

Level 1 Strategic Flood Risk Assessment for Greater Manchester – Tameside BC Sites Assessment

Final Report

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Greater Manchester Combined Authority

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Purpose

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1 Development and Flood Risk

1.1 Introduction

This document provides a strategic assessment of the suitability, relative to flood risk, of the potential development sites provided by Greater Manchester Combined Authority (GMCA) specific to Tameside Borough Council.

The information and guidance provided in this summary report (also supported by the main SFRA report, SFRA Maps in Appendix A and the Development Site Assessment spreadsheet for Tameside BC in Appendix B) can be used by GMCA and Tameside BC to inform the Greater Manchester Spatial Framework (GMSF) and Tameside Local Plan, and provide the basis from which to apply the Sequential Approach in the development allocation and development management process.

1.2 Sites assessment

GMCA provided several GIS datasets containing the following sites information:

- GMSF allocations (2019). These sites are the proposed allocations included within the Revised Draft GMSF drafted in January 2019. These sites are currently in Green Belt and are proposed to be removed from Green Belt and allocated for development in the GMSF. They are the sites that are needed to meet the shortfall in housing and employment land needs up to 2037.
- Baseline Land Supply (2018) housing, industry and warehousing and office land supply, which show the potential supply of new housing and employment land across Greater Manchester (GM) from 2018 to 31 March 2037.
- GMSF Call for Site Submissions (2018). These sites are currently in Green Belt though developers and landowners have suggested they should be taken out of Green Belt and allocated for development through the GMSF. The majority of these sites are not proposed for allocation in the GMSF.

For Tameside BC, 373 potential sites have been provided overall, including the proposed uses listed in

Table 1-1. This table also shows the associated vulnerability of each proposed use that is used to help assign the strategic site recommendations discussed in Section 1.4.

Table 1-1 Proposed site uses and flood risk vulnerability

Site category	Proposed site use	Flood risk vulnerability (Table 2 of FRCC-PPG)	Number of sites
GMSF Allocations 2019	Residential	More vulnerable	3
	Industry and warehousing	Less vulnerable	1
Land Supply 2018	Residential	More vulnerable	229
	Offices	Less vulnerable	7
	Industry and warehousing	Less vulnerable	18
Call for Sites 2018	Residential	More Vulnerable	97
	Residential / Gypsy and Traveller / Offices / Industry and warehousing / Other use	Highly vulnerable	1
	Residential / Offices	More Vulnerable	2
	Residential / Industry and Warehousing	More Vulnerable	3
	Residential / Offices / Industry and Warehousing	More Vulnerable	4
	Residential / Offices / Industry and Warehousing / Other use	More Vulnerable	2
	Residential / Other use	More Vulnerable	2
	Industry and warehousing	Less Vulnerable	1
	Other use	N/A	2
	Unknown	N/A	1

In order to inform the Sequential Approach to the allocation of development through the GMSF, this review entails a high-level GIS screening exercise overlaying the potential development sites against Flood Zones 1, 2, 3a and 3b and calculating the area of each site at risk. Flood Zones 1, 2 and 3a are sourced from the EA's Flood Map for Planning (Rivers and Sea) and Flood Zone 3b (functional floodplain) has been updated through this SFRA. Surface water risk to potential sites is assessed by way of the EA's Risk of Flooding from Surface Water (RoFSW) flood zones, namely the high risk 1 in 30 AEP zone; the medium risk 1 in 100 AEP zone; and the low risk 1 in 1000 AEP zone.

All sites assessment results are presented in the Development Site Assessment spreadsheet in Appendix B.

1.3 Screening of potential development sites

This section summarises the results included in the Development Site Assessment spreadsheet (Appendix B), produced from the GIS screening exercise. The LPA should use the spreadsheet to identify which sites should be avoided during the Sequential Test. If this is not the case, or where wider strategic objectives require development in areas already at risk of flooding, then the LPA should consider the compatibility of vulnerability classifications and Flood Zones (refer to FRCC-PPG) and whether or not the Exception Test will be required before finalising sites. The decision-making process on site suitability should be transparent and information from this SFRA should be used to justify decisions to allocate land in areas at high risk of flooding.

The Appendix B spreadsheet provides a breakdown of each site and the area (in hectares) and percentage coverage of each fluvial flood zone and each surface water flood zone. Fluvial Flood Zones 3b, 3a, 2 and 1 are considered in isolation. Any area of a site within the higher risk Flood Zone 3b that is also within Flood Zone 3a is excluded from Flood Zone 3a and any area within Flood Zone 3a is excluded from Flood Zone 2. This allows for the sequential assessment of risk at each site by addressing those sites at higher risk first. For the surface water flood zones, results are presented cumulatively.

Table 1-2 shows the number of sites within each fluvial flood zone and

Site category	Proposed site use	Number of sites within...			
		Flood Zone 1 [^]	Flood Zone 2 [*]	Flood Zone 3a ^{**}	Flood Zone 3b
GMSF Allocations 2019	Residential	3	0	0	0
	Industry and warehousing	1	0	0	0
Land Supply 2018	Residential	203	1	9	16
	Offices	7	0	0	0
	Industry and warehousing	13	0	1	4
Call for Sites 2018	Residential	84	0	0	13
	Residential / Gypsy and Traveller / Offices / Industry and warehousing / Other use	0	0	0	1
	Residential / Offices	2	0	0	0
	Residential / Industry and Warehousing	3	0	0	0
	Residential / Offices / Industry and Warehousing	2	0	0	2
	Residential / Offices / Industry and Warehousing / Other use	0	0	0	1
	Residential / Other use	2	0	0	0
	Industry and warehousing	1	0	0	0
	Other use	1	0	0	1
	Unknown	1	0	0	0
Total		323	1	10	38
[^] Sites with 100% area within Flood Zone 1 [*] No part of site within Flood Zones 3a or 3b ^{**} No part of site within Flood Zone 3b					

Table 1-3 shows the number of sites within each surface water flood zone.

Table 1-2: Number of potential development sites at risk from fluvial flooding

Site category	Proposed site use	Number of sites within...			
		Flood Zone 1 [^]	Flood Zone 2 [*]	Flood Zone 3a ^{**}	Flood Zone 3b
GMSF Allocations 2019	Residential	3	0	0	0
	Industry and warehousing	1	0	0	0
Land Supply 2018	Residential	203	1	9	16
	Offices	7	0	0	0
	Industry and warehousing	13	0	1	4
Call for Sites 2018	Residential	84	0	0	13
	Residential / Gypsy and Traveller / Offices / Industry and warehousing / Other use	0	0	0	1
	Residential / Offices	2	0	0	0
	Residential / Industry and Warehousing	3	0	0	0
	Residential / Offices / Industry and Warehousing	2	0	0	2
	Residential / Offices / Industry and Warehousing / Other use	0	0	0	1
	Residential / Other use	2	0	0	0
	Industry and warehousing	1	0	0	0
	Other use	1	0	0	1
	Unknown	1	0	0	0
Total		323	1	10	38
[^] Sites with 100% area within Flood Zone 1 [*] No part of site within Flood Zones 3a or 3b ^{**} No part of site within Flood Zone 3b					

Table 1-3: Number of potential development sites at risk from surface water flooding

Site category	Proposed site use	Number of sites within...		
		Low Risk (1 in 1000)*	Medium Risk (1 in 100)**	High Risk (1 in 30)
GMSF Allocations 2019	Residential	0	0	3
	Industry and warehousing	0	0	1
Land Supply 2018	Residential	70	31	47
	Offices	3	3	1
	Industry and warehousing	4	4	8
Call for Sites 2018	Residential	14	9	68
	Residential / Gypsy and Traveller / Offices / Industry and warehousing / Other use	0	0	1
	Residential / Offices	0	1	1
	Residential / Industry and Warehousing	0	0	3
	Residential / Offices / Industry and Warehousing	0	1	3
	Residential / Offices / Industry and Warehousing / Other use	0	1	1
	Residential / Other use	0	0	1
	Industry and warehousing	0	0	1
	Other use	0	0	2
	Unknown	0	0	1
Total		91	50	142
*No part of site within medium or high risk zone				
**No part of site within high risk zone				

The spreadsheet also includes high level broad-brush strategic recommendations on the viability of development for each site. Development viability is assessed, based on Tables 1, 2 and 3 of the flood risk and flood zone tables¹ of the FRCC-PPG (Paragraphs 065 - 067). The strategic recommendations are intended to assist the LPA in carrying out the Sequential Test. Table 1-4 **Error! Reference source not found.** shows the number of sites each strategic recommendation applies to.

Strategic recommendations:

- Strategic Recommendation A - consider withdrawal if development cannot take place outside of Flood Zone 3b;

¹ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#flood-zone-and-flood-risk-tables>

- Strategic Recommendation B - Exception Test required if site passes Sequential Test;
- Strategic Recommendation C - consider site layout and design around the identified flood risk if site passes Sequential Test, as part of a detailed FRA or drainage strategy;
- Strategic Recommendation D - site-specific FRA required; and
- Strategic Recommendation E - site permitted on flood risk grounds due to little perceived risk, subject to consultation with the LPA / LLFA.

Table 1-4 Strategic recommendations

Site category	Proposed site use	Strategic Recommendation				
		A	B	C	D	E
GMSF Allocations 2019	Residential	0	0	1	2	0
	Industry and warehousing	0	0	0	1	0
Land Supply 2018	Residential	2	7	25	116	79
	Offices	0	0	1	6	0
	Industry and warehousing	1	0	3	12	2
Call for Sites 2018	Residential	3	1	18	71	4
	Residential / Gypsy and Traveller / Offices / Industry and warehousing / Other use	1	0	0	0	0
	Residential / Offices	0	0	0	2	0
	Residential / Industry and Warehousing	0	0	1	2	0
	Residential / Offices / Industry and Warehousing	0	0	2	2	0
	Residential / Offices / Industry and Warehousing / Other use	0	0	0	2	0
	Residential / Other use	0	0	0	1	1
	Industry and warehousing	0	0	0	1	0
	Other use	0	0	0	1	0
	Unknown	0	0	1	0	0
Total		7	8	52	219	86

It is important to note that this Level 1 SFRA does not assess each individual site in detail. Each individual site will require further investigation, as local circumstances may dictate the outcome of the strategic recommendation. The strategic recommendation may therefore change upon further investigation.

Such local circumstances may include the following:

- Flood depths and hazards will differ locally to each at risk site therefore modelled depth, hazard and velocity data should be assessed for the relevant flood event

outlines, including climate change (using the EA's February 2016 allowances), as part of a site-specific FRA or Level 2 SFRA.

- Current surface water drainage infrastructure and applicability of SuDS techniques are likely to differ at each site considered to be at risk from surface water flooding. Further investigation, which may include detailed surface water modelling, would therefore be required, particularly for any site flagged as being at significant surface water flood risk.
- It may be possible at some sites to develop around the flood risk. Planners are best placed to make this judgement i.e. will the site still be deliverable if part of it needs to be retained to make space for flood water?
- Surrounding infrastructure may influence scope for layout redesign/removal of site footprints from risk.
- Safe access and egress must exist at all times during a flood event for emergency response and evacuation
- Current land use. A number of sites included in the assessment are likely to be brownfield, thus the existing development structure should be taken into account as further development in excess of the current footprint may lead to increased flood risk.
- If sites have planning permission but construction has not started, the SFRA will only be able to influence the design of the development e.g. finished floor levels. New, more extensive flood extents (from new models) cannot be used to reject development where planning permission has already been granted.
- Existing planning permissions may exist on some sites where the EA may have already passed comment and/or agreed to appropriate remedial works concerning flood risk. Previous flood risk investigations/FRAs may already have been carried out at some sites.
- Cumulative effects. New development may result in increased risk to other potential or existing sites. This should be assessed through a Level 2 SFRA or drainage strategy, whichever may be applicable.

1.4 Strategic Recommendations

The following strategic recommendations provide only a guide, based on the fluvial and surface water flood risk information made available for this Level 1 SFRA. Information regarding local, site specific information is beyond the scope of this Level 1 SFRA. It is the LPA's responsibility to carry out sequential testing of each site using the information provided in this SFRA and more specifically using their local, site specific knowledge and advice from the EA and LLFA. The strategic recommendations should be read alongside the Development Site Assessment spreadsheet in Appendix B, which assists the LPA in carrying out the Sequential Test for each site.

1.4.1 Strategic Recommendation A – Consider withdrawal if development cannot take place outside of Flood Zone 3b

This strategic recommendation DOES NOT take account of local circumstances, only that part of a site area falls within a flood zone.

Strategic Recommendation A applies to any site where the following criteria is true:

- 10% or greater of the site area is within Flood Zone 3b, or 10% or greater of highly vulnerable development is within Flood Zone 3a. The FRCC-PPG flood risk vulnerability classification states that only water-compatible uses and essential infrastructure should be permitted in Flood Zone 3b, though any essential infrastructure must pass the Exception Test and water-compatible uses must be designed and constructed to remain operational and safe for users in times of flood; must result in no net loss of floodplain storage; and not impede water flows and not increase flood risk elsewhere. Development should not be permitted for sites within the highly, more or less vulnerable categories that fall within Flood Zone 3b or for highly vulnerable development that fall within Flood Zone 3a. If the developer is able to avoid 3b however, then part of the site could still be delivered.

The 10% threshold is not included within any policy, it is merely considered that it may prove difficult for developers to deliver a site where 10% or more of the site area is considered as undevelopable, based on the NPPF. This 10% threshold does not account for local circumstances therefore it may be possible to deliver some of the sites, particularly in larger sites, included with Strategic Recommendation A upon more detailed investigation through a Level 2 SFRA or drainage strategy.

Strategic Recommendation A applies to seven of the 373 sites, six of which are due to being partially within Flood Zone 3b (see The other one is due to its classification as highly vulnerable and its location within Flood Zone 3a. Highly vulnerable development is not permitted within Flood Zone 3a.

Table 1-5). The other one is due to its classification as highly vulnerable and its location within Flood Zone 3a. Highly vulnerable development is not permitted within Flood Zone 3a.

Table 1-5 Sites to consider withdrawing if development cannot take place outside of Flood Zone 3b

Site category	Site ref	Proposed use	Site area (ha)	% within Flood Zone 3b
Call for Sites 2018	255	Residential	1.97	10.91
Call for Sites 2018	267	Residential	3.25	11.84
Call for Sites 2018	701	Residential	12.96	15.52
Call for Sites 2018	850	Residential / Gypsy and traveller / Offices / Industry and warehousing / Other use	13.28	5.52*
Land Supply 2018	E-HYDGOD-001	Industry and Warehousing	0.30	63.87
Land Supply 2018	H-HYDGOD-022	Residential	1.43	14.16
Land Supply 2018	H-HYDNEW-007	Residential	2.77	13.84
**highly vulnerable use with 63% in FZ3a				

The LPA should refer to the SFRA maps in Appendix A to ascertain whether it may be possible to accommodate the risk onsite or whether site boundaries can be redrawn to remove 3b from the site before deciding whether to take these sites forward. The areas of functional floodplain must either be removed from the site footprint or be incorporated into site design by leaving these areas free of development. Such areas could provide amenity greenspace for site users. A detailed site design together with a detailed FRA would have to show each site would be safe for its lifetime, which is 100 years for residential.

1.4.2 Strategic Recommendation B – Exception Test

This strategic recommendation DOES NOT take account of local circumstances, only that part of a site area falls within a flood zone.

Strategic Recommendation B applies to sites where it is likely the Exception Test would be required, assuming the Sequential Test has been passed in the first instance. This does not include any recommendation on the likelihood of a site passing the Exception Test. A more in-depth investigation such as a Level 2 SFRA would be required to assess this. The developer / LPA should always attempt to avoid the risk area where possible.

Strategic Recommendation B applies to sites where the following criteria is true:

- 10% or greater of any more vulnerable site that is within Flood Zone 3a, unless already included in Strategic Recommendation A. Less vulnerable uses of land do not require the Exception Test and highly vulnerable sites are not permitted in this zone.

NOTE: All development proposals in Flood Zone 3a must be accompanied by a flood risk assessment.

The 10% threshold is not included within any policy; it is merely considered that it would be very difficult for developers to avoid Flood Zone 3a when 10% or more of the site area is within it. This 10% threshold does not account for local circumstances therefore it may be possible to avoid Flood Zone 3a altogether for some of the sites included with Strategic Recommendation B. It may also be possible to deliver part of some of the larger sites, dependent upon further investigation, where a significant area is not within the FZ3a.

Strategic Recommendation B applies to eight potential development sites Table 1-6.

Table 1-6 Sites where application of the Exception Test would be required

Site category	Site ref	Proposed use	Site area (ha)	% within Flood Zone 3a
Call for Sites 2018	1052	Residential	5.44	26.22
Land Supply 2018	H-DUKSTB-002	Residential	0.40	16.92
Land Supply 2018	H-HYDGOD-039	Residential	0.09	100.00
Land Supply 2018	H-HYDNEW-003	Residential	5.69	26.60
Land Supply 2018	H-MOSSLE-022	Residential	0.23	11.01
Land Supply 2018	H-MOSSLE-131	Residential	1.08	37.66
Land Supply 2018	H-MOSSLE-132	Residential	1.07	10.26
Land Supply 2018	H-WATERL-050	Residential	1.23	24.27
*Also partially within Flood Zone 3b				

It appears unlikely that any of these sites would pass the second part of the Exception Test, given the small footprint areas available to either incorporate the risk into amenity open space or to redraw the boundaries without impacting too much on housing yields. In order to pass both parts of the Exception Test, the LPA or developer must prove that development of the site will provide wider sustainability benefits to the community that outweigh flood risk, and that the development will be safe for its lifetime, without increasing flood risk elsewhere and where possible reducing flood risk overall. To avoid having to apply the Exception Test, the developer / LPA should attempt to avoid the risk area altogether by removing the site from Flood Zone 3a.

1.4.3 Strategic Recommendation C – consider site layout and design as part of detailed FRA

This strategic recommendation DOES NOT take account of local circumstances, only that part of a site area falls within a Flood Zone.

This recommends that, due to only a small proportion of a site being at fluvial risk, it may be possible that a detailed review of site layout and / or design around the flood risk, as part of a detailed FRA at the development planning stage, may enable development to proceed. Or it may be possible to incorporate suitable SuDS into the site layout to mitigate risk on-site, following a detailed FRA or drainage strategy. A Level 2 SFRA or detailed site-specific FRA would be required to help inform on site layout and design.

Strategic Recommendation C applies to sites where the following criteria is true:

- <10% of the area of any site type is within Flood Zone 3b.
- <10% of any more vulnerable site is within Flood Zone 3a.

- 10% or greater of any site type is within the medium risk surface water flood zone

The 10% threshold is not included within any policy, it is merely considered that it may be possible for developers to avoid Flood Zone 3b and Flood Zone 3a when less than 10% of the site area is at risk. In terms of surface water risk, sites with greater than 10% within the 1 in 100 AEP event outline (medium risk) are likely to have to pay greater attention to incorporating the surface water into the site layout and design. This 10% threshold does not account for local circumstances.

Paragraph 050 of the FRCC-PPG states:

“Local authorities and developers should seek opportunities to reduce the overall level of flood risk in the area and beyond. This can be achieved, for instance, through the layout and form of development, including green infrastructure and the appropriate application of sustainable drainage systems, through safeguarding land for flood risk management, or where appropriate, through designing off-site works required to protect and support development in ways that benefit the area more generally.”

Overall there are 52 potential sites to which Strategic Recommendation C applies. 25 of these sites **Error! Reference source not found.** are partially within Flood Zone 3b (see Appendix B). The areas within Flood Zone 3b must not be developed and must be left as open space or the site boundaries adjusted to remove the 3b area from the site footprint. Of these 25 sites, 22 are classed as more vulnerable.

There are 17 sites located partially within Flood Zone 3a, 12 of which are also partially within Flood Zone 3b. 14 of the 17 sites are more vulnerable and should therefore be directed away from Flood Zone 3a. Also, for the less vulnerable sites, where possible, Flood Zone 3a areas should also be left to flood naturally.

27 of the 52 sites are potentially at significant risk from surface water.

Where Strategic Recommendation C applies to a potential site, the developer should consider the site layout with a view to removing the site footprint from the flood extent that is obstructing development. If this is not possible then the alternative would be to investigate the incorporation of on-site storage of water into the site design. Depending on local circumstances, if it is not possible to adjust the site boundary to remove the site footprint to a lower risk zone then this part of the development should not be permitted (for any site in Flood Zone 3b), or the Exception Test should be undertaken and passed as part of a site-specific FRA for the more vulnerable sites within Flood Zone 3a.

Any site layout and design within 8 m of any flood defence structure or culvert on a main river is likely to be a regulated flood risk activity under Schedule 25 of the Environmental Permitting (England and Wales) Regulations 2016. Site layout and design will have to take this into consideration for development proposals. This 8 m buffer is recommended by the EA to allow ease of access to watercourses for maintenance works. Any site redesign, where Flood Zones 3b and 3a, are included within the site footprint, should allow water to flow naturally or be stored in times of flood through application of suitable SuDS.

1.4.4 Strategic Recommendation D – development could be allocated subject to FRA

This strategic recommendation DOES NOT take account of local circumstances, only that part of a site area falls within a flood zone.

This recommends that development could be permitted due to low flood risk perceived from the EA flood maps, assuming a site-specific FRA shows the site can be safe and it is demonstrated that the site is sequentially preferable. A site within Flood Zone 2 could still be rejected if the conclusions of the FRA decide development is unsafe or inappropriate.

Strategic Recommendation D applies to sites where the following criteria is true:

- Any site within Flood Zone 2 that does not have any part of its footprint within Flood Zone 3a or 3b, with the exception of a highly vulnerable development which would be subject to, and have to pass, the Exception Test.
- Less vulnerable and water compatible sites within Flood Zone 3a. No part of the site can be within Flood Zone 3b.
- Any site 100% within Flood Zone 1 where surface water flood risk is apparent but not considered significant.
- Any site 100% within Flood Zone 1 that is greater than or equal to 1 hectare in area.

Recommendation D applies to 219 potential sites overall. 217 of these sites are 100% within Flood Zone 1 with 213 at some level of surface water risk. The other four are at very low risk from surface water, according to the RoFSW, though are greater than one hectare in area and therefore must be subject to a FRA.

1.4.5 Strategic Recommendation E – development could be allocated on flood risk grounds subject to consultation with the LPA / LLFA

This strategic recommendation DOES NOT take account of local circumstances, only that part of a site area falls within a flood zone.

Strategic Recommendation E applies to any site with its area 100% within Flood Zone 1, not within any surface water flood zone and less than 1 hectare in size.

This recommends that development should be allocated on flood risk grounds, based on the evidence provided within this SFRA. Further investigation may be required by the developer and an FRA would be required to assess further or new information that may not have been included within this SFRA. Recommendation E applies to 86 sites.

1.5 Climate change

As discussed in the main SFRA report, the potential development sites have been screened against fluviially modelled climate change outputs (using the EA's 2016 allowances), where available. For Tameside, 19 out of the 373 sites are located within 100m of watercourses which have been modelled for climate change. 9 of these 19 sites are not considered to be at additional risk from climate change. However, it is recommended that all 19 sites are reviewed against modelled climate change outputs at the FRA stage, using the latest EA allowances at the time. See Appendix B for these sites.

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