Draft Stockton-on-Tees Green Infrastructure Strategy 2009-2021

Contents

Foreword - to be completed

Executive Summary – to be inserted

Acknowledgements

Chapter 1:   Introduction

What is Green Infrastructure?

1.1   There are numerous definitions of Green Infrastructure.   The Tees Valley Green Infrastructure Strategy (2008) defines Green Infrastructure as:

- *Green or open spaces that can link together to create an informal but planned network across a wide geographical area.*

- *Parks, gardens woodland, green corridors, wildlife sites, open spaces, watercourses, street trees and the open countryside.*

- *Spaces that can perform a number of different functions - such as formal and informal recreation, nature conservation, food protection, enhanced settings for existing and new development, routes for walkways and cycle ways, areas for flood risk management, and an educational resource.*

1.2   Natural England's Green Infrastructure Guidance (2009) adopts the following definition:

Green Infrastructure is a strategically planned and delivered network comprising the broadest range of high quality green spaces and other environmental features. It should be designed and managed as a multi-functional resource capable of delivering those ecological services and quality of life benefits required by the communities it serves and needed to underpin sustainability. Its design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types.

Green Infrastructure includes established green spaces and new sites and should thread through and surround the built environment and connect the urban area to its wider rural hinterland. Consequently, it needs to be delivered at all spatial scales – regional, sub-regional, local and neighbourhood levels, accommodating both accessible natural green spaces within local communities and often much larger sites in the urban fringe and wider countryside.

1.3   In short, Green Infrastructure:
- includes all types of open spaces and environmental features;
- performs many different functions;
- delivers multiple benefits;
- is planned and managed as networks at all spatial scales

Green Infrastructure Components

1.4   Green Infrastructure comprises all open spaces and water bodies within and between our towns and villages. The following can be seen as the 'components' or 'assets' which make up the overall green infrastructure network:
- Amenity space
- Green corridors
- Brownfield sites
- Industrial & commercial sites

- Urban & country parks
- Village greens
- Children's play space
- Natural & semi-natural habitats
- Outdoor sports pitches and playing fields
- Cemeteries & closed churchyards
- Allotments
- Country parks
- Trees & woodlands
- Historic parks and gardens
- Farmland
- Gardens
- Rivers, streams, other water bodies
- Cycleways, footpaths, bridleways
- Cultural and natural features

Functions of Green Infrastructure

1.5   Green infrastructure can perform a very wide range of functions, these include:

- Active & passive recreation
- Sustainable transport and public rights of way
- Social venue/meeting place
- Cultural/event venue
- Education and training
- Heritage conservation
- Wildlife habitats and biodiversity
- Sustainable water and flood risk management
- Settings for new development
- Sustainable energy production
- Green produce and food production
- Focus for community engagement

1.6   A shown in Figure 1, a well-developed green infrastructure network will perform many of these functions, and very often individual green spaces or other green infrastructure components can be developed and managed as 'multifunctional' spaces. For example, an area of woodland can be a valuable wildlife habitat, a popular place for recreation, an outdoor 'classroom' and provides an important 'cooling' system during hot summers. However, this does require careful planning and management (see 1.9).
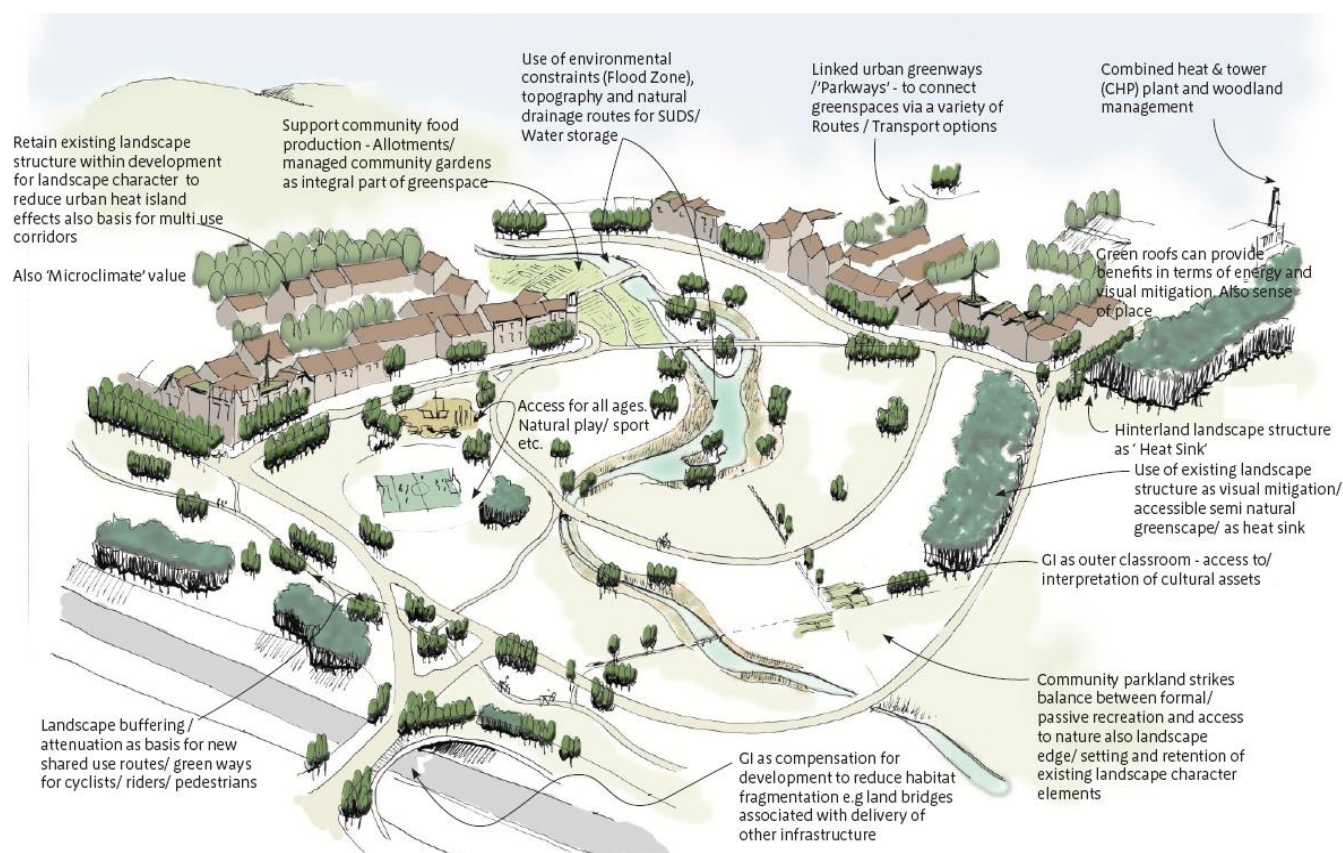

Figure 1:   Green Infrastructure, multifunctionality and place-making *(from Green Infrastructure Guidance, Natural England, March 2009*

Benefits of Green Infrastructure

1.7   Well-designed, appropriately located and well-managed green infrastructure can deliver numerous benefits for people, the environment and the economy, including:

- Improved health (physical and psychological)
- Greater sense of community
- Reduced crime, fear of crime and antisocial behaviour
- Provide an enhanced environmental backdrop that will assist in attracting business and inward investment
- Community capacity building
- Fully functioning ecosystems
- Improved image helping to attract inward investment
- New and sustained business opportunities based on tourism and recreational activity
- Greater 'sense of place' and pride in local area
- Education and learning
- Reduced flood risk
- Improved capacity to adapt to climate change – e.g. though micro climate adjustment
- Contribution to climate change mitigation – e.g. by encouraging alternatives to car travel
- Improved air and water quality
- Increased land values

1.8   Clearly a green infrastructure approach brings together a number of diverse policy agendas, encouraging partners and agencies to address issues in a 'joined-up' way to deliver a wide range of environmental, social and economic benefits. Green Infrastructure contributes to both 'quality of life' and 'quality of place', thus helping to deliver sustainable development, as illustrated in Figure 2.
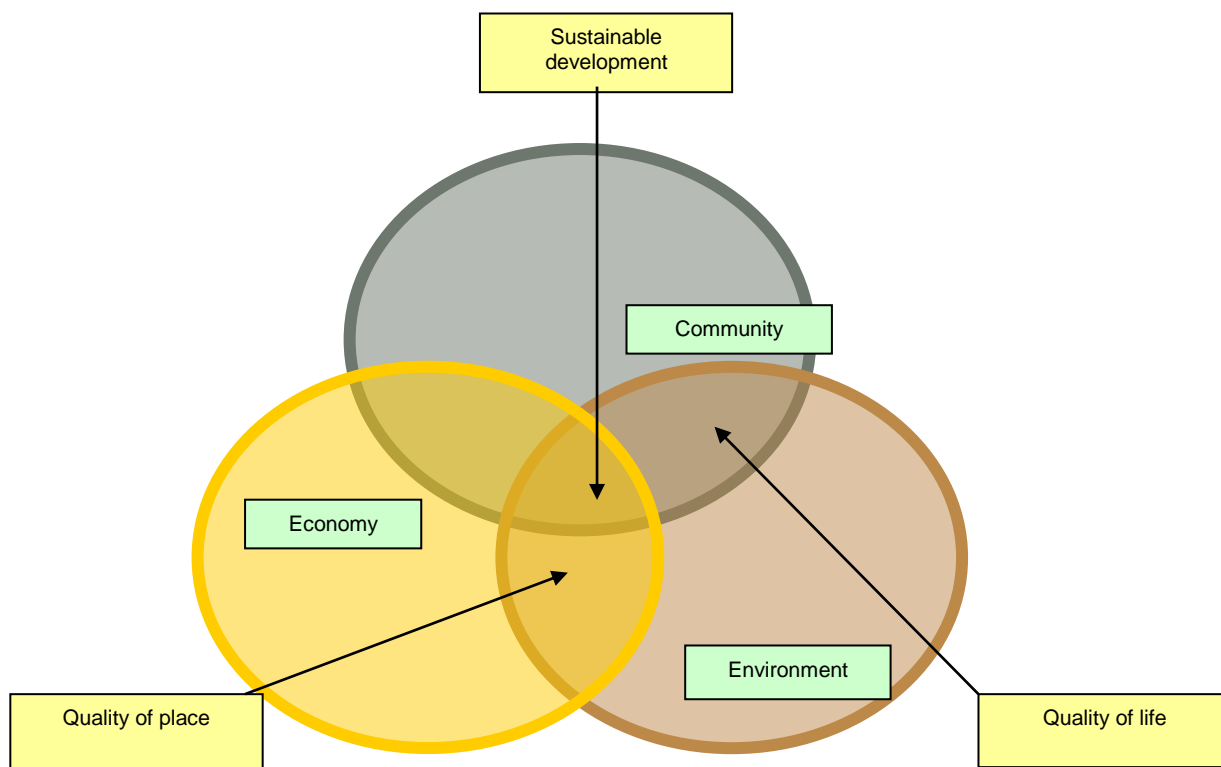
Figure 2:
The classic model of sustainable development. The overlap of environment, economy and community in the green infrastructure strategy is why it can be considered as a sustainable development activity

Planning and managing green infrastructure

1.9 To gain the maximum benefits from green infrastructure it requires long-term planning and management, and this need to be considered at different scales, from the local or 'neighborhood' scale right up to the sub-regional scale. In all cases it is important to think about green infrastructure as networks which connect people and places together in order to achieve maximum benefits. At the neighborhood scale this might involve planning the local footpath network to ensure safe and convenient access to a park or play space. At the sub-regional scale it might mean managing a river corridor to enhance its landscape and manage flood risk.

1.10 The local management of parks, trees and other green infrastructure components remains essential, but by planning and developing these individual elements as part of a wider network a green infrastructure planning approach will deliver greater environmental, economic and social benefits (Figure 3).
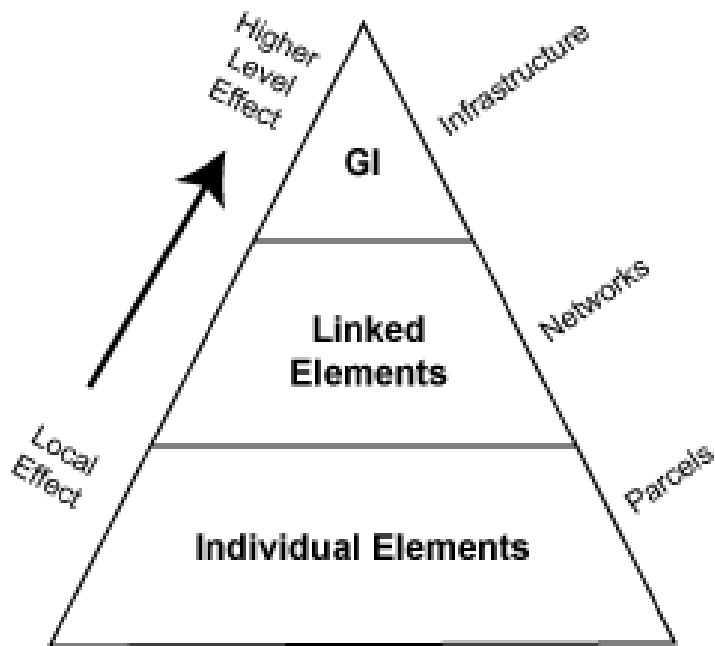
Figure 3:
The pyramid diagram shows how the beneficial environmental, economic and social effects increase as the scale of approach rises from individual green space parcels to green infrastructure (GI)

1.11 People with a wide range of experience and expertise should be encouraged to input to the green infrastructure planning process; from the local level up to the Borough or Tees Valley scale. A coordinated approach to planning, design and long-term management is essential if green infrastructure is to perform all the functions required and deliver the maximum benefits to for local people, the environment and the local economy.

1.12 To facilitate this kind of 'joined-up' approach it is suggested that all partners adopt some core principles and common approaches. This will help to ensure that all relevant strategies, plans, programmes of work and projects contribute towards delivery of our shared Green Infrastructure Vision, and that skills and resources are effectively combined to have maximum impact.

1.13 A set of guidelines for the planning and management of green infrastructure is included at **Appendix C.** These are based largely on those guidelines already incorporated into the Tees Valley Green Infrastructure Strategy (2008), on the basis that these have already been agreed by many partners and adoption of these guidelines will ensure a consistency in approach across the sub-region.

Why produce a Green Infrastructure Strategy for Stockton Borough?

1.14 The purpose of this Strategy is to:

- Provide a vision for green infrastructure in Stockton-on-Tees.

- Identify the priorities for the future development and management of the Borough's green infrastructure and set out a framework for delivery.

- Facilitate local delivery of the Tees Valley Green Infrastructure Strategy.

- Ensure that green infrastructure is planned and managed in a way which supports delivery of the Stockton-on-Tees Sustainable Community Strategy.

- Promote the importance of the environment to sustainable development.

1.15   In addition the Strategy:

- Highlights the different functions of green infrastructure and the significant benefits that these deliver - promoting wider recognition of the contribution green infrastructure makes to quality of life and quality of place.

- Provides a tool to facilitate on-going engagement with partners and stakeholders – seeking broad support for the principles of green infrastructure planning and promoting delivery through partnership working.

- Will be used to help embed green infrastructure into other plans and strategies, ensuring it features as a key element in the long-term growth and development of the Borough.

Chapter 2   Policy Context for green infrastructure planning

2.1   This chapter sets out the policy and strategic context for green infrastructure planning, with a particular focus on the Tees Valley and Stockton Borough (see Figure 4). More information on the regional and national policy context is available via the Background Portfolio (**Appendix B**).
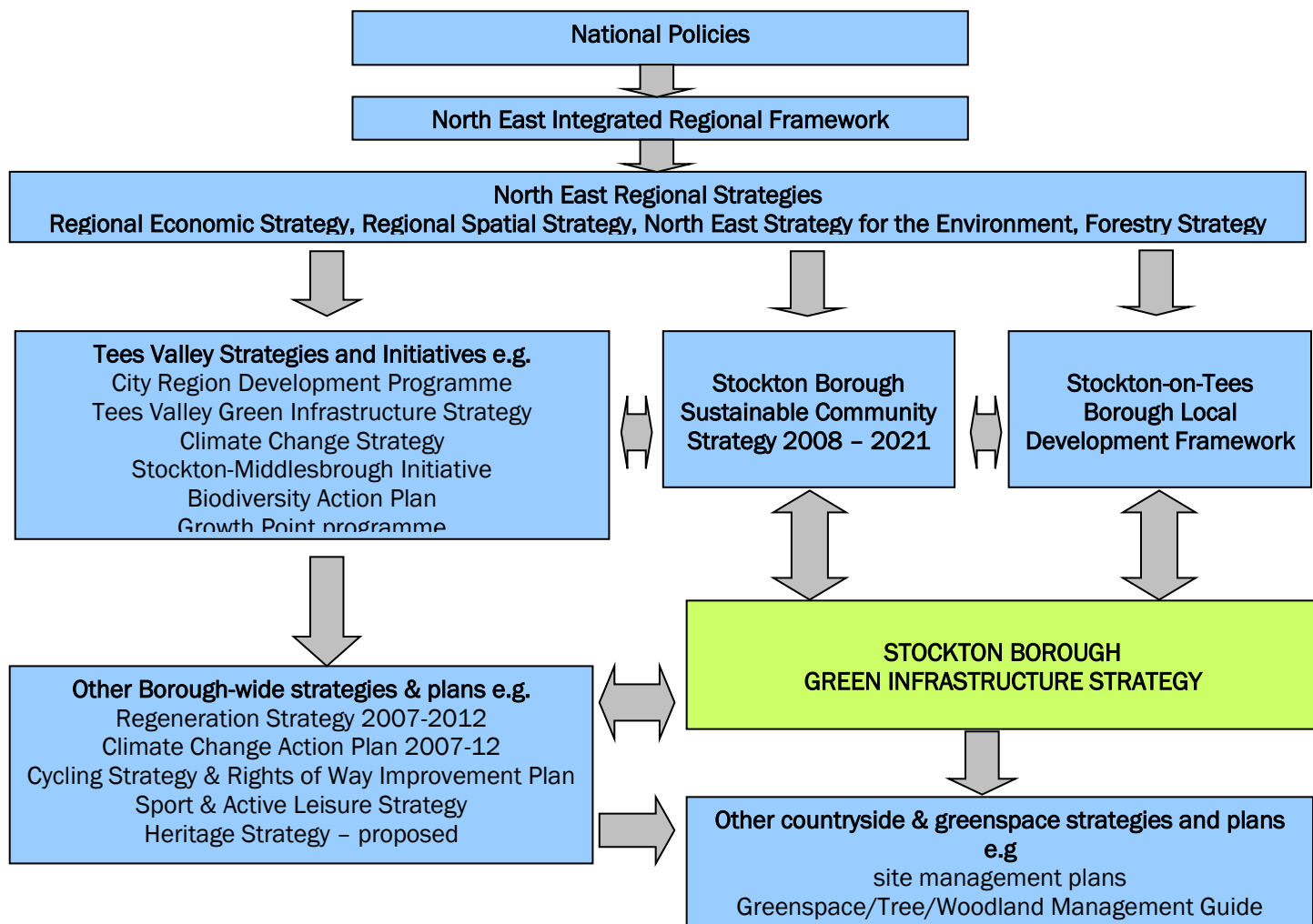
National Policies

North East Integrated Regional Framework

North East Regional Strategies Regional Economic Strategy, Regional Spatial Strategy, North East Strategy for the Environment, Forestry Strategy

Tees Valley Strategies and Initiatives e.g. City Region Development Programme Tees Valley Green Infrastructure Strategy Climate Change Strategy Stockton-Middlesbrough Initiative Biodiversity Action Plan Growth Point programme	Stockton Borough Sustainable Community Strategy 2008 – 2021	Stockton-on-Tees Borough Local Development Framework

Other Borough-wide strategies & plans e.g. Regeneration Strategy 2007-2012 Climate Change Action Plan 2007-12 Cycling Strategy & Rights of Way Improvement Plan Sport & Active Leisure Strategy Heritage Strategy – proposed

STOCKTON BOROUGH GREEN INFRASTRUCTURE STRATEGY

Other countryside & greenspace strategies and plans e.g site management plans Greenspace/Tree/Woodland Management Guide

Figure 4:
Relationship diagram between plans and strategies

National and Regional Context

2.2   This Strategy reflects national policy guidance and is in line with a number of key regional strategies, including the North East Regional Spatial Strategy (RSS) which under Policies 2, 9, 10 and 12 addresses the role of Green Infrastructure, particularly in and around region's the main urban areas. In doing so the RSS recognises that "the development of Green

Infrastructure - open spaces, woodlands, wildlife habitats, parks and other natural areas will play a key role in the Region's competitiveness and economic strength".[1]

Tees Valley Context

Tees Valley City Region Development Programme (2005) / City Region Business Case (2006)

2.3   The Tees Valley City Region Development Programme and Business Case identify the need to adopt "a strategic approach to green infrastructure and public realm is a vital part of improving the liveability of the region, its quality of place and the urban competitiveness of the Tees Valley".

City Region Forerunner Proposal (2009)

2.4   The document highlights Tees Valley Unlimited's ambition to ensure that the infrastructure is in place to enable businesses to invest, locate and grow in Tees Valley. This includes "ensuring that we have the right physical conditions" such as quality of place, modern and efficient communication networks, housing that meets today's expectations, quality town centres, public spaces and leisure and visitor facilities'[2].

Tees Valley Green Infrastructure Strategy (2008)

2.5   The Strategy sets out a broad framework for green infrastructure planning across the Tees Valley. Planning green infrastructure at the Borough scale must be based to a large part on the principles and 17 strategic green infrastructure corridors identified in the Tees Valley Green Infrastructure Strategy, recognising that green infrastructure networks extend across Borough boundaries and need to be planned in a joined-up way (see 5.4).

Local Context

Stockton's Borough's Sustainable Community Strategy 'Shaping Our Future' 2008 – 2021

2.6   Green infrastructure will play an important part in achieving our shared future vision for Borough and the Tees Valley, as set out in Stockton's Borough's Sustainable Community Strategy 'Shaping Our Future' 2008 – 2021:

- Stockton-on-Tees driving economic regeneration at the heart of a vibrant Tees Valley city region.

- An enhanced quality of place, including renewed town centres and improved local neighbourhoods.

- Enhanced well-being and achievement for local people.

2.7   The Strategy identifies eight broad themes, and the following table shows how a Green Infrastructure approach can contribute towards each strategy theme. These topic areas are explored in more detail later under the ten themes explored in Chapter 3.

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[1] The North East of England Plan Regional Spatial Strategy to 2021 - Government Office for the North East, July 2008

[2] City Region Forerunner Proposal - Tees Valley Unlimited, 2009

Sustainable Community Strategy – Core themes:	A Green infrastructure contribution:
Economic Regeneration and Transport	• Stimulating inward investment by creating attractive environments and improving image • Nature and activity-based tourism • Sustainable transport networks • Encouraging better use of the River Tees
Environment and Housing	• Creating better parks and open spaces • Tacking climate change • Improving design quality • Conserving our natural resources including biodiversity
Community Safety	• Reducing crime and the fear of crime through well-designed and well-used greenspaces
Children and Young People	• Involving children and young people in shaping their environment • Providing safe and stimulating spaces to play
Healthier Communities and Adults	• Promoting healthy lifestyles, including walking, cycling and active recreation
Supporting themes:	
Stronger Communities	• Providing opportunities for community involvement in the management and development of greenspaces, increasing pride in the local area.
Older Adults	• Providing leisure and recreational opportunities
Arts, Leisure & Culture	• Conserving and celebrating local heritage • Providing settings for cultural events and sport

Stockton-on-Tees Borough Local Development Framework (LDF)

2.8   The emerging LDF recognises the significant contribution which green infrastructure can make to the future development and growth of the Borough. Objective 8 of the *Core Strategy Development Plan Document Publication Draft (October 2008)* seeks to "protect and enhance the Borough's natural environment and to promote the creation, extension and better management of green infrastructure and biodiversity, taking advantage of the Borough's special qualities and location at the mouth of the River Tees'.

2.9   This is translated into a number of key policies with the draft Core Strategy, highlighting how "a strategic approach to green infrastructure will recognise its multifunctional role and a "joined-up" approach to its planning and management will address numerous environmental, social and economic objectives". For example:

Policy 3 (Sustainable Living) includes:

• In designing new development, proposals will make a positive contribution to the local area, by protecting and enhancing important environmental assets, biodiversity and geodiversity, responding positively to existing features of natural, historic, archaeological

or local character, including hedges and trees, and including the provision of high quality public open space;

Policy 10 (Environmental Enhancement) includes:

- Development throughout the Borough and particularly in the Billingham and Seal Sands area will be integrated with the protection and enhancement of biodiversity, geodiversity and landscape.

- The separation between settlements, together with the quality of the urban environment, will be maintained through the protection and enhancement of the openness and amenity value of:
    i. Strategic gaps between the conurbation and the surrounding towns and villages, and between Eaglescliffe and Middleton St George
    ii. Green wedges within the conurbation
    iii. Urban open space and play space.

- The integrity of designated sites will be protected and enhanced, and the biodiversity and geodiversity of sites of local interest improved.

- Habitats will be created in line with objectives of the Tees Valley Biodiversity Action Plan as part of development, and linked to existing wildlife corridors wherever possible.

- Joint working with partners and developers will ensure the successful creation of an integrated network of green infrastructure.

2.10 Delivery of the Green Infrastructure Strategy will be supported by some of the planning policies and guidance set out in the Local Development Framework. Key documents include:

- Open Space, Recreation and Landscaping Supplementary Planning Document (see below)
- Environment Development Plan Document - due to be published October 2012.
- Regeneration Development Plan Document - due to be published September 2011.

2.11 The Open Space, Recreation and Landscaping Supplementary Planning Document (SPD) sets local standards for improving the quantity, quality and proximity of open spaces and built sport and recreation facilities in the Borough. It aims to provide clarity and certainty to developers about the level of Planning Obligation contribution required for new development and the circumstances in which open space is to be required on site.

2.12 Planning Policy Guidance note 17 (PPG17) stresses that these standards are best set locally and the thus the SPD is based on a thorough local assessment of local needs and audit of local provision. This PPG17 assessment has been used to set local standards but also provides an excellent evidence base to help inform the development of this strategy (see 2.12 to 2.14)

Chapter 3   Vision, Aims and Ambitions

Our Green Infrastructure Vision:

A well-developed Green Infrastructure Network covering all parts of the Borough:
- providing a diverse, rich, locally distinctive, high quality environment;
- delivering essential 'ecosystem services';
- promoting enjoyment, health and well-being; and
- making a significant contribution to the regeneration of Stockton-on-Tees and the wider Tees Valley.

We will achieve this by working in partnership, helping people to shape their local environment and by conserving and enhancing landscapes, heritage and wildlife.

We wish to see significant improvements in the short-term, but our overall ambitions are long-term and will benefit not only those who live and work in the Borough today but also future generations.

3.1   We will achieve our Vision by focusing on ten key themes.

Theme 1:   Image and green settings for new development

Theme 2:   Natural systems to combat climate change

Theme 3:   Local greenspaces for enjoyment, health and well-being

Theme 4:   Destinations for recreation and tourism

Theme 5:   Biodiversity, air and water quality

Theme 6:   Routes for sustainable travel and recreation

Theme 7:   Landscape and heritage

Theme 8:   Productive landscapes

Theme 9:   Promoting understanding and community involvement

Theme 10:   Skills, training and employment

3.2   These themes are explored in more detail below, identifying how a green infrastructure approach will help to achieve our shared aspirations for Stockton Borough – its communities, environment and economy.   The overall aims and key ambitions outlined under each theme help to inform the specific objectives set out in Chapter 5.

3.3 It is important to recognise that these themes are strongly inter-linked and mutually reinforce each other. For example, green settings for new development should natural systems to reduce surface water run-off and provide shade. The same green setting should promote biodiversity, improve air and water quality and include cycleways and walkways which encourage sustainable travel and healthy lifestyles.

Theme 1: Image and green settings for new development

Aim: To improve quality of place, making Stockton-on-Tees highly attractive to residents, existing businesses, visitors and potential investors.

Why is it important?

There is a shared vision across the Tees Valley to make the sub-region as affluent as the rest of the country within the next twenty years. This means attracting economic investment and retaining skilled people in the area, and it is widely recognised that enhancing quality of place will play a fundamental role in achieving this.

Key ambitions:

- To create and enhance green 'gateways' within major transport corridors and at other strategic locations.
- To focus in particular on enhancing the River Tees corridor, which represents the main focal point for regeneration within the Borough.
- To integrate functional and visually attractive green infrastructure into new housing and commercial development, including regeneration of brownfield sites.

3.4   It is important to recognise that these themes are strongly inter-linked and mutually reinforce each other. For example, green settings for new development should natural systems to reduce surface water run-off and provide shade. The same green setting should promote biodiversity, improve air and water quality and include cycleways and walkways which encourage sustainable travel and healthy lifestyles

3.5   The *Tees Valley City Region Development Programme (2005) and Business Case (2006),* highlight the need to improve the urban competitiveness and liveability of the Tees Valley, and emphasise that provision of high quality environment and public realm will play an important role in the regeneration of the sub-region. Key priorities at the Tees Valley scale include bringing life back into the heart of the Teesside conurbation by developing city scale facilities, though initiatives such as the Stockton Gateway scheme, North Shore, St Mark's Basin and the Green Blue Heart. Improving 1,250 hectares of vacant and derelict land across the Tees Valley City Region is also a high priority.

3.6   The *Regeneration Strategy for Stockton Borough 2007-2012 aims to* "deliver a step change in the quality of place, and use it to help deliver the sustainable economic and social renaissance of Stockton-on-Tees".   Specific priorities include:

a) Improving city scale facilities and making better use of the River Tees, including:

- Tackling dereliction of the urban core of the Tees Valley

- Utilise the River Tees as a main focal point for regeneration, transforming the riverside through initiatives such as North Shore, Southern Gateway and Bowesfield Riverside

- Deliver a quality urban and rural environment for the Riverside with public access.

- Transform the inner core of Stockton and Middlesbrough through environmental and landscape led regeneration in the Green Blue Heart

b) Creating vibrant and successful town centres, including:

- Creating modern, vibrant and characterful town centres.

- Improving the 'gateways into Stockton Town Centre, as well as the links between the town centre and North Shore to the riverside

c) Creating vibrant and sustainable neighbourhoods and rural communities, including

- Stockton Borough is required to provide 11,140 new dwellings over the period 2004 to 2024, in line with targets set within the Regional Spatial Strategy. Some of the key housing sites are incorporated into a wider Tees Valley Growth Point Programme.

- There is also an aspiration to improve the Borough's housing stock through a continuing programme of housing regeneration. The long term ambition is for housing renewal in all areas that need investment.

- Development of improved community infrastructure is another priority, including delivery of a 15-year Building Schools for the Future Programme and major new hospital.

3.7 Delivery and management of high quality green infrastructure will play a key role in achieving these ambitions: contributing to design quality, enhancing the character of the Borough's built and natural environment and ensuring new development is integrated into existing landscapes and settlements. Consideration must also be given to the additional pressure new development might place on existing green infrastructure, and how this may require re-design and new approaches to management.

3.8 In short, it acknowledged that good design will be fundamental to the success of regeneration initiatives within the Borough, and green infrastructure is essential to achieving this. It will help to increase investor confidence and ensure that Stockton-on-Tees remains a place where people want to live, work and visit.

Theme 2: Natural systems to combat climate change

Aim: To develop green infrastructure in a way which will help the Borough adapt to the inevitable impacts of climate change and make our lives more comfortable.

Why is it important?

Climate change will make our Borough more challenging to live in within our children's lifetime; we owe it to the next generation to take the tough decisions and act now. Green infrastructure will play a key role in helping Stockton-on-Tees adapt to climate change while simultaneously improving people's health and well-being. It can also contribute in a small way to reducing the emissions which cause climate change.

Key ambitions:

- To increase tree canopy cover on streets and in the public realm - to provide more shade, moderate urban temperatures and reduce surface water run-off.
- To maintain, and where possible increase, the amount of vegetation cover in urban areas to reduce surface water run-off and increase the cooling effect – e.g. favouring green roofs and green walls in new and refurbished buildings, minimising the use of non-porous surfacing in the public realm and in gardens materials and when existing buildings are refurbished.
- To create more areas of open water and water features to increase cooling.
- To increase the use of Sustainable Drainage Systems to provide storm water attenuation and reduce flood risk.
- To identify opportunities to undertake river restoration projects, reinstating natural flood plains to create wetlands and flood storage areas.
- To reduce carbon emissions by encouraging people to make local journeys by cycle and or on foot.
- To adopt measures which enable wildlife and habitats to adapt to climate change and maintain biodiversity.

3.9   All climate models show that the climate change is occurring at an alarming rate. It is predicted that climate change will result in a 0.5°C to 1°C increase in annual temperature in the North East by 2020s, and by the 2050s we could experience a 1.5 to 2.5°C increase in temperature. This will result in:

- Hotter, dryer summers and wetter, milder winters (for example, by the 2050s, we could experience up to 20% more winter rainfall and 30% less summer rainfall).
- A likely increase in the number and extent of extreme events, such as floods, storms, droughts and heat waves. Flash flooding or 'pluvial flooding might become more frequent and flooding at the River Tees flood plain (including along river corridors such as Lustrum Beck and Cowbridge Beck) might worsen.
- Sea level along the Tees Valley coastline could rise by up to 20cm by 2020, leading to a greater risk of coastal erosion and flooding[3].

3.10   Nationally, in the heat-wave of 2003 hospitals admissions from heat stress and heat induced stroke rose by 40% in some parts of England. The impacts on the old and

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[3] Tees Valley Climate Change Strategy (2006-2012) and Stockton-on-Tees Action Plan (2007-2012)

vulnerable are particularly acute, but almost everyone can feel uncomfortable in very high temperatures.

3.11 The urban heat island is caused by a lack of air circulation, lack of shade and heat retention in built up areas; it leads to a heat build up 5 or more degrees warmer than in the surrounding countryside.

3.12 Green infrastructure will play a major part in enabling the Borough to adapt to climate change. Research has shown that a 10% increase in urban green-space could keep extreme surface temperatures at current levels up until the end of the century, despite climate change. That same 10% increase in green cover could also reduce the volume of surface water runoff in extreme rainfall events by 14%.

3.13 The Environment Agency's 2008 River Tees Flood Modal emphasises in particular the increasing risk of fluvial flooding within the River Tees catchment *(final version of this Strategy to make reference to the Strategic Flood Risk Assessment).* In some parts of the Borough channelisation of watercourses and the presence of hard flood defences could have the effect of increasing the rate of water flow and in certain situations this may actually increase the risk of flooding further downstream. Opportunities should be sought to restore natural stream and river systems where appropriate; for example, by re-introducing meanders and reinstating the natural flood plain. This has the effect of reducing the rate at which water moves through the system and improves flood storage capacity.

3.14 Green infrastructure can also play a part in slowing the rate of surface water run-off and helping conventional drainage systems cope with periods of heavy rainfall, as well as helping to tackle the environmental and social impacts of tidal flooding, which is being exacerbated by sea level rise along the coast.

3.15 It is important to remember that climate change will place additional stress on natural systems. For example, some tree species will be less resilient to changes in climate and wildlife habitats will also be affected. As the weather becomes warmer some species may migrate, and thus there is likely to be a change in the naturally occurring plant and animal species in the Tees Valley. Wildlife will better adapt to climate change if there are well-connected green infrastructure networks, including wildlife corridors and if we maintain a proactive and flexible approach to habitat management.

3.16 As well as introducing measures to adapt to climate change, green infrastructure can play a modest role in terms of climate change mitigation. For example, using trees to provide natural shade for buildings reduces the need for air conditioning, while attractive cycle and walking routes reduce car usage. Such measures will help to reduce carbon emissions, and contribute towards the Tees Valley targets for reducing CO_2e (carbon dioxide equivalent) by 8.75% (minimum) and 14% (aspirational) from 2000 levels for the period 2006-2012[4].

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[4] Tees Valley Climate Change Strategy, 2006-2012

Theme 3: Local greenspaces for enjoyment, health and well-being

Aim: To create diverse, safe and highly attractive local networks of greenspace which further enhance our neighbourhoods and contribute to everyone's health and well-being.

Why is it important?

Green spaces play a significant role in our everyday lives, providing places where children can play, friends can meet and areas for relaxation, sport and local events. Well maintained, safe and welcoming greenspaces help to create attractive neighbourhoods which engender a sense of local pride. They encourage people to walk, cycle, and play and enjoy healthy outdoor lifestyles. The active participation of communities in greenspace design and management creates a greater degree of 'local ownership', while high levels of use helps to reduce incidences of anti-social behaviour.

Key ambitions:

- To review the way local greenspaces are managed and maintained – ensuring they continue to meet local needs while also contribute towards wider objectives, e.g. addressing climate change and enhancing biodiversity.
- To ensure proposals to improve and enhance greenspace networks are incorporated into local plans, such as Village Plans.
- To create more 'pocket parks' which encourage greater use of the outdoors by all sections of the community – including children and young people and older adults
- To ensure local greenspaces are safe and well-maintained – encouraging greater use by all sections of the community.
- To provide spaces for play, sport and relaxation - promoting physical and mental health and well-being.
- To meet the particular needs of children and young people, and the growing proportion of older adults in our communities.
- To enhance dense urban areas through the introduction of street trees and other types of urban greening, and to create more shared, safe community space where there is local demand.
- To create greener settings for hospitals, nursing homes and other places where people will most benefit from proximity to green environments.

3.17 Creating better open spaces is a key priority in the Borough's Sustainable Community Strategy, recognising that these are valued by our communities, deliver multiple benefits and contribute to improved 'quality of place'. But we can make local green-space work harder to maximise community benefits and to make our lifestyles more sustainable.

3.18 Local greenspace networks should be designed and managed to be multi-functional – meeting the needs of local people irrespective of age or background. In all cases recent and on-going research and consultation (including the 2008 Sport Recreation and Leisure Survey, the Planning Policy Guidance 17 Assessment and other site visitor surveys) will help to inform the development of local greenspace networks.

3.19 A green infrastructure approach can help to address some of the main social and health issues within Stockton-on-Tees. This includes tacking the serious health inequalities which exist, resulting in life expectancy in some wards being 10 years lower than elsewhere in the Borough. Accessible, connected and attractive green infrastructure can encourage more

active lifestyles, reduce stress and promote general well-being – resulting in improved physical and mental health.

3.20   The Sustainable Community Strategy highlights the importance of meeting the particular needs of both children and young people, which make up nearly 20% of the Borough's population[5] and providing stimulating and 'playable' outdoor environments is vitally important. Outdoor play and exercise will help to reduce health inequalities amongst children and young people, helping to address the rise in childhood obesity. It also encourages children and young people to socialise and simply to have fun.

3.21   Creating outdoor spaces which are attractive to adults is also essential, and with the proportion of adults over retirement age set to rise dramatically over the next two decades meeting the needs of older adults is a priority. Again encouraging physical activity is important, but greenspaces should also provide spaces for adults of all ages to socialise and meet with family and friends in a safe, relaxing environment.

3.22   This Strategy also proposes the creation of new 'pocket parks' adjacent to housing areas and workplaces, largely utilising existing open space but also delivered as part of new development. In contrast the major 'destination' parks these would cater for local use. Pocket Parks are managed for multi-functional benefits and at the human scale; they typically feature shade, water, seating, nature and some form of recreation. They often have some form of boundary to create a clearly defined space where people feel comfortable.

3.23   In all cases giving local people the opportunity to help shape their local greenspaces and have a say in their on-going management is essential. This can help people to feel a greater sense of local pride and 'ownership' of greenspaces, and for children and young people it is perhaps especially important that they have the opportunity to make a positive contribution.

3.24   With input from local communities the Borough's local greenspace networks should continue to evolve to provide attractive, multifunctional and attractive settings for everyday living. Through this Strategy further work needs to be done to plan and develop the Borough's local greenspaces to meet changing community needs. This will include a continuation of existing programmes to create new and improved play spaces and regenerate local parks. But it will also involve 're-shaping' existing urban greenspace and potentially acquiring new areas of public open space adjacent to villages and in urban fringe locations.

3.25   In those parts of the Borough with dense urban development, such as central Stockton and parts of Billingham and Thornaby, there are limited opportunities to create or improve greenspaces. Here alternative greening approaches may be more practicable, for example, introducing more street trees, introduction of 'home-zones' and greening of back alleys.

3.26   Finally it is vital that all users of greenspace, and those who live nearby, feel safe. Careful design and effective greenspace management can help to reduce crime and the fear of crime, and encourage greater levels of use which in itself helps to make people feel safer and discourages anti-social behaviour.

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[5] Tees Valley Joint Strategy Unit, 2007

Theme 4:   Destinations for recreation and tourism

Aim: To develop and maintain high-quality outdoor destinations for local people and visitors - providing a diverse range of exciting recreational opportunities and supporting the development of nature-based and activity-based tourism.

Why is it important?

Stockton-on-Tees has some excellent, high-profile outdoor attractions. Further development and promotion of these destinations, and the sustainable transport networks which serve them, will make the Borough an even better place to live. It will also create new and sustain existing 'green collar' jobs in countryside and greenspace management, as well as generating business for accommodation and transport providers, and catering and retail sectors.

Key ambitions:

- To develop and promote a series of linked, high-profile visitor destinations within the River Tees Corridor, including the Tees Barrage, Stockton riverside, the River Tees Heritage Park, Preston Park and Yarm riverside.

- To promote greater use of the River Tees itself for leisure and watersports, including the development of a 'blue trail' for canoes and other boats, provision of river taxis and improved facilities for angling.

- To develop a regional nature park with RSPB Saltholme acting as the hub - to be promoted for nature-based tourism and as a local visitor destination.

- To develop and promote other areas and sites as key visitor destinations, including:
    - The Stockton to Darlington Corridor: based on the National Cycle Route and Coatham Wood
    - Wynyard area: based on the Castle Eden Walkway and access networks extending into south Durham.

- To build on the Borough's strong track record in the development and management of urban and country parks by further improving the quality of these destinations and the range of facilities available to visitors.

- To improve the cycle, footpath and public transport networks which serve the Borough's main outdoor destinations - reducing the need to travel by car and adding to the quality of the visitor experience.

3.27   The Borough's outdoor attractions are extremely popular with local residents. They provide people with a range of options for stimulating and enjoyable local days-out - often at little or no cost. Well-managed and attractive parks create a sense of local pride and also offer venues for outdoor events and activities.

3.28   Outdoor attractions can also be very popular destinations for people visiting family and friends in the area, and more high-profile sites such as Preston Park and RSPB's Saltholme Wildlife Reserve and Discovery Park attract visitors from much further afield, with the latter likely to emerge as one of the major nature-based tourism attractions in the Tees Valley.

3.29 Recreation and tourism can make an important contribution to economic regeneration. For example, based on an expected 100,000 visitors per year it has been estimated that RSPB's Saltholme Wildlife Reserve and Discovery Park will bring in around £1m to the local economy. Other outdoor destinations can also help to sustain local businesses and create new commercial activities, e.g. through major events, on and off-site retail and catering, and accommodation. The management and promotion of these major destinations also sustains and creates permanent and seasonal jobs.

3.30 But while the Borough has an excellent range of major outdoor destinations, much more can be done to improve the quality and diversity of the recreational and tourism offer. This strategy seeks to achieve this, at least in part, by focusing on the development of visitor destinations in key areas or 'clusters'. These include the area around RSPB Saltholme (and the concept of a Regional Nature Park), the Stockton to Darlington Corridor, Wynyard and the River Tees Corridor. This kind of approach will enable public and private sector partners to work together to enhance the range of visitor services and facilities and adopt an integrated approach to site management, marketing and promotion.

3.31 Making greater use of the River Tees itself for sport and recreation is a priority. This could include the development of a 'blue trail' for canoes and other boats between the Barrage, Stockton Riverside, Preston Park and Yarm. The introduction of some form of river taxi service could greatly enhance the recreational offer, and there is also a need to improve facilities for angling.

3.32 The Borough's parks are highly valued by the Borough's residents, and 'parks and open spaces' consistently feature as one of the top five most important Council services in residents surveys[6] In recent years the Council been undertaking a major park regeneration programme, which has seen the restoration of the Victorian Ropner Park and significant improvements to Newham Grange, Village and John Whitehead Parks. This programme will continue, delivering further enhancements to urban and country parks, and opportunities to develop new parks should be considered where appropriate.

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[6] Stockton Borough Council / Ipsos MORI, Residents Surveys 2002 to 2008

Theme 5: Biodiversity, air and water quality

> **Aim:** To conserve and extend wildlife habitats and maintain healthy natural ecosystems in urban and rural areas – enhancing biodiversity and helping to provide clean air and water.
>
> **Why is it important?**
>
> Biodiversity and good air and water quality are essential to us all. These provide the basic 'life support' system that we all depend upon. An environment rich in biodiversity also enriches our lives, and clean air and water are vital to our health and well-being.
>
> **Key ambitions:**
>
> - To conserve and enhance the Borough's biodiversity and geodiversity, especially priority species and habitats in the Tees Valley Biodiversity Action Plan.
> - To reduce habitat fragmentation through the creation and restoration of wildlife habitats.
> - To further enhance the Borough's designated wildlife sites and ensure all Local Wildlife Sites are in positive management.
> - To maintain and improve the condition of water bodies across the Borough, ensuring full compliance with the European Union Water Framework Directive no later than 2027.
> - To maintain and improve air quality by reducing pollution and mitigating its impacts.

3.33 Stockton-on-Tees is rich in biodiversity and natural resources: from nationally important mudflats and saltmarsh around the Tees Estuary to small patches of precious wildlife habitat in the heart of our towns and villages - all supporting a rich variety of plants and animals. While the River Tees and its tributaries form a natural network of green corridors, stretching from the rural areas in the west and south, through our towns and villages and out to the coast.

3.34 A green infrastructure approach will help to ensure that these natural assets are protected and enhanced, and to harness the full potential of natural systems to improve local environmental quality and to enrich our lives. This means working closely with all those responsible with the management of these systems: public bodies, voluntary agencies and private sector partners. Farming and other major landowners all play a critical role in conserving our biodiversity, and the quality of our soils, air and water.

3.35 Protecting, enhancing and extending important wildlife habitats is a key objective, focusing in particular on measures which will conserve the priority habitats and species identified in the Tees Valley Biodiversity Action Plan. This includes reducing habitat fragmentation and the strengthening of wildlife corridors.

3.36 As well as being important in its own right, conserving and enhancing biodiversity will also help to deliver the healthy natural ecosystems which are essential to our long term future. It also contributes towards wider social and economic objectives; for example, the presence of wildlife generates prides and interest in the local environment, promotes learning, and can stimulate economic regeneration through nature-based tourism.

3.37   Maintaining and, where necessary, improving the quality of the Borough's rivers, streams and other water bodies is another key objective. EU Water Framework Directive requires that there is no deterioration in existing water quality status in all water bodies and that stretching targets for improvement are set and achieved. The Environment Agency is preparing a river catchment management plan which will describe the means by which all water bodies will have achieved good status no later than 2027; presently this figure is XX%.

3.38   The main reason why water bodies do not achieve good status is diffuse pollution; this describes any form of pollution that can not be traced back to a single source such as run off from fields and vehicle emissions.

3.39   Working with the Environment Agency the Green Infrastructure Strategy requires that all water bodies in the Borough should comply with the EU water framework directive no later than 2027 and that capital programmes and the development control function should enable public enjoyment and biodiversity gains of all water bodies.

3.40   Finally, it is recognised that urban greenspace and trees can help to improve air quality in towns and cities; this is one of the benefits that will accrue from additional tree planting, which has also been identified as a priority action to help combat climate change.

Theme 6: Routes for sustainable travel and recreation

Aim: To further develop the Borough's sustainable transport routes: utilising green infrastructure networks and increasing the proportion of people using and accessing countryside and greenspace on foot, by cycle, on horseback and via public transport.

Why is it important?

An attractive, well-connected and easily accessible network of routes for cycling, walking and horse riding offers many benefits: healthy exercise, safe routes to school or work, an alternative to using the car for short journeys, or simply a great way to enjoy the Borough's countryside and greenspaces.

As we further enhance the quality of local greenspaces the need for safe, convenient and sustainable access to those spaces becomes all the more important, ensuring everyone benefits and the journey to park or play space becomes part of the overall recreational experience.

Key ambitions:

- To identify and 'bridge' gaps in the network of cycle, footpath and bridleway routes, especially within identified green infrastructure corridors and where new or improved routes are needed to access key destinations.
- To enhance and 'add value' to existing rights of way and cycle routes and promoted trails such as the Teesdale Way.
- To increase the number of people cycling, walking and horse riding, and using public transport to access the Borough's countryside and greenspace.
- To develop a strategic approach to the development, management and promotion of local path networks and recreational trails.
- To meet the particular needs of horse riders through the development of new and improved bridleways in rural and urban fringe areas.
- To create new and improved connections with public transport, enhancing access to path networks and major destinations, e.g. connections to proposed Tees Valley Metro, river taxis on River Tees and bus services.

3.41 The Borough's access networks have seen significant improvements over recent years, but further work is needed to develop a fully integrated network of cycle, pedestrian and equestrian routes. The development of such routes must be closely linked to the wider development of the Borough's green infrastructure, to create safe, attractive off road routes which encourage all potential users to adopt sustainable forms of travel - for utilitarian journeys and for leisure.

3.42 The implementation of the Borough's Cycling Strategy and Rights of Way Improvement Plan (ROWIP) will help to deliver the key ambitions under this theme. Creation of a strategic route network of local cycleway links and the development of cycle tourism facilities are both priorities under the cycling Strategy. While improving and extending the access networks for walkers and equestrians are identified as priorities in the ROWIP.

3.43 The cycle and footpath network in urban areas is relatively well-developed, but there is still great scope to increase the provision of safe, off road routes within some of the Borough's

main green corridors. In rural parts of the Borough addressing the problem of a disjointed and sometimes limited rights of way network is a major issue. The ROWIP also highlights the need to make the network physically accessible to all and to provide improved information for users.

3.44   The Borough has numerous 'promoted trails' and 'circular walks' – often waymarked on the ground and with accompanying leaflets and on-site interpretation. The Teesdale Way and the National Cycle Network are perhaps the most high-profile of routes. However, some of the Borough's recreational trails and walks have been planned in a piecemeal way, often without any systematic approach to their on-going maintenance and promotion.   This Strategy, in tandem with the proposed Heritage Strategy, encourages a more strategic approach to the on-going management of existing trails and the future development of new promoted routes.

3.45   Finally there is also an opportunity to encourage greater use of public transport to access greenspace and countryside destinations and to connect with trails and promoted routes. This is perhaps particularly important in relation to rural destinations such as Wynyard Woodland Park where the vast majority of visitors currently arrive by car. In areas like this the increased use of local buses by visitors could also help to sustain these services for the benefit of neighbouring rural communities as well.

3.46   Local rail services can also be used to access countryside and greenspace, but more significant opportunities will emerge with the proposed development of the Tees Valley Metro. A river taxi service on the Tees is another possible future development which would present an alternative means of transport to destinations within the proposed River Tees Heritage Park and along the Teesdale Way.

Theme 7:   Landscape and heritage

Aim: To conserve and enhance the Borough's unique landscape and heritage, and to address the poor visual appearance of some parts of the Borough through landscape restoration and renewal.

Why is it important?

To a large extent it is our landscape and heritage which makes the Borough distinctive, creating a real 'sense of place' for those who live or work here, and making it an attractive place to visit. Conserving and enhancing our landscapes and heritage helps to strengthen that local distinctiveness. But landscapes in some parts of the Borough are of very poor quality and create a negative image. While in other cases cultural and heritage features which could enhance our neighbourhoods are not recognised or fully valued.

Key ambitions:

- To conserve and enhance local landscape character in urban and rural areas, making the most of those features which are locally valued and unique to the Borough.
- To tackle issues of poor landscape quality through landscape restoration projects or the creation of new, contemporary landscapes where appropriate.
- To conserve and enhance the Borough's geodiversity, archaeology and cultural heritage.

3.47   Stockton-on-Tees has a diverse mix of landscapes – from the post-industrial, open landscapes around the Tees Estuary; to the intimate, wooded landscapes of the River Tees and River Leven corridors; to the agricultural landscapes in the western part of the Borough. The variety of urban and industrial landscapes in the Borough also adds to this diverse 'landscape character'.

3.48   A Landscape Character Assessment will accompany the final version of this Strategy and will help to set priorities for landscape conservation and enhancement within the Borough. This will include the identification of key landscape areas and features which are particularly worthy of protection or enhancement. English Heritage are also undertaking a Historic Landscape Character Assessment of the Borough which will also help to inform delivery of this Strategy. At the same time, a new Borough-wide Heritage Strategy will focus on the conservation, interpretation and celebration of key historic elements within the landscape.

3.49   In addition to conserving and enhancing the Borough's valued landscapes and heritage, green infrastructure planning also presents opportunities to focus on those areas of the Borough where poor landscape quality impacts negatively on local communities and hinders economic regeneration.   In these areas the approach may be to create new, planned landscapes - designed to drive regeneration, promote sustainable living and help the Borough adapt to future climate change.

Theme 8:   Productive landscapes

Aim: To utilise the Borough's urban greenspace and countryside for the sustainable, productive land uses – helping to sustain a vibrant local economy and delivering health and other social benefits

Why is it important?

Through the sustainable management of our countryside and greenspace we can maintain its productive capacity, while also delivering a wide range of other benefits. Indeed in order to accommodate a growing local population and tackle major issues such as climate change utilising our local countryside and greenspace for food and energy production will help to ensure a sustainable future for the Borough.

Key ambitions:

- To support a sustainable food and farming sector within the Borough, contributing to a strong rural and urban economy, maintaining and enhancing the quality of the local environment and delivering wider social benefits.

- To encourage food producers to market produce locally through retailers, high street and 'farmers' markets, and direct from the farm - thus reducing food miles, promoting healthy eating, and bringing about wider educational and social benefits; e.g complementing other rural or farm-based leisure activities and improving the public's understating of food and farming.

- To promote local food production and deliver wider social, educational and environmental objectives through the provision of allotments and other community-based schemes.

- To utilise green space, countryside and brownfield sites for the production of energy crops and for the appropriate development of renewable energy infrastructure - where sustainable supply chains can be established and where compatible with other uses and landscape and biodiversity objectives.

3.50   Approximately half of the borough is farmed and maintaining a profitable and sustainable local agricultural sector is important both to the Borough's economy and environment. In most rural and urban fringe areas farmers play a key role in the conservation and enhancement of the Borough's landscapes, biodiversity and natural ecosystems and the management of the access infrastructure which enable the public to enjoy the countryside. A sustainable food and farming sector thus makes a vital contribution towards our wider green infrastructure objectives.

3.51   Local food production and marketing, whether that be commercial production on farms, from community-run enterprises such as allotments and community orchards, or from private gardens and school grounds, can have a very wide range of social, environmental and economic benefits. It reconnects consumers with producers, supports the local economy, can promote healthy eating, and promotes learning and understanding about food and the environment.

3.52   An increase in local food consumption will also help to reduce "food miles" and support the local economy (food and drink is responsible for 8% of the carbon emissions of the average UK resident and 23% of their ecological footprint; most of which comes from food transportation and processing[7]).

3.53   There is also a desire for many residents in the Borough to grow their own fruit and vegetables, and this is reflected by an increase in demand for local allotments. This appears to be driven by the increased focus on healthy eating and healthy lifestyles, and the smaller garden plots now attached to new housing. Under the 1980 Allotment Act the local authority has a duty to meet local demand for allotments, and this will form an important aspect of local greenspace planning and development over the next few years. As well as increasingly the amount of local food production, provision of allotments and other local food initiatives will deliver wider educational, health and community benefits.

3.54   Current and future development of biomass-fed power plants and heating systems in the Tees Valley and surrounding areas offers new opportunities for the production of energy crops. For example, the UK's largest biomass fed power station, Wilton 10, has stimulated the development of a major biomass supply chain, with the operators aiming to increase the amount of short rotation coppice grown for the plant from 100 hectares to 3,000 hectares (although it should be noted that small roundwood from commercially managed forests in the North East, recycled wood and sawmill co-products represent the major fuels at present).

3.55   More generally, with the UK Renewable Energy Strategy requiring that 20% of electricity should come from renewable sources by 2020, it is important that opportunities to harness other renewable forms of energy such as wind and solar power are given full consideration. Indeed Policy 41 of the North East Regional Spatial Strategy states that "Small wind farms in urban areas and on the urban rural fringe should also be supported"[8] while also recognising that the detailed planning of any developments requires a wide of factors needs to be taken into account.

3.56   In short, there may be greater potential in the future for former industrial sites or other areas in the Borough to be used for production of energy crops and the building of new energy infrastructure. But in all cases this requires very careful management and careful integration with other green infrastructure functions. Development in inappropriate locations or where there are unsustainable supply chains could have negative environmental impacts.

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[7] **CABE – Sustainable Cities website**
[8] Government Office for the North East / Communities & Local Government (2008) The North East of England Plan Regional Spatial Strategy to 2021

Theme 9:   Promoting understanding and community involvement

Aim: To provide greater opportunities for outdoor learning and community involvement – promoting better understanding of the Borough's environment and heritage, encouraging community involvement in its management and creating an enhanced 'sense of place'.

Why is it important?
The outdoors provides a highly stimulating learning environment for people of all ages and should be used to its full potential. An enhanced awareness and understanding of the Borough's environment and unique heritage deepens the connection between people and place. This promotes a greater sense of local pride and 'ownership', and often represents the first step towards wider community involvement in the management and enhancement of the local environment. An enhanced knowledge of natural systems and processes will also help to gain public support for a green infrastructure approach.

Key ambitions:

- To provide improved opportunities for people of all ages and backgrounds to access and learn about the Borough's natural environment and heritage, including the use of new technologies to stimulate interest and enhance understanding.
- To promote the use of greenspace and countryside as an 'outdoor classroom'.
- To encourage and support community participation in the management and development of green infrastructure.
- To promote an enhanced 'sense of place' by raising awareness of those natural and cultural heritage features which make the Borough unique.
- To create a greater understanding of the role of natural systems and processes

3.57   Greenspaces can provide 'outdoor classrooms' for formal education and life-long learning, dedicated facilities for training and learning, as well interpretation of the natural environment and heritage through a variety of media.

3.58   There are already significant opportunities for learning about the Borough's rich and diverse natural and cultural heritage. This includes organised activities and on-site interpretation at locations such as RSPB Saltholme, Teesmouth National Nature Reserve, the Tees Valley Wildlife Trust's nature reserves, privately-owned sites, and Stockton Borough Council's country parks and Local Nature Reserves. Also, through the work of the Council's Museum Service and other partners such as Tees Archaeology.

3.59   Yet there is still a general recognition with the Borough that more could be done to improve understanding of the Borough's natural environment and heritage. Indeed the Stockton Renaissance Culture Partnership has identified 'raising the profile of our heritage' as a priority objective for the period 2008 – 2012.

3.60   One of the main challenges and opportunities will be how best to utilise new technologies to enhance education and interpretation, and perhaps allow 'virtual' access to areas where public access is to possible or desirable.

3.61   Improving understanding and raising awareness of the Borough's biodiversity, geodiversity, landscapes, archaeology and history will bring numerous benefits. For example, raising awareness and understanding of those distinctive features and characteristics which make

the Borough special, and those natural processes which are so important to its long-term future. This will help to broad public support for the further development of the Borough's green infrastructure and stimulate community-led activity in support of this.

Theme 10: Skills, work and training

Aim: To meet the current and future training, skills and employment needs presented by green infrastructure planning and management and to deliver as much of this as possible within the Borough.

Why is it important?
A major theme for the coming century will be environmental management - driven by demands such as renewable energy, enhanced management and greater use of greenspace, environmental engineering, outdoor and environmental education, horticulture, forestry, sustainable agriculture and the need for traditional or heritage skills. Grouped together these have been given the title 'green collar jobs' within a 'green collar economy'; the potential for employment is considerable.

Key ambitions:

- To maximise employment opportunities presented by green infrastructure and ensure the provision of adequate training and skills in the local area.
- Skills and training providers to develop courses that meet local demands across all levels of attainment including manual and intellectual provision.
- Ensure that there is a vibrant and active volunteering community in Stockton related to green infrastructure management.
- That opportunities are created for intermediate labour market training, to help people make the step into full-time employment in the green infrastructure sector.
- That those frequently excluded from the work-force such as those exiting the criminal justice system or suffering handicap or mental health issues have the opportunity to become involved.
- To develop employment related to servicing nature based tourism.

3.62   The Sustainable Community Strategy recognises the *"need to maximise opportunities presented by new growth sectors such as environmental and renewable industries".* Green infrastructure will play a large part in achieving this, especially in regard to the management of environmental assets and the spin off economic benefits associated with these. A good example is nature based tourism, an aspect of green infrastructure which Stockton is well-placed to develop. Employment associated with this will include: information provision, print and design, wardens, hospitality, sustainable transport, land management, marketing, catering, building, forestry and management.

3.63   The benefits of environmental volunteering are considerable and extend beyond the benefits to society to those of the individual participant. The Borough already benefits greatly from environmental volunteering through programmes led by the Council and organisations such as RSPB and the Tees Valley Wildlife Trust. Opportunities are also provided through the private sector – for example, via partners in the Industry Nature Conservation Association (INCA Teesside).   Volunteers are not only motivated by environmental reasons but also by the personal benefits which include opportunities to be out of doors and social contact with other people who share a common interest. Skills development is also important, as is the sense of worth, improved health and wellbeing. Volunteering is attractive to all ages and is remarkably diverse, cutting across ethnicity and gender boundaries; but there are barriers to be overcome. Some of the strongest barriers relate to access to sites, capacity of agencies to meet demand, knowledge of volunteering

opportunities and a lack of confidence. None of the barriers are insurmountable but strategies are required to overcome these.

3.64   The benefits of the intermediate labour market (ILM) include its effectiveness to engage with disadvantaged people in learning and training. Indeed training and learning is at the core of any ILM programme because it produces more flexible and self-aware workers. Despite the resource limitations of the voluntary sector it is the case that many of the most successful ILM schemes have been provided through this sector, using the training and learning opportunities offered by the natural environment. With full-time employment in this sector likely to increase over time the opportunity for progressing from ILM to full employment is a real prospect for the long term unemployed.

3.65   There are shortages of skilled labour to fill employment opportunities in green infrastructure. In some areas such as flood risk management this has led to industry wide initiatives to encourage more graduates to 'up-skill' and seek employment in this sector. Another instance is that the Commission for Architecture and the Built Environment (CABE) reports that the green space sector is suffering from an acute personnel and skills shortage. For example, there are inadequate numbers of landscape architects and a lack of training and career development opportunities is inhibiting the development of the sector. These problems are contributing to the poor quality of green spaces and the under-valuation of the workforce. Overcoming these and other deficiencies requires a concerted effort by the training and skills sector as well as an analysis of the issue at the local level.

3.66   Employment has a major part to play in reducing re-offending and with the right training ex-offenders can play an active role in the workforce; equally employment is known to be a prime reason why people-at-risk avoid criminal activity. To illustrate this, the 'Reducing Re-offending National Action Plan' states that prison sentences alone are ineffective in rehabilitating the majority of offenders and that the cost of re offending by ex-prisoners is at least £11 billion per year. The Forestry Commission have conducted action research in an 'Offenders and Nature' scheme which offered prisoners the opportunity to work within physically and mentally restorative natural environments. Participants acquire new skills, learn to work as a team, increase their sense of self-worth, gain valuable work experience and in some cases generate a cash sum. The scheme also enables offenders to 'pay back' society by improving access for the community and enhancing biodiversity. The results of the programme indicate that upon release offenders have an increased chance of finding employment and securing a home. In addition they are more likely to participate fully in community life and lead ex-prisoners into making training programme enquiries, seeking environmental qualifications and placements on apprenticeship schemes.

Chapter 4   Stockton Borough's existing green infrastructure resource

4.1   The Borough's urban and rural landscapes and all the individual greenspaces and other environmental features make up the overall green infrastructure resource.

4.2   At the Borough or Tees Valley scale some areas and features are particularly significant. This includes landscape character areas, landscape features such a green wedges and river corridors, and 'destination sites' such as urban and country parks and major wildlife sites. Some of the main areas and features are shown in **Map 1[9] (Stockton Borough Green Infrastructure Resource)**.   The map highlights the significance of the Borough's river corridors, which incorporate a number of wildlife and landscape features, and the importance of green wedges which help to prevent coalescence of settlements. All these corridors provide access to local greenspace and countryside, and connect to many of the Borough's key 'destination sites'.

4.3   At the neighbourhood scale smaller green infrastructure 'components' or 'assets' include local all open spaces, rights of way, smaller stream corridors, and features such as street trees (i.e. the full list of components identified in Section 1.4).   More detailed mapping, showing all individual components, including urban open space, will be available via Stockton Council's Geographical Information System, and can be viewed at:

(LINK TO BE INSERTED)

4.4   Green infrastructure planning will be informed by an understanding and appreciation of the Borough's landscapes and the individual sites and features identified in this chapter, and by the needs and aspirations of local communities.   In turn, the development and enhancement of green infrastructure networks will help to conserve valued assets enhance connectivity between sites and maximise the benefits provided for communities, the environment, and the local economy.

4.5   Detailed information on the Borough's existing green infrastructure resource is provided at Appendix A.   A few key characteristics and issues are summarised below.

The Borough's Landscapes

4.6   Stockton-on-Tees lies entirely within National Character Area 23, the 'Tees Lowlands'. Natural England define some of the key characteristics of the area as:
- A broad low-lying plain of gently undulating, predominantly arable farmland, with some pasture, and wide views to distant hills.
- Meandering, slow moving river Tees flows through the heart of the area, dividing the lowlands to north and south.
- Contrast of quiet rural areas with extensive urban and industrial development, concentrated along the lower reaches of the Tees, the estuary and coast.

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[9] The map in the final version of this Strategy will identify the main landscape areas as defined by a new Landscape Character Assessment

- Large scale chemical and oil refining works, dock facilities and other heavy plants along the Tees estuary form a distinctive skyline both by day and by night.
- Overhead transmission lines and pylons, motorway corridors, railway lines and other infrastructure elements are widespread features.
- Woodland cover is generally sparse, but with local variation such on steep banks of the middle reaches of the Tees, and to parkland and managed estates.
- Extensive areas of mud flats, saltmarsh wetlands and dunes at mouth of the river Tees, which support valuable wildlife habitats.
- Minor valleys and linear strips of open land extend as "green corridors" from rural farmland into the heart of the conurbation.

4.7   A detailed Landscape Character Assessment of the Borough's rural and urban fringe areas is currently being undertaken, and English Heritage has also commissioned a Historic Landscape Characterisation Study covering the entire Borough. It is anticipated that both studies will be completed in June 2009 and the main landscape areas defined through the Landscape Character Assessment will be identified in the final version of this strategy and used to inform its future implementation. For the time being it should be recognised that the Borough does have a diverse range of landscapes and **Map 1** identifies the following areas:

- o   Farmed countryside;
- o   Wynyard Park, village and business park
- o   Seal Sands, Saltholme and Cowpen Marsh area
- o   Urban areas and villages

The Borough's Green Infrastructure Components

4.8   Detailed information on the Borough's greenspaces and environmental features is included at Appendix D.

4.9   Delivery of this Strategy must be fully integrated with the other strategies, plans and programmes which aim to conserve, enhance and improve connectivity these green infrastructure 'components', including:
- Local Development Framework documents
- Tees Valley Biodiversity Action Plan
- Site management and development plans
- Programmes such as Stockton Borough Council's Park Regeneration, Spaces for Play Programme
- Local Transport Plan – and associated Rights of Way Improvement Plan and Cycling Strategy 2006 to 2011
- Proposed Heritage Strategy

Analysis of local open space provision

4.10   Local delivery of this Strategy should be informed at least in part by people's perceptions of countryside and greenspace. Investment in green infrastructure should also aim address gaps in current greenspace space provision.

4.11   Information on people's attitudes to local greenspaces and current levels of use is being captured though a number of on-going local surveys and consultations. Information gained from this research will help to shape the development of the Strategy Action Plan and individual projects.

4.12 In addition to this an extensive 'Sport, Recreation and Leisure Survey' undertaken in 2008. The consultation included face-to-face interviews with a sample of 2700 residents from across the Borough, as well as a survey of groups with particular knowledge or interest in open space, sport and recreation facilities.

4.13 This survey or 'needs assessment' was used in conjunction with an 'open space audit' to carry out a detailed assessment of the Borough's urban open space provision, including its quantity, quality and accessibility. This assessment has been carried out in accordance with Planning Policy Guidance 17 (PPG17): Planning for Open Space, Sport and Recreation.

4.14 The primary purpose of this PPG17 assessment was to inform development of the Borough's Open Space, Recreation and Landscaping Supplementary Planning Document (see 2.11 to 2.12), but together with the 'Sport, Recreation and Leisure Survey', the PPG17 assessment will also inform delivery of this Strategy. All documents can be accessed via the Background Portfolio:

 (INSERT LINK).

Chapter 5: Stockton-on-Tees green infrastructure network and priorities for action

5.1 The Strategy proposes a hierarchy of green infrastructure corridors and local 'green grids', forming an integrated network across the whole Borough. This network comprises three tiers:

- **'Primary' green infrastructure network:** a series of corridors identified through the Tees Valley Green Infrastructure Strategy (2008) and of significance up to the sub-regional scale.

- **'Secondary' green infrastructure network:** corridors identified as part of this Strategy and of significance up to the Borough scale.

- **Urban and rural 'green grids':** local green networks of particular significance at the neighbourhood scale.

5.2 The Primary and secondary corridors are shown on **Map 2 (Green Infrastructure Network).** The urban and rural 'green grids' are not mapped at the Borough-scale.

5.3 The following sections provide more information on these various networks and the priorities for action which will shape the Strategy Action Plan. These priorities address the aims and ambitions set out Chapter 4 and future delivery will be informed by the guidelines outlined in Chapter 5.

Primary and secondary green infrastructure network

5.4 The Borough's primary green infrastructure network comprises nine corridors, some of which extend beyond the Borough boundary (N.B. the numbering of these corridors is not sequential since they are derived from the full list of seventeen corridors identified through the Tees Valley Green Infrastructure Strategy):

Corridor 1	River Tees
Corridor 5	Darlington, Middleton St George, A66/67 Corridor to Stockton
Corridor 6	Preston-on-Tees/Hartburn/Fairfield/Bishopgarth to Wynyard
Corridor 7	Hartburn to Lustrum Beck to River Tees
Corridor 8	Stainsby Beck Valley

Corridor 9	Billingham Beck Valley to Wynyard
Corridor 10	Saltholme to Cowpen Bewley and Hartlepool
Corridor 11	Saltholme to Hartlepool Coast
Corridor 17	River Leven Corridor

5.5 The <u>secondary green infrastructure network</u> comprises thirteen corridors

Corridor A	River Tees to Coatham Wood
Corridor B	West Stockton
Corridor C	Greenvale to Oxbridge
Corridor D	Hardwick Dene to Lustrum Beck
Corridor E	Roseworth to Stockton & Norton
Corridor F	Thorpe Beck to Stillington
Corridor G	Northshore to Lustrum Beck
Corridor H	Saltergill to Leven Bridge
Corridor I	Bassleton Beck, Thornaby Wood to A174
Corridor J	River Tees to Ingleby Barwick and Yarm
Corridor K	Old River Tees to Thornaby Green
Corridor L	Maltby Beck
Corridor M	Cowbridge Beck
Corridor N	Charlton's Pond to East Billingham Transport Corridor
Corridor O	Teesmouth & Greatham Creek

5.6 Both at the Tees Valley and Borough scale these corridors are largely based on existing green corridors, but in some areas these corridors are more 'aspirational' and the linkages shown are indicative - to be achieved as and when opportunities arise, e.g. linked to future development.

5.7   The corridors include a mosaic of land uses, usually comprising private and publicly owned land. They incorporate, and link to, significant green infrastructure components such as parks and nature reserves. These can be seen as the 'hubs' within the network - linked by the wider network of green corridors, watercourses, cycleways, footpaths and bridleways.

5.8   Improving access for walking, cycling and horse riding is a key objective, but while the majority of corridors will incorporate access routes this may not always be the case. Opportunities for public access in some areas may be limited, particularly where land is in private ownership and few public rights of way exist. But these corridors may still play an important contribution to the Strategic Objectives on account of their landscape, hydrological or ecological significance.

5.9   Priorities for action within the Primary and Secondary corridors are set out in **Table 1**. These will inform the development of individual projects within the Strategy Action Plan.

5.10 Maintaining a strategic approach to the development of green infrastructure in these corridors is important, but there is also a need to allow some degree of flexibility. Green infrastructure planning must be responsive to opportunities and changing local priorities.

Table 1: Priorities for primary and secondary corridors			
Primary corridor	Secondary corridor	Priorities	Strategies, plans and programmes related to these specific corridors/areas *(Documents within the Local Development Framework are relevant to all)*
1	-	**Green Blue Heart** • Develop and deliver a Green Space & Public Realm Plan for the Green Blue Heart - to include: - creation of multifunctional landscapes , providing settings for development, access and movement, recreation, flood risk management and biodiversity. - high quality public realm - development and enhancement of greenspaces and promenades • Take account of the ecological value and sensitivity of Portrack Marsh and Maze Park, and further enhance these areas.	Tees Valley Green Infrastructure Strategy Stockton-Middlesbrough Initiative Green Blue Heart Plan (2007) Regeneration Strategy for Stockton Borough Maze Park and Portrack Marsh Nature Reserve Management Plans (Tees Valley Wildlife Trust)

		• Further develop the Tees Barrage site as one of the Borough's premier destinations for sport and recreation	
1	-	**Northshore and Greater Northshore** Northshore is one of the Borough's premier regeneration initiatives, aiming to transform the northern section of the River Tees Corridor east of Stockton town centre. Greater Northshore is the adjacent area to the north. Both areas should incorporate high quality green infrastructure which will: • Create an attractive setting for built development • Provide areas of functional and distinctive public realm • Provide spaces for play, recreation and leisure • Create attractive landscaped corridors linking to adjacent areas such as the Tees Barrage to the west, Tilery Park to the north and central Stockton on the east. • Contribute towards climate adaptation, e.g. provision of increased tree cover, sustainable drainage systems and greenspaces to reduce rate of surface water run off. • Promote and conserve biodiversity and enhance landscape quality	Northshore Masterplan Greater Northshore Supplementary Planning Document (proposed) Stockton-Middlesbrough Initiative Regeneration Strategy for Stockton Borough
1	-	**Central Stockton (including Southern and Eastern Gateways and Riverside)** All areas should incorporate high quality green infrastructure which will: • Create an attractive setting for built development • Provide areas of functional and distinctive public realm • Compliment and enhance the special character of central Stockton, including its Conservation Area • Provide spaces for play, recreation and leisure • Create attractive landscaped corridors, including the creation of a cycleway adjacent to River Tees as part of 8 Bridges Cycleway. • Contribute towards climate adaptation, e.g. provision of	Tees Valley Green Infrastructure Strategy Stockton-Middlesbrough Initiative Regeneration Strategy for Stockton Borough Riverside Sites Masterplan? Conservation and Historic Environment Folder

			increased tree cover, sustainable drainage systems and greenspaces to reduce rate of surface water run off. • Promote and conserve biodiversity and enhance landscape quality	
1 17		-	**River Tees from Stockton to Low Middleton and River Leven – including Tees Heritage Park** Prepare and implement development plan for River Tees Heritage Park (including at provision of green infrastructure as part of North Bowesfield development). Priorities to include: • Conserve, enhance and interpret the landscapes and biodiversity within the heritage of the park and surrounding areas, including nature reserves and Local Wildlife/Geodiversity Sites. • Establish new woodlands, wetlands and other wildlife habitats within the Tees and Leven corridors. • Improve access within and to the River Tees corridor, including enhancing the Teesdale Way and development of Connect2 cycle routes and Tees/Leven river crossings. • Investigate feasibility of providing improved pedestrian access to the countryside west and south of Ingleby Barwick, contributing to the creation of an Ingleby Barwick Circular Trail. • Develop the infrastructure to allow greater use of the river Tees for sport and recreation, including the development of a 'blue trail' for canoes and other boats along the Tees, angling and the introduction of river taxis. • Investigate opportunities to enhance access for walkers to the River Leven corridor, avoiding disturbance to sensitive habitats. • Consider potential for the River Leven corridor to act as a 'gateway' to the wider countryside. • Further development of Preston Park as destination park and 'gateway' to the Heritage Park. • Development of North Bowesfield site a 'gateway' to core Heritage Park, and including improvements to Teesdale Way, new cycle routes, enhanced landscape and biodiversity, better river access for watersports, infrastructure for angling, and landing	Tees Valley Green Infrastructure Strategy Tees Together Action Plan River Tees Navigation Strategy Bowesfield nature Reserve Management Plan (Tees Valley Wildlife Trust) Connect 2 Preston Park Development Plan

		stages for river taxis.	
		Access feasibility of adopting a 'landscape scale approach' within the rural River Tees and River Leven corridors - to deliver benefits for local businesses and communities, conserve and enhance the areas's landscape and biodiversity, and promote nature based recreation.	
5	-	**Stockton to Darlington Corridor** This broad rural corridor links Stockton to Darlington via Long Newton and Dinsdale, including National Cycle Network Route 1, Coatham Beck / Burnwood Beck, and Coatham Wood, the largest new woodland created in the Borough in recent years. Priorities include: • Establish continuous off-road cycle link between Stockton and Darlington, connecting West Burdon and Coatham Community Woodlands • Create additional new woodland • Enhance and promote Coatham Wood as a major recreational destination, with the potential for the development of associated commercial activities. Access feasibility of adopting a 'landscape scale approach' within the corridor - to deliver benefits for local businesses and communities, conserve and enhance the areas's landscape and biodiversity, and promote nature based recreation.	Tees Valley Green Infrastructure Strategy Coatham Wood Management Plan (Forestry Commission)
6	F	**Wynyard Woodland Park** Implement Project Plan for Wynyard Woodland Park, including measures to: • Develop main corridor to Hardwick • Develop core site as one of the premier recreation / tourism destinations in the Borough and 'gateway' to the wider	Tees Valley Green Infrastructure Strategy Wynyard Woodland Park Management Plan and Park Project Plan

		countryside. • Enhance access networks improving connectivity to other local sites and villages including Wynyard Village, Carlton, Redmarshall, Sillington, Thorpe Thewles and Whitton • Conserve, enhance and interpret the landscapes, biodiversity and heritage of the park and surrounding areas.	
6	J	**Wynyard to Yarm (or 'Five Parks') Greenway** Enhance and promote a continuous green corridor linking Wynyard to Yarm, including the creation of a continuous, ….km traffic-free cycle corridor linking five of the Borough's premier recreational sites: Romano Park (Ingleby Barwick), Preston Park, the proposed West Stockton Woodland Park, Ropner Park and Wynyard Woodland Park Priorities include: • Establish new section of cycle route to link existing Castle Eden Walkway (National Cycle Network Route 1) to Preston Park (Connect2 routes). • Establish new section of cycle route to link Ingleby Barwick to Yarm via new bridge across R Leven (part of Connect2 proposal) • Improve and enhance existing cycle corridor, e.g. through landscape and biodiversity improvements, enhanced access points, appropriate safety and security measures, signage and interpretation. • Promote use of route as means of accessing all five parks • Develop appropriate cycle infrastructure at all destinations	Tees Valley Green Infrastructure Strategy Wynyard Woodland Park Management Plan and Park Project Plan Local Transport Plan and Cycling Strategy 2006 to 2011 Connect2
6	-	**West Stockton 'Green Gateway'** Prepare and implement green infrastructure development plan for West Stockton Green Gateway. Priorities to include: • Establish Woodland Park • Create new cycle route as part of the Wynyard to Yarm (Five Parks) Greenway • Enhance linkages to Stockton to Darlington Corridor	Tees Valley Green Infrastructure Strategy Local Transport Plan and Cycling Strategy 2006 to 2011

| 7 | G | **Lustrum Beck Corridor, including Northern Gateway**

Prepare and implement green infrastructure development plan for Lustrum Beck Corridor. Priorities to include:
• Restore natural river features where practicable: e.g. by realigning flood defences and reinstating natural flood plain
• Conserve and enhance landscapes and biodiversity
• Improve pedestrian and cycle access to the river corridor and along its length
• Develop environmental interpretation initiatives
• Develop park regeneration/creation projects at Tilery, Primrose Hill and Grangefield, including new and improved play spaces.
• Establish green corridor with access routes linking Lustrum Beck corridor near Tilery to River Tees / Greater Northshore
• Develop a 'green node' at entrance to Queens Park North - to include Sustainable Drainage Scheme.
• Seek further opportunities to develop Sustainable Drainage Schemes and other measures which contribute to climate change adaptation
• Introduce tree avenues on roads linking to River corridor – including from Northern Gateway
• Incorporate green infrastructure into any future regeneration of Thompsons Scrap Yard site.
• Maximise potential for Lustrum Beck to act as shared community asset –connecting communities, creating an enhanced 'sense of place' and contributing to improved community safety | Tees Valley Green Infrastructure Strategy |
| 8 | L | **Old River Tees, Stainsby Beck Valley and Maltby Beck**
• Conserve and enhance important inter-tidal habitats along the Old River Tees including mudflats and salt marsh.
• Develop programme of woodland establishment and management – improving landscape value and providing enhanced gateway to Tees Valley via A19. | Tees Valley Green Infrastructure Strategy

Teesside Retail Park Biodiversity Action Plan |

		• Improve access to and within the corridor – contributing to development of the Thornaby Circular Trail and meeting the needs of horse riders. • Conserve and enhance landscape and wildlife value of Maltby Beck corridor, including its Local Wildlife Sites.	
9	F	**Billingham Beck Valley and the Northern 'Green Gateway'** Prepare and implement green infrastructure development plan for Northern Green Gateway. Priorities to include: • Enhance landscape and biodiversity within A19 corridor and to the north of Norton • Improve access between and within key sites: Billingham Beck Valley Country Park /Gravel Hole Nature Reserve /former Marshalls site, Norton. • Identify opportunities to provide improved education opportunities and interpretation at Billingham Beck Valley Country Park, Gravel Hole Nature Reserve and the former Marshalls site. • The A19 follows the course of the valley making this a very important landscape in terms of how it contributes to the image of Stockton Borough and the wider Tees Valley. • To address issues of poor water quality and contaminated land, including investigating opportunities to de-pollute contaminated soils and water through plants. • Seek opportunities to develop Sustainable Drainage Schemes and other measures which contribute to climate change adaptation • Development of strategic access routes, particularly for the local community at the R Tees end and forwards Wynyard • To investigate feasibility of providing areas for off-road motor biking.	Tees Valley Green Infrastructure Strategy Billingham Beck Valley Country Park Management Plan Gravel Hole Nature Reserve Management Plan (Tees Valley Wildlife Trust)
10 11	N O	**Regional Nature Park and Development of Access Network** Develop a Regional Nature Park - utilising RSPB Saltholme as the	Tees Valley Green Infrastructure Strategy

			hub and incorporating Teesmouth National Nature Reserve, Cowpen Bewley Woodland Park, Charlton's Pond & Osborne Park, and privately owned industrial sites of high wildlife value but with very restricted public access. Priorities to include: • Develop cycle and pedestrian linkages between RSPB Saltholme, Teesmouth National Nature Reserve, Cowpen Bewley Woodland Park, and Charlton's Pond. • Develop cycle route northwards towards Hartlepool and the coast (corridors 10 & 11) • Establish Osborne Park and further enhance Charlton's Pond – providing facilities for angling, and projects to enhance biodiversity and promote understanding • Greatham Creek - create intertidal habitat by breaching existing flood defence embankment (compensating for loss of intertidal habitat elsewhere on coast)	Tees Tidal Flood Strategy Teesmouth National Nature Reserve Management Plan RSPB Saltholme Management Plan (?) Cowpen Bewley Woodland Park Management Plan Charlton's Pond LNR Management Plan Billingham Environmental Links Project

-	A		**River Tees to Coatham Wood Corridor**
			• Seek opportunities to develop green, accessible corridors:
			  o linking Primary Corridors 1 and 5,
			  o improving access from Yarm, Eaglesclffe and Allens West to surrounding countryside
			  o Improving access to and within Coatham Wood
			• Conserve and enhance landscape and biodiversity, especially alongside Nelly Burdons Beck and in and around major sites such as Coatham Wood and the Admiralty Ecology Site.
				Coatham Wood Management Plan (Forestry Commission)

-	B C		**Greenvale and the West Stockton Corridor** • Further enhance the landscape and biodiversity value of the Greens Beck Corridor, including Greenvale Local Nature Reserve. • Provide new and improved opportunities for play and recreation. • Investigate feasibility of improving cycle and pedestrian access with the corridor • Seek opportunities to develop green, accessible corridors along the western fringe of Stockton, and conserve and enhance key landscape/biodiversity features.	Greenvale LNR Management Plan

			• Seek opportunities to develop Sustainable Drainage Schemes and other measures which contribute to climate change adaptation	
-		D	**Hardwick Dene to Lustrum Beck** • Further enhance the landscape and biodiversity value of this corridor, including Hardwick Dene and Elmtree Wood LNR, Newham Grange Park and Durham Road Cemetery. • Provide new and improved opportunities for play and recreation. • Investigate feasibility of improving cycle and pedestrian access with the corridor. • Establish Sustainable Drainage System and associated wildlife habitats linked to Hardwick Housing Regeneration Programme. • Seek other opportunities to develop Sustainable Drainage Schemes and other measures which contribute to climate change adaptation.	Hardwick Dene and Elmtree Woods LNR Management Plan
		E	**Roseworth to North & Stockton – including Great North Park** • Further enhance the landscape and biodiversity value of the Great North Park (including Norton Marsh LNR) and linking green corridors. • Provide new and improved opportunities for play and recreation. • Investigate feasibility of improving cycle and pedestrian access with the corridor.	
		F	**Carlton, Redmarshall, Sillington, Thorpe Thewles and Whitton** • Conserve and enhance existing countryside sites - Stillington Forest Park, Honey Pots Wood • Improve access network to meet current and future needs; e.g. circular routes for recreation, access to services and improved connectivity between villages and to key countryside sites. • Seek opportunities to improve and enhance landscape and biodiversity features in this area, especially within the beck	Stillington Forest Park LNR Management Plan Honey Pots Wood Management Plan

		corridors: Bishopton, Whitton, Thorpe and Letch Becks. • Interpret key features, sites and heritage	
-	H	**Saltergill to Leven Bridge** Corridor comprising the valleys of Saltergill Beck and West Gill / East Gill, including valuable woodland and grassland habitats and rights of way network. Area Includes the woodland blocks and belts associated with Kirklevington Hall, together with the characteristic clumps of trees and individual specimens in a traditional parkland setting. Priorities include: • Conserve and enhance wildlife habitats including Local Wildlife Sites • Identify opportunities for habitat creation and improved access where compatible with nature conservation objectives and the aspirations of landowners and residents.	
-	I	**Bassleton Beck, Thornaby Wood to A174** • Enhance the landscape and biodiversity value of these corridors, including implementing improved woodland management • Improve access to and within Thornaby Wood, including improved equestrian access and provision of cycle route linking Ingleby Barwick to Thornaby (part of Connect2 proposal)investigate feasibility of improving cycle and pedestrian access with the corridor • Investigate feasibility of providing improved cycle, pedestrian and equestrian access to the countryside east of Ingleby Barwick, contributing to the creation of an Ingleby Barwick Circular Trail. • Conserve and interpret historical features – including pill boxes and other Second World War heritage.	Local Transport Plan and Cycling Strategy 2006 to 2011 Connect 2 Bassleton Wood Management Plan
-	K	**Old River Tees to Thornaby Green** Further develop green infrastructure in this urban corridor. Priorities include:	Thornaby Cemetery Management Plan

		• Seek opportunities to establish accessible green corridors linking key sites, including Thornaby Cemetery, Littleboy Park, Mandale Linear park, Village Park and Thornaby Green. • Improve and enhance greenspaces, providing for multifunctional uses • Conserve and interpret historical features, e.g. Thornaby Green, Thornaby Cemetery and Harewood Pleasure Gardens	Conservation and Historic Environment Folder
-	M	**Cowbridge Beck** Further develop green infrastructure in the Cowbridge Beck corridor – including both urban and rural sections between Cowpen Bewley Woodland Park and Wynyard Village. Priorities to include: • Enhance landscape and biodiversity value of the river corridor, including identifying any further improvements to the urban greenspace section of the corridor/ • Identify opportunities to re-create a more natural stream channel corridor where this is compatible with other objectives – enhancing landscape and biodiversity and potentially reducing flood risk • Seek opportunities to develop Sustainable Drainage Schemes and other measures which contribute to climate change adaptation • Improve pedestrian and cycle access to the river corridor and along its length • Develop environmental interpretation initiatives	Cowpen Bewley Woodland Park Management Plan

Urban and rural 'green grids'

5.11   This third tier of green infrastructure comprises local networks of public open space, trees, streams, wildlife sites other landscape features are a vital element of the Borough's green infrastructure resource. The way in which these networks are managed will make a major contribution to the overall aims of this strategy, complementing investment in the primary and secondary green infrastructure network.

5.12 The Strategy promotes the concept of the 'Green Grid' as a way of planning and managing these spaces and features as multi-functional networks. Although it is beyond the scope of the Strategy to map existing local green grid components most of these are mapped on Stockton Council's corporate GIS system. This mapping will be a valuable tool in the planning and future management of these networks.

5.13 A series of Borough-wide priorities have been identified which should help to inform the development of these local green grids. These are set out in **Table 2** and would need to be translated into individual projects at the neighbourhood level. This will deliver significant local benefits and the cumulative impact of these proposals will make a significant contribution to the Borough's strategic green infrastructure goals.

Table 2: Urban and rural 'green grid' - priorities for action		
Topic	**Priorities**	**Links to other strategies, plans and programmes**
Trees, green streets and local community spaces	• Identify opportunities to develop projects which create greener streets, safe and useable local community spaces. • Increase tree canopy cover on streets and in other areas of public realm - by 15% by 2021, and by 30% by 2050. • Conserve existing mature trees and woodlands – incorporating these into new developments and regeneration projects and recognising how they contribute to the character of our urban areas.	Climate Change Action Plan
Urban open space – including parks, play spaces and allotments	Improve and enhance networks of urban open space, meeting the diverse needs of local communities. Specific priorities include: • Continue to deliver a Borough-wide park regeneration programme • Continue to develop and deliver a Borough-wide Spaces for Play programme, providing a greater range of play facilities and spaces for children and young people • Create new 'pocket parks' to accommodate multiple uses • Increase allotment provision in those areas of greatest need	Stockton Borough Council Park regeneration Programme Stockton Borough Council Spaces for Play Programme
Access, trails and interpretation	• Enhance pedestrian and cycle access to local greenspaces, increasing safety and encouraging greater levels of use.	Rights of Way Improvement Plan 2008-2018

	• Improve connectivity of the Borough's rights of way network, and provide enhanced network of routes for horse riders in urban fringe and rural areas • Develop Borough-wide network of waymarked walks in urban and rural areas, utilising existing trails (see 3.24) and through the development of new trails. • Stockton Council to develop an integrated approach to signage, interpretation and promotion in countryside and greenspaces – including preparation and application of an agreed 'style guide' • Promoting the use of public transport to access greenspace and countryside sites and promoted trails (e.g. through timetable information, site 'branding' of bus stops and minor variations to bus routes, and linked to the future development of the Tees Valley Metro).	Local Transport Plan and Cycling Strategy 2006 to 2011 River Routes in Stockton (project currently under development) Heritage Strategy (plaques, trails and interpretation theme)
Biodiversity and geodiversity	• Identify and implement measures within the Borough to contribute towards targets for all locally occurring priority habitats and species identified in the Tees Valley Biodiversity Action Plan. • Bring all the Borough's Local Wildlife and Geodiversity Sites (58 recognised sites in 2009) into positive management. The Council is required to report on the proportion of Local Sites under positive management under National Indicator 197. • Implement management plans for all the Borough's Local Nature Reserves	Tees Valley Biodiversity Action Plan
Rivers and streams	• Enhance water quality of rural and urban water courses in the Borough, contributing to meeting targets under the Water Framework Directive. • Identify opportunities for river restoration projects and creation of wetlands and flood storage areas, to reduce flood risk and enhance landscape and biodiversity. • Consider the potential for 'de-culverting' where relevant, particularly in association with new, large developments. • Maximise recreational value of river and stream corridors by improving access, providing infrastructure for angling and other	Tees Together Action Plan Stockton River Corridors Project Strategic Flood Risk Assessment

	activities. • Undertake small-scale projects to enhance the biodiversity and landscape value of river/stream corridors, and improve understanding through interpretation and education	
Landscape and heritage	• Develop and implement landscape conservation, enhancement and restoration initiatives in rural and urban fringe areas. To be informed by Landscape Character Assessment 2009 • Develop an integrated approach to green infrastructure development and heritage conservation and interpretation.	Conservation and Historic Environment Folder Heritage Strategy

Supporting Actions

5.14 In addition to focusing on the specific priorities listed above, the Strategy Action Plan should also incorporate a number of other supporting actions. These should include:

- **Influencing local and sub-regional strategies, plans and programmes** - to ensure these contribute to the development of the Borough's green infrastructure.

- **Development of a communications plan** - to raise awareness of green infrastructure issues and promote action at all levels to support delivery of the Strategy

- **Capacity building** – to develop the skills and knowledge required to effectively plan and manage the Borough's green infrastructure, including sharing of good practice, community engagement and education, formal training and professional development.

- **Development and delivery of complimentary programmes** - to maximise the social and economic benefits that can be delivered through the Borough's green infrastructure. This might include programmes to:
    - o improving health and well-being
    - o promote activity and nature-based tourism
    - o Support local food production and marketing
    - o Increase local energy production from renewable sources

Chapter 6   Implementing the Strategy

6.1   Successful delivery of this Strategy will require partnership working across broad range of organisations. It is proposed that a formal **Stockton-on-Tees Green Infrastructure Task Group'** be formed to oversee Strategy implementation and contribute to its on-going monitoring and review. The membership of this group may need to evolve over time, and consideration should be given to the possible development of some form of 'partnership memorandum of agreement' to provide a framework for long-term delivery.

6.2   The benefits of this kind of partnership approach include joint working; better targeting of resources; integration of delivery to avoid duplication of effort; a higher success rate in securing inward investment funding and key organisations playing to their respective strengths.

6.3   Clearly, green infrastructure planning addresses issues which go beyond the remit of environmental organisations; hence a wider network of stakeholder needs to be involved in the delivery of the Strategy, including organisations involved in public health, community development, economic development, sport, transport, urban regeneration and education. A full list of stakeholders is included in the background portfolio to the Green Infrastructure Strategy at www.stockton.gov/countrysideandgreenspace

6.4   On behalf of the partners Stockton-on-Tees Borough Council has taken on the role of leadership and partnership coordination. This role will include:

- Updating and revising the Green Infrastructure Strategy

- Providing for public scrutiny and debate

- Coordinating production of a action plan

- Providing some core funding and other resources

- Influencing other strategies and policies of the Council to help achieve the proposals in the green infrastructure strategy and delivery plan

- Convening forums and meetings to support promotion and implementation of the strategy

- Leading on monitoring and evaluation

- Producing and distributing an annual progress report

6.5   Numerous partners will play a part in the successful implementation of the Strategy, including organisations from the public, private and third sectors. Everyone from individual residents and landowners through to national agencies and businesses can make an important contribution to delivering improved green infrastructure, as demonstrated by the following local case studies:

CASE STUDIES – TO BE INSERTED

6.6   Some of the aims and ambitions set out in this plan can be achieved in the short term, while others will only be realised over a much longer timeframe.   It is suggested that implementation of the Strategy is considered over three broad time horizons:

Time Horizon	Years	Rationale
Short	0 – 5 years	Realistic timescale for delivery of an Action Plan linked to this first version of the Strategy
Medium	0 – 12 years	Links to the completion of the Sustainable Community Strategy (2021).
Long	0 – 50+ years	Time-horizon to address major impacts including climate change adaptation

Green Infrastructure Strategy Action Plan

6.7 The time priorities for action set on in Chapter 5 will form the basis of an Action Plan. As shown above, it is suggested this covers a 5-year period, initially from 2009 to 2014.

6.8 The action plan will:

- Set out details individual projects and programmes required to deliver the Strategy (some of these will be new, while others will be continuations of existing activities)
- Outline other actions required to deliver the Strategy (e.g. influencing the development of other strategies and plans)
- Details of new ideas requiring development time
- Relate projects and programmes back to the key aims and priorities et out in the Strategy
- Set out timescales for development and delivery of projects and programmes
- Identify the lead partner for each action and the main contact person / project manager
- Identify the contributing organisations
- List the sources of funding and whether these are secured, pending or require applications
- Identify success measures, outputs and desired outcomes
- Identify constraints and risks
- Set out how projects will be monitored and evaluated

6.9 The Action Plan would be reviewed on an annual basis by the 'Stockton Green Infrastructure Partnership Group' with input from the wider network of stakeholders.

Funding and delivery mechanisms

6.10 A list of potential sources and funding and delivery mechanisms will accompany the Action Plan, updated annually to reflect changes in funding programmes and local and national policy (e.g. changes to the planning system).   This is likely to include:

- Local Authority funds
- Central government – e.g. Growth Point Funding
- Single Programme programme funding (One North East)
- Rural Development Programme for England
- Local Transport Plan
- Planning obligations – S106 and the proposed Community Infrastructure Levy
- Lottery funding

- Landfill Communities Fund (LCF)
- Aggregates Levy Sustainability Fund (ALSF)
- Agri-Environment and Woodland Grant Schemes
- Government Agencies – e.g. Natural England, Environment Agency, Forestry Commission
- Private sector funding – e.g. sponsorship of a particular feature
- Private donations
- Charitable Trusts

6.11   In addition to securing the capital funding required to develop new projects it is important to identify the funding required for long-term management and maintenance. Consideration should be given to alternative funding models, many of which have been successfully applied elsewhere. These include:

- Establishment of new Charitable Trusts - to manage individual projects or a range of facilities. They can be funded through a variety of sources, e.g. Section 106 monies, bequests or charitable giving. This model has been used successfully in Milton Keynes, where an independent Parks Trust was set up with a one-off payment to cover the management of its land and holdings in perpetuity. This money was invested and the income generated is used alongside income from other assets (e.g agricultural licences and rental income) and grant aid to enable the Trust to manage over 4,500 acres of greenspace – equating to 20% of the total city area.

- Endowments - provision of an income generating fund or asset to assist with on-going operating costs. For example, this has been achieved in Peterborough, with the Development Corporation earmarking the rental income from an office building to fund recurring costs at the Nene Country Park.

- Roof Tax / household levy - again, an approach pioneered in Milton Keynes, where a charge for each new dwelling helps to pay for essential infrastructure to support residential development. This has approach has also been used to meet the revenue costs associated with West Park in Darlington.

- Income-generating opportunities – most commonly related activities within parks, such as car parking, rental income from businesses such as cafés and restaurants, boating lakes, sports facilities, and the use of parks for events, weddings and private functions. This could also include business sponsorship or 'adoption' of areas within parks, or where appropriate income from generation of renewable energy.

Chapter 7   Monitoring, evaluation and review

7.1   It is important for the success of the Strategy that measures are put in place to:
- monitor delivery of the Strategy Action Plan;
- evaluate the impact that the Strategy is having, and
- use this information to review both the Strategy and Action Plan in the medium and long term.

7.2   The Stockton-on-Tees Green Infrastructure Task Group will develop the systems to monitor, evaluate and review the Strategy and Action Plan, but these can be summarised as follows:

Monitoring

7.3   Wherever possible milestones and targets will be set against projects and activities within the Action Plan will The Action Plan and will form the basis of subsequent monitoring. Given that delivery of the Green Infrastructure Strategy is through a partnership approach the information needed for effective programme monitoring will need to come from a wide range of partner organisations.

7.4   Monitoring information helps to demonstrate progress through time and provides vital information to feedback to partners and stakeholders. Stockton-on-Tees Borough Council will coordinate the collection of monitoring data and compile the annual report. Monitoring will also enable the Council and other partners to report against other performance targets. These include the national set of indictors which now provides the overarching pperformance framework for Local Authorities and Local Authority Partnerships. These now represent the only means of measuring national priorities that have been agreed by Government.

7.5   The list of indicators has been compared with the functions and benefits of green infrastructure and is listed in the background portfolio of documents to this strategy. There are links between many of the indicators and green infrastructure delivery, however some are stronger than others notably in the category of environmental sustainability; two have been selected as very relevant to delivery of the Stockton Green Infrastructure strategy; NI188 adapting to climate change and NI197 improved local biodiversity. These two indicators will be used as the 'headline' measures of progress.

7.6   Other locally derived information will also be used to help monitor progress. This includes the Stockton-on-Tees Borough Council's biannual community survey, which provides information on people's satisfaction with green spaces and other issues dealing with the public realm. Park and greenspace visitor surveys and other local surveys will also support this process.

Evaluation

7.7   Evaluation is the process by which monitoring data and other information is used to make judgements about a project or strategy.

7.8   There are two types of evaluation relevant to this strategy; process evaluation and impact evaluation. Process evaluation will allow the partners to determine whether there are improved ways to go about delivery whilst impact evaluation will allow the partners to see whether the strategy is having an effect on environmental sustainability across the Borough.

The intention is to conduct a 'whole strategy' process evaluation three-year after the adoption of the Strategy and a 'whole strategy' impact evaluation after perhaps five years. It is good practice to commission an external provider or a consultant to conduct evaluations to ensure impartiality.

7.9   In addition to 'whole strategy' evaluations undertaken on an infrequent basis it is the intention to conduct interim evaluations on specific aspects of delivery to ascertain whether the green infrastructure strategy is having an impact on public policy. These areas include (a) impact on planning decisions i.e. are they more environmentally sustainable (b) development submissions i.e. are there better schemes coming forward (c) climate change amelioration i.e. is there material evidence of impact.

7.10   Based on monitoring and evaluation it will also be possible to determine good practice and share the information in the following ways:
   o   Issuing practice notes and guidelines to the professions operating in the Borough and stakeholders (e.g. land managers) as required.
   o   Holding conferences and seminars
   o   Responding to consultations to direct the development of future policy

Review

7.11   Information collected through monitoring and evaluation will be used to review the Action Plan (on an annual basis) and to review the Strategy as a whole. The Stockton-on-Tees Green Infrastructure Task Group would determine at what stage a full revision of the Strategy is required, but this is likely to be within a 5-year time horizon.
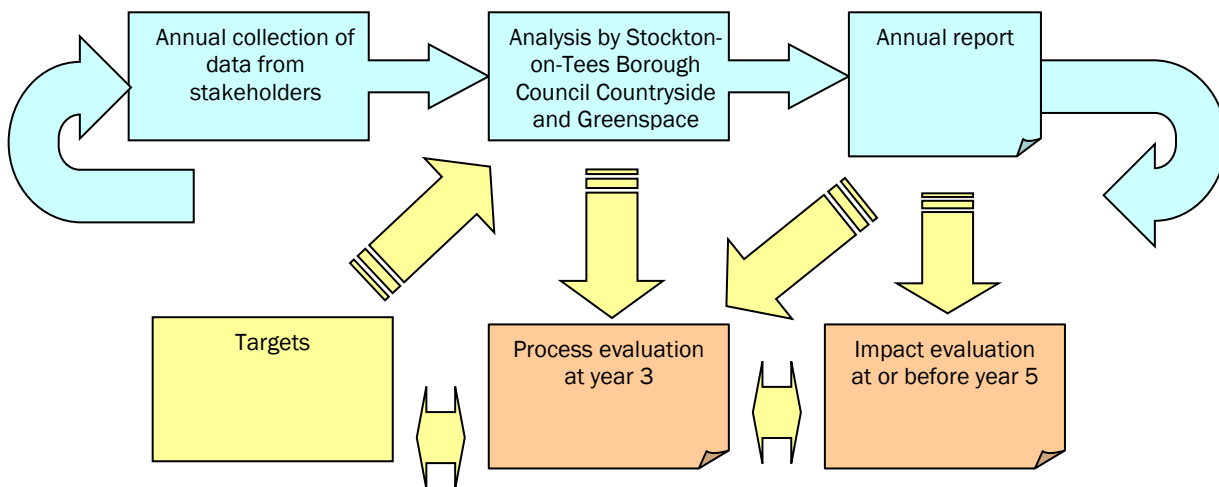

Figure XXX – monitoring and evaluation procedure

Appendix A Glossary

Biodiversity - variety of life including the different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part.

Brownfield - an area of land in a town or city that was previously used for industry

Carbon sequestration - capturing and storing atmospheric carbon in 'carbon sinks' such as trees and other green vegetation, as well as non-living 'reservoirs' such as soils and wood products),

Climate change adaptation – a concept that refers to decisions to modify natural or human systems in response to actual or expected global warming that cannot be avoided by emissions reductions.

Climate change mitigation – refers to reducing greenhouse gas emissions and concentrations in order to limit the severity of future climate change.

Ecosystem services – life support functions of the environment such as clean air and fresh water.

Geo-diversity - the minerals, rocks, soils, land forms and processes that make up the landscape and structure of the earth.

Governance - consistent management, cohesive policies, processes and decision-rights for a given area of responsibility.

Green corridors - strip of habitat or greenspace connecting wildlife populations and separating human activities.

Green infrastructure – a term which describes how green spaces and natural resources act together to provide ecosystem services to society.

Growth Point – a central government funded development programme which in the case of the Tees Valley requires an increase in its housing growth by 20% above the approved Regional Spatial Strategy target up to the period 2016/17. It identifies key infrastructure investment necessary to speed up the development of the Tees Valley Coty Region, which should include provision of new or enhanced green infrastructure.

Local Area Agreement (LAA)- the priorities for a local area agreed between central government and a local strategic partnership.

Landscape – an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors

Landscape Character – a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. Landscape character is what makes an area unique.

Local Development Framework (LDF) - folder of local development documents that outlines how planning will be managed in the local area.

Local Wildlife Sites (or Local Sites) – sites designated locally for their wildlife or geodiversity importance. Under National Indicator 197 the Local Authority reports annually on the proportion of Local Sites in positive management. Formerly many of these areas were designated Sites of Nature Conservation Interest

Multi-functionality – many uses made of the same piece of green space

National Character Areas (NCAs) - England has been divided into 159 NCAs representing areas with similar landscape character

Partnership approach – application of the complementary resources and skills from diverse sources drawing on each partner's core strengths.

PPG - planning policy guidance issued by Government.

PPS – planning policy statement issued by Government.

Public realm - publicly owned streets, rights-of-ways, parks and other open spaces, public and civic buildings and facilities.

Ramsar Site - a wetland of international importance for waterfowl under the Ramsar Convention

Renewable energy – a term used to describe the inexhaustible energy flows that occur naturally and continuously in the environment, such as energy from crops, the sun, wind or waves. Using renewable energy sources instead of fossil fuels has a number of environmental benefits including decreasing greenhouse gas emissions and air pollution.

Recreation, open-space and landscape SPD – a spatial planning document allied to the Local Development Framework.

Site of Special Scientific Interest (SSSI) – areas of national importance for wildlife, geology or geomorphology designated and protected under the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way Act 2000.

Special Protection Area (SPA) – an area designated under the European Union Directive on the Conservation of Wild Birds, which supports internationally important numbers of wild birds.

Stockton's Borough's Sustainable Community Strategy 'Shaping Our Future' 2008 to 2021 – sets out the future vision for the Borough, provides a framework for how public agencies and the private and third sectors will work together through the Local Strategic Partnership (Stockton Renaissance) and informs priorities within the Local Area Agreement.

Stockton Middlesbrough Initiative - project to deliver a 20 year vision for regenerating the urban core of the Tees Valley, focusing on the 3,000 hectare area along the banks of the River Tees between Stockton and Middlesbrough .

Stockton Renaissance – the Local Strategic Partnership for Stockton Borough, comprising a wide range of private, public and third sector partners. Responsible for production, delivery and review of the Borough's Sustainable Community Strategy and Local Area Agreement.

Sustainable development – enabling all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.

Sustainable Drainage Systems (SUDS) - systems for managing surface water run-off by encouraging surface water to remain on site and infiltrate the ground, rather than directing surface water into drains. Well designed and maintained SUDS are more sustainable than conventional drainage methods because they mitigate the adverse effects of urban stormwater runoff, can improve water quality, and provide biodiversity and social benefits.

Sustainable Resource Management - protection of all natural resources.

Tees Valley Biodiversity Action Plan (BAP): comprises a series of Action Plans for threatened or characteristic habitats and species in our area.   The Tees Valley Biodiversity Partnership is responsible for coordinating delivery of the BAP.

Appendix B   Background portfolio

A portfolio of supporting documents has been produced to accompany the Green Infrastructure Strategy. The portfolio is a web based resource which can be accessed from all internet equipped computers and public access points. The portfolio is not a fixed resource and will evolve through time; the portfolio will eventually contain:-

- o Supporting documents some of which have been specially produced to accompany the Strategy
- o Data base of green-spaces in the Borough
- o Maps linked to the data base
- o Strategy Action Plan
- o Monitoring and evaluation reports
- o Annual report

The supporting documents include a complete list of functions and benefits, functions and benefits relationship diagram and matrix, a list of stakeholder organisations and a paper on how the functions and benefits were determined for Stockton-on-Tees.

(LINK TO BE INSERTED)

Appendix C   Guidelines for the planning and management of Green Infrastructure

a) Planning and Development

- Green infrastructure should be planned and managed as an integrated network – operating at different spatial scales from the local/neighbourhood to the Tees Valley scale and seeking the integration and interaction of different functions on the same site and across a green infrastructure network as a whole.
- Proposals should promote social and economic regeneration through the creation of high quality open space, green space and landscaping.
- Green infrastructure should be fundamental to the planning of major new development and re-development schemes and should help to integrate development with surrounding townscape and landscape, and with adjoining communities. It should ideally be planned in advance of, or concurrently with, the built environment. It is essential that long-term maintenance is considered.
- Proposals should be designed to high standards of quality and sustainability to deliver social, economic and environmental benefits.
- Green infrastructure should maximise the contribution of natural systems and ecosystem services.
- Where appropriate use should be made of planning conditions, planning obligations and section 106 agreements to secure the provision and maintenance of green infrastructure.
- Community involvement should be encouraged from the outset in the design, implementation and management of green infrastructure.
- The principle of 'net gain' should apply when there is a loss in green infrastructure resource.

b) Accessibility

- Enhanced access by foot, cycle and, where appropriate, by horse is fundamental.
- New access routes should focus as a priority on areas of planned growth, regeneration and redevelopment, particularly where public access may be restricted at present.
- The development of the Tees Valley Metro offers opportunities to improve accessibility to a number of major green infrastructure elements - for example a halt near Teesside Park will also serve the Green-Blue Heart, River Tees Corridor and Tees Barrage; a halt in the vicinity of Cowpen Bewley could provide access to RSPB Saltholme, the Tees Estuary and Cowpen Bewley Woodland Park.
- Any planned park and ride facilities, whether for the Metro or as part of an enhanced bus network, should where possible be integrated within green infrastructure network offering, for example, links into the surrounding countryside and picnic facilities, as well as functional parking facilities.
- Where possible new road construction or highway improvement schemes should make a positive contribution to green infrastructure by, for example, incorporating features such as ponds or wild flower meadows or contributing to long term green infrastructure management.

c) Landscape and Historic Environment

- Green infrastructure should contribute to the management, conservation and improvement of the local landscape and townscape and reflect the landscape character approach.

- Local character and distinctiveness should be identified, enhanced and protected wherever possible, informed where appropriate by landscape and townscape character assessments (including the Borough Landscape Character and Historic Landscape Character Assessments).
- Green infrastructure should contribute to the protection and enhancement of historic assets.
- Where possible derelict, vacant and unused land should be restored/reclaimed for uses that contribute to the objectives of the Green Infrastructure Strategy. Land identified for specific uses, but where development is only likely in the long term (for example some employment land), should be considered for temporary 'greening' such as timber production for local renewable energy schemes, although the biodiversity value of such land should also be taken into account.
- A mosaic pattern of woodlands should form a core component of the green infrastructure network and should be planned and created in line with the Regional Forestry Strategy.
- Where appropriate woodland management and creation should include opportunities to produce sustainable supplies for local renewable energy projects.

d) Biodiversity

- Green infrastructure should maintain and enhance biodiversity. Wherever possible development and delivery of new green infrastructure should result in a net gain of Local Biodiversity Action Plan habitats and species.
- Wildlife corridors should be managed in a way that facilitates the movement of species and where appropriate provide suitable linkages to counter existing fragmentation of habitats, particularly to and from designated wildlife sites.
- New development should not damage existing wildlife sites and should enhance them where possible.

- Green infrastructure should enhance the natural environment of the Tees Valley and retain or enhance landscape character as appropriate, particularly through the use of locally sourced native species in planting schemes.

e) Climate Change

- Where feasible and appropriate green infrastructure should be compatible with and contribute to natural processes and systems.
- Green infrastructure should be planned in ways which enables biodiversity to adapt to climate change.
- Design of new developments should, where feasible, contribute to environmental sustainability, for example by including features such as green roofs, planting schemes that do not require large amounts of water, and the principles of sustainable drainage systems (SuDS)
- Watercourses and wetlands should be enhanced and managed to create multifunctional assets capable of delivering recreation and biodiversity benefits as well as water storage or flood management functions.
- Proposals should take account of the recommendations of the Tees Catchment Flood Management Plan and the Tees Tidal Flood Risk Management Strategy and Strategic Flood Risk Assessments.
- Flood Management Schemes should make a positive contribution to green infrastructure such as improving or creating habitats.

f) Leisure and Recreation

- Green infrastructure should create new leisure and recreational facilities, particularly where there are opportunities to link urban and countryside areas.
- The importance of green space and green corridors in providing sport, play and recreation opportunities that can enhance and promote health and well-being should be recognised.

g) *Safety and Security*

The Tees Valley Green Infrastructure Guidelines do not address this issue specifically, but within the Borough it is considered to be an important aspect of green infrastructure planning and management. It is suggested that the following broad principles be adopted, based on government guidance which identified seven attributes of sustainable communities that are particularly relevant to crime prevention.[10]   Where appropriate spaces should:

- be designed with well-defined routes, spaces and entrances that provide for convenient movement without compromising security;
- be structured so that different uses do not cause conflict;
- achieve a degree of natural surveillance – e.g. overlooked from a road or housing area;
- promote a sense of community ownership, respect and territorial responsibility;
- include necessary, well-designed security features;
- encourage an appropriate level of human activity to help reduce risk of crime and anti-social behaviour and increase a sense of safety;
- be designed with management and maintenance in mind, to discourage crime in the present and the future.

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[10] "Safer Places: The Planning System and Crime Prevention" - ODPM / Home Office, 2004

Appendix D   Stockton-on-Tees green infrastructure components

Details of the Borough's main green infrastructure 'assets' or 'components' are set out below, including:

1.   Wildlife and geodiversity sites / natural greenspaces
2.   Trees in the public realm
3.   Urban Parks
4.   Amenity space and green corridors
5.   Play spaces - for children and young people
6.   Outdoor sports facilities
7.   Cemeteries & closed churchyards
8.   Allotments
9.   Historic environment
10.   Rivers, steams and other water bodies
11.   Public Rights of Way and Cycleways
12.   Transport corridors

1.   Wildlife and geodiversity sites / natural greenspaces

These sites represent a significant proportion of the Borough's green infrastructure resource. They include both rural and urban sites, ranging from the internationally and nationally significant areas of grazing marsh, mud and sand flats found around the Tees Estuary to small Local Nature Reserves in the heart of the Borough's towns. The most significant sites for biodiversity within the Borough have some level of protection through local, national or European designation. The majority of wildlife sites are also important for recreation and education, and for their landscape value.

Most of the wildlife habitats found within the Borough are included under the Tees Valley Biodiversity Action Plan (see Appendix B). It is important to recognise that while designated wildlife sites are very important, biodiversity is a key element of all types of greenspaces including areas such as amenity areas, parks, churchyards and cemeteries, school grounds, gardens and allotments. Under the Tees Valley BAP there are Action Plans for all such areas.

Sites of Special Scientific Interest

There are two Sites of Special Scientific Interest (SSSIs) within the Borough:

- Seal Sands SSSI, which lies entirely within the boundary of Teesmouth National Nature Reserve
- Cowpen Marsh SSSI

Both form part of the wider expanse of wetland and mudflat habitat of Teesmouth, which is an internationally important breeding and feeding ground for migratory wildfowl, wading birds and shore birds

Special Protection Areas and Ramsar Sites

Teesmouth and Cleveland Coast Special Protection Area (SPA) and Ramsar Site: Cowpen Marsh SSSI and the majority of Seal Sands SSSI are recognised as wetlands of international importance for nature conservation. They are included as part of the Teesmouth and Cleveland Coast Special Protection Area PA. The land has the further international designation

as a Ramsar site. Both designations reflect the importance of the site for waterfowl which feed and roost in internationally important numbers.

Teesmouth National Nature Reserve

Designated in 1995 and managed by Natural England. The NNR covers an area of 355 hectares, spanning the boundary between the Borough's of Stockton and Hartlepool. The site contains the largest are of inter-tidal mudflats on the east coast of England between the Humber and Lindisfarne and boasts a rich variety of wildlife including huge flocks of migratory water birds and both grey and harbour seals.

Local Wildlife and Geodiversity Sites

A review carried out in 2008 identified a total of 58 Local Sites which met the selection criteria agreed by the Tees Valley Biodiversity Steering Group. Under National Indicator 197 the Council and its partners must report on the proportion of these sites in positive management.

RSPB Saltholme

Opened in 2009 as a major new nature reserve and discovery park. The site covers some 380 hectares of former industrial land and comprises a great variety of wildlife habitats including reedbeds wet grasslands and lakes. Saltholme attracts a vast array of birds and other wildlife, including wildlife and has the third largest common tern colony in England. It has a new state-of-the-art visitor centre and a series of trails extending across the site.

Country Parks

The Borough Council manages three country parks, all three of which held Green Flag status at the time when this Strategy was published:

• Wynyard Woodland Park, Thorpe Thewles
• Billingham Beck Valley Country Park
• Cowpen Bewley Woodland Park

The Council will continue to improve and develop these parks through its Park Regeneration Programme, informed by visitor surveys.

An extensive series of visitor surveys is being undertaken during 2009 to determine levels of use throughout the year and the views of visitors. This will help to inform the future management and development of these parks.

Local Nature Reserves (LNRs)

A number of sites in urban and urban fringe locations have been designated as LNRs. All these sites are managed by Stockton Borough Council:

• Bassleton Woods and the Holmes, Thornaby
• Barwick Pond, Ingleby Barwick
• Black Bobby's Field, Thornaby
• Billingham Beck Valley Country Park
• Charlton's Pond, Billingham
• Greenvale, Stockton
• Hardwick Dene and Elm Tree Wood, Stockton
• Norton Marsh, Stockton
• Quarry Wood, Eaglescliffe
• Stillington Forest Park
• Thorpe Wood, near Thorpe Thewles

<u>Tees Valley Wildlife Trust Nature Reserves</u>

The Trust manage five reserves in the Borough:

- Bowesfield
- Gravel Hole
- Maze Park (partly in Middlesbrough)
- Portrack Marsh
- Preston Farm

<u>Industrial and brownfield sites</u>

A significant proportion of the Borough's biodiversity occurs on current or post-industrial sites. Many of these sites form an important refuge for wildlife in what is often a heavily urbanised landscape. Over recent years a number of local organisations have worked in partnership with INCA to enhance the potential of their sites for biodiversity. These include:

- Belasis Estate
- BP Exploration Operating Co Ltd (BP CATS terminal)
- Frutarom
- GrowHow
- Huntsman Pigments
- INEOS Nitriles
- Lucite International
- SABIC
- SITA EfW plant

In addition to these 'operational' industrial sites in 2008 there was approximately 27 hectares of ecologically important brownfield land within Stockton.

<u>Woodlands</u>

There is around 360 hectares of woodland within the Borough. Major sites include:

- Coatham Wood, Long Newton - 198.6 hectare woodland owned and managed by the Forestry Commission with public access throughout.

- Honey Pot Wood, Whitton - 7 hectare woodland owned and managed by Stockton Borough Council with public access and linked by public rights of way to nearby villages.

- Wynyard Woodlands – large areas of largely plantation woodland in and around Wynyard Park and Village, extending into Hartlepool Borough and County Durham.

- Leven Valley woodlands – significant areas of woodland along the River Leven valley, much of which is identified as a Local Wildlife Site.

<u>Other wildlife sites</u>

In both urban and rural areas there are numerous other sites and features which contribute to the Borough's biodiversity resource, including hedgerows, grasslands, streams, ponds, and street trees (see XXXXX). It is worth noting too that many other types of urban greenspace also include important wildlife habitats; including sites such as Newham Grange and Preston Parks, and Thornaby Cemetery.

2. Trees in the public realm

Trees are major components of green infrastructure within the borough. The majority of the tree cover is present within greenspaces such as formal parks, countryside sites, schools and

education centres, cemeteries plus highways and a mixture of other public open spaces. There are approximately 12,000 individual trees located in public highways alone.

The Council currently has an active programme of annual tree planting typically planting up to 3-400 new street trees every year. A significant portion of tree cover is also present in suburban gardens and the rural fringe areas including industrial estates and agricultural land.

3. Urban parks and other key 'destination' sites

Stockton Borough Council owns and manages a number of urban and country parks. As well as being important for recreation many of these parks are rich in biodiversity and cultural heritage:

- Ropner Park, Stockton
- Preston Park, Stockton
- Newham Grange Park, Stockton
- Primrose Hill Park, Stockton
- John Whitehead Park, Billingham
- Village Park, Thornaby
- Littleboy Park, Thornaby

At the time of preparing this Strategy Ropner Park held Green Flag status.

Preston Park and Ropner Park are the parks most frequently used by residents of the Borough, although local use of other parks such as John Whitehead Park and Wynyard Woodland Park is very high.

Major improvements have been made to many of these parks in recent years; a process that continue through the Council's Park Regeneration Programme.

An extensive series of visitor surveys is being undertaken during 2009 to determine levels of use throughout the year and the views of visitors. This will help to inform the future management and development of these parks.

In addition to the sites identified above there are a number of areas alongside the River Tees which are popular recreational destinations:
- The Tees Barrage – a major destination for water sports, due to benefit from a major upgrade of the existing white-water course. The site also includes landscaped areas, riverside walks and a nearby caravan and camping site. The site is within the Green Blue Heart area, and adjacent to Maze Park and Portrack Marsh Nature Reserves.
- Stockton and Teesdale Riverside
- Yarm and Eaglescliffe Riverside

4. Amenity greenspace & green corridors

These spaces cover some 565 hectares, representing around nearly 30% of the total urban open space within the Borough.

5. Play spaces

In 2009 there were 40 dediacted play areas for children, with this number set to increase to 52 through the Borough Council's Borough's 'Spaces for Play' programme.

6. Outdoor sports facilities

There are around 600 hectares of outdoor sports facilities and playing fields across the Borough, although less than half of that area is open to the public at all times.

7. Cemeteries and Closed Churchyards

Stockton Borough Council manages five cemeteries:
- Durham Road, Stockton
- Oxbridge Lane, Stockton
- Thornaby Cemetery (holding Green Flag status in 2009)
- Billingham Cemetery
- Egglescliffe Cemetery

The Council also manages a number of closed churchyards.

8. Allotments

In 2009 there were 26 allotment sites within the Borough, with a total of 1103 allotment plots. These cover a total of 42.9hectares.

21 of these sites are owned by Town or Parish Councils with management responsibility devolved to Allotment Associations. Current demand for allotments is high and there is a need to increase allotment provision across the Borough.

9. Historic environment

Sites of Archaeological Interest

There are eight nationally important sites within the Borough, known as Scheduled Ancient Monuments:

- Castle Hill, Castleleavington
- Grindon Church, Grindon
- Round Hill Castle, Ingleby Barwick
- Larberry Pasture Settlement Site, Longnewton
- Newsham Deserted Medieval Village
- Market Cross, Stockton
- The Market Hall, Yarm
- Yarm Bridge, Yarm

The Roman Villa site at Ingleby Barwick may be considered for scheduling at a later date.

Registered Historic Parks and Gardens

There are two historic parks and gardens in the Borough:
- Ropner Park – an impressive Victorian Park dating back to 1890 and recently restored with the support of the Heritage Lottery Fund.
- Grade II* listed Wynyard Park – an early 19th century landscaped park with a lake and formal gardens.

Conservation Areas

Eleven areas are currently designated:

- Billingham Green
- Bute Street, Stockton
- Cowpen Bewley, Billingham
- Eaglescliffe with Preston
- Egglescliffe
- Hartburn
- Norton
- Thornaby Green
- Town Centre, Stockton
- Wolviston
- Yarm

<u>Other historic features and areas</u>

These include:
- Sites associated with the former Stockton and Darlington railway and other railway heritage
- Industrial heritage sites
- Sites associated with the two World Wars – including remains of the former aerodrome at Thornaby
- Locally listed buildings
- Areas of Special Character - to be identified in the LDF

10. Rivers, steams and other water bodies

Rivers and streams represent some of the most significant natural features within the Borough. The River Tees is the Borough's major watercourse, and all main and secondary rivers flow into the Tees. Map 1 shows the sections of main river or watercourse within the Borough; these are as follows:

	Length:
River Tees:	
- from SW Borough boundary to River Leven	13.6km
- from River Leven to Tees Barrage	12.8km
- from Tees Barrage to Teesmouth	13.6km
River Leven to River Tees	10.3km
Cowbridge Beck to Greatham Creek	6.5km
Greatham Creek to Teesmouth	8.3km
Belasis Beck via Holme Fleet to River Tees	5.9km
Bishopton Beck via Whitton and Thorpe Becks to Billingham Beck	13.5km
Billingham Beck to River Tees	7.3km
Burnwood Beck via Coatham Beck to Hartburn Beck	7.1km
Hartburn Beck via Lustrum Beck to River Tees	8.7km
The Fleet via Old River Tees to River Tees	2.3km
Total	*109.9km*

Together with secondary watercourses such as Bassleton Beck, Stainsby Beck and Greens Beck these watercourses represent a major landscape, biodiversity and recreational asset, particularly when seen as part of wider green corridors which link town and country.

The River Tees is one of the Borough's major recreational resources, with the eleven mile non-tidal section upstream from the Barrage offering opportunities for a range of water-sports, angling and river trips. While other sections of river corridor such as Greatham Creek and the Old River Tees include some highly valuable natural habitats. Management of flood risk within these river corridors is also of major importance.

Ponds and lakes - *to complete*

11. Public Rights of Way and Cycleways

The Borough has an extensive network of paths for walking, cycling and horse riding.

Public Rights of Way

The network comprises:
- 154km footpath (221 routes)
- 32km bridleway (32 routes)
- 2km byway (3 routes)

18% (33.4km) of this network is in the urban part of the Borough; the remainder is in rural areas. Over half the network is on agricultural land and around one-third crosses arable land.

A major issue is the disjointed nature of the network, with routes severed by major roads, and with limited access across railways and rivers. Several paths terminate at busy roads making them unattractive to recreational users. The Borough's Rights of Way Improvement Plan (2008-2018) sets out priorities for improving the network and increasing usage.

Cycleways
In 2009 the Borough's network of cycle routes extended to 1008km, including on carriageway, segregated, and cycle 'tracks', including some sections of National Cycle Network.   Of this 78km was 'off-road' routes.

Promoted routes

A number of rights circular and linear routes are promoted through leaflets and on-site signage. Some also have on-site interpretation. These promoted routes often include public rights of way and cycle paths, and include:
- Teesdale Way – a regional long-distance path
- Castle Eden Walkway
- Three Villages Loop Walk
- Park to Park Circular Walk
- Teesside Retail Park Nature Trail
- Gravel Hole to Portrack Marsh
- Thornaby Aerodrome Walking Tour
- Historic Trails at Cowpen Bewley, Norton and Yarm

12. Transport corridors

Road and rail corridors often include verges, embankments, hedgerows and tree and woodland belts, often making these important areas for wildlife and a significant component of the Borough's green infrastructure network.   New road developments can deliver landscape and biodiversity enhancements, and the visual appearance can help to present a

positive image to residents and visitors to the Borough. However, roads and railways can also present a barrier to access countryside and greenspace.

Acknowledgements

We wish to thank all the organisations and individuals who have contributed to this strategy - and we look forward to working with you all on its future implementation.

In particular we wish to thank the members of the 'partnership group' who have been involved throughout the process. This includes representatives from the following organisations: