GREEN INFRASTRUCTURE AUDIT

SEPTEMBER 2012

East Lindsey
DISTRICT COUNCIL

East Lindsey Accessible Greenspace Audit

What is Green Infrastructure?

1. Green Infrastructure (GI) is the umbrella term used to describe all the different elements that form the network of natural and semi-natural spaces within and around our towns and villages, and in the open countryside. There is no set definition of what should be included in an audit but guidance on GI suggests that the scope of what is included in any GI study should be established at the inception of any study and will be shaped by the nature of GI in the study area.

2. The use of the word green in this context can be confusing as it is often misunderstood to mean parks, woodlands and other areas that are literally green, but the term can be used to cover a wider range of spaces and includes rivers and other water features, and importantly in East Lindsey's situation, includes the coastline. GI covers a variety of types of spaces, including (but by no means exclusively) woodland, parks and gardens, green lanes, public rights of way, churchyards, sports facilities, water courses and beaches and dunes. It also covers spaces that host a wide range of activities, from the places people walk the dog or kick a football around, to the Local Nature Reserve where people go to enjoy the wildlife on offer, to the beach with its scope for many and varied recreational activities. However, many of these spaces have more than one function and some were not specifically designed as open spaces but have evolved into this role over time. Indeed, the fact that GI is frequently multifunctional is one of the reasons why it is so important that there is sufficient available to communities.

3. Ideally, GI should come from a range of different types, forming an overall network. GI is an important component part of place making and quality of life. It has many benefits to the environment and to both individuals and the community as a whole. It can:

    - Foster Environmental Appreciation;
    - Help provide space for Biodiversity and networks to help the migration of species;
    - Help improve Health and Childhood Development by providing opportunities for physical activity and diverse and flexible environments for play;
    - Improve general Well Being and Quality of Life;
    - Provide the setting for both formal and informal Recreation;
    - Safeguard our Landscapes and enhance the setting of Heritage Assets;
    - Help shape our sense of place and Community Identity and provide the setting for different sectors of the community to come together;
    - Provide opportunities for Climate Regulation through assisting Urban Cooling, flood water storage, Sustainable Urban Drainage Schemes and also provide the space for biodiversity to respond to changes in climate;
    - Provide a filter for airborne Pollution; and
    - Play a role in improving the desirability of places to live and invest.

4. The Government has recently published a Natural Environment White Paper, which highlights the social and economic importance of the natural environment, in addition to its obvious environmental benefits. Also recently published alongside this is the National Ecosystems Assessment. This looks to analyse the UK natural environment and assess its value in terms of the benefits it provides to society and the nation's economy. Clearly, the emphasis on the role of green space and the natural environment is increasing, not diminishing, and the need to hold data and plan to protect and enhance the overall value of our spaces is a key aspect of our planning policies.

Green Infrastructure and the Planning System

5. It is often assumed that rural areas must be well blessed with green infrastructure, given the relatively low density of population and the large swathes of open land which contribute to its landscape character. However, much of this land is given over to agriculture and is not primarily managed for wildlife or public access, is largely privately owned, the public footpath network is not always extensive and there are few public spaces in some of the smaller communities. Settlements have often developed incrementally over long periods of time rather than planned as an entity. This is particularly the case in the more rural communities where the development of individual plots is more common and the ability to provide public space to support the cumulative development is a challenge. Parish Council's often find it difficult to provide GI in these smaller communities, as the opportunity to create the finances necessary to provide new public open space and to pay for its ongoing maintenance are limited due to the size of the population.
6. The concept and role of GI has grown in prominence, with particular relevance to the housing and the economic growth agenda. Green Infrastructure Planning puts the provision of strategic multifunctional greenspace at the heart of the planning system with overall benefit for communities and wildlife. It can help communities adapt to climate change and enable local authorities to meet their obligations under Section 40 of the Act the Natural Environment and Rural Communities (NERC) Act which requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.
7. Establishing the size and distribution of greenspace enables the gaps to be identified. It provides the evidence that is needed to seek to protect the valuable spaces we have and to provide appropriate levels of additional space through the planning process or the allocation of new sites for development through the Local Plan. This does not mean that no space will provided in areas where there is GI present, but it allows the targeting of space where this is lacking, the better distribution of space throughout larger settlements, the development of a range of types of spaces and better linking of open space for the benefit of people and wildlife.

What is a Green Infrastructure Audit?

8. The purpose of this GI Audit is get a better understanding of the range, nature, current size and distribution of greenspace across the District, to assesses this against agreed standards to enable the gaps to be identified and to identify important networks of sites for biodiversity. This will then help shape the strategic approach to GI within the context of the Local Plan. That is intention of this report. This will help provide the evidence that is needed to seek to provide the appropriate levels of additional space through planning applications or the allocation of new sites for development through the Local Plan. The information will also be available for local communities, as the localism agenda continues to develop, to help them fit their community aspirations within a wider context.

9. The provision and maintenance of GI is not solely the remit of Local Authorities and is not solely a planning matter. There are many organisations that provide elements of GI, such as Parish Councils, Local Wildlife Trusts and Sports Clubs. Similarly, other Council departments are responsible for the provision, development and maintenance of a wide range of open spaces. The Local Authority cannot always enforce the provision of GI, although it may enable some provision through the planning system and its own land holdings. However, it can highlight areas where provision could be improved as a focus for all providers. This audit is not intended to commitment organisations to actions and projects to improve GI across the District, as much of this is not within the gift of the Council. However, the information is available to enable them to make decisions in a wider context.

10. It is important to recognise the difference between a Green Infrastructure Audit and an audit of Sport and Recreation as carried out under Planning Policy Guidance Note 17 (PPG17) (Planning for Open Space, Sport and Recreation). Although most of the types of open space included in an audit of GI are also likely to be considered under a PPG17 audit, it would be wrong to view a GI study is a sub-component of a wider Sport and Recreation Audit. Whilst the two studies have some common features they are both broader in their scope which means that one does not slot neatly into the other. This may mean that a recreation or sports facility is not counted as part of the GI provision but is still considered important for its sport or recreation role and may require protection through the planning system. This may be, for example, because it is managed for its sports requirements alone, such as a bowling green, and has few wider benefits. Similarly, a Sport and Recreation Audit will consider sites of value for biodiversity as a recreational resource, but it will not be concerned with types of habitats that are within the sites or their importance if they have no recreational role.

11. GI Audits are prepared using mainly electronic data, mapped on Geographical Information Systems (GIS). This allows a spatial understanding of the distribution of spaces and is easier to view on a map rather than describe in written text. For that reason, a GI audit does not lend itself easily to a written report. The audit is therefore comprised of this report, which is sets out the background and methodology for the audit, including a brief written summary and overview, along with the map based evidence.

N.B At the moment, the Council does not have the facility to make this available on its website however, it is working to resolve this issue so that it can be used by other interested parties. In the meantime, should anyone want to see the base date used, they can make an appointment to come into view the data.

Accessible GI and Biodiversity GI

12. Green Infrastructure Audits cover two main strands.

    • Accessible greenspace and;
    • Biodiversity greenspace.

13. As its name suggests, Accessible GI is that which is accessible to the general public. Generally, this should be free to access, be available at most times and have a degree of naturalness to it.

14. Biodiversity is the overall term now widely used to cover the whole range of species and habitats and how they interrelate. Biodiversity GI is therefore focused on the habitats that house this huge variety of wildlife.

15. There is overlap between the two but they are not mutually interchangeable. Greenspace is frequently multifunctional and often greenspace that is usable by people is also used by wildlife, even if it does not form a viable habitat and is only as means of providing a route between more suitable habitats. However, the reverse is not true and all greenspace used by wildlife is not also used by people, either due to ownership of a site, the sensitivity of the habitat, the type of activities carried out on it or the inaccessibility of a site located away from roads and footpaths.

16. The strength of an audit is dictated largely by the primary data at its disposal. The Council has a lot of data plotted on recreation space, due to both its corporate activities and that which was collected for its PPG17 Audit. In the case of habitats and biodiversity the amount of data currently available is incomplete; this view has also been backed up by similar work previously carried out for The Wash Estuary GI project. There is sufficient information available on sites that are protected for their wildlife importance, be that protected locally or at a national or international level. However, there is little readily accessible information across the rest of the District. The ideal scenario would be to have a Phase 1 Habitat Survey for the whole of the District to provide data on the non-protected sites. A Phase 1 Habitat Survey requires every parcel of land to be visited by a trained surveyor to map the types of habitats across an area. This would then allow us a better understanding of how wildlife uses the landscape of the District. Unfortunately, a phase 1 habitat survey for an area the size of East Lindsey would be a lengthy and expensive exercise and one for which the resources are not available. However, the Green Infrastructure Audit should not be seen as a one off exercise but more of a living document that can be updated as more mapped information comes forward. As more information comes

forward in the future, we can add this into the data we hold to enable the work to evolve.

17. The way in which we use the raw data will vary for the two types of GI and this will be outlined further later in this document. However, in summary, for accessible greenspace we will consider how much greenspace each community has within different distances from the settlement (or within in the case of larger settlements), where there are gaps to fill and where linkages can be made between existing spaces to create a strategic and linked network of multifunctional open spaces of benefit to both people and wildlife.

18. At the Core Strategy level, this information helps to identify what the availability of GI is across the District to shape the strategic policy. However, this finer grain of detail will be of use once the Plan moves on to look at individual settlements. The information can also be used to shape individual developments and identify new pockets of open space particularly at a community scale. Even if development is not of sufficient size to provide significant new greenspace, the audit can show where there are pressure points where smaller areas of amenity space would be a welcome addition both for residents and as a haven for wildlife.

19. In terms of biodiversity, the audit can be used to establish where there are networks of different types of habitats, based on the movement distances of species that use those habitats. From that, areas can be identified that will strengthen these networks and provide the greatest chance of success for new habitats created. Again, this will be explained later on in this report.

N.B. Due to an issue with the software used by the Council, there has been some difficulty in establishing connectivity in respect of linear sites. The Council is working to resolve this issue so that it can be made available for use by other interested parties. In the meantime, should anyone want to see the base date used, they can make an appointment to come into view the data.

What work has been done so far?

East Midlands GI Study

20. A GI study was prepared for the East Midlands to provide evidence to help increase the amount of GI across the region. This was initially carried out to support the Regional Plan but can still be considered in the light of the uncertainty surrounding the regional planning tier. The first part of the work was a Scoping Study with the objectives of:

    - Identifying key areas across the region where significant growth and regeneration work is taking place and identify whether these communities have a Green Infrastructure resource below accepted standards;
    - Identifying current activity and areas of new opportunity for future action to deliver Green Infrastructure;

- Identifying barriers to the delivery of integrated Green Infrastructure and make recommendations for addressing these; and
- Developing regional understanding of the need for Green Infrastructure and build support for its delivery and management in the long-term.

21. The Scoping Study also looked at the possibility of mapping GI across the Region. It was beyond the timescale and resources of the Scoping Study to actually map GI for the whole region, so pilot areas were selected to test the approach. Pilot areas were identified throughout the East Midlands, with three in East Lindsey: Louth; the Coastal Area from Mablethorpe to Anderby Creek; and a separate Coastal Area from Anderby Creek to Skegness.

22. The East Midlands Scoping Study used digital mapping and aerial photography to assess the distribution for different types of green space. In some ways, this is a comprehensive approach as it does not rely on spaces being individually recorded on any databases. However, it is not a precise tool as the information on the base map is not always 100% accurate and looking at aerial photography doesn't provide information on the level of accessibility of public spaces, the true nature of some of the spaces or the integrity of sites for biodiversity.

23. For example, in the Louth pilot, areas on Fairfield Industrial Estate which are vacant plots awaiting development and were categorised as amenity open space, which is not the case. Similarly in the Coastal Pilot Areas the caravan sites were mapped as amenity open space, despite the fact that they are largely covered by or in-between caravans and are not generally accessible to the wider public. There are other anomalies that only local knowledge would bring out.

24. The other piece of work carried out regionally was a Public Benefit Mapping project, bringing together a number of socio-economic and environmental indicators to see where the introduction or improvement of GI could bring about the greatest benefits. The Benefits Mapping must also be appreciated for what it is. It cannot bring forward individual sites and makes no comment on the likelihood of that GI coming forward in those areas. It does not take into account ownership or current aspirations for land. Unsurprisingly, the Public Benefits mapping shows that the greatest benefits are likely to occur in those areas across the region with the pockets of higher population density (i.e. towns or cities) and the highest level of socio-economic deprivation – such as the Lincolnshire Coast and the North Nottinghamshire Coalfields.

25. This is interesting work that highlights the issue of GI and benefits that can be accrued from it. However, based on the concerns over base data expressed in paragraph 21 above, the Regional Study should be viewed as a useful tool in showing very strategic patterns of GI and broad opportunities for improvement at a more strategic level, but should not be relied on for the consideration of individual sites.

The Wash Green Infrastructure Project

26. A draft Green Infrastructure Study was produced for the area of The Wash. However, only a small part of East Lindsey falls within the Study area. The Study was prepared in response to the increasing pressure that will be places on the Green Infrastructure of The Wash and surrounding countryside, as a result of the residential growth points surrounding The Wash and the Fens, which have been identified at King's Lynn, Peterborough, Cambridge, Thetford, Lincoln, Norwich, Newark and Grantham. These will bring thousands of new residents to the area and with it their desire to explore the countryside and the coast.

27. The Study contains a number of maps showing a range of Green Infrastructure across the Wash and its hinterland. Buffers have then been applied around these different types of GI to show distances between sites and networks of sites. The buffers vary depending on the type of GI, i.e. accessible GI or different types of habitats. The maps then allow any users of the data to assess the relative benefits of different locations in assessing the development of new GI.

The East Lindsey Approach

28. As mentioned above, the area of East Lindsey covered by the Wash is only a small proportion of the District as a whole, and so there remains a large area to consider in terms of GI.

29. The primary purpose for preparing this GI Audit is to feed into and provide evidence for the Local Plan, although there may be other uses for the information in the long term. The Audit will provide the background evidence of the current situation in the District, the Local Plan will then use that information to develop its policies and allocations.

30. As the East Midlands and Wash Studies are already been prepared, it is logical to look at their work as the starting point for setting out on the East Lindsey Study. However, it has to be appreciated that a team of people worked on the East Midlands Study and the Wash Study had a dedicated officer working on the project for two years. The Planning Policy team does not have such resources at its disposal, and the key therefore for the East Lindsey Study is to be focused in its approach, tailoring the methodology used to the resources and data readily available and to target the end product at the purpose for which it is prepared; as a background document for the Local Plan. The methodologies used for the two different types of GI (Accessible and Biodiversity) are set out below.

Accessible Green Infrastructure

31. This part of the GI Audit is seeking to establish the amount of and nature of GI that is available to communities. This is an important tool for the LDF as it will enable the Council to identify key spaces it needs to protect and to identify places where there are low levels of accessible greenspace that could be improved through policies and proposals in the LDF.

32. In order to identify shortfall, current provision needs to be established and assessed against an appropriate threshold or set of standards. Accessible Natural Greenspace Standards (ANGSt) developed by Natural England, have widely been acknowledged as a useful standard to be used in assessing the level of accessible greenspace within a local authority's area. These are the also the Standards that were used by the Regional Study and the Wash Study. Given that they are most widely used and widely accepted standards on the subject, it would seem appropriate to use them as the starting point in East Lindsey's Audit.

Accessible Natural Greenspace Standards (ANGSt)

33. The ANGSt standards are:

    Every home should be within 300 m of an accessible natural greenspace of at least 2 ha, plus:

    At least one accessible 20 ha site within 2 km

    At least one accessible 100 ha site within 5 km

    At least one accessible 500 ha site within 10 km

    Within the original ANGSt model as set out in EN 153 the standard also included:
    Provision of at least 1 ha Local Nature Reserve per 1000 population

34. For the purposes of ANGSt natural greenspace is considered to be, *"places where human control and activities are not intensive so that a feeling of naturalness is allowed to predominate"*. This means that facilities such as bowling greens, hardened sports surfaces, equipped play areas and other similar spaces would not be included. Larger playing fields which are managed for sport but may still provide some natural environment in the form of boundary hedges (and may provide spaces for wildlife to travel from one area to another) are a grey area, but they have been included in this study as they frequently form some of the larger areas of freely accessible greenspace in communities and also have wider benefits in terms of Natural England's and broader GI objectives.

35. Natural England has sought to refine ANGSt, by dividing the different types of green space into four categories relative to their degree of naturalness. However, there are no sub-thresholds for these categories, and no suggestion of what percentages of each type of greenspace should make up the provision. So, for the East Lindsey Audit, it has been decided not subdivide the GI down into these categories as it does not advance our assessment of GI significantly. Any consideration of the type of space available to a community can be addresses on a settlement by settlement basis when the settlement proposals are being drawn up.

36. These standards are clearly very challenging and, in East Lindsey, much of the District will have a short fall. In particular, at the Strategic level there are

only four sites larger than 500ha that are accessible to residents; The North Lincolnshire Coast, Saltfleetby and Theddlethorpe Dunes and The Wash Estuary; which are designated as National Nature Reserves, Special Areas of Conservation, Special Protections Areas and Ramsar sites, and Willingham Woods near Market Rasen. As these sites are all on the periphery of the District (or outside it), this does leave large areas of the District, particularly in the centre and south west, which are some considerable distance from strategic scale green infrastructure.

37. Despite the challenging nature of the standards, there are opportunities to provide more greenspace and the Local Development Framework (LDF) can play a role in identifying some of these shortfalls, especially the community level, and seeking to require or encourage gaps to be filled. However, areas of new greenspace, whether provided through new development, the work of the Council or community groups, are often small areas which, although providing localised pockets of much valued space within a residential area or elsewhere within the community, may not even meet the lowest level required of 2ha. As discussed above, this is a particular issue for smaller communities, but the fact that it may not be possible to create significant large new areas should not prevent smaller pockets being brought forward. Even if any new areas created fall below the standards, any addition to accessible greenspace is to be welcomed both for local people and wildlife.

38. The LDF covers the whole District and applies to activities across settlements and open countryside; however, one of its principle roles is in strengthening and supporting communities. Many GI studies start by putting buffers round the individual pieces of GI to see what the scope and connectivity of the sites is, however, it has been decided to look at Accessible Greenspace slightly differently for the purposes of this audit. Natural England's Accessible Natural Greenspace Standards (ANGSt), approaches the assessment of accessible GI for the point of view of different radii of people from space. As for the purposes of the LDF we are looking at what GI communities can easily access and where there is the need to bring forward additional space or accessibility. It therefore feels more logical to start with the communities, rather than the GI, and places the buffers around the communities instead.

39. So how have we assessed how we measure up to these standards? GI audits are normally based on Geographical Information Systems (GIS) and require many layers of data to inform them. GI throughout East Lindsey is plotted on overlays on the Council's GIS system, this is applied to the base map and then it is possible to establish how much GI and what size of GI falls within the different size and distance standards of ANGSt, and how accessible it is (based on public right of way network or other information on access to sites). The overlays that have been used are:

    - Allotments
    - Parks and Gardens
    - Amenity Green Space
    - Churchyards and Cemeteries
    - Green Corridors
    - Sports Provision
    - Natural and Semi-natural Greenspace

- Local Nature Reserves
- Local Wildlife Sites
- Public Rights of Way
- Recreational Footpaths
- Sites of Special Scientific Interest

40. The application of these distances is not precise. It would be an extremely lengthy task to apply them to every house within a settlement to see how its individual needs are met, nor would this be a necessary exercise as it is the wider community needs that we are seeking to understand. Similarly, it would be a lengthy exercise to establish the distance by road or footpath to each of the sites, so "as the crow flies" distances have been applied. The purpose of this audit is to get an overview of the situation, if necessary, fine tuning of data can be looked at when we come to the Settlement Proposals stage and are drilling down further into data to draw up proposals for each settlement. In our larger towns, where it is a significant walk from one side of the town to the other, this may means that even GI within part of a town may not meet the lower 300m standard for the whole of that town. Any differences within different parts of the larger settlements have been brought out within the commentary attached to this report, so where one part of a town has poorer access to GI than another part this is identified.

41. The amount of open space has been noted, its size, function, whether or not it has formal access which is free of charge and available to all. Information on access is taken from the overlays, although other sources have also been fed in. Sites are only considered to be accessible if the public has free and uninhibited access to a site. For example, this could include a parish playing field, woodland with agreed public access (details taken from the Woodland Trust website), a site operated by the Lincolnshire Wildlife Trust or a site with a public footpath running through it. In the case of public footpaths, the whole site has been included, even if the footpath only passes through part of the site, as it is considered that the public are able to enter part of the site and enjoy the natural environment in the wider area even if they have no right to wander freely within it. If the audit required the public open access across the whole of a site then standards would fall markedly. This assessment also applies to watercourses, disused railway lines and other linear features where there is a public access.

42. This allows us to see where the standards are met and where there are gaps in the level of provision. All the information is useful as it also allows us to see the sites that meet the standards but do not currently have access (and these may be areas where access could be arranged in the future) and also to see the variety of smaller sites that do not meet the standards but contribute to the range and variety of sites that are available to the public (and wildlife) and may be expanded in future. Sites may not meet the size threshold and some villages (or towns) may find it difficult to meet the standards but the assessment of what is available will show where there is a good level of cumulative greenspace and where there is a low level of supply. Good public footpath networks have also been noted, as these add to the opportunities available to a community.

43. It is important to note that, even when there is provision meeting the ANGST criteria within a settlement, there is often only one site and if that site becomes inaccessible for some reason (e.g. change of ownership) there is no alternative. Similarly, this also means that there is no variety of provision. For example, if the only available site is a Site of Special Scientific Interest and people are allowed to take dogs in but have to keep them on leads or have to keep to selected routes, there are no alternatives for those who seek a less restricted environment for activities such as playing ball games or to exercise dogs. Therefore, the fact that a town or village has met the criteria at a certain level in the standards with a site should not be a reason to not seek additional areas to broaden the strength and variety of provision in an area. Similarly, smaller sites, below ANGST criteria can be just as useful, but the ANGST standards should be looked on as the premium standard and to be aspired to.

44. As the Local Plan moves forward to look at individual settlements and identify broad areas for growth, this data will help the Council to identify those areas where there is the need to facilitate the provision of additional greenspace through the Local Plan, to identify short falls in particular types of greenspace and to seek opportunities. As the National Government's Localism agenda is rolled out and local communities undertake a more active role in planning for their own area, the information in the Study will help them identify their own opportunities for green infrastructure.

Biodiversity Green Infrastructure

45. Biodiversity GI takes a slightly different form, although many of the principles are similar. In this case the same mapping exercise is carried out, with individual sites plotted on GIS overlays and buffers applied to the sites to identify gaps and networks. As set out in paragraph 16, there are gaps in the information available on habitats however, studies of this nature should not be seen as fixed and data can be updated as new information comes to light. The data that has been used at this point are overlays for:

- Local Wildlife Sites;
- Sites of Special Scientific Interest (and the remaining Sites of Nature Conservation Importance as yet un-surveyed);
- Natural and Semi Natural Greenspace; and
- River Corridors.

46. Each of the sites on these overlays have been categorised by habitat type. Natural England has prepared a methodology which groups habitats into four main types: grassland; heathland; mires, fens and bogs; and woodland. Coastal habitats and water based habitats have also been added into this list. Three buffers are added to each site, the size of these buffers reflecting the movement distances of species that use these habitats. The movement distances and therefore the size of the buffers vary between habitat types, depending upon the species typical of each type of habitat.

BAP Habitat	EHN Type	Low Movement Distance	Medium Movement Distance	High Movement Distance
Undetermined Grassland	Grassland	0.5km	1.0km	2.0km
Lowland calcareous Grassland	Grassland			
Upland Calcareous Grassland	Grassland			
Lowland Dry Acidic Grassland	Grassland			
Purple Moor Grass & Rush Pasture	Grassland			
Lowland Meadow	Grassland			
Upland Hay Meadow	Grassland			
Coastal & Floodplain Grazing Marsh	Grassland			
Upland Heathland	Heathland	0.3km	0.6km	1.2km
Lowland Heathland	Heathland			
Lowland Raised Bog	Mires, Fens & Bogs	0.25km	0.5km	1.0km
Fens	Mires, Fens & Bogs			
Reedbeds	Mires, Fens & Bogs			
Wet Woodland	Woodland	0.75km	1.5km	3.0km
Lowland Beech & Yew Woodland	Woodland			
Lowland Mixed Deciduous Woodland	Woodland			
Undetermined Woodland	Woodland			
Coastal/Dunes	Coastal	0.75km	1.5km	3.0km
Running Water	Water	0.25km	0.5km	1.0km
Standing Water				

47. As a result, each habitat type has to be looked at separately, in relation to the other similarly categorised habitats to see where there are networks of such sites and to see where networks can be strengthened and supported.

Locations for new or extended habitats can be identified which give the greatest connectivity with other similar habitats, or it can enable the best type of habitat to be chosen, depending on the location, in order to give that new area the best chance of success. For example, where there is a cross over of buffers at the highest movement distance, this indicates that there is a network of site. However, if the crossover of buffers appears at the lowest movement distance, the network is strongest and most robust. Sites that are created in isolation, without the ability to form part of a network with other sites will be more vulnerable.

48. It very difficult, for a district the size of East Lindsey, to produce a paper map showing the sites and the buffers. The complexity of the buffers means that, even on a large map, the fine detail is lost. The plotted data and buffers need to be looked at in more detail and the mapping will therefore be made available electronically so that interested parties can look at the areas that interest them in more detail.

N.B. Due to an issue with the software used by the Council, there has been some difficulty in establishing connectivity in respect of linear sites. The Council is working to resolve this issue so that it can be made available for use by other interested parties.

As a result, the analysis of the biodiversity aspect of this audit has yet to be completed. In the meantime, should anyone want to see the base date used, they can make an appointment to come into view the data.

The Results

Accessible Green Infrastructure

49. Attached to this report is are two appendices. One (an excel spreadsheet) contains the raw data extracted during the study on a settlement by settlement basis looking at GI within 1km of each settlement, an easy walking distance, and also how the GI matches up in respect of ANGSt criteria. The second contains a narrative in respect of GI by settlement. It sets out the level of accessible natural greenspace that each settlement has access to, if any, and a short commentary about what is available to each settlement. For ease of description , to save going through the lengthy size and distances every time, the different levels in the ANGSt have been given a title, and in the table these are abbreviated to their initial letter, so:

COMMUNITY - 300 m of an accessible natural greenspace of at least 2 ha

LOCAL - At least one accessible 20 ha site within 2 km

MEDIUM - At least one accessible 100 ha site within 5 km

STRATEGIC - At least one accessible 500 ha site within 10 km -

NB These titles have been given for ease of description for the purpose of the East Lindsey GI Audit and are not used elsewhere.

50. The audit has shown that there are very few settlements in East Lindsey that meet all the levels of ANGSt. Fulstow has sites meeting all levels, however, the Community level is provided by the playing field which is managed for sport, if some complementary wildlife management could be encouraged in the margins, this would meet the standards. Also, one site is covers both the local and medium level. Mablethorpe/Trusthorpe/Sutton on Sea have sites to meet the standards but in the case of community space only 64% of the population have access. There is therefore a need to boost the amount of community level space in some parts of the towns as some areas are a little outside the distances required for some of the smaller sites, although they may well have smaller pockets of space which support local provision. Again, Anderby has sites to meet the different levels, but at a community level this is only for part of the parish. Most of the ability to meet the standards comes from the beach, so again more variety would add to the depth of provision. Skegness is close to meeting the standard but although there is community provision it is only within 300m of 34% of the population of the town so this would require some additional community scale provision in the West and North West of the town. There are a number of other settlements that have provision at the upper three levels but no accessible greenspace of a sufficient size to meet the community level. This is something that can be considered when settlement proposals are being developed.

51. A particular difficulty, and one not easy to remedy, is the strategic level of open space - a site of 500ha within 10km of residents. The District has only four designated sites of 500ha; the North Lincolnshire Coast (part of Humber Flats, Marshes and Coast); the Saltfleetby-Theddlethorpe Dunes; the Wash (including Gibraltar Point); and Willingham Woods – although clearly the first three could be described as one larger area as the whole of the coast is a large recreational and wildlife resource. This means that the south west of the District, and indeed any settlements further than 10km inland, does not have an area of GI meeting the strategic standard. Creating new areas, or expanding existing, to cover over 500ha would be a significant undertaking and would be difficult to achieve through the LDF alone; if this were possible to address it would require the efforts and initiatives of a number of partners. There may be opportunities to provide public access to or expand already existing large green spaces and these should be encouraged but there are few circumstances in which this can be required.

52. Of the 152 towns and villages looked at in the audit, 29.6% do not meet the ANGSt criteria at any level and of these 7.9% are in the current settlement hierarchy as settlements that may receive additional development; although clearly this may change as the LDF develops a new strategy for future development. This includes 3 towns – Alford, Louth and Spilsby. This does not mean that there is no greenspace in these towns but what is there is not sufficient to meet the criteria. For example, Louth has some very good areas of public open space and a range of types, but the northern and eastern sides of the town are particularly lacking at a community level and there is no provision at a higher level. Alford and Spilsby have a low level of open

space with most of those being sports clubs or education sites that are not promoted for informal use.

53. In respect of where there is provision, 17% of the towns and villages meet the Community standard; 33% the Local level; 44% meet the Medium level and 38% meet the Strategic standard. The reason that there is a higher proportion of accessibility at the local, medium and strategic is in part a reflection of the distance thresholds at each level. The larger the space, the greater the distance threshold and therefore the greater number of communities that fall within its range. Whereas, at a community scale, the travel distance is only small (300 metres) and a piece of open space will only serve that community or, in the case of a town, part of that community.

54. In terms of the final criteria of ANGSt, 1ha Local Nature Reserve (LNR) per 1000 population, the District has 4 LNRs totalling 104ha. The 2009 District wide population estimate is 140,800, this means that the District should have approximately 140.8 hectares of Local Nature Reserves, so falls short of the threshold. It should also be noted that the four LNRs are in the Southern half of the District so the access to the sites is not equal.

Biodiversity Green Infrastructure

55. It is the detail of the biodiversity element of the Audit that really brings the information to life and shows the opportunities for strengthening biodiversity in the District. This is difficult to describe in written text and is best presented in an electronic form. However, looking at each of the habitat types in turn, a brief overview of what the mapping exercise shows can be drawn out.

56. There is a good spread of grassland sites across the District, with a particularly strong presence in the Lincolnshire Wilds AONB (AONB), especially along its boundaries. There are good linkages in this area at the medium movement distance, but they could be strengthened in places to create a more robust network through better connectivity at the low movement distance. There is also a spread of sites in the west and south-west of the District but these would require strengthening if they were to form a clearer network. There are also some clusters in the north-east of the District that could be linked to improve the network of sites in this area and the work of the Coastal grazing marsh project may bring opportunities to address this.

57. Dunes and coastal habitats as are an important component along the Lincolnshire Coast, and one of the priority habitats from the Lincolnshire Biodiversity Action Plan. There are strong habitats, including Dunes, along the coast which fall into three distinct groups: the northern area (North Lincolnshire Coast, Part Of the Humber Flats, Marshes and Coast and Saltfleetby-Theddlethorpe Dunes (includes Toby's Hill, SSSI)); a central cluster of Anderby Creek Sand Dunes and Chapel Point - Wolla Bank); and the southern area around The Wash. Opportunities for linking these areas may be limited due to the settlements along the coast that intervene. However, the work of Coastal Country Park in this area of the District may

present an opportunity to look at the situation in the central part of the coast.

58. There are only two site that have been identified by habitat type as Healthland, these are at Woodhall Spa and are close enough to provide a strong cluster. There are few Mires, Fens and Bogs sites in East Lindsey. There are two isolated sites and a chain if sites along the coast which form a chain of sites at the higher movement distance level and could be strengthened by the expansion of existing sites. Again, the work of the Coastal Country Park in this area of the District may present an opportunity to look at this issue.

59. For woodlands, there is a strong band of woodland sites along the western side of the District, including the Lincolnshire Limewoods. There are some pockets where the networks could be strengthened through more planting, where the overlap between the buffers is only at the highest level. There are also some strong networks along the eastern and southern edges of the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) that could also be strengthened in places. There are some weaker networks across the AONB where the links are only at the higher movement distance level.

60. There are poor networks of standing water sites in the District, although this may in part be down to gaps in the data available. There are no available records for private ponds in people's gardens and no plotted data currently for fishing lake and other private areas of standing water. This is one area where work on additional data gathering work is clearly needed.

61. For running water, the rivers have been plotted in addition to the other data held on protected sites. Clearly, there are large gaps between the existing riverine watercourses, and there are strong clusters of drains in the marsh and fen. Opportunities to increase the amount of running water courses are probably limited, although there has been much work to improve the quality of these areas for biodiversity, such as the successful Chalk Streams Projected run by the Lincolnshire Wolds Countryside Service.

Conclusions

62. The GI data collected and presented electronically of the purposes of this audit should not be viewed as a fixed report, but a living document to be added to and populated with more detail as more work is carried out to bring forward new areas of Green Infrastructure.

63. The details will help the Council in preparing the detailed proposals as part of its Local Development Framework and will be available for Parish Council's to use as their role in spatial planning increases through the Localism Bill. It is also important the Council includes a Green Infrastructure policy in its Core Strategy to enable the wider issue of GI to be addressed beyond that which takes place within the communities included in future Settlement Proposals.

64. As the information is made available electronically, it will be available for other groups to consider when planning their own projects and hopefully will raise awareness of the role of GI in and around our communities.