

Wirral Metropolitan Borough Council

Wirral Environmental Sensitivity Study Draft Final Report - Part 2

Prepared by LUC
January 2021



Wirral Metropolitan Borough Council

Wirral Environmental Sensitivity Study Draft Final Report

Version	Status	Prepared	Checked	Approved	Date
1.	Draft final report	Mark Cooke Lucy Wallwork Jacqueline Whitworth Sofie Swindlehurst	Mark Cooke	Sarah Young	01.12.2020
2.	Draft final report	Mark Cooke Lucy Wallwork	Mark Cooke	Sarah Young	07.01.2021

Chapter 12

Assessment of Wirral's Strategic Spatial Options

Introduction

12.1 In the Wirral MBC Local Plan Issues and Options Consultation (January 2020), the Council identified the following three spatial options for meeting local housing and employment requirements, as illustrated in **Figure 12.1**:

- Option 1a: Urban Intensification (Brownfield) (Preferred Approach);
- Option 2a: Dispersed Green Belt Release; and
- Option 2b: Single Urban Extension.

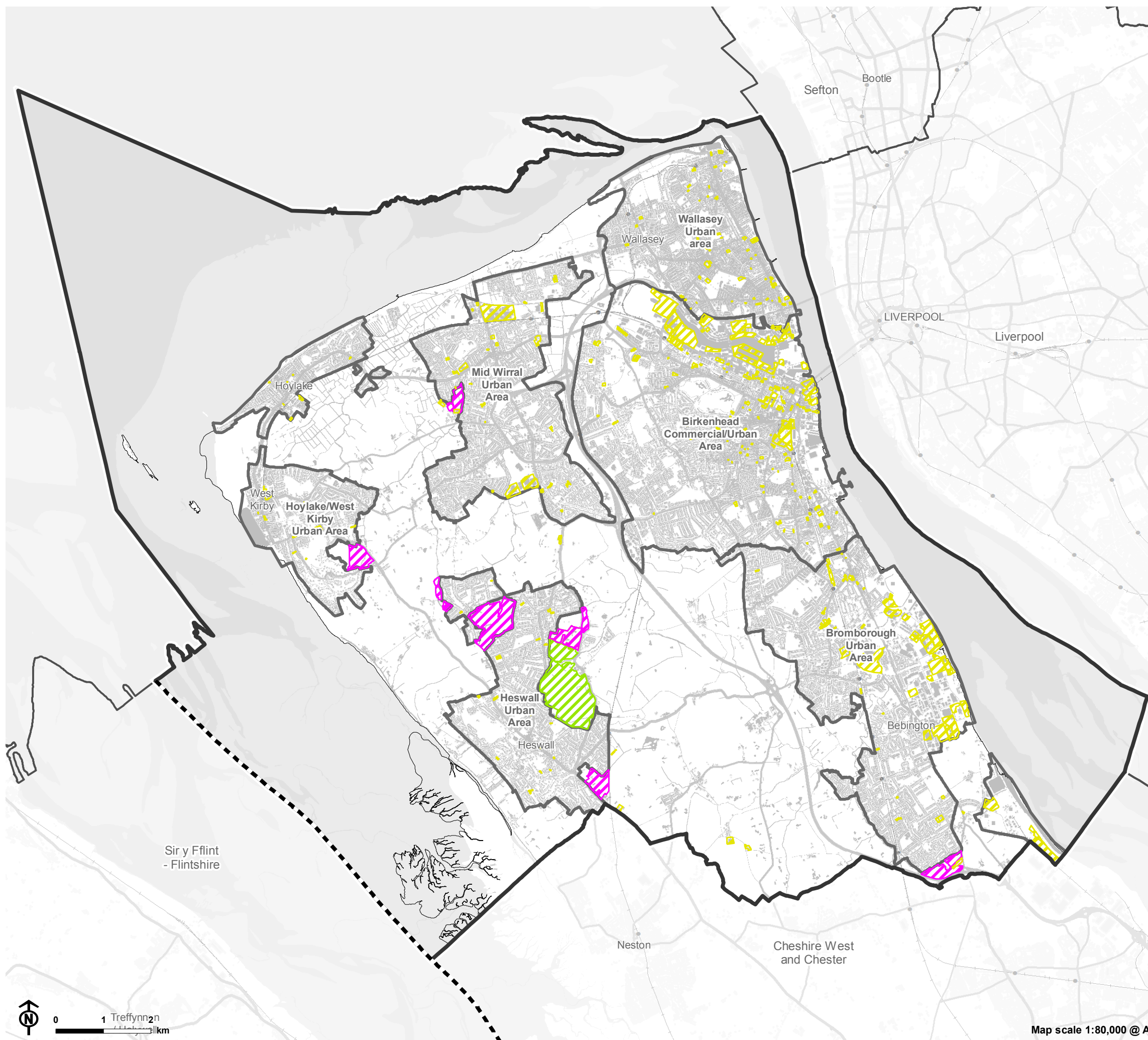
12.2 For each of these spatial options, a high level assessment is included in this chapter summarising:

- key environmental sensitivities and potential for mitigation;
- landscape sensitivity (excluding the urban areas);
- potential for carbon emissions;
- areas of potential lower sensitivity / summary of sensitivities.

12.3 Overall sensitivity and accessibility to services/open space maps are included for each Strategic Spatial Option and are presenting alongside the assessments.

12.4 This assessment is necessarily high level and does not take into account more detailed site assessments and surveys that may have been undertaken by site promoters.

Figure 12.1: Wirral's Strategic Spatial Options



- Wirral boundary
- Other Local Authority boundary
- England - Wales boundary
- Landform edge
- Settlement area
- Physical constraint
- Urban intensification Option 1a
- Green Belt Option 2a
- Green Belt Option 2b

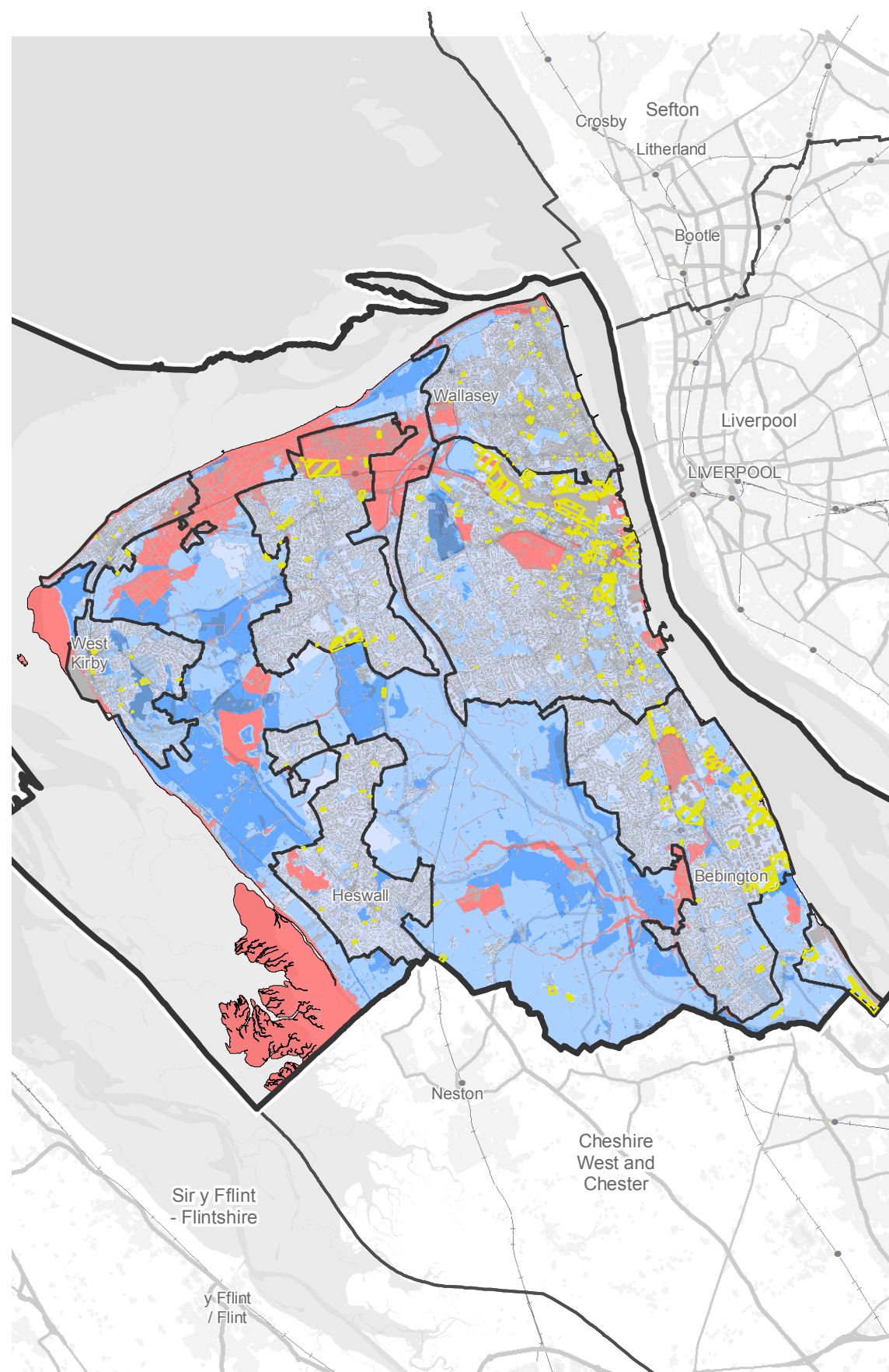
Note
Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.

Strategic Option 1a Profile: Urban intensification (preferred approach)

Issue	Commentary
<p>Summary of Environmental sensitivities and potential for mitigation</p>	<p>Option 1a considers sites lying within existing settlement boundaries. Within these boundaries, there are some limited areas of Higher Sensitivity (marked in red) that overlap with some of the sites proposed under this Option. These areas of Higher Sensitivity include:</p> <ul style="list-style-type: none"> ■ Areas of Flood Zone 3 within the Hoylake, Mid Wirral and Wallasey Urban Areas, which are associated with the River Birket and Fender corridors. A cluster of allocations under Option 1a within the Mid Wirral Urban Area (housing allocations at areas of Moreton/Leasowe now in industrial use) lie within Flood Zone 3, as does a proposed allocation at Bromborough Pool. Development in Flood Zone 3 is generally considered inappropriate in line with the NPPF. There are also some areas of Flood Zone 3 within the broad Wirral Waters development area, however the strategic scale of this development area is likely to allow for greater flexibility in layout to mitigate this risk. Similarly, within the Land off Dock Road South (Bromborough), the small intersection within Flood Zone 3 allows room for mitigation through layout design. ■ Conservation Areas at Port Sunlight and Birkenhead Park. One small allocation under this Option lies within the Birkenhead Park Conservation Area, which is considered as a highly sensitive location. However, the small scale of the site limits to an extent the impact on heritage assets, provided appropriate design parameters. <p>There are also scattered areas of heightened sensitivity (where 7-9 'moderately sensitive' assets overlap) within the site allocations under Option 1a. The sources of sensitivity in these urban areas generally include:</p> <ul style="list-style-type: none"> ■ Existing urban green space, within the minority of sites which are urban greenfield sites rather than brownfield. In these cases, the impact of development would have to be mitigated through provision of alternative high-quality open space, in line with Wirral's draft Open Space Standards. ■ A number of historic landfill sites, particularly around the former docklands, where the potential for contaminants would have to be properly mitigated through appropriate management plans. ■ Heritage-related sensitivities, in those areas where small-scale sites are allocated within the Wellington Road and Caldys Conservation Areas. Development proposals in these locations would have to be of high quality, sensitive design and carefully assessed for heritage impacts. ■ Small areas of Priority Habitat, which would have to be retained (and potentially buffered) as part of site layout in the case of development; ■ Noise pollution from nearby roads, particularly in the case of the A540 in West Kirby, which could be mitigated by site layout or by buffering using vegetation or other measures. <p>Considering the impact of developing these urban sites on the integrity of Wirral's habitat networks (particularly those supporting designated sites) a cautious approach must be taken, bearing in mind data limitations for this mapping exercise. While the majority of priority areas identified by the WeBS data lie outside the Settlement Areas, there are some overlaps with settlement areas - particularly with some parts of the Mid Wirral Urban Area.</p>
<p>Summary of landscape sensitivity</p>	<p>N/A – the Landscape Sensitivity Assessment (LSA) does not cover urban areas of the Borough.</p>

Issue	Commentary
Summary of potential for carbon emissions assessment	<p>Given the focus of this Option within existing urban areas, the accessibility mapping of the Borough indicates that these sites have better accessibility to key services, in part due to the presence of the existing Merseyrail network. As such, they are considered less likely to lead to car-dependent lifestyles, and to result in lower levels of carbon emissions from future residents. This Option is also likely to require less mitigation (in the form of service and infrastructure provisions) than other Options considered.</p> <p>In addition, these locations are more likely to benefit from the availability of heat sources to supply energy to heat pumps as part of District Heat Networks, resulting in potential carbon savings from building stock. In particular, Wirral's emerging Heat Network Feasibility Study explores the potential to abstract water from the docks, transport tunnels and wastewater treatment works in Birkenhead, which could provide an opportunity for carbon savings.</p>
Areas of potential lower sensitivity / Summary of sensitivities	<p>With the exception of those area highlighted above, the environmental sensitivities are generally lower than outside the settlement areas. There are extensive areas within these sites where sensitivity is identified as being lower (i.e. where only 1-3 'moderately sensitive' assets overlap), and as such where appropriate development is more likely to be possible with appropriate mitigation without leading to unacceptable environmental impacts.</p>

Overall sensitivity



Accessibility

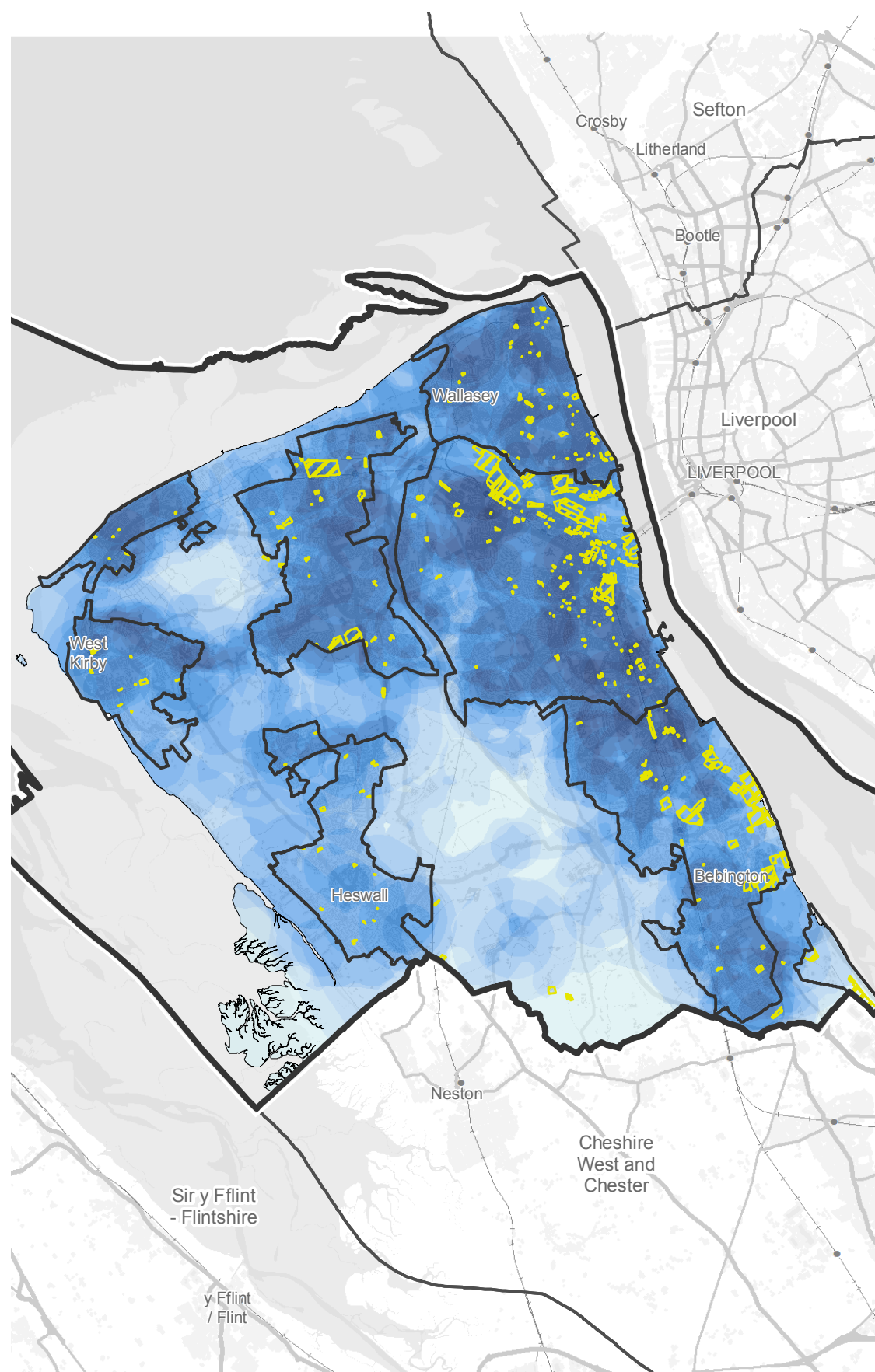


Figure 12.2: Strategic Spatial Option 1a (Urban Intensification)

- Wirral boundary
- Other Local Authority boundary
- Landform edge
- Settlement area
- Physical constraint

Overall sensitivity

- High
- Moderate (13-15)
- Moderate (10-12)
- Moderate (7-9)
- Moderate (4-6)
- Moderate (1-3)
- Lower

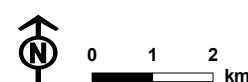
Accessibility to key services and open space facilities rating

- Highest accessibility
- Lowest accessibility

- Brownfield site

Note

Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.

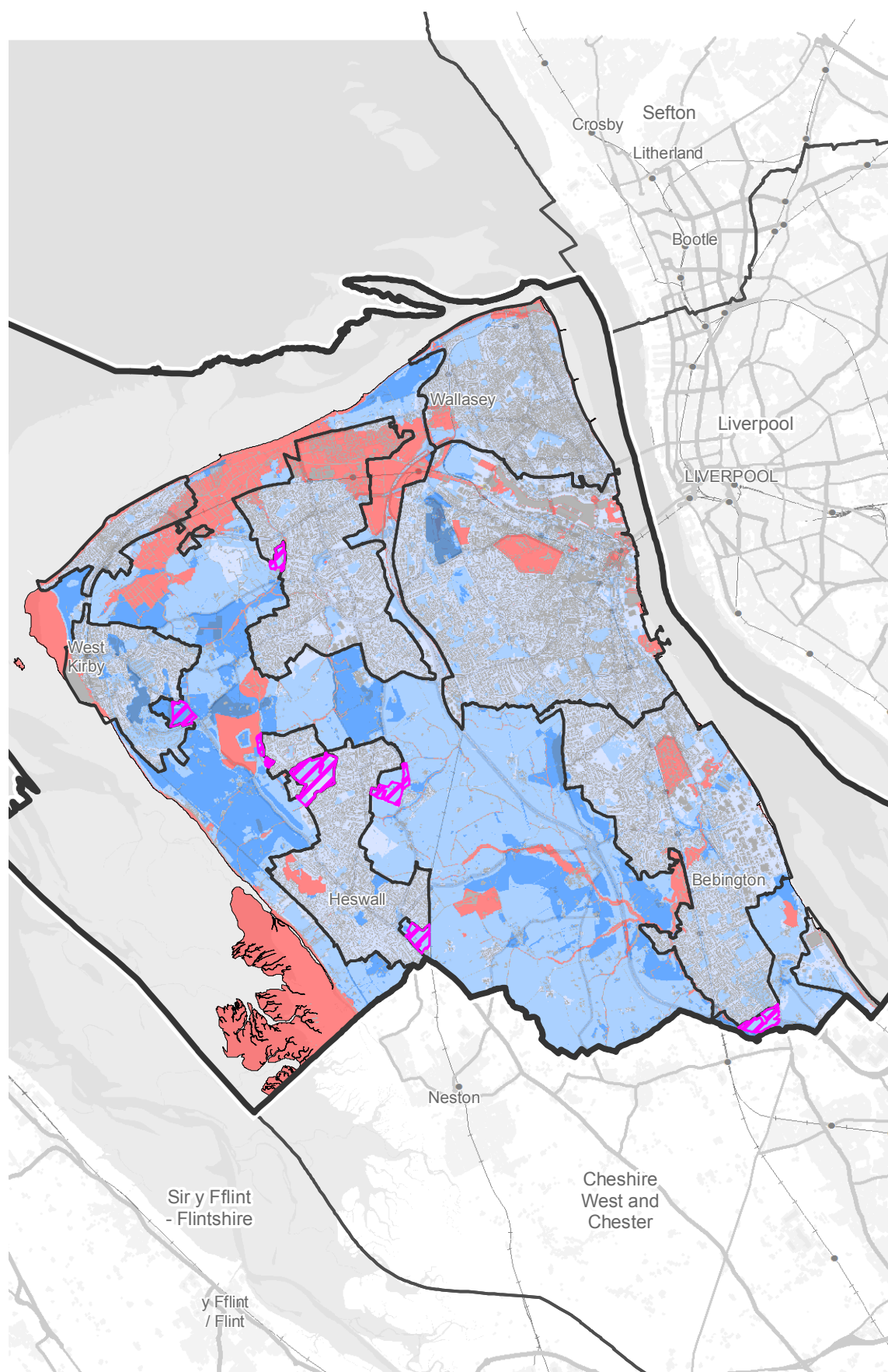


Map scale 1:125,000 @ A3

Strategic Option 2a Profile: Dispersed Green Belt release

Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>Option 2a consists of eight distinct sites, five of which surround Heswall; one in West Kirby, one in the Mid Wirral Urban Area, and one in the Bromborough Urban Area.</p> <p>None of the sites overlap with significant areas of identified Higher Sensitivity land (marked in red). The limited areas which are identified as Higher Sensitivity relate to Arrowe Brook within the site north of Saughall Massie. However, the commentary within Chapter 10 relating to considerations of functionally linked habitat should also be taken into account across all these sites.</p> <p>Small parts of the site on the edge of West Kirby are identified as having higher environmental sensitivity (i.e. where 7-9 'moderately sensitive' assets overlap). This land forms an important part of the West Wirral Heathlands and Arrowe Park Nature Improvement Area (NIA). It also overlaps with an area highlighted by Natural England as a 'Potential Network Join' in the habitat network. As such, the sensitivities largely stem from the role of this land in Wirral's wider ecological network.</p> <p>Elsewhere, large parts of these sites overlap with areas of Moderate Sensitivity i.e. where 4-6 'moderately sensitive' assets overlap. These largely relate to:</p> <ul style="list-style-type: none"> ■ The presence of Impact Risk Zones (IRZs) for nearby SSSIs. ■ Areas of archaeological interest. ■ The presence of Local Wildlife Sites, e.g. the cluster around Barnston Dale. ■ Areas of recreational value.
Summary of landscape sensitivity	<p>None of the sites under this Option intersect with areas of identified High landscape sensitivity. However, three sites intersect with areas of Moderate-High sensitivity – the site east of West Kirby (around Caldys Hill), the site west of Morton, and the larger site west of Irby.</p>
Summary of potential for carbon emissions assessment	<p>The locations considered within this Option all lie in areas identified as having relatively low accessibility to key services. As such, prior to any mitigation, development in these locations is likely to result in relatively higher transport-related carbon emissions. Given the dispersed nature of the development proposed under this Option, mitigation through infrastructural provision is also likely to be more challenging – particularly when considering access to services such as secondary schools and local retail centres.</p> <p>In addition, the dispersed development pattern proposed here may make the use of District Heat Networks unfeasible.</p>
Areas of potential lower sensitivity / Summary of sensitivities	<p>In general terms, the sites within this Strategic Option which have lower environmental and landscape sensitivity include:</p> <ul style="list-style-type: none"> ■ Land south of Irby (providing that constraints related to the water course and archaeological site are dealt with). ■ Land north of Saughall Massie (providing that sensitivities associated with the waterway and surrounding habitats are appropriately managed). ■ Land south of Bromborough (providing that deciduous woodland is retained, and sensitivities associated with the nitrate vulnerable zone (NVZ) are appropriately managed). ■ Land at Chester High Road, Gayton (providing that existing woodland is retained, the impact on nearby SSSIs is appropriately managed, and that sensitivities associated with the nitrate vulnerable zone (NVZ) are appropriately managed).

Overall sensitivity



Accessibility

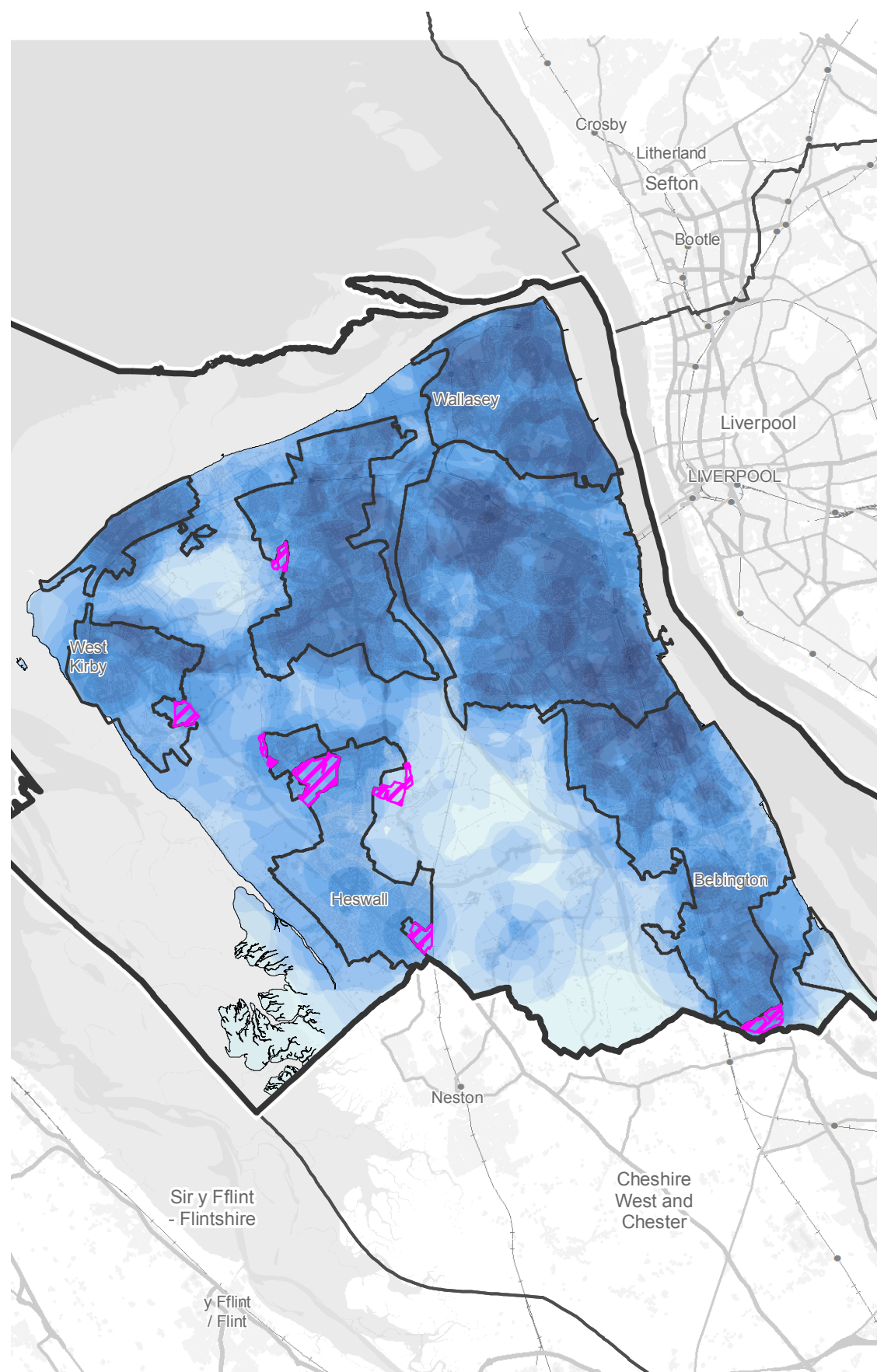


Figure 12.3: Strategic Spatial Option 2a (Dispersed Green Belt Release)

- Wirral boundary
- Other Local Authority boundary
- Landform edge
- Settlement area
- Physical constraint

Overall sensitivity

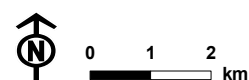
- High
- Moderate (13-15)
- Moderate (10-12)
- Moderate (7-9)
- Moderate (4-6)
- Moderate (1-3)
- Lower

Accessibility to key services and open space facilities rating

- Highest accessibility
- Lowest accessibility
- Green Belt Option 2a

Note

Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.



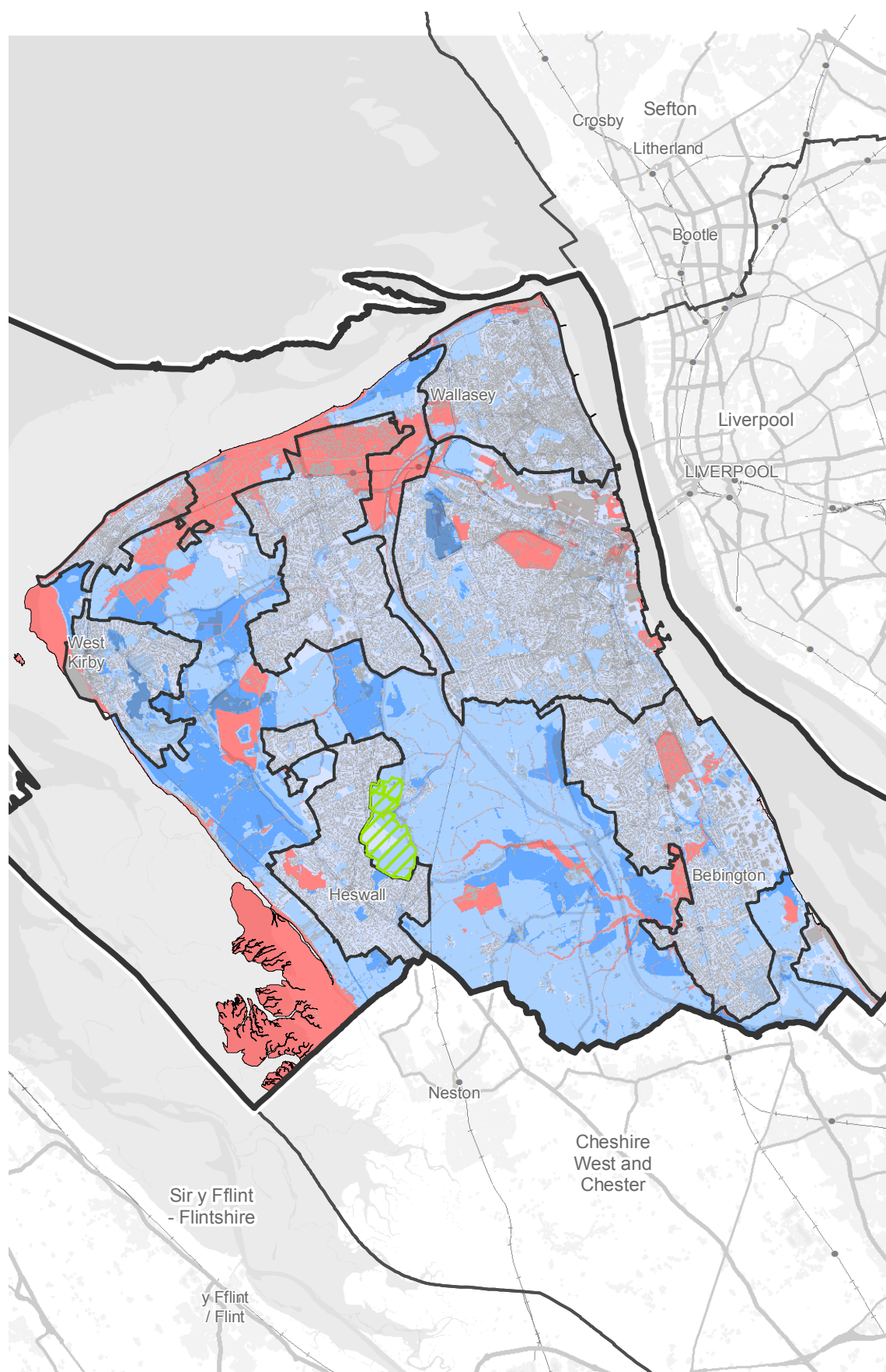
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Strategic Option 2b Profile: Single urban extension

Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>Option 2b consists of one single site on the eastern urban edge of Heswall, lying in the gap with Barnston village and consisting largely of land in agricultural use. Aside from a very limited area alongside a waterway in the south of the site (designated as Flood Zone 3), there are no significant areas identified as having Higher Sensitivity (i.e. marked in red).</p> <p>The highest sensitivity land within the site is found at those locations where 4-6 'moderately sensitive' assets overlap. These areas are concentrated in the east of the site, away from the urban edge. The sensitivities largely result from the presence of:</p> <ul style="list-style-type: none"> ■ a cluster of three Local Wildlife Sites (Lower Heath Wood, Barnston Dale, Murrayfield Hospital); ■ scattered blocks of deciduous woodland Priority Habitat; ■ a cluster of areas of archaeological importance around Barnston and Barnston Dale; and ■ the Barnston Conservation Area and cluster of heritage assets associated with it. <p>The environmental effects of development in the surrounding areas could potentially be mitigated by measures such as: the buffering of vulnerable habitats; appropriate site layout to limit the impact on the most sensitive ecological and heritage assets in the east; and multi-functional GBI features bordering Barnston Dale, to provide linking and supporting habitat. It is noted that the larger scale of this site allows more scope for flexible layout options to mitigate environmental impacts and to incorporate strategic GBI features and enhancements into the site.</p>
Summary of landscape sensitivity	<p>The entirety of the site has been identified as having a Moderate-High landscape sensitivity. This is in large part due to the presence on its borders of Prenton Brook and the associated enclosed wooded valley at Barnston Dale, which contrasts with the surrounding landscape and increases sensitivity. The heritage features around Barnston are also identified as further sources of landscape sensitivity.</p> <p>It is noted that the M53 and railway line are intrusive features within this area, lowering sensitivity, but that there is greater tranquillity towards Landican and Barnston, away from transport corridors and urban edges - signalling a higher sensitivity to development in these locations.</p>
Summary of potential for carbon emissions assessment	<p>The land under this Option is highlighted within this study's accessibility mapping as having – prior to any mitigation – low levels of accessibility to key services.</p> <p>The larger scale and consolidated nature of the settlement proposed here suggests that mitigation through infrastructural provision as part of the site could be more feasible. However, it should also be noted that the mapping illustrates that Heswall performs more poorly on accessibility than Wirral's other Settlement Areas, suggesting an existing deficit in key services. Similarly, the more consolidated nature of this proposal may indicate greater opportunities (than Option 2a) for district heat networks. However, studies to date have focussed on the wider Birkenhead Area as the major source of opportunity for these types of network and so further assessment would be required to determine the potential in this location.</p>
Areas of potential lower sensitivity	<p>Areas of lower environmental sensitivity (i.e. where 1-3 'moderately sensitive' assets overlap) are relatively more extensive than within other site options. These areas are concentrated in the west closest to the urban edge of Heswall.</p> <p>However, all areas of the site have been identified as moderate-high landscape sensitivity within the desktop LSA carried out as part of this study. A more detailed, site-specific LSA may highlight some variation in how sensitivity varies across different parts</p>

Issue	Commentary
	of the site and help to identify how development might minimise impacts on the most sensitive locations.

Overall sensitivity



Accessibility

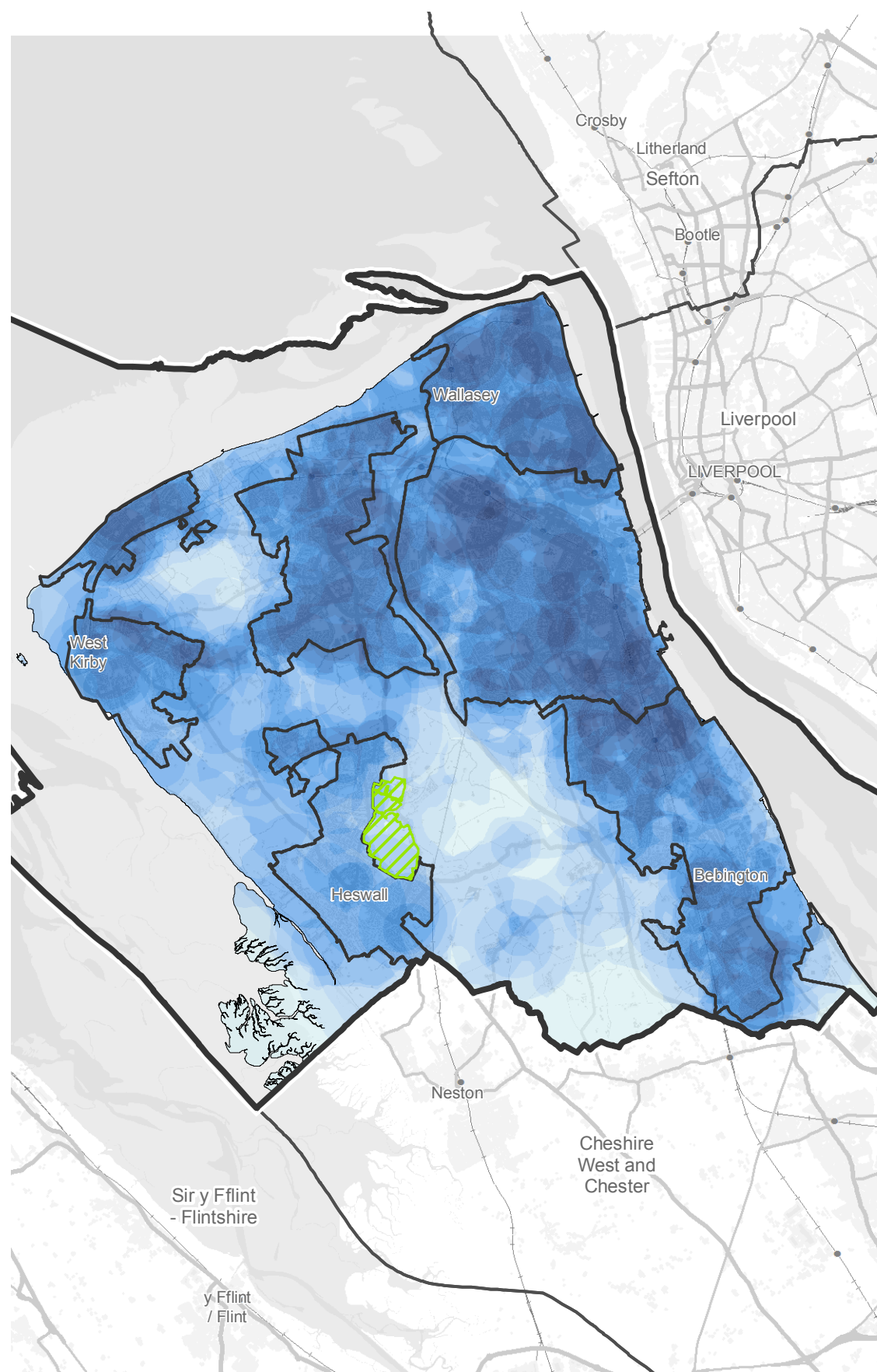


Figure 12.4: Strategic Spatial Option 2b (Single Urban Extension)

- Wirral boundary
- Other Local Authority boundary
- Landform edge
- Settlement area
- Physical constraint

Overall sensitivity

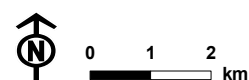
- High
- Moderate (13-15)
- Moderate (10-12)
- Moderate (7-9)
- Moderate (4-6)
- Moderate (1-3)
- Lower

Accessibility to key services and open space facilities rating

- Highest accessibility
- Lowest accessibility
- Green Belt Option 2b

Note

Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.



Map scale 1:125,000 @ A3

Conclusions from the assessment of Wirral's Strategic Spatial Options

12.5 In summary, this high-level assessment has found that Strategic Option 1a (Urban Intensification) has lower sensitivity in terms of potential impacts on environmental assets. The existing access of urban sites to key services and transport routes also mean that less ambitious mitigation would be required in order for new development to align with the Borough's carbon reduction goals. There is also greater scope than other options to potentially deliver District Heat Networks, given the urban setting of development. However, the sites considered under this Option are not free of environmental sensitivity in all cases, and some level of mitigation would still be required at most sites.

12.6 Strategic Option 2a (Dispersed Green Belt release) would affect a number of sensitive environmental assets, including both ecological and heritage assets. In some cases, it is likely that mitigating these impacts would be challenging. These sites also perform poorly on accessibility to existing key services and public transport and, given the dispersed nature of this Option, investment in infrastructural provision would be required.

12.7 Strategy Option 2b (Single urban extension) contains fewer highly sensitive environmental assets than Option 2a, however it would encroach on sensitive landscapes, particularly further from the urban edge of Heswall. Investment would be required in terms of accessibility to key services and public transport. However, it is recognised that the scale of this site offers more scope for more ambitious infrastructural delivery to support development. Further studies would be required to assess whether District Heat Networks or other low carbon energy generation proposals were feasible at the site.

Chapter 13

Settlement Area Profiles

Introduction

13.1 This Chapter sets out a high-level assessment of the sensitivity of land around six Settlement Areas within Wirral. The Settlement Areas within Wirral identified by Wirral MBC are:

- Area 1: Wallasey Urban Area.
- Area 2: Birkenhead Commercial (see paragraph 13.2).
- Area 3: Birkenhead Urban Area (see paragraph 13.2).
- Area 4: Bromborough Urban Area.
- Area 5: Mid Wirral Urban Area.
- Area 6: Hoylake/West Kirby Urban Area.
- Area 7: Heswall Urban Area.

13.2 For the purposes of this assessment, Areas 2-3 ('Birkenhead Commercial' and 'Birkenhead Urban Area') have been assessed together rather than separately, given the limited extent of the outer boundary of the 'Birkenhead Commercial' settlement area. This results in six Settlement Profiles.

13.3 The focus of this assessment stage considers the areas of land immediately surrounding the urban edge of existing Settlement Areas within Wirral. Whilst the Council is not currently considering the development of land within the Green Belt, any potential future spatial options for development within the Green Belt are most likely to take the form of urban extensions as opposed to the creation of new settlements.

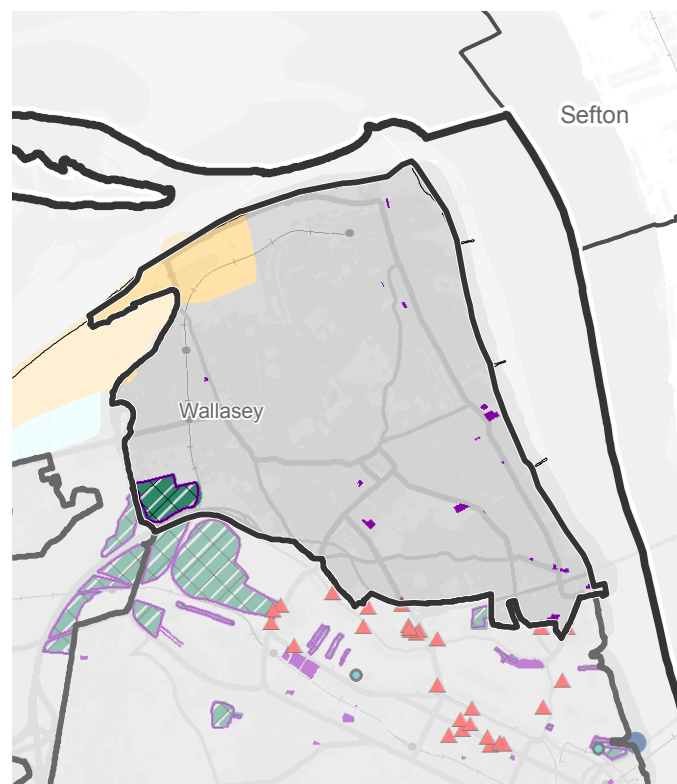
13.4 For each settlement area, an assessment is undertaken of:

- key environmental sensitivities and potential for mitigation.
- landscape sensitivity.
- potential for carbon emissions.
- areas of potential lower sensitivity / summary of sensitivities.
- other key considerations.

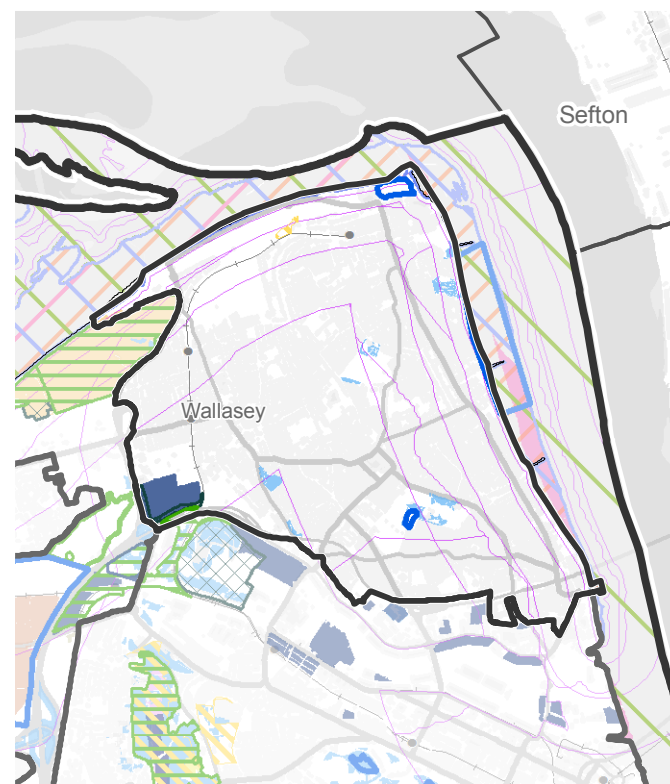
Settlement Area 1 Profile: Wallasey Urban Area

Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>A large part of the edge of the Wallasey urban area is coastal, abutting the Mersey Estuary to the east and the North Wirral coast to the north, both of which are highly sensitive and physical constraints to development. Directly to the south, the urban area adjoins the former docklands (the proposed 'Wirral Waters' site) and the centre of Birkenhead to the south. This settlement area only directly adjoins a non-urban area to the west, where it lies adjacent to the North Wirral Coastal Park and the River Birket Corridor. Physical constraints along this edge include road infrastructure associated with the A554 and M53.</p> <p>The main area of Higher Sensitivity on the western edge of Wallasey relates to the designated Flood Zone along the River Birket Corridor, which extends to the west toward Hoylake. This Flood Zone extends along the majority of the urban edge of Wallasey and largely precludes development.</p> <p>Areas of Moderate Sensitivity are largely a result of:</p> <ul style="list-style-type: none"> ■ the landfill site at Bidston Moss; ■ the presence of waste disposal sites; ■ the presence of Priority Habitats (coastal sand dune) within Wallasey Golf Course; ■ parts of North Wirral Coastal Park (a Country Park); and ■ land which lies in the impact risk zone (IRZ) for nearby designated SSSIs.
Summary of landscape sensitivity	<p>There are no areas of High or Moderate-High landscape sensitivity on the urban edge of the Wallasey Urban Area (these areas range from Low to Moderate sensitivity, as shown in Chapter 9).</p> <p>Those areas of High sensitivity highlighted by the map either lie within the settlement edge (around North Wirral Coastal Park) or are adjacent to the Birkenhead Urban Area (see accompanying profiles).</p>
Summary of potential for carbon emissions assessment	<p>In terms of accessibility to key services, the Wallasey Urban Area performs relatively strongly, if unevenly, across the settlement. However, on Wallasey's western urban edge levels of accessibility are still relatively weak. The only exception is a small area of the urban edge adjacent to Wallasey Golf Course, in part due to its accessibility to Wallasey Grove Road Merseyrail station (however it should be noted that this area of land also presents significant environmental constraints).</p>
Areas of potential lower sensitivity	<p>Given the various constraints described above, there are very limited areas around the edge of Wallasey where both environmental and landscape sensitivity are considered to be lower. The only limited area of lower sensitivity is land currently in horticultural use to the west of the A554 junction.</p>
Other key considerations	<p>Green Belt - While some limited areas of land on the western edge of Wallasey show relatively low environmental and landscape sensitivities, it should be noted that these areas generally lie in a narrow gap between neighbouring settlements. As such, further assessment of the impact on the potential harm to Wirral's Green Belt would be required in order to gain a better understanding of the key Green Belt constraints relevant to this area of land.</p>

Core Theme 1. Land, soils, minerals and waste sites



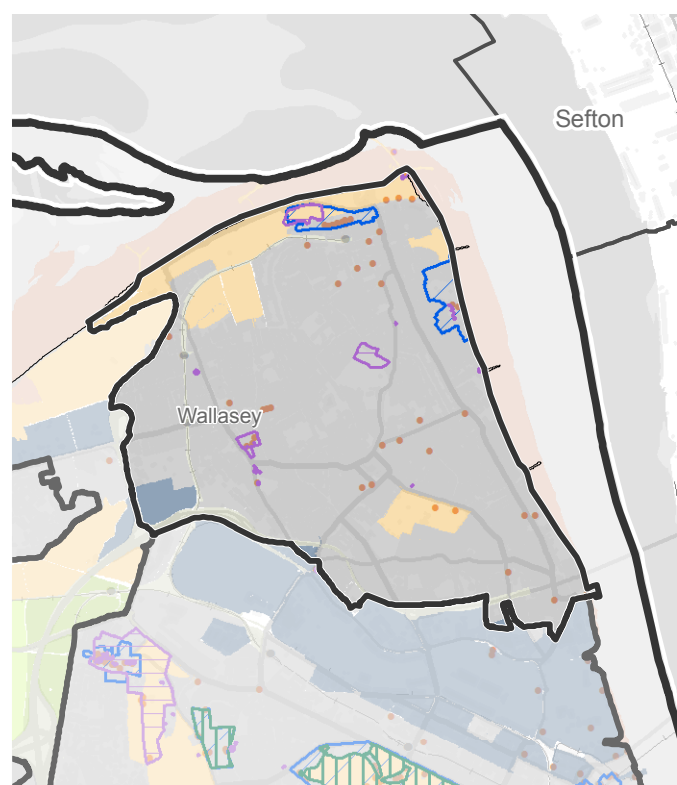
Core Theme 2. Ecology and geology assets



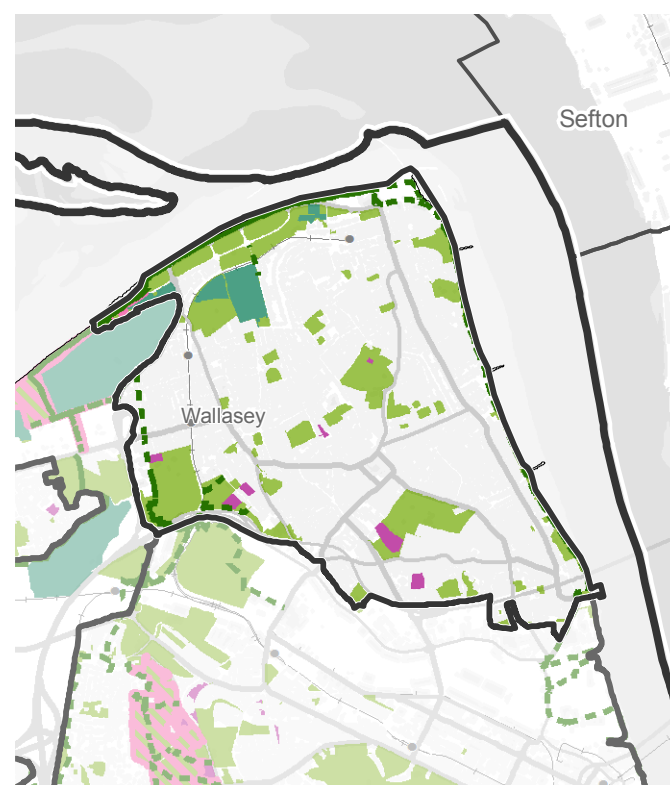
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

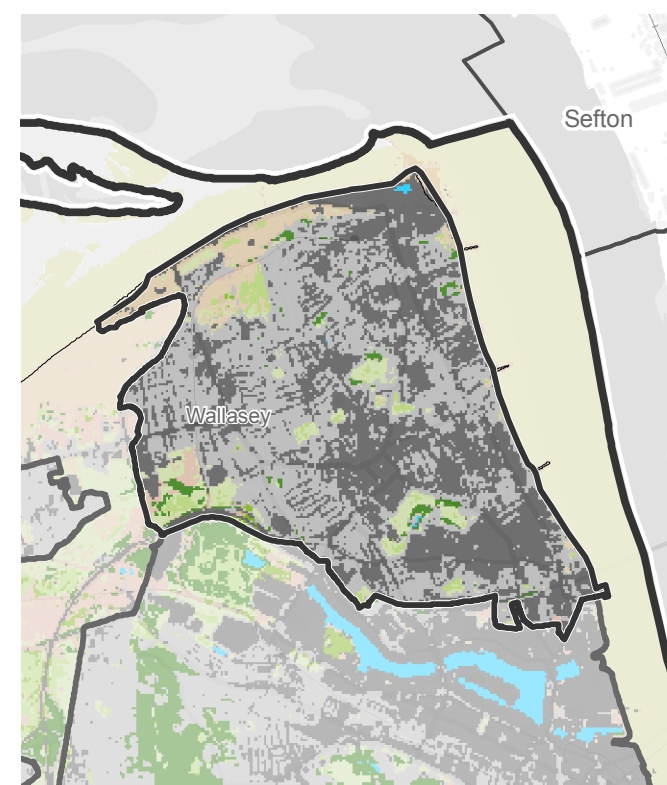
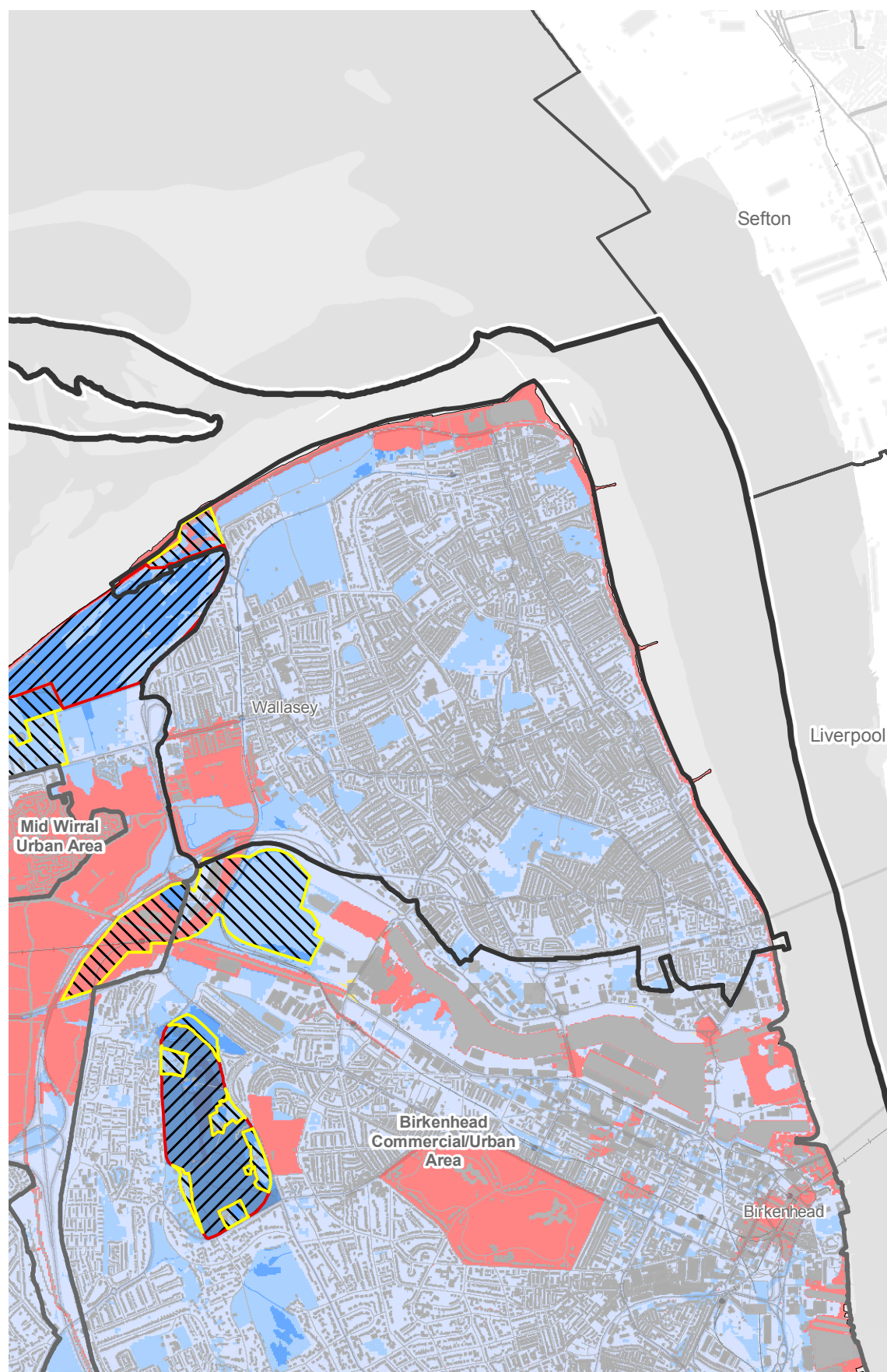


Figure 13.1 Environmental constraints around Wallasey Urban area



Overall sensitivity



Accessibility

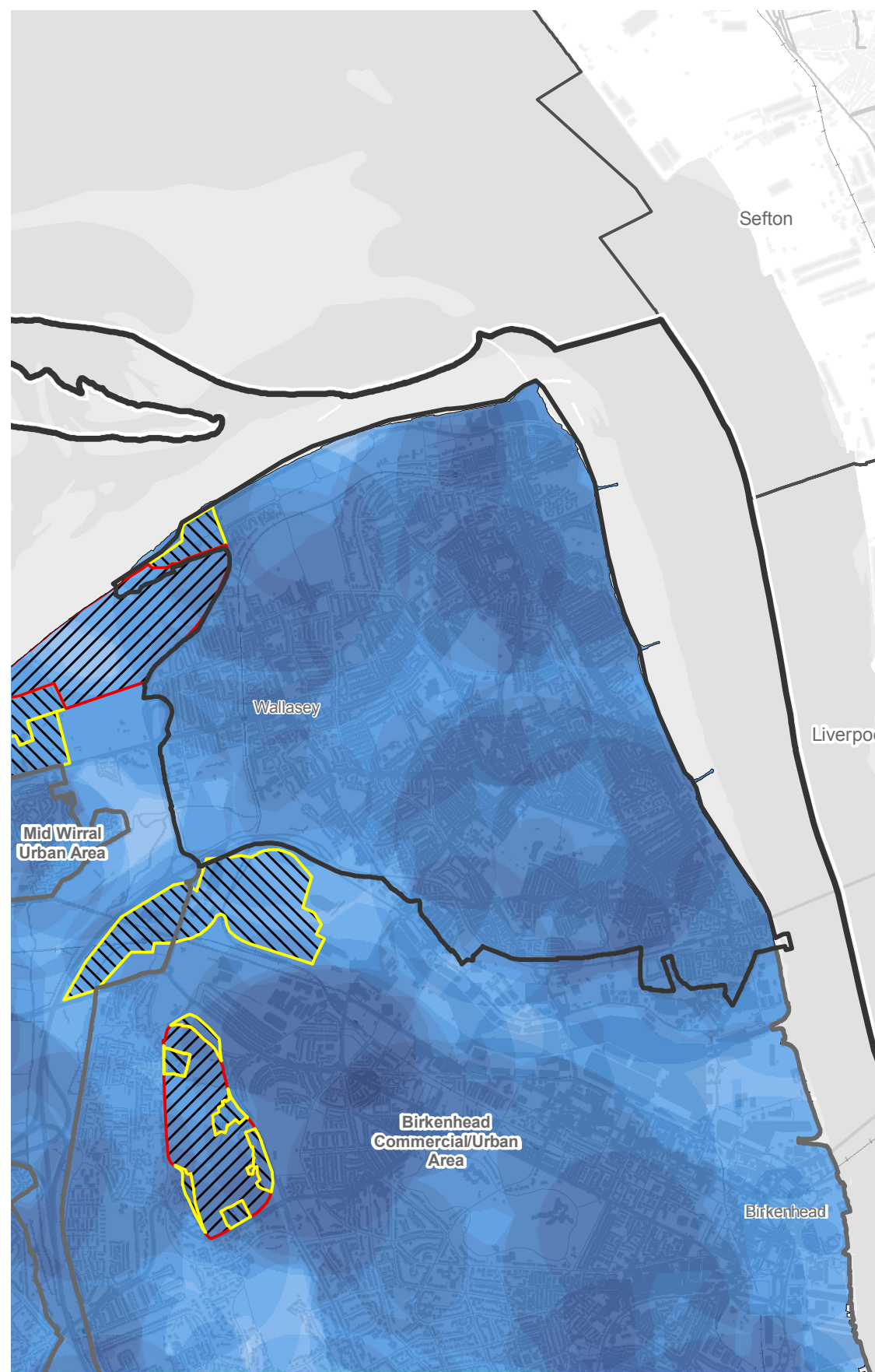
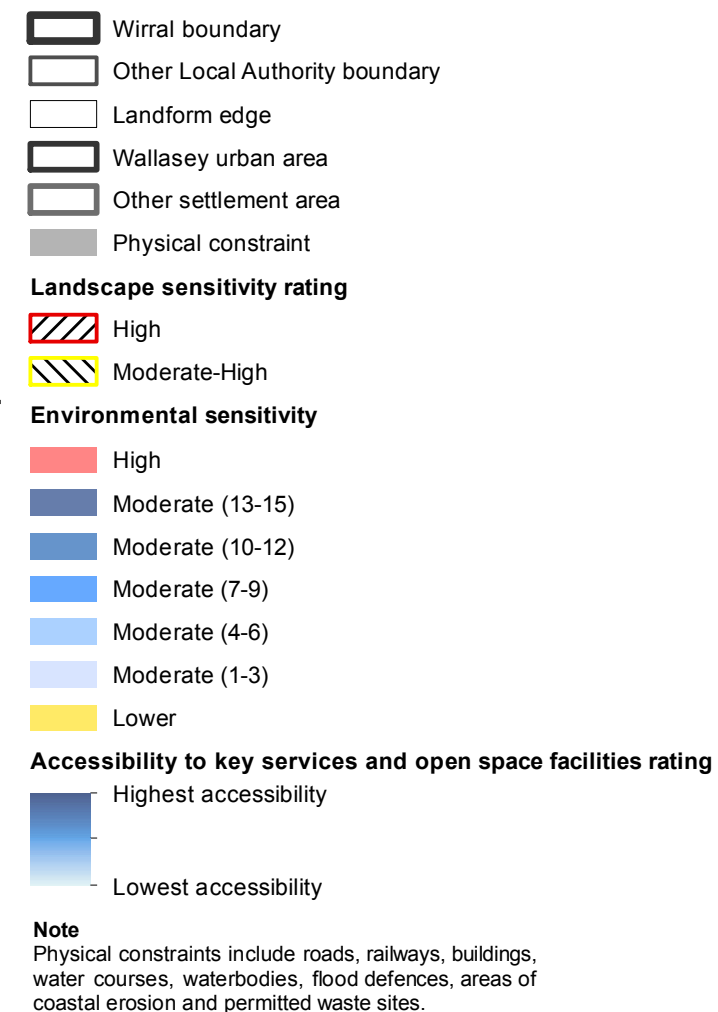


Figure 13.2 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Wallasey urban area

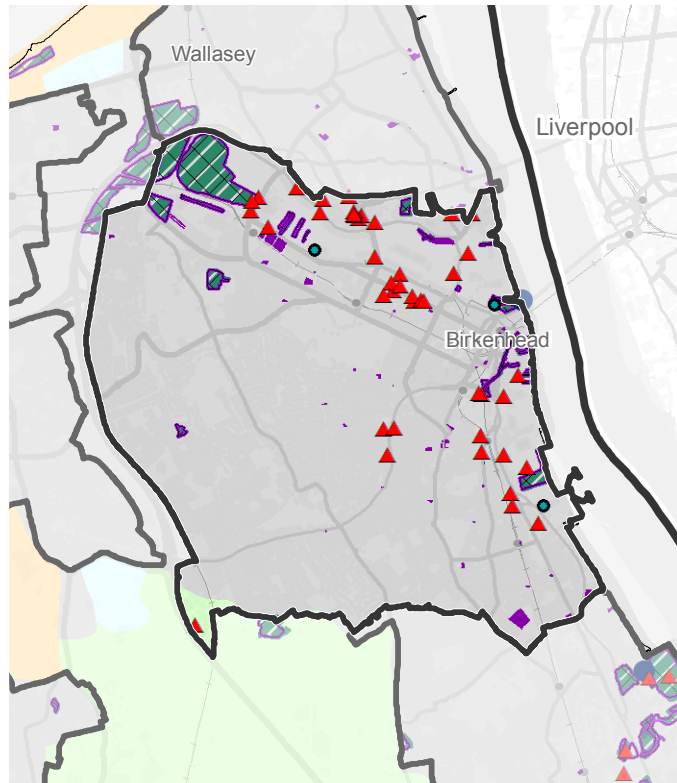


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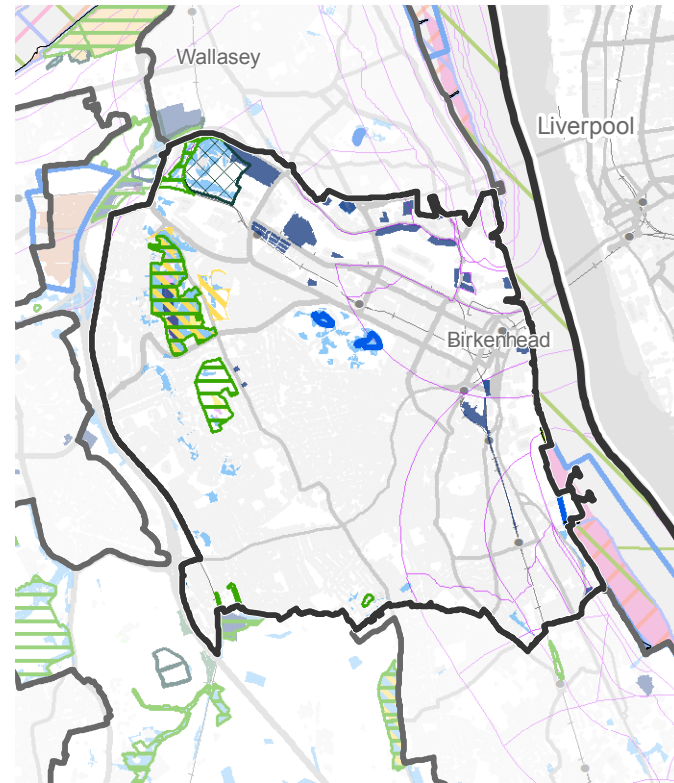
Settlement Areas 2-3 Profile: Birkenhead/Birkenhead Commercial Urban Areas

Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>These two combined Urban Areas coalesce with the Wallasey Urban Area to the north, and the Bromborough Urban Area to the south. To the west, there is only a narrow strip of land (the M53 corridor) separating this Urban Area from the Mid Wirral Urban Area. To the east, the urban boundary is marked by the Mersey Estuary – both a highly sensitive environmental asset and a physical constraint.</p> <p>Areas of high environmental sensitivity are concentrated on the north western boundary, where an area of Flood Zone 3 associated with the River Birket leads up to the urban edge. The boundary to the West is largely characterised by the physical constraint of the M53 corridor.</p> <p>Areas of heightened (but still Moderate) sensitivity are concentrated on the southern boundary of the Urban Area, around Prenton Golf Club. Aside from the recreational value presented by the golf course, this area represents a collection of various sensitivities relating to:</p> <ul style="list-style-type: none"> ■ a historic landfill site at Lower Farm (and the resulting human health risks); ■ the proximity of the Prenton Dell and Claypit Local Wildlife Site (LWS) to the west; ■ scattered blocks of deciduous woodland Priority Habitat; ■ a linear archaeological asset running through a nearby golf course; and ■ a SSSI Impact Risk Zone (IRZ). <p>While impacts on these assets could be mitigated against by limiting future land use changes to avoid sensitive areas and retaining certain habitats, land use change here could prove challenging due to the number of sensitivities in the area.</p>
Summary of landscape sensitivity	<p>The only area of higher landscape sensitivity adjacent to the Birkenhead/Birkenhead Commercial Urban Area is in the north where the raised topography of areas around Bidston Moss (within the Fender River Floodplain LCA) acts as a constraint. To the west and south of the Urban Area there are no areas identified as high landscape sensitivity.</p>
Summary of potential for carbon emissions assessment	<p>In terms of accessibility to key services, the wider Birkenhead Area performs strongly compared to other parts of the Borough (see Chapter 11). On the urban edge, accessibility is fairly strong within parts of the M53 corridor and around Bidston Merseyrail station. However, areas of low accessibility – prior to any mitigation or infrastructural provision - are also found on the southern urban edge.</p>
Areas of potential lower sensitivity	<p>While the northern and western urban edges of Birkenhead are largely constrained by high landscape sensitivity, Flood Zone 2 and the physical constraint of the M53, there are two very limited pockets of land in the southern section of this urban area which show lower levels of sensitivity. The first lies to the east of Prenton Golf Course and adjacent to housing along Stanley Avenue and Pinewalks Ridge. However, this is a very limited area of land (in terms of its overall size).</p> <p>In addition, there is a small stretch of land lying between the M53 and the railway line, currently in use as the Glenavon playing fields. Environmental sensitivity here is identified as lower than surrounding areas, and there are no identified higher landscape sensitivities.</p>
Other key considerations	<p>The small stretch of land at Glenavon playing fields – while not highlighted as presenting high environmental sensitivity – is likely to have issues related to air quality and noise pollution resulting from its location between the M53 and the railway line and its proximity to a major motorway junction.</p>

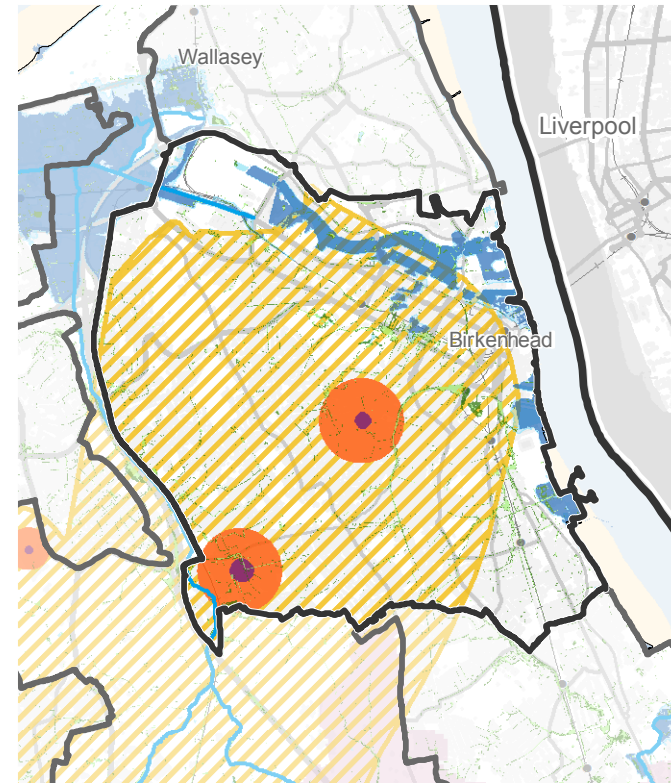
Core Theme 1. Land, soils, minerals and waste sites



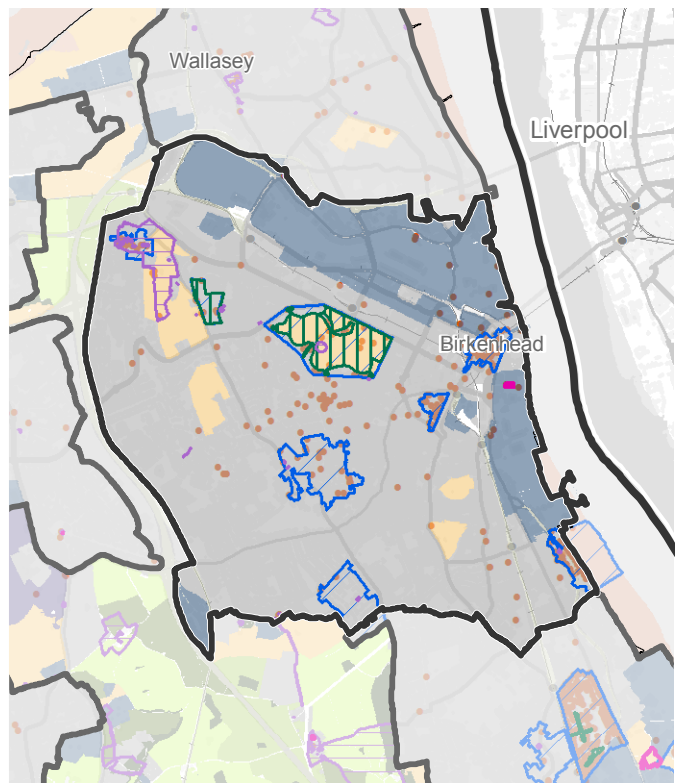
Core Theme 2. Ecology and geology assets



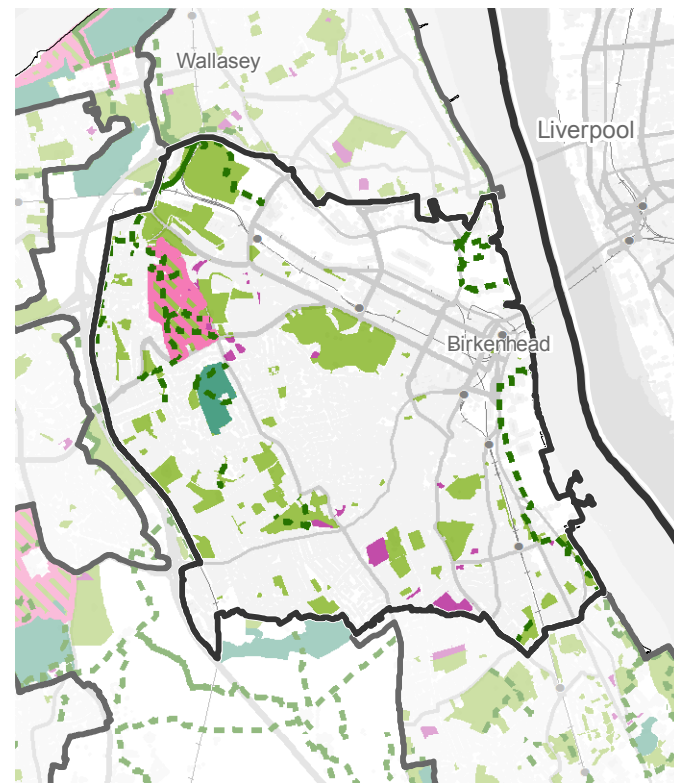
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

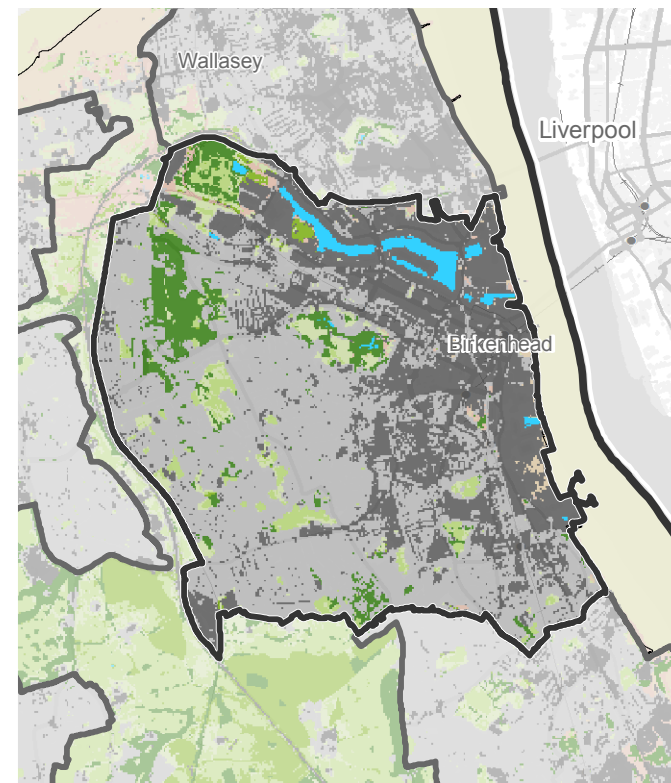
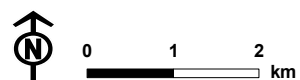
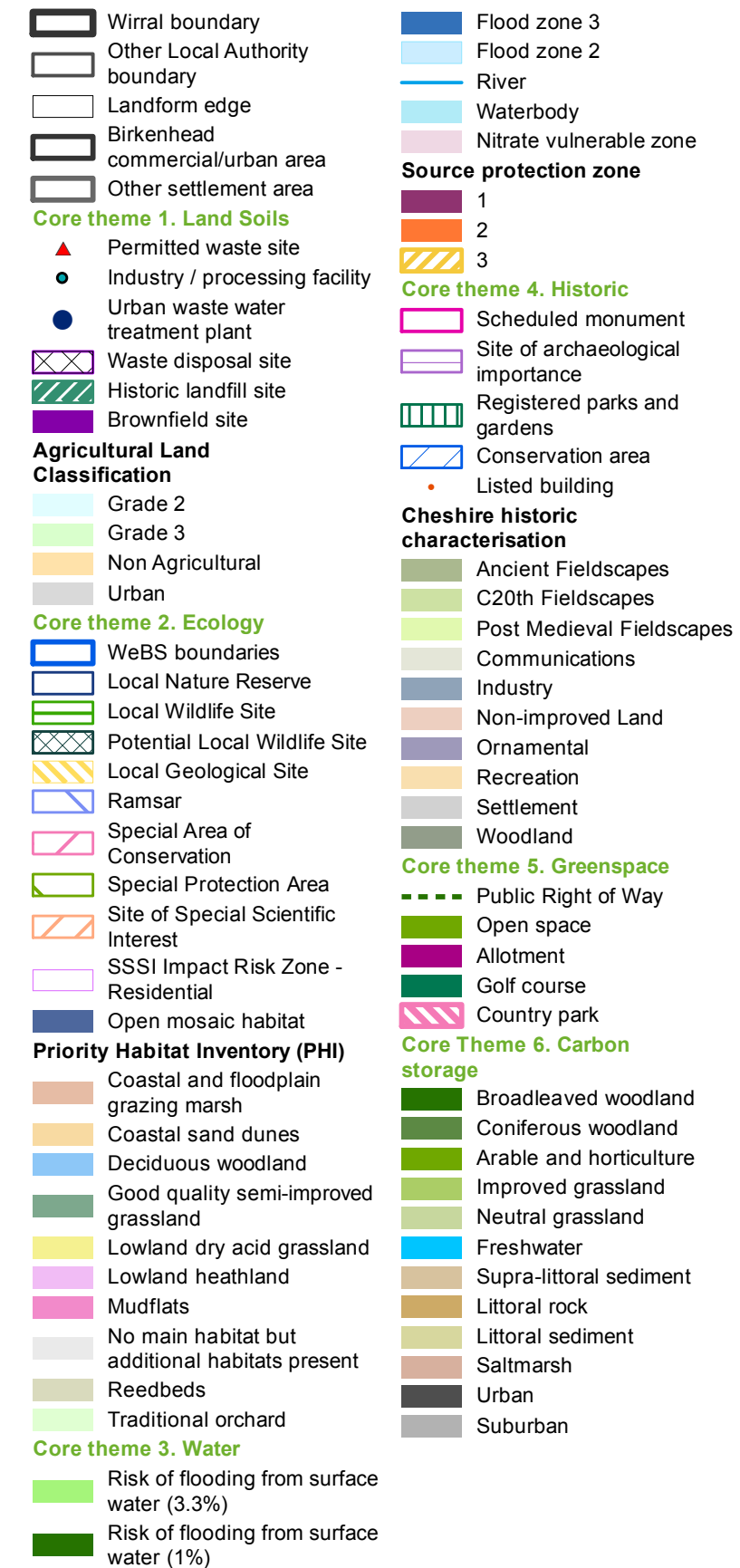
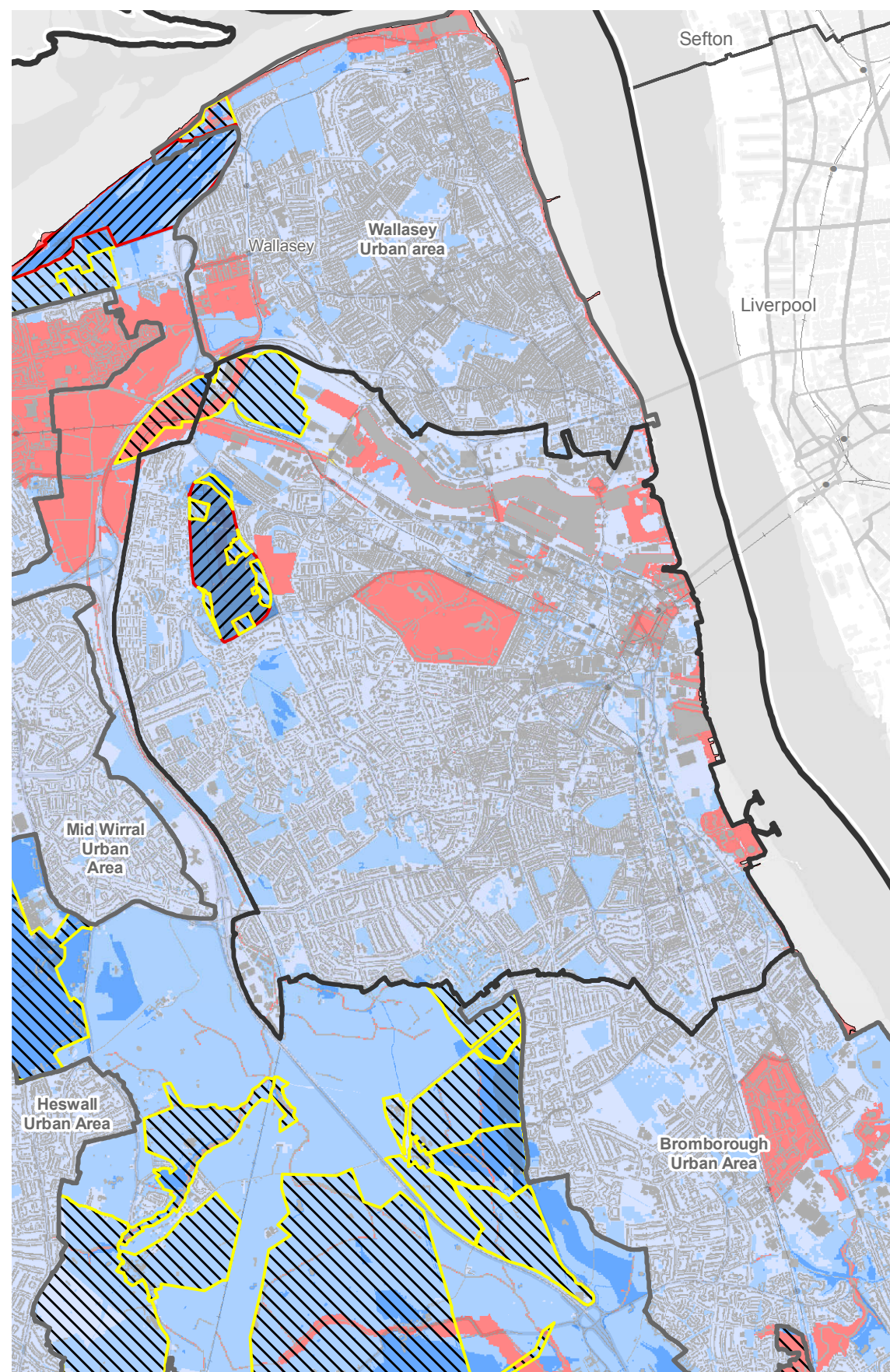


Figure 13.3 Environmental constraints around Birkenhead Commercial/Urban Area



Map scale 1:88,000 @ A3

Overall sensitivity



Accessibility

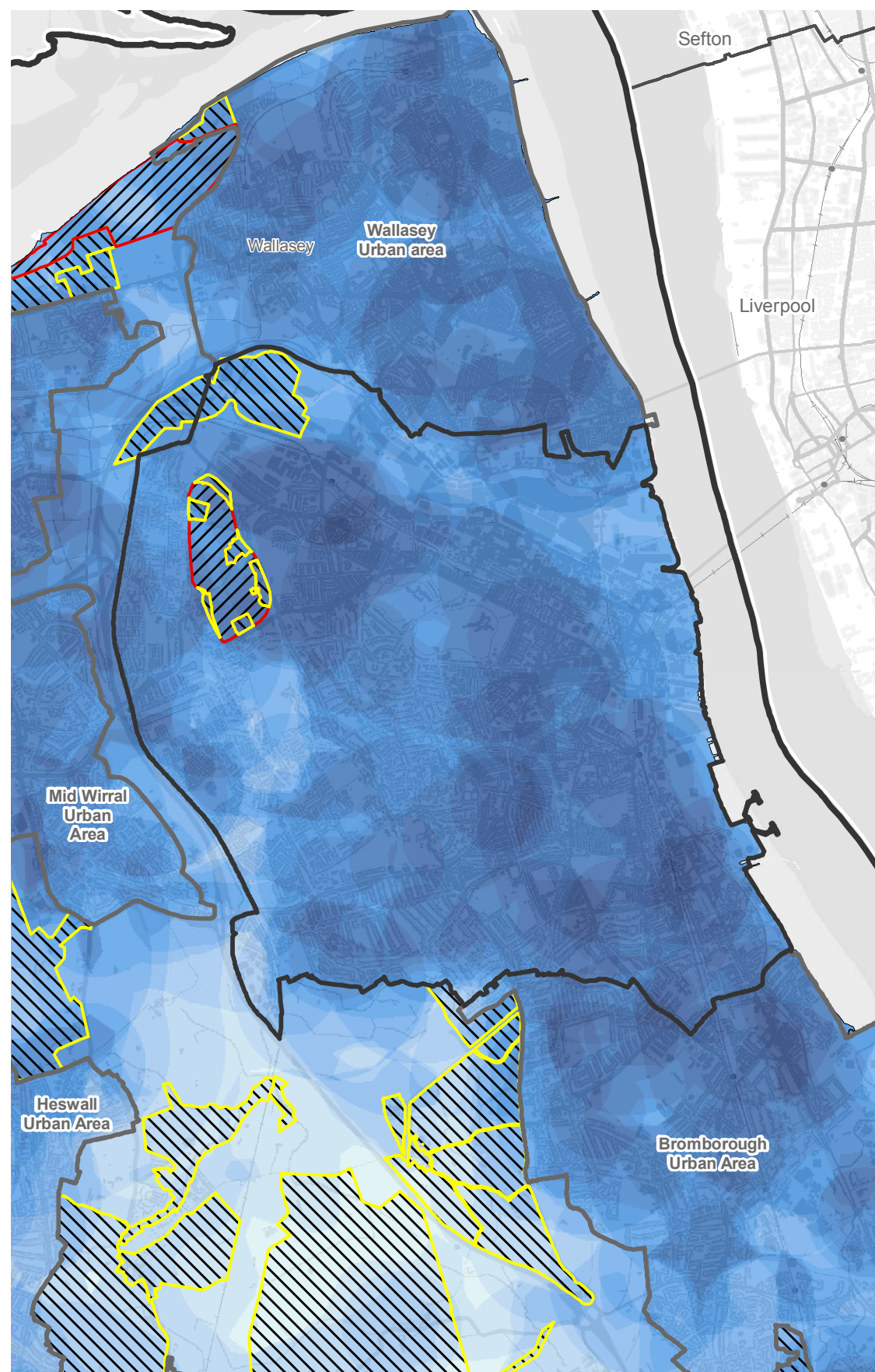
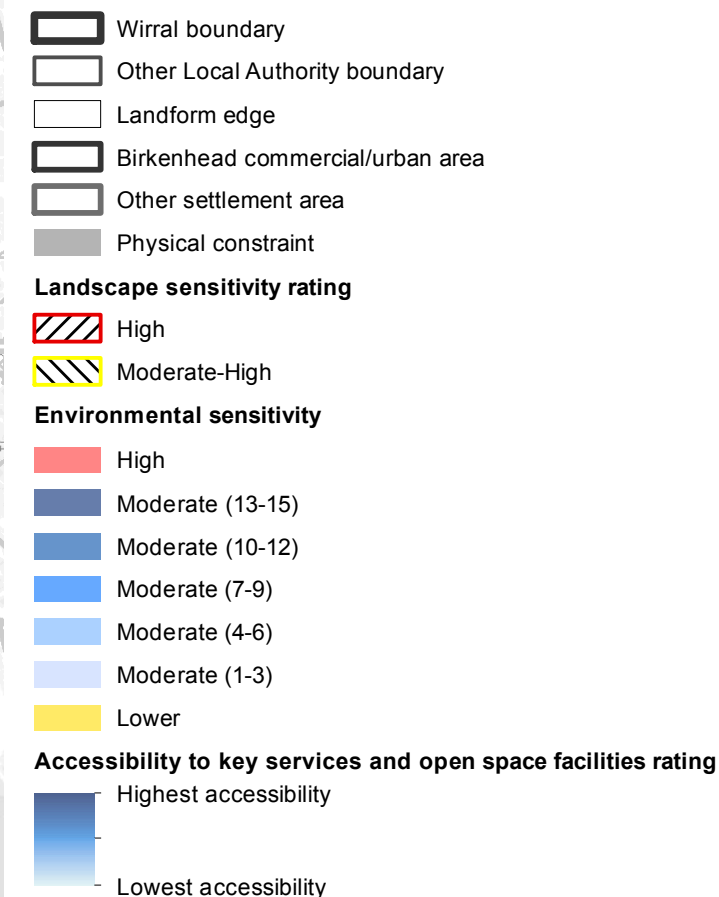


Figure 13.4 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Birkenhead commercial/urban area



Note
Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.



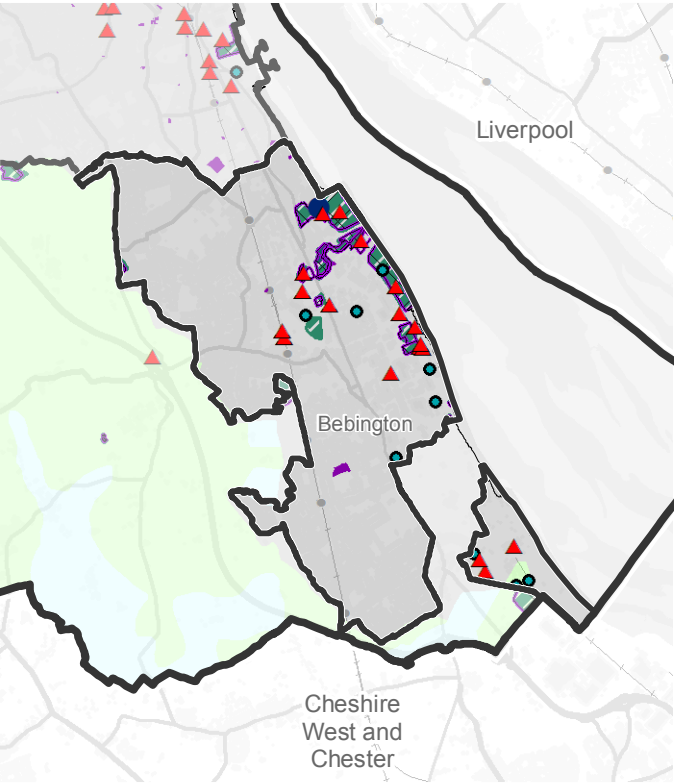
Map scale 1:52,100 @ A3

Settlement Area 4 Profile: Bromborough Urban Area

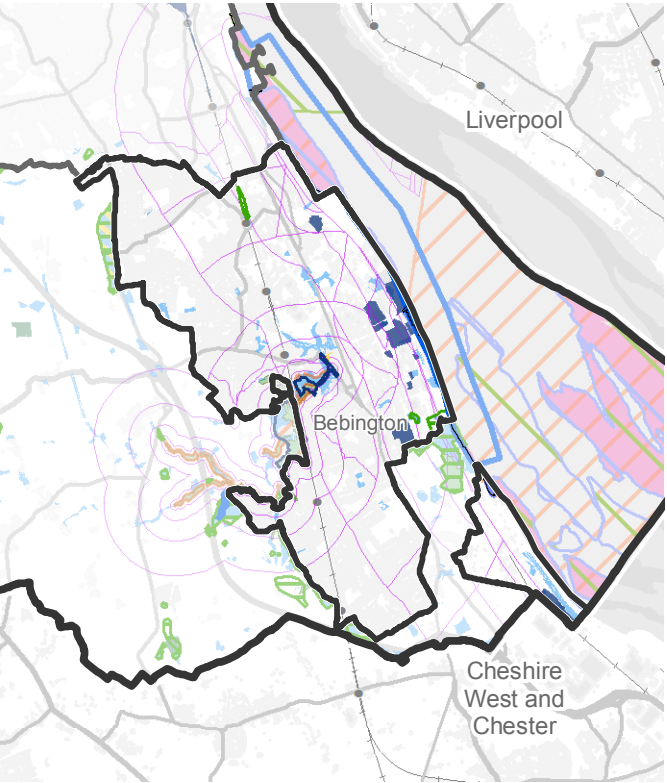
Issue	Commentary
<p>Summary of Environmental sensitivities and potential for mitigation</p>	<p>While the eastern edge of the Bromborough Urban Area is marked by the Mersey Estuary – both a highly sensitive environmental asset and physical constraint – the Urban Area has an extensive urban edge with surrounding countryside to the west and the south.</p> <p>The areas of Higher sensitivity (i.e. marked in red) are concentrated on Bromborough's urban edge around Dibbinsdale. The overlapping designations of the Dibbinsdale SSSI and the Brotherton Park and Dibbinsdale Local Nature Reserve (LNR) are recognised as sensitive environmental assets. Relatively expansive areas of ancient woodland at Railway Wood and Marsford Woods also contribute to the significant sensitivity. The whole of this broader area has been designated as the Dibbinsdale and Raby Mere Nature Improvement Area (NIA) by the Merseyside Environmental Advisory Service (MEAS), given the opportunity it presents to deliver a 'step change' in nature conservation by creating habitat and enhancing connectivity between local sites.</p> <p>An additional, but more limited, area of Higher Sensitivity is identified at the area of ancient woodland found at Eastham Woods on the Urban Area's southern boundary. A further area of Higher Sensitivity is found in the narrow stretch of Flood Zone 3 alongside Dibbinsdale Brook, which provides the boundary to the built-up area around Brookhurst.</p> <p>Beyond areas of Higher Sensitivity, there are a number of areas identified as having Moderate Sensitivity. These areas of higher sensitivity (i.e. 10-15 'moderately sensitive' assets) are visible to the north around the Storeton Wood LWS, which overlaps with a designated Local Geological Site (LGS), as well as lying in the Impact Risk Zone (IRZ) for a nearby SSSI and hosting a significant swathe of deciduous woodland Priority Habitat. An archaeological site on the urban edge and the Storeton Quarry historic landfill site further increase sensitivities, whilst the area has recognised recreational value as green space. In addition, a collection of sensitive environmental assets on the southern boundary, around Eastham Country Park, also cumulatively present higher sensitivity (7-9 'moderately sensitive' assets) - aside from the Country Park itself, other sources of sensitivity here include Eastham Woods LWS and extensive deciduous woodland Priority Habitat. Finally, the linear Plymyard Dale LWS running along the urban edge of Brookhurst contributes to higher sensitivity along the western boundary.</p> <p>The majority of the remaining urban edge of Bromborough - mainly relating to areas adjacent to the settlement of Bebington - also shows some degree of environmental sensitivity (i.e. where 4-6 'moderately sensitive' assets overlap). In general terms, this degree of sensitivity results from:</p> <ul style="list-style-type: none"> ■ the recreational value of existing green spaces; ■ the presence of impact risk zones (IRZs) for surrounding SSSIs; and ■ scattered areas of deciduous woodland Priority Habitat. <p>There is some scope for mitigating these sensitivities when considering future land use, including the buffering and expansion of important areas of habitat and ensuring that provision of high-quality open space meets Wirral's draft Open Space standards.</p>
<p>Summary of landscape sensitivity</p>	<p>There are areas of High landscape sensitivity evident to the north, east and south of the Bromborough Urban Area. To the north, the area around the ridge of Storeton Wood is considered highly sensitive, as is the land within the Dibbin Valley on the western edge of Bebington.</p> <p>Finally, two distinct areas on the southern boundary are identified as highly sensitive landscapes – the first in the vicinity of Eastham Country Park and the second another area on the edge of Eastham, lying between the A41 and Eastham Refinery.</p>

Issue	Commentary
Summary of potential for carbon emissions assessment	In terms of accessibility to key services, the Bromborough Urban Area performs relatively weakly compared to Urban Areas to the north, particularly in certain indicated areas on the western urban edge, and areas along the Mersey Estuary to the east (many parts of which are, however, environmentally constrained). Consequently, on the urban edge, accessibility – prior to any mitigation or infrastructural provision – is also relatively weak, particularly in the south.
Areas of potential lower sensitivity	<p>Given significant constraints caused by both sensitive environmental assets and sensitive landscapes, there are very limited areas of Bromborough's urban edge which are free of significant sensitivities. There are two small pockets of land which are highlighted as being relatively less sensitive:</p> <ul style="list-style-type: none"> ■ A very limited area of land adjacent to Poulton Road on the western urban edge of Bromborough; ■ A limited area of Eastham Lodge Golf Course to the south. However, the sensitivity of a SSSI impact risk zone (IRZ) would have to be considered further. <p>As such, there is only limited scope for land use change of any significant scale on the edge of this Urban Area.</p>
Other key considerations	N/A

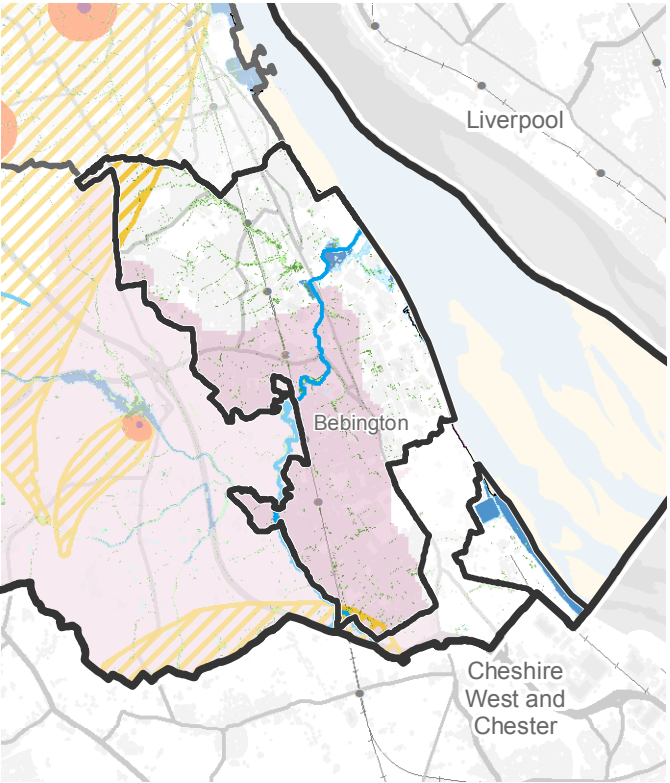
Core Theme 1. Land, soils, minerals and waste sites



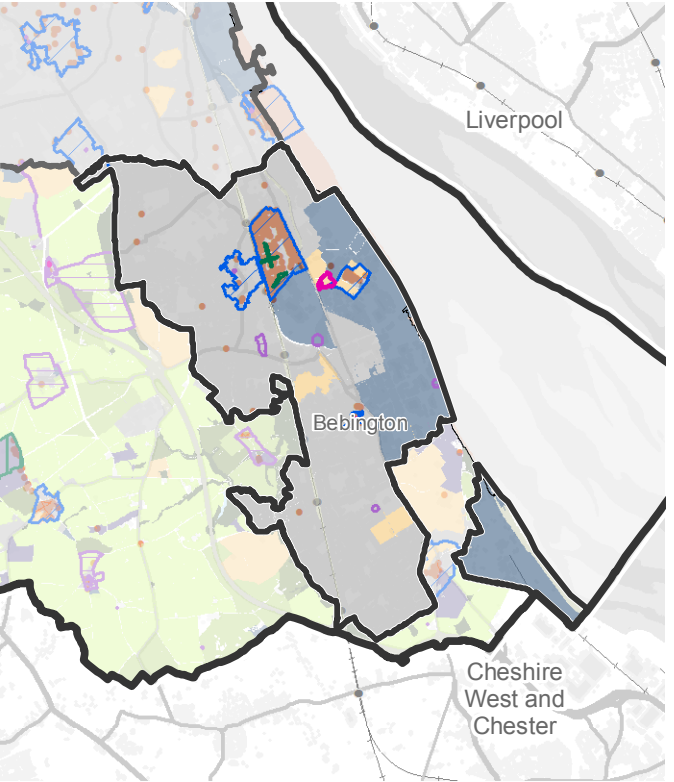
Core Theme 2. Ecology and geology assets



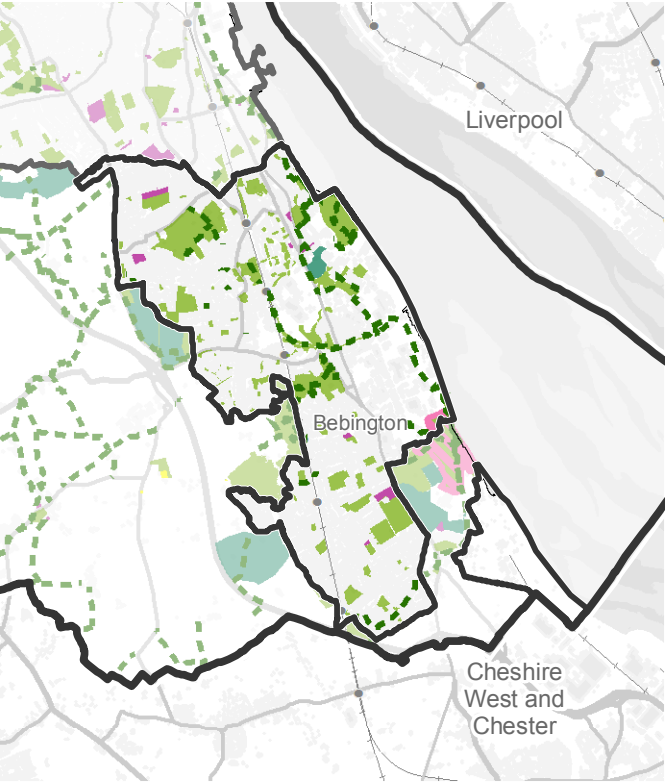
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

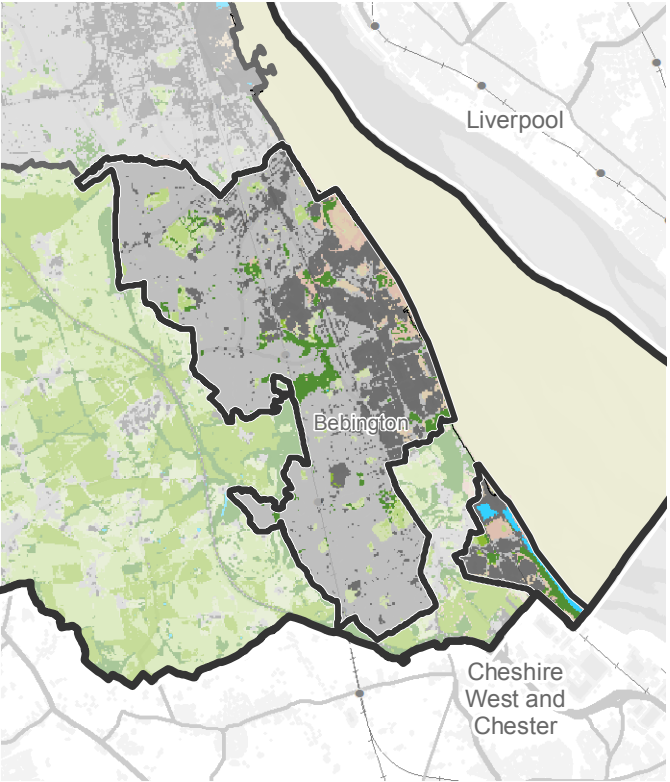
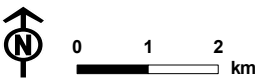
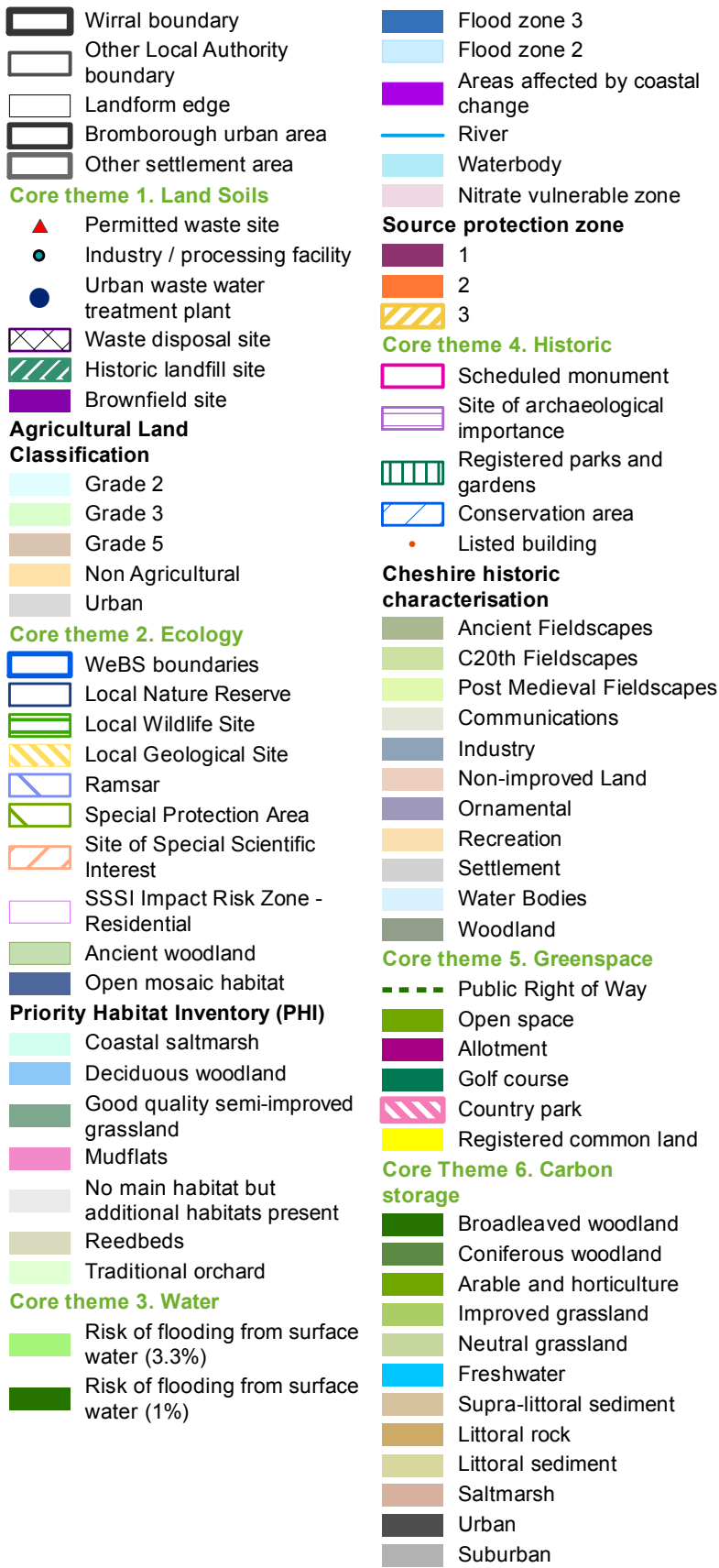
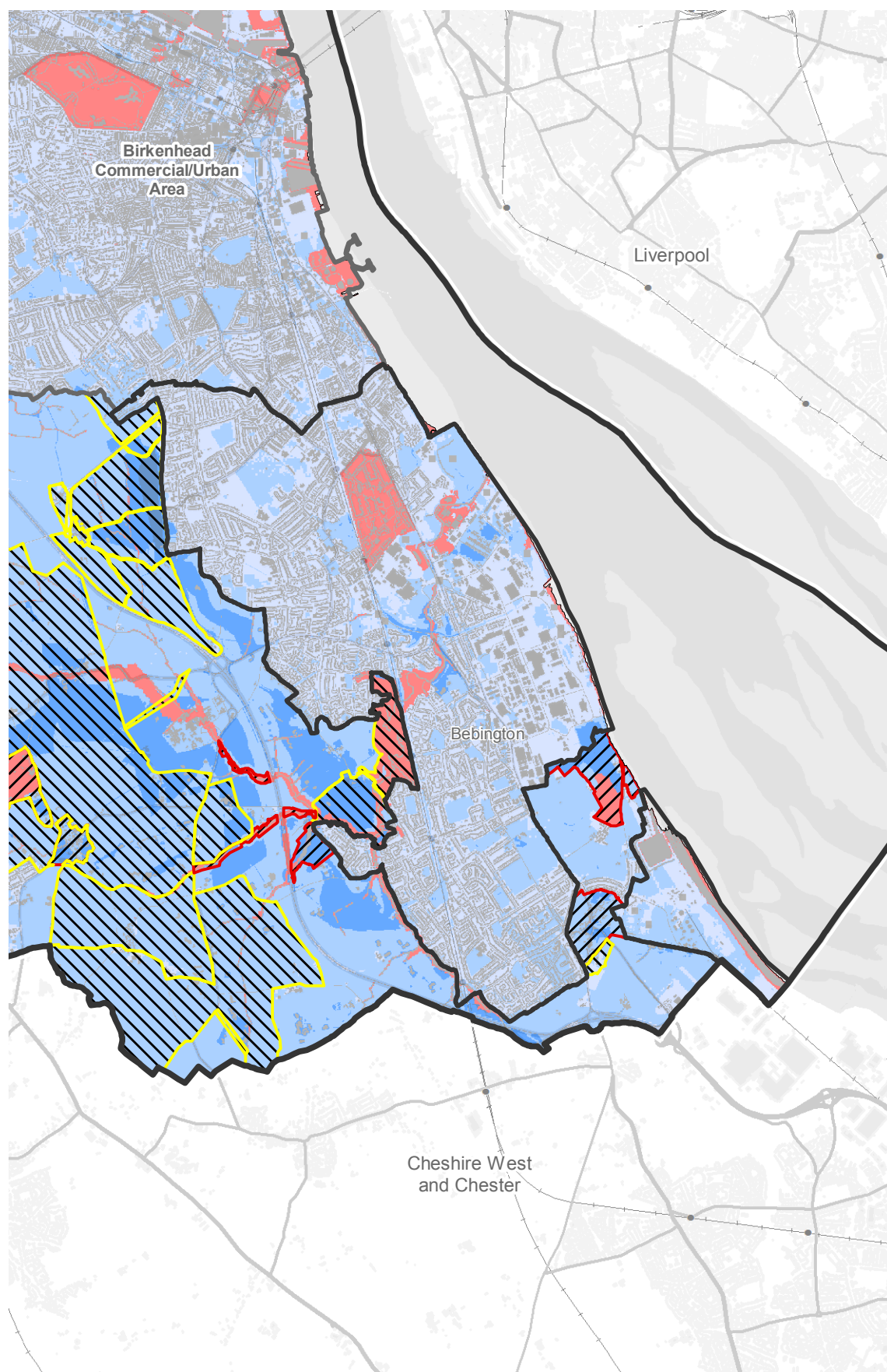


Figure 13.5 Environmental constraints around Bromborough Urban Area



Map scale 1:107,000 @ A3

Overall sensitivity



Accessibility

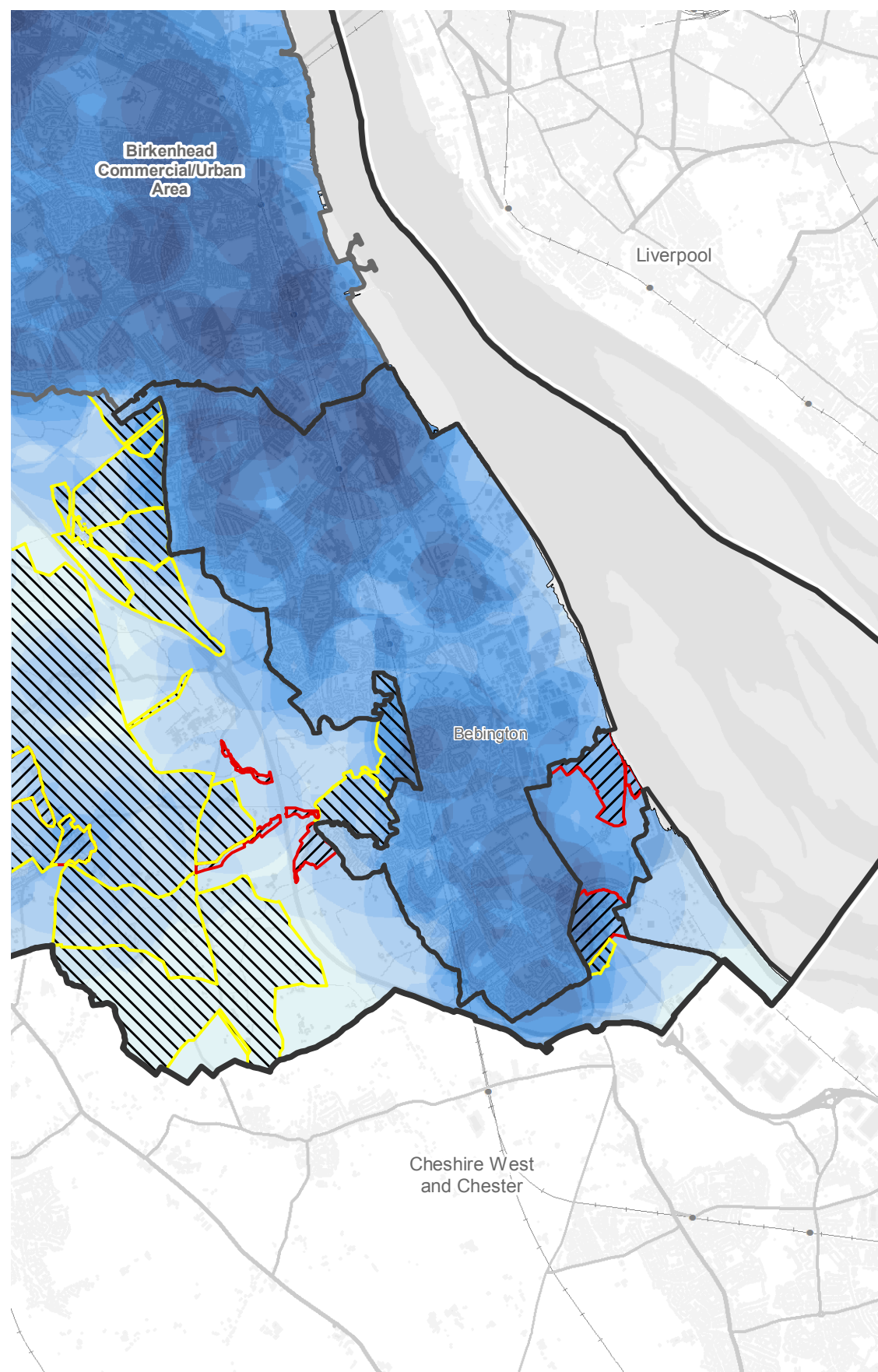
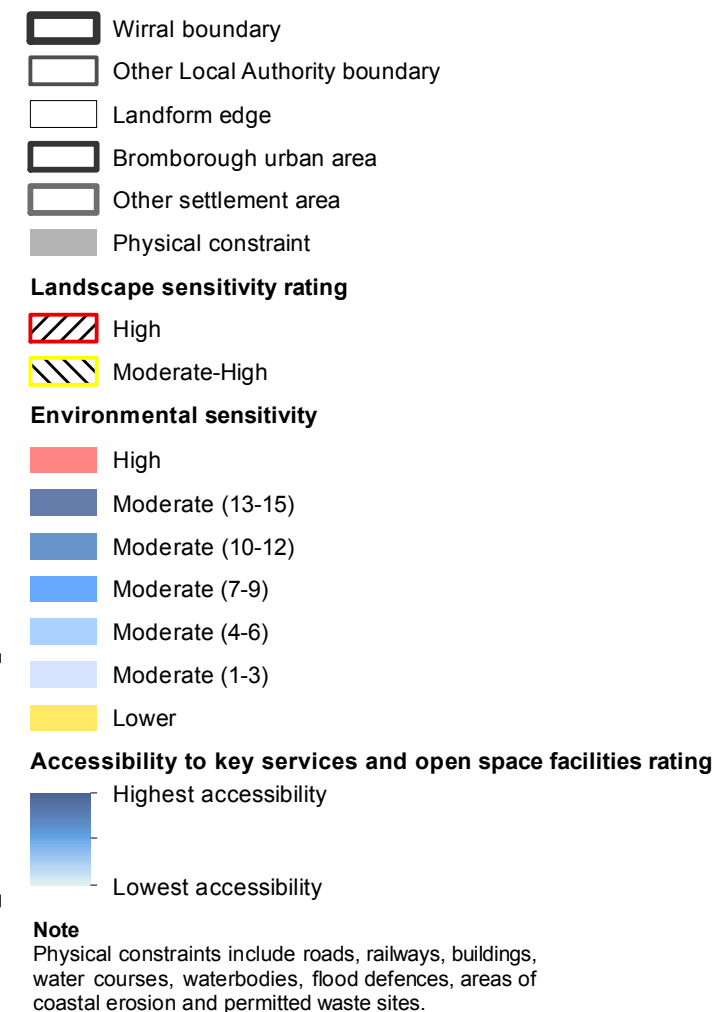


Figure 13.6 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Bromborough urban area



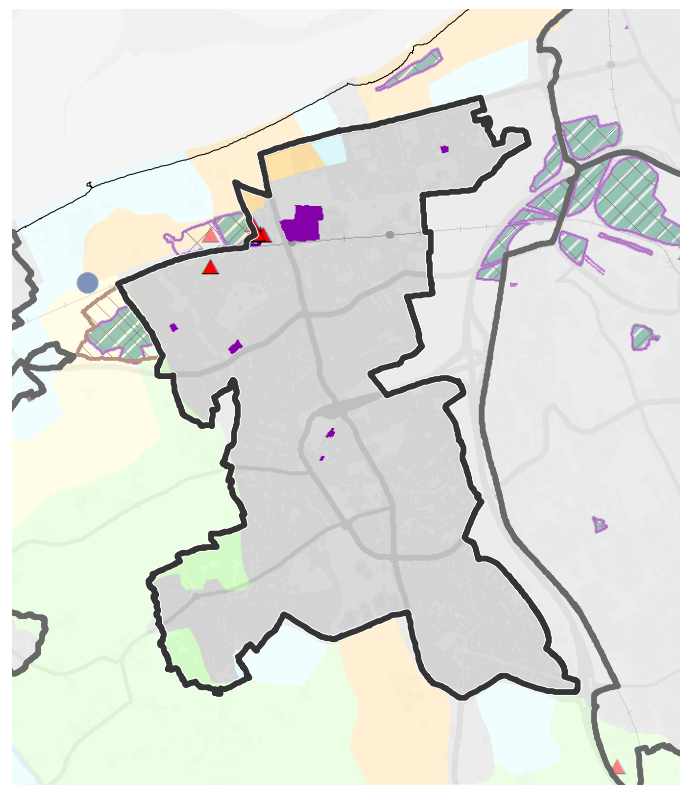
Map scale 1:63,600 @ A3

Settlement Area 5 Profile: Mid Wirral Urban Area

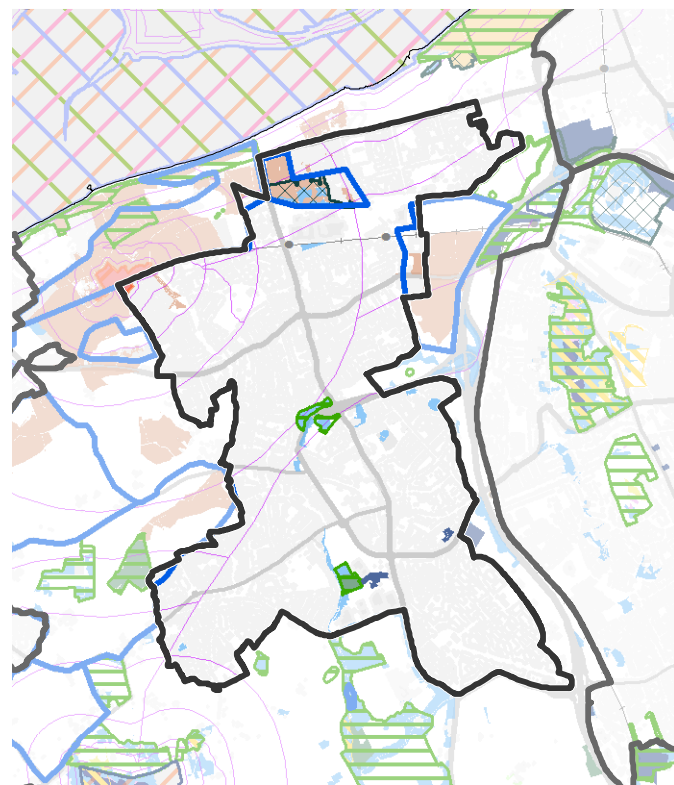
Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>The Mid Wirral Urban Area includes the settlements of Moreton, Upton and Greasby. This Settlement Area does not have a coastal boundary, given that it is separated to the north by a stretch of the North Wirral Coastal Park and Wallasey golf course, which lie outside the identified Urban Area. To the east there is only a small gap between the Wallasey and Birkenhead Urban Areas, while to the east and south there is a larger gap to neighbouring settlements, consisting largely of agricultural land and floodplain.</p> <p>Much of the northern and north eastern edges of the Urban Area are constrained by Flood Zone 3, associated with the River Birket and River Fender floodplains and as such are considered as Higher Sensitivity land (marked in red). Elsewhere the only other Higher Sensitivity asset is a small area on the edge of Greasby.</p> <p>Beyond these areas, there are also a number of areas of heightened Moderate Sensitivity (where 7-9 'moderately sensitive' assets overlap). These relate to:</p> <ul style="list-style-type: none"> ■ In the south, a cluster of sensitive assets within and around Arrowe Country Park. Aside from the recreational value of the Country Park, these include scattered blocks of Priority Habitat (deciduous woodland and good quality semi-improved grassland); a local geological site (LGS) at Arrowe Brook; a number of SSSI impact risk zones (IRZs); non-designated heritage assets; and a source protection zone (SPZ) near the urban edge. ■ In the west, an area of sensitive land lying in the gap between this Urban Area and West Kirby. Sensitivities here relate largely to: the Manor Farm Former RAF Camp local wildlife site (LWS); a non-designated heritage asset at the Site of RAF West Kirby (Newton-cum-Larton); areas of Priority Habitat (coastal and floodplain grazing marsh/semi-improved grassland); and impact risk zones (IRZs) for nearby SSSIs. <p>Large parts of both of these areas also lie within the West Wirral Heathlands and Arrowe Park/River Birket Corridor Nature Improvement Areas (NIAs) identified by MEAS, which have been identified as strategic opportunities to deliver a 'step change' in nature conservation by creating habitat and enhancing connectivity between local sites. This is part relates to the potential for parts of this area to provide habitat networks to support designated sites.</p> <p>Outside these areas, there are expansive areas identified as lower level Moderate Sensitivity (i.e. 4-6 'moderately sensitive' assets overlapping). These areas consist of overlapping sensitivities related mainly to: landfill sites at Annaban Limited and Carr Lane Brickworks; areas of Priority Habitat (particularly floodplain grazing marsh); SSSI impact risk zones (IRZs); sensitivities at Landican Cemetery; and, in some limited areas, noise pollution from roads.</p> <p>Mitigation options for these sensitivities might include: management strategies to reduce the risk of contaminant release from historic landfills; the use of vegetation to buffer noise and air pollution from nearby roads; and buffering and expansion of areas of Priority Habitat.</p>
Summary of landscape sensitivity	<p>There is a clear area of identified High landscape sensitivity around Arrowe Park to the south of the Urban Area. In addition, there are other small areas of High sensitivity related to Saughall Massie and Arrowe Brook on the edge of Greasby - where the urban edge meets Frankby Fields - and in the north within the River Birket Floodplain.</p>
Summary of potential for carbon emissions assessment	<p>In terms of accessibility to key services, the Mid Wirral Urban Area performs relatively strongly, particularly in the east and south. Areas on the urban edge in the north and west are generally less accessible. However, land on the urban edge to the south (to the south of Greasby and west of Woodchurch) shows relatively strong levels of accessibility, prior to any mitigation or infrastructural provision. A further, more limited area of land on the western edge of Greasby also shows relatively strong accessibility.</p>

Issue	Commentary
Areas of potential lower sensitivity	<p>There are a number of limited areas to the east, south and west of the Mid Wirral Urban area which are free of higher environmental and landscape sensitivities, according to this mapping:</p> <ul style="list-style-type: none"> ■ To the east, the non-wooded areas located to the north of the M53 and lying in between Upton and Moreton; ■ A narrow stretch of land between Woodchurch and the M53; ■ The area of agricultural land on the southern boundary of Greasby (other than the deciduous woodland at Greasby Copse); and ■ Some limited pockets of land to the west of Garden Hey Road – those areas where no identified Priority Habitat is present.
Other key considerations	<p>The mapping highlights some areas of land where, from an environmental perspective, sensitivity is lower than elsewhere. However, from a spatial perspective many of these areas may need to be considered further for their potential harm to the Green Belt, particularly in relation to vulnerable gaps between neighbouring towns.</p> <p>In addition, the air pollution from major road infrastructure around the Mid Wirral Urban Area (which was not taken account of in the sensitivity mapping, due to the absence of AQMAs) is likely to prove a further human health consideration within these areas of land, particularly around the M53 and the A553.</p>

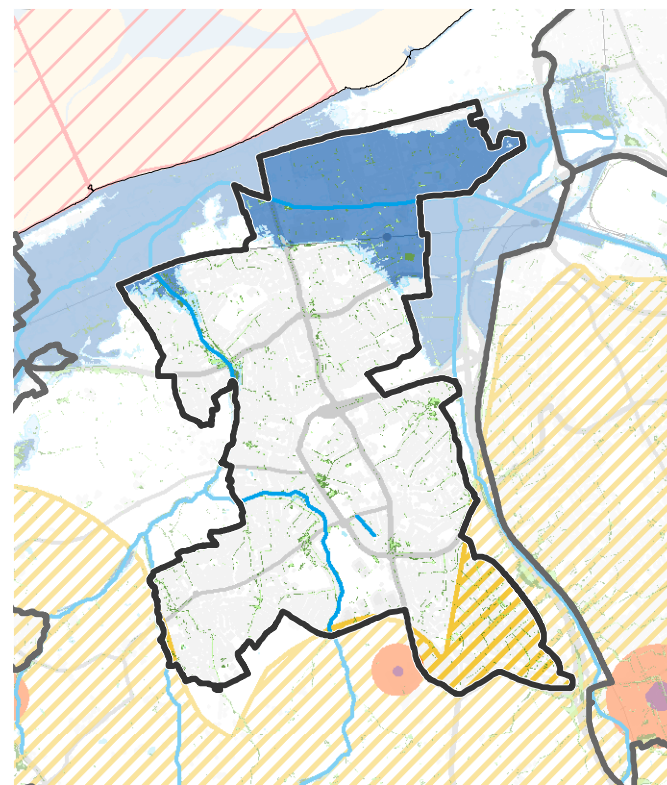
Core Theme 1. Land, soils, minerals and waste sites



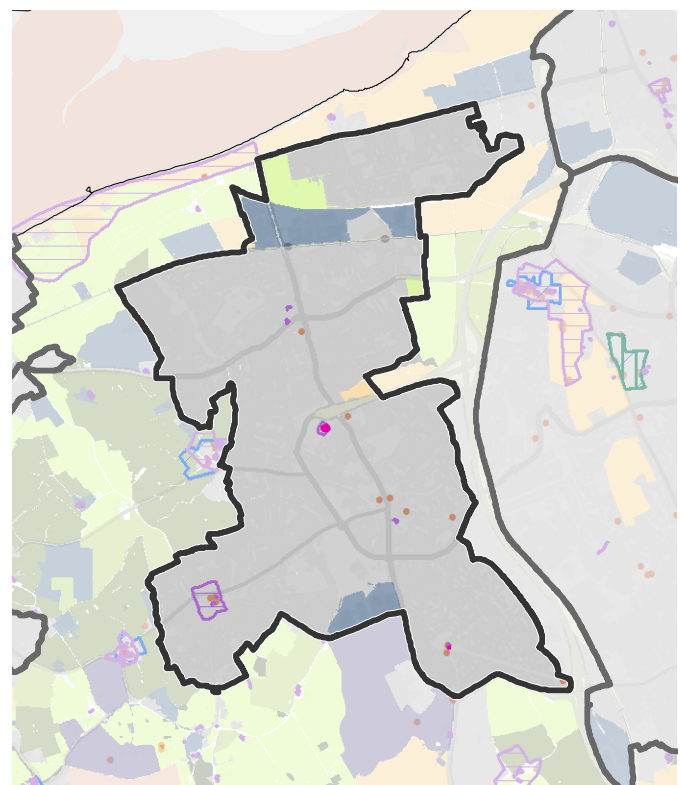
Core Theme 2. Ecology and geology assets



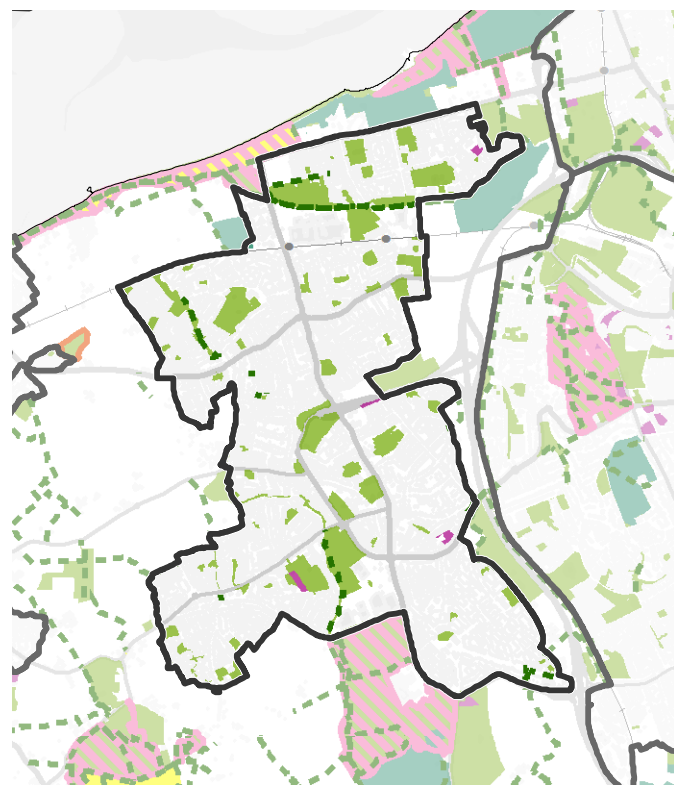
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

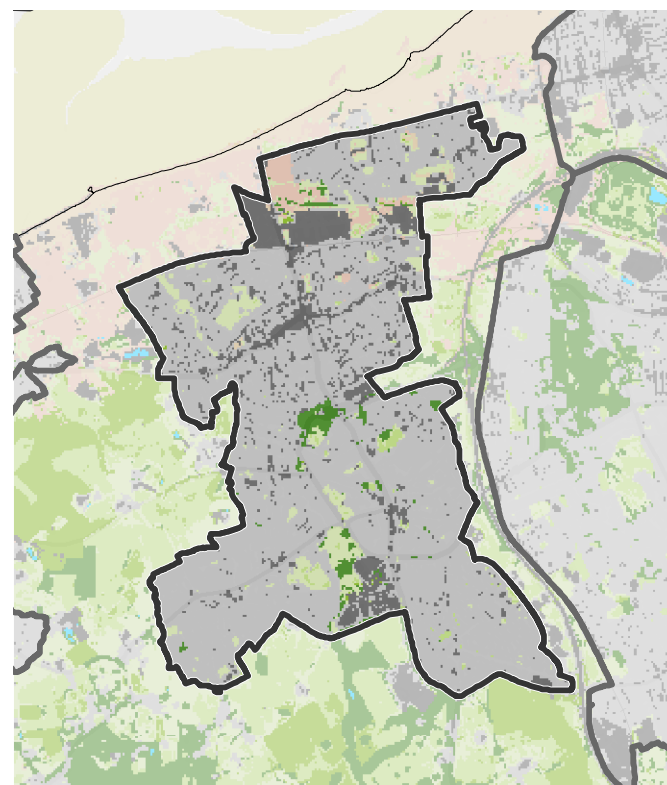
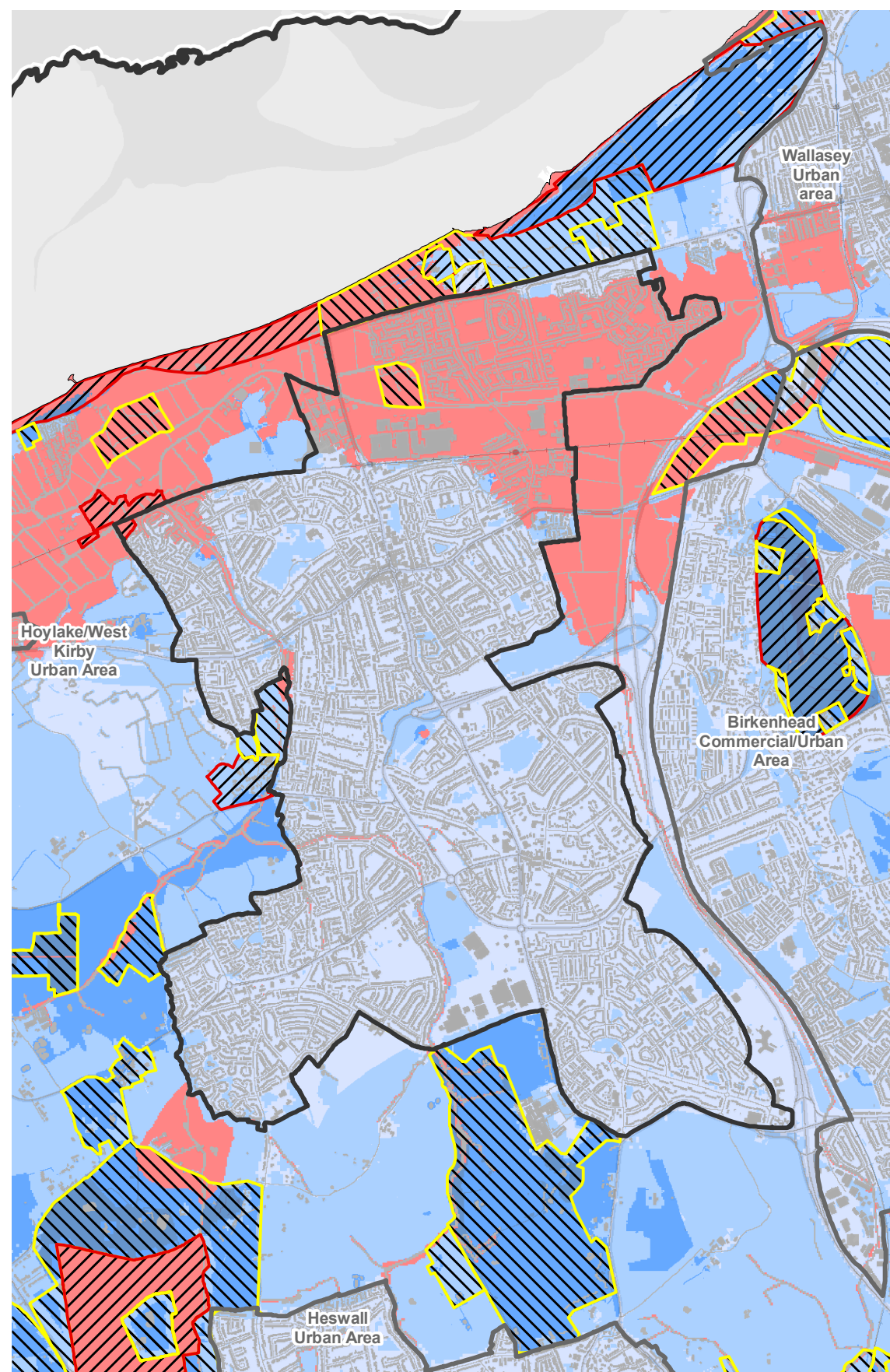


Figure 13.7 Environmental constraints around Mid Wirral Urban Area



Map scale 1:71,000 @ A3

Overall sensitivity



Accessibility

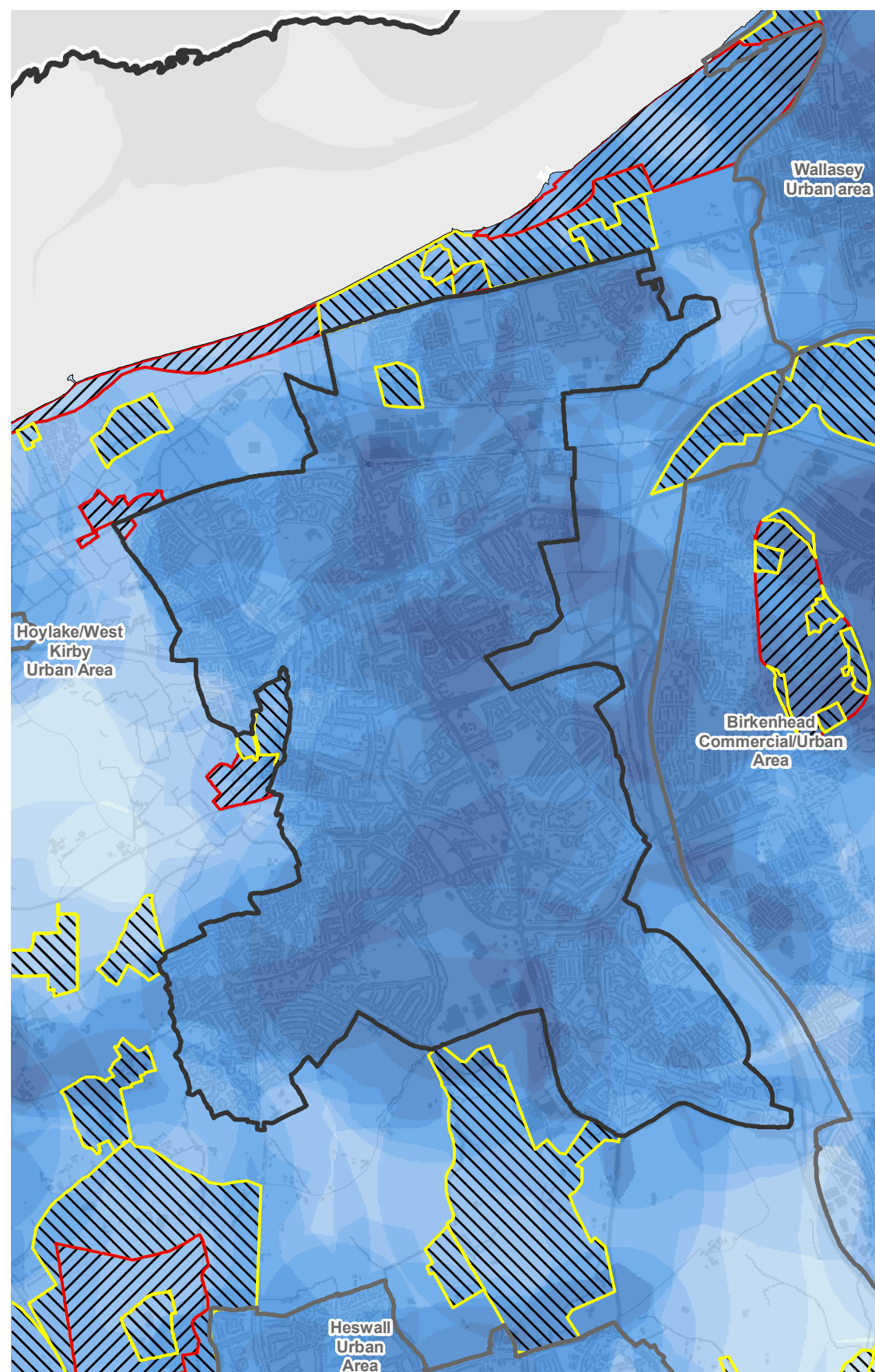
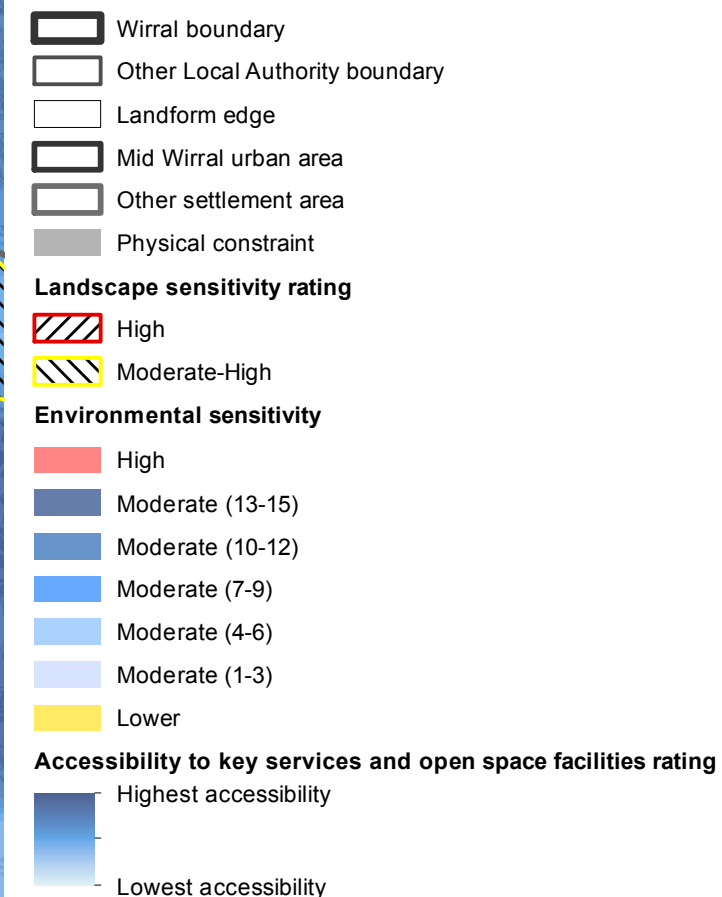


Figure 13.8 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Mid Wirral urban area



Note
Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.



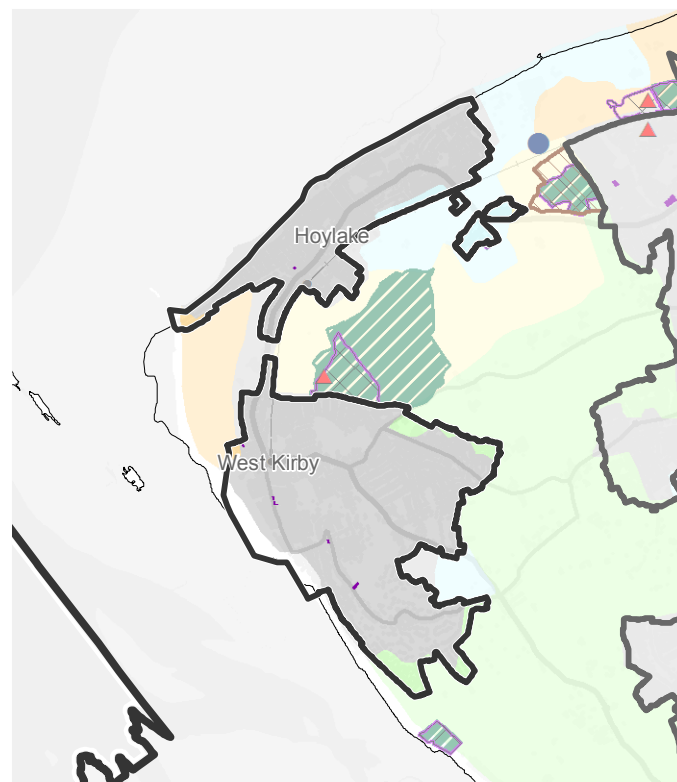
Map scale 1:37,400 @ A3

Settlement Area 6 Profile: Hoylake/West Kirby Urban Area

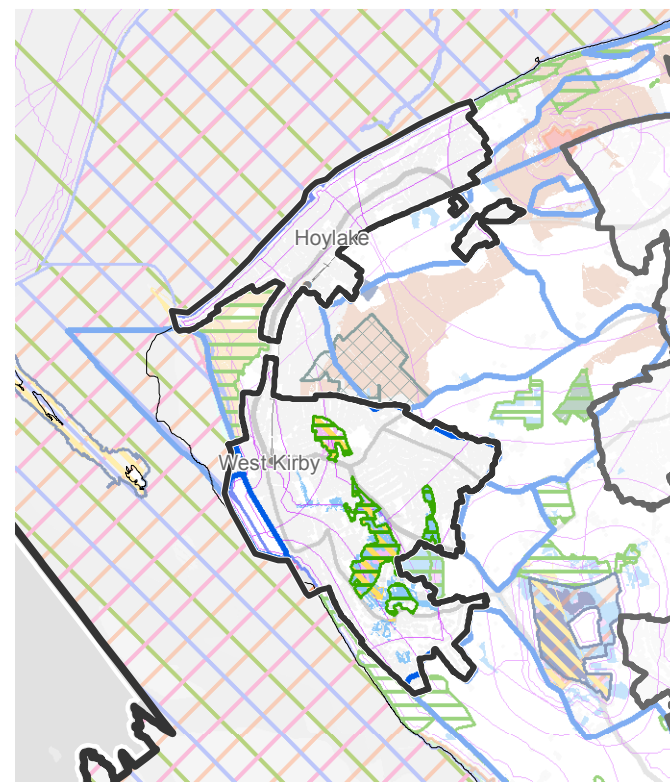
Issue	Commentary
Summary of Environmental sensitivities and potential for mitigation	<p>The only identified areas of High Sensitivity (marked in red) on the edge of the Hoylake/West Kirby Urban Area relate to areas of Flood Zone 3 associated with the River Birket floodplain, constraining the eastern and southern boundaries of Hoylake.</p> <p>However, there are areas where a number of Moderate Sensitivity assets overlap (7-9 assets). On the northern edge of West Kirby, these are clustered around the Gilroy Nature Park, where the Hoylake Langfields site has been identified as a potential Local Wildlife Site (LWS). This area also forms a large part of the River Birket Corridor Nature Improvement Area (NIA) identified by MEAS, and the land lying between West Kirby and Hoylake has been identified as likely to contain habitats which support Wirral's designated sites.</p> <p>Other similarly sensitive areas lie on the southern edge of West Kirby, notably to the east, south and west of Caldy. Higher sensitivity in these areas stems from: a cluster of local wildlife sites (LWS); overlapping IRZs; the presence of Priority Habitats (deciduous woodland and lowland heathland); a habitat 'fragmentation action zone' identified by Natural England; the linear asset of the Wirral Way; and the local wildlife site (LWS) at Caldy Golf Course. There is also significant overlap in these areas with the identified West Wirral Heathlands NIA.</p> <p>Finally, there are significant areas on the edge of both Hoylake and West Kirby identified as a lower level of Moderate Sensitivity (where 4-6 'moderately sensitive' assets overlap):</p> <ul style="list-style-type: none"> ■ Around Hoylake, these generally relate to: the Local Wildlife Site (LWS) and extensive coastal sand dunes Priority Habitat at the Royal Liverpool golf course; the Meols Drive Conservation Area; the Greenbank Road historic landfill site and other types of Priority Habitat within the Hoylake Municipal Golf Course; and areas designated as Flood Zone 2 within the River Birket Floodplain. ■ Around West Kirby, these generally relate to the presence of the Thurstaston/Station Road Tip to the south; extensive areas which lie within the Frankby Fields, Caldy Fields and Thurstaston Fields WeBS boundaries (see Core Theme 2); and extensive areas which lie within the West Wirral Heathlands and Arrowe Park Nature Improvement Area (NIA). <p>Mitigation options for the identified sensitivities might include: the use of SuDS features to minimise flood risk in Flood Zone 2; the protection, buffering and expansion of areas of Priority Habitat; and appropriate management of historic landfill sites to reduce the risk of contaminants.</p>
Summary of landscape sensitivity	<p>This Urban Area is significantly constrained by identified High landscape sensitivities. The areas of highest sensitivity relate to: the Royal Liverpool golf course at the tip of the peninsula; the site of the Greenbank Road former landfill between Hoylake and West Kirby; and the raised topography of Caldy Hill.</p> <p>Areas of Moderate-High sensitivity lie along the Dee Estuarine edge, constraining the whole of the southern boundary of this Urban Area.</p>
Summary of potential for carbon emissions assessment	<p>In terms of accessibility to key services, the Hoylake/West Kirby Urban Area shows a mixed picture, with accessibility average in the built-up area of Hoylake and in the northern parts of West Kirby, but low in southern parts of West Kirby such as Caldy. Along the urban edge, the land north and east of West Kirby perform most strongly, while areas to the south of West Kirby perform poorly and would require significant infrastructural provision to reach acceptable levels.</p>
Areas of potential lower sensitivity	<p>There are only limited areas of land on the edges of this Urban Area which are relatively free of environmental and landscape sensitivities. The only less constrained land is a small area of open space currently used as playing fields on the edge of Hoylake, between Carham Avenue and Carrington Avenue – this land lies outside of designated</p>

Issue	Commentary
	Flood Zones 2-3, and has relatively fewer sensitivities than surrounding areas, but still has recreational value and lies in a SSSI Impact Risk Zone (IRZ).
Other key considerations	In several areas, the relatively narrow gaps between settlements (Hoylelake, West Kirby and settlements within the Mid Wirral Urban Area) indicate that a further assessment of the potential harm to the Green Belt would be needed.

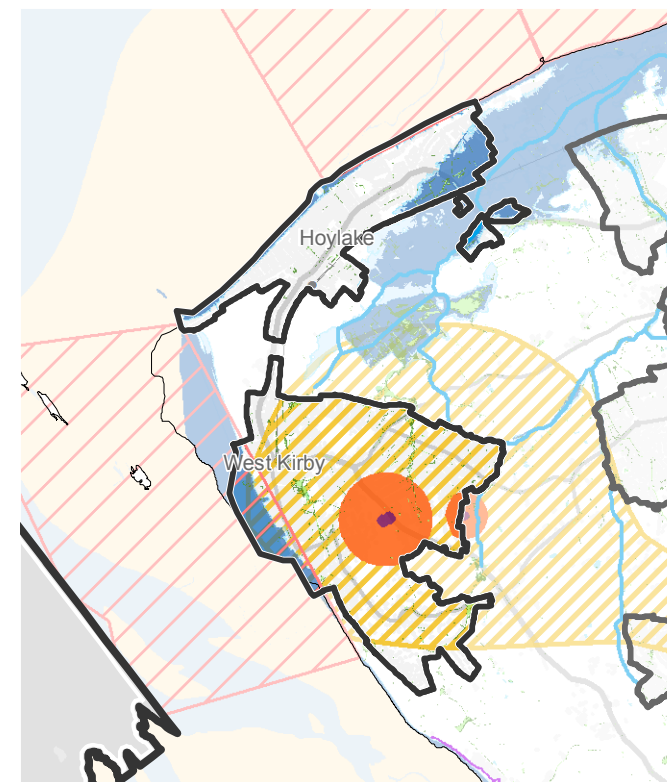
Core Theme 1. Land, soils, minerals and waste sites



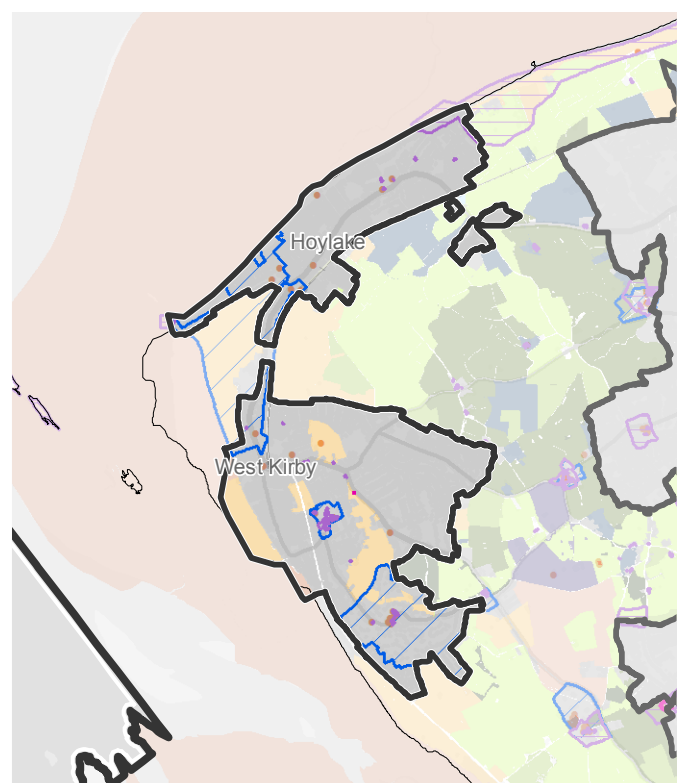
Core Theme 2. Ecology and geology assets



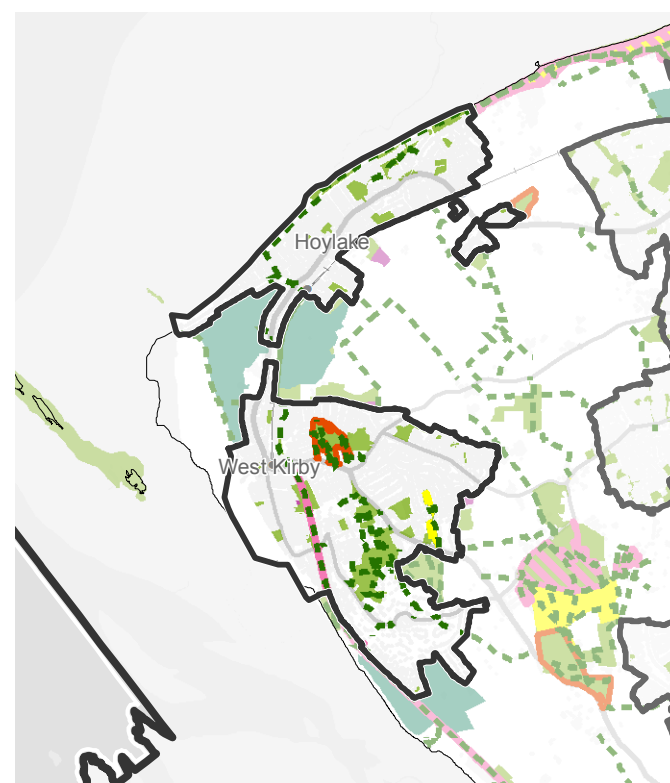
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

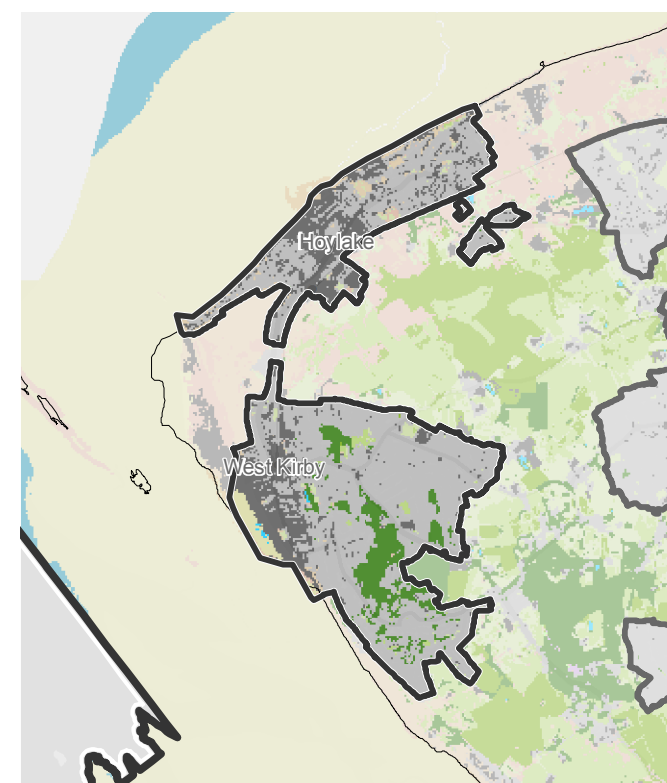
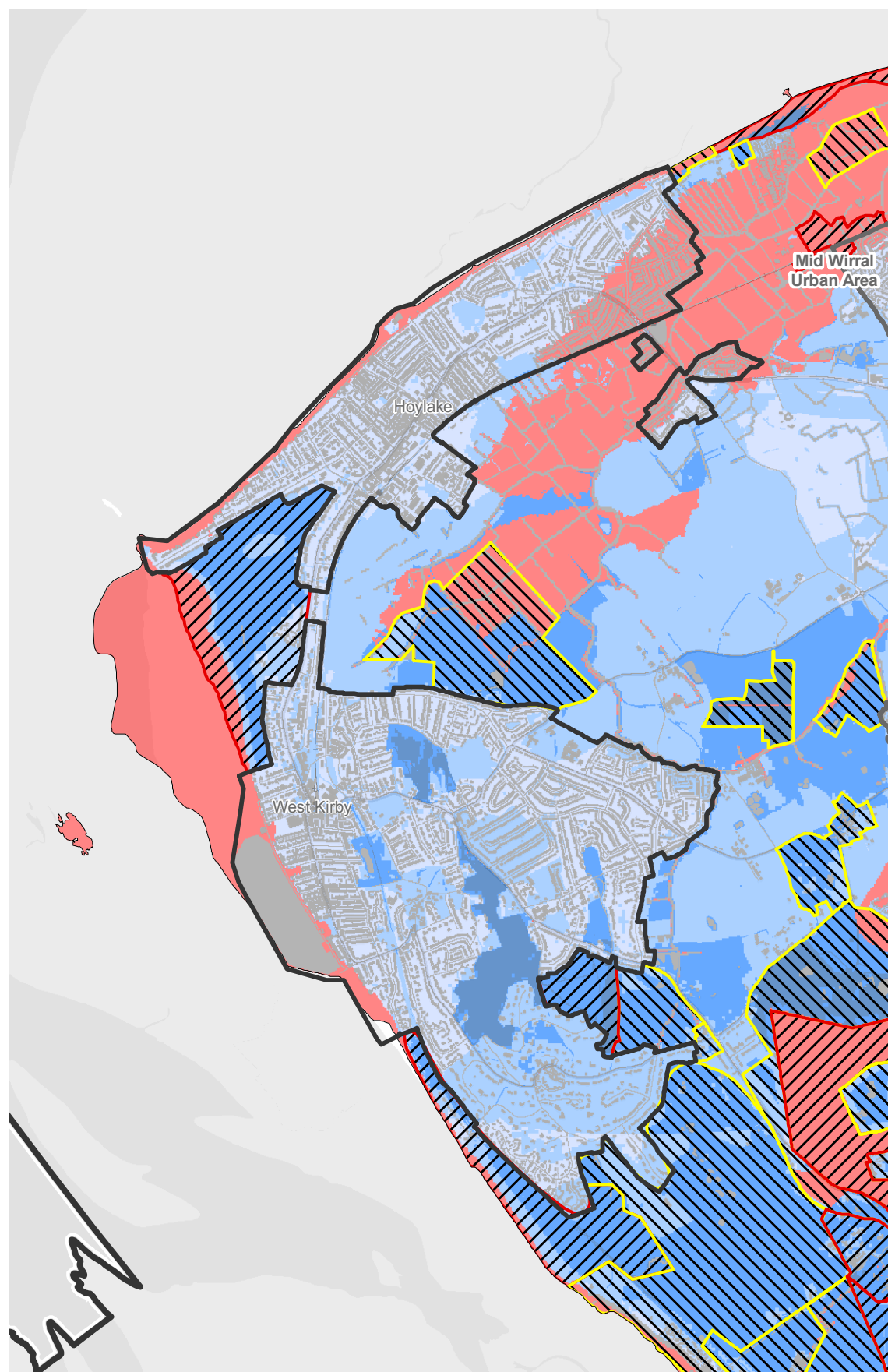


Figure 13.9 Environmental constraints around Hoylake/West Kirby Urban Area



Map scale 1:79,500 @ A3

Overall sensitivity



Accessibility

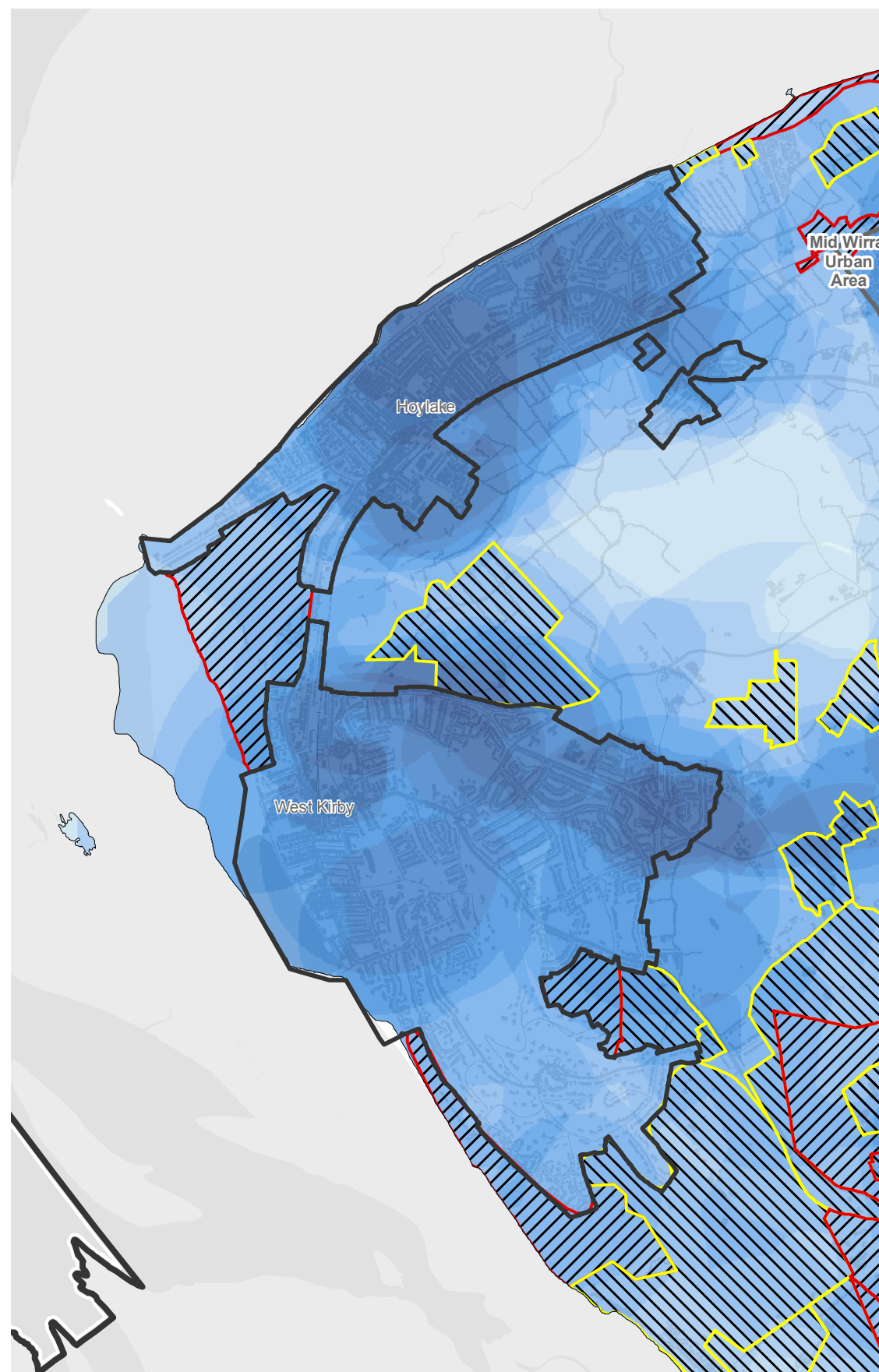


Figure 13.10 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Hoylake/West Kirby urban area

- Wirral boundary
- Other Local Authority boundary
- Landform edge
- Hoylake/West Kirby urban area
- Other settlement area
- Physical constraint

Landscape sensitivity rating

- High
- Moderate-High

Environmental sensitivity

- High
- Moderate (13-15)
- Moderate (10-12)
- Moderate (7-9)
- Moderate (4-6)
- Moderate (1-3)
- Lower

Accessibility to key services and open space facilities rating

- Highest accessibility
- Lowest accessibility

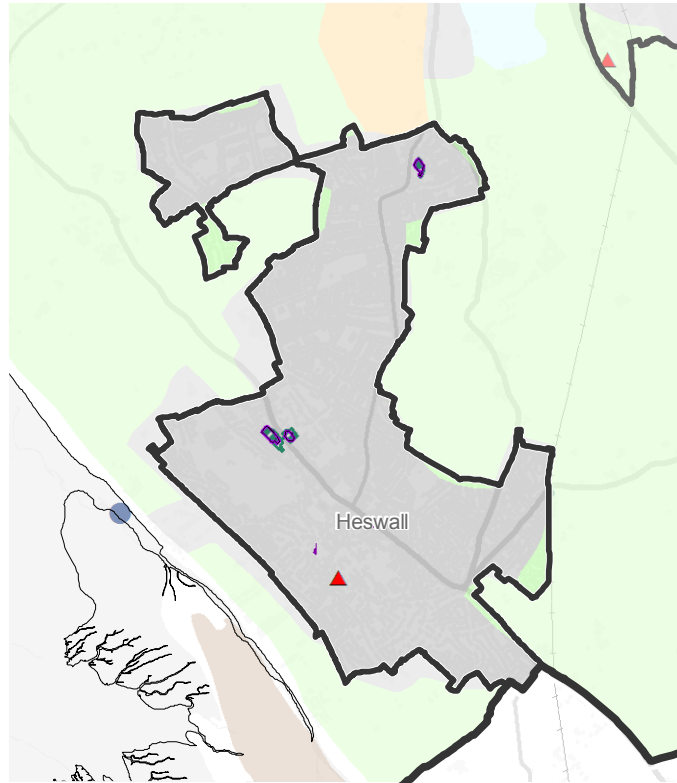
Note
Physical constraints include roads, railways, buildings, water courses, waterbodies, flood defences, areas of coastal erosion and permitted waste sites.

Settlement Area 7 Profile: Heswall Urban Area

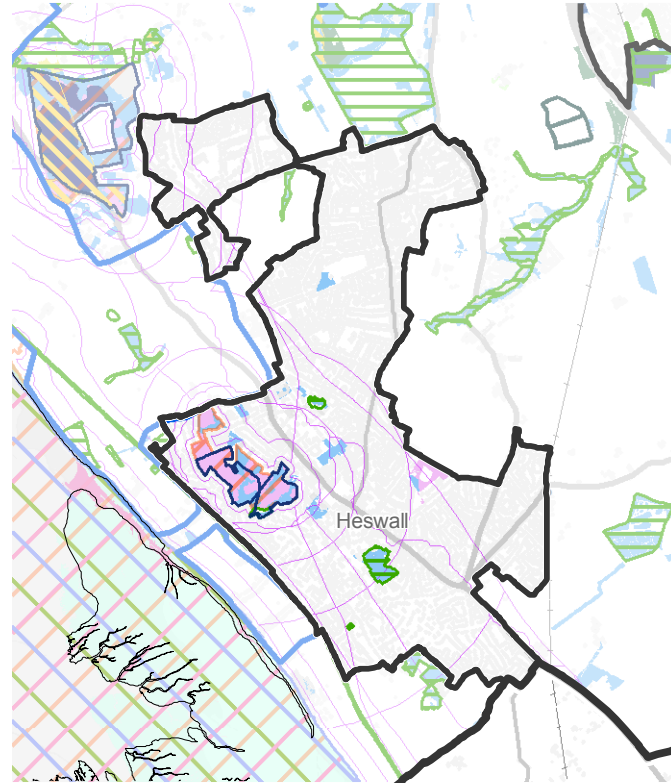
Issue	Commentary
<p>Summary of Environmental sensitivities and potential for mitigation</p>	<p>Heswall lies close but not adjacent to the Dee Estuarine Edge in the west of the Borough and is bordered to the east by the central swathes of Wirral's low-lying farmland landscape.</p> <p>The only significant area of Higher Sensitivity (marked in red) identified on Heswall's urban edge relates to the designated SSSI at Thurstaston Common. However, there are two additional small-scale areas of Higher sensitivity - the site of Irby Hall, given its status as a Scheduled Monument, and limited areas along Arrowe Brook.</p> <p>A number of areas of heightened Moderate sensitivity (i.e. where 4-6 'moderately sensitive' assets overlap) are also visible in the following areas:</p> <ul style="list-style-type: none"> ■ A small archaeological site on the northern edge of Irby; ■ The Arrowe Park golf course, due to: the presence of archaeological assets; scattered blocks of deciduous woodland Priority Habitat; several SSSI impact risk zones (IRZ); and Public Rights of Way (PROW). This area also makes up a significant part of the identified West Wirral Heathlands and Arrowe Park Nature Improvement Area (NIA). ■ An area of land on the southern boundary of Gayton, where there is a cluster of local wildlife sites (Gayton Wood, Gayton Hall Wood and the linear Wirral Way), with their associated Priority Habitats. The Gayton Conservation Area, and archaeological site within it, also contribute to the area's sensitivity. <p>More expansive areas around Heswall are indicated as areas of relatively lower, but still Moderate Sensitivity (i.e. where 4-6 'moderately sensitive' assets overlap). Along the Dee Estuary, these largely relate to: the presence of areas of Priority Habitats; the presence of SSSI impact risk zones (IRZ); and the impact of the Nature Improvement Area (NIA) - which wraps around the entire northern edge of Heswall. Around the village of Barnston, sensitivities largely stem from the cluster of Local Wildlife Sites (Lower Heath Wood, Barnston Dale and Murrayfield Hospital), and heritage assets including archaeological sites and the Barnston Conservation Area.</p> <p>There is some scope to mitigate these sensitivities by supporting or expanding habitat corridors to support locally and nationally designated sites, to create multi-functional GBI features such as wildlife-rich parks and nature reserves and to buffer vulnerable habitats.</p>
<p>Summary of landscape sensitivity</p>	<p>Significant areas surrounding Heswall are constrained by High landscape sensitivity. The most sensitive areas lie on Heswall's western boundary, along the Thurstaston and Greasby sandstone hills, which includes a distinct ridge line and some of the highest land in the Borough, leading up to Thurstaston Hill and Caldys Hill further north. There is an additional smaller area of High landscape sensitivity on the southern boundary of Heswall, south of Gayton, where the time depth of historic field patterns has been recognised as contributing to sensitivity.</p> <p>However, there are also more expansive areas of Moderate-High landscape sensitivity surrounding Heswall. These include:</p> <ul style="list-style-type: none"> ■ the wider Dee Estuarine Edge to the west, where the changing character of the Estuary has a strong influence on landscape character; ■ the area around Arrowe Park and Arrowe Park golf course to the north; ■ the area lying on Heswall's eastern edge at Barnston Vale and between Barnston and Heswall, where greater tranquillity away from transport corridors contributes to landscape sensitivity (referenced through LSA work).

Issue	Commentary
	Further east, but not directly adjacent to the Urban Area, the Raby Lowland Farmland and Estates in the centre of the peninsula is also a landscape noted for its sensitivity, in part thanks to its sense of separation from largest settlements such as Heswall.
Summary of potential for carbon emissions assessment	In terms of accessibility to key services, the Heswall Urban Area is the poorest performing settlement area based on existing provision. Only small parts of Irby show slightly stronger levels of accessibility. On the urban edge, accessibility is generally poor, other than on the northern edge of Thingwall. On the eastern edge, accessibility is particularly poor and would require significant mitigation through infrastructural provision to reach acceptable levels.
Areas of potential lower sensitivity	<p>While the majority of the urban edge of Heswall is constrained by either high landscape sensitivity or the presence of 4 or more 'moderately sensitive' environmental assets, there are some limited areas which indicate lower levels of sensitivity. They are:</p> <ul style="list-style-type: none"> ■ Land to the west of Gayton, lying east of the railway line. However, this area excludes areas of higher sensitivity around Gayton Park (where recreational uses and multiple SSSI impact risk zones (IRZ) indicate higher sensitivity) and linear blocks of deciduous woodland Priority Habitat; ■ Parts of the land lying between the urban edges of Pensby and Arrowe Brook, with the exception of the Arrowe Brook corridor itself and the associated Harrock Wood LWS. ■ A very small area of agricultural land north of Irby, which lies outside the Nature Improvement Area (NIA) but within a SSSI impact risk zone (IRZ).
Other key considerations	When considering these areas of lower environmental and landscape sensitivity, potential harm to the Green Belt must be fully assessed in line with the purposes set out in the NPPF. This is particularly the case where there is a narrow gap between settlements, or where a feature such as a railway line provides a clear existing boundary on the urban edge.

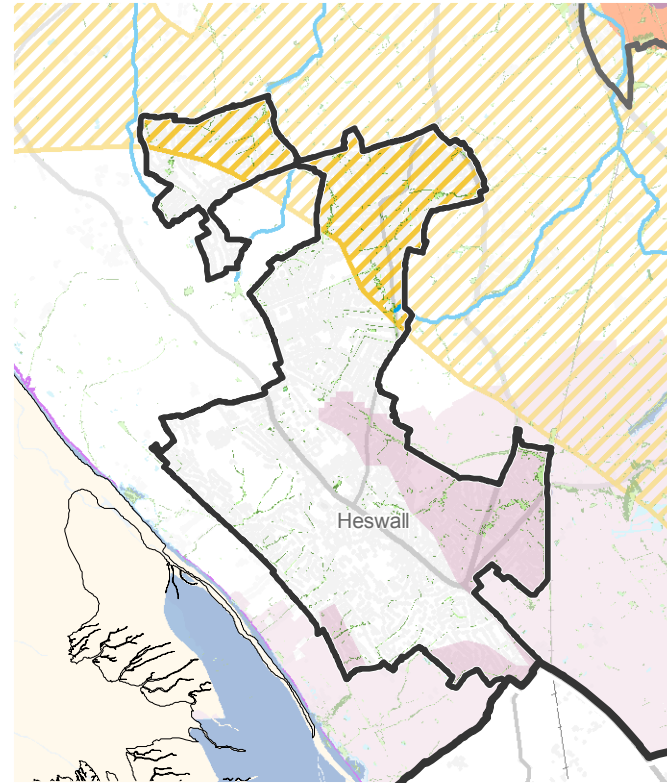
Core Theme 1. Land, soils, minerals and waste sites



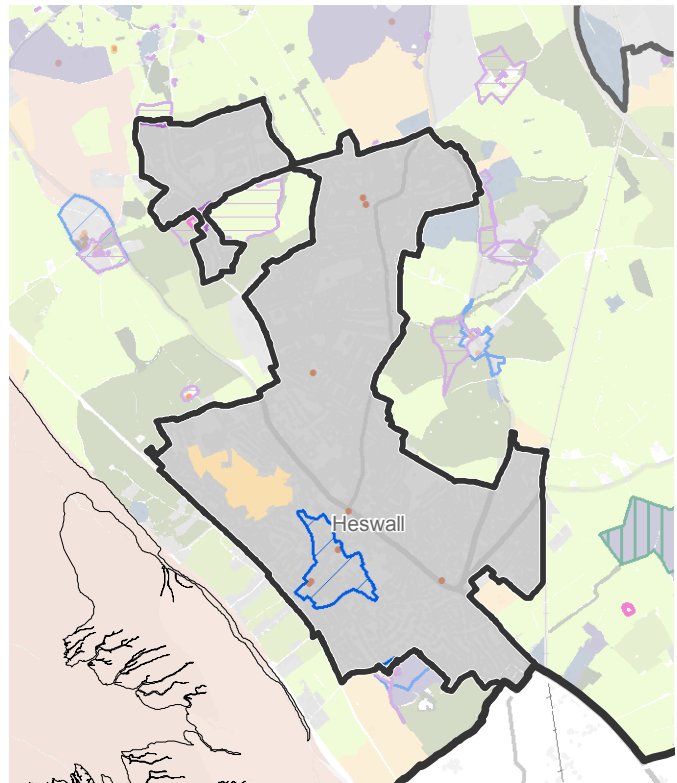
Core Theme 2. Ecology and geology assets



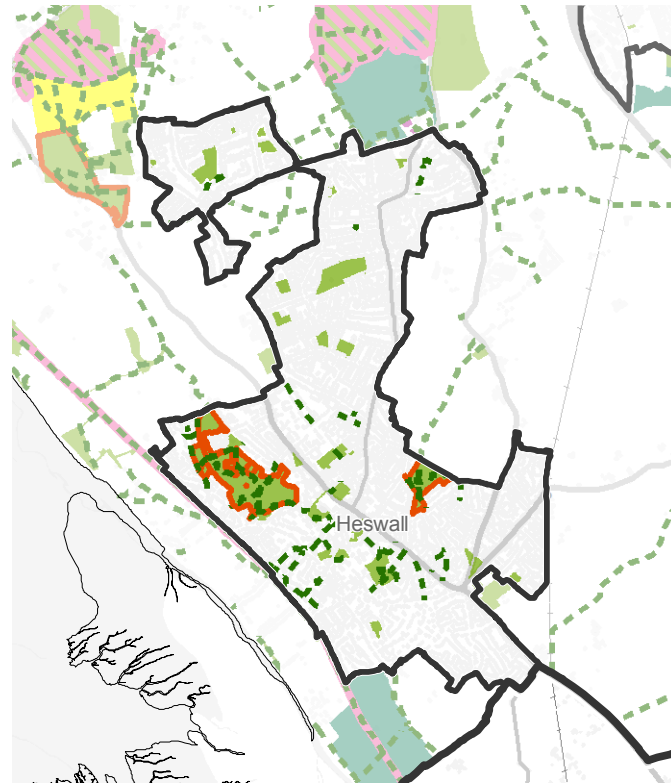
Core Theme 3. Water and coastal environment assets



Core Theme 4. Landscape and cultural heritage assets



Core Theme 5. Green space and recreation assets



Core Theme 6. Carbon storage assets

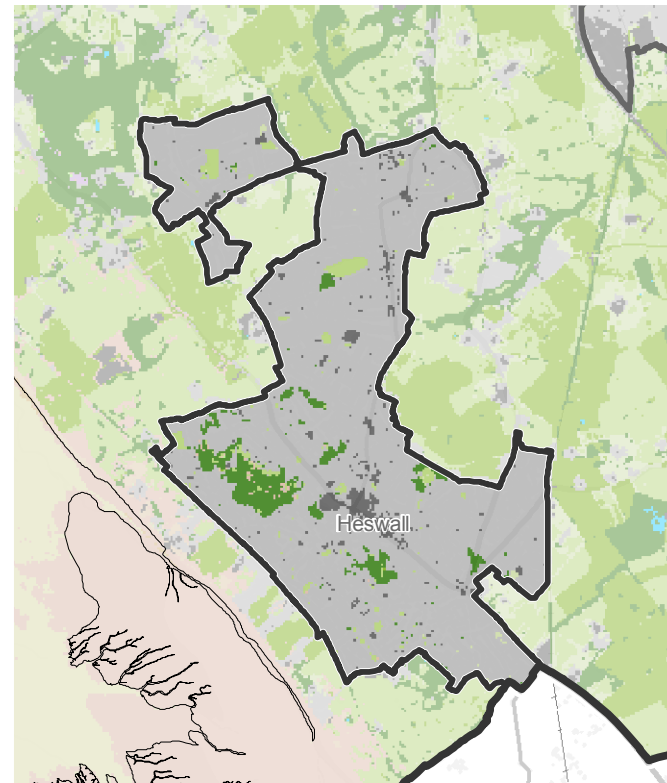
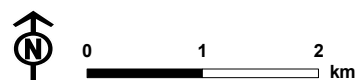
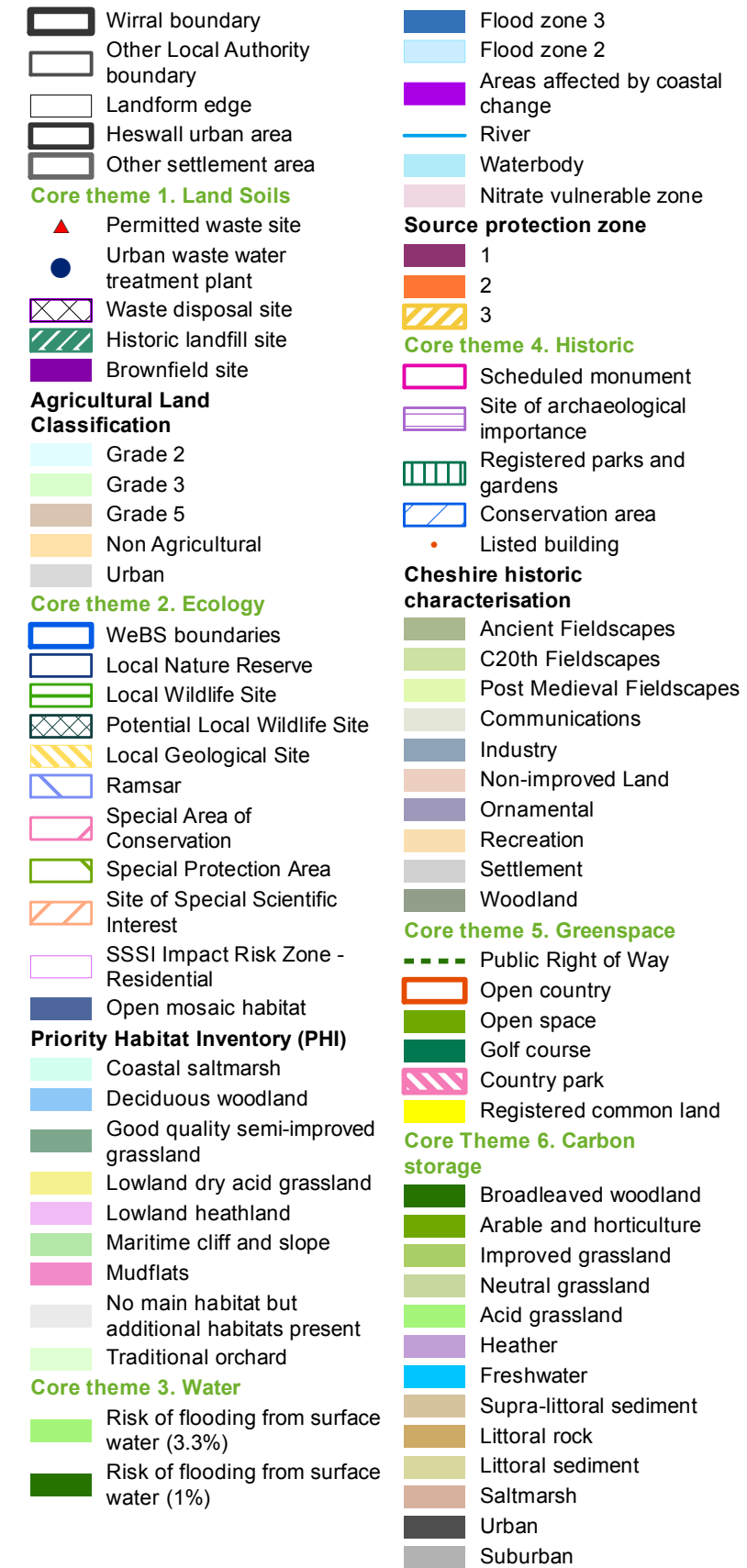
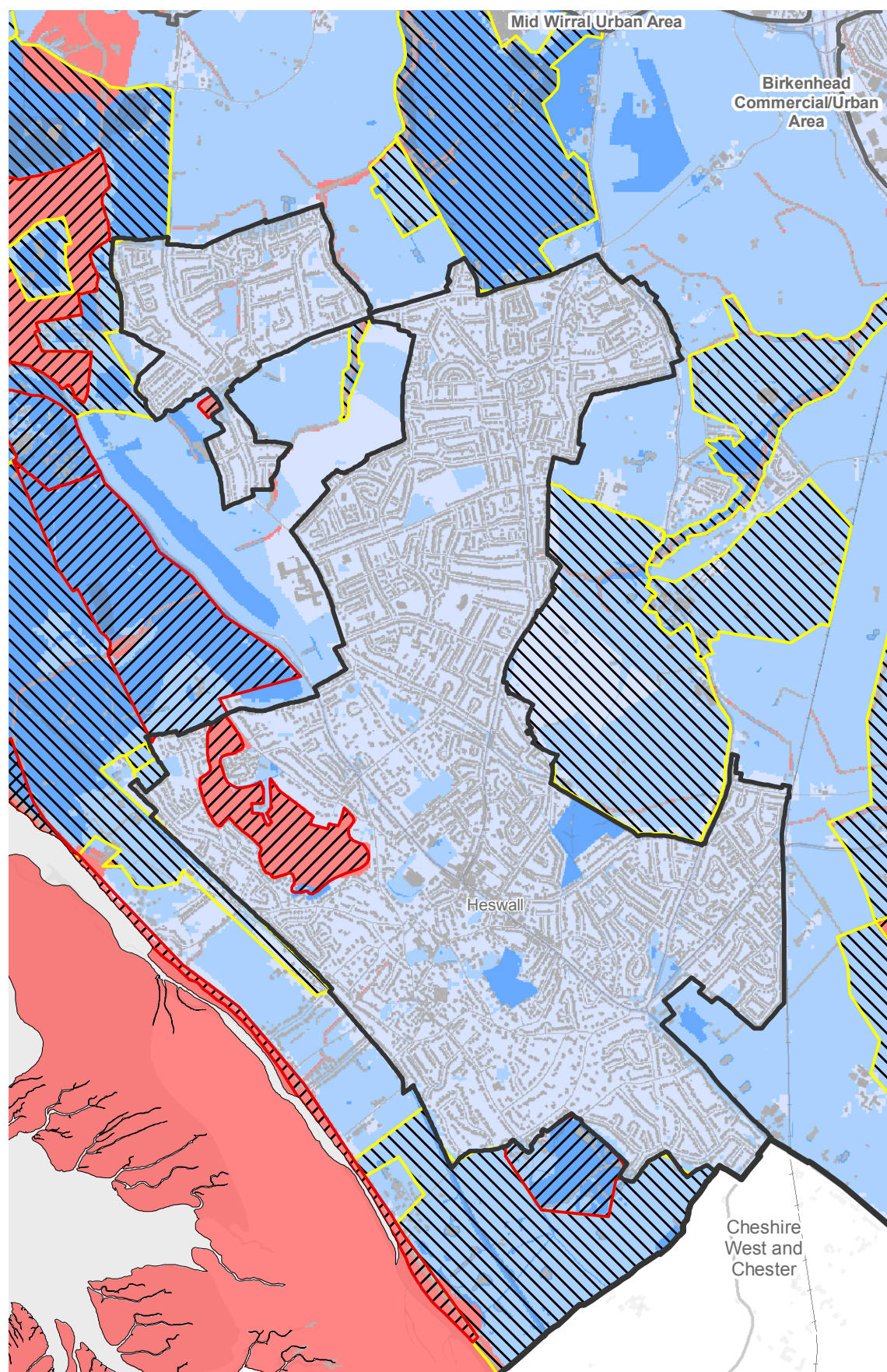


Figure 13.11 Environmental constraints around Heswall Urban Area



Map scale 1:65,500 @ A3

Overall sensitivity



Accessibility

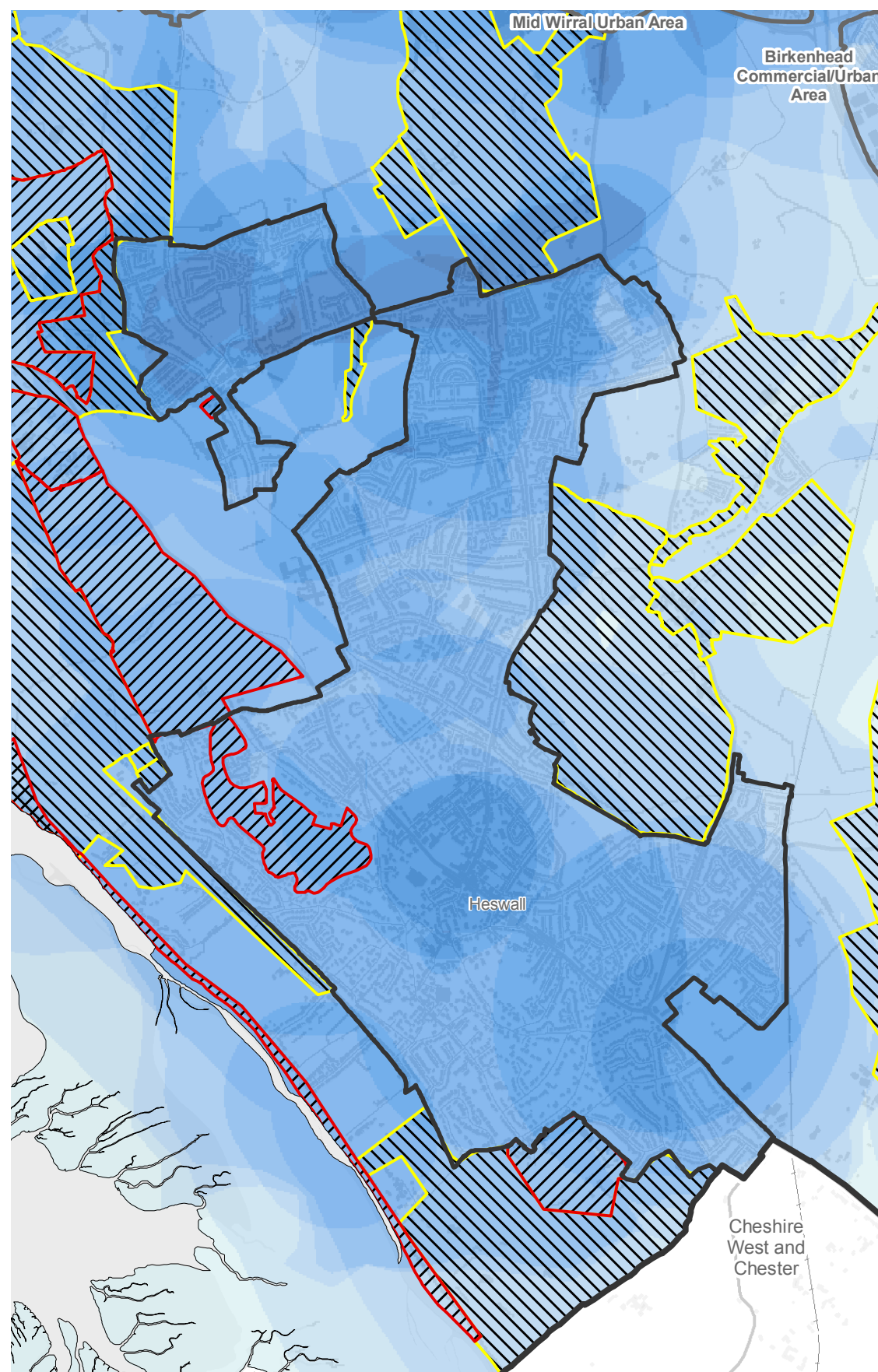
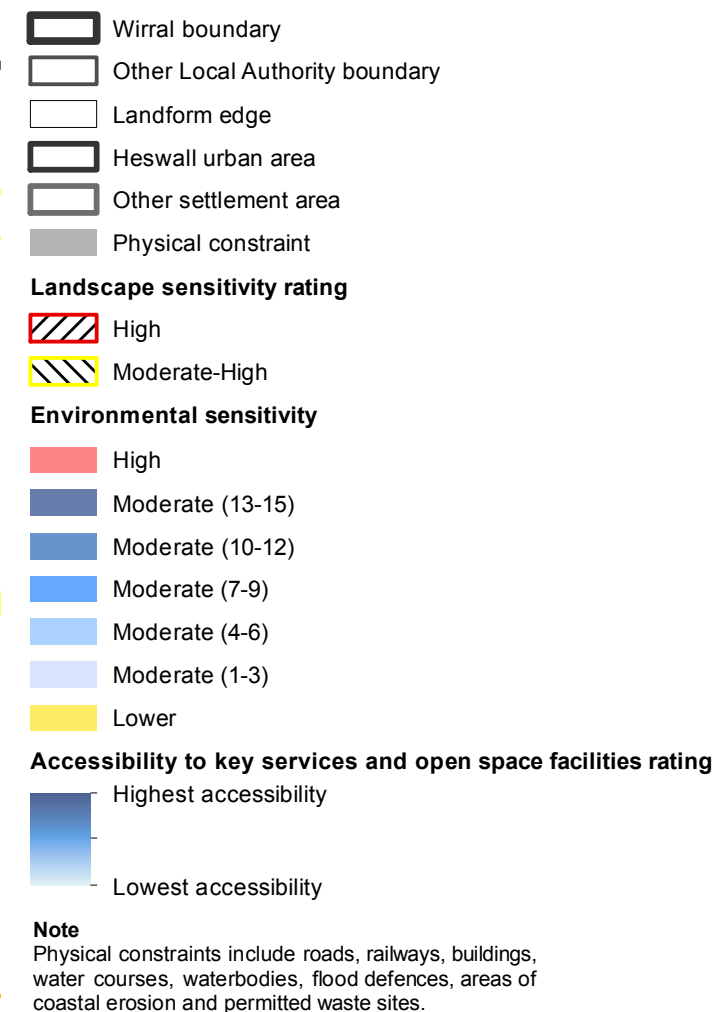


Figure 13.12 Mapping of environmental sensitivity (including landscape) and potential for carbon emissions around Heswall urban area



Map scale 1:31,200 @ A3

Chapter 14

Findings, Conclusions and Next Steps

Introduction

14.1 This Chapter provides a brief overview of the report's key findings⁷⁵ and an indication of how the findings of this study could be used by the Council to inform future potential planning for land use change in Wirral. It also sets out guidance on how this report could be updated in the future.

Overview of key findings and conclusions

14.2 As outlined in **Chapter 1**, living within 'environmental limits' has long been an overarching principle of UK sustainable development policy, with paragraph 11 of the NPPF setting out a 'presumption in favour of sustainable development'.

14.3 This report has also outlined that the purpose of this study is not to determine the exact point at which environmental targets, standards and policy intent are likely to be compromised. Instead it seeks to provide in an as objective way as possible, a description and evaluation of the potential sensitivity of land within Wirral to further development.

14.4 As discussed in **Chapter 10**, no definitive judgement has been made about whether Wirral is 'at environmental capacity', or that the Borough is unable to accommodate further development. However, both the composite mapping of environmental and landscape sensitivity carried out within the study and the identified additional pressures (such as recreational use) illustrate that Wirral is a highly constrained Borough in both environmental and landscape terms. The Borough is characterised by its peninsular form, with approximately 55% of its land already developed. The remaining countryside provides an important resource for both the inhabitants of Wirral and visitors from the wider Liverpool City Region.

14.5 A number of important and vulnerable biodiversity assets are located across the Borough. Sensitive assets around the coastal edge require inland habitat areas to support them. The protection of these vulnerable resources and of Wirral's 'sense of place' is key to maintaining a sustainable future. Too much additional development has the potential to erode Wirral's unique qualities.

⁷⁵ For a more detailed assessment of Wirral's Environmental Sensitivity please refer to Chapter 10.

14.6 In addition, the areas of sensitivity identified by this study are known to be an underestimate. The extent of functionally linked habitat, for example, is not yet clearly defined.

14.7 It is understood that the Council's preferred option for meeting their housing and employment need is to pursue options within the existing urban areas, through a strategy of brownfield urban intensification and in particular through the Birkenhead revitalisation and regeneration programme.

14.8 This is consistent with the findings of this study that Strategic Option 1a (Urban Intensification) as defined in the Local Plan Issues and Options Report (2020) has lower sensitivity in terms of potential impacts on environmental assets. It also has the greatest potential to limit the generation of carbon emissions.

14.9 In addition, Government policy requires Local Planning Authorities to demonstrate that they have examined fully all other reasonable options for meeting their identified need for development before justifying any changes to the Green Belt. Para 137 of the NPPF states that, before concluding that there are exceptional circumstances to justify changes to the Green Belt boundaries, the strategic policy making authority should:

- a. make as much use as possible of suitable brownfield sites and underutilised land;
- b. optimise the density of development in line with the policies in Chapter 11 of [the NPPF], including whether policies promote a significant uplift in minimum density standards in town and city centres and other locations well served by public transport; and
- c. be informed by discussions with neighbouring authorities about whether they could accommodate some of the identified need for development, as demonstrated through the statement of common ground.

14.10 The Council's approach of urban intensification accords with the NPPF.

Other considerations

14.11 At this point in time the Council are pursuing the preferred option 1A, which aims to meet the need for housing and jobs entirely within the urban area. The Council are not intending to pursue the release of sites within the Green Belt through the full draft Local Plan, due to be published under Regulation 19 in 2021.

14.12 However, there are some pockets of less heavily constrained land within the Borough. If options outside of Urban Areas are considered at any point in the future, the Council would need to carefully consider the following:

- **Potential harm to the Green Belt** - in line with the requirements of the Calverton Case (Calverton Parish Council v Greater Nottingham Councils & others (2015), planning judgments setting out the 'exceptional circumstances' for the amendment of Green Belt boundaries require consideration of the 'nature and extent of harm' to the Green Belt and 'the extent to which the consequent impacts on the purposes of the Green Belt may be ameliorated or reduced to the lowest reasonably practicable extent'. Any potential release of land within the Green Belt would need to demonstrate that consideration of the potential harm to the Green Belt has been taken into account. However, this does not necessarily mean that the Council are required to release land that has the least harm to the Green Belt purposes, as a more rounded consideration of the potential impacts of development on sustainable development is required.
- **Access to public transport** - any consideration of sites within the Green Belt would need to demonstrate, in accordance with Paragraph 138 of the NPPF, that all efforts have been made to prioritise sites that have the best access to public transport.
- **Access to services** - this study has looked at the accessibility to key services, but further consideration would be required relating to the capacity of existing services and whether there is scope to cater for further development.
- **Infrastructural constraints** - consideration would need to be given to whether there are any overriding infrastructure constraints that may render development within certain areas not possible, e.g. severe road impacts, poor access to services, water treatment capacity, waste management capacity, services. This would require close consultation with key infrastructure/utility providers.
- **Viability and deliverability issues** - it would be necessary to demonstrate whether sites within the Green Belt are considered to be viable and whether there are significant deliverability constraints such as land ownership or legal issues.
- **Environmental constraint and mitigation** - the results of this study give a high-level indication of sensitivity across the Borough. A more granular review of these sensitivities would need to be undertaken in areas of potential opportunity. This would need to consider any mitigation required for identified constraints, in addition to other factors not covered by this study e.g. the potential for impacts on the setting of heritage assets.

14.13 Finally, in assessing environmental sensitivity, this piece of evidence covers many of the same issues as Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) required for all Local Plans. It is important that any future consideration of spatial options embeds SA into its formulation.

Next steps

14.14 It is recognised that significant work is being undertaken to update data sets relating to environmental assets in Wirral and the wider Liverpool City Region. As such, it is recommended that this report remains a 'live' document, in the sense that it should be reviewed when updated datasets are available to consider. In particular, it is recommended that future iterations should incorporate any implications relating to the following:

- Updated Phase 1 Habitat data.
- The extent of 'functionally linked habitat' in Wirral following the completion of Natural England's study (due in the Spring of 2021).
- Liverpool City Region Natural Capital baseline data.
- Finalised locally designated Local Green Spaces (LGS).

14.15 The nature of these updated data sets may lead to changes in the 'sensitivity values' assigned to particular areas, which in turn should be incorporated into a revised set of sensitivity maps as required.

Appendix A

Full list of spatial data sets used and data limitations

Table A.1: Spatial data sets used in the study

Figure	Data sets used
1.1 – The Wirral Peninsula	Settlement Area data (urban areas)
3.1 – Land, soils, minerals and waste sites in Wirral	Agricultural Land Classification / Soil types
	Historic landfill sites
	Active Waste management facilities
	Urban wastewater treatment plant locations
	Contaminated Land and COMAH
	Brownfield site register / SHLAA
4.1 – Ecology and geology assets in Wirral	Special Areas of Conservation
	Special Protection Areas
	Ramsar
	Sites of Special Scientific Interest
	SSSI Impact Risk Zones
	Local Wildlife Sites / Sites of Biological Importance
	Potential Local Wildlife Sites
	Local Nature Reserves
	Local Geological Sites
	Ancient woodland
	Priority Habitat Inventory
	Nature Improvement Areas
	WeBS Core Count Areas
5.1 – Water and coastal environment assets in Wirral	Water Bodies
	Nitrate vulnerable zones
	Flood zones 2 & 3 and flood storage areas
	Open river
	Surface water
	Source protection zones
	Designated Bathing Waters
	Areas affected by coastal change

Figure	Data sets used
6.1 – Landscape character areas in Wirral	Landscape Character Areas
	Local Landscape Designations (LLD)
6.2 – 'Night Blight' mapping of light pollution in Wirral	Night Blight 2016 (CPRE)
6.3 – Areas of 'tranquillity' in Wirral	Tranquillity mapping (CPRE)
6.4 – Historic environment assets in Wirral	Listed buildings
	Scheduled monuments
	Sites of archaeological importance
	Registered parks and gardens
	Registered battlefields
	Historic Environment Records
	Conservation areas
	Cheshire historic character areas
7.1 – Green space and recreation assets in Wirral	Public Rights of Way
	Open country/open access land
	Registered common land
	Allotments
	Public Parks and greenspace
	Country Parks
	Designated local green spaces
7.2 - Day time noise exposure in Wirral	Noise Exposure data - round 3 Laeq 16h
7.3 - Night time noise exposure in Wirral	Noise Exposure data - round 3 Laeq 16h
7.4 – Air quality in Wirral (PM ₁₀ PM _{2.5} and NO ₂)	Daily Air Quality Data - PM ₁₀ PM _{2.5} and NO ₂
8.1 – Land use cover types in Wirral	CEH Land Cover 2019
9.1 – Results of LSA	LSA data (2019) (and 2020 additions)
10.1 – Locations of key services and open space in Wirral	MerseyTravel TRACC accessibility modelling
	Open space and recreation layers
11.1 – Wirral's Strategic Spatial Options	Wirral MBC Strategic Spatial Options

Appendix B

List of evidence base documents reviewed

Table B.1: Core national/regional policies and strategies which have influenced this Environmental Sensitivity Study

Document	Purpose
25 Year Environment Plan (2018)	Sets out what the UK government will do to improve the environment within a generation and represents an important shift in thinking towards long term positive action to improve people's lives and the environment. Sets out a series of targets for policy following the country's exit from the EU to which the government will be legally bound. Calls for 'Nature Recovery Areas' as important parts of developing Ecological Networks. Ambitions of the Plan include the creation or restoration of 500,000ha of wildlife-rich habitat outside the protected site network.
Revised National Planning Policy Framework (2012) (last updated February 2019)	Sets out government planning policy for England. Updated (to 'NPPF2') in July 2018, in order to translate the provisions of the 25YEP into national planning policy.
Revised Planning Practice Guidance (PPG): Natural Environment 2016 ((last updated July 2019)	Adds further context to the NPPF and it is intended that the two documents should be read together.

Table B.2: Other national, regional and local policies and strategies which have influenced this Environmental Sensitivity Study (by theme)

Document	Purpose
Development Plan Documents and Vision documents	
Wirral Unitary Development Plan (2000)	Old-style development plan adopted in February 2000. Emerging Local Plan policies are to replace those in the existing Development Plan.
Wirral Growth Plan (2015)	Council worked with partners to produce five year Growth Plan with a focus on the long-term vision for Wirral, to attract and guide investment into Wirral. Sets out key ambitions and goals and provides the strategic framework in which place shaping will be taken forward.
Wirral Issues and Options Consultation Document (January 2020)	The Local Plan Issues and Options consultation document seeks the views of the public on the future direction for development in Wirral. The consultation in particular focuses on potential strategic spatial options that will allow Wirral MBC to deliver our requirements for housing and employment land. It therefore sets out a series of Spatial Options as to how the housing and employment requirements could be met within the Borough. The Council's Preferred Option is for Urban Intensification, however the Borough is required to consult on a range of other options, should they not be able to meet all our requirements by Urban Intensification alone. These other options would involve release of land for development which is currently designated as Green Belt.
Core Theme 1: Land, soils, minerals and waste	
Sub Theme: Brownfield and contaminated land	
N/A (data layers for brownfield sites and contamination, however, are mapped as GIS data sets)	
Sub Theme: Soil quality	

Document	Purpose
Safeguarding our Soils – A Strategy for England (2011)	Sets out the current national policy context on soils and includes a number of core objectives for policy and research. It emphasises the importance of the planning system in providing appropriate levels of protection for good quality agricultural land.
Study of Agricultural Economy and Land in Wirral (2019)	Reviews the current agricultural practices and land use in Wirral, looking at viability for traditional enterprises, the socio-economic impact of farming, soils and geological information and capturing the views of agricultural stakeholders, including farmers. Designed to inform the development of the emerging Local Plan.
Sub Theme: Minerals sites	
Wirral Minerals Report 2020	A complete review of mineral resources and mineral-related facilities in Wirral, with a view to providing advice on future minerals planning policy.
Sub Theme: Waste sites	
National Planning Policy for Waste (2014)	Sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and management.
Joint Waste Local Plan for Merseyside and Halton (2013)	Provides a clear direction for future waste management development to 2027, both in terms of site allocations and detailed development management policies.
Core Theme 2: Ecology and Geology	
Sub Theme: Biodiversity and geodiversity	
Wirral MBC Biodiversity Audit (2009)	Commissioned to develop an evidence base for the Local Development Framework and to review and update selection criteria for Local Wildlife Sites. Includes the identification of potential wildlife corridors and linkages, assesses the distribution of priority species and identifies critically important areas for maintaining favourable conditions, including potential areas of habitat expansion.
Merseyside Environmental Advisory Service RAG Screening (2019)	Provides a red, amber and green-based screening assessment of potential urban site locations and Green Belt parcels that were identified for further investigation in the 2018 Development Options Review, against information held on MEAS environment databases.
Wirral Schedule of Sites of Biological Importance (2017)	The Schedule of SBI is a material consideration in the determination of individual planning applications. Site plans are available for each.
Liverpool City Region Ecological Network (2015), including Nature Improvement Area (NIA) profiles	An evidence base comprising ecological and biodiversity information on the City Region's natural asset. It also identifies opportunities to enable better protection and management of those nature assets and describes opportunities to create new natural assets. Intended to inform the preparation of the Districts' Local Plans and to help wider partnerships. The Ecological network consists of: core biodiversity areas; linear features; stepping stone sites; and nature improvement areas (NIAs). Each NIA profile outlines existing ecological features, ecological priorities, ecological opportunities and how it can support wider priorities.
Liverpool City Region Recreation Mitigation Strategy (RMS) (emerging)	Once prepared, this Strategy will assess the impact of growth across the region on sites of international importance. It will inform local policy and is designed to enable sustainable housing and tourism development, whilst securing sustainable, long term protection of the international site network.
Wirral Schedule of Local Geological Sites (LGS)	There are 15 Local Geological Sites in Wirral. These are non-statutory sites but are protected through the Unitary Development Plan (UDP) process.

Document	Purpose
Core Theme 3: Water and Coastal Environment	
Sub Theme: Water assets and water quality	
Future Water: The Government's Water Strategy for England (2008)	Outlines the Governments vision for how the water sector will look by 2030 and an outline of the steps which need to be taken to get there.
NB. Natural England profiles of aquatic national/international designations also include assessments of water quality at a number of sites.	
Sub Theme: Flood zones and coastal change	
Strategic Flood Risk Assessment for Wirral (2019)	Update to the 2009 Level 1 SFRA using up to date risk information, with the aim of identifying the number and spatial distribution of flood risk sources throughout the authority area. This will aid MBC in allocating land and providing part of the evidence base for the Local Plan.
Wirral Preliminary Flood Risk Assessment 2011 (and 2017 update)	High level screening exercise which collects information on past and future potential floods and using it to identify Flood Risk Areas. Supports the Lead Local Flood Authorities (LLFAs) in managing local flood risk in line with the European Floods Directive.
Wirral Local Flood Risk Management Strategy (2016)	Produced by Wirral MBC as the Lead Local Flood Authority (LLFA) as a requirement under the Flood Water and Management Act (FWMA) 2010. Assesses risk from: the sea; groundwater; watercourses (including lakes/ponds); and surface runoff.
DEFRA Surface Water Management Action Plan (July 2018)	Provides an overview of Surface Water and management actions. It sets out actions to advise and support local government, develop systems to enable skills sharing, review and consider surface water risk management funding mechanisms.
The Wirral Sustainable Drainage & Surface Water Management Technical Guidance for Developers	Note produced by Wirral Council which provides guidance to developers on requirements to address flooding risk on sites and an information checklist on what should be submitted with a planning application.
Wirral Water Cycle Study (2013)	Designed to identify any constraints on housing and employment growth planned for the area up to 2027 that may be imposed on the water cycle, and how these can be resolved. Also provides a strategic approach to the management and use of water. The report tested three potential growth scenarios.
Wirral Coastal Strategy (2013)	Designed to provide a strategic level assessment of coastal hazards across Wirral, both present and future. Based on the need to identify sustainable arrangements for future management of flood and coastal erosion risk. Identifies a preferred set of management arrangements for Wirral.
Shoreline Management Plan 2 North West England and North Wales (2010)	Provides a large-scale assessment of risks associated with erosion of flooding at the coast and presents policies to help manage risks. Sits at the top of a hierarchy of Strategy and Scheme plans that the Environment Agency and Local Authorities use to plan their work to manage coastal risks. Policy options recommended range across; 'Hold the line', 'Advance the Line', 'Managed Realignment' and 'No active intervention'.

Document	Purpose
Draft North West Marine Plan (published for public consultation January 2020)	Produced under Section 51 of the Marine and Coastal Access Act 2009.
Core Theme 4: Landscape and cultural heritage	
Sub Theme: Landscape (including tranquillity)	
Wirral Landscape Character Assessment (2019)	Provides a landscape character assessment for all land outside defined settlements and intended to inform work on policy development and development management, guiding development and land management that is sympathetic to local character and the special qualities of the borough. Forms part of the evidence base for the emerging Local Plan and is also intended to promote an understanding of how landscapes are changing as a result of natural, economic and human factors, and how they can be strengthened in response.
Wirral Landscape Sensitivity Assessment (2019)	Provides an assessment of the extent to which the character and quality of Wirral's landscape would, in principle, be susceptible to change as a result of the introduction of built development. Considers the landscape sensitivity of 53 sites identified for further investigation by the Council.
Wirral Local Landscape Designations Review (2020)	Review undertakes a full review of the landscapes across Wirral, including the Areas of Special Landscape Value. It identifies the landscapes of the highest quality and most value in the Borough that could potentially merit local designation in line with current best practice and provides up to date evidence and justification for the recommended Local Landscape Designation areas and their boundaries.
CPRE Mapping Tranquillity (2005)	CPRE project to map levels of tranquillity across the UK: https://www.cpre.org.uk/wp-content/uploads/2019/11/mapping_tranquillity.pdf
Sub Theme: Historic Environment	
National Heritage at Risk (HAR) Register	Updated annually, the HAR Register helps to understand the overall state of England's historic sites. The programme identifies those sites that are most at risk of being lost as a result of neglect, decay or inappropriate development.
Historic England report on 'Coastal Risk and Priority Places' (2019)	Accompanied by an interactive map and displays heritage assets across the UK identified as being sensitive to coastal change.
Wirral Conservation Area Appraisals	Conservation Areas are designated by the local planning authority as areas of special architectural or historic interest - often containing listed buildings. The Conservation Areas are reviewed regularly to ensure that places of special architectural interest are being protected.
'The Search for the Battle of Brunanburh Project' (emerging, due 2020)	When finalised, will review the status of archaeological work undertaken to date by Wirral Archaeology on the site, assesses the importance of the finds and identifies the next steps the Council should take to help safeguard the historical assets. This in turn will inform planning policy affecting the site.
Merseyside Historic Characterisation Project – Wirral Report (2011)	Carried out by staff within Merseyside Archaeological Advisory Service (MAAS), National Museums Liverpool. Designed to undertake a broad-brush characterisation of the landscape of Merseyside using GIS and a linked database which can be interrogated and thus encourage the management and understanding of the historic dimension of the present day.
Core Theme 5: Green space, health and wellbeing	

Document	Purpose
Sub Theme: Green space and recreation	
Draft Open Space Assessment Report (2019)	<p>Provides detail on open space provision in Wirral, its condition, distribution and overall quality. Using research, consultation, site assessments, data analysis and GIS mapping, and breaks down spaces by typology. Also considers future requirements based on population distribution, planned growth and consultation findings.</p> <p>This Assessment acts as an evidence base to help inform developer contributions through Section 106 agreements and other mechanisms. To be read in conjunction with the Playing Pitch Strategy (PPS).</p>
Draft Open Space Standards Paper 2019	Sets out proposed local standards recommended for Wirral. Uses community surveys to assess how far people are willing to travel locally.
Wirral Playing Pitch and Outdoor Sports Strategy 2016	Building on the preceding Assessment Report, it provides a strategic framework for the maintenance and improvement of existing outdoor sports pitches. Provides a clear understanding of the mix of pitch provision in Wirral and the roles of different partners.
Draft Wirral Local Football Facility Plan (2018)	Led by the Football Association, designed to enable investment in football facilities to be accurately targeted for the grassroots game. Purpose is to identify priority projects in Wirral.
Wirral Rights of Way Improvement Plan (2018)	Used by the highways authorities as the prime means to identify changes to be made.
Interim Health Impact Assessment 2019	Summarises the context and potential health impacts of Wirral MBC's emerging Local Plan.
Wirral Joint Strategic Needs Assessment	Intended as a systematic review of the health and wellbeing needs of the local population, informing local priorities, policies and strategies that in turn informs local commissioning priorities that will improve health and wellbeing outcomes and reduce inequalities throughout the Borough.
Liverpool City Region and Warrington Green Infrastructure Framework (2013)	<p>Produced across 7 local authorities to produce an evidence base to inform decision making on GI, to advocate for GI as critical infrastructure, and to identify actions that meet key priorities. The Framework was prepared at a time of great change in order to coordinate activity across administrative boundaries, and to support the region in attracting investment.</p> <p>The accompanying Action Plan sets out 12 key activities and 41 actions to deliver, which uses the concept of 'pinch points' to identify key areas where needs are not met by green infrastructure.</p>
Wirral Green and Blue Infrastructure Strategy (emerging, due 2020)	Will set out a baseline assessment of Wirral's existing GBI network (including recreational functions in addition to various other functions), identify gaps and set out priority opportunities for enhancing the network.
Wirral Resilient Parks Study	Considers the impact of climate change on parks and open spaces in Wirral and provides guidance on adaptation and mitigation measures to improve resilience. Provides specific recommendations for Wirral's five parks, based on research and public consultation, and includes a public toolkit.
Sub Theme: Noise exposure	

Document	Purpose
N/A (data layers for noise pollution, however, are mapped as GIS data sets)	
Sub Theme: Air quality	
DEFRA Clean Air Strategy (2019)	Sets out the comprehensive action that is required from across all parts of government and society to meet air quality goals set out in the Air Quality Directive 2008. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem.
Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities (2017)	DEFRA report which provides an overview of actions that the UK Government plans to take to achieve reduction of harmful air pollution, particularly nitrogen dioxide. Proposes reducing air pollution is via charging Clean Air Zones (CAZs) – areas in which emission standards determine whether a vehicle's owner must pay a charge to enter.
The Air Quality Strategy for England vol. 1 (2007)	Sets out a way forward for work and planning on air quality issues by setting out the air quality standards and objectives to be achieved. It introduces a new policy framework for tackling fine particles and identifies potential new national policy measures which modelling indicates could give further health benefits and move closer towards meeting the Strategy's objectives.
Wirral Air Quality Annual Status Report (2020)	Prepared to meet Wirral MBC's Local Air Quality Management (LAQM) obligations under the Environment Act, to review and assess local air quality.
Wirral Local Plan Air Quality Modelling Study (2020)	Prepared to provide an air quality assessment of the nitrogen dioxide (NO ₂) and particulate matter (PM ₁₀ and PM _{2.5}) associated with emissions from the transport network.
Core Theme 6: Carbon Storage	
Sub Theme: Carbon Storage	
UK Peatland Strategy (2018-2040)	Aims to drive and co-ordinate action across the UK, supported by country level plans that will establish a course for peatland conservation and management at a more detailed level.
Trees, Hedgerows and Woodland Strategy 2020-2030	Commissioned on the back of Wirral MBC declaring a climate emergency in July 2019, and aims to guide and influence tree and hedgerow planting across Wirral by: providing a good estimate of tree cover and help to set standards; monitoring canopy cover; helping to deliver the aims of the government's 25-year Environment Plan; and to better focus urban forestry. The major focus is to actively protect and increase Wirral's 'urban forest' and it was produced in partnership with the Wirral Initiative on Trees (WIT), a forum of local community groups.
See also: Cool 2 – A Strategy for Wirral in the face of the global climate emergency (2020).	
Non-Theme Specific	
Wirral Local Plan Climate Change and Renewable Energy Study (2020)	
Wirral District Heat Network Feasibility Report (2020) Sustainable Energy	

Document	Purpose
Natural Capital Solutions and Liverpool John Moores University (2019), 'Baseline natural capital assessment for the Liverpool City Region'	
WMBC Habitats Regulations Assessment of the Wirral Local Plan 2020-2035 I&O Consultation Document (2019)	
Natural England - Mersey Narrows and North Wirral Foreshore Sites of Special Scientific Interest - Investigation into the impacts of Recreational Disturbance on Bird Declines (2015) NECR201	

Appendix C

Full results of Landscape Sensitivity Assessment (LSA)

LSA Methodology

This section sets out the methodology used for the landscape sensitivity assessment (based on the work undertaken as part of the LSA 2019 study). This includes information on approach, the assessment criteria and process followed. Results of the LSA (2020) study follow this methodology section. These results were digitised and added together with LSA data from the 2019 study to form a comprehensive LSA mapping layer.

Assessment approach

Defining assessment criteria

The approach taken in this study builds on the process set out in An Approach to Landscape Sensitivity Assessment (Natural England, 2019) which has replaced Landscape Character Assessment Guidance for England and Scotland Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity (Scottish Heritage and the former Countryside Agency, 2004), as well as LUC's considerable experience from previous and on-going studies of a similar nature. LUC sensitivity assessments have been accepted at Local Plan examination and used to inform development appeal decisions.

In the Natural England approach, landscape sensitivity is defined as follows:

Landscape sensitivity may be regarded as a measure of the resilience, or robustness, of a landscape to withstand specified change arising from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value.

A criteria-based assessment

In line with Natural England's An Approach to Landscape Sensitivity Assessment, this study uses carefully defined criteria so that judgements can be clearly traced back to the underlying landscape and visual baseline. These indicators of landscape sensitivity are set out in **Table 14.1**.

Criteria selection is based on the attributes of the landscape most likely to be affected by residential and employment development. It considers both 'landscape' and 'visual'

aspects of landscape sensitivity and those relating to value. The criteria provide examples of the types of landscape character or features that could indicate low, moderate or high sensitivity under each criterion.

The Natural England approach suggests that the indicators of value may include designations, sense of place, valued attributes, community values, recreational value and ecosystem services.

The landscape of each assessment area and its surroundings is appraised against the individual criteria (in **Table 14.1**) to provide an indication of the relative sensitivity of the landscape to new development.

Making an overall judgement on levels of sensitivity

A five-point rating from 'low' to 'high' landscape sensitivity is used to indicate overall levels of landscape sensitivity within each assessment area, with supporting justification. Definitions for each of these ratings are provided in **Table 14.2**. The overall rating is based on professional judgement, taking account of all the individual criteria set out in **Table 14.1**. In some cases, one criterion alone may be sufficient to result in a judgement of high sensitivity but more often the judgement is informed by a number of criteria.

Table 14.1: Sensitivity assessment criteria and definitions

Landscape Sensitivity Assessment Criteria				
Physical character (including topography and scale) <p>This considers the shape and scale of the landform, landscape pattern and landscape elements in relation to the scale of potential development. Smooth, gently undulating or flat landforms are likely to be less sensitive to development than a landscape with a more dramatic landform, distinct landform features or incised valleys with prominent slopes.</p> <p>This criterion considers how developments fit with the scale of the landform (understanding the scale of the development proposed is important when applying this criterion). Larger scale, simple landforms are likely to be less sensitive to larger scale developments than smaller scale, enclosed landforms (where large-scale developments could appear out of scale with the underlying landform). Conversely, smaller developments may be able to be screened within enclosed landforms, therefore reducing landscape sensitivity. Existing small-scale features in the landscape in the form of existing buildings or trees will influence the scale of development that can be accommodated in the landscape.</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity
<i>e.g. the landscape has smooth, gently undulating or featureless landform with uniform large-scale landscape pattern and low density of overlying landscape features.</i>		<i>e.g. the landscape has an undulating landform and some distinct landform features; it is overlain by a mixture of small-scale and larger scale field patterns and a moderate density of small-scale landscape features.</i>		<i>e.g. the landscape has a dramatic landform or distinct landform features that contribute positively to landscape character; the area has a high density of small-scale landscape features and is overlain by a small-scale field pattern.</i>
Natural character <p>This criterion considers the 'natural' qualities of the landscape in terms of coverage of semi-natural habitats and valued natural features (e.g. trees, hedgerows) which could be vulnerable to loss from development. Areas with frequent natural features (including large areas of nationally or internationally designated habitats) result in increased sensitivity to development, while landscapes with limited natural features (including intensively farmed areas or areas with high levels of existing development) will be less sensitive. This criterion also looks at role as part of a wider network of natural features (Nature Recovery Network).</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity
<i>e.g. much of the landscape is intensively farmed or developed with little semi-natural habitat coverage and few valued natural features.</i>		<i>e.g. there are areas of valued semi-natural habitats and features found in parts of the landscape, whilst other parts are intensively farmed or developed.</i>		<i>e.g. large areas of the landscape are nationally or internationally designated for their nature conservation interest; there is a frequent occurrence of valued natural features across the landscape.</i>
Historic landscape character <p>This considers the extent to which the landscape has 'time-depth' (a sense of being an historic landscape, with reference to the Cheshire Historic Landscape Characterisation) and/or the presence of heritage assets that are important to landscape character (i.e. Conservation Areas, Scheduled Monuments, listed buildings, archaeological features and remains or other features listed in the landscape character assessment).</p> <p>Landscapes with small-scale, more irregular field patterns of historic origin are likely to be more sensitive to the introduction of modern development than landscapes with large, regular scale parliamentary field patterns.</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity
<i>e.g. A landscape with relatively few historic features important to the character of the area and little time depth (i.e. large intensively farmed fields).</i>		<i>e.g. A landscape with some visible historic features of importance to character, and a variety of time depths.</i>		<i>e.g. A landscape with a high density of historic features important to the character of the area and great time depth (i.e. piecemeal enclosure with irregular boundaries, ridge and furrow)</i>
Character and setting of existing settlement				

Landscape Sensitivity Assessment Criteria				
<p>This considers the overall settlement form and character of existing settlement and considers whether development in the landscape would be in accordance with the general pattern, setting and form of current development and relationship with the existing settlement edge. It includes an understanding of the landscape pattern associated with settlement edges (where relevant), for example if it is well integrated by woodland cover or open and exposed to form a 'hard edge' to the adjoining landscape.</p> <p>This criterion also considers the extent to which the landscape contributes to the identity and distinctiveness of settlements, by way of its character and/or scenic quality, for example by providing a backdrop/ setting, or playing an important part in views from a settlement. This also considers the extent to which the area contributes to a perceived gap between settlements (the loss of which would increase coalescence).</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity
<i>e.g. the area does not contribute positively to the setting of the settlement or play a separation role. Development in the assessment area would have a good relationship with the existing settlement form/ pattern and could provide the opportunity to improve an existing settlement edge.</i>		<i>e.g. the area provides some contribution to the setting of the settlement by providing, or plays some part in views from the settlement, or play a role in the perception of a gap between settlements. Development in the assessment area may be slightly at odds with the settlement form/ pattern and may adversely affect the existing edge to some extent.</i>		<i>e.g. the area provides an attractive backdrop/ setting to the settlement, plays an important part in views from the settlement, or forms an important part in the perception of a gap between settlements. Development in the assessment area would have a poor relationship with the existing settlement form/pattern and would adversely affect an existing settlement edge (which may be historic or distinctive).</i>
<p>Views and visual character including skylines</p> <p>This considers the visual prominence of the assessment area, reflecting the extent of openness or enclosure in the landscape (due to landform or land cover), and the degree of inter-visibility with the surrounding landscape (i.e. the extent to which potential development would be visible).</p> <p>Visually prominent landscapes are likely to be more sensitive to development than those which are not so visually prominent. Landscapes which are visually prominent and inter-visible with adjacent landscapes (both urban and rural) are likely to be more sensitive to development than those which are more hidden or less widely visible.</p> <p>It also considers the skyline character of the area including whether it forms a visually distinctive skyline or an important undeveloped skyline. Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, are likely to be more sensitive to development because new buildings/structures may detract from these skylines as features in the landscape. Important landmark features on the skyline might include historic features or monuments.</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity
<i>e.g. the area is enclosed/visually contained and/or has a low degree of visibility from surrounding landscapes and the area does not form a visually distinctive or important undeveloped skyline</i>		<i>e.g. the area is semi-enclosed or has some enclosed and some open areas. It is likely to have some inter-visibility with surrounding landscapes and may have some visually distinctive or undeveloped skylines within the area.</i>		<i>e.g. the area is open and/or has a high degree of visibility from surrounding landscapes, and/or the area forms a visually distinctive skyline or an important undeveloped skyline.</i>
<p>Perceptual and experiential qualities</p> <p>This considers qualities such as the rural character of the landscape (traditional land uses with few modern human influences), sense of remoteness or tranquillity. Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a traditional rural feel with few modern human influences) tend to increase levels of sensitivity to development compared to landscapes that contain signs of modern development. High scenic value and dark night skies also add to sensitivity in relation to this criterion. This is because development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/naturalness.</p>				
Low sensitivity	Low-moderate sensitivity	Moderate sensitivity	Moderate-high sensitivity	High sensitivity

Landscape Sensitivity Assessment Criteria				
<i>e.g. the area is significantly influenced by development/human activity, where new development would not be out of character.</i>		<i>e.g. A landscape with some sense of rural character, but with some modern elements and human influences.</i>		<i>e.g. A tranquil or highly rural landscape, lacking strong intrusive elements. A landscape of high scenic value with dark skies and a high perceived degree of rural character and naturalness with few modern human influences.</i>

Table 14.2: Five-point scale of landscape sensitivity

Sensitivity Judgement	Definition
High	Landscape and/or visual characteristics of the assessment unit are very susceptible to change and /or its values are high or moderate-high and it is unable to accommodate the relevant type of development without significant change or adverse effects. Thresholds for significant change are very low.
Moderate-high	Landscape and/or visual characteristics of the assessment unit are susceptible to change and /or its values are moderate through to high. It may be able to accommodate the relevant type of development but only in limited situations without significant change or adverse effects. Thresholds for significant change are low.
Moderate	Landscape and/or visual characteristics of the assessment unit are susceptible to change and /or its values are low-moderate through to moderate-high, or it <i>may</i> have some potential to accommodate the relevant type of development in some <i>defined</i> situations without significant change or adverse effects. Thresholds for significant change are intermediate.
Moderate-low	Landscape and/or visual characteristics of the assessment unit are resilient and of low susceptibility to change and /or its values are low-moderate or low and it can accommodate the relevant type of development in many situations without significant change or adverse effects. Thresholds for significant change are high.
Low	Landscape and/or visual characteristics of the assessment unit are robust or degraded and are not susceptible to change and /or its values are low, and it can accommodate the relevant type of development without significant change or adverse effects. Thresholds for significant change are very high.

Development types and scenarios considered

C.1 This study considers the sensitivity of the landscape to the principle of development without knowing the specific size or exact location of that development. However, two general development types are considered by this assessment, as described below:

Residential development

C.2 Scenario description: housing development including typical dwellings of 2 storeys with gardens, with some 3 storey flats along roads, at a density of around 30 dwellings per hectare (dph).

Employment development

C.3 Scenario description: large block warehouse-type buildings, typically two storeys high. These could be stand-alone buildings or located within a large complex of similar warehouses.

Assessment process

Desk study

C.4 The first task in the assessment process, following the definition of the sites for assessment, was to carry out a desk-top analysis for each area. This involved the mapping of multiple data sets within ArcGIS (Geographical Information System) to identify the potential sensitivities of each area.

Field verification (undertaken through the LSA 2019 study only and not through the 2020 additions)

C.5 A structured process of field survey verification was undertaken by landscape environment experts in order to test and refine the outputs from the desk study. Each area for assessment was visited in turn to record information and take photographs. The field survey was undertaken from roads and public rights of way.

C.6 The survey work looked in particular at the visual relationships between the assessment area and adjoining settlement, landscape settings and wider views, the condition of individual landscape features, and perceptual qualities (i.e. levels of tranquillity).

Reporting

C.7 The LSA 2019 provides report findings of those areas assessed as part of that study, the LSA (2020) study findings are outlined below.

C.8 The evaluation for each assessment area as part of this study includes the following information:

- A short description of the area including location and landscape character context;
- Landscape value context, in terms of any relevant national and local landscape designations;
- Analysis against the assessment criteria with a description given against each of the assessment criteria set out in **Table 14.1**;
- Evaluation of landscape sensitivity for the assessment area with an overall judgement/rating (as defined in **Table 14.2**; and
- Broad guidance applicable to potential development within each area.

Wirral LSA (2020 additions) findings

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
1a North Wirral Coastal Edge	Royal Liverpool Golf Course (SP016)	<ul style="list-style-type: none"> ■ The area forms part of a flat coastline with distinctive rolling sand dunes on its seaward side which increases sensitivity to residential development. Whilst the low topographical range and low density of overlying landscape features indicates lower sensitivity to development, a defining component of the landscape is its open remote character with strong sensory characteristics and extensive views of the coast which overall increases its sensitivity to development. ■ The North Wirral Coastal Park and golf courses are considered valuable landscape assets within the LCA. ■ The LWS and SBIs in the north east and south west of the LCA indicate medium to high levels of sensitivity, influenced by their proximity to the adjacent SPA and SAC designated areas which also encroach into the LCA. ■ The coastline within the LCA is largely undeveloped which increases the sensitivity to residential development. Prominent historic buildings at Leasowe Castle (Grade II*) and the lighthouse at Leasowe (Grade II) are distinctive features on the skyline. ■ There are pockets of neglected and underused land in the south eastern edge of the LCA resulting in lower sensitivity to residential development. These fields contain several commercial nurseries and horse paddocks.
1b Dee Estuarine Edge	A small central area (SP058C, 58D and 58E)	<ul style="list-style-type: none"> ■ The coastal landform is gently undulating and varied in its character, from soft cliffs to expansive saltmarsh. The changing character of the Dee Estuary has a strong influence on the landscape character, indicating a higher sensitivity to development. ■ The nationally designated Dee Cliffs SSSI lie in the north west of the LCA, containing priority habitat maritime cliff and slopes, coastal saltmarsh and lowland mixed broadleaf woodland. This area also lies adjacent to the Dee Estuary SPA, SAC, SSSI and Ramsar Site increasing sensitivity to development. ■ The Dee Estuary SSSI extends into the southern part of the LCA denoting high sensitivity to development in these locations. ■ There is a variety of time-depth within historic field patterns - including pre-1600s field patterns south of Gayton, Medieval Townfields west of Heswall along the coast, as well as 19th century reorganised fields in the north indicating moderate sensitivity. Fields are regular in pattern but small to medium in size indicating higher levels of sensitivity. Larger field sizes in the north of the area have a potentially reduced sensitivity to development.

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<ul style="list-style-type: none"> ■ There is little development within most of the area apart from scattered farms. The urban edges of Caldy and Heswall are screened by woodland and do not form prominent features in the landscape, reinforcing the unsettled nature of the local landscape character. ■ The rural character of the lanes, especially due to hedgerows is considered a valued landscape attribute within the LCA. ■ The visual values and landscape quality of much of the area are recognised locally as an ASLV. This area is considered to be among the most outstanding landscapes within Wirral and provides an important and positive contribution to the distinctive attractiveness of the peninsula increasing sensitivity to development. ■ Part of the Gayton Conservation Area lies in the south-east and contains the Grade II* Gayton Hall and dovecot, increasing sensitivity to development. ■ The area to the east of Heswall between Dee Side and Cottage Lane is considered less sensitive to residential development than the surrounding area as its character has been weakened by the introduction of piecemeal residential development.
1c Eastham Estuarine Edge	Yes (SP054, SP055)	<ul style="list-style-type: none"> ■ N/A
2a The Birket River Floodplain	A small area in south eastern corner in proximity to and including Saughall Massie (SP001, 002, 003, 004A and 005A).	<ul style="list-style-type: none"> ■ The landscape is flat but relatively unvegetated and open, signalling a lower sensitivity to development. The northern section of the LCA is located within floodplain which includes the channelled River Birket, its tributaries and a network of drainage ditches which increases sensitivity to development in an otherwise degraded landscape. ■ Meols Meadows SSSI is a nationally designated site located between Arrowe Brook and the River Birket. LWS, SBIs and potential LWS within the LCA tend to be large in scale and are considered to have a cumulative medium to high sensitivity to development due to their benefit to birdlife and how it contributes to landscape character. ■ The landscape has a variety of time depths indicating moderate sensitivity. Formed by draining marshland, the area retains extensive areas of irregular pre-1600s field patterns. ■ The LCA is sparsely settled. However, there are areas of industrial and commercial developments on the urban edge in the north east of the LCA including landfill, mineral extraction, water treatment works and commercial units along the A553 Hoylake Road. These reduce tranquillity and signal lower sensitivity to development. ■ The A533 which runs centrally through the LCA is open with wide verges lowering sensitivity to development. However, the

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<p>landscape in this area plays a key role in the separation of Moreton and Meols which increases sensitivity to development.</p> <ul style="list-style-type: none"> ■ Small parcels of land at the periphery of the LCA or adjacent to existing housing or areas of industry are less sensitive to development. ■ The urban edge of Meols is visually contained by woodland along the railway line. There are long views over farmland southwards to the rising slopes at Caldy, West Kirby and Thurstaston and to the east at Bidston Hill. Coastal views do not seem a prominent feature of the LCA minimising visual sensitivity to development in the north east.
2b The Fender River Floodplain	A single small parcel of land south of M53 Jct 2 (SP025B)	<ul style="list-style-type: none"> ■ The land is generally flat across the area lowering sensitivity to development. Small hills of up to 30m AOD are present in the north at Bidston Moss and south of the Bidston golf club. These hills contrast with the surrounding flat landscape and provide local viewing points which increase sensitivity to development. ■ Most of the area north of M53 junction 2 lies within floodplain increasing sensitivity to development. ■ The presence of Priority Habitat mixed deciduous woodland and reedbed at Bidston Moss has resulted in designation as a LWS and SBI. Combined with its topographical sensitivity, this is considered to have medium – high sensitivity overall. ■ Most woodland has been introduced to soften urban fringes and the infrastructure. The woodland is a valued attribute as it provides unity to the discordant character of the LCA. ■ The field pattern of the area has predominantly been shaped by 20th century infrastructure and recreation. The area still in agricultural use around Fender Bridge retains a pre-Parliamentary enclosure field pattern and is more sensitive to development. However, fields shown as having low-moderate sensitivity contain some elements of semi-natural habitats and provide a sense of separation between settlements. ■ Infrastructure has a strong influence on the character of this landscape, lowering sensitivity in proximity of the motorway and elevated A roads that traverse it.
3a Bidston Sandstone Hills	-	<ul style="list-style-type: none"> ■ The topography is a high ridge of wooded sandstone, which is prominent within the wider landscape. The topographical range is dramatic and highly sensitive to development. ■ It is one of the most wooded areas in Wirral with areas of Priority Habitat mixed deciduous woodland distributed across the landscape. Most of the area is designated as a LWS and SBI. ■ There are landmark buildings on the top of the ridgeline that provide a link to the history of the region. There are a series of

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<p>footpaths across Bidston Hill, and a designated Heritage Trail, all of which increases sensitivity.</p> <ul style="list-style-type: none"> ■ The LCA forms part of the setting for Bidston Village CA and it also extends into the north of the area. The CA includes the Grade II* Bidston Hall. There is a strong vernacular of local buff sandstone, particularly for boundary walls, and the houses are largely well integrated into the surrounding woodland. ■ The visual values and landscape quality of much of the area are recognised locally as an ASLV. This area is considered to be among the most outstanding landscapes within Wirral and provides an important and positive contribution to the distinctive attractiveness of the peninsula increasing sensitivity to development. ■ In areas of less sensitive lower ground, there are allotments, Tim O'Shanter urban farm and a cricket ground. These generally lie opposite existing residential areas that face onto the LCA which makes them less sensitive to development. ■ The area retains a 'natural wilderness', with a remote character despite surrounding development which increases sensitivity to development. ■ Areas with lower sensitivity are considered to lie outside of the ASLV where the LCA has an interface with the A553 and there is precedent for residential development. Woodland on rising land offers enclosure to minimise the impact of development.
3b Thurstaston and Greasby Sandstone Hill	Three discrete parts of the LCA (SP010A and SP059B, C and D and SP013)	<ul style="list-style-type: none"> ■ The area includes some of the highest land in the borough with a series of small hills which form part of a prominent sandstone ridgeline. High points including Thurstaston Hill and Caldys Hill have an increased sensitivity to development. ■ The area has a strong rural character, with a sense of remoteness particularly along the ridgeline. The distinctive form of the sandstone ridge with rocky outcrops provide a sense of place, signalling a moderate to high sensitivity to development. ■ Field pattern varies; to the south, fields are often long and linear, and bordered by heavily wooded boundaries which are considered valued semi-natural habitats. However, their presence highlights a sense of localised enclosure. These areas are considered to range from moderate to moderate – high sensitivity. ■ To the north, fields are smaller and irregular. Although smaller field sizes indicate higher sensitivity to development, the LCA notes that in the northern part of the LCA, the hedgerows become smaller and more fragmented, thereby reducing the potential for loss of semi-natural habitats. The farmland here is also considered to lack the distinctive character and scenic qualities of the ridgeline and is influenced by human influences

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<p>associated with settlement edges, therefore, low-moderate to moderate sensitivity is considered appropriate.</p> <ul style="list-style-type: none"> There is a variety of time-depths - Medieval Townfields around Newton and Frankby in the north, pre-Parliamentary enclosure and 19th century reorganised field pattern in the centre of the area and formal ornamental parkland at Royden Park indicating a moderate sensitivity to development. This is one of the most wooded character areas within Wirral with woodland concentrated around Thurstaston Hill, Caldby Hill and Royden Park. Woodland is mostly located on the slopes of the hills. Irby Quarry, Royden Park, Stapledon Wood, Caldby Hill, Caldby Hospital Grounds, and Frankby Cemetery are designated LWS and SBI for deciduous woodland habitats. The Frankby CA includes a cluster of Grade II listed buildings indicating moderate – high sensitivity. The strong vernacular of the historic buildings at Frankby provides a rural and coherent character to the settlement. Thurstaston village is also designated as a Conservation Area, and housing on the western edge of the area is part of Caldby Conservation Area. The adjacent urban fringes of Irby, Greasby and Caldby are located on rising ground with housing typically set within mature wooded gardens. Mature hedgerows around adjacent fields limit and contain the prominence of the urban fringe maintaining a sense of separation when viewed in the wider landscape. This indicates a moderate sensitivity to development. From high points there are panoramic views of regional landmarks and vice versa indicating higher levels of sensitivity.
3c Irby and Pensby Sandstone Hills	The eastern extent of the LCA (SP059E, SP060)	<ul style="list-style-type: none"> In the western section of the LCA, the land reaches its highest point of 100m AOD, and then slopes steeply towards the coast to 50m AOD. The change in level is dramatic and highly sensitive to development. In the central section, the land is falling from 95m AOD to 75m AOD from south to north which is a less dramatic slope than the landscape in the western section making it less sensitive to development. The Dungeon is nationally designated as a SSSI and contains Priority Habitat deciduous woodland (also LWS and SBI) indicating high levels of sensitivity. The area predominantly retains its historic field pattern including pre-1600s field systems, Medieval Townfields, pre-Parliamentary enclosure and an area of C20th fields. The variety indicates moderate sensitivity generally. The field pattern is irregular and a variety of scales, with hedgerow forming the dominant field boundary. A large arable

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<p>field borders the east of Telegraph Road, and contrasts with low hedgerows and few hedgerow trees.</p> <ul style="list-style-type: none"> ■ Irby Hall is a historic feature of note. This large moated site, now dry, surrounded the site of the 11th century manor and courthouse of St Werburgh's Abbey and is listed as a Scheduled Monument indicating higher levels of sensitivity. ■ Settlement edges are less sensitive to development. The area is surrounded by visible residential development on three sides with limited vegetation to integrate. Pensby High School is a prominent development in the local area, reducing sensitivity to development. ■ There is intervisibility between areas of high ground within this LCA and LCA 3b. Views are available across LCA 1c of the rural land to the west. Distant views of the Liverpool cathedrals are possible from high points on the horizon above the housing and woodland. ■ The western extent of the LCA is recognised locally as an ASLV, considered among the most outstanding landscapes within Wirral, and provides an important and positive contribution to the distinctive attractiveness of the peninsula. Combined with the topographical sensitivities, this is considered to have a high sensitivity to development. ■ There are pockets of tranquillity within the area, which increase with distance from the settlement edge.
3d Heswall Dales Sandstone Hills	Two discrete parts of the LCA (SP010A and SP059B, C and D)	<ul style="list-style-type: none"> ■ Most of the area is a nationally designated SSSI and is an important example of lowland heath within Merseyside. Locally the area is designated as the Heswall Dales and Cleaver Heath LNR and Bush Way LWS and SBI indicating high levels of sensitivity to development. ■ The LCA reaches 70m AOD at its highest point. The land falls to the south west to 60m AOD. The land is steeply undulating throughout, with the steepest slopes along the southern and eastern fringes and flatter plateaux on the northern and western fringes. ■ In the north of the area there are extensive panoramic views across the Dee Estuary towards the Welsh coastline. These contrast with enclosed views on lower ground and in areas of more established woodland. ■ The visual values and landscape quality of the area are recognised locally as an ASLV. This area is considered to be among the most outstanding landscapes within Wirral and provides an important and positive contribution to the distinctive attractiveness of the peninsula. ■ Dale Farm is the only development within the LCA. It is located in the centre of the Dales and comprises a farm and large market garden cultivating fruit and vegetables. The farm

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		buildings are surrounded by mature woodland, which provides enclosure reducing sensitivity to development.
4a Landican and Thingwall Lowland Farmland and Estates	Southwestern section of the LCA (SP061, SP062 and SP064E)	<ul style="list-style-type: none"> ■ The landform is generally undulating. Farmland generally comprises small-medium scale regular fields, which become smaller closer to the settlements. These locations have a moderate density of landscape features - low hedgerows with hedgerow trees - indicating a moderate sensitivity to development. ■ Field sizes increase around Landican where there is a lower density of landscape features indicating lower levels of sensitivity. Here, however, the land slopes distinctly from a low point at 25m along the M53 to 60m by Landican Cemetery and 60m along the fringes of Prenton which results in an increased sensitivity to development. ■ Prenton Brook creates a narrow enclosed wooded valley at Barnston Dale between Barnston and Thingwall, which contrasts with surrounding open landscape. Along with the surrounding Priority Habitat woodland, it is a prominent landscape feature and designated as a LWS and SBI increasing sensitivity to development. ■ Arrowe Country Park (LWS and SBI) contains the wooded course of the Arrowe Brook as well as a number of man-made pools, meres and a constructed waterfall. ■ Arrowe Country Park and Barnston CA are key heritage areas. Both feature clusters of Grade II Listed features indicating higher sensitivity to development. ■ Landican also makes a contribution to landscape character as a small hamlet with a rural and remote character which sits on the top of a hill. Properties with sandstone boundaries are set in small groups along the road which provides interest and variety. ■ The landscape is crossed by few roads, most of which are rural in character except for the busy A551 Barnston Road which runs across the centre from Heswall to Thingwall and Storeton Lane which is characterised by street lighting and ribbon development extending from Barnston. ■ The M53 and railway line are largely screened by vegetation, although they are aurally intrusive which lowers sensitivity to development. There is greater tranquillity towards Landican and Barnston, away from the transport corridors and urban edges, signalling a higher sensitivity to development. ■ The Church of St Saviour, Oxton is a prominent landmark punctuating the woodland on the rising skyline at Prenton. The roofs of the crematorium buildings within Landican Cemetery and the incinerator tower at Arrowe Park Hospital are detracting skyline features.

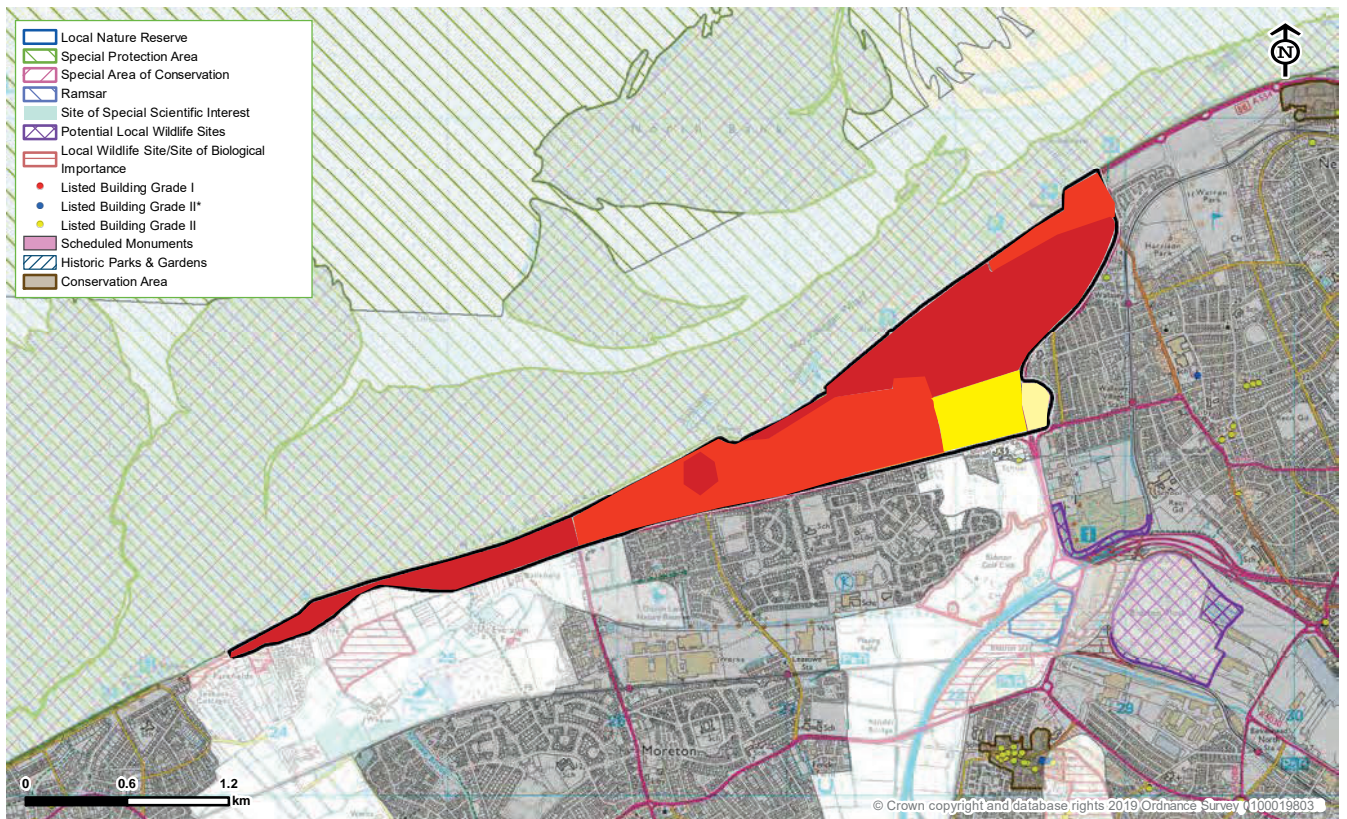
LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<ul style="list-style-type: none"> There is some visual intrusion from surrounding urban settlement at Heswall, Prenton, Pensby and Thingwall. From Landican Lane in the north of the area there are open close-distance views of housing development at Woodchurch, Prenton and Oxtan, the Asda store and industrial development immediately east of the M53 lowering sensitivity to development.
4b Thornton Hough Farmland and Estates	A small parcel of land in the south west corner (SP071)	<ul style="list-style-type: none"> The land is generally flat with minor undulations around Thornton Hough and along watercourses. The land rises to the west and east, to ridgelines outside the LCA increasing sensitivity to development in these locations. Neighbouring LCAs (4c) have views of the Welsh coastline and Clywdian Range at Rest Hill Road and Red Hill Road. The lack of settlement within this LCA potentially enables this view. The agricultural landscape is generally made up of regular large fields except for in the south east where the field sizes are small-medium increasing sensitivity to development. The larger scale fields have a lower density of landscape features lowering sensitivity to development. However, intact historic field pattern bounded by well-maintained hedgerows or estate fencing found through much of the area, provides time-depth and contributes to the sense of place. The regular pattern is a result of the Post Medieval Planned Enclosure that has occurred within most of the LCA. Pockets of higher sensitivity to development exist where there are areas of valued semi-natural habitats within the north of the LCA. These are substantial geometric blocks of Priority Habitat mixed deciduous woodland which are visually prominent. Stanley Wood and Manor Wood are designated as LWS and SBIs – higher sensitivity. Thornton Hough CA lies centrally in the south of the LCA. Thornton Manor Grade II* Registered Park and Garden lies to the north of the CA along Manor Road. This area is considered to have high sensitivity to development as a result of its coherent and distinctive sense of place. Brimstage also makes a valuable contribution. There are distinctive linear avenues of ornamental trees which pass through the LCA connecting the Lever Causeway to Thornton Manor, one-time home of Lord Lever. They are an attractive landscape feature which provide an interaction with the rural landscape and provide a sense of formality with links to the past, signalling medium to high sensitivity. The visual values and landscape quality of the area around Thornton Manor and Thornton Hough are recognised locally as an ASLV. This area is considered to be among the most outstanding landscapes within Wirral and provides an important

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<p>and positive contribution to the distinctive attractiveness of the peninsula.</p> <ul style="list-style-type: none"> ■ The LCA has a strong agricultural character with limited settlement access via quiet rural lanes increasing sensitivity. This character weakens as human influence becomes more apparent, at the edges of the LCA. The M53 and railway line do provide a physical barrier to settlement. ■ The LCA provides a rural setting to the areas of Heswall and Gayton in the west, indicating higher levels of sensitivity to residential development. ■ There is generally little settlement within the LCA except for the villages of Thornton Hough and Brimstage and scattered historic farmsteads built of red sandstone. There is more settlement in the south of the LCA where C20th residential development appears at odds with the historical settlement pattern. ■ The road pattern is sparse and largely rural, with the exception of the M53 which cuts through the north east of the area. Lower levels of sensitivity lie adjacent to the M53 due to the change in natural character. ■ A sense of remoteness is experienced within the LCA through the enclosure provided by the field boundaries and blocks of woodland which results in a higher sensitivity to development. Sensitivity is lower where urban fringe elements intrude including small areas of industry in the south west.
4c Clatterbrook and Dibbin Valley Lowland Farmland and Estates	A significant proportion of the LCA including all areas to the east of the M53	<ul style="list-style-type: none"> ■ Valley landform following the course of several small watercourses although the valley has less topographical range in the west of the LCA, lying mostly between 30-40m AOD indicating lower levels of sensitivity to development than in the east of the LCA. ■ The course of the Clatter Brook is distinctive with Priority Habitat woodland, much of which is ancient. The narrow valley along the brook cuts deeply through the landscape, increasing sensitivity to development locally. The wooded watercourses are ecologically valued habitats, nationally designated as a SSSI and provide a rural wooded character to the area. ■ The site is overlain by a pattern comprising a mixture of geometric and rectangular fields that are medium in size across most of the western part of the LCA, signalling moderate sensitivity to development. ■ Small to medium scale fields in the south west have a higher sensitivity to development. Fields are mostly formed by hedgerows with occasional hedgerow trees, alongside linear woodlands and woodland copses, which provide a higher density of small-scale landscape features.

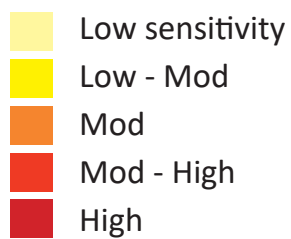
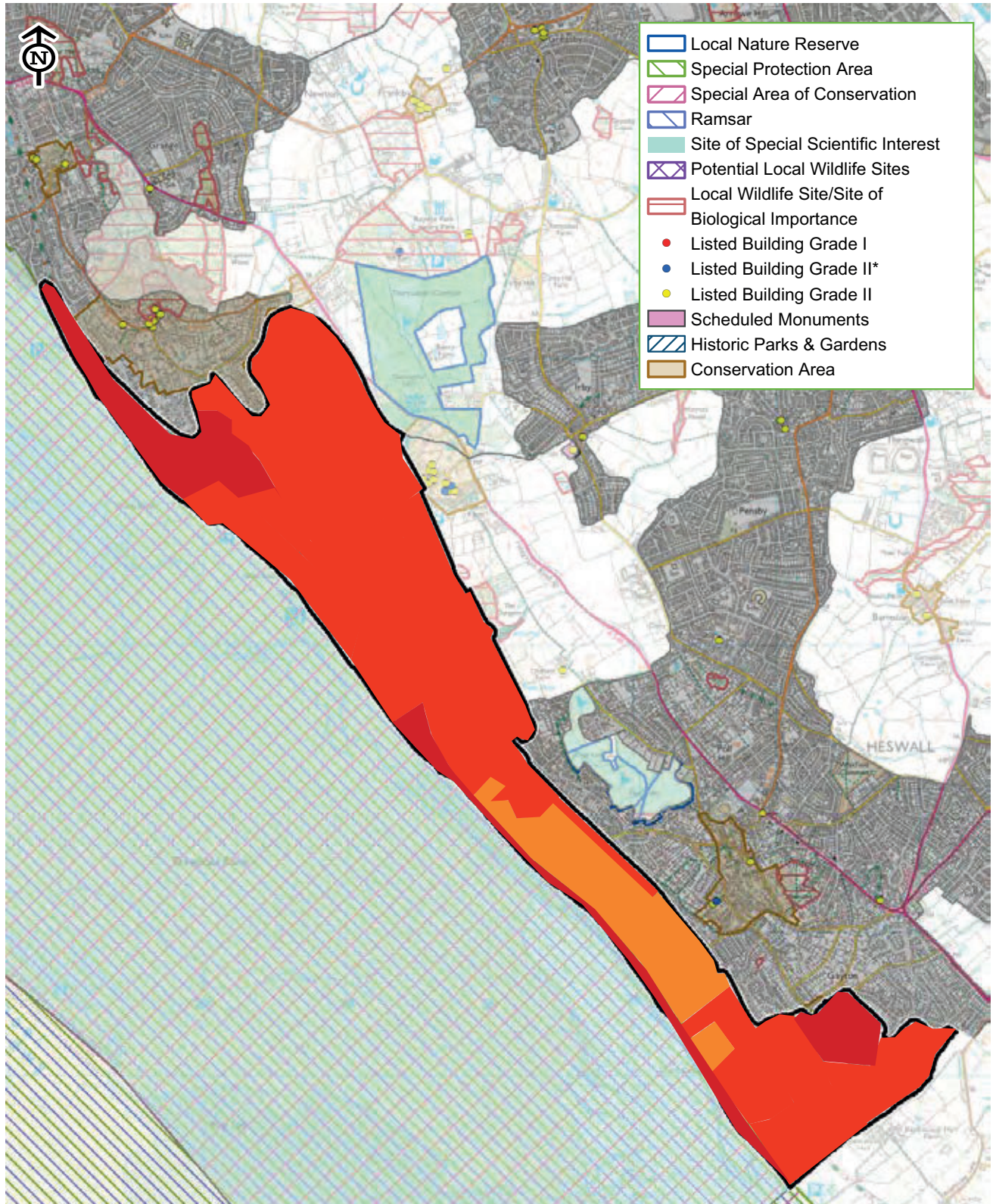
LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<ul style="list-style-type: none"> ■ There is relatively little built form within the west of the character area aside from Clatterbridge Hospital. The hospital consists of a number of buildings positioned within a low lying and well screened area estate lowering sensitivity to development. ■ The Cheshire HLC indicates that the area contains a relatively diverse time depth which highlights moderate sensitivity to residential development. Farmland in the south is largely enclosed by numerous hedgerow trees which are almost all mature or senescent. ■ There are limited heritage assets important to landscape character. The distinctive linear avenues of ornamental trees which pass through the LCA 4b also connect through into this LCA to the north of Clatterbridge. They are an attractive landscape feature which provide an interaction with the rural landscape and provide a sense of formality with links to the past. ■ The M53 provides a barrier to the eastern part of the LCA. The western extent of the LCA is predominantly rural apart from Clatterbridge hospital – there is no defined settlement edge increasing the sensitivity to residential development. ■ The M53 is in a cutting for much of its length along the western edge of the area and has heavily wooded banks. However, it remains a prominent feature within the landscape, particularly around the junctions where traffic movement, motorway signage and lighting are evident. Land in this location has a lower sensitivity to development.
4d Raby Lowland Farmland and Estates	-	<ul style="list-style-type: none"> ■ This is a gently undulating landscape with landform flattening around Raby House which is on a small plateau around 40m AOD. The undulating nature of the land enables the field pattern to be discernible from footpaths and the local road network. Woodland is also scarce enabling visibility which increases sensitivity to development. ■ Farmland features regular medium to large scale fields although closer to houses and small watercourses the field pattern tends to become irregular. The fields are mostly bounded by low hedgerows with some mature hedgerow trees and in some places by Cheshire rail fencing. This indicates moderate sensitivity to development. ■ The historic field pattern predominantly dates from 19th century reorganised fields, with a small area of pre-Parliamentary enclosure fields around Hargrave Cottages indicating moderate sensitivity to development. ■ Woodland cover is low. Willaston Copse LWS and SBI is valued for its priority woodland cover increasing sensitivity to development locally.

LCA	Covered by Wirral LSA 2019 (LUC)	Summary of significance
		<ul style="list-style-type: none"> ■ The historic character of the small village of Raby and sparse settlement pattern of scattered sandstone farmhouses adds to the scenic qualities of the area. There are a number of Grade II listed buildings in the vicinity. The visual values and landscape quality of the area round Raby are recognised locally as an ASLV. This area is considered to be among the most outstanding landscapes within Wirral and provides an important and positive contribution to the distinctive attractiveness of the peninsula. This indicated medium to high sensitivity. ■ The Benty Heath Lane Ponds are designated as a LWS and SBI. Given their scale within the field pattern, it is considered that these areas are medium to high sensitivity. There is also an area of Priority Habitat purple moor grass and rush pastures north of Hargrave Cottages. ■ The area has a strong rural, tranquil farmland character with intact historic field pattern and discernible estate character. It retains a clear sense of separation from the larger settlements of Heswall in the west and Eastham and Bromborough in the west. Residential development akin to C20th development to the west of Thornton Hough would also feel out of sync with the ribbon settlement pattern of the LCA. In this respect, the area is considered to have a predominantly moderate to high sensitivity. ■ The village is strongly associated with farming, with a small number of houses in the centre and the fringes characterised by large farms. Properties are semi-detached or detached with a few smaller cottages. The majority of properties are associated with farm buildings. ■ The M53 is in cutting within this character area, and therefore does not have a significant visual impact on the area. ■ Perceptual qualities of the landscape on the edge of the LCA to the east are, however, affected by the M53 and to the south by settlements at Willaston and Neston, lowering sensitivity locally.
5a North Wirral Foreshore and Coastal Waters	-	■ N/A
6a Dee Estuary	-	■ N/A
6b Mersey Estuary	-	■ N/A

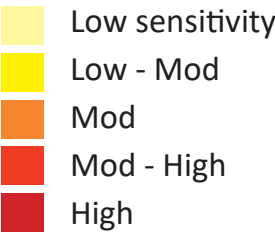
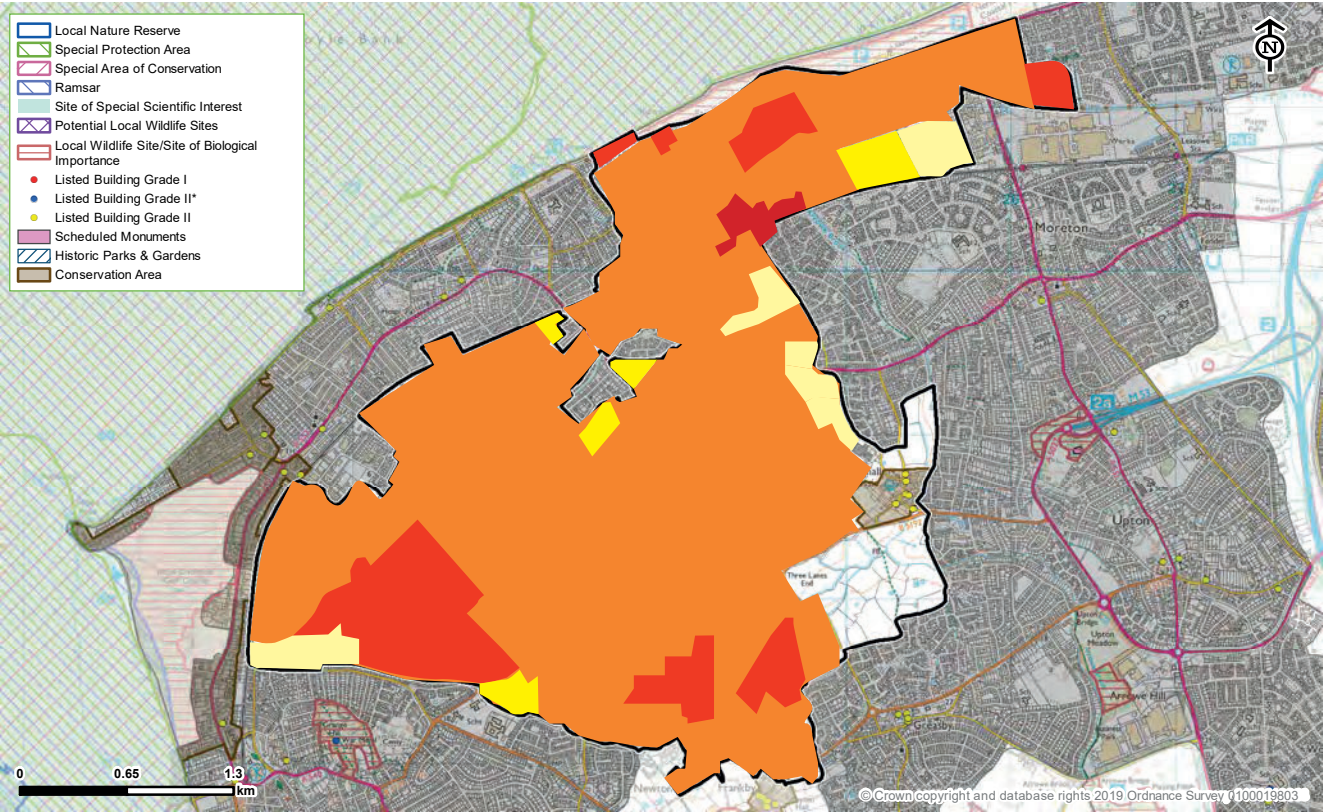
1a: North Wirral Coastal Edge



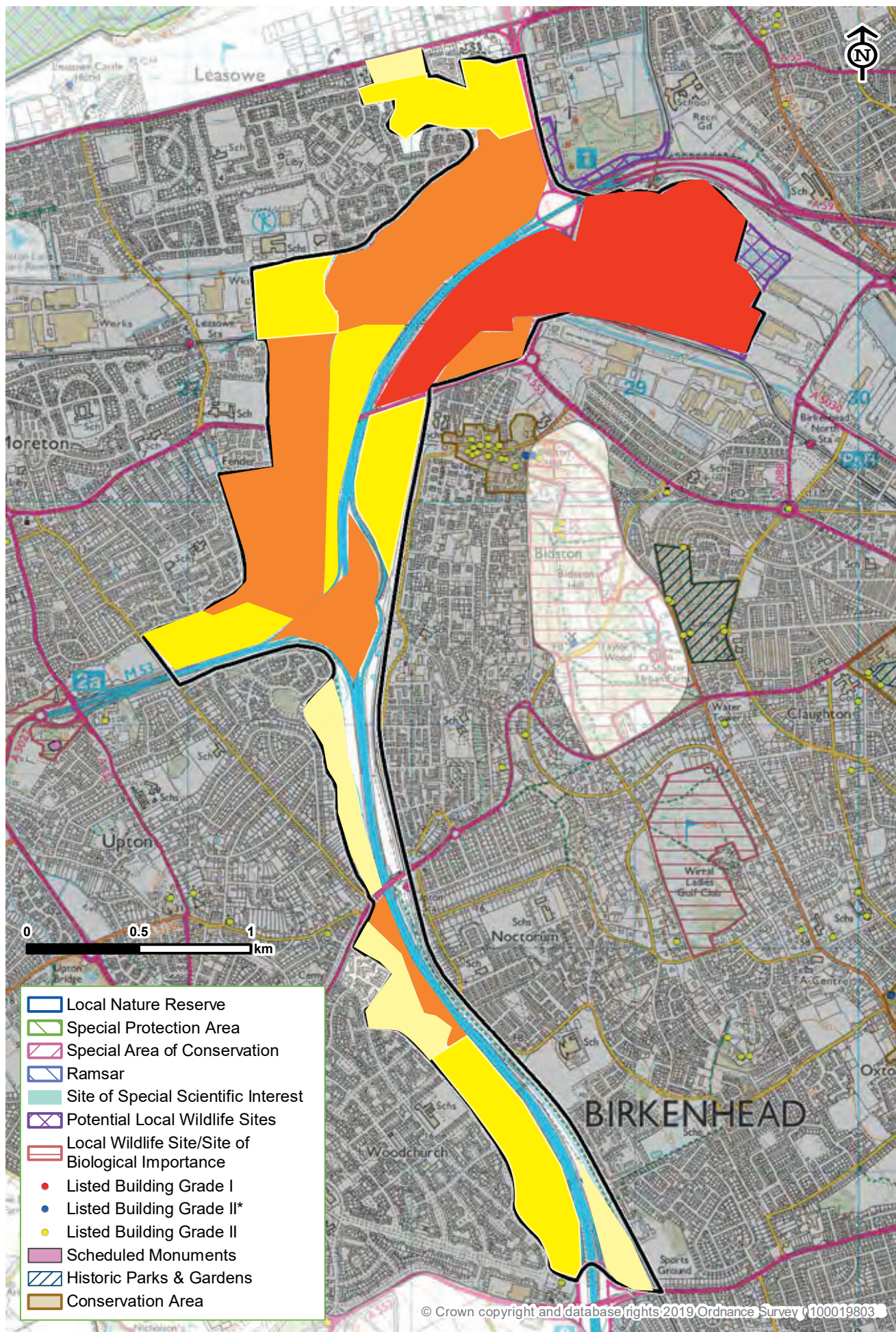
1b: Dee Estuarine Edge



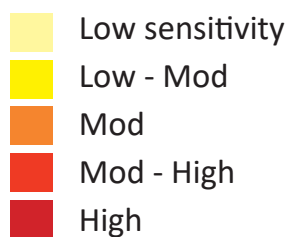
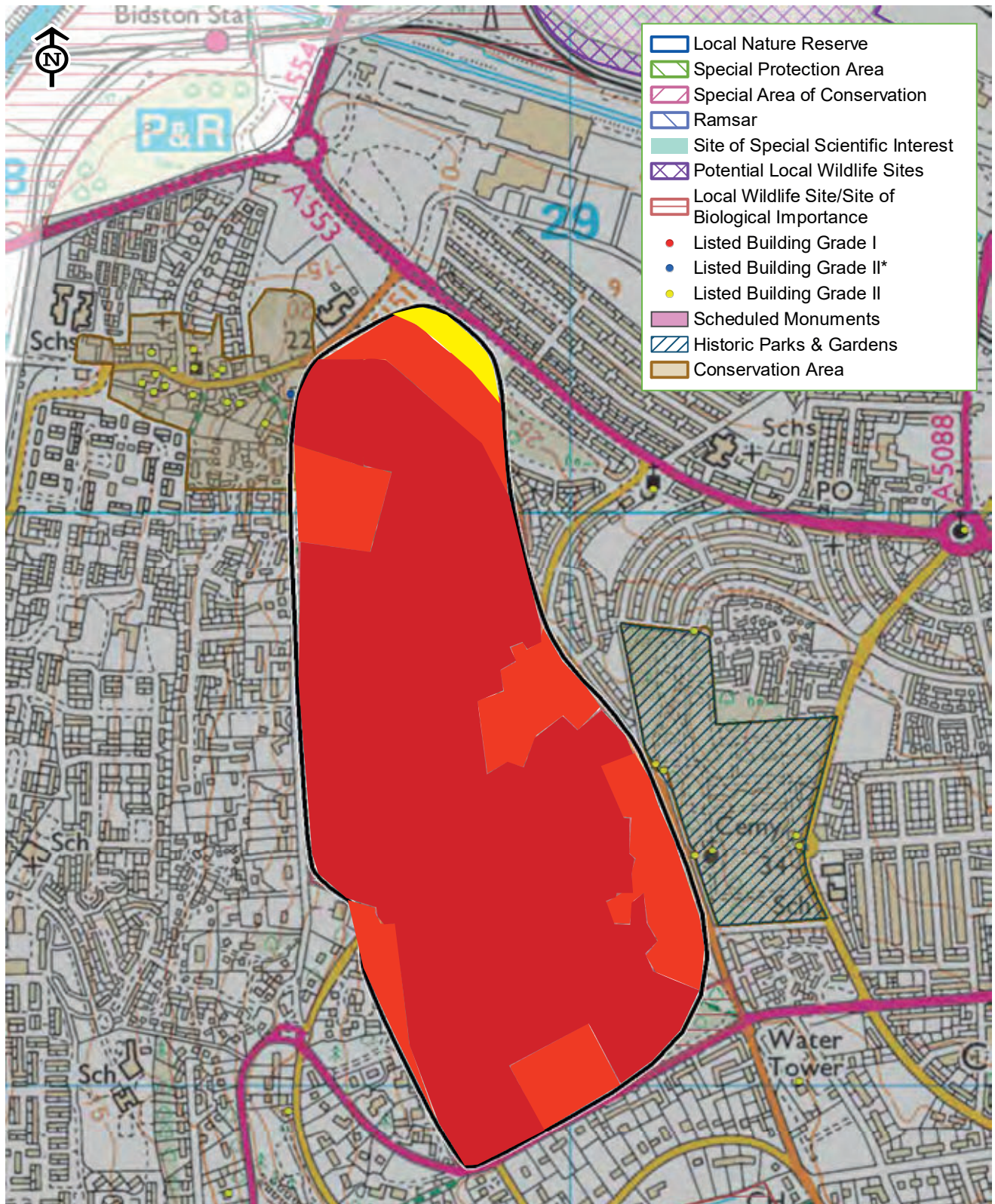
2a: The Birket River Floodplain



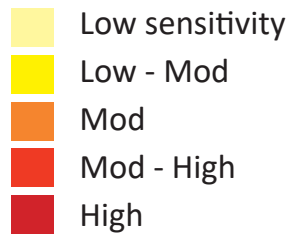
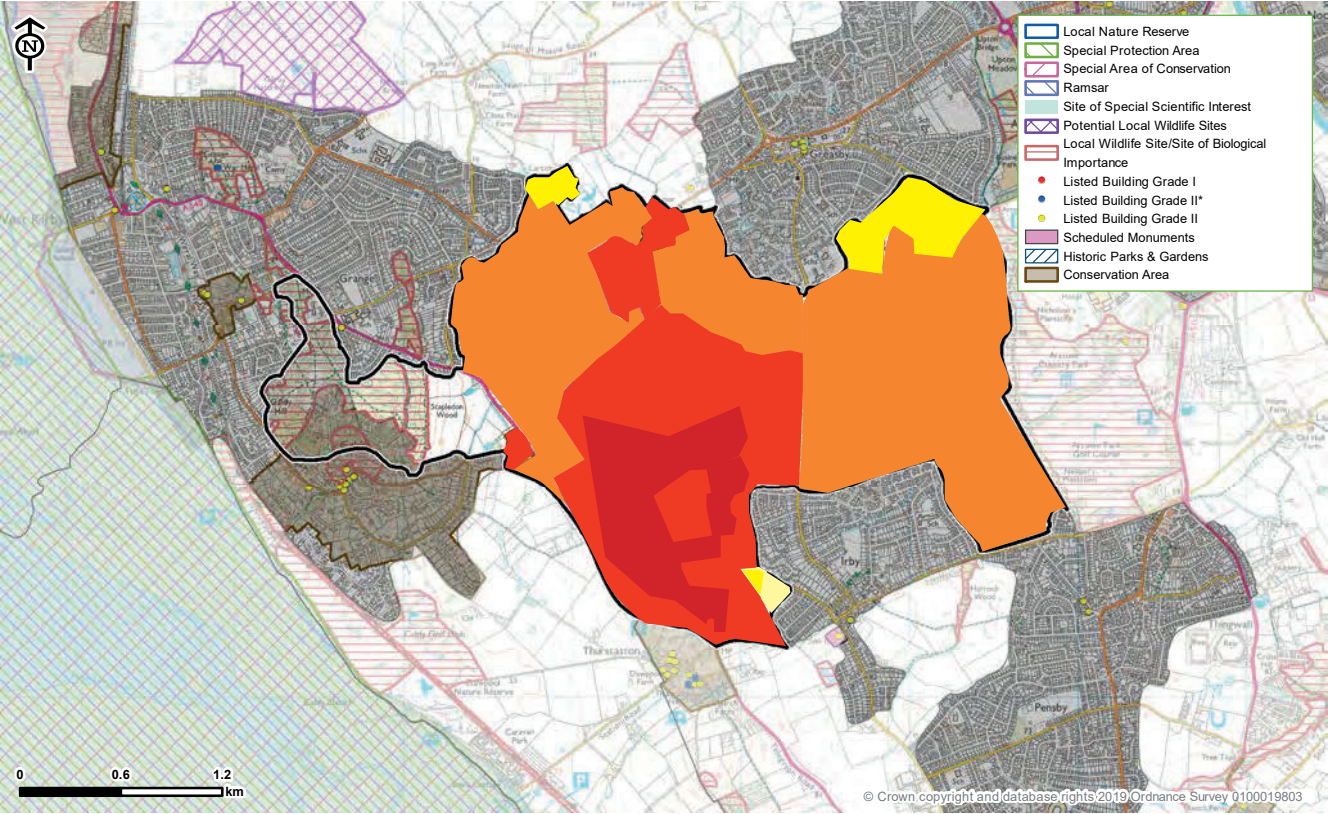
2b: The Fender River Floodplain



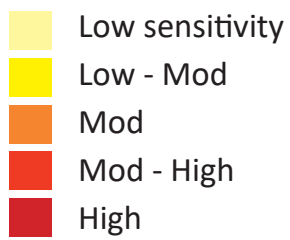
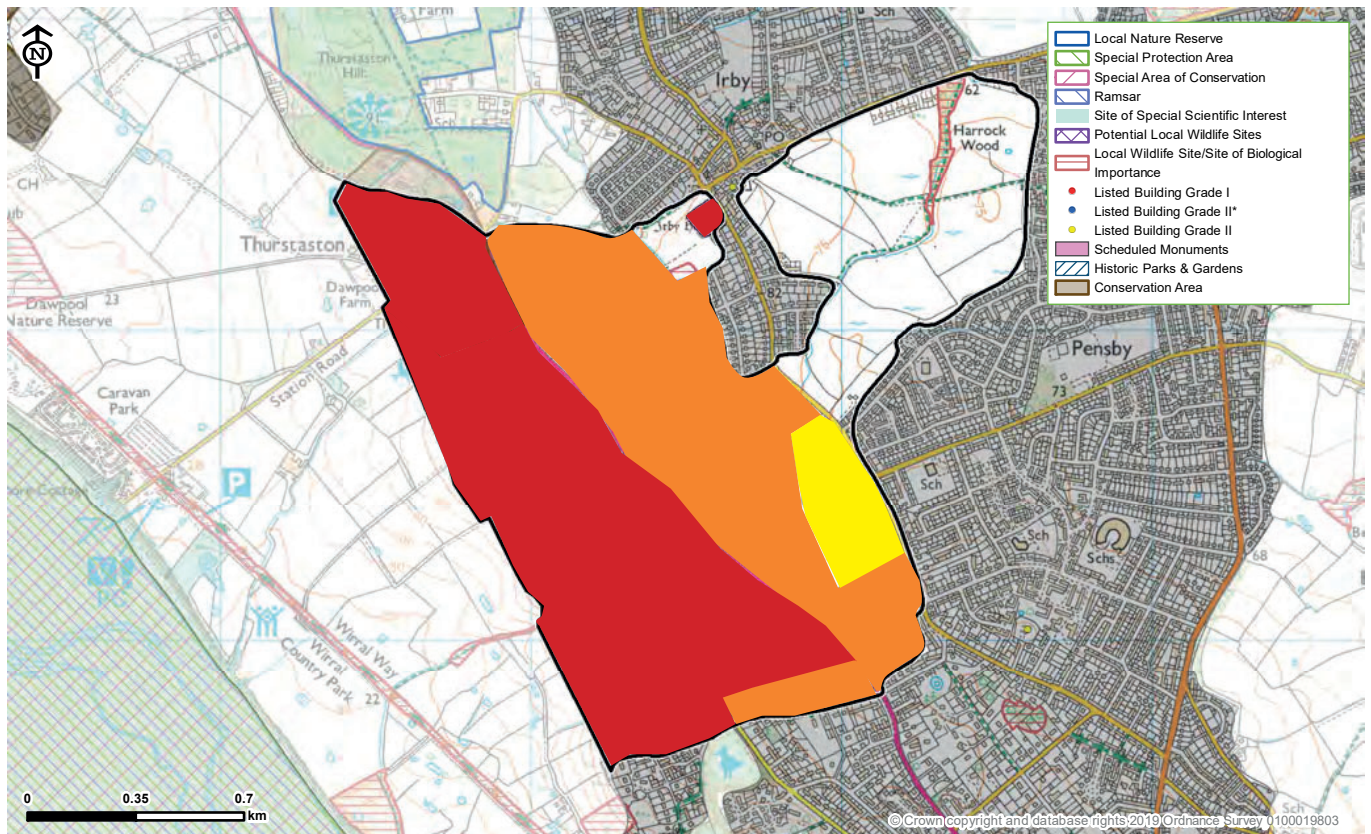
3a: Bidston Sandstone Hills



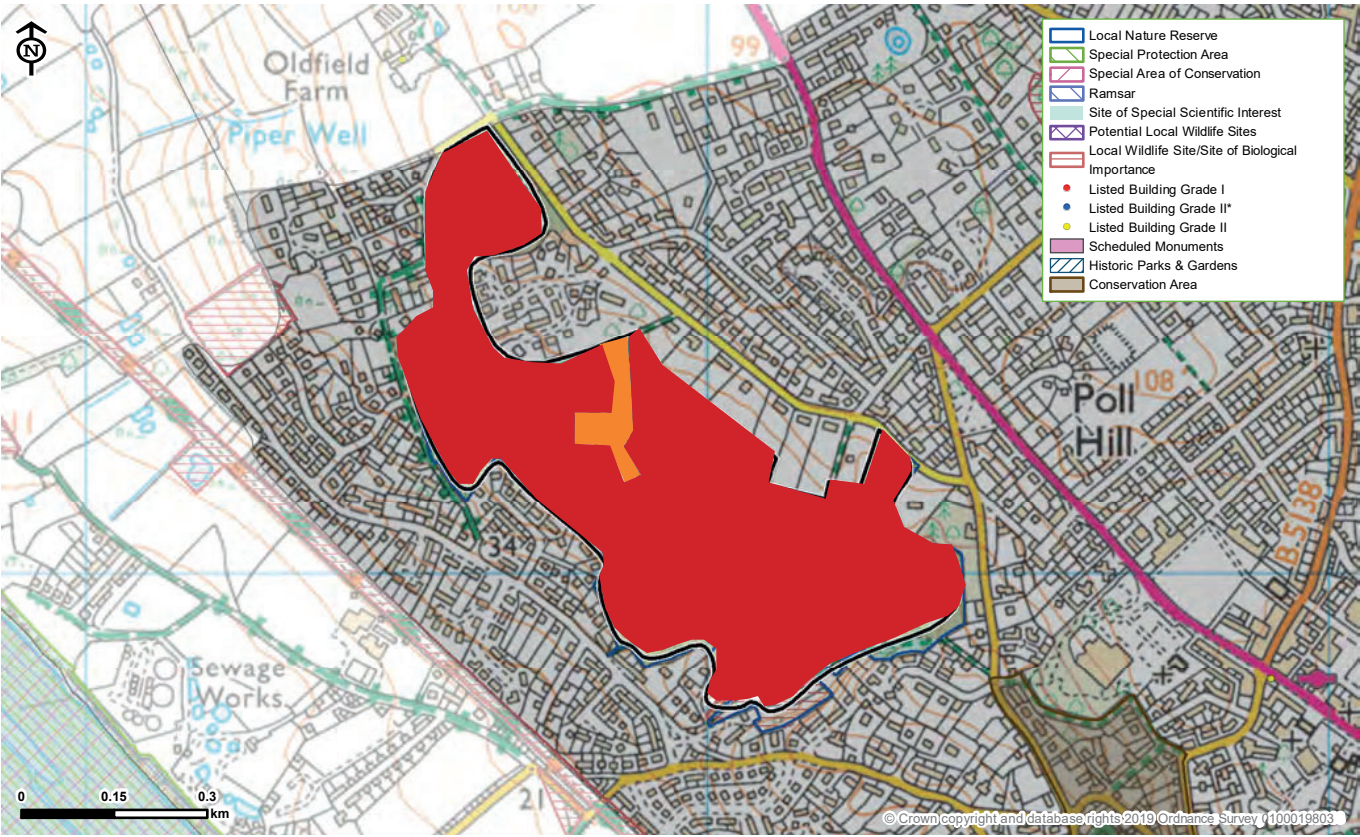
3b: Thurstaston and Greasby Sandstone Hills



3c: Irby and Pensby Sandstone Hills

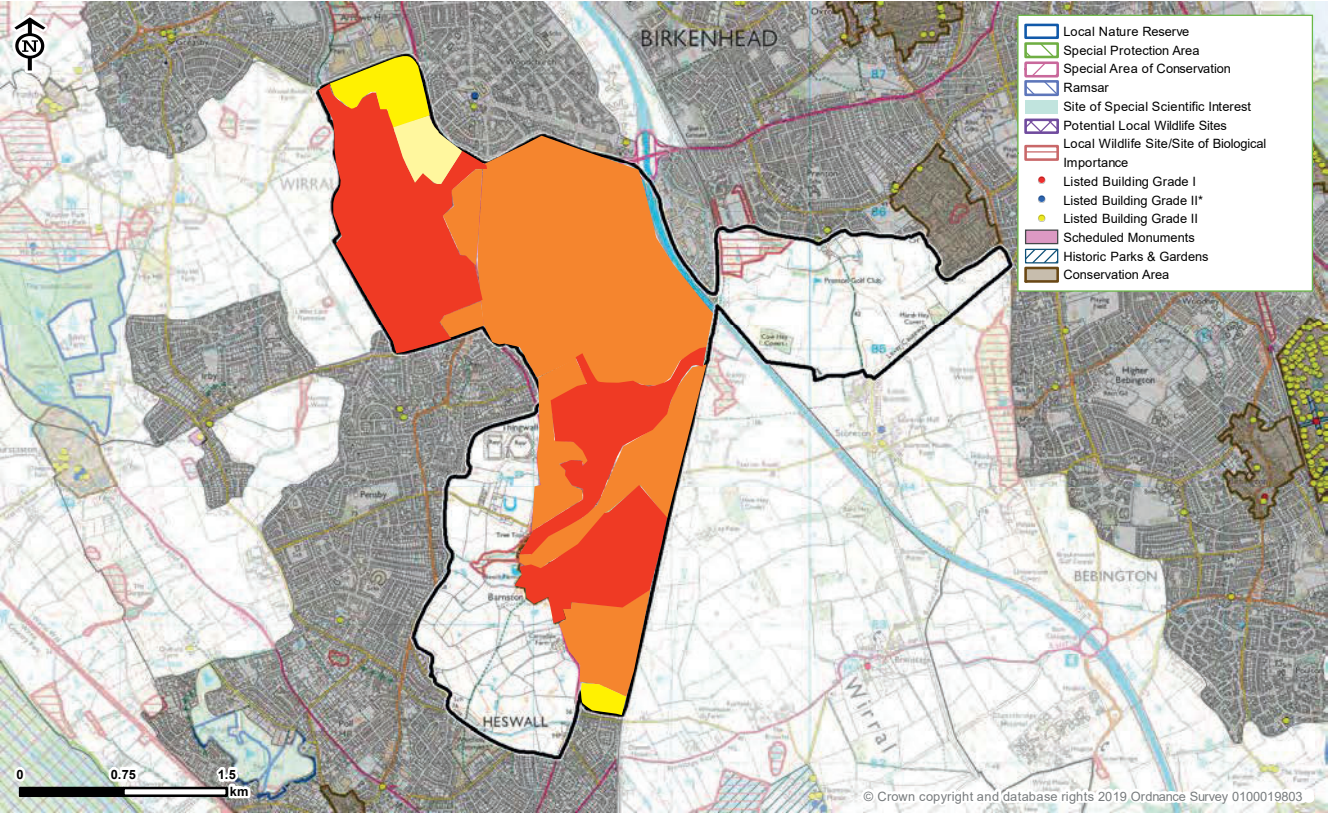


3d: Heswall Dales Sandstone Hills



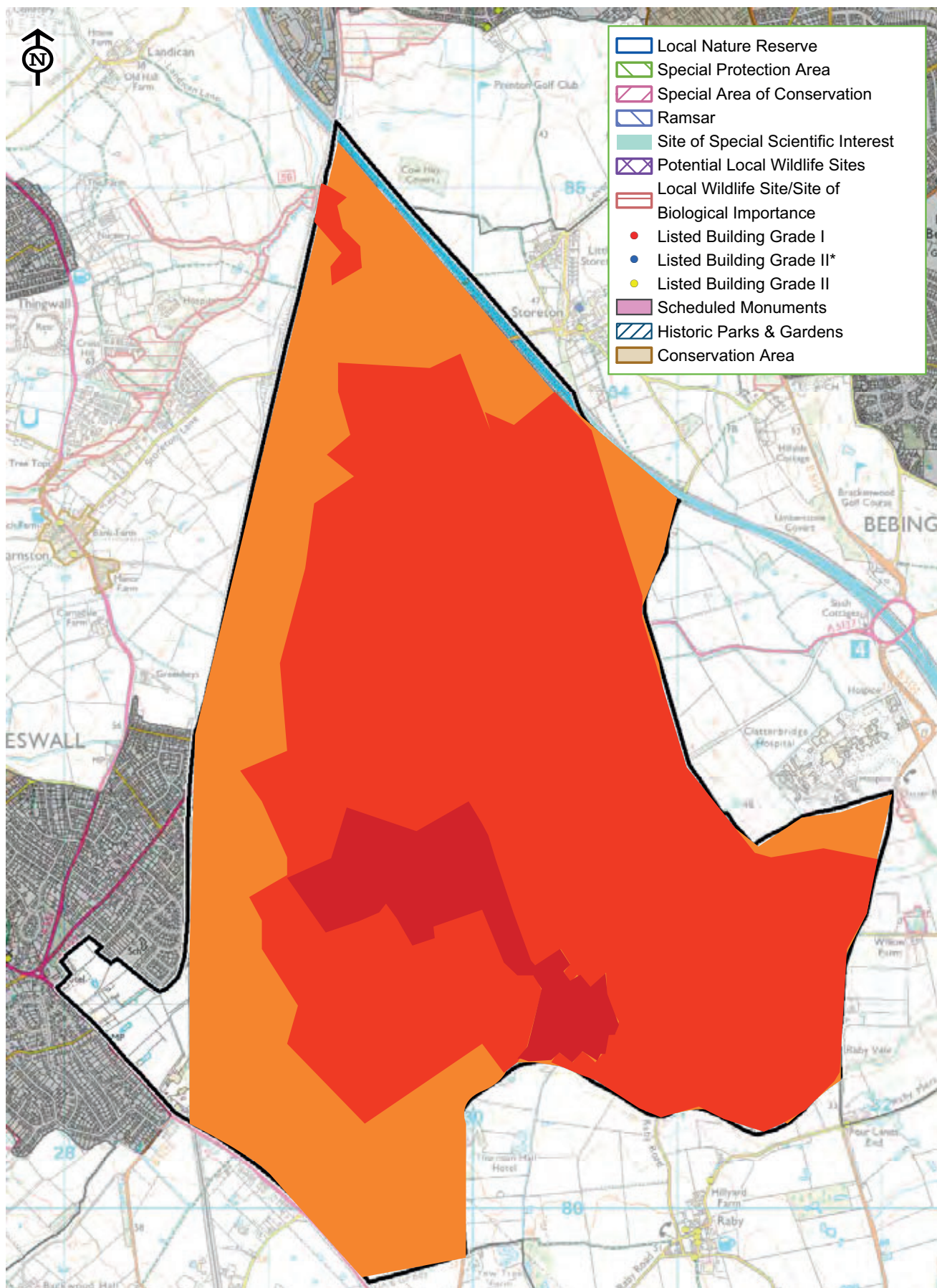
- High sensitivity
- Moderate sensitivity

4a: Landican and Thingwall Lowland Farmland



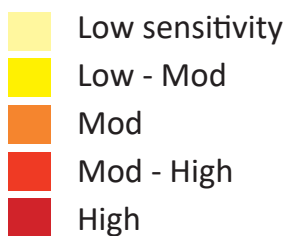
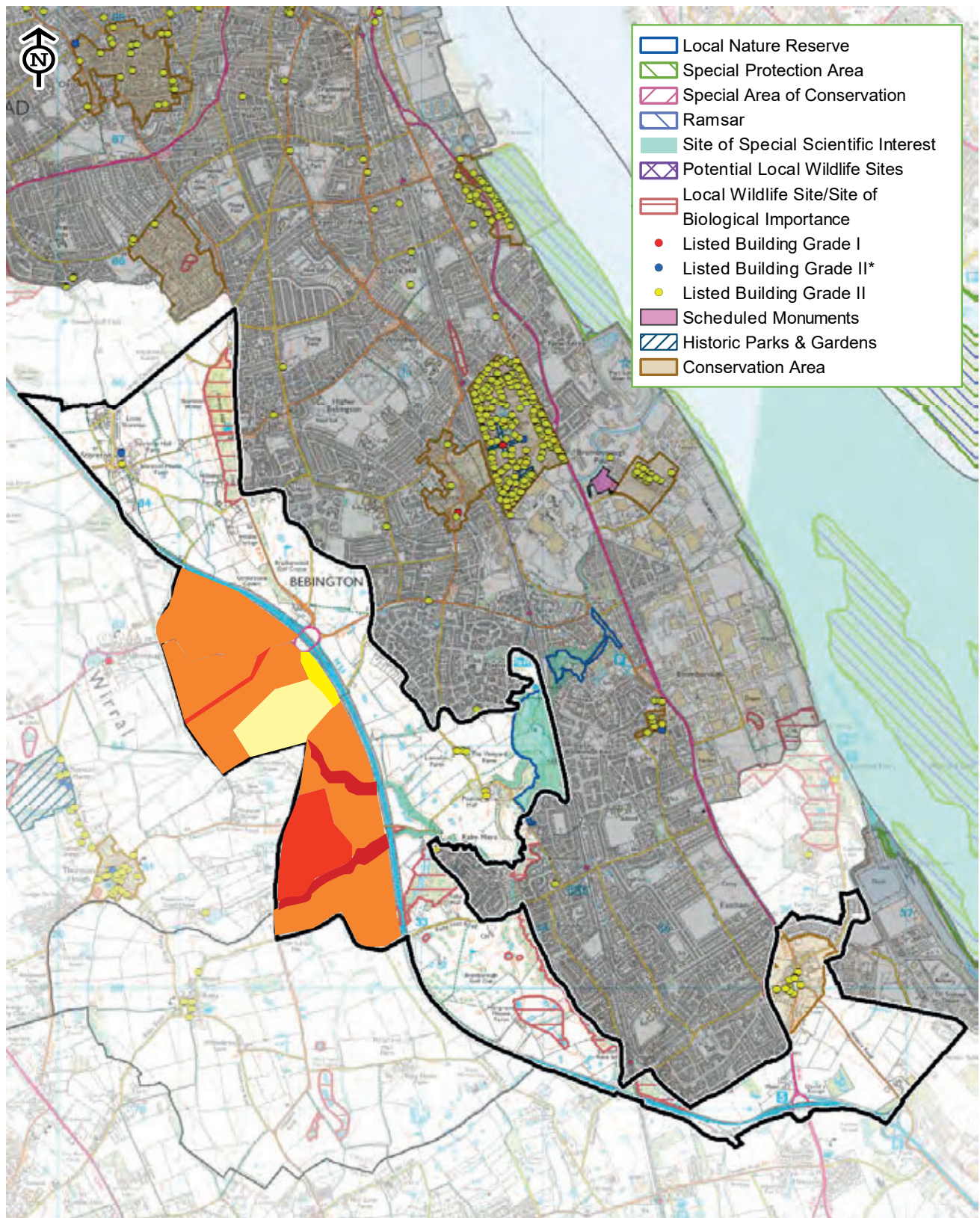
- Low sensitivity
- Low - Mod
- Mod
- Mod - High
- High

4b: Thornton Hough Lowland Farmland and Estates

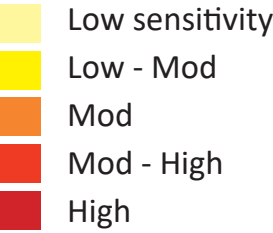
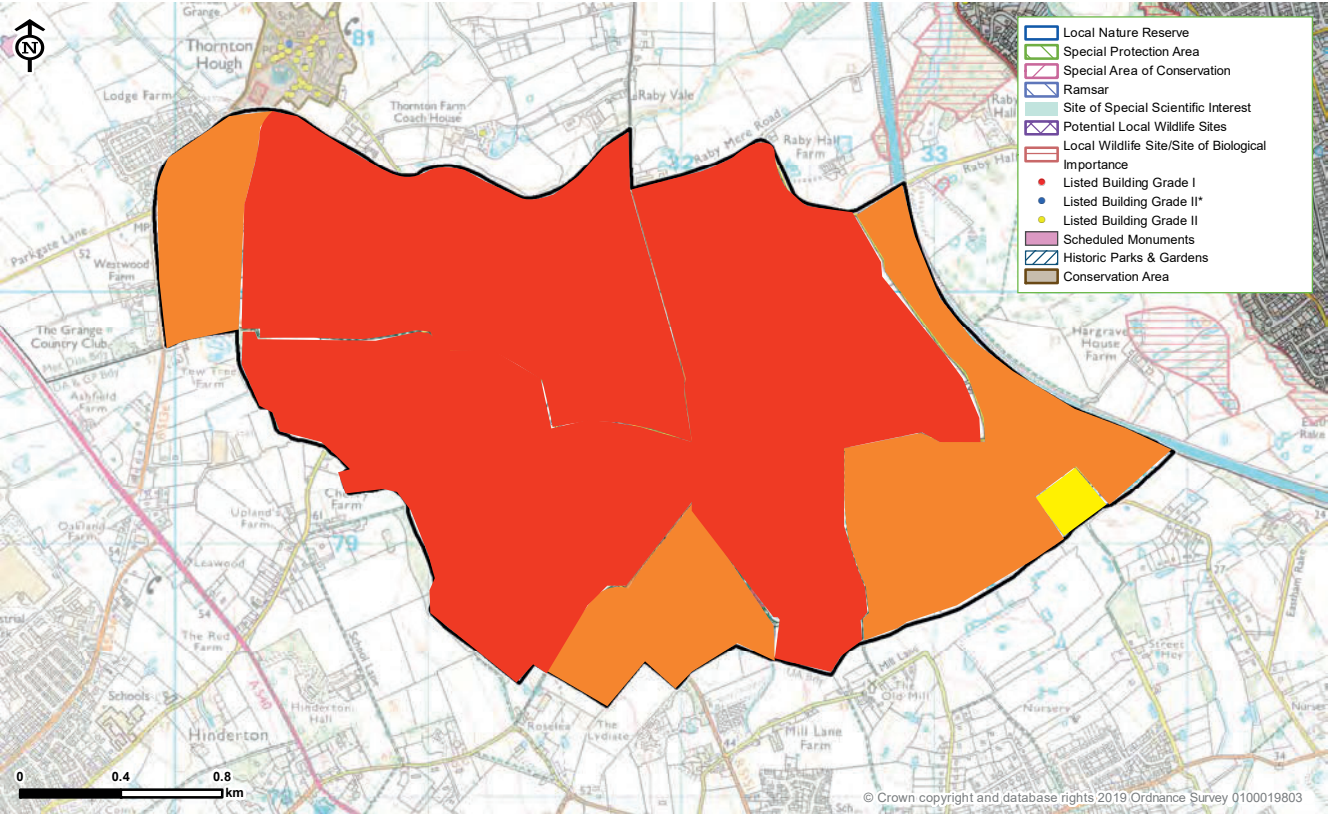


- Low to moderate sensitivity
- Moderate to high sensitivity
- High sensitivity
- Rest of area: moderate sensitivity

4c: Clatterbrook and Dibben Valley Lowland



4d: Raby Lowland Farmland and Estates



Appendix D

Record of Consultation on the draft methodology of the study

Table D.1: Key Stakeholders contacted for comment on the draft methodology of the study

Please note, this table and its contents are structured according to the now superseded methodology structure. Therefore, Core Theme and paragraph references may not fully align with the structure of this final report.

General comments

General comments	Consultee	Comment Summary	Project Team Response	Proposed Action
General approach	Wirral Wildlife	General agreement, with some concern over 'vague wording' where the study says "residential development may be possible in some locations"	Comment is noted, however at this stage we cannot rule moderate areas out if there is not a clear policy/legislative requirement to do so. Some residential development may be possible in locations depending on the level of mitigation required, this is an unknown at this stage until further assessment work can be undertaken on the suitability or otherwise of particular areas.	None
	United Utilities	Refer you to our recent comments to the Local Plan and GBI Strategy. We wish to reiterate the points made in the responses and the key for the Study to demonstrate an understanding for the benefits of linking Green Infrastructure, utilising any existing networks, and how this links to sustainable drainage. Sustainable drainage should be integrated into new development as part of high-quality green and blue infrastructure, which we've made representation to previously. We would recommend any study should recognise the importance of the multi-functional sustainable drainage should meet the standards for design in the Ciria SuDS Manual.	Previously made consultation comments are noted and principally relate to development/ GBI requirements to consider drainage and infrastructure improvements rather than of relevance to a strategic assessment of sensitivity. The comments will be considered further through the future Stage 2 assessment process.	None

	Natural England	<p>We note there is limited commentary about climate change, with reference to only transport related carbon emissions and carbon storage. There are a lot of other areas relating to climate change which a local plan could be looking at, including the link between biodiversity net gain, green infrastructure (multiple benefits of) and climate change.</p> <p>Natural England, the Environment Agency and the Forestry Commission have recently produced a shared vision to use nature-based solutions to tackle the climate and ecological emergency. This includes through delivering large-scale woodland planting in the right places, protecting and restoring peatlands, supporting farmers towards net zero, working with nature to manage flood risk, taking a strategic approach to land use, encouraging the use of less carbon intensive materials and pushing for action across the UK and abroad. https://www.gov.uk/government/news/environmental-bodies-set-joint-vision-to-tackle-climate-change.</p> <p>The Climate Change Adaptation Manual 2nd edition has recently been published with a spatial approach to assessing habitat vulnerability to climate change and now has a green infrastructure and climate change chapter.</p> <p>Natural England and RSPB Climate Change Adaptation Manual - http://publications.naturalengland.org.uk/publication/5679197848862720. There are also links on gov.uk to work by the Environment Agency regarding Working with Natural Processes to reduce flood risk.</p>	<p>The comment is noted. Whilst it is agreed that links to biodiversity net gain and GI are important considerations this stage of the assessment process is concerned with identifying the environmental sensitivity of Wirral's peninsula and understanding whether there are any areas of lower sensitivity which may be considered suitable for development. The principle aim of the study is not to identify areas that have BNG potential or can accommodate GBI opportunities (see the GBI Strategy for further details). However, future assessment stages will need to ensure that any identified areas of lower sensitivity will not sterilise identified GBI/BNG opportunities.</p> <p>The methodology states '<i>Where possible, identified GBI opportunities will be overlaid with the findings from this study to ensure that GBI opportunity areas are not sterilised or fragmented by development. It is envisaged that GBI opportunities will help to link ecological assets and align with any future Local Nature Recovery Strategy. GBI is multifunctional and so the consideration of GBI opportunities and enhancement projects will be relevant to a number of the themes in this study.</i>'</p>	<p>Consider GBI opportunities following sensitivity mapping process and as part of the analysis work.</p> <p>Links to the GBI Strategy and BNG principles could be made within the climate change supporting text if appropriate to do so.</p>
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Themes	Wirral MBC Senior Manager, Parks, Coast and Countryside	Ecologically 'regeneration' has a different meaning to economic 'regeneration' and some habitats do not 'regenerate'.	This is taken into account through the proposed classification of sensitivity values and explained in supporting text	None
	Wirral MBC Flood and Coastal Risk Manager	The themes address the areas of my work. I am not aware of anything missing.	Noted	None
	Wirral Wildlife	Theme 5 should include something about quality of greenspace. Too many urban greenspaces are just mown grass with a few trees, often mature and in need of successors. Improvements in quality would provide extra ecosystem and health benefits. Themes 2 and 3 need to be closely linked. The issue of buffers to ecological sites needs addressing, effects of development on water tables and supply to water bodies are important. The question to be answered, once analysis is done; Is there actually room in Wirral for the housing numbers demanded by national government without irreparable environmental damage and inability to meet carbon targets? Links to other plans/strategies e.g. GBI should be made.	The comments are noted and are largely addressed throughout the methodology document. Quality of open space and opportunities for enhancement are considered through the GBI Strategy. The purpose of the study is to ascertain whether and where there are areas of low environmental sensitivity and if so whether these areas can accommodate any future development.	None
	Environment Agency	Not clear where river geomorphology fits within all this. Water assets and water quality, does this include water availability beyond Source Protection Zones? Bathing waters seems to be missing? Granted it is unlikely to have development on the Bathing Waters but even on adjacent sites development could impact bathing water quality. At the very least it needs to be identified within the context of the study. Key infrastructure, including flood defences and natural flood storage areas, should be considered constraints to development.	LUC contacted the EA to discuss this further including Flood Zone 3, river geomorphology. Water supply issues will be considered as part of follow on work in Stage 2 where all infrastructure constraints and opportunities will be considered in more detail. Consideration of bathing waters is an important factor which will be addressed in greater detail through Stage 2 Assessment work where any areas of	LUC contacted the EA to address comments made and made the necessary amendments to the methodology. Refer to bathing water in the supporting text of Sub-Theme 3.1. Data reviewed to ensure that flood defences and flood storage areas are

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			lower sensitivity are identified in proximity to coastal areas.	considered as constraints to development.
Sensitivity Approach	Wirral MBC Flood and Coastal Risk Manager	Agree with approach	Noted	None
	Wirral Wildlife	Some moderate values will need ruling out as well. There should be the flexibility to include LWS in High sensitivity. LWS are not necessarily less sensitive habitats than SSSI.	The project team considered sensitivity ratings through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration. Instead, their value will be considered through analysis of mapped sensitivity ratings and through further stage 2 assessment work.	None
	Environment Agency	Approach acknowledged and no comments	Noted	None

Data sets	Wirral MBC noise and contaminated land officer	Available data sets for noise and land contamination are limited which could affect the robustness of your conclusions. For example, DEFRA noise maps don't include modelling of industrial noise.	The project team investigated the availability of noise data however this information was not available to use in this study.	None
	Wirral Wildlife	Some errors in land use classifications - the old phase 1 data set may be better/ use of unprocessed data	Data accuracy was checked with the council, use of unprocessed data was not deemed to be possible.	None
	Environment Agency	<p>When looking at Appendix A</p> <p>Quite a lot of the data seems Wirral MBC focused. Please check on https://www.gov.uk/guidance/environmental-data</p> <p>3.2 Ecology and geological assets – WFD North West River Basin Management Plan waterbody classifications is available via open data.</p> <p>3.2 The report should use our river mapping (I think it might be part of the Flood Map for Planning)</p> <p>3.3 Bathing Waters is available via open data</p> <p>3.3 should be noted always use Flood Map for planning for this type of work. Also flood maps don't usually map out functional floodplain and this will need to be obtained from the Local Planning Authority who have produced some indicative outlines for the SFRA.</p>	Data sets were checked and the council provided functional floodplain data from Wirral Council's SFRA.	Data sets updated accordingly and functional floodplain data from SFRA included.
	Natural England	Having reviewed the sections regarding mapping of environmental assets we wish to highlight that that we are aware of some similar work currently being undertaken by MEAS on environmental constraint mapping and you may wish to contact them. The contact at MEAS is Andrew Clark Andrew.Clark@eas.sefton.gov.uk .	The comment was noted, and investigations sought to obtain this information, however this data was not available for use in this study.	None
		We note that all the correct and relevant designated sites have been included in the list, including inland Sites of Special Scientific Interest	Noted	None

Core Theme 1

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 1.1: Brownfield and contaminated land	Wirral Wildlife	Concerns over inadequate data available on the biodiversity value of brownfield sites, so not captured.	Comment is noted and additional text to be added to further emphasise the potential biodiversity value of brownfield sites. In the absence of consistent data for all sites however, it is difficult to know what further data can be used.	Additional text added to emphasise the potential for brownfield biodiversity on sites where no data exists.
	Environment Agency	Is there an element of being able to rank sensitivity to known contaminated land sites understood to require a higher level of remedial work (therefore greater risk) or at least those identified within the context of the Brownfield Land register.	Potential to consider this further however it is not known if data exists showing particularly contaminated land.	To be considered further through any stage 2 assessment work.
Sub-Theme 1.2: Soil quality	Wirral Wildlife	Request that all Grade 3 land included as BMV until further assessment done.	<p>The methodology discusses the key local soil quality considerations and pressures and previous studies undertaken to determine the soil quality of Wirral. Previous studies indicated that it was not possible to determine the ALC grade of particular land parcels without a detailed</p> <p>technical survey of the soil. As explained, the ESS study will therefore consider all currently farmed land as being potentially Grade 2 and 3a agricultural land until such time as detailed, or on site, investigations are undertaken to determine agricultural land quality in specific locations of Wirral's Peninsula.</p>	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 1.3: Minerals sites	Environment Agency	Would agree it attracts a fairly low sensitivity by the fact there are very minimal winnable mineral materials within Wirral.	Noted	None
Sub-Theme 1.4: Waste sites	Environment Agency	<p>Arguably historic landfill sites should be located also under 'contaminated land' especially where they have been surrendered. Depending on the content (which may or may not be known) and the proximity to sensitive receptors could attract a higher or lower sensitivity rating.</p> <p>Would agree active waste sites (as well as those allocated sites) should be mapped as a physical constraint to development.</p>	<p>The comment is noted and historic landfill sites as contaminated land / impact on local sensitive receptors is an important consideration when determining suitable development locations. This is highlighted through the supporting text of Sub-Theme 1.4.</p> <p>Licensed waste site layer provided by council.</p>	<p>No sensitivity rating changes proposed as consideration of health impacts is discussed in the supporting text of sub theme 1.4 but text to be added to discuss impacts to sensitive receptors. Text in sensitivity table to be amended to reflect contamination risk and impact to surrounding receptors.</p> <p>Licensed waste sites layer added to mapping.</p>
	Wirral Wildlife	Potentially some typos - as old landfill sites are unlikely to have been capped and lined (table 3.5).	The comment is noted. Further investigation would be required to understand if a site had or had not been capped and lined.	Reflect in text that old landfill sites may not have been capped and lined.

Core Theme 2

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 2.1: Biodiversity and Geodiversity	Wirral MBC Senior Manager, Parks, Coast and Countryside	<p>Mostly agree with the analysis, however should include the following points</p> <ul style="list-style-type: none"> - Priority habitats – should have a higher sensitivity rating, - Lowland Heath should be included in the list of Priority Habitats, - SSSI Impact Risk Zones should be considered on a case-by-case basis similar to the “functionally linked habitat supporting international designations,” since no two sites have the same requirements, habitats and wildlife. Some specific SSSI impact risk zones may be classed as higher sensitivity (e.g. those close to coastal areas) and therefore wholly unsuitable for any form of development. - Local Wildlife sites – the analysis needs to acknowledge the community element in terms of site significance and with regards to Local Wildlife Sites (LNR/SBI etc) it is questionable that these sites, ‘tend not to support habitats and species that are as vulnerable to change as nationally or internationally designated sites.’ For example; badgers, bats, viviparous lizards, newts are all present at various sites on Wirral that either have no designation at all or only a local designation. <p>3.116 Two more current pressures: Invasive species introduction – an increase in residential developments in close proximity to Ramsar/SPA likely to lead increased introduction of invasive non-native species from gardens. Public access and disturbance: unauthorised fly tipping or littering (for instance boats at Heswall Foreshore)</p> <p>Table 3.7:</p> <ul style="list-style-type: none"> •Under SSSI Impact Risk Zones and Priority habitats “Residential development may be possible in some locations” Very vague and open to interpretation. •Mentions ecological networks in sections 3.127 but does not list these sites as an “Asset” in table 3.7. Linear features (corridors) and 	<p>The project team considered sensitivity ratings through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration. Instead, their value (including impacts of development in SSSI impact risk zones) will be considered through analysis of mapped sensitivity ratings and through further stage 2 assessment work.</p> <ul style="list-style-type: none"> - Amendments to the wording of Local Wildlife Sites can be made to make references to the potential presence of the species listed. - References to invasive species and public access can be made in the supporting text. - References to residential development potentially being possible is to be kept. This statement does not indicate that development is possible in all locations and cannot be more specific at this stage without further information, detailed consideration of local environmental features and investigation of suitable mitigation potential. - It is difficult to map ‘ecological networks’ or stepping stone habitats as a separate asset as data may not exist for these, 	<p>Amendments to the wording of Local Wildlife Sites and consideration of LCR ecological network.</p> <p>References to invasive species and public access pressures.</p> <p>Lowland heath added to list of priority habitats</p>

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Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		stepping stone habitats should also be protected from development as they offer important connections between core areas.	instead these will likely be covered through sensitivity ratings assigned to other linear assets.	
	Wirral Wildlife	Some of the systems holding data used need to be updated. Not all LWS should be considered as moderate sensitivity - many are high sensitivity. 3.116 should maybe say that there is conflict between those who want a return to sandy beaches, those who appreciate the new 'Green beach' for its wildlife and/or its protection of the sea wall, and those who object to large-scale spraying of herbicide	The project team considered sensitivity ratings through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in LWS, there is no policy or legislative justification to categorically exclude these areas from consideration. Instead, their value will be considered through analysis of mapped sensitivity ratings and through further stage 2 assessment work.	No changes to sensitivity ratings but additional text added regarding Hoylake.
	Environment Agency	Would point our Water Framework Directive (although does appear on the next chapter) does not appear to be mentioned within the context of Biodiversity and Geodiversity assets. Any development that could restrict the ability for a waterbody to achieve good ecological potential should not be permitted.	Comment is noted.	EA Water Framework Directive mentioned in Sub Theme 2.1
		Reference should be made to the 2017 regulations (I believe the report currently refers to the 2015 version) On the topic of WFD and for further context: Regulation 33 of The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 places a duty on each public body, including local authorities, to 'have regard to relevant River Basin Management Plans when exercising their functions. This means they must ensure they neither undertake nor authorise a project which may jeopardise: <ul style="list-style-type: none">• The current status of a WFD element or cause its deterioration• The attainment of good status• Pollution reduction measures	Comment is noted.	References made to the 2017 Regulations (replacing 2015 references). References to Regulation 33 also added in the supporting text of Core Theme 3).

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		<ul style="list-style-type: none"> Standards and objectives for protected areas 		
	Natural England	<p>Natural England supports the assessment of functionally linked land within Chapter 3 (page 30, 3.131). We advise robust and recent bird data is obtained from the BTO WeBS counts and local bird clubs to help identify and determine the scale of functionally linked supporting habitat, to provide adequate evidence for a Habitats Regulations Assessment (HRA), and to further inform mitigation/compensation measures (if required). Where there is insufficient available evidence Natural England advises further bird surveys are undertaken to inform bird usage and habitat suitability.</p> <p>The sensitivity rating for FLL is currently it is classed as 'Moderate'. The habitats identified as functionally linked to designated sites are considered to be critical or necessary for the ecological or behavioural functional of the qualifying SPA feature. Such land will be particularly important to the continuing survival, reproduction and viability of a mobile species population associated with a designated site. For this reason, we advise the sensitivity should be set as 'Higher'.</p> <p>Natural England has recently obtained funding from the Network Recovery Fund to map FLL for the SPA sites on the north-west coast including both the Dee Estuary SPA, Mersey Narrows & North Wirral Foreshore and the Mersey Estuary SPA. This project needs to be completed by the end of March 2021. We would be happy to share the results of this project with Wirral Council, likewise we also be grateful of any bird data to help deliver the project.</p>	<p>Comment is noted - unfortunately it is not possible within the scope of this project to undertake an assessment of what is functionally linked habitat by reviewing BTO and local bird club data. This study will however flag up that additional survey and investigation work will be required to understand necessary FLL and levels of mitigation.</p> <p>It is difficult to categorically rule out FLL (i.e. assign it a red rating) unless there is conclusive data that support this. Unfortunately, the data referred to by NE will not be available before this study is concluded. It may be possible that the data could be used in the Stage 2 work, if it is available by that point.</p>	Reference to be included regarding the use of Webs Core Count Area data as a Proxy for Functionally Linked Habitat.

Core Theme 3

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 3.1: Water assets and water quality	Wirral MBC Senior Manager, Parks,	There are numerous natural/semi-natural and man-made large ponds and small lakes which could be mapped. Many of which support substantial amphibian populations (including Great Crested Newt) as well as other wildlife including invertebrates, water voles, numerous	Comment is noted. Data sources were checked to confirm if we have this information and map accordingly but	Reference made to water bodies

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
	Coast and Countryside	wetland bird species and various species of bats (notably Daubenton's).	there were not additional datasets available.	
	Wirral MBC Flood and Coastal Risk Manager	I disagree with the assumption regarding Source Protection Zones. The report states "There are a number of SPZs present across Wirral, however source protection zones are not inherently sensitive to residential development and would not pose a constraint to development." However, for the management of surface water development should follow the SuDS discharge hierarchy as set out in the Non-statutory Technical Standards. The primary method of discharge for surface water is via infiltration. Source Protection Zones are a key consideration of whether infiltration is a viable method. Additionally, even where infiltration is not possible due to poor permeability use of permeable paving and surfacing is utilised to limit the volume of water discharged to other sources (watercourse, sewer). I would disagree that SPZs are not inherently sensitive to development.	Comment is noted and the wording of this section will be altered accordingly. Sensitivity rating will be changed to moderate.	Assign SPZs a moderate sensitivity rating.
	Wirral Wildlife	Link to biodiversity including for the smaller river systems (Birket and Dibbin)	Agreed that these references can be made in the Sub Theme supporting text.	Make reference to Birket and Dibbin and biodiversity links/value.

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
	Environment Agency	<p>Agreed waterbodies be mapped as a physical constraint to development.</p> <p>Source protection zones can be sensitive to residential development and can pose a constraint to development. This includes those awarded SPZ for smaller private household and licenced abstractions.</p> <p>No mention of bathing waters.</p>	<p>Comment is noted and the wording of this section altered accordingly. Sensitivity rating will be changed to moderate.</p> <p>Bathing waters could be mentioned in the supporting text and consideration of bathing waters could be addressed in greater detail through Stage 2 Assessment work where any areas of lower sensitivity are identified in proximity to coastal areas.</p> <p>Regarding additional waterbodies, we will check our data sources to confirm if we have this information and map accordingly.</p>	<p>Assign SPZs a moderate sensitivity rating.</p> <p>Reference to bathing waters will be added in the supporting text.</p> <p>Re: additional waterbodies - data sources checked to confirm if we have this information and mapped accordingly.</p>
		<p>Reference should be made to the 2017 regulations (I believe the report currently refers to the 2015 version)</p> <p>On the topic of WFD and for further context:</p> <p>Regulation 33 of The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 places a duty on each public body, including local authorities, to 'have regard to relevant River Basin Management Plans when exercising their functions. This means they must ensure they neither undertake nor authorise a project which may jeopardise:</p> <ul style="list-style-type: none"> • The current status of a WFD element or cause its deterioration • The attainment of good status • Pollution reduction measures • Standards and objectives for protected areas 	<p>Comment is noted, references to be made to the 2017 Regulations (replacing 2015 references).</p> <p>References to Regulation 33 will also be added in the supporting text of Sub Theme 2.1 (and within Core Theme 2).</p>	<p>Replace 2015 regulations with 2017 references.</p> <p>References to Regulation 33 will also be added in the supporting text of Sub Theme 2.1 (and within Core Theme 2).</p>

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 3.2: Flooding and coastal change	Wirral MBC Flood and Coastal Risk Manager	Figure 3.3 contains errors in the mapping of "Rivers". The Arrowebrook at Upton / Greasby does not follow the route shown on the plan. It is also mis-aligned around the Moreton Area. There is no connectivity of The Fender to The Birket. There also seems to be many Main Rivers missing and other areas of misalignment. Rivacre Brook is outside the Wirral boundary. The use of Surface Water Flood - 1 in 30 Year Event and 1 in 100 Year Event is confusing. Do you not mean risk of SW flooding \geq 3.3% AEP and between 3.3% AEP and 1% AEP. You may have mapped these incorrectly - I can't quite make it out but I think \geq 3.3% AEP (high risk) is mapped as medium risk and vice versa.	Data layers for rivers were reviewed and cross referenced with EA database (see comments in 'general' tab) to address any errors in the datasets. Surface water classifications were considered.	Review data layers for rivers and cross reference with EA database (see comments in 'general' tab) to address any errors in the datasets. Reconsider surface water classifications.
	Wirral Wildlife	Sea level rise is currently following the higher estimates used in the SMP, so coastal change is more likely than originally thought - which also comes back to the accretion on North Wirral foreshore, as at some point sea level rise may overtake accretion, but no-one knows when.	Comment is noted and additional text to be added to communicate these points	Additional text added
	Environment Agency	Don't see how flood zones 2 and 3 can be considered under the same sensitivity. we would suggest; Flood Zone 3b (functional floodplain) is, as stated, an essential area in which water is stored in times of flood and should not accommodate residential development. Therefore, this should be identified as a barrier to development. Flood Zone 3a should be Higher Sensitivity, and the sequential test must be undertaken (sequential approach is slightly different). Happy with Flood Zone 2 being considered moderate. In terms with Flood Zone 1, this is only low risk of fluvial and tidal flooding and does not consider other forms of flooding. The flood risk of these other types of flooding might be such to warrant removal from consideration of residential development. We would suggest you discuss this with the Lead Local Flood Authority and sewer infrastructure providers.	Comment is noted and the proposed amendments will be made. Noting comments about Flood Zone 1, the wording will be amended to indicate that this covers fluvial and tidal flooding with surface water flooding addressing other sources	Amend Flood Zone Sensitivity to accord with: <ul style="list-style-type: none">- Flood zone 3b – higher sensitivity- Flood Zone 3a - higher sensitivity- Flood Zone 2 - moderate sensitivity- Flood Zone 1 - reference to fluvial and tidal flooding with other sources considered through surface water flooding mapping

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
	Natural England	Page 41 makes reference to the North West England and North Wales Shoreline Management Plan (SMP2) (2010). Please note that the SMP is currently undergoing a refresh and reference should be made here to the SMP-Refresh.	Comment is noted and reference to the SMP refresh will be made.	Reference SMP-Refresh within sub-theme 3.2

Core Theme 4

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 4.1: Landscape	Wirral MBC Senior Manager, Parks, Coast and Countryside	All sites on Historic England's register of historic parks and Gardens and Conservation Areas should be raised to higher sensitivity.	The project team considered this through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration.	No changes to the proposed sensitivity grading.
	Wirral Wildlife	Need to include the Dibbinsdale treescape	Comment noted, will consider this further and whether the required data set is available / that this information was included in the 2019 LCA.	None proposed – data sets not available for use in this study, but important landscapes captured through LSA work.
	Natural England	As there are no protected landscapes (National Parks or AONBs) within or within close proximity to Wirral we have no specific comments to make with regards to landscape.	Comment is noted.	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 4.2: Historic Environment	Wirral MBC Senior Manager, Parks, Coast and Countryside	All sites on Historic England's register of historic parks and Gardens and Conservation Areas should be raised to higher sensitivity. Also, in section 1.8 (heritage) – include reference to the national heritage designations of Birkenhead Park (Grade 1) and Flaybrick Memorial Gardens (Grade 2*)	The project team considered this through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration. References to Birkenhead Park and Flaybrick Memorial Gardens are made.	None
	Wirral Wildlife	Could ancient field systems and hedges be included? Data is being collected on hedges	Historic Landscape Character Areas (including ancient fieldscapes) mapped. As data is still being collected on hedges it is not possible to map/consider these through this study.	None

Core Theme 5

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 5.1: Green space and recreation	Wirral MBC Senior Manager, Parks, Coast and Countryside	The current 'access to green space' standard is 400m – i.e. target distance from residential properties to the nearest accessible park/open space. This was based on Natural England's access to nature in urban areas standard. The plan to move to an access standard of over 700m will adversely impact elderly, young and disabled residents and reduce the number of residents that can see green space from their window, which has been shown to have an impact on health and wellbeing. Removal in part or in whole of local parks reduces opportunity for healthy exercise and reduced wellbeing, leading to potential mental health problems and loss of a sense of community and sense of place (if another open space is created it would not have the same memories, history and importance to the existing community).	The figures are based on Wirral's own Open Space Standards (2020). This was investigated further, and it was determined that access standards used in the study are as per those use in table 3.3.4 in the Open Space standards paper. It is suggested that the study continues to use these standards for consistency.	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		3.341 Country Parks should be classed as Higher Sensitivity. The country parks list should be corrected to include Eastham Country Park, North Wirral Coastal Park, Arrowe Country Park, Royden Park as well as Wirral Country Park. Housing development within the boundary of a country park is likely to result in a reduction in the country Park's ability to provide healthy, countryside experiences for the increasing number of urban residents. Trampling of sensitive habitats/species within the Country Parks is likely to increase (as has already been the case with the bluebells at Eastham Country Park since the new housing adjacent to the site, unless suitable buffer areas are identified and not built on).	<p>The project team considered this through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration.</p> <p>Instead, an assets role and function will be taken into account if included in an area selected for Stage 2 assessment.</p>	Parks list was reviewed and updated.
		The Parks and Gardens analysis may need to give greater consideration to the spread of sites across the borough. It may be necessary to specify further parks and gardens in the areas of higher population density (including Birkenhead and Wallasey) as not being suitable for residential development, due to residents not having access to private transport and increased housing in the vicinity. Allotments should be designated as higher, given their statutory protection, high significance and difficulty to replace. Use of allotment sites across Wirral has remained consistently high with a large number of allotment holders having leased sites for a significant period. Relocation of any sites may inadvertently be discriminatory, especially if a replacement sites are located further away from the people who use them. Provision for children and young people – residential development proposals will need to come with a caveat that requires developer to include provision of children's play areas.	<p>The project team considered this through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration.</p> <p>Instead their importance and local value will be considered if the asset is included in an area selected for Stage 2 assessment.</p> <p>Provision for children and young people - the point is noted however this is a planning policy / Development Management consideration. On/off site requirements for any particular identified development area would be considered further through any stage 2 assessment.</p>	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
	Wirral Wildlife	Greatly object to losing any Country Park land to development, as most of them are LWS in whole or in part, and most are located away from urban areas, so car-dependent. Similarly, we would object to any loss of publicly accessible natural/semi-natural greenspace - many are LWS, but the general lack of semi-natural space in the urban areas makes such patches very valuable to wildlife, and to human health. I think these areas should be marked up as high sensitivity. Most of Wirral's allotments are statutory, and with high demand well in excess of plots available (even before Covid) there can be no justification for closing any sets. The two 'temporary' sets are for cemetery expansion when required. Allotment soil is highly fertile, and a water supply and car access are essential. Most are in or on the fringe of the urban area where access is good. Wirral Allotments Society have been trying to find more land for allotments or community growing and it is difficult! Therefore, existing allotments should be highly sensitive, not moderate, as it is very difficult to replace allotments with anything like similar land.	The project team considered this through the process of drafting the methodology. Whilst it is highly unlikely and undesirable to develop in these locations, there is no policy or legislative justification to categorically exclude these areas from consideration. Instead their importance and local value will be considered if the asset is included in an area selected for Stage 2 assessment.	None
	Environment Agency	Waterbodies and the wider buffer strip (we usually expect 8m) should be considered green space.	Comment is noted, additional water bodies will be mapped as a physical constraint and an 8m exclusion buffer can be applied around these areas.	Additional waterbodies mapped as a physical constraint and 8m buffer zone assigned to watercourses.
	Natural England	As you will be aware, recreational pressure is an issue within the Liverpool City Region area and within Wirral affecting the internationally designated sites. Wirral Council is working with other local authorities in the LCR to strategically address the issue through a Recreational Mitigation Strategy covering the whole combined authority area. Natural England recently advised that each local authority should develop an authority wide interim approach to recreational pressure until the Recreational Mitigation Strategy is finalised and adopted, expected to be 2023. Natural England advise that green space and public rights of way networks also be considered in the role they play within the authority	Comment is noted.	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		<p>as an avoidance measure to help address the impacts of recreational pressure.</p> <p>We are pleased to see the acknowledgement under paragraph 3.329 regarding SANGs and the protection they should be afforded when used as compensatory measures to address recreational disturbance.</p>		
Sub-Theme 5.2: Noise exposure	Wirral MBC noise and contaminated land officer	Industrial noise should be modelled	This was considered further and queried at the council to see if datasets were available. Non were available for use in this study and therefore industrial noise has not been mapped.	None
	Wirral Wildlife	From experience, there are very few places in Wirral without some traffic noise - even in the middle of Thurstaston Common it is audible. So, there is great need to reduce road traffic. New development must not lead to road traffic increases. Air quality reasons also require reducing road traffic. Electric vehicles help but do not solve either problem.	Comment is noted.	None

Core Theme 6

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
Sub-Theme 6.1: Transport-related carbon emissions - access to key services/ destinations	Wirral MBC Senior Manager, Parks, Coast and Countryside	Removal of an existing park or open space would mean some communities having to travel further afield (potentially using either public transport or a private vehicle). This would increase carbon emissions but would also have the potential to exclude non-drivers (including many of the borough's poorer and more vulnerable residents) leading to increased social inequality and isolation. The height of the Covid 19 pandemic proved the necessity of easy access to public open space regardless of income. With government and PHE guidance restricting use of public transport to essential travel only the	Accessibility to open spaces is being considered in the study.	None

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		necessity to have parks that are easily accessible on our residents' doorsteps is critically important.		
	Wirral Wildlife	The time in table 3.19 for travel to work is far too low. Many people in Wirral travel far more than 20 mins to access employment, especially in Liverpool and Chester.	The stated travel times are taken from the Mersey Travel evidence base.	None
Sub-Theme 6.2: Carbon storage	Wirral MBC Senior Manager, Parks, Coast and Countryside	Lowland Heaths sequestering of carbon is a point to emphasis	Comment noted and can be referenced in the supporting text for Sub Theme 6.2	Reference in the supporting text of Sub Theme 6.2.
	Wirral Wildlife	The land use classification contains errors e.g. Bidston Hill is down as coniferous forest - only about a quarter is planted with pines, the rest is lowland heathland and deciduous/mixed woodland. Thurstaston Common is marked as mixed woodland, which the National Trust would not appreciate, as they work hard to keep the SSSI heathland there in as good a condition as possible. I think the 1980s Phase 1 is actually a better guide than the land use classification. I was involved supervising the Phase 1, and from living in the area ever since, know that there has not been massive change in boundaries or sites. Some small areas will have changed e.g. Heswall Beacons will be down as containing some heathland, which has now virtually gone to deciduous woodland, and Bidston Moss landfill was active in the 1980s and is now young woodland (not pasture as marked on the land use map). Agricultural land uses may have shifted a bit, but the study on them just completed covers that. I appreciate that the Phase 1 was not done as a digital format; I do not know if Wirral BC has digitised it since.	Land use data was reviewed and in the absence of digitised Phase 1 habitat survey data, CEH Land use datasets have been used.	CEH Land use 2019 datasets to replace CORINE
		Para 3.453 There is a small area of active wet peat on Wirral, within Thurstaston Common SSSI on the east side, between Benty Farm and the fringing woodland. National Trust have installed bunds to try to keep this wet. This is why the east of Thurstaston Common is very	Comments noted. A footnote can be added to that effect.	Reference to caution being applied to use of landuse datasets added

Sub Theme	Consultee	Comment Summary	Project Team Response	Proposed Action
		sensitive to development nearby that might affect the water table. Therefore, the figures in Table 3.15 should be treated with caution, as the land use data is faulty in places.		to carbon storage sensitivity table
		Para 3.449 Note that negotiations are currently under way for Wirral BC to join the Mersey Forest. However, identifying land suitable for planting/regenerating thousands of trees will be difficult and must involve private owners as well as public land. Suitability of land for trees could be noted in this study, so that land is not designated for development that could be better planted as woodland. e.g. what about a generous tree belt along as much of the M53 as possible to catch some of the air and noise pollution, and act as a wildlife corridor? What would that need in terms of funding, and practicalities for agricultural land? Where are there areas that should not be woodland e.g. scraps of wetland by J2 spur. The Bidston Moss Forestry Commission sites and the woodland planting at Woodchurch High school form a start. This is where this study needs to tie up closely with the Green and Blue Infrastructure work. Once analysis is done, is there actually room in Wirral for the housing numbers demanded by national government without irreparable environmental damage and inability to meet carbon targets?	Land identified as having a higher carbon sequestration potential or identified as being suitable for GBI projects will be considered as part of the mapping process, discussed through the narrative and where necessary considered in more detail through any areas identified for inclusion in Stage 2 Assessment work.	References to sequestration and GBI potential will be considered through Stage 2 assessment. As such no changes proposed.