APPENDIX 2 FORESHORE EROSION, SEAWALLS AND STORMWATER OUTLETS ASSESSMENT

Table A – Foreshore Erosion Assessment

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
E1.Along the railway between Liverpool Weir and Liverpool Hospital	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Reduced accessibility by land Approximated length of eroded area of 450m	Storm water runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E2.Opposite the railway between Liverpool Weir and Liverpool Hospital	Liverpool	Moderate	Low	High	Undercutting and exposed roots Reduced accessibility by land Approximated length of eroded area of 150m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E3.Along the carpark east of the railway	Liverpool	Light	Low	Medium	Undercutting and exposed roots at the bottom of the bank Approximated length of eroded area of 180m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Stabilisation of the bank toe with small seawall (Option E2)
E4.Directly east of the carpark	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Approximated length of eroded area of 160m	Storm water runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E5.Along McMillan Park	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Fallen trees and roots exposed Approximated length of eroded area of 190m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E6.Opposite McMillan Park	Liverpool	Light	Low	Medium/High	Undercutting and exposed roots Approximated length of eroded area of 270m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Stabilisation of the bank toe with small seawall (Option E2) Vegetation planting (Option E3)
E7.Northern bank of Lake Moore	Liverpool	Light	Low	Medium	Undercutting and exposed roots Approximated length of eroded area of 250m	Tidal erosion	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall (Option E2)
E8.South-eastern side of Bulba Dibeen Island	Liverpool	Moderate	Medium	Medium	Undercutting and exposed roots Approximated length of eroded area of 70m	Tidal erosion	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank with small rocks (Option E8) Stabilisation of the bank toe with small seawall (Option E2)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
E9.North of Bridges Road Wharf	Liverpool	Severe	Low	High	Localised erosion	Storm Water runoff	Vegetation planting where gaps in vegetation along bank (Option E3)
E10.Directly east of Lake Moore entrance along the Georges River	Liverpool	Light	Low	Low/Medium	Light erosion behind vegetation Approximated length of eroded area of 110m	Tidal erosion Edge effect of rock protection of the bridge crossing Lake Moore Entrance	Stabilisation by further vegetation planting(Option E3) No action
E11.Ngamba Island	Liverpool	Light	Medium	Low	Undercutting and exposed roots along the southern bank Approximated length of eroded area of 210m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Stabilisation of the bank toe with small seawall (Option E2) Sand nourishment (Option E9)
E12.Northern bank opposite Ngamba Island	Liverpool	Moderate	Medium	Medium	Undercutting and exposed roots Approximated length of eroded area of 120m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Stabilisation of the bank toe with small seawall (Option E2) Sand nourishment (Option E9)
E13.Western end of Chauvel Park	Liverpool	Moderate	Low	Medium/High	Undercutting and exposed roots Approximated length of eroded area of 110m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall (Option E2)
E14.Opposite Chauvel Park	Liverpool	Moderate / Severe	Low	Medium/High	Strong undercutting and exposed roots Reduced accessibility by land Approximated length of eroded area of 310m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall (Option E2)
E15.Along Chauvel Park and downstream to the river bend	Liverpool	Severe	Medium	Medium/High	Erosion along the whole height of the bank Approximated length of eroded area of 420m	Storm water runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall (Option E2)
E16.Outside of the river bend	Liverpool	Light	Low	Medium/High	Undercutting and exposed roots between the different private seawalls along the bend Localised erosion	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Edge effect due to the privates seawalls	Stabilisation of the bank toe with small seawall (Option E2) Vegetation planting (Option E3)
E17.East of the pipe crossing the River between the river bend and Governor Macquarie Bridge	Liverpool	Severe	High	Medium	Erosion along the whole height of the bank under bridge	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour Exacerbating of the erosion by the proximity of the pipe foundation	Levelling of the bank to reach a stable slope (Option E1) Construction of a seawall opposite the pipe foundation (Option E4)
E18.Eastern bank directly downstream the pipe crossing the river	Liverpool	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 50m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
							(Option E2)
E19.Western bank between the river bend and Governor Macquarie Bridge	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 540m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E20.Eastern bank between the river bend and Governor Macquarie Bridge	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 250m	Stormwater runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E21.Directly north of Governor Macquarie Bridge, both banks	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 100-150m	Stormwater runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E22.Southern end of South Park	Liverpool	Light	Low	Medium	Undercutting and exposed roots Approximated length of eroded area of 170m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of the bank toe with small seawall (Option E2) Sand nourishment (Option E9)
E23.Along South Park	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Exposed roots and fallen trees Bank collapsing Approximated length of eroded area of 430m	Stormwater runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E24.Westlake Point	Liverpool	Moderate	Low/Medium	Medium/High	Strong undercutting Approximated length of eroded area of 160m	Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction)	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Construction of a seawall around Westlake Point (Option E2 or E6) Use of small rocks as protection (Option E8)
E25.Southern end of the Warwick Farm	Liverpool	Light	N/A	N/A	Old severe erosion covered with vegetation Approximated length of eroded area of 370m	Old tidal erosion	No particular response needed due to natural recovery
E26.Along Warwick Farm up to Cabramatta Creek entrance	Liverpool	Severe	Low	High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 650m	Stormwater runoff Tidal erosion (exacerbated by changes in tidal characteristics due to the Lakes construction) Steep embankment with possible collapsing after	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
						toe scour	
E27.Western bank of Cabramatta Creek directly upstream the entrance	Liverpool	Severe	Low	High	Localised erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 100m	Presence of a seawall on the opposite side of the Creek entrance Tidal erosion Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Construction of a seawall on the second side of the creek entrance (Option E7)
E28.Stormwater drain near the intersection of Cherrybrook Road and Silverwater Crescent along Cabramatta Creek	Liverpool	Severe	Low/Medium	High	Localised erosion along the whole height of the bank in front of the stormwater concrete pipe drain	Steep embankment with collapsing after scour from the stormwater drain	Upgrade the stormwater outlet direction to lower erosion Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E29.Under Liverpool Road Bridge at Cabramatta Creek	Liverpool	Severe	High	Low	Localised erosion under the bridge	Turbulence from the bridge foundation	Rock protection under the bridge (Option E4)
E30.Rest of Cabramatta Creek	Liverpool/Fairfield	Light	N/A	N/A	Generally pristine looking, well vegetated and protected from erosion Some light undercutting visible in some area within the gap in vegetation	Tidal erosion	No particular response needed
E31.Western side of Angle Park	Liverpool	Light	Low	Medium	Light undercutting occurring behind vegetation Some rocks dumped at this place Approximated length of eroded area of 240m	Tidal erosion	Replenishment of the eroded part and vegetation planting (Option E9) Levelling to reach a new equilibrium profile and vegetation planting (Option E1)
E32.Northern side of Angle Park	Liverpool	Light	N/A	N/A	Minor undercutting occurring behind vegetation Approximated length of eroded area of 250m	Tidal erosion	No particular response needed
E33.Western side of Grand Flaneur Beach	Liverpool	Moderate	Low/Medium	Medium	Undercutting with trees falling into the water Approximated length of eroded area of 60m	Tidal erosion	Replenishment of the eroded part and vegetation planting (Option E9) Levelling to reach a new equilibrium profile and vegetation planting (Option E1)
E34.Eastern Side of Grand Flaneur Beach	Liverpool	Light	Low	Medium	Dumped rocks east of the beach protecting against undercutting Approximated length of eroded area of 50m	Tidal erosion	Replenishment of the eroded part and vegetation planting (Option E9) Levelling to reach a new equilibrium profile and vegetation planting (Option E1)
E35.Bass Island	Liverpool	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 300m	Tidal erosion Wind wave generated within Chipping Norton Lake	Stabilisation of the bank by deposition of small rocks like around Daruk Island (Option E8) Stabilisation by further vegetation planting (Option E3) Replenishment with sand (Option E9)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
E36.Crescent Island	Liverpool	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 100m	Tidal erosion Wind wave generated within Chipping Norton Lake	Stabilisation of the bank by deposition of small rocks like around Daruk Island (Option E8) Stabilisation by further vegetation planting (Option E3) Replenishment with sand (Option E9)
E37.Wildlife Island	Liverpool	Light	Low/Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 230m	Tidal erosion Wind wave generated within Chipping Norton Lake	Replenishment with sand (Option E9) Stabilisation by further vegetation planting (Option E3)
E38.East of Cabramatta Creek Entrance	Fairfield	Severe	Low/Medium	Medium/High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 140m	Edge effect from the several scattered short seawall constructed along Hoy and Cherrybrook Parks Tidal erosion Wind wave generated within Chipping Norton Lake Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Joining the different scattered seawall to create one unique seawall to avoid edge effect (Option E10)
E39.Along Silver Crescent	Fairfield	Light	Low	High	Undercutting and exposed roots Approximated length of eroded area of 160m	Tidal erosion Wind wave generated within Chipping Norton Lake Edge effect from Howards boat ramp	Construction of a seawall along the different parks and carparks (Option E5 or E6) Stabilisation by vegetation planting (Option E3)
E40.East of Howards boat ramp	Fairfield	Light	Low	Medium	Undercutting and exposed roots Approximated length of eroded area of 100m	Tidal erosion Wind wave generated within Chipping Norton Lake Edge effect from Howards boat ramp	Construction of a seawall along the carpark (Option E5 or E6) Stabilisation by vegetation planting (Option E3)
E41.Strong Park	Fairfield	Light	Low	Medium/High	Undercutting and exposed roots Approximated length of eroded area of 140m	Tidal erosion Edge effect from Strong Park Wharf	Construction of a seawall along the park (Option E5 or E6) Stabilisation by vegetation planting (Option E3)
E42.Between Strong and Howard Park	Fairfield	Severe	Low/Medium	Medium/High	Severe undercutting Approximated length of eroded area of 40m	Tidal erosion Wind wave generated within Chipping Norton Lake Edge effect of the seawall along Howard Park	Extend Howard Park seawall (Option E10) Stabilisation by vegetation planting (Option E3)
E43.South of Long Point opposite Howard Park	Liverpool	Severe	Low/Medium	Medium/High	Erosion along the whole height of the bank Exposed roots Approximated length of eroded area of 200m	Edge effect from rock protection along Long Point Exacerbating of the erosion due to the presence of a seawall on the opposite side of the river Tidal erosion Increased current as the channel between	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Southwards prolongation of Long Point seawall (Option E10)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
						Chipping Norton Lake and Floyd Bay is narrow Relatively steep embankment with possible collapsing after toe scour	
E44.Between the eroded part south of Long Point and Black Muscat Park	Liverpool	Moderate	Low	High	Erosion behind trees Transition erosion between the severely eroded areas directly south of Long Point and the light undercutting along Black Muscat Park Approximated length of eroded area of 160m	Tidal erosion / Transition area	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E45.Along Black Muscat Park	Liverpool	Light	Low	Medium	Undercutting and exposed roots Approximated length of eroded area of 570m	Tidal erosion	Construction of a seawall along the park where embankment is low (Option E5-E6) Stabilisation of the toe by small seawall where higher embankment (Option E2) Replenishment with sand of eroded part (Option E9) Stabilisation by vegetation planting (Option E3)
E46.East of Shearer Park Wharf	Fairfield	Light	Low	Medium	Undercutting and exposed roots Approximated length of eroded area of 130m	Tidal erosion	Construction of a seawall along the park where embankment is low (Option E5-E6) Replenishment with sand of eroded part (Option E9) Stabilisation by vegetation planting (Option E3)
E47.Coot Island	Fairfield	Severe	Low/Medium	Medium/High	Erosion along the whole height of the southern bank Exposed roots and fallen trees Approximated length of eroded area of 150m	Tidal erosion Increased current as the channel between Dhurawal and Floyd Bay is narrow Edge effect generated by the presence of rock protections on both extremities of the island	Extension of the rock protection along the island (Option E10) Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Small rocks protection like on Daruk Island (Option E8)
E48.Inside of the most downstream bend of Prospect Creek	Bankstown	Moderate	Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 90m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) “No action” option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E49.Outside of the most downstream bend of Prospect Creek	Fairfield	Moderate	Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 110m	Tidal erosion Natural erosion on the outside of a creek bend	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) “No action” option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E50.Southern end of	Fairfield	Moderate	Medium	Low/Medium	Undercutting and exposed roots	Tidal erosion	Replenishment with sand (Option E9)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
Liverpool Golf Course					Approximated length of eroded area of 60m		Levelling of the bank to reach a stable slope and vegetation planting (Option E1) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E51.Opposite south-eastern bank of Liverpool Golf Course	Bankstown	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 350m	Tidal erosion	Replenishment with sand (Option E9) Levelling of the bank to reach a stable slope and vegetation planting (Option E1) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E52.North-eastern bank of Liverpool Golf Course	Fairfield	Moderate	Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 60m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E53.Opposite north-eastern bank of Liverpool Golf Course	Bankstown	Moderate	Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 340m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E54.Directly downstream the dwelling along Knight Street, northern bank	Bankstown	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 130m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E55.Directly downstream the dwelling along Knight Street, southern bank	Fairfield	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 210m	Tidal erosion Edge effect from the private seawalls of the houses along Knight Street	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E56.Eastern bank between Day Street and Hume Highway Bridge	Bankstown	Moderate	Medium	Low/Medium	Undercutting and exposed roots Approximated length of eroded area of 410m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) "No action" option suggested by Earth Tech (2004) can be used as preliminary option due to the low priority of the action in the area.
E57.Eastern bank of	Bankstown	Severe	Medium	High	Erosion creating a small pocket beach	Tidal erosion	Replenishment with sand (Option E9)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
Prospect Creek mouth					Approximated length of eroded area of 40m	Movement of Prospect Creek entrance	Stabilisation by vegetation planting (Option E3) Construction of a seawall to stabilize Prospect Creek mouth like at Cabramatta Creek (Option E7)
E58.South of Beatty Reserve	Bankstown	Severe	Medium	High	Erosion along the whole height of the bank Exposed roots and fallen trees Approximated length of eroded area of 120m	Edge effect from the Private seawalls of the properties located between Beatty Reserve and Georges River Golf Course Tidal erosion Steep embankment with possible collapsing after toe scour	Replenishment with sand (Option E9) Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E59.South-eastern end of Heron Park	Liverpool	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 200m	Tidal erosion	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3)
E60.Opposite the south-eastern end of Heron Park	Bankstown	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 150m	Tidal erosion Edge effect from the seawall directly south of this area	Replenishment with sand (Option E9) Stabilisation by vegetation planting (Option E3) Northward extension of the seawall (Option E10)
E61.Along Georges River Golf Course	Bankstown	Light	Low	Medium	Minor undercutting Approximated length of eroded area of 130m	Tidal erosion	Vegetation planting (Option E3)
E62.Inside of the bend around Newbridge Road Bridge	Liverpool	Severe	High	Low/Medium	Collapsing of the western foreshore under the bridge Approximated length of eroded area of 90m	Edge effect from the dumped material directly south of the bridge and from the bridge foundation Tidal erosion Collapsing after toe scour	Construction of a rock protection under the bridge (Option E4)
E63.Outside of the bend around Newbridge Road Bridge	Bankstown	Severe	Medium	Medium/High	High erosion directly north of the bridge Approximated length of eroded area of 70m	Natural erosion of the outside of a river bend Tidal erosion Edge effect from the rock protection along the eastern side of the bridge	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Northward extension of the rock protection of the bridge (Option E10)
E64.Opposite Hind Park	Bankstown	Severe	Low	High	Localised high erosion	Stormwater runoff Edge effect from the old stormwater drain adjacent to the area Gap in vegetation	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E65.Directly upstream of Beveridge Park	Liverpool	Moderate	Medium	Medium	Undercutting Approximated length of eroded area of 40m	Tidal erosion Edge effect from the seawall along Beveridge Park and the different private seawall along the foreshore	Construction of a seawall along the undercut area (Option E2 or E6) Stabilisation by vegetation planting (Option E3)
E66.Opposite Beveridge	Bankstown	Light	Medium	Low/Medium	Erosion along the bank in areas unprotected by	Tidal erosion	Construction of a seawall along the park (Option

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
Park					vegetation Approximated length of eroded area of 80m	Gap in vegetation	E2 or E6) Stabilisation by vegetation planting (Option E3)
E67.End of Davy Robinson Drive	Liverpool	Moderate	Low/Medium	High	Erosion around the wharf at the end of Davy Robinson Drive Approximated length of eroded area of 70m	Tidal erosion Boat wash Edge effect from the wharf seawall and the different area where building refuses have been dumped	Join the different protection to avoid edge effect between the different protections (Option E10) Stabilisation by further vegetation planting (Option E3)
E68.Opposite the southern end of the recycling station	Bankstown	Light	Low/Medium	Low	Minor undercutting Approximated length of eroded area of 90m	Tidal erosion Boat wash	Stabilisation by vegetation planting (Option E3)
E69.Southern extremity of the recycling station	Liverpool	Severe	Medium/High	Medium	Localised high erosion where no vegetation or dumped material protection Approximated length of eroded area of 50m	Tidal erosion Boat wash Edge effect from the dumped material along the recycling plant	Extend dumping/protection to the south (Option E10) Stabilisation by vegetation planting (Option E3)
E70.Inside of the bend south of the recycling station	Liverpool	Moderate	Medium	Medium	Undercutting and exposed roots Approximated length of eroded area of 170m	Tidal erosion Boat wash	Stabilisation by vegetation planting (Option E3)
E71.Outside the bend south of the recycling station	Bankstown	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 500m	Tidal erosion Boat wash Natural erosion on the outside of a river bend	Stabilisation by vegetation planting (Option E3)
E72.Northern end of New Brighton Golf Course	Liverpool	Light	Medium	Low	Undercutting and exposed roots Approximated length of eroded area of 80m	Tidal erosion Boat wash Natural erosion on the outside of a river bend	Stabilisation by vegetation planting (Option E3)
E73.Along the carpark north of the M5 bridge	Bankstown	Light	Low	Medium/High	Undercutting and exposed roots Approximated length of eroded area of 110m	Tidal erosion Boat wash Natural erosion on the outside of a river bend	Stabilisation by vegetation planting (Option E3)
E74.Between the M5 bridge and Williams Creek mouth, eastern bank	Bankstown	Severe	Medium/High	Medium	High erosion under the bridge and south of the bridge Exposed roots and fallen trees Approximated length of eroded area of 450m	Tidal erosion Boat wash Exacerbating of the erosion by the presence of the bridge foundation under the bridge Steep embankment with possible collapsing after toe scour	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Construction of a rock protection under the bridge (Option E4)
E75.Williams Creek	Liverpool	Light/Moderate	N/A	N/A	Generally pristine looking, well vegetated and protected from erosion by vegetation Some light to moderate undercutting visible in	Tidal erosion	No particular response needed as very natural

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
					some area within the gap in vegetation		
E76.Along Webster Street, downstream Williams Creek mouth	Bankstown	Light	Medium	Low	Light undercutting all along the southern bank of Deepwater Regional Park Approximated length of eroded area of 370m	Tidal erosion Boat wash Gaps in vegetation Edge effect from dumped concrete block at the western end of this area	Stabilisation by vegetation planting (Option E3)
E77.Along East Hills Park	Bankstown	Light	Low	Medium	Light erosion along small beach and under the railway bridge Approximated length of eroded area of 440m	Tidal erosion	Stabilisation by vegetation planting (Option E3) Construction of a low seawall along the park (Option E6)
E78.Along the western part of Pleasure Point	Liverpool	Light	Low	Medium	Light erosion along the foreshore where no vegetation Approximated length of eroded area of 300m	Tidal erosion	Stabilisation by vegetation planting (Option E3)
E79.East of Pleasure Point	Liverpool	Light	Medium	Low	Light undercutting along the foreshore where no vegetation and exposed roots Approximated length of eroded area of 100m	Tidal erosion	Stabilisation by vegetation planting (Option E3) Extend seawall along the military entrance (Option E10)
E80.Deadmans Creek	Liverpool/Sutherland Shire	Light / Moderate	N/A	N/A	Generally pristine looking, well vegetated and protected from erosion by vegetation Some light to moderate undercutting visible in some area within the gap in vegetation	Tidal erosion	No particular response needed
E81.Sandy Point	Liverpool	Moderate	Low	High	Localised undercutting provoking seawall collapsing Localised erosion	Tidal erosion Edge effect of the several seawalls and boat ramp in this area	Complete/Fix the seawall and building in a proper way to avoid any undercutting (Option E10)
E82.Opposite southern half of Sandy Point	Bankstown	Light	Low	Medium	Undercutting where gap in vegetation and exposed roots Approximated length of eroded area of 380m	Tidal erosion	Stabilisation by further vegetation planting(Option E3) Extend Picnic Point small seawall (Option E2 and E10)
E83.Western Bank between Sandy Point and Picnic Point	Liverpool	Light	Low	Medium	Localised erosion where no vegetation Approximated length of eroded area of 50m	Tidal erosion	Stabilisation by further vegetation planting(Option E3)
E84.Mill Creek	Sutherland Shire	Light / Moderate	N/A	N/A	Generally pristine looking, well vegetated and protected from erosion by vegetation Some light to moderate undercutting visible in some area within the gap in vegetation	Tidal erosion	No particular response needed
E85.Western side of Henry Lawson Drive Bridge at Little Salt Pan Creek	Bankstown	Light	Medium/High	Low	Light erosion under the bridge despite the presence of big boulders	Flow concentrated into the narrow entrance to the creek	Rock protection on both side of the bridge to avoid further erosion (Option E4)

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
entrance						Exacerbating by the bridge foundation	
E86.Beach on the opposite side of Little Salt Pan Creek entrance from the carpark at the end of River Road	Bankstown	Moderate	Medium/High	Low	Erosion along the back of the small beach Approximated length of eroded area of 40m	Tidal erosion Impact of Little Salt Pan Creek entrance Gap in vegetation	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Sand replenishment along the back of the dune (Option E9)
E87.Bank opposite the south-western end of the Georges River National Park	Sutherland Shire	Light	N/A	N/A	Undercutting and exposed roots Approximated length of eroded area of 100m	Tidal erosion Impact of Little Salt Pan Creek entrance	No particular response needed as very natural
E88.Along Old Ferry Road carpark, east of Little Moon Bay	Sutherland Shire	Moderate	Medium	Medium/High	Localised erosion on both side of a small rock Approximated length of eroded area of 60m	Edge effect of a very short rock seawall	Extend seawall (Option E10) Removal of seawall, levelling of the bank to an equilibrium profile and vegetation planting (Option E1)
E89.Moore Reserve Boat Ramp	Kogarah	Light	Low	Medium	Some erosion between boat ramp and stormwater outlet west of it Approximated length of eroded area of 30m	Proximity to the stormwater outlet Tidal erosion	Levelling of the bank to reach a stable slope and vegetation planting (Option E1) Stabilisation of seawall toe with small seawall (Option E2)
E90.Southern end of Poulton Park	Kogarah	Severe	Low	High	Severe erosion at the location of two stormwater outlets Approximated length of eroded area of 70m	Proximity to the stormwater outlets Water runoff from the road Tidal erosion	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E91.Connells Point Reserve	Kogarah	Moderate	Low	High	Erosion behind small beach Pile of light in water GPT creating a gully at the level of the beach on the western side An overflow pipe surrounded by erosion on the eastern side of the beach Approximated length of eroded area of 50m	Wave action Stormwater outlet proximity Spills from GPT	Construction of an environmentally friendly seawall along the beach (Option E5 or E6) Sand replenishment using the sand from the extensive shallow facing the park (Option E9) Sizing of the GPT to avoid overflows
E92.Dover Park	Kogarah	Moderate	Low	High	Erosion behind seawall Approximated length of eroded area of 230m	Wave action / Overtopping	Replacement of the seawall by an environmentally friendly seawall
E93.Dover Park West	Kogarah	Severe	Low	High	Erosion along the whole height of the bank Presence of a few large rocks and a small overflow pipe Approximated length of eroded area of 50m	Proximity of the pipe Tidal erosion	Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E94.North-western end of Woolooware Bay	Sutherland Shire	Light	Low	High	Erosion all along the park where no seawall or vegetation	Beach underlain by coffee rocks limiting erosion	Sand replenishment (Option E9) Creation of a small boulder or step seawall

Location	LGA	Severity	Cost (Relative to Results)	Priority Rating	Details / Comments	Possible Causes	Suggested Management Response (Options provided refer to Erosion Options of Section 7.3.1 of the report)
					Approximated length of eroded area of 110m		(Option E6 or E5)
E95.Eastern side of Sandringham Bay	Rockdale	Moderate	Medium	Medium	Erosion south of the rock seawall along the line of tree Localised erosion	Edge effect of the seawall Wave action	Southward extension of the seawall (Option E10) Levelling of the bank to reach a stable slope and vegetation planting (Option E1)
E96.Peter Depena Reserve	Rockdale	Moderate	High	Low	Erosion at the northern end of the beach along the reserve Sand is fronting a vertical seawall Approximated length of eroded area of 250m	Wave action Beach realignment to the vertical seawall level	Levelling of the slope to reach an equilibrium profile (Option E1) Replenishment of the beach (Option E9) No action option
E97.Southern end of Lady Robinsons Beach	Rockdale	Moderate	High	Low	Water overtopping the back of the southernmost groyne No more sand between the two last groyne Approximated length of eroded area of 160m	Wave action	Landward extension of the last groyne Replenishment of the beach between the 2 southernmost groynes (Option E9) No action option
E98.Lady Robinsons Beach centre	Rockdale	Severe	High	Low	Severe erosion on the northern side of the two northernmost groyne Beach north of the northernmost groyne totally eroded and covered with water at high tide Approximated length of eroded area of 310m	Wave action Groyne impact	Replenishment of the northern side of the groyne (Option E9) Construction of a new groyne further north
E99.Northern end of Lady Robinsons Beach	Rockdale	Light	Medium	Low	Beach very narrow maybe due to light erosion Approximated length of eroded area of 1400m	Wave action	Replenishment of the beach (Option E9) No action option

Table B – Seawalls Assessment

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
S1.Liverpool Weir	Liverpool	Good	Low	Medium	Vertical rock wall crossing the River along the Weir	Estuary upper limit and weir protection Light seawall settling on eastern side	Fix the settling part of the weir on its eastern half Creation of more habitat in front of weir (Option S2)
S2.Along northern bank between McMillan Park and Gandangara Island	Liverpool	Fair	Low / Medium	Medium/High	100m long gabion seawall supported by sheet piles Approximated seawall length of 110m	Covered with weeds	Sheet piles can be replaced by environmentally friendly rock seawall to allow vegetation growing in the gap of rocks (Option S5) Creation of more habitat in front of sheet piles seawall (Option S2)
S3.Bridge crossing Lake Moore entrance	Liverpool	Good	N/A	N/A	Small rock protection at the extremities of the bridge	Avoid erosion at the extremities of the bridge	No specific action required
S4.Eastern bank at the level of the pipe crossing the River upstream of Governor Macquarie Bridge	Liverpool	Poor	High	Medium	Dumped rocks and other materials at the bottom of the bank and geotextile on the bank	Slow embankment collapsing	Replace dumped materials by seawall build to engineered standard and allowing vegetation to grow in the gaps of rocks (Option S1)
S5.Governor Macquarie Bridge Western Bank	Liverpool	Poor	High	Medium	Dumped concrete blocks and plates	Irregular dumping along embankment height, mostly just at the bottom of the slope	Replace dumped materials by seawall build to engineered standard and allowing vegetation to grow in the gaps of rocks (Option S1)
S6.Governor Macquarie Bridge Eastern Bank	Liverpool	Fair	High	Low	Steep rock seawalls	Upstream half subject to settling while downstream part covered with weeds	Replace settling part of seawall by a rocks seawall (Option S1)
S7.Cabramatta Creek Mouth Eastern Bank	Fairfield	Good	N/A	N/A	Short rock seawall, large blocks Approximated seawall length of 30m	Environmentally friendly with vegetation along the seawall Might be responsible for the erosion of the other bank of Cabramatta Creek entrance	No specific action required
S8.Hoy Park	Fairfield	Good	Medium	Low	Short rock seawalls, large blocks Approximated seawall length of 30m	Environmentally friendly with vegetation along seawalls Too short to be effective and increase erosion on both side of the seawalls Should be linked together	Prolongation of seawall to avoid edge effect (Option S3)
S9.Ascot Point	Liverpool	Fair	N/A	N/A	Rock seawalls at the tip and on the western bank, Slope of 1:2 Approximated seawall length of 80m	Surrounded by vegetation	No specific action required
S10.Grand Flaneur Beach	Liverpool	Good	N/A	N/A	Rock seawall at the eastern end of the beach Approximated seawall length of 30m	Short seawall allowing seedling to grow in gaps of rocks Some rocks are dumped along the eastern side of the bay	No specific action required

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
S11.Howard Boat Ramp	Fairfield	Good	N/A	N/A	Short rock seawalls, large blocks	Protection of boat ramp Some vegetation in front of the seawall Undercutting at both extremities	No specific action required
S12.Daruk Island	Liverpool	Good	N/A	N/A	Small rocks – size of gabions fill – covering the whole foreshore Approximated seawall length of 360m	Efficient against undercutting	No specific action required
S13.Long Point	Liverpool	Good	N/A	N/A	Small rocks – size of gabions fill – covering the whole foreshore Approximated seawall length of 520m	Efficient against undercutting	No specific action required
S14.Between Eora Beach and Strong Park Wharf	Fairfield	Poor/Fair	Medium	Medium/High	Various size rocks seawall, slope of 1:1 Approximated seawall length of 1000m	Irregular height and size Damage and top of the seawall eroded in some places needing maintenance	Upgrade of seawall to engineered standard and environmentally friendly condition using rocks (Option S1)
S15.Wildlife Island Southern Bank	Liverpool	Poor	High	Medium	Low layer of dumped rocks along 100m	Slow down undercutting Need levelling	Rock seawall can be extended to avoid edge effect along Wildlife Island (Option S3)
S16.Howard Park and Dowling Beach Boat Ramp	Fairfield	Good	N/A	N/A	Rock seawalls, large blocks all along the park foreshore and around the beach Approximated seawall length of 1150m	Environmentally friendly with vegetation along the seawalls Part of the seawall currently in construction around the boat ramp	No specific action required
S17.Western End of Shearer Park	Fairfield	Poor	Medium/High	Medium/High	Small layer of small rocks along around 80m of the foreshore	Protection against undercutting Some vegetation growing through the rocks	Environmentally friendly seawall along Dowling beach can be extended in front of Shearer Park (Option S5)
S18.Western End of Coot Island	Fairfield	Good	N/A	N/A	Western end of the island covered with rocks, slope of 1:2-1:3 Approximated protection length of 70m	Protection against undercutting Some vegetation growing through the rocks May be responsible for the high erosion along the southern bank of the island	No specific action required
S19.Coot Island footbridge	Fairfield	Fair	N/A	N/A	Rock seawalls on both side of the footbridge, slope of 1:2	Protecting the passage between Hollywood Park and Coot Island Some vegetation is growing between the rocks	No specific action required
S20.Southern bank of Hollywood Park	Fairfield	Fair	High	Low	Rocks dumped all along the park, on the whole height of the bank Approximated protection length of 230m	Irregular dumping of rocks High rocks useless Vegetation growing through rocks	Dumped rocks can be replaced by engineered rock seawall (Option S1)
S21.Most downstream bend of Prospect Creek along Hollywood Park	Fairfield	Poor	Low	High	Remnant of old 10-15m long timber retaining wall	Ineffective Almost totally destroyed	Timber retaining wall can be removed and replaced by vegetation (Option S4)

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
S22.Lawrence Beach	Liverpool	Good	N/A	N/A	80m rock seawall with large blocks in the middle of the beach and around 20m long rock groyne at the eastern end of the beach	Vegetation growing along the seawall along the beach Groyne allows beach rotation and avoid beach erosion	No specific action required
S23.Natural entrance under footbridge directly south of Heron Park	Liverpool	Good	N/A	N/A	Entrance covered of large rock and seawalls are built on both side of the bridge Approximated protection length of 20m	Some vegetation growing on the rock layer Stabilizes natural entrance	No specific action required
S24.Eastern bank of Prospect Creek mouth	Bankstown	Poor	Low	High	10m vertical brick wall surrounding boat ramp	Cracked wall, tree growing in the middle of the misused boat ramp	Old abandoned structures can be replaced by vegetation (Option S4)
S25.Northern End of Georges River Golf Course	Bankstown	Good	N/A	N/A	80m rock seawall, large block	Environmentally friendly with vegetation growing along the seawall Relatively new seawall Protect area devoid of vegetation	No specific action required
S26.Bank opposite the northern end of the Georges River Golf Course	Liverpool	Fair	Medium	Medium	Short gabions wall behind vegetation Approximated protection length of 40m	Covered with vegetation Not indispensable	Seawall can be removed and replaced by vegetation (Option S4)
S27.Along northern end of Rickard Street	Liverpool	Poor	Medium/Low	High	Low concrete seawall Approximated protection length of 180m	Covered with weeds	Seawall can be removed and replaced by vegetation (Option S4) Seawall can be replaced by environmentally friendly seawall (boulder seawall) (Option S5)
S28.Tip on the western side of Newbridge Road Bridge	Liverpool	Poor	Medium/High	High	Low small rocks seawall north of the bridge Dumped rocks and concrete blocks along the foreshore under the bridge and directly south of the bridge Approximated protection length of 130m	Low seawall north of the bridge facing reeds Ineffective as only a few blocks are dumped Poor visual quality	Dumped material can be replaced by rock seawall allowing vegetation to grow between rocks (Option S1)
S29.Eastern side of Newbridge Road Bridge	Bankstown	Good	N/A	N/A	High rock seawall, slope 1:1.5 Approximated protection length of 110m	Good protection of the outside of the bend	No specific action required
S30.Hind Park	Liverpool	Good	N/A	N/A	Short rock seawall, large block Approximated protection length of 40m	Environmentally friendly with vegetation along the seawall Two step seawall	No specific action required
S31.Beveridge Park	Liverpool	Good	Low/Medium	Low/Medium	Two or three layer gabions seawall Approximated protection length of 80m	Good protection against undercutting	Gabion seawall can be replaced by a step seawall or boulder seawall (Option S5)
S32.Between Davy Robinson Drive and the southern end of the recycling station	Liverpool	Poor	Medium/High	Medium/High	Boat ramp surrounded by low brick seawall Most foreshore along this area covered with dumped rocks, concrete block and other building	Brick wall surrounding boat ramp suffering from settling Dumped materials reduced erosion but have a	Replace dumped materials by rock seawalls to allow seedlings to grow between the rocks (Option S1)

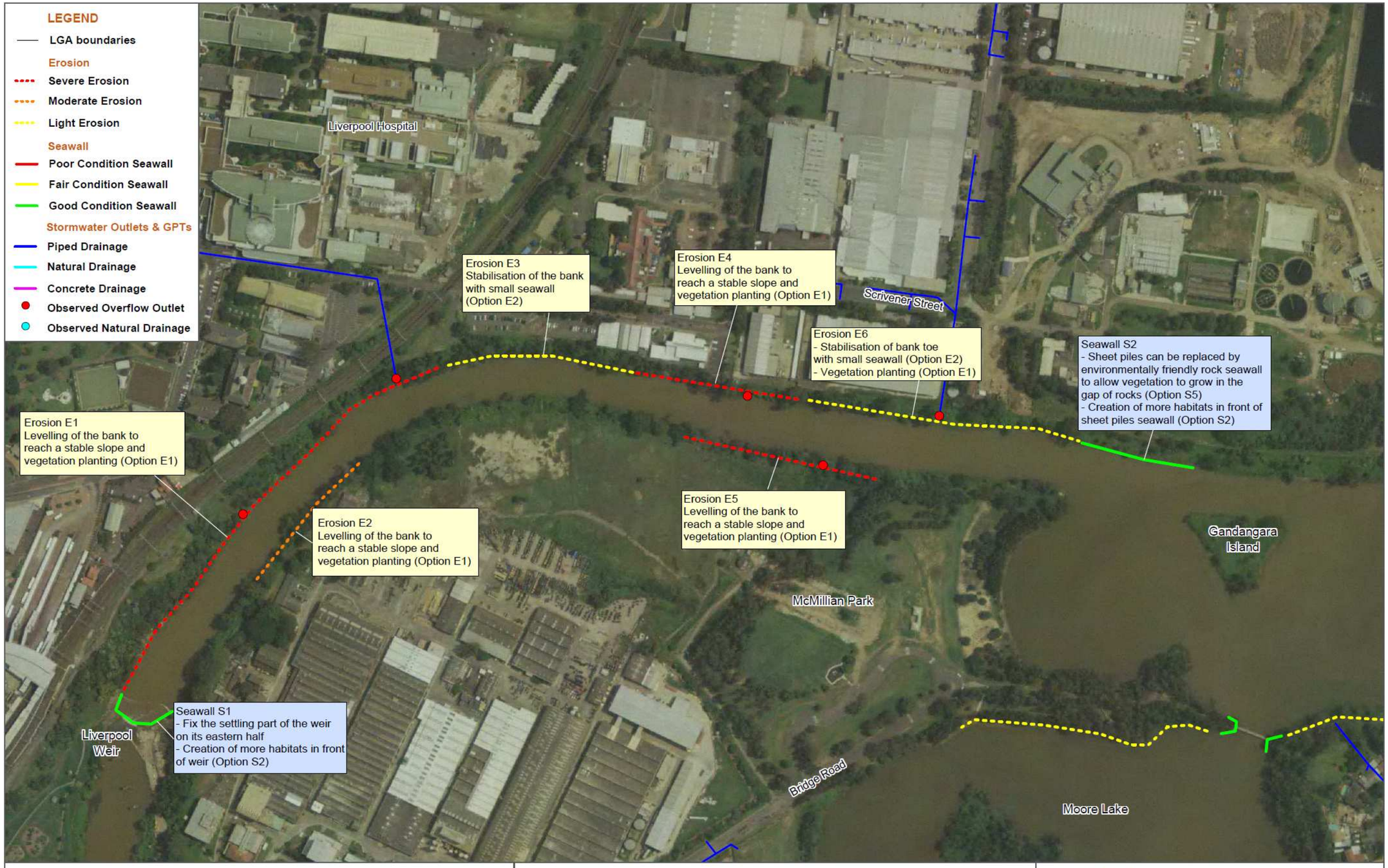
Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
					refuses along around 650m of foreshore	very low visual quality and need upgrades as light undercutting is still visible	Replace existing protection by boulder seawall without cement to create new habitats (Option S5)
S33.New Brighton Golf Course	Liverpool	Poor	Medium/High	Medium/High	Dumped materials (rocks, concrete block and other building refuses) along around 450m of the Golf Course foreshore	Dumped materials reduced erosion but have a very low visual quality and need upgrades as light undercutting is still visible	Replace dumped materials by native vegetation (Option S4) Replace dumped materials by rocks seawall allowing seedling to grow in the gap between the rocks (Option S1)
S34.Inside of Georges River bend along opposite Williams Creek mouth	Bankstown	Poor	Medium/High	Medium/High	Remnant of old concrete seawall, wharf, stairs and boat ramp along around 300m of the foreshore	Ineffective as seawall mostly destroyed High erosion visible behind remnant of the seawall	Replace dumped materials by rocks seawall allowing seedling to grow in the gap between the rocks (Option S1) Replace dumped materials by native vegetation (Option S4)
S35.South of the Kelso Park	Bankstown	Good	N/A	N/A	Short high seawall located backward the foreshore along around 40m	Not very efficient as very short and not directly in contact with the river	No specific action required
S36.Opposite East Hills Park	Liverpool	Poor	Low	High	Scattered dumped materials where there is no vegetation Approximated protection length of 40m	Slow erosion in area devoid of vegetation Very bad visual aspect	Replace dumped materials by native vegetation (Option S4)
S37.Directly upstream of Monash Reserve natural entrance	Bankstown	Good	Low	Medium/High	Around 20m long low vertical seawall	Good protection against undercutting	Seawall can be replaced by boulder seawall to create more habitats (Option S5)
S38.Inside of the bend along Pleasure Point	Liverpool	Poor	High	Medium	Low concrete seawall along around 300m of foreshore	Low protection as very low seawall Significant damage and collapsing along the seawall Erosion noticeable behind seawall due to possible overtopping	Replace seawall by boulder seawall to create more habitats (Option S5) Creation of more habitats by adding rocks in front of the seawall (Option S2)
S39.Military boat ramp directly upstream Deadmans Creek mouth	Liverpool	Fair	Low	High	5m long rock seawall with large blocks directly east of the boat ramp Sheet piles protection surrounding the small military entrance	Increased erosion at the extremity of the seawall due to edge effect Old rusty sheet pile	Rusty sheet pile seawall can be replaced by vertical seawall including object to increase surface and habitats (Option S7)
S40.Lambeth Reserve	Bankstown	Fair	Low	High	30m long rock groyne at Lambeth Reserve	Eroding on the downstream side while accreting on the upstream side	Groyne can be removed and replaced by vegetation (Option S4)
S41.Opposite Lambeth Reserve	Sutherland Shire	Fair/Poor	Medium	Medium	Low private rock seawalls Low seawall at the bottom of Pleasure Point Road protecting a boat ramp Approximated protection length of 230m	Some erosion visible behind the seawalls	Some rocks can be placed in front of the existing seawall to increase habitats (Option S2) Objects can be placed along or in front of the seawall to increase colonisation by various species (Option S7)
S42.Sandy Point	Sutherland Shire	Fair	Low	High	Various kind of vertical seawalls all along Sandy	One Localised highly eroded area close to a boat	Fix eroded seawall

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
					Point Approximated protection length of 300m	ramp at the tip of Sandy Point	Some rocks can be placed in front of the existing seawall to increase habitats (Option S2) Objects can be placed along or in front of the seawall to increase colonisation by various species (Option S7)
S43.Between Sandy and Picnic Point	Sutherland Shire	Fair	Low/Medium	Medium/High	Some large rock at some Localised area Approximated protection length of 70m	Protect area devoid of vegetation	Seawall can be removed and replaced by vegetation (Option S4)
S44.Western and Southern side of Picnic Point	Bankstown	Fair/Good	Low	Medium	Short large block rock seawall at northern end Low vertical rock seawall along around 900m of Picnic Point foreshore	Localised area protected where devoid of vegetation Some area are accreting along the seawall Good protection against undercutting	Scattered seawall at the northern end can be removed and replaced by vegetation (Option S4) Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2) Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S45.Eastern side of Picnic Point and Yeramba Lagoon entrance	Bankstown	Fair/Good	Low	Medium/High	Low vertical rock seawall along around 500m of Picnic Point and Yeramba Lagoon entrance foreshore	Some area currently being fixed at the south-eastern tip of Picnic Point Maintenance needed in some eroded area of the seawall along the eastern foreshore of Picnic Point Yeramba Lagoon Entrance well stabilized	Maintain eroded area of the seawall along the eastern foreshore of Picnic Point Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2) Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7) Low vertical seawall can be replaced by boulder seawall to allow the creation of new habitat (Option S5)
S46.Cattle Duffers Flat up to Anvil Rock	Bankstown	Poor	Medium/High	Medium/High	Rock seawall at the western end and various low vertical rock seawalls along around 500m of foreshore	Upstream half of the area strongly eroded with seawall collapsing Downstream half enclosing a beach with seawall almost cover by sand	Highly eroded seawalls can be removed and replaced by vegetation (Option S4) Seawall can be replaced by boulder seawall to increase habitats (Option S5) Low vertical seawall can be faced by vegetation (Option S6) Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2)
S47.Between Anvil Rock and the Little Salt Pan Creek entrance	Bankstown	Fair	Low/Medium	Medium/High	Various low vertical rock seawalls along around 1400m of foreshore	Top of seawall eroded in some area Some holes landward of seawall in several places along the area Seawall not straight and some pocket beaches are appearing in the meander of the seawall	Replace existing seawall by boulder seawall without cement to increase habitats (Option S5) Vertical seawall can be faced by vegetation (Option S6) Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
S48.Northern Side of Alfords Point Road Bridge	Bankstown	Good	N/A	N/A	Short rock seawall with large blocks under the bridge and a bit further downstream	Protection of a stormwater drain and of bridge foundation	No specific action required
S49.Southern Side of Alfords Point Road Bridge	Sutherland Shire	Good	N/A	N/A	Short rock seawall with large blocks under the bridge	Protection of a stormwater drain and of bridge foundation	No specific action required
S50.Along Old Ferry Rd east of Little Moon Bay	Sutherland Shire	Fair	Low	High	Short rock seawall close to boat ramp Approximated protection length of 40m	Generates edge effect on both side	Seawall can be removed or extended (Option S3)
S51.Jewfish Bay swimming area	Hurstville	Fair	Low/Medium	Medium/High	Vertical sandstone seawall all along the area Approximated protection length of 480m	Needing minor maintenance with a couple of blocks out of the wall to fix	Fix seawall where needed (Option S9) Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S52.Western side of the southern end of Como Bridge	Sutherland Shire	Fair	N/A	N/A	Rock seawall Approximated protection length of 90m	Protecting some tracks along the bridge	No specific action required
S53.Eastern side of the southern end of Como Bridge	Sutherland Shire	Fair	Low/Meduim	Medium/High	Vertical sandstone seawall Approximated protection length of 130m	Under the bridge and along the small harbour directly east of the bridge	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S54.Como Pleasure Gardens	Sutherland Shire	Fair	N/A	N/A	Vertical sandstone seawall around the gardens Approximated protection length of 230m	Mostly fronted by rocks	No specific action required
S55.Scylla Bay Reserve	Sutherland Shire	Fair Poor	Medium	Medium High	Vertical sandstone seawall along the reserve Rock seawall protecting the boat ramp at the eastern end Approximated protection length of 200m	Protecting Verona Range Rock protection is very low and not engineered	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7) Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2)
S56.Oatley Pleasure Ground	Kogarah	Poor/Fair	Low	High	Vertical sandstone seawall on the eastern half, rocks on the western half and small concrete boat ramp at the southern end Approximated protection length of 120m	Boat ramp need maintenance. Other structure enough for the protection of the area	Boat ramp should be fixed and seawalls can be fixed and faced by objects to allows the creation of more habitats (Option S9 and S7)
S57.Moore Reserve Boat Ramp	Kogarah	Poor	Medium/High	Medium	Low concrete seawall along the boat ramp Dumped rocks in front of overflow outlet west of boat ramp Approximated protection length of 40m	Boat ramp subject to erosion needing maintenance Cracks in concrete block around the outlet	Boat ramp should be fixed and seawalls can be upgraded to allows the creation of more habitats (Option S7)
S58.Donnelly Park	Kogarah	Fair/Poor	Medium	Medium/High	Vertical sandstone seawall all along the park Approximated protection length of 230m	Some water is leaking under the seawall at the eastern end Top of seawall is eroded in some area	Top of the seawall needs maintenance as well as the eastern end as some water is leaking from the bottom of the seawall (Option S9) Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
S59.Kyle Bay	Kogarah	Fair	N/A	N/A	Rock protection for two overflow pipes Approximated protection length of 70m	Dumped rocks along the beach and vegetation growing along the back of the beach Protection along the beach is relatively new and the bay is currently adapting to the change	No particular action required
S60.Shipwrighst Bay	Kogarah	Fair	Low	High	Vertical sandstone seawall Approximated protection length of 60m	Relatively low seawall	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S61.Around tip at northern end of Tom Ugly's Bridge	Kogarah	Fair	Medium	Medium	Vertical sandstone seawall Approximated protection length of 250m		Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S62.Shag Point, north of Gwawler Bay	Sutherland Shire	Fair	N/A	N/A	Vertical sandstone seawall all along the headland Approximated protection length of 190m	Vertical seawall fronted by rocks	No specific action required
S63.Dover Park	Kogarah	Poor	Medium	High	Low rock seawall between the boat ramps Approximated protection length of 230m	Erosion visible behind the seawall Buffer behind seawall	Seawall can be replaced by an environmentally friendly step seawall like at Claydon Reserve (Option S5)
S64.Carss Park	Kogarah	Good	Low	Medium/High	Northern half protected by vertical sandstone seawall Southern half is a small beach protected by a very low vertical sandstone seawall Approximated protection length of 1050m	Higher then the ground level to stop overtopping Very low but enough to protect this calm area	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7) Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2)
S65.Claydon Reserve	Kogarah	Good	N/A	N/A	New rock step seawall with vegetation between the steps Approximated protection length of 260m	Environmentally friendly	No specific action required
S66.Bonney Street Wharf	Kogarah	Good	Low	Medium	Vertical sandstone seawall Approximated protection length of 70m	Too low seawall but can not elevate as the whole area is very low	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7) Some rocks can be placed in front of the existing vertical seawalls to increase habitats (Option S2)
S67.Corner Vista Street and the Promenade	Kogarah	Fair	Medium	Medium	Vertical sandstone seawall Approximated protection length of 60m	Protects the park but very low	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S68.End of Harris Street near St Georges Motor Boat Club	Kogarah	Fair	High	Low	Steep sandstone seawall along the end of the road Approximated protection length of 20m	Old seawall but enough to protect the end of Harris Street	Replace old existing seawall by rocks seawall allowing seedling to grow in the gap between the rocks (Option S1)
S69.Southern end of Captain Cooks Bridge	Sutherland Shire	Fair	Medium	Medium	Rock seawall	Protecting Old Taren Point Road	Objects can be placed along or in front of the vertical seawalls to increase colonisation by

Location	LGA	Condition	Cost (Relative to Results)	Priority Rating	Details	Comments	Management Options (Options provided refer to Seawall Options of Section 7.3.2 of the report)
					Approximated protection length of 170m		various species (Option S7)
S70.Northern end of Captain Cooks Bridge	Kogarah / Rockdale	Fair	Medium	Medium	Rock seawall Approximated protection length of 220m	Protecting a small a small park under the bridge	Objects can be placed along or in front of the vertical seawalls to increase colonisation by various species (Option S7)
S71.North-western end of Woolooware Bay	Sutherland Shire	Fair	Low	High	Low rock seawall surrounding a GPT along the northern half of the park Approximated protection length of 50m	Seawall subject to overtopping	Seawall can be extended along the whole park (Option S3) Seawall can be replaced by boulder seawall to increase habitats (Option S5) Seawall can be faced by vegetation (Option S6)
S72.Along Riverside Drive	Rockdale	Fair	N/A	N/A	Rock seawall Approximated protection length of 710m	Covered with sand and vegetation	No specific action required
S73.Eastern Side of Sandringham Bay	Rockdale	Fair Good	Medium	Medium	Short rock seawall located under the trees 300m long vertical sandstone seawall continuing the rock seawall northward up to the beach	Generates erosion at the southern end, not engineer but efficient May be responsible for the erosion of the beach at its northern end	Northern seawall can be upgraded to engineered standard with geotextile Some rocks can be placed in front of the existing southern vertical seawalls to increase habitats (Option S2)
S74.Peter Depena Reserve	Rockdale	Fair Good	N/A	N/A	Wood groyne south of the Sailing Club Large block rock protection and sandstone vertical wall at the GPT entrance	Keeps the sand on the beach Entrance almost filled up with sand	No specific action required
S75.From the third northern groyne southward	Rockdale	Good	N/A	N/A	Vertical sandstone seawall Approximated protection length of 2100m	Mostly protecting a cycle/walkway and carparks	No specific action required
S76.Between the fourth and fifth groynes (from the north)	Rockdale	Fair/Good	High	Low	At this place, the vertical seawall is replace by a large rocks and concrete blocks seawall Approximated protection length of 140m	Not engineered but efficient Most exposed area of the beach	Seawall can be properly engineered with geotextile
S77.Between the two southernmost groynes of Lady Robinsons Beach	Rockdale	Poor	High	Low/Medium	Old rock seawall totally covered with water Approximated protection length of 160m	No real effect except provided habitat along the vertical concrete seawall formed by the walkway	Vertical seawall can be faced by more rocks to create additional habitats (Option S2)
S78.Lady Robinsons Beach Groynes	Rockdale	Good	High	Low	Ten low rock groynes located at regular interval along the southern half of the beach	Generation of severe erosion north of the northernmost groyne The southernmost groyne is overtopped by water on its landward end and would need to be extended landward	Southernmost groyne can be extended landward (Option S3) Additional groynes can be built north of the groyne field



DATE 16/04/2010

0 75 150

metres

COORDINATE SYSTEM GDA 94 Zone 56

FIG NO. 1

FIGURE TITLE Liverpool to Moore Lake

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PROJECT TITLE Georges River Data Compilation and Estuary Processes Study

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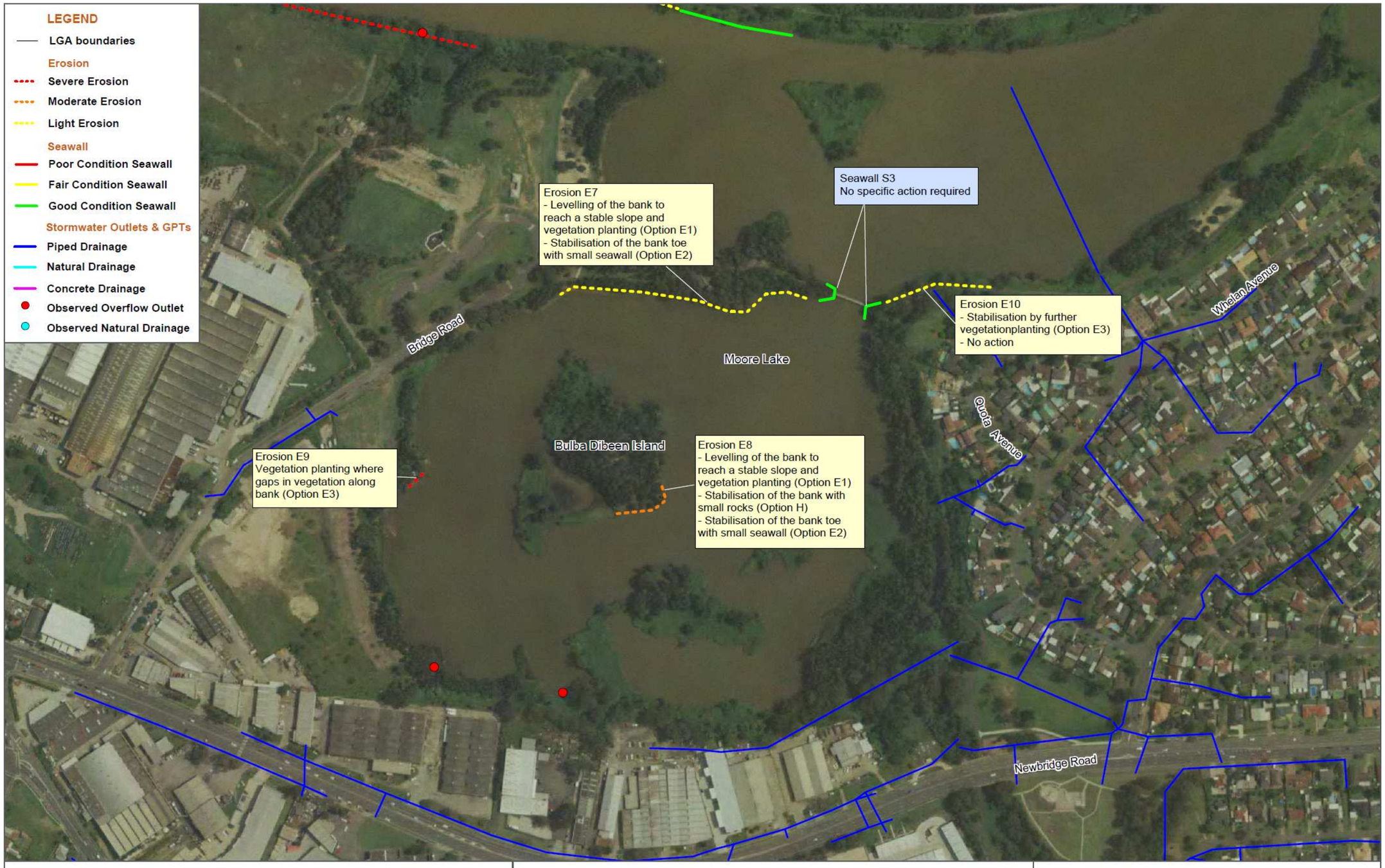

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FIG NO. 2

FIGURE TITLE Moore Lake

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FIG NO. 3

FIGURE TITLE Lake Moore to Governor Macquarie Bridge

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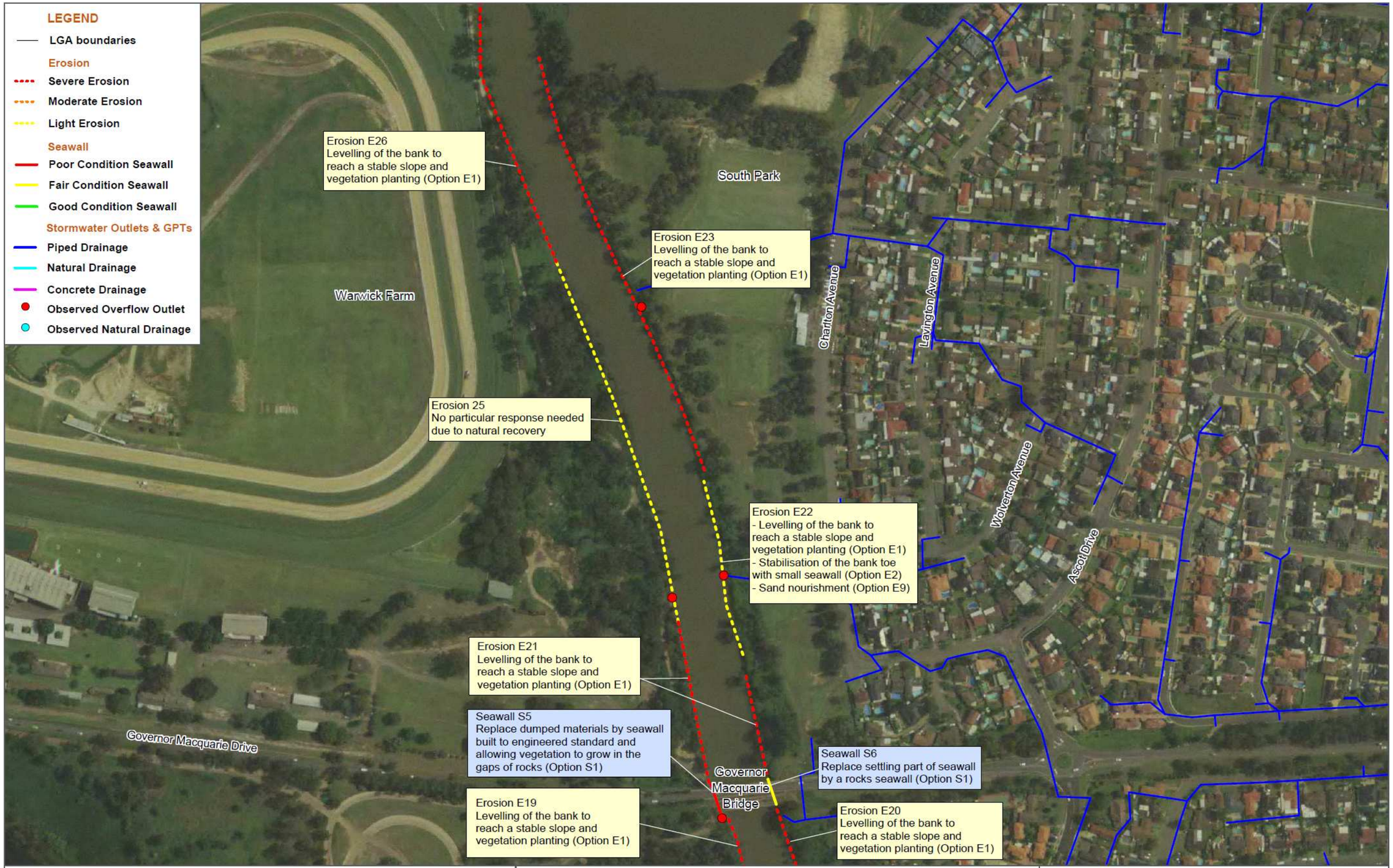

DATE 16/04/2010 | 0 75 150 metres | COORDINATE SYSTEM GDA 94 Zone 56

FIG NO. 4 | FIGURE TITLE Governor Macquarie Bridge to Chipping Norton Lake

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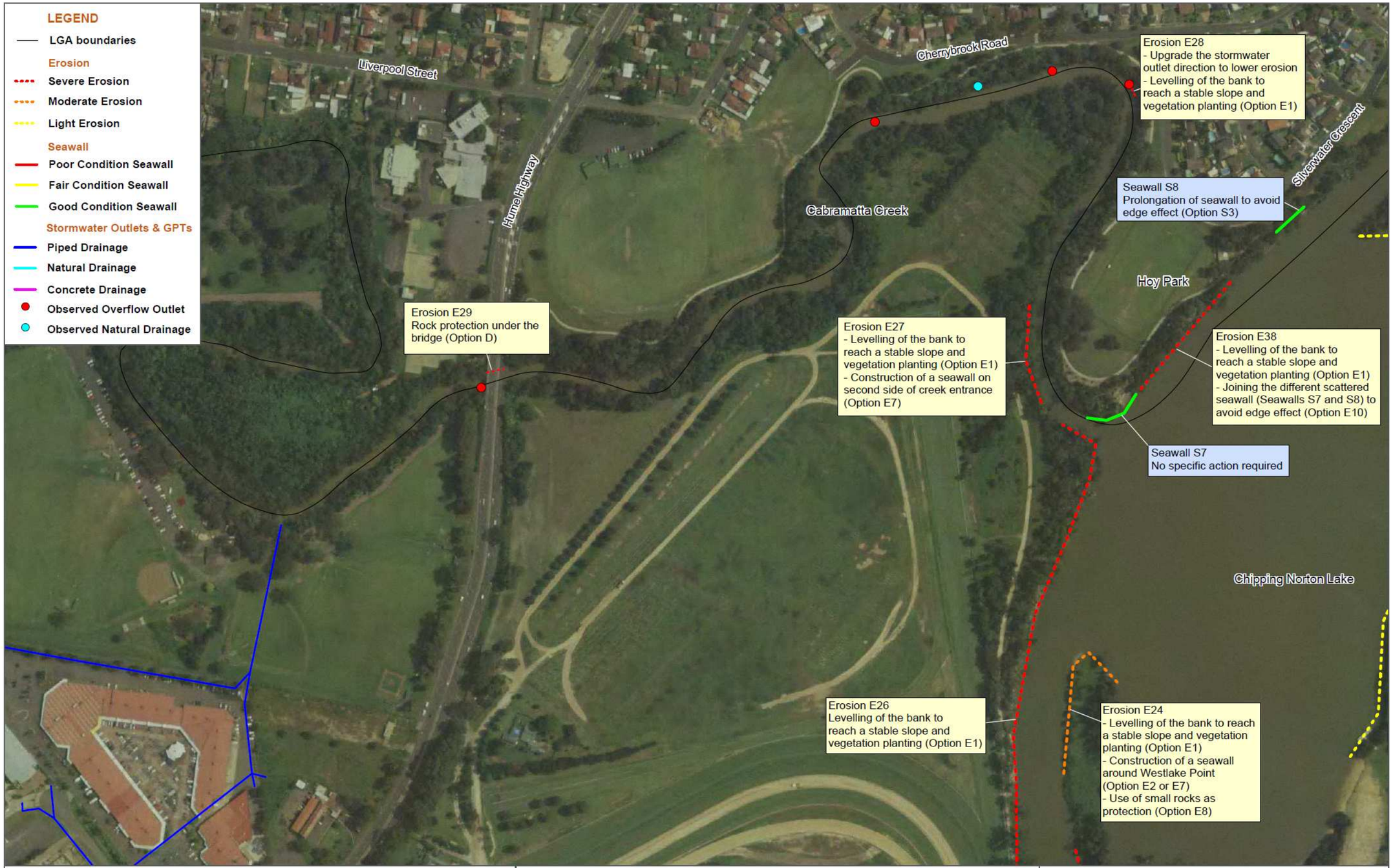

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FIG NO. 5

FIGURE TITLE Cabramatta Creek

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FIG NO. 6

FIGURE TITLE West Chipping Norton Lake

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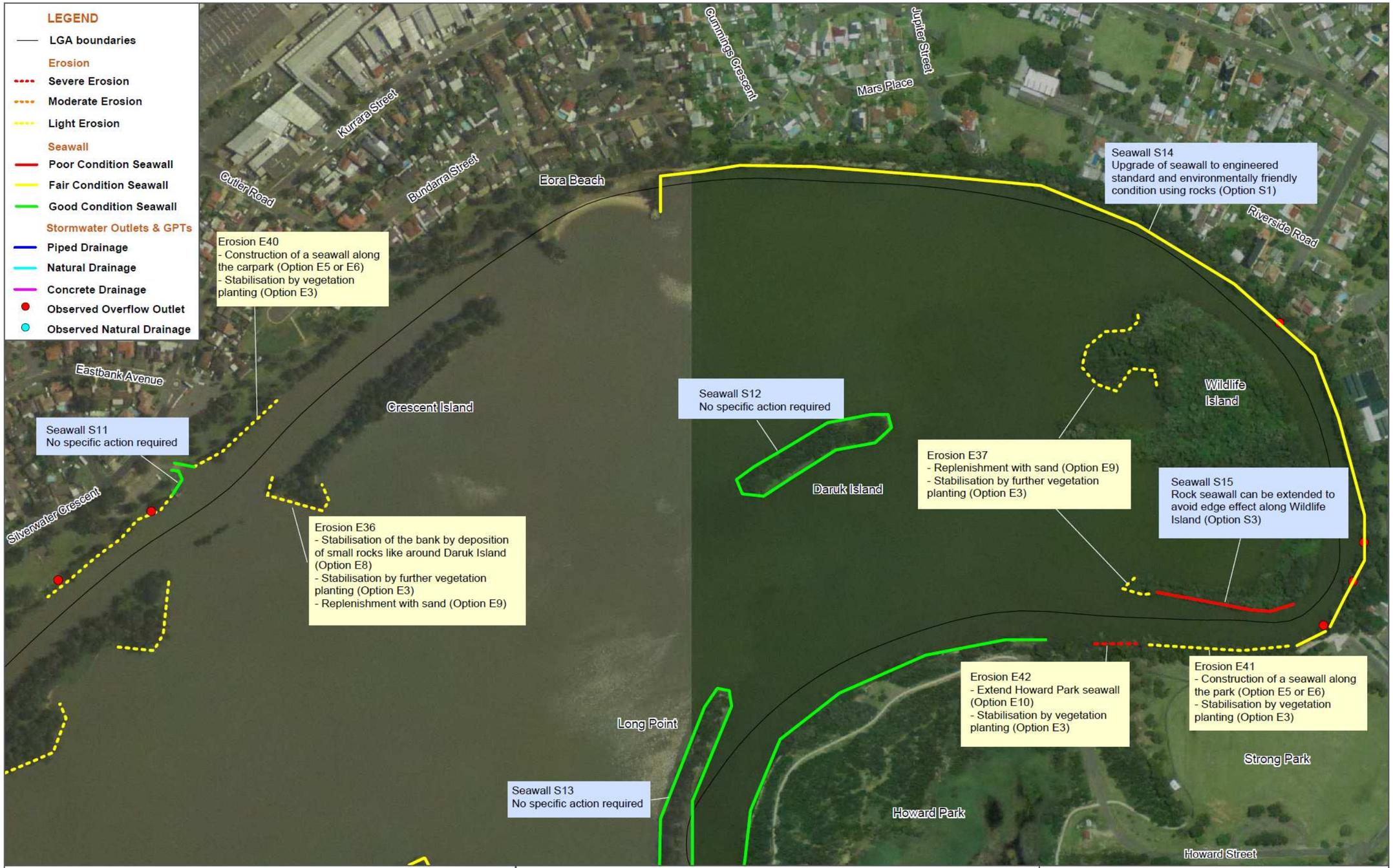

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FIG NO. 7

FIGURE TITLE East Chipping Norton Lake

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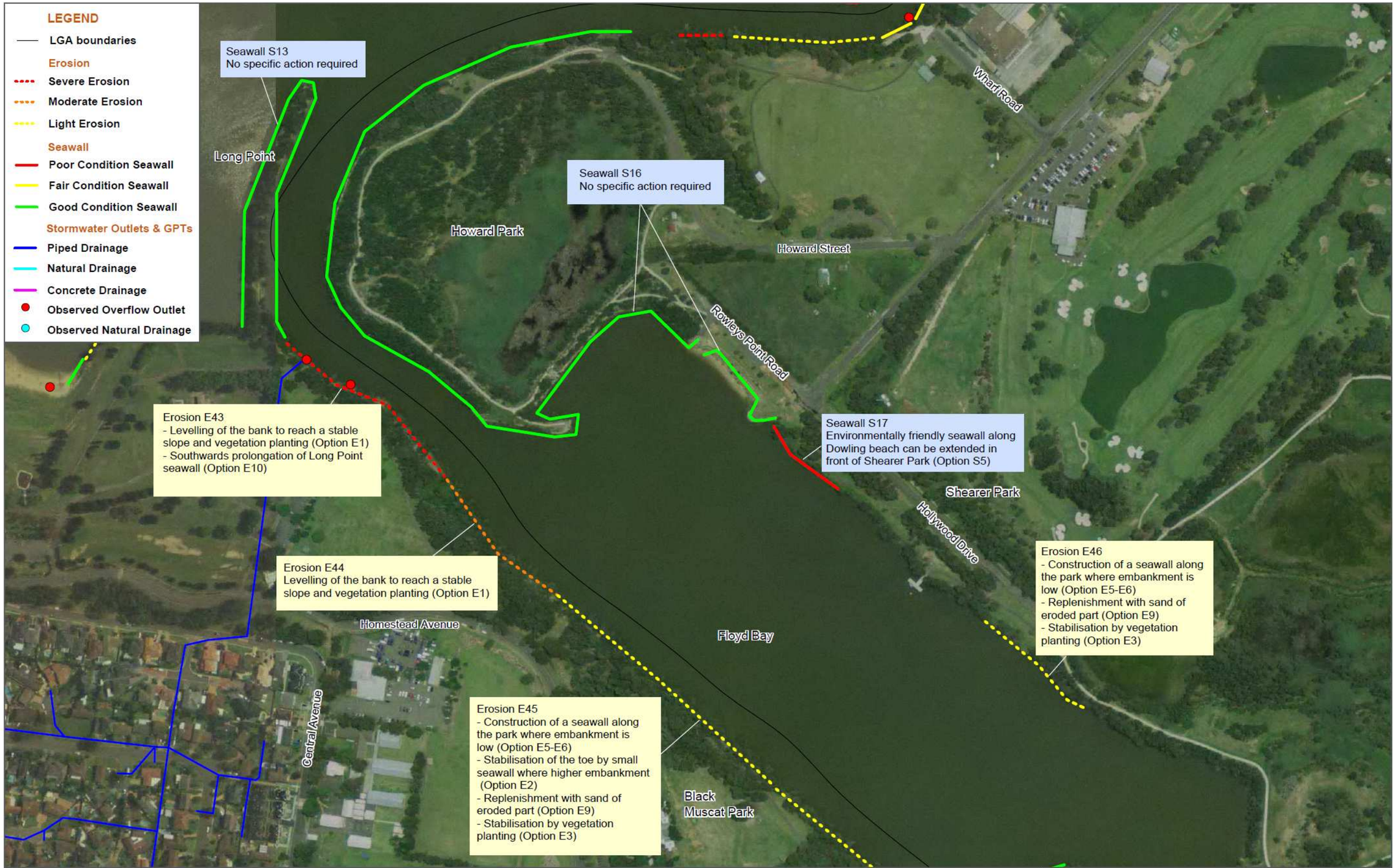

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metres

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FIG NO. 8

FIGURE TITLE Chipping Norton Lake to Floyd Bay

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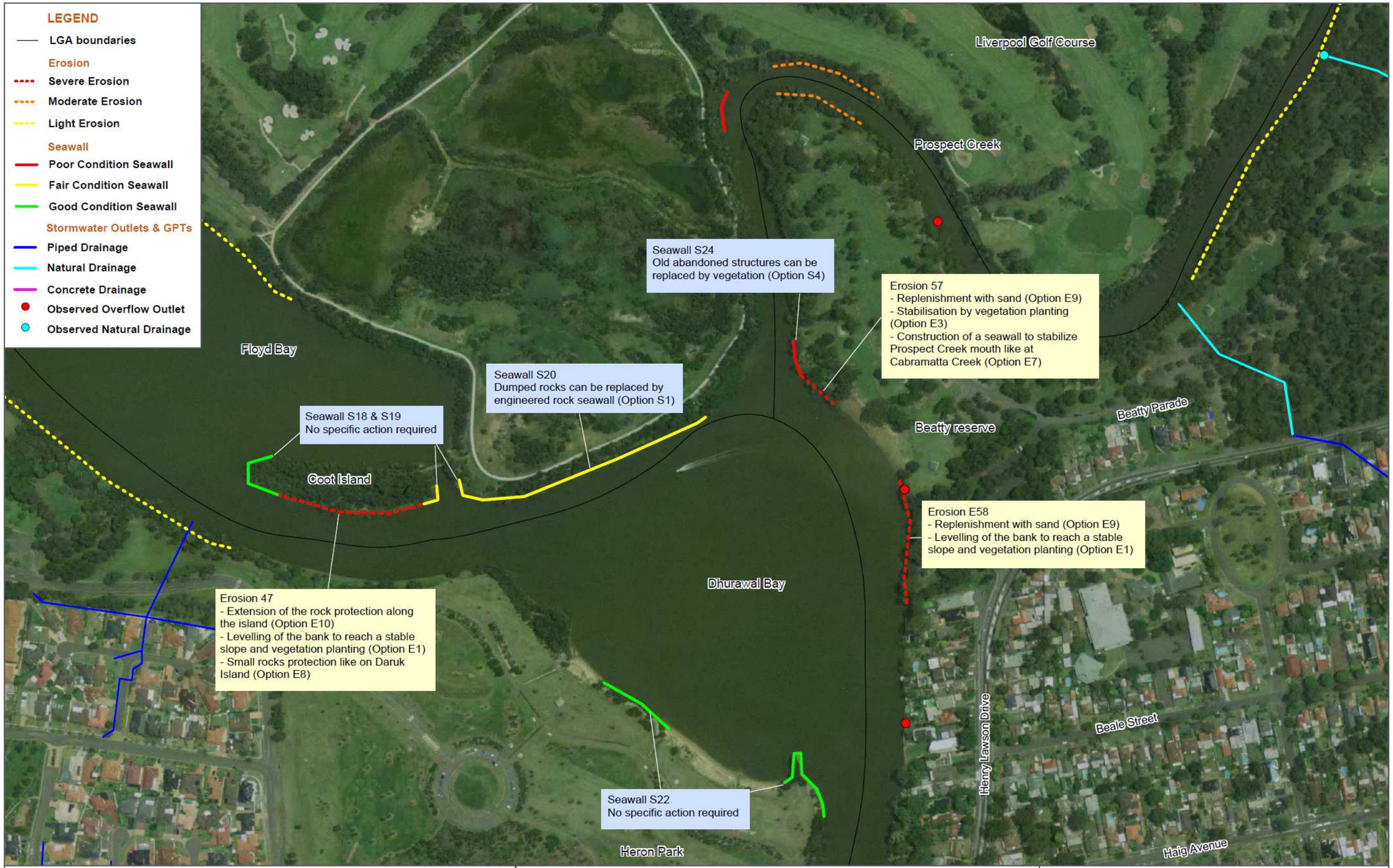

DATE	16/04/2010	0 75 150 metres	COORDINATE SYSTEM	GDA 94 Zone 56	
FIG NO.	9	FIGURE TITLE	Floyd Bay to Prospect Creek Entrance		
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FIG NO.	10	FIGURE TITLE	Lower Prospect Creek		
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FIG NO. 11

FIGURE TITLE Prospect Creek up to Hume Highway Bridge

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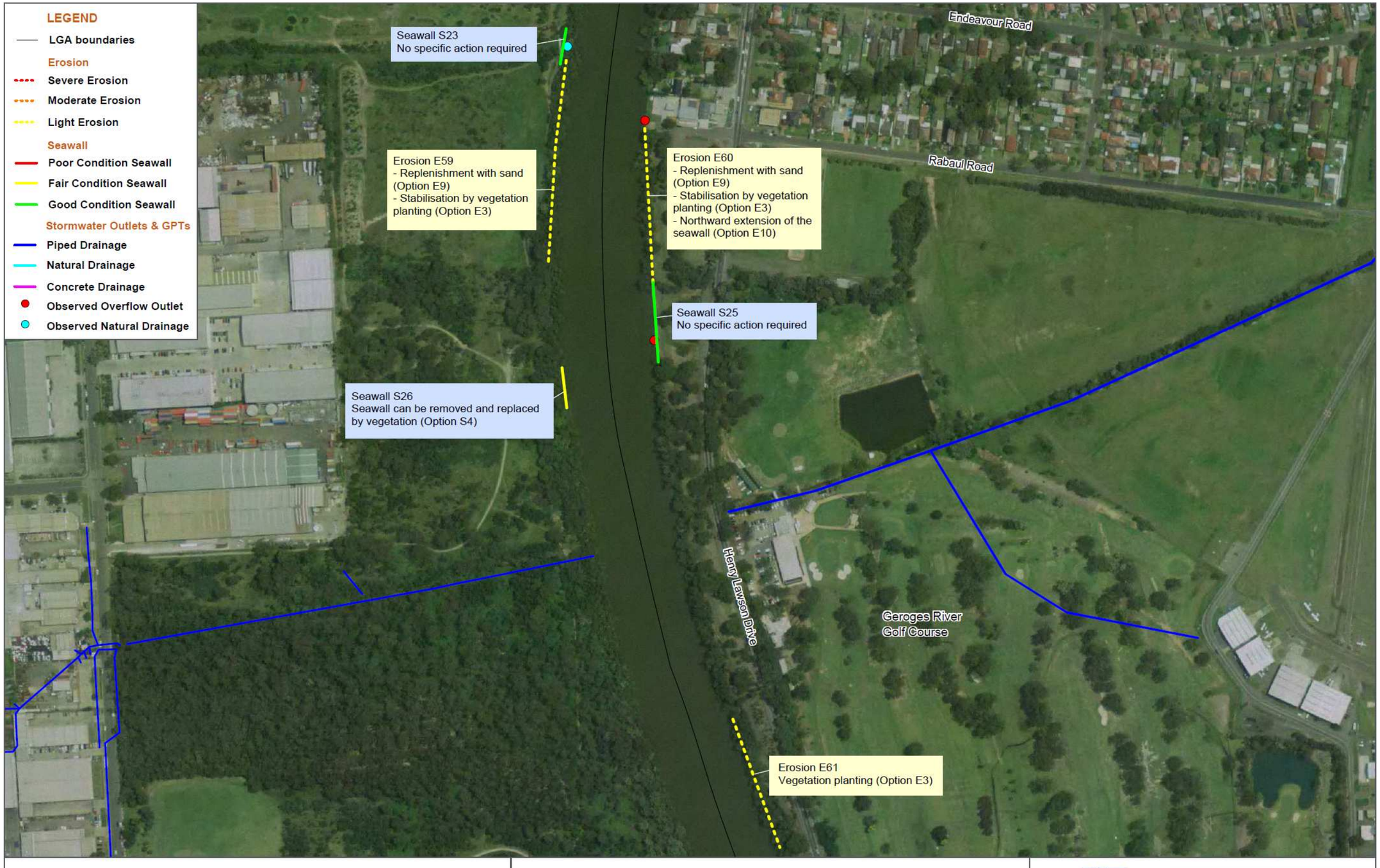

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FIG NO. 12

FIGURE TITLE Dhurawal Bay to Georges River Golf Course

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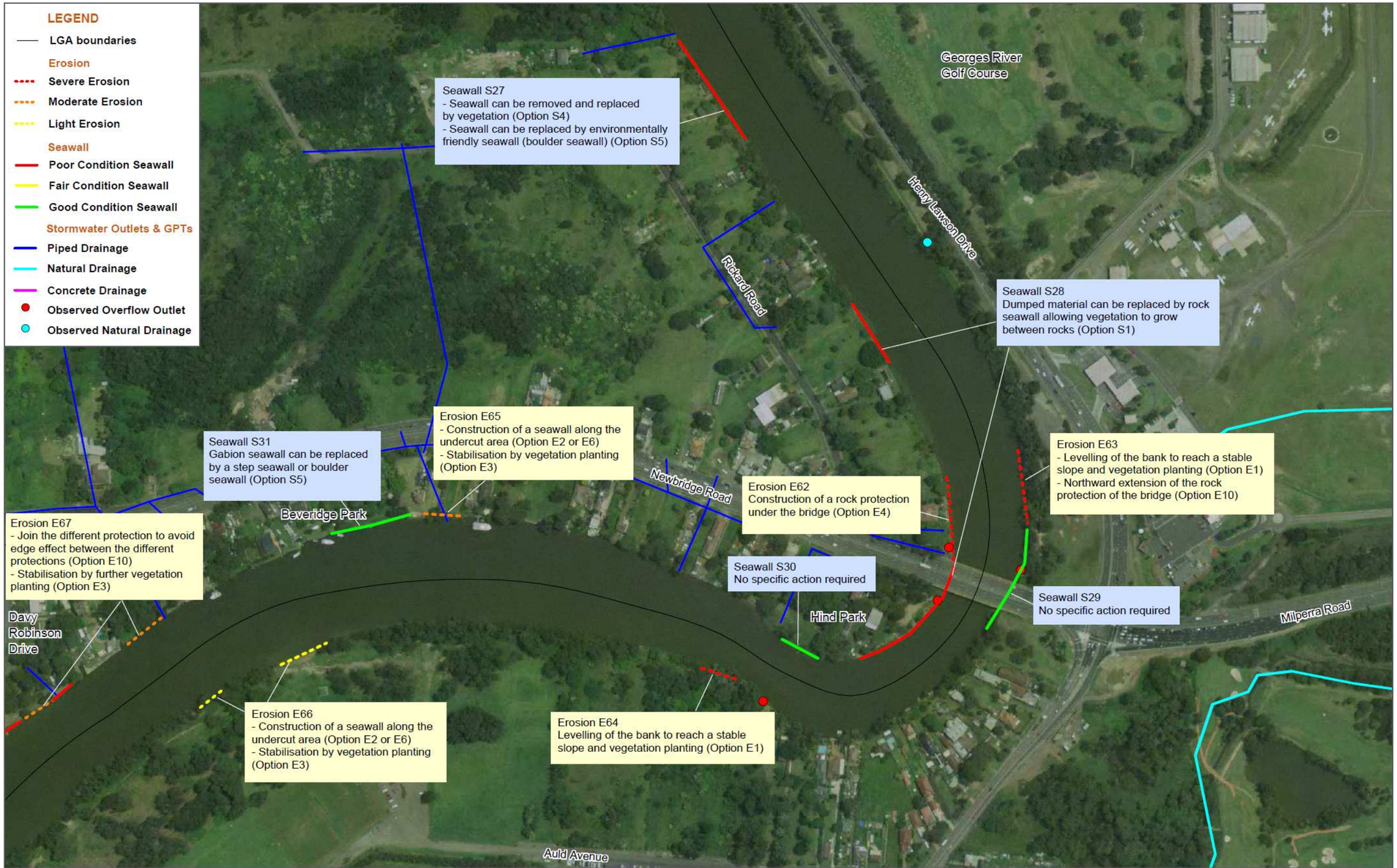

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FIG NO. 13

FIGURE TITLE Georges River Golf Course to Davy Robinson Drive

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PROJECT TITLE Georges River Data Compilation and Estuary Processes Study

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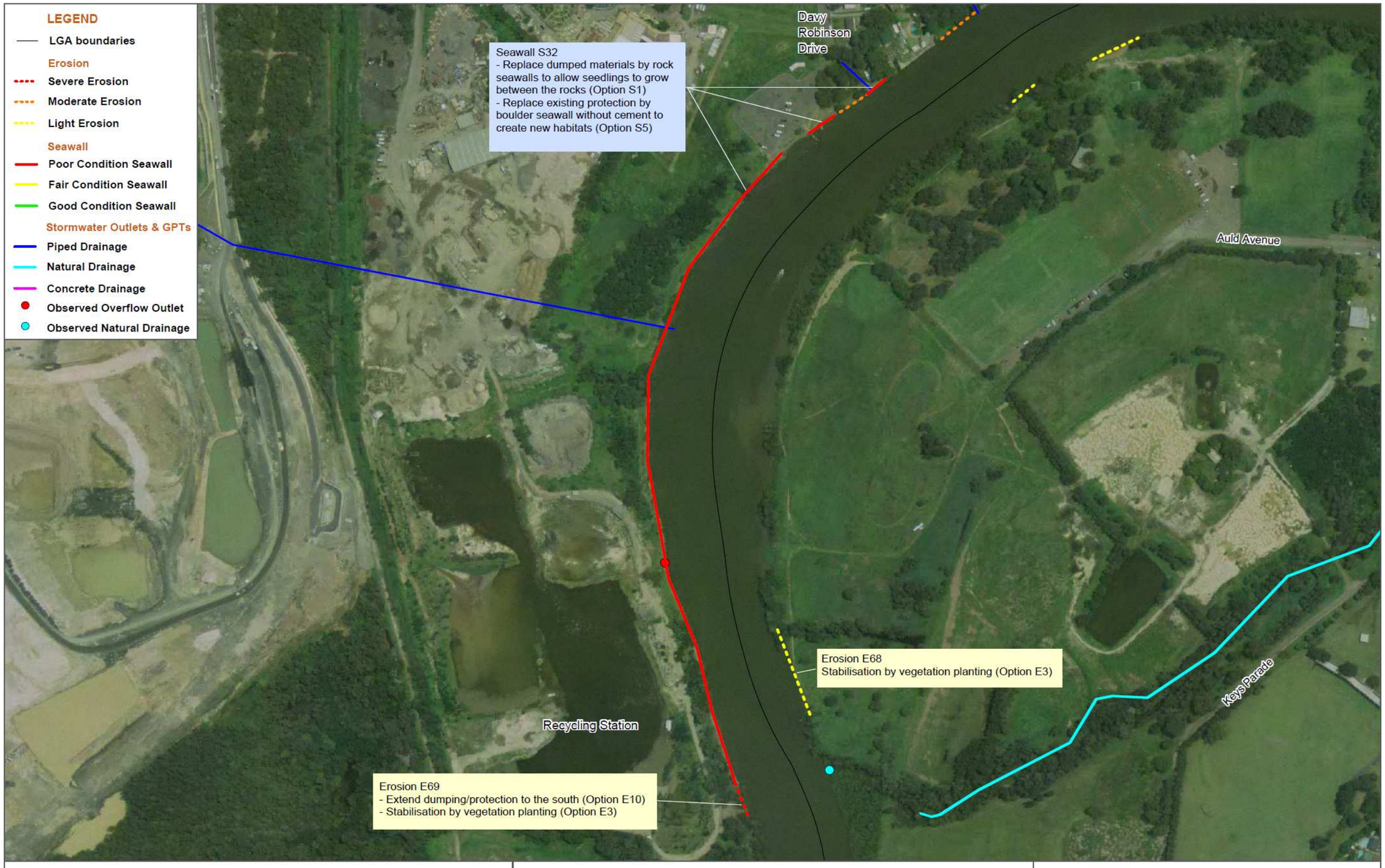

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FIG NO.	14	FIGURE TITLE	Davy Robinson Drive to Recycling Station		
PROJECT NO.	3001765	PROJECT TITLE	Georges River Data Compilation and Estuary Processes Study		
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metres

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FIG NO. 15

FIGURE TITLE Recycling Station to New Brighton Golf Course

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