

Appendix A – Maps supporting the core report

Glossary

Adaptation

Actions to deal with the consequences of a given event i.e. accepting that climate change is going to happen and acting to adapt to the consequences (see mitigation).

Amelioration

Actions to make better or improve upon current situation, i.e. using green infrastructure to reduce the contribution of a community to climate change.

AONB

Area of Outstanding Natural Beauty designated by Natural England for its landscape value.

Biodiversity value

Biodiversity is a measure of the health of ecosystems, based on the degree or variation of life forms within a given ecosystem.

CABE

Commission for Architecture and the Built Environment.

DCMS

UK government's Department for Culture, Media and Sport.

DEFRA

Department for Environment, Food and Rural Affairs.

Diffuse pollution

Diffuse pollution is the release of potential pollutants from a range of activities that individually may have no effect on the water environment, but at the scale of a catchment can have a significant impact (i.e. reduction in water quality, decrease in wildlife, etc.). Diffuse sources of pollution include run-off from roads, houses and commercial areas, run-off from farmland, and seepage into groundwater from developed landscapes of all kinds.

Ecosystem services

The resources, services and processes supplied by natural ecosystems.

Geopark

A territory defined by UNESCO as encompassing one or more sites of scientific importance, not only for geological reasons but also by virtue of its archaeological, ecological or cultural value.

GI

Green infrastructure as explained in the executive summary.

Green corridor

A green corridor is not necessarily the same thing as a wildlife corridor, in that there are many reasons for having green corridors other than those required by wildlife i.e. creating an active transport route for bikers and walkers in

combination with creating social green spaces running through communities.

GVA

Gross value added. A commonly used measure of productivity in the UK economy.

SUDs and SuDs

Sustainable Urban Drainage systems (and Sustainable Drainage Systems). Engineered or landscaped solutions to control water at source rather than achieving quick run off to major water courses which makes flash flooding at key points worse.

UK BAP

United Kingdom's Biodiversity Action Plan. Program addressing threatened species and habitats designed to protect and restore biological systems, emerging from the 1992 Convention on Biological Diversity (CBD).

UNESCO World Heritage Site

United Nations Educational, Scientific and Cultural Organisation. Sites listed under the Convention Concerning the Protection of World Cultural and Natural Heritage. 186 state parties are ratified the convention.

Urban fringe

The landscape 'interface' or meeting point between town and country.

Urban heat island effect

Urban heat island effect is the name given to the process by which urban areas have higher temperatures (1-2°C daily maxima and 1-9°C daily minima) above that of surrounding rural areas. It results from changes in moisture levels due to a

critical mass of impermeable surfaces decreased humidity, or alteration in heat balance.

Market mimicking techniques

Some economists critique techniques like willingness to pay because they are hypothetical/theoretical (with a significant margin of error) and may not reflect what people in an actual market would spend on any given good or service.

Mitigation

Reducing the causes of the issue, i.e. to mitigate climate change you might seek to reduce greenhouse gasses.

Monetized statistics

Statistics resulting from non-market methodologies of valuation that result in a financial figure.

Land-based products

Term referring to any products produced from the land, e.g. agricultural or forestry products.

Willingness to pay

A methodology developed to put a value on goods or services that do not form a market transaction. Used to put a value on environmental or social goods or services, which are often difficult to put an economic value on. Achieved through measuring consumers hypothetical or actual willingness to pay (directly or indirectly).

Wildlife corridor

Habitat strip connecting different patches of key habitat to enable wildlife to migrate and sustain their own populations,

and to make them thus more sustainable and less at risk from

GI Type definitions explained

Before launching into the main report it is worth being clear about the definitions used. The analysis uses the following green infrastructure types:

Park or public garden

Includes urban parks, country parks and formal gardens (including ones where you may have to pay for access). Generally designed for public access and enjoyment, combining a variety of landscape and horticultural elements. Extraneous facilities for the public may be present on-site which enhance visitor attraction.

General amenity space

Usually publicly owned and managed, and always accessible for public enjoyment. Their function is usually as a green 'landscape backdrop' but their landscape value can sometimes be minimal because of poor design. They include the 'left over' green spaces within housing and other forms of development, as well as most road verges. Most commonly, but not exclusively in housing areas - including informal recreation spaces, green spaces in and around housing, and village greens.

Outdoor sports facility

events which might wipe out patches of habitat.

Includes sports pitches, school and other institutional playing fields, golf courses and other outdoor activities. Usually consist of vegetated sports surface and boundary shrubbery, trees and hedges. Can be publicly or privately owned and often occur within parks.

Woodland

All forms of woodland including deciduous woodland (both ancient semi-natural and woodlands of more recent origin) and mixed and coniferous woodland (including plantations and shelterbelts). Includes newly planted woodland. Small clusters of trees, in our case, will be classed as woodlands.

Water course

All areas of running water, including large rivers, small streams, canals and aqueducts.

Water body

Expanses of open water, including large lakes, small ponds, reservoirs and harbours. The sea is also classed as a water body.

Grassland/ heathland/ moorland or scrubland

Grassland which is not agriculturally improved. Could include established vegetation on reclaimed derelict

land which is not part of a formal recreation green space. Includes downlands, commons and meadows. Also includes areas of moorland and heathland vegetation consisting mainly of ericaceous species, and including moorland grass, shrub moor, shrub heath and bracken. Likely to include some commons within urban areas. Scrubland areas predominantly consist of shrubs, with grasses and herbs also present.

Coastal habitat

Beaches, sand dunes, marshes, mudflats and semi-natural open land by the coast.

Agricultural land

Land managed for agriculture, including grazing lands, crop production fields and hedgerows. Potentially irregular field margin trees may be included.

Allotment, community garden or urban farm

Allotments are small plots which collectively make up a larger green space. These plots are available for members of the public to rent for the cultivation of fruit, vegetables and flowers. Community gardens and urban farms are community-managed projects ranging from wildlife gardens, to fruit and vegetable plots on housing estates, community polytunnels, to large city farms. They exist predominantly in urban areas and are often community led projects, created in response to a lack of access to green space. They combine a desire to encourage strong community relationships and an awareness of gardening and farming. Most projects

provide food-growing activities, training courses, school visits, community allotments and community businesses. Dedicated orchards are classified separately.

Cemetery, churchyard or burial ground

Land used as burial grounds, including cemeteries and churchyards, usually grass covered with occasional shrubs and trees.

Derelict land

Land which has been disturbed by previous development or land use but is now abandoned. Waste or derelict land is often re-colonised by processes of natural succession. Land is classed as derelict whilst it is in the early stages of natural succession.

Private domestic garden

Privately owned greenspace within the curtilage of individual dwellings, which is generally not publicly accessible. These plots of private land vary in size but often make up a significant part of the green fabric of urban areas. Land may include trees, shrubs, grass and flowering plants.

Institutional grounds

Green space in the grounds of institutions such as schools, universities and colleges, hospitals and nursing homes, and associated with commercial and industrial premises. Land usually consists of expanses of grass, scattered trees, hedgerows and shrubs. Outdoor sports facilities are not included.

Wetland

Land dominated by wet habitats, including fen, marsh, bog and wet flush vegetation. Wetland associated with the coast, such as salt marshes, is classified as coastal habitat.

Orchard

Areas populated with fruit bearing trees, can be publicly or privately owned, could be for commercial selling or local community use.

Street trees

Generally in urban areas, a row/collection of individual trees along the side of a road. Trees will vary in size and species depending on location and size of street. Usually located on the pavement edge in tree pits, requires reasonably wide pavements. Tree pits may be planted with small flowering plants.

Green roof

Roofs of buildings, bus shelters or any other form of construction which are partially or completely covered with vegetation. Vegetation may be sedums, plants, perennials, grasses, trees and shrubs. Larger green roofs may contain small ponds.

Functions – definitions and explanations

Recreation – public

Anyone can use for recreational purposes (formal/informal and active/passive), without having to pay or have access to keys. Can include areas which are closed at night, on specific days, or seasonally but a judgement call will be required as to whether this restricts public use. Can include sports fields, fishing lakes, playgrounds, etc, and open access land.

Recreation – private

Land which is used for recreation but only by owners of the land or those invited by the owners to use. This includes private gardens and other privately owned green spaces to which access for the public is prohibited.

Recreation public – with restrictions

Public use for recreational purposes (formal/informal and active/passive) is allowed but is restricted to those who pay or have keys. Can include sports fields, golf courses, fishing lakes, allotments, etc, but not public rights of way.

Green travel route

Off road routes through greenery for pedestrians and cyclists (for recreational purposes as well as for getting between places), can include public rights of way,

Sustrans, and private routes which are not on roads. Useful in urban areas and often located close to large centres of population. Also includes the green infrastructure which surrounds green travel routes, making them an attractive alternative route.

Aesthetic (CABE, 2005)

Improves the image of an area for people as they arrive, and for those who reside there. Examples may include street trees, trees along major roads, etc. Applies equally to towns, cities and the rural landscape. Green infrastructure can make the town/village etc. a more attractive place to live and visit. The improved aesthetic which green infrastructure can provide will be reflected in surrounding property prices.

Shading from sun (Huang *et al.* 2006, Parker, 1981)

Shading of people, buildings, and surfaces from solar radiation to reduce temperatures and increase comfort levels. Usually provided by trees and taller plants and vegetation. Particularly found in urban areas to reduce the urban heat island, this function will become more critical as we have to adapt to a changing climate. Green infrastructure which provides shade will also be important for protecting agricultural land and other species from solar damage.

Evaporative cooling (Kramer & Kozlowaki, 1960)

As plants transpire water is evaporated from their surfaces cooling their immediate locality. All types of green infrastructure can provide this function, including open water. Plants with a larger leaf area are likely to be better than those with a smaller leaf area. During a drought, irrigation is likely to be necessary to maximise this function in plants, whilst open water will continue to be valuable in its own right.

Trapping air pollutants (Hill, 1971, Beckett *et al.*, 1998, Smith, 1990, Hewitt *et al.*, 2005)

Removal of pollutants, especially ozone, nitrogen dioxide and particles from the air, through uptake via leaf stomata and deposition on leaf surfaces. Once inside the leaf, gases diffuse into intercellular spaces and may be absorbed by water films to form acids or react with inner leaf surfaces. This function is usually associated with more urban areas, especially close to travel routes.

Noise absorption (Fang & Ling, 2002)

Screening of noise, especially from major transport routes. Requires certain types of green infrastructure which are tall enough to intercept and absorb sound waves. This function is usually associated with more urban areas, especially close to travel routes. Trees may perform this function to some extent, although a large part of their effect may be just on the 'perception' of noise. Landform is likely to have a greater effect.

Habitat for wildlife (Tree People, 2009)

Providing a habitat for wildlife – a place to live with a source of food. Different types of green infrastructure will provide habitats for a widely different range of species. The range of species will also be dependent on other factors such as climate and disturbance.

Corridor for wildlife (Benedict & McMahon, 2006)

Conduit of green and blue spaces through which wildlife can disperse to and from habitat spaces. This function will increase in importance in the future; species will need the capacity to move upwards and northwards as the climate changes. Connectivity is vital for this function. Different types of green infrastructure will provide a corridor for a widely different range of species. Range of species will also be dependent on other factors such as climate and disturbance.

Soil stabilisation (Barker, 1995)

Root structures of all vegetation can help improve the strength and stability of soil, holding together the top soil and preventing it from eroding.

Heritage

Historic links in the landscape (including ancient woodlands, canals, designated sites and monuments). Heritage is "that which is inherited".

Cultural asset

Green space used for cultural purposes, the hosting of public art, events and festivals. Examples include international garden festivals and sculpture parks.

Carbon storage (Milne & Brown, 1995)

Removing carbon from the atmosphere and storing it in plants, trees and soils. Trees and peat soils are particularly important types of green infrastructure for storing carbon. Certain types of green infrastructure are slower growing and will take longer to absorb carbon. Stored carbon in trees will stay locked away inside the wood if felled for material substitution.

Food production (TCPA, 2008)

Land used for growing crops or the grazing of animals.

Timber production

Growing trees and woodlands for timber. Includes for use as a substitute for other materials. Can be on a large scale for construction materials or a smaller scale for smaller wood products. Stored carbon in trees will stay locked away inside the wood if felled for material substitution.

Biofuels production

Using vegetation as biofuels – a form of energy production. Biofuel crops include wood from trees which may or may not be coppiced, miscanthus, rapeseed and waste from other crops.

Wind shelter

Green infrastructure can provide shelter from winds at a local level by slowing or diverting currents.

Learning

Opportunities for lifelong learning. Green infrastructure can provide a backdrop for outdoor classrooms and learning outside of the indoor school environment, and also a setting for learning new skills that may help adults back to work.

Inaccessible water storage

Water stored in soils and vegetation. Certain types of sustainable urban drainage systems and soils will store large amounts of water. Certain soils such as clay and peat will store more water than others. This water is inaccessible for human use or for irrigation.

Accessible water storage

Water stored in ponds, lakes, reservoirs and certain wetlands. This water is accessible for human use and for irrigation should it be required.

Water interception (Centre for Urban Forest Research, 2002)

Interception of rainwater before it reaches the ground, e.g. by the leaves of trees and plants. This will slow the flow of water to the ground. All types of green infrastructure will intercept water in some way, though certain types with a greater leaf area will intercept a greater amount and slow its flow to greater extent. This can help to reduce the risk of flooding.

Water infiltration

Vegetation and roots aid in the movement of rainwater and floodwater into the ground. Green infrastructure will help water to drain naturally into the soil. Includes both surface infiltration and deep infiltration. Green infrastructure is a permeable surface as opposed to hard surfacing such as concrete. It aids in the natural passage of water to the ground – helping reduce the risk of flooding.

Coastal storm protection

Green infrastructure can be used to protect infrastructure and agriculture close to the shore. It can protect against winds, sea spray and slow the speed and impact of waves and large tidal surges. Could include areas of woodland and marsh.

Water conveyance

Green infrastructure can transport water to areas which are in need of water and also away from areas at risk of saturation or flooding. Examples include rivers and

canals. Irrigation ditches in agricultural land are another example of water conveyance.

Pollutant removal from soil/water (Barret *et al.* 2005)

Vegetation can remove pollutants from soil and water. For example green infrastructure at the side of the road can clean contaminated road runoff (reducing concentrations of pollutants such as heavy metals), and certain plants can remove pollutants from contaminated soil.

Flow reduction through surface roughness

The speed and amount of water passing through a site can be reduced by vegetation. If the site has a varied green topography as opposed to hard standing, water will be retained onsite for longer, potentially helping to reduce flooding. Some types of green infrastructure perform this function more than others – for example, a woodland floor tends to be rougher than grass.

Note on maps

Clearly with so many types and functions analysis is complex, and there are an infinite number of combinations that can be analysed and mapped – the initial analysis created more than 200 such maps, which are held by Carlisle District Council with the data that created them for potential future usage. The include mapping of future needs and demand for green infrastructure based on the imperfect data currently available.

Below are a handful of key maps that further evidence points made in the text of the main report. These are just some of the mapping outcomes possible with the GIS-based green infrastructure mapping system, chosen because they help evidence and illustrate the points made in the main report, but the system and process that created them is capable of providing spatial analysis on a whole range of issues and with different kinds of focus.

To avoid making this report unreadable, and overly complex, only those maps that illustrate core themes are used to give stakeholders a spatial focus to the points being made – but this (and the maps it creates) should be understood as the simplified beginning of a process, and a glimpse of its potential, not its end point.

Landscape character map for North Cumbria, Carlisle and the Borders

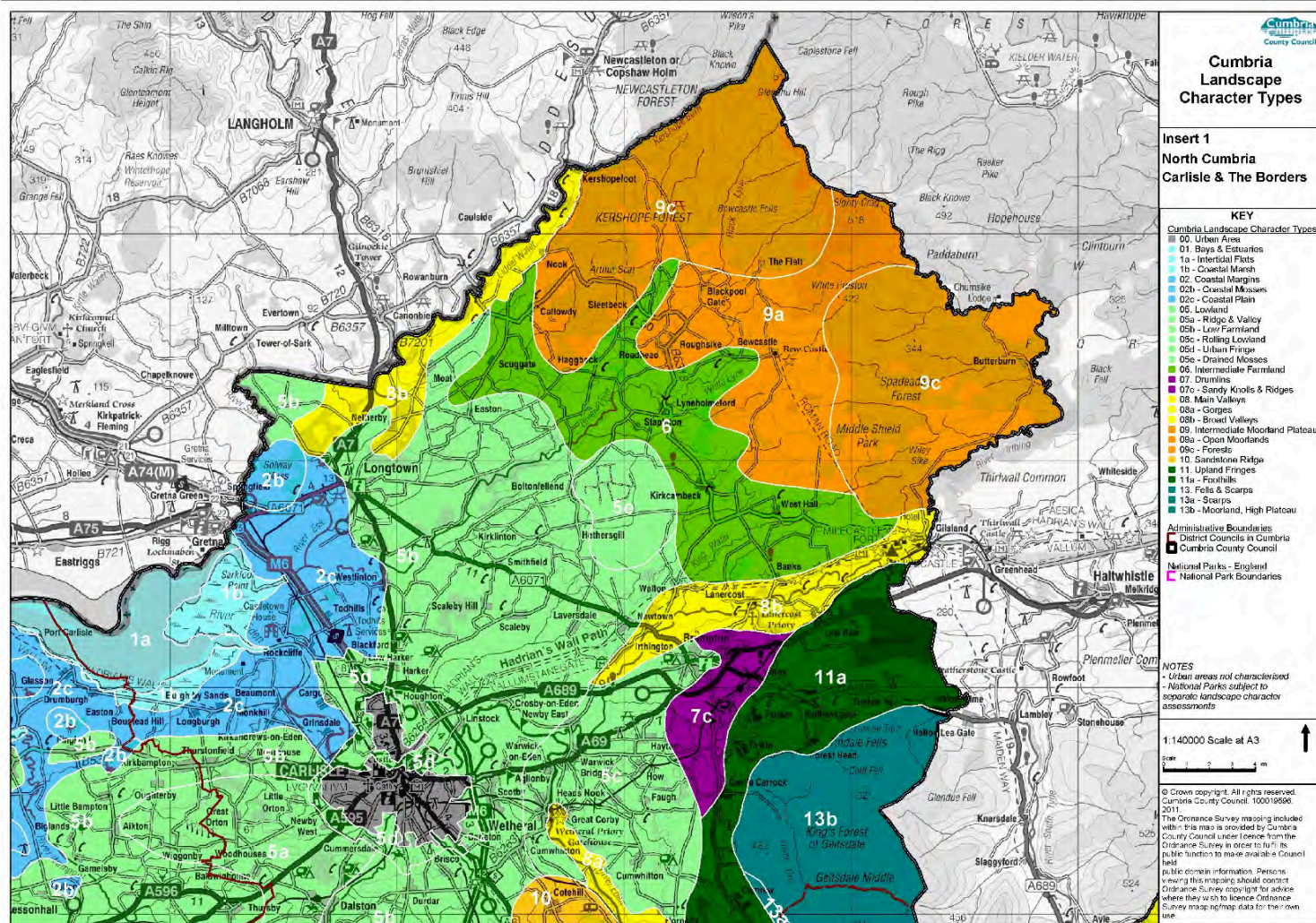


Figure 1 This map is from the **Cumbria Landscape Character Guidance and Toolkit** – to view the map in more detail see <http://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/406869467.pdf> and to understand the character types see <http://www.cumbria.gov.uk/eLibrary/Content/Internet/538/755/2789/40592145216.pdf>

Map of traffic volumes 1

Traffic volumes

Roads: vehicles passing per year

- 10,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- 200,000 - 500,000
- 500,000 - 1,000,000
- 1,000,000 - 2,000,000
- 2,000,000 - 5,000,000
- 5,000,000 - 10,000,000
- 10,000,000 - 20,000,000

Railway stations: passenger usage per year

- 10,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- 200,000 - 500,000
- 500,000 - 1,000,000
- 1,000,000 - 2,000,000
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- 5,000,000 - 10,000,000
- 10,000,000 - 20,000,000

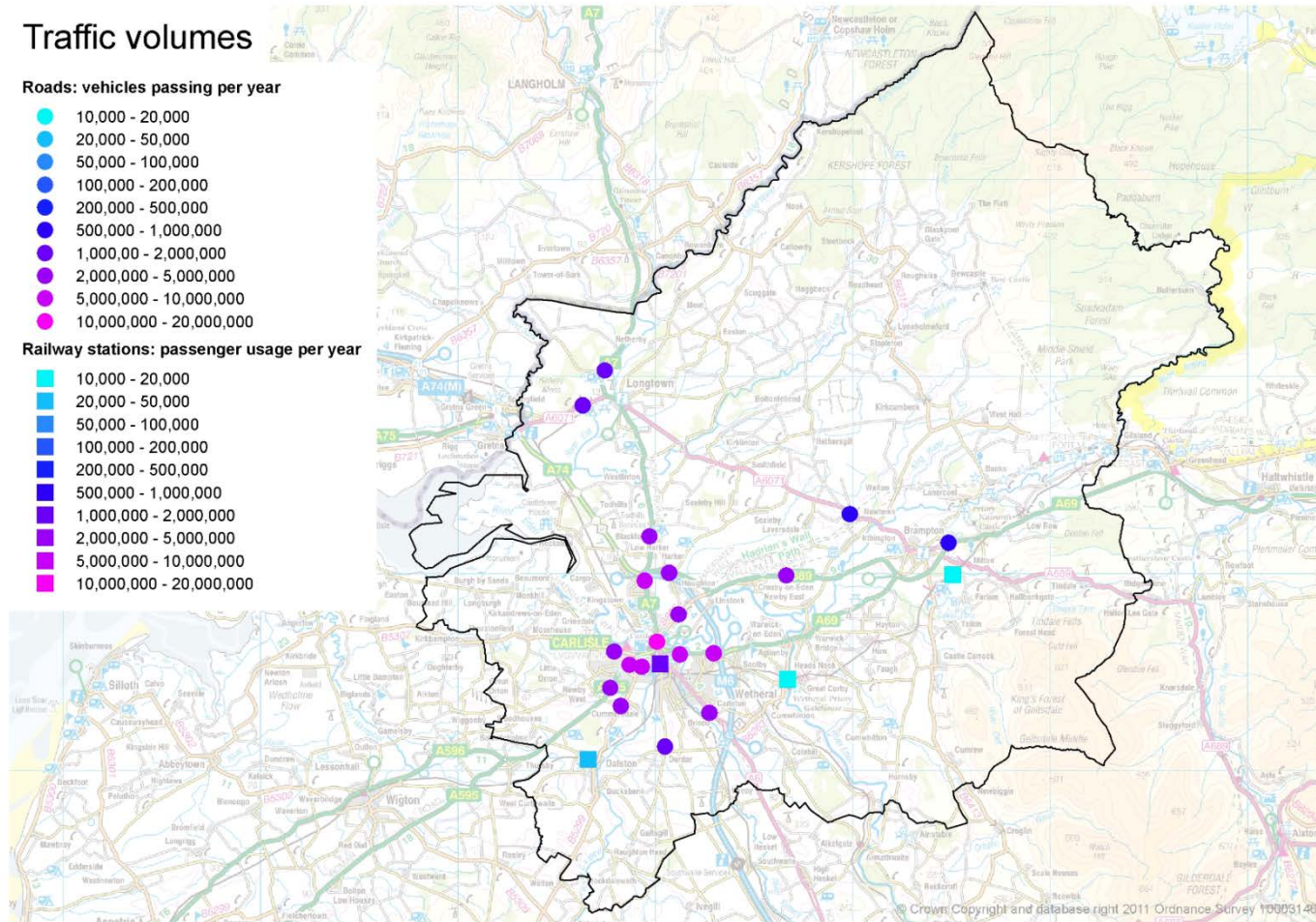
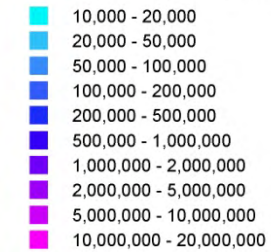


Figure 2 Traffic volumes on key routes in Carlisle District. If the city of Carlisle is to be perceived as a great green city and the gateway to other quality landscapes then it needs to ensure that in future that the aesthetic experience of visitors reflects this ambition and nurtures this perception. This map is based on UK Government data about traffic volumes.

Map of traffic volumes 2

Estimated traffic volumes

Railway stations: passenger usage per year



Roads: vehicles passing per year

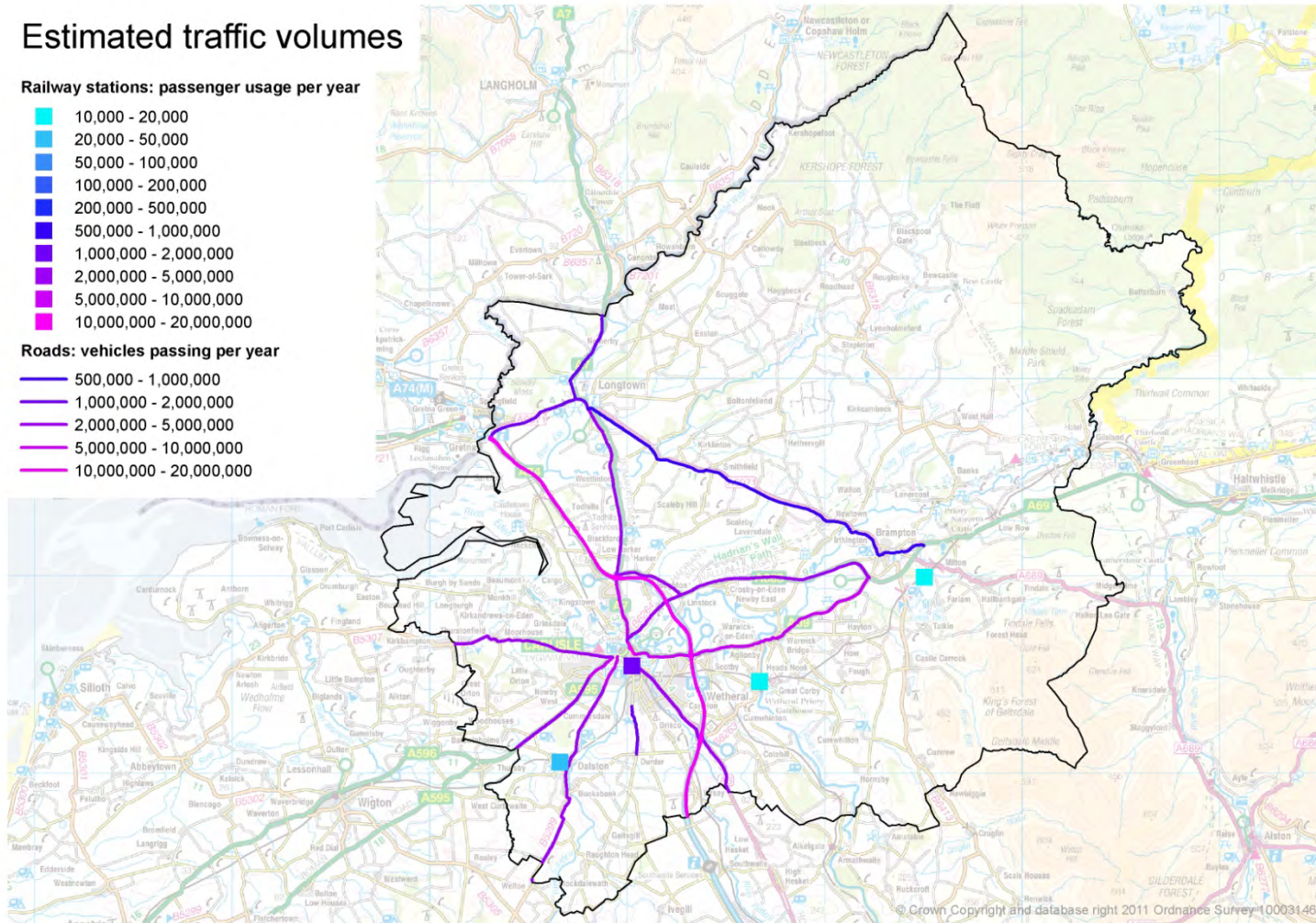
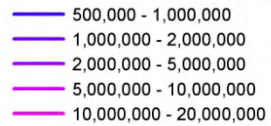
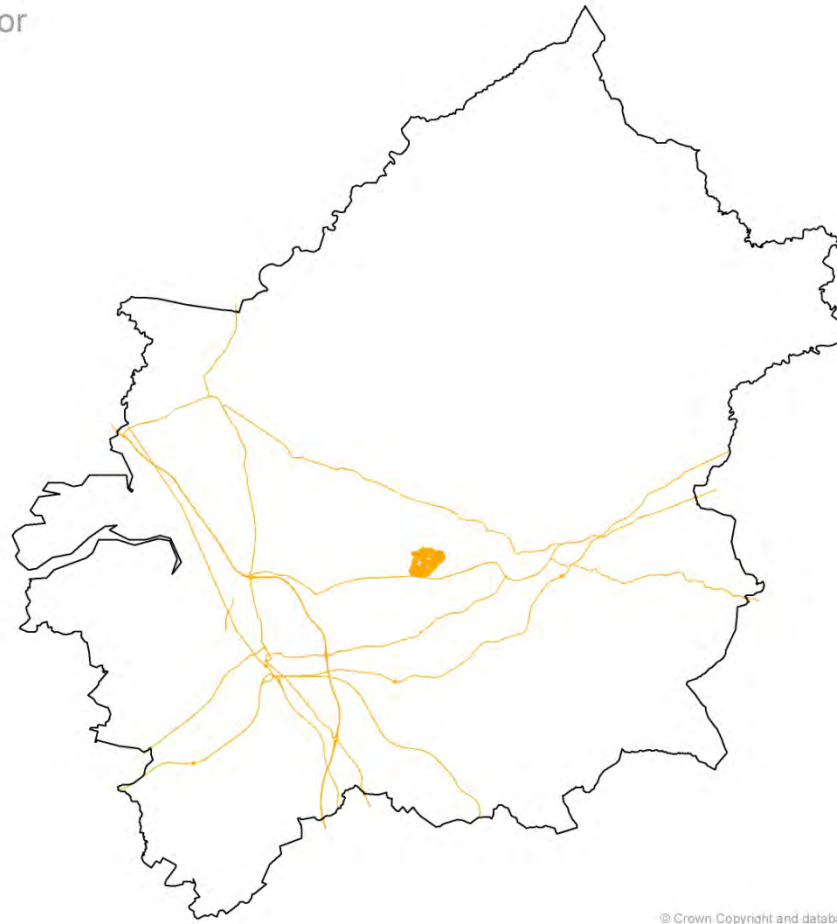


Figure 3 This maps shows the same data as the previous map but visualised along the key routes.

Map of greatest need for aesthetic improvements - District

Greatest need for
Aesthetic



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Figure 4 This map shows where there is the greatest need for the aesthetic function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be proximity to key transport gateways, main roads and railways, and the airport (see brown cluster in centre of image) the rationale being that the most important benefit of the aesthetic function is giving a good first impression to visitors. Note that lower levels of need for this function will exist elsewhere.

Map of greatest need for aesthetic improvements - City

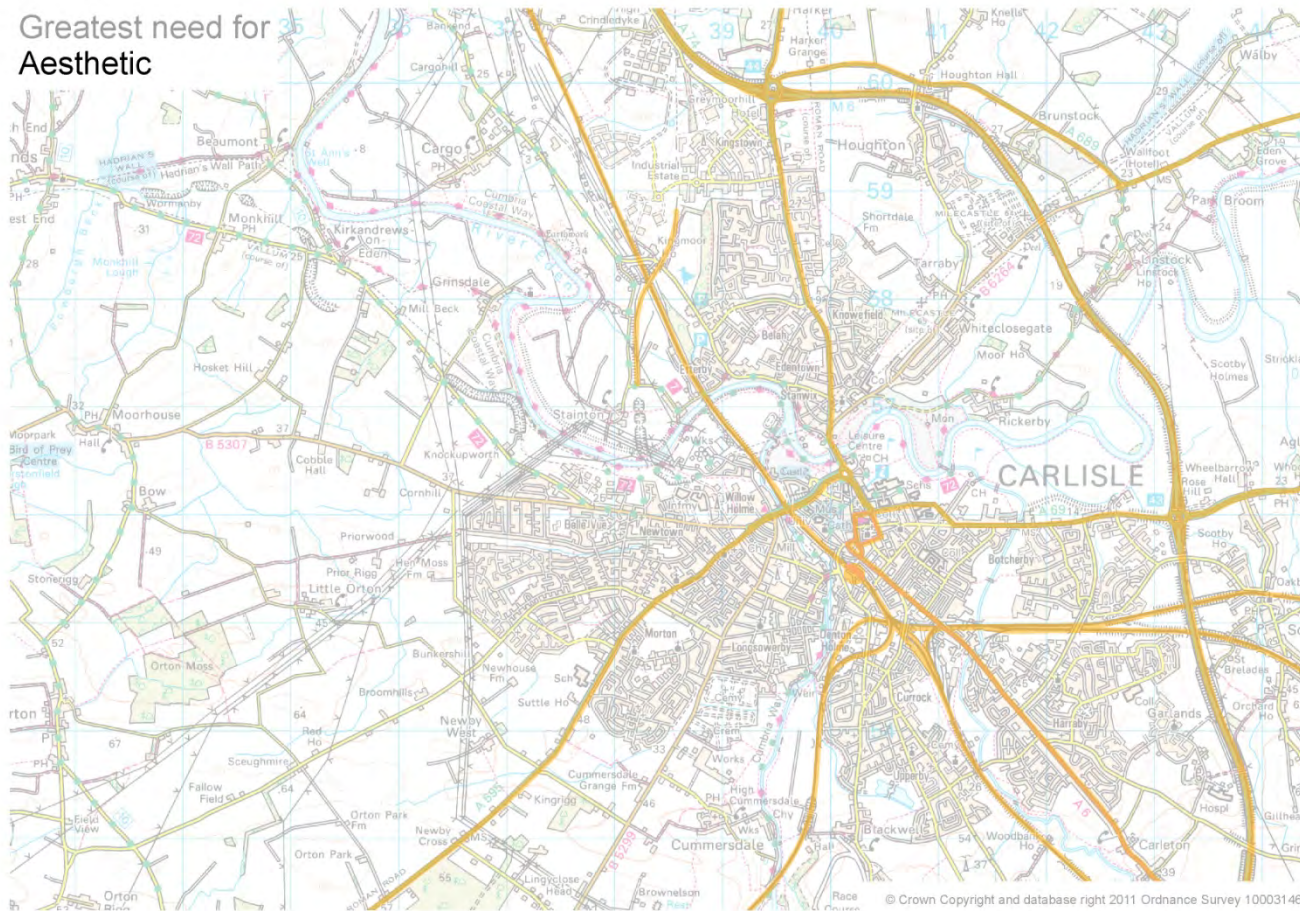


Figure 5 This map shows where there is the greatest need for the aesthetic function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be proximity to key transport gateways, main roads and railways, the rationale being that the most important benefit of the aesthetic function is giving a good first impression to visitors. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for recreation (public) – District

Greatest need for
Recreation - public

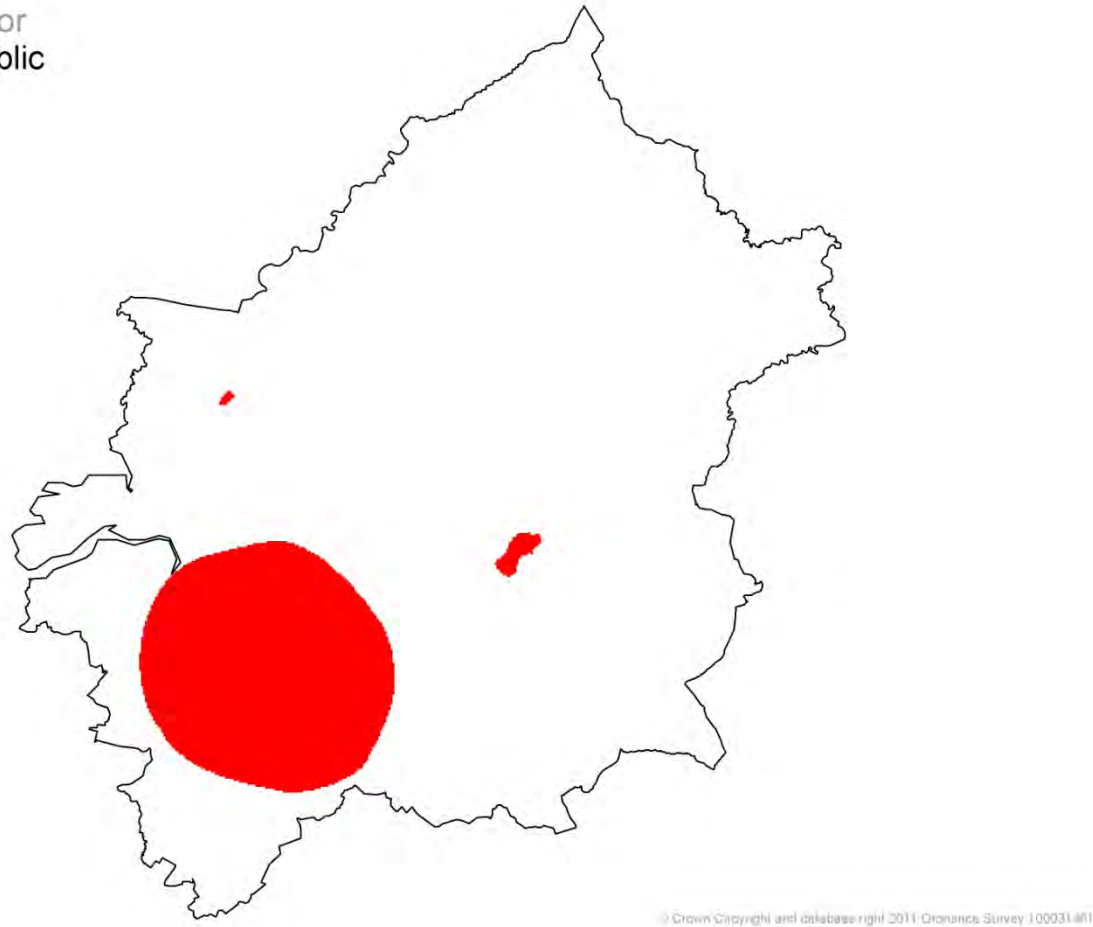
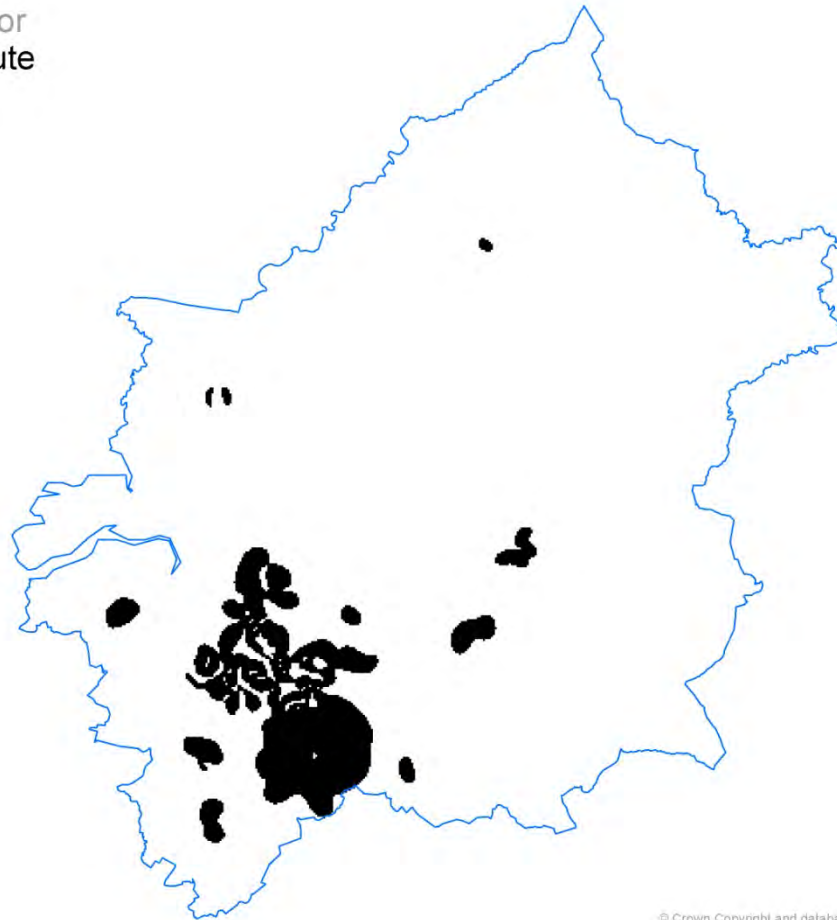


Figure 6 This map shows where there is the greatest need for the public recreation function of green infrastructure (primarily around Carlisle, Longtown and Brampton). Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factors in this case are considered to be present and future population density, car ownership, health deprivation and the proportion of the population made up of children. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for green travel routes – District

Greatest need for
Green travel route



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Figure 7 This map shows where there is the greatest need for the green travel route function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be the number of people likely to want to travel between each pair of locations, which was estimated using residential and workplace population density and school locations and pupil numbers. Note that lower levels of need for this function will exist elsewhere. More focused analysis will be required on smaller geographic areas to enable effective interventions.

Map showing roads, paths and cycleways - City

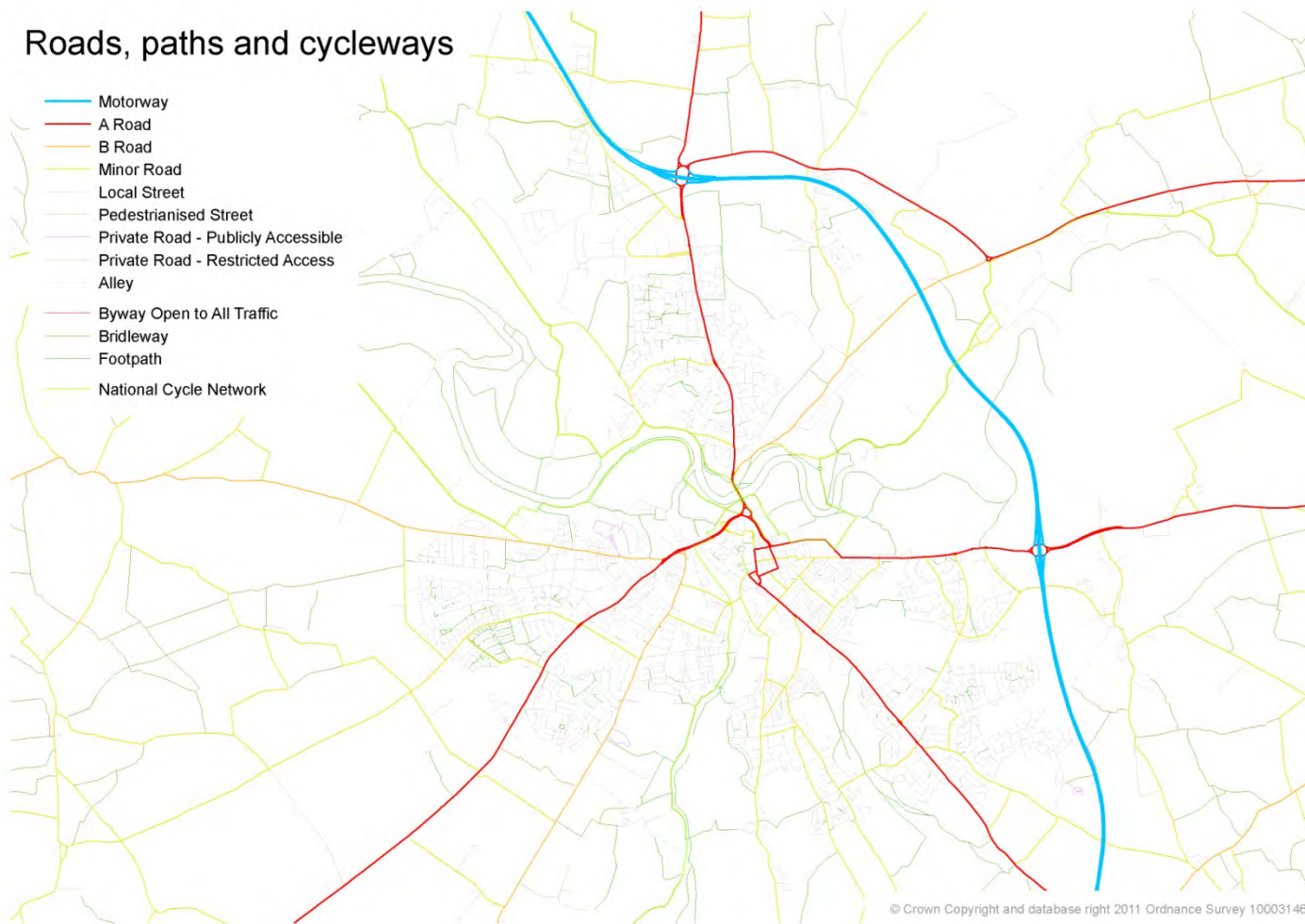
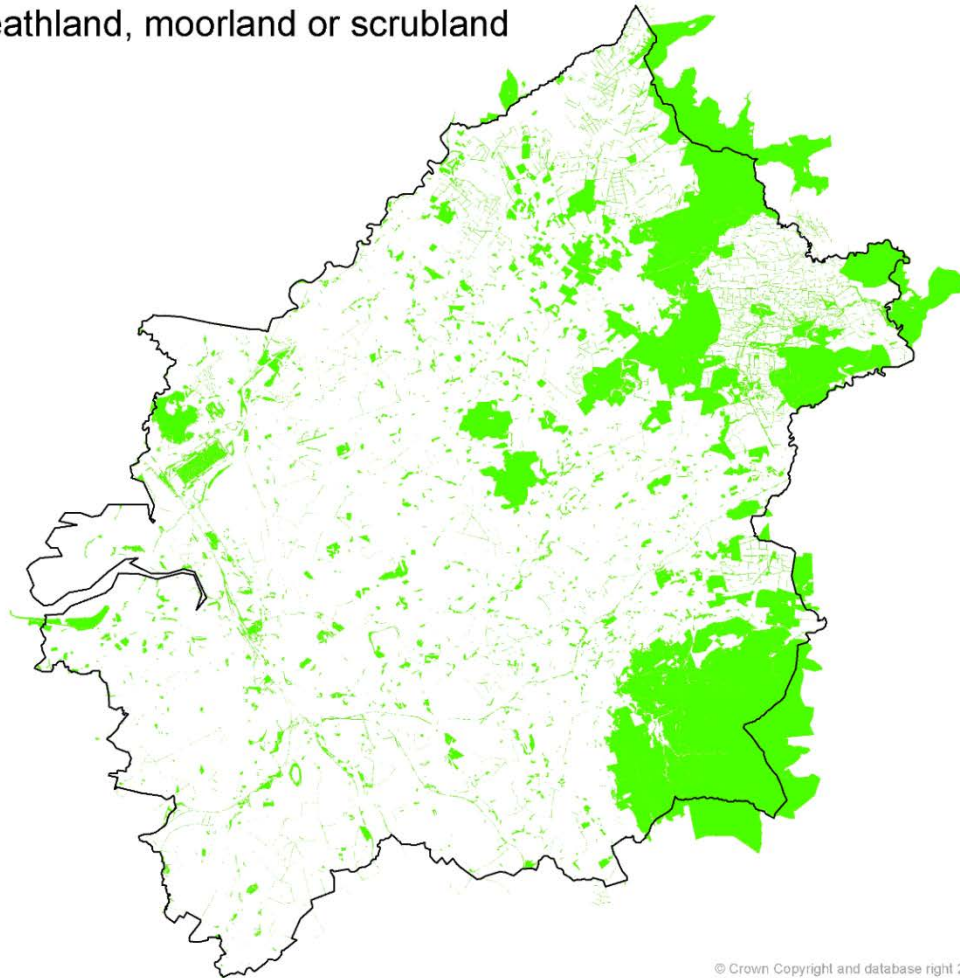


Figure 8 Superficially, Carlisle would appear to have an adequate network of routes, but analysis at the local level suggests that sometimes access to green spaces is less than ideal as factors like the volume of traffic on a route can make it a significant barrier to access. On the urban fringe access to the surrounding countryside varies from community to community. In future it may be possible to map all available routes and their usability against the location, quality and scale of open green spaces.

Map showing grassland, heathland, moorland or scrubland - District

Grassland, heathland, moorland or scrubland



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Figure 9 This map shows the grassland, heathland, moorland or scrubland as determined by the typology mapping process. It should be noted that much of this land is productive agricultural land (and might be seen as complimentary to that mapped as 'agricultural land' on page 66 of the main report.

Map showing agricultural land classification – District

Agricultural Land Classification

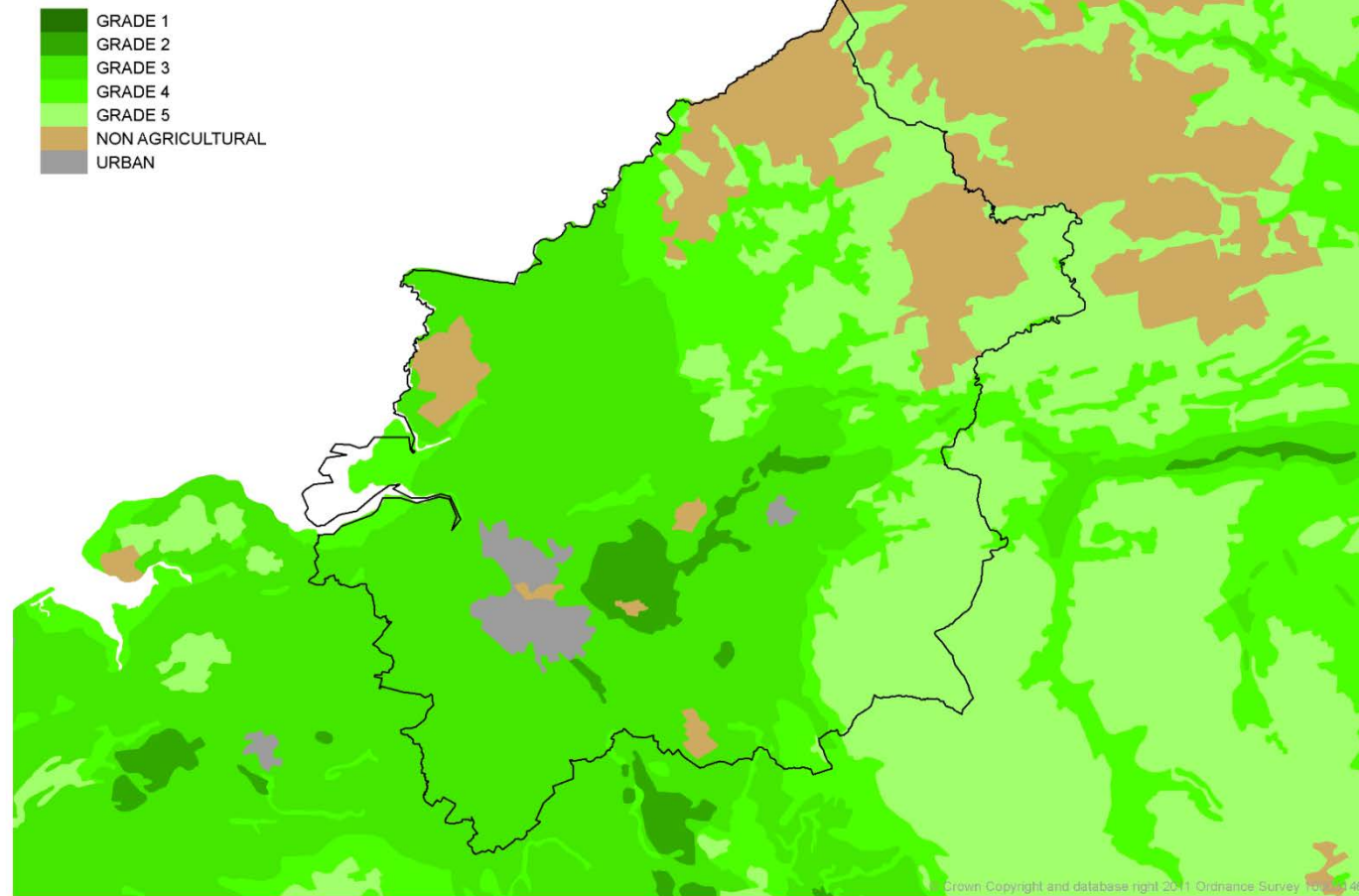
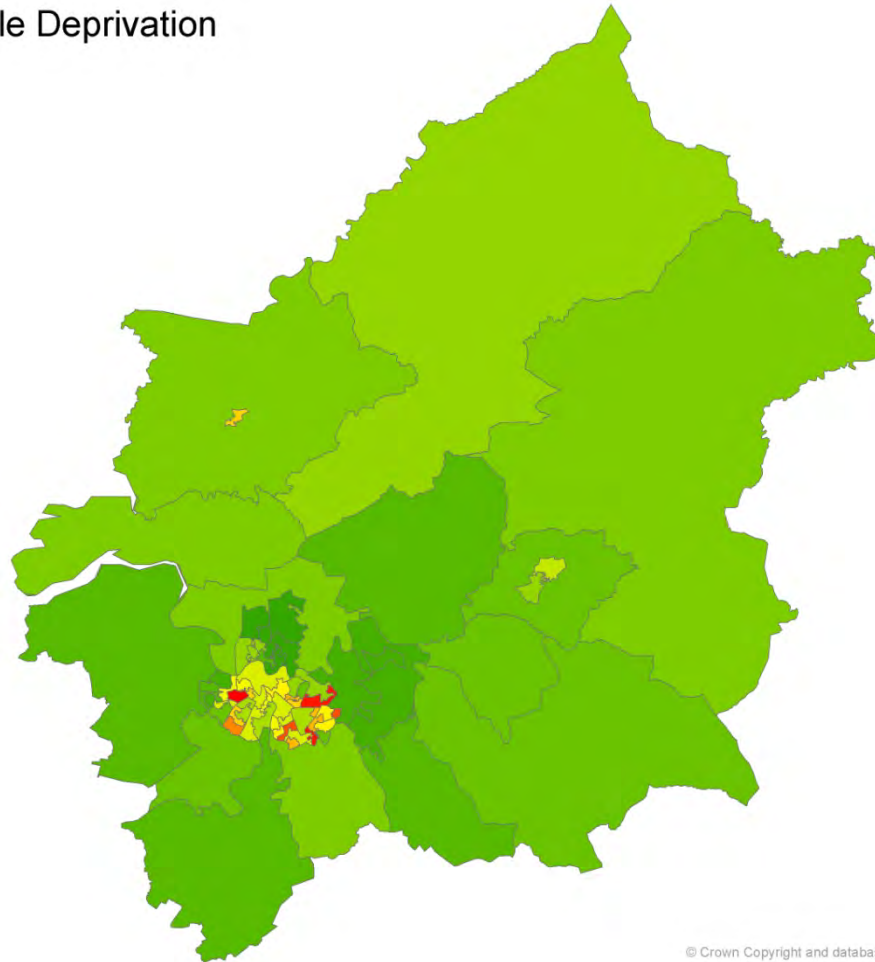
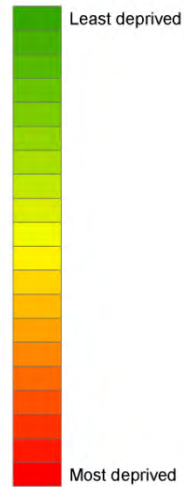


Figure 10 This map shows the grade classification of the agricultural land in the District. This is a matter of some importance as the Draft National Planning Policy Framework stresses the need for planning authorities to think carefully about development on high quality agricultural land and to consider the alternatives.

Map showing index of multiple deprivation – District

Index of Multiple Deprivation



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Figure 11 This map shows the Department for Communities and Local Government's Index of Multiple Deprivation. The relationship between deprivation and green infrastructure needs to be understood. There are many social, environmental and economic reasons for investing in the District beyond the city, but when the target is to reach the maximum number of people suffering from deprivation and its effects then the focus area is more likely to be the city area.

Map showing spatial correlation between house prices and health

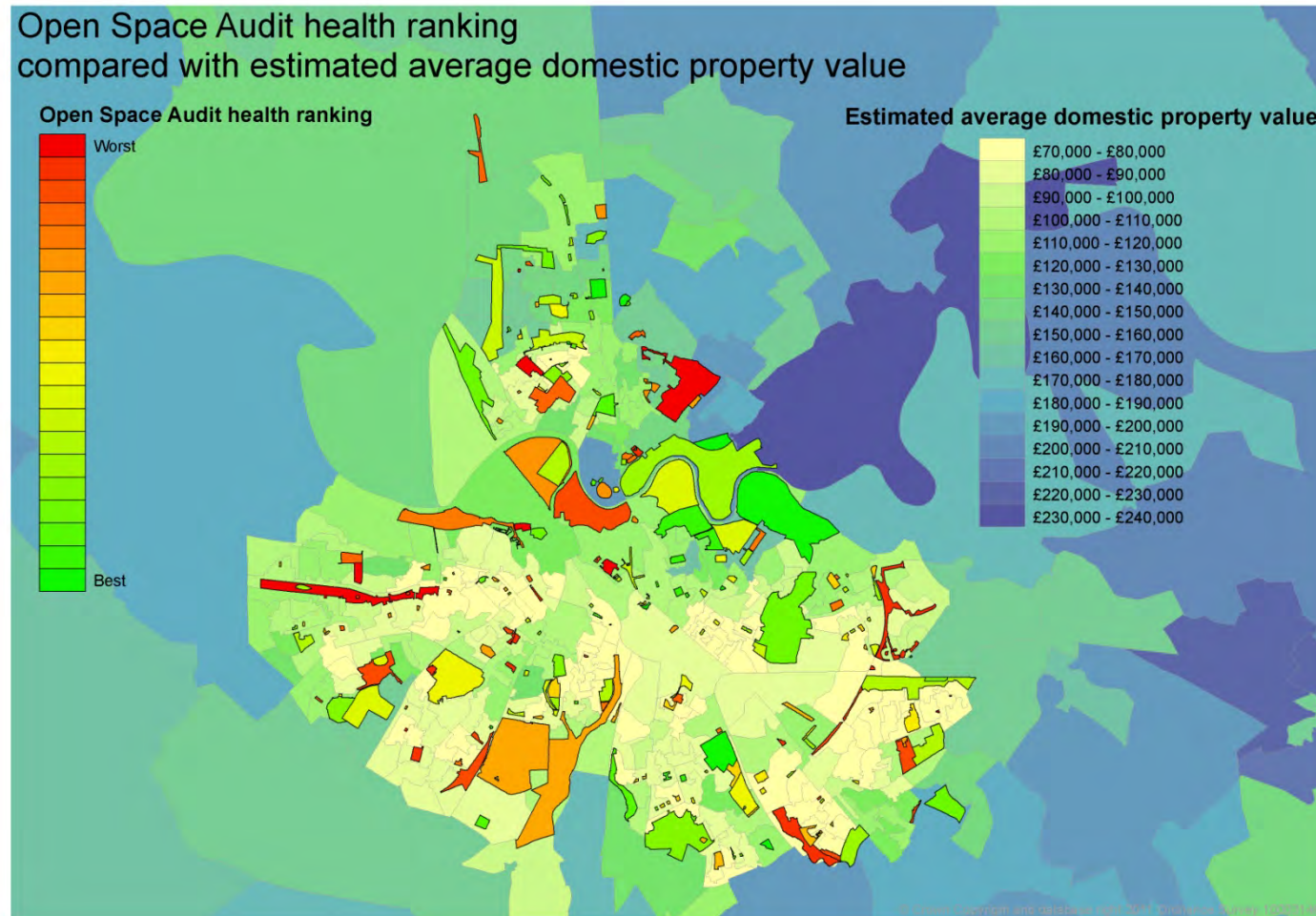
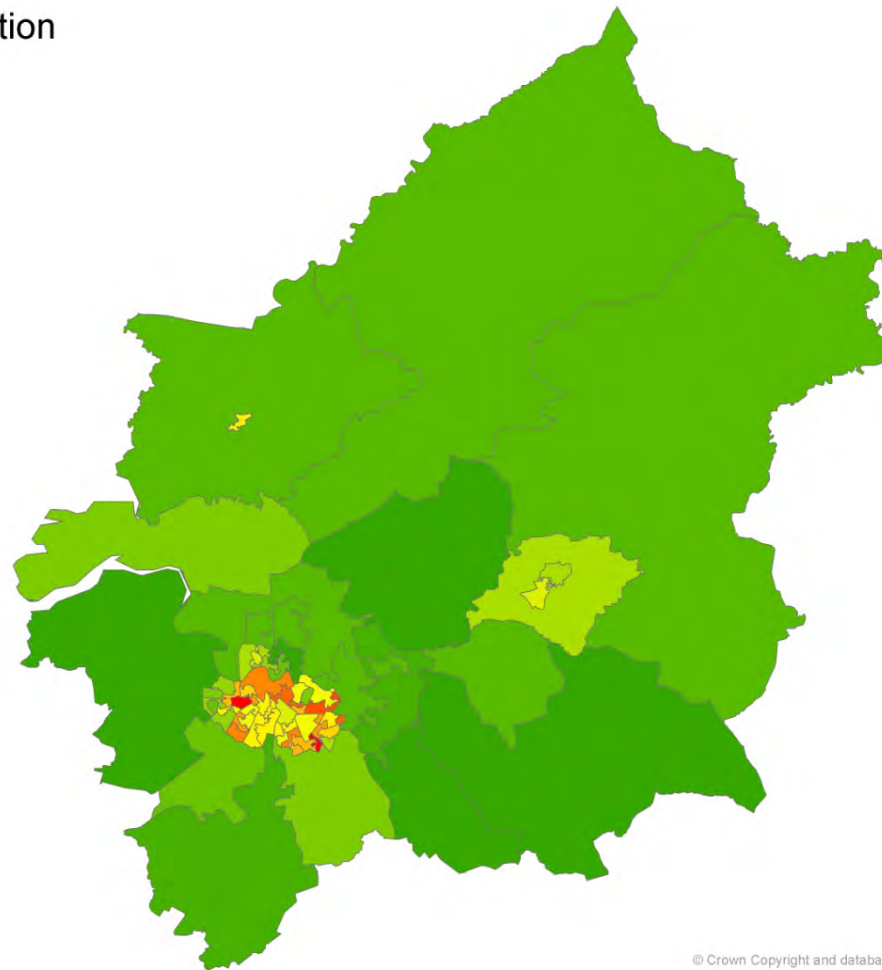
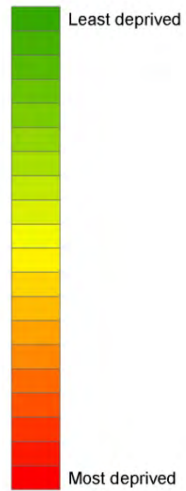


Figure 12 This map shows the open spaces from the city Open Space Audit ranked according to the levels of various health issues in their immediate vicinity, overlaid on estimates of the average value of domestic properties in each Census Output Area. The open green spaces have the key on the left hand side of the table, the rest of the map is defined by the property price key the right.

Map showing health deprivation incidence – District

Health deprivation



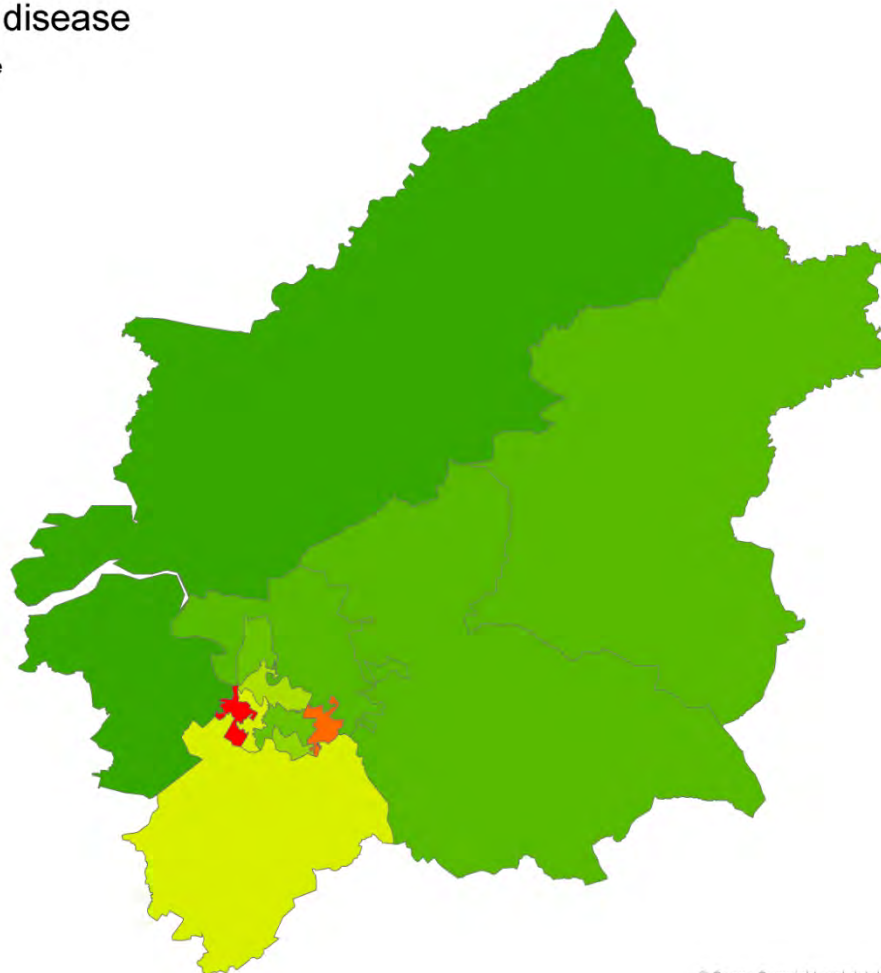
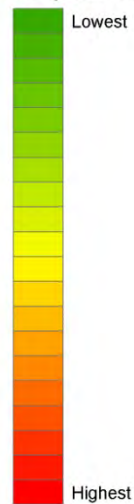
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Figure 13 This map shows the Department for Communities and Local Government's Indices of Multiple Deprivation data for health deprivation for Carlisle District.

Map showing coronary heart disease incidence – District

Coronary heart disease

Hospitalised incidence



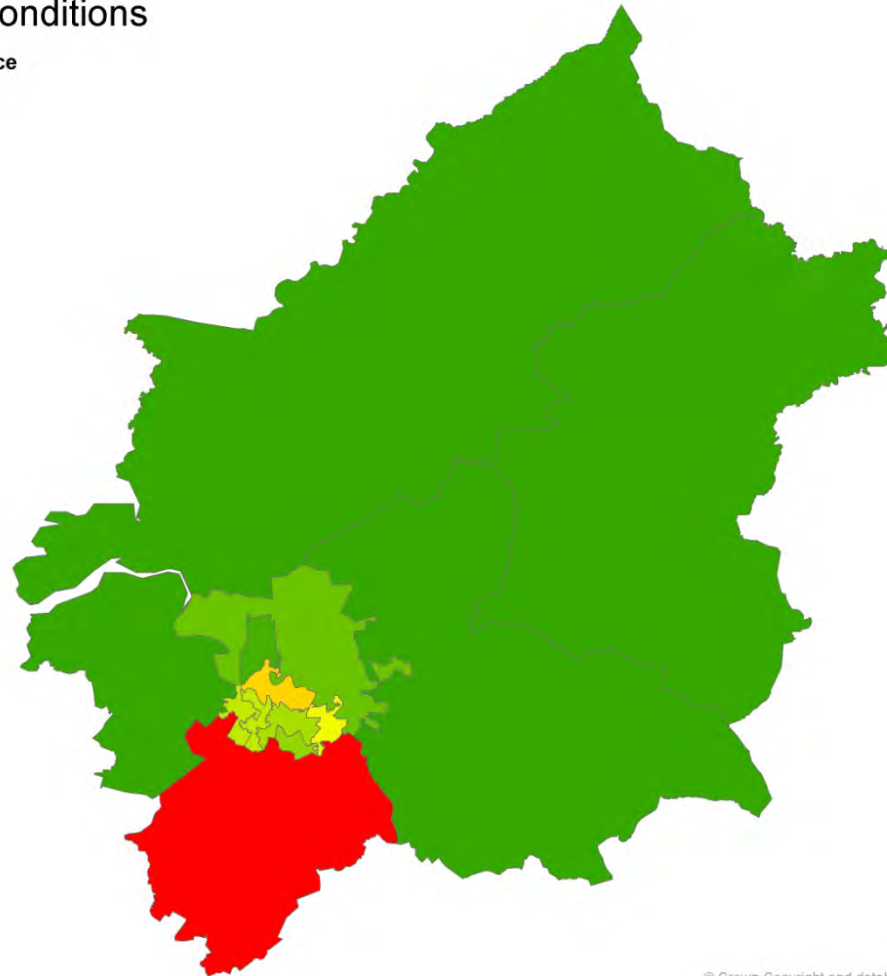
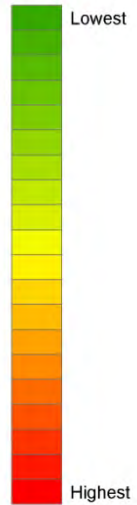
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Figure 14 This map shows the hospitalised incidence of coronary heart disease according to data from the North West Public Health Observatory.

Map showing mental health conditions incidence – District

Mental health conditions

Hospitalised prevalence



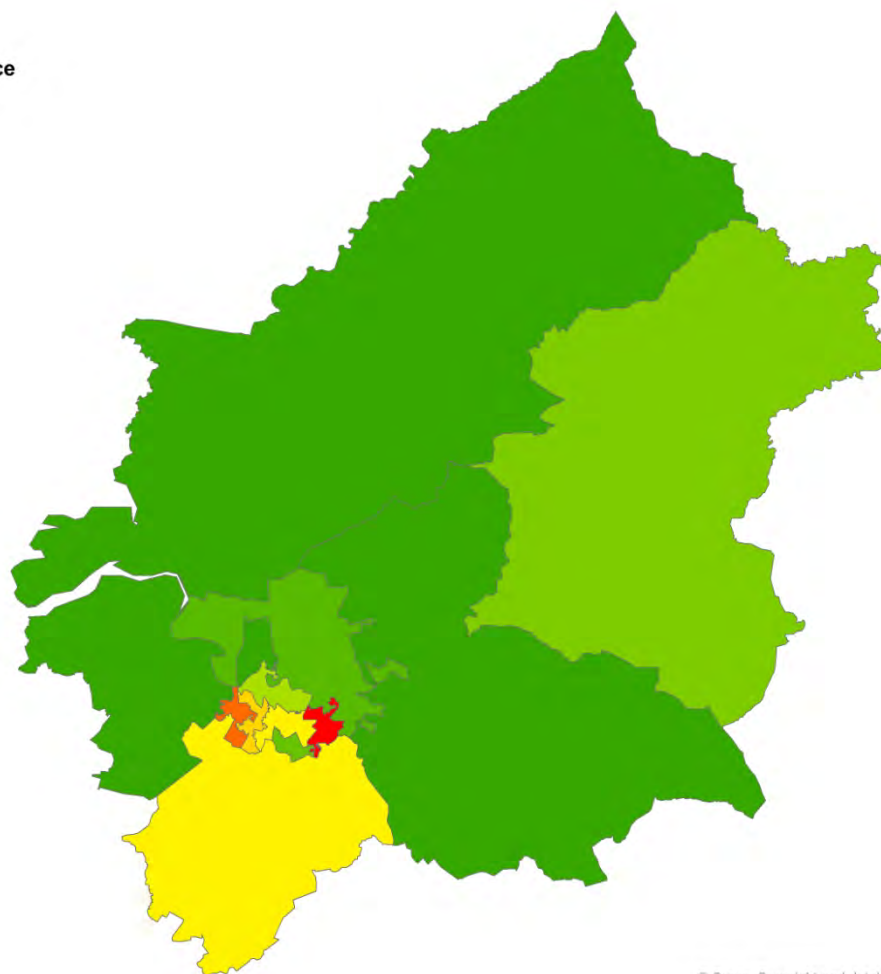
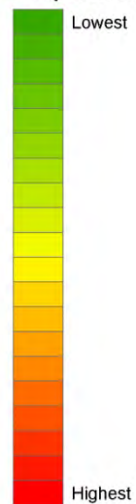
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Figure 15 This map shows the hospitalised prevalence of mental health conditions according to data from the North West Public Health Observatory.

Map showing diabetes incidence – District

Diabetes

Hospitalised prevalence



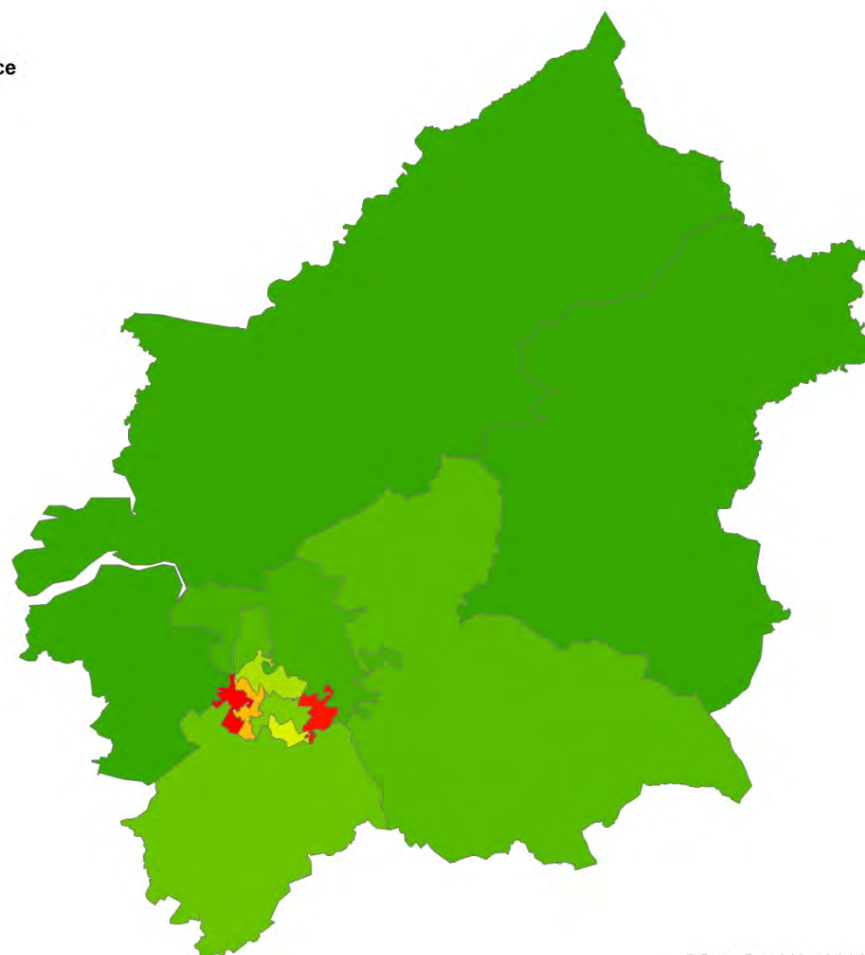
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Figure 16 This map shows the hospitalised prevalence of diabetes according to data from the North West Public Health Observatory.

Map showing asthma incidence – District

Asthma

Hospitalised prevalence



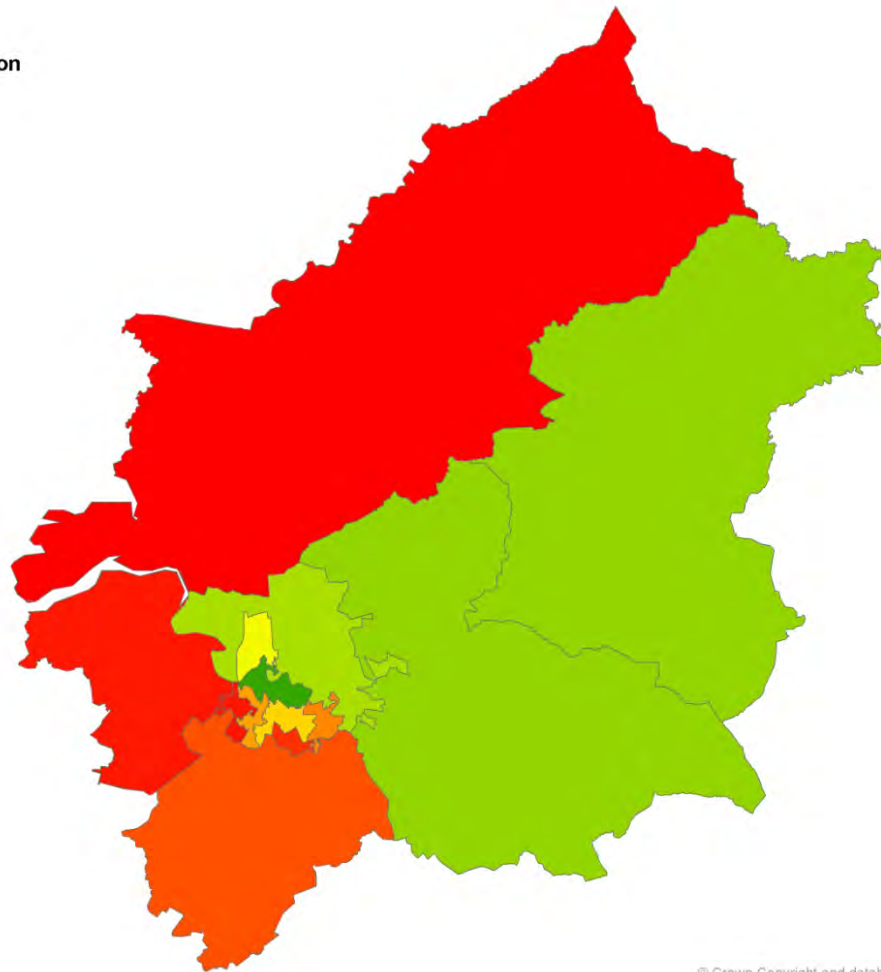
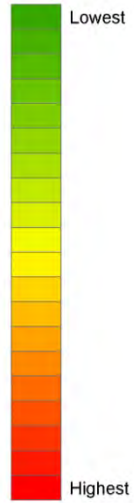
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Figure 17 This map shows the hospitalised prevalence of asthma according to data from the North West Public Health Observatory.

Map showing obesity incidence – District

Obesity

Proportion of population

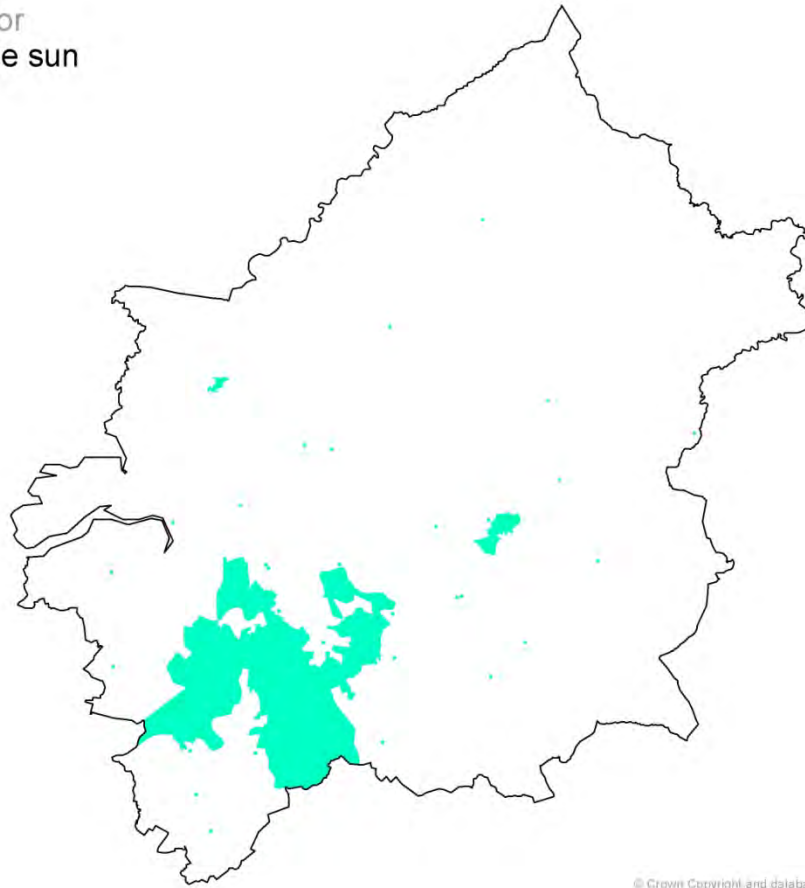


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Figure 18 This map shows the proportion of the population suffering from obesity according to data from the Office of National Statistics.

Map showing greatest need for shading from the sun - District

Greatest need for
Shading from the sun

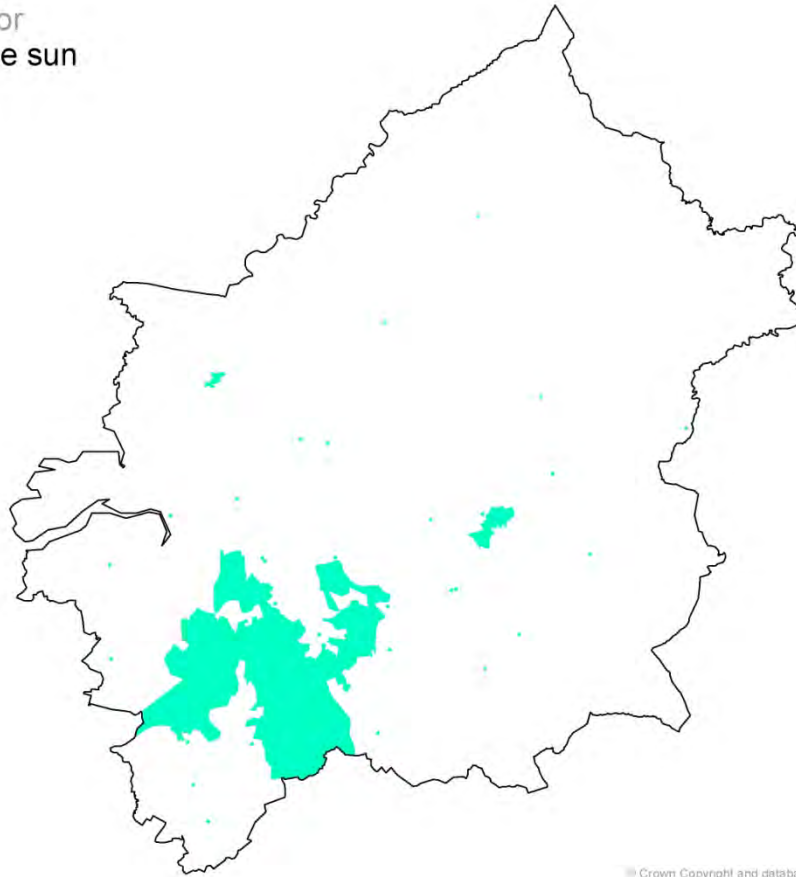


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This map shows where there is the greatest need for the shading from the sun function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factors in this case are considered to be present and future population density, the proportions of the population made up of children, older people and those suffering from limiting long-term illnesses, and proximity to schools. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for shading evaporative cooling - District

Greatest need for
Shading from the sun



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Figure 19 This map shows where there is the greatest need for the evaporative cooling function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factors in this case are considered to be the proportions of the population in urban areas made up of children, older people and those suffering from limiting long-term illnesses. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for flow reduction through surface roughness - District

Greatest need for
Flow reduction through surface roughness

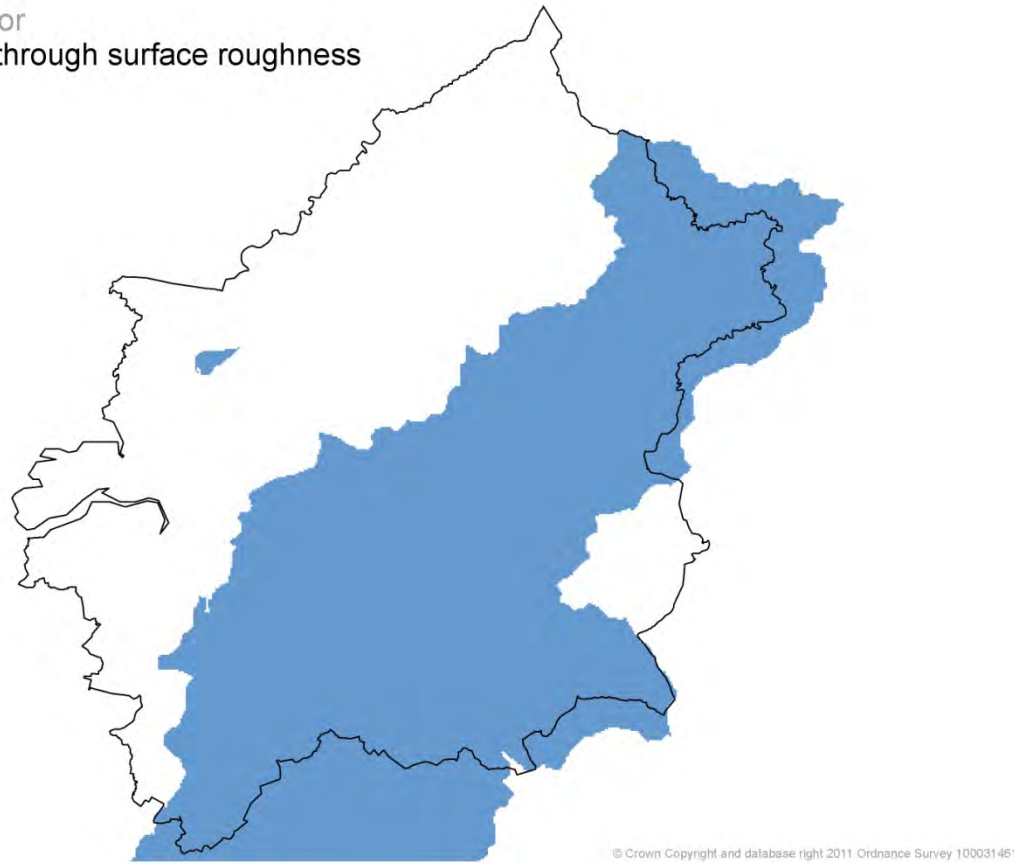


Figure 20 This map shows where there is the greatest need for the flow reduction through surface roughness function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be whether an area is upstream of an urban flood zone. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for flow reduction through surface roughness – City

Greatest need for
Flow reduction through surface roughness

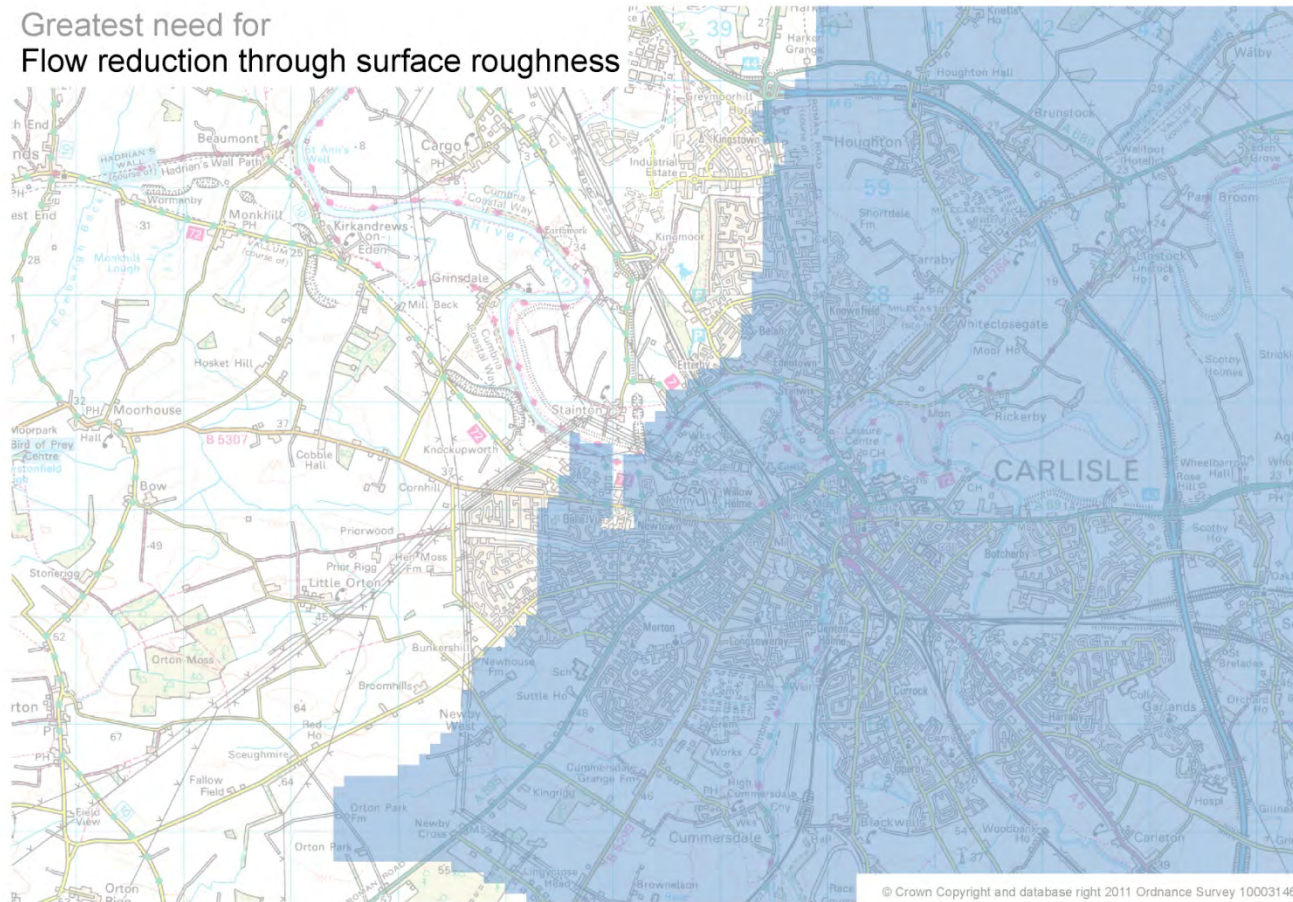


Figure 21 This map shows where there is the greatest need for the flow reduction through surface roughness function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be whether an area is upstream of an urban flood zone. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for inaccessible water storage – City

Greatest need for
Inaccessible water storage

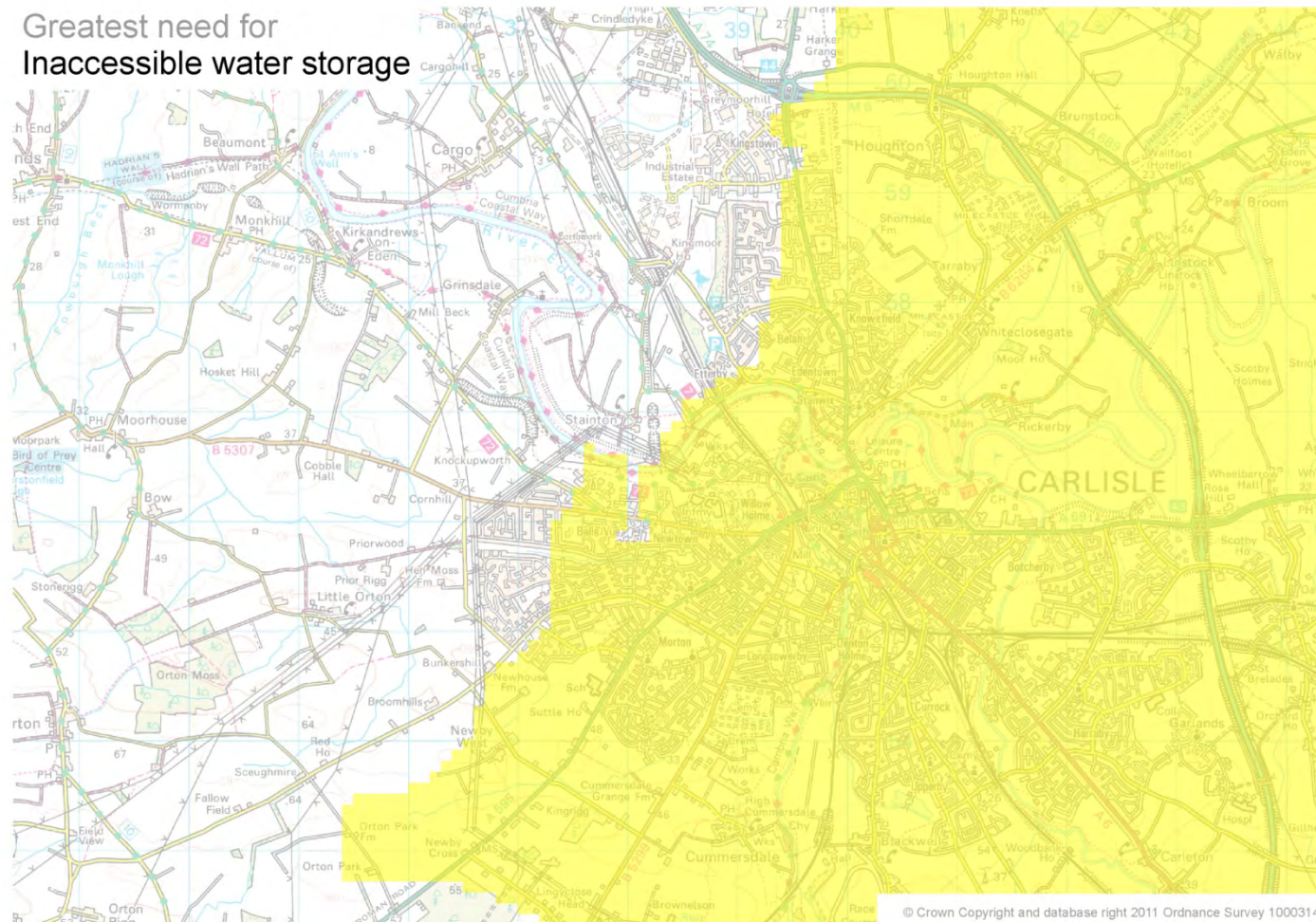


Figure 22 This map shows where there is the greatest need for the inaccessible water storage function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be whether an area is upstream of an urban flood zone. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for water conveyance – City

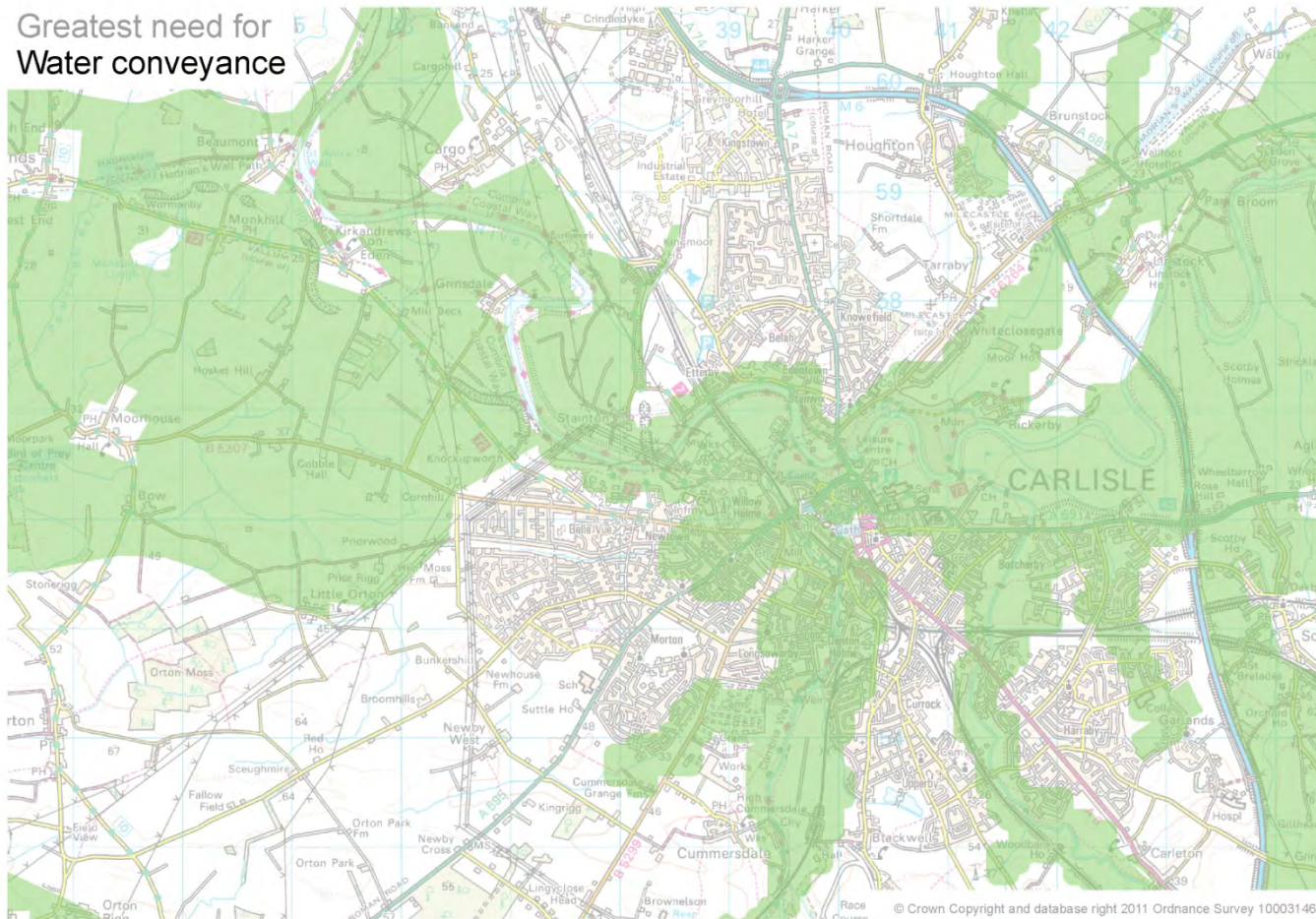


Figure 23 This map shows where there is the greatest need for the water conveyance function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factors in this case are considered to be whether an area is downstream of an urban flood zone, and agricultural quality of the land. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for water infiltration – City

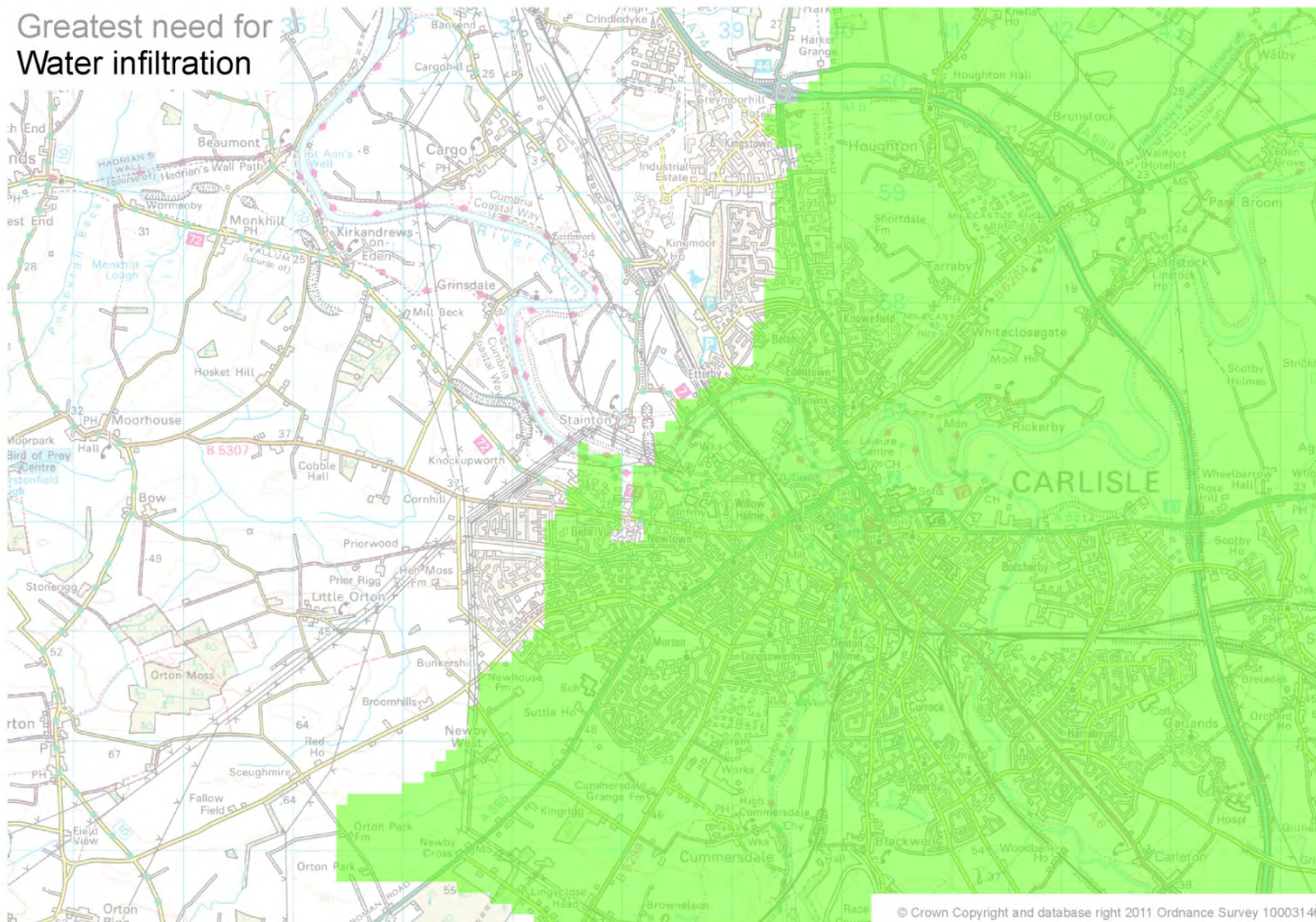
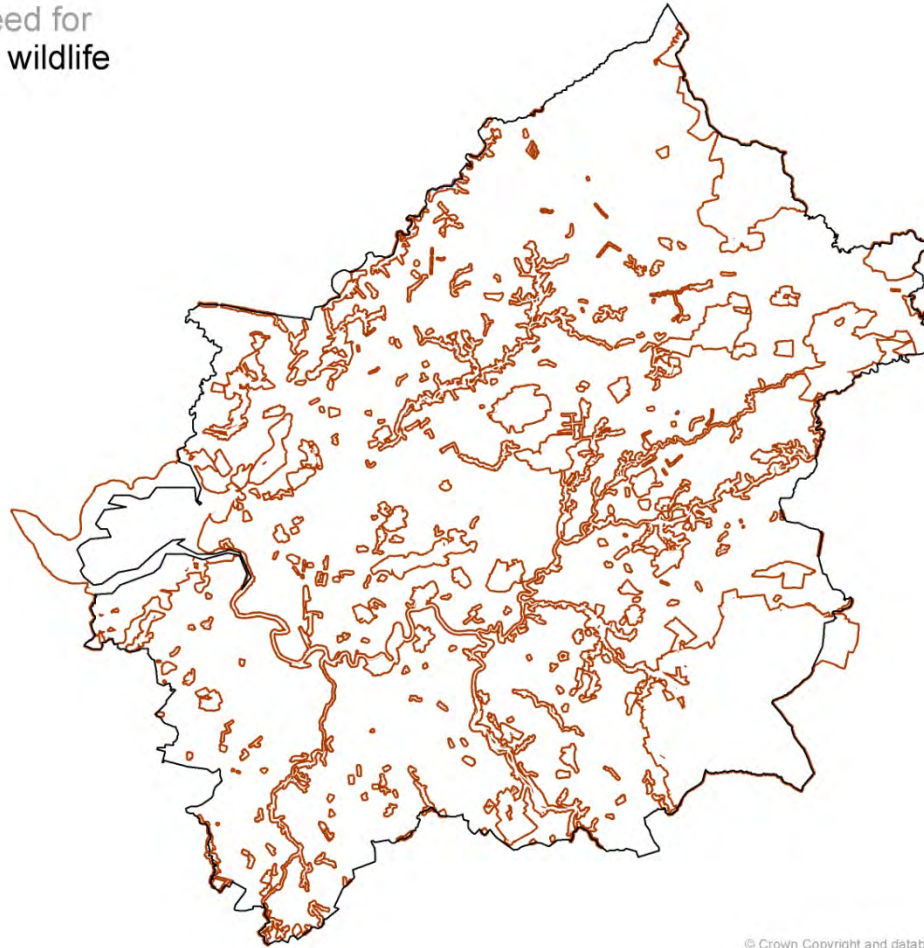


Figure 24 This map shows where there is the greatest need for the water infiltration function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function but instead only considers other factors. The overriding factor in this case is considered to be whether an area is upstream of an urban flood zone. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for corridors for wildlife – District

Greatest need for
Corridor for wildlife



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Figure 25 This map shows where there is the greatest need for the corridor for wildlife function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be proximity to habitat designations. Note that lower levels of need for this function will exist elsewhere.

Map showing greatest need for corridors for wildlife – City

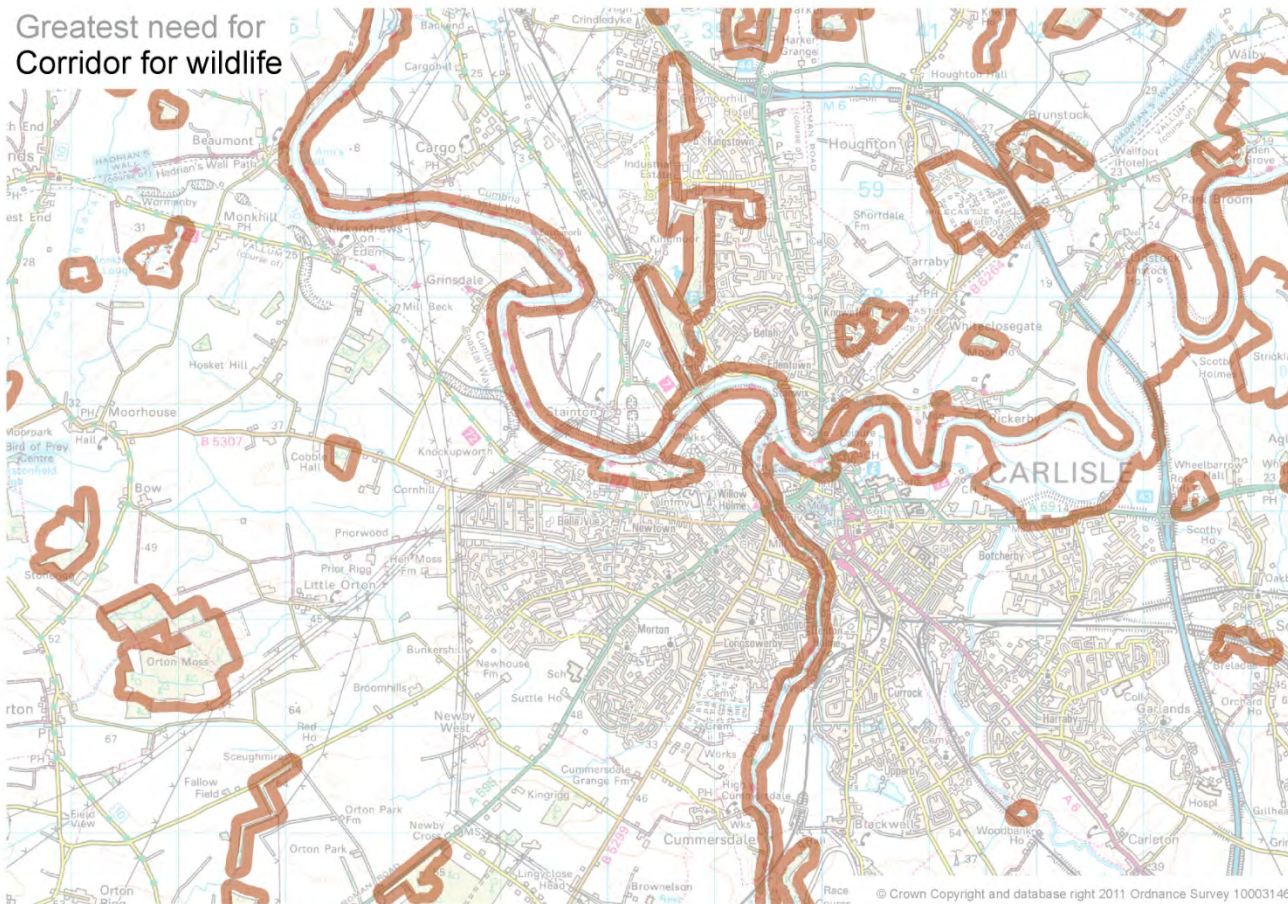
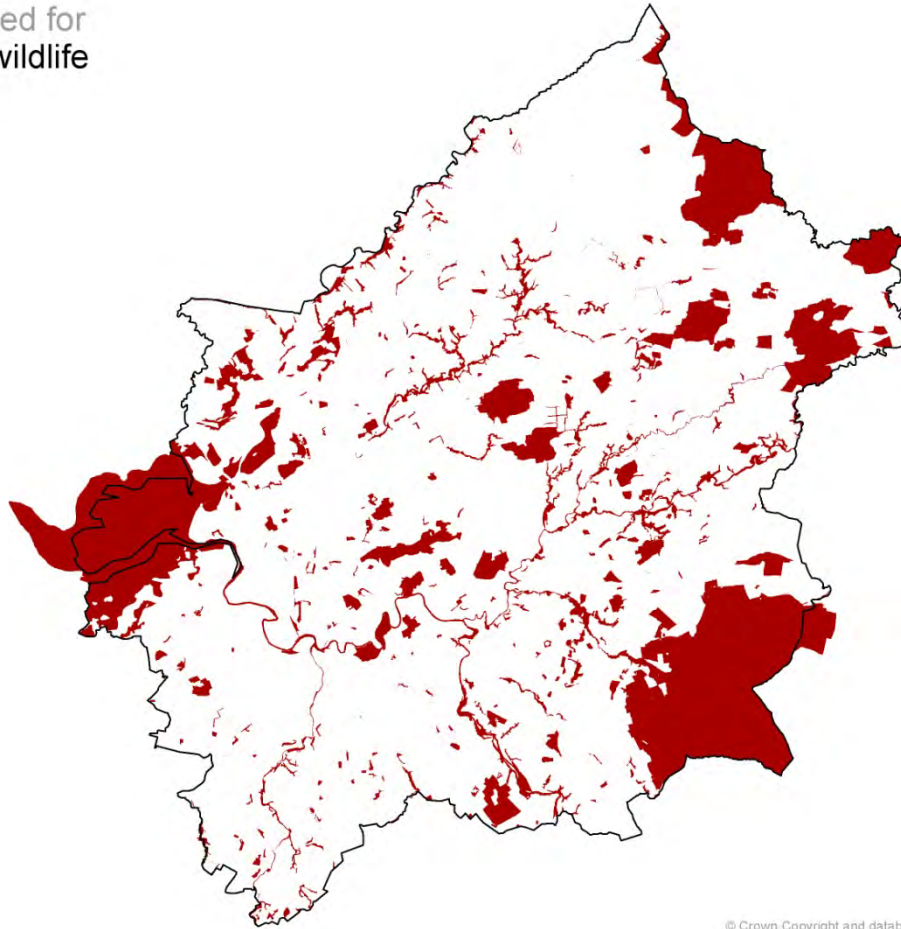


Figure 26 This map shows where there is the greatest need for the corridor for wildlife function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be proximity to habitat designations. Note that lower levels of need for this function will exist elsewhere. Where stakeholders are creating active transport routes or social green spaces, for example, then opportunities to create other wildlife corridors.

Map showing greatest need for habitat for wildlife

Greatest need for
Habitat for wildlife



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Figure 27 This map shows where there is the greatest need for the habitat for wildlife function of green infrastructure. Like all of the greatest need maps, this does not take into account provision or lack of provision of the function, but instead only considers other factors. The overriding factor in this case is considered to be the existence of habitat designations. Note that lower levels of need for this function will exist elsewhere.

