

APPENDIX O

MARKS GATE

MARKS GATE INCLUDING GREEN BELT TO THE NORTH OF BILLET LAND AND TO EAST OF WHALEBONE LAND NORTH

Area Name: Marks Gate including Green Belt to the north of Billet Lane and to the east of Whalebone Lane North.

Location: Dagenham

River Catchment: River Rom

NPPF Flood Zone (majority of area): Flood Zone 1

NPPF Flood Zone (worst case): Flood Zone 1

Introduction

The Marks Gate strategic development site occupies an area of approximately 1.58 km² and is located in the north of Barking and Dagenham (refer to Appendix A). The site is currently largely greenfield and covers the area around Whalebone Lane North, Billet Road, Collier Row Road and Marks Gate Cemetery. The proposals for the development of Marks Gate strategic development site include the development of residential units.

Description of Flood Risk*Flood Zones*

The entire area of the Marks Gate strategic development site is located within Flood Zone 1 and is therefore not considered to be at risk of flooding from fluvial or tidal sources.

Surface Water

The Environment Agency Risk of Flooding from Surface Water map indicates the area is generally at low risk of surface water flooding. Surface water flooding within the Marks Gate strategic development site is illustrated in Figure O3.

Groundwater

The increased Potential for Elevated Groundwater map (iPEG), developed for the Barking and Dagenham SWMP, indicates that only a small area on the eastern border of the Marks Gate strategic development site is within an area identified as having an increased potential for groundwater to interact with or rise to within 2m of the ground surface. Therefore the risk of ground water flooding at the site is thought to be low.

Defence or Reservoir Failure

The Marks Gate strategic development site is located within Flood Zone 1 and is therefore not within an area benefitting from flood defences and is not at risk of flooding due to breach of any flood defences.

The Environment Agency Risk of Flooding from Reservoirs map indicates the area is not at risk of reservoir flooding.

Flood Warning Areas

The Marks Gate strategic development site is not located within an Environment Agency Flood Warning or Flood Alert area.

Impact of Climate Change

The Marks Gate strategic development site is not predicted to be at risk of fluvial or tidal flooding, now or in the future.

The effects of climate change will potentially increase the frequency and intensity of surface water flood risk within the Borough. A comparison of the Environment Agency 1 in 100 (1%) annual probability and

1 in 1000 (0.1%) annual probability predicted surface water flood extents, provided in the Level 1 SFRA report, suggests that although the Marks Gate strategic development site is at low risk from surface water at present, a number of flow paths along Collier Row Road and Whalebone Lane North towards the Beam River may become more prominent in the future, increasing the surface water flood risk to the site.

Planning Recommendations

Spatial Planning and Development Control

Development of the site should be undertaken in accordance with the principles as set out within Section 1 of this report and Section 7 of the Level 1 SFRA. It is understood that the proposed development within the Marks Gate strategic development site comprises residential development.

A site-specific flood risk assessment is required for developments in Flood Zone 1 where the development is 1 hectare or greater or at significant risk of flooding from other sources (i.e. surface water, sewerage systems or reservoirs).

The need and scope of a site-specific flood risk assessment in Flood Zone 1 should be discussed and agreed with the Council. However, it is recommended that, at minimum, a site-specific flood risk assessment is provided for development at risk of surface water flooding up to the 1 in 30 (3.33%) annual probability event, or at risk of flooding to a depth greater than 300mm during the 1 in 100 (1%) annual probability event.

Within a development site, a sequential approach should be adopted that takes into account all sources of flood risk including the potential effects of climate change.

To ensure the flood resistance of a building, it is recommended ground floor levels are situated 300mm above adjacent ground level, or above the estimated 1 in 100 (1%) annual probability flood depth.

Basement structures are considered acceptable in Flood Zone 1, although where possible they should be designed to prevent the overland flow of water entering the basement structure up to and including the 1 in 30 (3.33%) annual probability event.

Sustainable Drainage Systems

The Marks Gate development site is currently predominantly greenfield and therefore the risk of contamination may be low. Given the size of the development site it is recommended that a strategic surface water drainage assessment for the site as a whole is completed to enable an overall drainage strategy to be formulated and then followed on a plot by plot basis.

SUDS techniques as discussed in Section 7.7 of the Level 1 SFRA should be promoted at the site. The site should seek opportunities to integrate SUDS within the design of the site and provide an exemplar of best practice techniques including good use of green space to accommodate a variety of SUDS features in order to control and clean runoff from the site.

Previously undeveloped areas of the site should achieve greenfield runoff rates. Previously developed sites should strive to achieve betterment over existing discharge rates. Given the strategic development site's relatively high elevation within the catchment, developers should strive to achieve pre-developed greenfield rates as far as practicable in order to assist in the reduction of flood risk within areas at a lower elevation. Where this is not practicable a minimum betterment of 20%, whilst taking the potential effects of climate change into consideration, should be achieved.

File Name: N:\Water Engineering\3514006A - LBBB SFRA - WORKING FOLDER\GIS\MapPhase 1\3514006A-SSR-Surface Water Flood Hazards.mxd
 Plot Date: 13/08/2015
 Login: desouraj

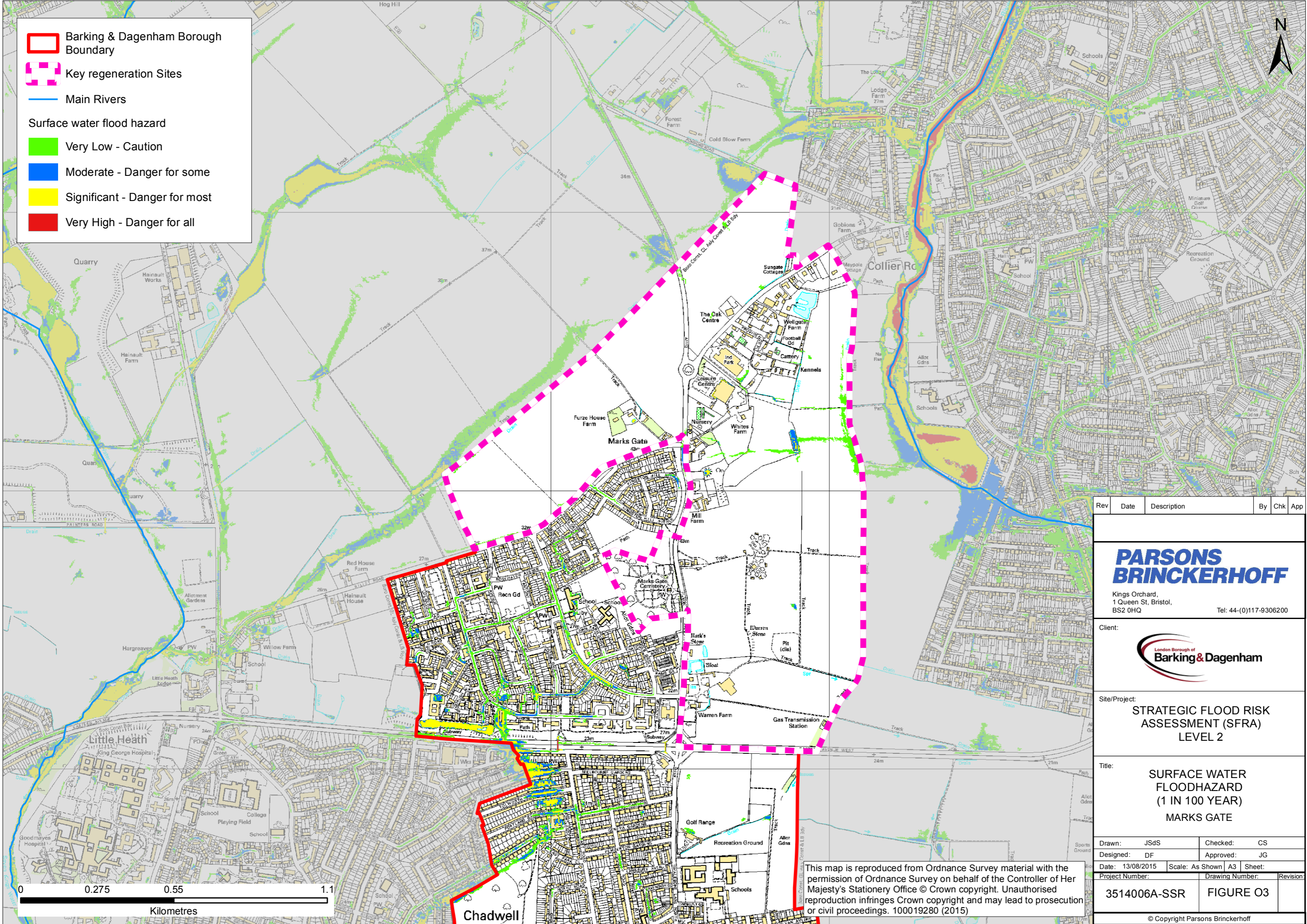
Barking & Dagenham Borough Boundary

Key regeneration Sites

Main Rivers

Surface water flood hazard

- Very Low - Caution
- Moderate - Danger for some
- Significant - Danger for most
- Very High - Danger for all



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. 100019280 (2015)

Rev	Date	Description	By	Chk	App

PARSONS BRINCKERHOFF

Kings Orchard,
1 Queen St, Bristol,
BS2 0HQ
Tel: 44-(0)117-9306200

Client:

Site/Project:
STRATEGIC FLOOD RISK ASSESSMENT (SFRA) LEVEL 2

Title:
SURFACE WATER FLOODHAZARD (1 IN 100 YEAR) MARKS GATE

Drawn: JSdS	Checked: CS
Designed: DF	Approved: JG
Date: 13/08/2015	Scale: As Shown A3 Sheet:
Project Number:	Drawing Number: Revision:

3514006A-SSR **FIGURE O3**

© Copyright Parsons Brinckerhoff