Mapping and Dataset Summary

A series of maps, and a geodatabase have been produced to accompany this study and assist the assessment of sites by London Borough of Bromley as part of their decision making process. A GIS based mapping system using the software package 'ArcGIS' was implemented to enable this. A summary of the figures created and the GIS layers used for each of the maps is included in the Table D1 below.

Table D1 *- Summary of Maps Created*

Map Number	Figure Title	Layers Used
Map 001	River Network	· Ordnance Survey Base-mapping (25k)* · Borough Boundary* · Main River* · Ordinary Watercourse* · Culvert*
Map 002	Topography	· Lidar (Elevation Data)
Map 003	Geology	· Drift Geology · Solid Geology
Map 004b	Historical Fluvial Flood Map	· EA fluvial flood records · LBB local knowledge on groundwater flood incidents
Map 004b	Records of Sewer Flooding	· DG5 dataset provided by Thames water
Map 005	Risk of Flooding from Rivers and Sea	· Flood Zone 2 · Flood Zone 3a · Flood Zone 3b
Map 006	Risk of Flooding from Surface Water	· Flood Map for Surface Water 30 year extent · Flood Map for Surface Water 100 year extent · Flood Map for Surface Water 1000 year extent
Map 007	Susceptibility to Groundwater Flooding	· BGS dataset for Groundwater Vulnerability
Map 008	Risk of Flooding from Reservoirs	· EA designated reservoir flood extents

Map Number	Figure Title	Layers Used
Map 009	Risk of Flooding from Rivers and Sea with an Allowance for Climate Change	· Flood Zone 2 · Flood Zone 3a · Flood Zone 3b · Ravensbourne Model outline with 25% and 35% allowance for climate change · Cray Model outline with 25%, 35% and 70% allowance for climate change
Map 010	Infiltration SuDS Suitability	· BGS dataset for SuDS Suitability
Map 011	Flood Warning Areas	· EA designated Flood Warning Areas
Map 012a	Vulnerable Sites: Risk of Flooding from Rivers and the Sea with an Allowance for Climate Change	· NRD Vulnerable sites · Flood Zone 2 · Flood Zone 3a · Flood Zone 3b · Ravensbourne Model outline with 25% and 35% allowance for climate change · Cray Model outline with 25%, 35% and 70%
Map 012b	Vulnerable Sites: Risk of Flooding from Surface Water	· NRD Vulnerable Sites · Flood Map for Surface Water 30 year extent · Flood Map for Surface Water 100 year extent · Flood Map for Surface Water 1000 year extent
Map 012c	Vulnerable Sites: Susceptibility of Groundwater Flooding	· NRD Vulnerable Sites · BGS dataset for Groundwater Vulnerability

Notes:*Included in all maps

ArcGIS uses multiple datasets with associated attribution to present geo-located features from multiple sources. An overview of the information provided for mapping purposes by the various key stakeholders is shown below.

Table D2 *- Description of GIS Layers used to inform the assessment*

	Dataset	Source	Format	Layer Description
Fluvial and Tidal	Detailed River Network	Environment Agency Geostore	GIS shapefile	Identification of the river network including main rivers and ordinary Watercourses.
	Flood Map for Planning (Rivers and Sea) Flood Zones 2 and 3	Environment Agency Geostore	GIS shapefile	Shows areas at varying risk of flooding from rivers and the sea.
	Historic Flood Map	Environment Agency Geostore	GIS shapefile	Single GIS layer showing the extent of fluvial historic flood events.
	Asset Information Management System (AIMS)	Environment Agency	GIS shapefile	Shows where there are existing river assets (embankments and walls).
	Ravensbourne Catchment Model	Environment Agency	GIS shapefile	Report and GIS outputs summarising the flood modelling of The Beck River, River Ravensbourne and Kyd Brook, completed in 2015.
	Cray Catchment Model	Environment Agency	GIS shapefile	GIS outputs for the flood modelling of the River Cray, completed in 2010.
	Flood Warning and Alert Areas	Environment Agency Geostore	GIS shapefile	Shows areas benefitting from fluvial flood warning schemes in the Borough.
Pluvial	Risk of Flooding from Surface Water	Environment Agency Geostore	GIS shapefile	Provides an indication of the broad areas likely to be at risk of surface water flooding during a 1 in 30 year, 1 in 100 year and 1 in 100 year return period event.

	Dataset	Source	Format	Layer Description
Groundwater	Geology	Environment Agency Geostore	GIS shapefile	Illustrates bedrock and superficial geology across the Borough.
	Infiltration SuDS Summary Map	British Geological Society	GIS shapefile	Dataset produced by BGS illustrating the likely suitability of the utilisation of infiltration SuDS techniques across the Borough.
	Groundwater Vulnerability	British Geological Society	GIS shapefile	Dataset produced by BGS illustrating the likely suitability to groundwater flooding, based on geological indicators.
Sewer	DG5 Register of sewer flooding incidents, by post code area	Thames Water	MS Word	Indicates post code areas that may be prone to flooding as have experienced flooding in the last 10 years.
Reservoir	Area Deemed at of Risk of Flooding from Reservoirs	Environment Agency	GIS shapefile	Identifies areas which are at risk of flooding in the event of a reservoir breach.
General	Post Code Boundaries	London Borough of Bromley	GIS shapefile	Delineates Post Code Boundaries for the Borough, enabling mapping of Thames Water datasets.
	National Receptor Database	Environment Agency	GIS shapefile	A comprehensive register of land uses across the Borough, used to identify vulnerable sites and water management infrastructure.
	Ordnance Survey 25k Background	London Borough of Bromley	Raster file (.tiff)	Provides background mapping and indicates important features and street names in detail.

	Dataset	Source	Format	Layer Description
	LiDAR Data	Environment Agency	Raster file (.tiff)	Provides a useful basis for understanding local topography and the surface water flood risk in the area.