

# Appendix D - Opportunity Areas for Flood Management



**NOTE TO FILE**

JBA Code 2019s0820  
Project GMCA Level 2 SFRA  
Client Greater Manchester Combined Authority  
Date 23 March 2020  
Author Mike Williamson  
Subject Opportunity areas for flood storage

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## 1 Introduction

The NPPF states that local plans should identify land that should be safeguarded from development for current and future flood management. The GMCA's Brief document for this Level 2 SFRA included a request to identify broad opportunity areas for additional flood storage, including natural flood management techniques in Greater Manchester.

The GMCA Level 1 SFRA (2019) included a high-level screening assessment of the EA's Working with Natural Processes (WwNP) dataset against thousands of potential development sites provided by the GM district councils, in an attempt to flag up any areas where further investigation should be carried out to assess whether there may be benefits to identifying such sites as opportunity areas for flood management. As part of the Level 1 sequential testing, all sites were also screened against fluvial and surface water flood risk extents.

## 2 Methodology

Identifying opportunity areas for flood storage is not straightforward and the broad-brush approach applied in this Level 2 SFRA will require further work to understand the potential volume of storage available and the costs before any opportunity area could be considered viable. Subsequently, were any viable scheme to come forward on these sites, it would be in the longer term.

**It must be noted that these areas are not, at this stage, recommended for formal safeguarding, rather, opportunity areas for the local authorities to assess in further detail as part of their local plans.**

The Environment Agency states that the best sites for flood storage are close to watercourses but not currently floodplain. It is difficult however to identify these sites as there is a requirement to understand the difference in ground levels between the site and the watercourse and hence the volume of excavation required to generate storage. It was not possible to do this at the GM-wide scale for this Level 2 SFRA. It is therefore the case that there may be a number of other areas suitable for flood storage that have not been identified in this Level 2 SFRA.

Flood Zone 2 has been assessed against non-urban areas of GM, upstream of existing settlements and communities, where areas of floodplain are considered significant enough in size to provide meaningful flood risk benefit to downstream communities. The areas have to be considered large enough to provide effective attenuation solutions.

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**2.1 Criteria and GIS datasets**

The following criteria were used to gauge whether any areas of Flood Zone 2 could provide opportunities for flood storage in the future:

- WwNP measures (RAF, floodplain reconnection, riparian planting and tree planting) – to check whether any areas coincide with the WwNP datasets,
- Undeveloped Greenspace (identified using Google aerial imagery) – to ensure opportunity areas are undeveloped and open greenspace,
- Proximity to settlements (identified using OS OpenData mapping) – to ensure opportunity areas are upstream of urban areas in order to maximise benefits to downstream communities,
- The Corine Land Cover (CLC) 2018 dataset was used to broadly identify non-urban areas. The CLC is a European programme, coordinated by the European Environment Agency (EEA), providing consistent information on land cover and land cover changes across Europe. CLC products are based on the photointerpretation of satellite images by the national teams of the participating countries - the EEA member or cooperating countries. The resulting national land cover inventories are further integrated into a seamless land cover map of Europe.
- EA Historic Flood Map – to ascertain whether an area may have flooded in the past and is therefore prone to flooding.

**2.2 GIS processing steps**

- Flood Zone 2 was selected where it coincided with all non-urban areas of the CLC 2018 map.
- A manual process was then carried out to select only those areas of floodplain upstream of settlements that it was judged could provide flood mitigation for the downstream settlement.
- These Flood Zone 2 areas were then manually edited to remove any current waterbodies or river channels from them.
- 42 areas have been identified as possible opportunity areas for flood management. The enclosed GeoPDF map shows these opportunity areas. The table below lists the areas by name, which can be cross referenced to the map.

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Name	Area (ha)	Potential communities benefitting
<b>Opportunity Area FRM 1</b>	2	Hazel Grove
<b>Opportunity Area FRM 2</b>	46	Stockport
<b>Opportunity Area FRM 3</b>	38	Stockport
<b>Opportunity Area FRM 4</b>	71	Irlam
<b>Opportunity Area FRM 5</b>	20	Leigh
<b>Opportunity Area FRM 6</b>	12	Leigh
<b>Opportunity Area FRM 7</b>	48	Pennington
<b>Opportunity Area FRM 8</b>	38	Leigh
<b>Opportunity Area FRM 9</b>	8	Platt Bridge
<b>Opportunity Area FRM 10</b>	25	Platt Bridge
<b>Opportunity Area FRM 11</b>	10	Platt Bridge
<b>Opportunity Area FRM 12</b>	7	West Leigh
<b>Opportunity Area FRM 13</b>	9	Wigan Central
<b>Opportunity Area FRM 14</b>	24	Shaw
<b>Opportunity Area FRM 15</b>	39	Lostock
<b>Opportunity Area FRM 16</b>	7	Heap Bridge, Bury East
<b>Opportunity Area FRM 17</b>	10	Bury North
<b>Opportunity Area FRM 18</b>	18	Summerseat, Bury North
<b>Opportunity Area FRM 19</b>	2	Bosden Farm, Stockport
<b>Opportunity Area FRM 20</b>	503	Warrington; Lymm, Oughtrington; Heatley; Martinscroft
<b>Opportunity Area FRM 21</b>	171	West Didsbury; Sale; Stretford
<b>Opportunity Area FRM 22</b>	290	Sale; Stretford
<b>Opportunity Area FRM 23</b>	12	Heywood North
<b>Opportunity Area FRM 24</b>	15	Redvales
<b>Opportunity Area FRM 25</b>	41	Radcliffe
<b>Opportunity Area FRM 26</b>	3	Ellenbrook
<b>Opportunity Area FRM 27</b>	5	Lower Arthurs
<b>Opportunity Area FRM 28</b>	14	Mossley
<b>Opportunity Area FRM 29</b>	106	Stockport

## NOTE TO FILE

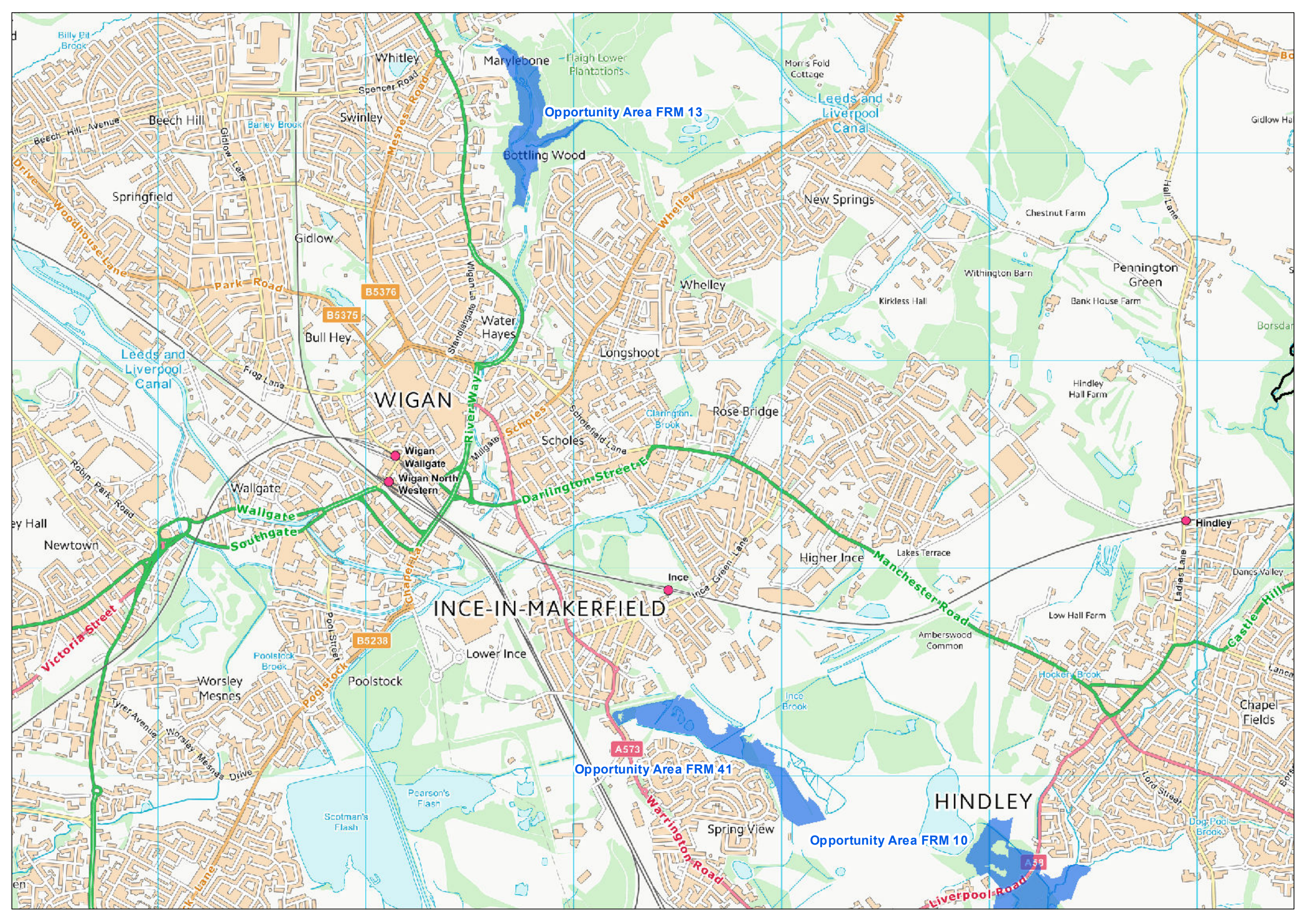
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Name	Area (ha)	Potential communities benefitting
<b>Opportunity Area FRM 30</b>	40	Stockport
<b>Opportunity Area FRM 31</b>	39	Stockport
<b>Opportunity Area FRM 32</b>	9	Plank Lane
<b>Opportunity Area FRM 33</b>	113	Sale; Irlam
<b>Opportunity Area FRM 34</b>	3	Tyldesley
<b>Opportunity Area FRM 35</b>	56	East Didsbury
<b>Opportunity Area FRM 36</b>	292	Irlam
<b>Opportunity Area FRM 37</b>	6	Kingston, Hyde
<b>Opportunity Area FRM 38</b>	4	Kingston, Hyde
<b>Opportunity Area FRM 39</b>	4	Bury North
<b>Opportunity Area FRM 40</b>	21	Ramsbottom
<b>Opportunity Area FRM 41</b>	12	Spring View, Wigan
<b>Opportunity Area FRM 42</b>	10	Heywood North

### 3 Further work requirements

As stated above, further work to understand the potential volume of storage available and the costs involved would be required before any opportunity area could be considered viable. Subsequently, it could be a long time before any viable scheme came forward on these sites.

Information on potential number of properties protected, storage volumes required, excavation requirements, will be required to ascertain benefit-cost ratios to inform on whether a scheme may be viable. All future investigation should be carried out in consultation with the EA.



Opportunity Area FRM 13

Opportunity Area FRM 41

Opportunity Area FRM 10

WIGAN

INCE-IN-MAKERFIELD

HINDLEY

Whitley

Marylebone

Bottling Wood

New Springs

Whelley

Water Hayes

Longshoot

Scholes

Rose Bridge

Wallgate

Wigan Wallgate

Wigan North Western

Scholes

Ince

Higher Ince

Hindley

Lower Ince

Worsley Mesnes

Poolstock

Low Hall Farm

Chapel Fields

Spring View

Dog Pool Brook

Leeds and Liverpool Canal

Leeds and Liverpool Canal

Castle Hill

Warrington Road

Liverpool Road

Whitley

Marylebone

Bottling Wood

New Springs

Whelley

Water Hayes

Longshoot

Scholes

Rose Bridge

Wallgate

Wigan Wallgate

Wigan North Western

Scholes

Ince

Higher Ince

Hindley

Lower Ince

Worsley Mesnes

Poolstock

Low Hall Farm

Chapel Fields

Spring View

Dog Pool Brook

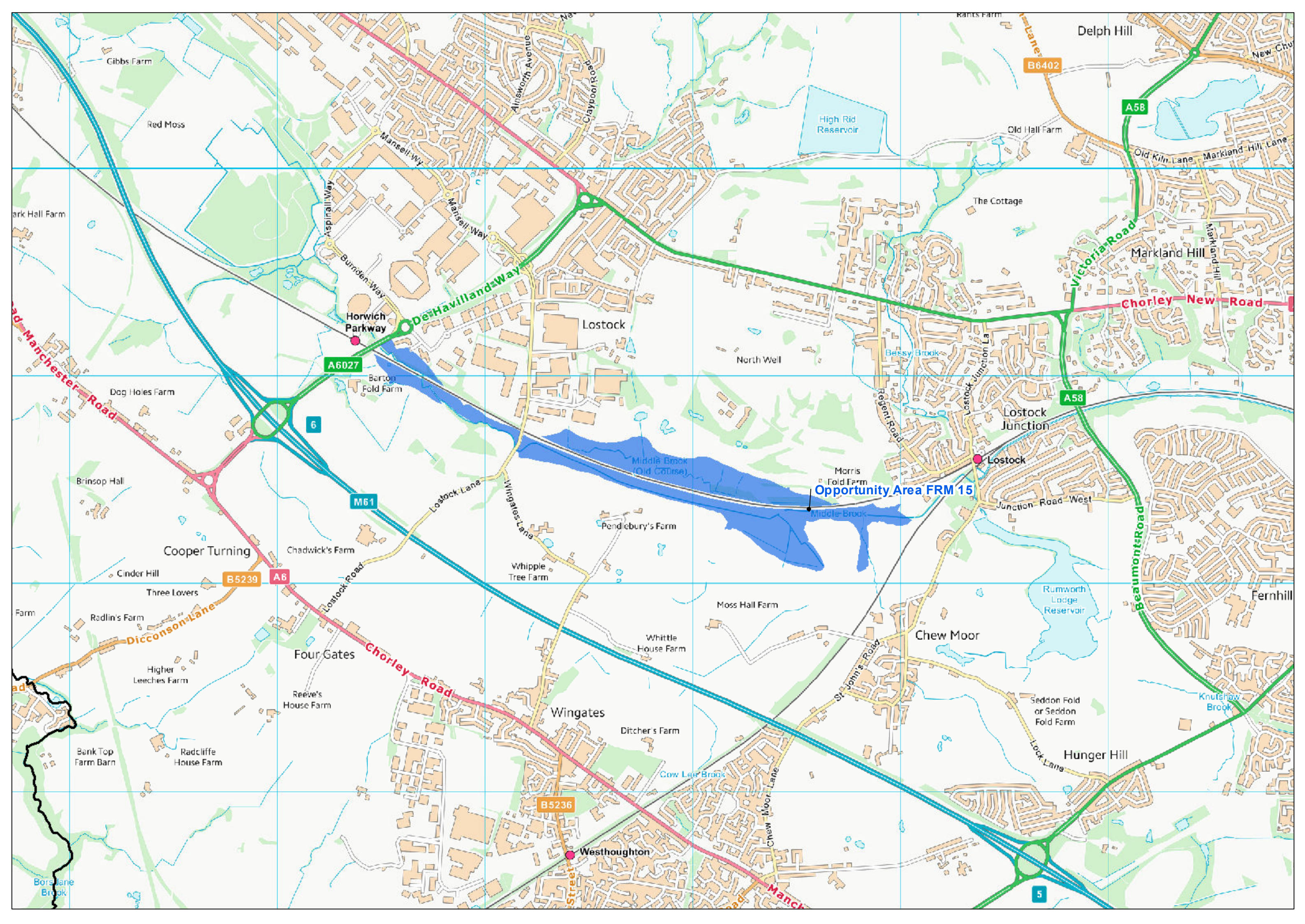
Leeds and Liverpool Canal

Leeds and Liverpool Canal

Castle Hill

Warrington Road

Liverpool Road

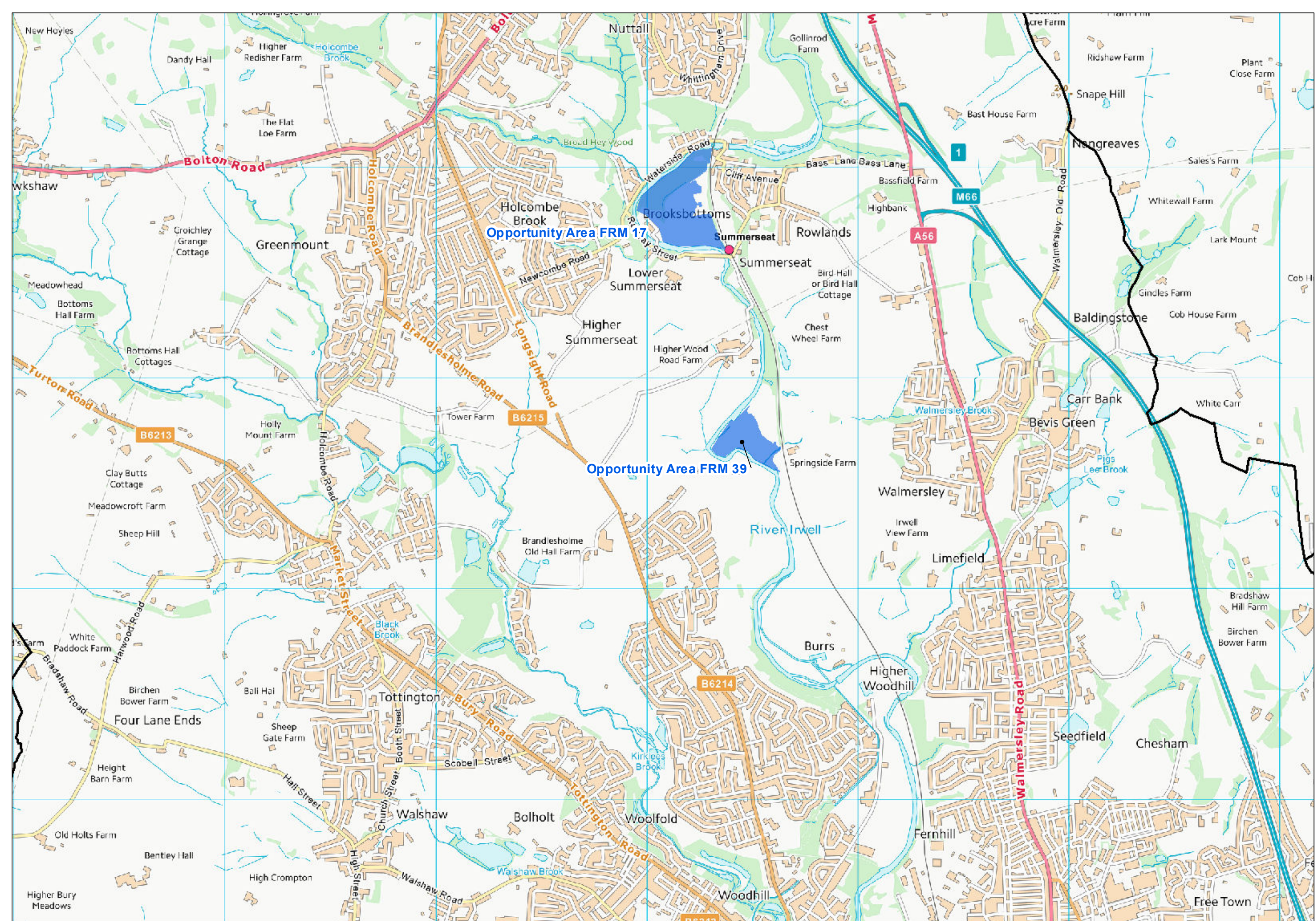


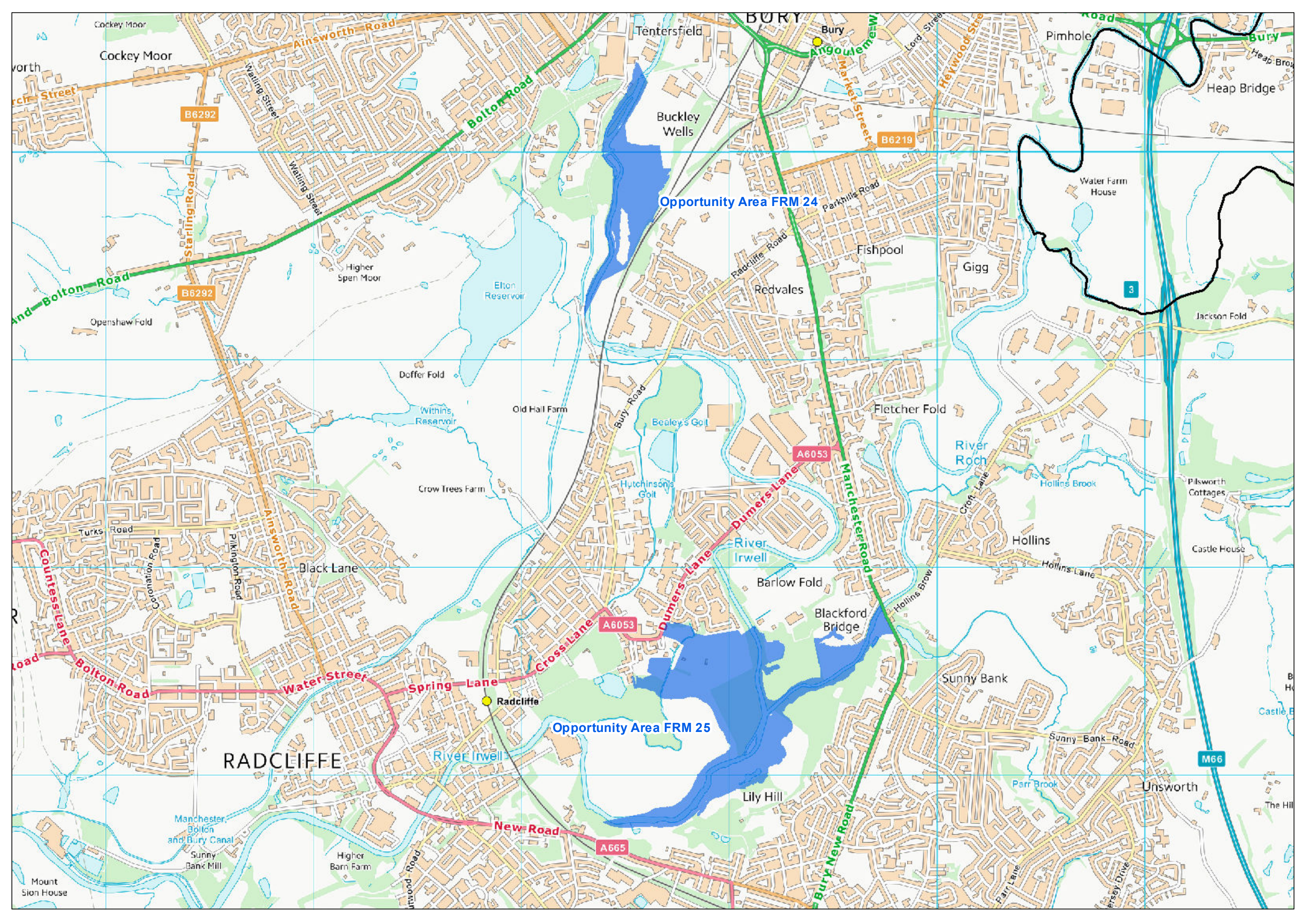
Opportunity Area FRM 15

6

5







Opportunity Area FRM 24

Opportunity Area FRM 25

RADCLIFFE

BURY

Cockey Moor

Pimhole

Heap Bridge

Buckle Wells

Bury

B6292

B6219

3

Elton Reservoir

Fishpool

Gigg

Doffer Fold

Withins Reservoir

Old Hall Farm

Bury Road

Bealey's Golt

Hutchinson's Golt

Fletcher Fold

River Roch

Hollins Brook

Pilsworth Cottages

Castle House

Crow Trees Farm

River Irwell

Hollins

Hollins Lane

Black Lane

Barlow Fold

Blackford Bridge

Hollins Brow

Sunny Bank

Sunny Bank Road

Unsworth

Manchester Bolton and Bury Canal

Sunny Bank Mill

Higher Barn Farm

New Road

A665

Lily Hill

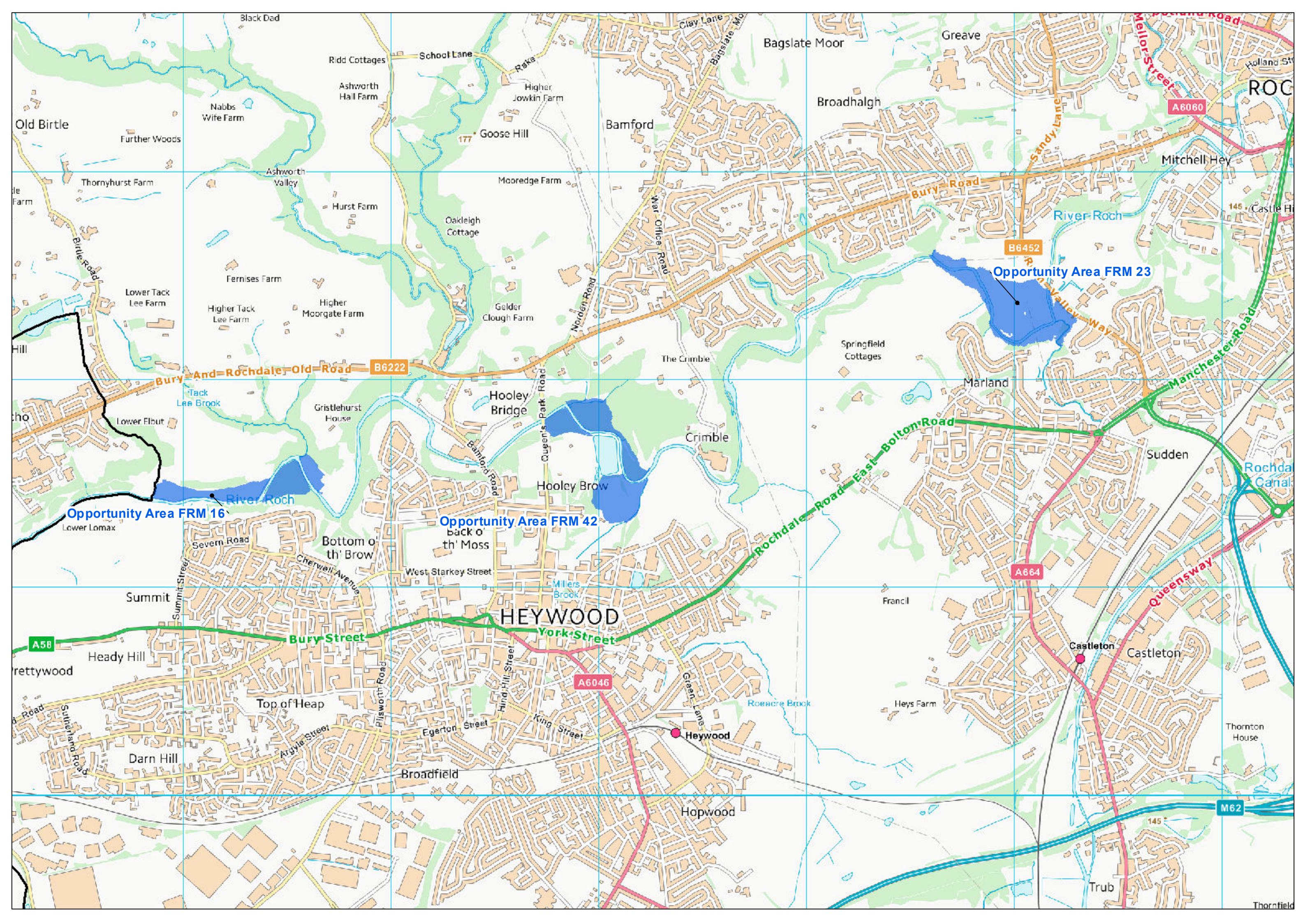
Parr Brook

Parr Lane

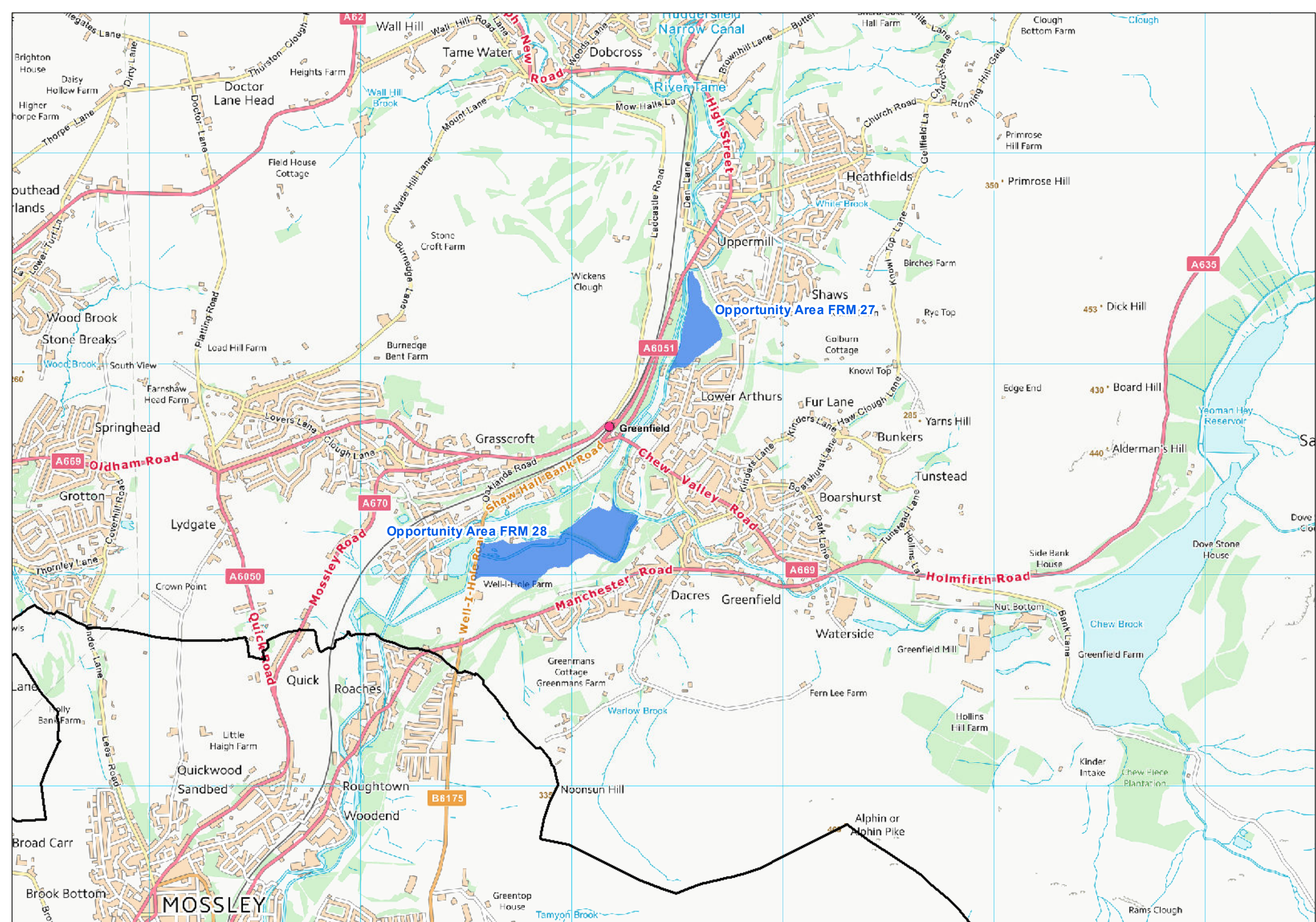
Jersey Drive

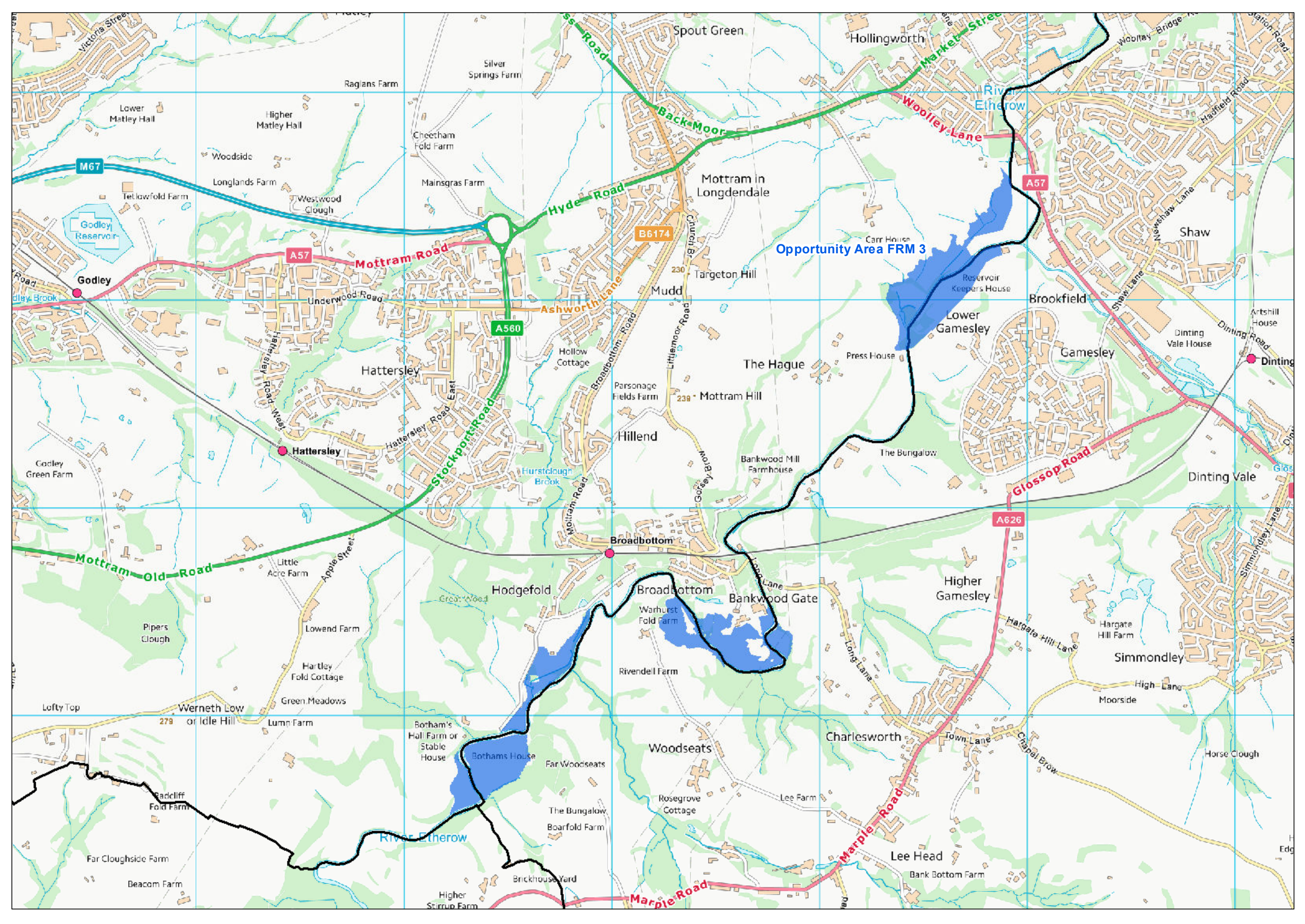
Mount Sion House

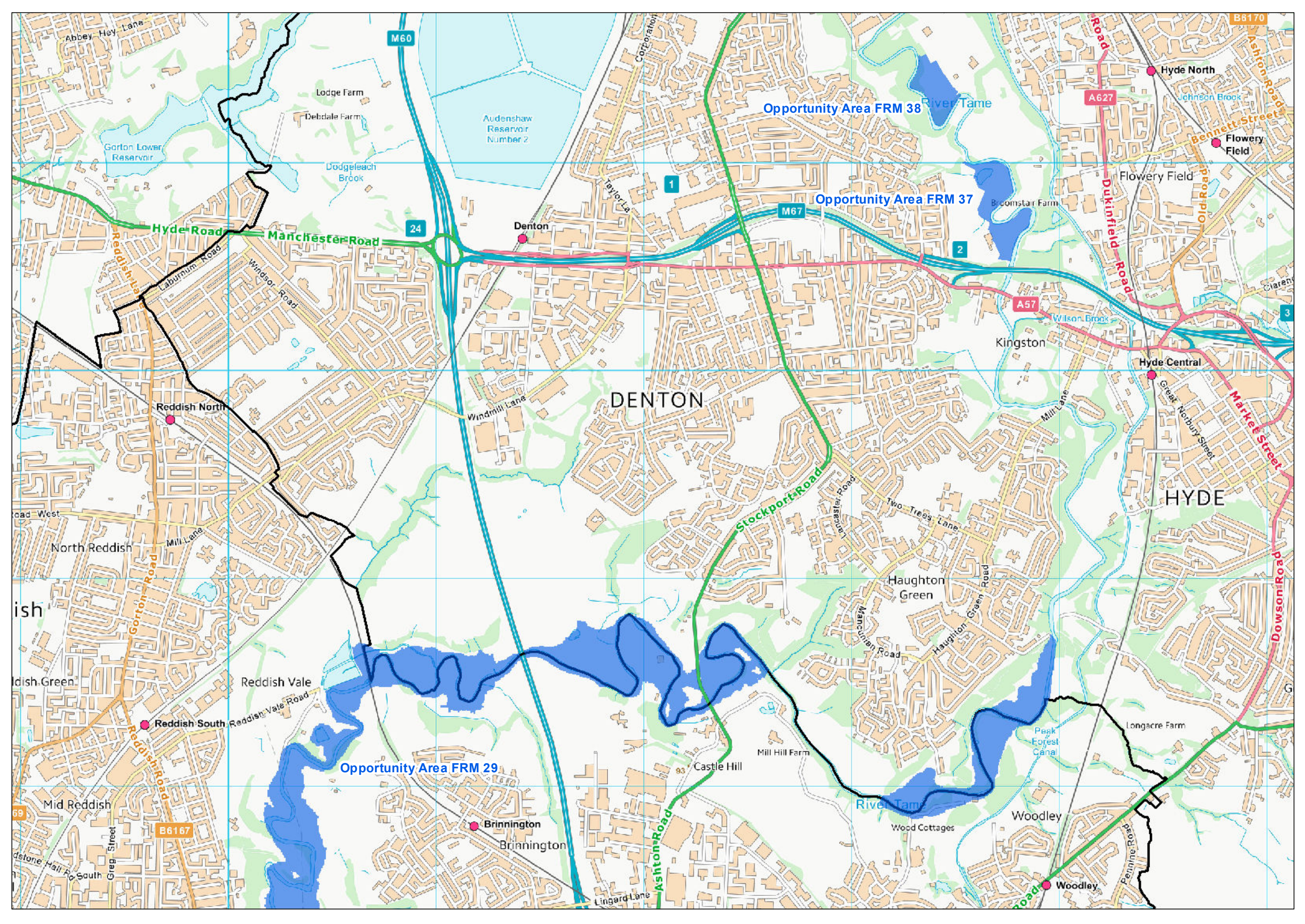
The Hill

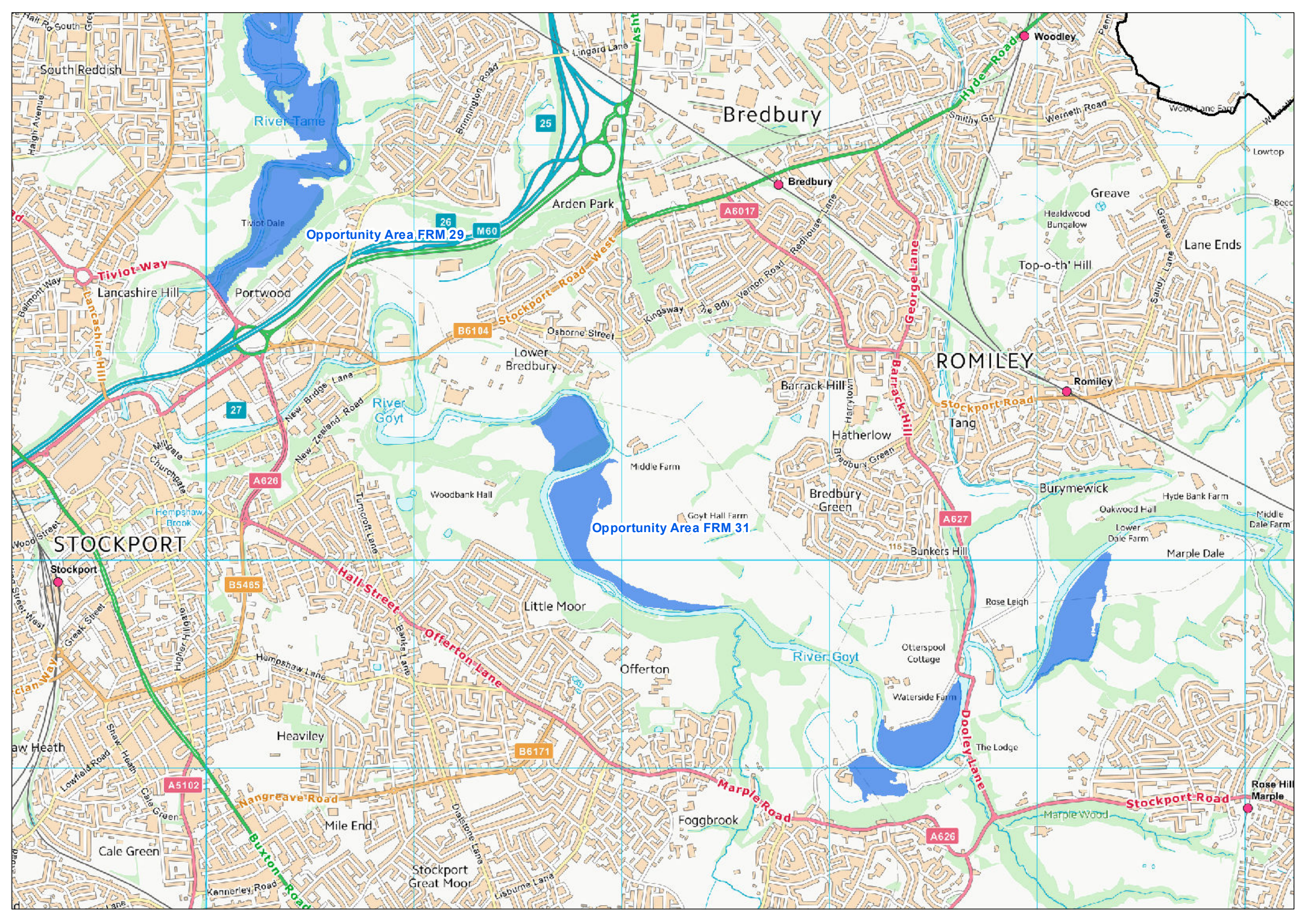








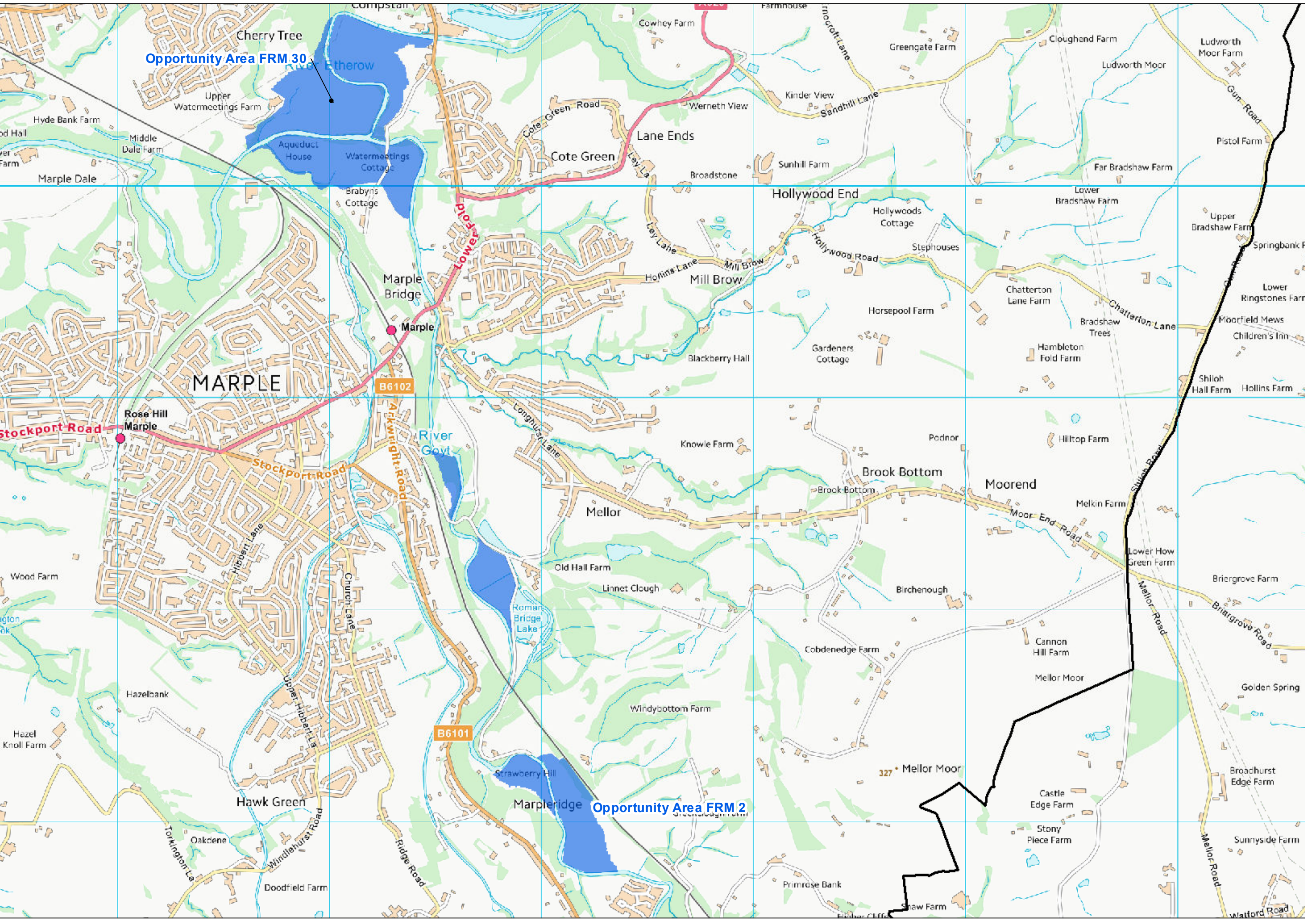


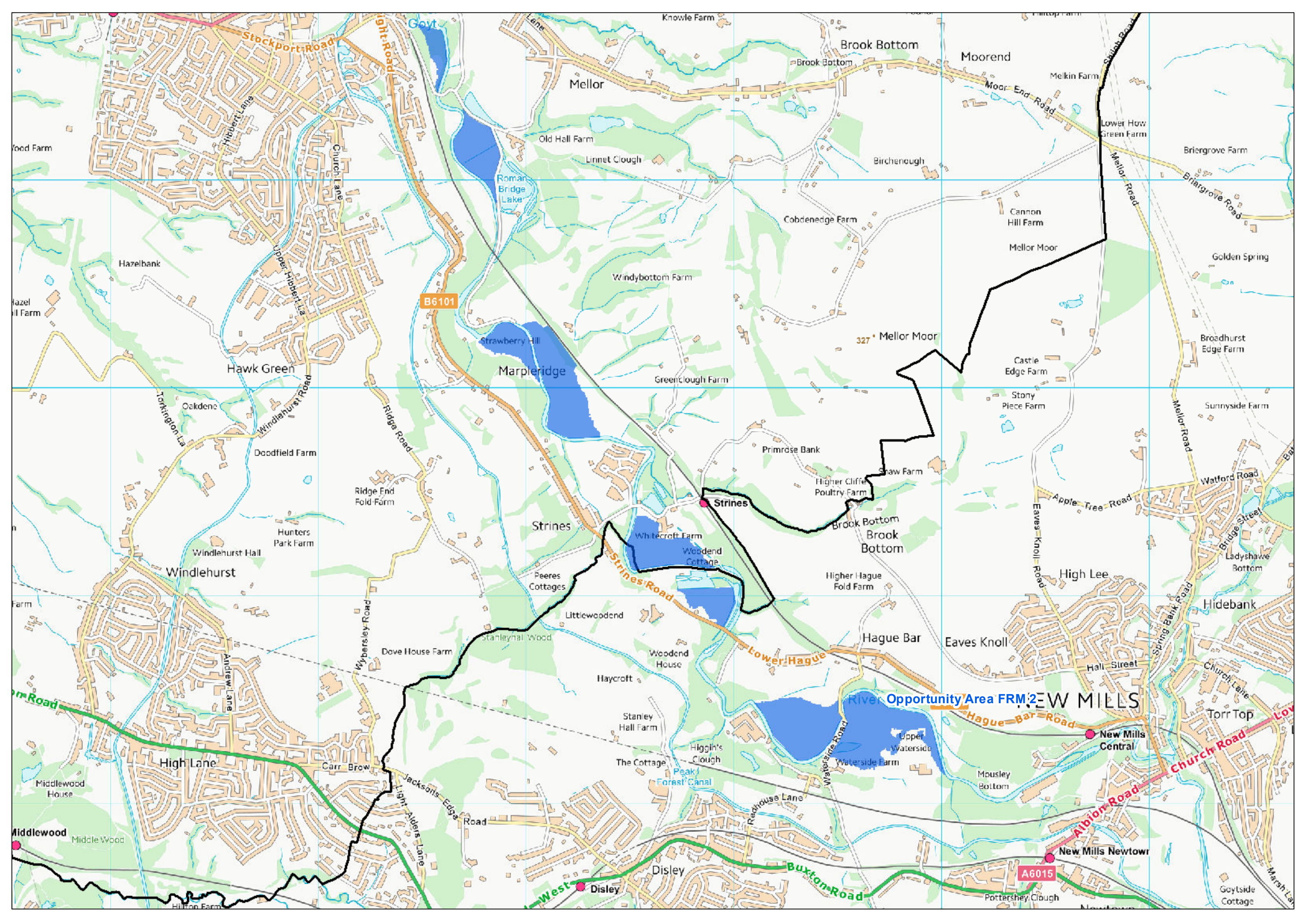


Opportunity Area FRM 30

Opportunity Area FRM 2

MARPLE





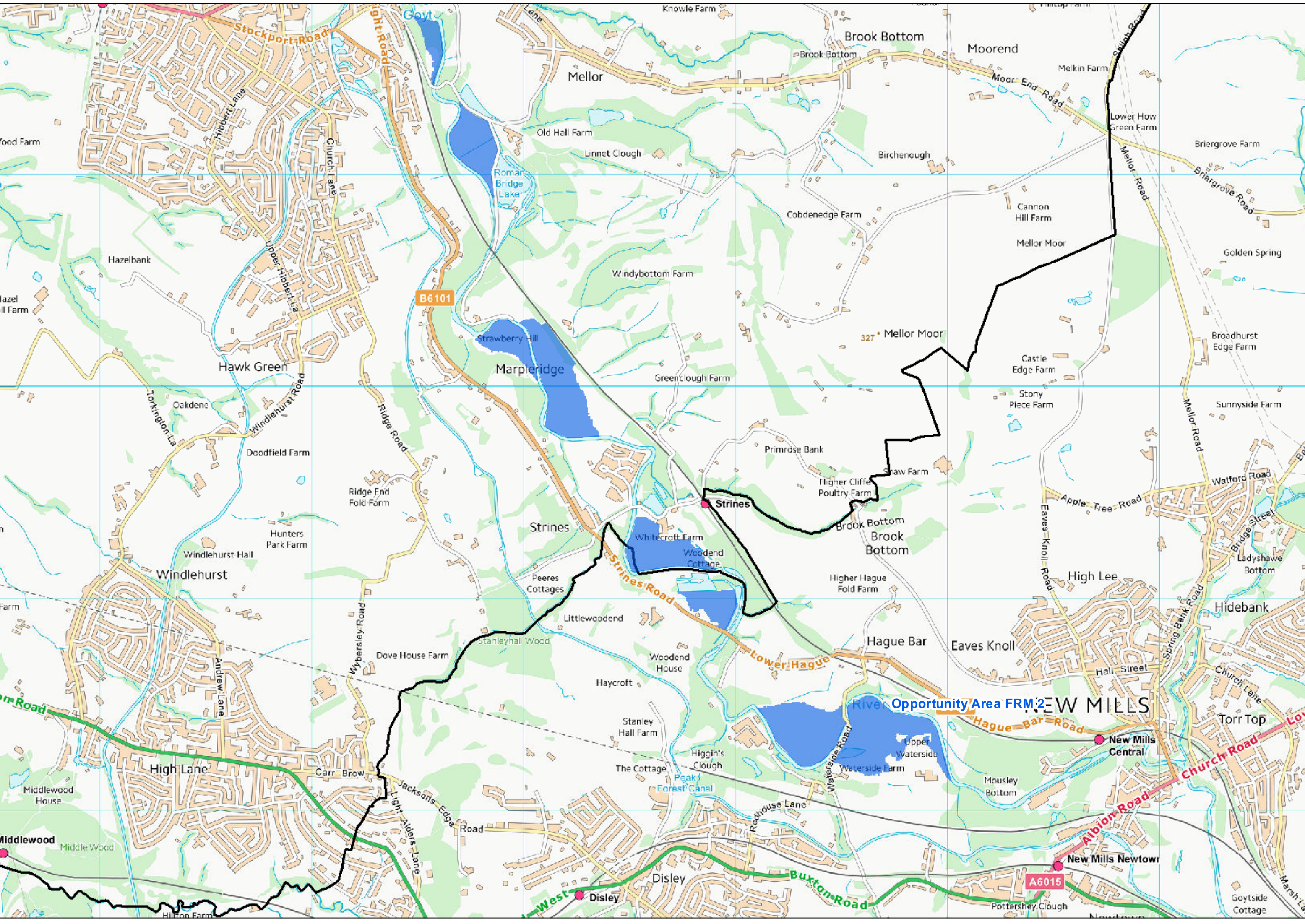
Stockport Road

B6101

327

River Opportunity Area FRM2 EW MILLS

A6015

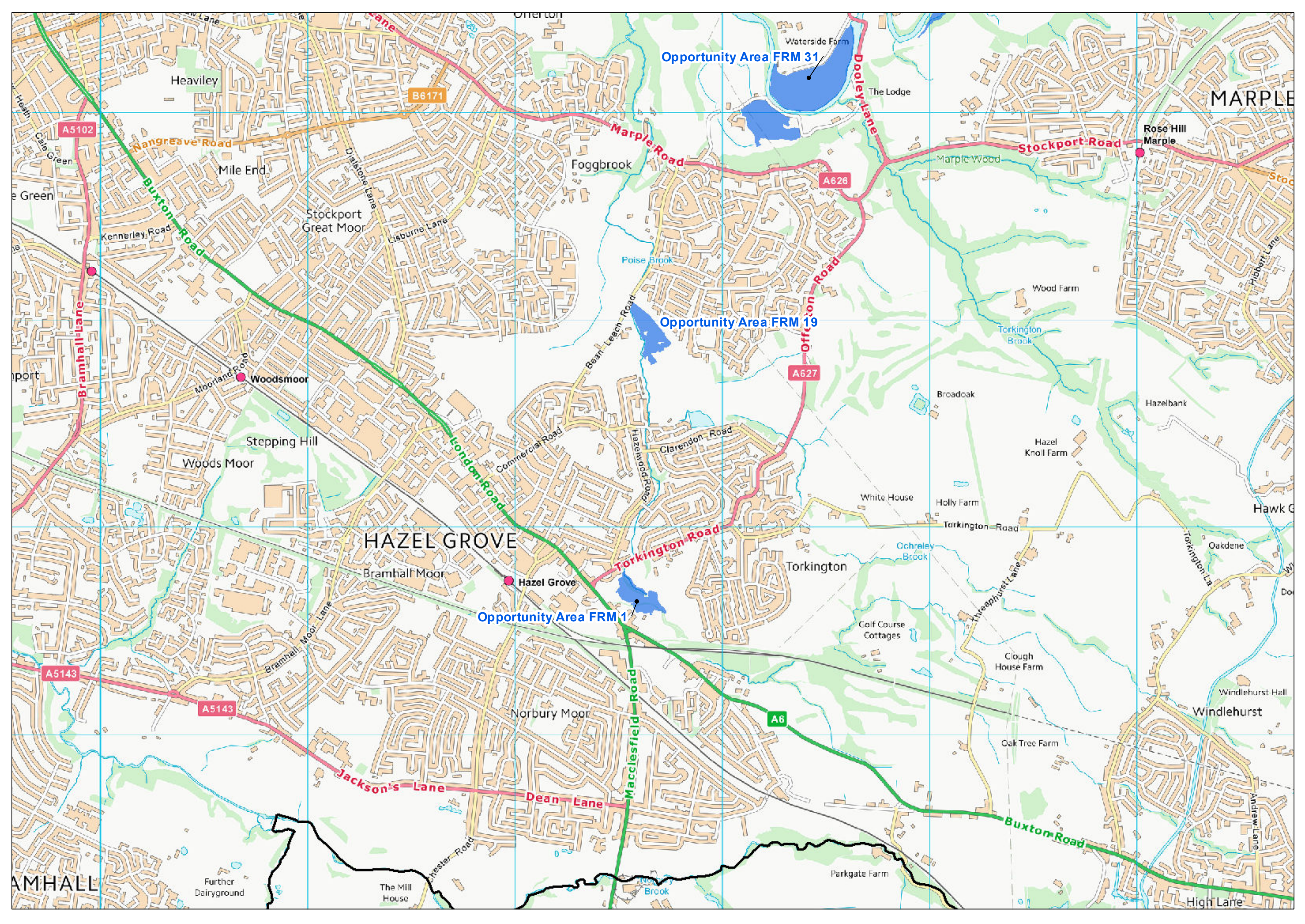


Stockport Road

B6101

River Opportunity Area FRM2 EW MILLS

A6015



Opportunity Area FRM 31

Opportunity Area FRM 19

Opportunity Area FRM 1

HAZEL GROVE

MARPLE

AMHALL

Heaviley

Mile End

Stockport  
Great Moor

Foggbrook

Waterside Farm  
The Lodge

Rose Hill  
Marple

e Green

Kennerley Road

Moorland Road  
Woodsmoor

Stepping Hill

Woods Moor

Poise Brook

Opportunity Area FRM 19

Wood Farm

Torkington  
Brook

Broad oak

Hazelbank

Hazel  
Knoll Farm

Commercial Road

Clarendon Road

White House

Holly Farm

Torkington Road

Hawk G

Bramhall Moor

Hazel Grove

Torkington Road

Torkington

Ochreley  
Brook

Threapurst Lane

Oakdene

A5143

A5143

Bramhall Moor Lane

Norbury Moor

Macclesfield Road

A6

Clough  
House Farm

Windlehurst  
Hall

Windlehurst

Jackson's Lane

Dean Lane

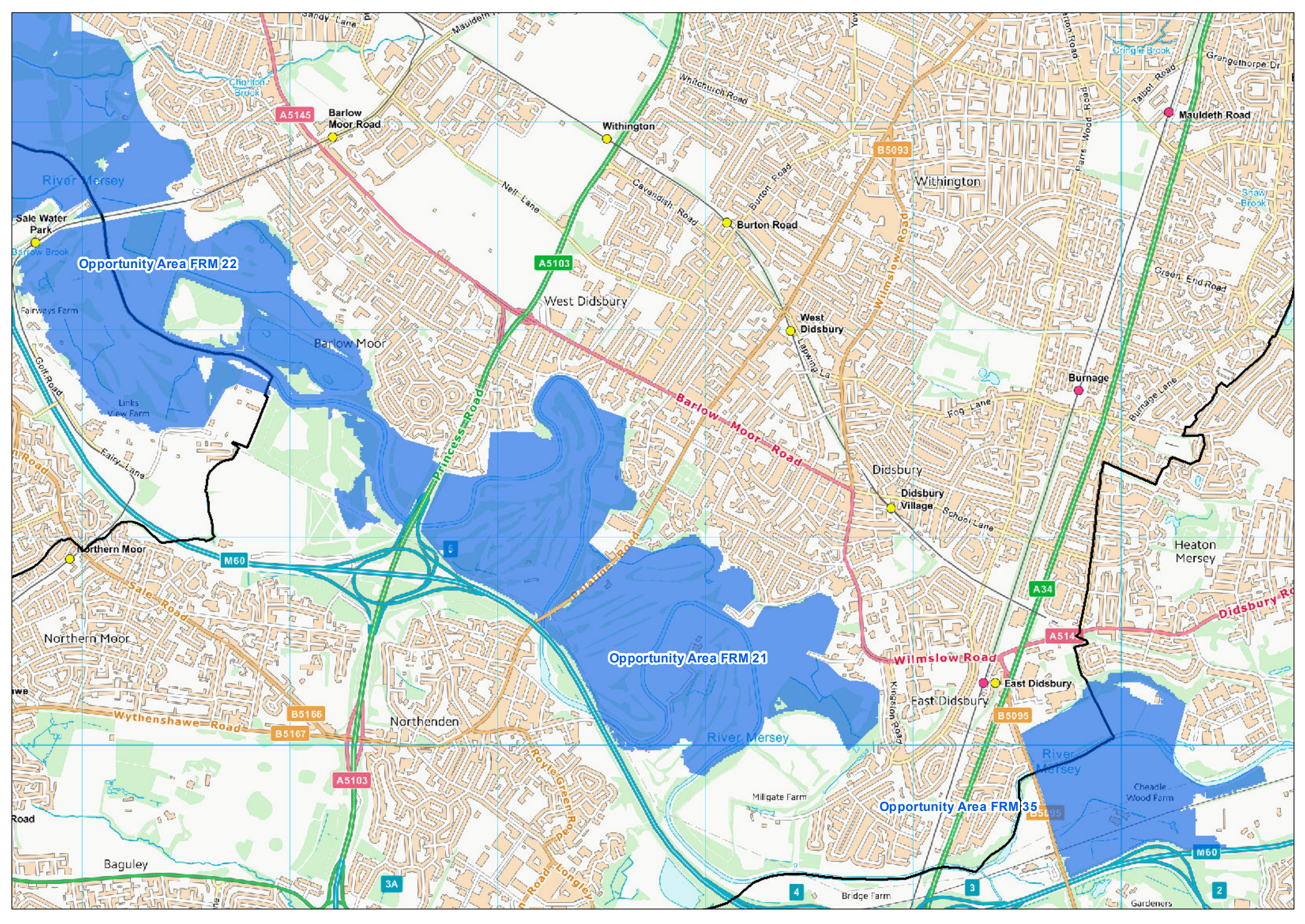
Buxton Road

Further  
Dairyground

The Mill  
House

Parkgate Farm

High Lane



Opportunity Area FRM 22

Opportunity Area FRM 21

Opportunity Area FRM 35

A5145

A5103

B5093

M60

A34

B5166

B5167

A5103

B5095

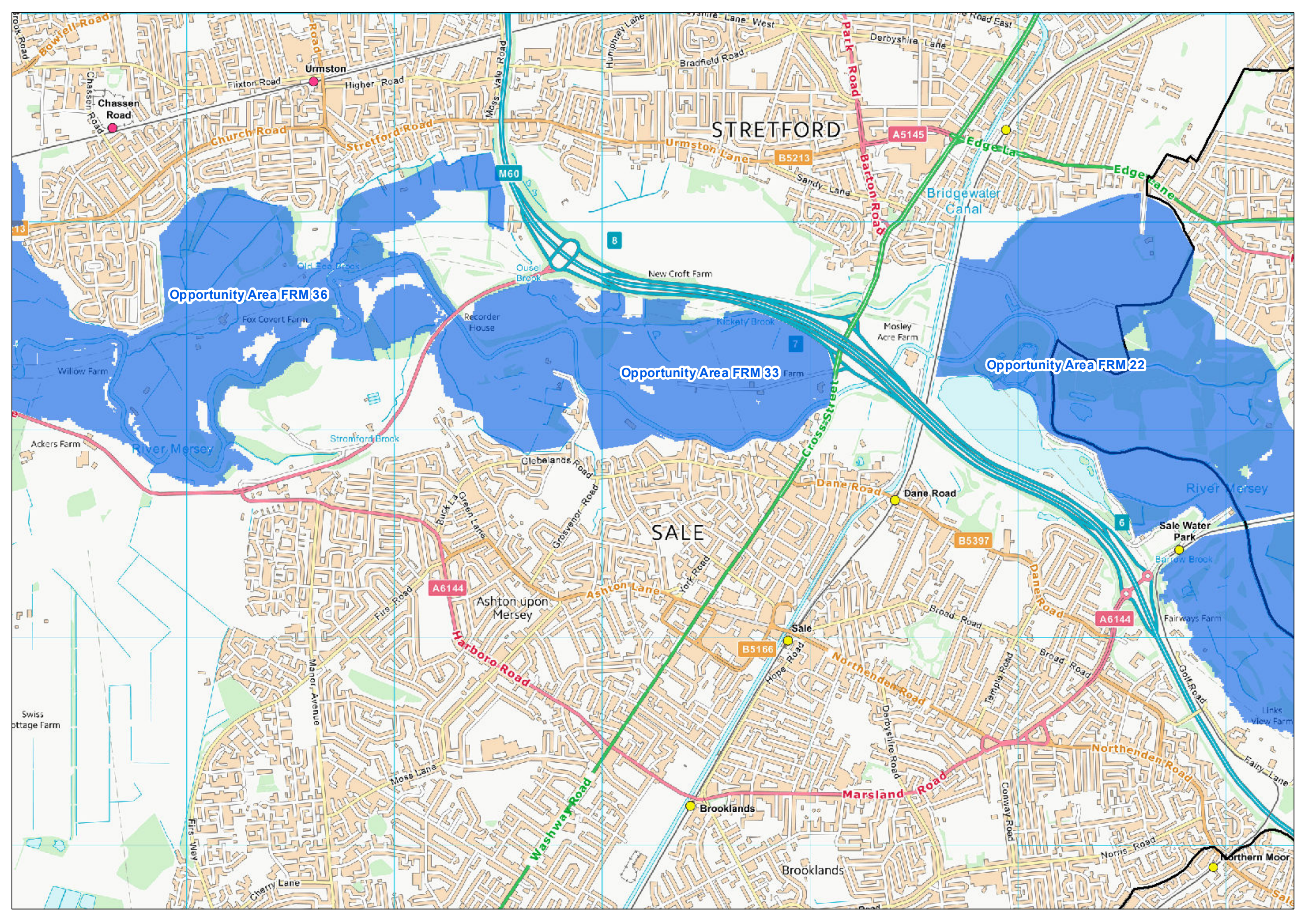
B5035

3A

4

3

2



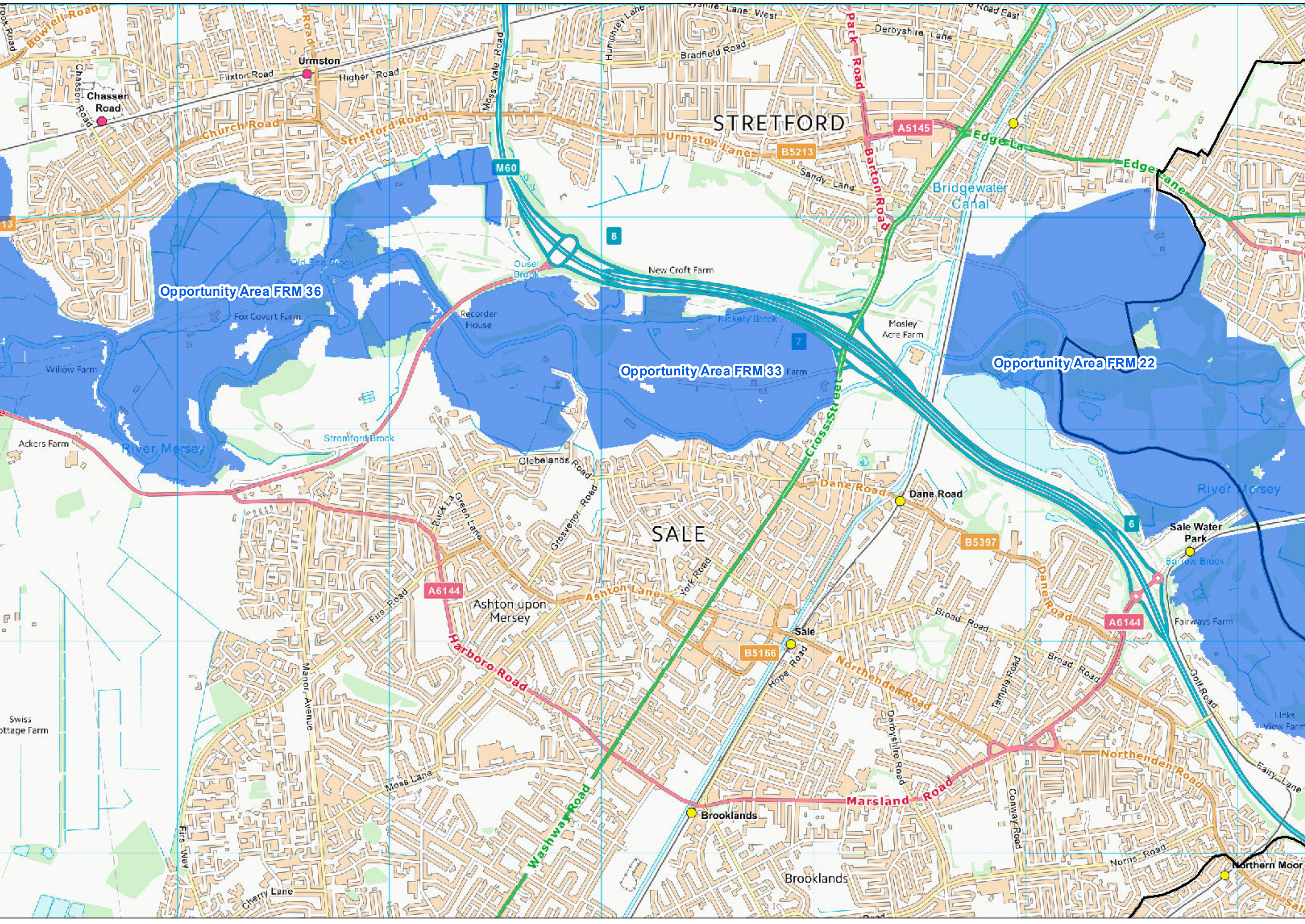
Opportunity Area FRM 36

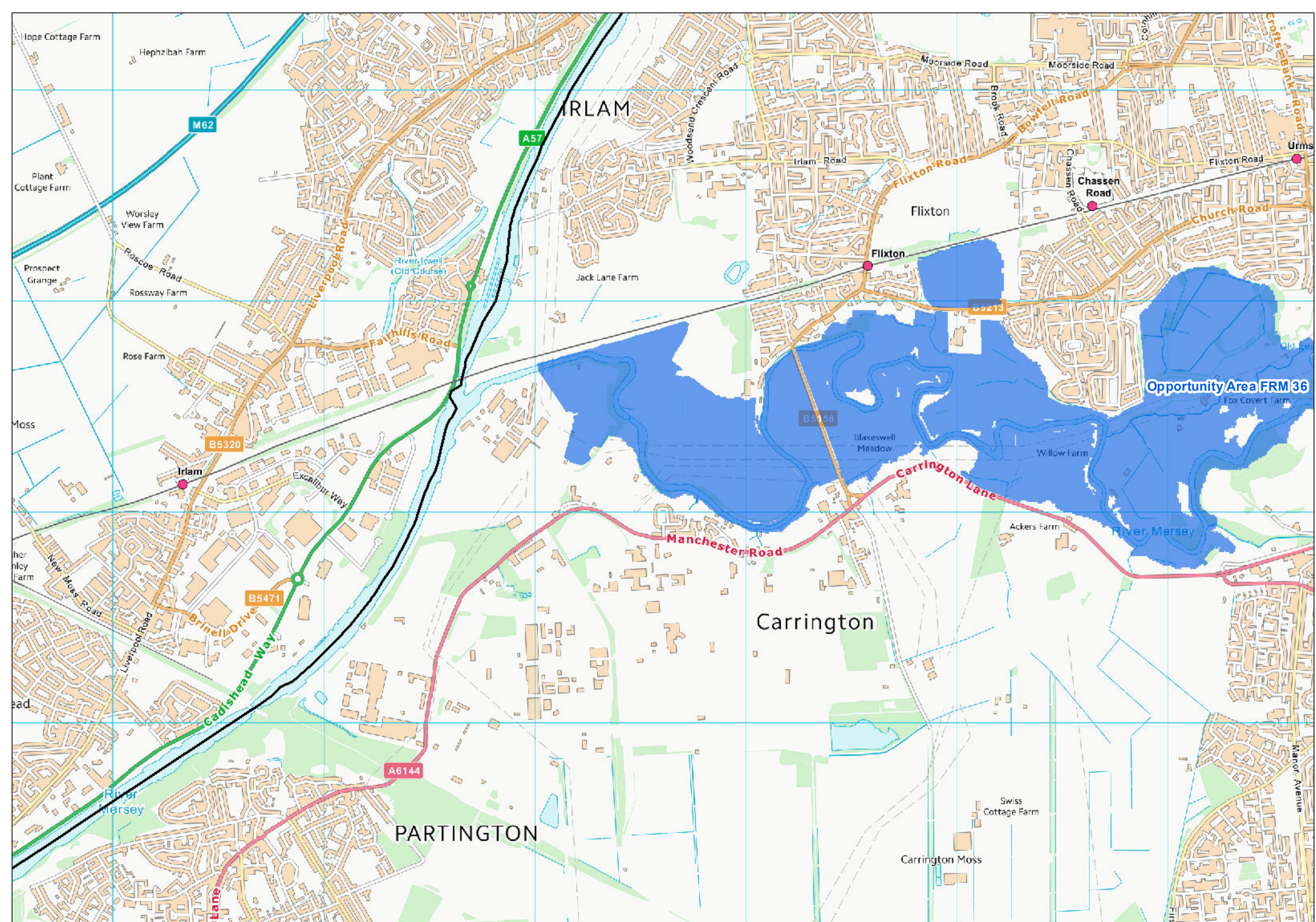
Opportunity Area FRM 33

Opportunity Area FRM 22

STRETFORD

SALE





**Opportunity Area FRM 36**

IRLAM

Flixton

Carrington

PARTINGTON

River Mersey

M62

A57

B5320

B5471

A6144

B5458

B5213

Hope Cottage Farm

Hephzibah Farm

Plant Cottage Farm

Prospect Grange

Roscoe Road

Rossway Farm

Rose Farm

Moss

her nley Farm

ead

River Mersey

Lane

Worsley View Farm

Roscoe Road

Rossway Farm

Rose Farm

Irlam

New Moss Road

Liverpool Road

River Mersey

Lane

Liverpool Road

Faithills Road

Excalibur Way

Brinell Drive

Liverpool Road

River Mersey

Lane

River Irwell (Old Course)

Excalibur Way

Brinell Drive

Liverpool Road

River Mersey

Lane

Jack Lane Farm

Woodsend Crescent Road

Irlam Road

Jack Lane Farm

Manchester Road

Manchester Road

Liverpool Road

River Mersey

Lane

Moorside Road

Irlam Road

Flixton Road

Carrington Lane

Manchester Road

Liverpool Road

River Mersey

Lane

Moorside Road

Moorside Road

Flixton Road

Carrington Lane

Manchester Road

Liverpool Road

River Mersey

Lane

Chassen Road

Flixton Road

Carrington Lane

Manchester Road

Liverpool Road

River Mersey

Lane

Church Road

Flixton Road

Carrington Lane

Manchester Road

Liverpool Road

River Mersey

Lane

Urms

Old Ee

Fox Covert Farm

Ackers Farm

Manchester Road

Liverpool Road

River Mersey

Lane

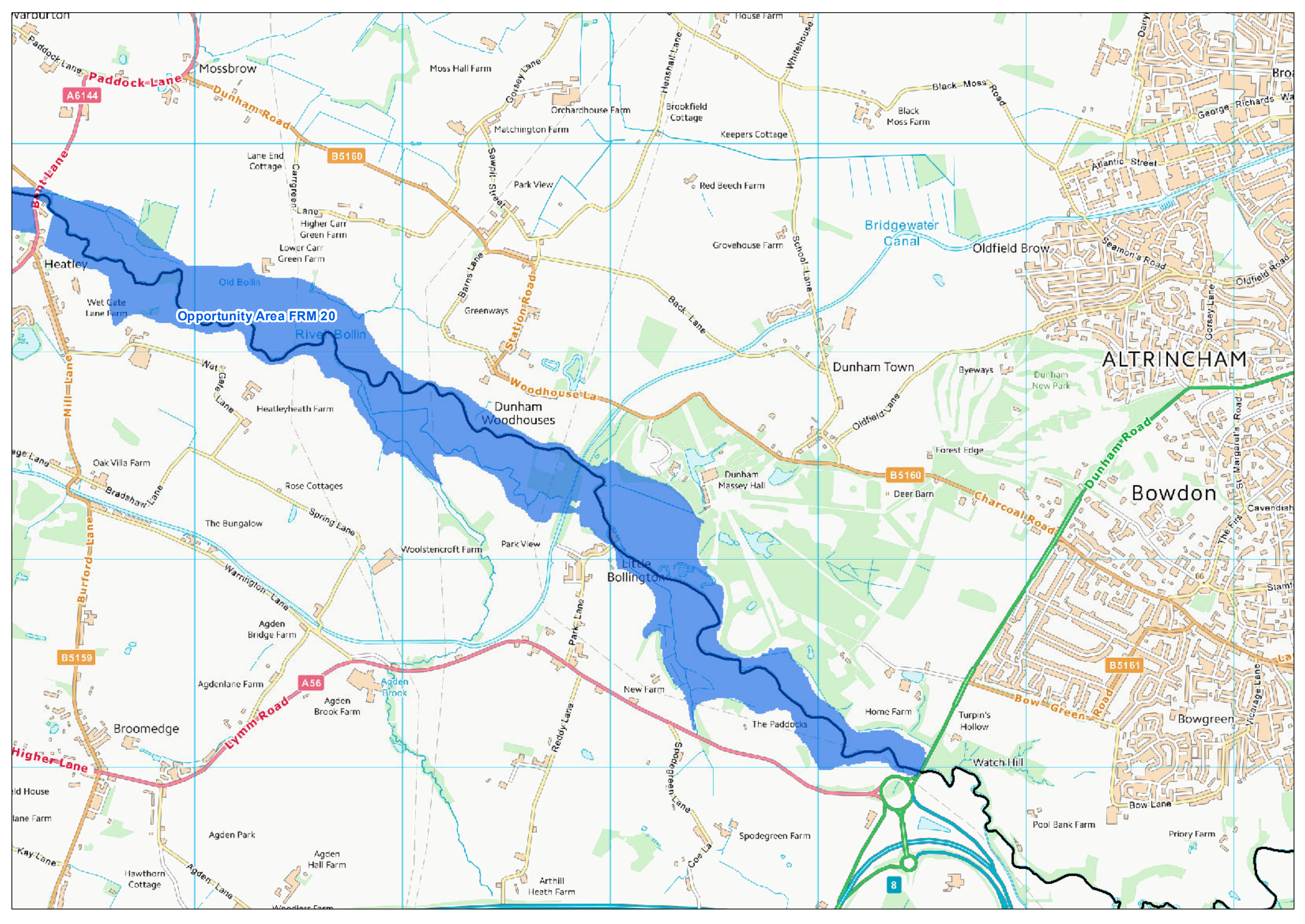
Swiss Cottage Farm

Carrington Moss

Minor Avenue

Flixton





Opportunity Area FRM 20

River Bollin

ALTRINCHAM

Bowdon

Little Bollington

Dunham Woodhouses

Dunham Town

Bowgreen

varburton  
Paddock Lane  
A6144  
Dunham Road

Heatley  
Wet Gate Lane Farm  
Old Bollin

Wet Gate Lane  
Heatleyheath Farm

Agden Bridge Farm  
Agden Brook  
A56  
Lymm Road

Broomedge  
Agden Park  
Agden Hall Farm

Hawthorn Cottage  
Agden Lane

Lane End Cottage  
Carrgreen Lane  
Higher Carr Green Farm  
Lower Carr Green Farm

Wet Gate Lane  
Oak Villa Farm  
Bradshaw Lane  
Rose Cottages  
The Bungalow  
Spring Lane  
Warrington Lane

Agdenlane Farm  
Agden Brook Farm

Moss Hall Farm  
Orchardhouse Farm  
Matchington Farm  
Park View

Greenways  
Station Road

Woolstencroft Farm  
Park View

New Farm  
The Paddocks  
Home Farm

Arthill Heath Farm

Brookfield Cottage  
Keepers Cottage  
Red Beech Farm  
Grovehouse Farm

Back Lane

Dunham Massey Hall  
Deer Barn

Spodegreen Lane  
Spodegreen Farm

House Farm  
Henshall Lane  
Whitehouse

Black Moss Farm

Forest Edge

Home Farm  
Turpin's Hollow  
Watch Hill

Pool Bank Farm  
Priority Farm

Bridgewater Canal

Oldfield Brow

Byeways

Deer Barn

Turpin's Hollow

Watch Hill

Pool Bank Farm

Atlantic Street

Seamon's Road

Oldfield Road

Dunham New Park

Cavendish

Stamf

Bow Lane

Priority Farm

Bro  
George Richards Wa

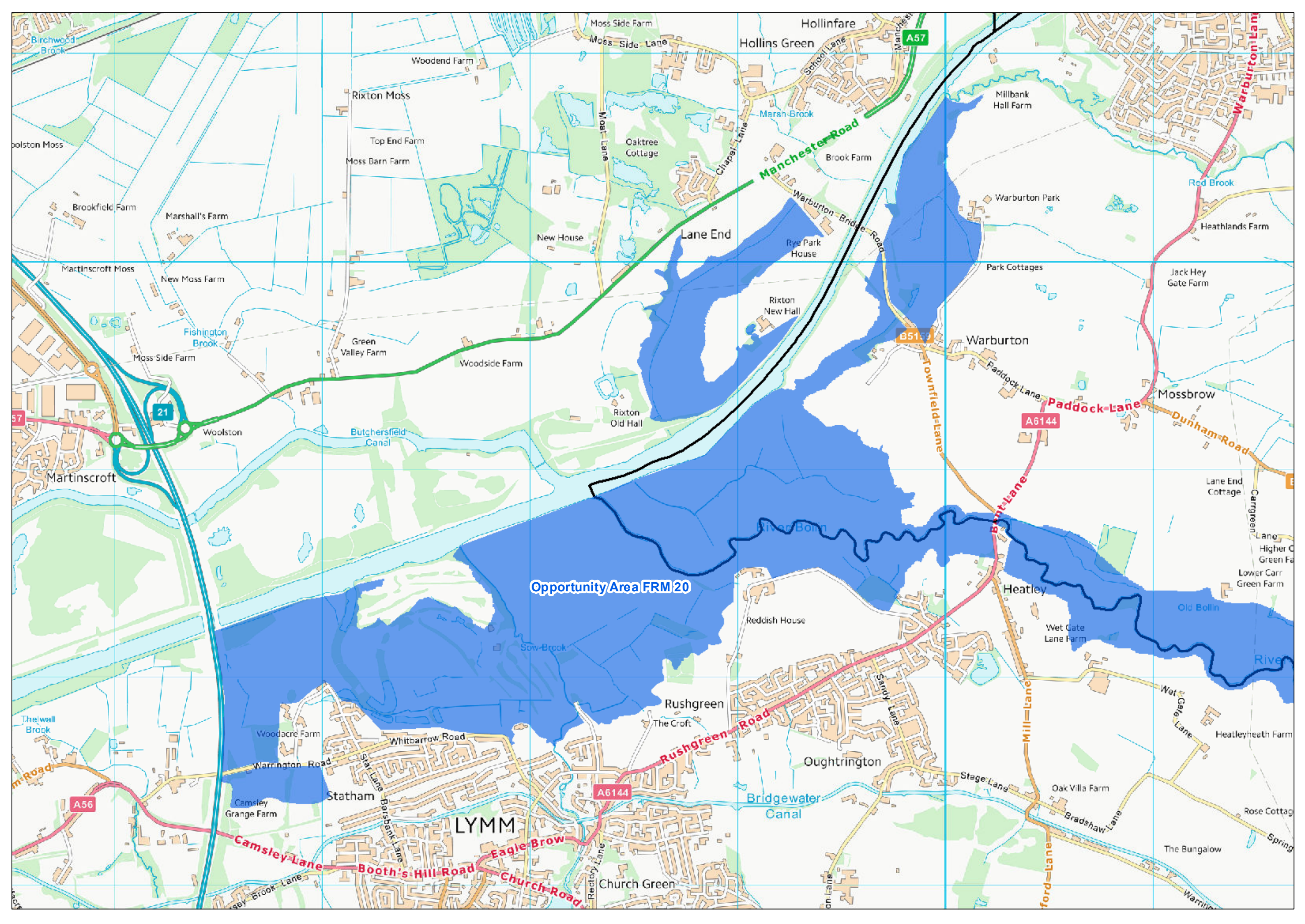
Oldfield Road

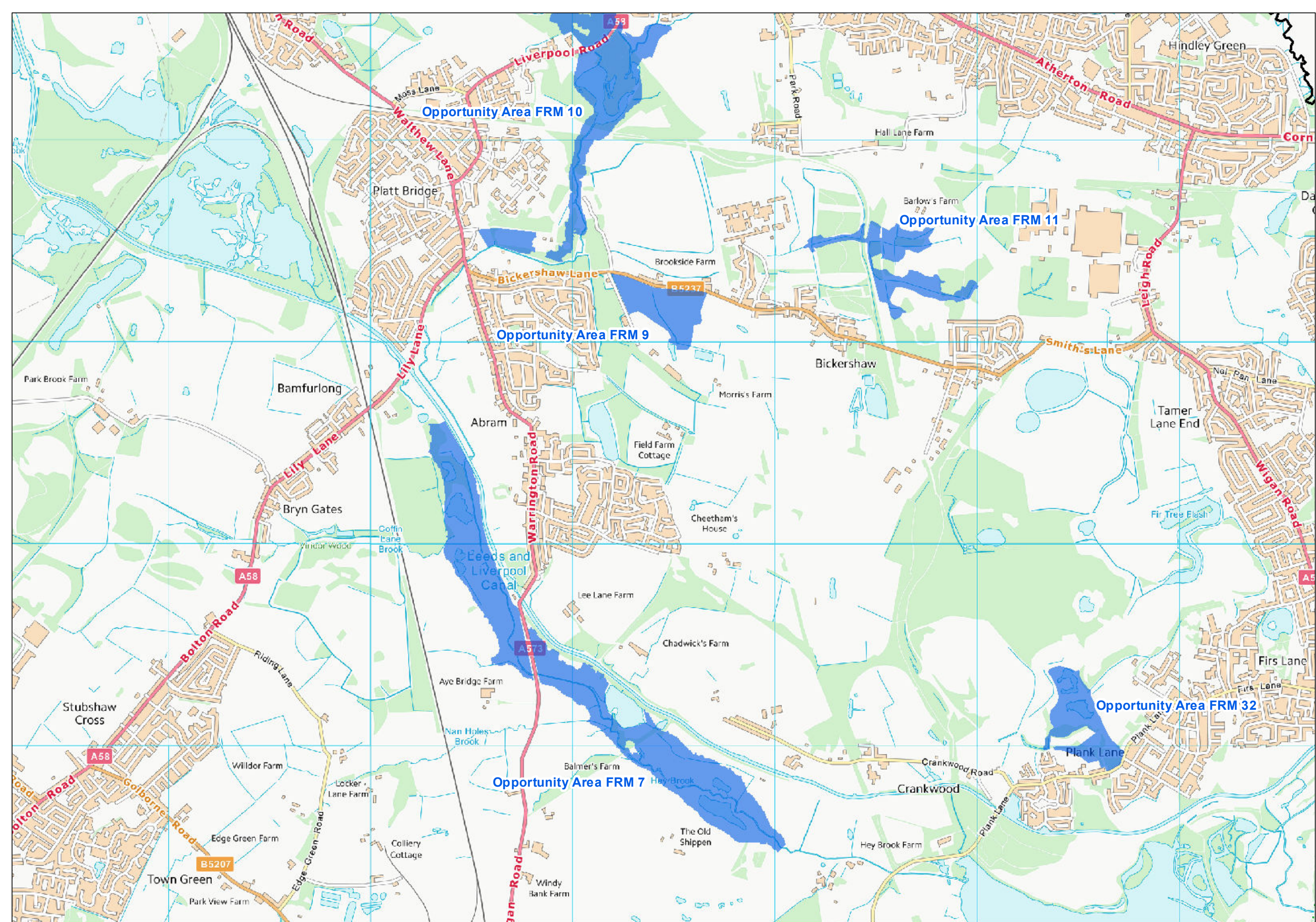
St Margaret's Road

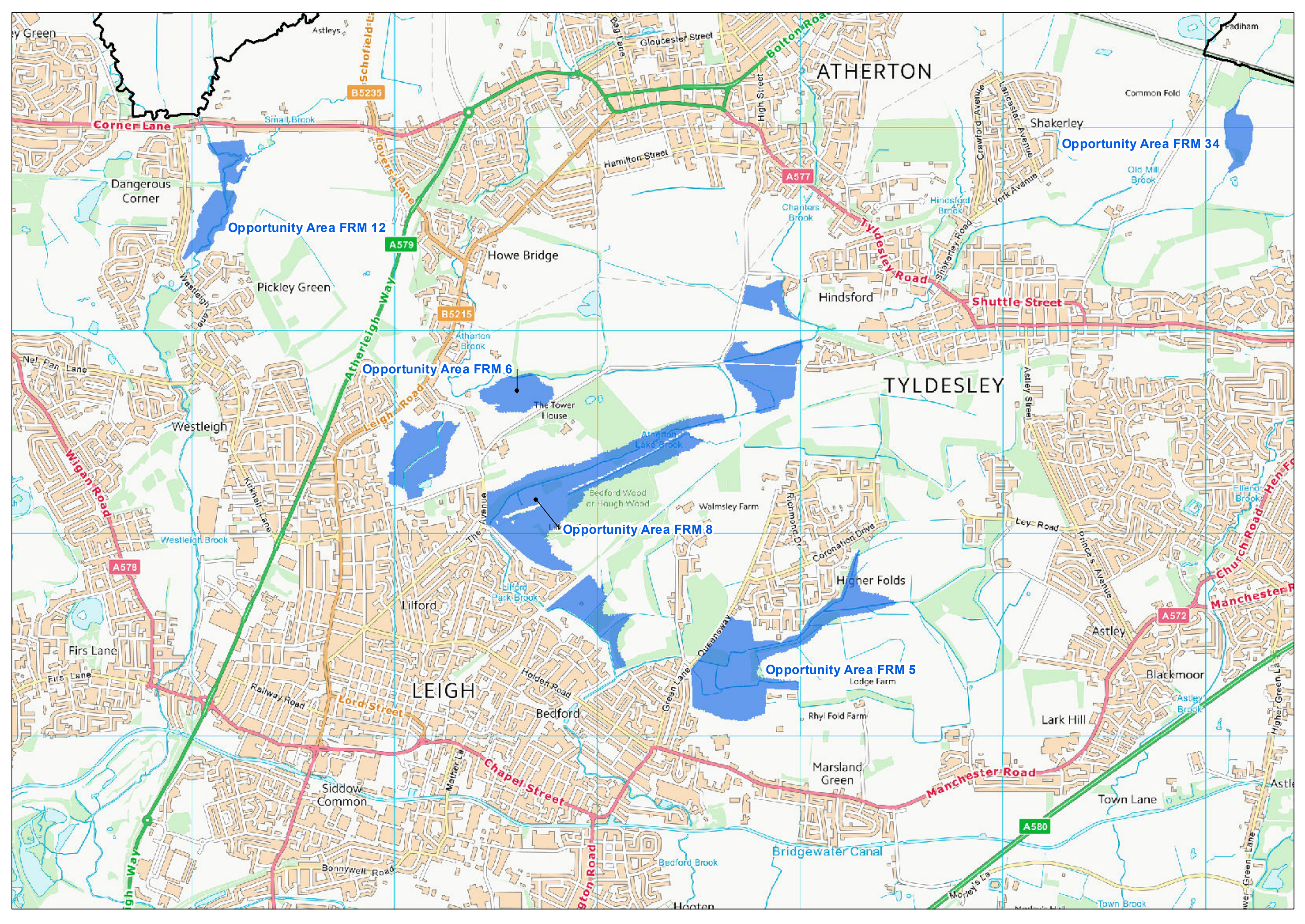
Vicarage Lane

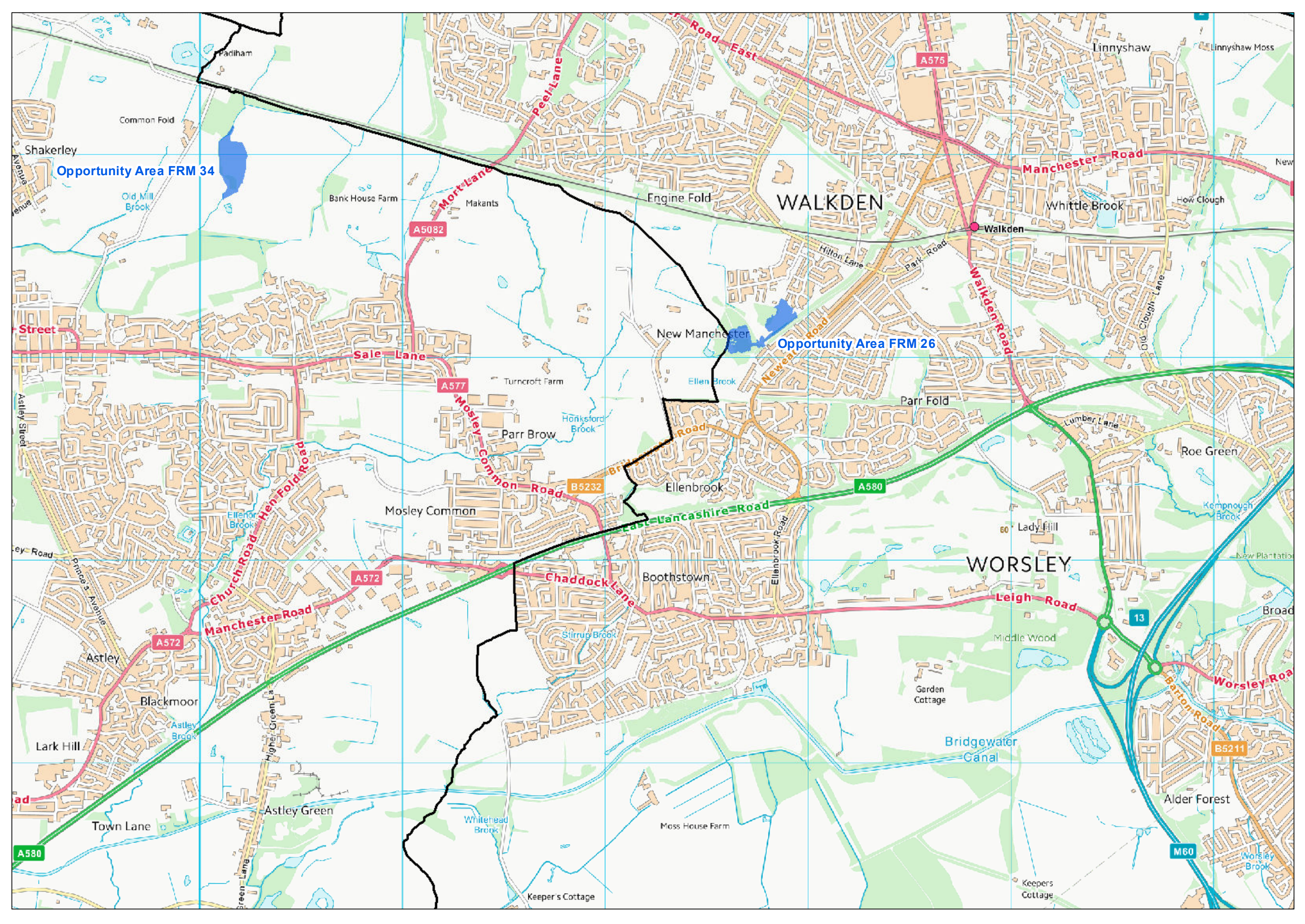
Priority Farm

8









Opportunity Area FRM 34

WALKDEN

Opportunity Area FRM 26

WORSLEY

Shakerley

Street

Astley Street

Key Road

Astley

Lark Hill

Town Lane

A580

Common Fold

Old Mill Brook

Ellen Brook

Ellen Brook

Astley Brook

Astley Green

Green Lane

Bank House Farm

Mosley Common

Whitehead Brook

Makants

Parr Brow

Boothstown

Keeper's Cottage

Engine Fold

New Manchester

Ellenbrook

Stirk Brook

Moss House Farm

WALKDEN

New Manchester

Ellenbrook

Boothstown

Keeper's Cottage

WORSLEY

Middle Wood

Garden Cottage

Keepers Cottage

Linnishaw

Whittle Brook

Roe Green

Lady Hill

Middle Wood

Alder Forest

Worsley Brook

Linnishaw Moss

How Clough

Roe Green

New Plantation

Broad

Worsley Brook

Peel Lane  
Mort Lane  
A5082  
A577

Peel Lane  
Mort Lane  
A5082  
A577

Peel Lane  
Mort Lane  
A5082  
A577

Peel Lane  
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A577

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Peel Lane  
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