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 Southwark as part of their decision making process. A GIS based mapping system using the software package 'ArcGIS' was implemented to enable this.

Throughout this study, a range of datasets have been requested and obtained. Each of these datasets has been analysed in conjunction with key stakeholders to agree the most updated and relevant information to be included in the SFRA and additional or modified datasets created where necessary. A summary of the maps created and the GIS layers used for each of the maps is included in the Table C1 below.

Table C1 *- Summary of Maps Created*

Map Number	Map Title	Layers Used
Map A1	River Network	• Ordnance Survey Base-mapping (25k)* • Borough Boundary* • Main River* • Ordinary Watercourse* • Culvert* • Hidden Watercourses; • Docks • Reservoirs • Quays
Map A2	Flood History	• Historical Groundwater Flooding • Historical Surface Water Flooding • Recorded Flood Outlines - From River and Sea • Properties Flooded From Overloaded Sewers
Map A3	Flood Risk From Rivers And Sea	• Flood Zone 2 • Flood Zone 3a • Flood Zone 3b
Map A4	Flood Map for 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 • Critical Drainage Areas
Map A5	Areas at Risk of Flooding from Groundwater	• Susceptibility to Groundwater Flooding
Map A6	Flood Risk From Reservoirs	• Flood Risk From Reservoirs • Reservoirs
Map A7	Flood Risk Management Infrastructure	• Areas Benefiting From Defences • Flood Defences - Earth Embankment • Flood Defences - Rail Embankment
Map A8.1	Breach Mapping - Maximum Predicted Flood Extents	• Maximum Flood Extent - MLWL2014 • Maximum Flood Extent - MLWL2065 • Maximum Flood Extent - MLWL2100

Map Series A8.2	Breach Mapping - Flood Depth (Per Individual Breach Location)	• Detailed River Network Breach Locations Flood Depth For (2014, 2065 and 2100)
Map Series A8.3	Breach Mapping - Flood Hazard (Per Individual Breach Location)	• Detailed River Network Breach Locations Flood Hazard (for 2014, 2065 and 2100)
Map Series A8.4	Breach Mapping - Flood Velocity (Per Individual Breach Location)	• Detailed River Network Breach Locations Flood Velocity (for 2014, 2065 and 2100)
Map A9	Flood Warning Areas	• Flood Alert Area • Flood Warning Area
Map A10.1	Vulnerable Sites – Flood Risk from Rivers And The Sea	• Vulnerable Sites (Medical Facilities, Ambulance Stations, Fire Station, Police Stations, Public Transport Stations, Education Sites, Aged Care, Scheduled Ancient Monuments, SSSI, World Heritage Site) • Flood Zone 2 • Flood Zone 3a • Flood Zone 3b
Map A10.2	Vulnerable Sites – Flood Risk from Surface Water	• Vulnerable Sites (as above) • Flood Zone 2 • Flood Zone 3a • Flood Zone 3b
Map A10.3	Vulnerable Sites – Flood Risk from Groundwater	• Vulnerable Sites (as above) • Flood Risk from Groundwater
Map A11	SuDS Infiltration Suitability	• SuDS Summary Map
Map A12	Topography	• Lidar (Elevation Data)

Note:
*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.

All of the datasets used in this SFRA update have been newly obtained from stakeholders, to ensure the latest available understanding of flood risk. The date each dataset was obtained has been included for ease in establishing the need for any subsequent update.

***Table C2** - Description of GIS Layers used to inform the assessment*

	Dataset	Source	Format	Layer Description	Date Received
Fluvial and Tidal	Detailed River Network	Environment Agency	GIS shapefile	Identification of the river network including main rivers and ordinary watercourses.	27/08/2015
	Flood Map for Planning (Rivers and Sea) Flood Zones 2 and 3	Environment Agency	GIS shapefile	Shows areas at varying risk of flooding from rivers and the sea.	27/08/2015
	Historic Flood Map	Environment Agency	GIS shapefile	Single GIS layer showing the extent of fluvial historic flood events.	27/08/2015
	Asset Information Management System (AIMS)	Environment Agency	GIS shapefile	Shows where there are existing defences, structures, heights, type and design standard. However many fields contain default values.	27/08/2015
	Areas Benefitting from Defences	Environment Agency	GIS shapefile	Indicates the areas within the Borough that are under the protection of flood defences.	27/08/2015
	Flood Defences	Environment Agency	GIS shapefile	Location of flood defences within the Borough.	27/08/2015
	Flood Warning Area	Environment Agency Geostore	GIS shapefile	Shows areas benefitting from fluvial flood warning schemes in the Borough.	27/08/2015
	Thames Tidal Breach Modelling Study	Environment Agency	GIS ascii and shapefiles and PDF	Reports and GIS outputs summarising the breach modelling of the TTD, completed in 2014.	09/09/2015
	Flood Alert Area	Environment Agency Geostore	GIS shapefile	Shows areas benefitting from flood alert schemes in the Borough.	27/08/2016

	Dataset	Source	Format	Layer Description	Date Received
	Hidden Watercourses	London Borough of Southwark (updated by AECOM)	GIS shapefile	Shows indicative location of the 'hidden' culverted watercourses within the Borough, based on historic maps. The location is approximate only.	11/11/2015
Pluvial	Updated Flood Map for 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 1000 year return period event.	27/08/2015
	Recorded Flood Outline	London Borough of Southwark (from SWMP)	GIS shapefile	Indicates the extent of historic surface water flood events.	12/10/2015
	Flood Defences	London Borough of Southwark (from SWMP)	GIS shapefile	Indicates informal flood defences, including railway and earth embankments, identified during the Surface Water Management Plan.	12/10/2015
	Critical Drainage Areas	London Borough of Southwark (from SWMP)	GIS shapefile	Location of designated critical drainage areas within the Borough.	27/08/2015
	Historic Flooded Properties	London Borough of Southwark (from SWMP)	GIS shapefile	Location and descriptions of surface water flooding events recorded within the Borough.	12/10/2015
Groundwater	Geology	London Borough of Southwark	GIS shapefile	Illustrates bedrock and superficial geology across the Borough.	27/08/2015
	Aquifer Designation Map	Environment Agency	GIS shapefile	Broadly shows extents of aquifers in the Borough.	27/08/2015
	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.	10/11/2016

	Dataset	Source	Format	Layer Description	Date Received
	Susceptibility to Groundwater Flooding	British Geological Society	GIS shapefile	Broad scale assessment of areas likely to be susceptible to groundwater flooding based on geological indicators.	10/08/2016
	Source Protection Zones	Environment Agency	GIS shapefile	Shows areas which are Groundwater Source Protection Zones.	27/08/2015
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.	12/10/2015
Sewer	Sewer Network	Thames Water	GIS shapefile	Details of the combined sewer assets across the Borough.	12/10/2015
	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.	08/10/2015
Other	Administrative boundary	London Borough of Southwark	GIS shapefile	Defines the administrative area of the Borough for mapping purposes.	27/08/2015
	Post Code Boundaries	London Borough of Southwark	GIS shapefile	Delineates Post Code Boundaries for the Borough, enabling mapping of Thames Water datasets.	27/08/2015
	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.	24/09/2015
	Ordnance Survey 25k Background	Purchased from Emapsite Contractor Link	Raster file (.tiff)	Provides background mapping and indicates important features and street names in detail.	16/09/2015
	LiDAR Data	Environment Agency	Raster file (.tiff)	Provides a useful basis for understanding local topography and the surface water flood risk in the area.	09/12/2015