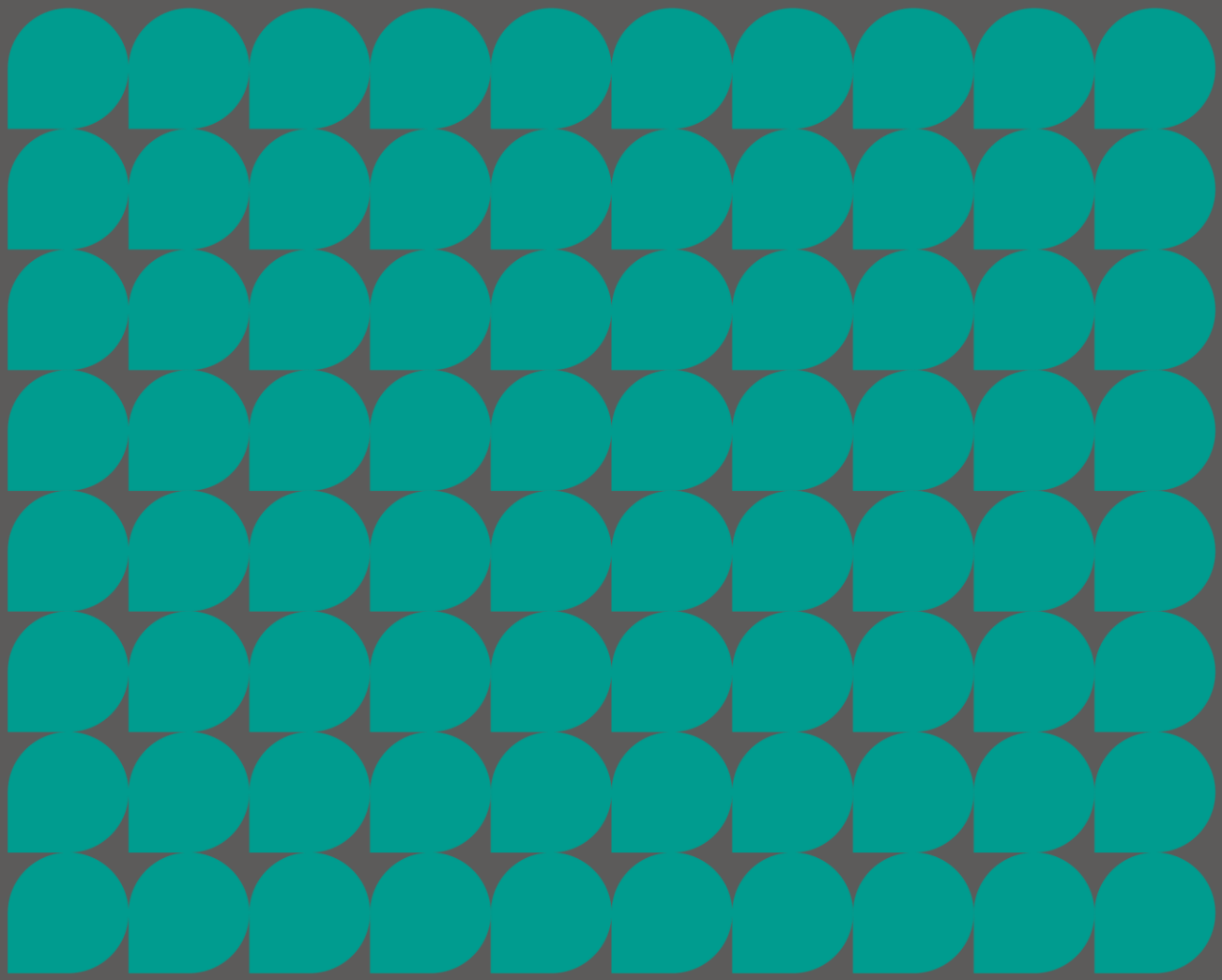
GREATER MANCHESTER
DOING THINGS DIFFERENTLY

Places for Everyone

Flood Risk Sequential Test and Exception Test

Evidence Paper

July 2021



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1. Introduction

1.1 This purpose of this paper is to explain how the flood risk sequential test and exception tests, as required by the National Planning Policy Framework, have been applied in the preparation of the Places for Everyone Plan 2021.

GMSF to Places for Everyone (PfE)

1.2 In November 2014, the AGMA Executive Board recommended to the 10 Greater Manchester local authorities that they agree to prepare a joint Development Plan Document ("Joint DPD"), called the Greater Manchester Spatial Framework ("GMSF") and that AGMA be appointed by the 10 authorities to prepare the GMSF on their behalf.

1.3 The first draft of the GMSF DPD was published for consultation on 31st October 2016, ending on 16th January 2017. Following substantial re-drafting, a further consultation on the Revised Draft GMSF took place between January and March 2019.

1.4 On the 30 October 2020 the AGMA Executive Board unanimously agreed to recommend GMSF 2020 to the 10 Greater Manchester Councils for approval for consultation at their Executives/Cabinets, and approval for submission to the Secretary of State following the period for representations at their Council meetings.

1.5 At its Council meeting on 3 December Stockport Council resolved not to submit the GMSF 2020 following the consultation period and at its Cabinet meeting on 4 December, it resolved not to publish the GMSF 2020 for consultation.

1.6 As a joint DPD of the 10 Greater Manchester authorities, the GMSF 2020 required the approval of all 10 local authorities to proceed. The decisions of Stockport Council/Cabinet therefore signalled the end of the GMSF as a joint plan of the 10.

1.7 Notwithstanding the decision of Stockport Council, the nine remaining districts considered that the rationale for the preparation of a Joint DPD remained. Consequently, at its meeting on the 11th December 2020, Members of the AGMA Executive Committee agreed in principle to producing a joint DPD of the nine remaining Greater Manchester (GM) districts. Subsequent to this meeting, each district formally approved the establishment of a Joint Committee for the preparation of a joint Development Plan Document of the nine districts.

1.8 Section 28 of the Planning and Compulsory Purchase Act 2004 and Regulation 32 of the Town and Country Planning (Local Planning) (England) Regulations 2012 enable a joint plan to continue to progress in the event of one of the local authorities withdrawing, provided that the plan has 'substantially the same effect' on the remaining authorities as the original joint plan. The joint plan of the nine GM districts has been prepared on this basis.

1.9 In view of this, it follows that PfE should be considered as, in effect, the same Plan as the GMSF, albeit without one of the districts (Stockport). Therefore "the plan" and its proposals are in effect one and the same. Its content has changed over time through the iterative process of plan making, but its purpose has not. Consequently, the Plan is proceeding directly to Publication stage under Regulation 19 of the Town and Country Planning (Local Planning) England Regulations 2012.

1.10 Four consultations took place in relation to the GMSF. The first, in November 2014 was on the scope of the plan and the initial evidence base, the second in November 2015, was on the vision, strategy and strategic growth options, and the third, on a Draft Plan in October 2016.

1.11 The fourth and most recent consultation on The Greater Manchester Plan for Homes, Jobs and the Environment: the Greater Manchester Spatial Framework Revised Draft 2019 (GMSF 2019) took place in 2019. It received over 17,000 responses. The responses received informed the production of GMSF 2020. The withdrawal of Stockport Council in December 2020 prevented GMSF 2020 proceeding to Regulation 19 Publication stage and instead work was undertaken to prepare PfE 2021.

1.12 Where a local planning authority withdraws from a joint plan and that plan continues to have substantially the same effect as the original joint plan on the remaining authorities, s28(7) of the Planning and Compulsory Purchase Act 2004 provides that any step taken in relation to the plan must be treated as a step taken by the remaining authorities for the purposes of the joint plan. On this basis, it is proposed to proceed directly to Publication stage under Regulation 19 of the Town and Country Planning (Local Planning) England Regulations 2012.

1.13 A comprehensive evidence base was assembled to support the policies and proposals in the GMSF 2020. Given the basis on which the Plan has been prepared, this evidence base remains the fundamental basis for the PfE 2021and has remained available on the GMCA's website since October 2020. That said, this evidence base has been reviewed and updated in the light of the change from GMSF 2020 to the PfE2021 and, where appropriate, addendum reports have been produced and should be read in conjunction with evidence base made available in October 2020. The evidence documents which have informed the plan are available via the GMCA's website.

2. Background

2.1 The requirement for applying the sequential and exception tests are set out in Paragraphs 155 to 161 of the National Planning Policy Framework (NPPF) and further guidance on the tests is provided in the Planning Practice Guide.

2.2 The NPPF requires local planning authorities to develop policies to manage flood risk from all sources supported by an SFRA and local plans should apply a sequential, risk-based approach to the location of new development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by:

- Applying the sequential test and then, if necessary, the exception test;

- 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; and
- Where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations.

2.3 Paragraph 158 of the NPPF states that the aim of the sequential test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated if there are reasonably available sites appropriate for the proposed development in areas with a lower of flooding. The SFRA will provide the basis to apply this test.

2.4 Paragraph 159 of the NPPF states that If it is not possible for development to be located in zones with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in national planning guidance.

2.5 Paragraph 160 of the NPPF states that the application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. For the exception test to be passed it should be demonstrated that:

(a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

(b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

2.6 Finally, Paragraph 161 states that both parts of the exception test should be satisfied for development to be allocated or permitted.

2.7 The flood risk and coastal change section of the Planning Practice Guide describes the application of the sequential test for Local Plan preparation in Figure 1 below.

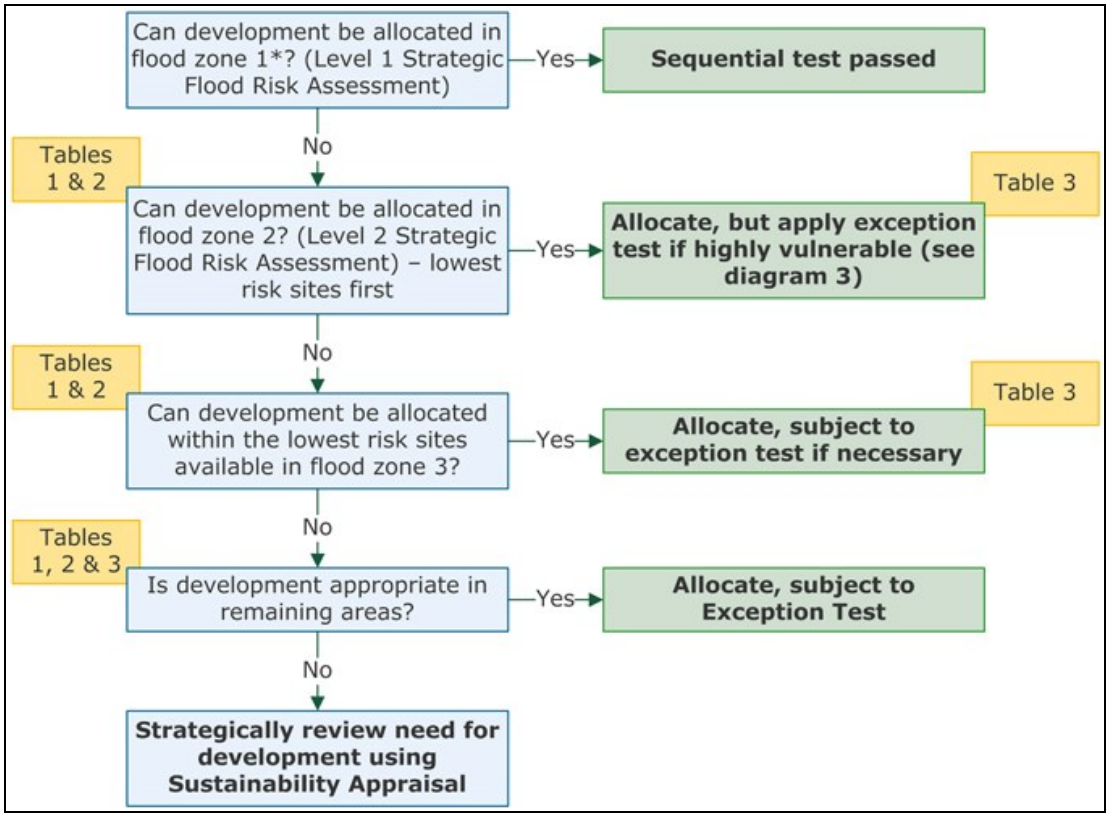

Figure 1: application of the sequential test for Local Plan preparation (Diagram 2 of the NPPF)

2.8 Flood zones are defined within Table 1 of the Planning Practice Guide based on the probability of occurrence replicated below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)

Flood Zone	Definition
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.(Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from

Table 1: Flood Zones

2.9 Table 2 of the planning practice guide classifies the type of development according to their vulnerability to flood risk which is outlined in the list below.

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:

- 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.

2.10 If a site cannot be accommodated in Flood Zone 1 then the exception test will be required for highly vulnerable sites in Flood Zone 2 or more vulnerable, highly vulnerable and essential infrastructure in Flood Zone 3. Table 2 (Figure 2 shown below) in the Planning Practice Guide explains when the exception test should be carried out based on the vulnerability of the development.

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

Key:

✓ Development is appropriate

✗ Development should not be permitted.

Figure 2: Flood risk vulnerability classification

3. Overview of flood risk

3.1 The PfE area covers the vast majority of Greater Manchester, excluding the borough of Stockport. Greater Manchester consists of a complex hydrological network that interlinks the 10 Greater Manchester authority districts. The Irwell and Mersey catchments dominate the sub-region, accounting for 78% of the total catchment area. The upper regions of the catchments tend to be steeper and are more susceptible to flooding from high intensity rainfall events. The lower areas of the catchments are more susceptible to flooding from widespread and persistent rainfall events. All catchments within the sub-

region, apart from the River Douglas, drain into the Manchester Ship Canal. The Irwell catchment drains areas to the north of Manchester and is home to over 2 million people. The Mersey Catchment drains from the eastern boundary of the Pennines with a population of 1.2 million. The Douglas catchment flows from Winter Hill, high on the West Pennine moors, through rural landscapes and urban areas until it meets the Ribble Estuary with a population of 800,000. The Glaze catchment in the south west covers the remaining areas of Greater Manchester. All the watercourses in the catchments are heavily modified in parts with many culverted or channelized by development.

3.2 There are over 50,000 properties in Greater Manchester that have between a 1% and 0.1% chance of flooding from main rivers in any year. 30% of these properties are located in Salford, 20% in Manchester and 15% in Wigan. The remaining 35% of properties at risk of flooding are distributed fairly evenly across the other districts of Greater Manchester.

3.3 The Irwell catchment is affected from rainfall in different ways. The upper reaches in Bacup and Rawtenstall, Lancashire and Littleborough and Rochdale are affected by flash flooding from rainfall water draining into the river very quickly. Further downstream in Bury, Radcliffe, and Middleton rainfall water takes longer to drain into the river, approximately 4-5 hours, which means that this part of the catchment is affected by flooding from widespread heavy rain and/or prolonged periods of wet weather. The lower reaches of the Irwell in Manchester and Salford are most affected from widespread/prolonged wet weather throughout the catchment.

3.4 The Mersey catchment is similar to the Irwell catchment because it too has predominantly rural uplands and an urbanised lower catchment. Future changes in land management across all catchments, especially in areas upstream of communities at risk, could reduce water runoff and peak flows as well as improving water quality and habitats.

3.5 Reservoirs and canals in Greater Manchester have important drainage and flood alleviation functions, including the Manchester Ship Canal and the reservoirs in the Tame, Goyt and Etherow sub-catchments.

3.6 Areas of Rochdale, Bolton and Oldham are affected in part due to surface water run-off surcharging the drainage system. Areas in Salford and Manchester are affected from the backing up of the drainage system during high riverflows.

3.7 Groundwater flooding is currently not perceived to be a major issue.

4. PfE 2021 Scale and Distribution of Growth

4.1 The overall spatial strategy of the PfE seeks to take advantage of the opportunities for delivering high levels of economic growth, whilst addressing the challenges for securing genuinely inclusive growth and prosperity in the joint plan area. As such, the spatial strategy comprises of;

- Core Growth Area: central Manchester, south-east Salford, and north Trafford:

  Making the most of the key assets at the core of the conurbation is central to the approach, as this will be essential to maximising competitiveness and driving economic growth across the city region.

- Inner Area Regeneration: surrounding inner parts of Manchester, Salford and Trafford:

  Securing major investment in the surrounding inner areas will be important to addressing the extensive deprivation in those neighbourhoods, as well as supporting the successful functioning of the core areas.

- Boost Northern Competitiveness: Bolton, Bury, Oldham, Rochdale, Tameside, Wigan, and west Salford:

The PfE seeks to boost significantly the competitiveness of the northern parts of Greater Manchester to reduce the disparities between the northern and southern parts of Greater Manchester.

- Sustain Southern Competitiveness: most of Trafford and south Manchester:

  The PfE seeks to ensure that the southern areas of the joint plan area continue to make a considerable contribution to growth by making the most of its key assets.

- Rapid transit routes, town centres and strategic green infrastructure:

  These elements are an important part of the spatial strategy and extend through all of these areas.

4.2 In terms of the scale of development in the plan area:

- PfE Policy JP-H 1 sets out that a minimum of 164,880 net additional dwellings will be delivered in the plan area over the period 2021-37, or an annual average of around 10,305.
- PfE Policy JP-P 3 sets out that at least 1,900,000 sq m of new, accessible, office floorspace will be provided in the plan area over the period 2021-2037.
- PfE Policy JP-P 4 sets out that at least 3,330,000 sq m of new, accessible, industrial and warehousing floorspace will be provided in The plan area over the period 2021-2037.

5. Housing Land Supply

5.1 The PfE housing land supply forms a key component of the evidence base to support the delivery of housing to meet the housing requirement set through the PfE and assesses the supply of housing land against PfE housing requirements. Sites which form part of the housing land supply were identified by each district as part of individual Strategic Housing Land Availability Assessments (SHLAAs).

5.2 In accordance with the National Planning Practice Guidance SHLAAs should:

- Identify sites and broad locations with potential for development;
- Assess their development potential; and
- Assess their suitability for development and the likelihood of development coming forward (the availability and achievability).

5.3 Utilising previously developed land as a priority is a key objective within the PfE, Integrated Assessment Framework and site selection methodology.

5.4 In addition, in order to maximise the housing land supply and minimise the need for Green Belt release each district has, as a minimum, undertaken a search for potential housing sites for each of the following:

- Extant planning permissions;
- Allocations;
- Lapsed planning permissions
- Developer proposals;
- Main town centres;
- Sites in close proximity to public transport nodes, such as train stations and Metrolink stops;
- Existing employment allocations;
- Unimplemented employment permissions;
- Poorly performing employment areas, for example as identified in an employment land review;
- Mills identified in the Greater Manchester mills survey;
- Safeguarded land;
- Protected open land;
- Other greenfield land around the edge of the urban area, informed by the latest open space assessment where available;
- Council-owned land;
- Sites already assessed through the SHLAA that have not been included as deliverable due to policy non-compliance but would nevertheless be preferable to Green Belt development.

5.5 Due to the shortfall in the housing land supply to meet the housing requirement, land which is currently protected open land / safeguarded land or Green Belt had to be considered in strategic locations in line with the PfE spatial strategy.

6. PfE Site Selection

6.1 The Site Selection Topic Paper sets out the detailed methodology which was utilised as part of the overall site selection for the PfE (including the call for sites process).

6.2 The purpose of the PfE site selection methodology is to identify the most sustainable locations for residential and employment development that can achieve the PfE Vision, Objectives and Spatial Strategy and meet the housing and employment land supply shortfall across the plan area.

6.3 In summary, this involved the following stages:

- Stage 1: consider opportunities on Protected Open Land/ Safeguarded Land.
- Stage 2: Identify Areas of Search in line with the Site Selection criteria.
- Stage 3: Planning constraints assessment of the Call for Sites within Areas of Search.
- Identify Areas of Search with the potential for allocation.

6.4 The methodology includes seven site selection criteria which have been informed by the PfE Spatial Strategy, plan objectives and guidance in the NPPF to identify the most sustainable sites in the Green Belt. These were:

- Criterion 1**:** Land which has been previously developed and/or land which is well served by public transport
- Criterion 2: Land that is able to take advantage of the key assets and opportunities that genuinely distinguish Greater Manchester from its competitors

- Criterion 3: Land that can maximise existing economic opportunities which have significant capacity to deliver transformational change and / or boost the competitiveness and connectivity and genuinely deliver inclusive growth
- Criterion 4**:** Land within 800 metres of a main town centre boundary or 800m from the other town centres' centroids
- Criterion 5: Land which would have a direct significant impact on delivering urban regeneration
- Criterion 6: Land where transport investment (by the developer) and the creation of significant new demand (through appropriate development densities), would support the delivery of long-term viable sustainable travel options and delivers significant wider community benefits.
- Criterion 7**:** Land that would deliver significant local benefits by addressing a major local problem/issue

7. Integrated Assessment

7.1 As part of the preparation of the PfE, an Integrated Assessment (IA) has been undertaken for each draft of the GMSF that preceded the PfE and an updated IA to support the publication PfE plan. The purpose of the IA is to promote sustainable development, health and equality issues through better integration of social, environmental and economic considerations into the preparation of the PfE. The IA helps to guide the development of the PfE by testing the policies at each stage, against an agreed list of objectives. The Integrated Assessment incorporates the planning regulation requirements of the Sustainability Appraisal, Strategic Environmental Assessment and Health Impact Assessment to assess the plan's impact on sustainability.

7.2 At each stage the IA suggests ways to strengthen and enhance the policy to better meet the objectives, and ultimately strengthen the PfE.

7.3 The Sustainability Appraisal also has a role in providing evidence to determine if sites can pass part (a) of the exception test - that development would provide wider sustainability benefits to the community that outweigh the flood risk. The role of the sustainability appraisal is set out in Paragraphs 024 and 037 of the Planning Practice Guidance.

7.4 The IA objectives and assessment criteria are outlined below.

- Objective 1: Provide a sustainable supply of housing land including for an appropriate mix of sizes, types, tenures in locations to meet housing need, and to support economic growth. The assessment criteria for this objective are:
    - Ensure an appropriate quantity of housing land to meet the objectively assessed need for market and affordable housing?
    - Ensure an appropriate mix of types, tenures and sizes of properties in relation to the respective levels of local demand?
    - Ensure housing land is well-connected with employment land, centres and green space or co-located where appropriate?
    - Support improvements in the energy efficiency and resilience of the housing stock?

- Objective 2: Provide a sustainable supply of employment land to ensure sustainable economic growth and job creation. The assessment criteria for this objective are:
    - Meet current and future demand for employment land across the plan area?
    - Support education and training to provide a suitable labour force for future growth?
    - Provide sufficient employment land in locations that are well-connected and well-served by infrastructure?

- Objective 3: Ensure that there is sufficient coverage and capacity of transport and utilities to support growth and development. The assessment criteria for this objective are:

    - Ensure that the transport network can support and enable the anticipated scale and spatial distribution of development?
    - Improve transport connectivity?
    - Ensure that utilities / digital infrastructure can support and enable the anticipated scale and spatial distribution of development?

- Objective 4: Reduce levels of deprivation and disparity. The assessment criteria for this objective are:
    - Reduce the proportion of people living in deprivation?
    - Support reductions in poverty (including child and fuel poverty), deprivation and disparity across the domains of the Indices of Multiple Deprivation?

- Objective 5: Promote equality of opportunity and the elimination of discrimination. The assessment criteria for this objective are:
    - Foster good relations between different people?
    - Ensure equality of opportunity and equal access to facilities / infrastructure for all?
    - Ensure no discrimination based on ‘protected characteristics’, as defined in the Equality Act 2010?
    - Ensure that the needs of different areas, (namely urban, suburban, urban fringe and rural) are equally addressed?

- Objective 6: Support improved health and wellbeing of the population and reduce health inequalities. The assessment criteria for this objective are:
    - Support healthier lifestyles and improvements in determinants of health?
    - Reduce health inequalities and with the rest of England?
    - Promote access to green space?

- Objective 7: Ensure access to and provision of appropriate social infrastructure. The assessment criteria for this objective are:
    - Ensure people are adequately served by key healthcare facilities, regardless of socio-economic status?
    - Ensure sufficient access to educational facilities for all children?
    - Promote access to, and provision of, appropriate community social infrastructure including playgrounds and sports facilities?

- Objective 8: Support improved educational attainment and skill levels for all. The assessment criteria for this objective are:
    - Improve education levels of children in the area, regardless of their background?
    - Improve educational and skill levels of the population of working age?

- Objective 9: Promote sustainable modes of transport. The assessment criteria for this objective are:
    - Reduce the need to travel and promote efficient patterns of movement?
    - Promote a safe and sustainable public transport network that reduces reliance on private motor vehicles?
    - Support the use of sustainable and active modes of transport?

- Objective 10: Improve air quality. The assessment criterion for this objective is:
    - Improve air quality within the plan area, particularly in the 9 Air Quality Management Areas (AQMAs)?

- Objective 11: Conserve and enhance biodiversity, green infrastructure and geodiversity assets. The assessment criterion for this objective is:
    - Provide opportunities to enhance new and existing wildlife and geological sites?

    - Avoid damage to, or destruction of, designated wildlife sites, habitats and species and protected and unique geological features?
    - Support and enhance existing multifunctional green infrastructure and / or contribute towards the creation of new multifunctional green infrastructure?
    - Ensure access to green infrastructure providing opportunities for recreation, amenity and tranquillity?
- Objective 12: Ensure communities, developments and infrastructure are resilient to the effects of expected climate change. The assessment criterion for this objective is:
    - Ensure that communities, existing and new developments and infrastructure systems are resilient to the predicted effects of climate change?

- Objective 13: Reduce the risk of flooding to people and property. The assessment criteria for this objective are:
    - Restrict the development of property in areas of flood risk?
    - Ensure adequate measures are in place to manage existing flood risk?
    - Ensure development is appropriately future proof to accommodate future levels of flood risk including from climate change?

- Objective 14: Protect and improve the quality and availability of water resources. The assessment criteria for this objective are:
    - Encourage compliance with the Water Framework Directive?
    - Promote management practices that will protect water features from pollution?
    - Avoid consuming greater volumes of water resources than are available to maintain a healthy environment?

- Objective 15: Increase energy efficiency, encourage low-carbon generation and reduce greenhouse gas emissions. The assessment criteria for this objective are:
    - Encourage reduction in energy use and increased energy efficiency?
    - Encourage the development of low carbon and renewable energy facilities, including as part of conventional developments?
    - Promote a proactive reduction in direct and indirect greenhouse gas emissions emitted?

- Objective 16: Conserve and/or enhance landscape, townscape, heritage assets and their setting and the character of the plan area. The assessment criteria for this objective are:
    - Improve landscape quality and the character of open spaces and the public realm?
    - Conserve and enhance the historic environment, heritage assets and their setting?
    - Respect, maintain and strengthen local character and distinctiveness?

- Objective 17: Ensure that land resources are allocated and used in an efficient and sustainable manner to meet the housing and employment needs of the PfE, whilst reducing land contamination. The assessment criteria for this objective are:
    - Support the development of previously developed land and other sustainable locations?
    - Protect the best and most versatile agricultural land / soil resources from inappropriate development?
    - Encourage the redevelopment of derelict land, properties, buildings and infrastructure, returning them to appropriate uses?
    - Support reductions in land contamination through the remediation and reuse of previously developed land?

- Objective 18: Promote sustainable consumption of resources and support the implementation of the waste hierarchy. The assessment criteria for this objective are:
    - Support the sustainable use of physical resources?
    - Promote movement up the waste hierarchy?
    - Promote reduced waste generation rates?

8. Greater Manchester Level 1 Strategic Flood Risk Assessment

8.1 The Greater Manchester Level 1 Strategic Flood Risk Assessment (GM Level 1 SFRA) was completed in March 2019 as part of the evidence base to inform the preparation of the GMSF and remains an up-to-date evidence base to inform the PfE.

8.2 It updates and brings together the evidence base on flood risk in Greater Manchester to:

- Apply the sequential test to the existing land supply sites and the PfE allocations.
- Identify the existing land supply sites and PfE allocations that need to pass the exception test.
- Identify sites that are likely to be at a greater risk of flooding from climate change.
- Update the functional floodplain (Flood Zone 3b) across Greater Manchester; and

- Identity ‘opportunity areas for further critical drainage management’ as a step towards updating the existing locally defined critical drainage areas in Greater Manchester.

9. Greater Manchester Level 2 Strategic Flood Risk Assessment

9.1 The GM Level 1 SFRA recommended that more detailed strategic flood risk assessment work was required to support the GMSF. Consequently, this was undertaken in the Greater Manchester Level 2 Strategic Flood Risk Assessment (GM Level 2 SFRA), completed in October 2020. It remains an up-to-date evidence base for the PfE. The more detailed work comprised of:

- Exception test site reports - an assessment of whether GM housing land supply sites and PfE allocations would pass the part (b) of the exception test, which had been flagged from the GM Level 1 SFRA.

- New flood risk modelling - ‘broadscale’ flood modelling was completed on some PfE allocations to fill modelling gaps, which enabled flood risk to be more accurately assessed on the site.

- Flood risk reviews – considers the new modelling on some PfE allocations to provides a summary of the flood risks for the sites.

- Opportunity areas for flood storage - identifies potential areas across GM that could be considered, pending more detailed investigation, for further flood storage, including natural flood management techniques.

9.2 To support the application of Part B of the Exception Test, the Level 2 SFRA reviewed the 57 sites (52 land supply and 5 allocations) that were identified

from the Level 1 SFRA as requiring further appraisal. In addition, 6 strategic allocations were also scoped for further broadscale fluvial modelling to cover existing gaps in the baseline information.

10. Applying the sequential test

10.1 To apply the sequential test, the key question is whether the PfE housing land requirement of 164,880 net additional dwellings can be accommodated in areas of lower flood risk in Flood Zone 1 first, then Flood Zone 2 before considering higher risk areas in Flood Zone 3. To answer this question, the housing land supply, and PfE site selection process and the site screening assessment undertaken for the GM Level 1 SFRA need to be considered.

Housing land supply

10.2 As outlined previously, the nine joint plan districts have identified suitable sites for housing, the majority of which area on previously-developed land, in their brownfield registers, strategic housing land availability assessments and local plans. This existing supply of potential housing sites is insufficient to meet the overall identified housing requirement. Consequently, additional sites are required across the plan area. The only realistic option for doing so is to remove some land from the Green Belt in strategic locations in line with the PfE spatial strategy.

PfE site selection

10.3 Using the site selection methodology as set out in the PfE Site Selection Topic Paper, sites were selected for allocation in Green Belt (and some safeguarded land) that best met the spatial strategy to meet shortfall in housing supply to the overall requirement. The selection process included assessing sites that were submitted to the PfE call for sites exercise.

GM Level 1 SFRA site screening assessment

10.4 The GM Level 1 SFRA completed a flood risk screening assessment of the GMSF/PfE allocations, sites within the housing and employment land supply and sites submitted to the GMSF/PfE call for sites exercise.

10.5 All sites were screened to against the Environment Agency's (EA) Flood Map for Planning (Flood Zones 1, 2 and 3), the functional floodplain (Flood Zone 3b), fluvial climate change (based on the EA's February 2016 allowances) and the surface water flood zones of the EA's Risk of Flooding from Surface Water (RoFSW) dataset.

10.6 Using the flood risk vulnerability classification, as set out in Table 3 of the Planning Practice Guidance, to determine what type of development is appropriate in the flood zones, each site was given a recommendation based on the extent and severity of flood risk and the vulnerability of the proposed site use. The recommendations are set out below:

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

  Strategic Recommendation A applies to any site where 10% or greater of the site area is within Flood Zone 3b

- Strategic Recommendation B - Exception Test required if site passes Sequential Test;

  Strategic Recommendation B applies where 10% or greater of any more vulnerable site is within Flood Zone 3a, unless already included in Strategic Recommendation A. Less vulnerable uses of land do not require the Exception 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 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

- Strategic Recommendation D - site-specific FRA required;

  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.

- Strategic Recommendation E - site permitted on flood risk grounds due to little perceived risk, subject to consultation with the LPA / LLFA.

  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.

10.7 The result of the site screening assessment for the nine joint plan districts are presented in Appendix B of the GM Level 1 SFRA. Table 2, below, summaries the outcome of site screening assessment for the PfE allocations.

	A	B	C	D	E
Bolton	0	0	1	2	0
Bury	0	0	3	3	0
Manchester	0	0	1	2	0
Oldham	0	2	5	10	0
Rochdale	1	1	5	6	0

Salford	1	0	0	3	0
Tameside	0	0	1	3	0
Trafford	0	0	2	0	0
Wigan	0	0	4	1	0
PfE Total	2	3	22	30	0

Table 2: tally of strategic recommendations for PfE allocations

10.8 The vast majority of PfE allocations received either recommendation C or D, as such, no further assessment of these sites is required through the SFRA. Two allocations received a Recommendation A: Roch Valley, Rochdale and East of Boothstown, Salford. Three allocations received a Recommendation B: Chew Brook Vale (Robert Fletchers) and Broadbent Moss, both in Oldham and Crimble Mill, Rochdale. These five allocations were recommended for further assessment to determine their suitability for development in the GM Level 2 SFRA. 50 sites in the housing land supply were also recommended for further assessment.

Sequential Test conclusions

10.9 Following the screening assessment in the GM Level 1 SFRA, the vast majority of the housing land supply and PfE allocations can be accommodated in Flood Zone 1 and Flood Zone 2. Out of the 3,862 sites in the housing land supply, 242 are in Flood Zone 3 (6.2%) and from these sites, only 47 are covered by 10% or more of the site area by Flood Zone 3 (10% being the threshold at which the design and layout of development could avoid Flood Zone 3) which equals 1.2 % of the sites in the GM housing land supply. In terms of the PfE allocations, only five allocations are partially in Flood Zone 3 as outlined in the previous paragraph.

10.10 The baseline housing land supply sites and PfE allocations that are in Flood Zones 2 and 3 are required because they meet the PfE site selection criteria to deliver the spatial strategy of the plan. There are no reasonably available other sites in areas of lower flood risk that could be considered as alternatives as other sites have been screened out of the site selection process as not meeting the criteria to deliver the spatial strategy.

10.11 Therefore, as there are insufficient sites within the housing land supply to meet the plan's housing land requirement and additional sites in Green Belt are required, then all the sites within the housing land supply satisfy the Sequential Test, because they are all needed and meet the site selection criteria.

10.12 Following on from the sequential test and based on the GM Level 1 SFRA recommendations, 50 housing land supply sites and five PfE allocations are required to be assessed through the exception test to determine their suitability for development.

11. Applying the Exception Test

11.1 As noted earlier, where residential developments (or more vulnerable uses) are proposed in Flood Zone 3, Table 3 of the National Planning Practice Guidance (Flood Risk and Coastal Change[1]) identifies that the Exception Test needs to be applied. To pass this test it should be demonstrated that:

> (a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and
>
> (b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

11.2 A total of 55 sites (50 land supply and 5 allocations) were identified from the Level 1 SFRA as requiring further appraisal in a Level 2 SFRA (listed in Appendix 1). The allocations were:

- JPA14 – Broadbent Moss

1 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/575184/Table_3_-_Flood_risk_vulnerability_and_flood_zone__compatibility_.pdf

- JPA15 – Chew Brook Vale (Robert Fletchers)
- JPA21 – Crimble Mill
- JPA24 – Roch Valley
- JPA27 – Land East of Boothstown

11.3 Broadbent Moss was subsequently screened out of requiring the Exception Test due to the vulnerability of use being proposed (less vulnerable).

11.4 In addition, 6 strategic allocations were also scoped in for further broadscale fluvial modelling to cover existing gaps in the baseline information. These were:

- JPA 1.2 – Northern Gateway (Heywood Pilsworth)
- JPA7 – Elton Reservoir
- JPA13 – Bottom Field Farm (Woodhouses Cluster)
- JPA27 – Land East of Boothstown
- JPA32 – South of Hyde
- JPA35 – North of Mossley Common

Part A

11.5 The process to identify the housing supply and land allocations for the PfE has been undertaken against strict sustainability criteria that meet with wider plan objectives. Therefore, evidence on which it can be demonstrated that Part A of the Exception Test has been satisfied is based on:

- Housing Land Supply and associated PfE Housing Topic Paper
- Site Selection Process and associated PfE Topic paper
- Integrated Assessment of the PfE

11.6 The outcome of the Integrated Assessment process for the 4 allocations requiring the detailed Exception Test appraisal is summarised below:

Table 3: Summary of IA recommendations for PfE site allocations

Allocation	IA Summary
JPA15 – (Chew Brook Vale) Robert Fletchers	• Scored positive effects against the majority of objectives. • IA 2020 noted no negative or very negative effects. Where negative effects were given these were in combination with positive effects. • Scoring for objectives 1 and 11 improved following IA mitigation. • Where objectives were scored as 'neutral' it was noted that wider thematic policies would address any mitigation requirements and no further mitigation was recommended in the IA 2020 when the plan was read as a whole. • The site is part greenfield and previously developed so scored both positive and negative for objective 11. However, the IA recommendations were considered to be addressed in Chapter 4 of the PfE and no further mitigation was recommended in the IA 2020 when the plan was read as a whole.
JPA21 – Crimble Mill	• Scored positive effects against the majority of objectives • IA 2020 noted no negative or very negative effects. Where negative effects were given these were in combination with positive effects. • Additional was included in the GMSF 2020 to include reference to creation of GI corridor along river corridor to deliver greater ecological benefits. • Uncertain negative impacts and neutral scores were considered to be addressed by wider thematic policies and no further mitigation was recommended in the IA 2020 when the plan was read as a whole. • Scoring for objectives 10, 11, 13, 15 improved following IA mitigation.

Allocation	IA Summary
JPA24 – Roch Valley	• Scored positive effects against the majority of objectives • Negative effects were noted for objective 17 as the site is greenfield. However, the IA recommendations were considered to be addressed in Chapter 4 of the PfE and no further mitigation was recommended in the IA 2020 when the plan was read as a whole. • Neutral scores were considered to be addressed by wider thematic policies and no further mitigation was recommended in the IA 2020 when the plan was read as a whole. • Scoring for objectives 6, 10, 11, 12, 13, 14 and 17 improved following IA mitigation.
JPA27 – Land East of Boothstown	• Scored positive effects against the majority of objectives • Negative effects were noted for objective 17 as the site is greenfield. However, the IA recommendations were considered to be addressed in Chapter 4 of the PfE and no further mitigation was recommended in the IA 2020 when the plan was read as a whole. • Scoring for objective 11 improved following additional text provided within the reasoned justification. • Uncertain negative impacts and neutral scores were considered to be addressed by wider thematic policies and no further mitigation was recommended in the IA 2020 when the plan was read as a whole.

Part B

11.7 For the 55 detailed site assessments, the recommendations for each site and the likelihood of passing the Exception Test at flood risk assessment stage are detailed within accompanying site screening assessments of the Level 2 Report. An overview of this is provided within Appendix A which summarises, for each site:

- The key risks,

- The main barriers to development and/or passing the Exception Test,
- Overall recommendation on whether development should proceed and whether it can pass the second part of the Exception Test, and
- Further work required and recommended next steps following EA, LLFA and LPA consultation.

11.8 In consultation with each Local Planning Authority the following decisions were made:

- Remove from baseline land supply (12 sites)
- Exception Test not applicable (10 sites)
- Likely to pass the Exception Test (22 sites)
- Unlikely to pass the Exception Test - site to remain in longer term land supply (+10years) to allow for further evidence to be updated and the site revisited (11 sites)

11.9 For those sites remaining within the baseline land supply/allocations, detailed recommendations for the mitigation of flood risk will need to be addressed as part of the specific development proposals for each site and supported by a site-specific Flood Risk Assessment (FRA).

11.20 In addition to the findings that the Exception Test was not applicable to allocation JPA14 (Broadbent Moss), the remaining 4 allocations were considered 'likely' to pass the Exception Test if the recommendations from the SFRA Level 2 were implemented. This was also the case for the 6 allocations which had new broadscale flood modelling produced.

12. Conclusion

12.1 The site selection process for the PfE included the consideration of flood risk to identify appropriate sites for development. As a result, the vast majority of sites are located outside of areas with the highest risk of flooding in Flood Zone 3.

12.2 In order to meet the PfE's strategic objectives spatial strategy, which incorporates the principles of sustainable development, a number of sites are required in Flood Zones 2 and 3 which have been selected through the PfE site selection process.

12.3 As such the GM Level 1 SFRA recommended that sites in higher areas of risk flooding should be subject to further assessment to determine their suitability through the application of the Exception Test. This resulted in 50 sites in the housing land supply and five PfE allocations being tested in further detail in the GM Level 2 SFRA plus a further six PfE allocations to address gaps in flood risk information.

12.4 Through the PfE site selection process, the site screening assessment in the GM Level 1 SFRA and the more detailed assessment on sites in the GM Level 2 SFRA, it is considered that the sequential and exception tests as outlined in the NPPF have been applied as necessary and met.

Appendix A – Exception Test Site Assessment Summaries (GM Level 2 SFRA, Oct 2020)

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
Bolton			
1040-BOL - Urban Village 5 St Helena S	N/A - site has been removed from baseline land supply	Onsite Main River (River Croal); significant fluvial and surface water risk; no room for onsite compensatory storage	Due to current level of risk and limitations to developable areas, site has been withdrawn from the existing land supply. However, as this site is in a key regeneration area with high demand, development on this site could still be possible if an FRA was submitted demonstrating sufficient evidence to show any use and built form, including access, is able to mitigate the flood risk and pass the ET
1148-BOL- Gilnow Mill,	N/A - no need to apply ET for a change in land use	N/A	As development is currently restricted to a conversion, the ET is not required to be applied here

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
Spa Road, BL1 4LF			
1189-BOL - EAGLEY BROOK WAY, BOLTON	ET Not applicable: • The site is allocated for housing in the Bolton Allocations Plan (2014) • The site is covered by an implemented planning permission because the site is part of a wider scheme that has been built (the site is the residual that has not been built out). The rest of Waterside Gardens was built out some years ago now. But the residual apartment blocks never commenced. The current base clearly illustrates the gap between the completed blocks and	Uncertainty with Flood Map for Planning and modelling	The Level 2 assessment of flood risk and the modelling and mitigation recommendations are very useful for a site-specific flood risk assessment on any future planning applications on the site. EA to update Flood Map for Planning with latest Croal 2016 modelling

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
	the single apartment block to the south. There have been no further approaches I am aware of to develop the site nor to bring forward the residual so assessment of current flood risk have never arisen		
1237-BOL - RIVERSIDE, FOLD ROAD, STONECLOUGH RADCLIFFE, BOLTON,	Not applicable - planning permission previously granted	N/A	None
744-BOL - Gilnow Gardens, Bolton, BL3 5NT	It is unlikely this site can pass the Exception Test, unless the flood risk can be safely mitigated and safe access and egress routes achieved	Fluvial risk from culverted watercourse, currently difficult to achieve safe	Due to current level of risk and safe access/egress being unachieveable, site has been withdrawn from the existing land supply. The principle of housing still remains should a developer bring forward a housing scheme which can be shown to meet the requirements and pass the Exception Test

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		access and egress routes	
HLA-122 - REGENT HOUSE, 617 CHORLEY NEW ROAD, LOSTOCK, BOLTON,	Given the relatively shallow modelled flood depths, it should be possible for this site to pass the ET if stilted development can be implemented and clear access/egress routes can be achieved	100% in FZ3a however modelled flood depths are shallow	Revisit assessment when the updated Bessy Brook model is made available. An FRA will be required to show safe access/egress can be achived along with an detailed emergency plan specifying evacuation procedures. Stilted development with raised access routes will need to be considered at this site
Bury			
HL/2441/00 - Bealey Industrial Estate, Hallam Street, Off Dumers Lane, Radcliffe	Based on current, available information, this site should pass the ET. This decision should be reassessed however following more detailed modelling of Hutchinson's Goit and with the quantified risk from nearby Bealey's Goit and culvert	Unmodelled watercourse of Bealey's Goit and residual risk from culvert on the watercourse, more detailed modelling of Hutchinson's Goit	Further modelling needs to be carried out Hutchinson's Goit and the risk quantified from Bealey Goit and the culvert. This work should be undertaken the FRA stage and so should be considered an update to this Level 2 SFRA with any modelling subject to consultation with the both the LLFA and EA

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
HL/2519/00 - Mondi Paper Mill, Holcombe Mill, Peel Bridge, Ramsbottom, BL0 0BS	It is unlikely the ET could be passed due to significant risk from both fluvial and surface water sources.	Significant fluvial and surface water risk; lack of safe access/egress routes	If this site was carried forward, an FRA would be required to demonstrate how the flood risk would be managed. Any design would likely be costly at this site, i.e. stilted development. Council minded to remove from baseline until further evidence provided.
HL/2648/00 - Land adjacent to SE of 11 Morris Street, Radcliffe, Manchester, M26 2HF	Based on current, available information, it is unlikely this site would pass the ET.	Significant fluvial and surface water risk to site and wider area; lack of safe access/egress routes	This Level 2 SFRA should be revisited and updated when the site boundary has been amended, once the updated Irwell model is approved and to include residual risk when new modelling is available that takes into account the flood defences near Morris St, currently under construction. Despite this, it remains unlikely that this site will be suitable for development due to access/egress issues from the wider area during a flood
Manchester			
113669/FO/2016 - Land to the side of 27	Based on current information, it is likely this site will pass the ET;	No major barriers have been	Further consultation with the EA to confirm level data that was supplied. Current site boundary overlaps with FZ3 and an existing access road though the proposed building

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
Willaston Close, Chorlton	confirmation on site boundary required	identified at this stage	footprint does not, site boundary could be redrawn to avoid this. Due to change in use at the site, an FRA will be required to demonstrate that flood risk will be mitigated from any new developments
Brad_Cap_141 - Lower Medlock	This site is likely to pass the ET if development can avoid the areas within FZ3 as well as accounting for climate change	Existing and long term risk from onsite Main River (River Medlock)	Manchester City Council to amend site boundary to only include developable areas, i.e. outside FZ3 as well as accounting for climate change, an FRA will still be required. If development were to be undertaken in these areas then it would likely require stilted development and the ET would be need to be revisited
CC_Cap_007 - Mayfield Development Area	This site is likely to pass the ET if development can avoid the areas within FZ3 as well as accounting for climate change	Existing and long term risk from onsite Main River (River Medlock)	Recommend amending site boundary to remove areas within FZ3, also accounting for climate change. This Level 2 SFRA should be revisited following site specific data from the Mayfield flood model is made available.
CC_Cap_904 - Blackfriars St/Deansgate	Site boundary has been amended to avoid FZ3 and FZ2 so ET not required	Onsite Main River (River Irwell)	Assumed that no development will take place over the River Irwell. An FRA will be required, this will potentially need to assess residual risk from culvert blockage at the north of the site as well as resolve any discrepancies

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			betweent the modelled data and latest Flood Map for Planning
High_Cap_700 - Blackley New Road, River Irk site	This site is likely to pass the ET if the developable area avoids FZ3 including accounting for climate change	Available Irk model is 1D-only therefore depths, hazards, etc cannot be quantified	Manchester City Council to amend site boundary to only include developable areas, i.e. outside FZ3 as well as accounting for climate change, an FRA will be required. A 2D model of the River Irk should be developed to more robustly quantify risk, this work should be undertaken as part of an update to this Level 2 SFRA. If the EA are satisifided that the current 1D modelled results are represantative of the risk then development of a 2D model is not required.
Hulm_Cap_002 - Gamecock, Boundary Lane	This site is likely to pass the ET	No major barriers have been identified at this stage	An FRA should not be required as the site is located with FZ1, is low risk of surface water flooding and is <1 hectare in size
Old_Cap_001 - 396 Wilmslow Road	N/A -site has been withdrawn from the existing land supply	Significant existing and long term fluvial risk,	N/A - site has been removed from the existing land supply by Manchester City Council

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		majority of site within FZ3a	
Oldham			
GM Allocation 15a – Broadbent Moss	ET is not applicable as the proposed use is classified as less vulnerable	Existing Flood Map for Planning not likely to be accurate, awaiting updated Beal model outputs	This Level 2 SFRA should be revisited when the updated Beal model is made available. Due to surface water risk to the site, it must be shown that this can be controlled for the lifetime of the development before any development can proceed. It is possible that a drainage strategy would also be required for any development at this site due to level of risk. This work should be undertaken as part of an FRA.
GM Allocation 18 – Robert Fletchers	It is likely this site can pass the ET. However, additional work required at the Level 2 SFRA stage to quantify: risk from unnamed and unmodelled watercourse, residual risk from long culverted sections, risk from	Unquantified risk from unnamed watercourse, significant surface water flow routes	The GMCA has commissioned additional work to assess the reservoir drawdown risk, modelling of the unmodelled watercourse, and residual risk from culverts through blockage scenario modelling Any future FRA will need to demonstrate that the risk from surface water can be managed for the lifetime of the development through an appropriate drainage strategy

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
	Dovestone reservoir during an emergency drawdown scenario		
HLA2091(1) – Knoll Close, Oldham	Given this is a small extension to an existing dwelling, it is unlikely that planning permission would be refused on flood risk grounds.	EA currently (at the time of writing) remodelling River Tame therefore dependant on outputs from this. Also dependent on subsequent update to the Flood Map for Planning	The Flood Map for Planning is due to be updated with latest modelled outputs from the new Tame model. The EA states that 'if a development is applied for before this update, it is unlikely that planning permission would be refused due to the size of the site. It would also be expected that FFL would match existing and flood resilience measures would be implemented. If a development is applied after the Flood Map update, then the site should be within FZ1 and so would not require an ET'. It is also possible that Oldham will be removing this site from the existing land supply
SHA1723 – Wellington Road, Oldham	This site is likely to pass the ET when the Flood Map for Planning is updated with latest outputs from the Tame 2018 model	Aawaiting updates to the Flood Map for Planning	An FRA will need to provide sufficient evidence to demonstrate that the surface water risk to the site can be managed for the lifetime of the development without increasing flood hazards elsewhere. This Level 2 SFRA

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			should be revisited when the Flood Map for Planning is updated as this is likely to place the site wholly within FZ1
Rochdale			
GM Allocation 25 – Crimble Mill	It is likely that this site will pass the ET if the Level 2 SFRA recommendations are followed	Unmodelled watercourses; Roch model is 1D only therefore no depth / hazard information	Early discussions have taken place with the Environment Agency with regards to flood risk issues on this site. • Detailed 2D modelling of the River Roch would be required to determine layout designs, floor levels, emergency access and egress routes. This should account for climate change using the EA's latest allowances. • The EA have indicated that due to the small size of the catchments of Millers Brook and the unnamed watercourse to the east of the site that they do not need to be modelled at the strategic planning level. However, this should be carried out at the FRA stage. • 11 hectares of land is developable (in Flood Zone 1 and outside climate change risk area) based on existing fluvial risk information (i.e. outlines only). New development should be directed to these 11 hectares in the first

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			instance. • The open space created by the demolition of the factory buildings should be used for flood storage. • Redevelopment of Crimble Mill should investigate suitable property flood resilience techniques whilst not increasing the development footprint from its current area. • Integration of safe access and egress routes and a full emergency plan will need to be included in the redevelopment of Crimble Mill. • A full drainage strategy should be formulated for the area of new development south of the Roch to inform the FRA, to account for surface water flow routes and how to mitigate within a proposed layout.
GM Allocation 28 – Roch Valley	It is likely that this site will pass the ET if the recommendations within this Level 2 SFRA are followed, however this decision should be deferred to the outline planning application stage with an FRA	Flood risk not quantified from unmodelled unnamed watercourse at north east corner	An updated FRA will need to fully consider the implications of the access road encroaching on the proposed FSA. The access road should either be moved further north, or the developer should find alternative compensatory storage onsite. Risk from the unnamed watercourse, along with residual risk from the culvert,

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		of the site (including residual risk from culverts)	should be quantified. • Options for culvert removal should be investigated. Development should seek to remove redundant structures/culverted sections to reduce flood risk and help improve WFD status. • The FRA should include emergency planning procedures with particular consideration to safety around the proposed FSA, the existing culvert, and the provision for safe access and egress routes in times of flood.
SH0594 – Ealees Area of Opportunity	Based on current information, it is unlikely that this site could pass the ET	Significant existing and long term fluvial and surface water risk	Rochdale to add the site into the longer term supply due to the potential positive impacts of the Littleborough FAS. Despite this, the site is not likely to pass the ET. However development could be feasible via stilted development, raised FFLs with offsite compensatory storage or less vulnerable ground floor developments. In order to pass the ET, further investigation and detailed modelling of these options would be required as well as ensuring safe access/egress routes. This work would be undertaken as

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			part of an update to this Level 2 SFRA as well as consideration of the Littleborough FAS modelling.
SH0610 – New Ladyhouse Mill	Based on current information, it is unlikely that this site could pass the ET	Confirmation of fluvial risk required	To confirm the fluvial risk to the site, this Level 2 SFRA should be revisited when the updated Beal model is made available. Due to the significant surface water risk to the site, it must be shown that this can be managed for the lifetime of the development before any development can proceed. A detailed drainage strategy may also be required due to the level of surface water risk. It will additionally need to be shown that safe access/egress routes to the site are achievable
SH0665 – Healey Hall Mills	N/A - This site has been removed from the baseline supply	N/A	N/A
SH0807 - Dyehouse Lane	This site is likely to pass the ET if development avoids areas within FZ3a including accounting for climate change	Unmodelled Ordinary Watercourse (Ash Brook);	This Level 2 SFRA should be revisited following updated modelling on Ash Brook to quantify flood risk, current flood mapping is based off broadscale. A detailed drainage strategy will be required to show that the

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		onsite Main River (River Roch)	significant surface water risk can be managed for the lifetime of the development
SH0893 - Oakenrod School	This site is likely to pass the ET if development avoids land within FZ3a including accounting for climate change	Significant fluvial risk	The overall site capacity may be reduced at a later date by Rochdale to include only developable areas. A drainage strategy may be required to mitigate the surface water risk to the site. An FRA should assess options to include an amenity greenspace alongside the River Roch in development plans. This would have to be designed with design flood levels in-mind
SH1020 - Charles Street	N/A - Site removed from 2020 baseline land supply	Existing fluvial risk and long term risk from climate change	Any future development here would likely need to include significant investigation into mitigation options, i.e. stilted development. Ongoing discussions between Council, site owner and EA regarding the removal of nearby structures across the watercourse and how this will help with mitigating flood risk in this area
SH1759 - Mellor Street	N/A - Site removed from 2020 baseline land supply	Significant existing fluvial risk; long term	Any future development in this site would likely require stilted construction due to high fluvial depths from climate change

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		risk from climate change	
SH1775 - Greenbooth	It is likely this site will pass the ET if the recommendations from this Level 2 SFRA are followed	Uncertainty with Flood Map for Planning; unmodelled Ordinary Watercourse (Woodhouse Lane Brook); onsite Main River (Naden Brook); onsite culverts; residual risk	The Level 2 SFRA should be revisited after the Flood Map for Planning is updated with the latest modelling of Naden Brook, current mapping is based off older broadscale modelled outputs. Modelling of the currently unmodelled Woodhouse Brook should also be undertaken and the results used to update this Level 2. An FRA will also be required to quantify residual risk from culvert blockage of the structures on this watercourse. Options for the removal of these structures and the associated benefits of mitigating flood risk should also be investigated. An FRA may also be required to investigate any residual risk from Doctor Dam, i.e. dam breach or overtopping, emergency drawdown scenarios
SH1778 - Warwick Mill	N/A - ET not required for a change in use	N/A	An FRA will be required due to the change in use, this should also assess the current drainage system in place to ensure it is suitable for any future development. The

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			existing Mill is a listed Grade 2 building which has had planning permission granted previously
SH1962 - Booth Hollings	For any new development at this site, it is unlikely to pass the ET. Conversion or redevelopment of the site would not require the ET to be applied and so may be achievable	Onsite unmodelled ordinary watercourse (Longden End Brook) – 2D model required; significant surface water risk; development would likely be over a culvert	Due to the significant surface water risk and lack of detailed modelling of Longden End Brook, it is unlikely that any new development can take place at this site. Any further modelling of the Brook should be undertaken as part of an update to this Level 2 SFRA. The existing Mill on this site is a Listed building and as this site is also within the Green Belt, any redevelopment or conversion would likely be limited to the existing building footprint. Any FRA should also investigate potential options for the removal of the culvert. Due to the signifiant surface water risk to the site, a full drainage strategy will also be required and an assessment of the existing drainage network
SH2066 - London House	N/A - ET not required for a change in use	N/A	A previous planning proposal was focused on a conversion from an office to residential use, presumed that any future proposal would also be a conversion. An FRA would also be required to ensure the development is

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			safe for its lifetime as well to assess the current drainage network in place is suitable
SH2330 - Hilton Fold Lane	N/A - there is no change in vulnerability for this site	Significant fluvial risk; 2D model of River Irk required; significant onsite culverts; residual risk	An FRA should focus on detailed 2D modelling of the River Irk and its triburary. Options for the removal of culverts on the watercourse should also be investigated in order to reduce flood risk. Rochdale council has significantly reduced the capacity of the site (55 to 20 units) meaning that dveelopment could now occur on the parts of the site that were identified as being at low risk of flooding. This site is linked to a wider proposal around British Vita and a new link road, the information from this Level 2 SFRA will be reviewed in the next update of the baseline land supply
Salford			
GM Allocation 31 – East of Boothstown	Based on a further review of flood risk, this site is likely to pass the ET	Fluvial risk from Shaw Brook; surface water risk in the southern parts of the site	Based on the Level 2 SFRA, a further, more detailed flood risk review has been carried out which illustrates an indicative SuDS plan to mitigate fluvial risk, including zoning of development around several onsite and offsite attenuation basins, linked by a network of open and piped

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			swales. There is also an option to install a further culvert under the Bridgewater Canal to direct floodwater to a purpose-built offsite wetland, if required. The capacities and volumes of these indicative basins and swales are based on the flood extents and depths produced from the JFlow modelling. It is strongly advised that, the site-specific FRA for the site includes detailed 2D hydraulic modelling of Shaw Brook, based on detailed channel survey. • The more detailed flood risk review also indicates that fluvial flows to the RHS site that lies adjacent to the east can be attenuated through the network of swales and attenuation and basins and the opening up the culvert at the southern end of the site. • Shaw Brook currently flows through multiple culverts located onsite. Any development should seek to investigate options looking into culvert removal, where feasible.

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S/BEL/002 - Land adjacent to 1 Chaddock Lane, Worsley	N/A - site has been removed from the existing land supply	Significant surface water risk; 1D model only of Stirrup Brook	As this development is for one dwelling only, the site has been removed from the existing land supply. If this site were to be developed, further surface water modelling would have to be carried out and be able to demonstrate that it can remain safe for the lifetime of the development without increasing risk elsewhere. Further detailed 2D modelling of Stirrup Brook would also be required to fully quantify the fluvial risk to the site. This work, if undertaken, should be part of an update to this Level 2 SFRA
S/BRO/004 - Former Royal Archer Public House, Lower Broughton	N/A - site has been removed from the existing land supply	Significant residual existing risk and long term fluvial risk from River Irwell; EA cannot commit to maintaining defences long term	Site has been removed from existing land supply by Salford Council though this does not mean that development is not permissible in the future. Further review of flood risk may be undertaken for the Salford Local Plan: Core Strategy. If development were to be carried forward here, it is recommended that it not be for residential use given the residual risk and longer term-risk from climate change. An FRA would need to include options modelling to assess the potential for safe

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			development. Additionally, were development to proceed, detailed emergency plans would need to be developed and be in place for all site users and updated when new information is made available. Residual risk breach modelling and overtopping of the Irwell's defences should also be modelled for an FRA, this may require condition inspections of the defences
S/BRO/053 - Cambridge Riverside	N/A - site has been removed from the existing land supply	Significant residual existing risk and long term fluvial risk from River Irwell; EA cannot commit to maintaining defences long term	Site has been removed from existing land supply by Salford Council though this does not mean that development is not permissible in the future. Further review of flood risk may be undertaken for the Salford Local Plan: Core Strategy. An FRA would need to include options modelling to assess the potential for safe development. Additionally, were development to proceed, detailed emergency plans would need to be developed and be in place for all site users and updated when new information is made available. Residual risk breach modelling and overtopping of the Irwell's defences should

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			also be modelled for an FRA, this may require condition inspections of the defences
S/BRO/062 - 238 Lower Broughton Road, Salford	N/A - site has been removed from the existing land supply	Significant residual existing risk and long term fluvial risk from River Irwell; EA cannot commit to maintaining defences long term; surface water risk prevents access routes to site	Site has been removed from existing land supply by Salford Council though this does not mean that development is not permissible in the future. As this site is for one dwelling only, it may be that the cost and scale to mitigate flood risk is unviable. An FRA would need to include options modelling to assess the potential for safe development. Additionally, were development to proceed, detailed emergency plans would need to be developed and be in place for all site users and updated when new information is made available. Residual risk breach modelling and overtopping of the Irwell's defences should also be modelled for an FRA, this may require condition inspections of the defences
S/BRO/067 - Former Harry Hall Gardens,	Based on current information, it is unlikely this site can pass the ET	Significant residual existing risk and long term fluvial risk from	It has been noted that this site may be removed from the land supply following further EA consultation. If this were to occur, this does not mean however that development is not permissible in the future. Further review of flood risk

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land off Heath Avenue		River Irwell; EA cannot commit to maintaining defences long term	may be undertaken for the Salford Local Plan: Core Strategy. Salford Council has noted that as the modelled flood depths on the site are limited, it may be possible to develop this site for a small number of dwellings following careful design. Based on current information, the most likely solution for achieving sustainable development is to place any development on stilts which would require additional detailed options modelling. Were development to proceed, detailed emergency plans would need to be developed and be in place for all site users and updated when new information is made available. Residual risk breach modelling and overtopping of the Irwell's defences should also be modelled for an FRA, this may require condition inspections of the defences
S/CAD/060 - Irlam Locks Tower Site, off Cadishead Way, Irlam	Based on current information it is unlikely this site could pass the ET	Uncertainty on fluvial risk to the site, requires updated MSC model results	This Level 2 SFRA should be revisited when the updated MSC modelling is made available. Salford Council have agreed to leave this site in the land supply but for the longer term (10+ years). An FRA would also need to include emergency planning procedures with a

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			consideration on maintaining safe access and egress to the site in times of flood. Any emergency plan must be consulted on with Peel Ports
S/KER/018 - Land at Kersal Way	Unlikely to pass ET unless developable area reduced and/or comensatory storage can be found	Significant residual existing risk and long term fluvial risk from River Irwell; EA cannot commit to maintaining defences long term	Salford Council have agreed to leave this site in the land supply but for the longer term (10+ years). The anticipated density on this site based on figures in the HELAA is approximately 13 dwellings per hectare – about 50% down on what otherwise might be expected in order to leave space to design compensatory flood storage into the site. Based on existing information this site should not be developed for residential use, however an FRA would need to include options modelling to assess the potential for safe development. Residual risk breach modelling and overtopping of the Irwell's defences should also be modelled for an FRA, this may require condition inspections of the defences
S/ORD/087 - Land bounded by Ordsall	Based on current information it is unlikely this site could pass the ET	Uncertainty on fluvial risk to the site, requires	This Level 2 SFRA should be revisited when the updated MSC modelling is made available but based on current information, if development densities were reduced by

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Lane, Dyer Street and Worrall Street		updated MSC model results	directing development to FZ1 and FZ2 then the site is likely to pass the ET. Salford Council have agreed to leave this site in the land supply but for the longer term (10+ years) pending more detailed modelling. If the existing development on the site is demolished for new development then a drainage strategy will be required to ascertain flow routes on the site and whether these can be attenuated on site
Tameside			
H-DUKSTB-002 - Sandy Lane, Dukinfield	It is likely this site can pass the ET if surface water risk can be shown to be managed	Significant surface water risk; Ensuring safe access/egress routes during surface water flood events; broadscale	This site is currently subject to a pending planning application for residential development. The Flood Map for Planning should be updated with the latest modelling of the River Medlock, this work should be carried out at the FRA stage and should inform an updated planning application. Any residual risk from the culverts, i.e. blockage or failure, should be modelled and quantified with options for culvert removal also to be explored. Due to the significant surface water risk to the site, a full drainage strategy will be required as part of an FRA to

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		mapped fluvial risk	ensure that the risk can be managed for the lifetime of the development and not increase hazards elsewhere
H-HYDGOD-022 - Brook Street, Hyde	A detailed FRA has already been carried out at this site concluding that the flood risk is manageable so it should pass the ET	Onsite ordinary watercourse (Godley Brook); significant surface water risk	A site-specific FRA concludes that development should not be precluded on flood risk grounds as actual flood risk is manageable via mitigation strategies. Tameside Council have recently approved a pending residential application for this site. However, Level 2 recommendation is that all areas within FZ3 would ideally be left free of development and be included as a blue-green corridor. However, the FRA has suggested plans for raised FFLs and use of compensatory storage
H-HYDNEW-003 - Clarendon Road, Hyde, SK14 2LJ	N/A plans for current development to be converted	N/A	Tameside Council notes that the yield listed in the original baseline supply has been reduced to take into account the FZ constraints at the site. Due to the uncertainty with the Flood Mapping, it is recommended that Godley Brook be remodelled and the unmodelled ordinary watercourse be 2D modelled to quantify the flood risk to the site. This work should be undertaken as part of an update to this Level 2 SFRA with the SFRA being revisited when this

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			data is available. Due to the change of use at the site, an FRA will be required to demonstrate that flood risk does not increase elsewhere as a result of the development. Additionally, as there is significant surface water risk to the site a drainage strategy may be required to be submitted with an FRA as well as consideration of further SW modelling. Inclusion of a blue/green corridor to be left free from development should be explored for areas within FZ3, these areas are also at significant risk from surface water
H-MOSSLE-022 - Two Mills Lane, Mossley, Tameside	N/A - site has been removed from the existing land supply	Significant existing and long term fluvial risk from River Tame, based on updated 2018 model	Updated modelled outputs from the Tame show this site to be at fluvial risk of flooding, it is recommended that this site should not be used for residential development and ideally instead, be allowed to flood naturally. The Flood Map for Planning should be updated by the EA with the latest results from the 2018 Tame model to avoid any confusion of discrepancies with future developers

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H-MOSSLE-131- Queen Street, Mossley, Tameside	It is likely this site will pass the ET, based on updated Tame 2018 model	Fluvial risk; long term from climate change	The site has no history of previous planning applications. The Flood Map for Planning should be updated by the EA with the latest results from the 2018 Tame model to avoid any confusion of discrepancies with future developers. Tameside Council has noted that the current FZ3a extent in the site appears to be due to the footprints of former buildings, the yield identified in the baseline supply has been reduced to account for the FZ constraint. This area, including accounting for climate change, is recommended to be left as open greenspace. An FRA should inform the site design including the greenspace as well as investigating opportunities for SuDS. A drainage strategy will also be required to be submitted to ensure that drainage can be managed and the development will be safe for its lifetime
H-MOSSLE-132 - Audley Street, Mossley, OL5 9WH	It is likely this site will pass the ET, based on updated Tame 2018 model	Uncertainty in achieving safe access and egress; fluvial	Any development in this site should avoid areas within FZ3a, including accounting for climate change from the udpated Tame model. Tameside Council notes that the FZ3a extent appears to be dictated to a large extent by

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
		climate change risk	the footprints of former buildings. The Flood Map for Planning should be updated by the EA to include the latest Tame model outputs. An FRA is required due to the change in use at the site and should focus on achieving safe access/egress to the site as the current proposed alternative access is unlikely to be practical or feasible due to third party landownership and presence of the existing Tame Valley Trail. It is recommended that the area at risk of flooding in the south of the site should be converted to open greenspace
H-WATERL-050 - Park Bridge, Ashton-under-Lyne, OL6 8AW	N/A - Site has already had planning permission granted	2D model required for onsite culverted Main River (River Medlock); residual risk; significant surface water risk	This site has outine consent for residential development, approved 4/2/19. This Level 2 SFRA should be revisited and updated with the outcomes of site-specific FRA and drainage strategy used in the planning application. Further detailed 2D modelling of the River Medlock including an assessment of the residual risk should be carried out by an FRA. The Flood Map for Planning would then need to be updated with this Medlock modelling. Where possible, options for culvert removal should also

Proposed site	Level 2 recommendation on passing the Exception Test	Main barriers to passing Test	Recommended next steps
			be explored. Risk from surface water needs to be shown it can be managed safely for the lifetime of a development through the FRA and accompnying drainage strategy
Trafford			
1610- Lock Lane, Trafford	Based on existing information this site should pass the ET	Unclear risk from MSC; awaiting latest model results	This Level 2 SFRA should be revisited once the the latest MSC model is made available (late-2020). Based on the existing information, the site would be likely to pass the ET if development is able to avoid areas within FZ3a. An FRA should include a drainage strategy to incorporate the surface water risk into site design layout. The FRA should also include emergency planning procedures with particular consideration to achieving safe access and egress to the site during times of flooding. A fully detailed emergency plan must be included and consulted on with Peel Ports
Wigan			
SHLAA0023 - Leyland Mill	Unlikely to pass ET unless developable area reduced - direct	Fluvial risk from River Douglas with significant	FRA to examine reduction is developable area and refocusing to eastern area in FZ1

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	development to east of Leyland Mill Lane	depths; residual risk from adjacent culvert	
SHLAA0240 - Barn Lane, Golborne	Likely to pass ET assuming risk area along Millingford Brook can be included in a blue/green corridor	Millingford Brook flows directly through the site	FRA to carry out 2D modelling of Millingford Brook; surface water risk to also be mitigated within blue/green corridor
SHLAA0325 - Former Gas Depot, York Road, Ashton	This site is unlikely to pass the ET	Significant fluvial risk from onsite culverted Main River (Millingford Brook); residual risk; long term risk from climate change	There is currently a pending planning application on this site for residential development, this has been objected to by the EA on issues of flood risk. This Level 2 SFRA should be revisited and updated with the outcomes of the FRA used in the planning application. Based on available information, it is recommended that this site should not be developed and be left as open greenspace with options for culvert removal to be investigated
SHLAA0405 - Land adjacent to Premier Inn,	This site is unlikely to pass the ET unless development can be directed to areas within FZ1, reducing developable area	Significant residual existing risk and long term	It is possible that Wigan Council will amend the site boundary to reflect the developable area that avoids flood risk. The council notes that this area could be left for car parking. An FRA should include a drainage strategy to

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Harrogate Street		fluvial risk from River Douglas	ensure that for any proposed new development, that drainage can successfully be managed for the its lifetime. An FRA should also include a detailed emergency plan detailing safe access/egress routes and evacuation procedures during flood events