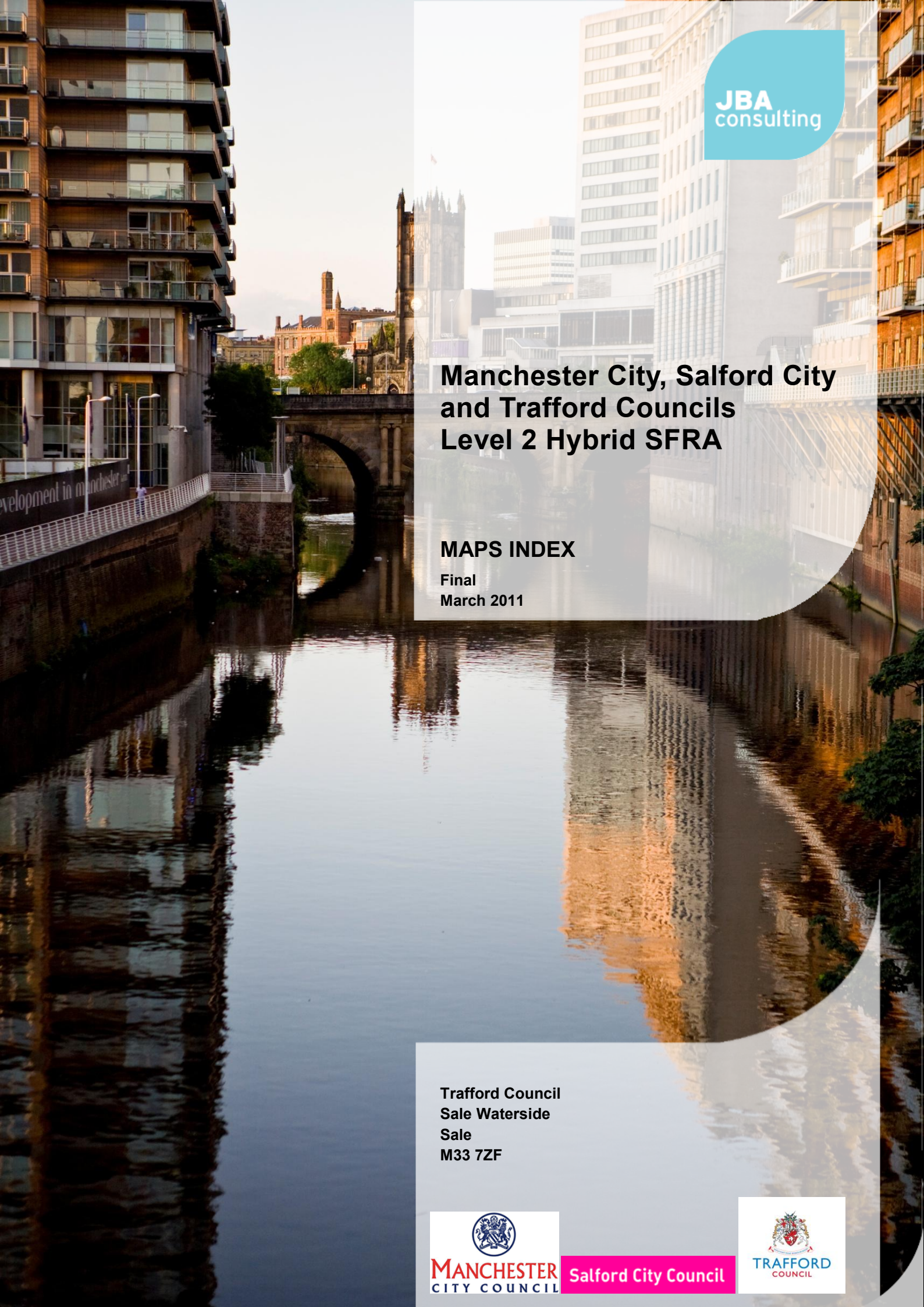

Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA

MAPS INDEX

Final
March 2011

Trafford Council
Sale Waterside
Sale
M33 7ZF

Structure of the Manchester, Salford and Trafford SFRA

The Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA is supplied as four Volumes, described in the table below. Readers should refer to SFRA User Guide that is currently being developed for guidance on how to use the information provided in the SFRA.

SFRA Volume	Contents
User Guide	This is currently being developed and will provide detailed guidance for Spatial Planners, Development Control Officers, developers and Emergency Planners on their responsibilities within regional and local flood risk management as defined within PPS25 and the use of the SFRA as a supporting tool.
Level 1 SFRA	The Level 1 SFRA has used mostly existing data to make an assessment of flood risk from all sources now and in the future and builds on the Association of Greater Manchester Authorities (AGMA) Sub-Regional SFRA. It looks at the risk of flooding from rivers, canals, reservoirs, groundwater and surface water and sewers. It provides evidence for LPA officers to apply the Sequential Test and identify the need to pass the Exception Test where required.
Level 2 SFRA	The Level 2 SFRA provides more detailed information on flood risk from rivers (The Lower Irwell, Grey Irwell, Rivers Irk, Medlock and Mersey and the Corn Brook), canals (Manchester Ship Canal and the Bridgewater, Rochdale and Ashton Canals) and surface water and sewers. It also looks at the impacts of development on flood risk and the interactions between different sources of flooding. The additional detail can also inform a sequential approach to development allocation within flood risk areas, the likelihood of sites passing the Exception Test and mitigation options where appropriate.
Maps	**This volume collates the map outputs for the SFRA and provides a Maps Index.**

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Revision History

Revision Ref / Date Issued	Amendments	Issued to
Draft v1.0 (February 2010)		Colin Moss (TBC), Fiona Fryer (SCC), Helen Best (MCC) and Helen Telfer (EA)
Final (March 2010)	LPA and EA comments	Colin Moss (TBC), Fiona Fryer (SCC), Helen Best (MCC) and Helen Telfer (EA)
Final for review by LPAs (January 2011)	Minor text amendments and addition of Figure 1 showing SFRA modelling extents	Colin Moss (TBC), Fiona Fryer (SCC), Helen Best (MCC) and Helen Telfer (EA)
Final (March 2011)	Minor text amendments	Colin Moss (TBC), Fiona Fryer (SCC), Helen Best (MCC) and Helen Telfer (EA)

Contract

This report describes work commissioned by Trafford Council, on behalf of Manchester City, Salford City and Trafford Councils, by a letter dated 26 May 2009. Trafford's representative for the contract was Colin Moss. Sam Willis of JBA Consulting carried out this work.

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Purpose

This document has been prepared as a Final draft SFRA Maps Index for Manchester City, Salford City and Trafford Councils. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

JBA Consulting has no liability regarding the use of this report except to Manchester City, Salford City and Trafford Council.

Acknowledgments

JBA Consulting would like to acknowledge the support of the SFRA steering group: Colin Moss, Steve Hark (Trafford BC), Fiona Fryer, Nigel Openshaw, Will Horsfall (Salford CC), Helen Best, Andrew Parkin (Manchester CC), Helen Telfer and Chris Waring (Environment Agency).

We would also like to thank Neil D'Arcy at British Waterways for his contribution in understanding the risk of flooding from canals and the Manchester Ship Canal Company.

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JBA is a carbon neutral company and the carbon emissions from our activities are offset.

Contents

List of Figures

List of Tables

List of Maps

The following outputs have been provided as GIS files only:

Fluvial Hazard - 1 in 100 year plus climate change

Fluvial Hazard - 1 in 1000 year

Fluvial Depth - Lower Irwell Breach 1 in 100 year plus climate change

Fluvial Hazard - Lower Irwell Breach 1 in 100 year plus climate change

Fluvial Depth - Mersey Breach 1 in 100 year plus climate change

Fluvial Hazard - Mersey Breach 1 in 100 year plus climate change

Abbreviations

ABD	Areas Benefiting from Defences
AGMA	Association of Greater Manchester Authorities
BGS	British Geological Society
CC	Climate Change
CDA	Critical Drainage Area
EA	Environment Agency
FZ	Flood Zone
LIDAR	Light Detection and Ranging
MSC	Manchester Ship Canal
MST	Manchester Salford Trafford
NFCDD	National Flood and Coastal Defence Database
OS	Ordnance Survey
PPS	Planning Policy Statement
SFRA	Strategic Flood Risk Assessment
SFRM	Strategic Flood Risk Mapping
SUDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan

1 Maps Index

1.1 Background

JBA Consulting was commissioned in May 2009 by Manchester City, Salford City and Trafford Councils to undertake a Level 2 Hybrid Strategic Flood Risk Assessment (SFRA) following on from the Greater Manchester Sub-Regional SFRA completed in August 2008. This is a hybrid SFRA because it fills in the gaps from the Level 1 SFRA and also fulfils the criteria for a Level 2 SFRA.

The Hybrid SFRA has been prepared in accordance with current best practice, including Planning Policy Statement 25 Development and Flood Risk (PPS25)[1] and the PPS25 Practice Guide[2].

The Manchester, Salford and Trafford Level 2 Hybrid SFRA is presented across four separate report volumes:

- User Guide (this is currently being developed)
- Level 1 SFRA
- Level 2 SFRA
- Maps

This document serves as a Map Index that is part of the Maps Volume to provide a summary of the data sources and purpose of each map that has been produced for the SFRA. Links are drawn to the Level 1 and Level 2 SFRA where appropriate.

1.2 Fluvial

See the Level 1 SFRA and Chapters 2 and 3 of the Level 2 SFRA. Please note the SFRA presents the results for the Manchester Ship Canal for the adopted residual risk scenario, unless stated otherwise.

1.2.1 Flood Risk Management - Map FL_1.1

The Flood Risk Management maps are a requirement of Level 1 SFRAs and pull together existing information available from the Environment Agency (EA) to provide a preliminary understanding of flood risk management measures within the catchment and the extent to which these mitigate the risk.

This map identifies flood risk management measures, including the location of Environment Agency, Local Authority and privately owned defence assets and Areas Benefiting from Defences (ABDs).

The map shows the outputs from the Environment Agency's National Flood and Coastal Defence Database (NFCDD) directly; this data has not been reviewed or amended and the data should be used to lead discussions with the EA. Environment Agency Flood Warning Areas are also shown.

This map also shows the location of water control structures on the Manchester Ship Canal. These are operated as a flood defence and the Areas Benefitting from Defences for the Manchester Ship Canal is shown on this map.

The Areas Benefitting from Defences outlines show the extent to which existing fully operational flood defences, i.e. no allowance for structural failure or reduced capacity in the model, can reduce the areas at risk to flooding in the 1 in 100 year flood event when compared to Flood Zone 3.

[1] Communities and Local Government (2010) Planning Policy Statement 25: Development and Flood Risk
[2] Communities and Local Government (2009) Planning Policy Statement 25: Development and Flood Risk – Practice Guide

These maps should be used to identify communities where flood risk management measures are currently reducing the level of food risk. It should be noted that proposed development in Areas Benefitting from Defences will still be subject to residual risk in flood events greater than the 1 in 100 year event or in the event of asset breach or failure.

1.2.2 Flood Zones - Map FL_1.2

PPS25 divides the country into three Flood Zones; Flood Zones 1, 2 and 3, corresponding to areas of low, medium and high flood risk, respectively. The Flood Zones provided in the SFRA are based upon the Environment Agency's Flood Map (version 3.15 issued in September 2009). They refer to the probability of flooding from rivers and ignore the presence of defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. They do not consider other forms of flooding and do not take account of climate change.

The Flood Zone outlines are published by the EA. Nationwide broadscale modelling was used to derive the original Flood Zone outlines and this has been updated with more detailed information as and when it has become available. The Flood Zone maps in the SFRA also contain the undefended modelled outlines for the Manchester Ship Canal and outlines for the Grey Irwell provided to the councils for use in the SFRA and the undefended model outlines for parts of the Sinderland and Timperley Brooks that will become integrated into the national Flood Map in June 2010.

In addition the map shows the Functional Floodplain, which is Flood Zone 3b. The Functional Floodplain was determined as part of the Greater Manchester Sub-Regional SFRA[3] and has been reviewed as part of this study. PPS25 defines Functional Floodplain as '*land where water has to flow or be stored in times of flood*'. Developed areas are not normally included, although it should be recognised that some parts of the urban area may provide important storage or conveyance, such as car parks that are allowed to flood or key flow routes along roads. The area defined as Functional Floodplain takes into account the effects of defences. In the case of Manchester, Salford and Trafford, this includes areas defended on the Lower Irwell and the Manchester Ship Canal. The Functional Floodplain includes the flood storage areas at Lower Kersal (Lower Irwell), Didsbury and Sale (Mersey) and Timperley (Timperley Brook).

Where hydraulic models were available, the outputs from these models have been used to produce the Functional Floodplain, based on a 1 in 25 year flood event extent where available. Where these were not available the Flood Zone 3 outline has been used. Where Flood Zone 3 has been used there is less confidence in the extent of the Functional Floodplain.

These outlines have then been modified to exclude the following:

- developed (brownfield) land
- major transport infrastructure (e.g. motorways and railways)

This map should be used to facilitate the undertaking of the Sequential Test by planners and developers according to PPS25.

The data sources for each watercourse and the associated confidence in their accuracy for the Functional Floodplain are shown in Table 1-1.

[3] AGMA (2008) Greater Manchester Sub-Regional SFRA

Table 1-1: Functional Floodplain Data Sources and Confidence Levels

Watercourse	Data Source	Confidence
River Irwell	1D-2D linked SFRA model	High
Grey Irwell	1D-2D linked SFRA model	High
River Irk & Moston Brook	1D-2D linked SFRA model and Irk flood mapping (EA, 2004)	High
River Medlock	1D-2D linked SFRA model	High
Corn Brook	2D Infoworks CS River Model (SFRA)	High
Worsley Brook & tributaries	Worsley Brook flood mapping study (EA, 2008)	High
River Mersey	Flood Zone 3	Low
Chorlton Platt Gore and Cringle Black Brook	Chorlton Platt Gore and Chorlton Brook flood mapping study (EA, 2007)	High
Sinderland Brook and Tributaries	Timperley and Sinderland ISIS-TUFLOW Study - 1 in 100 year defended outline (EA, 2010)	Medium
Glaze Brook	AGMA SFRA Functional Floodplain (AGMA, 2008)	High
All other watercourses, and beyond modelled reaches on watercourses listed above	Flood Zone 3	Low

1.2.3 Fluvial Flood Extents - Maps FL_1.3 and FL_1.4

The Fluvial Flood Extent maps detail the flood extents associated with the 1 in 100 year and 1 in 1000 year events, and the 1 in 100 year and 1 in 1000 year events plus climate change assuming existing defences are operational. Where there is limited data an indicative outline has been derived based on the Flood Zone maps.

The maps are constructed from the data sources detailed below in descending order of preference:

1. Level 2 SFRA outputs.
2. The EA have provided extents for the 1 in 100 year plus climate change event from a number of recently completed studies. In these locations there is no data to map the 1 in 1000 year plus climate change outline.
3. The 1 in 1000 year Flood Zone 2 has been used as an approximation to the 1 in 100 year plus climate change extent where no model results were available. These outlines were originally produced assuming an undefended scenario and hence are indicative only. In these locations there is no data to map the 1 in 1000 year plus climate change outline.

The modelled climate change outlines are a deliverable for the Level 1 SFRA and have been incorporated into the Flood Extent maps. These outlines show the potential increase in flood extents associated with an increase in flows of 20% attributable to climate change to 2115 (based on climate change guidelines in PPS25).

The maps are useful when carrying out a sweep of sites that may require the Exception Test by Spatial Planners, Development Management and developers in assessing

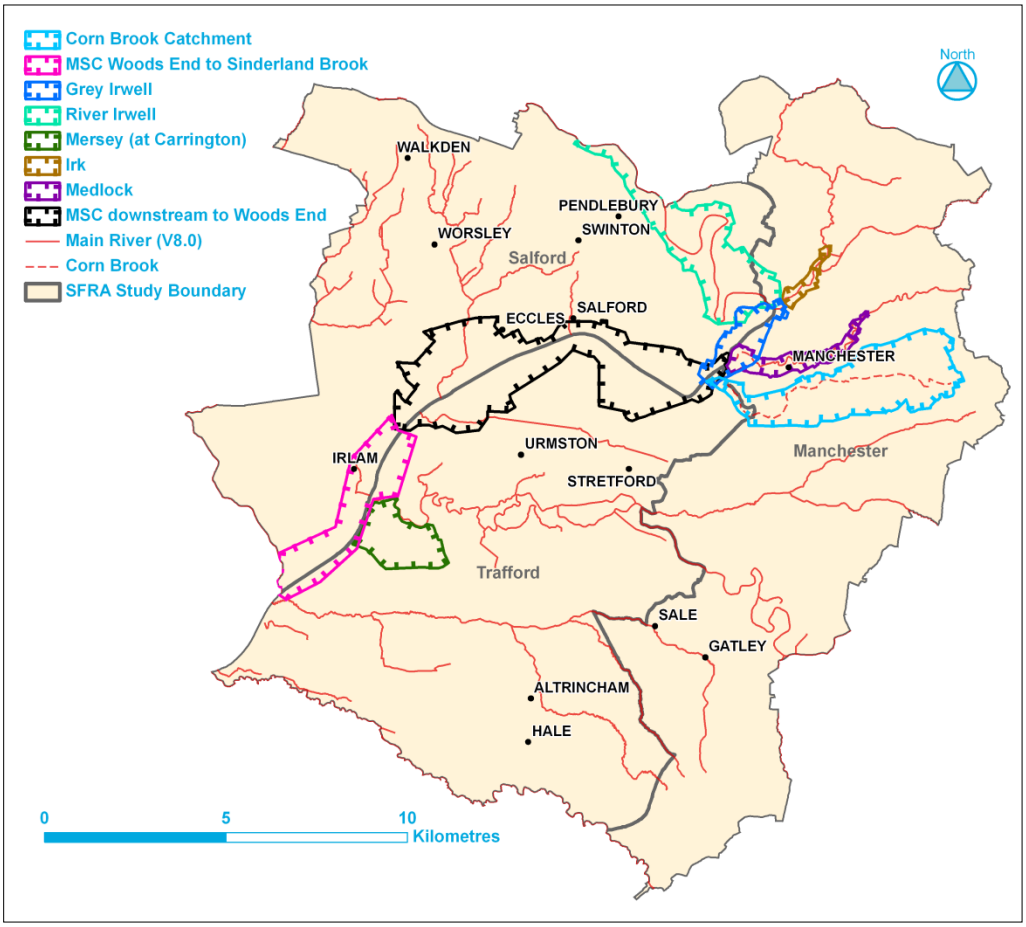
possible future fluvial risks. Emergency planners may also find them useful while designating access and egress routes.

Table 1-2 provides details of which models were used to produce the outlines for each reach. Figure 1-1 shows the SFRA model extents.

Table 1-2: Fluvial Flood Extent Maps Data Sources

Watercourse	Data Source	Flood Extent Outline
River Irwell	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Grey Irwell	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Irk	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Medlock	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Corn Brook	2D Infoworks CS River Model (SFRA)	100yr, 1000yr, 100yr CC, 1000yr CC
MSC downstream to Woods End	MSC ISIS-TUFLOW SFRA Model	100yr, 1000yr, 100yr CC, 1000yr CC
MSC between Woods End and Sinderland Brook	MSC Flood Mapping Study (ISIS) model (EA, 2009)	100yr, 1000yr, 100yr CC, 1000yr CC
MSC downstream of Sinderland Brook	Flood Zones	100yr, 100yr CC (100 yr proxy), 1000yr
Mersey (at Carrington)	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Chorlton Platt Gore and Cringle Black Brook	Chorlton Platt Gore and Chorlton Brook flood mapping study (EA, 2007)	1000yr, 100yr CC (100yr and 1000yr same as Flood Zones)
Worsley Brook	Worsley Brook flood mapping study (EA, 2008)	1000yr, 100yr CC (100yr and 1000yr same as Flood Zones)
Sinderland Brook and Tributaries	Flood Zones	100yr, 100yr CC (1000yr proxy), 1000 yr
All other watercourses, and beyond modelled reaches on watercourses listed above	Flood Zones	100yr, 100yr CC (1000 yr proxy), 1000yr

Figure 1-1: SFRA Modelled Extents



1.2.4 Fluvial Flood Depths - Maps FL_1.5, FL_1.7, FL_1.8 and FL_1.9

The Fluvial Flood Depth maps show the flood risk depths associated with the 1 in 100 year and 1 in 1000 year events, and the 1 in 100 year and 1 in 1000 year events plus climate change assuming existing defences are operational.

The maps have been constructed from the data sources detailed below in descending order of preference:

1. Level 2 SFRA depth grids
2. A strategic depth grid has been derived from Flood Zone 3 using available LiDAR data. The outlines were originally produced assuming an undefended scenario and hence the depth grids are indicative only.

These maps should be used to inform the Sequential and Exception Tests. Sites susceptible to high depths of flooding will be inappropriate for certain types of development. This information should also be used to determine appropriate access routes for developments that pass the Exception Test.

Table 1-3 provides details of which models were used to produce the depth grids for each reach.

Table 1-3: Fluvial Flood Depth Maps Data Sources

Watercourse	Data Source	Depth grids
River Irwell	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Grey Irwell	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Irk	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Medlock	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Corn Brook	2D Infoworks CS River Model (SFRA)	100yr, 1000yr, 100yr CC, 1000yr CC
MSC downstream to Woods End	MSC ISIS-TUFLOW SFRA Model	100yr, 1000yr, 100yr CC, 1000yr CC
MSC between Woods End and Sinderland Brook	MSC Flood Mapping Study (ISIS) model (EA, 2009)	100yr, 1000yr, 100yr CC, 1000yr CC
MSC downstream of Sinderland Brook	Flood Zone 3	100yr
Mersey (at Carrington)	1D-2D linked SFRA model	100yr, 1000yr, 100yr CC, 1000yr CC
Chorlton Platt Gore and Cringle Black Brook	Flood Zone 3	100yr
Worsley Brook	Flood Zone 3	100yr
Sinderland Brook and Tributaries	Flood Zone 3	100yr
All other watercourses, and beyond modelled reaches on watercourses listed above	Flood Zone 3	100yr

1.2.5 Fluvial Flood Hazards - Maps FL_1.6 and FL_1.10

These maps identify flooding hazard associated with the 1 in 100 year event and the 1 in 1000 year plus climate change event. The maps have been produced as part of the Level 2 SFRA using detailed 1D-2D hydraulic river models assuming existing defences are operational. Modelling was undertaken for the Lower Irwell, Irk, Medlock, Grey Irwell, MSC, Corn Brook and on the River Mersey at Carrington.

The hazards maps have been produced as a function of flood depth, flood velocity and a debris factor. Flood hazards are categorised as Very Low Hazard, Dangerous For Some, Dangerous For Most and Dangerous For All.

These maps should be used during the Sequential Test and to provide the evidence to inform the likelihood of sites passing the Exception Test. Emergency planners may also find this useful in designating access and egress routes. The 1 in 1000 year plus climate

change is an indicative scenario that can be used to present a worst case scenario of flood hazard on the floodplain.

1.2.6 Lower Irwell Breach Depth and Hazard - Maps FL_1.11 and FL_1.12

These maps identify the flood risk associated with a defence breach scenario on the Lower Irwell at Lower Kersal and Lower Broughton.

Flooding depths and hazards were derived for the 1 in 100 year event from the SFRA hydraulic model of the Lower Irwell.

This information should be used, in concert with site specific FRAs where necessary, to understand the residual risk associated with sites in this area for the Sequential and Exception Tests.

1.2.7 Manchester Ship Canal Defended and Undefended Depth - Maps FL_1.13 and FL_1.14

These maps identify the estimated flood depths for the defended 1 in 100 year flood event on the MSC (from the Areas Benefitting from Defences ISIS model) and the estimated flood depths for the undefended 1 in 100 year flood event on the MSC (from the Flood Zones ISIS model).

These maps should be used alongside the SFRA model outputs (that show the adopted residual risk scenario) for the MSC to provide an understanding of the variations in water levels and should be considered when development is planned adjacent to the MSC.

1.2.8 Urban Design Zoning for Manchester Ship Canal and Grey Irwell - Map FL_1.15

This map shows typical urban design approaches that would be applicable to areas of residual flood risk. The design thresholds used to identify where resistance and resilience are potentially applicable are based on flood depths expected in a 1 in 100yr event with an allowance for climate change and the adopted flood risk scenario for operation of the Manchester Ship Canal. This map should be used in conjunction with the advice given in Chapter 9 of the Level 2 SFRA.

This map shows the depths expected in a 1 in 100 year event, considering climate change for the adopted residual risk scenario for the Manchester Ship Canal and Grey Irwell.

Note that this map is based on the strategic modelling undertaken for the SFRA and the recommendations should always be supported by more detailed investigations in a site specific Flood Risk Assessment.

1.2.9 Animations

Animations have also been produced for the 1 in 100 year plus climate change and the 1 in 1000 year flood events for the Lower Irwell, Grey Irwell, Irk, Medlock, Corn Brook and MSC. These animations show the changing depths and flow paths during an event. Animations have been provided digitally.

These can be used to identify rapid inundation zones, the development of flow paths and indicative inundation timing. Critical flood paths along roads and around buildings within urban centres are apparent in these results.

1.3 Groundwater

See the Level 1 SFRA.

1.3.1 Groundwater Flooding - Map GW_2.1

These maps show the potential areas where groundwater flooding may be possible and include the following:

1. Areas at risk of groundwater rebound - identified by the Environment Agency[4]
2. Areas at risk of groundwater flooding - based on the BGS 1:625,000 drift geology mapping across Flood Zone 2
3. Areas of shallow groundwater - based on a Groundwater Emergence Map[5] and permeable drift. Note - this appears to cover extensive areas but the likelihood is low

These zones should not influence the spatial placement of development during the Sequential Test but should highlight the need to investigate the risk further during a site-specific FRA. It is recommended that detailed investigations should be carried out and results should be used to help assess suitable mitigation measures and sustainable drainage techniques.

1.4 Manmade sources

See the Level 1 SFRA and Chapters 3 and 4 of the Level 2 SFRA.

1.4.1 Reservoir Screening - Map MM_3.1

The reservoirs within and near to the MST districts have been identified using data from the councils and OS Mastermap and Flood Storage Areas from the EA.

Inundation mapping for reservoirs under the 1975 Reservoirs Act is covered by the Civil Contingencies Act, the information has a national security status and would not be available for public release. For this reason the SFRA has not taken the analysis of reservoir flood risk forward and the maps show the locations of reservoirs only.

This map should not influence the spatial placement of development during the Sequential Test; however, it should inform the need for emergency planning to take account of the risk within community plans.

1.4.2 Canal Hazard Zones - Map MM_3.2

Two indicative "Canal Hazard Zones" have been created for the Bridgewater, Ashton and Rochdale Canals. These have been generated using broadscale 2D mapping to show areas that could potentially be affected by flooding in the event of:

- overtopping of canal embankments
- breach of raised canal embankments (this zone is further sub-divided as set out below)

The potential breach locations / areas were sub-divided into two Canal Breach Zones:

> Canal Breach Zone A. A walkover survey of the canal was undertaken to identify the embankments more likely to breach, based on their height and width. This zone shows those areas that would be affected by a breach of one of these embankments. In this zone a detailed examination of canal breach flood risks is required in a site specific FRA.
>
> Canal Breach Zone B. Less likely breach locations, such as at wide, low or very low embankments, were identified by a walkover survey of the canal. At such locations it is more likely that this source of risk could be scoped out within any site specific FRA.

It should be noted that these outlines are based on broadscale modelling techniques and should only be taken as an indication of areas that might be at risk. There are a number of uncertainties associated with the simulation of flooding from canals in either overtopping or breach conditions. Because of a number of complex factors during extreme flood events it is difficult to predict exact inflows and outflows into the canal system. The assumptions behind the modelling should be considered when using and

[4] Environment Agency, 2007. Groundwater Flood Risk and Management in the North West Region.
[5] Jacobs, 2004. Strategy for Flood and Coastal Erosion Risk Management: Groundwater Flooding Scoping Study (LDS 23). Final Report produced for Defra, 2 Volumes, May 2004.

reviewing the hazard zones that have been produced. Full details of the methodology used to derive Canal Hazard Zones is provided in Chapter 3 of the Level 2 SFRA.

The Canal Hazard Zone resulting in a breach from the Rochdale Canal in Oldham has also been included on the map[6]. This was based a similar broadscale methodology.

The map should be considered when applying the Sequential Test and used to scope the inclusion of canal flood risk within a site specific FRA.

1.5 Surface Water

See Chapter 5 of the Level 2 SFRA.

1.5.1 Surface Water Flooding - Maps SS_4.1 and SS_4.2

These maps highlight areas susceptible to surface water flooding. The maps are generated using a similar methodology to the existing Areas Susceptible to Surface Water Flooding maps produced by the EA, but have been revised for Manchester, Salford and Trafford.

Outputs were generating by modelling a 1 in 200 year rainfall event across a digital elevation model modified to reflect the effects of buildings and hard surfaces on flow paths for a current and future scenario. The effect of the sewer network in this magnitude of event is assumed to be negligible and hence no allowance has been made for the capacity of the storm water network.

These maps show an extreme scenario but are useful in a strategic context to identify those locations and flow routes where surface water flooding could be an issue.

1.5.2 Surface Water Flooding Risk Assessment- Maps SS_4.3 and SS_4.4

These maps combine the outputs from the Surface Water Flooding Maps with OS AddressPoint data to highlight properties which could be at risk from surface water flooding. These are not the number of properties that have historically been affected by surface water flooding but the number of properties that could be affected by such flooding if a 1 in 200 year rainfall event were to occur.

The maps provide useful context on the scale of flood risk associated with surface water flooding shown on the Surface Water Flooding maps.

1.5.3 Critical Drainage Areas- Maps SS_4.5

Certain locations are particularly sensitive to an increase in the rate of surface water runoff and/or volume from new development. There are generally known local flooding problems associated with these areas. These areas have been defined as Critical Drainage Areas in the SFRA. Specific drainage requirements are required in these areas to help reduce local flood risk. These maps show the boundary of 'Critical Drainage Areas' (CDAs).

Natural catchments where there is a high risk of surface water flooding were combined with United Utilities Drainage Areas (showing where sewer systems are interconnected across the boundaries of natural catchments) to define CDA boundaries. It should be noted that only Drainage Areas that intersect the boundaries of Manchester City, Salford City and Trafford Council areas were made available for this study. The sewered catchments of the CDAs may therefore be larger than those produced for this SFRA.

These maps should be used to scope site-specific FRAs to promote a more holistic approach to development within each CDA and as a starting point in the identification of areas for SWMPs. It is noted that the AGMA SWMP has received funding and is currently being undertaken.

[6] Oldham Council (2010) Oldham SFRA

1.6 Hydraulic Interactions

See Chapter 7 of the Level 2 SFRA.

1.6.1 Hydraulic Interactions- Map HI_5.1

This map shows the links between different sources of flooding (rivers and canals) and hence highlights areas where flooding could be exacerbated by overspill from other sources. This map should be used when applying the Sequential and Exception Tests and should lead to further consideration of hydraulic interactions in site specific FRAs, in conjunction with the tables in Chapter 7 of the Level 2 SFRA.

Appendices

A . Maps

B . Animations

Offices at

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