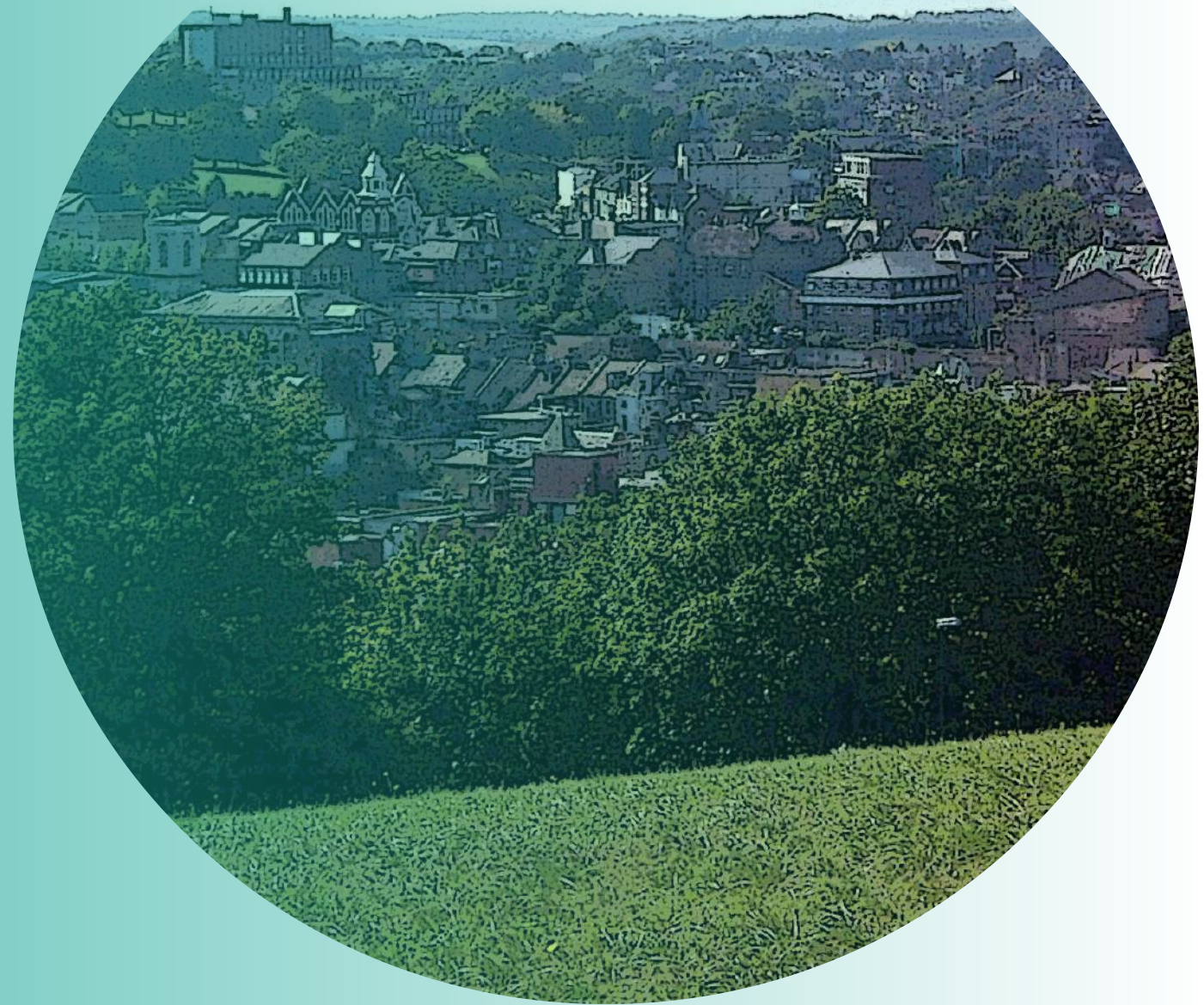


Medway Green and Blue Infrastructure Vision (Draft)



The **Natural** Capital Place - June 2019

Imagine 2035...

Regeneration has transformed Medway and all areas are thriving. Growth has been supported by investment in green and blue infrastructure, and Medway's transformation is resilient and equitable. Everyone has benefitted from investment in green and blue infrastructure.

Residents are more active, as everyone has access to a high quality local green space and more attractive places to walk and cycle.

Travel is quicker and more enjoyable on health-supporting green routes. Medway is green and connected, and its outstanding nature is flourishing.



The natural place for growth...

Green and Blue infrastructure is needed to support the delivery of important elements of Medway 2035



Natural Capital

is the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that provide benefits to people and which make human life possible. Natural Capital underpins economic growth. Investing in Medway's natural capital will bring social, economic and environmental gains for all.

Imagine 2035...

Medway has outstanding green and blue infrastructure assets.

A green and blue infrastructure approach views ecological and natural assets as critical infrastructure, as important as water, power and transport. It maximises the multiple social, environmental and economic benefits which arise.

Habitats and species are returning and residents are proud of their internationally important nature.

A developing urban forest is improving the air and providing shade, even though summers are becoming hotter due to climate change.

The benefits of the investment in green and blue infrastructure are obvious to all, residents, as well as policy-makers. Integrated natural improvements are routinely sought by all sectors; in water management, parks management, regeneration, the economy, health, transport and tourism.



Mark Falardean - Flickr



Sebastian Ter Burg - Flickr



Sebastian Ter Burg - Flickr

The **natural** place for growth...

“In most cases there is little doubt that returns on **green infrastructure** investment are high. Investments in green space **improve a region’s image**; helping to attract and retain high value industries, new business start-ups, entrepreneurs and workers. This in turn increases the scope for leveraging **inprivate sector investment**, reducing unemployment and increasing **‘Gross Value Added’**”

Natural Economy North West

“**CREATING BETTER PLACES** where more people want to live enhances financial value**RICS** research showed

A VALUE UPLIFT between **5%** and, in one case, **56%”**

Ursula Hartenberger - RICS global head of sustainability - 2019

What is **green** infrastructure? ...

What is Green Infrastructure?

Natural and semi-natural rural and urban green spaces – including woodland, scrub, grassland, heath, wetland and open and running water (blue infrastructure), brownfield sites, coasts.

Parks and gardens urban parks, country parks, formal and private gardens, institutional grounds (e.g. schools and hospitals).

Amenity green space recreation spaces, play areas, outdoor sports facilities, community and roof gardens, village greens, commons, hedges, civic spaces, highway trees and verges.

Allotments, city farms, orchards and farmland.

Cemeteries and churchyards.

Green corridors rivers, canals, road verges, rail embankments, cycling routes, rights of way.



Nature conservation sites designated sites and statutory and non-statutory Nature Reserves.

Green space designations (selected for historic significance, beauty, recreation, wildlife, or tranquillity).

Functional green space such as sustainable drainage schemes (SuDS) and flood storage areas.

Built Structures - Living roofs and walls, bird and bat boxes, roost sites.



The benefits of green infrastructure...

There is strong economic evidence

to support the role of green infrastructure as an essential component of building communities where people want to live and in attracting and retaining businesses.

Green infrastructure can tackle obstacles to economic growth in ways which enhance the environment and quality of life as well as support improvements in health and well-being.

There is also evidence that green infrastructure projects that are integrated with other projects or strategies, such as urban regeneration, are likely to provide more benefits, faster.



Environmental Benefits

Improved visual amenity

Enhanced microclimate

Improved air quality

Reduced flood risk

Better water/ soil quality

Water storage and reuse

Improved biodiversity

Reducing ambient noise

Economic Benefits

Increased property prices

Increased land values

Faster property sales

Encouraging inward investment

Reducing building energy costs

Faster planning permission

Improving areas for tourism

Lowering healthcare costs

Social Benefits

Encouraging physical activity

Improving childhood development

Improved mental health

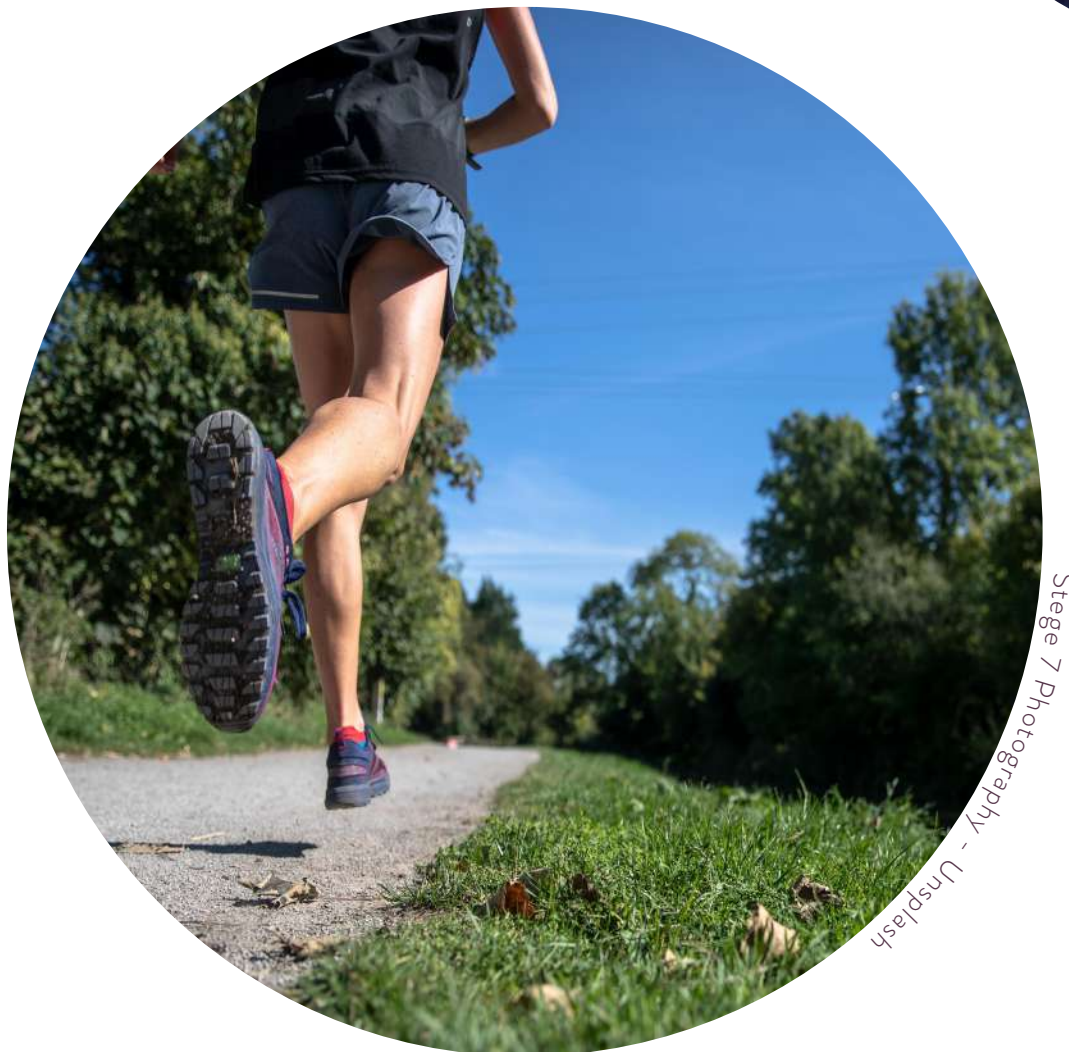
Faster hospital recovery rates

Lowering stress

Improved workplace productivity

Increasing social cohesion

Reducing crime

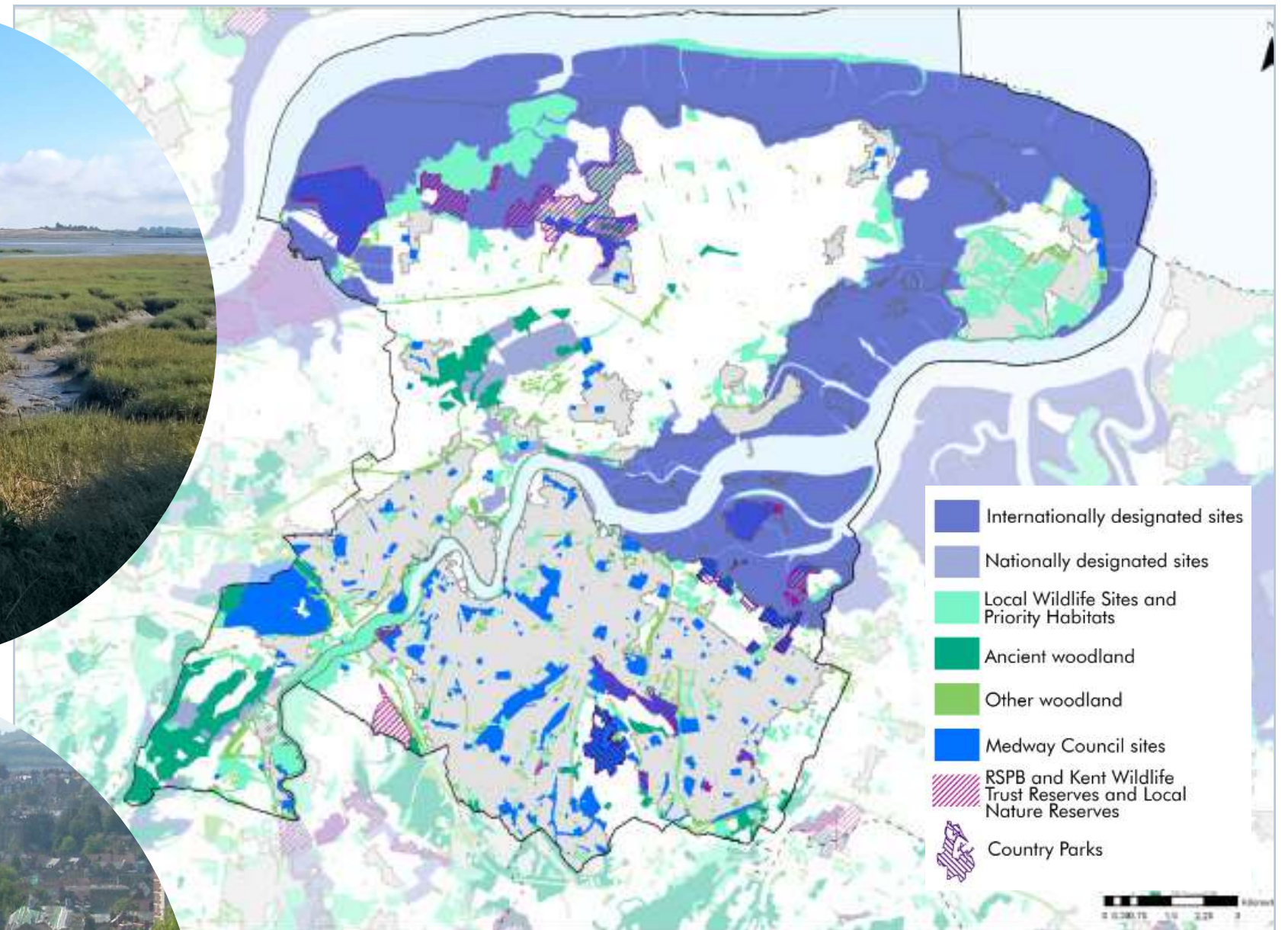


Medway's **green** infrastructure network...

The importance of Medway's rural green infrastructure is clear – with large areas of countryside of international importance and many wildlife sites and nature reserves.

Medway's urban green infrastructure network is also extensive. The parks, country parks, small natural areas, woodlands, nature reserves and other green spaces are an outstanding asset for people and wildlife.

The city is also green. Ridges of chalk remain in the city. Places such as Darland Banks bring chalk grassland and a multitude of flowers into the city centre Woodlands intersperse the city streets.



Medway's Green Infrastructure Network



Medway Council

itself owns 1900 hectares of green spaces, offering huge opportunities for improvements to benefit people and wildlife.

Medway – Outstanding Biodiversity...

Medway and Thames estuaries – important foreshore habitats including mudflats and saltmarsh host many species and are internationally important. The Medway estuary is a Marine Conservation Zone (MCZ), and the Thames Estuary is a recommended MCZ.

Grazing marsh pasture – this grassland is on the Hoo Peninsula, particularly north of Cliffe and the Isle of Grain. The network of ditches, streams and areas of reed support an array of wildlife including highly protected water voles.

Chalk grassland – areas of flower-rich chalk grassland remain, both in the Kent Downs Area of Outstanding Natural Beauty and with the urban area. This habitat is under threat from lack of management.

Woodland – around 4% of Medway is ancient woodland, with internationally important beech and yew woodland on the downs above Halling.



Oystercatcher - Medway Estuary - Donald Macaulay



Bluebells - Adrian Scottow



Man Orchid - Blom S



Grazing Marshes - Colin Park

Nearly a third of Medway

is of international importance for biodiversity and is designated a Special Protection Area or Ramsar Wetland of international importance

Medway's blue infrastructure network...

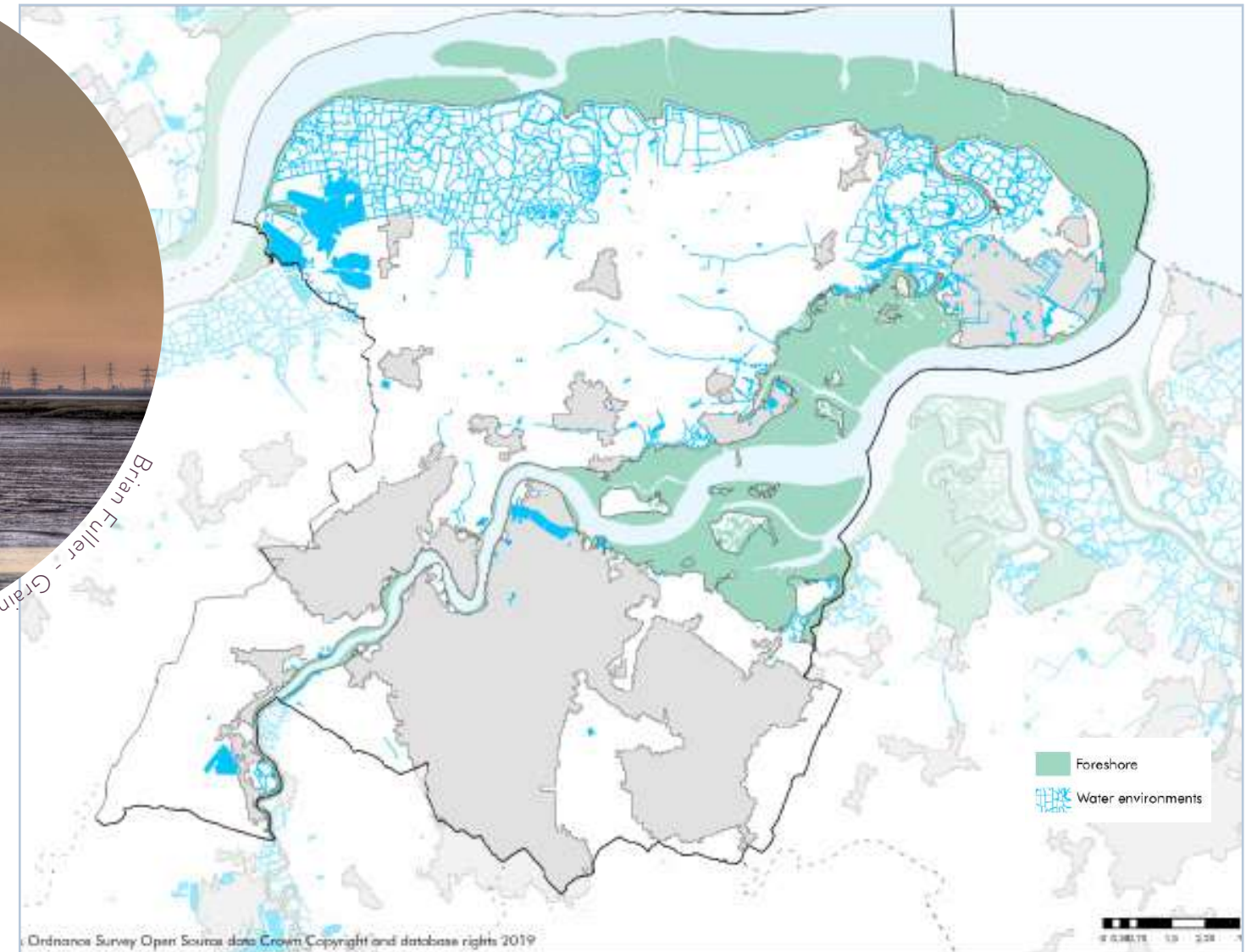
Medway's blue infrastructure is exceptional, supporting outstanding biodiversity. True solitude can be found on the wild and windswept grazing marsh, mudflats and saltmarshes of the Hoo Peninsula. These mudflats and saltmarshes support diverse biodiversity and are internationally protected for the vast number of overwintering birds they support. Medway has the highest area of these habitats of all Kent local authorities.



Brian Fuller - Grain - Flickr

“Ours was the marsh country, down by the river” Charles Dickens Great Expectations

The Medway river winds through the city; a green-blue corridor for wildlife and people, and of huge cultural significance. Medway has the highest area of rivers, streams and standing water of any local authorities in Kent, at 15% of Medway's area.



Medway's Blue Infrastructure Network



River Medway - Petras Gagilas

Medway **green** and **blue** corridors...

Green and Blue Corridors

To halt, and then reverse, the decline in biodiversity, actions are needed on a large scale. Ecological networks must be created across the landscape with wildlife spaces linked and connected.

Medway's green and blue corridors

are priority areas to improve biodiversity. The corridors are expansive. They are both blue and green. They link designated nature conservation sites, areas of good quality habitat and Local Wildlife Sites and reserves. They are based on the Biodiversity Opportunity Areas identified by the Kent Nature Partnership and include important links identified in many past Medway strategies. They include areas of Medway Council owned land, where improvements can be made for nature.



Medway's Green and Blue Infrastructure Corridors

They weave through both countryside and city. They bring nature close to people. Permeability through them for wildlife must be maintained, even where development is planned. They link beyond Medway's boundaries.

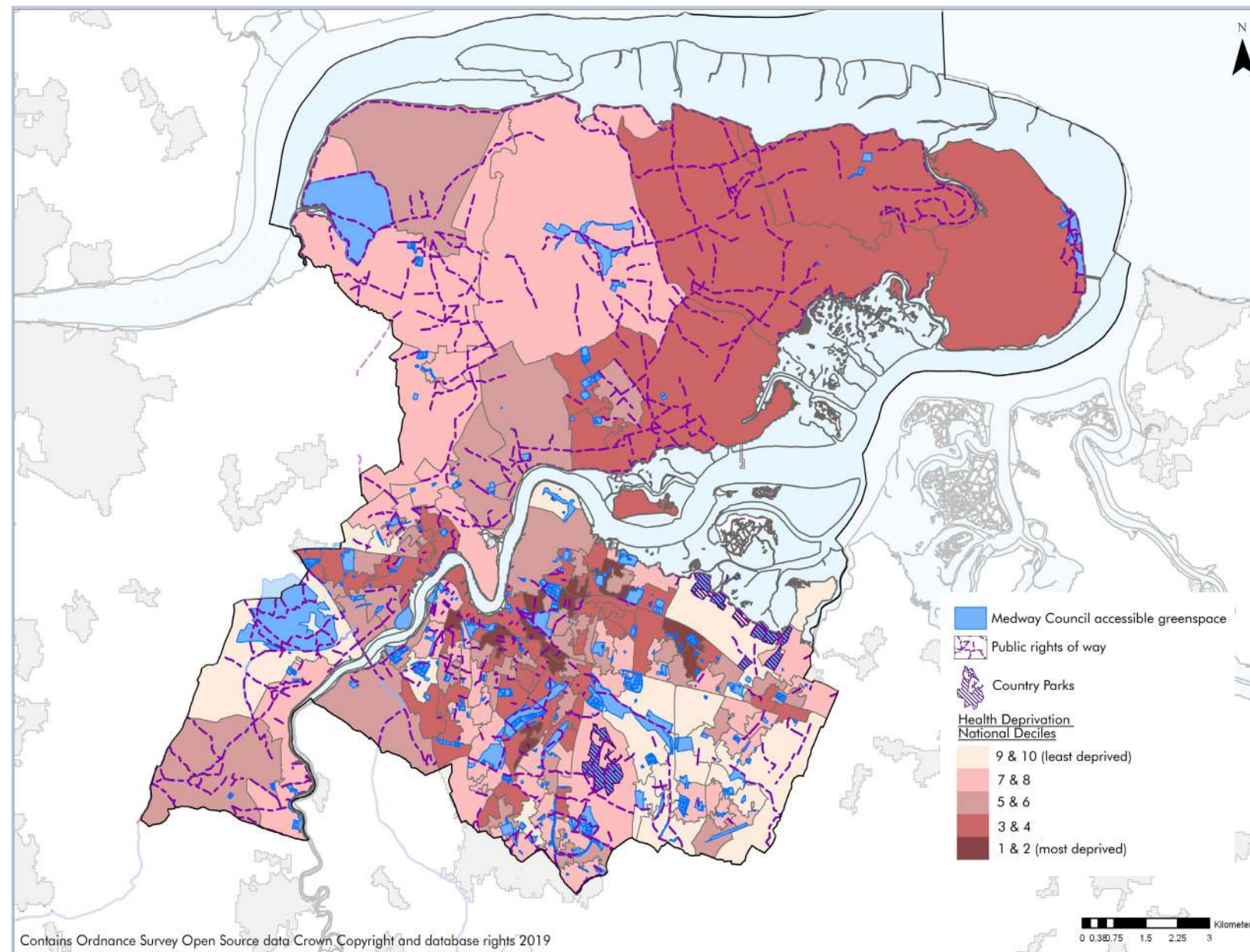
Luke McKernan - Medway - Flickr



Priorities for nature in the corridors

- Improve the quality of wildlife sites
- Expand wildlife sites
- Connect wildlife sites through corridors or 'stepping stones'
- Create new wildlife sites
- Create buffers around wildlife sites

Creating places for active and healthy lifestyles...



Challenges

- High levels of obesity and other health issues and low levels of physical exercise in Medway
- The need for better quality spaces close to where people live to encourage non-users
- Networking and linking spaces and green routes



30% of adults in Medway are obese compared with the average of **24.2%**



22.5% of adults in Medway are physically inactive compared to **19.3%** in the South East



1.4% of adults cycle to work in Medway compared to **3.5%** in the South East



In Medway the mortality rate from heart disease for persons under 75 is **70.9** (per 100,000) compared to **59.9** in the South East



Medway is in the lowest quartile in England for healthy eating with **23.9%** of adults eating five or more portions of fruits or vegetables per day, significantly worse than the England average of **28.7 %**



In Medway in 2016, it is estimated that **6.3%** of adult deaths can be attributed to long-term exposure to air pollution, compared to an average of **5.3%** in England

Creating places for active and healthy lifestyles...

The quality of our environment

has a direct influence upon levels of physical activity. Well-managed green spaces and places that encourage communities to pursue active lifestyles will be crucial to Medway's regeneration. They will help to address many of Medway's health challenges, including low levels of physical activity and high levels of obesity.

The opportunity to explore

safe, attractive and interesting parks or streetscapes can be a significant motivator for recreational walking and cycling.

Offering safety and convenience, they promote active travel for shorter journeys.

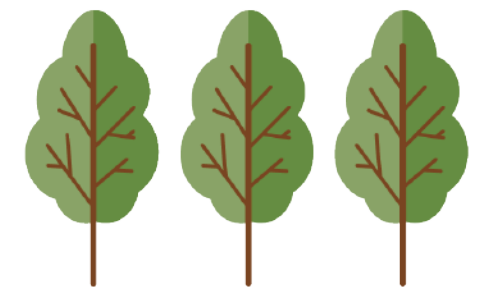
Active use of the outdoors

can strengthen communities and creates a sense of place in which people feel they belong. Natural space has a restorative effect on adults suffering from depression or anxiety.



People cycled **26%** further in **2016** compared to **2006**, up to **53 miles** per year from **42 miles** per year.

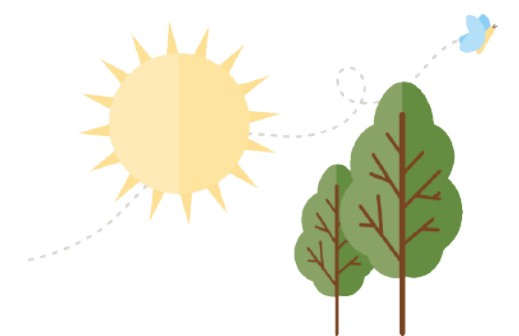
Almost **90%** of people taking part in a study by Mind said that doing physical exercise outdoors in a natural environment was either important or very important in how they felt.



65% of people that are currently not active outdoors are more likely to participate within **2 miles** of their home



Streets & parks designed to be safer and more attractive were the most common changes people reported would encourage them to walk more. **35%** of respondents stated that urban form and environment quality were the most important Healthy Urban Planning issues in their city.



In **2015** Cycling England calculated that a **20%** increase in cycling would save **£107 million** in reducing premature deaths, **£52 million** in lowered NHS costs and **£87 million** by shrinking absences from work

Creating places for active and **healthy** lifestyles...

Community Gardens - orchards, food growing, leisure gardens, play, family spaces,

Providing space for locally grown food can have multiple health benefits, from providing local, organic produce, to the physical activity of managing an allotment. There are also social benefits from community spaces that draw people together to meet, socialise and work together. This has benefits for people of all ages, genders and cultures and can reduce social isolation.

Linear Parks public rights of way, cycle paths, horse riding, rambling, river walks, coastal walks

Medway will have connected neighbourhoods with safe, cycling and walking routes and green and blue corridors linking country parks and city spaces. Urban to rural green spaces will be safe and accessible.



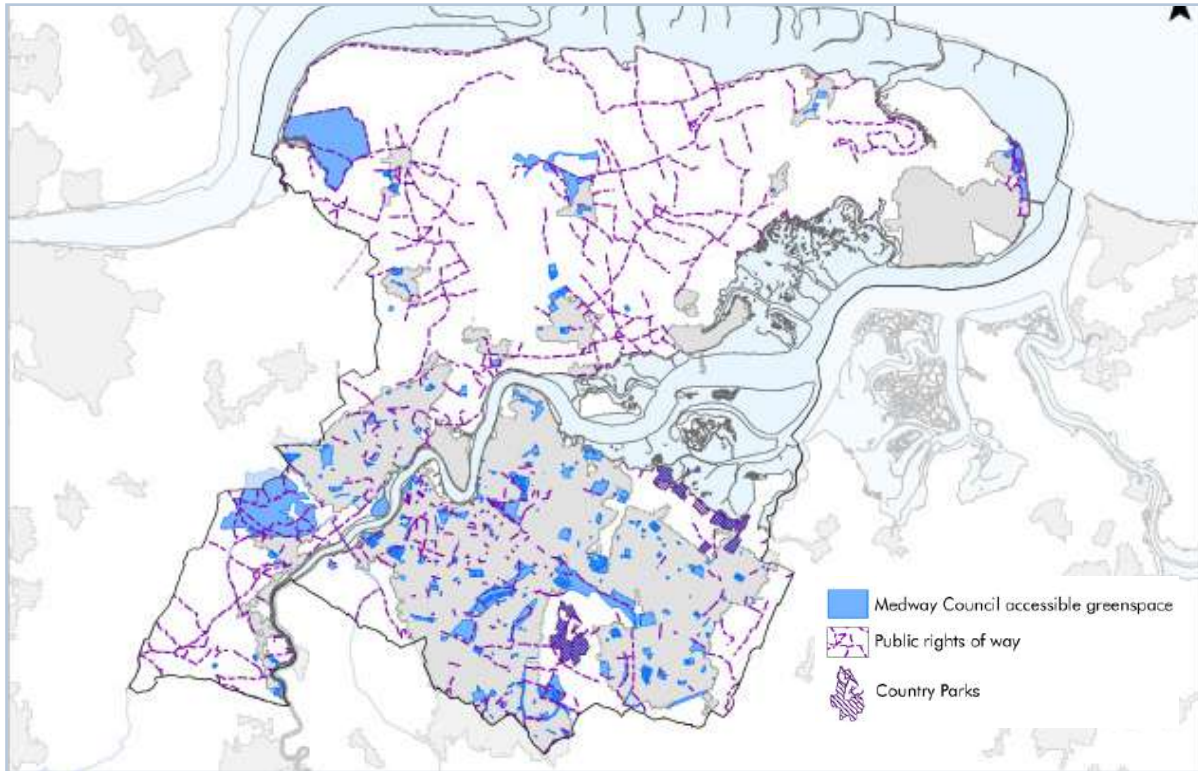
Networks of open spaces

provide the framework for Medway's cities, towns and villages and provide important opportunities for sport and physical activity. Both formal sports areas and informal spaces provide places for exercise, sport, play and being active outdoors.

Accessible Greenspace - park run, leisure walking, dog walking, power walking, sports events, local open spaces

'Natural' environments offer important settings for health-enhancing physical activity. As well as the health benefits associated with physical activity, they have been shown to reduce chronic stress and enhance a sense of wellbeing.

Creating places for active and healthy lifestyles...



Medway's Access Network

Opportunities

- making spaces provide many benefits - exercise, social, growing food
- Better information - eg intelligent signing and interpretation
- Encouraging and supporting exercise in green spaces
- Using rights of way network for active travel
- The Gold Route - Case Study Sheffield

The Gold Route - Sheffield

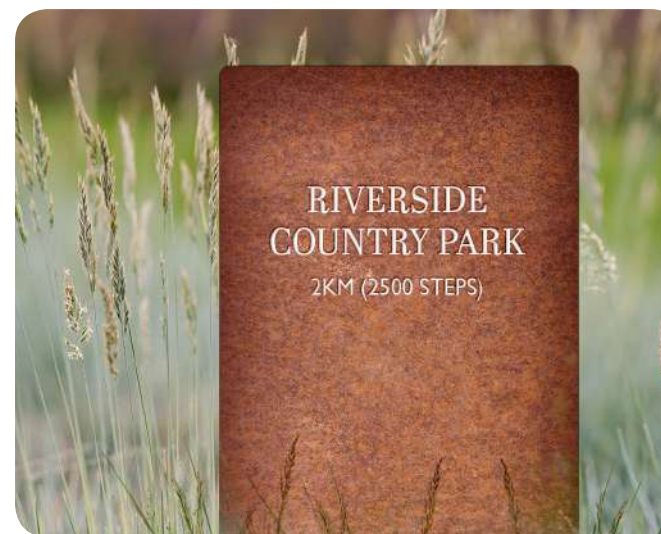
The concept for linking series of public spaces from Sheffield railway station to the city began in the mid 1990s as part of the Heart of the City project. The project creates a critical mass of high-quality public space to support city living, helping to make dense inner urban development sustainable. The scale of the project makes this one of the largest corridors of linked high-quality public realm in the country.

Intelligent signage

Medway's public rights of way network and promoted routes offer great opportunities for exercise in both rural and urban areas. These should be clearly mapped showing distance and the number of 'steps' from end to end.

Community Spaces

Spaces can provide many benefits to communities; for exercise, play, access to wildlife, growing food and bringing the community together. New spaces at the interface of the countryside and new development would enhance new communities. The uses provided by existing greenspaces could be expanded. Spaces could be designed and run by the local community.



Greening the grey ... living urban spaces

Medway is a green city

and is fortunate to have many urban green spaces. There are opportunities to expand greening in the urban areas, bringing many benefits.

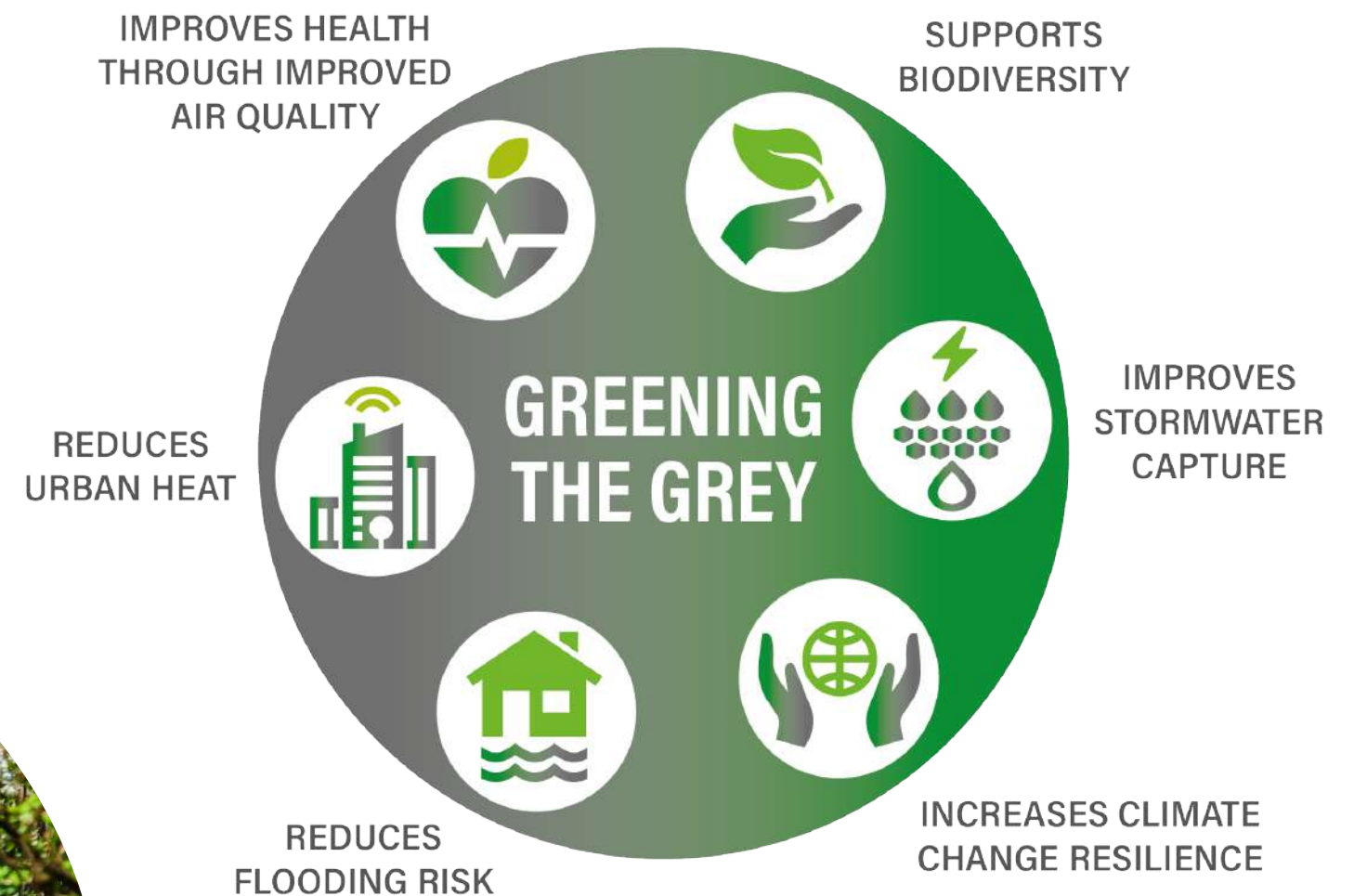
Several of these will help to 'future proof' the city, allowing the city to adapt to climate change and retain quality of life alongside a growing population.

Trees are needed to bring urban cooling and shade in the hotter summers resulting from climate change.

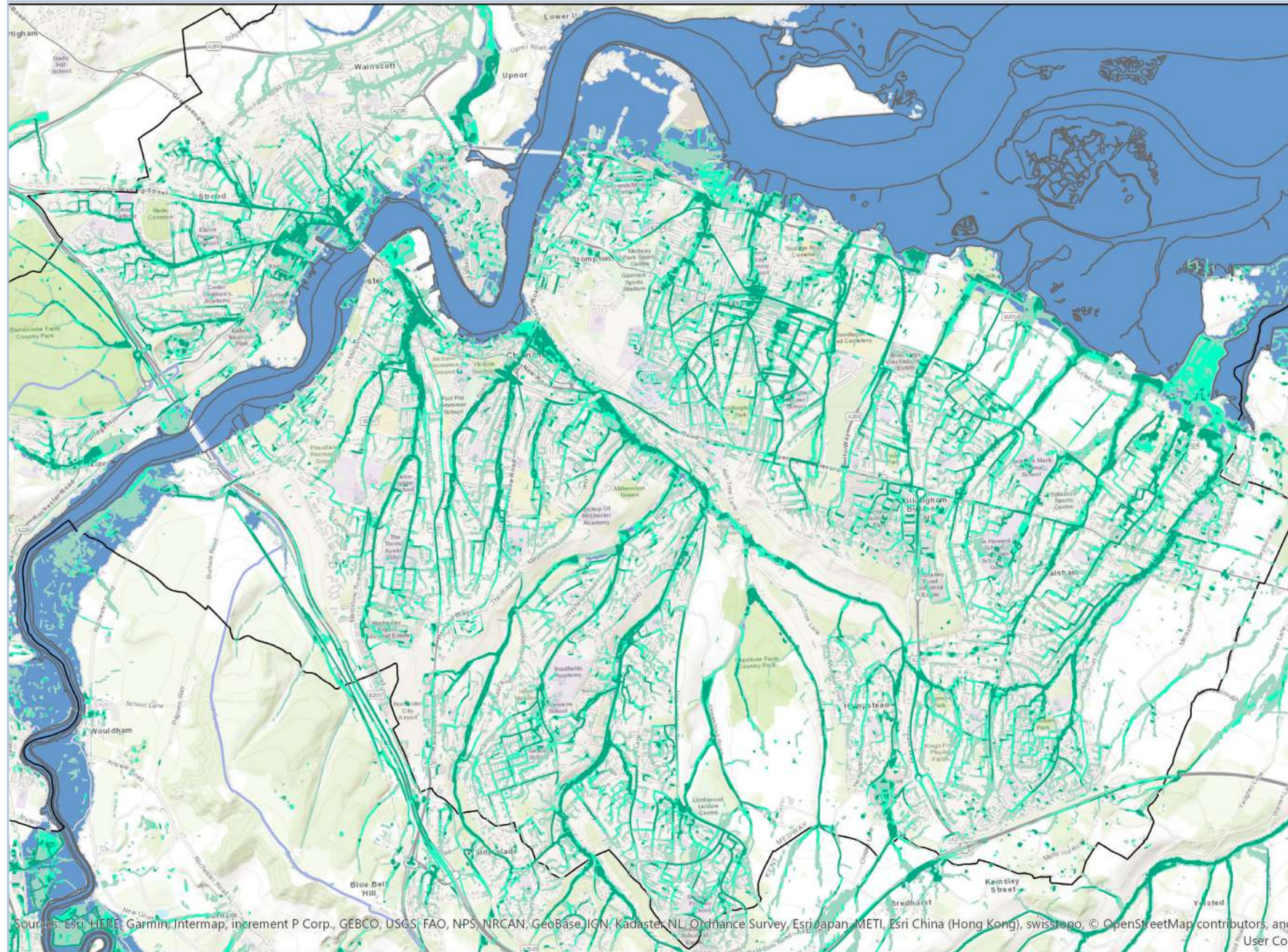
School grounds will also need shade, and can incorporate natural play and growing food to enhance health and wellbeing.

The public realm can be enhanced by green and blue infrastructure to make it more attractive, encourage people to walk and boost the economy.

Even in Medway's terraced streets can be enhanced by 'micro' green infrastructure.



Greening the grey ... smart water



Flood Zone 3 and Areas at Risk of Surface Water Flooding

Water can create challenges – both from flooding and from water supply. Population growth and climate change will increase both of these challenges.

Areas of Medway are at risk from flooding, both from rivers and surface water flooding.

Parts of Medway have been classified by the Environment Agency as moderately or seriously water stressed in terms of supply. The demand for water to supply Medway's growing population will increase.

An estimated 999 properties

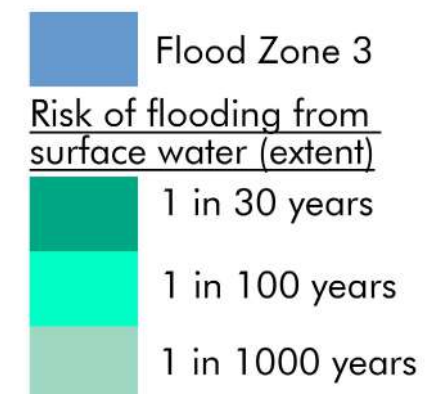
in Strood, Rochester, Chatham and Gillingham are at risk from flooding. If climate change increases rainfall intensity by 40% as estimated (conservatively) by the Environment Agency, this will rise to 2,463 in 100 years.

Medway Surface Water Management Plan

Medway will have a supply and demand deficit

of between 25 and 35 million litres of water a day - if no action is taken before the population grows and as the climate changes.

Kent Water for Sustainable Growth Study



Greening the grey ... smart water

Green and blue infrastructure

can help support other measures in place to solve water challenges. New thinking on urban planning recommends that space should be allocated for water sensitive features such as water bodies, reed beds and areas of ground percolation to reduce and slow flows. Such green and blue infrastructure can also be attractive.

How Medway can create a water smart city:

Slow the flow – rain gardens collect stormwater runoff, letting it slowly infiltrate.

Porous pavements – reduce surface runoff. Green buffer zones, alongside rivers or roads, and ‘bioswales’ allow water infiltration and can remove pollutants.

Green roofs – planted rooves hold rainwater, as well as bringing many other urban greening benefits.

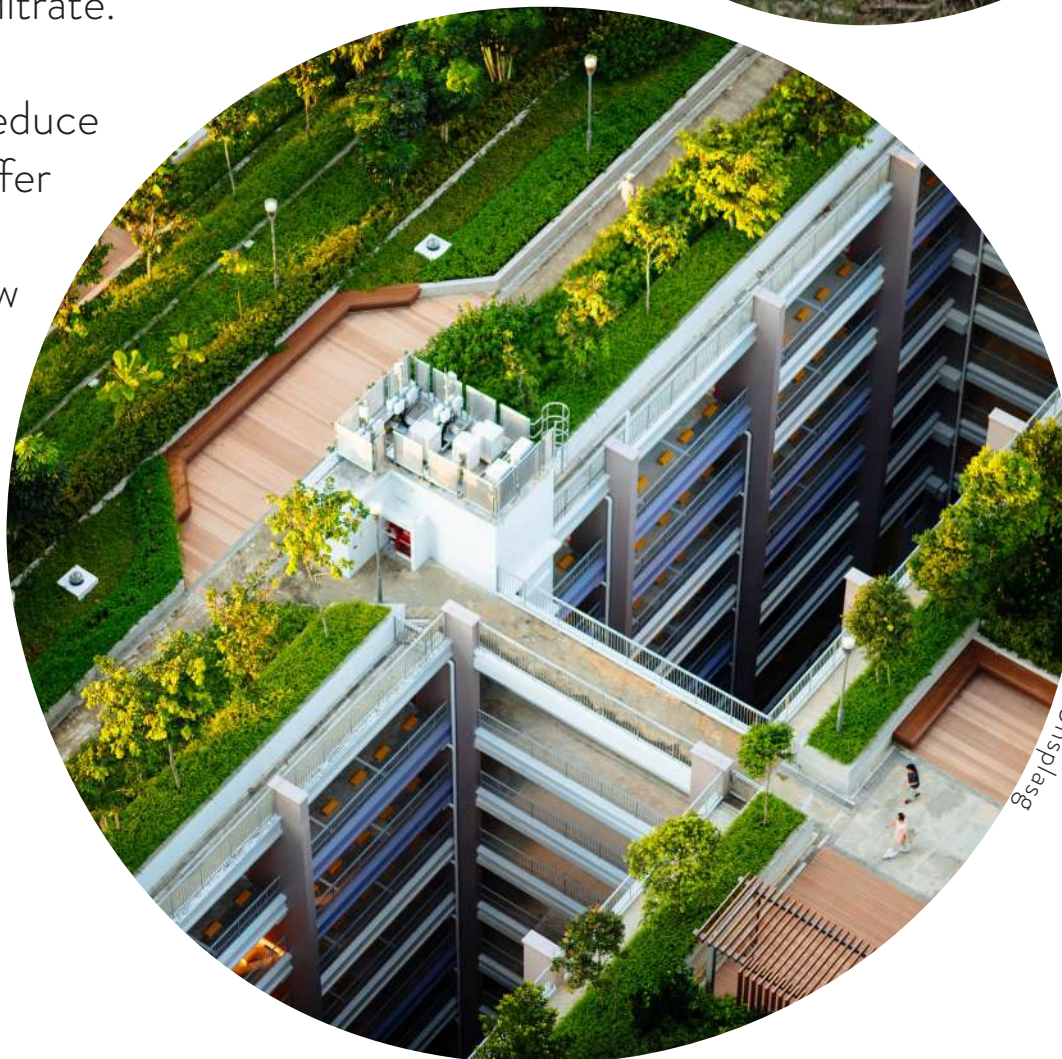


In Northumberland woodlands have been shown to provide **£1,200 per hectare in flood alleviation savings**, versus the cost of engineered solutions.

Plant smart – use plants that can tolerate drought to reduce water use, or that can tolerate flooding where there are excess flows.

Reduce water use – raise awareness of the need to reduce water use. Encourage residents to capture and store water for later use and to plant drought tolerant species.

Many of these measures are recommended in Medway's Surface Water Management Plan (2016).



Medway **green** and clean...

Air pollution caused by road traffic has a detrimental effect on health, increasing both mortality and morbidity. There are four areas in Medway where air quality does not meet objectives for nitrogen dioxide pollution. Some of these are in areas already suffering health deprivation.

Green travel routes increase walking and cycling, reducing pollution-creating traffic and congestion. Green and blue infrastructure improves the attractiveness of urban areas, encouraging people to walk, as well as bringing benefits of cleaner air.

Some tree and shrub planting can also remove particulates clean the air – birch and yew are particularly effective.

Medway Air Quality Management Areas

Central Strood Rochester and Chatham,
Rainham High Street,
Pier Road (Gillingham)
Four Elms Hill
(Chattenden) are in Air
Quality Management
Areas.

In 2010, 125
annual deaths were
attributed to man-made
air pollution in Medway.

**Public Health England
(2014)**



Miki Yoshito - Flickr



Shutterstock

Transport related air pollution impacts most on the disadvantaged with increased risk of respiratory diseases and other illness. People in the 10% most deprived areas in England experience worst air quality...

**Environment Agency, Environmental
Quality and Social Deprivation
(2003)**

Large hedges and trees on busy road verges

have been shown to remove
60/80% of particulates.

It has been calculated that
London's trees provide "at least
£133 million of benefits every
year in terms of air pollution
removal, carbon sequestration
and reducing the amount of water
going into drains.

Trees for Cities 2014

Collaborative **green** and **blue** infrastructure...

Expand Collaboration

Success requires participation by everyone, from residents, agencies, commercial/ industrial property owners and developers. Collaboration among agencies and groups needs to be supported, reinforced and expanded to include many delivery areas.

Develop Programmes and Implement Projects

Showcase successful green and blue infrastructure projects through demonstration projects. Develop ambitious authority-wide green and blue infrastructure programmes, such as greening front gardens, school grounds projects and SuDS/ bioswales in car parks.

Policies

Green and blue infrastructure needs to be embedded in policies across delivery areas. This not only includes planning and parks, but health, transport, skills, visitor economy and regeneration. Policies advising when green and blue infrastructure is required, how it is designed, how it is reviewed and approved, and how it is maintained, will make it easier to implement across Medway.



Fund

Funding construction and maintenance is a critical success factor. Identifying green and blue infrastructure requirements and projects, funding methods, and making appropriate investments to spur local green infrastructure innovation are all part of achieving cost-effective green and blue infrastructure solutions.

Learn, Share, and Adapt.

Develop best practice - provide developer education/seminars on the benefits of green and blue infrastructure in creating active and cohesive communities.

The Ministry of Housing Communities and Local Government

places great weight on achieving high quality places and good design in new housing schemes. In order to encourage developers to engage with communities to better understand the expectations of those living there, the ministry has decided to support a new category at this year's Housing Design awards, entitled the "Good Neighbour Award". The winner of this category will demonstrate evidence of community support for the new development.

Collaborative green and blue infrastructure...

Encourage local charities - and community groups to participate in initiatives to help residents learn from each other and cultivate a supportive environment to share information and resources.

The gardens of Medway could become havens for wildlife and help link habitats across the urban area:

Wild about Gardens

The Wildlife Trusts and the RHS set up 'Wild About Gardens' to celebrate wildlife gardening and to encourage people to use their gardens to take action to help support nature.

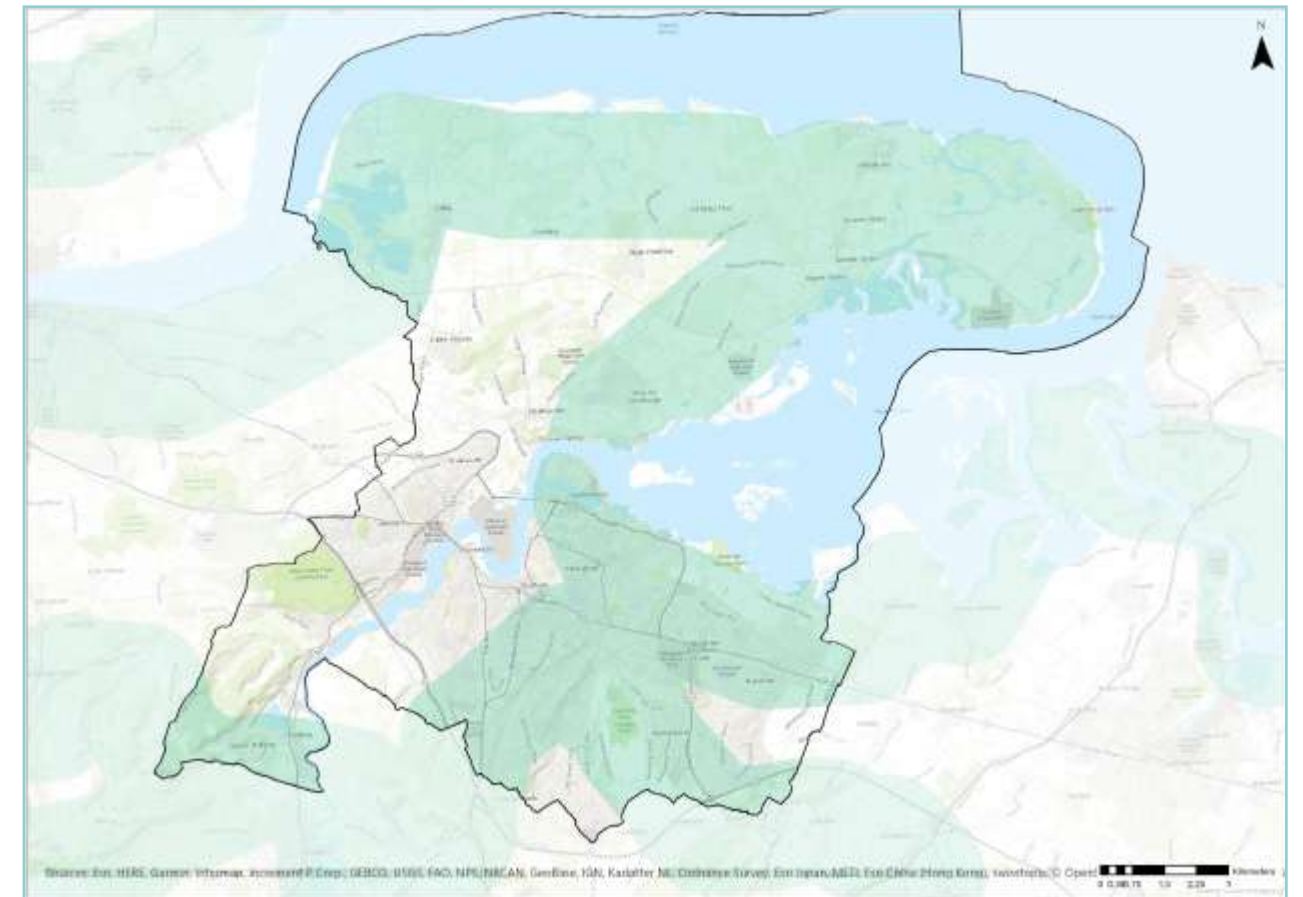
B - Lines

The charity Buglife has identified B - Lines - and many pass through Medway. These are the priority areas to create habitats for pollinators - express highways for them to travel and thrive. The city and rural areas are important to enhance.



Its your Neighbourhood (RHS - South East in Bloom)

Competition for community groups or groups of volunteers who are working to improve the place where they live. This scheme is open to any small group of residents who have come together to improve an area, or undertake a one-off project. Any group can enter; a street, a close or residential area, an allotment, a sports club etc.



B-Line Corridors in Medway



Its Your Neighbourhood - Community Garden by kind permission of South East in Bloom