Creating the Right Environments for Health

The Annual Report from the Director of Public Health

Wokingham Borough

May 2018

WOKINGHAM BOROUGH COUNCIL

FOREWORD

We are shaped by our environment more than we may realise. Public health through the ages has always understood that environmental factors, from poor housing, lack of sanitation and poor air quality have an important role to play in determining our health; both as immediate threats to life and limb; and as long-term factors creating long-term exposure to potential harms. Other disciplines - and indeed many of our established arts - have sought refuge and inspiration in nature; however, it has taken some time for public health and medicine to identify the evidence base supporting what many of us had long felt; that nature and greenspace is good for us!

This report is intended for a wide audience. Since public health moved back into local government in 2013, we have reconnected with many of our valued colleagues in planning, leisure and sports development, parks and recreation, housing and highways (amongst others) to create place-based strategies and deliver actions which bind together these wider determinants of health with our local priorities. I hope that this report reaches a wide and diverse audience, most importantly to residents and to their representatives such as Councillors and GPs, who are poised to respond to the recommendations laid out herein.

With ever increasing demands for new housing in the South-East of England, and the need to improve and increase infrastructure; so the natural environment can come under pressure and its intrinsic values may be overlooked. Berkshire is as a whole, a green and pleasant place. From the areas of outstanding natural beauty of the North Wessex Downs; to the Green Flag accredited parks of Slough, communities live close by or surrounded by attractive green space. Rivers and waterways play an important part in our communities too – from the Thames at Windsor through to the reclaimed recreational parks and lakes of Dinton Pastures; these provide nature and people with nourishment, peace and pleasure. The new town planners who gave birth to Bracknell in the late 1940s planned a town where greenspace and recreation was a defining generator of the town's layout; and in Reading, the Thames side open spaces at Richfield Avenue and at King's Meadow provide homes to two huge community events; the Reading Festival and Reading Pride respectively.

Berkshire's natural environment can be seen to provide opportunity for peace and tranquillity; gentle and boisterous play; sport, competition and spectacle; natural habitats and preservation of wildlife; and attractive places to walk; cycle and live amongst. That our communities are still able to live amongst and use a variety of natural environments freely for our recreation is testament to many who have fought for their preservation and enhancement. Improvement in and widening access to green and blue space must be a public health ambition in itself, and this report provides the evidence base to build that ambition.

I truly hope that this report reconnects professions; communities and landowners who all have a duty to support the public's health through creating the right environments for health to thrive and benefit us all through the beauty of natural and green spaces.

Darrell Gale FFPH MSc BA (Hons)
Acting Strategic Director of Public Health for Berkshire

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ABOUT THIS REPORT

This report was developed and produced on behalf of the Acting Director of Public Health by Shared Public Health Services for Berkshire, and authored and coordinated by Dr Steffan Glaze (Foundation Doctor).

This report is the joint effort of all Consultant-led Public Health teams in Berkshire to produce the statutory annual report of the Director of Public Health both as a pan-Berkshire document, celebrating the history of shared working across the six Unitary Authorities; and also as a unique report for each individual authority.

Case studies were provided by a variety of individuals from local authority public health teams or other groups, such as voluntary organisations who are acknowledged below and with their contributions.

Finally, we acknowledge Judith Wright who was Interim Strategic Director of Public Health for Berkshire from April-December 2017, who conceived of the topic and encouraged us all to find the right environments for health.

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INTRODUCTION –

The Wider Determinants of Health

There are many factors, or determinants, that come together to affect our health. There are some we cannot change – chiefly, our genes. Of the modifiable factors, some are individual and personal choices such as taking up smoking or choosing to exercise. On a population level, there are the wider determinants of health: a diverse range of economic, environmental and social factors that affect people's health and influence their choices and lifestyles. Difficult to quantify, many of these determinants are shaped by national and local government policies, our environment and the distribution of wealth - things not quickly changed. They include:

- Income and social status
- Educational attainment
- Quality of housing
- Community and social networks
- Activity – the way we live

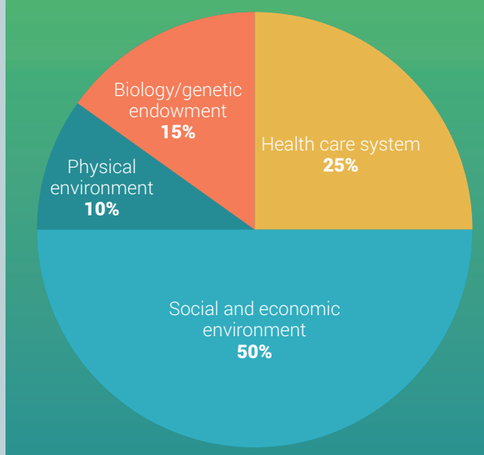
It is generally agreed that these wider determinants of health overall have a more significant impact on the health of individuals that direct interventions in health care. Estimates vary, but it seems that health care contributes less than 25% of our overall health, with these wider determinants contributing to the majority.

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

World Health Organisation, 1948

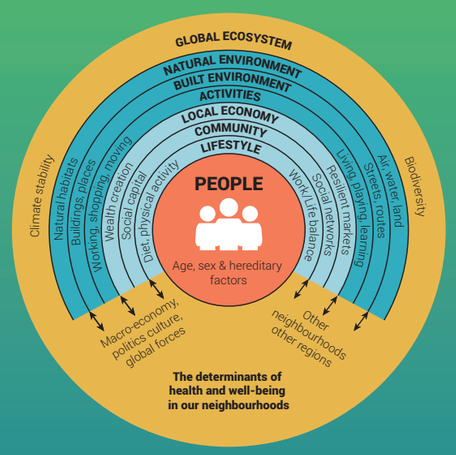
Public health, as a responsibility of local authority, has the opportunity to influence these determinants for the improvement of the health and wellbeing of the population it serves. The benefits may not be quickly realised, but are potentially vast and wide reaching, and could reduce the inequalities in our society and improve health and wellbeing for all of us.

[1] Estimated impact of determinants on health status of the population



Source: Canadian Institute for Advanced Reseach, Health Canada, Population and Public Health Branch AB/NWT 2002

[2] Barton and Grant, "A health map for the local human habitat", 2006



The health map: Barton and Grant 2006 developed from a concept by Dahigren and Whitehead 1991

This report will focus on one of the wider determinants of health – the natural environment – and how this could be used to improve our health. We will begin by describing the natural environment and its relationship to other determinants of health, then go on to examine particular health dimensions in this context. Finally, we will consider the challenges – and opportunities – to the natural environment that we can adjust to improve the wellbeing of our communities and from these build recommendations to act on.

Throughout the report, you will find case reports and research. We want to make effective changes, such that investments made will reap benefits for our communities. The research is included to discuss the scientific factual evidence available, and local case studies highlight the ways in which local communities are already using the natural environment to stay healthy or improve their health.

RESEARCH

Most of the research described in this report comes from scientific journals. Researchers conduct their studies, and then publish their results only after a body of other scientists have reviewed their work for accuracy. It can be difficult to get evidence on a population scale because there are so many things that can contribute to health and wellbeing, making it hard to measure the amount caused by a single aspect. The studies selected are considered to be of good quality, but reflect only a small proportion of the data available.

CASE STUDY

All of the case studies are examples of the work going on in this local authority in line with the theme of the report. We are pleased to highlight a variety of council, voluntary and national initiatives that are contributing to improving our health.

THE NATURAL ENVIRONMENT

The natural environment can encompass many parts of our surroundings. We often think of wide open fields, quiet forests or flowing rivers as the truly natural environment, but our urban environments can include natural elements. Often termed 'green space', this includes many things, from sports fields to decorative gardens. The natural environment can also encompass 'blue spaces' such as rivers and lakes, which are features of our area that can enable exercise, time in nature, leisure and relaxation. There is evidence that this natural environment has an influence on health in a variety of ways.

The ways in which the natural environment can improve health are complex and intertwined with many other factors. There are broad themes that have appeared from the research in this field, namely [3]:

- Stress reduction
  - It has been known for a long time that spending time in nature can have restorative effects, through relaxation.
- Improved environmental quality
  - Green spaces are more likely to be biologically diverse, and contribute to improving air quality and reducing the effect of heat concentration in cities.
- Greater social cohesion
  - Areas of natural environment are places that people can socialise and congregate, places of pride in the community and as a result improve the cohesion of neighbourhoods.
- Increased physical activity
  - Green spaces are appealing to visit, and typically need to be walked, cycled or played in to appreciate them.

We will see throughout this report how scientific research has found evidence from an individual to a population level that green spaces and the natural environment can have positive effects on our health and wellbeing. Although the exact mechanism isn't clear, there is still the opportunity to increase the availability, quality and use of natural elements in our communities.

Policy

The Department for Communities and Local Government published a consultation paper [4] in 2010 on planning policy and shaping healthy environments. Within the paper, the government defined a wide range of green spaces.

- parks and gardens – including urban parks, country parks and formal gardens
- natural and semi-natural urban green spaces – including woodlands, urban forestry, grasslands, common land, wetlands, areas of open and running water, wastelands, derelict open land and rock areas
- green corridors – including canal and river banks, cycle ways and rights of way
- outdoors sports facilities (with natural or artificial surfaces, either publicly or privately owned) – including tennis courts, bowling greens, sport pitches, athletics tracks, playing fields and other outdoor spoors areas
- amenity green space – including informal recreation spaces, green space in and around housing, domestic gardens and town or village greens
- provision for children and teenagers – including play areas, adventure playgrounds, skate parks, basketball courts and other informal areas
- allotments, community gardens, city (urban) farms and land used for permaculture
- cemeteries and churchyards
- accessible countryside in urban fringe areas
- civic spaces, including civic and market squares
- landscape around buildings – including street trees

RESEARCH

At an individual patient level, in 1983 R Ulrich [5] found that a view over green space could quicken someone's recovery from surgery in a suburban hospital in Pennsylvania, USA. This study compared similar people who had the same operation, but what differed between the two groups compared was the view from their window - either a brick wall or trees. Those with the green view had statistically significant lower length of stays and lower use of painkillers. This early evidence showed that there may be a restorative effect to simply viewing greenery and natural environments.

Looking at the population level, a study in the Netherlands [6] examined the electronic GP records of over 340,000 patients, and measured their illness by how often they saw their GP for various health problems. This was then compared with the percent of greenspace in a radius around their postcode based on satellite imaging. The analysis showed that over half the health problems were less common among the patients who lived in areas with more green space, even when correcting for potential confounding factors such as age and socioeconomic status. The correlation was strongest for anxiety and depression, children under 12 and those aged 46-65. They found that an extra 1% of green space in a person's area was as beneficial to overall health as being a year younger.

How can we measure Green space?

How can we define how 'green' our neighbourhoods are? There are many ways this is measured in scientific study, the two most common being:

- Satellite imaging – by looking at photographs taken from space, scientists can calculate what percent of an area is covered by plants. This is relatively easy to derive, and data is available for much of Europe. However, it does not account for the quality of the green space, e.g. for access or for food production, or how much we can actually access or use that greenery, as any plants on roofs, within private land, or in the middle of a roundabout would be included.
- Mapping – analysing maps can reveal the different land types in an area, from arable to housing. Counting how much of an area is covered by accessible green space can be used to measure the amount of natural environment in a neighbourhood. This method will miss small areas, such as verges and paths, which contribute to green routes but are not large enough to be documented on most maps.

Although effective at developing a measure of how green an area is, neither of these methods account for how easy the space is for people to access, how much that space is used or the quality of it. This aspect of the natural environment can be heavily influenced by the community who use it and live near it, such that we can all have a part to play in making the most of green spaces in our area.

Resources

A variety of resources are available for us to find and use green space in our area.

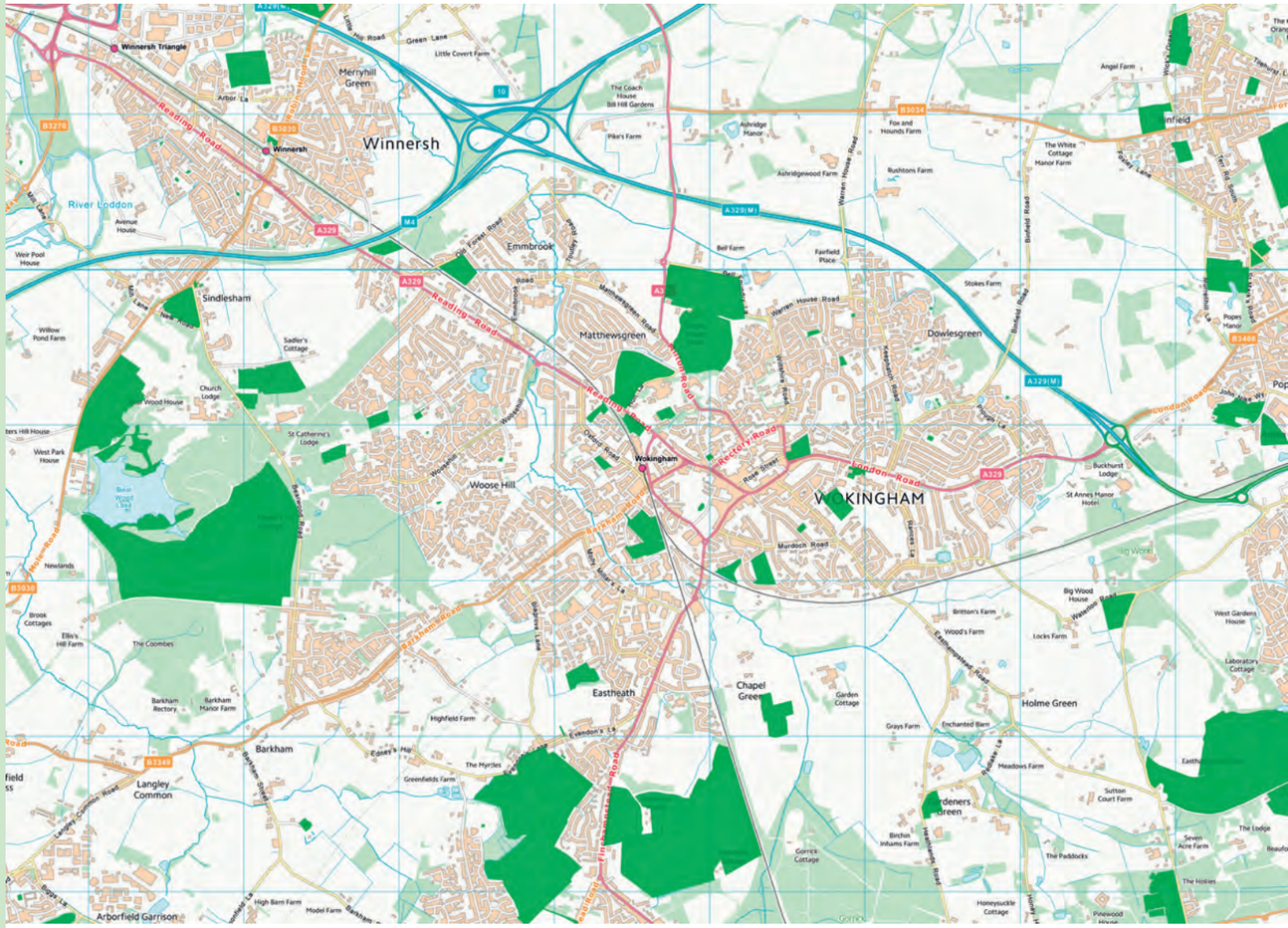
WOODLANDS TRUST WEBSITE

The Woodlands Trust, the UK's largest conservation charity, has an online database of the woods they manage. Using your postcode, you can find more about the woodland in your area.

OS GREENSPACE

The Ordnance Survey has assessed their own data about land use in the United Kingdom to produce an interactive map which can be used to see where green spaces are, what they are used for and how they can be accessed.

Wokingham Borough Council keeps online records of all the green spaces they manage, which includes details about facilities and opening times. You can find this resource at the following address:
http://www.wokingham.gov.uk/countryside-parks-and-conservation/
© Ordnance Survey OpenData (2018)



Source: © Ordnance Survey OpenData (2018)

HEALTH OUTCOMES AND BEHAVIOURS –

Profiles

The following section describes some of the key health outcomes and behaviours on which there is a firm evidence base for the effect of green space or the natural environment. The relevance of these to our communities is demonstrated by data about the current health and wellbeing of the local communities in a summary graphic. You will also find original research evidence and a case study from your local area.

Mental health is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.

World Health Organisation definition

Mental Health

Mental health is essential for our overall health and wellbeing, and changes in policies and the NHS is increasingly recognising this. The 2011 report from the Department of Health 'No Health Without Mental Health' identifies some key facts about the national picture:

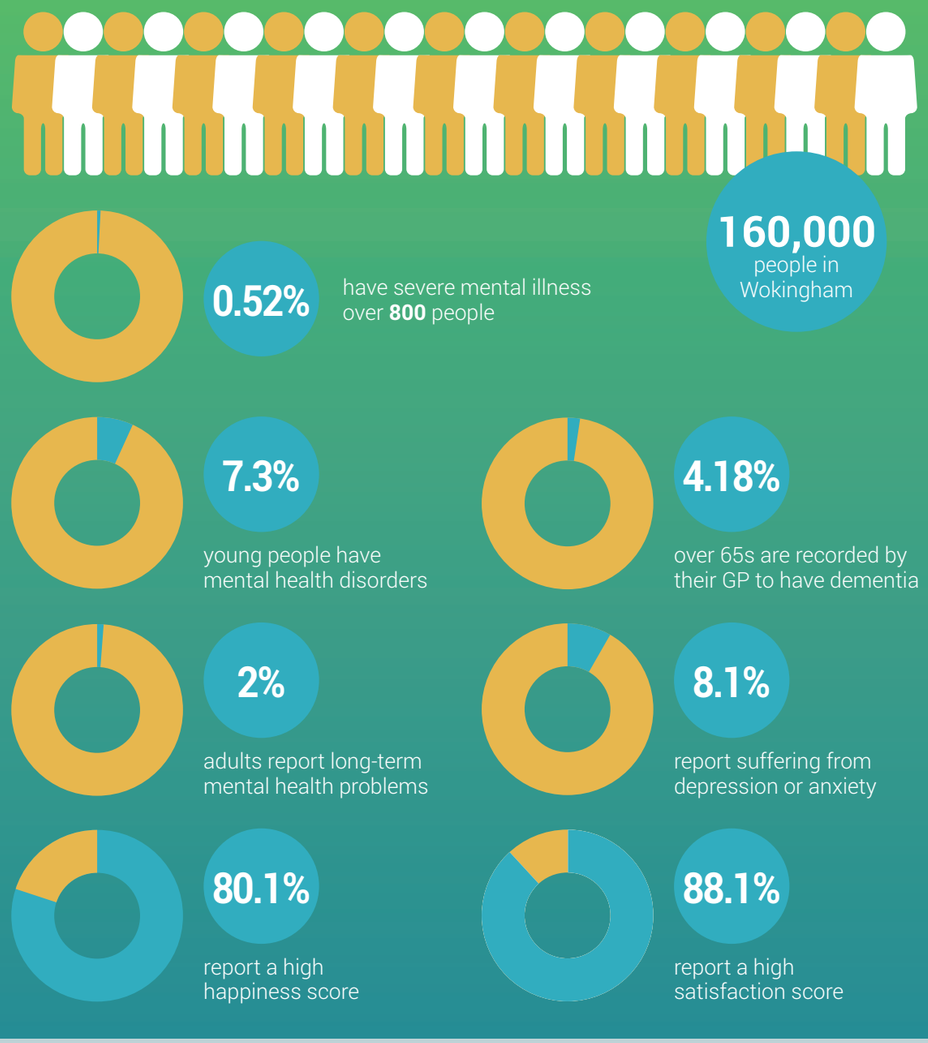
- mental illness is the single largest cause of disability in the UK
- at least one in four people will experience a mental health problem at some point in their life and one in six adults have a mental health problem at any one time
- the costs of mental health problems to the economy in England have recently been estimated at a massive £105 billion, and treatment costs are expected to double in the next 20 years

How could natural environments contribute to changing this picture? It is hard to identify exactly the mechanisms for these benefits, but a variety of evidence is available. It has been shown that exposure to natural environments can reduce stress, anxiety, blood pressure and anger. Over longer periods of time, those who live in greener areas are more likely to report good mental health and wellbeing.

National policies and initiatives recognise the benefits of spending time in green spaces on mental health. For example, Mind's Ecominds scheme found 7 of 10 people experienced significant increases in mental wellbeing by the end of an ecotherapy project [7]. It helped people find full-time employment, with potential savings of around £5,700 for each person in terms of government spend.

IN OUR AREA

There are currently estimated to be around 160,000 people [8] in Wokingham: 0.52% have severe mental illness – over 800 people. An estimated 7.3% of young people have mental health disorders, and 4.18% of over 65s are recorded by their GP to have dementia. Responding to a GP Survey, 2% of adults report long-term mental health problems, and 8.1% report suffering from depression or anxiety. In terms of self-reported well-being, 80.1% report a high happiness score and 88.1% a high satisfaction score. [9] [10]



RESEARCH

Evidence for the effect of green space on mental health looks at both the short-term, temporary effects and long term benefits. Contact with nature can improve emotional state, reduce self-reported anger, fatigue, anxiety, sadness and increase feelings of energy. [11]

Hartig et al [12] tested whether natural environments were more relaxing and restorative than purely urban surroundings, by giving subjects difficult tasks. They measured blood pressure and reported mood throughout, and found that being in nature was associated with quicker returns to normal levels of blood pressure and mood after stress – evidence that being in nature can improve your physical and mental wellbeing in times of stress.

A study by Alcock et al [13] looked at people who moved to greener areas during the years of an annual survey of their mental health. Moving from a less to more green area was associated with improvements in reported mental health.

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CASE STUDY: THE MENTAL HEALTH AND WELLBEING PROGRAMME

By Sian Attard, GP Referral and Long Term Health Conditions (LTHC) Manager

As well as improving physical health, engaging in physical activity can have a significant positive impact on mental wellbeing. The Mental Health and Wellbeing Programme offers participants a range of activities including Badminton, Football, Table Tennis, Circuits, Stretch and Relax and Health Walks. Clients may experience one or more of the following conditions – stress, anxiety, depression, bi-polar, psychosis, personality disorder and/or schizophrenia amongst others. Referrals are made by GPs, health professionals, Community Mental Health Teams as well as by individuals. The programme was launched in May 2015 and has received 133 referrals so far. Activities are delivered free of charge and available to residents over 16 years old, clients can participate in as many classes as they wish.

Children and Young People

Every child deserves the best start in life to give them the opportunity to thrive in life. Pregnancy and upbringing impacts our physical and mental health during childhood and through to adulthood. Enabling good maternal health can allow a safe delivery and good growth of the foetus, preventing potential poor outcomes from low birth weight or prematurity. The development of a baby's brain and immune system begins in the womb, and continues as they grow.

Green spaces may alter the environmental stimuli we are exposed to, and through this change whether we develop inflammatory diseases such as asthma. They can encourage us to be more active or to connect with our community, which can improve cognitive development. Exposure to the natural environment appears to have an impact on the development of our microbiome – the vast number of microorganisms that co-inhabit the human body. This microbiome may have an impact on the formation of our immune system, and as such the prevalence of allergies and long-term inflammatory diseases – including asthma. There is also evidence that street trees can improve the air quality in urban areas by absorbing some of the particulate matter from pollution, as well as reducing the 'heat island' effect generated by the concentration of hard surfaces and taller buildings [14].

Together with the improvements in mental health through spending time in nature, green spaces can contribute to a positive development for children, especially for play. The natural environment can improve our environment and change our behaviour to help us grow well. A healthy community which is using the green space available for both formal and informal play to increase a child's chance for the best start in life can set them off on the way to greater health and wellbeing.

RESEARCH

Dadvand et al [15] studied a group of 2,593 primary school children in 36 schools in Barcelona, Spain. Using repeat measures of memory and inattentiveness as an indicator of cognitive development, they compared this with exposure to green space. They measured the 'greenness' around the children's homes, their route to school and the school itself from satellite data that measures the percent of an area covered by plants. They found greater progress in the children in greener schools and home environments, partly explained by a reduced exposure to air pollution.

An American study [16] examined the association between birth outcomes and residential greenness. Looking at 64,705 births in Vancouver, Canada (1999-2002), they examined the density of vegetation within 100m of participants' homes, their birth outcomes and other aspects of their environment. They found that, independent of air pollution, noise, neighbourhood walkability and proximity to a park, increasing residential greenness was associated with beneficial birth outcomes including higher term birth weight and reduction of likelihood of prematurity.

IN OUR AREA

Looking at the most recent data for the health of children in Wokingham, we see 4.6% of infants born at a low weight. There were 13,840 attendances to Accident and Emergency by those under 18 years old, and 44 hospital stays last year to treat Asthma. At 4-5 years of age, 6.0% of children are obese which increases to 13.8% at age 10-11.

In terms of being ready for school, 82.8% of children meet the expected level at the phonics screening check and 76.2% had achieved a good level of development at the end of reception year. Looking ahead, 61% of pupils at Key Stage 2 met the expected standard in reading, writing and maths; just over 70% of teenagers achieved five A*-C grades at GCSE. [17] [18] [19]

4.6% of infants born at a low weight

at 4-5 years of age **6%** of children are obese which increases to **13.8%** at age 10-11

13,840 attendances to Accident and Emergency by those under 18 years old

44 hospital stays last year to treat Asthma

82.8% of children meet the expected level at the phonics screening check

76.2% had achieved a good level of development at the end of reception year

Looking ahead

61% of pupils at Key Stage 2 met the expected standard in reading, writing and maths

just over **70%** of teenagers achieved five A*-C grades at GCSE

CASE STUDY: BOOST CAMP

By Sian Attard, GP Referral and LTHC Manager

In 2017 Wokingham Borough Council commissioned a pilot five-day multi-sport camp for young people, called Boost Camp, in partnership with Reading Football Club (RFC) and Boost, delivered at Bulmershe Leisure Centre in Woodley.

The aim of the pilot was to establish whether the use of biometric tracking (Boost bands) was an engaging and acceptable way of increasing physical activity for young people. The band recorded the child's distance travelled and how many steps they carried out that day, as they completed sporting activities in and around the leisure centre.

The eligibility criteria for the camp were participants had to be between the ages of 11-16 years old, attend a Wokingham Borough School, were overweight or obese and were predominantly inactive. Children were referred either by a parent/guardian or professionals such as children's services or school nurses.

Four camps were delivered in Easter (3rd – 7th April), July (31st July – 4th Aug), August (29th Aug – 1st Sept) and October (23rd – 27th October) 2017 and 18 referrals were made.

Over the course of the 4 camps, the majority attending were motivated to complete at least 10,000 steps per session and the average distance covered was around 9km. This initiative was an exciting use of technology to motivate young people to be more active and be outside.

Physical Activity

Being active can have wide reaching benefits to our health. It has been shown to reduce the risk of coronary heart disease, stroke, type 2 diabetes. It can help maintain a healthy weight, improve self-esteem and reduce depression and anxiety. Physical inactivity contributes to 1 in 6 deaths [20] , estimates suggest that an inactive person is likely to spend 37% more time in the hospital and visit the doctor 5.5% more often than an active person [21]. The Department for Environment, Food and Rural Affairs estimates that the health system could save £2.1 billion per year if everyone had sufficient access to green space and its benefits. [22]

We also know our environment can shape our behaviour, so there is the opportunity to design our neighbourhoods and towns with activity in mind. The links between access to green space and levels of physical activity are well-established in research, which shows higher levels of physical activity in areas with more green space [23]. Careful planning of towns can enable active travel – i.e. walking or cycling as a mode of transport – through making distances achievable and creating safe and aesthetically pleasing routes to travel on. Those who walk or cycle to their place of work are more likely to meet their physical activity needs. If more of us were active, we could significantly improve the health and wellbeing of our communities. The potential benefits are not limited to health – reducing journeys made by car will decrease carbon emissions, air pollution and traffic, and encouraging walking for shopping can boost our local economy.

Accessible, quality green spaces also allow sports and play to increase leisure time activity. Supporting local sports clubs with facilities, giving spaces for community groups and the provision of playgrounds can all enable people at all ages to be more active. We can harness the natural environment to increase physical activity in our community, and be healthier as a result.

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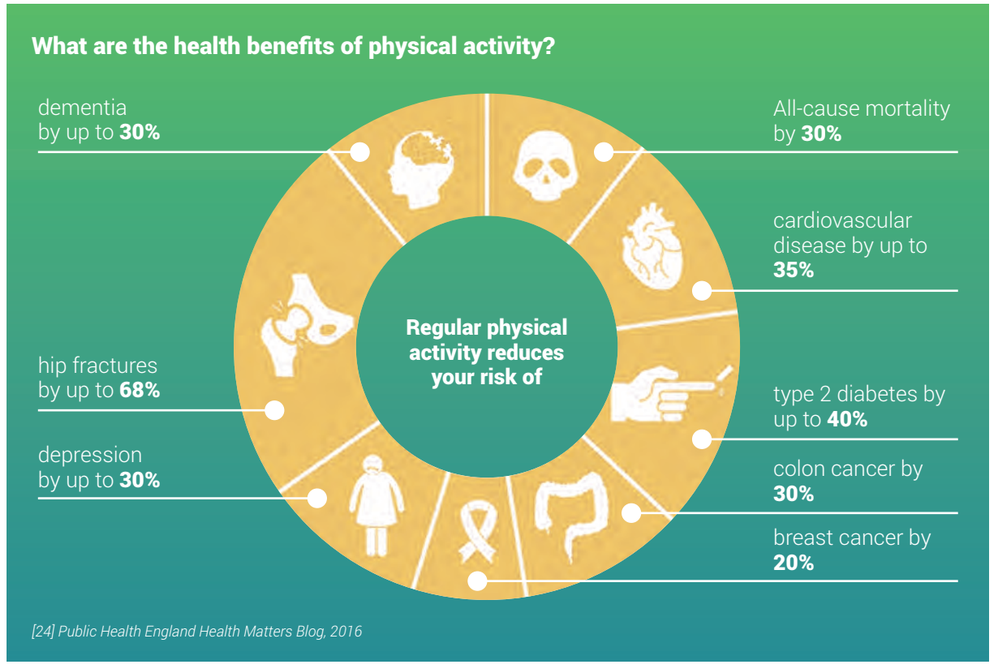

POLICY

Chief Medical Officer Recommendations [25]:

1. Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of ten minutes or more – one way to approach this is to do 30 minutes on at least five days a week.
2. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
3. Adults should also undertake physical activity to improve muscle strength on at least two days a week.
4. All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

RESEARCH

Analysis of the Danish National Health Survey [26] was able to assess self-reported distances to green spaces, BMI and exercise habits. It revealed that those who reported living over 1km, compared with less than 300m, to green space were more likely to be obese and less likely to exercise. Although based on self-reporting which may be biased, this study highlights the potential benefit of encouraging physical exercise through proximity to green space.

A study [27] in Bristol, UK, used data from the 2005 Bristol Quality of Life in your Neighbourhood survey of 6,821 adults and matched it with a mapping database of neighbourhood and green space information. After statistical analysis, they found that the amount of use reduced with increased distance from the green space, and those living near a formal park were most likely to achieve the recommended amounts of physical activity and were less likely to be overweight.

IN OUR AREA

In Wokingham, current data shows 67.6% of adults (18-65) report meeting the physical activity guidelines set out by the Chief Medical Officer, yet 21.1% of adults complete less than 30 minutes exercise per week [28]. Less than half (46.5%) of adults do any walking at least 5 times per week. 62.9% of 15 year olds are sedentary for over seven hours per day on average. A study by The Health Survey for England 2008 using an accelerometer found however that only 6% of men and 4% of women met the required levels of activity [29].

Over half of Wokingham's adults are overweight or obese (53%), and this starts in childhood – 26.6% of Year 6 children are overweight or obese. 5,160/4.7% have diabetes, 17,167/12.3% people are living with high blood pressure and 4,973/4.6% suffer from heart disease. 130 people were admitted to hospital last year having broken their hip. [30] [31]

21% Completing less than 30 min exercise per week

53% Overweight or obese

68% Performed the recommended physical activity (based on self-reported surveys)

But only **6%** of men **4%** of women meet the recommended activity levels when objectively measured with an accelerometer

Source: Health Survey for England 2008

If people were more active, what could we reduce?

17,167 (12.3%) with high blood pressure

5,160 (4.7%) with diabetes

4,973 (4.6%) with heart disease

130 admissions for hip fractures

CASE STUDY: DINTON PASTURES

By Tanya Lee, Centre Manager, and Simon Bartlam, Countryside Operations Officer

Wokingham Borough Council's Countryside Service manage over 20 sites and 143 miles of accessible footpaths and bridleways within the Borough, enabling people to be active while they engage with the natural environment. One such area in the Borough is Dinton Pastures, which has over 100 acres of meadows and 5 miles of surfaced paths for people to explore, along with three orienteering courses and an inclusive destination play which is accessible to the whole community. There is a free mobility scooter access scheme for visitors with restricted mobility.

Activities are also run by other partners including the successful health walk scheme, offered free of charge by the Wokingham Borough Sports and Leisure Team.

Dinton Pastures aims to be a place where everyone can find something interesting to do. The Activity Centre offers a range of outdoor adventurous options for adults, children and families.

For adults there are Sailing Courses, Running and Multisport Events, Open Water Swimming and SUP Fitness sessions. The afterschool and weekend activities are very well attended by local children with a series of regular participation sessions for children in kayaking and sailing, the latter is supported by RYA OnBoard. The Teenager Programme offers this group an opportunity to learn to become instructors and become volunteers themselves.

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Communities and Health Inequalities

The wider determinants of health, as described in the introduction, have an important role in shaping our health and wellbeing. They were a key focus of the Marmot Review [32], which examined the health of our nation and identified a number of inequalities across our society – those of a lower socio-economic class have a lower life expectancy, a higher frequency of many diseases and poorer mental health. The mechanisms between a lower socio-economic class and poorer health are complex, but can include low quality housing, less healthy diets and lower educational achievement.

Green spaces have been shown to reduce these health inequalities, as the benefits of the natural environment may have a stronger effect for those in lower socio-economic groups. This may be in part due to smaller personal gardens and less aesthetic features in neighbourhoods, but there are often more barriers to the use of green spaces as well – such as crime, traffic and social isolation, which itself has been shown to be associated with increased mortality [33].

An important task of public health is to ensure improvements to health occur throughout society, and inequalities in our area are reduced. Improving green spaces in particular areas of deprivation or using initiatives that reduce isolation and loneliness might be one of the means for us to eliminate health inequalities in our area and improve our communities.

POLICY

The Marmot Review [32] of 2010 is a key piece of work that identifies many of the health inequalities in our society and gives recommendations for change. Policy Objective E, 'Create and develop healthy and sustainable places and communities' has a number of aims for the improvement and development of green spaces across the social gradient.

PRIORITY OBJECTIVES:

- Develop common policies to reduce the scale and impact of climate change and health inequalities
- Improve community capital and reduce social isolation across the social gradient

RECOMMENDATIONS:

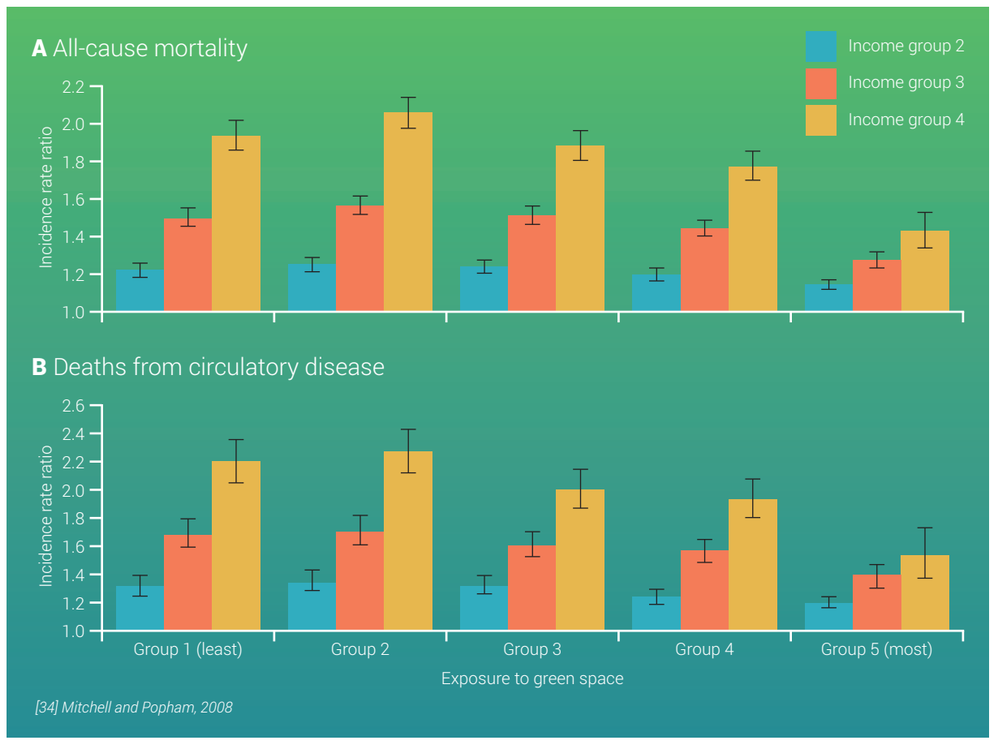
- E1: Prioritise policies and interventions that both reduce health inequalities and mitigate climate change, by:
  - Improving active travel across the social gradient
  - Improving good quality open and green spaces available across the social gradient
- E2: Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality.
- E3: Support locally developed and evidence-based community regeneration programmes that:
  - Remove barriers to community participation and action
  - Reduce social isolation.

RESEARCH

Mitchell and Popham [34] compared different socio-economic groups and the influence of greenspaces on their health. Looking at people of working age in groups of increasing income and comparing them with the same groups in areas of increasing green space, they found that the difference in different health outcomes was reduced in areas with more green space. This can be seen in the graph below by the reducing size of the bars as you move left, which is areas of higher green space.

National data from the Monitor of Engagement with the Natural Environment survey, undertaken by Natural England from 2013 to 2015 [35] found that 12% of children had not visited the natural environment in the previous year, and these children were more likely to be of Black and Ethnic Minority origin or of a lower socio-economic class.

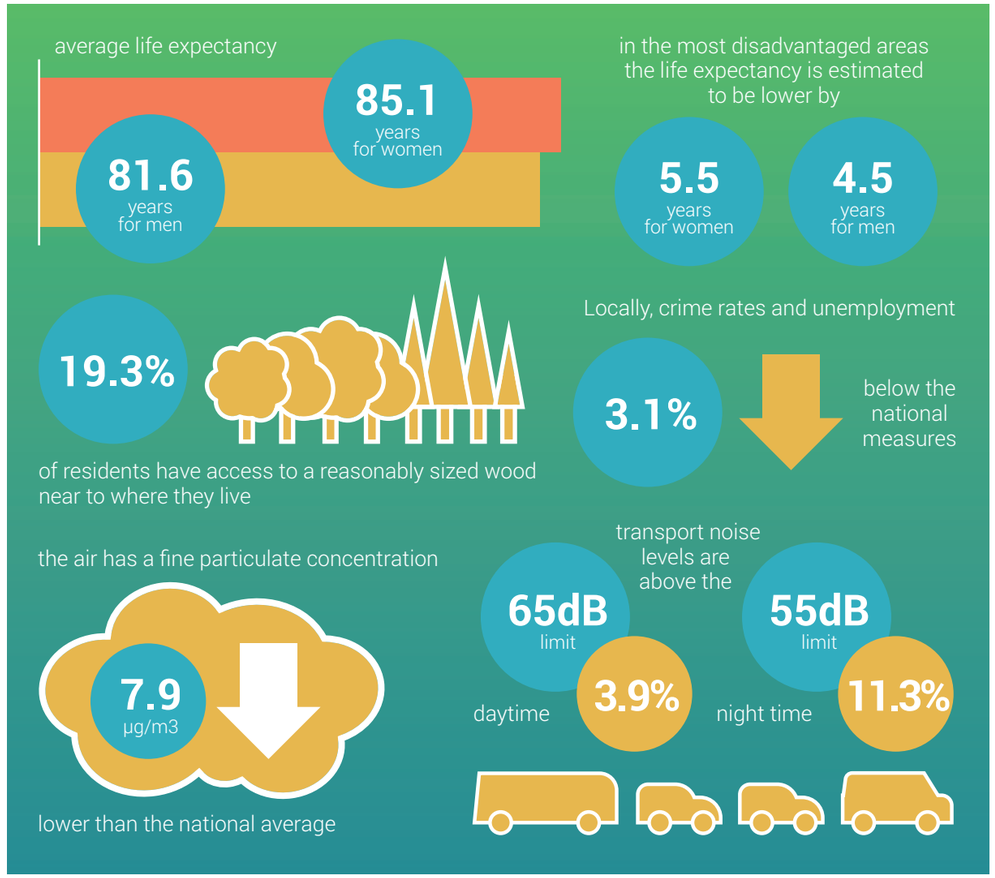
A study [36] in Chicago, USA, looked at the surrounding greenness of 98 publically owned apartment blocks. Residents were randomly assigned to any of the blocks. An examination of police data showed that there were fewer crime reports from apartment blocks with greener surrounding areas when compared to those with less green surroundings.



[34] Mitchell and Popham, 2008

IN OUR AREA

The latest data for Wokingham shows the average life expectancy is 85.1 years for women and 81.6 for men. However, in the most disadvantaged areas the life expectancy is estimated to be lower by 5.5 years for women and 4.5 for men, compared to the least disadvantaged areas. There are lots of ways to measure the potential causes – they are often the wider determinants of health discussed earlier in the report. Locally, crime rates and unemployment (3.1%) are below the national measures. In terms of pollution, the air has a fine particulate concentration of 7.9µg/m3 (lower than the national average), but transport noise levels are above the 65dB limit in daytime for 3.9% of residents, rising to 11.3% for the night time 55dB limit. In terms of personal isolation, only 48.6% of adult social care users have as much social contact as they would like. Only 19.3% of residents have access to a reasonably sized wood near to where they live. [37]



CASE STUDY: SPORTS FOR VULNERABLE COMMUNITIES
By Glenn Goudie, Physical Activity Projects Coordinator

The Wokingham Borough Council Sports and Leisure Team have designed a series of programmes targeted at vulnerable communities, who are likely to face poorer outcomes than the general population, to reduce health inequalities. These activities frequently make use of outdoor spaces for leisure and sports.

Walking for Health is led by 17 volunteers with the Wokingham Borough Council Sports and Leisure Team overseeing the programme and training to ensure the programme meets accreditation from Walking for Health. The walks, which are free of charge, are available across the Borough. The average age of attendees is 55-65 years. In February 2018, over 1,500 people were registered on the Walking for Health database. The programme attracts many new people to health & leisure activities.

Sportivate is a programme of activities provided for young people in areas identified as deprived by Wokingham Borough Council. Activities include Cheerleading for girls 11-16 years old, Yoga for girls 16-25 years old and Cycling sessions for children 11-15.

Yoga classes for women were run in three of our areas of deprivation.

Dementia Friendly Activities are offered in partnership with the charity, Young People with Dementia. A range of 40 weekly sessions of activities are provided including walks, bowling, tennis and boccia. Other programmes include seated exercise classes and a drop-in falls prevention class. Old Time Dancing is run at the Memory Clinic in Barkham Hospital.

Here4U is a service for looked after children leaving care. Personalised training sessions are offered by our own qualified Personal Trainer and weekly football sessions. Care Leavers can benefit from a very attractive gym membership at our local leisure providers.

OPPORTUNITIES AND CHALLENGES

New Developments and Regeneration

The planning of our local area can influence our health behaviours. Quality, easily accessible green space can enable us to exercise, accessibility to services allows walking and there can be opportunities for social engagement.

With local pressures on housing and the demand for new homes to be built in our area, there are both opportunities and challenges to the amount of quality green space. As urbanised areas already become increasingly built up, there is the need to use green areas on the peripheries of towns to provide enough quality accommodation for our population, often against the wishes of some residents. Although green views can be lost, the majority of these developments take place on private land which is not generally accessible by the public. With careful planning, new developments on previously private land could actually result in more publically accessible green space.

A variety of national policies and frameworks exist to assist local authorities concerning the provision of green spaces. These take the form of general advice through to specific quantifications of how much should be provided and for what purpose. These policies are often used by planning authorities to develop local policies that are relevant to the local situation.

To deliver safe, quality homes and neighbourhoods for all groups in our community it is important to find ways to balance the loss of green areas, the need for more housing and the opportunity to develop new green spaces and use investments to benefit the wider community. By engaging with the planning process and ensuring health and wellbeing of residents is considered in planning, we have the opportunity to develop new assets to improve our neighbourhoods.

POLICY

The Six Acres Standard [38] is a commonly used set of measures to guide local planners as to the amount of recreational space that should be in a community. It was developed by the National Playing Fields Association (NPFA, operating name Fields in Trust), and has existed in various forms since the 1930s with a specific recent update in 2008. It aims to inform policy that will result in the protection, improvement and green spaces focused on sport and play. Many Local Authorities include the standard in their open spaces policies.

Fields in Trust recommended benchmark guidelines - formal outdoor space [38]

Open space typology	Quantity guideline (hectares per 1000 population)	Walking guideline (walking distance: metres from dwellings)	Quality guideline
Playing pitches	1.2	1200m	• Quality appropriate to the intended level of performance, designed to appropriate technical standards • Located where they are of most value to the community to be served • Sufficiently diverse recreational use for the whole community • Appropriately landscaped • Maintained safely and to the highest possible condition with available finance • Positively managed taking account of the need for repair and replacement over time as necessary • Provision of appropriate ancillary facilities and equipment • Provision of footpaths • Designed so as to be free of the fear of harm or crime • Local authorities can set their own quality benchmark standards for playing pitches, taking into the account the level of play, topography, necessary safety margins and optimal orientation • Local authorities can set their own quality benchmark standards for play areas using the Childrens' Play Council Quality assessment tool
All outdoor sports	1.6	1200m	
Equipped/ designated play areas	0.25	LAPs -100m LEAPs - 400m NEAPs - 1000m	
Other outdoor provision (MUGAs and skateboard parks)	0.3	700m	

The National Planning Policy Framework [39] features a number of policies relating to green and open spaces. They include:

- Promoting healthy communities, through access to high quality open spaces and opportunities for sport and recreation
- Protection for existing facilities and the 'Local Green Space' designation, which can be used to afford special protection for green areas of particular local importance due to their use or features
- Protection of green belt land and the need to positively enhance beneficial use of the land through increasing access, biodiversity of improvement of damaged land

CASE STUDY: MARKET PLACE REDEVELOPMENT

By Emy Circuit, Delivery Manager, and Catherine Brimble, Landscape Architect

Wokingham is an attractive market town with a rich history but it also remains forward looking. The public realm has played a central and lively role in the rich history of this market town and this should continue to be the case. In order to achieve this, it is crucial that the character and quality of Wokingham's public realm is enhanced to match that of its built surroundings reinforcing to local residents and businesses that the town has a strong future encouraging them to promote and have pride in the town.

As part of the town centre improvements in Market Place it was essential that we incorporate large trees within the space not only as replacements for the trees that were removed but because of the numerous benefits and advantages trees can bring to the urban environment apart from the obvious visual impact and seasonal interest.

Large urban trees create a sense of place, local identity and a system of landmarks that attract leisure and community activities helping residents to take pride in their town. Trees also provide a range of environmental benefits and the most important of which is the impact on air quality as trees are able to remove from the air harmful pollutants and fine particulates. Trees help to regulate climatic extremes by cooling the air in urban environments thereby reducing the heat island effect of extensive hard surfaces and reducing the energy demands of buildings. Trees create a positive environment which is shown through studies to improve the physical and psychological heath of residents and contribute to the improvement of anti-social behaviour.

Hornbeam was carefully chosen as the tree species for Market Place as it has good upright form and it is able to tolerate wide range of environmental conditions such as drought and high pollution levels and it is very tolerant of pests and diseases. Large trees in urban spaces can have a long life span provided there is sufficient rooting space. In Market Place this has been supported by the use of the underground structural soils cells which will provide a substantial rooting zone for the trees beneath the paving. These trees have increased the natural elements within an important town regeneration initiative and will offer many health benefits to our residents.

INCREASING ACCESS

Another way we can maximise the benefits of green space in our area is to make best use of existing spaces. This can be through improving the quality of already available spaces, opening previously private areas and finding new ways to encourage their use.

Access to green spaces can be increased by removing the barriers to their use. These can vary for different groups, and are not restricted to their quantity or closeness to home. Personal concerns for safety, the quality of the spaces, the weather or poor transport infrastructure can prevent people using green spaces.

Local authorities can work to remove these barriers, alongside the wide range of other organisations who aim to improve the natural environment, encourage people to use it and increase healthy behaviours. Finding new ways to collaborate and strengthening existing links can allow us to make the most of the potential benefits for the green spaces already in our area.

RESEARCH

Volunteering with the Wildlife Trusts [40] improved peoples' mental wellbeing in 6-12 weeks in a study looking at 139 people, some of which were referred by healthcare providers, who volunteered with the Wildlife Trusts as they took part in nature conservation volunteering activities. 95% of participants with low self-reported wellbeing at the start of the project reported an improvement in 6 weeks, this level increased further over the following 6 weeks. Participants reported significantly enhanced feelings of positivity, increased general health and pro-environmental behaviour, higher levels of physical activity and more contact with greenspace at 12 weeks.

An Australian study [41] combined an audit about public open spaces in Perth with over 1,800 personal interviews. After statistical analysis, they found that those with very good access to large, attractive open spaces were 50% more likely to report high levels of walking, when compared with those do not have access to quality public spaces. This is evidence that the proximity and quality of spaces increases their use.

POLICY

A briefing [42] from the UCL Institute of Health Equity and Public Health England suggests some ways to increase access to green spaces:

1. Create new areas of green space and improve the quality of existing green spaces.
2. Increase accessibility of green spaces and improve engagement with local people.
3. Increasing the use of good quality green space for all social groups.

The Accessible Natural Greenspace Standard (ANGSt) was developed by Natural England to aim to quantify the need for local, useable space near communities. The standards state:

'All people should have accessible natural green space:

- of at least two hectares in size, no more than 300m (five minutes' walk) from home
- at least one accessible 20 hectare site within 2km of home
- one accessible 100 hectare site within 5km of home
- one accessible 500 hectare site within 10km of home'

These criteria account for the need for immediately local smaller spaces, as well as larger areas for sports and walking and are a means by which we can measure the depth and breadth of green spaces around us. Applying the standards to our area might enable us to find particular spaces that could be opened for residents for the widest benefit.

CASE STUDY: GREENWAYS

By Andrew Glencross, Green Infrastructure Manager

FIRST TRAFFIC-FREE GREEN ROUTE LINKING FINCHAMPSTEAD TO ARBORFIELD GREEN

Wokingham Borough Council's first greenway, which links Finchampstead (The FBC Centre) to new the new development at Arborfield Green (the former Arborfield Garrison) was officially opened by the Mayor of Wokingham borough in December 2017.

The project forms part of the Council's ambitious agenda to develop a network of greenways – traffic-free multi user routes – to link the major development locations to each other and also to the existing communities and places of interest and employment. In addition to the contribution to our sustainable transport strategy, it is hoped that the network will make cycling or walking more accessible to the local community which will inevitably bring a range of health and wellbeing benefits.

The first greenway will provide a safe route for pedestrians, cyclists and other users between the new Arborfield Green Development, and Finchampstead via California Country Park. The new path boasts a new hard, permeable all weather surface made from a mixture of gravel and recycled car tyres, making the path accessible for most types of users.

Wokingham Borough Council's executive member for environment, Cllr Norman Jorgensen said: "I'm delighted that the first of our Greenways has now opened. These Greenways provide a genuinely attractive alternative to cars for getting around – it's great that our first will be accessible for so many different users – all while providing new designated commuter routes to get people to where they work and go to school."

CONCLUSIONS

Green spaces can fundamentally define the spaces in which people live and work. The natural environment can have wide ranging health benefits for individuals and our communities and therefore have an important role to play in helping to reduce health inequalities.

Green spaces are free at the point of use and are an accessible asset for all communities, including those who may not be willing or able to pay to use other public or private facilities. It should be noted that Green spaces are assets of value in their own right and are often valued for their relatively undeveloped and unspoilt nature. The quality of such spaces and their benefit to communities depends upon appropriate design and management of them.

We have examined how there is clear evidence for a range of improvements to health and wellbeing, including but not limited to:

- Mental health
- Pregnancy
- Childhood development
- Reduction in cardiovascular disease
- Increasing physical activity
- Reducing health inequalities
- Improving cohesion in communities

We have been able to showcase the wide range of success stories from the local authority and other organisations that are increasing our health and wellbeing by using the natural environment.

We also considered the current health of our population, particularly in the areas that could be improved by green spaces.

There are opportunities and challenges to using green spaces, and we have also considered some of the limitations to achieving these benefits and a few of the ways we might make more use of the assets in our area.

RECOMMENDATIONS

1. Local authorities and other agencies should continue to encourage community initiatives that make the most of natural space available, with the aim of improving mental health, increasing physical activity and strengthening communities.
2. Existing green space should be improved and any new developments should include high quality green spaces. The use of professional design and arrangements to ensure the ongoing management of natural environments should be considered if spaces are to be sustainable.
3. Opportunities to increase active transport should be considered when designing new green spaces and in the improvement of existing space.
4. Planning guidance for new developments should specifically consider the use of green and blue space to improve the health and wellbeing of residents and others using the space.
5. Local Authorities and their public health teams should foster new relationships with organisations aiming to improve the natural environment and its use.

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