

Sustainable Ventures in Public Health

The economic benefits of green infrastructure
in the North West of England



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Executive Summary

Supporting and promoting investment in green space is likely to have a range of far-reaching benefits for the local economy and public health

- ◆ Sites with green infrastructure are more attractive to both businesses looking for a new location and their employees. In order to attract the most highly skilled workers, businesses should consider locating on sites within or near green space.
- ◆ Opportunities for outdoor relaxation, recreation and leisure activities are desirable, and associated with physical and mental health benefits. Businesses should consider sites that provide workers and residents with green space to undertake these activities, or invest in the development of green space in their existing location.
- ◆ Investment in active transport will benefit businesses. Encouraging employees to cycle or walk to work will increase motivation and productivity and reduce absenteeism.
- ◆ An increasing and improving active transport route is likely to increase access to a place of work, enhancing the employee and customer pool.
- ◆ Greener towns and cities are more attractive to tourists. Tourism strategies should invest in urban green space and ensure that these green spaces are well marketed and highlighted in promotional material.
- ◆ To encourage regeneration in economically disadvantaged areas, investment in green space should be a priority. Improving green space is likely to increase neighbouring and nearby property prices and taxes as well as attracting new businesses and investment.
- ◆ Studies show that people are willing to pay additional taxes if these are used to secure improvements in green infrastructure.

Improving green space benefits whole communities but can especially benefit those in disadvantaged communities

Championing regeneration and urban greening: Regeneration of sites that have been neglected within a community may attract businesses to the area and provide more attractive areas of green space that residents can use for leisure and recreation purposes. Good quality green space can have a positive impact on property prices, and higher prices are linked to regeneration and have benefits for local businesses, residents and authorities.

Developing and promoting active transport options: Developing active transport options can particularly benefit residents in disadvantaged communities who may be less likely to have access to public transport or be car owners. In disadvantaged areas, employment, education and recreation options may be limited within the community, so increasing safe options for cycling and walking can have multiple benefits. Projects to promote the use of active transport among the public should be run alongside route developments.

Establishing community projects: Community projects and schemes involving groups such as the young or unemployed people can be set up as part of community regeneration that will involve residents in the establishment of high-quality green space. Projects to clean-up

or develop areas of green space that can be accessed by the local community are likely to help create a positive community spirit and provide opportunities for residents to learn important skills.

Maintenance and upkeep of green space is important to see continued benefits

It is important that sites are well kept in order to continue to provide many of the potential benefits associated with green space. Different aspects of green space will have different requirements depending on their function and purpose. It is important to consider what the main assets of good-quality green space are and ensuring that these are maintained.

Maintaining safety and security: If the public are to use a site it is important that it is safe. Employees or customers may access a place of work through an area of green space, or use a cycling or walking route. They are more likely to use these features if they feel safe doing so. Therefore factors such as ensuring lights work, monitoring who is using a site and providing maintenance are vital if the public are to feel safe using the site.

Creating attractive and aesthetically pleasing green space: Green space including parks, woodlands and other natural environmental features are sites that people visit in order to relax and undertake recreational and leisure activities in a pleasant environment. It is important that sites are well-maintained to preserve their natural beauty and aesthetic qualities. There may be opportunities for voluntary or training projects to be introduced that will have co-benefits by providing upkeep of the natural environment and teaching new skills.

Investment in Sustainable Ventures in Public Health: Summary

Investment in:	Active Transport <i>Routes for cycling and walking</i>	Urban Green Space <i>Parks, woodland, water</i>	Rural natural attractions <i>Environmental features</i>
<i>Key economic, community and public health benefits</i>	<ul style="list-style-type: none"> ◆ Increased travel and commuting options ◆ Safer commuting ◆ Reduced congestion ◆ Reduced pollution ◆ Promotion of healthy lifestyle ◆ Increased access to jobs ◆ Increased access for customers to facilities and businesses 	<ul style="list-style-type: none"> ◆ Aesthetically pleasing ◆ Increased sporting, recreation and leisure opportunities ◆ Improved quality of place ◆ Improved image and potential for promotion for tourism ◆ Increased opportunity for outdoor activities and events ◆ Increased opportunity for volunteering and training projects 	<ul style="list-style-type: none"> ◆ Increased business opportunities ◆ Improved recreation and leisure opportunities
<i>What might investment in this area encourage?</i>	<ul style="list-style-type: none"> ◆ New businesses and investment ◆ Active transport tourism ◆ Economic regeneration ◆ A healthier and more productive workforce 	<ul style="list-style-type: none"> ◆ The most highly skilled workers to work in the area ◆ Tourism ◆ Increased property prices ◆ Economic regeneration 	<ul style="list-style-type: none"> ◆ Tourism
<i>Who is likely to benefit?</i>	<ul style="list-style-type: none"> ◆ Low income workers ◆ Businesses located away from an urban centre ◆ Businesses benefiting from a larger potential workforce and number of customers 	<ul style="list-style-type: none"> ◆ Businesses attracting the best workforce ◆ Local residents ◆ Disadvantaged areas ◆ Tourism and leisure industries 	<ul style="list-style-type: none"> ◆ Tourism and leisure industries ◆ Businesses located near natural attractions ◆ Local residents

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Introduction

Overview

Cycling, walking and activities in green space have clear benefits for health and wellbeing but investing in green infrastructure also has the potential to afford social, economic and environmental benefits to communities in the North West. Initiatives that promote cycling, walking and activities in green space may be termed 'sustainable ventures'; ventures with clear economic benefits that utilise opportunities to improve health and wellbeing while contributing to environmental sustainability.

This report is based on a review of the evidence on the wider economic benefits of sustainable ventures in public health. The review primarily considers initiatives to promote cycling, walking and activities in green space, but also more broadly on the social and economic benefits of investing in the development of green infrastructure. The report also makes recommendations on how sustainable ventures in public health can be further encouraged or promoted at a regional level.

Benefits of Activities in Green Space for Health and Well Being

There is evidence that populations in England in areas with a higher proportion of green space have better health (Mitchell & Popham, 2007). One explanation for this is that greener communities are perceived as more desirable and attractive, and a high level of satisfaction amongst residents with a neighbourhood and its infrastructure is associated with an increase in physical activity and self-rated health (Stronegger et al., 2010). Physical activity if performed regularly reduces the risk of a range of diseases including obesity, diabetes, some cancers and cardiovascular diseases (Natural England, 2011). It would therefore appear logical that increased opportunity to participate in physical activity through increased access to green space should result in better physical health.

Access to green space in towns and cities has been demonstrated to be associated with higher physical activity and health benefits including reduced risk of obesity (Natural England, 2011). Access to green space is also associated with better mental health and wellbeing (Pretty et al., 2006; Pretty et al., 2007). Evidence suggests that the quality of the green space rather than the quantity may be the most important factor and that green space perceived as pleasant to be in is likely to have a greater impact on use (van den Berg et al., 2010). Factors such as how secure and safe green space is perceived to be are likely to influence the extent to which they are used (Mitchell & Popham, 2007; Natural England, 2011; Richardson & Mitchell, 2010), so it is important that green space is well-maintained and looked after.

Estimating the Economic Benefits of Green Space

Estimating the wider economic benefits of green space presents several challenges; however, economic valuation is needed for a variety of purposes and is important for decision making. Green space is an example of a *non-marketed good or service* to which an *economic value* needs to be assigned. The economic value of something may be considered “as the extent to which people would be prepared to sacrifice something else in order to obtain or safeguard a quantity of it” (DTLR, 2002).

There are two ways of estimating the economic benefits attached to green space: (i) *revealed preference* approaches; and (ii) *stated preference* approaches. Revealed preference approaches identify the ways in which a non-marketed good (e.g. green space) influences actual markets for some other good (e.g. the housing market; see **Property and Land Values**), whereas stated preference approaches are based on hypothetical markets. The aim of economic valuation techniques is to uncover the *total economic value* of the goods in question (see Box 1).

In addition to the ‘classical elements’ of economic value summarised in Box 1, costs associated with the creation of green infrastructure (e.g. costs for purchasing land, or for designing and constructing green infrastructure) should be considered; this is called the *investment value* (Vandermeulen et al., 2011).

Box 1: Total economic value of green space

The *total economic value* associated with green space comprises both *use values* and *non-use values* as shown in Figure 1. Use values may be *direct* (e.g. visiting a site) or *indirect* (e.g. increased health from cycling and walking in green space). *Option values* are also direct values and reflect an individual’s willingness to pay to conserve a good for future possible use. Non-use values include *existence values*, which arise when an individual is willing to pay for a good even if they do not expect to benefit from it. The *bequest value* represents an individual’s willingness to pay to conserve the good for possible use by future generations.

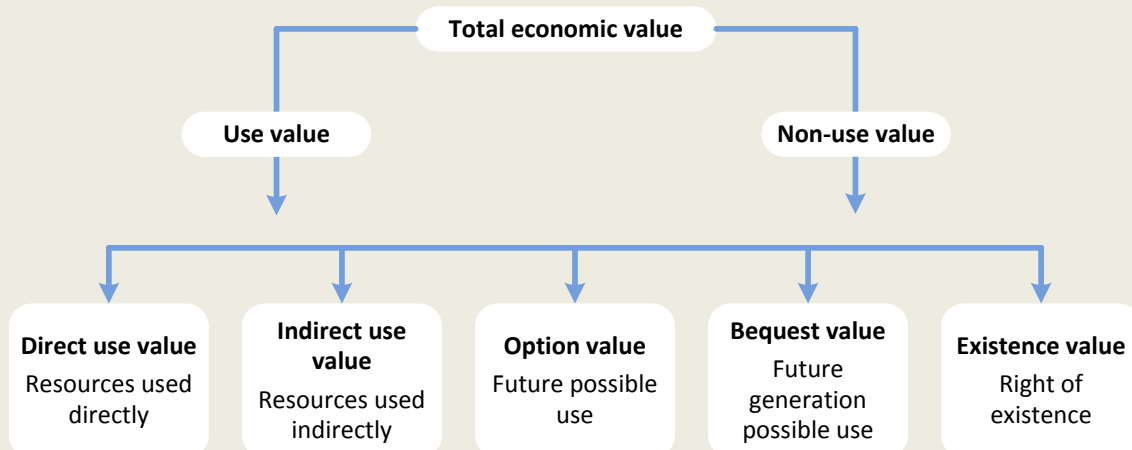


Figure 1. The total economic value of green space

Stated preference approaches

Methods used to capture stated preferences include *contingent valuation* and *choice experiments*. In the UK these methods have been used to value the benefits of forest and woodland recreation, the use of footpaths, National parks and Environmentally Sensitive Areas. Contingent valuation involves direct questioning of people to elicit their valuations of a particular good or service by asking for their *willingness to pay* based on hypothetical payment scenarios. In choice experiments, people are presented with a set of choices made up of alternative outcomes from which they are asked to choose their preferred outcome. Outcomes are distinguished in terms of different levels of attributes, such as price.

An example of a contingent valuation survey

A contingent valuation survey of users of the Ridgeway National Trail was undertaken to estimate the value that users place on access to the Trail (Bennett et al., 2003). The 68km Trail is open to walkers, cyclists, horse riders and off-road vehicles and situated in the North Wessex Downs Area of Outstanding Natural Beauty. The survey was based on a questionnaire whereby participants were told that more funds were needed to maintain the Trail and that funds would have to come from the visitors in the form of a day permit. The question was based on a dichotomous choice willingness to pay elicitation format using 12 different payment levels. Participants were asked whether they “would be willing to pay £x” for the day permit according to payment levels ranging from £0.50 to £1.70. The mean willingness to pay among participants was estimated at £1.24 (95% confidence interval [CI] £1.13–£1.36) per visit. Based on an estimated 150,000 visits per year to the Trail the authors calculated that the Ridgeway National Trail had an estimated economic value of around £186,000 (95% CI £169,500–£204,000) per year compared to maintenance costs of £154,250.

An example of a choice experiment

A study based on the choice experiment technique was used to determine preferences and willingness to pay for different standards of provision of public rights of way in Bedfordshire (Morris et al., 2009). Bedfordshire County Council is responsible for the management of approximately 2,220 km of public rights of way comprising 1,550 km of public footpaths, 600 km of bridleways and 50 km of ‘byways open to all traffic’. The first stage of the study identified the attributes of public rights of way which included: physical characteristics and structures, signposts and information, path facilities, local importance, and cost. The relative importance of each attribute was ascertained by presenting participants with eight choice cards from 64 possible choice profiles that described the current conditions of public rights of way in Bedfordshire, and a new situation describing possible future conditions. The authors estimated the participant’s willingness to pay for improvements in the quality of the attributes across three improvements scenarios relative to the current situation (Table 1). The study showed that Bedfordshire residents were willing to pay additional taxes if these secured substantial improvements in public rights of way. As shown in Table 1, the aggregate economic value was estimated at just under £2 million per year based on the

improvements described in Scenario 3 (20% improvement in physical condition and facilities, 30% improvement in signposting and information and local importance).

Table 1. Willingness to pay for specified changes in attribute levels relative to current situation

	Scenario 1 change from current	Scenario 2 change from current	Scenario 3 change from current
Physical condition*	+0%	+10%	+20%
Sign-posting and information*	+10%	+10%	+30%
Facilities*	+10%	+20%	+20%
Local importance*	+10%	+0%	+30%
Willingness to pay (per household per year)	+£0.73	+£6.58	+£12.27
Aggregate** WTP Bedfordshire (per year)	+£112.32	+£1,012.41	+£1,887.89

*Absolute % changes. **Based on 153,862 households.

Adapted from Morris et al., (2009)

Findings from the Review of Evidence

Overview

This review of evidence focused on the identification of the wider economic benefits of sustainable ventures in public health, primarily initiatives to promote cycling, walking (termed active transport) and activities in green space, but also more broadly on the social and economic benefits of investing in the development of green infrastructure.

The findings from the review of evidence are discussed across four key areas of economic benefit:

- ◆ Growth, Investment and Regeneration;
- ◆ Quality and Productivity of the Labour Force;
- ◆ Tourism, Recreation and Leisure; and
- ◆ Property and Land Values.

Readers should note that there is much overlap between these areas of economic benefit and they should not be seen as independent from one another. In particular, impacts on the labour force and property values may strongly reflect the level of growth and investment in an area.



Growth, Investment and Regeneration

- ◆ There is clear indication in the literature that green space and infrastructure are associated with economic growth and regeneration.
- ◆ Sites with green infrastructure are more attractive to both businesses looking for a new location and employees. Businesses located within or near green space are more likely to attract the most highly skilled workers.

Attractive to businesses and employees

High value businesses and skilled workers are more likely to be attracted and retained in areas with access to well managed green space (ECOTEC, 2008; Forest Research, 2010; Natural Economy North West, 2009; Green Link, 2010). How an area or the wider region is perceived can help or be a barrier when attracting businesses (ECOTEC, 2008). It may be difficult to attract the best employees to areas that are not perceived to offer a high quality of life and green space, and an area's recreational and aesthetic qualities are important to potential employees when deciding where to work (Green Link, 2010). New businesses are therefore likely to seek areas with attractive environments and green infrastructure (Natural Economy North West, 2009), ensuring that they are able to attract the highest quality employees. Establishing areas of green space where businesses can operate may therefore attract high value industries, which will have benefits for the local economy through increasing economic activity and job availability (Forest Research, 2010).

Opportunities for employment and training

In 2009, 109,000 jobs in the North West were related to the environment (Natural England, 2009). The development of green infrastructure can directly provide employment from the local area for those involved in its creation and continued management (Land Use Consultants, 2006). Maintenance of green spaces over time is a key factor in their continued success (Natural England, 2009) and, for example, green space management and park rangers will be required to ensure the safety, quality and appearance of green spaces (Landscape Institute, 2011). Investing in active transport options is also likely to provide employment. Using Baltimore, USA as a case study, Garrett-Peltier (2010) found that twice as many jobs are created in pedestrian or cycle repair or development projects, compared to less labour intensive road repairs or resurfacing projects. Jobs are likely to be created in a variety of industries benefiting from the development of footpaths and cycle lanes including construction, engineering, architectural, retail, food and drink and employment services (Garrett-Peltier, 2010).

Box 2. How can green infrastructure generate growth?

- ◆ More attractive to businesses
- ◆ More attractive to highly skilled workers
- ◆ Provides business opportunities
- ◆ Encourages tourism

Further benefits of green infrastructure development are the voluntary and work experience opportunities it may provide which can benefit the local community. Green spaces can be used for the training of new skills in horticulture and conservation, for example for the long-term employed, young offenders or individuals recovering from addictions (Landscape Institute; Land Use Consultants, 2006). The potential benefits for all volunteers include skill development, improved employability and improved physical and mental health (Green Space, 2010). An example within the North West of a voluntary opportunity that benefits the community and individuals through improving green space is explored in **Case Study 1**. Additionally, the chance to volunteer to create and manage green space can help promote community involvement and integration amongst local residents and to create a more unified community (O'Brien et al., 2008).

Case Study 1: Practical Countryside Skills Course, Oldham

In Oldham, Groundwork Oldham and Rochdale manages areas of green space including the Jubilee Nature Site. A six week course gives volunteers the opportunity to work towards an Award in Practical Countryside Skills through carrying out practical tasks in the Nature Site and completing theory work. Examples of tasks volunteers have accomplished include clearing a pond, creating a habitat bench and improving the paths around the site. The aim of the course is that in addition to improving green space for the local community, volunteers will learn transferrable practical and social skills to improve their CVs and help them gain employment. The Course is to be extended to cover other sites that Groundwork manages in the local area.

A longer programme has been established where volunteers also work towards a Community Volunteering Award over a 13 week full-time programme. The aim of the programme is to improve community sites and help volunteers move into full time employment. Based in local sites such as community centres and youth centres, the volunteers carry out practical work similar to the shorter course aiming to improve local green space. In addition they have the opportunity for personal development through shadowing staff and undertaking additional skills courses.

Around 50 volunteers have taken part in the courses in the past year and although no formal evaluation has been undertaken, feedback has been very positive with volunteers reporting that the courses have been useful and that they would like to continue their work upon completion. A number of volunteers have moved into employment and it is hoped that with the extension of the project with the longer programme and onto other Groundwork managed sites, the courses will further help more local people in the future.

For further information:

Groundwork UK: www.northwest.groundwork.org.uk/oldham--rochdale/what-we-do/case-studies/2012/practical-countryside-skills-c.aspx

Well maintained parks provide an opportunity for businesses to provide a service that utilises this natural environment. Liverpool City Council (2011) identified a variety of businesses operating within parks in the city including keep fit and personal training classes, dog walking services, cafes and restaurants and horse riding tuition. Additionally, the parks provide a suitable space to host functions and events such as wedding fairs, food festivals and sporting and music events. Further examples of the many different sorts of businesses operating in North West parks are yoga sessions in Manchester's Heaton Park, the Butterfly House in Lancaster's Williamson Park, 5-a-side football in Leverhulme Park in Bolton and the Grosvenor Park Miniature Railway in Chester. Providing an opportunity for these sorts of businesses is likely to create employment and generate income as residents and tourists will be attracted to use and attend the services and events provided within parks.

Regeneration

Developing or improving green infrastructure can regenerate an area. Investing in green space can have wide economic benefits through improving perceptions about quality of place (Trust for Public Land, 2006) by enhancing the attractiveness of a city or area and its recreational and leisure opportunities. As explored in *Case Study 2*, Moston Vale Community Woodland is an example of how improving a community green space site can have multiple benefits for residents and businesses. Regeneration through developing green space can create jobs, attract businesses and workers and revitalise struggling local economies (Green Link, 2010).

Case Study 2: Moston Vale Community Woodland

The project aimed to regenerate a former landfill site situated in an economically deprived area with high unemployment, low house prices and few options for recreation.

The site was transformed from a poor quality, unattractive environment which was home to anti-social behaviour including fly-tipping and joy riding. The site is now an attractive community woodland with trees, meadows, footpaths and sports facilities. Solar powered lighting keeps the footpaths safe for use at night for residents and those accessing the neighbouring Central Business Park.

Who benefits?

- ◆ Investment is more likely in the neighbouring Central Business Park.
- ◆ Businesses located within the Business Park are more attractive to potential employees.
- ◆ Employees in the Business Park can access the woodland to commute to and during work.
- ◆ House prices in the area are rising above the rate in the rest of Manchester due to the improved image of the area.
- ◆ The woodland provides the local community and residents with a place to access for recreation and exercise purposes.

For further information:

Natural Economy Northwest (2008). Case study 9: Moston Vale Community Woodland—part of the Newlands programme. Available at:

www.naturaleconomynorthwest.co.uk/resources+case+studies.php

Quality and Productivity of the Labour Force

- ◆ As established in the previous section, a business set within green space is perceived as more desirable for businesses and employees.
- ◆ There are economic benefits for businesses if employees benefit from working in a green environment with active transport options.
- ◆ Using active transport is likely to have a positive impact on health within a community. Additionally, employees who cycle or walk to work may be more motivated and productive.

Green working environment

Working in a pleasant environment achieved through the development of green infrastructure is associated with a more productive workforce (Natural Economy North West). Improved health and reduced stress from working in a more pleasant green environment are predicted to result in reduced absenteeism and increasing motivation (ECOTEC, 2008). Businesses established within developed green infrastructure may be able to attract and retain higher quality employees (ECOTEC, 2008) and therefore quality of life is important for businesses when deciding location and for workers when deciding where to work (Green Link, 2010). Green space with the recreational and relaxation opportunities it provides are important aspects of quality of life and are likely to impact upon workers' decisions to join and stay with an employee.

Box 3. Benefits of green space for employees

Employees working in areas with developed green infrastructure may therefore be:

- ◆ More motivated and productive
- ◆ More healthy and fit and therefore reduced absenteeism and increased productivity
- ◆ Able to access more jobs
- ◆ More likely to be high value workers

Facilitating active transport options

Increasing active transport options to enable and encourage workers to cycle or walk to work may have similar benefits. Improving cycle infrastructure can lead to improvements in journey time, safety and workers' enjoyment of cycling to work (Yi, 2011). These factors are likely to increase the number of cycling commuters and reduce stress amongst those that choose active transport options. Providing more opportunities for walking and cycling to work may improve the fitness of staff, and a healthier and more motivated workforce is predicted to increase productivity (ECOTEC, 2008; Litman, 2011). An additional option for encouraging active transport may be to introduce a bike scheme, similar to the Barclays Cycle Hire scheme in London where it is possible to hire a bike for up to 30 minutes without charge. Multiple docking stations allow easy collection and drop off making it a suitable option for commuters, and it is possible to pay for longer periods of use. Since the scheme

was introduced in July 2010, over 9.5 million cycles have been hired (Transport for London, 2012). An important benefit of increasing active transport options is that it increases opportunities to access work and education for many people who lack access to jobs, particularly non-drivers, increasing both the quantity and quality of potential employees available to local businesses (Litman, 2011). Lack of access to transport and the cost of running a motor vehicle or fares on public transport are key factors that prevent access to jobs and reduce the range of jobs that an individual can consider feasible (SEU, 2003). In the current financial climate with high unemployment and reduced employment opportunities it is important to reduce barriers to gaining employment where possible. Increasing opportunities for active transport may be particularly effective in disadvantaged areas and for businesses that employ a high number of staff on lower wages (Litman, 2011). Individuals who have to travel outside their area of residence for work, particularly in the evening or at weekends where public transport coverage is reduced, will benefit from active transport routes (SEU, 2003). In *Case Study 3*, a proposed project to increase active transport in Greater Manchester that would particularly benefit areas of economic deprivation is explored. In order to maximise their impact, it is important that designated route ways for walking and cycling are safe (for example well lit at night) and provide safer mobility for accessing places of work, which is likely to particularly benefit vulnerable groups such as women and older adults (WHO, 2010).



Case Study 3: Greater Manchester Commuter Cycle Project

Overview

Transport for Greater Manchester has submitted a proposal for Department for Transport funding for a project to increase active transport commuting options. It is proposed that £54 million worth of investment from the Government and Local Sustainable Transport Fund is needed for the Greater Manchester Commuter Cycle Project; a sustainable transport plan to increase cycling and walking options. It is suggested that for every £1 invested, the project will create £5 of benefit. The project includes a large focus on regeneration and benefiting disadvantaged areas which will particularly benefit from increased commuting options: the scheme is designed to include areas of economic deprivation in Greater Manchester and the proposal promises to help the unemployed through provision of job-seeker support, cycle training and reduced transport ticket prices for individuals trying to find employment. It is hoped that if the proposal is successful the project will lead to an improvement in public health through *increased physical activity with active travel*.

Who benefits?

The project aims to reduce unemployment by enabling more people to get to work through active travel. In addition there are likely to be great benefits to the environment, health and local businesses:

- ◆ Increased access to jobs and support for job seekers.
- ◆ Increased time spent walking and cycling resulting in improved health throughout Greater Manchester.
- ◆ Reduced absenteeism and increased productivity through improved employee health and reduced commuter time: the project is estimated to save businesses an estimated 1500 absentee days per year.
- ◆ Reduced car use and congestion: it is estimated the project will remove 26 million km of commuter car journey per year.
- ◆ Reduced emissions and pollution: it is estimated the project will save 1000 tonnes of carbon per year through reducing the number of car journeys.

For further information:

Transport for Greater Manchester (2011). Greater Manchester Commuter Cycle Project. Available at: www.tfgm.com/ltp3/documents/Key-Component-Application-Form-v1-0-DfT-Final.pdf

Tourism, Recreation and Leisure

- ◆ Greener towns and cities are more attractive to tourists.
- ◆ Improving green infrastructure and the availability of cycle paths and walkways benefits local residents by offering alternative recreational activities and everyday transport options, which can further enhance the local economy and local industry and have a beneficial impact on traffic congestion, pollution and health.

Box 4. How can tourists on cycling/walking trails benefit the local economy?

Visitors to the region may:

- ◆ Require overnight accommodation
- ◆ Use local shops, post offices
- ◆ Use local pubs, restaurants, cafes
- ◆ Book holidays through local companies
- ◆ Require cycling/walking equipment
- ◆ Travel by public transport
- ◆ Visit rural attractions

Tourism is an important source of income in the North West of England. In 2008, tourism generated over £14 billion in direct and indirect expenditure, which supported 222,000 jobs (Team Tourism Consultancy, 2009). Encouraging tourism through the development of green infrastructure in the form of urban parks, cycle paths and trails, and developing and promoting natural assets has positive or minimal impacts upon the environment and may lead to

redevelopment of unused or derelict land. It may have additional positive impacts on social outcomes such as economic inequalities, health and climate change. The amount that a local area will benefit from tourism utilising the natural environment depends on many factors including the natural assets of the area and how well these are marketed. In the North West, for example, tourism related employment in 2008 accounted for approximately 7% of jobs, ranging from over 9% in Cumbria and in Lancashire, to under 6% in Cheshire (Team Tourism Consultancy, 2009). A range of industries are likely to benefit from tourism including retail, food and drink, and accommodation.

Cycle paths and walking trail

There is evidence that providing trails for cycling and walking can have economic benefits through increased tourism and the revenue that brings to the local area. Trails in the UK developed to attract cyclists and walkers have been demonstrated to benefit businesses and to create jobs within the local area (Institute of Transport & Tourism, 2008; Sustrans, 2007). Some of these benefits are summarised in Box 1. In addition, users place a high value on having access to trails (Bennett et al., 2003).

Box 5. The Celtic and Taff trails

The Celtic and Taff trails for cyclists and walkers in South Wales attract over two million visitors per year from Wales and beyond. Nearly 1,400 jobs were created or sustained by the trails, which together generate approximately £75 million annually. Each group of visitors, averaging 2 people, spent on average between £177 and £196 per trip and overnight visitors from outside of South Wales spent on average up to £283, demonstrating the importance of attracting tourists.

Institute of Transport & Tourism (2008)

There is high demand from cyclists and walkers in the UK to use dedicated trails, for example the Celtic Trail in South Wales attracts 1.5 million visitors a year (Institute of Transport & Tourism, 2008; Box 4). Visitors may include tourists from outside of the local area who will contribute to the local economy through using overnight accommodation and local holiday companies. Visitors from inside and outside of the area will contribute to local trade through using facilities located close to trails. This may include local shops, public transport links, pubs and inns and rural tourist attractions (Sustrans, 1999). Industries providing cycling or walking equipment are also likely to benefit, for

example, the cycling industry may benefit through cycle hire and selling the concept of cycling holidays to tourists (Sustrans, 1999) and through manufacturing and retail (Bicycle Federation of Wisconsin, 2005). Promoting cycle trails within a community is therefore likely to have benefits for the local economy as well as for health and fitness. In *Case Study 4* a project to increase cycling at Delamere Forest in Cheshire is discussed.

Box 6. Cycle routes in the North East of England

Four cycle routes in the North East form part of the National Cycle Network and attract over 300,000 visitors each year who contribute nearly £10 million and £13.5 million to the local economy in direct and total (direct and indirect) expenditure and sustain over 200 local jobs. Tourists from outside the North East generated nearly £6 million income, sustaining nearly 100 jobs.

Sustrans (2007)

Case Study 4: Healthcycle at Delamere Forest

Cycling at Delamere Forest in Cheshire is being promoted through sessions ran by CTC, the UK's National Cyclists' Organisation in partnership with TRACS UK. The Forestry Commission are planning to improve the Forest through investments in a new Visitor Centre, improved walking and cycle trails and other visitor facilities and the Healthcycle project is part of this effort to increase use of the Forest. The primary aims of the project are to encourage more people to take up cycling to increase physical activity and to benefit health, and to encourage visitors to the Forest.

Project details

Activities include cycling sessions aimed at different levels of cycling ability and educational bike rides including family events. In the sessions that have already taken place, customers typically have limited cycling experience and want to improve their cycling skills and health in a safe, low pressure environment with others of a similar ability. The cost for taking part in the sessions, including cycle hire, is designed to cover the cost of putting the sessions on. CTC hope that through taking part, individuals will improve their cycling ability and eventually use the Forest outside of the sessions. Although uptake is expected to be relatively small with weekly sessions available for eight people at a time, CTC believe that the sustainable nature of the project will allow it to continue. A marketing campaign to raise interest is underway and it is hoped that those who take part will engage with other activities in the Forest, including voluntary opportunities to improve the site and use of local businesses such as Go Ape and the mountain bike company TRACS UK.

Benefit to a local business

TRACS UK, a company based at Delamere Forest offering mountain bike hire, coaching and skills sessions and workshop facilities, are an important part of the Healthcycle project. CTC have worked with TRACS to involve them in the project to a point where TRACS now have ownership of the sessions and keep any income. As the company are used to offering services related to mountain biking, they have had to adjust to working with a different demographic of customers who have very different needs. A challenge for CTC setting up the project with TRACS was demonstrating the potential economic benefits of the project that would make it viable from a business perspective. Opening the business to cater for a different market may have large rewards and understanding this was important for TRACS becoming involved.

For further information:

CTC www.ctc.org.uk/delamere
TRACS UK <http://www.tracs-uk.co.uk/>

Developing green infrastructure in cities

There are multiple economic benefits for towns and cities that choose to invest in green infrastructure. Even if it is not the primary reason for tourists to visit a city, developing green infrastructure is important for tourism. Parks are one of an urban area's most prominent features and if well maintained and developed can improve the attractiveness of a place and attract tourists to a city (Tibbatts, 2002). This is likely to benefit urban businesses such as shops, restaurants and accommodation providers (Team Tourism Consultancy, 2009). Parks have become a typical feature of promotional materials designed to sell a city to visitors and therefore, if marketed correctly, well-maintained and attractive green spaces have the potential to attract large numbers of tourists (Liverpool City Council, 2011).

Developing walking trails or cycle paths to link urban areas with green spaces will allow new areas to be used for recreational purposes (ECOTEC, 2008), which is likely to attract more visitors to an area and improve the attractiveness of a city. Facilities next to active transport routes such as shops and pubs are likely to benefit with increased spending by those using the paths. Residents will also benefit from the development of green infrastructure and will be able to access new facilities or green spaces (AIMON, 2008). Residents may be willing to pay additional taxes if these are used to fund improvements in green infrastructure (Morris et al., 2009).

Additionally, visitors are attracted to parks and green spaces that provide the opportunity for recreation and leisure activities and events. Parks in the North West host a variety of events including concerts, exhibitions and astronomy classes at Heaton Park, Manchester and horticultural events and the Summer Music Festival in Grovesnor Park, Chester. In Liverpool, examples of events held in city parks include the Food and Drink festival at Sefton Park, sporting events, circuses and ghost tours (Liverpool City Council, 2011).

National parks and environmental attractions

The North West contains many natural attractions that benefit the area economically. Natural attractions can vary greatly in type, size and popularity with perhaps the greatest tourist pull being to national parks. Evaluation of the New Forest National Park suggests that around 2,500 jobs are sustained by tourists and visitors to the park (New Forest National Park Authority, 2007). In total, £72 million is estimated to be spent by visitors to the park annually with an average spend during the day of over £8 per visitor, while those requiring overnight accommodation spend on average from £5 to £40 depending on accommodation quality. A study examining the economic impact of tourism in Germany suggests that day visitors to national parks spend on average £23 while overnight visitors spend from £76 to £110 depending on accommodation type (Mayer, 2010). It is clear therefore that designation of national parks has the potential to bring economic benefits to the local economy through increases in tourism and visitor spending. In the North West, the Lake

District National Park is a nationally important tourist attraction but there are numerous and diverse natural assets that attract visitors from within and beyond the region. Examples are given in Table 2 of natural assets in the North West that attract tourists and that are likely to benefit the local economy. It is important that natural assets are marketed properly in order to maximise their potential for attracting visitors, and managed appropriately to prevent damage to the environment that is likely to reduce their popularity and marketability (Tourism, Enterprise and Management, 2006).

Table 2. Natural assets of the North West of England

Type of Natural Asset	Examples
◆ Notable mountains and hills	Pendle Hill Hellvelyn Shutingsloe
◆ Notable species of plants and animals	Red squirrels at Formby Osprey at Bassenthwaite
◆ Inland water	Lake Windermere Cheshire ring canal
◆ Landscape character	Arnside Silverdale Western Lakes
◆ Viewpoints with easy access	Shutinsloe Arnside Knott Alderley Edge
◆ Significant woodlands and forests	Delamare Forest, Cheshire Grizedale Forest, Cumbria
◆ Geological interest	Whitbarrow limestone pavement Sandstone ridges (Cheshire)
◆ Major landscaped parklands	Tatton Park, Cheshire Haigh Country Park, Wigan
◆ Coastal landforms – dunes, cliffs, saltmarshes etc.	Sefton Coast St Bees Head Ribble Estuary Dee estuary marshes
◆ Remoteness and tranquillity	North Pennine moors Western Lakes

Adapted from: Tourism, Enterprise and Management (2006)

Property and Land Values

- ◆ Improving green space is likely to increase neighbouring and nearby property prices which may improve the prosperity of an area.

High quality green space is a desirable factor for people when choosing where to live (Trust for Public Land, 2006), and accordingly people are likely to be prepared to pay more for urban properties close to parks. The building of new properties next to high quality green space, or redevelopment to improve the quality of green space, is likely to benefit local authorities and businesses. For example, the increased value of property near green space increases revenue through council tax (Arvanitidis & Skouras, 2008; Crompton, 2000; GEN Consulting, 2006). Increased income may offset the cost of redevelopment and be used to further develop amenities that may provide further income, for example developing recreation opportunities that can bring visitors to a park. Higher value and more desirable properties are likely to attract higher income groups (GEN Consulting, 2006) and improve the prosperity of an area (ECOTEC, 2008).

Studies have consistently found evidence that property values increase in areas adjacent to and close to green space. An examination of the impact of eight high quality urban green spaces in England (CABE, 2005) identified that higher property values were associated with proximity to parks. In all properties the value increase ranged from 0% to 34% and the effect was greatest in properties immediately adjacent to parks where values increased on average by 11.3%. An average 7.3% increase was reported in “off park” properties nearby but not immediately bordering the park. Dunse and colleagues (2007) reported that residents in Aberdeen were willing to pay up to 20% extra for a property adjacent to a park when compared to properties 450m away. A review of 25 US studies examining the relationship between proximity to green space and property values found a positive relationship was reported in 20 (80%) cases (Crompton, 2000). A review of evidence reported that in addition to parks, proximity to other types of green space such as greenway routes, woodland and trees may have a positive impact on property values (AIMON, 2008).

It is clear from the evidence that the association between proximity to green space and property values is not straightforward, and a number of factors may influence the relationship. Perceptions of security are important; if the park or property is not believed to be secure and risk from anti-social behaviour is perceived more likely this can impact negatively on property values (CABE, 2005; Crompton, 2000; Dunse et al., 2007; Trust for Public Land, 2006). For example, houses with back gardens that back onto a park may be less desirable than houses that face a park across a street due to concerns about privacy and anti-social behaviour (Crompton, 2000). Similarly, there may be more of a risk perceived in houses on the edge of parks compared to flats due to security concerns (Dunse, 2007); highlighting the importance of ensuring that parks are kept safe and well maintained

(Crompton, 2000; Trust for Public Land, 2006). Other perceptions of parks that are used for recreation purposes such as noise and congestion may also have negative impact on property desirability (Crompton, 2000). It is apparent that views of the green space are important if property values are to increase (CABE, 2005; Crompton, 2000) particularly in non-adjacent properties. Therefore factors such as the height of buildings and design of neighbourhoods that impact on the visibility of the park and trees from surrounding streets and properties are important. It is suggested that extending the green space into neighbouring streets wherever possible can help increase the area over which property values may increase (CABE, 2005). Size and prestige of parks may also have an impact on property values with larger and more established high quality parks likely to have more of a positive affect (CABE, 2005).

Key Messages and Recommendations

Key messages

Supporting and promoting investment in green space is likely to have a range of far-reaching benefits for the local economy and public health

- ◆ Sites with green infrastructure are more attractive to both businesses looking for a new location and their employees. In order to attract the most highly skilled workers, businesses should consider locating on sites within or near green space.
- ◆ Opportunities for outdoor relaxation, recreation and leisure activities are desirable, and associated with physical and mental health benefits. Businesses should consider sites that provide workers and residents with green space to undertake these activities, or invest in the development of green space in their existing location.
- ◆ Investment in active transport will benefit businesses. Encouraging employees to cycle or walk to work will increase motivation and productivity and reduce absenteeism.
- ◆ An increasing and improving active transport route is likely to increase access to a place of work, enhancing the employee and customer pool.
- ◆ Greener towns and cities are more attractive to tourists. Tourism strategies should invest in urban green space and ensure that these green spaces are well marketed and highlighted in promotional material.
- ◆ To encourage regeneration in economically disadvantaged areas, investment in green space should be a priority. Improving green space is likely to increase neighbouring and nearby property prices and taxes as well as attracting new businesses and investment.
- ◆ Studies show that people are willing to pay additional taxes if these are used to secure improvements in green infrastructure.

Recommendations

The following are recommendations for how sustainable ventures in public health can be further encouraged or promoted at a regional level. This report should be used to ensure that the economic benefits of green infrastructure to communities across the region is understood by health and local government professionals and to support the communication of these messages to organisations including those in the private sector, trusts, social enterprises, the voluntary and community sector, and local authorities.

Recommendations from *Blue Sky Green Space* (Green Link, 2011)

The green sector needs to work with Government to:

- ◆ Increase recognition of the unique contribution that high quality green space makes as a catalyst for community participation; and for improving health and well being, cultural integration, the environment and local economies.
- ◆ Ensure green space providers can best contribute to solving local problems through participation in the key local decision making partnerships.

- ◆ Ensure green space providers are properly represented when new local delivery arrangements are being developed.
- ◆ Ensure communities have access to a range of diverse high quality green spaces.
- ◆ Develop a range of effective and sustainable green space management models that support community action and volunteering and partnerships between the private sector, Trusts, Social Enterprises the voluntary and community sector and local authorities.
- ◆ Encourage investment in the skills required to manage quality green space in a changing delivery environment.
- ◆ Position quality local green space provision at the heart of preventative health strategies and encourage health providers to acknowledge its value.
- ◆ Support the creation of a Community Land Bank to open up under-used land to community groups.

Growth, investment and regeneration

- ◆ Invest in green infrastructure and reuse brownfield land.
- ◆ Recognise the economic value of green infrastructure and incorporate it into economic development strategies and policymaking.
- ◆ Recognise the need for strong collaboration between local authorities, private sector organisation, the voluntary and community sector and, most importantly, with the local community to maximise the economic benefits of green infrastructure.
- ◆ Recognise the key role to be played by the private sector to realise the economic benefits of green infrastructure (ECOTEC 2008), in terms of:
 - Land and asset management e.g. the considerable green infrastructure assets owned and managed by farmers, water companies, the National Trust and private estates.
 - Investment in green infrastructure which may be realised through Corporate Social Responsibility.
 - Investment in green infrastructure by developers as integral aspects of, for example, new housing and industrial growth.

Quality and productivity of the labour force

- ◆ Recognise the many roles that walking and cycling can play in an efficient and active transport system, including the provision of basic and affordable mobility, access to other transport options, exercise, enjoyment and tourism.

Tourism, recreation and leisure

- ◆ Address perceptions of the region which may be more associated with its industrial heritage and which may fail to recognise the unique natural assets of the region.
- ◆ Focus on creating a high quality of place, so that green infrastructure attracts visitors and is used to further develop the tourism sector in the region.

- ◆ Recognise that where green infrastructure is the major attraction for visitors, e.g. National Parks, that their conservation and maintenance are essential to the local economy.

Property and land values

- ◆ Consider layout and urban design (e.g. factors such as the height of buildings and design of neighbourhoods), and perceptions of security to ensure that increases in property values around areas of green space are spread over as large an area as possible.

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