

COLNE & CRANE VALLEYS
GREEN INFRASTRUCTURE STRATEGY
SEPTEMBER 2019



Foreword



*John Whitby
Chairman
Colne Valley Regional Park*

Colne Valley

The Colne Valley Regional Park was established in 1965, a far-sighted step that seized the opportunity to restore damaged and derelict areas of urban fringe across five counties. Achievements include the creation of four country parks; many restoration schemes; and 50km of new paths to complete important connections across administrative boundaries.

It is a special place – a surprising survival of a rich and varied landscape so close to the urban fringe of London. It is a vitally important resource for people, and home to an astonishing variety of wildlife, including several threatened species.

However, in the 21st century, the Colne Valley finds itself sandwiched between two of the biggest civil engineering projects in Europe – HS2 and proposed Heathrow expansion – and a host of other significant development proposals.

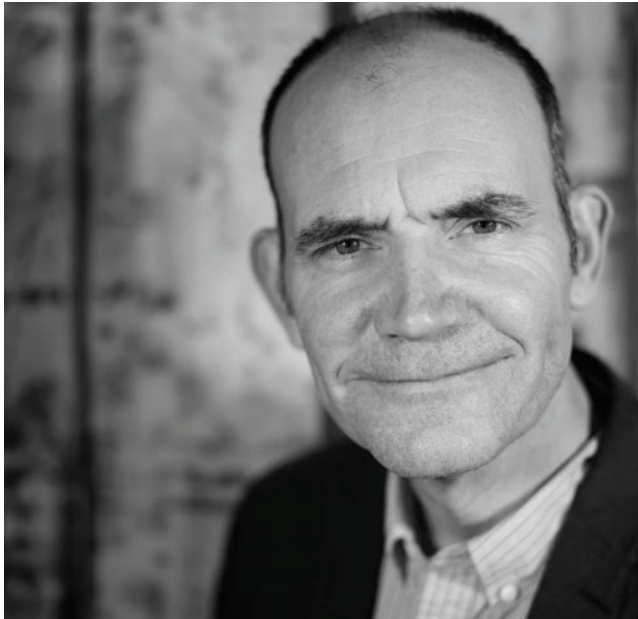
We feel the truly immense cumulative effects all this has on the Colne Valley is still underestimated. It is possibly the most threatened landscape of its kind in the entire country.

If this one comparatively small area is to host so many developments 'in the national interest', then we believe national and local government must respond by creating the conditions for a Regional Park that functions properly, offering an accessible high quality green resource for the capital and beyond.

It needs greatly enhanced co-ordination of spatial planning and of environmental and community mitigation.

This Green Infrastructure Strategy can be used by developers and Local Planning Authorities to inform both the design of development proposals and their comprehensive mitigation/ planning obligations.

There is ample evidence that a co-ordinated approach to the landscape is the best way to create a vibrant, pleasant, and vitally important area for people and wildlife.



*John Waxman
Development Manager
Crane Valley Partnership*

Crane Valley

The Crane Valley stretches across five west London Boroughs. Within this heavily urbanised landscape that is home to well over half a million people, the semi-natural river corridor acts as a unifying green thread, linking an extensive and remarkably varied network of publicly-accessible open spaces: parks and recreation grounds, nature reserves, water meadows and wetlands, woodland and scrubland. The green infrastructure of the Crane Valley is a precious commodity, providing a wide range of ecosystem services benefiting both wildlife and people.

We are now at a major crossroads. There has been a lot of great work over the last decade, by a wide range of public, private and third sector partners, to enhance the value of the Valley's natural capital and strengthen the links between its open spaces. This work is now starting to bear fruit. But there remains much to be done. Significant effort is still needed to reverse past interventions that have degraded the quality of the environment. For example, the river system within the Crane catchment has been extensively modified over the years, reducing its aesthetic and amenity value as well as its ability to support wildlife. In some places the Valley's watercourses are difficult to access or are hidden from view.

And population growth, major development projects, climate change and public sector funding pressures all pose significant threats to the available open space now and in the future.

A co-ordinated response is required, one that transcends administrative boundaries through a landscape-scale approach to protection and enhancement. And one which also recognises the important role that high quality green infrastructure provision plays in the 'good growth' agenda. The response needs to involve local communities as well as local authorities and other public bodies. 'Friends' groups and other voluntary organisations are already helping to deliver significant positive change on the ground, and can do much more with the necessary support and encouragement.

This strategy is a call for action that highlights a wide range of 'greening' opportunities within the Crane Valley. It will serve as an essential reference guide for developers, local authorities, statutory bodies and other stakeholders committed to delivering good growth. And also for local community groups willing to take on active stewardship roles.

By virtue of its geography, the Crane Valley also has considerable potential to act as a 'green highway' for people and wildlife, connecting the River Thames in West London with the Colne Valley and Chilterns AONB. With appropriate investment in green infrastructure and cycling/walking routes, this function can be developed and consolidated to the benefit of all the areas concerned.

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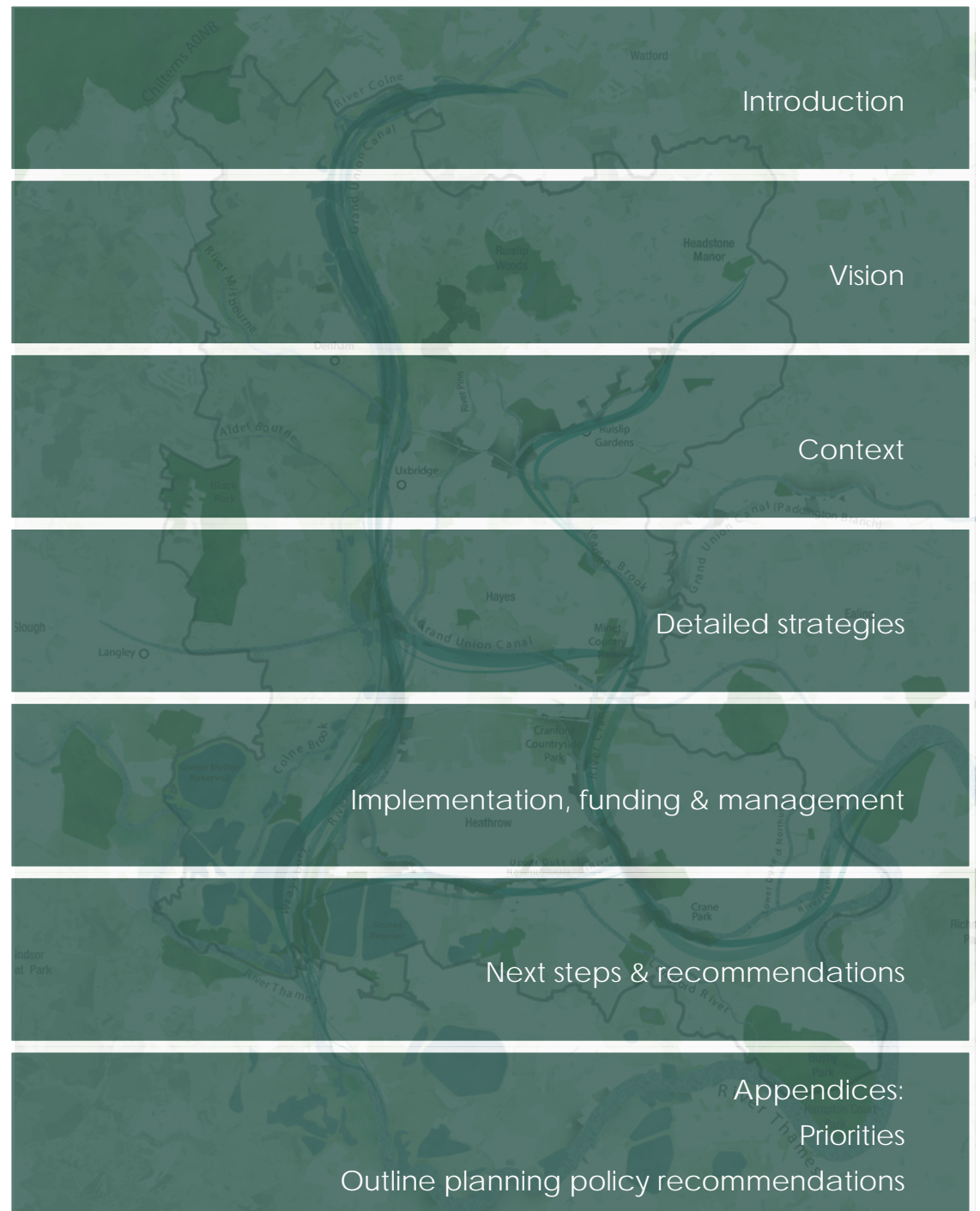
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INTRODUCTION

Purpose of the strategy

This green infrastructure strategy has been prepared to address the significant and numerous challenges of the 21st century in the Colne and the Crane river catchments. It is intended for use by developers, local authorities, partnerships and statutory bodies to inform both the design of development proposals and their comprehensive mitigation and planning obligations.

The strategy will support a coordinated approach to project development, project approval and funding distribution. It will:

- provide a landscape-scale context for green infrastructure, including opportunities for enhancement and cross-boundary links;
- highlight the benefits of green infrastructure to all, and how it can underpin good development; and
- define a starting point for authorities and other organisations to prepare more detailed plans and delivery strategies for implementing projects.

The strategy has been prepared to work at all scales and to support delivery of short-term projects along with a long term transformation of the quality and functionality within the two valleys. It can be used to address both the immediate challenges of major infrastructure schemes such as High Speed Two (HS2) and the potential expansion of Heathrow, alongside consideration of the cumulative impact of nationally significant infrastructure projects, major housing and other developments.

Furthermore, the strategy highlights the unique green infrastructure assets of this area and sets

out approaches to enhance and interconnect these to increase their value for both people and wildlife, and to create resilience (both climatic and ecological).

It includes a map-based strategy for tying together and building on existing green infrastructure and environmental plans in consultation with key stakeholders. It is a framework for guiding future partnership working and to assist other authorities working towards other strategies including:

- Water Framework Directive;
- London Plan and National Park City status;
- 25 Year Environment Plan; and
- Local Plans and county green infrastructure strategies and biodiversity action plans.

The project has been commissioned by the Colne Valley Regional Park Community Interest Company. The project steering group includes representatives of the Colne Valley Regional Park and the Crane Valley Partnership.

Funding has come from the Heritage Lottery Fund Landscape Partnership Scheme (Colne Valley: A Landscape on the Edge), government Planning Delivery Funds and the Environment Agency.



Overview of the study area and existing green infrastructure

The character of the Colne and Crane valleys

The Colne and Crane valleys have rich natural landscapes and a diverse recreational offer. Here lie some of the country's most valued natural and cultural assets. Historically important buildings and parkland, internationally significant populations of bird species at the South-West London Water Bodies Special Protection Area (SPA) and Ramsar site; a network of Natura 2000 sites and Sites of Special Scientific Interest (SSSI); and chalk streams providing a gateway to, and a buffer for, the Chilterns Area of Outstanding Natural Beauty (AONB).

The two valleys form a vital green infrastructure resource serving the London region and also Surrey, Buckinghamshire, Berkshire and Hertfordshire. Together they provide a green lung for over 1.6 million people living within a 20 minute walk. They create a strategic connection between London, the Thames Valley and the Chilterns.

The landscape infrastructure is becoming increasingly fragmented, reducing its resilience and benefit to nature and people. If these valley environments are to function as rich and valuable interconnected assets, their natural capital value needs to be fully recognised and protected for future generations.

The last fifty years has seen much of the landscape resource become severed by transport infrastructure and fragmented by development.

Yet many of the green and blue spaces are havens of tranquillity, 'hidden treasures' for local people to experience and enjoy. Unfortunately the significance of the green infrastructure

resource in the Colne and Crane is not widely known, which often means insufficient attention, lack of funding and neglect; or some 'honey-pot' sites struggling to cope with visitor numbers.

Other green spaces are uncared for, under-performing, or sometimes left derelict in the hope they will be viewed - some time in the future - as suitable sites to develop - despite green belt designation.

As the scale of planned change increases with proposals including HS2 and potential Heathrow expansion, and strategic development opportunity areas such as the Western Wedge, it is a timely point to take stock and plan for a resilient future which has green infrastructure at its heart.

The quality and coherence of much of the green infrastructure is strong with great potential, providing the foundations for creating a fully functioning and thriving landscape ecosystem. **But there needs to be a step change in the way the landscape is managed.** The opportunities now need to be embraced and supported by those with the power and funding to help them thrive, including national and local government, local companies and developers.



A haven for wildlife - Damselfly



Lowland river valley landscapes



276KM
OF WATERCOURSES - THE EQUIVALENT
DISTANCE FROM LONDON TO PARIS



155KM
OF REGIONAL/NATIONAL RECREATION
ROUTES



30%
OF THE AREA SITS WITHIN THE FLOODPLAIN
ON THE COLNE AND CRANE ¹



430KM
OF MAJOR ROAD AND RAIL CORRIDORS ³



142
INTERNATIONAL AND NATIONAL
ECOLOGICAL DESIGNATIONS ²



946
NATIONALLY SIGNIFICANT HERITAGE
DESIGNATIONS ⁴



1.6 MILLION
PEOPLE LIVE WITHIN 2 KM (20 MIN WALK)
OF THE STUDY AREA

1. Land lying within flood zones 2 and 3 (defined by the Environment Agency).
2. Ramsar sites, SPA, SSSI, NNR and ancient woodland.
3. Including motorways, A roads and railway lines (not including HS2).
4. Scheduled Monuments, Registered Parks and Gardens, listed buildings.



© CC iRegard1
Heathland and plantation - Black Park



Motorway infrastructure and Heathrow airport dominate parts of the valleys



River flowing through Crane Park



Watersports, Rickmansworth Aquadrome



Historic buildings within a parkland setting - Cranford Countryside Park



© CC Bob McCaffrey
Grand Union Canal - Lock gates

A call for action

The Colne and Crane Valleys can work much harder than they already do in order to deliver:

- high quality and diverse open spaces for local and regional communities;
- improvements for wildlife including the areas designated as regionally, nationally and internationally important; and
- resilience to climate change.

This strategy is necessary to ensure that there is greater investment in green infrastructure which will yield the following benefits:

- boosting health and well-being through active leisure and lifestyles;
- promoting recreation within a natural living environment;
- promoting active travel;
- natural water management to reduce flooding;
- protecting precious water resources;
- improving air quality;
- providing carbon sequestration;
- enhancing biodiversity and ecological resilience;
- fostering community cohesion; and
- improving quality of life.

This strategy articulates the importance of the Colne and Crane landscapes, setting a vision and an approach for stakeholders to unite around.



Thriving waterways - The Grand Union Canal








Valuable but under-utilised - the Yeading Brook at Spider Park, Ruislip

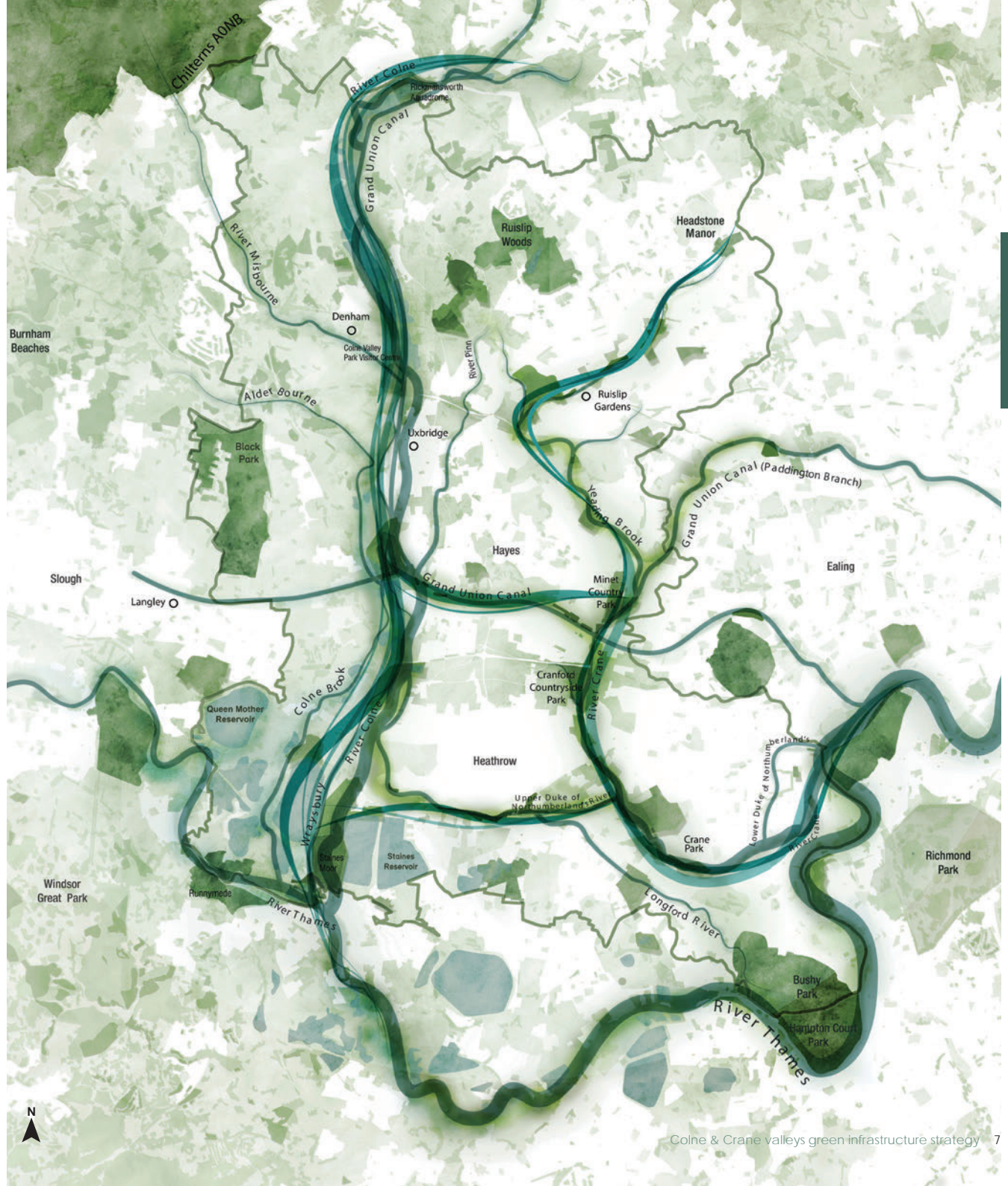
VISION

Our vision

Our vision is for the Colne and Crane valleys to be a valued, connected network of open spaces for nature, recreation and wellbeing by 2050.

Key

-  Strategy area
-  Strategic green space
-  Linking green space
-  Key waterscape
-  Strategic green infrastructure network



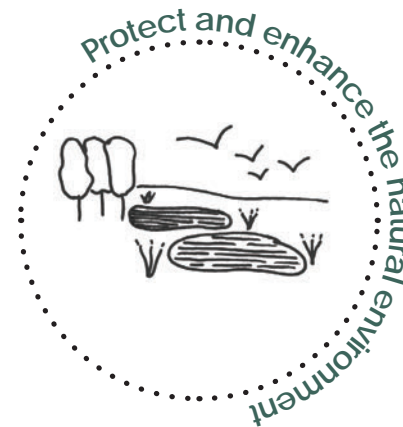
Key principles

1 



- Promote local distinctiveness through revealing tranquil river corridors, ancient lanes and vistas over wooded hillsides.
- Restore historic buildings, parklands and canal bridges.
- Celebrate local crafts, industrial heritage and market gardening.

2 



- Protect and appropriately manage priority habitats and nature sites to create robust and connected wildlife corridors, building in ecological resilience.
- Promote a catchment scale approach to water management with an emphasis on natural flood management and nature-based solutions.
- Re-naturalise river banks and improve water quality.

3 



- Create continuous, safe routes, encouraging active travel for commuting and recreation.
- Create identifiable gateways from stations and local centres to access open spaces.
- Restore routes severed by major infrastructure barriers.

4



- Raise community awareness of the value of local green spaces.
- Encourage local people to take stewardship of green spaces.
- Form green hubs for socialising, learning and community horticulture.
- Promote productive landscapes i.e. farming, woodlands and orchards.

5



- Ensure landscapes are multi-functional, capturing carbon and purifying the air.
- Promote natural flood management, water storage and Sustainable Drainage Systems (SuDS).
- Recognise and enhance natural capital and create new woodlands and wetlands.
- Ensure development delivers net gain in high quality green space provision.
- Ensure landscapes are adaptable and resilient to climate change.

6



- Enhance mental and physical health and wellbeing through access to nature.
- Encourage healthy lifestyles for all.
- Provide opportunities for recreation, natural play and sports activities.

The following pages provide some illustrated ideas that could be located within the Colne and Crane Valleys. These have been linked to the key principles and are intended to generate ideas and interest as and when actual sites become available to deliver on.

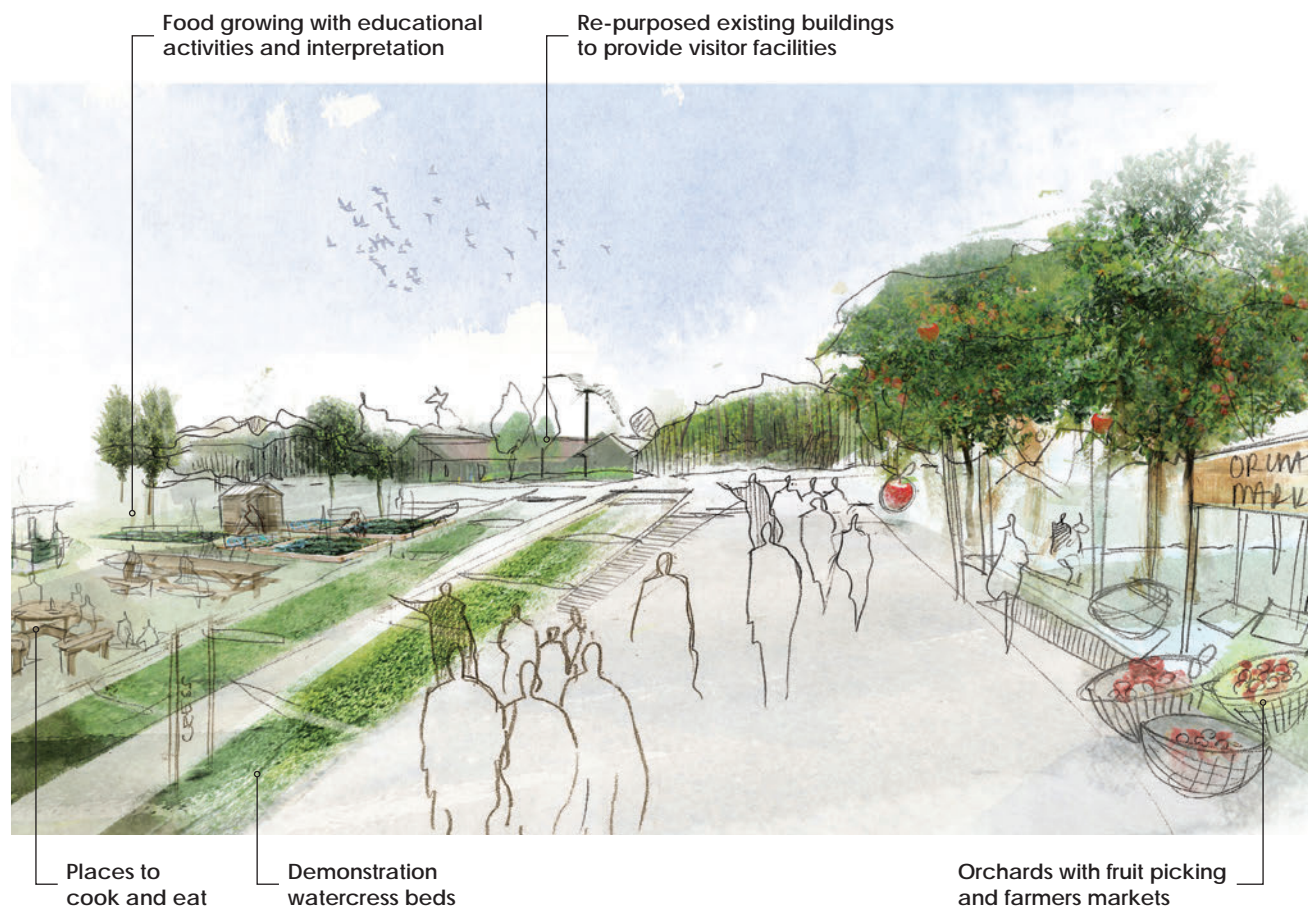
Creating new landscape visitor demonstration hubs

This concept shows illustrative possibilities for developing enhanced, more resilient visitor infrastructure for key sites in the two valleys where they would provide the greatest value and footfall.

Opportunities associated with landscape hubs could include:

- creating distinctive gateways to the Colne and Crane Valleys;
- reinstating and celebrating historic craft production techniques to enhance the visitor offer;
- providing educational activities and creating greater access to heritage assets and the countryside;
- creating links to productive landscape uses such as coppice, charcoal and apiaries;
- forming information hubs to engage local communities; and
- promote best practice techniques in farming, woodland management and protection of the environment.

Centres could be expanded and promoted as significant regional hubs with a focus on the productive history and future of the Colne and/or Crane Valleys. They could also be promoted as locations for farmers markets and other events, with recreational and interpretation trails linked to surrounding landscape features such as gravel lakes, woodland and parklands.



Key Principles:



Celebrate landscape, character & heritage



Protect and enhance the natural environment



Provide for communities

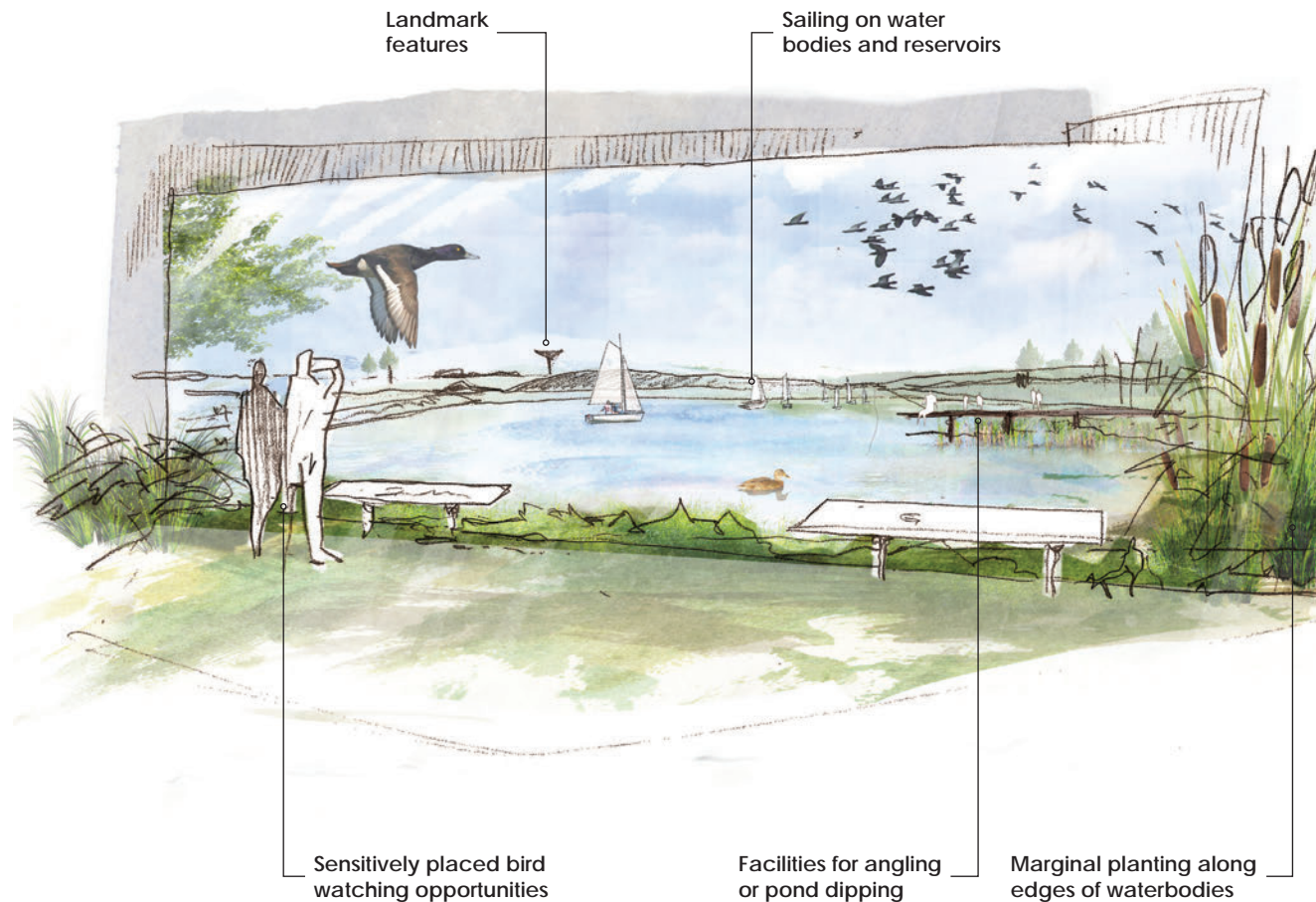
Providing new and enhanced visitor experiences

There is a huge number of interesting and varied habitats and landscapes across the Colne and Crane Valleys. While many of them already host a range of different activities, including bird watching, angling and sailing, there is potential to introduce further small to large scale interventions to enhance the recreational experience.

New interventions could take the form of bird hides, viewing platforms, visitor facilities, educational spaces or landmark features. These can take the form of a programme of relatively small scale changes along key pathways, potentially linked into larger scale facilities or visitor hubs where viable. Care will need to be taken to sure they are implemented in a way that protects the sensitive ecological and historic environments commonplace throughout the Colne and Crane Valleys. In some locations, opportunities for enhanced visitor experiences could be delivered through management or maintenance regime changes, creating viewpoints and places to rest.

In parts of the area where there are extensive reservoirs and water bodies, there are opportunities for biodiversity enhancements. Nature-based solutions generally will help protect the natural environment, particularly in the context of climate change resilience.

These ideas tie in to surrounding opportunities including access improvements to routes across the area and enhanced links between key settlements and major open spaces.



Key Principles:



Celebrate landscape, character & heritage



Protect and enhance the natural environment



Provide for communities



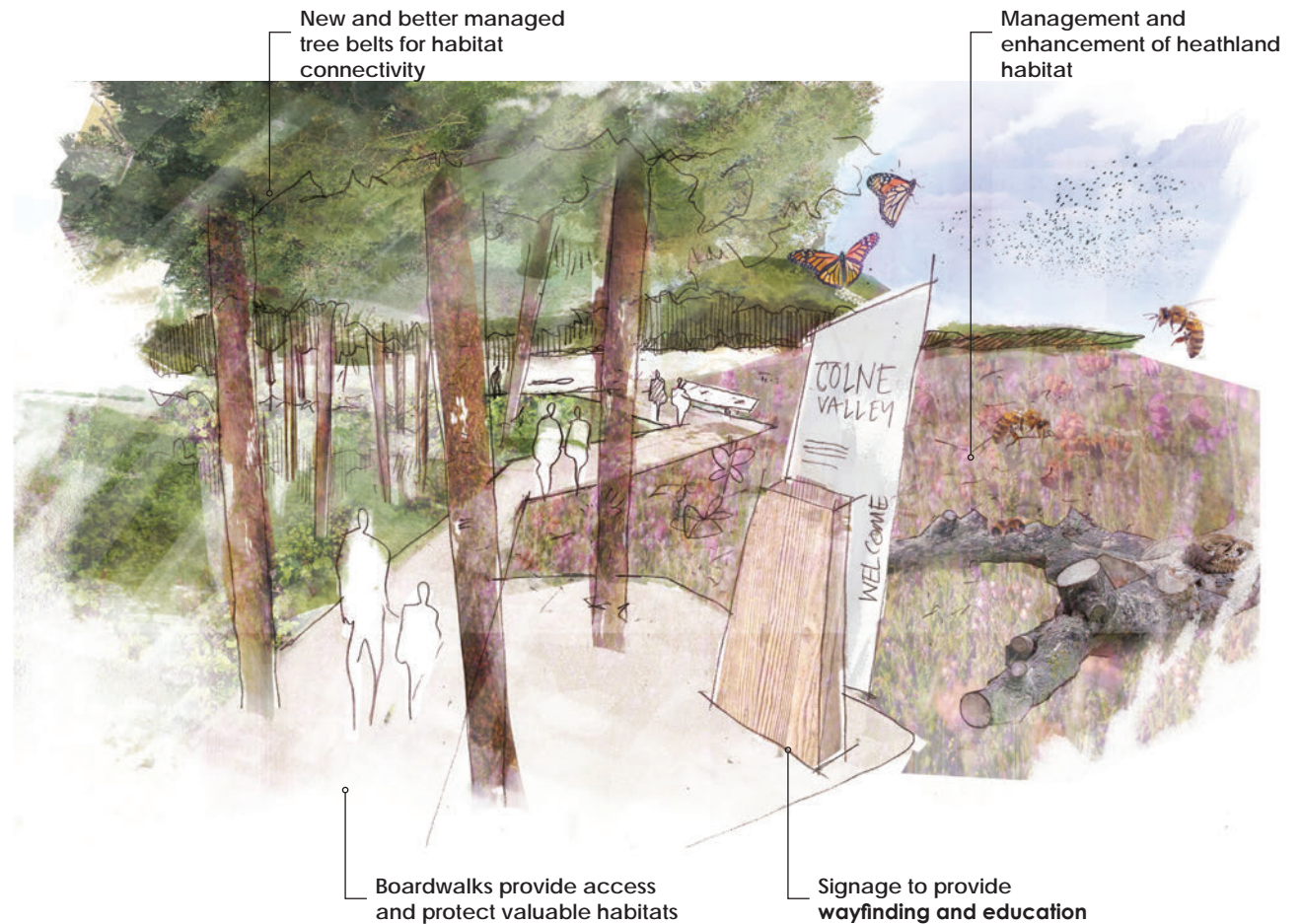
Boost health & wellbeing

Enhancing and connecting landscapes and habitats

The valleys include woodland, wetland, chalk grassland and heathland habitats of great ecological value, including ancient woodland and parklands with veteran trees. These rich landscape mosaics provide a sense of naturalness, tranquillity and local distinctiveness, whilst providing vital climate change regulation services including carbon absorption and natural flood management.

The issues and principles set out below apply not just to the country parks but to other locations in the two valleys. Sites such as the country parks are popular visitor attractions, with pressures from overuse, car parking and need for more facilities. The landscape around these are sometimes fragmented by development and road corridors. There is an opportunity to extend and connect characteristic habitats and planting types to reduce the visual impact of development and enhance biodiversity and ecosystem services.

Manage habitats to ensure succession and habitat continuity including heathland management and restoration, long-term woodland regeneration, plant specimen trees, seek to revert arable to grazed pasture and increase connectivity with nearby similar sites. Related opportunities exist for interpretation of cultural and natural heritage interest and access improvements including footpath and bridleways across major A roads.



Key Principles:



Protect and enhance the natural environment



Improve pedestrian and cycle connectivity



Be adaptable & resilient to climate change



Boost health & wellbeing

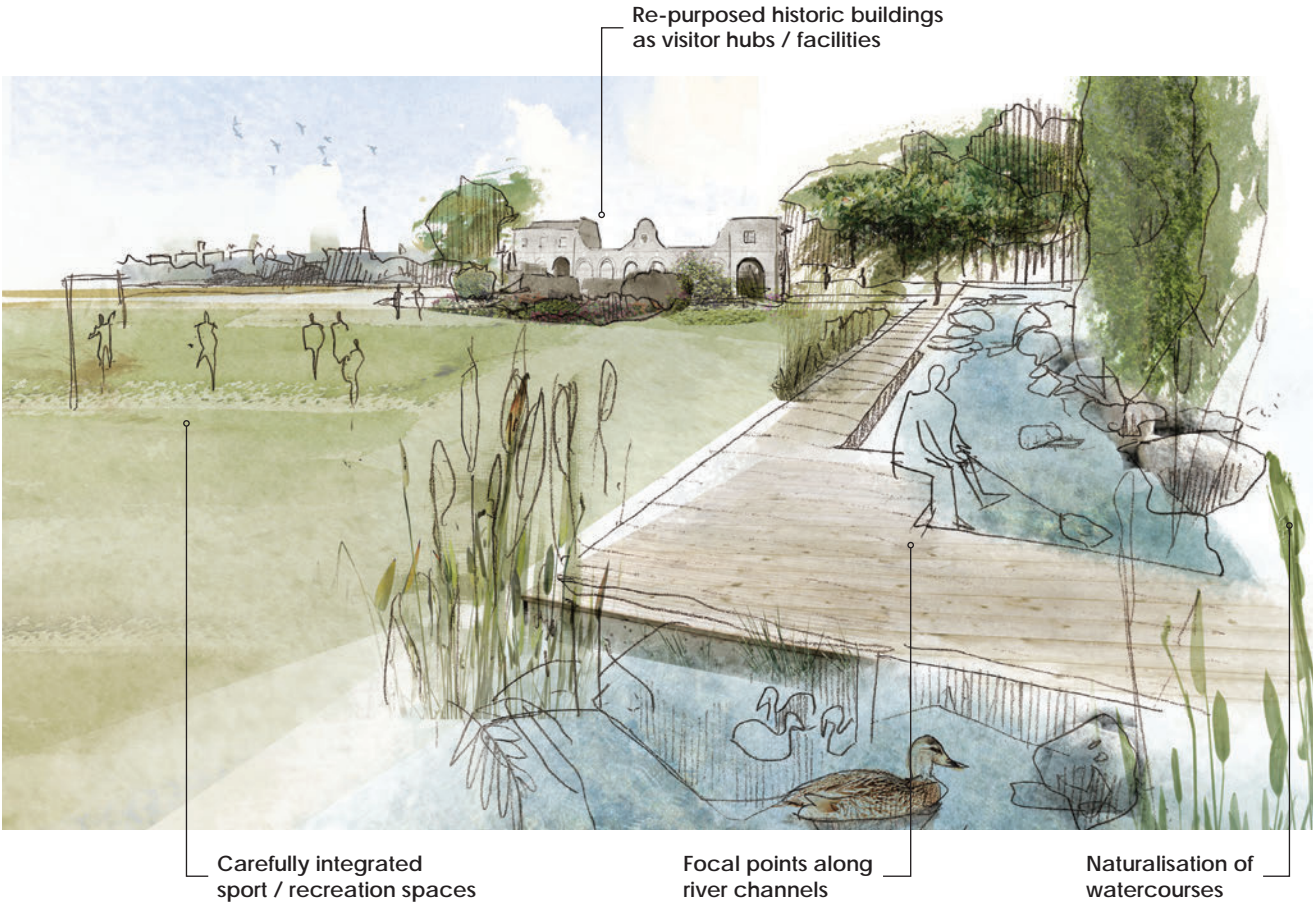
Restoring and enhancing designed parklands for recreation

The study area is rich in historic parklands, many of which now have a strong recreational offer and enhancement potential. Many of the parks occupy strategically important locations in the chain of local open spaces.

Access to green space can provide multiple benefits for health and wellbeing and valuable ecosystem services for climate change adaptation. There are opportunities for historic buildings and structures to be restored or re-purposed to create focal points for the parks, provide education/ interpretation opportunities and generate potential financial benefit and revenue generation.




Within the parks are opportunities to establish more diverse landscape experience with zones for the use of community groups, children's play, sports facilities and visitor hubs. Within some of the parks there are also potential river enhancements including naturalising the channels and creating attractive focal points such as new wetland areas and habitats for education and play. Existing wood-pasture, parkland and grassland habitats can be managed for biodiversity.

There is also the potential to embrace initiatives such as Green Flag and National Park City.



VISION

Key Principles:

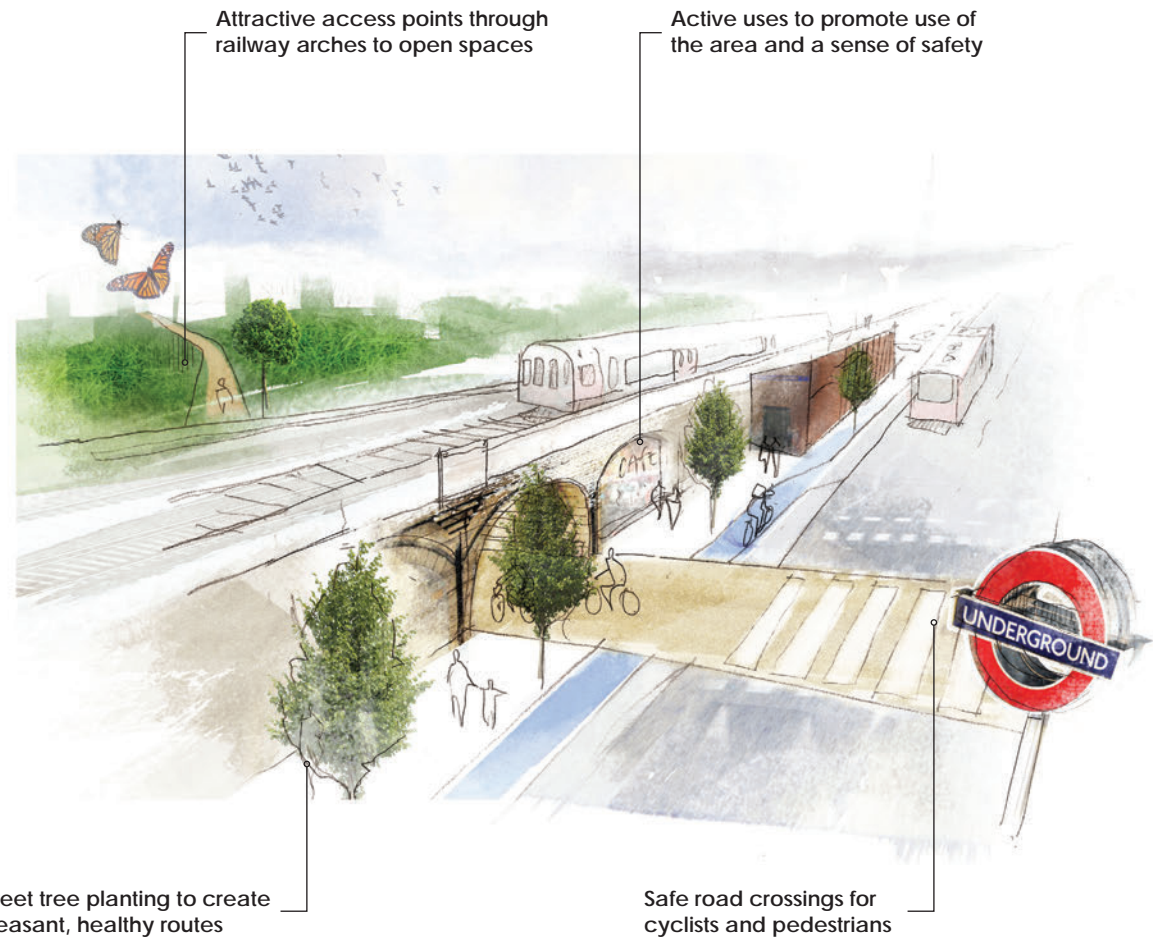
-  Celebrate landscape, character & heritage
-  Be adaptable & resilient to climate change
-  Boost health & wellbeing

Improving pedestrian and cycle connectivity and gateways

Across the Colne and Crane Valleys, pedestrian and cycle connectivity is frequently severed by major infrastructure barriers, particularly road and rail. Consequently the benefits the river corridor and its surrounding green space provides for health and wellbeing of the large populations of West London and outer London settlements, are not being fully realised.

Potential opportunities exist to create connections between key 'gateways' such as rail / tube stations and nearby green spaces. This should be a key priority for connecting people with their environments and promoting active travel - both for recreation and commuting. This includes clearly signposted pedestrian and cycle routes to green space destinations, and exploring opportunities for improving connectivity and the user experience, such as routes through existing railway arches.

Key stations can be promoted as gateways to watercourses with associated signage and branding, and may encourage further active uses of the public realm such as cafés / cycle hire. Public realm enhancements such as street tree planting, cycle stands and seating will help to create a pleasant and attractive setting and experience to the river corridors.



Key Principles:



Improve pedestrian and cycle connectivity



Boost health & wellbeing

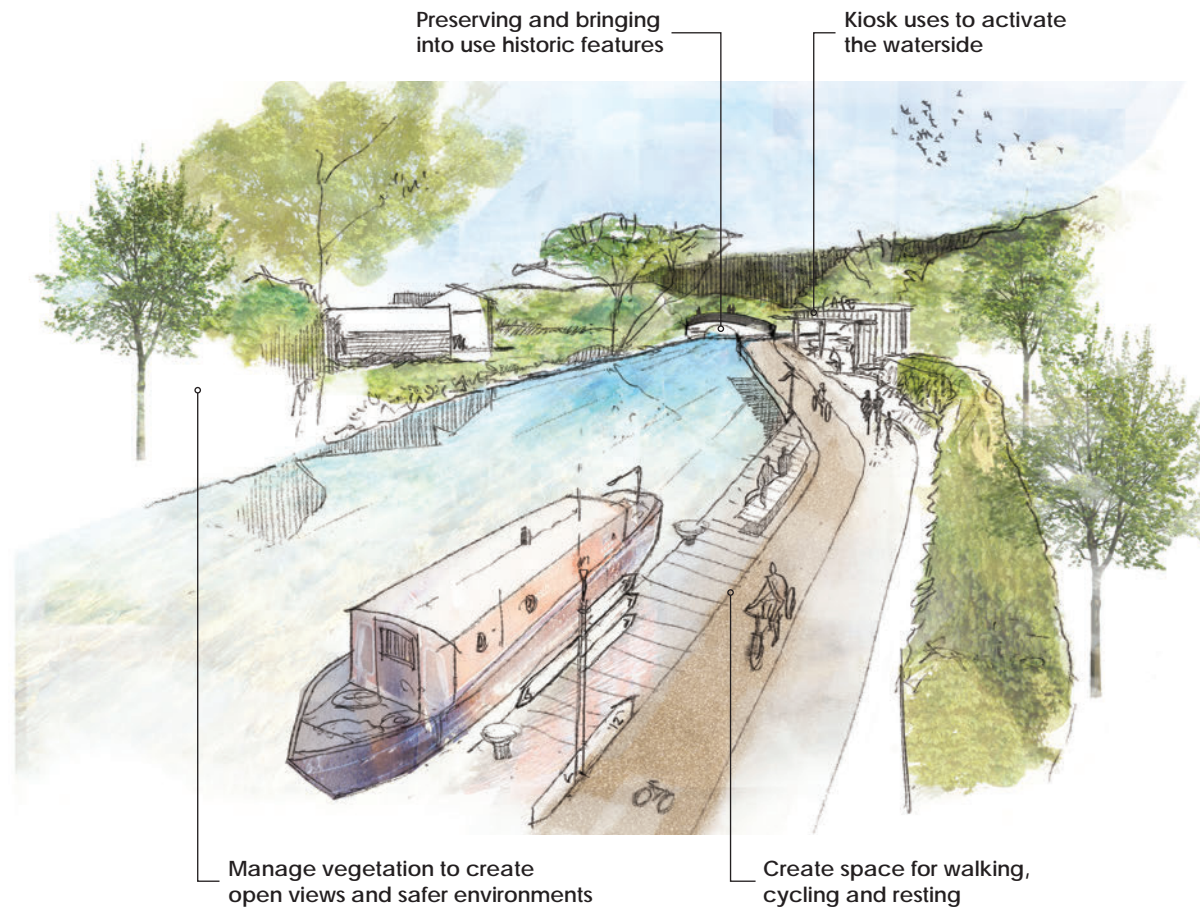
Improving access to watercourses

The watercourses and canals across the Colne and Crane Valleys are home to a huge variety of different species and create a connecting thread across the whole area. In places there are excellent connections along the watercourses which then allow people to get close to water and nature, benefitting their wellbeing. However, there are opportunities to further enhance this connectivity through new links, safer routes down to the watercourses and improved surfacing and management.

Through careful management of bankside vegetation, views can be opened up to make the watercourses more visible, promising a greater perception of safety. Improved surfacing, ramps and steps, and links to each other will make the corridors more usable throughout the year and promote more journeys to be undertaken on foot and by bike.

Many of the canals include interesting historic features such as bridges, mooring points and distance markers. All of these can become part of local and regional trails to add to the interest of taking a journey alongside the water.

Where close to bigger community groups, kiosks can also introduce greater activation of the waterside, further enhancing public safety through “natural surveillance”.



Key Principles:



Celebrate landscape, character & heritage



Improve pedestrian and cycle connectivity



Boost health & wellbeing

CONTEXT

Context

This section provides an overview of the character and context of the whole study area. This summarises the policy context in which this strategy sits, grouped into three overall themes of water, open spaces and access & health.

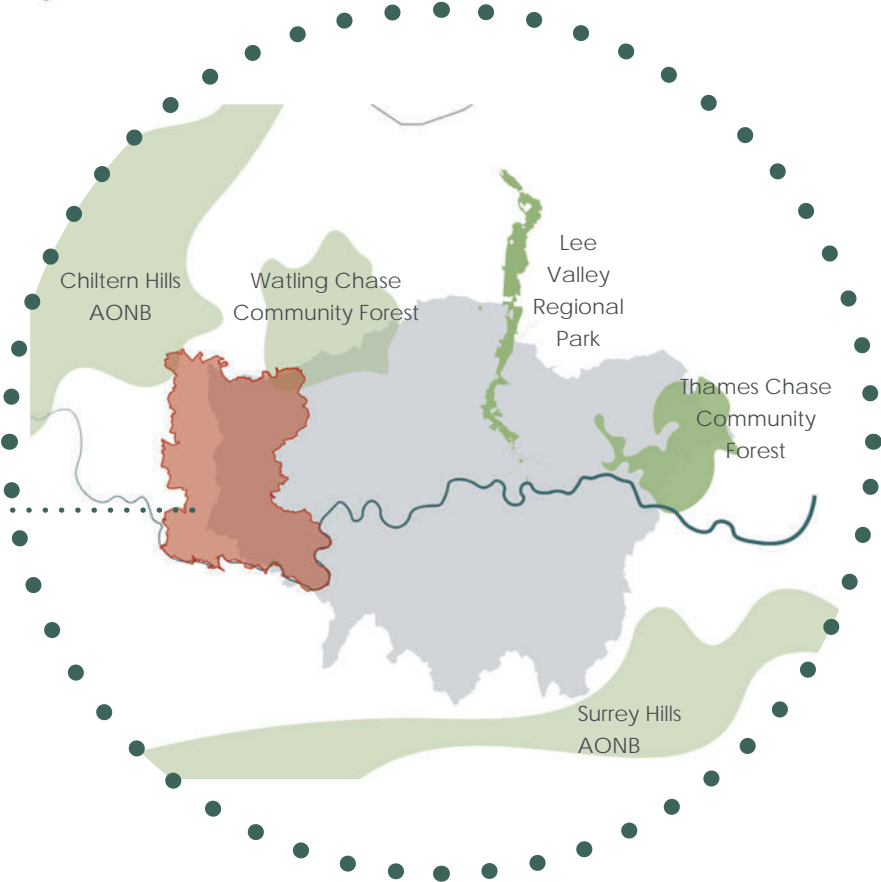
The fundamental areas of change are also described, which provide a lot of the background as to why this strategy is crucial at this time.

Location

The study area occupies an environmentally strategic location connecting London, the Thames and the Chilterns AONB.

It covers an area a sixth the size of London and envelops two significant river valleys - the Colne and the Crane - and a number of their tributaries including the Pinn.

**TOTAL STRATEGY
AREA 309 KM²**
**AREA 1/6TH OF
LONDON**



Policy and open space

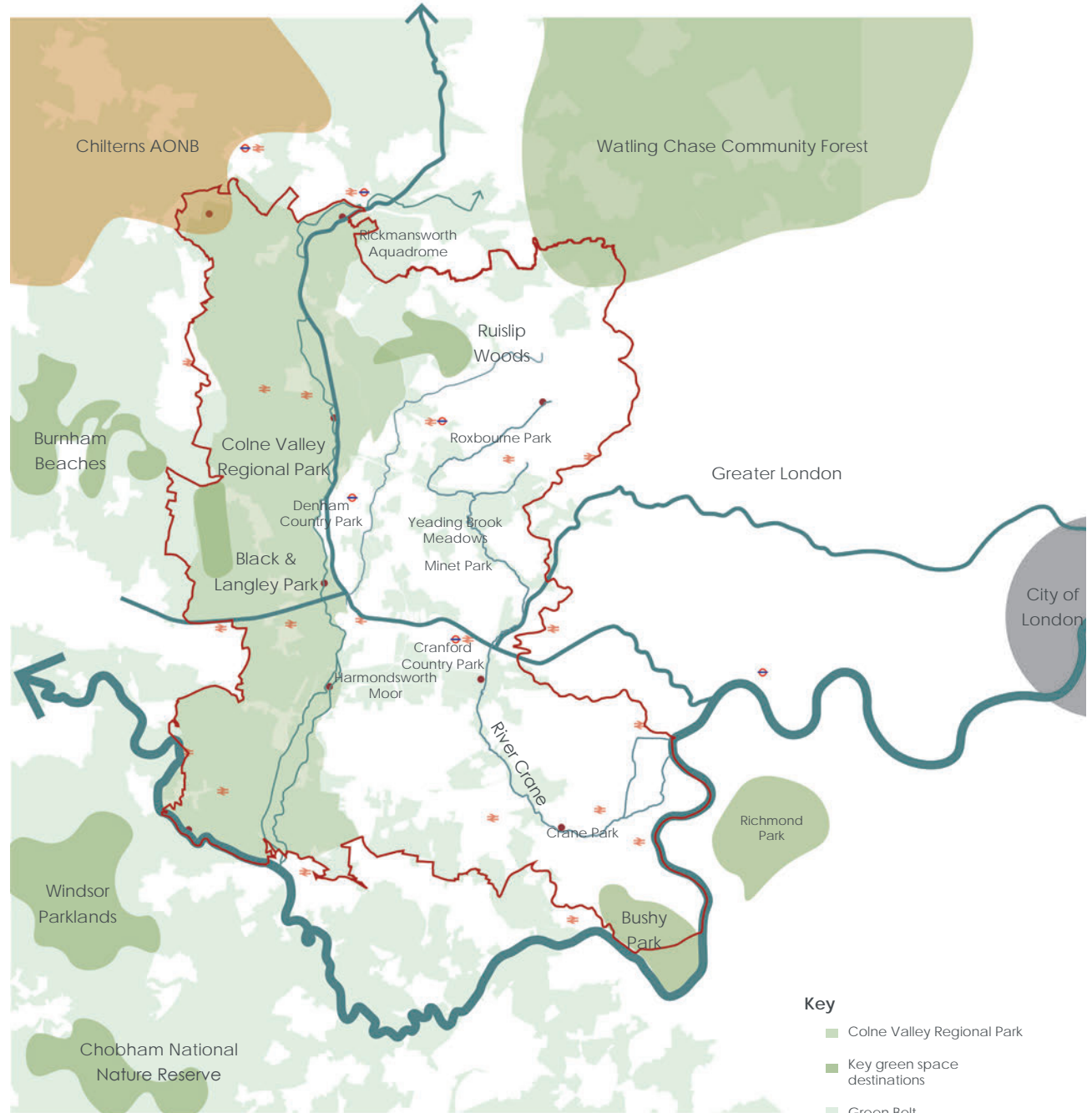
Access for all to good quality green infrastructure for all is recognised as an important part of an inclusive and fair society.

The UK 25 Year Environment Plan¹ and the National Planning Policy Framework (NPPF)² place green infrastructure right at the heart of an integrated approach to the planning and delivery of social, economic and environmental outcomes which improve peoples' lives.

The NPPF explicitly references green infrastructure in strategic policy paragraph 20d, to provide for “conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation. The NPPF also notes that green infrastructure can “enable and support healthy lifestyles” (paragraph 91) and “improve air quality or mitigate impacts” (paragraph 181).

Large areas of the Colne and Crane valleys are covered by Green Belt designations. Paragraph 138 of the NPPF states: “Where it has been concluded that it is necessary to release Green Belt land for development, plans should... set out ways in which the impact of removing land from the Green Belt can be offset through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land”. This Green Infrastructure Strategy including the detailed schedule of opportunities can be used to inform those improvements in the event of Green Belt land being developed.

¹ A Green Future: Our 25 Year Plan to Improve the Environment, 2018
² National Planning Policy Framework, 2019



Policy and open space (continued)

The UK 25 Year Environment Plan, 'A Green Future'³, aims to embed an environmental net gain approach to all developments. Commitments include ensuring biodiversity net gains through land planning processes, planting more trees, especially in and around urban areas, using green spaces to help people improve their health and well being, and establishing green infrastructure standards to green towns and cities. The proximity of quality accessible green spaces to where people live and work is key to the plan.

The core objective of the draft London Plan⁴ is to reach over 50% green cover across London and to contribute towards London as a National Park City. The plan is focussed on protecting and enhancing existing green infrastructure, and promoting 'good growth' in creating new urban greening. It recognises a holistic approach to green infrastructure and its numerous benefits. It highlights that planning is important for identifying opportunities and designing solutions to address both environmental and social challenges. The plan encourages strategies that work cross-borough for the greatest benefits.

The London Environment Strategy⁵ sets out the Mayor's objectives to plan, design and manage green spaces so that they meet their full potential for improving peoples' lives. It serves as an overarching framework for London's green infrastructure, including initiatives to green streets via sustainable drainage, green roofs and walls, programmes to manage and grow London's urban forest and to encourage wildlife friendly landscapes as part of new developments. Consideration will be given to all other current and emerging strategies and guidance.



© Leigh Odinson

Harmondsworth Moor

³ A Green Future: Our 25 Year Plan to Improve the Environment, 2018

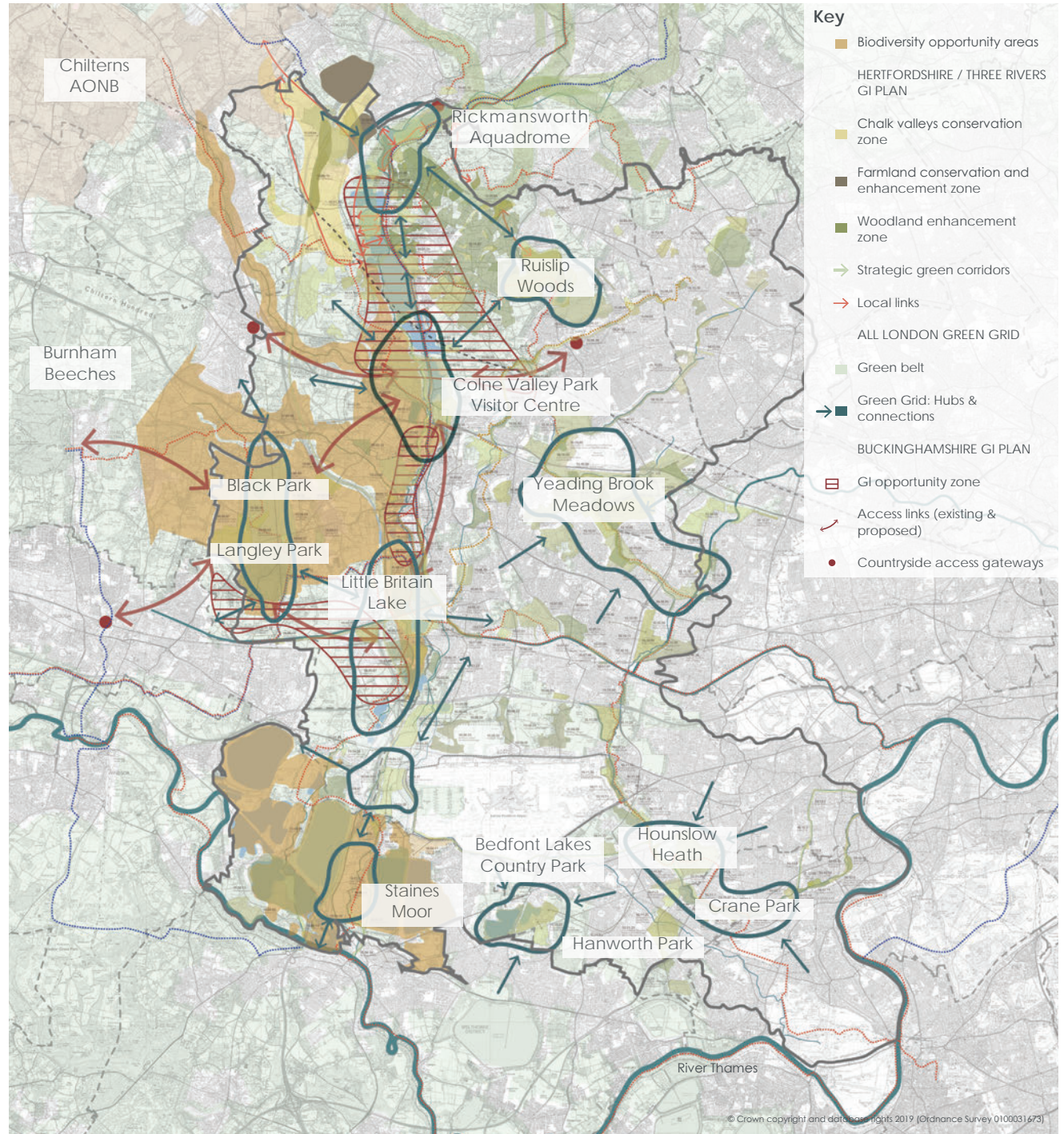
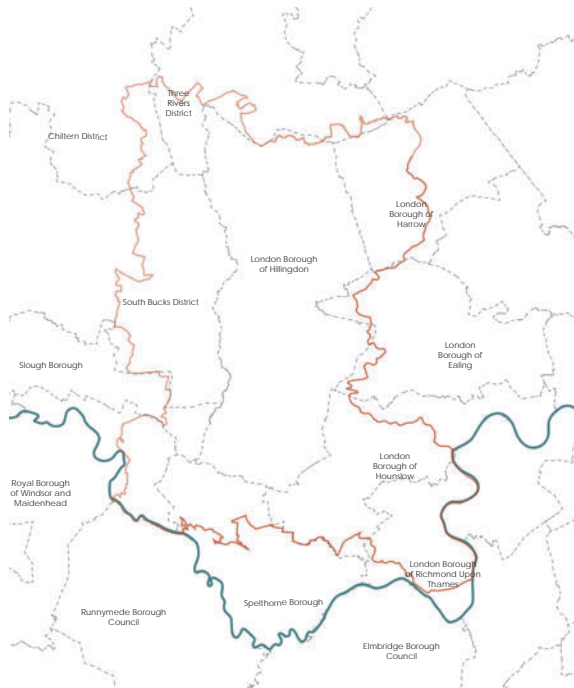
⁴ Draft New London Plan, 2018

⁵ London Environment Strategy, 2018

Existing GI strategies

The study area encompasses eleven borough/district councils, three county councils and the Greater London Authority.

Existing green infrastructure (GI) evidence bases include strategies for Buckinghamshire and Hertfordshire, Three Rivers, Bucks NEP Vision and Principles for the improvement of Green Infrastructure and the All London Green Grid (ALGG) for the Colne and Crane areas. These strategies have been reviewed and embedded into this work.



Water

Water is a defining characteristic of the Colne and Crane Valleys. The Colne Valley offers a diverse landscape of lakes and wetlands interlinked by the Colne river network and Grand Union Canal. This mosaic of wetland habitats plays home to both wildlife and people alike and connects the rural peripheries of London with the urban fringe. The Crane Valley spans the districts of outer west London, with the River Crane and the Yeading Brook carving a course through parkland, nature reserves and busy town centres. The river is often hidden from view, with its course

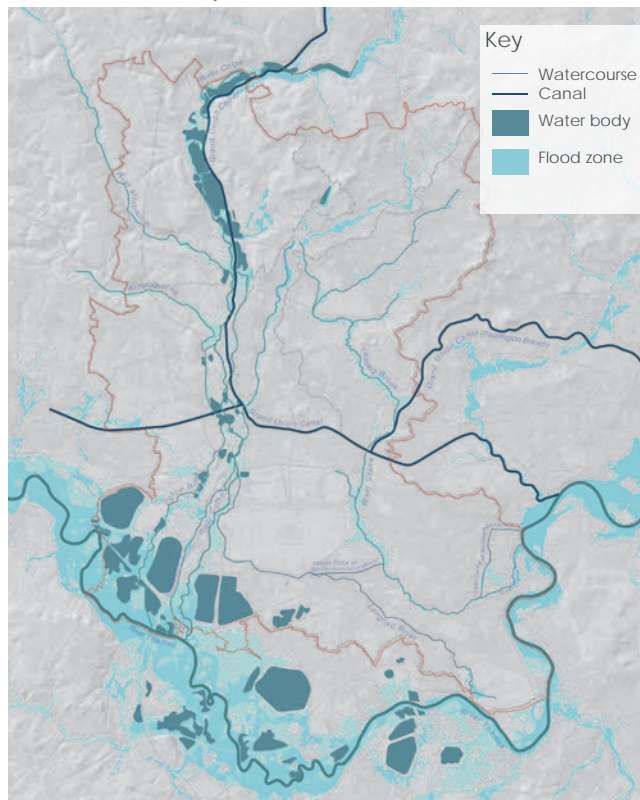
now constrained by the hard urban landscape that has grown around it.

Both valleys provide respite from the hustle and bustle of urban life and provide local people with opportunities for both recreation and interaction with nature. However, these blue landscapes are becoming increasingly fragile due to a range of pressures. Both valleys are already experiencing the effects of climate change and there is a pressing need to adapt our waterbodies to facilitate extreme highs and lows in rainfall. The

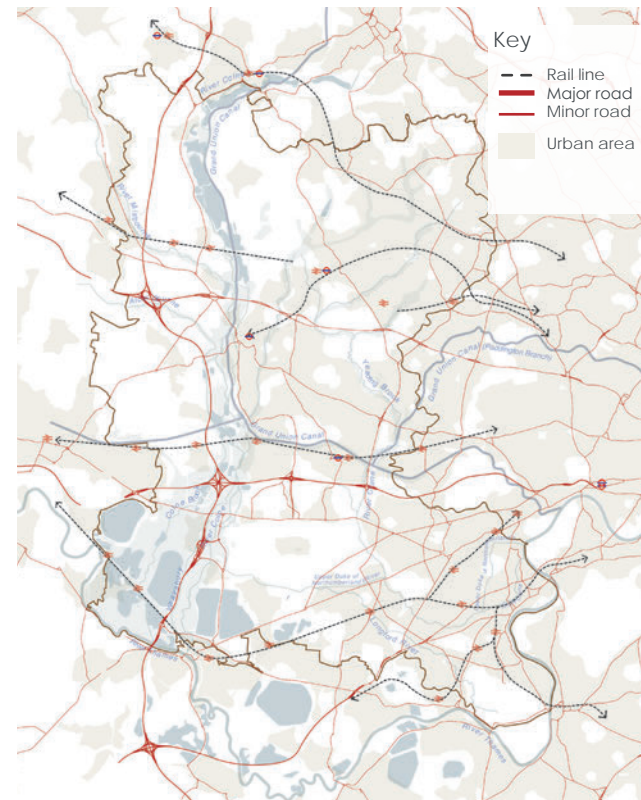
substantial presence of development across the two valleys has eaten into valuable areas of floodplain, which were once vital for water storage. Urbanisation has also affected overall environmental quality of our waterbodies, with the effects of habitat degradation and urban pollution reducing biodiversity across the board. Invasive species have also taken hold across both valleys and urgent action is required to reverse their impact on native wildlife.

The opportunities to improve the valleys' blue assets are extensive, with river restoration and natural floodplain management being key principles which should underpin any project. The improvement of our waterbodies results in increased natural capital and the provision of ecosystem services, which will make both valleys more popular destinations for both recreation and tourism.

Baseline – waterscape and flood zones



Baseline/ constraints – infrastructure and urban areas



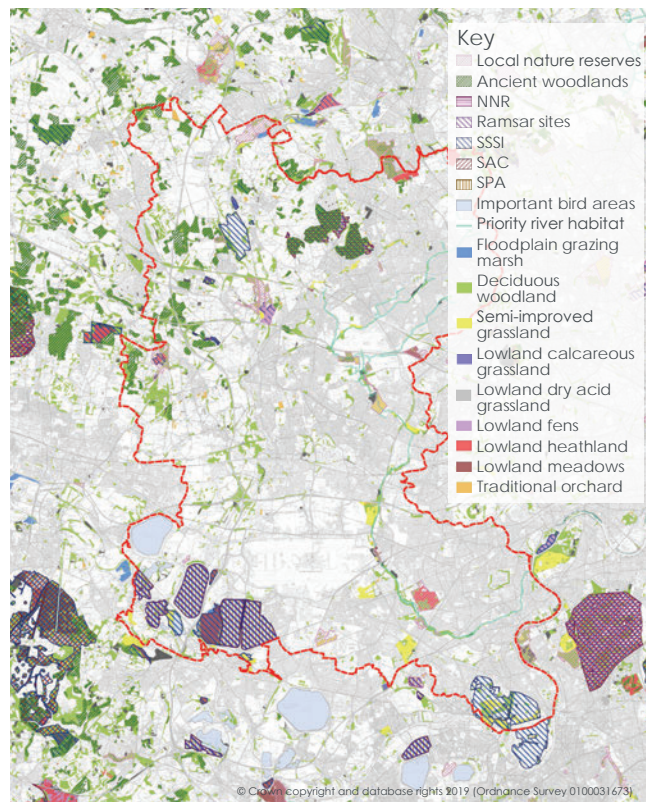
Key open spaces

There are some significant landscape assets providing a diverse range of landscapes and destinations including country parks, semi-natural woodland, ancient woodland, public parks, allotments, rivers, lakes, nature reserves, orchards and productive land including farmland. The two valleys provide important green ribbons including many sites designated nationally for biodiversity, some joined and interlinked by stepping stone sites.

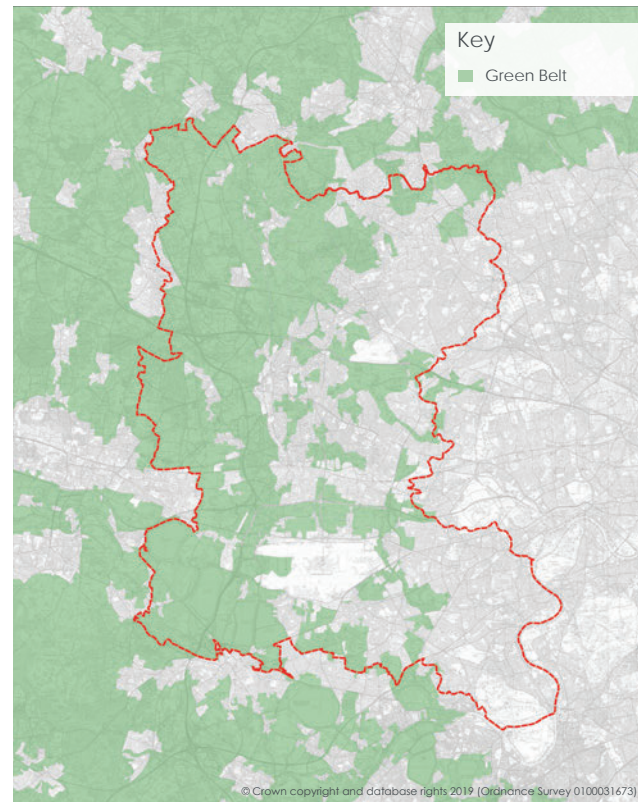
Green Belt and Metropolitan Open Land are defining characteristics of the area, forming the setting of key settlements in the valleys and containing urban sprawl. In many instances Green Belt land, whilst meeting the strategic purposes of designation is not meeting its full potential or quality, being threaded by large transport infrastructure. It is therefore to some extent both constraint and opportunity.

Opportunities relate to enhancement of strategic green space sites, country parks and hubs. There is also opportunity for landscape-scale approaches to enhancing biodiversity connectivity, reducing habitat fragmentation and enhancing resilience to climate change, as well as improving access links. Opportunities for new recreational experiences of the valleys could take advantage of existing initiatives such as Green Flag and National Park City, to add value to improvements made.

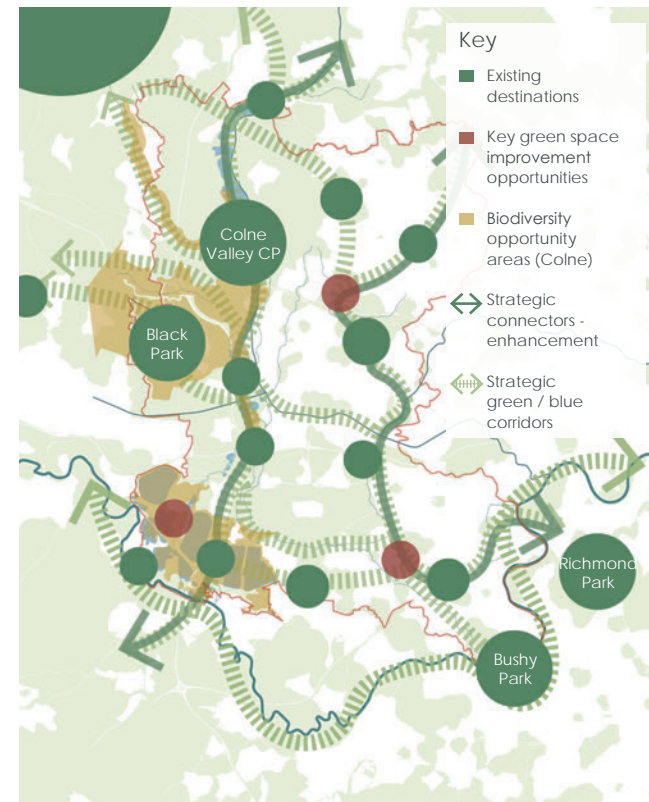
Baseline – biodiversity (national designations)



Baseline – Green Belt



Opportunities – green space enhancement/connectivity



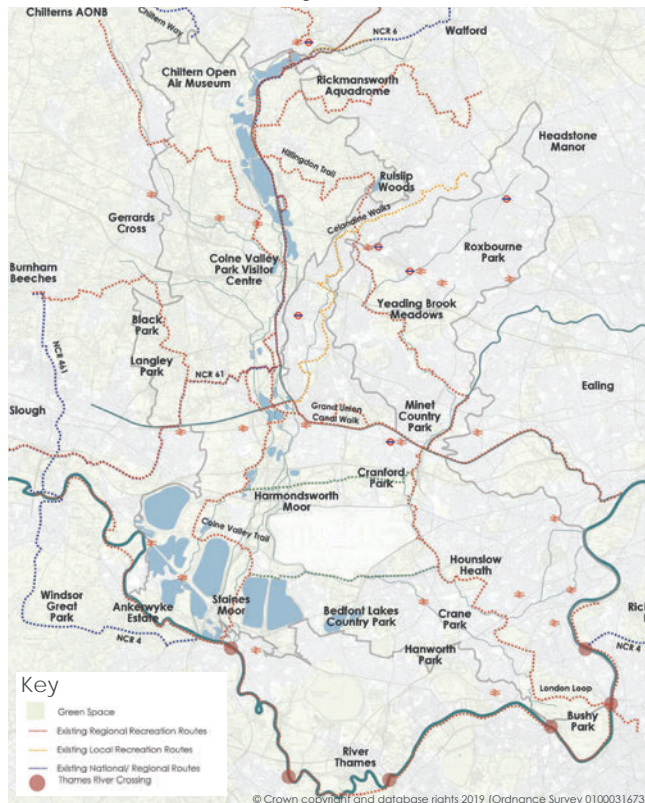
Access and health

Key destinations are strategically scattered around the study area, but some are under pressure from large visitor numbers. A strong network of strategic pedestrian/ cycle links in some areas is let down by significant blockages and severance caused by roads and other infrastructure. Rail/ tube stations serve communities of West London.

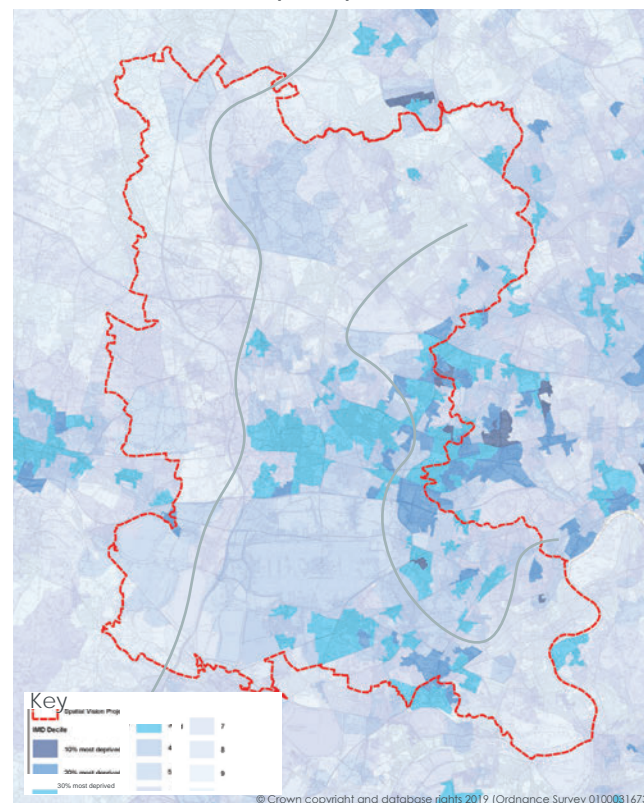
There are some significant pockets of relative deprivation, generally associated with urban areas including West London, around Heathrow and Slough. These are also areas of potential future growth where new developments present opportunities for providing quality green infrastructure.

Opportunities relate to enhancing walking and cycling links in strategic locations between key destinations (including schools, employment areas and recreation) and residential areas or key gateway/ access points such as stations. This presents key opportunities to contribute to health and wellbeing, where green infrastructure in proximity to areas of deprivation has the potential to improve quality of life. Green corridors are also of huge benefit to local wildlife.

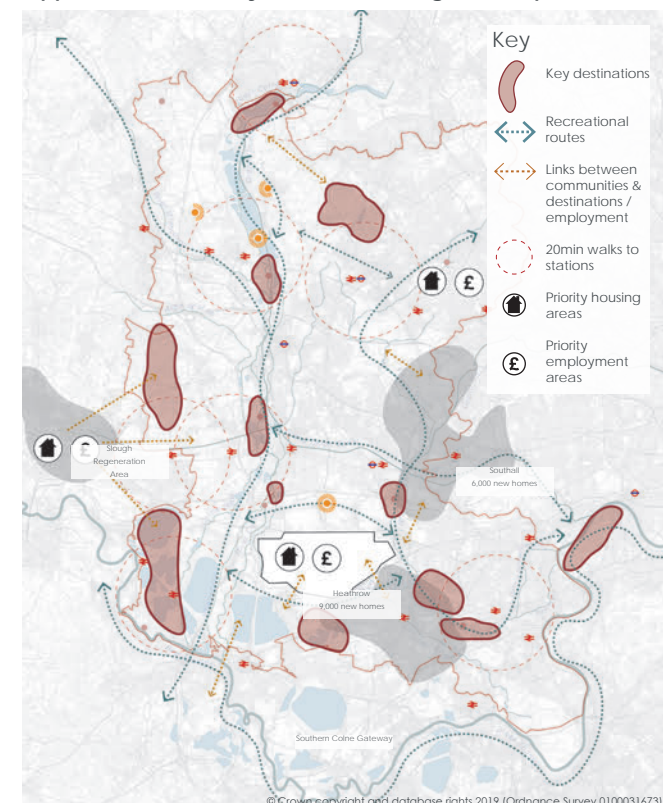
Baseline – recreation and key destinations



Baseline – Indices of Multiple Deprivation (IMD)



Opportunities – healthy, accessible living landscapes



Heritage

The rivers provide a rich living heritage and tell the story of how the landscape has evolved. Many heritage assets such as locks, lock keepers' cottages, arched bridges, sluices and mills, are linked closely to the watercourses. A strong industrial heritage is evident, including paper and flour mills, breweries and watercress beds in the upper reaches of the Colne. Gunpowder mills and wharves located close to the River Crane reflect its strategic importance for London and beyond. The Grand Union Canal would have been a key corridor for transporting locally

mined gravel as well as bricks and other building materials.

Historic estates and parklands are frequent features, often associated with ancient woodlands, rural lanes and veteran trees. Estates on higher ground would have been strategically situated to exploit designed vistas; intended to 'see and be seen' from the water; some historic estates are now public parks. The River Thames provides a strong historic link with nationally and internationally significant assets including

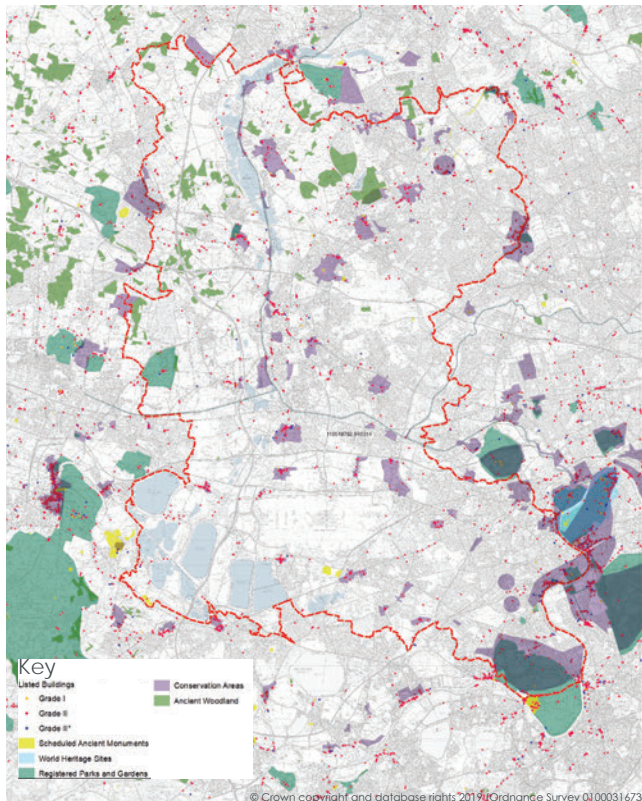
Runnymede, Ankerwycke, Hampton Court and Kew World Heritage Site.

Many villages and hamlets are designated conservation areas, with landmark churches and village greens. Historic pubs and shops are an intrinsic aspect of local character which can enhance visitor experience and provide benefits for local economy, particularly sustaining small local businesses.

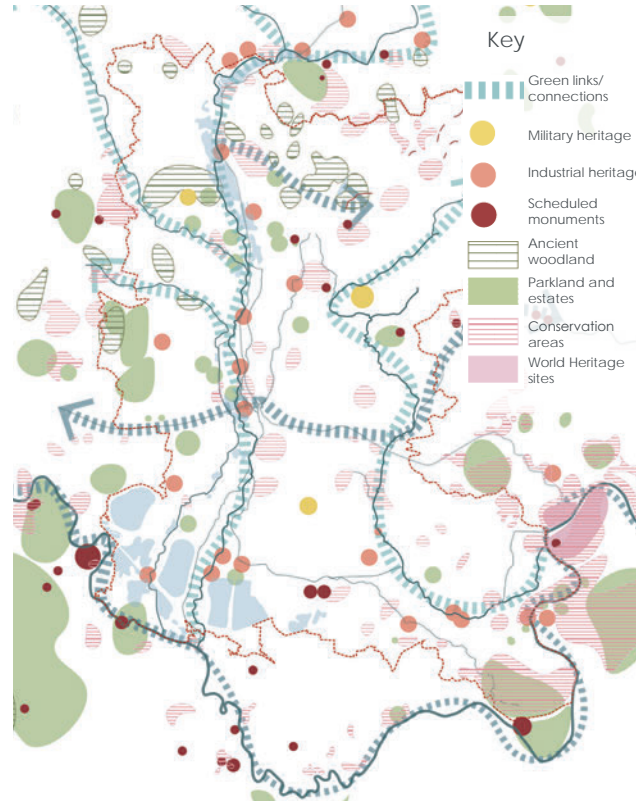
Heritage assets provide unique opportunities to promote local distinctiveness and celebrate local character and industry. Opportunities relate to the re-creation of lost landscapes in some situations, such as wet woodland and alder or willow carr, or traditional orchards. Some heritage assets are identified as being 'at risk' on the Historic England register¹, and others could be vulnerable to becoming at risk if not cared for; and would benefit from positive action to maintain them.

Archaeological discoveries and historical events provide opportunities as 'story-lines' for educational activities. There are also opportunities for recreational routes or circular themed walks to link together historic features: for example a 'hunters trail' along the Colne valley linking early prehistoric discoveries or 'medieval countryside' linking moats, barns, churches, deer parks and ancient woodlands. Opportunities to increase understanding of historic assets through interpretation and education, in combination with community engagement and targeted, well-designed audience development, can strengthen ties between communities and their local areas.

Baseline – heritage assets



Opportunities – enhancing heritage and historic landscapes



¹ <https://historicengland.org.uk/advice/heritage-at-risk/search-register/>

Designing in context

The individual special qualities of the Colne and Crane landscapes have developed over millennia of natural processes combined with human interventions - from farming and flood management through to the major infrastructure developments of the late 20th and early 21st Centuries.

The Colne and Crane valleys are subject to major current and future drivers of change. Population growth, major development projects, climate change and public sector funding pressures all pose significant threats to available open space. In the Colne Valley two of the biggest civil engineering projects in Europe - HS2 and the proposed Heathrow expansion - will potentially cause immense cumulative effects on the landscape. In the Crane valley, its significantly modified catchment and river morphology from past interventions have reduced its aesthetic, amenity and wildlife value. Part of the solution will be a co-ordinated approach to spatial planning and environmental and community mitigation across administrative boundaries, and recognition of the important role that high quality green infrastructure plays in the 'good growth' agenda.

The characteristics and priorities of the Colne and Crane valleys are captured on the plan opposite. These help to define the approach to developing proposals which respond to the uniqueness of place and also guide funding and action.

While the characteristics listed are not exhaustive, they help to set the context and direction for the more detailed short and long term opportunities identified in the detailed strategies section of this report.



DETAILED STRATEGIES

Whole area

This section of the report provides details of a series of opportunities across the Colne and Crane Valleys. The first part outlines opportunities which apply to the whole study area.

This is followed by an overview of the defining character for each of the six overarching sub-areas along the Colne and the Crane and uses this to define an area strategy. The strategy includes a detailed plan and accompanying schedule of opportunities that describe potential projects which operate at all scales and within a series of different potential timeframes.

The boundaries of each area are not intended to be definitive, instead providing a broad indication of how the vision and principles can be applied with careful consideration of the local distinctive character.

The map key is provided on each of the following maps for each individual detailed area.



Whole area schedule of opportunities

1 Water / wetland focused opportunities
 1 Open space / green infrastructure focused opportunities
 1 Access / connectivity focused opportunities

No.	Title	Description	Link to Principles	Further comments
A	Continuous Colne Valley Trail	Upgrade existing access routes to form continuous foot/ cycle route along a 'Colne Valley Trail' from Staines to Colnbrook / West Drayton including enhancing user experience. Enhance access routes to the trail from outside the area and ensure cohesive trail marking.	3. Improve pedestrian and cycle connectivity	
B	Improve bus routes north - south	Improve public transport connections between transport nodes and destinations in the Colne and Crane river corridor to encourage non-car travel.	3. Improve pedestrian and cycle connectivity	
C	New dedicated bus route	Connecting key urban centres and stations to Colne Valley destinations e.g. Slough e.g. key train stations.	3. Improve pedestrian and cycle connectivity	
D	Crane wide data base	Collect and digitise existing data: invasive species/ wildlife/ habitats/ water data/ geomorphology. Include population and socio-economic data plus friends groups and other community and interest groups to identify gaps and fill gaps with new data collection e.g. Thames Water's Smarter Water Catchment natural capital assessment work, to provide comprehensive data source. Used to inform e.g. habitat enhancement locations, wildlife areas to protect, invasive species removal strategy. Feed work into Greenspace Information for Greater London (GIGL) data service.	2. Protect and enhance the natural environment	
E	Crane valley continuous pathway and cycleway	Fill in gaps of walking and cycle path along Crane/Yeading Brook and associated signage, connecting to nearby tube/train stations and populations centres to encourage use as commuting corridor. Continue work already done up to Hounslow Heath and link to Met cycleway at Harrow station.	3. Improve pedestrian and cycle connectivity	
F	Cycle hire scheme	Hubs at main stations and designations. Encourage cycle hire business to provide for Colne and Crane areas, for example an equivalent of Santander bikes in London.	3. Improve pedestrian and cycle connectivity 6. Boost health and wellbeing	
G	Crane Valley Trail	Formalise 'Crane Valley trail' as a new trail stretching the whole of the Crane and Yeading Brook river corridor. Offers continuous signage, interpretation maps at key nodes, leaflets and well managed path with a common Crane Valley identity.	3. Improve pedestrian and cycle connectivity	
H	Local school green space ownership	Encourage ownership of green spaces adjacent to local schools e.g. vegetation management/ own area of the park. For example Guru Nanak Sikh Academy at Minet Country Park or CRT Schools adoption programme.	4. Provide for communities 6. Boost health and wellbeing	

DETAILED STRATEGIES

No.	Title	Description	Link to Principles	Further comments
I	Water quality improvement and monitoring	Co-ordinated strategy to improve and monitor water quality on each project undertaken to show improvements and reinforces need for further projects. Link to Environment Agency work under the WFD. Crane: Build on the work carried out under the Citizen Crane project and being proposed by the Thames Water smarter catchments programme. Pinn: Water quality improvement along the course of the River Pinn. Colne: Identify, monitor and rectify sources of urban pollution in CVRP using Citizen Science Networks and activities co-ordinated by Colne Catchment Action Network.	2. Protect and enhance the natural environment	
J	Water visibility and access	Improve water visibility within the Crane catchment from key paths through vegetation management, interpretation boards, artwork. Interventions to improve water access through lowering banks within larger green spaces.	1. Celebrate landscape, character and heritage 2. Protect and enhance the natural environment	
K	Green ring walking loops	Connect Colne and Crane valleys through strategic walking and cycling routes e.g. Slough to Black and Langley Park, the Feltham Loop (in the middle Crane) and the three river walk in the lower Crane. Streamline and simplify existing walking routes through encouraging councils to work together. Market these walks and cycle routes as health assets to the local communities.	3. Improve pedestrian and cycle connectivity	
L	Catchment scale mitigation to fish barriers	Catchment Partnership projects to improve fish movement along the Crane and Colne river corridors: Implement the recommendations of the Colne and Crane Fish Passage Assessment. Undertake a fish passage assessment on the River Colne Brook to identify barriers to coarse fish and eel passage and implement recommendations.	2. Protect and enhance the natural environment	
M	Invasive species removal	Removal (by all parties) of invasive non-native species throughout both the Colne and Crane river corridors. Multiple projects led by the Environment Agency, including a collaborative project to remove invasive species in the Colne and Upper Lea catchments. The programme will pilot approaches on at least five water bodies, working on enhancements toward improving resilience and ecological status. Linking with and building on HNL Pennywort Project and the Colne Valley Lottery Project.	2. Protect and enhance the natural environment	
N	Pollution mitigation	Put into action 'Urban Diffuse Pollution action plans' which are currently being created by the Environment Agency, which will provide guidelines to tackle priority sources of pollution.	2. Protect and enhance the natural environment 6. Boost health and wellbeing	
O	SuDS priority areas	SuDS incentives in urban areas with significant flash flooding issues. Develop an approach to SuDS implementation and management for outfalls with key objectives of flood and asset management, environmental and community value enhancement.	2. Protect and enhance the natural environment	
P	Communities and friends groups	Identify existing friends and community networks and enhance these with the ultimate objective of having an active friends groups and community engagement for every open space in the catchment.	4. Provide for communities	

No.	Title	Description	Link to Principles	Further comments
Q	Develop links with the health, education, training and employment sectors	Develop links and engage these sectors in the use and sustainable maintenance/improvement of the network of local open spaces.	4. Provide for communities 6. Boost health and wellbeing	
R	Maintenance and continuous improvement	Develop a methodology for continuous maintenance and improvement of open spaces. Include all sectors of local communities and potential beneficiaries in the ongoing and sustainable maintenance and improvement of the network of open spaces through largely self funded daily activities and engagement - building on the models of engagement being developed in the lower Crane. Encourage Green Flag awards for open Spaces.	2. Protect and enhance the natural environment	
S	Farmland biodiversity enhancement	Opportunity for biodiversity enhancements within and between existing farmland including restoration of areas of chalk grassland and enhanced hedgerows. Encourage tree/hedge planting along hilltops. Identify habitat and species priorities for the area and how they can best be helped.	2. Protect and enhance the natural environment	Consider conservation farming scheme for CVRP area akin to Green Flag Award. Needs to integrate with existing agri-environment schemes and the proposed ELMS.
T	Allotments strategy	Review usage of allotments. If areas are vacant potential to reallocate these to local schools or community groups, or convert to community orchards for access to all.	4. Provide for communities 6. Boost health and wellbeing	Encourage use of vacant allotments.
U	Historic heritage	Identify opportunities to link heritage sites or include heritage sites/ information in walk leaflets/literature and host heritage themed activities.	2. Protect and enhance the natural environment 5. Be adaptable and resilient to climate change	
V	Strategic key Species conservation	Update baseline status of key species of principal importance within area, with aim to design and implement plans for management, enhancement and /or translocation/introductions to sustain populations	2. Protect and enhance the natural environment. 5. be adaptable and resilient to climate change	Species will include Desmoulin's whorl snail, two-lipped door snail, glow worm, stag beetle, bullhead, adder, skylark, barn owl, pochard, shoveler, otter, water vole
w	Canal improvements	Improvements include, renovation of locks, canalside bank habitat improvements, dredging and shoring up of banks. Encourage Green flag for lock side gardens	1. celebrate landscape character and heritage	
x	Colne Valley Countryside Management Service	Establish CMS for CVRP to improve landscape and public realm - opportunities for trainees/apprentices and run community events and guided walks. Contribute to the ambition for more Green Flag sites.	2. Protect and enhance the natural environment	
Y	Reinstate productive landscape	Reinstate productive landscape features as demonstration areas e.g. Watercress beds and orchards, enhancing the educational and food offer, plus opportunities for wider productive landscape e.g. coppice, charcoal etc, apiaries, use of spring water (historic use of the Colne spring waters for brewing).	1. celebrate landscape character and heritage	
z	Improve road corridors	improve road corridors especially verge management, hedges and trees and increase where possible.	3. Improve pedestrian and cycle connectivity	

IMPLEMENTATION, FUNDING & MANAGEMENT

Implementation, funding & management

The Colne Valley Park Community Interest Company and Crane Valley Partnership provide the principal mechanisms to co-ordinate an area-wide strategy across administrative boundaries. The co-ordination role of these partnerships must be supported by action from all. Significant benefits have been achieved to date by these partnerships, through a range of funding streams including Heritage Lottery Fund (HLF) and the Mayor's Big Green Fund.

Below are some high level principles for implementation of the Colne and Crane Green Infrastructure Strategy, potential funding streams and an outline of future management considerations.

Implementation

Green infrastructure in the Colne and Crane valleys is a vital framework for sustainable social, cultural and economic growth (as well as vital for wildlife and nature).

To make a successful business case for implementing green infrastructure projects it is important to recognise the true value of these in the context of an economic backdrop which provides limited resources for delivering and maintaining green infrastructure. This is particularly challenging around Heathrow, where the current, unmanaged open space is deemed by some to be of low value, including low ecological value, compared against its potential as land for commercial development. As such the multi-functional benefits of green infrastructure for quality of life for communities, physical and mental health of residents, for biodiversity and the potential it provides for

environmental resilience to climate change, need to come to the fore in stating the case for making projects happen. Investment in green infrastructure is progressive (not regressive), and will benefit the poorest and most deprived in society, addressing the issue of social deprivation.

It is also important to recognise that delivering the Colne and Crane Green Infrastructure Strategy will also play a part in meeting key national (and wider) environmental and social priorities including the United Nations Sustainable Development Goals, the Water Framework Directive, Government's 25 Year Environment Plan and the London Plan.

The many administrative boundaries, land ownerships and the huge number of different stakeholders pose a significant hurdle to implementing a successful outcome for this area-wide strategy. Therefore, realising the green infrastructure strategy will mean delivery by the many, not the few, and will involve garnering support from a range of local groups, community volunteers and larger companies/ authorities, each bringing a little to achieve a lot and to deliver the vision incrementally, over time - a phased approach. The presence of a unified vision for the whole area provides a good starting point and common goal to work towards. Through co-ordinated and joined-up action, the vision for a strong, connected network of green spaces can be realised.

Funding and management

A co-ordinated partnership approach is also required to applying for and amassing funding for delivery, given the limited resources in which



The Green Infrastructure Strategy is a 'roadmap' for project delivery over time

the environmental sector often operates. Such an approach should pay equal importance to creation and to ongoing management and maintenance (e.g. consideration of both capital and on-going revenue expenditure). This will require strong communication between local authorities and other organisations to firstly work up the detail of projects, and secondly to fund and deliver them.

This document provides a starting point for applying to different funding streams, providing evidence for future funding bids. It is also important to consider whole life costs and benefits, and sustainable models for funding - where match funding will be sourced from, how activity planning and audience development /partnership development can be used to leverage funding and revenue generation activities.

Delivery of the strategy needs to move beyond the traditional route of grant funding for projects to a more complex mix of funding, blending new funding streams such as the Environmental Land Management Scheme (ELMS), biodiversity offsetting, carbon offsetting, and payments for ecosystem services.

Relating projects to specific policy drivers, priorities or green infrastructure benefits will also help in harnessing potential funding from a much wider net of investment including health and well-being sectors, new development and central government.

Green infrastructure can complement new development, Section 106 and other planning gains. It is essential to recognise that it is the

quality of the green space in addition to quantity that is important. Spaces which provide multi-functional benefits, are attractive and easily accessible support quality of life; equally important is recognising the value of the key landscape assets and conserving and enhancing these wherever possible, using them as anchors to create strong green and blue networks. Therefore proposals may be just as much about creative approaches to landscape management as about capital works, as these can often add as much value and impact.



Activity planning is a key part of successful GI projects - Cassiobury Park, Watford (Image: Paul Rabbitts)



Small scale, high impact: Micro GI interventions can often be valuable in selling the concept as here in the parklet at Fitzpark, Windmill Street, London (Image: Paul Carstairs, Arup)

NEXT STEPS & RECOMMENDATIONS

Next steps & recommendations

The Green Infrastructure Strategy for the Colne and Crane Valleys is a major step in positive planning for green infrastructure for the valleys for the short and long term, and in securing resilience and adaptation to change over the coming decades.

The strategy identifies a significant body of potential capital projects and initiatives which can be taken forward in partnership with others by the Colne Valley Community Interest Company, the Colne Valley Partnership and the Crane Valley Partnership, so that the green infrastructure network achieves its full potential over the coming years and beyond.

Going forward, five key steps will enable the delivery of the green infrastructure projects and initiatives in this strategy. These are:

Prioritise projects and opportunities for delivery

The schedules in this strategy provide a useful starting point so that projects can be evaluated against local priorities, available resources and funding opportunities. An outline of priorities can be seen in Appendix 1.

Build support for projects and initiatives

The Colne Valley Park CIC and the Crane Valley Partnership will work to ensure this strategy is adopted and actively used by all interested parties to inform their plans. This will include

working with the local planning authorities in embedding key messages of this strategy in future Local Plans so that this can form a basis for delivering green infrastructure through the development management process. An outline of planning policies for the Colne Valley Regional Park and for development close to watercourses can be seen in Appendix 2.

Scope delivery mechanisms, funding models and options

Identify a suite of delivery mechanisms, funding models and streams and match the prioritised projects to these in terms of criteria, outcomes delivered and viability. Funding the delivery of the strategy needs to move beyond the traditional funding streams to new forms such as the new ELMS scheme, biodiversity offsetting, carbon offsetting etc.

Form partnerships to deliver projects

Informed by this strategy we will identify opportunities for joint working across multiple projects. This will involve identifying partners to develop, scope, secure funding and then deliver the projects.

Future maintenance funding and administration in perpetuity will be a fundamental part of the project planning.

Monitor and review

This stage is essential to understand lessons learned in relation to project delivery and to streamline the process for future projects. Monitoring and review should also be applied to future iterations of this strategy e.g. during the mid-point of the Local Plans it seeks to influence, to maintain effectiveness.

APPENDICES

APPENDIX 1: Colne and Crane valley priorities

Link to principles



Removing barriers to the movement of wildlife and people along the river corridors



[Target 2030]

- Overcoming current obstacles to pedestrian and cycle access along the River Crane and in the Colne Valley Regional Park
- Provision of a high-quality cycle way network throughout the Colne Valley Regional Park and along the entire route of the Crane Valley, including signage and wayfinding
- Removal or adaptation of weirs and other impediments to fish migration



Delivering long term improvement & management of the open space network



[Target 2030]

- Landscape management plans to achieve Green Flag Award quality (or similar) developed for all principal open spaces
- Sustainable funding mechanisms in place
- Maintenance regimes established including litter and graffiti clearance
- Greater use of Sustainable Urban Drainage Systems (SUDS) to manage flood risk and control pollution
- Enhanced green infrastructure links between the Colne and Crane's

- catchment for people and wildlife
- The Crane Valley actively marketed as a local visitor destination
- The Colne Valley Regional Park promoted as a recreation resource for the 3 Million people who live within 10 miles and wider target audience i.e. (London, the South East & Herts).



Enhancing the river corridors for wildlife



[On-going to 2035]

- The wildlife value of the entire corridor networks to be properly evaluated by 2024.
- Naturalisation of the rivers, including de-culverting and de-channelling.
- Prevention of pollution e.g from surface water outfalls (due to misconnections and contaminated road run-off) and combined sewer discharges.
- In-river improvements, including riffles, bank-clearing and re-planting.
- Open-space improvements, including vegetation control, habitat management, wetland creation.
- Building in ecological resilience including for climate change.



Creating a strong sense of ownership

[Target 2030]

- All open spaces and river reaches to be under the stewardship of/ supported by a designated Friends Group or other community/voluntary body
- Voluntary groups/bodies to be representative of the local community in terms of their diversity
- Local Authorities, statutory agencies, other relevant delivery organisations and the catchment partnerships to have the necessary resources to support a step change in project delivery, working across administrative boundaries.



Enhancing the visitor experience



[Target 2035]

- Provision of visitor centres or enhanced visitor facilities at key hub points along the Crane Valley.
- Enhance existing/create new visitor hubs as gateways to the Colne Valley Regional Park. Enhance connections between these sites e.g. the Grand Union Canal.
- Heritage asset restoration, interpretation and promotion (as locally relevant) and reflecting each site's context within the wider landscape.

APPENDIX 2: Outline of planning policy recommendations

This section sets out some model policy wording to embed conservation and protection of the valleys in spatial planning.

Colne Valley Regional Park

When Local Plans are being prepared or updated that affect land within the Colne Valley Regional Park a policy should be included that specifically recognises the Park's designation and the need to protect and enhance its natural environment, as in the box below:

Model Development Plan Policy relating to the Colne Valley Regional Park

"Proposals within the Colne Valley Regional Park should make a positive contribution towards improvement of the Park in line with its 6 objectives¹. Development within the Park is expected to demonstrate it will:

- Maintain and enhance the landscape, historic environment and waterscape of the park in terms of their scenic and conservation value and their overall amenity;
- Conserve and enhance biodiversity within the Park through the protection and management of its species, habitats and geological features;
- Provide opportunities for countryside recreation and ensure that facilities are accessible to all, promoting active travel networks;

- Seek to achieve a vibrant and sustainable rural economy within the Park; *and*
- Encourage community participation including volunteering and environmental education, and promote health and social well-being through accessible, high quality green space.
- Include legally binding provision for the long term management and maintenance of green infrastructure provided or improved as part of the development and its mitigation.

Development that fails to demonstrate the above will be refused unless the context of the proposed development means that the above factors are not relevant."

Development close to watercourses/water-bodies in the Colne and Crane valleys

Local Plans should have a planning policy for development adjacent to watercourses. Planning policies in such instances should promote design that takes on board factors such as:

- Protection and enhancement of water-bodies, their water quality and ecology/ riparian habitat
- Naturalised river channels and settings with generous green buffers

- Increasing public access to rivers and river banks to realise their recreation and educational potential, consistent with biodiversity considerations
- Promotion of excellent connectivity in terms of walking and cycle routes, forming part of wider networks across areas with green infrastructure
- Improve passage by fish and other species along river corridors
- Preventing the spread of invasive non-native species
- Enhancing the visual role of rivers/ water-bodies in the local landscape/ townscape including protection of river heritage assets/features.

COLNE AND CRANE GREEN INFRASTRUCTURE STRATEGY

We would like to thank all who contributed to the consultation on the strategy

The full report, detailed list of opportunities and accompanying map can be seen at www.colnevalleypark.org.uk/whatwedo

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