Four facilities were assessed within the Sydney Olympic Park (Table 9-32).

Table 9-32 Foreshore facilities assessed in Sydney Olympic Park

Asset	Locality	Type of Facility	Condition
SOPA_F01	Shipwreck Viewing Platform, Homebush Bay	Viewing platform	Good

<sup>20</sup> The cost to install a new seawall or coastal revetment is dependent on a number of factors, including:

- The ground conditions at the site
- Materials required, material availability and whether existing materials can be reused
- Site access
- The required structure profile including slope, crest height and foundation depth
- Hydrodynamic conditions

In light of this variability, an indicative cost of \$3,000-\$5,000 per linear metre of seawall has been adopted for seawalls requiring replacement.

<sup>21</sup> Refer section 4.8.1 for explanation of treatments

Asset	Locality	Type of Facility	Condition
SOPA_F02	Newington Armoury Wharf, River South	Decommissioned timber vessel loading/unloading facility	Good
SOPA_F03	Newington Armoury Wharf, River South	Public timber jetty, steel gangway with timber slats and concrete floating pontoon	Excellent
SOPA_F04	Blaxland Riverside Park, River South	Concrete landing that appears to be an abutment for an older wharf structure	Poor

SOPA\_F04 is a concrete landing that appears to be an abutment for an older wharf structure that is no longer present. A low steel rail has been installed around the structure edge. A public footpath/cycleway is located adjacent to the structure.

SOPA\_F02 is a decommissioned timber vessel loading/unloading facility supported by timber piles. Two cranes are located on the decking and are supported by concrete slabs and steel piles. A number of ladders provide access from the wharf to the water and a set of timber sea stairs is located at the eastern extent of the facility. A sandstone wall and rubble revetment is present beneath the structure.

While the condition assessment for this facility is categorised as 'good' the timber piles, decking and beams are showing signs of deterioration, and the concrete slabs and steel piles that support the crane are corroding.

Public access is available although a section at the western extent has been cordoned off with bollards and witches hats. There is no barrier on the deck to define the edge of the structure.

It is recommended that a more detailed investigation be undertaken to determine the extent of deterioration of the timber piles. The defects in the decking noted should be replaced and public access reinstated.

#### 9.6.4 Estuarine Vegetation

The Sydney Olympic Park contains extensive estuarine wetlands and waterways, which are a mix of natural remnant and constructed communities (Table 9-33), and comprises the largest assemblages of mangrove, saltmarsh, and estuarine riparian vegetation communities within the study area.

SOPA has conducted a range of wetland and saltmarsh specific mapping and management projects over the past decade. Spatial data used to generate the figures in Table 9-33 are based on mapping assessed from 2003 aerial photography conducted by SM-CMA in collaboration with I & I NSW and NSW Maritime Authority. Spatial data generated from SOPA mapping projects is likely to be more accurate and therefore it is acknowledged that there is likely to be variance in the figures reported for this study.

Table 9-33. Estuarine vegetation occurring within Sydney Olympic Park

Community	Landward Migration <sup>22</sup>		Total (ha)
	Limited (ha)	Potential (ha)	
Mangrove	47.5	16.4	63.9
Saltmarsh	5.5	13.1	18.6
Swamp Oak Floodplain Forest	9.0	5.5	14.5
Sydney Turpentine Ironbark	n/a	n/a	15.8

<sup>22</sup> Landward migration refers to the potential for vegetation to migrate naturally upslope unimpeded. Limited landward migration is typically where obstacles are present in the form of structures, development, or due to natural topography.

Community	Landward Migration <sup>22</sup>		Total (ha)
	Limited (ha)	Potential (ha)	
Forest			

The estuarine wetlands located within the Sydney Olympic Park contain large areas of mudflats which significantly increase the total area of estuarine habitat above that listed for the cover of estuarine vegetation in Table 9-33.

Areas within the Sydney Olympic Park that will be vulnerable to forecasted sea level rise include those mangroves and saltmarsh communities located within the lower reaches of Haslams and Powells Creeks. The extensive areas of mangroves and saltmarsh located within Newington Nature Reserve (specifically Wanngal Wetland) are afforded a level of protection against the impacts of sea level rise through regulation of tidal flows via a purpose built weir (refer Section 7.6.7: Coastal Saltmarsh – sea level rise).

SOPA maintains a high level of conservation management in accordance with the requirements of the Sydney Olympic Park Act 2000, and associated Sydney Olympic Park Plan of Management (PoM), and have undertaken considerable research in relation to weed management in estuarine wetlands, wetland restoration, and more recently the effects of climate change on estuarine wetland communities within the park.

#### 9.6.5 Management Recommendations

##### *Stormwater:*

At the time of preparing the project GIS database for this study, SOPA spatial analysts were heavily committed to preparing event based requirements for the park. As such, GIS data layers relating to stormwater drainage and management have not been incorporated into the project GIS database. It is recommended that as soon as is practical, that SOPA and the Committee formalise data license agreements so that the project database can be updated accordingly, and potential future stormwater management activities can be incorporated into estuary management plan.

##### *Seawalls and facilities:*

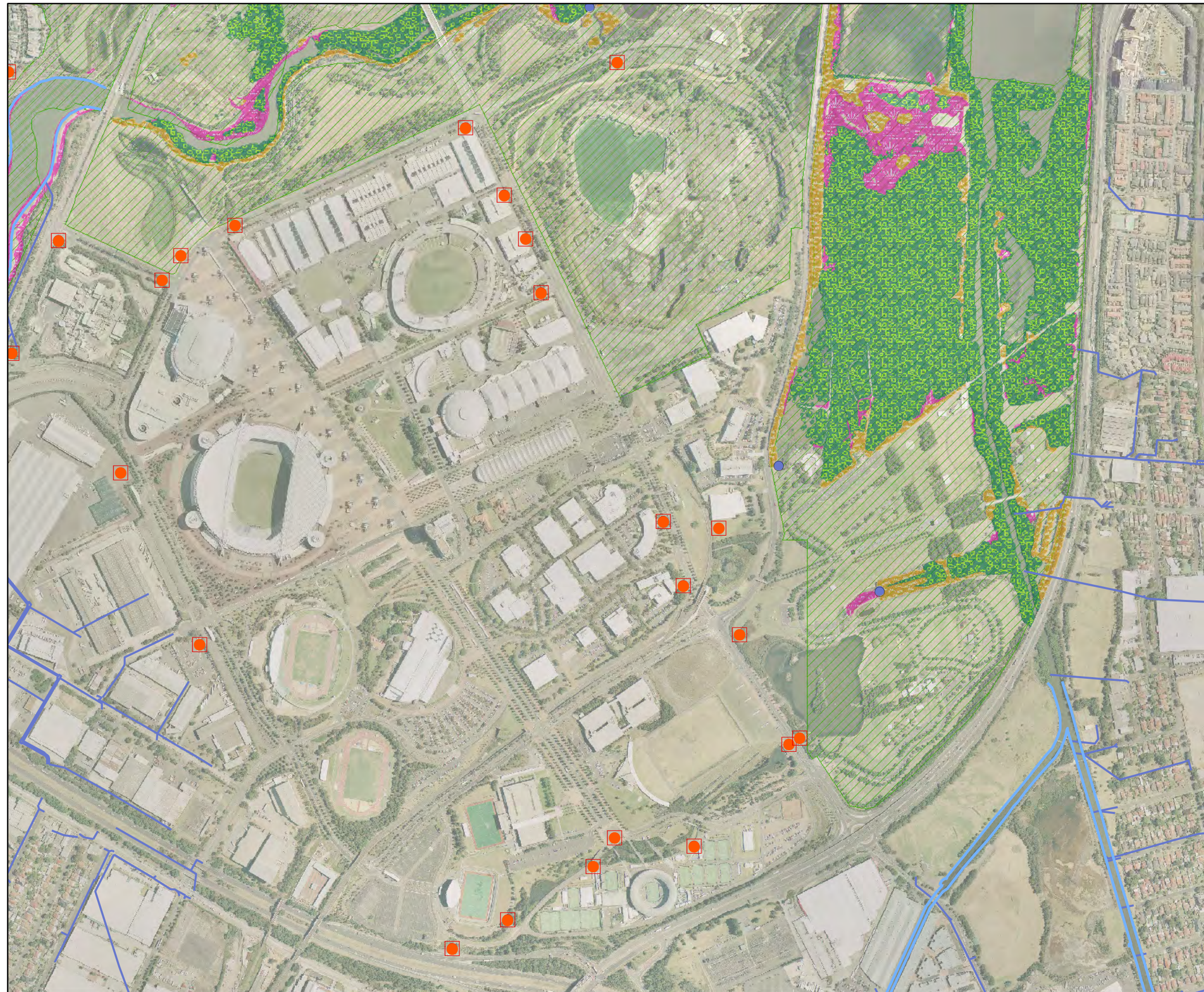
As per Sections 9.5.2 and 9.5.3.

##### *Estuarine vegetation:*

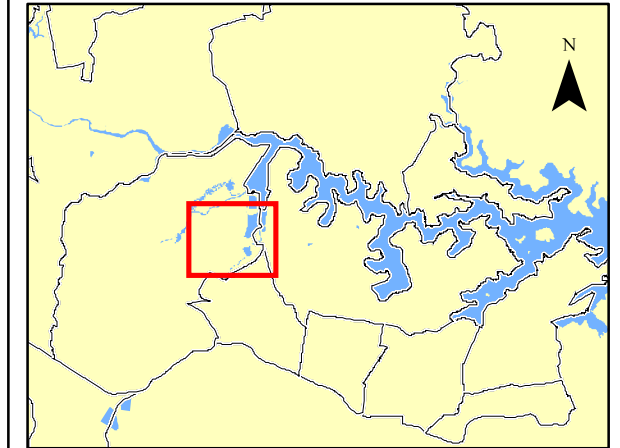
Potential implications of sea level rise on estuarine vegetation as researched by SOPA may assist in guiding management strategies for intertidal vegetative communities elsewhere in the study area.

The vast area of estuarine wetlands within Sydney Olympic Park may also provide a future location in which translocation of saltmarsh materials and maintenance of genetic diversity may be facilitated (i.e. from locations within the study area where existing fragmented saltmarsh plants or communities are threatened by localised extinction).





# SITE LOCATION



## Seawalls

- Excellent
- Good
- Poor
- Failed

- Stormwater outlet
- Existing GPT
- Stormwater drainage
- Canal
- Foreshore erosion

## Facilities

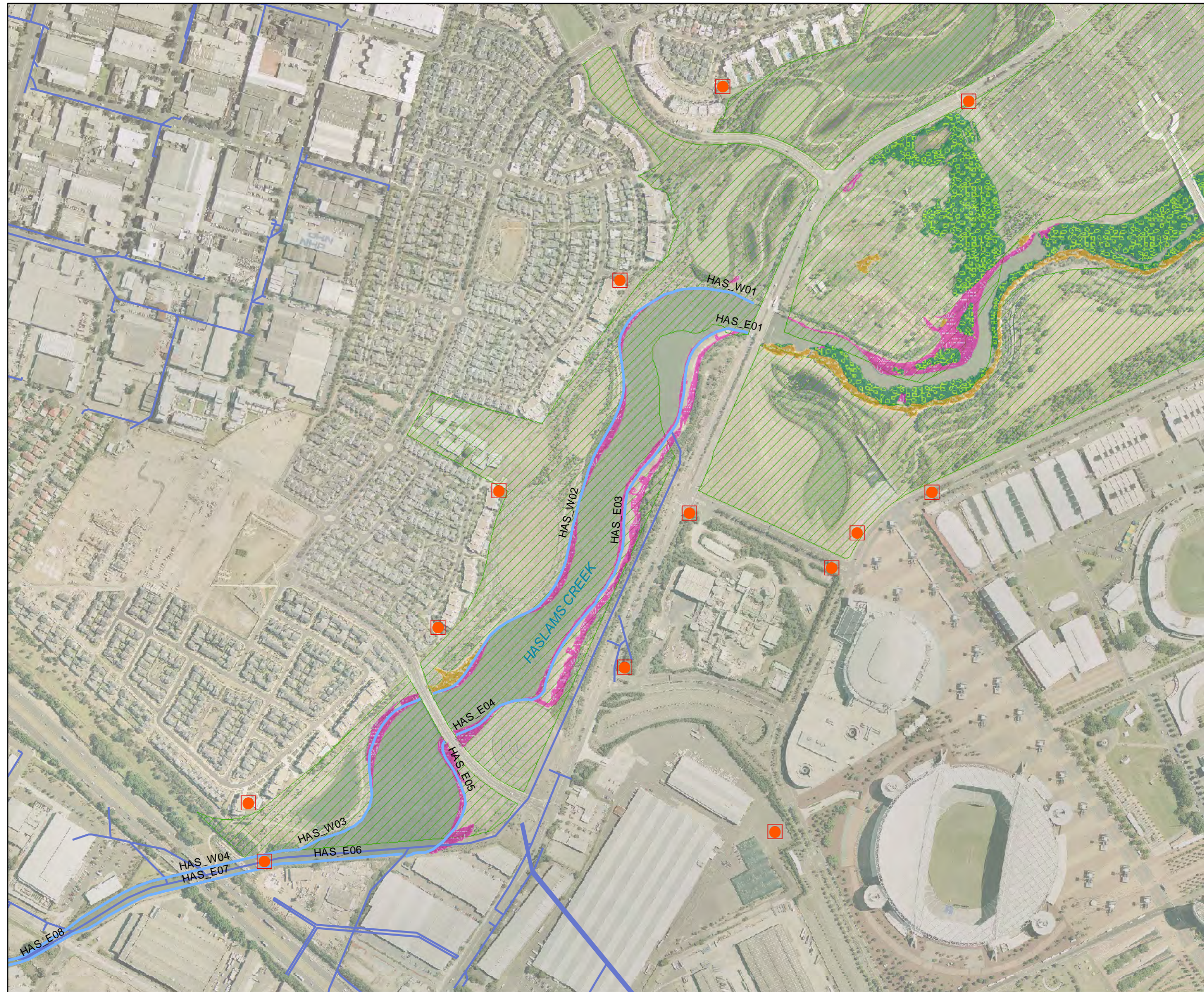
- Vegetation Communities
- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine - ironbark forest (EEC)
- Coastal sandstone communities
- Foreshore parks and reserves

## Source:

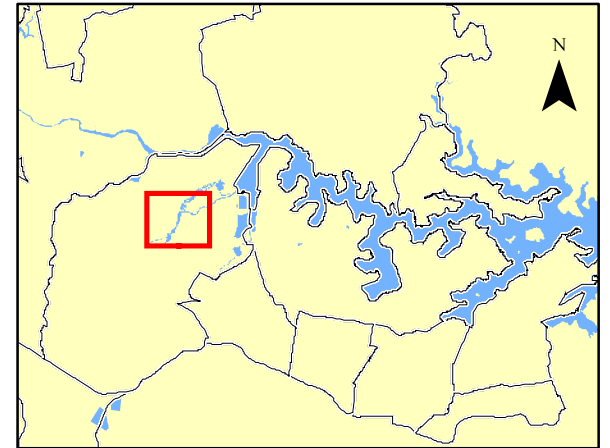
Seagrass base plan: Industry & Investment NSW (2003)  
Seagrass ground truthed: AECOM (2009)  
Vegetation base mapping: SMCMA (2007)  
Other: refer study section 8.0 (2010)

Coordinate System: GDA94 MGA Zone 56





# SITE LOCATION



## Seawalls

- Excellent
- Good
- Poor
- Failed

- Stormwater outlet
- Existing GPT
- Stormwater drainage
- Canal
- Foreshore erosion
- Facilities

## Vegetation Communities

- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine - ironbark forest (EEC)
- Coastal sandstone communities
- Foreshore parks and reserves

## Source:

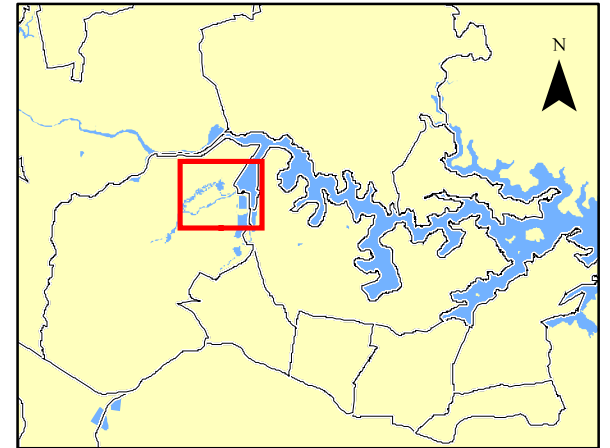
Seagrass base plan: Industry & Investment NSW (2003)  
 Seagrass ground truthed: AECOM (2009)  
 Vegetation base mapping: SMCMA (2007)  
 Other: refer study section 8.0 (2010)

Coordinate System: GDA94 MGA Zone 56





# SITE LOCATION



## Seawalls

- Excellent
- Good
- Poor
- Failed

- Stormwater outlet
- Existing GPT
- Stormwater drainage
- Canal
- Foreshore erosion

## Facilities

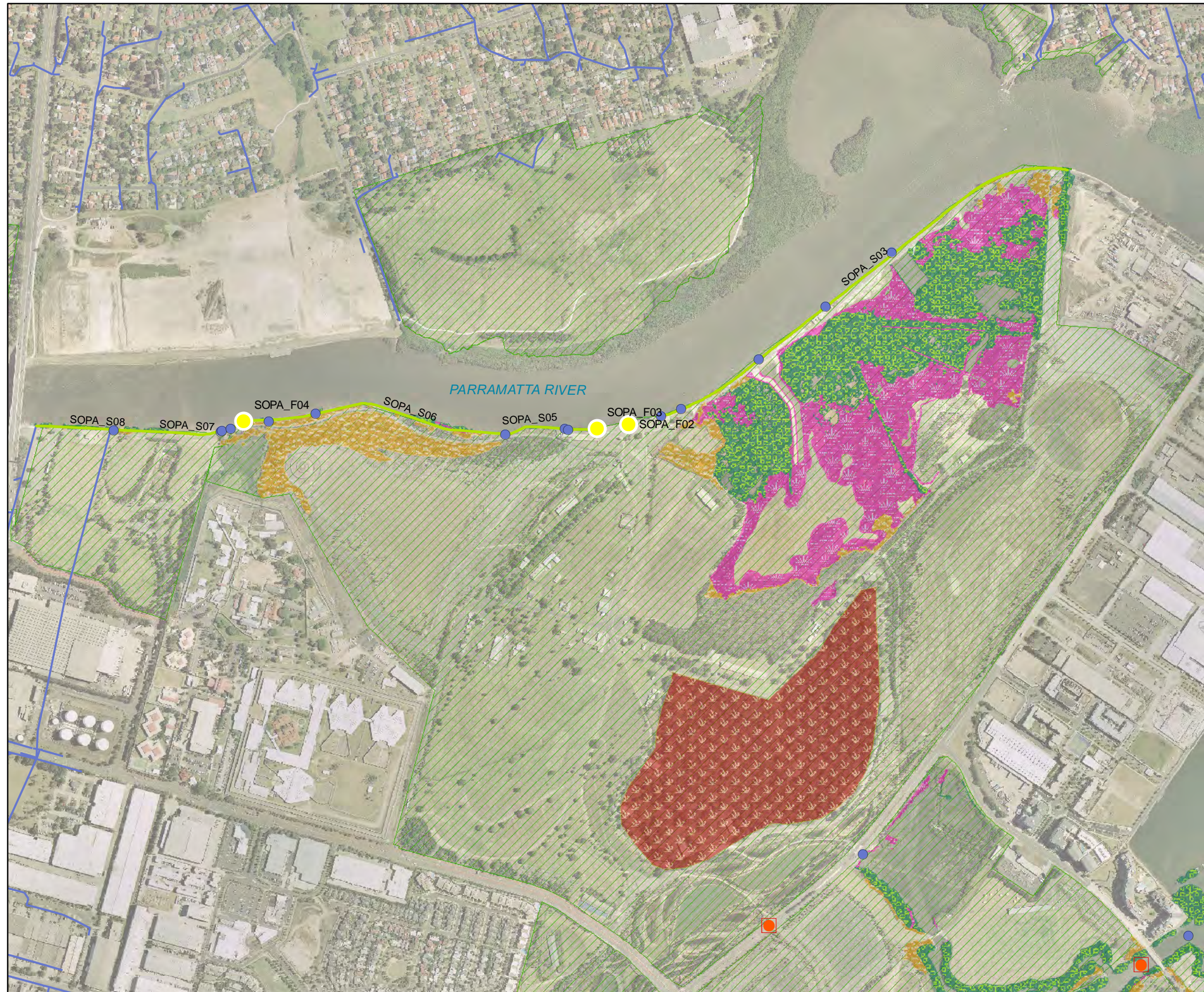
- Vegetation Communities
- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine - ironbark forest (EEC)
- Coastal sandstone communities
- Foreshore parks and reserves

## Source:

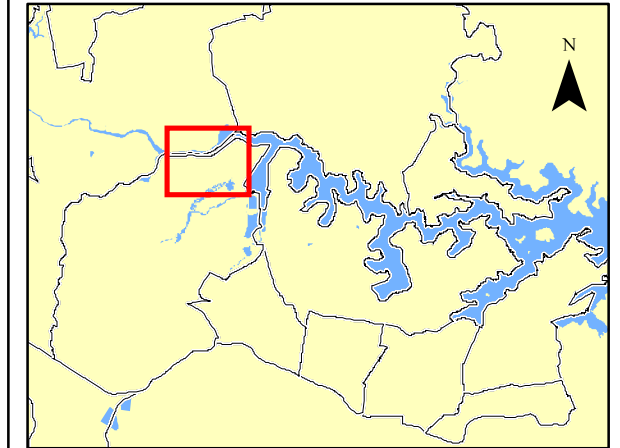
Seagrass base plan: Industry & Investment NSW (2003)  
Seagrass ground truthed: AECOM (2009)  
Vegetation base mapping: SMCMA (2007)  
Other: refer study section 8.0 (2010)

Coordinate System: GDA94 MGA Zone 56





# SITE LOCATION



## Seawalls

- Excellent
- Good
- Poor
- Failed

- Stormwater outlet
- Existing GPT
- Stormwater drainage
- Canal
- Foreshore erosion
- Facilities

## Vegetation Communities

- Estuarine mangrove
- Coastal saltmarsh (EEC)
- Swamp-oak floodplain forest (EEC)
- Turpentine - ironbark forest (EEC)
- Coastal sandstone communities
- Foreshore parks and reserves

## Source:

Seagrass base plan: Industry & Investment NSW (2003)  
 Seagrass ground truthed: AECOM (2009)  
 Vegetation base mapping: SMCMA (2007)  
 Other: refer study section 8.0 (2010)

Coordinate System: GDA94 MGA Zone 56



## Appendix 5: Field Assessment Sheets for Priority Sites

### SITES IN ORDER OF PRIORITY

All assessment sites are detailed within the project GIS database.

### ABBREVIATIONS

**Level:** metres AHD (m)

**Co-ords (MGA):** Coordinates Map Grid of Australia

**E:** easting

**N:** northing

**Condition:**

Excellent	<ul style="list-style-type: none"><li>• No defects observed</li><li>• Structure is functioning as intended</li></ul>
Good	<ul style="list-style-type: none"><li>• Minor defects observed</li><li>• Generally good condition</li><li>• Structure is functioning as intended</li></ul>
Poor	<ul style="list-style-type: none"><li>• Major defects observed</li><li>• Structure is at risk of failure without remedial action</li><li>• Reduced functionality</li></ul>
Failed	<ul style="list-style-type: none"><li>• Major defects observed</li><li>• Structure is no longer functioning as intended</li><li>• Structure has collapsed</li></ul>



# Seawall Inspection Record

- SOPA\_S01

Date	<u>10/09/09</u>	Locality	<u>Shipwreck Viewing Platform, Homebush Bay</u>	Level	<u>1.28m</u>	LGA	<u>Auburn</u>
Time	<u>13:45</u>			Tide	<u>Mid-High</u>		



Co-Ords (MGA)

Start

E 322191

N 6254488

End

E 322191

N 6254497

Seawall Details (Slope, Material, Const. Method, Type):

Concrete block revetment around public lookout structure within Homebush Bay.

Condition Assessment (Slope, Crest, Toe, Backfill):

Blocks that form the revetment have collapsed due to a loss of fine sediments.

Excellent

Good

Poor

Failed

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>

Assets

The structure supports a public lookout structure.

Photo 1

View of concrete block revetment and lookout structure.

Photo: SOPA\_S01-01

Photo 2

Collapse of blocks that form revetment.





# Seawall Inspection Record

- SOPA\_S02

Date	10/09/09	Locality	Shipwreck Viewing Platform, Homebush Bay	Level	1.28m	LGA	Auburn
Time	13:30			Tide	Mid-High		



Co-Ords (MGA)

Start

E 322188

N 6254529

End

E 322175

N 6254519

Seawall Details (Slope, Material, Const. Method, Type):

Rubble and building waste ad-hoc revetment around public lookout structure within Homebush Bay. A new concrete slab is present on the crest and forms a viewing platform.

Condition Assessment (Slope, Crest, Toe, Backfill):

Blocks that form the revetment have collapsed and soil beneath is exposed. The concrete slab has been undermined.

Excellent

Good

Poor

Failed

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>

Assets

The structure supports a public lookout structure.

Photo 1

View of revetment and lookout structure.

Photo 2

Failure of blocks exposing soil and undermining concrete slab on crest.





Canal Inspection Record - HAS\_E02

Date 2/09/09 Locality Sydney Olympic Park Level 1.05m  
Time 15:18 Tide Mid LGA Auburn- SOPA



Co-Ords (MGA)  
Start  
E 320447  
N 6253933  
End  
E 320429  
N 6253927

Facility Details (Usage, Material, Const. Method, Type):  
Gabion matt revetment with a gabion basket crest. The matt appears to have been placed to prevent erosion of the slope and undermining of the gabion crest. No public access is available.

Condition Assessment:  
Where the gabion matt is not present, the slope is eroding and the gabion basket crest has been undermined.

Excellent  
Good  
Poor  
Failed

Assets:  
The wall does not support any other structures.

Comments:  
Saltmarsh is present beyond crest. Photos of structure are HAS\_E02-01 to HAS\_E02-07.

Photo 1  
View of structure with erosion of slope and undermining of crest shown.



Photo 2  
Undermining of crest.





Facility Inspection Record

- SOPA\_F04

Date	20/08/09	Locality	Parramatta River, Sydney Olympic Park	Level	0.67m	LGA	Auburn
Time	14:52			Tide	Low-Mid		



Co-Ords (MGA)

Start

E 320114

N 6255581

Facility Details (Usage, Material, Const. Method, Type):  
Concrete landing that appears to be an abutment for an older wharf structure that is no longer present. A low steel rails has been installed around the structure edge. A public footpath/cycleway is located adjacent to the structure.

Condition Assessment:

Surface weathering and cracking was observed.

Excellent	<input type="checkbox"/>
Good	<input type="checkbox"/>
Poor	<input checked="" type="checkbox"/>
Failed	<input type="checkbox"/>

Assets:

The facility does not support any other assets

Comments:

Photo of facility, SOPA\_F04-01.

Photo 1

View of facility.

Photo 2

Cracking and weathering of concrete.





# Facility Inspection Record

- SOPA\_F02

Date	<u>19/08/09</u>	Locality	<u>Newington Armory Wharf</u>	Level	<u>0.71m</u>	LGA	<u>Auburn</u>
Time	<u>14:34</u>			Tide	<u>Low-Mid</u>		



Co-Ords (MGA)

Start

E 320908

N 6255579

## Facility Details (Usage, Material, Const. Method, Type):

Decommissioned timber vessel loading/unloading facility supported by timber piles. Two cranes are located on the decking and are supported by concrete slabs and steel piles. A number of ladders provide access from the wharf to the water and a set of timber sea stairs is located at the eastern extent of the facility. A sandstone wall and rubble revetment is present beneath the structure.

## Condition Assessment:

Timber piles, decking and beams are showing signs of deterioration. The concrete slabs and steel piles that support the crane are corroding.

Excellent

Good

Poor

Failed

X

## Assets:

Public access is available although a section at the western extent has been cordoned off with bollards and witches hats. There is no barrier on the deck to define the edge of the structure. The facility supports an old building and the two cranes.

## Comments:

Photos of facility, SOPA\_F02-01 to SOPA\_F02-06.

## Photo 1

View of facility.



## Photo 2

Timber piles, sandstone block seawall and rubble revetment beneath structure deck.

