Urban green infrastructure networks:

the social, economic and environmental potential

A briefing note with best practice examples, for local authorities, local partnerships and all organisations concerned with delivering sustainable communities.

Sustainability South West, July 2010

Sustainability South West

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1.0 Introduction

This briefing note has been prepared by Sustainability South West, an independent champion body for sustainable development. It has been commissioned by DEFRA with the support of Government Office for the South West; Natural England, NHS Trusts South West and the South West Regional Development Agency. The purpose of the briefing note is to support practitioners to pursue sustainable, multi-functional approaches to the planning and development of urban Green Infrastructure (GI) by providing an outline of its many benefits and connections to a wide range of mainstream agendas. The note may help to inform or inspire thinking or be useful in facilitating discussions with colleagues and delivery partners.

2.0 What is 'Green Infrastructure'?

The term green infrastructure (GI) refers to the network of natural environmental components and green (and blue) spaces that lie within and between our cities, towns and villages. Greenspaces include: parks, allotments, woodlands, gardens (both publicly and privately owned), heaths, meadows, fields, city farms, hedgerows, embankments, green/planted 'civic space', roof gardens and vertical greenery (eg climbing plants and green walls). We need also to consider 'blue infrastructure' (eg lakes, ponds, canals, streams etc) and its relationship with 'green infrastructure'.

GI can, and does, provide multiple social, economic and environmental benefits. With integrated and mutually-supportive delivery, it has the potential to maximise these benefits, to support genuinely sustainable communities – those that are healthy, productive, socially just and living within environmental limits. A well-planned and managed, integrated system of GI can support sustainable solutions and approaches to issues such as: access and transport; energy; water and waste management; health and well-being; community cohesion and 'sense of place'; biodiversity; food production; and climate change mitigation and adaptation – and, in doing so, will generate an array of new learning and economic opportunities.

3.0 Linking grey to green: why urban Green Infrastructure?

3.1 The potential of urban GI to deliver mainstream agendas

The challenge of modern, sustainable urban living is being recognised in an increasing number of quarters – from practitioners involved in regeneration and economic development to those principally concerned with the management of natural resources. Recent years have seen awareness heightening around major sustainability issues – such as climate change, obesity and population growth – and how they link together. For instance, the think tank Foresight has predicted severe pressure on water supply, biodiversity, carbon sinks and urban green spaces over the coming decade(s) with factors such as population growth, warmer weather and international competition over land ownership and usage all adding to the strain (2009).

It is clear that the context for planning and development has changed and that we now need to re-vision and restructure how we live in urban areas. Green infrastructure is a fundamental part of that re-visioning. For towns and cities to be resilient to the challenges of the 21st century they need to integrate networks of greenspace (green infrastructure) which support communities to be healthy, productive, socially-just and to live within environmental limits.
Sustainable communities require GI that promotes community well-being, inclusion, cohesion and self-sufficiency (eg in food, energy and skills) and support resilience to climate change impacts. Quality green infrastructure can bring benefits to local authorities and other agencies by supporting attractive and vibrant towns and cities and offering a cost effective alternative to managing and maintaining built environments.

Recent research by Sustainability South West – conducted with GI leads in both the public and community sectors – has revealed that most practitioners are generally confident in their knowledge of the multiple benefits of GI and how that contributes to sustainable communities. However, both sides feel that the level of knowledge of decision makers is poor, and that it is largely a national responsibility to address this. The increased focus on localism is an opportunity for local agencies to learn from the burgeoning central pool of knowledge and make wider geographical and sustainability links, rather than working in isolation. With the explosion of interest and expertise within communities it is also important that local groups (who do not currently feel involved in GI strategies) are better engaged in GI plans – as much to improve the quality of plans as to ensure inclusion. Finally, it is essential that GI strategies connect and support local biodiversity, transport, water and flood management strategies and, indeed, any activities that influence planning or delivery of green infrastructure.

To maximise the positive, lasting benefits of green spaces urban communities can apply the following principles:

Health and well-being
Support safe, accessible and appealing recreation, relaxation and play opportunities for the community. Develop programmes which maximise the well-being benefits of community participation in greenspace (eg fresh air; interaction with neighbours; access to wildlife).

Safety and 'ownership'
Actively maintain and manage greenspace so it is perceived as safe and is cared about by all segments of the community. Use the principles of 'passive surveillance' and 'secure by design' to discourage crime and anti-social behaviour.

Active participation and inclusion
Encourage active community participation and representation in greenspace development. Ensure participation is inclusive and does not discriminate on the basis of age, gender, race, disability or faith.

Local Food
Support the development of local food cultivation that contributes to local food markets/networks and reduce and reuse food waste through composting schemes.

Energy and waste
Maximise the potential of locally-owned (council or community) sustainable biomass and other renewable energy schemes (including wind and solar). Find sustainable uses for 'green waste'.

Biodiversity
Enhance and create wildlife habitats and corridors for the survival and adaptation of healthy local ecosystems (including developing green 'arteries' to outlying rural areas) and actively reverse declines in local soil quality.

Climate impacts and pollution
Develop resilience to increased flood, drought and soil erosion risks through good drainage, tree planting and water management.

3.2 The multiple benefits of urban GI: themed summaries with case studies

3.2.i Access and transport

Sedentary lifestyles are causing an obesity epidemic and increasing the risk of health problems such as diabetes, heart disease, stroke, cancers and osteoporosis. One of the easiest ways to increase physical activity is to include walking and cycling in the daily routine. Integrating GI into urban areas including carefully planned and situated networks of foot and cycle paths means that dependency can be reduced and activity levels raised resulting in residents becoming fitter and healthier. A decrease in motorised transport will have many environmental and health benefits, for example an increase in air quality, and therefore a reduction in respiratory illness, including asthma.

A good sustainable transport system should provide access to the countryside by green corridors including river and canal banks and roads.

3.2.ii Climate change and energy

Climate change is widely accepted to be the biggest environmental, public health and subsequently, economic, challenge of the 21st century.

GI provides a system of green resources which could be a very effective instrument in helping populated areas, especially urban and growth areas, mitigate and adapt to climate change. GI can play an important part in managing high temperatures in urban areas, as the heat intensity will rise due to the high concentration of large buildings, a hub of transport links and a restriction of wind. The need for air-conditioning can also be cut back by using large trees to shade buildings up to 5 storeys high.

Mobilise!

Mobilise! is a Cornwall-wide initiative that aims to get people more active, more often, through cycling and walking. The scheme is free and a great way to meet new people (regardless of age or ability) who enjoy exercising in Cornwall's great outdoors. The organisers arrange regular cycle rides and walks through trails and on paths. They also co-run a maintenance scheme to help keep the paths of the Clay trails clear of vegetation. See **www.mobilise-cornwall.org.uk**

Gwellheans on Wheels

This project was set up for recovering drug and alcohol users from the Gwellheans substance misuse day centre in Redruth, West Cornwall to take them on cycle rides around the local area. The aim of the project was to engage with a 'hard to reach group', encourage outdoor activities as part of a holistic intervention programme, to raise awareness of the natural environment and its accessibility and to deal with inactive life styles causing health problems including obesity and mental health issues. Users benefited from increased fitness, ability to cope better with difficult or stressful situations i.e. in times when they would have turned to drugs or alcohol, developing new social skills, advancement in their recovery through a different type of treatment and allowance for them to slowly integrate back into society.

The UK floods in 2007 caused approximately £10 billion worth of damage as well as a huge amount of stress and disruptions to transport and commerce. As climate change intensifies predictions suggest that flash floods/periods of heavy rainfall will increase, GI can help to reduce some of the pressure and help protect communities again the worst of the damage.

Russell Town Avenue Community Allotment, Bristol

RTACA dates back to 2003, its present location at City Academy Bristol consists of six core residents, key objectives for the group are to promote RTACA, welcome new members and increase the number of visitors to the allotment. City Academy Bristol students use the site exploring through practical activity such as rainwater harvesting and composting, where food comes from, self-sufficiency and reducing reliance on non-renewable resources. Prior to cultivation, drainage of the area was very poor. Now there is better uptake of water and improved soil quality. This is now an interesting, lively space that is used for training, social events as well as growing food. RTACA allows local residents to share ideas about preparing and cooking produce, whilst some have also had opportunities to develop skills in landscaping and garden construction projects. The allotment also collaborate with other local groups and contacts in sourcing recycled or organic materials and sharing information about events such as plant/seed swaps and workshops.

Another mitigation role of green infrastructure is fossil fuel substitution. As costs of fossil fuel resources continue to rise people are looking for other ways to heat and cool so as to use less. Providing space for renewable energy resources, for example ground source heat pump installations and biofuel production. A number of local authorities are harvesting their park and street tree prunings to use as biomass.

Increasing green spaces allows for a number of positive effects on the surrounding ecosystem. Helping species to migrate and adapt to the effects of climate change through the provision of a more vegetated and permeable landscape, by reducing soil erosion by using vegetation to stabilise soils that may be vulnerable to surface run-off erosion and by providing for increased biodiversity.

Although the main climatic benefit of urban GI is cooling and the provision of shading, vegetation, soils and in particular trees absorb harmful green house gases and other pollutants so acting as ‘carbon sinks’. Well designed GI mitigates climate change by increasing local food production to reduce food miles and changing local farm production methods which results in less overall emissions.

Well integrated GI can also maximise the potential of locally-owned (council or community) sustainable biomass and other renewable energy schemes (including wind and solar), as well as finding sustainable uses for ‘green waste’. Climate change adaptation is increasingly important in policy making for public space, and GI should be considered the cornerstone of those spaces.

3.2.iii Communities

Integrating GI into a community is essential for the well being of the residents, to advance social cohesion within the social groups and to contribute towards making more attractive towns and cities. Communities should always be consulted in the development and maintenance of green spaces, and residents should be encouraged to become more engaged in supporting or managing their local GI. Local GI should places locals are proud of; having a place the residents feel a sense of ownership over can help in reducing vandalism and anti-social behaviour. Green spaces can have a real impact of a places quality of life especially in areas of deprivation where the regeneration of a park or other green space can act as a means to revitalise the entire community.

As the majority of the population lives in urban areas, most of their interactions with nature have been derived from visits to local parks and other green spaces. Aside from providing people with a place to partake in physical activity green spaces provide local people with a place to meet, a place to come together to enjoy either the same activity or a different recreation. The ability to interact with other residents from the community helps to foster bonds of friendship that helps to create a stronger, more cohesive community.

Well integrated and designed GI is a way of motivating, encouraging and engaging people with the landscapes around them, which is particularly important in new communities and regenerated areas. The development of GI resources that are accessible, connected, and functional spaces can provide cultural, ecological, and psychological between people and the environment. This process has also been debated as encouraging social inclusion and communal cohesion, as well as lowering anti-social behaviour.

Hayle Library Community and Wildlife Garden, Hayle, Cornwall

Hayle Library is reclaimed land situated at the rear of the library, where a garden and wildlife community space was developed. Building the garden was a community effort, with people from across the community, including the Hayle Youth project and Probation service volunteering their time. Schools, library customers, gardening groups and pensioners all take part in looking after the garden, which is a real testament of a community focus, as it is open and accessible to all and community consultations are undertaken to get feedback on the planting, upkeep and future of the garden.

Fishponds Locality Action Group

This community action group, based in the Hillfields area of Fishponds, Bristol is continually trying to improve the quality of life for the local community. One of the past projects was based in Hillfields Park, creating a nursery area. The current project is about turning a derelict garage site into an environmental centre for the community. This involves out of school work with 8 – 13year olds and help from a range of local community volunteers. The aim of the group is to bring people together and break any present social barriers, creating emphasis on progressing community aspirations.

3.2.iv Economy

The creation and development of GI can promote the 'profitable' use of the landscape and can stimulate and sustain local economies – sustainable approaches uphold and enhance the quality of natural environment, ensuring economic value is sustained into long term. A green, healthy environment is commonly associated with commercial and economic success, offering economic opportunities for particular sectors and types of business, inspiring innovation and attracting high value industry and workers to an area. GI has a big part in the generation of new tourism opportunities, and in generating economic activity within agriculture, forestry and public services. GI also contributes to the health of a population by lowering the need for primary medical care and promoting a healthier more active working population who take less days of work (the health problems associated with obesity and inactivity alone are estimated to cost the health service billions each year).

Quality, multifunctional GI provides a range of benefits to the economy including: increasing property and land values; attracting workers and talent from overseas ; providing a focus for social inclusion, education and health; enhancing natural and historic assets and thereby supporting tourism; and providing settings conductive workforce productivity and spending. There also a range of direct cost benefits provided by GI, including reducing building heating and cooling costs and overall energy use.

3.2.v Equality and diversity

GI should provide spaces that are accessible to people of all ages, background and physical ability and provide a good quality of resources for all. The spaces should be socially inclusive and accommodate a variety of uses for different age ranges so that all individuals feel comfortable in the area and that no single group should dominate. The use of the principles of 'passive surveillance' and 'secure by design' on GI can discourage crime and anti-social behaviour. As urban areas are where most of the diverse communities live, GI provides an opportunity to bring people of all abilities, backgrounds and beliefs together. Natural England's Accessible Natural Greenspace Standard (ANGSt) provides a set of benchmarks for ensuring access to places near to where people live, including an accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home and one hectare of statutory Local Nature Reserves per thousand population.

Access to Nature grant scheme

Administered by Natural England, the Access to Nature grant scheme was set up to encourage people from all backgrounds to access and enjoy England's natural environment. It aims to help people understand the ways they can use the natural environment and the potential benefits to them. The fund particularly targets socially-excluded people, who may have little or no contact with their community and its green spaces. It seeks to increase people's confidence to get out and be part of the community and to improve opportunities for doing so. It is hoped that Access to Nature will have benefited 1.7 million people from urban and rural communities in England by 2014. Search 'access to nature' at **www.naturalengland.org.uk**

The development of GI should also encourage active community participation that is inclusive and does not discriminate on the basis of age, gender, race, disability, faith or sexual orientation.

3.2.vi Food and water

There has been a marked increase in the concerns about food, including food prices, food miles, the environment, animal welfare and overall health benefits. This has led not only to an increased interest in food, but also in wider food production in the UK and in local food growing and the responsibilities of local government and communities. The interest in food at a local level is also on the rise because people want better access to good, healthy and affordable food, and to enjoy the benefits of getting outdoors, cultivating beautiful green spaces and meeting other people.

GI can play a huge part in providing, especially an urban areas, a healthier, more localised lifestyle through local food production. Localised food production means a reduction in food miles and changing the current agricultural practices to reduce carbon emissions, and also supporting local growers and producers and thus strengthens the local economy. The recycling of urban food waste is also a way to help create a healthier food supply and as a way to reduce green house gases.

GI can play a vital role in flood protection and management. The use of greenspaces as there is also benefits to GI based drainage and water treatment systems, including SUDS and reed beds, both of which offer a highly cost effective way of dealing with excess surface water and sewage respectively, as well as providing the additional GI benefits. Managing surface water run off and sewer flooding is another role that GI plays. Towns and cities provide limited drainage routes for rainfall due to the high amount of impervious material particularly if the frequency and amount of rainfall increases due to climate change. Trees intercept rainfall and slow the rate of run off while parks and gardens serve as efficient, coast-effective, sustainable soak-aways. The soil and vegetation that is incorporated in green spaces is highly permeable so is able to soak up even substantial amounts of rainfall. The process of being able to soak up this water reduces the volume and rate of run-off and generally contributes towards a more sustainable urban drainage system.

Cornwall Community Food and Composting Project

This three year project that is delivered through a partnership between Cornwall Neighbourhoods for Change (CN4C), Cornwall Waste Action (CWA) and the Federation of City Farms and Community Gardens (FCFCG) targeting disadvantaged neighbourhoods across 6 Cornish towns: Penzance, Falmouth, Truro, St Austell, Bodmin and Liskeard. The project was initiated to break down food growing and composting into easy and practical steps to try and make growing fresh, organic produce and composting of waste more achievable and accessible to families on low incomes. The project aims to help approximately 400 homes by installing vegetable patches and compost areas/bins in the homes. Each house was also given their own set of basic gardening tools, seeds and plants. Through advice and guidance they will learn how to maintain their plots and be made aware of local gardening clubs and any suitable training courses.

3.2.vii Health and well-being

Increasing research shows that access to natural green and blue spaces provide significant mental and physical health benefits for those who live and work nearby. Therefore GI that facilitates access to natural spaces should be integrated into urban and growth planning to ensure existing and new communities benefit.

Contact with the natural environment can help prevent both physical and mental ill-health and facilitate recovery, and people with access to nearby nature are generally healthier than those without. There is a positive impact on blood pressure, cholesterol, outlook on life and stress reduction. People who perceive access to safe green spaces to be easy report higher green space use, more regular physical activity and lower risk of obesity. Therefore, access to safe and convenient green space is likely to be an important environmental factor in public health efforts aimed to promote physical activity and reduce obesity. Accessible GI can also play an important community role in strengthening social cohesion and community safety and reducing health inequalities.

The natural environment and access to green spaces has also been found to benefit mental well-being as the human response to nature includes feelings of pleasure and interest and a reduction in anger and anxiety. Another positive impact is the restorative and stress reducing benefit nature and green spaces give. The Chief Medical Officer for England states that 'Physical activity is effective in the treatment of clinical depression and can be as successful as psychotherapy or medication'. Simple activities can develop motivation and raise self-esteem, while contact with other people can reduce isolation, provide support and help improve social skills.

South Gloucester Play Rangers

The South Gloucester Play Rangers is based in six different suburbs within the South Gloucestershire area. It was set up to create a safe place for children aged 5 – 15 to play freely and encourage children to take pride and a sense of ownership of their local green space which will help towards decreasing anti-social behaviour. The play rangers aim to provide both free and structured play e.g. planting, den building and fire building. The group is free and run by qualified workers. The scheme is open all year round and available to all.

The scheme is thought to be very beneficial in the growth of children, having adults that are perceived as good role models and as adults who they can trust yet play together. Some of the children who attend have disabilities including autism and mobility problems that may not have had the opportunity for group play in open green spaces and allows an increase in their confidence and risk taking in relation to play. Allowing the children to play in green spaces provides them with the opportunity to get close to nature and potentially learn how to grow food. Active play also means the children are taking part in physical activity, helping to keep them healthy and succeed in education. More information available from South Gloucestershire council – see **www.southglos.gov.uk**

There are also a range of direct benefits to the local environment including: moderating temperatures in the urban heat island, cleansing the air and sheltering people and buildings from noise, UV light, and flooding. By filtering polluted air, shading out harmful solar radiation, GI can have a positive effect on the incidence of asthma, skin cancer and many stress related illnesses.

Indigos

Indigos are an environmental project/ organisation offering free, open access play and learning for children of all ages in a woodland setting in Devon. Indigos staff work with children to find their own level of challenging and exciting play opportunities in a natural environment. They teach the children about the land and to respect themselves, others. They also encourage the children to challenge their own abilities and support those who are less able. Children get the opportunity to connect with nature by taking part in den building, tree planting, crafts, climbing and forest skills activities. Children and young people can also use the 'peace', 'fairy' or 'Indian' gardens and also the adjoining football field.

Further details on Indigos and other play case studies available from Play England: **www.playengland.org.uk**

3.2.viii Learning and skills

GI can provide a setting for learning and skills building, as they should be accessible to all so everyone can have the opportunity to learn something new. Outdoor, active learning helps to develop the learning skills of enquiry, experimentation, review and co-operative learning. Green spaces can also help with the development of social interaction skills throughout all ages and back grounds.

As well as outdoor learning has been proven to be especially beneficial to people with learning disabilities as well as beneficial in promoting healthy living and well being for the general community. Many schools use green spaces for creative learning, which can help many subjects to 'come alive'.

The presence of green spaces provides great opportunities for people to gain knowledge on environmental awareness, especially local biodiversity. Local orchards are also good for teaching people how to grow food and learn to appreciate where it comes from before it appears on shop shelves.

3.2.ix Natural environment

GI in urban and growth areas can both protect and enhance natural habitat, by providing essential wildlife corridors, reversing habitat fragmentation, increasing biodiversity and strengthening links between urban and rural areas. Incorporating good GI into new and existing sites contributes to a high environmental landscape quality, as well as playing an essential role in maintaining the health of the natural environment and its ability to provide the area with a range of 'ecosystem services'. The management (both natural and human) of basic resources such as water, soil and clean air are linked with social and economical benefits and core to the ecological value of urban green spaces, demonstrating our dependence on the natural environment no matter how urban the setting

A successful GI network will include a variety of habitats, to provide the community with a rich and diverse environment and support a range of species and ecosystems, including the woodlands, ponds and rivers, parks and gardens, allotments and cemeteries. The RSPB has conducted a number of wildlife surveys that confirm urban green infrastructure is critical for biodiversity, especially for species such as hedgehogs, frogs and butterflies who live in the green spaces of urban areas. This is particularly important given the reduction in farmland biodiversity (as a result of intensive agriculture) as urban green spaces can potentially support a new cycle of old wildlife habitats, for threatened species which can no longer depend on farmland. Development of these ecosystems will also actively reverse declines in local soil quality.

Kemble Community Gardens, Cirencester, Gloucestershire

Kemble Community Gardens (KCG) is a not-for profit organisation that provides a hub for local community projects whilst making a difference to the natural environment. As a group of volunteers they have turned a large area of derelict, overgrown land into orchards, 32 allotments and public gardens for community use. They aim to be "green" and work with the existing natural environment. This includes promoting the "no-dig" method (with no chemicals), rainwater harvesting (saving unnecessary mains water usage), creation of an area to attract bees (aiding the declining UK bee population) and ponds to encourage wildlife. They encourage the local community to actively enjoy the area, and run a number of events, particularly for young people, including shelter building, mosaic making to create small paved stones for the site and vegetable carving. They also further involve local young people by having specific areas for teenagers and some vegetable beds for the local primary school. As well as an area of gardening and food growing, the gardens have become a community focal point and a place where people can get together and have a chat or BBQ with their neighbours. The Gardens have had such a positive impact that other nearby communities have visited to see how they can recreate one in their area. More information available from the KCG website at **http://kemblecommunitygardens.club.officelive.com**

3.2.x Planning and development

A robust planning system is particularly important to the UK; a small island with a dense population. In the current system, local planning authorities must consider the interests of local residents and the wider public, whilst planning guidance developed in recent years has given greater weight to broader social, economic and environmental factors. Planning and development is a big issue for green infrastructure, as it has the potential to facilitate more joined-up approaches and sustainable outcomes for GI delivery.

The UK planning system is based on a range of planning policies at national, regional and local levels which guide decisions on individual applications. The recent change in Government may entail a wide scale review of the current planning system. Meanwhile, in terms of GI, a proposed new Planning Policy Statement (PPS) 'Planning for a Natural and Healthy Environment' was out for consultation during Spring 2010. If adopted the PPS will streamline and consolidate the following policy statements and guidance: ‘PPS 9: Biodiversity and Geological Conservation’; the aspects of ‘PPS 7: Sustainable Development in Rural Areas’ which relate to landscape protection, soil and agricultural land quality and forestry; the aspects of ‘Planning Policy Guidance (PPG) 20: Coastal Planning’ which relate to coastal access, heritage coast and the undeveloped coast; and the aspects of ‘PPG 17: Planning for Open Space, Sport and Recreation’ which relate to open space, sport, recreation and play. It is also proposed to combine and update existing planning policy on climate change and renewable energy to better reflect the latest legislative and policy context. If developed, the resulting PPS will be a supplement to ‘PPS1: Delivering Sustainable Development’.

3.2.xi Sense of place

GI is an important component of the identity of a place – helping to reflect the local culture and heritage. ‘Formal’ GI, such as parks and gardens, can provide a historic context as well as a social connection, while features such as rivers, woodlands, hedges and wetlands reflect the natural character of the area. Every element of GI contributes towards the identity of a place and people’s appreciation and pride of the landscape and public realm, and the quality and management of neighbourhoods, streets and parks are directly linked to community pride and identity. Well managed and cared for GI will strengthen an area’s appearance and therefore encourage a positive impression that it is a good place to live and work. For this reason GI should be an important part of urban regeneration, landscape restoration and neighbourhood renewal schemes. Well designed GI can enhance an areas distinct character and support local strategies for such issues as energy efficiency, local food production and sustainable urban drainage. Green spaces can alter the quality of life within an area just by improving community development and cohesion.

4.0 Further Guidance

4.1 Local Authority Indicators

NB: Although changes to the local structures by the new government may result in the removal of LAAs and/or the dissolution of LSPs, local partnerships and plans will still remain as core to local community development. The key themes from below can be interpreted through new structures to ensure that GI remains on the local agenda.

Local area agreement (LAA) targets on GI/greenspace can help secure government funding for projects. Local authorities can also seek funding from LAA and developer contributions by providing evidence of the need for green space from a green space strategy. Guidance produced by CLG includes an annex of funding streams that can be negotiated into the LAA.

Benefits such as improved community health need to be linked to the attainment of national indicator (NI) targets. Investment in accessible natural green space can directly contribute to the achievement of NI 197 (improved local biodiversity) but can indirectly contribute to a range of other national indicators. The national indicators are an important way of measuring national priorities that have been agreed by Government. They are the agreement between the LA and central government to which local authorities are measured. Indicators can be used as leverage to access resource and provision, providing potential for more investment in green spaces in accordance to local needs and targets.

CABE Space 'advises promoting the outcomes and values of parks and open spaces rather than focussing on outputs (ie service delivery)'. It is important to advocate for the inclusion of indicators which are relevant to greenspace.

Key indicators include:

- 5 – *Overall/General satisfaction with local area*
- 8 – *Adult participation in sport and active recreation*
- 10 – *Visits to museums and galleries*
- 188 – *Adaptation to climate change*
- 189 – *Flood and coastal erosion risk management*
- 195 – *Improved street and environmental cleanliness*
- 197 – *Improved local biodiversity*
- 199 – *Children and young people's satisfaction with parks and play areas*

Many other indicators have an impact on or are impacted by greenspace. Showing how greenspace contributes to these, in terms of value to the community, can provide additional support.

- Anti-social behaviour – nos. 17, 21, 22, 24, 25
- Combating obesity & Increasing activity in children – nos. 55, 56, 57
- Housing & built environment – nos. 154, 159, 170
- Public transport – nos. 175, 176
- Street & environmental cleanliness – no. 196

4.2 Key GI Partners

Natural England: Natural England is an independent public body whose purpose is to protect and improve England's natural environment and encourage people to enjoy and get involved in their surroundings. Their aim is to create a better natural environment that covers all of our urban, country and coastal landscapes, along with all of the animals, plants and other organisms that live with us. Their broad remit means that their reach extends across the country ensuring sustainable stewardship of the land and sea so that people and nature can thrive. It is their responsibility to see that England's rich natural environment can adapt and survive intact for future generations to enjoy. They work with farmers and land managers; business and industry; planners and developers; national, regional and local government; interest groups and local communities to help them improve their local environment.

CABE/CABE Space: CABE is the government's advisor on architecture, urban design and public space. They provide expert independent design advice to improve the quality of what gets built in England. They work across the English regions to build local and regional capacity, share ideas and develop policies linked to local needs and priorities. They work with regional organisations and networks to put good design and placemaking at the heart of strategies and projects to make places that people want to live and invest in. CABE runs the Grey to Green campaign to try and shift spending from grey to green infrastructure in local authorities. This means moving a proportion of investment in projects like road building and heavy engineering to networks of green spaces to provide flood protection and cut carbon emissions. This green infrastructure could be a powerful tool to help towns and cities to adapt to climate change and improve public health.

Environment Agency: The Environment Agency is an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and an Assembly Sponsored Public Body responsible to the National Assembly for Wales. They are responsible for protecting and improving the environment of England and Wales. They also have the responsibility for protecting communities from the risk of flooding and managing water resources. Their principal aims are to protect and improve the environment and to promote sustainable development. They play a central role in delivering the environmental priorities of central government and the Welsh Assembly Government through their functions and roles. Their long-term goal is for a rich, healthy and diverse environment for present and future generations.

GreenSpace: GreenSpace is now the nation's leading network of information and assistance for the improvement of all parks and green spaces, with a membership of more than half of the local authorities in the country and a network of nearly 4,000 community groups involved with green space. They work towards achieving a network of easily accessible, safe, attractive and welcoming parks, gardens and green spaces which meet the needs of everyone and which contribute to the economic, social and environmental well-being of people and places, now and for future generations. Their aim is to be the UK's leading advocate for the economic, social and environmental benefits of better planned, designed and managed parks, gardens and green spaces and for their positive contribution to our economic, physical and spiritual health, to social cohesion and to biodiversity.

Woodland Trust: The Woodland Trust is the UK's leading woodland conservation charity. Over the last 30 years, they have acquired more than 1,000 woodland sites covering over 20,000 hectares. Its purpose is to champion native woods and trees, so they can be enjoyed and valued by everyone. They aim to enable the creation of more native woods and places rich in trees; protect native woods, trees and their wildlife for the future and inspire everyone to enjoy and value woods and trees.

RSPB: The RSPB is the UK charity working to secure a healthy environment for birds and other wildlife, helping to create a better world for us all. The RSPB speaks out for birds and wildlife, tackling the problems that threaten our environment. They are the largest wildlife conservation organisation in Europe with over one million members. Wildlife and the environment face many threats. Part of the RSPB's work is focussed on the species and habitats that are in the greatest danger. They protect, restore and manage habitats for birds and other wildlife, research the problems facing birds and the environment, look for practical solutions that they can implement on the ground, and promote to others, carry out 'hands-on' recovery projects for our most threatened species and own and manage 200 nature reserves.

Wildlife Trusts: The Wildlife Trust are the largest UK voluntary organisation dedicated to conserving the full range of the UK's habitats and species, whether they be in the countryside, in cities or at sea. They manage 2,256 nature reserves covering more than 90,000 hectares; they stand up for wildlife; inspire people about the natural world and foster sustainable living. Wildlife Trusts was set up to save the UK's natural heritage from devastation for future generations. There are 47 local Wildlife Trusts across the whole of the UK, the Isle of Man and Alderney. With 791,000 members, The Wildlife Trusts are working with partners and local communities to create 'A Living Landscape' across the whole of the UK. They are restoring damaged and fragmented blocks of habitat, reconnecting these habitats and linking them to the green space in our cities, towns and villages to rebuild nature in our midst

4.3 Regional Networks

There are a range of networks that GI professionals, local authority officers and related organisations can access for information, resources, best practice and case studies.

The Green Infrastructure Network South West (GINSW) is coordinated regionally by Natural England, in partnership with GreenSpace SW and Sustainability South West, and is open to representation from local authorities across the region as well as relevant organisations. The Network aims to provide support and information, training and events, to promote the development of integrated GI. One of the main outcomes of GINSW is its web portal, which is designed to be used by anyone with an interest in achieving good quality, multi-functional, accessible green and water spaces, parks, parkland, coast and countryside and other natural environments. It is designed to be used in two ways: to provide users/participants with up-to-date information and guidance and to be a depository where participants/users are encouraged to "share" their information.

GreenSpaceSW is the regional group of GreenSpace (information above)

4.4 Best Practice Pointers

- Re-valuing of GI to include economic benefits (following the North East model) and health benefits (including cost savings). This should also be in the language of the 'people who need to know' ie, finance directors, planners, developers etc.

- GI benefits to be included in LA/LSP and LEP training (to be extended to any new local partnerships as identified by the current government restructure)

- Integration of GI strategies into wider LAA/Community strategies, or any new local strategies as important factors in the development of growth areas and regeneration

- Central and local guidance for developers and planners, which includes minimum expectation on GI provision in regeneration and growth areas.

- Support for local and regional networks to provide best practice, in the South West there is currently www.ginsw.org.uk as a good source of information but it is important to maintain these wider opportunities to share local knowledge.

- An increase in training and information provision for those on the 'frontline' who 'sell' GI, to include:
    - Confidence building to help gain momentum in projects and to work within partnerships, this includes knowing who to contact for help and experience, both locally, regionally and nationally.
    - Better communication and awareness raising to 'unconverted'

- Regional and country level mapping
    - ensure cross boundary to show links, potential partnerships and good local examples as well as to enable local mapping to focus on specific areas of need.

- Practical advice and information for businesses with a local focus and local delivery, linked to business support organisations such as BusinessLink, to provide relevant information and business case information for the benefits of GI locally.

- Ensure multifuctionality of GI is fed into other infrastructures/policies as solution/cost savings and advance joint agency working especially related to development.

- The need for a regional service – advocacy, communication, technical support, data analysis and management.

- GI being widely accepted as a critical infrastructure, both nationally and locally, particularly as a key element of 'Big Society'.

4.5 Other Resources – useful websites (list complied May 2010)

Grey to Green – CABE
http://www.cabe.org.uk/grey-to-green

Climate Change Act
The Climate Change Act 2008 makes the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. It also creates a framework for building the UK's ability to adapt to climate change.
http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1

Local Authority Indicators
National Indicators for Local Authorities and Local Authority Partnerships: Handbook of definitions - Draft for Consultation
http://www.communities.gov.uk/documents/localgovernment/pdf/543055.pdf

National Indicator Set
The new NIS includes indicators determined by measuring citizens' views and perspectives collected through a single Place Survey that is administered by all local authorities.
http://www.audit-commission.gov.uk/localgov/audit/nis/Pages/niguidancesearch.aspx

UK CIP predictions
The UK Climate Projections (UKCP09) give climate information for the UK up to the end of this century. Projections of future changes to our climate are provided, based on simulations from climate models.
http://ukclimateprojections.defra.gov.uk/content/view/857/500/

Biodiversity Action plans
Each Local Biodiversity Action Plan works on the basis of partnership to identify local priorities and to determine the contribution they can make to the delivery of the national Species and Habitat Action Plan targets.
http://www.ukbap.org.uk/genpagetext.aspx?id=57

Local transport plans
LTPs set out the authority's local transport strategies and policies, and an implementation programme.
http://www.dft.gov.uk/pgr/regional/ltp/theltpprocess
http://www.dft.gov.uk/pgr/regional/ltp/guidance/fltp/fullguidanceonlocaltransport3657

Water cycle studies
This document is to assist local authorities, developers and others involved in commissioning or carrying out a water cycle study. It provides non-prescriptive guidance on the purpose, scope and best-practice process for undertaking such studies.
http://publications.environment-agency.gov.uk/pdf/GEHO0109BPFF-e-e.pdf

Flood management plans
Catchment Flood Management Plans (CFMPs) give an overview of the flood risk across each river catchment and estuary. They recommend ways of managing those risks now and over the next 50-100 years
http://www.environment-agency.gov.uk/research/planning/33586.aspx

Regional spatial strategies
The objective of the Regional Spatial Strategy (RSS) is to contribute to the achievement of sustainable development. The RSS, incorporating a Regional Transport Strategy (RTS), provides a broad development strategy for the region for a fifteen to twenty year period.
http://www.communities.gov.uk/planningandbuilding/planning/regionallocal/regionalspatialstrategies/regionalspatialstrategies2/

South West Regional Strategy
http://www.gos.gov.uk/497666/docs/166217/regional_planning_guidance

RCEP
The Royal Commission on Environmental Pollution (RCEP) is an independent standing body established in 1970 to advise the Queen, Government, Parliament, the devolved administrations and the public on environmental issues.
http://www.rcep.org.uk/