Figure 5.1 Location of sampling locations and sites; reference sites, impact sites.

5.4 Water Quality

Water quality profiling was undertaken to provide background water quality data. Data was collected at the surface and at mid-water (~ 6 m deep) at each sampling site using a TPS 90FL multi-parameter water quality meter. The water quality parameters measured included temperature (°C), salinity (ppt), dissolved oxygen (DO), turbidity (NTU), pH and conductivity (µS/cm). For each location the mean, standard deviation and standard error of each water quality values for surface and mid-water were calculated. Mean and standard error values are displayed in this report. The water quality parameter values obtained at each site were compared to the trigger values for slightly disturbed estuarine ecosystems in south east Australia as specified in the ANZECC / ARMCANZ National Water Quality Guidelines (ANZECC / ARMCANZ 2000), and the expected water quality values for Australian estuaries (NSW Government 1992).

5.5 Sediment Sampling

Sediment sampling was undertaken to provide an overview of the particle size distribution of sediments at each of the sampling sites. Sediment samples were collected by diver coring at each sampling site (12 samples in total), using a 50 mm polycarbonate core to a depth of 20 cm. Particle Size Analysis (PSA) was carried out by ALS Environmental (Warrabrook) using hydrometer.

Analysis of heavy metals and other COPC in marine sediments adjacent to Barangaroo was undertaken by ERM (ERM 2008b). The results of the ERM (2008b) report are summarised in **Section 4.2.3.**

5.6 Seabed Inspection and Mapping

Detailed inspection of the seafloor was undertaken within the footprint of the proposed Lend Lease development and at two reference locations (**Figure 5.1**). A total of four spot dives (sites) were undertaken by commercially qualified scientific divers at each location, to ascertain the seabed conditions and to determine the presence and extent of any sub-aquatic vegetation. Spatial data for each site was recorded using a Garmin GPS 60CSx. Maximum depths at each site were recorded by divers using dive computers.

Underwater photography was used to record images of the seafloor. All underwater photos were captured using a Canon Powershot G11 with a Cannon waterproof case. In addition to underwater photography, four towed video transects were performed at the impact location, to provide a broader overview of the site and to confirm the presence or absence and extent of any sub-aquatic vegetation. Video transects were undertaken using a towed video system (Delta Vision Industrial Pro Package with 150ft cable, DVD player and LCD Monitor), deployed from the surface. The location of each video transect is shown in **Figure 5.2**.