# **Medway Council**



# **Flood Risk Sequential Test Report**

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## 1 Introduction

- 1.1 Medway Council has produced a new Local Plan, replacing the 2003 Medway Local Plan. This will be a single document, containing strategic level policies, land allocations, (including minerals and waste workings), and a policies map.
- 1.2 The plan will cover the period up to 2037, providing for the number of homes and jobs and supporting infrastructure, such as transport, health facilities, schools and parks, to meet the needs of the growing population over this time.
- 1.3 Subject to outcomes of an independent examination by a planning inspector, it is anticipated that Medway's Local Plan will be adopted in 2023.
- 1.4 Medway Council has used the Standard Method for calculating Local Housing Need. The annual need is for 1586 homes, or 26,962 over the plan period, which is a challenge to accommodate with the range of constraints in Medway.,<sup>1</sup>
  - 26,962 homes (1586 homes per year).
  - 60,107sqm of B1a office space, 31,178 sqm of B1b/c, B2 industrial land, and 193,994 sqm of B8 warehousing land.
  - 34,900m<sup>2</sup> of comparison retail space and 10,500m<sup>2</sup> of convenience (groceries etc.) retail space up to 2031.
- 1.5 The Development Strategy report published in 2018 as a consultation document informing the preparation of the plan presented four development scenarios that could provide a spatial strategy for the new local plan. The Council received comments on the consultation document and updated information from site promoters that was used to prepare a further iteration of the Strategic Land Availability Assessment.
- 1.6 Further work was then undertaken to assess the sustainability and feasibility of these options, looking at detailed infrastructure planning, viability testing, transport capacity and impacts, potential environmental impacts and economic considerations, and opportunities for mitigation. Assessments were carried at a strategic location level and for individual sites. This iterative assessment identified sites and broad locations that could provide for the spatial strategy. This has provided the proposals in the draft local plan to be published in late 2021.

## 2 Background

- 2.1 Paragraph 160<sup>2</sup> of the National Planning Policy Framework (NPPF) states that Local Plans should apply a sequential, risk-based approach to the location of development and consider the current and future impacts of climate change so as to avoid, flood risk to people and property, and manage residual risk by;
  - applying the Sequential Test and if necessary, the Exception Test;

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https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationproje ctions/datasets/householdprojectionsforengland

<sup>&</sup>lt;sup>2</sup> National Planning Policy Framework: July 2021

- safeguarding land from development that is required, or likely to be required, for current or future flood management.
- using opportunities offered by new development to reduce the causes and impacts of flooding; (where appropriate via the use of natural flood management techniques).
- where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long term, seek opportunities to facilitate the relocation of development, including housing, to more sustainable locations.
- 2.2 The Local Planning Authority undertook an iterative Strategic Land Availability Assessment (SLAA) in 2015, 2017 and 2018, which linked to work on the preparation of the plan, and key 'Regulation 18' consultation stages. However, these assessments did not identify sufficient land suitable and available to meet Medway's anticipated growth needs over the Local Plan period. The latest Medway SLAA was published in 2019 and it was informed by the successful outcome of the Housing Infrastructure Fund that provided investment to provide for transport and environmental mitigations that would support growth on the Hoo Peninsula; and the publication of town centre masterplans for Chatham, Gillingham and Strood which identified additional capacity for urban regeneration. This work has fed into further technical assessments to inform the proposed spatial strategy in the draft plan.

## 3 Scope

- 3.1 This report has been prepared to review sites considered as part of the Local Plan process to identify which sites can be allocated within Flood Zone 1 using the Level 1 SFRA, and identify which sites located within Flood Zone 2 and 3 could be allocated via further assessment within Level 2 SFRA. The Level 2 SFRA will inform an evidence base for application of a detailed Exception Test at planning application stage where it is required.
- 3.2 This document will also provide an evidence base for the Local Planning Authority to inform the setting of strategic and development management policies and to assist developers and their consultants when considering submissions for site-specific planning applications.
  - Section 4 and 5 provides an overview of current Sequential and Exception Test policy, contained within NPPF and National Planning Policy Guidance (NPPG).
  - Section 6 gives an overview of the wider flood risk policy applicable to the area.
  - Section 7 includes the Sequential Test methodology and outputs.
  - Section 8 provides a summary and conclusions.

## 4 Sequential Test overview

4.1 Paragraphs 159-165 of the National Planning Policy Framework and 018-022 in the National Planning Policy Guidance (NPPG) *Flood and Coastal Change*<sup>3</sup> sets out the approach for applying the Sequential and Exception Test.

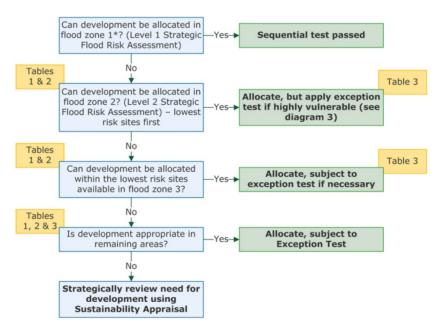


Figure 1: NPPG Flood and Coastal Change process for applying the Sequential Test

- 4.2 The aim of the Sequential Test is to steer new development to areas with the lowest risk of flooding, and not allocate development if there are reasonable available sites in areas at lower risk. The Level 1 SFRA provides the basis for applying this test.
- 4.3 If following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives for the development to be located in zones with a lower probability of flooding, the Exception Test can be applied.
- 4.4 The requirement for an Exception Test is dependent on the flood risk vulnerability classification for the type of development proposed. Flood Risk Vulnerability classifications for different development types are set out within Table 2 of NPPG *Flood and Coastal Risk* (included at Appendix 1 of this report).
- 4.5 Table 3; *Flood Risk Vulnerability Classification* within the NPPG contains a matrix to apply to ascertain if, after taking the Sequential Test, a development is appropriate according to the Flood Zone attributed to the site and confirms when an Exception Test is required on this basis.

Source: Flood and Coastal Change NPPG, 2018

<sup>&</sup>lt;sup>3</sup> https://www.gov.uk/guidance/flood-risk-and-coastal-change

Flood Zones	Flood Risk Vulnerability Classification							
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible			
Zone 1	✓	1	1	1	1			
Zone 2	1	Exception Test required	1	1	1			
Zone 3a †	Exception Test required †	×	Exception Test required	1	1			
Zone 3b *	Exception Test required *	×	×	×	✓ *			

Figure 2: Table 3 NPPG: Flood and Coastal Change. Flood Risk Vulnerability and Flood Zone Compatibility

Key:

- ✓ Development is appropriate
- X Development should not be permitted.
- 4.6 NPPG *Flood and Coastal Change* states that the Sequential Test is only required for sites located in Flood Zone 2 or 3; terms used to describe the risk of river and coastal flooding. However, a Sequential Test will be also applied to sites at risk of surface water flooding.
- 4.7 Recent updates to NPPF (July 2021) introduce a sequential test which considers all forms of sources of flood risk. This report appraises the risk of surface water risk, and groundwater flood risk. However it should be noted that the risks of groundwater flooding are less evidenced than that of surface water risk and is part of ongoing monitoring via flood incident data collection.
- 4.8 Risks of flooding attributed to ditches and streams is relevant in Hoo from the Hoo Stream. A separate Surface Water Management Plan study has been undertaken for Hoo which appraises the impact of development on the catchment and tests options to reduce flood risk throughout the urban area. The outputs of the study indicate that where development offers opportunity to reduce the risk of flooding throughout the catchment.

4.9 There is no specified 'design flood' for surface water flood risk. Therefore, for the purposes of applying a Sequential Test to sites at risk of surface water flooding, a 'design flood' was determined as events associated with high or medium risk of flooding.

high surface water flood risk where the chance of flooding is greater than 3.3% (1 in 30 chance each year),

medium risk where the chance of flooding is between 1% and 3.3% (between a 1 in 30 and a 1 in 100-year chance).

- 4.10 This 'design flood' is broadly commensurate with the consideration of risks to developments proposed within areas at risk of river flooding within NPPF/G. It is also on the basis that there is more uncertainty associated with estimations of low risk, albeit this threshold should still be appraised when considering mitigating actions at a planning application stage.
- 4.11 Each potential site allocation was assigned a net and gross developable area by the LPA to estimate density and number of units which could be delivered. The gross area is representative of the red line boundary of a site, and the net area representative of the likely developable area considering a 40% reduction, to account for reductions to facilitate infrastructure and green space.
- 4.12 To apply a sequential test, sites where the risk of surface water under a high or medium is <40% of the gross site area, were filtered, regardless of Flood Zone classification, and these sites were considered to pass the Sequential Test. Sites where the risk of surface water flooding under a high or medium scenario were ≥ 40% were considered to not pass the Sequential Test.</p>
- 4.13 This conservative sequential approach identifies sites where allocated development capacity may not be achieved, and where flood risk and open space provision need to be carefully considered. Depending on the nature and scale of the risk, detailed Flood Risk Assessment may demonstrate that a reduction in risk and a betterment can be achieved over the existing situation but would need to be appraised at detailed level should such sites be allocated.
- 4.14 The number of units and or extent of commercial provision for sites where the risk is
  ≥ 40% may need to be reviewed, sites which are not considered to have passed the
  Sequential Test should be subject to both parts of the Exception Test.

## 5 Exception Test overview

5.1 Paragraph 023 of *Flood and Coastal Change* (NPPG) describes the Exception Test as a method to demonstrate and ensure that flood risk to people and property is managed satisfactorily. It consists of two parts:

#### Part A

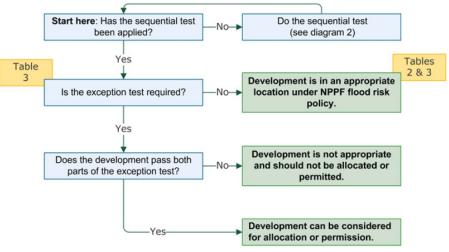
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk.

#### Part B

Demonstration that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and where possible reducing flood risk overall.

5.2 Diagram 3: *application of the Exception Test to Local Plan preparation* within NPPG (Figure 1 below) advises how to apply the Exception Test to a Local Plan preparation.

#### Figure 2: Application of the Exception Test to Local Plan preparation



Source: Flood and Coastal Change NPPG, 2018

- 5.3 However, without detailed site-specific information, it is not possible to apply an indepth Exception Test at a Local Plan stage, but it is possible to highlight key flood risk issues. Therefore, sites identified in this report where the Exception Test is required will be subject to high level appraisal via a Level 2 SFRA which will inform a sitespecific Exception Test where required.
- 5.4 Paragraph 024 of NPPG *Flood and Coastal Change* states that evidence of wider sustainability benefits to the community (Part A) should be demonstrated via the Sustainability Appraisal. If a potential site allocation fails to score positively against the aims and objectives of the SA. It will then be down to the LPA to consider whether the use of planning conditions and/or obligations can make it do so.

- 5.5 It is the role of the LPA to allocate sites on the basis of the evidence provided within this report, the Level 2 SFRA, and the Sustainability Appraisal.
- 5.5 The latest Level 1 Strategic Flood Risk Assessment (SFRA) 2019 sets out how a development may be made safe. It includes such measures such as (but not limited to), raising floor levels, flood resistance and resilience, provision of flood risk infrastructure, use of Flood Warnings, and consideration of evacuation issues for the safe access and egress of occupiers and residents. An accompanying Technical Guidance sets out criteria for developers for the management of surface water.
- 5.6 Although not formally defined via the planning system, paragraph 026 of NPPG *Flood and Coastal Change* confirms that the lifetime of a development in the context of flood risk is 100 years minimum for a residential development. Further advice from the LPA should be sought to estimate the lifetime of any non-residential development based upon characteristics of the development.

# 6 Strategic flood risk policy

6.1 As well as applying the Sequential and Exception Tests outlined in NPPF and NPPG, potential development sites should be reviewed against wider flood risk objectives. There are several plans applicable to the area including:

- Medway Estuary and Swale Shoreline Management Plan (SMP), 2010<sup>4</sup>
- Medway Estuary and Swale Strategy (MEASS), 2019<sup>5</sup>
- Isle of Grain to South Foreland Shoreline Management Plan (SMP), 2010<sup>6</sup>
- Thames Estuary 2100 Plan, 2012<sup>7</sup>
- 6.2 SMP's guide the approaches that should be taken to manage coastal flood and erosion risk over the next 100 years. MEASS is applicable to the majority of estuary riverside within Medway and establishes preferred options to implement the policies set out in the 2010 Medway and Swale SMP.
- 6.3 The Isle of Grain SMP covers a small part of marshland between Allhallows and Grain, and includes an area also covered by the Thames Estuary 2100 Plan. Similar to SMP's, the Thames 2100 Plan sets out a strategic flood risk management plan for London and Thames Estuary through to the end of the century.
- 6.4 Sites which have been taken forward for further assessment via SFRA L2 will be listed against the preferred MEASS option (where applicable) to identify sites where a developer and the LPA should take account of opportunities for development to contribute towards the preferred option as a beneficiary.

<sup>&</sup>lt;sup>4</sup> <u>https://se-coastalgroup.org.uk/shoreline-management-plans/medway-estuary-to-swale/</u>

<sup>&</sup>lt;sup>5</sup> <u>https://www.gov.uk/government/publications/medway-estuary-and-swale-flood-and-coastal-risk-</u>

management-strategy/medway-estuary-and-swale-flood-and-coastal-risk-management-strategy <sup>6</sup> https://se-coastalgroup.org.uk/shoreline-management-plans/isle-of-grain-to-south-foreland/

 <sup>&</sup>lt;sup>7</sup> https://www.gov.uk/government/publications/thames-estuary-2100-te2100

# 7 Application of Sequential Test

7.1 The Sequential Test was undertaken in an iterative manner throughout the Local Plan process. Firstly it was applied to the development scenarios within the Development Strategy Consultation 2018, and with reference to Figure 1: NPPG *Flood and Coastal Change* process for applying the Sequential Test.

## 7.2 Development Strategy Consultation

Can development be located in Flood Zone 1?

A total of 68 sites across all four development scenarios were identified to be wholly located within Flood Zone 1. These sites are listed at Appendix 2. Of those sites, 3 sites are indicated to have high or medium surface water risk equal to or more than 40% of the gross site area. Therefore 65 sites in total are considered to pass the Sequential Test in flood risk terms and the remaining 3 sites should be subject to the Exception Test if allocated.

Can development be located in Flood Zone 2 (lowest risk first)?

A total of 4 sites with any part located in Flood Zone 2 (but not Flood Zone 3) were identified and are listed at Appendix 3. Of those sites, 1 site is indicated to have a high or medium surface water risk equal to or exceeding 40% of the gross site area. This site should be subject to the Exception Test if allocated. The remaining 3 sites would be subject to the Exception Test if proposals are indicated to the highly vulnerable.

Can the development be located within the lowest risk sites available in Flood Zone 3?

The total of 30 sites with any part located in Flood Zone 3 were identified and are listed at Appendix 3. Of those sites, 4 sites are indicated to have a high or medium surface water risk exceeding 40% of the gross site area. These sites would be subject to the Exception Test.

7.3 Results of the assessment were fed back to the LPA. The information was provided to the consultants preparing the Sustainability Appraisal for the draft Local Plan, as part of wider assessment work.

### 7.4 Preferred sites

7.5 The Sequential Test was then applied to the 'preferred site' allocations with reference to and with reference to Figure 1: NPPG *Flood and Coastal Change* process for applying the sequential test.

#### Can development be located in Flood Zone 1?

The total number of sites in Flood Zone 1 is 58. Of those 58 sites, 5 sites are indicated to have high or medium surface water risk exceeding 40% of the gross site area. Therefore 53 sites in total are considered to pass the Sequential Test.

#### Can development be located in Flood Zone 2 (lowest risk first)?

The total number of sites situation wholly within Flood Zone 2 is 5. Of those sites, 1 is indicated to have a high or medium surface water risk exceeding 40% of the gross site area. These sites would be subject to the Exception Test if highly vulnerable.

Can the development be located within the lowest risk sites available in Flood Zone 3?

The total number of sites situated wholly within Flood Zone 3 is 51. These sites would be subject to the Exception Test if allocated.

Of those 51 sites, 25 sites have areas which are located within Flood Zone 3b 'functional floodplain'. Paragraph 015 of NPPG: *Flood and Coastal Change* defines functional floodplain as land which would naturally flood with an annual probability of 1 in 20 (5%) or greater in any year. It is noted that many of the sites identified in Strood with large extents of functional floodplain now benefit from the newly constructed Strood Riverside riverwalls, which is not currently reflected by the most up to date flood mapping.

NPPG states that areas which would naturally flood, but which are prevented from doing so by existing defences and infrastructure or solid buildings, will not normally be identified as functional floodplain meaning that fewer sites would be strictly classified as 'functional floodplain'.

Of the 51 sites in Flood Zones 3a and 3b, 13 sites are indicated to have high or medium surface water risk exceeding 40% of the gross site area.

7.6 The total number of sites to be taken forward for further appraisal via a Level 2 SFRA is 53. This is based on a site-specific basis and discounts wider Opportunity Areas identified and accounted for above to avoid duplication.

# 8 Summary and conclusions

8.1 This report has applied a Sequential Test to the initial sites identified and included within the Development Strategy Consultation and to sites identified as part of a preferred option to filter which sites require further appraisal as part of a high-level Exception Test within a Level 2 SFRA.

8.2 Further appraisal via a Level 2 SFRA which seeks to apply a high-level Exception Test and inform the Sustainability Appraisal will be undertaken. However, due to inherent uncertainties associated with applying Part B of the Exception Test at a high level, against site specific conditions identified at detailed planning stage, part B of the Exception Test should be fully applied within any Flood Risk Assessment accompanying a site application which is included within the Level 2 SFRA. The LPA will advise if Part A of the Exception Test needs to be reapplied.

8.3 Paragraph 022 of the NPPG: *Flood and Coastal Change* states that where other sustainability criteria outweigh flood risk issues, the decision-making process should be transparent with reasoned justification for any decision to allocate land at areas of high risk in the Sustainability Appraisal report.

8.4 The outputs of this Sequential Test report, and the Level 1 and 2 SFRA should therefore be considered alongside the Sustainability Appraisal to determine if site allocation is appropriate based on flood risk evidence and criteria within the SA.

8.5 Paragraph 033 of NPPG: *Flood and Coastal Change* provides specific advice to consider planning applications where there has been no sequential testing or where the use of the site being proposed in not in accordance with the development plan. In such instances, the Sequential Test will be defined by local circumstances relating to the catchment area for the type of development proposed.

#### Appendix 1 Table 2: Flood Risk Vulnerability Classification (Paragraph 066 – NPPG)

#### **Essential infrastructure**

Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.

Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood.

Wind turbines.

#### **Highly vulnerable**

Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.

Emergency dispersal points.

Basement dwellings.

Caravans, mobile homes and park homes intended for permanent residential use.

Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').

#### More vulnerable

#### Hospitals

Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.

Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.

Non-residential uses for health services, nurseries and educational establishments.

Landfill\* and sites used for waste management facilities for hazardous waste.

Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

#### Less vulnerable

Police, ambulance and fire stations which are not required to be operational during flooding.

Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.

Land and buildings used for agriculture and forestry.

Waste treatment (except landfill\* and hazardous waste facilities).

Minerals working and processing (except for sand and gravel working).

Water treatment works which do not need to remain operational during times of flood.

Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

#### Water-compatible development

Flood control infrastructure.

Water transmission infrastructure and pumping stations.

Sewage transmission infrastructure and pumping stations.

Sand and gravel working.

Docks, marinas and wharves.

Navigation facilities.

Ministry of Defence defence installations.

Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.

Water-based recreation (excluding sleeping accommodation).

Lifeguard and coastguard stations.

Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.

Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Medway Council Flood Risk Sequential Test Report

# Appendix 2: Sites from Development Strategy Consultation located in Flood Zone 1

Site	
101 Beacon Road, Chatham	Land West of Allhallows
111 Rainham Road (Jezreels), Gillingham	Land West of Hoo
13-15 Borough Road, Gillingham MLP Allocated Site	Land west of Lower Station Road, Rainham
143-145 Canterbury Street GILLINGHAM	Land West of Ropers Lane, Hoo
146 Canterbury Street, Gillingham	LIFT site, 551-555 Canterbury Street, Gillingham
19 New Road Avenue and 3 New Cut, Chatham	Lodge Hill
26-36 Napier Road Gillingham	Lodge Hill (SSSI)
274-276 Station Road Rainham	Manor Farm, Parsonage Lane
3 Broad Street Cottages, Main Road, Hoo	Medtha Bungalow, Port Victoria Road, Grain
31-39 Duncan Road, Gillingham	Medway Maritime Hospital
320 - 344 High Street inc. 42 New Road, Rochester	Middle Street Farm, Grain Road, Middle Stoke
56A Pump Lane, Rainham	Miles Place, Delce Road, Rochester
6-11 New Road Avenue, Chatham	North of Ratcliffe Highway
85 Church Street GILLINGHAM	Parcel 2 North of Stoke Road, Hoo
Beacon Hill	Parcel 3 South of Stoke Road
Bennetts Orchard, Lower Rainham	R/O 250 Main Road, Hoo
Berengrave Nursery	R/O Whitehouse Farm, Stoke Road, Hoo
Canterbury Lane, Rainham	Rainham Library
Chatham Retailing, Clover/Richard/Rhode/High Street	Rear of 47 High Street/Britton Street, Gillingham
Deangate Cottage	Rear of Lower Rainham Road/Station Road, Rainham
Deangate Ridge, Sports Complex, Chattenden	Retailing in Gillingham, High Street, Skinner Street, Jeffrey Street
East of Whitehouse Farm, Hoo	Samuels Towers, Longhill Avenue
Elm Avenue, Chattenden	Siloam Farm, Rainham
Ex Service station, Adj 86 Corporation Street, Rochester*	South of Main Road, Hoo
Firmstart Estate Twydall	South Ratcliffe Highway, West Vidgeon Avenue, Hoo
Former Gillingham Fire Station	St Bartholomews Hospital, New Road, Rochester
HMP Rochester, Sir Evelyn Road	Strood Service Station, 3 London Road, Strood
Jeffrey Street, Gillingham	The Platters, Rainham
Land at 54 Beacon Road, Chatham	Vixen Close, Lordswood
Land at Capstone Valley, Darland Farm	Walnut Tree Farm, r/o Longfield Ave, High Halstow
Land at High Street, Union Street and New Road, Chatham	Westmoor Farm, Moor Street, Rainham
Land at Mierscourt Road, Rainham	Whiffens Avenue Car Park, Chatham
Land at Robins and Day*	Wickes, New Cut, Chatham*
Land to east of Chattenden Lane	
Land to East of High Halstow	

\*Indicates that the site is indicated to have a high or medium risk of surface water flooding equal to or exceeding 40% of the gross site area.

# Appendix 3: Sites from Development Strategy Consultation located in Flood Zones 2 and 3

Site	Reference	FZ2%
Opportunity Area West of Knight Road Strood	SO25	92
North side, Priory Road	1057	3
Junction of Pier Road and Medway Road, Gillingham*	810	2
	760	0.05

Site	Reference	FZ3 %	
Car Park, Commercial Road, Strood*	1115	100	
J7, Chatham Maritime	818	100	
National Grid Property, Pier Road, Gillingham	687	100	
National Tyre, Station Road, Strood*	1039	100	
Second Avenue, Luton	\$016	100	
The Brook (R/O High Street and Batchelor Street) Chatham*	857	100	
Wooleys Orchard, land south of Lower Rainham Road	749	100	
1 Batchelor Street, Off the Brook, Chatham*	834	100	
Civic Centre and Janes Creek	137	100	
Interface Land	0820a	98	
Strood Riverside, Canal Road	90	93	
352-356 Luton Road, Luton	213	92	
Tesco, Charles Street, Strood	843	86	
Norse Depot, Pier Approach Road	1188	76	
Hopewell Drive, Luton	\$017	68	
Driving Range, Street End Road	1114	41	
Land South of Stoke Road, Hoo	1114	33	
Interface Land, Chatham Maritime	0820b	26	
	102	20	
1-35 High Street, Chatham (Grays Garage)	SO22	17	
Land West of Commercial Road, Strood	1109	17	
Steelfields, Danes Hill, Gillingham		17	
Land at Burneys Farm, Lower Stoke	754		
Land West of Lower Stoke	SO8	12	
55-105a The Brook & 1,5,11 & 12 King Street, Chatham	866	11	
Manor Farm, Marsh Road, Halling	1105	9	
Land at Capstone Valley, Darland Farm	0783d	8	
Former Police Station, Chatham	755	6	
Between Cross Street & The Brook, Chatham	757	5	
Chatham Docks, Chatham	824	4	
2-8 King Street and 1-11 Queen Street, Chatham	865	2	

\*Indicates that the site is indicated to have a high or medium risk of surface water flooding equal to or exceeding 40% of the gross site area.

# Appendix 4:

Site	Site reference	% high surface water risk	% medium surface water flood risk	% Flood Zone 2	% Flood Zone 3
Land at Robins and Day	822	79.2	83.4	0.0	0.0
218 Main Road, Hoo	781	31.3	47.3	0.0	0.0
Miles Place, Delce Road, Rochester	1106	37.4	47.2	0.0	0.0
Former Alloy Wheels Priory Road	839	31.6	41.7	0.0	0.0
Rear of Angel Cottages, Station Road, Rainham	1302	35.1	41.7	0.0	0.0
R/O 250 Main Road, Hoo	1072	20.4	31.9	0.0	0.0
R/O 73,75-77 High Street, Rochester	880	0.5	27.2	0.0	0.0
143 Berengrave Lane, Rainham	1165	8.8	22.4	0.0	0.0
3 Broad Street Cottages, Main Road, Hoo	1092	14.3	22.2	0.0	0.0
Bennetts Orchard, Lower Rainham	849	12.0	21.4	0.0	0.0
Land west of Lower Station Road, Rainham	800	8.9	16.4	0.0	0.0
Strood Service Station, 3 London Road, Strood	603	1.8	8.3	0.0	0.0
West of Town Road Cliffe Woods	1070	2.9	8.1	0.0	0.0
Land to east of Chattenden Lane	714	2.7	7.1	0.0	0.0
19 New Road Avenue and 3 New Cut, Chatham	868	1.1	6.9	0.0	0.0
Land West of Hoo	753	3.6	6.9	0.0	0.0
Former Gillingham Fire Station	1181	3.2	4.6	0.0	0.0
Former Tug & Shovel, North Street, Strood	702	0.0	4.5	0.0	0.0
St Bartholomews Hospital, New Road, Rochester	144	1.6	4.4	0.0	0.0
Parcel 2 North of Stoke Road, Hoo	1178	1.8	3.8	0.0	0.0
Flanders Farm, Ratcliffe Highway	1211	2.2	3.5	0.0	0.0
South of Main Road, Hoo	1065a	1.8	3.1	0.0	0.0
Parcel 3 South of Stoke Road	1179	0.0	2.7	0.0	0.0
Deangate Ridge, Sports Complex, Chattenden	1121	1.0	2.3	0.0	0.0
Land West of Ropers Lane, Hoo	1084	0.9	2.3	0.0	0.0
Lodge Hill	0050a	0.6	2.1	0.0	0.0
Land to East of High Halstow	1113	0.8	1.9	0.0	0.0
Deangate Cottage, Dux Court Rd	1209	0.0	1.0	0.0	0.0
	IPM	0.1	0.9	0.0	0.0
Site 2 Land to South of Baytree Farm	1214	0.0	0.8	0.0	0.0
	OA5	0.6	0.7	0.0	0.0
320 - 344 High Street inc. 42 New Road, Rochester	100	0.0	0.7	0.0	0.0
Land north of Christmas Lane, High Halstow	1252	0.0	0.7	0.0	0.0
Pit 2, Roman Way, Strood	705	0.0	0.3	0.0	0.0
Land West of Allhallows	1296	0.0	0.2	0.0	0.0
Diggerland, Roman Way, Strood	686	0.0	0.1	0.0	0.0
South Ratcliffe Highway, West Vidgeon Avenue, Hoo	1066	0.0	0.1	0.0	0.0
Samuels Towers, Longhill Avenue	1112	0.0	0.0	0.0	0.0
6-11 New Road Avenue, Chatham	1056	0.0	0.0	0.0	0.0

# Preferred option sites located within Flood Zone 1

	1316	0.0	0.0	0.0	0.0
Whiffens Avenue Car Park, Chatham	759	0.0	0.0	0.0	0.0
Community Centre, White Road	1120	0.0	0.0	0.0	0.0
North of Ratcliffe Highway	1175	0.0	0.0	0.0	0.0
North of Ratcliffe Highway	1267	0.0	0.0	0.0	0.0
Land West of Seymour Road, Rainham	1286	0.0	0.0	0.0	0.0
Site 1 Land North of the Ratcliffe Highway	1220	0.0	0.0	0.0	0.0
Seagull Road, Strood	1135	0.0	0.0	0.0	0.0
Holy Name Church, Lower Rainham Road	797	0.0	0.0	0.0	0.0
Retailing in Gillingham, High Street, Skinner Street, Jeffrey Street	39	0.0	0.0	0.0	0.0
111 Rainham Road (Jezreels), Gillingham	853	0.0	0.0	0.0	0.0
56A Pump Lane, Rainham	177	0.0	0.0	0.0	0.0
274-276 Station Road Rainham	182	0.0	0.0	0.0	0.0
Land east of Seymour Road, Rainham	1047	0.0	0.0	0.0	0.0
101 Beacon Road, Chatham	1052	0.0	0.0	0.0	0.0
	1314	0.0	0.0	0.0	0.0
	1322	0.0	0.0	0.0	0.0
	1310	0.0	0.0	0.0	0.0
	1307	0.0	0.0	0.0	0.0

Site	Site Reference	Proposed land use	% High surface water risk	% Medium surface water flood risk	% Flood Zone 2	% Flood Zone 3
1 Batchelor Street, Off the Brook, Chatham	834	Residential	18.3	100.0	100.0	100.0
18-20 Batchelor Street, Chatham	1147	Residential	7.0	100.0	100.0	100.0
Car Park, Commercial Road, Strood	1115	Residential	64.3	97.4	100.0	100.0
	1321	Residential	78.2	81.0	100.0	100.0
National Tyre, Station Road, Strood	1039	Residential	45.4	79.0	100.0	100.0
	1305	Residential	14.0	56.9	100.0	100.0
	1311	Residential	17.8	47.5	100.0	73.7
	1313	Residential	19.2	39.6	100.0	63.5
ELNA Kingsnorth 1	647	Employment	1.8	4.7	100.0	99.9
J7, Chatham Maritime	818	Residential	0.0	0.0	100.0	100.0
Upnor Wharf	735	Residential	0.0	0.0	100.0	55.1
247-253 High Street, Chatham	1133	Residential	48.7	95.8	100.0	95.7
	1308	Residential	0.0	1.7	100.0	98.9
Civic Centre and Janes Creek	137	Residential	4.4	9.9	100.0	98.0
Acorn Wharf Shipyard	1190	Residential	0.0	0.0	99.9	99.9
	1318	Residential	18.6	73.9	99.9	99.9
Pentagon, Chatham	756	Residential	58.3	94.5	99.9	98.2
Interface Land	0820a	Residential	0.4	2.4	99.7	97.6
Norse Depot, Pier Approach Road	1188	Residential	0.0	12.9	98.8	85.5
	1319	Residential	1.2	3.6	98.6	95.6
352-356 Luton Road, Luton	213	Residential	1.1	11.4	97.9	94.6
	1320	Residential	14.4	43.3	95.7	86.0
National Grid Property Holdings, Grain Road	699	Employment	0.4	1.5	95.3	88.9
	1306	Residential	19.4	33.0	93.9	87.4
	1297	Residential	29.4	38.6	92.1	87.8
Tesco, Charles Street, Strood	843	Residential	37.2	49.0	91.1	88.8
325 High Street, Rochester	1141	Residential	32.6	34.6	88.9	55.5
Strood Riverside, Canal Road	90	Residential	1.7	4.8	88.5	84.9
	1309	Residential	0.0	65.1	85.8	69.3
	OA1	Employment	2.5	9.0	83.2	70.6
Grain Power Station, Grain Road	646	Employment	0.5	2.0	79.6	75.9
	OA2	Employment	20.9	31.5	76.3	70.8
Chatham Docks, Chatham	824	Residential	1.8	4.1	70.3	54.5
National Grid Property, Pier Road, Gillingham	687	Residential	0.1	1.6	66.9	49.5
Wooleys Orchard, land south of Lower Rainham Road	749	Residential	17.4	31.7	54.9	43.8
	OA3	Employment	18.4	36.6	49.8	38.5
Steelfields, Danes Hill, Gillingham	1109	Residential	0.0	0.0	45.0	25.0
	1312	Residential	0.0	18.8	43.9	20.9
	1301	Residential	8.3	14.8	34.6	14.3

# Appendix 5: Preferred option sites located within Flood Zones 2 and 3

## Medway Council Flood Risk Sequential Test Report

1-35 High Street, Chatham (Grays Garage)	102	Residential	2.1	6.4	34.2	28.0
Interface Land, Chatham Maritime	0820b	Residential	0.6	1.5	28.1	17.9
55-105a The Brook & 1,5,11 & 12 King Street,	866	Residential	6.2	11.5	26.7	10.3
Chatham						
	1251	Employment	2.8	5.1	22.4	18.3
Between Cross Street & The Brook, Chatham	757	Residential	0.0	9.3	18.1	5.6
Manor Farm, Marsh Road, Halling	1105	Residential	0.9	1.1	15.2	5.0
Site 4 Land to north of Binney Farm	1216	Residential	0.5	6.1	15.0	6.4
Potential expansion area	1299	Residential	3.2	5.5	7.6	6.9
Potential expansion area	1299	Employment	3.2	5.5	7.6	6.9
Land East of Pier Approach Rd, Gillingham	1278	Residential	0.0	0.0	6.8	0.6
	1315	Residential	0.2	0.6	6.3	0.0
North side, Priory Road	1057	Residential	0.0	0.0	2.8	0.0
	1317	Residential	2.3	5.6	2.8	1.2
Junction of Pier Road and Medway Road, Gillingham	810	Residential	53.7	74.6	2.3	0.0
Chatham Retailing, Clover/Richard/Rhode/High Street	243	Residential	0.0	2.0	1.9	0.0
Former Tesco Store Chatham	760	Residential	0.0	0.0	0.1	0.1
Manor Farm, Parsonage Lane	1088	Residential	0.5	2.5	0.0	0.0

Medway Council Flood Risk Sequential Test Report