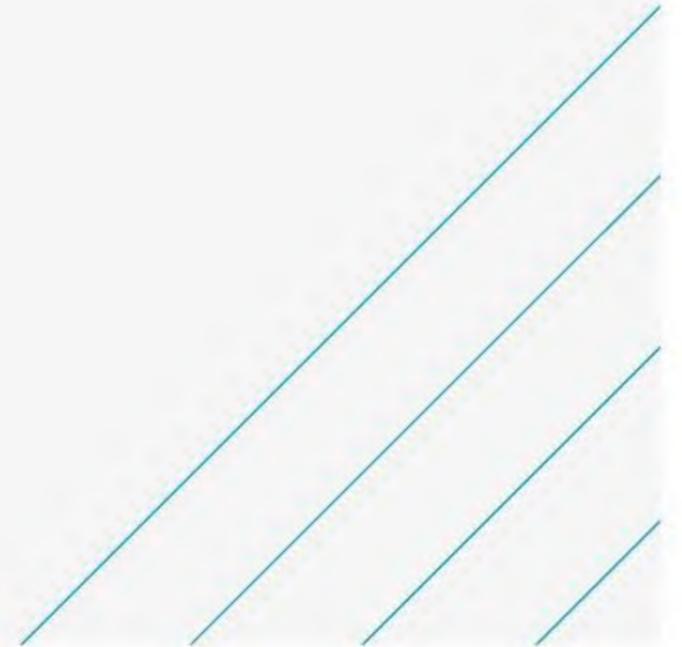




North fringe of Bristol Strategic Infrastructure-led Masterplan

West of England Combined Authority

August 2022



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Abbreviations

CPNN	Cribbs Patchway New Neighbourhood
EHSNN	East of Harry Stoke New Neighbourhood
ELSNA	Economic Land Spatial Needs Assessment
GI	Green Infrastructure
JLTP4	Joint Local Transport Plan 4
LCWIP	Local Cycling Walking Improvement Plan
MoD	Ministry of Defence
NPPF	National Planning Policy Framework
RDP	West of England 10 Year Rail Delivery Plan
RTPI	Royal Town Planning Institute
SPD	Supplementary Planning Document
SuDS	Sustainable Drainage Systems
The Combined Authority / The CA	West of England Combined Authority
The Strategic Masterplan	North fringe of Bristol Strategic Infrastructure-led Masterplan
WoE JGIS	The West of England Joint Green Infrastructure Strategy

Executive summary

North fringe of Bristol Strategic Infrastructure-led Masterplan

The West of England Combined Authority (the Combined Authority), South Gloucestershire Council and Bristol City Council are jointly working on a strategic infrastructure-led masterplan for the north fringe of Bristol (hereafter ‘north fringe’) with the support of Atkins.

Where is the north fringe?

The north fringe is a mostly developed area between the northern edge of the City of Bristol and the M4 and M5 motorways which comprises the urban communities of Filton, Cribbs Causeway, Patchway, Bradley Stoke, Stoke Gifford, Harry Stoke, Henbury and Brentry.

It is a major economic driver in the Southwest as a centre for commercial and retail activities as well as a cluster of Aerospace and Engineering businesses, the University of the West of England and South Gloucestershire and Stroud College.



What is the strategic masterplan?

The north fringe Masterplan sets out a vision for place-based investment across the north fringe of Bristol, that closes the equality gap, enables sustainable growth, responds to the climate and ecological emergency, and delivers value for money over the next 30 years (up to 2050).

As well as presenting a vision for the area, the masterplan is supported by recommendations for place-making and infrastructure projects that can be taken forward now, to begin to realise key aspects of the vision and lay the foundations for the longer-term opportunities identified.

The masterplan will be a catalyst for change across the area. It will build on the aerospace, logistics, retail, leisure, and growing tourism sectors to ensure the north fringe will not just be a great place to live, work or visit but also to stay and explore.

Through area wide master-planning, this plan will influence the shape and form of new growth ensuring it is sympathetic to the character of the area, embedded into the surrounding communities and meets the future needs of our residents.

Whilst building on its economic strengths, our approach also has people and nature at the heart of it. This plan sets out how we can reshape and strengthen the communities across the area through stronger high streets, liveable neighbourhoods, increasing local employment and enhancing the character and sense of place of the district whilst enhancing biodiversity and nature recovery.

The proposals set out in the strategic masterplan, in their current form, will require further study before proposals can be translated into commitments in the emerging local plan.

What has informed the final masterplan?

All recommendations set out in this masterplan have been informed by outputs from existing and emerging strategies and discussions with key stakeholders across transport, place-making, net zero, energy and nature recovery.

We have worked with local authority officers, technical specialists, local members, businesses, education providers, health providers and members of the public across the north fringe to understand the key challenges and opportunities that need to be addressed.

By considering priorities across multiple sectors a holistic view of the north fringe has been drawn out to make recommendations for how the area can adapt, grow and change over the next 30 years. The masterplan largely focusses on opportunities for transport, nature and place-making. Considerations have also been given to how future energy supplies and planning for essential community services such as healthcare and education will need to be considered to support the future vision.

All recommendations have been assessed against local policy commitments, sustainability guidelines and deliverability criteria.

The project has provided an excellent opportunity for the local authorities, key technical stakeholders, major organisations and landowners to engage in valuable discussions about what the area looks like now and opportunities for how it might change over the next 30 years. This, and the 6-week public engagement exercise held in Spring 2022 has not only helped to finalise the masterplan but will be hugely valuable to inform future planning across the area.



North Fringe Strategic Masterplan work to date

Vision and aspirations

By focusing on shaping the north fringe as a place, the intention is to directly address the priorities of delivering sustainable, inclusive communities, infrastructure, and growth whilst addressing the climate emergency and widening opportunities, sharing prosperity, and raising the quality of life for all residents, businesses, and visitors.

These intentions are summarised in the vision for the north fringe, presented below.

Vision:

“Over the next 30 years [by 2050] the north fringe of Bristol urban area will continue to be a major economic driver in the West of England and the wider South West.

It will continue to maintain and re-shape its role as a major focus for employment, commercial and retail activity, education, and learning.

Harnessing innovative transport solutions and green technologies will help to create a climate resilient north fringe with a thriving low carbon economy and lifestyle reflected in our travel, homes, businesses and communities.

The distinctive identities and heritage of the existing communities and neighbourhoods will have been strengthened.

The development of new and existing neighbourhoods will follow the 15-minute neighbourhood principle to create neighbourhoods which are better connected with residents and workers able to access local amenities and employment by high quality public transport, walking and cycling links.

Nature and access to green space will be enhanced through opportunities to provide new, improved and better-connected green spaces, within the existing urban area which support adaptation and resilience to the changing climate, restore nature, improve health and wellbeing and which connect to the wider countryside, to create a greener north fringe where people and nature thrive.”

The vision is supported by 9 distinct aspirations which capture all aspects of the vision and seek to address the key challenges of sustainable development including economic growth, social equity and climate change and net zero carbon.

Through these 9 aspirations, ambitions for the economy, land use, multi-functional green spaces, sustainable transport, natural and historic assets, future utilities networks, access to education, integration of new development and the regions housing needs are expressed.

Aspirations:

- **Increasing the use and function of green space to enhance the landscape and the environment:** Better integration of green spaces to protect and restore nature, provide resilience to changing climate, support wastewater management and improve health and wellbeing.
- **Protecting existing natural and historic environments:** Ensuring that all proposals enable thriving communities with a clean and biodiverse environment, where natural assets and historic assets are protected, and natural resources are used prudently.
- **Delivering a sustainable transport system:** Providing a more integrated, convenient, safe, attractive, accessible for all, sustainable transport network with priority given to public transport, pedestrians, cyclists, and wheelers (e.g. wheelchair users).
- **Delivering utilities that meet the challenges of the future:** Providing utilities (such as energy, digital and water networks) that will support future growth and be future proofed against changes in technology, policy, and the climate.
- **Prioritising people and place through diversifying land use:** Improving health and well-being by provision and access to a greater range of social, cultural, community, recreational facilities, and green spaces for new and existing communities in the north fringe of Bristol.
- **Improving access to opportunities and education:** Supporting residents across the north fringe of Bristol to reach their potential and develop the skills needed to continue to drive economic growth in the region, in line with the Local Industrial Strategy.
- **Integrated approach to new development:** Taking a comprehensive and integrated approach to new development to ensure new sites contribute towards the broader vision.
- **Strengthening role as a regionally important employment location and tourist destination:** Ensuring that the north fringe of Bristol maintains its role as a major economic driver in the West of England, making the West of England economy one of the most prosperous, innovative, and vibrant in Europe.
- **Making a significant contribution to the regions housing challenge:** Providing new and affordable homes.

Key principles within this Masterplan

Land use and sense of place

The vision for the north fringe is to promote a more holistic approach to street design and land use to create a stronger sense of identity and heritage in new and existing communities, whilst maintaining the role of the area as a major focus for employment, commercial and retail activity, education, and learning.

This will be achieved by strengthening connections between existing communities as well as identifying opportunities to achieve more integrated and efficient use of available land. This is to move towards a more 'Urban Lifestyles' approach, where a greater range of land

uses can be provided to improve the sense of place and improve access to opportunities, education and employment for residents and visitors.

Also fundamental to the future sense of place across the north fringe will be the sensitive integration of major new developments to ensure they benefit both new and existing residents. Key sites that could have a transformational impact include: the new Filton Airfield sites and the East of Harry Stoke New Neighbourhood (EHSNN) sites. These new developments will bring forward substantial numbers of new homes, jobs, recreation and entertainment facilities including a new 17,000 seat arena complex in the historic Brabazon Hangar arena. Whilst this masterplan does not seek to define the nature of these sites specifically, it identifies opportunities to integrate these sites with the wider community to ensure they serve to complement and enhance the area.

Green Infrastructure (GI)

GI is the term used to describe the natural environmental features of an area and the natural connections (or network) between these features.

The planning, management and investment GI is fundamental and is required at all levels of planning; from strategic to the local level, with site specific plans recognising that GI can be embedded in grey infrastructure (for example roads, rail, and flood schemes) and is not in competition with it.

To achieve the over-arching vision for the north fringe, GI will need to be at the heart of all infrastructure planning to achieve wide-reaching benefits to biodiversity, climate change and resilience, place-making, and the economy.

Transport and movement

The over scaled transport infrastructure of the past 'out of town model' prioritises vehicular capacity over place, efficiency, and sustainability, with large amounts of surface level parking and highways networks that have left an ironic legacy of a disconnected place. The segregated land-use model exacerbates this challenge and increases the need to drive from one place to another.

A key priority of the vision for the north fringe is to embed urban lifestyles principles to make it easier for individuals to access everything they need, including employment, community, leisure, and healthcare facilities, within a 15-minute walk or cycle of where they live.

The fundamental aim of this approach is to improve sense of place and to reduce the need to travel all together, relieving congestion and contributing towards reducing the impact of the area on greenhouse gas emissions.

In addition to reducing the need to travel and encouraging more journeys to be made by active modes, the public transport system in the north fringe will also need to see a further step change in provision over the next 30 years. This will include better integration with other modes and a higher quality and frequency of services. This will need to be complemented by a gradual reduction in capacity for private car users and an increase in the availability of last mile options such as e-

scooters and on-demand local public transport services (Dynamic Demand Responsive Transport).

The transport vision for the north fringe will build on a wealth of existing proposals set out in the Baseline Chapter, to fill the gaps in infrastructure for pedestrians, cyclists, and wheelers (e.g. scooters, wheelchairs etc.) and to maximise the potential of existing plans for public transport services (including MetroWest and MetroBus) by increasing service frequencies and improving access through the introduction of new demand responsive local services and stronger interchange opportunities.

Putting people first

In the past, street design has been dominated by some users at the expense of others, often resulting in unimaginatively designed streets which tend to favour motorists over other users. Reversing the

hierarchy of streets across the north fringe will be a key change which will strengthen the sense of place and identity and encourage greater use of sustainable transport modes. The intention is to create streets that encourage greater social interaction and enjoyment while still performing successfully as conduits for movement. Where appropriate pedestrians should be considered first, followed by cyclists and public transport users before service vehicles and other motor traffic.

Making more efficient use of car parking

Underpinning this masterplan is a gradual shift in how car parking is provided. The north fringe currently has large amounts of surface level parking for businesses, retail, and leisure. This is very inefficient in terms of the use of land, and we are recommending a gradual transition in how parking is provided to release significant areas of

land that could form part of the delivery of the concepts within this masterplan.

Illustrative examples of how the area could change

Some place-based examples and illustrative opportunities for change have been included within the strategic masterplan to bring to life the key principles and spatial concepts that underpin the vision and aspirations by presenting some localised illustrations, to demonstrate how the vision can be realised in key locations across the north fringe.

We have also identified examples where place-based interventions better connect areas within the north fringe and support stronger, more inclusive local communities as well as making sustainable travel more attractive and safer for everyday journeys for work, shopping, visiting friends or leisure.

Illustrative opportunities for change

A38

Finally, the Strategic Masterplan makes recommendations for how main transport corridors could be transformed by reconfiguring some of the large junctions and introducing a more pedestrian friendly environment along the length of the route.

In terms of the A38, it could transform the corridor so that it no longer forms a major barrier between communities, but instead becomes a street with people and the environment at the heart of the design, whilst still maintaining its function as a strategic transport corridor.

Opportunities may include:

- Removal of central reservations to be replaced with frequent pedestrian islands, interspersed with planters to enable people to cross the road freely along pedestrian desire lines.
- Restrict highway traffic to single lane and reallocate remaining highway space to segregated foot/cycleways and bus priority where needed.
- A reduced highway footprint could open-up further retail and commercial opportunities.
- Conversion of the Highwood Road junction into a crossroad would release land equivalent close to the size of nine football pitches for development/regeneration and or public realm.
- In the longer term, decommissioning the flyover completely or repurposing to reduce the footprint of the road and create a linear park.

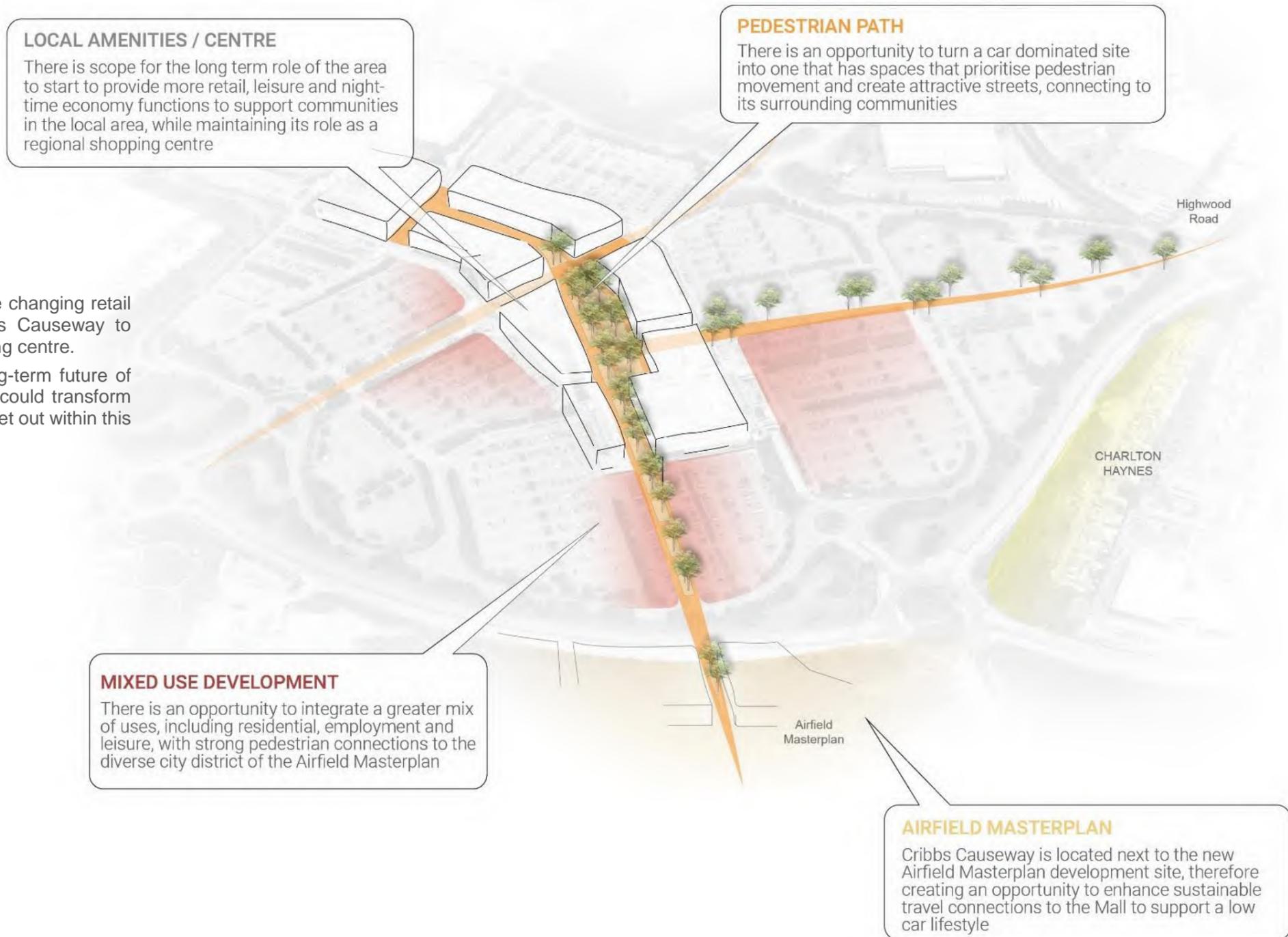


Illustrative opportunities for change

Cribbs causeway

This first example shows how, in the long-term, the changing retail market could open up the opportunity for Cribbs Causeway to become a local centre as well as a regional shopping centre.

Working with the operators to understand the long-term future of Cribbs Causeway, there are simple changes that could transform the area, which incorporate many of the principles set out within this masterplan document.

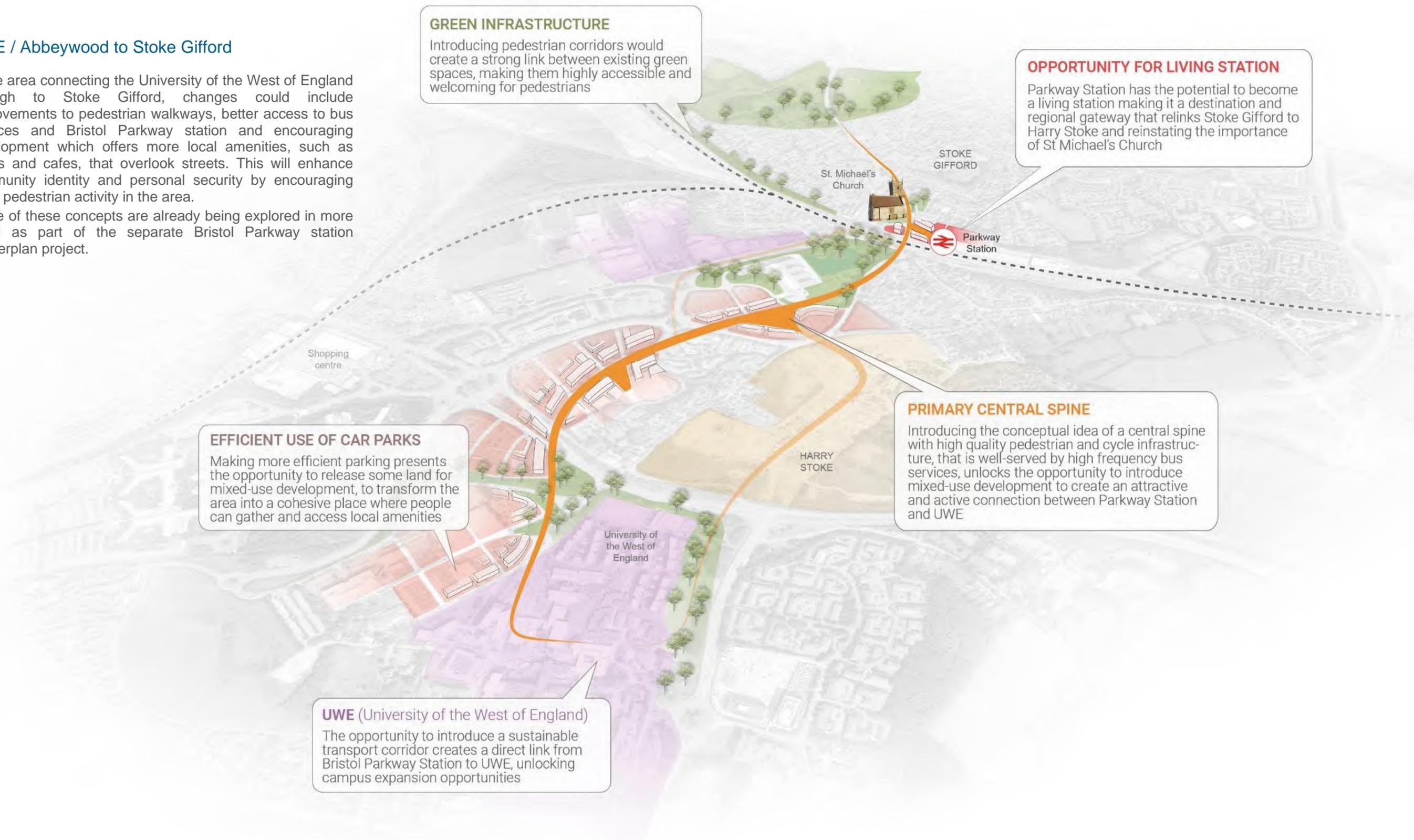


Illustrative opportunities for change

UWE / Abbeywood to Stoke Gifford

In the area connecting the University of the West of England through to Stoke Gifford, changes could include improvements to pedestrian walkways, better access to bus services and Bristol Parkway station and encouraging development which offers more local amenities, such as shops and cafes, that overlook streets. This will enhance community identity and personal security by encouraging more pedestrian activity in the area.

Some of these concepts are already being explored in more detail as part of the separate Bristol Parkway station masterplan project.



Illustrative opportunities for change

Aztec West Business Park

Aztec West, like many out-of-town business parks, was developed in the early 1980s and many of the older buildings may only have one refurbishment left in them before they become redundant.

As the demand for out-of-town office space changes, and the number of employees able to work from home increases, there may be opportunities to use the land differently. For example, introducing alternative uses, such as community facilities and retail, whilst increasing employment through the development of innovative and agile workspaces.

These changes could also help improve connections between Aztec West and the surrounding local communities, in particular providing a high-quality walking and cycling connection past key locations in Patchway including Coniston Primary School, Patchway Parade and the Tumps nature area to enhance and strengthen existing local facilities and access to green space.

Similar concepts could be considered for other business parks in the area, including the Almondsbury Business Park.

New bus, walking and cycling connections through Aztec West to Cribbs Causeway and the new urban centre proposed as part of the Filton Airfield site will generate more people and customers for wider retail and leisure opportunities as part of wider regeneration of Patchway.



Illustrative opportunities for change

Highwood Road

This example shows how by improving connections between the existing local centre along Rodway Road and the opposite side of Highwood Road, communities can be brought closer together. There could also be opportunity for mixed-use development, including more community facilities.

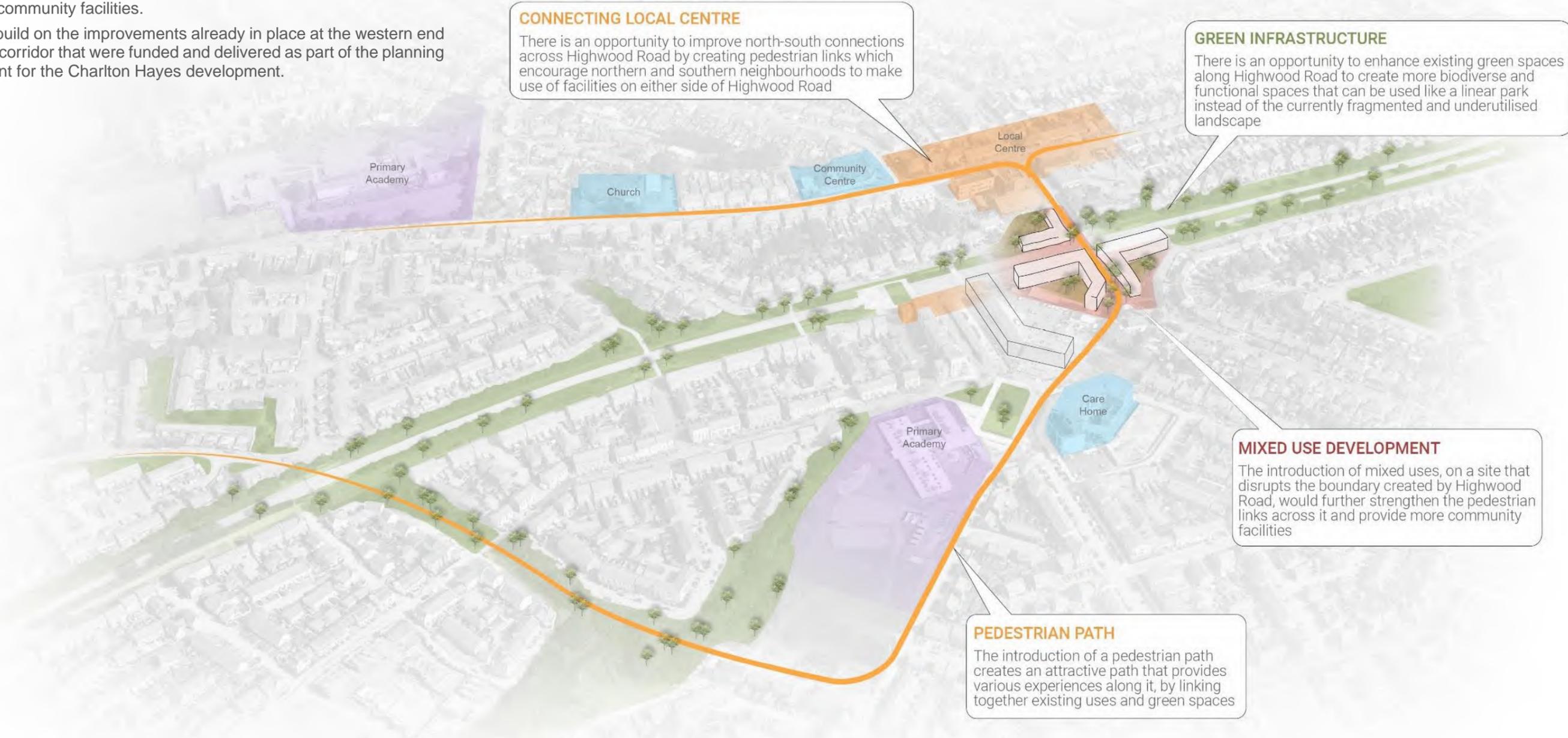
It will build on the improvements already in place at the western end of the corridor that were funded and delivered as part of the planning consent for the Charlton Hayes development.

CONNECTING LOCAL CENTRE
 There is an opportunity to improve north-south connections across Highwood Road by creating pedestrian links which encourage northern and southern neighbourhoods to make use of facilities on either side of Highwood Road

GREEN INFRASTRUCTURE
 There is an opportunity to enhance existing green spaces along Highwood Road to create more biodiverse and functional spaces that can be used like a linear park instead of the currently fragmented and underutilised landscape

MIXED USE DEVELOPMENT
 The introduction of mixed uses, on a site that disrupts the boundary created by Highwood Road, would further strengthen the pedestrian links across it and provide more community facilities

PEDESTRIAN PATH
 The introduction of a pedestrian path creates an attractive path that provides various experiences along it, by linking together existing uses and green spaces

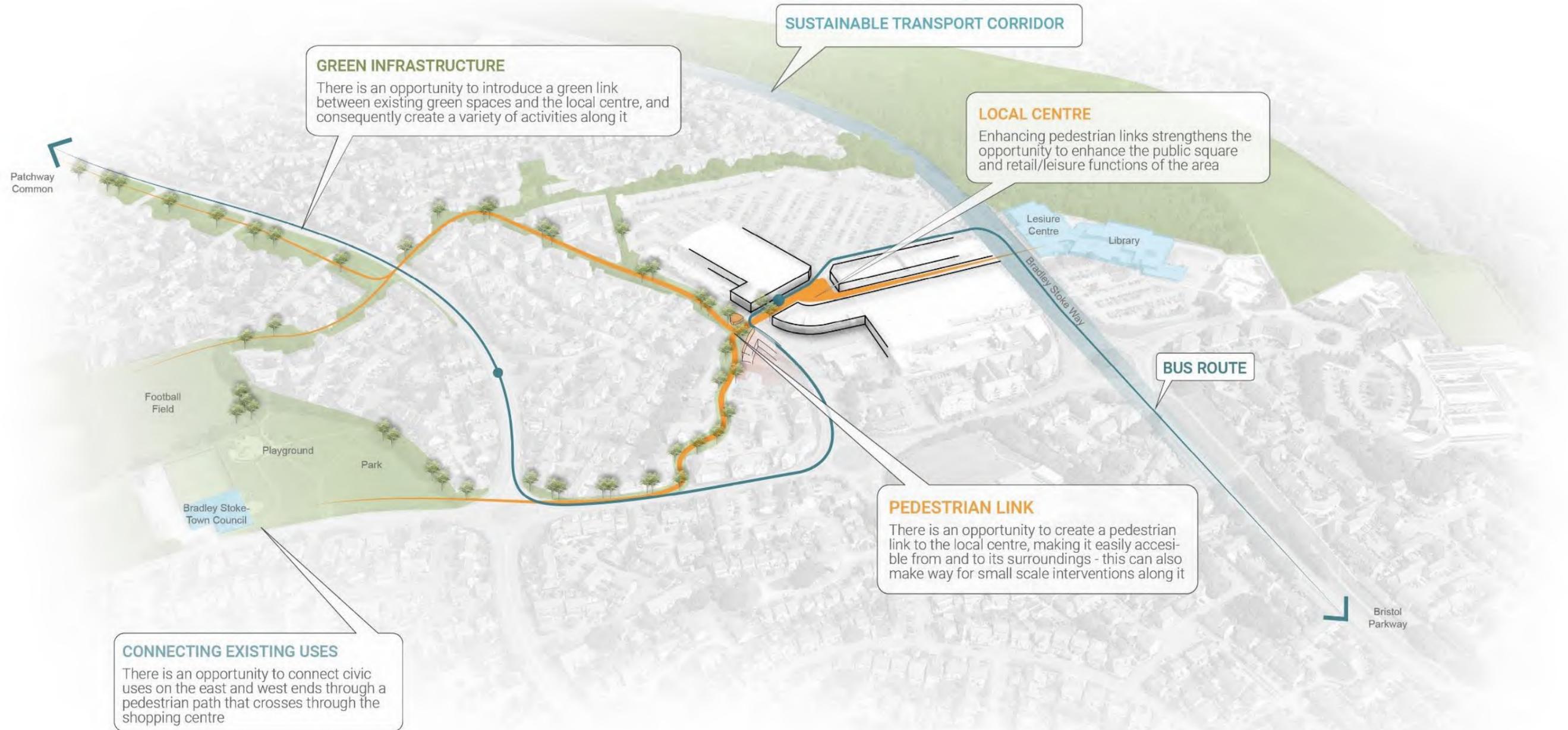


Illustrative opportunities for change

Bradley Stoke

This drawing demonstrates how there is potential around Bradley Stoke town centre to create a local high street by improving access and public spaces. This may also open up opportunities in the longer-term for the centre to grow to offer more amenities and night-time economy activities, such as restaurants, to support the 15-minute neighbourhood principle. This is the principle that residents have access to most, if not all, of their needs within a short walk or bike ride from their home.

Whilst Bradley Stoke is being used as an example here, other local centres could be transformed in a similar way through small interventions.



Next steps

Overview

This strategic infrastructure-led masterplan sets out the potential for the north fringe to evolve and adapt over the next 30 years. The vision encompasses ideas and principles to enhance the sense of place, economy, and community facilities; create a more sustainable transport network and reduce the need to travel; reduce carbon emissions; and build a more resilient GI network to benefit biodiversity, climate resilience and social wellbeing across the area.

Whilst it is recognised that some of the potential changes set out in this report will take longer to develop and deliver, there are several place-based infrastructure projects that can start to be developed and delivered. This can act as a catalyst for further change.

Existing ongoing studies will continue to shape the masterplan

Several studies are currently being conducted which will inform investment in infrastructure across the north fringe. Key studies which will be crucial to understand before finalising plans for development across the north fringe include:

- Carbon pathway studies;
- Heat network studies and Energy Planning Integrated with Councils (EPIC);
- Joint GI Strategy/Nature Recovery Network; and
- Parkway Station Masterplan.

Short-term recommendations

The figure presented on this page sets out the short-term recommendations for progressing the masterplan vision and the following sections provide more detail regarding immediate priorities including strategic planning and feasibility assessments; and short-term infrastructure investment.

Medium and long-term priorities will need to be explored in more detail through further work.

North Fringe Strategic Infrastructure-led Masterplan: Next Steps

Short-term recommendations

Deliver short-term place-based infrastructure

Infrastructure that will stand the test of time.

Quick win investment that can be accelerated to demonstrate the commitment and lay the foundations for change. This in turn will stimulate wider actions from stakeholders and build momentum for delivery of the masterplan.

Place-based Plans

Continuing to nurture the relationships built through the north fringe masterplan engagement to maintain involvement in taking forward place-based infrastructure projects and policies.

For areas which are closer proximity in terms of potential change it may be beneficial to develop more detailed site appraisals and infrastructure plans to better understand the case for change.

Phasing of changes and infrastructure pipeline

It is recognised that some of the longer-term potential opportunities will require more substantive infrastructure, with more complex business cases and the need to embed them within wider policy.

Critical to developing a longer-term pipeline of infrastructure will be consideration of current and future funding opportunities.

Deliver short-term place-based infrastructure

The table below sets out short-term priorities for investment. These are needed regardless of any uncertainties around how longer term economic, environmental or movement needs may change. They will make tangible progress towards achieving a vision for the area and are not dependent on how uncertainties around future climate change, economy and future travel trends materialise.

North fringe of Bristol Strategic Infrastructure-led masterplan: short term place-based infrastructure priorities

 <p>Formal assessment of green spaces and waterways.</p> <p>To help identify the best options for enhancing our natural spaces to gain the maximum benefit for people and the environment.</p>	 <p>Feasibility assessment to consider options for reconfiguring the A38 Junction with Highwood Road to improve access by pedestrians, cyclists and wheelers (e.g. wheelchair users).</p> <p>To improve connectivity across the A38 and to make more efficient use of the space, potentially freeing up land for alternative uses.</p>
 <p>Tree planting and greening of streets across the area.</p> <p>To improve the quality of the environment for residents and visitors to the area as well as providing benefits for climate mitigation and resilience.</p>	 <p>Feasibility assessment to consider options for improved access across the A4174 Avon Ring Road near Abbeywood and UWE for pedestrians, cyclists and wheelers (e.g. wheelchair users).</p> <p>To strengthen connections between UWE and Parkway.</p>
 <p>Developing a strategy for rolling out 15-minute neighbourhoods.</p> <p>To provide residents access to most, if not all, of their needs within a short walk or bike ride from their home to reduce the need to travel, strengthen community identity and reduce inequalities.</p>	 <p>Progress walking, cycling and wheeling schemes to bridge the gaps between existing proposals along main routes.</p> <p>To create continuous walking, cycling and wheeling networks along major routes.</p>
 <p>Further study to understand opportunities for Aztec West business Park.</p> <p>To shape the nature of renewal and replacement of existing buildings that are coming to the end of their life and the nature of new development coming forward to fill existing empty sites.</p>	 <p>Improving access to existing and planned new rail stations for pedestrians, cyclists and wheelers (e.g. wheelchair users) by improving connections and providing more last mile options (e.g. e-scooters, bike parking at stations).</p> <p>To get the best out of the rail network through ensuring there are good bus connections to all stations, as well as high quality facilities to support users travelling to stations by foot, bike or other wheeling modes.</p>
 <p>A38 corridor review to understand how the A38 can better serve the local community.</p> <p>To better connect local communities whilst retaining the function of the A38 as a major road.</p>	 <p>Developing options for improved bus services in local neighbourhoods as part of the delivery of the Bus Service Improvement Plan.</p> <p>To improve the accessibility and reliability of the public transport system either through making changes to existing bus services or providing new services to meet demand.</p>

Supporting policy considerations

Beyond infrastructure, this masterplan points to several policy areas that need to be developed if the aspirations are to be met and the outcomes realised.

	<p>More people walking and cycling and higher standards for public transport</p> <p>Measures to reduce demand for travel by car, address severance, and enable a step change in public transport</p>	<p>Connectivity to provide access for all</p> <p>Infrastructure built to be accessible to all and issues of major severance points resolved</p>	<p>Revised parking standards for new development</p> <p>Review of current parking standards for new developments to encourage reduced car dependency</p>	<p>Make better use of underutilised land currently used for parking</p> <p>Review of current and future parking provision across the north fringe to identify opportunities for repurposing</p>
	<p>Access to open space</p> <p>Increased investment to improve access to existing open space</p>	<p>Introducing more Green Infrastructure* into the street environment</p> <p>Street tree strategy to increase Green Infrastructure across the entire north fringe</p>	<p>Higher standards for integrating Green Infrastructure*</p> <p>Higher standards for integrating Green Infrastructure with grey infrastructure (transport, new developments etc.)</p>	<p>Improving strategic Green Infrastructure* connections</p> <p>Building wildlife corridors to contribute towards strategic Green Infrastructure connectivity as part of the nature recovery network</p>
	<p>Meeting energy needs of the area</p> <p>Resilient and green energy supply</p>	<p>Innovative approach to water management</p> <p>Prioritise investment in wastewater management solutions which have wider benefits for the environment and reduce waste</p>	<p>Improving efficiency</p> <p>Promote collaboration and innovation to develop a more circular economy for water, waste and energy in domestic and commercial settings</p>	<p>Leading the way with digital</p> <p>Building a fast, high powered, digital network suitable to support market leading growth and innovation</p>
	<p>Stronger and more diverse local economy</p> <p>Support for small businesses and encouraging high streets that enhance local identity</p>	<p>Encourage collaboration between key players in the north fringe</p> <p>Collaboration groups to steer planning across energy, waste management, future skills needs, community infrastructure desires, supply chain</p>	<p>Developing the skills for tomorrow</p> <p>Better planning for post-16 education to give people the opportunity to develop skills which will be vital to drive forwards the green economy</p>	<p>Invest in flexible workspaces</p> <p>Increased investment in improving facilities to support education and employment in the green innovation sector</p>
	<p>Health care</p> <p>Better local access to healthcare facilities</p>	<p>Encouraging mixed use and higher densities</p> <p>Local plan policies which encourage mixed use and higher densities in new and existing developments</p>	<p>Retrofitting existing development</p> <p>Retrofitting of homes to improve energy efficiency and energy supply</p>	<p>Community facilities for everyone</p> <p>More places for people and groups to strengthen community cohesion</p>

A healthier, more sustainable, and equitable north fringe by 2050

*Green Infrastructure is the term used to describe the natural environmental features of an area and the natural connections (or network) between these features.

Place-Based Plans

There is an opportunity to build on dialogue and stakeholder relationships across key businesses, private sector infrastructure providers, landowners and health and education providers to help plan for and drive forward key concepts of the masterplan.

Through ongoing dialogue there will be a better understanding of both the potential proximity of when future change could be realised and what further work should be progressed to unlock the potential of the area.

Set out in this section is an appreciation of specific areas where further work may be warranted to develop an understanding of the potential opportunities, and what measures would be required to realise them.

Opportunity area masterplans

Of the areas considered within this masterplan, there are already active conversations underway around the UWE/Abbeywood to Stoke Gifford Area and in relation to the development at the former Filton Airfield. It is recommended that the principles set out within this masterplan are taken into discussions and further work in relation to those locations to strengthen the outcomes.

The remaining areas that could merit further consideration of how the masterplan concepts and principles could be developed are Cribbs Causeway and the business parks at Aztec West and Woodlands. Of these two locations, there is less urgency around the Cribbs Causeway area as the retail market appears to be holding up stronger than similar retail locations around the country and there is, therefore, more time to consider longer term uses.

In terms of the business parks, Aztec West is an area that could be subject to incremental change in the nearer term given the age of some of the buildings and due to the remaining undeveloped plot adjoining the Patchway residential area. This presents an opportunity to influence how positive change takes place to start to turn Aztec West looking outwards and integrating with the surrounding communities. Conversely, in the absence of developing this opportunity, the market may deliver different forms of growth at this location that miss out on acting as a catalyst for wider regeneration.

As part of the development of further place-based plans it will be important to consider the findings of the Combined Authority and South Gloucestershire Council employment land reviews and, in due course, the updated South Gloucestershire Local Plan.

Formal assessment of strategic ecological networks

There is an immediate opportunity to understand how the existing GI across the north fringe can be enhanced and better connected. An understanding of the potential interventions could inform future investment programmes and potential developer contributions to start to deliver change.

A more formal assessment of Habitat identification, Biodiversity Net Gain Baseline calculation (assessment of extent of natural habitat and ecological features) and assessment of possible interventions to improve biodiversity net gain could be undertaken. This will also allow

more detailed consideration of the potential carbon benefits associated with Biodiversity Net Gain and green/blue infrastructure.

A high-level strategic quantification and valuation of other benefits can be undertaken, including increased flood protection and urban cooling to adapt to climate change, air pollutant removals, water quality, and recreational and educational opportunities.

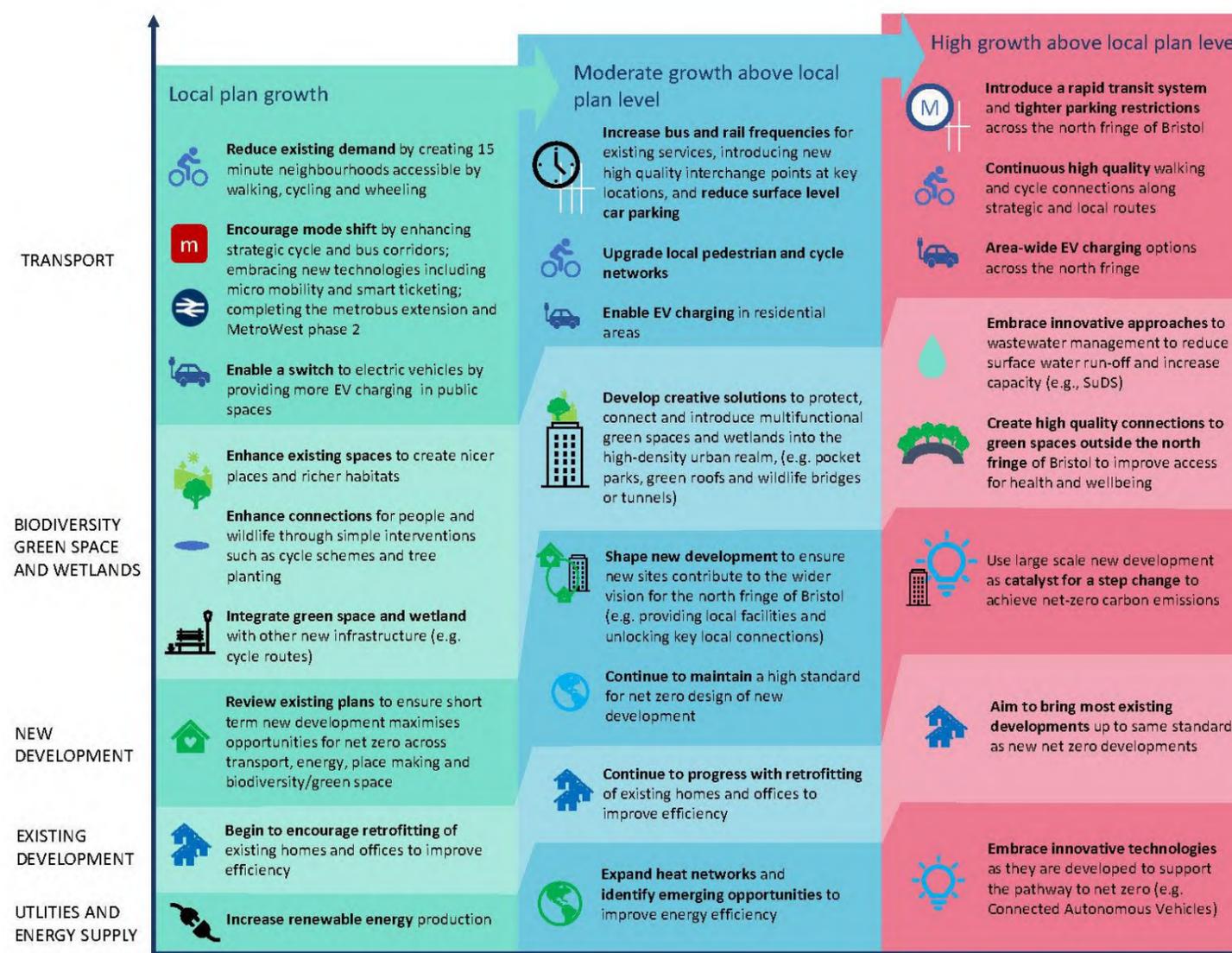
Phasing of changes and infrastructure pipeline

Given the complexity of the north fringe and the current and future potential for change, there is a need to develop a conveyor belt of interventions to ensure a sustained delivery of infrastructure proposals to fully realise the future potential of the area.

The infrastructure programme should be developed in line with the principles of ramping up investment and growth as set out in the illustrative example below.

The precise nature of what is needed in the medium and longer terms to support growth in the north fringe should be driven by the updating of local planning, transport, and economic policy alongside any further development Place-Based Plans for the areas identified within this report.

It is recognised that this masterplan covers a longer period up to 2050 and, as such, could contain potential options beyond current plans. The principles identified in this masterplan should be built into future policy reviews and longer-term infrastructure programmes should be maintained and updated.



Illustrative example of how infrastructure will need to respond to increasing levels of growth across the North Fringe, to maximise opportunities for sustainable transport and provide important services to meet the needs of business and residents of the north fringe

When planning future growth, place-making and infrastructure projects, the importance of inclusive and sustainable design must be prioritised to ensure any interventions will contribute towards the pathway to net zero and reduce social inequality, whilst enabling economic growth. This means, any new proposals should consider the latest standards and guidance emerging from the latest net zero strategies, inclusive design principles and environmental regulations.

It is acknowledged that much of growth will be market driven which will determine the timescales of developments, although some targeted growth may need public sector interventions for strategic and policy reasons, and this is covered in further detail below.

This type of area-wide master planning forms part of the wider evidence-base for local economic, planning and transport policy development along with the development of infrastructure programmes by both the public and private sector. It provides a high-level view of the future, stakeholder views and the priorities for further studies, scheme, and policy development to start to take forward the vision.

The proposals set out in the Strategic Masterplan, in their current form, will require further study before proposals can be translated into commitments in the emerging local plan.

Providing the right infrastructure at the right time

It will be crucial that a holistic approach to planning and development is applied to ensure the right pieces of infrastructure come forward at the right time to support planned growth. This will ensure that as new development comes forward, people continue to have access to necessary education, employment, and healthcare services as well as ensuring there is sufficient provision of green space and sufficient capacity in our transport and utilities networks to support increased demand.

Future proofing utilities

Creating future-proofed utilities networks will be paramount to enable the roll-out of electric vehicles through the provision of green electricity; enabling home-working and encouraging inwards investment from research and development and advance engineering sectors through the provision of high performing digital networks; and keeping carbon emissions down and responding to the impacts of climate change through delivering innovative solutions to wastewater management and the design of new developments. This will require a joined-up approach ensure that infrastructure investment is both resilient to future changes in utility provision and able to provide sufficient capacity for energy, wastewater, and digital connectivity to

support economic activity and continued growth across the north fringe.

Realising opportunities for public transport

The phasing of transport infrastructure will also need to align with the phasing of development. In the first instance small scale interventions can be implemented, including the creation of 15-minute neighbourhoods and improved walking, cycling and wheeling connections, to reduce travel demand. Then, as the intensity of development is increased, there will be new opportunities to ramp up the frequency of public transport services as these become more viable due to increased demand. This will need to be timed with a reduction in capacity for private car use to encourage a shift towards more sustainable travel behaviours in the north fringe.

Maintain high standards for multifunction GI as the level of growth intensifies

Finally, as places grow and evolve, high standards for GI must be maintained and therefore there will be a need to identify innovative solutions to integrate GI into the urban realm to ensure as the North fringe grows, people continue to have access to high quality open space and key wildlife corridors are preserved.

Funding long-term infrastructure

The West of England is in a strong position to deliver ambitious infrastructure programmes to support inclusive, sustainable growth.

The Combined Authority builds on 15 years or more of joint working that has seen a gradual ramping up of investment. This includes joint working on major infrastructure projects prior to the Investment Fund such as the metrobus network, and the delivery of a range of projects through the Local Enterprise Partnership including the £202m Local Growth Fund, £500m Economic Development Fund and £57m Revolving Infrastructure Fund programmes.

Set out in the main report are further details on the wider possible sources of funding that could be explored as opportunities to take forward priorities from this masterplan.

Delivery partners for economic infrastructure

A primary driver is the continuing strength and capacity of the technology in the area reflected in the Local Industrial Strategy (LIS) and partnerships to boost the knowledge economy and skills base in the north fringe. The area should position itself as one of the UKs leading inward investment locations for technology specialisms

including aerospace, composites, digital and robotics. Focus should be on infrastructure to support SMEs and start-ups both from the existing supply chain to the major north fringe businesses and new entrants. This will include innovation and incubation accommodation, business support and skills development centres, and specialist technology centres like the National Composites Centre. A range of key partners should be engaged by the local authorities to deliver the Local Industrial Strategy priorities:

- Aerospace – Airbus, GKN, Rolls Royce, BAe with their substantial supply chains
- Other technology sectors e.g., Advanced manufacturing, Defence, Emerging materials technologies, digital, microelectronics research and design, financial and business services sector, Sustainable and low carbon energy research, development, and manufacturing
- UWE – a key partner for innovation, research and technology transfer and partnerships with business.
- South Gloucestershire and Stroud College- important to support local skills base supporting key sectors
- Ministry of Defence (MoD) Abbey Wood – longer term potential for business and innovation collaborations with defence sector
- Developers and major landowners- key sites which can be the focus of future knowledge economy developments – Filton Airfield, Horizon 38, Cribbs Causeway, Aztec West and Almondsbury Business Park, UWE campus, Aviva campus. MoD campus.

Conclusions

This masterplan sets out a place-based vision for the north fringe that can strengthen its role as a leading economic area whilst enhancing the connectivity, cohesion and strengthen the character of local communities.

The infrastructure-led strategic master plan for the north fringe has provided an opportunity for the local authorities and stakeholders to engage in an in-depth look at the area now and the opportunities for change over the next 30 years. The output is a vision for the area supported by a high-level view on the infrastructure and wider policies that could realise the opportunities identified.

The principles for inclusive, sustainable growth through applying place-based incremental change to the north fringe should inform the development of infrastructure programmes and economic, planning and transport policy.

1. Introduction

1.1. Location and context

In January 2021 the Combined Authority, in collaboration with South Gloucestershire Council and Bristol City Council, commissioned Atkins and Avison Young to prepare a strategic infrastructure-led masterplan for the north fringe of Bristol (hereafter 'north fringe'), located mainly in South Gloucestershire.

The north fringe is a mostly developed area between the northern edge of the administrative City of Bristol and the M4 and M5 motorways. Its eastern edge is usually defined as the M32 motorway. The area falls mostly within South Gloucestershire Council's authority

boundary, with a smaller section within the northern part of Bristol City Council's authority boundary.

The north fringe and its constituent urban communities of Patchway, Bradley Stoke, Filton, Stoke Gifford, Harry Stoke, Charlton Hayes, Henbury and Brentry, form a diverse urban area with a rich history of aerospace achievements and a wider role as a centre for commercial, retail, and educational activities.

The aerospace industry in the north fringe spans more than a century. Its legacy is still evident in the region today which is home to an internationally significant cluster of Aerospace and Advanced engineering, the largest in the UK.

The north fringe is also home to important education facilities, including the University of the West of England and South Gloucestershire and Stroud College, and regional retail and leisure attractions at Cribbs Causeway.

Due to the highly accessible location of the north fringe, adjoining two major motorways and on the edge of the major population centre of Bristol, the area has experienced substantial growth in housing and employment since the 1980s. This has created an environment dominated by busy roads and large campus-style employment hubs, creating disconnects between many of the communities within the north fringe and the wider employment and leisure functions.

South Gloucestershire Council recognised the north fringe as a key area for regeneration in their previously adopted Core Strategy (2006-2027). In the Core Strategy, a vision for the area was set out to maintain the region's role as a key economic driver, whilst re-balancing existing land uses through the delivery of two new residential neighbourhoods: Cribbs Patchway New Neighbourhood (CPNN) and East of Harry Stoke New Neighbourhood (EHSNN). These new neighbourhoods were promoted to provide more people with the opportunity to live near to where they work, to strengthen community identity and neighbourhood distinctiveness, and improve connectivity via public transport, walking and cycling.

In the Bristol City Council Core Strategy (2011), the need to strengthen Bristol's transport and economic linkages to the north fringe, as one of the largest employment areas in the subregion, has also been recognised. The strategy identifies that several relatively deprived Bristol communities have so far not benefited from the rapid growth in employment opportunities. It is recommended that improved linkages between North Bristol and the north fringe are needed to enhance opportunities for local residents to access employment and services.

Supplementary Planning Documents (SPDs) were commissioned to support South Gloucestershire Council's 2013 Core Strategy for the CPNN and EHSNN. These documents set out in greater detail the overarching spatial framework for the two key sites as well as identifying key enabling infrastructure required to support wider growth.

1.2. The need for a Strategic Masterplan for the north fringe

Since the key documents outlined above were published there have been a number of changes to the political, social, economic, and natural environment including:

- Brexit;
- COVID-19;
- Climate Emergency Declarations;
- The Environment Act 2021; and
- New planning policy.



Brexit has created new economic pressures creating new challenges for industry and local businesses.

The COVID-19 pandemic has shone a light on the importance of health and wellbeing, including the importance of providing people with access to high quality open space. It has changed travel behaviours, including reduced confidence in using public transport, higher car use by some groups and remote/agile working reducing the some of the need to travel for jobs that are suitable for home working (around 30% nationally).

National and local government climate emergency declarations, including commitments from the Combined Authority, South Gloucestershire Council and Bristol City Council to reach net zero carbon emissions by 2030 and a national statutory target of reaching net zero by 2050, have brought the net zero agenda to the forefront of local and national policy.

The Environment Act 2021 sets clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water, and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030.

Finally, new planning policy has emerged in the form of updates to the National Planning Policy Framework (NPPF), the recent publishing of the South Gloucestershire Council Local Plan 2020 review. A notable change in planning policy includes the substantial increase in the assessed housing need across the West of England, particularly in the Bristol area.

There is a need to revisit the existing planning policy and spatial plans to develop an up-to-date vision for the region which is resilient to the uncertain impacts of COVID-19 recovery, the climate, and ecological emergencies, as well as aligning to the updated vision for the new local plan period and beyond. A recent example includes the 'Houses in Multiple Occupation: Guidance for new developments' SPD which was adopted in October 2021 following evidence showing that there has been an increase in this type of development in South Gloucestershire over recent years to meet demand.

1.3. Role of the Strategic Masterplan

This Strategic Masterplan sets out a vision for place-based investment across the north fringe, that closes the equality gap, enables sustainable growth, and responds to the climate and ecological emergency over the next 30 years (up to 2050).

It is supported by a high-level view on the infrastructure and wider policies that could realise the opportunities identified. By focusing on shaping the north fringe as a place, the intention is to directly address the priorities of delivering, inclusive communities, infrastructure, and growth to create a resilient and thriving environment with both people and nature at the heart of it.

It will widen opportunities, share prosperity, and raise the quality of life for all residents, businesses, and visitors. This will be achieved through creating stronger high streets, liveable neighbourhoods, increasing local employment and enhancing the character and sense of place for the region.

This Strategic Masterplan sets out recommendations for future place-making and infrastructure projects to maximise land use potential, improve the transport system, enhance the provision of multifunctional green spaces, reshape, and strengthen community identity and improve local connectivity for access to employment, health, education, community, and leisure facilities.

The process of developing the Strategic Masterplan for the north fringe has provided an opportunity for the local authorities and stakeholders to engage in a holistic look at the area now to identify the opportunities for change over the next 30 years.

Through a programme of place-based infrastructure investment, combined with wider policy interventions, and a focus on change at key locations we can continue to unlock the potential of the north fringe, powering the West of England economy and providing new jobs and skills across the area.

The masterplan will be a catalyst for change across the area. Building on the aerospace, logistics, retail, leisure and growing tourism sectors, the north fringe will not just be a great place to live, work or visit but also to stay and explore.

This type of area-wide master planning forms part of the wider evidence base for local economic, planning and transport policy development along with the development of infrastructure programmes by both the public and private sector. It provides a high-level view of the future vision, stakeholder views and the priorities for further studies, scheme and policy development to start to take forward the vision.

The objectives of the Strategic Masterplan project can be summarised as follows:

- To provide a vision for the creation of new high quality, well connected, environmentally sustainable economic growth, to support new business as well as addressing current housing need;
- To identify locations where there are longer-term opportunities to open up new development or change of use of existing development, to deliver the future spatial growth and the strategic priorities of the LIS;
- To provide an evidenced-based programme of proposed infrastructure investments and interventions that will allow transformational change of the north fringe area;
- To consider how infrastructure investment in the defined area can contribute towards the pathway to net zero by 2030, in line with Local Political declarations;
- To fully integrate innovative solutions for sustainable travel;
- To ensure any new vision is fully co-ordinated with our partner organisations in the area to fully integrate with their objectives; and
- To ensure that Biodiversity Net Gain is delivered as required by the Environment Act for all development.

The proposals set out in the Strategic Masterplan, in their current form, will require further study before proposals can be translated into commitments in the emerging local plan.

1.4. Strategic Masterplan Process

Through this project, existing policy and research documents have been reviewed to gain a holistic understanding what the north fringe is now, and what the key challenges and opportunities are that will need to be addressed over the next 30 years.

Consideration has been given to the existing socio-demographic, economic and environmental context as well the existing land use and infrastructure that support transport, utilities, community services, homes, and jobs across the north fringe.

Findings from this baseline analysis have been developed to propose a new vision for the north fringe up to 2050, supported by recommendations for placemaking and infrastructure projects and policy to be taken forward now as priorities for next steps.

All recommendations set out in this masterplan have been informed by outputs from existing and emerging strategies and discussions with key stakeholders across transport, place-making, net zero, future energy supplies and nature recovery.

We have worked with local authority officers, technical specialists, local members, businesses, education providers, health providers and members of the public across the north fringe to understand the key challenges and opportunities that need to be addressed.

By considering priorities across multiple sectors a holistic view of the north fringe has been drawn out to make recommendations for how the area can adapt, grow and change over the next 30 years. The masterplan largely focusses on opportunities for transport, nature and place-making with considerations have also been given to how future energy supplies and planning for essential community services such as healthcare and education will need to change to support the future vision.

Recommendations for place-making and infrastructure projects have also been assessed using a multi criteria assessment framework to better understand timescales for delivery; contribution towards the masterplan aspirations; deliverability; affordability; alignment with criteria for sustainable development; and alignment with current market trends.

1.5. Document Structure

The Strategic Masterplan sets out the baseline findings and explains the new vision and place shaping and infrastructure recommendations through the following sections:

- Chapter 2: Baseline findings
- Chapter 3: Issues and opportunity analysis
- Chapter 4: Summary of vision and aspirations
- Chapter 5: Illustrating the north fringe vision
- Chapter 5: Delivery and next steps

2. Baseline findings

2.1. Social, Economic and Environmental Context

2.1.1. Socio-demographic context

The population in the north fringe has increased by 9,320 since 2011 to reach 73,292 in 2019. Population growth has been particularly driven by young adults (16-24) and people in age of retirement (65 and over), with the data now showing a slow and progressive shift towards an ageing population.

north fringe is not too dissimilar to the City of Bristol, with the majority of the population being working age (above two thirds). According to the 2011 census there is a working age population of approximately 47,000 in the north fringe, of which 76.3% were considered as economically active (in employment, in search of employment or full-time students). This is higher than the City of Bristol, and overall statistics for South Gloucestershire and the Southwest.

Almost half of the population is occupied in mid-level professional roles (professional occupations, associate professional and technical occupations and administrative and secretarial occupations), with another large share of population occupied in skilled trade, sales, and customer service occupations.

It can also be noted that the proportion of people with a “low” level of qualifications (no qualifications, level 1 or level 2 qualifications) is higher in the north fringe (44.3%) than in the City of Bristol (40.2%) but comparable to South Gloucestershire and the Southwest. This could put the population of the north fringe to a slight disadvantage for the most qualified jobs available in Bristol and in the north fringe against residents of the City of Bristol.

The index of multiple deprivation for the north fringe shows a clear distinction between the east of the area (Bradley Stoke, Stoke Gifford and Filton), which is amongst the least deprived area in England; and the west of the area (Patchway, Cribbs Causeway and Henbury, which ranks amongst the most deprived area in England; with Gloucester Road marking the border between the two zones. The western area is characterised by a high proportion of industrial developments and is dominated by the vacant airfield site (proposed for residential redevelopment).

In terms of housing, the majority of households in the north fringe consist of one family or 2 adults living together. The proportion of one person households (single adult or student) and other household types (i.e., people living in care homes, students living in student accommodations, shared properties etc.) is lower than in the City of Bristol, where this proportion is driven up by the high concentration of young professionals (of which a large proportion are single) and students.

2.1.2. Economic function

Due to the location of the north fringe being highly accessible by car, the area has experienced substantial growth in housing and employment since the 1980s. As a result of this rapid growth, the north fringe is now considered one of the most economically important areas in the Southwest. It is internationally recognised as a centre of excellence for the aero-engineering industry as well as wider functions including education, leisure, retail, and recreation.

Notable major employers within the area include a nationally significant manufacturing and aerospace cluster at Filton with employers including Airbus UK, GKN Aerospace and Rolls Royce; the MoD; significant numbers of office and service businesses around Aztec West and Almondsbury Business Park; and high-tech advanced-engineering industries around the University of the West of England, that connect to the Bristol and Bath Science Park at Emersons Green in South Gloucestershire. The north fringe is also home to South Gloucestershire and Stroud College’s Wise and Filton campuses.

The urban area of the north fringe is also developing as a tourism destination with the opening of the Aerospace Bristol Museum and a planned major new arena complex in the historic Brabazon Hangar at Filton airfield. There is also a cinema, retail and leisure complex at the Cribbs Causeway Mall, a regional shopping centre, and leisure centres at Filton and Bradley Stoke. These complement significant attractions in the rural areas adjacent to the north fringe including Bristol Zoo’s Wild Place and the Wave surfing lake.

Finally, the North fringe is also a key housing growth location with significant new housing developments having been recently completed at Charlton Hayes and Cheswick Village and more planned within the CPNN and EHSNN.

The West of England Local Industrial Strategy (LIS) sets out various land use, infrastructure, and place-making priorities in the region to encourage further growth. These priorities include a technology focus encompassing the Filton Enterprise Area, University of the West of England, MoD and the Bristol and Bath Science Park. The Local Industrial Strategy builds on the range of national and local businesses in the area, as well as the key transport connections which have been put in place in recent years and digital and physical connectivity.

As highlighted in the latest Combined Authority Economic Land Spatial Needs Assessment (ELSNA), there is currently an undersupply of high quality (Grade A) employment space and a shortage of medium and small sites to support the advanced manufacturing and engineering sectors in the West of England. There is also a need for more smaller scale ‘last mile’ distribution premises and the changing retail market is likely to open up opportunities to rethink retail spaces to free up floorspace for other key sectors.

2.1.3. Environment and the Changing Climate

Climate change poses a clear and urgent challenge, that will affect our future environment and the prosperity of our region.

Locally climate change is likely to have big impacts on the amount of rain and extreme heat we experience. These extreme weather events are likely to happen at least every other year by 2040 if temperatures continue to rise at current rates.

As temperatures increase in the UK there are likely to be more incidents of regular flooding of homes and businesses and disruption of local services. Furthermore, it may impact on our health, the food available for us to eat and our water supply. Within urban areas there will also be further challenges including the impact of increased urban heating and risks of ‘heat island effect’ with implications for infrastructure and for health.

Central Government has recognised the need to take action to respond to the impact of climate change, and the UK is the first country to commit to becoming net carbon zero by 2050. The Combined Authority, South Gloucestershire Council and Bristol City Council have gone further than this, committing to carbon neutrality by 2030.

Carbon budgets were introduced in the UK under the 2008 Climate Change Act. A carbon budget is a statutory cap on total greenhouse gas emissions, which should not be exceeded, to meet the UK’s emission reduction commitments.

Locally our carbon emissions are mainly generated from homes, transport and industry and it is estimated that the carbon budget for the north fringe will be spent in approximately 6.5 years if business continues as usual.

To make our contribution to limiting the average rise in global temperature to 1.5 degrees C we will need to change the way we heat and power our homes, move people and goods, and provide manufacturing and services so that doing these no-longer emits the greenhouse gas pollution that is increasing global heating.

Introducing more high quality multi-functional GI will also play a key part in responding to the impacts of climate change due to its broad benefits including:

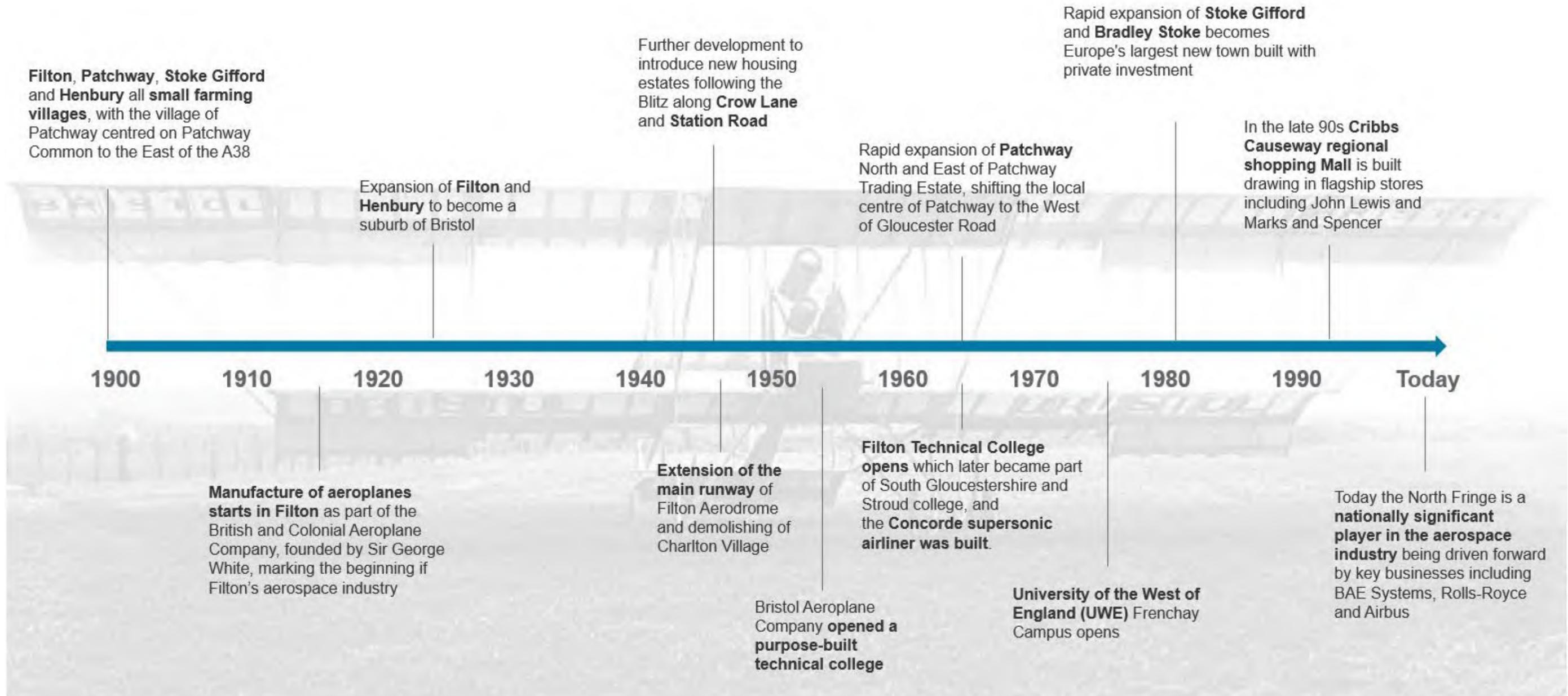
- Supporting resilient ecosystems and biodiversity;
- Mitigating and adapting to climate change;
- Conserving and enhancing a legible network of physical green spaces;
- Reducing and managing flood risks and drought;
- Improving wellbeing through the cohesion of local communities;
- Increasing the sustainability of food production;
- Enhancing cultural heritage, landscapes and natural resources;
- Promoting economic growth, employment and skills improvement.

2.2. History and Heritage

Over the last 100 years the north fringe has grown from a series of rural settlements to an urbanised area steeped in industrial heritage supporting a residential population of over 70,000.

Many of the features of from the historic villages of Stoke Gifford, Filton and Henbury have been preserved in the north fringe today where there are still approximately 37 listed Buildings.

The aerospace industry initially defined much of the development and character of the north fringe and rapid growth following the Second World War has led to the development of large residential areas across Patchway and later Bradley Stoke where this heritage has been lost.



2.3. Land use and Green Infrastructure (GI)

The pattern of land use in the north fringe is indicated in the map below. This plan demonstrates the segregated character of the area with large employment and education campuses sitting in isolation from local centres, regional retail, and residential communities.

2.3.1. Retail and leisure

The north fringe has a diverse retail market including the Mall Out of Town Regional shopping centre and retail parks at Cribbs Causeway, two local retail parks at Abbey Wood and Filton and other community

facilities including supermarkets and leisure centres available at Bradley Stoke and Patchway Town Centres.

There are also a small number of local centres/shopping areas, in locations such as the North Gloucester Rd, Filton Avenue, Patchway Parade, North Bradley Stoke and Stoke Gifford.

The location and nature of many of the local centres in the area are such that many businesses choosing to invest are of an out-of-town nature including car show rooms and drive through restaurants.

In addition to retail and local community facilities there are several regional leisure facilities including the newly opened Aerospace Bristol

Museum in Filton; Ice Rink in Cribbs Causeway; and the Wild Place expansion and the Wave Surfing Lake just outside the study area.

2.3.2. Employment land

Most of the existing office stock is in the northern part of the area, at Aztec West and Almondsbury Business Park. However, there are also two large office campuses located between Stoke Gifford and Abbey Wood, which are occupied by Aviva and the MoD, and some smaller office properties located in local centres such as Filton, Harry Stoke and Stoke Gifford and on largely industrial sites such as Rolls Royce and Horizon 38 near Patchway Station.



Map of Land Use in the North Fringe



There is about seven million square feet of industrial space in the north fringe, most of which is used for warehousing/distribution and manufacturing activities.

Most of the industrial stock in the area is spread across four locations: Filton, Cribbs Causeway, Little Stoke and M4/M5 Junction (predominantly along the M5).

Much of the industrial activity within Filton is dominated by the aerospace industry with key players including Airbus UK, GKN, Rolls Royce, and BAE Systems.

2.3.3. Residential

In Bradley Stoke and Stoke Gifford the residential accommodation is predominantly post 1980s terraced and semi-detached housing with a cul-de-sac layout and on and off-street parking available for most properties. Stoke Gifford still has some heritage assets associated with the original village settlement including some period residential properties and historic narrow lanes, for example North Road and Mead Road.

In Filton and Henbury much of the housing is terraced and semi-detached with a number of streets of the Victorian period. Henbury also has a large cluster of listed buildings where the old Village backs on to the Blaise estate.

Patchway is comprised of large 1950s housing estates which are predominantly detached and semi-detached with both on road and off-road parking as well as some more modern higher density residential developments in the recently developed Charlton Hayes area.

2.3.4. Green Infrastructure (GI)

GI is the term used to describe the natural environmental features of an area and the natural connections (or network) between these features. A detailed map of the GI areas across the north fringe is presented below.

Within the boundary there are two areas of ancient woodland (Savages Wood and Haw Wood), one site of Special Scientific Interest (Pen Park Hole), two Local Nature Reserves (Gorse Covert and Three Brooks), 10 Local Wildlife Sites, seven Sites of Nature Conservation Interest and three Water Framework Directive water bodies (River Trym, Stoke Brook and Bradley Brook).

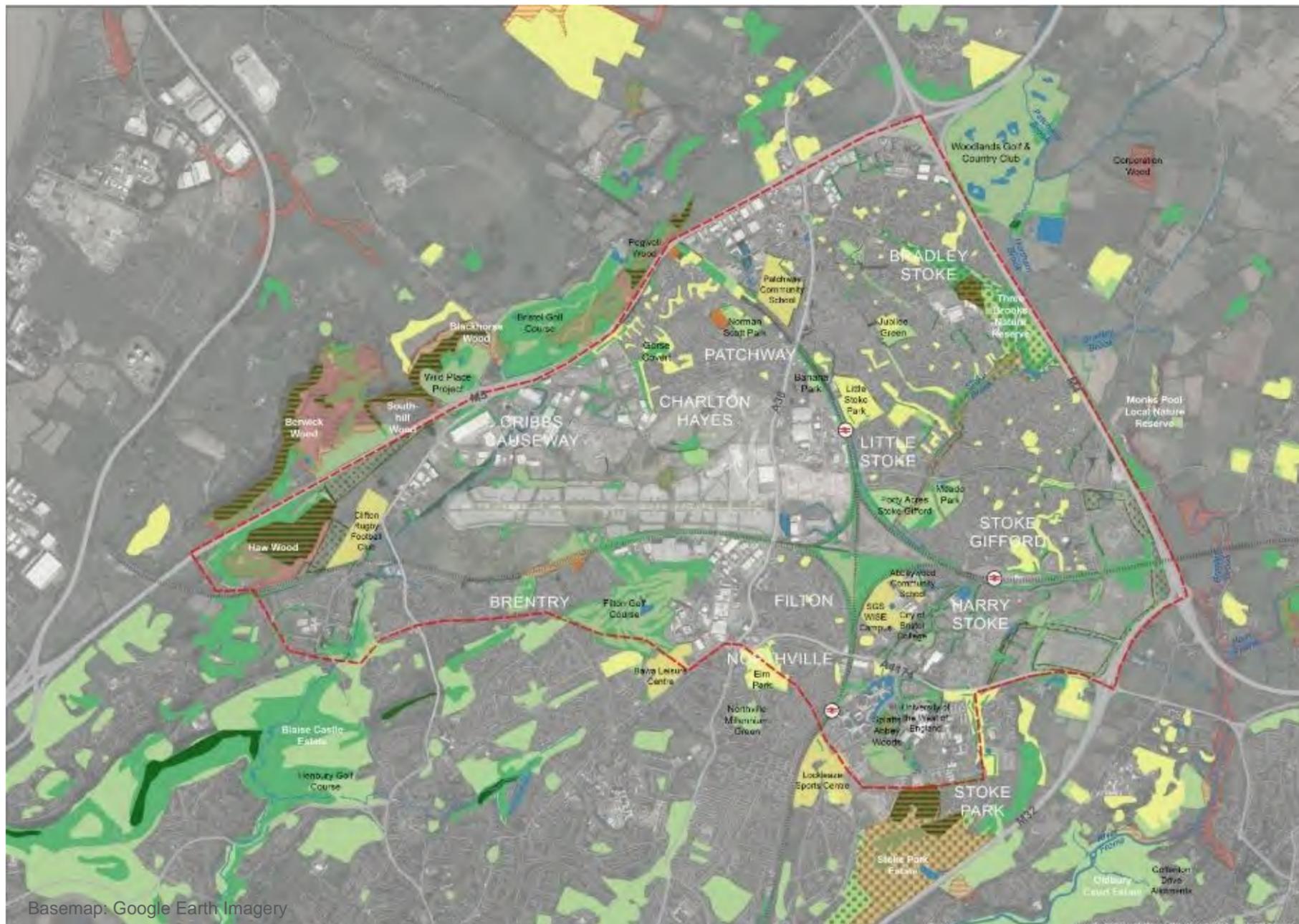
Within these habitats there are records of 10 ancient veteran trees and five European protected species within the north fringe boundary.

The presence of large areas of high-quality GI and waterways within the north fringe presented good ecological opportunities to the Southwest and Northeast where existing ecological assets could be strengthened to improve and expand these networks.

In terms of the overall provision of accessible green space for use by residents and visitors for sports and leisure purposes, there are over 270 open spaces including large parks and nature reserves which are greatly enjoyed by residents and visitors of the north fringe. This includes several Registered Parks and Gardens situated immediately

south of the north fringe area including Blaise Castle and Hamlet, Stoke Park and Oldbury Court.

There is however scope to improve the accessibility and safety of green spaces. This could be achieved through strengthening connections to existing spaces and introducing new green spaces where needed (predominantly in the South and West of the area) as well as improving the maintenance and natural surveillance of green spaces to make them safer.



Map of Green Infrastructure (GI) in the North Fringe



2.4. Transport and movement

The transport and movement infrastructure in the north fringe is presented in the map below. This map includes key public transport, walking and cycling connections across the study area.

2.4.1. Highway infrastructure

The north fringe is easily accessed from the M4, M5 and M32 motorways, and is crossed by the A38, A4174 ring road and A4018 from Cribbs Causeway to Henbury and beyond. This excellent connectivity has attracted substantial and rapid development over the

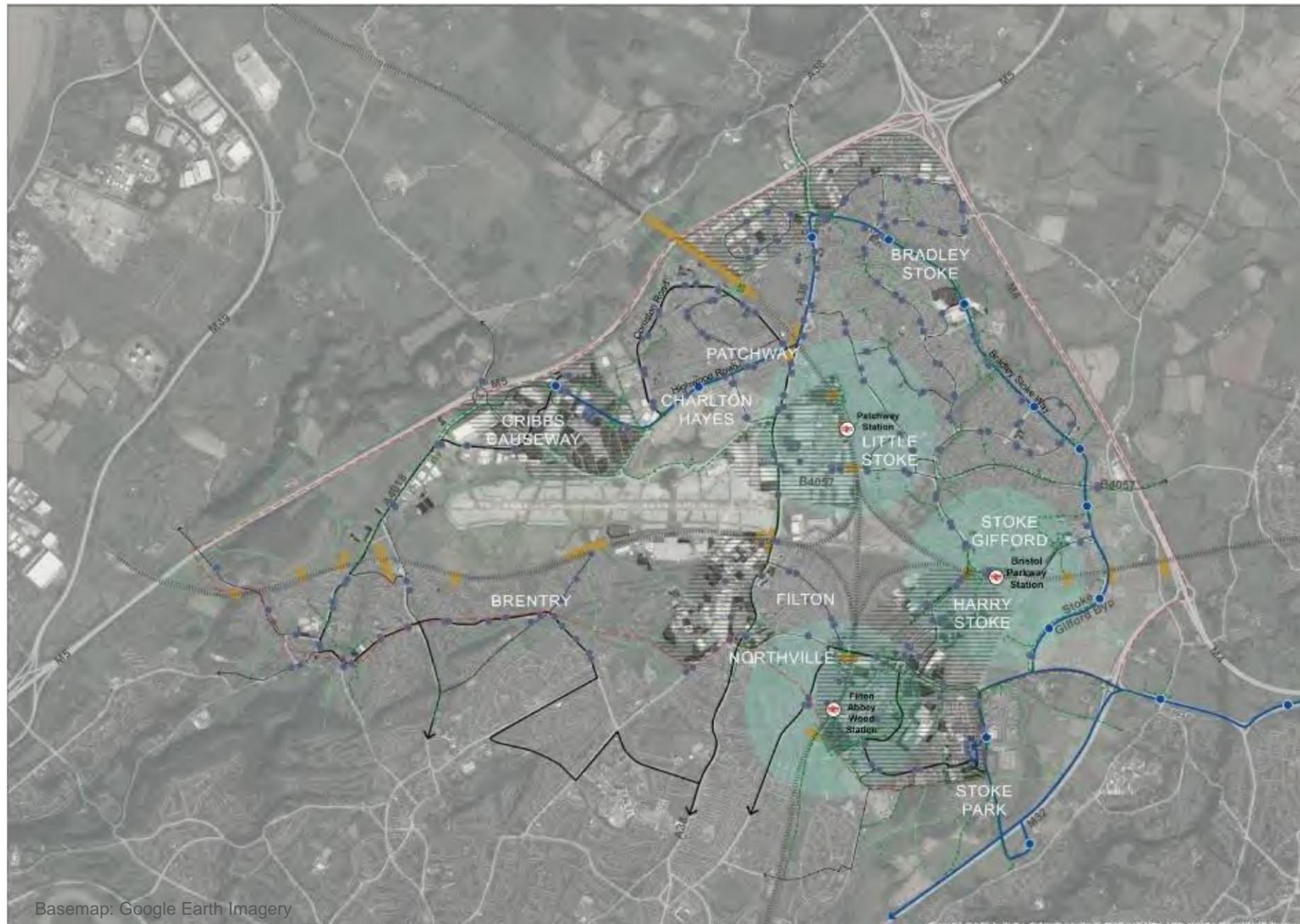
years, drawing in significant employment opportunities of regional significance.

M5 Junction 17 connects traffic onto the A4018 corridor near Cribbs Causeway; M5 Junction 16 connects traffic to the A38 Gloucester Road which bisects the area from North to South and serves as a major commuter route serving employment clusters at Aztec West, Airbus UK, and Rolls Royce; and M4 Junction 19 connects traffic to the M32 from which traffic can access the area via the A4174 Filton Road.

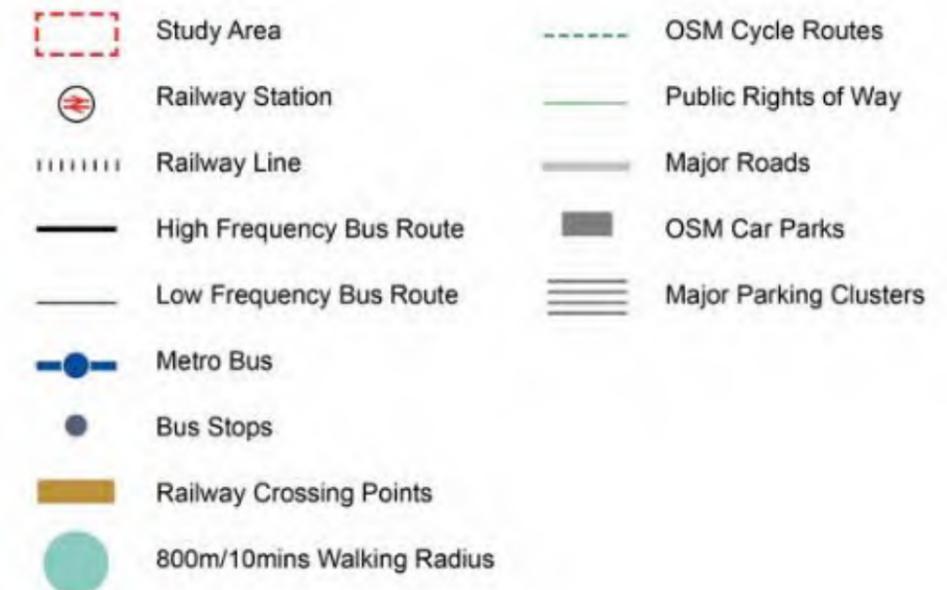
Rapid economic growth in the region has led to high levels of in-commuting for employment, with trips predominantly made by private

car. This, added to traffic generated by leisure and freight trips, in the region has created congested transport networks with repercussions for public transport services and other commuters travelling by private car or active mode.

Large amounts of free car parking provision at retail, leisure, and employment sites as well as unrestricted parking across residential areas, has been identified as a key challenge which is likely to be exacerbating increasing car use as well as limiting the potential for growth and place-shaping due to inefficient land use, synonymous with out-of-town developments.



Map of Transport Infrastructure in the North Fringe



Basemap: Google Earth Imagery

2.4.2. Public transport

Local and regional connections can be made by bus and rail in the north fringe.

Bristol Parkway rail station provides links to Bristol City Centre, London, the Midlands, the Southwest and South Wales, benefitting from electrification of the mainline to London. Other local connections can be made from two additional stations at Filton Abbey Wood and Patchway.

There is a good overall bus network coverage although most local services run at very low frequencies, even during peak times. The M1 Metrobus offers a high frequency service connecting the north and east fringes of Bristol, to Bristol City Centre and South Bristol. Plans are also in place to extend this service to stop at Parkway and continue through to Cribbs Causeway via Gipsy Patch Lane.

Once the Metrobus extension has been completed, the role of Bristol Parkway as a key public transport hub will be enhanced. Other locations where transport users can pick up several local and national bus services include Cribbs Causeway and UWE where service users can access national services, Metrobus and local connections to bus stations.

2.4.3. Walking, Cycling and Wheeling

Walking, Cycling and Wheeling captures all transport users choosing to travel by foot, bike, scooter, wheelchair, or mobility aid.

Whilst network coverage is wide, many of the routes are inconsistent in their quality and indirect or discontinuous. Many routes for cycling, which would be regarded as segregated, are just shared use footways which are often of substandard width. The lack of safe, segregated routes for pedestrians, cyclist and wheelers on main roads will make achieving high levels of active travel unrealistic across much of the study area. For example, even for the small proportion of the population that feel able to cycle, observations during key commuter times highlight that many cyclists are choosing to cycle on the busy highway opposed to the available shared use facilities, reflecting that they do not provide a viable end-to-end route.

Furthermore, major roads and rail lines in the study area pose major issues, where crossing is either dangerous/not encouraged, not possible at all (particularly in the case of the railway line), or the physical environment creates a perceived severance which will make individuals less likely to travel on foot or by bike.

2.4.4. Public realm

Much of the north fringe is dominated by highways, with infrastructure such as large-scale distributor roads leading to a low standard of public realm with streets being designed around cars and not people.

Whilst some local streets and cul-de-sacs in residential neighbourhoods benefit from properties with space allocated to front gardens, overlooking the road, and lower volumes of traffic which can improve the sense of place, the attractiveness of the wider area is limited by the large stretches of highway.

A lack of investment in street furniture and GI and a lack of natural surveillance has also created areas with poor public realm in local centres and other non-residential areas.

2.5. Property Market

A detailed Property Market analysis has been prepared as part of the baselining process of the Strategic Masterplan. Key observations from this analysis are reported here.

2.5.1. Summary

- Robust commercial and residential property markets underpinning new developments and repurposing of existing sites.
- Steady demand levels for all property sectors, although ongoing competition with city centre to secure knowledge economy jobs and investment.
- New office developments limited compared to city centre activity.
- Industrial and logistics space in high demand including last mile/urban logistics uses.
- Sustained demand for retail and leisure uses at Cribbs Causeway and the Mall, and Filton Retail Park.
- Deep technology specialisms in aerospace and digital technologies - growth likely especially from SMEs.
- Filton Airfield development is the key focal point for new development and a catalyst for the surrounding area – higher density development, public realm and green space, high quality employment space, integrated transport infrastructure.
- Post pandemic impacts yet to show in a significant way e.g., agile working patterns, shift to online retail, new urban distribution models but the north fringe market is expected to follow national trends and trends in the city centre such as repurposed retail buildings and divergence of the office market into high quality corporate occupiers and more general flexible offices.
- Regeneration opportunities in local neighbourhoods/town centres.
- Opportunities for densification and repurposing of current employment sites.
- Growing cultural/visitor sector – e.g., Arena, Zoo, Ice Rink.
- Transformations to major public sector campuses will influence land use and economy – UWE, MoD, Filton College.
- Number of new residential developments coming on stream together. Need to target growing types of housing occupiers, and affordability.

2.5.2. Update on general property market trends and forecasts

There are a set of wider factors which will influence the property market in the north fringe as elsewhere:

- Decarbonisation of real estate – the built environment accounts for 38% of global emissions. The MEES policy deadlines (Minimum

Energy Efficiency Standards for commercial buildings) will push occupiers and investors to undertake refurbishments to comply with the code and emphasises the attractiveness of compliant energy efficient buildings.

- 2022 will be a year of continuing recovery from the Covid-19 pandemic and see a release of pent-up demand including in the leisure, hospitality and tourism sectors which were hardest hit by the pandemic, despite pressure of inflation on consumer budgets.
- The COVID-19 pandemic has changed the way we work. Throughout 2021, the workforce fully embraced hybrid working during the many lockdowns and various government restrictions that the UK has lived through. The relatively muted levels of 'return to the office', when workers have been willing and able to, is evidence that hybrid working is here to stay.
- Despite the recent evolution of working practices, the office remains an integral part of business around the world. There is now a greater focus not on the quantum of office space, but rather how to optimise it for employees who can choose where to work based on the tasks and activities they need to carry out. Fewer companies are now looking to downsize their office space and there is increasing evidence that employees will choose between the office, the home or elsewhere based on the individual tasks of their day.
- Surveys have found that office workers feel that the home is best for planned meetings, routine tasks, and audio conferences while the office is best for learning from others, social interaction, using specialist equipment and hosting clients. This will of course vary based on employees' individual preferences, working styles and home and office set ups.
- Staff in high quality offices are more positive about their workplaces, with the focus being on productivity, learning, pride, and client care. High performing workplaces act as a pull factor that attract staff into the office. This is one of the fundamentals driving the so-called 'flight to quality'. Most the UK's major markets continue to have a Grade A supply shortage, and even with a tail off in demand, competition for prime space has widened the rental differential between Grade A and B office space.
- The pandemic has driven an increase in demand for a wider range of flexible solutions and minimisation of capital expenditure. This is driving an increase in the number of short-term leases and management agreements as well as the gradual return to flexible workspace take-up. As supply levels have increased and flexible occupier solutions have been in greater demand, more and more landlords have pivoted away from the traditional blank canvas shell and core and Cat A fit out where tenants are left to provide themselves with a working finish Cat B fit out. Given the broad nature in the type of fit-out from basic Cat A+ to fully fitted/plug and play transactions, rental premiums are also broad and will depend on the length of the lease, although the cost of the fit-out will generally be realised over a 3-to-5-year period.
- Build cost inflation has been increasing at an unprecedented rate. The unique factors of Brexit and COVID-19 have led to a 'perfect

storm' whereby the cost of both materials and labour have risen exponentially against a backdrop of a sharp increase in consumption. These factors have contributed to supply chain issues, congestion at ports and the volume of delays to imported goods has had a detrimental impact on construction costs. Overall, pricing pressures are likely to ease during 2022 at least partially, but the complexity of the supply chain issues and the cost of inflation impacting the sector will continue to have a sizeable impact during the year. Therefore, we expect to see in some cases delays, postponements, and reconsideration of development projects – with relatively little deflationary pressure likely to occur at least in the short term.

- 2022 will continue to see very strong demand for industrial and logistics space as the sector continues to benefit from the fundamental shift in the way we shop, as well as supply chain disruption. A tight supply picture will continue to put upwards pressures on land values, underpin appetite for speculative development, drive refurbishment of older stock. 2022 will see an increase in the diversity of demand, particularly at the smaller end of the market. We have already seen demand for dark grocery space increasing off the back of the growth in rapid grocery delivery services.
- New retail formats – while the traditional retail sector will continue to face challenges from online shopping there are new formats which are reinvigorating the sector; growth in the number of independent retailers is stimulating demand and conversion of shops to leisure and experiential offers. Over 650 live/former-retail stores were converted into mixed use schemes in the first half of 2021, and this is expected to rise further as local authorities and landlords take action to revitalise those high streets and shopping centres that now find themselves with lots of vacant units. Leisure operators will be assessing opportunities in prime locations as they look to expand across the UK.
- Successful retailers have always been at the forefront of innovation due to their ability to digest vast amounts of customer data to profile consumer behaviour. This profiling will become even more sophisticated in 2022 as organisations seek to deliver a more personalised shopping experience.
- One area where we are seeing strength is in the out-of-town retail market. 2021 has seen strong occupational and investor demand, and this is likely to continue well into 2022. This has been driven by the presence of popular big-box operators, increased demand from discount retailers and drive-thru restaurants. Residential – over the last year, transaction volumes have hit 1.5 million, the highest since the financial crisis and house prices have grown 10%. The most recent data points to continued growth.
- Despite the undoubted contribution the Stamp Duty holiday has had to boosting activity, the impact of the reassessment of housing choices following the pandemic live/work experience is increasingly apparent. House price growth in many other advanced economies which have not had a tax incentive to transact has also been very strong since the pandemic, pointing to impact this is having in society. There are other major factors which will help

continue to propel the housing market in 2022. The labour market continues to be robust, and we expect inflation to peak in the first half of next year, with pressures that are driving it receding as the year progresses. This will support the economy, underpin consumer confidence, and create a willingness to undertake house purchases.

- The strong uptick in the global economy, and the lessons learned in 'living with Covid' are driving money into real estate. The rebound in investment volumes in the UK has generally not been centred around value-seeking distress, as the level of government support has protected large swathes of the real estate markets. However, the removal of support in late 2021 and early 2022 will likely increase the supply of investment opportunities, and in turn, liquidity in the market. Industrial and residential will continue to be the focus of investor interest, with question marks hanging over the offices and retail sectors.

As shown in Table 2-1 there were 500 commercial properties providing c.17,800,000 square feet in the north fringe at March 2021. There is limited vacancy in the area, with a general rate of 3.9%, which can be considered as being below a healthy vacancy rate of circa 5-7% which would allow for turnover of tenants and attracting new occupiers.

Table 2-1 - Commercial properties north fringe

Primary Type	Properties	Floorspace (ft ²)	Average Floorspace (ft ²)	Vacancy
Office	184	4,390,451	23,861	4.7%
Light industrial	19	809,873	42,625	0.0%
Industrial	101	7,030,754	69,611	6.3%
Retail	156	4,001,568	25,651	1.2%
Health Care	3	168,027	56,009	0.0%
Hospitality	10	567,320	56,732	N/A
Sports & entertainment	3	128,135	42,712	0.0%
Speciality	24	699,414	29,142	0.0%
TOTAL	500	17,795,542	35,591	3.9%

2.5.3. Office market commentary

The Bristol office market is generally split into city centre, and out-of-town, which includes the north fringe study area. In Bristol City Centre there has been significant growth in the office rental market growth over the past few years leading to a shortage of stock, and high levels of conversion of office buildings to alternative uses under Permitted Development Rights (PDR). Prime office rents now stand in excess of £35 per square foot. By contrast the out-of-town market has experienced generally lower levels of demand, and although vacancy rates have been declining this has not been accompanied by rental

growth, with prime rents out-of-town rents having remained at £23.50 per square foot for the past few years. Unlike the city centre, there has been no significant office development activity out-of-town for several years.

Much of the existing office stock is in the northern part of the north fringe, along the M5. Some office properties are also located in local centres such as Filton, Harry Stoke and Stoke Gifford.

There is good demand for serviced offices though demand is higher in the city centre than out-of-town, and requirements are generally not footloose between the two locations. In the future, with the increasing move towards hybrid and flexible working, there will be an increasing blurring of the lines between serviced/managed, and leased workspace. Consequently, many landlords are now seeking to have a managed offering in the mix to spread their risk and meet tenant demand.

Clearly the COVID-19 pandemic has changed the way that businesses use their office space, and some of these changes are likely to become permanent. There is already evidence of companies seeking to downsize their office footprint by shedding surplus accommodation or even in some instances closing their offices entirely and moving to 100% homeworking. Going forward it is anticipated that a greater percentage of companies offering hybrid working arrangements, and a 'flight to quality' as the office becomes a place that staff come together to collaborate rather than a permanent workplace from 9.00 – 5.30, five days a week.

However, it seems likely that location decisions in the future will still be driven fundamentally by business need and, whilst activity has started to return in the city centre, and several new development schemes are underway, there is no sign at present of any upsurge in enquiries or development activity on the north fringe.

2.5.4. Industrial market commentary

The COVID-19 pandemic has fundamentally changed the way that the UK population and economy operate. For industrial land use it has rapidly accelerated trends that have been slowly shifting business and consumer behaviour over the last few years and probably will not reverse. These changes to consumer spending habits have driven significant demand for 'shed' space in key locations. The core activities driving this demand are major supermarkets, e-commerce, and third-party logistics providers. The north fringe is an ideal staging point for last mile logistics serving greater Bristol with the combination of housing, public transport, motorway links, clustering, and environment.

There is about seven million feet² of industrial space in the north fringe, most of which is used for warehousing/distribution and manufacturing activities.

The average rental value is £6.67 per square foot, with some new and with specialist properties achieving £8.50- 12.50 per square foot and above. The investment market for good quality industrial and distribution properties is in a buoyant period with exceptional demand. Yields are generally between 4.75% and 6.5% and for long term (20

years), prime covenant property might be 4%. In the north fringe the new Volvo dealership at Horizon 38 sold for a 5% yield.

In summary, any opportunity to provide employment land in B1, B2, B8 Use Classes in the north fringe will meet with strong demand and given that supply only exists where some businesses will not locate in Severnside, it is expected that these values will be robust.

2.5.5. Retail and Leisure market commentary

The north fringe has a diverse retail market including:

- The Mall Regional shopping centre and retail parks at Cribbs Causeway;
- The retail park at Abbey Wood at Filton;
- Bradley Stoke town centre;
- Filton town centre;
- District Centres at Patchway and Stoke Gifford; and
- Local centres and parades – North Gloucester Rd, Filton Avenue, and several parades in Patchway and Bradley Stoke.

At the Filton Airfield site, a new town centre is planned for the Brabazon development close to the proposed Arena site and new public transport hub. The town centre will comprise mixed use buildings with 5,000m² of retail and a hotel, community uses and a library.

The Arena site has planning permission for a 17,000-seat arena, a Festival Hall which can be used for events and conferences, and a Hub building which will include 11,000m² of leisure attractions and 4500m² of food and drink outlets. An impact study suggests the Arena retail and leisure offer will not impact on surrounding retail centres and will bring a positive contribution from overnight stays and event days.

In relation to post COVID-19 impacts it is expected that 40-50% of all non-essential retailing will be transacted online going forward, up from around 30% pre-COVID. In the future, high streets will need to become multi-purpose locations, combining retail and hospitality amenities with residential, education, healthcare, cultural, technology, community and more. South Gloucestershire Council has started to bring this into action with its regeneration of Kingswood High Street and Yate Town Improvement Masterplan.

Repurposing of existing retail buildings is an important consideration. Traditionally stores were always a combination of the retail and logistics functions. Recent trends suggest a renewed recognition of this dual role and as surplus retail space becomes cheaper and more available, innovations around local delivery will be a key part of reimagining the future of retail. However, the high specifications of modern distribution units mean conversion of standard retail warehouses will not always be practical or cost effective.

Whilst there is a comprehensive retail offer in the north fringe, the leisure offer is more limited despite the recent addition of the Venue at Cribbs Causeway offering leisure space (133,000 feet²). The area could benefit from the additional leisure facilities as the retail industry is shifting towards leisure and experience-based offer.

It is an ambition in the South Gloucestershire Council Local Plan 2020 consultation document to encourage the growth of the leisure and

cultural sector in the north fringe to add to its vitality and economic mix. There are several regional destinations built and proposed:

- The newly opened Aerospace Bristol Museum;
- Bristol Zoo relocation and Wildplace expansion;
- The Wave Surfing Lake;
- A new Ice Rink and leisure facilities at Cribbs Causeway; and
- The proposed 17,000-seat Arena and events space at the Brabazon development.

2.5.6. Residential market commentary

Table 2-2 - Co Star residential property analysis in north fringe

	Number of dwellings	Share of total
Detached	7,064	19%
Semi-detached	12,085	32%
Terraced	11,506	30%
Flat	7,350	19%
Shared dwelling	13	0%
TOTAL	38,018	100%

The most notable new developments sit within the CPNN area and the EHSNN. A large-scale scheme that is nearing completion of construction is Charlton Hayes for 2,200 dwellings, to the north of the former Filton Airfield.

Throughout the pandemic, interest in properties, reservations and purchases have been maintained at pre-pandemic levels, in some cases seeing a growth in sales rates, despite the lockdown.

Based on the above, buyer sentiment and therefore developer sentiment is strong now and coupled with a shortage of land available for development in much of the Southwest means that demand for land is strong resulting in high land values, especially in and around Bristol, especially for consented land.

2.5.7. Public Sector Property commentary

Public sector land and properties in the north fringe will play an important role in how future infrastructure is planned. Public sector services have a typical mix of assets across the area of varying ages and condition and some with strategic significance. These include:

- Southmead Hospital- a modern general hospital serving the north of the region location just outside the north fringe study area;
- A new Police Centre at Patchway serving the city region;
- The UWE main campus, which has expanded its scale and functions since acquiring the adjacent HP factory a decade ago;
- South Gloucestershire and Stroud College WISE and Filton campuses;
- The MoD Abbey Wood Campus comprises 19 buildings providing c.120,650 m² with c.14,000 employees.

South Gloucestershire Council and the Combined Authority are working through the WoE Joint Assets Board (JAB) to coordinate regional public sector asset owners and achieve financial efficiencies and support growth through collaboration and service integration. A key objective is to look for opportunities for integrated public service hubs which can support neighbourhood regeneration and amenities. This is particularly relevant to collaboration between NHS and local authority care services. The Health Hub at Patchway is an example of this combined service.

2.6. Planned infrastructure and development

Existing development and infrastructure proposals have been identified for consideration when developing the long-term vision for the north fringe.

Committed schemes have been identified through the interrogation of existing reports and planning documents. Longer term options have been identified through engagement with council officers across the Combined Authority and its unitary authorities to understand emerging opportunities across all sectors. By taking a step back to understand the current direction of travel for each sector in the north fringe these ideas can be built upon to develop a new ambitious and better-connected vision for the north fringe as a whole, up to 2050.

2.6.1. Planned growth

As is outlined in the South Gloucestershire Council adopted Core Strategy, there are two new neighbourhoods being developed within the north fringe Study Area (CPNN and EHSNN).

The proposed new neighbourhoods provide an exciting opportunity to build two new communities that enhance the urban edge of Bristol and form a key component in the Council's strategic housing provision up to 2027.

The new neighbourhood sites will provide new infrastructure including transport networks, green and blue infrastructure and community facilities which will benefit both new neighbourhood residents and residents of the wider area.

Several planning applications are already being processed for sites within the CPNN and EHSNN which must be considered as part of the Masterplan assembly process to ensure proposals complement, and where necessary, make recommendations to improve existing proposals.

Build out of the new developments will introduce new areas of high and medium density development including residential, mixed use, leisure and employment uses creating an opportunity to enhance the character of the north fringe through the introduction of new employment opportunities, visitor attractions and improved connectivity across the old airfield site.

All the new development sites will also incorporate green and blue infrastructure in the form of green corridors, managed sports pitches, recreation areas and playgrounds.

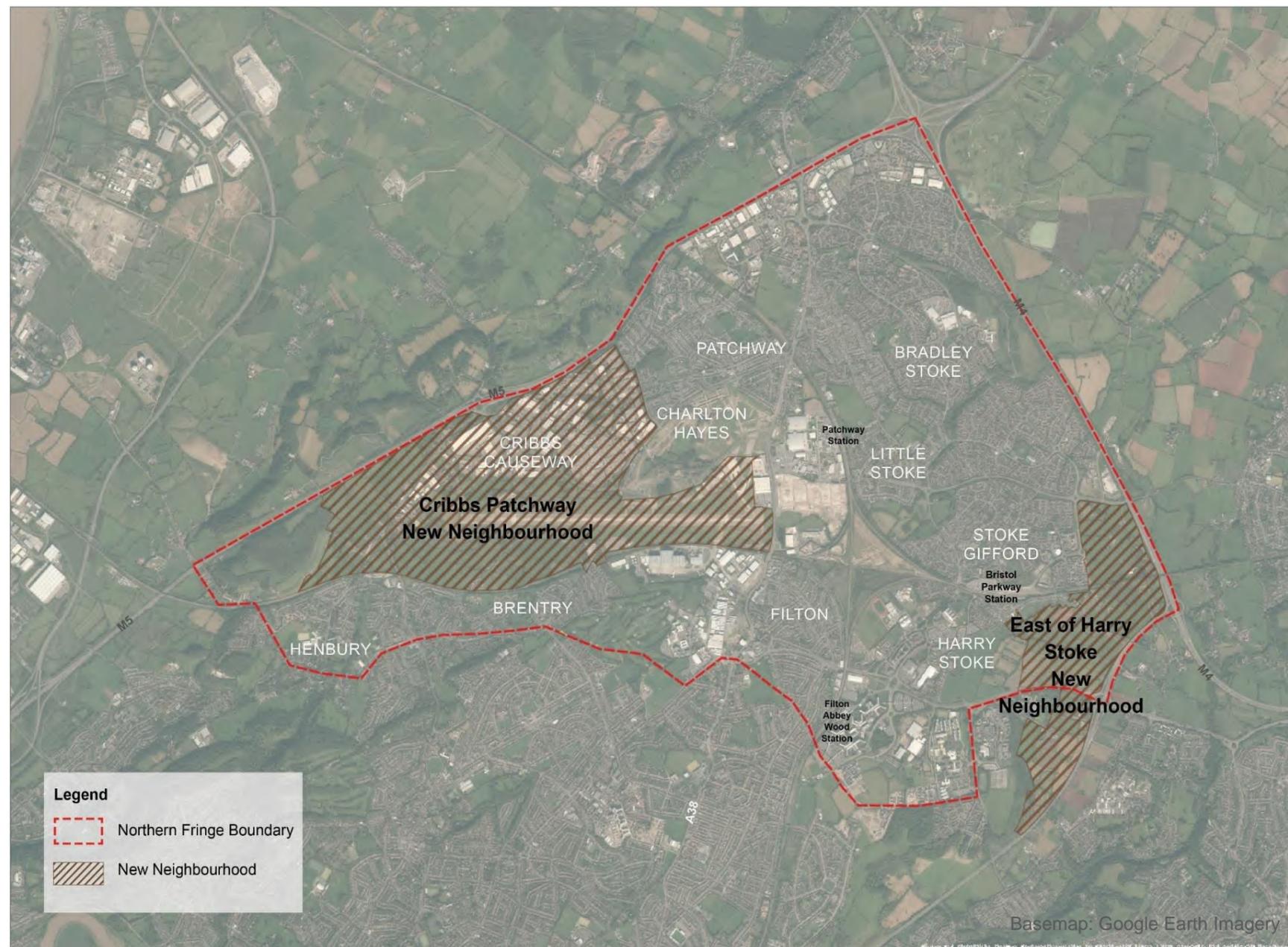
Based on current planning consents, once complete, the CPNN will provide 5,700 new dwellings and 50 Ha of employment space and the EHSNN will provide approximately 2,000 new homes supported by community facilities. Applications have come forward to fully develop the EHSNN and for the CPNN current planning applications will deliver nearly 5,000 of the proposed 5,700 dwellings and 24 ha of employment space.

Details of the major planning proposals currently being progressed within the New Neighbourhood sites are presented in Table 2-3. There are also a couple of smaller applications not presented here.

Several smaller sites are also likely to come forward across the wider study area through the call for sites process which will likely deliver small pockets of residential and industrial development.

Table 2-3 - Major proposals with planning consent in the north fringe

Site	Proposal	Status
Cribbs Urban Village (Haw Wood)	1,000 dwellings, 86 bed care home, primary school, mixed use local centre	Under construction
Fishpool Hill	1,100 dwellings, primary school	Approved
Filton Airfield	2,675 dwellings, 24 ha employment plus retail, commercial and community uses, railway station, secondary school, 2 primary schools, 2 nursery schools, 120 bed hotel, community centre	Under construction
YTL Arena Complex	17,080-capacity Arena and associated leisure facilities	Under construction
East of Harry Stoke	2,000 dwellings, mixed use local centre, primary school, nursery, extra care facility	Under construction



Map of New neighbourhood areas in the North Fringe

2.6.2. Transport infrastructure proposals

Transport infrastructure proposals and policy have been identified from the SPDs prepared for the CPNN and EHSNN as well as other adopted local transport policy including:

- Joint Local Transport Plan 4 (JLTP4);
- West of England Bus Strategy;
- Bus Service Improvement Plan;
- 10 Year RDP;
- West of England Transport Delivery Plan;
- Local Cycling Walking Improvement Plan (LCWIP); and
- Portbury, Avonmouth & Severnside (PAS) Transport Strategy.

Other proposed interventions, which are not yet committed, have also been identified through engagement with council officers to ensure a holistic understanding of current plans for investment is established so all schemes can be considered as part of the package of infrastructure required to enable a new long-term vision for the north fringe.

A list of committed transport schemes that have not yet been delivered, have been summarised in Table 2-4.

Table 2-4 – Committed transport schemes, not yet delivered

Scheme	Description	Status
Metrobus extension	Metrobus extension - Bristol Parkway to The Mall including bus priority.	Committed (2020-22)
A38 bus corridor	Phase 1 corridor investment: A38 corridor in the north fringe - only to Almondsbury not onwards to Filton roundabout	Committed (2023-24)
Metro West	New Stations at Ashley Down, North Filton and Henbury Station and hourly rail service at Filton and Henbury.	Committed (2022-23)
LCWIP	Walking and cycling improvements to enhance connections along: the A38; between Bradley Stoke Town centre and Abbeywood/Frenchay; and the A4018.	Committed (2020-2036)
Travel Planning	Travel Plans at new developments.	Committed
Strategic highway network improvements	Capacity enhancements at: M5 J17, M5 J16, A38 Aztec West Roundabout, A38/B4057 junction, A38/A4174 Filton Roundabout, A4018 Lysander Road. Conversion of A4018 Crow Lane roundabout to signalised crossroads.	Committed

In addition to these interventions, more ambitious investments, and initiatives, to improve public transport and active travel, are already being considered as part of emerging planning policy.

Emerging interventions and concepts include:

- Park and ride sites along the A38 and the A4018;
- Bus service improvements including Smart Ticketing and Real Time journey information; Further bus corridor enhancements including the A4174, A4018 and Bradley Stoke Way, and further enhancements to the metrobus service including fleet upgrades and improved supporting infrastructure;
- A long-term opportunity for a Mass Transit service connecting Bristol City Centre to the north fringe;
- Increased rail frequencies for services to/from the new Henbury and Filton stations;
- Future mobility zones including increased cycling parking and roll out of mobility hubs;

- Full electrification of the Great Western Mainline to Bristol Temple Meads, via Bath Spa and Bristol Parkway;
 - Introduction of policy measures to encourage EV uptake;
 - Support ongoing work, as appropriate, in the development of zero and low emission vehicles, including the necessary infrastructure including a regional electric vehicle charging network;
 - Urban traffic control/Smart City initiative;
 - Investment to support the role out of Connected Autonomous Vehicle;
 - Freight/goods deliveries consolidation centre;
 - Low emissions freight vehicles; and
 - Demand management – including review of availability of parking.
- These emerging concepts together set out a step change in the level of ambition regarding sustainable transport. The emphasis is on providing fully integrated transport networks which provide high frequency and easy to use services which are safe and affordable whilst to reduce reliance on the private car. For those trips which cannot be made via sustainable modes, the focus will be on the roll out of electric vehicle charging infrastructure and smart traffic control initiatives to manage demand and reduce emissions.

2.6.3. Utilities infrastructure proposals

Utilities interventions that have already been identified as being necessary to support planned growth (as set out in the adopted Core Strategy and the LIS), have been summarised in Table 2-5.

In addition to these committed schemes, there are several workstreams that are ongoing where further interventions and projects are being developed including:

- The roll out of heat networks to serve new, higher density developments;
- Potential for ground mounted solar to reduce carbon emissions and provide financial return; and
- Increasing grid capacity to support planned development.

It is noted that to create utilities networks that are future-proofed and able to support a low carbon economy, thought will need to be given to the potential impacts of future energy supply, climate change and the increasing shift to digital working on the resilience of our existing utilities networks. Work has already begun to make sense of these uncertainties including Western Power's Energy Planning Integrated with Councils (EPIC) project which is considering Distribution Future Energy Scenarios to develop a tool to support the development of local energy plans which take a more holistic view of the energy system. Careful study will also be required to ensure that as new development comes forward, suitable wastewater management systems are put in place to manage flood risk, including the implementation of solutions such as Sustainable Drainage Systems (SuDS).

Table 2-5 - Utilities infrastructure proposals

Scheme	Description	Planned start date
BNET fibre communications network rollout	Superfast Broadband - provision of support for new businesses to connect to broadband in Enterprise Areas	Committed
North Bristol relief sewer	Wessex Water North Bristol Relief Sewer is to provide the required additional sewerage capacity in the North Bristol to accommodate large scale development.	Committed
Waste transfer & SORT IT facility (CPNN)	Financial contribution towards waste transfer and SORT IT centre	Committed
Pylons	Undergrounding of overhead pylon lines, including EHSNN	Under construction
Umbrella network	Connecting the University of the West of England at Frenchay and the Bristol and Bath Science Park at Emersons Green via fibre and wireless connectivity creating a new research and development testbed for digital technology industries.	Under construction

2.6.4. Green infrastructure (GI) proposals

There is a wealth of local and regional policy and guidance in place to drive forward the development of high quality, multifunctional GI across the West of England. This includes:

- West of England Joint Green Infrastructure Strategy;
- South Gloucestershire Council's Landscape Character Assessment Supplementary Planning Document;
- South Gloucestershire Council's Greener Places Green Infrastructure Strategy;
- South Gloucestershire Council's Green infrastructure guidance for new development;
- South Gloucestershire Council's Biodiversity and the planning process;
- Building with Nature Standards Framework; and
- Natural England's National Character Area profiles.

Notably, the South West Local Nature Partnerships Nature Recovery Network programme identifies nature connectivity opportunities in the southwest and north east regions of the north fringe and the SPDs for CPNN and EHSNN set out standards for multifunctional GI at new developments including natural habitats and recreational spaces.

These proposals have been considered to inform recommendations for GI networks in the future vision for the north fringe.

3. Issue and opportunity analysis

3.1. Land use

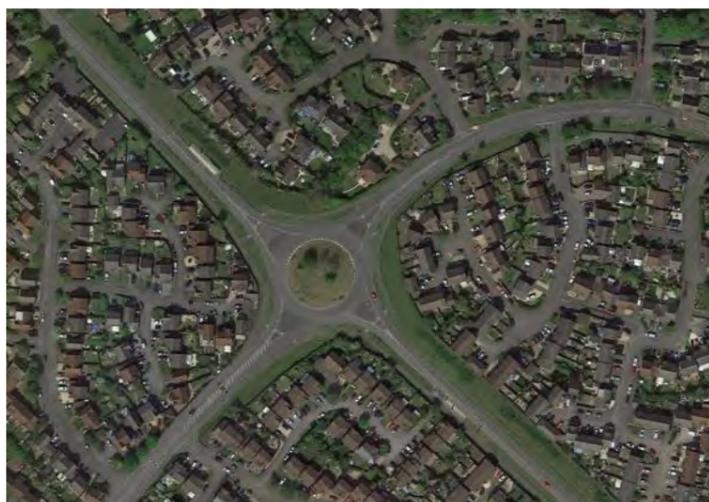
The north fringe is characterised by large areas of mono land use, whereby large areas of residential space sit adjacent to large impenetrable areas of industrial land, contributing to the car-dominated nature with limited access to local amenities such as shops, health care and leisure facilities.

Example of land use separation in the north fringe



The highway network is characterised by large junctions and roundabouts which create severance between communities, isolate areas of green space, and reduce the amount of space available for development.

Example of large roundabout in the north fringe



Furthermore, constraints of the Green Belt mean there is limited land left to be developed in the north fringe so opportunities will need to be identified to make more efficient use of currently underutilised land to achieve overall growth in housing and jobs.

Opportunities for land use change

There is an opportunity to introduce more mixed-use development by making more efficient use of currently underutilised land. This will introduce diversity and contribute towards building 15-minute neighbourhoods with improved local access to education, employment, healthcare, retail, and leisure.

By maximising opportunities for development within the existing urban area, further opportunities can be realised including a reduced need to build out into the green belt and increased viability of sustainable transport.

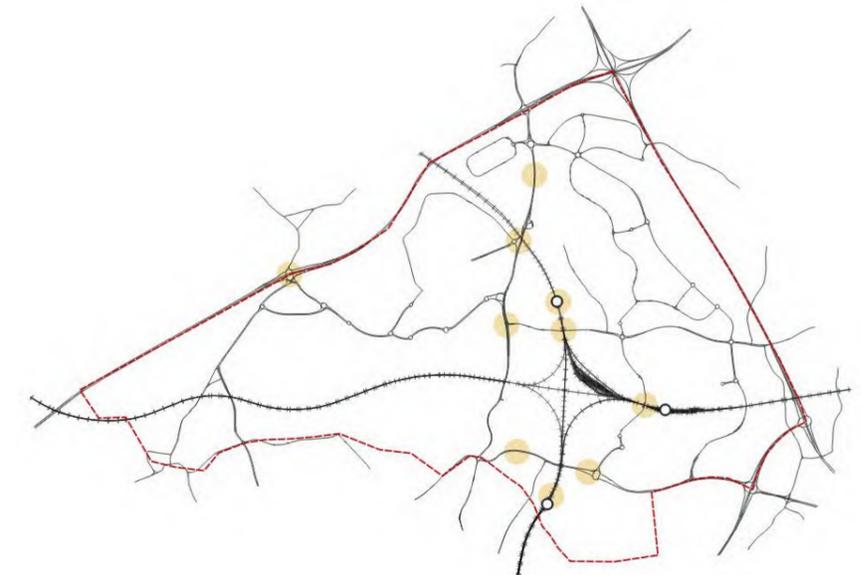
3.2. Transport and movement

The transport and movement framework across the north fringe has historically been built around the car as the primary choice of movement. This has created a place which is unattractive, and often unsafe, for walking, cycling, and wheeling and there is a lack of facilities within walkable distances from many residential areas. High demand for car travel has also led to congested roads and poor public transport services.

Where journeys can be made by public transport, the journey duration will often be significantly longer than the same journey made by car. In many cases users will be forced to change between services to complete their journey. Moreover, many users will need to walk long distances to reach a station or bus stop to begin their journey, due to

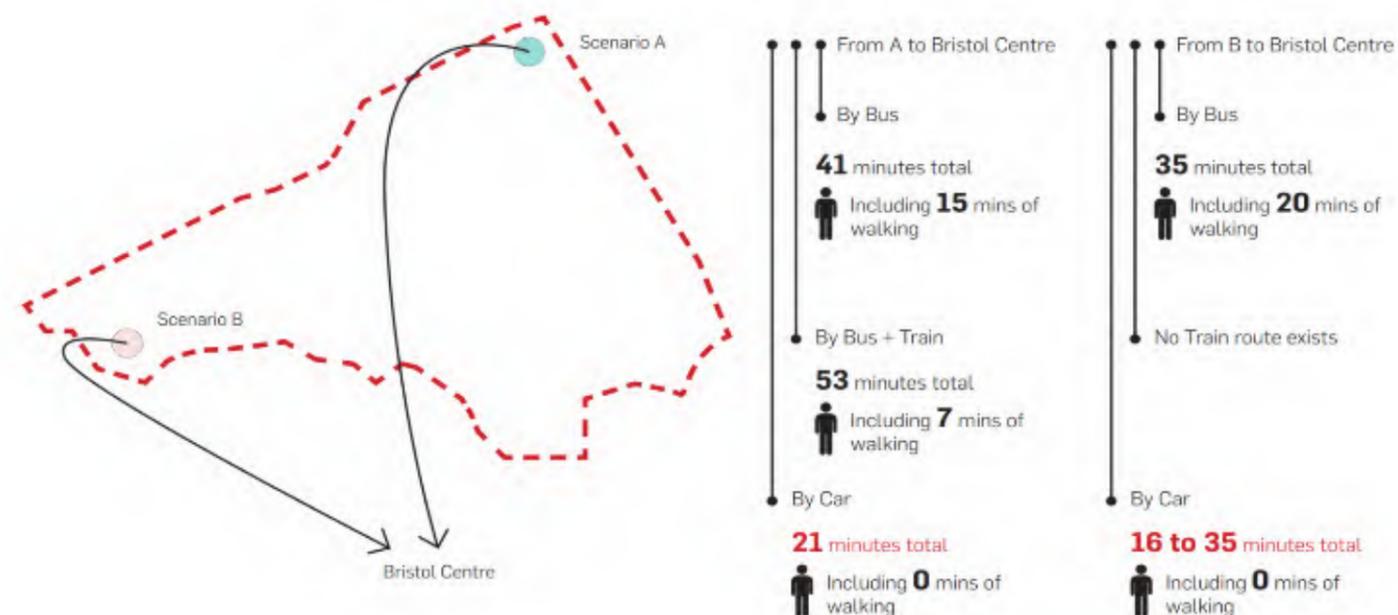
the poor penetration of the public transport networks into local centres. Whilst Metrobus has improved access to Bristol City Centre, it only penetrates the eastern side of the north fringe.

Major points of severance



The roads and rail lines create major points of severance, creating an environment which is often impenetrable by foot or by bike.

Key points of severance include the A4174 by the MoD and Filton; several locations along the A38; and the rail lines.



How people travel from the north fringe to central Bristol

Significant free car parking provision in the north fringe reinforces its car-centric nature, creating unattractive environments, and prioritising car use over public transport or active modes.

Areas with large clusters of car parking



These challenges paired with the dispersed trip patterns in the north fringe have led to a high level of daily commuting and a high car mode share in the area.

How people travel to work in the north fringe¹

	Public Transport	Driving a car or van	Bicycle	On foot	Other
2011 Census (North fringe)	8%	72%	6%	6%	7%
2021 TTW (Aztec West)	6%	78%	7%	3%	4%
2021 TTW (Bristol Business Park)	5%	65%	9%	19%	2%
2021 TTW (Filton)	7%	59%	21%	10%	4%
2021 TTW (Stoke Gifford)	5%	74%	10%	9%	2%

The COVID-19 pandemic saw some considerable changes to travel behaviours including increased home working and an increase in the use of active modes.

Homeworking - 2011 census and the latest Travel to Work Survey¹

In 2011, approximately **4%** of people were **working mostly from home**

In 2021, approximately **73%** of people were **working mostly from home**

However, when you consider both the level of population and economic growth forecast across the region, and the fact that journeys to work only count for approximately 15% of all trips, reliance on positive behaviour change and impacts from the pandemic, will not suffice as a stand-alone solution to tackle the transport challenges in the north fringe.

Opportunities for Transport and Movement

In the north fringe a step change in sustainable transport services is required to support sustainable growth whilst addressing other issues relating to climate, health, and inequality and placemaking.

This can be achieved by building on existing proposals in the JLTP4, LCWIP and RDP to:

- Embrace opportunities to create 15-minute neighbourhoods through investment in high quality urban realm and active travel connections to local facilities;
- Address key points of severance through high value infrastructure investment;
- Rationalise car parking to create space for other land uses and to discourage travel by private car;
- Improve the quality and integration of public transport services;
- Embrace new technology to support last mile transport solution; and
- Turn roads into streets so the aspirational user hierarchy becomes more apparent (active users > public transport users > highway users).

3.3. Green and blue infrastructure

Much of the land within the north fringe has already been developed and most of the remaining empty sites have been granted planning permission.

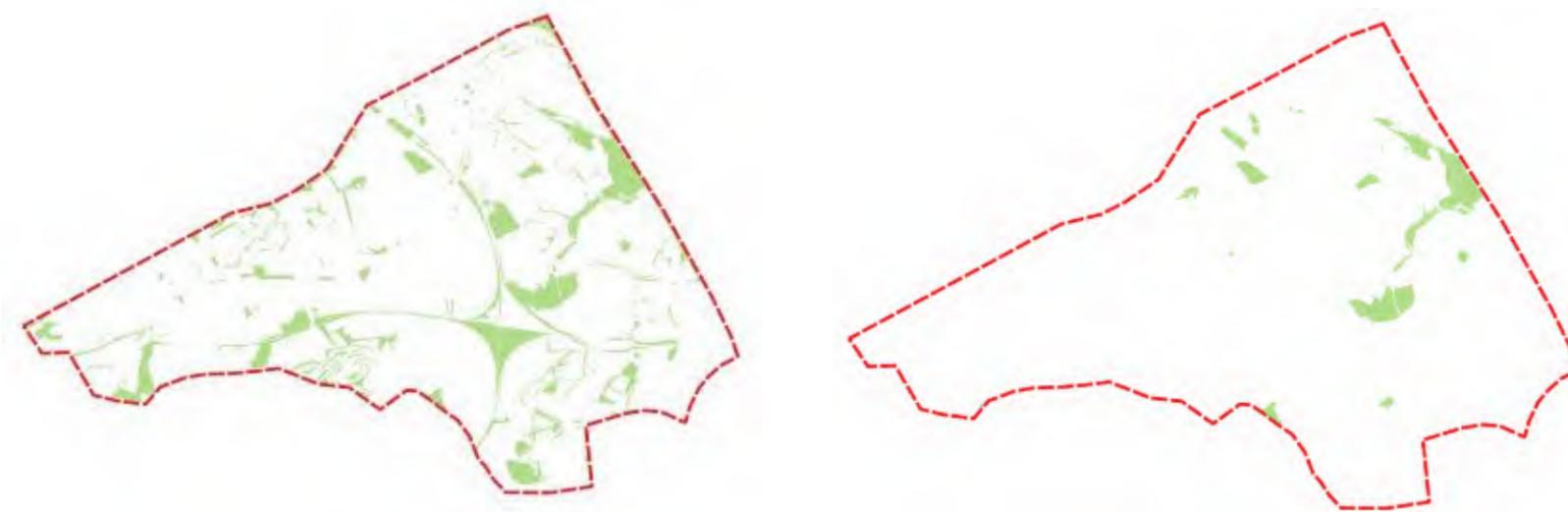
Whilst the new sites coming forward will offer elements of open green space and integrated GI, the forthcoming development will reduce the overall GI provision compared with the amount of open green space which is currently available. If the proposed integration of GI within new sites is not carefully planned, there is a risk that existing GI networks will become even more fragmented.

In terms of the existing provision, whilst there are several large areas of existing GI in the north fringe, including natural and semi-natural habitats, there are several challenges in terms of the quality and connectivity of these sites for biodiversity and recreational purposes. Furthermore, the potential benefits of GI for climate mitigation and resilience are also not being maximised.

Firstly, large swathes of transport infrastructure including major roads and rail lines sever habitat connectivity and movement for wildlife and much of the GI in the north fringe provides very limited value for nature and landscape. For example, many public parks and green spaces adjacent to roads and rail lines is amenity grass cut with low biodiversity.

Many of the public green spaces in the north fringe have also not been created with good urban design principles in mind, with many spaces positioned at the periphery of development making them hard to reach by foot or bike and creating poor natural surveillance.

Finally, opportunities are currently being missed to integrate GI into the public realm and other infrastructure. For example, street trees, green cycleways and green roofs could transform the public realm and the introduction of SuDS could improve wastewater management whilst simultaneously increasing GI in the north fringe.



All green space vs green space allocated for general recreation

¹ 2011 census for the north fringe, 2021 Travel to Work Data

Opportunities for Green Infrastructure (GI)

There are several opportunities to enhance the role of multi-functional GI in the north fringe to contribute towards key goals set out in the West of England Joint Green Infrastructure Strategy; South Gloucestershire Council's Landscape Character Assessment Supplementary Planning Document; and South Gloucestershire Council's Greener Places Green Infrastructure Strategy.

- Create wildlife corridors between existing ecological assets to enable the movement of wildlife through existence points of severance such as road and rail lines;
- Maximise opportunities on underutilised land to introduce new areas of high-quality natural habitat within the north fringe;
- Invest in GI to create new larger scale nature reserve areas across the Severn vale to connect and enhance the areas growing green tourism offer and support flood resilience and nature recovery aspirations;
- Integration of GI with other infrastructure including transport, buildings and wastewater management (e.g. green cycleways, green roofs and SuDS);
- Improve accessibility to existing green spaces to benefit the health and wellbeing of the communities of the north fringe including improved access to green space outside beyond the urban area (e.g. Severn Vale);
- Ensure new development is planned with GI at the heart of placemaking; and
- Utilise GI to create attractive areas for investment and job creation.

which should be encouraged includes sites for industrial technology, innovation and research facilities, new retail and leisure formats, flexible offices, and urban logistics uses balanced with affordable housing and local amenities and community facilities.

Engagement with key education providers has also identified challenges in planning for post-16 education for students wanting to continue study through alternative routes to A levels, including apprenticeship schemes.

Finally, uncertainties surrounding the post Brexit economy and COVID-recovery and Climate Change mean future growth and the facilities which support that growth needs to include more flexible spaces for instance in the office and innovation centre sectors which can adapt to changing working patterns and support small to medium businesses and start-ups in particular

Opportunities for clean and inclusive growth

Opportunities have been identified for inclusive and sustainable economic growth which aligns with the priorities of the Local Industrial Strategy and the ELSNA to develop the right skills, businesses and infrastructure:

- Invest in the skills and knowledge of the local workforce to drive forward innovations in aerospace and green technology;
- Employ a joined-up approach to education employment and skills to train the right people up at the right time;
- Provide residents with support, information and advice to unlock career potential;
- Provide sufficient funding and facilities to support post-16 students through vocational routes aligned to the green economy;
- Build the right facilities and infrastructure to meet the needs of businesses, particularly in the Aerospace and Advanced Engineering, Professional Services, Creative and Digital and last mile distribution sectors;
- Invest in high quality employment spaces, world-leading digital connections and future-proofed energy networks to support an innovative economy where new green technologies can thrive;
- Explore innovative new typologies, such as multi-storey industrial facilities to meet the demand for space across the region
- Subsidise rent to encourage small businesses to move into the north fringe;
- Improve access to employment for the sub-regions most deprived localities and broadening labour market reach; and
- Create more affordable homes with a range of housing types to enable people to both live and work in the north fringe.

3.4. Economy

The north fringe has the potential to play a key role in driving forward the four key priorities set out in the West of England's Local Industrial Strategy relating to cross-sectoral innovation and research, inclusive growth, adoption of new technologies and capitalising on the region's innovative strengths to deliver the infrastructure necessary for future growth.

Congested and unsustainable transport networks are creating challenges in connecting people to job; and businesses to customers and supply chains within the region.

The imbalance of land uses has led to high levels of in-commuting and local centres developing as place which are synonymous with out-of-town shopping environments opposed to being designed to serve the residents who live there.

This environment has created market pressures which don't support balanced and sustainable economic growth which will drive forward new innovative businesses into the region. The type of investment

3.5. Property market

There is a thriving property market operating in the north fringe which can support the growth of the knowledge economy and support business and provide more sustainable neighbourhoods for residents and visitors.

Notwithstanding this, there is a great deal of uncertainty regarding post-COVID trends and how these will impact the market over the coming years.

Potential structural trends include:

- Permanent increase in online shopping and conversion of retail space into new retailing and urban logistics formats;
- Diversion of the office market into high quality occupier/HQ buildings and flexible office formats to meet agile working patterns;
- Continuing high demand for all forms of logistics space;
- Requirements for R&D and Innovation space in the north fringe driven by the key tech organisations and their SME supply chain;
- Densification of new residential developments like the airfield alongside amenities, service centres and green space;
- New leisure developments taking up vacant retail spaces; and
- Major campus occupiers like MoD and Aviva reviewing their future accommodation needs.

In the meantime, the conventional market continues to be buoyant with recent activity including:

- Major office lettings to the Nuclear Decommissioning Authority (Key Point) and MoD;
- Forward funding of the Bayliss scheme at Filton Retail Park for Aldi and Premier Inn;
- Opening of the Vue Leisure Ice Rink at Cribbs Causeway and proposals for further restaurant and leisure uses;
- Closure of Debenhams and Marks and Spencer in the city centre putting more emphasis on the major department stores in the Mall; and
- Investment transactions including the RAC building at Almondsbury which has recently sold for a 5% yield, and the pre-let development of 100 Bristol Business Park with Babcock International as the tenant sold for 4.75% yield.

These potential changes to market trends will require a flexible approach to planning and urban design to ensure that as these needs change development still comes forward through joined up approach which is considerate to the communities of the north fringe.

Opportunities to influence the market

There are several key locations which will act as catalysts for growth and transformation depending on how they develop over the next few years. These include Filton Airfield, Cribbs Causeway, Aztec West, and adjoining business parks, and the Abbeywood/UWE to Stoke Gifford area.

It will be important to ensure there is a supply of innovation and specialist R&D space to support growth of the knowledge economy and continued engagement with key players across the north fringe to ensure new development is well-integrated with surrounding communities.

Increased intensity of development will also place pressure on capacity of existing sub-stations in the north fringe which are already nearing capacity in some locations. The future uptake of electric cars and air source/ground source heating could place further strain on electricity supply.

As industries become increasingly reliant on digital technology, to support home-working, other industrial applications and innovative transport systems which rely on digital connectivity, reliable and fast digital connections across the whole of the north fringe will become increasingly important to enable continued economic growth.

3.7. Key conclusions

By realising many of the opportunities outlined above, the north fringe can contribute towards the pathway to net zero carbon emissions and respond to the changing climate whilst becoming a more equitable and economically thriving area, with people and nature at its heart.

It will be a place which is known for its industrial heritage and role in aerospace and innovation as well as encompassing distinct and inclusive communities, designed for the residents who live there but which are also attractive to visitors for both employment and leisure.

Opportunities for utilities networks

Opportunities for utilities infrastructure have not been considered in depth as part of this project. However, some key principles and opportunities for future provision have been identified:

- Embrace innovative technologies to address sewerage capacity issues including better integration of GI with new developments to introduce SuDS that relieve capacity from surface run off whilst mitigating against rising temperatures;
- Ensure electricity supply networks are resilient to increasing density of development;
- Identify opportunities to improve the efficiency of energy, waste, and water networks through promoting collaboration and innovation to develop a more circular economy in domestic and commercial settings (e.g. recycling excess heat generated during commercial activity);
- Expansion of heat networks and identification of other opportunities to generate renewable energy, for example through ground mounted solar to reduce carbon emissions and provide financial return;
- Continued roll out of superfast broadband; and
- Invest in high-powered computing capabilities in the region to become a market leader in the digital sphere

3.6. Utilities

Utilities networks across the north fringe will need to evolve over the next few years to respond to climate change impacts, including physical changes to the environment and changing policy, as well as responding to increasing pressure from new development and a growing population and a changing economy which is becoming increasingly reliant on digital connectivity.

In the north fringe supply of water is not expected to be an issue. However, the area is already prone to flooding in some locations and increasingly occurring adverse weather events will place increasing pressure on waste-water facilities with wide-reaching impacts on things such as food production.

For energy, future challenges will be focused on building utilities networks which will be adaptable to changing energy provision in line with the regions progress along the pathway to net zero.

Currently, much of the existing development across the north fringe is reliant on gas boilers within old buildings which perform poorly in terms of energy efficiency.

Gas is currently supplied across the area by Wales and West utilities through an extensive pipeline network comprised of both high pressure and low-pressure lines.

Work is being done through the National Grid Future Grid project to better understand the potential for the existing National Transmission System (NTS) to be converted to transport hydrogen as well as proposals moving ahead to install heat networks.

4. Vision and Aspirations

4.1. A Vision for the north fringe

“Over the next 30 years [by 2050] the north fringe of Bristol urban area will continue to be a major economic driver in the West of England and the wider South West.

It will continue to maintain and re-shape its role as a major focus for employment, commercial and retail activity, education, and learning.

Harnessing innovative transport solutions and green technologies will help to create a climate resilient north fringe with a thriving low carbon economy and lifestyle reflected in our travel, homes, businesses and communities.

The distinctive identities and heritage of the existing communities and neighbourhoods will have been strengthened.

The development of new and existing neighbourhoods will follow the 15-minute neighbourhood principle to create neighbourhoods which are better connected with residents and workers able to access local amenities and employment by high quality public transport, walking and cycling links.

Nature and access to green space will be enhanced through opportunities to provide new, improved and better-connected green spaces, within the existing urban area which support adaptation and resilience to the changing climate, restore nature, improve health and wellbeing and which connect to the wider countryside, to create a greener north fringe where people and nature thrive.”

4.2. Aspirations

The aspirational vision for the north fringe has been considered alongside key challenges which must be addressed when planning for sustainable development as outlined in the NPPF.

Based on these, 9 distinct aspirations have been identified which the strategic masterplan will aim to address through an infrastructure-led strategy to deliver a cohesive vision for the north fringe.

All aspirations are underpinned by the primary challenges associated with sustainable development of achieving a pathway to net zero carbon emissions and climate resilience, equality and diversity and economic growth.

A summary of the 9 aspirations is presented below and further details regarding how each aspiration will be approached is provided over the next few pages.

Table 4-1 - Aspirations for the Strategic Masterplan

PRIMARY CHALLENGES FOR SUSTAINABLE DEVELOPMENT		
Net Zero and Climate resilience	Equality and diversity	Economic growth
KEY ASPIRATIONS TO BE REALISED THROUGH A PLACEMAKING AND INFRASTRUCTURE-LED STRATEGY TO ADDRESS THESE PRIMARY CHALLENGES AND REALISE THE VISION		
Increasing the use and function of green space to enhance the landscape and the environment	Protecting existing natural and historic environments	Delivering a sustainable Transport system
Delivering utilities that meet the challenges of the future	Prioritising people and place through diversifying land use	Improving access to opportunities and education
Integrated approach to new development	Strengthening role as a regionally important employment location and tourist destination	Making a significant contribution to the regions housing challenge



Rolls Royce - Filton



EV charging points and bike lanes - Filton



Three Brookes Nature Reserve – Bradley Stoke



Increasing the use and function of green space to enhance the landscape and the environment

Better integration of green spaces to protect and restore nature, provide resilience to changing climate, support wastewater management and improve health and wellbeing by:

- Delivering higher standards for GI in new developments including higher standard for the quantity and quality of GI to be provided in new developments as well as requirements to improve connections to existing GI networks
- Increasing the integration of small pockets of GI and street trees in the public realm, and in new and existing developments, for enhanced placemaking and increased pollinator network
- Addressing major points of wildlife severance through creating wildlife corridors to make a significant contribution to biodiversity net gain and enhance regional nature recovery networks
- Improving connections to areas of green space within the north fringe
- Improving connections to large areas of public green space outside the North Fringe including the Severn Vale, Blaise Castle Estate and Stoke Park
- Integrating GI into infrastructure for wastewater management (e.g., SuDS)
- Better management of existing waterways



Protecting existing natural and historic environments

Ensuring that all infrastructure proposals enable thriving communities with a clean and biodiverse environment, where natural assets and historic assets are protected, and natural resources are used prudently by:

- Identifying opportunities to repurpose existing buildings to save resources.
- Ensuring new developments are built with efficiency in mind when designing for energy and water management systems and when procuring materials for construction
- Ensuring that new development is designed in a way that is sensitive to surrounding historic or environmental assets such that new development enhances such assets
- Celebrating the industrial heritage of the north fringe through promotion and education to bring the local communities who live within the north fringe closer to this history of aerospace and innovation
- Enhancing existing green space as new development comes forward to support protected species that inhabit the north fringe and to encourage greater species diversity through effective habitat management



Delivering a sustainable Transport system

Providing a more integrated, convenient, safe, attractive, accessible for all, sustainable transport network with priority given to public transport, pedestrians, cyclists, and wheelers (e.g. wheelchair users) by:

- Applying urban lifestyles principles and place making to reduce travel demand and free up some capacity on existing transport networks
- Reconfiguring bus routes to introduce new interchange points to pick up other bus, rail, or last mile connections
- Introducing higher frequency bus and rail services and two new rail stations at Filton and Henbury
- Investing in Mobility as a Service and Future Transport solutions to make journey planning as easy as possible.
- Upgrading existing walking, cycling, and wheeling networks to LTN1/20 standards
- Introducing bus priority measures through reallocation of highway capacity and improving waiting facilities at bus stops
- Addressing major points of severance
- Reallocating car parking to other uses as public transport services are improved.
- Implementing more electric vehicle charging infrastructure and carbon neutral bus fleets



Delivering utilities that meet the challenges of the future

Proving utilities (such as energy, digital and water networks) that will support future growth and be future proofed against changes in technology, policy, and the climate by:

- Considering alternative scenarios to ensure that new infrastructure we put in place today to address energy supply is future proofed against changing sources of energy as we move toward more sustainable means of energy generation
- Ensuring new developments are built to a high standard in terms of their energy efficiency and wastewater management efficiency to reduce electricity demand and reduce wastewater run off
- Prioritising the roll out and maintenance of superfast broadband to support the growing digital economy and increased homeworking
- Embracing technologies to improve wastewater management and free up capacity through investing in SuDS
- Expanding heat networks and identifying other opportunities to generate renewable energy, for example through ground mounted solar



Prioritising people and place through diversifying land use

Improving health and well-being by provision and access to a greater range of social, cultural, community, recreational facilities, and green spaces for new and existing communities in in the north fringe of Bristol by:

- Introducing more mixed-use development by making more efficient use of currently underutilised land to create more places where people can live, work, shop, relax, learn, and access vital services such as healthcare and green space without leaving their local area.
- Applying urban lifestyles principles to create 15-minute neighbourhoods with improved access to local facilities by walking, cycling, and wheeling
- Improving permeability for pedestrians, cyclists, and wheelers by introducing streets and a greater mix of uses within campus style developments and addressing key points of severance across the north fringe
- Changing major roads into streets
- Identifying opportunities to introduce a greater range of uses to encourage a 'stay and spend' culture for those working and visiting the tourist and leisure destinations in the area, whilst protecting economic functionality



Improving access to opportunities and education

Supporting residents across the north fringe of Bristol to reach their potential and develop the skills needed to continue to drive economic growth in the region, in line with the Local Industrial Strategy by:

- Bringing together a broader range of budgets and interventions linked to addressing careers advice, worklessness, in-work progression, and both digital and physical infrastructure to better connect people to opportunities.
- Establishing a two-way flow of information to ensure development of regional apprenticeship provision is well-informed and responsive to the needs of employers and residents.
- Moving towards a more flexible approach to infrastructure and planning for education which is responsive to the evolving skills requirements of the Fourth Industrial Revolution.



Credit: Rich McD



Credit: Rich McD.



Credit: Rich McD.

Integrated approach to new development

Taking a comprehensive and integrated approach to new development to ensure new sites contribute towards the broader vision by:

- Setting higher design standards for new buildings in terms of energy efficiency and wastewater management, to contribute towards the net zero pathway and future climate resilience
- Setting clear placemaking requirements for new development to ensure new development is aligned to the overall placemaking vision for the north fringe and benefits existing communities through improved connections and access to services
- Reducing the requirements for private parking availability at new developments, and increasing requirements for car club spaces
- Increasing requirements for access to public transport services at new developments
- Increasing standard for GI at new development to encourage a greater quantity and quality of multi-functional GI
- Ensuring new development is coordinated with the delivery of improvements to public transport services and connections for pedestrians, cyclists, and wheelers to optimise the use of sustainable travel



Strengthening role as a regionally important employment location and tourist destination

Ensuring that the north fringe of Bristol maintains its role as a major economic driver in the West of England, making the West of England economy one of the most prosperous, innovative, and vibrant in Europe by:

- Providing better quality, more flexible and higher density office space
- Exploring innovative new typologies, such as multi-storey industrial facilities, to meet the increasing demand for space across the region
- Build the right facilities and infrastructure to meet the needs of key businesses, particularly in the Aerospace and Advanced Engineering, Professional Services, Creative and Digital and last mile distribution sectors
- Investing in high-powered computing capabilities and superfast broadband to become a market leader in the digital sphere
- Taking opportunities to provide more balanced employment across the district so that every community has access to employment locally
- Improving regional transport links to enable visitors to travel to regional tourism and leisure destinations at Cribbs Causeway and into the Severn Vale by sustainable modes



Making a significant contribution to the region's housing challenge

Providing new and affordable homes by:

- Making more efficient use of underutilised land to identify more land for development within the existing urban area of the north fringe to reduce the pressure on greenfield sites
- Increasing the level of ambition at forthcoming sites on currently undeveloped land by allow development to come forward at higher densities if integrated with high quality public transport services
- Ensuring that new housing coming forward is suitable to serve the needs of the local community by providing a range of home tenures, types, and sizes

5. Place-based principles and illustrative opportunities for change

The vision and 9 supporting aspirations, set out in Chapter 4, seek to address the key challenges of sustainable development to set a vision for place-based investment across the north fringe, that closes the equality gap, enables sustainable growth, and responds to the climate and ecological emergency.

Through the vision and 9 aspirations, ambitions for the economy, land use, multi-functional green infrastructure (GI), sustainable transport, natural and historic assets, future utilities networks, access to education, integration of new development and contributions to the regions housing needs are set out.

This Chapter draws out the key principles and spatial concepts that underpin the vision and aspirations to bring these to life by first exploring opportunities for land use and sense of place; Green Infrastructure (GI); and Transport and Movement networks across the north fringe as a whole, before presenting some localised illustrations of spatial concepts, to demonstrate how the vision can be realised in key locations across the north fringe.



5.1. Strategic spatial concepts

These concepts will support South Gloucestershire Council's new Local Plan 'urban lifestyles' approach. However, as set out in the masterplan, there will be a need for further studies to identify and prioritise the places which require change and provide specific design guidance for each sub area of the north fringe to deliver this vision/objective.

In the sections strategic spatial concepts are explored for land use and sense of place; GI; and transport and movement to bring to life the ambitions set out in the vision and aspirations presented in Chapter 4, as well as the key principles for infrastructure phasing and delivery over the next 30 years.

5.1.1. Land use and sense of place

The vision for land use and sense of place in the north fringe is to promote a more holistic approach to street design and land use to create a stronger sense of identity and heritage in new and existing communities, whilst maintaining the role of the north fringe as a major focus for employment, commercial and retail activity, education, and learning.

This will be achieved by strengthening connections between existing communities as well as identifying opportunities to achieve more integrated and efficient use of available land. This is to move towards a more 'urban lifestyles' approach where a greater range of land uses can be provided to improve the sense of place and improve access to opportunities, education and employment for residents and visitors of the north fringe.

This range of uses can include places for people to live, as well as including employment opportunities, leisure activities, cultural facilities, and shops.

By identifying opportunities to introduce mixed uses into new and existing areas, we can create vibrant destinations and offer an enhanced experience for residents and visitors, and increase the amount of people who live in, work in, and visit the north fringe. Particularly, the high streets and town and district centres can be made more sustainable and vibrant to ensure that they thrive in the future.

“Over the next 30 years [by 2050] the north fringe of Bristol urban area will continue to be a major economic driver in the West of England and the wider South West ”

Strengthening identity and community function

The sense of place is fundamental to creating a richer and more fulfilling environment. It comes largely from creating a strong

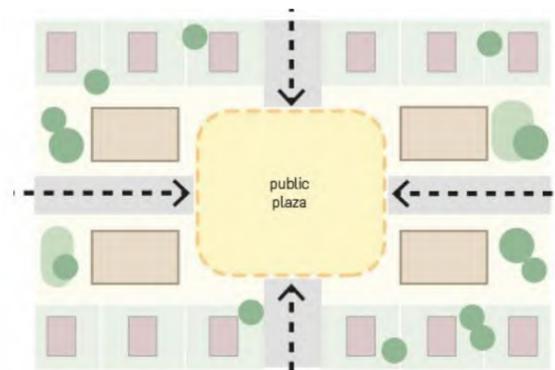
“It will continue to maintain and re-shape its role as a major focus for employment, commercial and retail activity, education, and learning.”

relationship between streets and the buildings and spaces that frame them.

In the north fringe there are several distinct communities where it will be important to identify distinct character types on a location-specific basis with reference to both the place and movement functions for each street to ensure existing identity and heritage is celebrated and strengthened.

Where possible, many of the roads across the north fringe need to move towards becoming streets which are flexible by design and which place people at the heart of the design process, acknowledge diversity and difference and provide buildings and environments that are convenient and enjoyable to use for everyone.

Highway layout which prioritises place and community function



Identifying opportunities for mixed use in existing communities

A key challenge in the north fringe is moving away from the previous 'out of town model' that prioritised vehicular movement over place, efficiency, and sustainability. Large amounts of surface level parking, major roads and a segregated land-use model currently disconnects neighbourhoods, creating a place which is illegible for pedestrians, cyclists and wheelers and increases the need to drive from one place to another.

The urban area of Filton is an excellent example of a place where its history and heritage are one of its greatest strengths but is also creating a disconnect between the communities that live there.

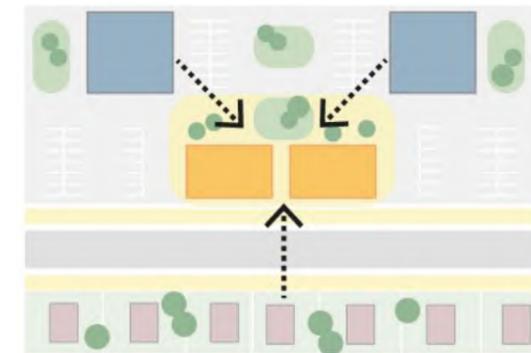
This is an area characterised by intense economic activity as well as being a place where people live, and a place which straddles a key movement corridor towards the centre of Bristol (the A38). As such, investment in public realm and community infrastructure should echo the heritage of the aerospace industry and opportunities should be identified to better integrate residential areas with employment centres

through the introduction of integrated facilities to be used by both employers and residents a-like.

The high security nature of some of the employment areas in Filton present a big challenge for improving permeability for pedestrians, cyclists, and wheelers.

There are examples where secure industrial and defence sites are being opened to the public and wider business through collaboration and innovation centres which can incorporate community facilities and make secure sites more permeable (for example, GCHQ innovation park at Cheltenham and Porton Down Science Park). This type of facility could be used at the aerospace sites and MoD Abbeywood for example. The A38 will also need to adapt and change over time to enable better local connectivity whilst maintaining its function as a key movement corridor.

Example of a land use framework where facilities are introduced to be used by residents and workers



By contrast, other local centres in the north fringe, such as Bradley Stoke already have a clear community function. In these locations, small interventions can be considered which enhance the existing function and promote more opportunities for sustainable travel and greater integration of mixed uses.

“The distinctive identities and heritage of the existing communities and neighbourhoods will have been strengthened.”

In Bradley Stoke Town Centre the existing community identity can be enhanced by reconfiguring the transport and movement networks so that greater emphasis is placed on walking and cycling connections to the surrounding residential areas and areas of green space, and less emphasis is placed on the private car. A gradual reduction in space needed for car parking over time may also present an opportunity for the layout of the local centre to adapt over time as space is freed for new development and community spaces.

The north fringe is also increasingly recognised as a cultural and tourist destination with attractions such as the Aerospace Bristol

Museum, an ice rink, sky-dive centre, regional shopping centre and, soon to be built, 17,000 capacity arena in the former Brabazon hangers, as well as local attractions including The Wave inland surfing lake, and Bristol Zoo's Wild Place Project. As the leisure and tourism sector grows it will be important to ensure that these areas can evolve from places where people visit attractions for a day trip to places where people stay for longer and places that can be used by the local community for work, education, leisure, and recreation. This can be achieved through identifying opportunities to integrate a wider range of uses, alongside large leisure attractions such as restaurants and coffee shops as well as community services.

Strengthening connections between communities

Another key feature of the vision for land use and sense of place is identifying opportunities to strengthen connections between neighbourhoods to ensure any new development coming forward is well integrated into its surroundings to benefit the wider local area.

This can be achieved through creating opportunities to make existing local centres more outward facing by creating high quality walking, cycling, and wheeling connections that draw people in and by turning some of the strategic travel corridors into streets as opposed to roads.

Key opportunities have also been identified which focus on enhancing strategic connectivity through place-based interventions.

In the north fringe there are a handful of key corridors which have the potential to become streets which serve local communities that are also well-positioned to provide strategic connections across the area.

Notable corridors include Gipsy Patch Lane, the A38 and Highwood Road, which each have potential to be enhanced as places but will also provide important east west connectivity as new development comes forward between the Airfield and Bristol Parkway and Patchway/Bradley Stoke.

More generally, opportunities need to be identified to improve the permeability of the road network and residential and employment areas. This will create networks of streets that provide permeability and connectivity to the main destinations and a choice of routes which reflect pedestrian desire lines.

Utilities networks designed with sustainability and economic growth in mind

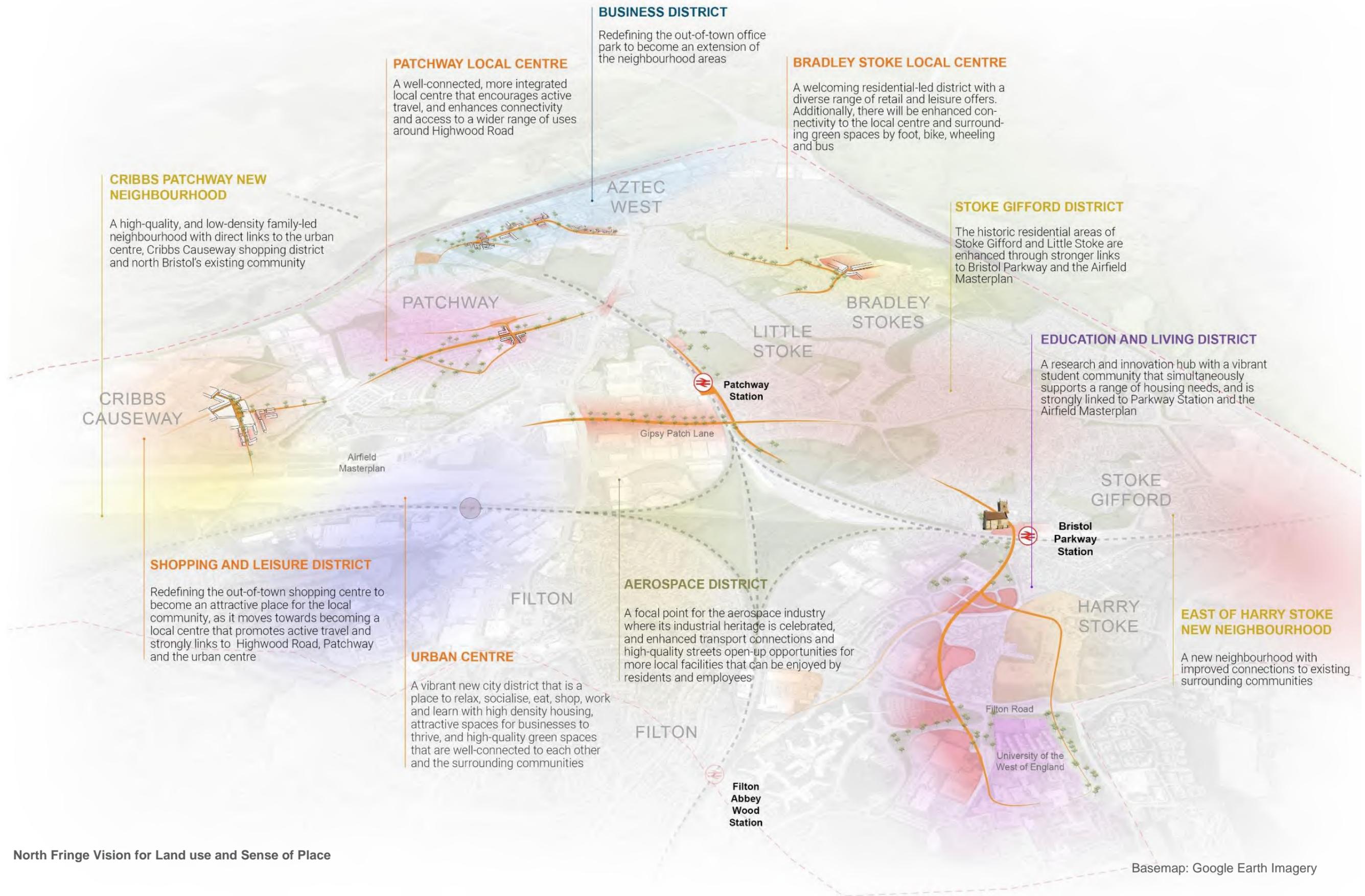
A key component of the vision for the north fringe is to ensure that as new development comes forward sufficient investment is directed

towards engineering resilient utilities networks to support economic growth.

Creating efficient energy, waste and water supply/drainage systems will be paramount to enabling the roll-out of technologies such as electric vehicles and to enable continued economic activity and growth. This will require more collaboration and innovation to identify opportunities to develop a more circular economy for water, waste and energy in domestic and commercial settings to gain the maximum output from available supply.

SuDS will play a crucial role in flood control, creating wildlife habitats and efficient wastewater recycling.

Finally, a high performing digital network will be crucial in enabling both home-working and maintaining inwards investment from employers who can drive forward research and development and keep the north fringe on the map as a key economic centre for research and innovation.



CRIBBS PATCHWAY NEW NEIGHBOURHOOD

A high-quality, and low-density family-led neighbourhood with direct links to the urban centre, Cribbs Causeway shopping district and north Bristol's existing community

PATCHWAY LOCAL CENTRE

A well-connected, more integrated local centre that encourages active travel, and enhances connectivity and access to a wider range of uses around Highwood Road

BUSINESS DISTRICT

Redefining the out-of-town office park to become an extension of the neighbourhood areas

BRADLEY STOKE LOCAL CENTRE

A welcoming residential-led district with a diverse range of retail and leisure offers. Additionally, there will be enhanced connectivity to the local centre and surrounding green spaces by foot, bike, wheeling and bus

STOKE GIFFORD DISTRICT

The historic residential areas of Stoke Gifford and Little Stoke are enhanced through stronger links to Bristol Parkway and the Airfield Masterplan

EDUCATION AND LIVING DISTRICT

A research and innovation hub with a vibrant student community that simultaneously supports a range of housing needs, and is strongly linked to Parkway Station and the Airfield Masterplan

SHOPPING AND LEISURE DISTRICT

Redefining the out-of-town shopping centre to become an attractive place for the local community, as it moves towards becoming a local centre that promotes active travel and strongly links to Highwood Road, Patchway and the urban centre

URBAN CENTRE

A vibrant new city district that is a place to relax, socialise, eat, shop, work and learn with high density housing, attractive spaces for businesses to thrive, and high-quality green spaces that are well-connected to each other and the surrounding communities

AEROSPACE DISTRICT

A focal point for the aerospace industry where its industrial heritage is celebrated, and enhanced transport connections and high-quality streets open-up opportunities for more local facilities that can be enjoyed by residents and employees

EAST OF HARRY STOKE NEW NEIGHBOURHOOD

A new neighbourhood with improved connections to existing surrounding communities

North Fringe Vision for Land use and Sense of Place

Basemap: Google Earth Imagery

5.2. Green Infrastructure (GI)

The planning, management and investment in GI is fundamental and is required at all levels of planning; from strategic, to the local level with site specific plans recognising that GI can be embedded in grey infrastructure (for example roads, rail, and flood schemes), and is not in competition with it.

To achieve the over-arching vision for the area, GI will need to be at the heart of all infrastructure planning to achieve wide-reaching benefits to biodiversity net gain, climate change and resilience, placemaking, and the economy.

Some key opportunities are explored below. Some of the smaller scale opportunities could be progressed now, however it is noted that larger scale interventions that aim to create and strengthen strategic wildlife connections will require further study to identify the most suitable locations for maximum biodiversity net gain.

“Nature and access to green space will be enhanced through opportunities to provide new, improved and better-connected green spaces, within the existing urban area which support adaptation and resilience to the changing climate, restore nature, improve health and wellbeing and which connect to the wider countryside, to create a greener north fringe where people and nature thrive.”

Enhancing biodiversity net gain

The Environment Act 2021 sets clear targets for reversing species decline by the end of 2030. To respond to these new requirements, key networks of existing GI will need to be maintained and enhanced through conservation work at existing sites and through the introduction of wildlife corridors through the urban area to strengthen existing nature corridors and create new ones. Key sites to be considered include: Three Brooks Nature Reserve; GI corridors along the railway; and green space beyond the area boundary, such as areas within the Severn Vale.

This can be achieved through a combination of small and large-scale interventions. Small measures would include tree planting, re-wilding existing green spaces, and better integration of GI along cycle corridors and within the public realm. Larger scale interventions could also be implemented such as building wildlife tunnels or bridges across transport corridors (road and rail) or by re-purposing land currently allocated for development to create larger areas of natural and semi-natural green space which provide both meaningful wildlife connections as well as benefitting local communities. There is also scope to review some of the existing GI assets to consider whether

the benefits of these are being maximised. For example, the large area of inaccessible green space bounded by the intersection of the rail lines, Northeast of Filton, could be considered through further study. This is highlighted as “enhanced green space” in the vision for strategic GI map as further study is needed to understand whether this could be enhanced in terms of biodiversity or whether further investment could be used to open this up as a space that can also be used by the public.

Introducing more trees, shrubs and other GI into the area and better management of waterways could provide resilience against climate change impacts such as providing shade during high temperature days and through reducing the impacts of surface water run-off in events of high rainfall.

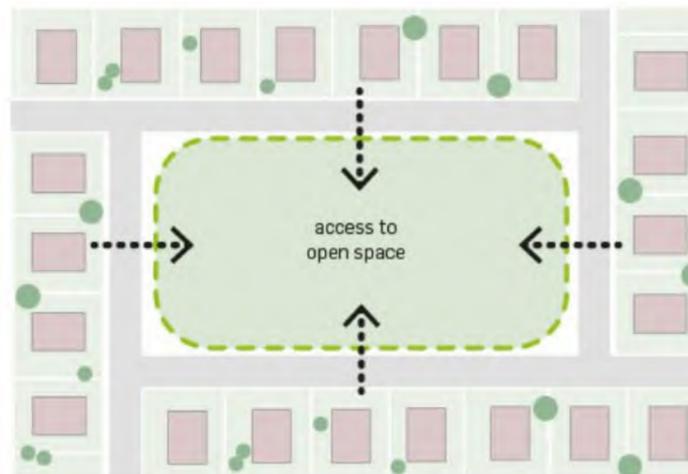
Increasing the coverage and quality of GI networks also has the potential to contribute towards the reduction of carbon emissions through carbon sequestration. As such even small-scale opportunities to integrate GI into infrastructure development should be maximised. Projects such as the roll out of an area-wide street tree strategy for example would have wide reaching benefits, including protecting against the effects of high temperature days through the provision of valuable shade in the urban area, create nicer places, and absorbing carbon from the atmosphere.

Creating more attractive places

The placemaking function of GI can be maximised in the north fringe through creating better connections to existing public open spaces, including high-quality green spaces outside the urban area boundary. It will also be important to identify opportunities to integrate more GI into the public realm to strengthen the sense of place.

Many of the parks and gardens in the north fringe are of a very high quality and benefit the communities who live nearby. That said, the thick hedgerows and disconnected locations of many of these green spaces mean they can often feel unsafe at night, lack natural surveillance, and are difficult to reach by foot or by bike.

Example of how streets can be reconfigured to face onto areas of open space to improve natural surveillance and sense of place



Identifying opportunities to better integrate the green spaces in the area with the communities they serve will enhance the placemaking function and benefit the health and wellbeing of residents and visitors to the north fringe.

Maximising the presence of large well-maintained public open space at the new airfield site, in addition to a network of smaller parks and green corridors, is emphasised as a key opportunity to create a large, biodiverse green connections to increase biodiversity net gain and provide valuable open space for use by residents in the surrounding areas which are currently under-served in terms of access to open space.

Planting, particularly street trees, helps to soften the street scene while creating visual interest, improving microclimate, and providing valuable habitats for wildlife. Where trees are to be used, careful consideration needs to be given to their location and how they are planted. Trench planting, irrigation pipes and urban tree soils will increase the chance of trees establishing themselves successfully, thereby minimising maintenance and replacement costs.

Balancing GI ambitions with economic growth

Introducing high quality GI into the urban area can also benefit the economy. For example, GI can have a positive impact on the attractiveness of an area, as outlined above, which can in turn increase investment and job creation.

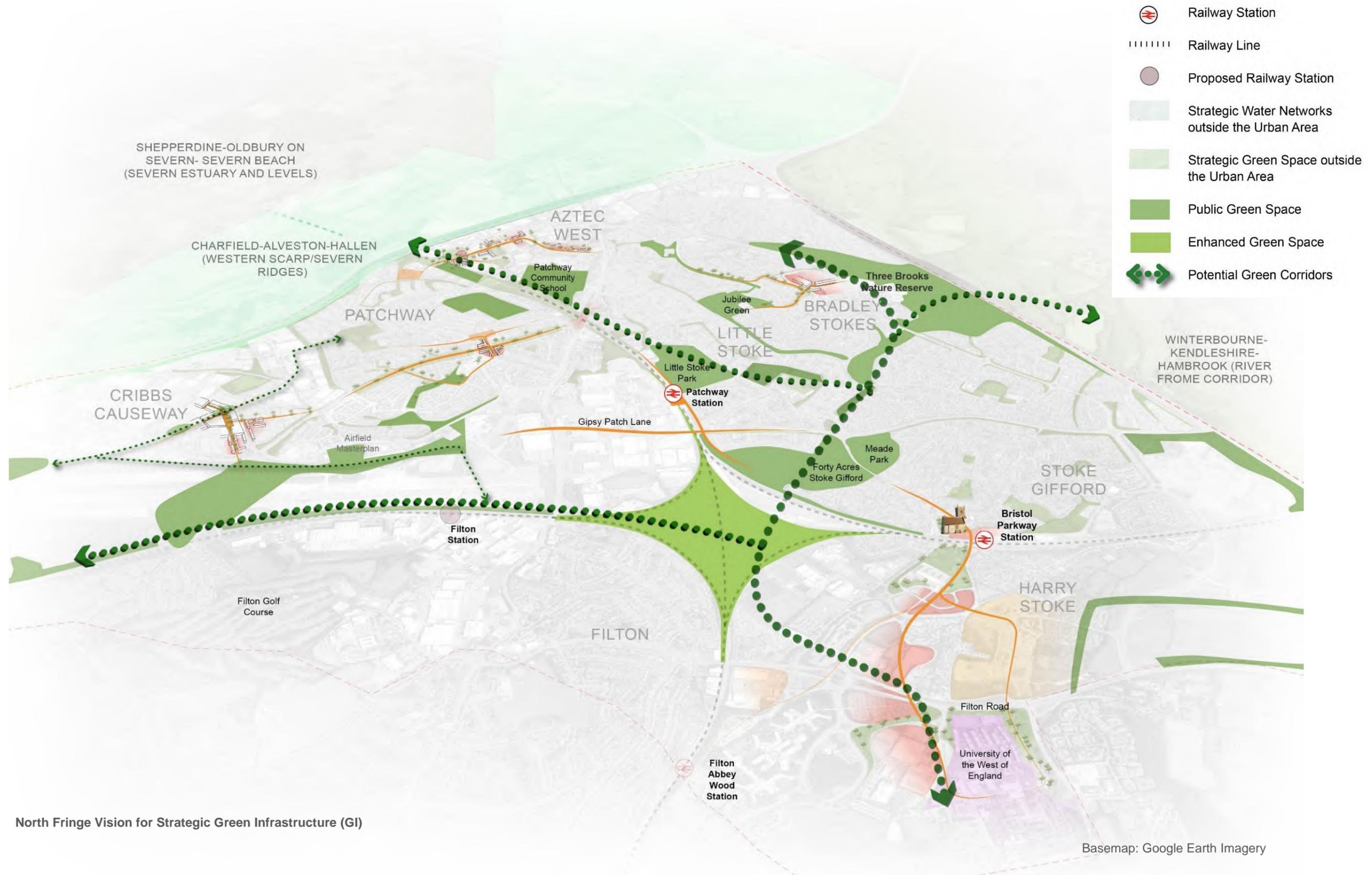
Enhancing GI across the north fringe also presents an opportunity to enhance the local pollinator network which have a positive impact on local food production.

As new development comes forward and opportunities for greater land use efficiency are identified, GI must be considered at the heart of place making to ensure that any plans for housing and economic growth are not to the detriment of GI networks in terms of biodiversity, climate resilience and place making. In areas with higher densities of development, innovative solutions to introducing GI will need to be explored such as introducing interventions such as pocket parks and green walls and roofs.

Wider applications of GI

The integration of innovative GI interventions such as SuDS and well managed and connected waterways across the north fringe will also contribute towards reducing the impacts of surface water run-off in events of high rainfall as well as freeing up capacity in the wastewater networks to support higher levels of growth.

SuDS cover the whole range of sustainable approaches to surface water drainage management which aim to mimic natural drainage processes and remove pollutants from urban run-off at source. Examples of SuDS which could be implemented in the north fringe include green roofs, permeable paving, rainwater harvesting, swales, detention basins, ponds, and wetlands. These solutions can be used in combination and are considered more sustainable than conventional drainage solutions and are associated with wider benefits including providing habitats for wildlife in urban watercourses.



North Fringe Vision for Strategic Green Infrastructure (GI)

Basemap: Google Earth Imagery

5.2.1. Transport and movement

The over scaled transport infrastructure of the previous ‘out of town model’ prioritises vehicular capacity over place, efficiency, and sustainability, with large amounts of surface level parking and highways networks that have left an ironic legacy of a disconnected place. The segregated land-use model exacerbates this challenge and increases the need to drive from one place to another.

A key priority of the vision for transport is to move towards more sustainable travel behaviours through initially identifying opportunities to reduce travel altogether, then encouraging people to switch to more sustainable modes, before finally enabling a switch to more sustainable fuel types for journeys which require use of a motorised vehicle. This is in line with the RTPI’s Substitute, Switch, Shift model for delivering Net Zero Transport²

The transport vision for the north fringe will build upon the wealth of existing proposals set out in the Baseline Chapter, to fill the gaps in infrastructure for pedestrians, cyclists, and wheelers and to maximise the potential of existing plans for public transport services (including MetroWest and MetroBus) by increasing service frequencies and improving access through the introduction of new demand responsive local services and stronger interchange opportunities.



Reducing the need to travel by creating 15 minute neighbourhoods

By embedding urban lifestyles principles across new and existing neighbourhoods we can reduce the need to travel for residents, workers, and visitors to the area by making it easier for people to access everything they need, including employment, community, leisure, and healthcare facilities, within a 15-minute walk or cycle of where they live or work.

This can be achieved, by improving accessibility for pedestrians, cyclist, and wheelers, and identifying opportunities to encourage a greater mix of amenities into local neighbourhoods as has been set out in the vision for land use and sense of place. As well as reducing travel demand this approach is likely to lead to wider benefits including stronger community identity and sense of place, improved health and wellbeing of our local communities, and reduced greenhouse gas emissions, due to their being less people driving around the area.

Improving walking, cycling, and wheeling networks

In the past, street design has been dominated by some users at the expense of others, often resulting in unimaginatively designed streets which tend to favour motorists over other users.

Reversing the hierarchy of streets across the area will be a key change which will strengthen the sense of place and identity and encourage more local trips by walking, cycling, and wheeling.

“The development of new and existing neighbourhoods will follow the 15-minute neighbourhood principle to create neighbourhoods which are better connected with residents and workers able to access local amenities and employment by high quality public transport, walking and cycling links.”

The intention is to create streets that encourage greater social interaction and enjoyment while still performing successfully as conduits for movement.

Where appropriate pedestrians should be considered first, followed by cyclists (and wheelers) and public transport users before service vehicles and other motor traffic.

Highway user hierarchy for streets

Consider first  Consider last	Pedestrians
	Cyclists
	Public Transport users
	Specialist service vehicles (e.g., emergency services, waste etc.)
	Other motor traffic

Key strategic corridors for cycling have also been identified (see vision for transport and movement map) where it is recommended that provision should be upgraded to be LTN 1/20 compliant and be high-quality and accessible by a diverse range of wheeling users (e.g. wheelchairs, tricycles, cargo bikes). Where possible, segregated provision for pedestrians, cyclists and wheelers will be provided, and routes will be designed to be direct, safe, and well-signed. Provision should also be made for cyclists at junctions and crossings to ensure that journeys are not frequently disrupted.

These key strategic cycle corridors will be supported by local walking, cycling and wheeling networks which could be a mix of on road cycling, some segregated sections, and some shared use paths where footfall is low.

Consideration should also be given to ensuring access to key destinations is as direct as possible, through the provision of new

direct off-road routes or through identifying opportunities for filtered permeability that prioritises cyclists.

Where cyclists are sharing spaces with motor vehicles, safety is a priority. Where cycling routes are through green spaces, lighting should be sufficient, and as much as possible informal surveillance should be encouraged by the provision of spaces where people are likely to stay, such as cafes and leisure facilities.

The whole network should also be well signed, with key destinations and interchange points highlighted and secure parking options at frequent locations along the route and at key destinations.

Addressing major points of severance

Connectivity to local amenities by walking, cycling, and wheeling can also be improved by addressing some of the major points of severance across the area. Some opportunities for large scale investment have been identified where major severance is caused by both roads and rail lines. Along the A38, there are two large structures that promote travel by car and make both walking and cycling more difficult: the flyover by Gipsy Patch Lane and the multi-level interchange in Patchway. It is proposed that further work is done to identify how to transform these junctions to reduce the severance impacts and make them more welcoming for pedestrians and cyclists.

In addition, it is proposed that the entire A38 corridor (from Almondsbury to Filton) is reviewed to improve East West permeability by improving the frequency of crossing points along the route and potentially transforming the corridor to remove dualled sections with central reservations. There are several other locations where severance is caused by railway lines and major roads, such as by Parkway and Filton Abbey Wood stations, which will also need to be addressed through further study.

Encouraging people to shift to more sustainable modes of transport

For longer journeys that cannot be made by walking, cycling, or wheeling, public transport services will need to see a further step change in provision over the next 30 years to make travel by public transport a viable alternative for people currently choosing to travel by car. This will include better integration with other modes and a higher quality and frequency of services. As well as improving public transport services, there may also be opportunities to encourage a shift away from private car ownership through better promotion of opportunities for car-pooling, bike sharing and car clubs. Finally, this will also need to be complemented by a gradual reduction in capacity for private car users and an increase in the availability of last mile options such as e-scooters and on-demand local public transport services (Dynamic Demand Responsive Transport, DDRT).

High quality transport interchanges

An important aspect of a well-functioning sustainable transport system in the area will be the ability to easily interchange between services and modes. There are already some key interchange points in the north fringe such as Cribbs Causeway (bus services), UWE (bus

² <https://www.rtpi.org.uk/media/9233/rtpi-net-zero-transport-january-2021.pdf>

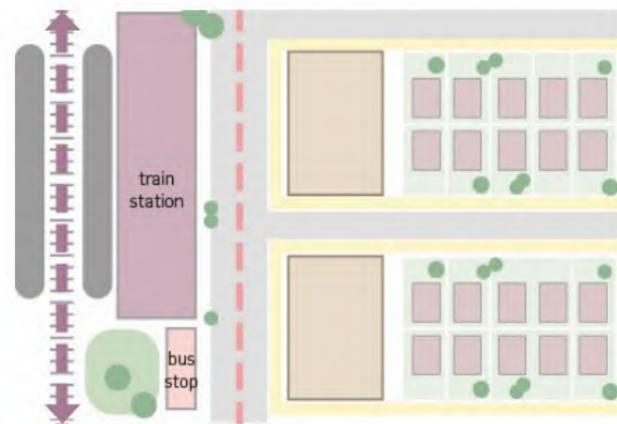
services) and Parkway (bus services and railway station) but there is scope for improvement, especially for the “last mile” of journeys.

Potential key interchange sites have been identified on the network, at rail stations, at the intersections between key corridors, at key destinations, and where high frequency corridors overlap. Local bus routes will need to be reviewed to improve penetration into the community and increase opportunities for interchange between services.

It is also expected that there will be many smaller local interchange points including enhanced bus stops where users can switch to other modes to reach their destination. This could include additional cycle parking, potentially additional e-scooter parking spots, and a DDRT system to provide a public transport option which can better-penetrate some of the large lower density residential areas including Patchway and Bradley Stoke.

Integrated ticketing will also be a crucial aspect of a higher quality transport system to enable users to seamlessly transition between modes without needing to switch between different apps, ticket types or payment systems.

Example configuration of a high-quality transport interchange

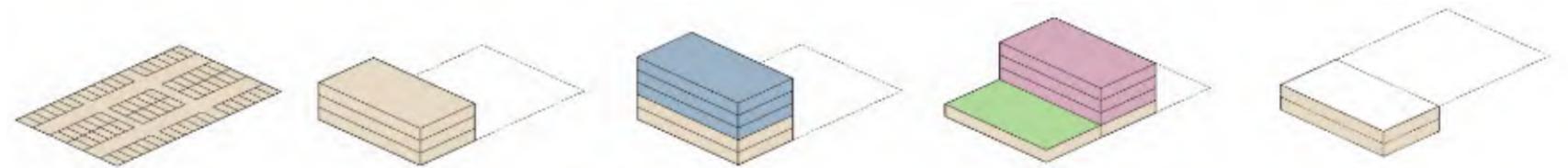


Maximising opportunities for Metrobus and other buses

A Metrobus system has been in operation in Bristol since 2018, with one of the three routes currently serving parts of the north fringe. The north fringe to Hengrove route connects Cribbs Causeway to Aztec West, and then continues through Bradley Stoke and UWE before connecting to the M32, for a much faster bus route to the city centre and south Bristol than was previously possible.

Plans are already in motion to extend the existing metrobus service, which currently connects Cribbs Causeway to Aztec West, and then continues through Bradley Stoke and UWE before connecting to the M32. The extension will connect the new Airfield development to

Options to gradually reduce and reimagine parking provision in the North Fringe



Bristol Parkway station via Gypsy Patch Lane passing key employment sites including Rolls Royce and Horizon 38. Ensuring this service is delivered to a high quality including effective integration with other modes and services will be key to its success.

Additional strategic corridors in the north fringe have also been identified (the A38, the A4174 and the A4018) where a much higher level of bus priority should be provided to improve bus journey times as well as journey time reliability. This may include changes at junctions including to signals, and additional segregated sections of bus route where there is available space, recognising this may not be possible along the full route extent.

Maximising opportunities for Rail

The north fringe is currently served by three railway stations: Bristol Parkway (with national services including to London, Birmingham, the Southwest, the North and Scotland), Filton Abbey Wood (with regional services connecting to South Wales, Wiltshire, and Gloucestershire) as well as local connections. Patchway station is the most underserved station in the area, with trains to South Wales and the Southwest.

Two new stations are proposed in the area as part of MetroWest Phase 2: North Filton and Henbury stations which will form part of the Henbury spur and a new hourly train service running between Bristol Temple Meads and Henbury, calling at Ashley Down and North Filton. The new vision for transport and movement in the north fringe is to maximise the impacts of these new stations by providing higher service frequencies to ensure travel by rail can be seen as a convenient and reliable alternative to travel by private car.

Improving access to stations is also highlighted as a priority for the area. The ambition is for all stations to also serve as interchange sites for other modes with bus connections and micro-mobility hubs for last mile options.

Encouraging a shift away from private ownership

Developing a strategy to encourage shared modes may also present an opportunity to reduce the amount of traffic on the roads. This could be achieved through better promotion of opportunities for carpooling,

and wider provision of infrastructure to support bike sharing and car club schemes, particularly at new developments.

Making more efficient use of space allocated for car parking

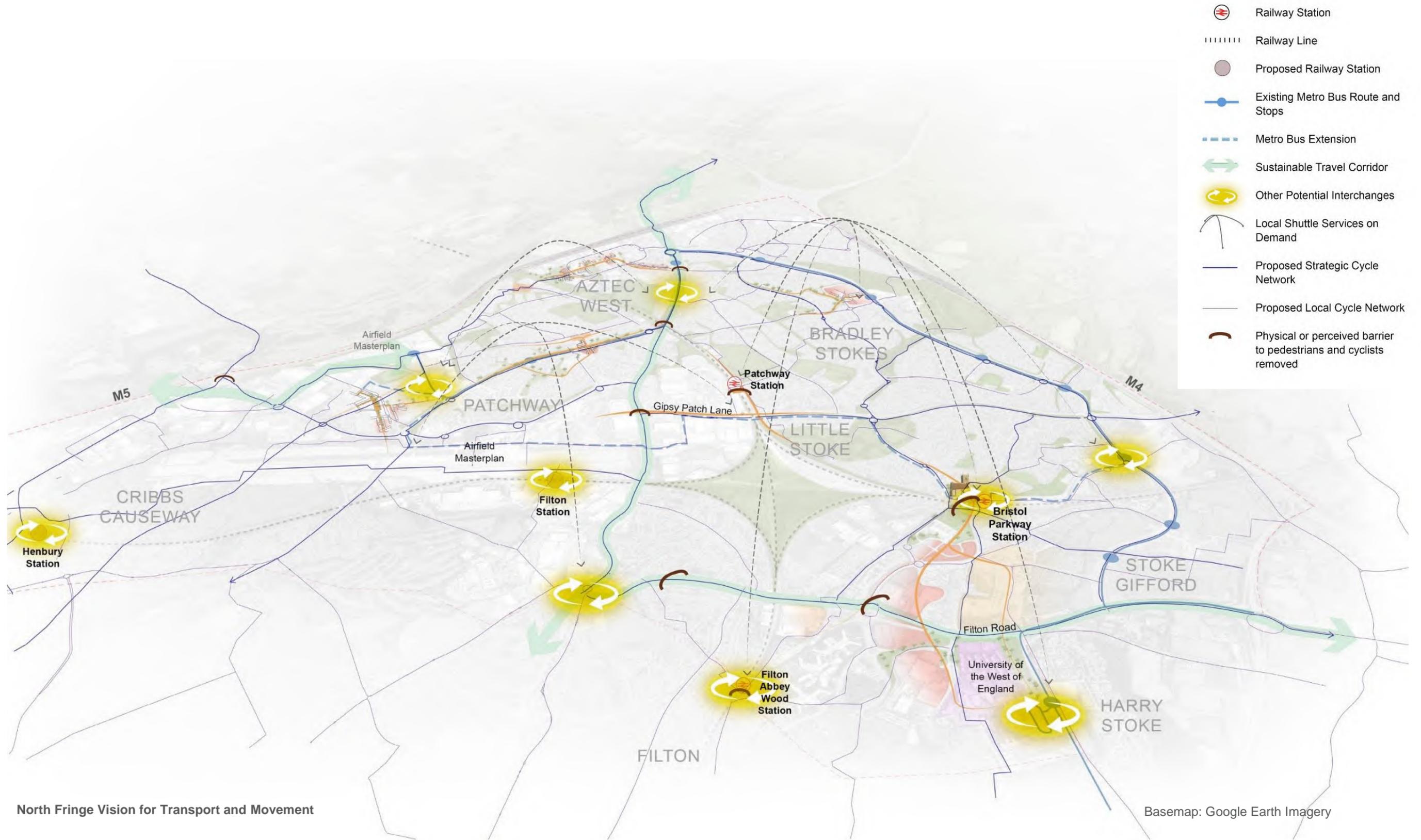
As public transport services are improved there will need to be a gradual shift to reduce the highway allocation for private cars including rationalising existing surface level parking provision in the area. This could be achieved by initially implementing decked parking to free up land for new develop and eventually moving towards underground parking or removing parking all together as travel behaviours change. Restricting new parking provision, combined with policy measures such as workplace parking levy’s, should be considered to make better use of the existing parking stock to support new growth, effectively reducing the ration of parking spaces per head. There will also need to be improved connections from park and ride sites for long distance commuters.

“Harnessing innovative transport solutions and green technologies will help to create a climate resilient north fringe with a thriving low carbon economy and lifestyle reflected in our travel, homes, businesses and communities.”

Enabling a switch to more sustainable fuel types for journeys requiring use of a motorise vehicles

For trips where travel by private car is likely to remain necessary, infrastructure will need to be in place to enable a shift to electric vehicles, initial through rolling EV charging at key locations with a long-term aim of installing EV charging capabilities at people homes across both new and existing developments.

There will also need to be a shift to low emissions vehicles for the bus fleet to respond to carbon reduction targets as part of the pathway to net zero.



North Fringe Vision for Transport and Movement

Basemap: Google Earth Imagery

5.4. Illustrations of strategic concepts

A series of illustrations have been prepared to demonstrate how the maximum benefit from committed and proposed infrastructure investment can be realised in specific locations across the north fringe as well as to motivate for further or changed future infrastructure proposals.

Illustrations have been prepared for:

- Cribbs Causeway;
- The area between UWE / Abbeywood and Stoke Gifford;
- Aztec West;
- Highwood Road;
- Bradley Stoke; and
- The A38 Gloucester Road.

Aligned to the masterplan vision, these illustrations have been developed to 'paint a picture' of a future for the north fringe that, in its response to future challenges, seeks to explore the principles of a 15-minute neighbourhood to remedy the impact of a past 'out-of-town'

planning model, respond to and influence the shape of future infrastructure investment and deliver on future climate imperatives.

Developed from a starting point that aims to safeguard and improve existing land use provision and accessibility as a minimum (such as in employment and retail for example), they advance a range of scenarios that envisage future growth that is more sustainable, achieves greater land use efficiency and realises the benefits of integrating different types of development (for example building residential properties adjacent to community facilities and employment spaces). This guiding approach to increased land use efficiency and mixed-use development reflected in the illustrations not only supports and optimises more sustainable approaches to travel and infrastructure investment, but also addresses placemaking imperatives by shaping a more desirable area in which to live, work and invest.

Importantly these area specific illustrations are framed within a wider context, responding to the accessibility, environment, and GI frameworks to ensure they both contribute to the delivery of their

respective component parts of the wider strategy, as well as evolve responsively in alignment to the comprehensive vision.

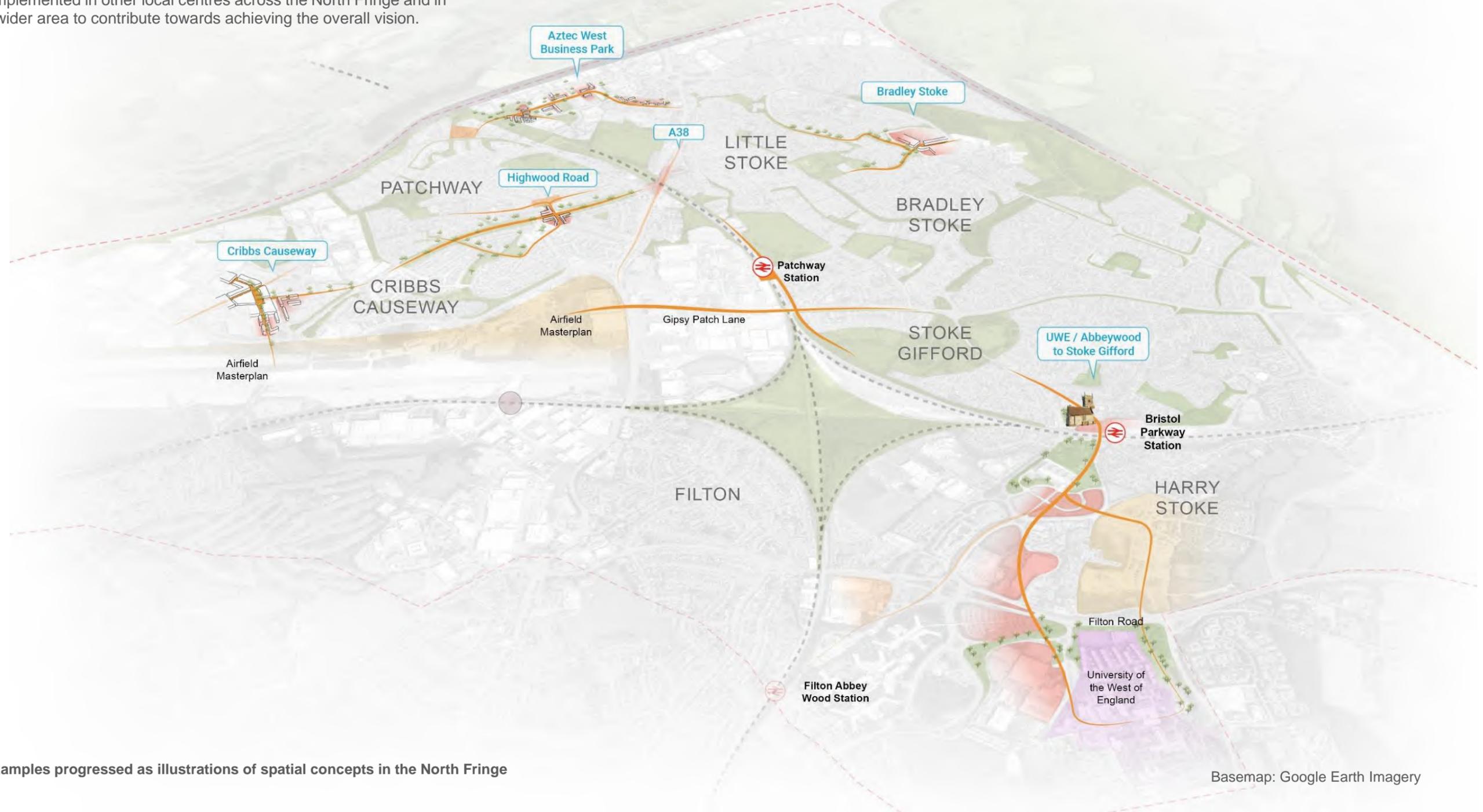
It is important to note that the illustrations presented here are not intended as proposals, but rather to identify a few different investments, development and regeneration opportunities that develop upon the opportunities created by a range of infrastructure interventions. While it is envisaged that not all the opportunities presented here would be progressed, those that are taken forward for further consideration would benefit from a high-level feasibility study aligned to broad stakeholder engagement. Furthermore, additional locations may also be identified where similar principles could be applied.

In Chapter 6, alternative locations where these types of interventions could also be implemented.

Example areas marked on this map have been selected to help articulate how the vision for the North Fringe can be realised through the delivery of key pieces of strategic infrastructure and localised public realm and placemaking interventions.

For each location, an analysis of the unique issues and opportunities has been conducted to demonstrate how sensitive land use changes, improvements to the transport and movement networks and the introduction or enhancement of multifunctional GI have the potential to transform the distinct locations across the North Fringe.

As outlined in the previous section, many of these approaches could be implemented in other local centres across the North Fringe and in the wider area to contribute towards achieving the overall vision.



Examples progressed as illustrations of spatial concepts in the North Fringe

Basemap: Google Earth Imagery

5.4.1. Illustrative Example of Cribbs Causeway

Overview, Issues and Opportunities

Current Layout



Issues

Movement (Pedestrian + Cycling)



Photo looking south-west showing pedestrian running around the shopping centre

- Poor pedestrian links to shopping centre
- Pedestrian path runs around, not through the shopping centre
- Missed opportunity to connect to surroundings

Land Use



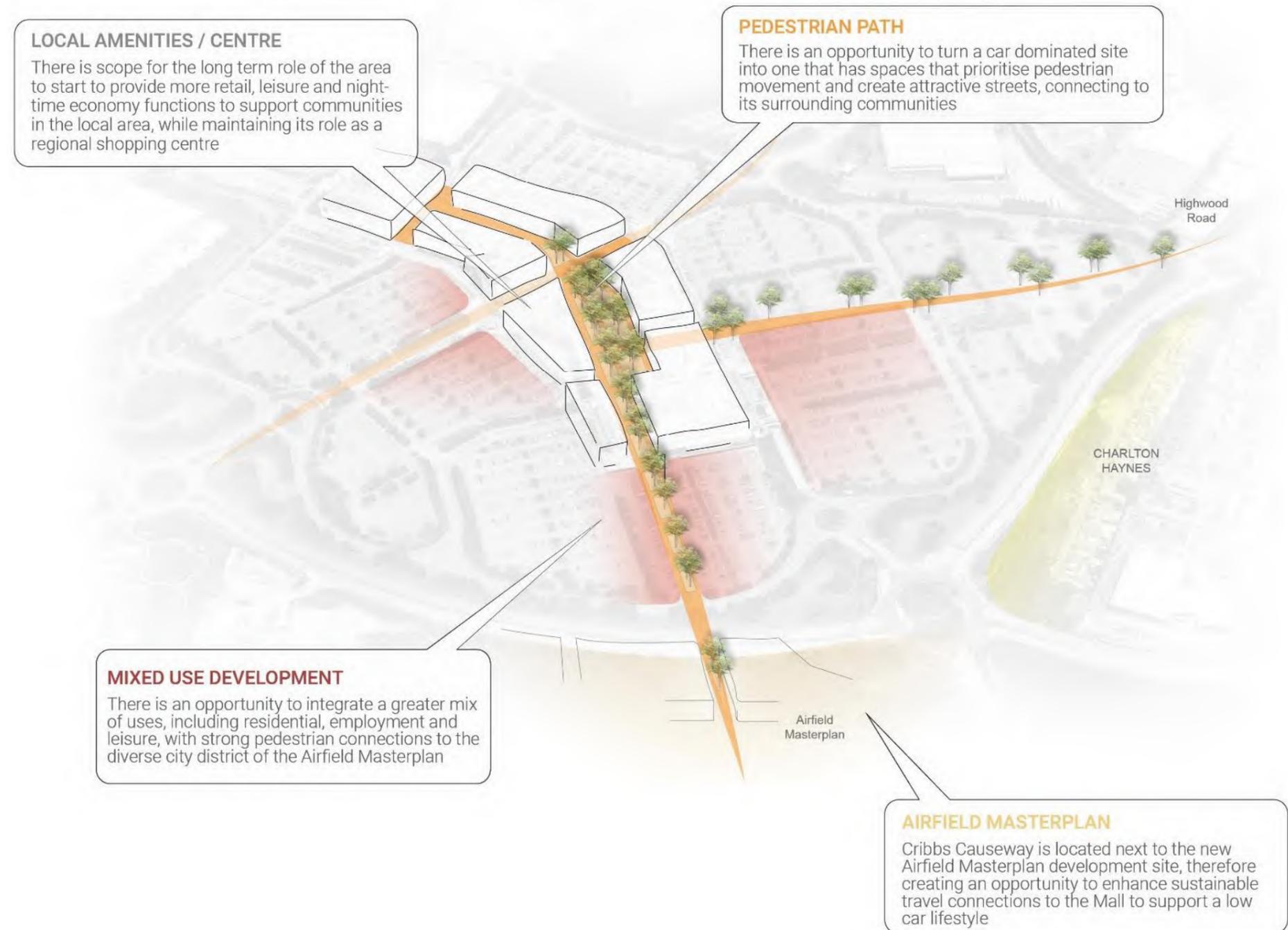
Photo looking south-west showing shopping centre lost within car parks

- Shopping centre sits at the centre of car parks and is disconnected from its surroundings
- Lacks sense of character and place

Opportunities

This first example shows how, in the long-term, the changing retail market could open up the opportunity for Cribbs Causeway to become a local centre as well as a regional shopping centre.

Working with the operators to understand the long-term future of Cribbs Causeway, there are simple changes that could transform the area, which incorporate many of the principles set out within this masterplan document.



LOCAL AMENITIES / CENTRE

There is scope for the long term role of the area to start to provide more retail, leisure and night-time economy functions to support communities in the local area, while maintaining its role as a regional shopping centre

PEDESTRIAN PATH

There is an opportunity to turn a car dominated site into one that has spaces that prioritise pedestrian movement and create attractive streets, connecting to its surrounding communities

MIXED USE DEVELOPMENT

There is an opportunity to integrate a greater mix of uses, including residential, employment and leisure, with strong pedestrian connections to the diverse city district of the Airfield Masterplan

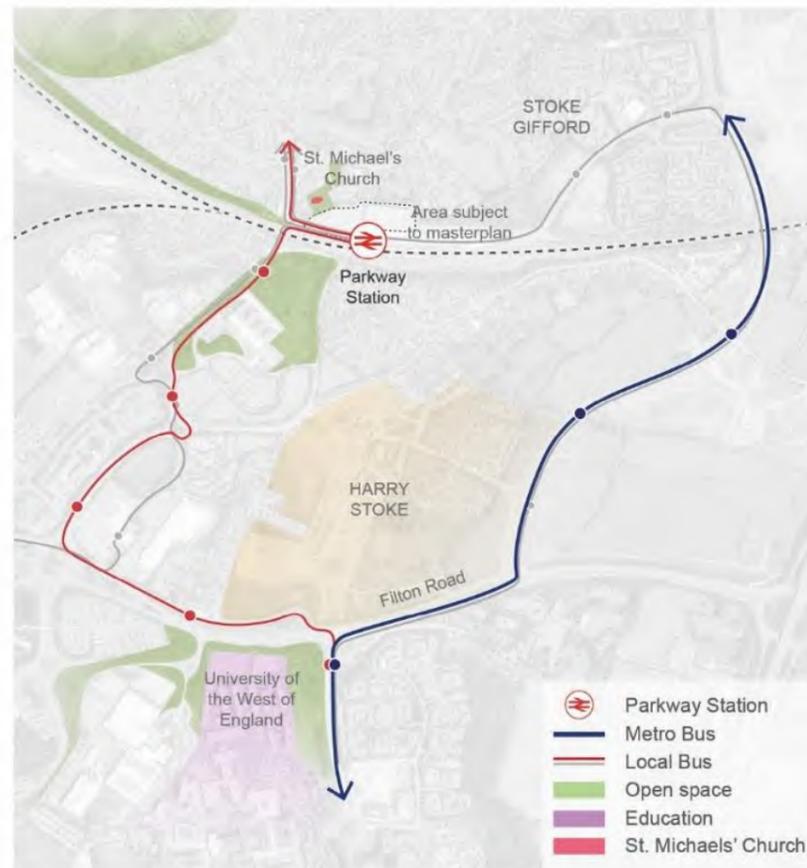
AIRFIELD MASTERPLAN

Cribbs Causeway is located next to the new Airfield Masterplan development site, therefore creating an opportunity to enhance sustainable travel connections to the Mall to support a low car lifestyle

5.4.2. Illustrative example in UWE / Abbeywood to Stoke Gifford

Overview

Current Layout



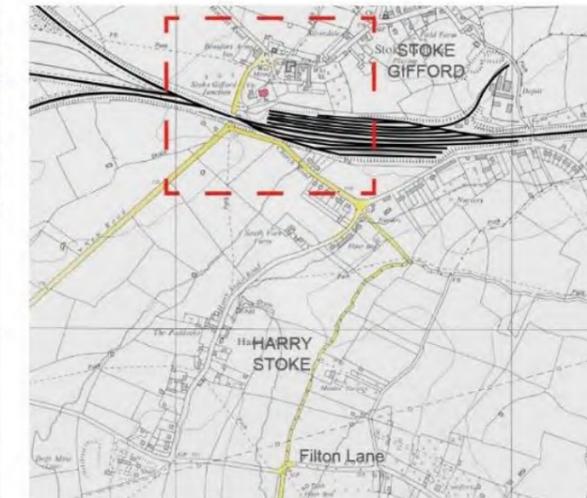
History

1879



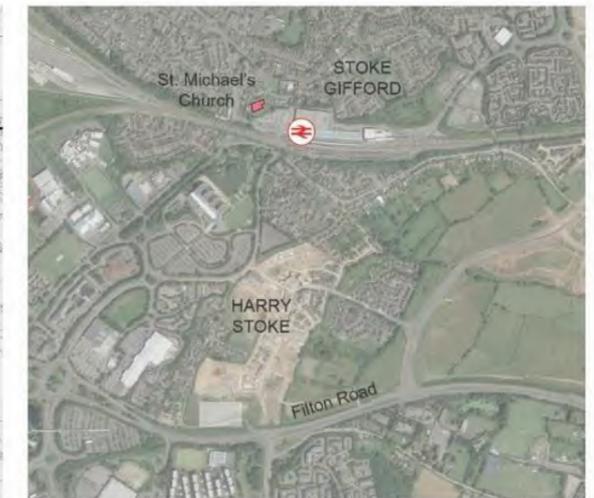
- Stoke Gifford has distinct towns and settlements with unique character and identity
- Stoke Gifford is connected to surrounding areas
- The listed St. Michael's Church sits within the village

1969



- Introduced rail track and Parkway Station cut through Stoke Gifford and create a north-south disconnect

Present



- Introduced oversized roads lead to further fragmentation of the area
- Stoke Gifford and Harry Stoke lose their character and identity

The illustration builds on the proposed changes being considered in the masterplan for Bristol Parkway, to transform its out-of-town model into an attractive gateway to the wider north fringe, incorporating improved transport provision and connectivity and a new sense of place.

As such, the opportunities that are identified both seek to develop the potential such change would realise, as well as influence it to ensure it offers maximum benefit to the wider area.

The analysis demonstrates how the historic character of the neighbourhood has been lost and its nature transformed by the past planning model that has shaped the north fringe, with the transport infrastructure ironically creating disconnect in the area and segregated out of town land use model driving an increased need for the car and shaping a series of characterless areas.

- Infrastructure is separating rather than connecting
- Character of place is being reshaped to be about its infrastructure
- The rich character of the past is buried beneath inconsiderate infrastructure
- Human experience is ignored

Issues

Transport

Station



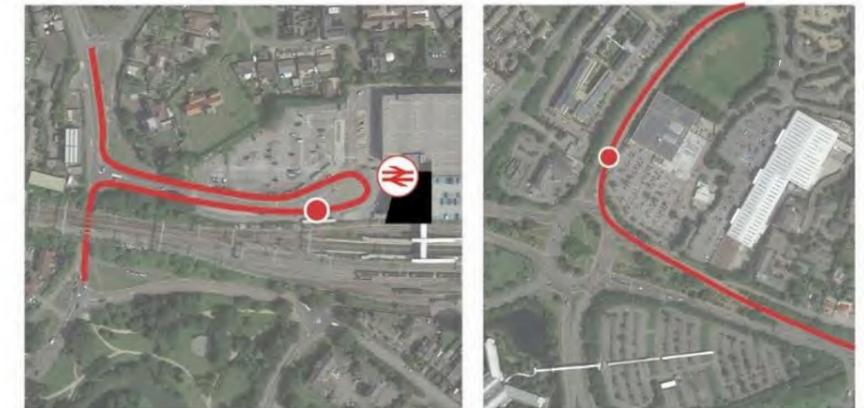
Aerial view showing station isolated from its surroundings



Photos showing poor wayfinding and unattractive approach towards the station

- Parkway railway station currently appears to lack of a sense of arrival, resulting in poor connection to surrounding area and misses its opportunity to support a high-density mixed-use neighbourhood.

Bus



Photos showing how bus routes loop around and are not strategically placed

- Some routes 'run around the edge' of the development, and loop back out at the station and miss their opportunity to improve accessibility and benefit development.
- Bus stops are often placed in front of parking lots, or in a location where they're not fully catering to their surroundings.

Movement (Pedestrian + Cycling)

Barriers



Aerial view showing railway acting as barrier



Photos showing only access across railway

- Narrow access point under railway bridge creates a disconnect between Parkway Station and the education and employment sites to the South

Crossings



Photo showing car-dominated roads

Photo showing overcomplicated crossings

- Car-dominated roads and lack of crossings hinder pedestrian movement and create an unpleasant atmosphere for pedestrians and cyclists
- Crossings are overcomplicated and do not prioritise pedestrians

Landscape

Open Space



Aerial view showing gated, private open space



Photo showing no public right of way to open space

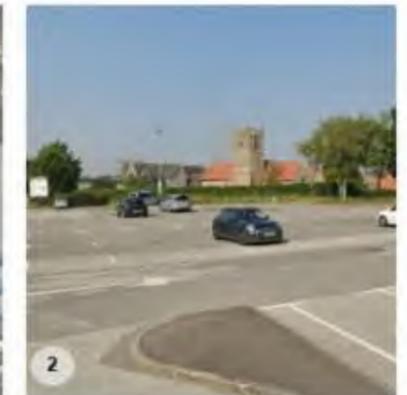


Photo showing Aviva Centre open space

Village Green and St. Michael's Church



Aerial and photo showing how Parkway creates a disconnect between the station and St. Michael's church



- Open space is not planned but is leftover and hardly accessible
- Open space is mostly gated and segregated from residential areas due to excess of roads and car parks

- The station currently creates a disconnect between the station and St Michael's Church

Land Use

Segregated



Aerial showing isolated residential area



Aerial showing isolated office park

'Designated Town Centre'



Aerial showing 'Designated town centre'

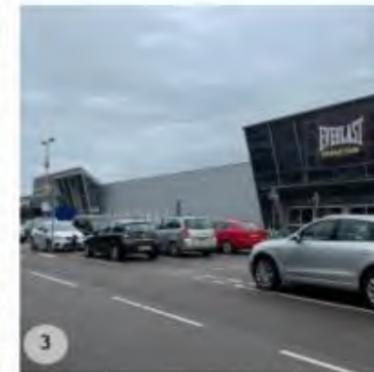
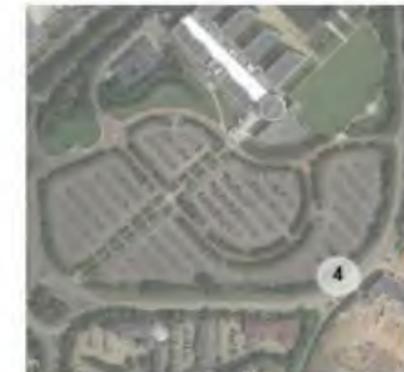


Photo looking east showing shopping malls as town centre

Car Parks



Aerial showing area dominated by car parks



Photo looking west showing unutilised car parks

- Land use is fragmented; it creates office parks, segregated residential areas and shopping centres that promote car travel
- Segregation reduces the character and sense of place of the area

- Designated town centre is shopping centre surrounded by massive car parks
- Lacks qualities of a local centre and is isolated from its surroundings

- Segregated land use zones promote car travel and create a sterile environment dominated by car parks
- Large amounts of surface level car parking

Opportunities

In the area connecting the University of the West of England through to Stoke Gifford, changes could include improvements to pedestrian walkways, better access to bus services and Bristol Parkway station and encouraging development which offers more local amenities, such as shops and cafes, that overlook streets. This will enhance community identity and personal security by encouraging more pedestrian activity in the area.

Some of these concepts are already being explored in more detail as part of the separate Bristol Parkway station masterplan project.

GREEN INFRASTRUCTURE

Introducing pedestrian corridors would create a strong link between existing green spaces, making them highly accessible and welcoming for pedestrians

OPPORTUNITY FOR LIVING STATION

Parkway Station has the potential to become a living station making it a destination and regional gateway that relinks Stoke Gifford to Harry Stoke and reinstating the importance of St Michael's Church

PRIMARY CENTRAL SPINE

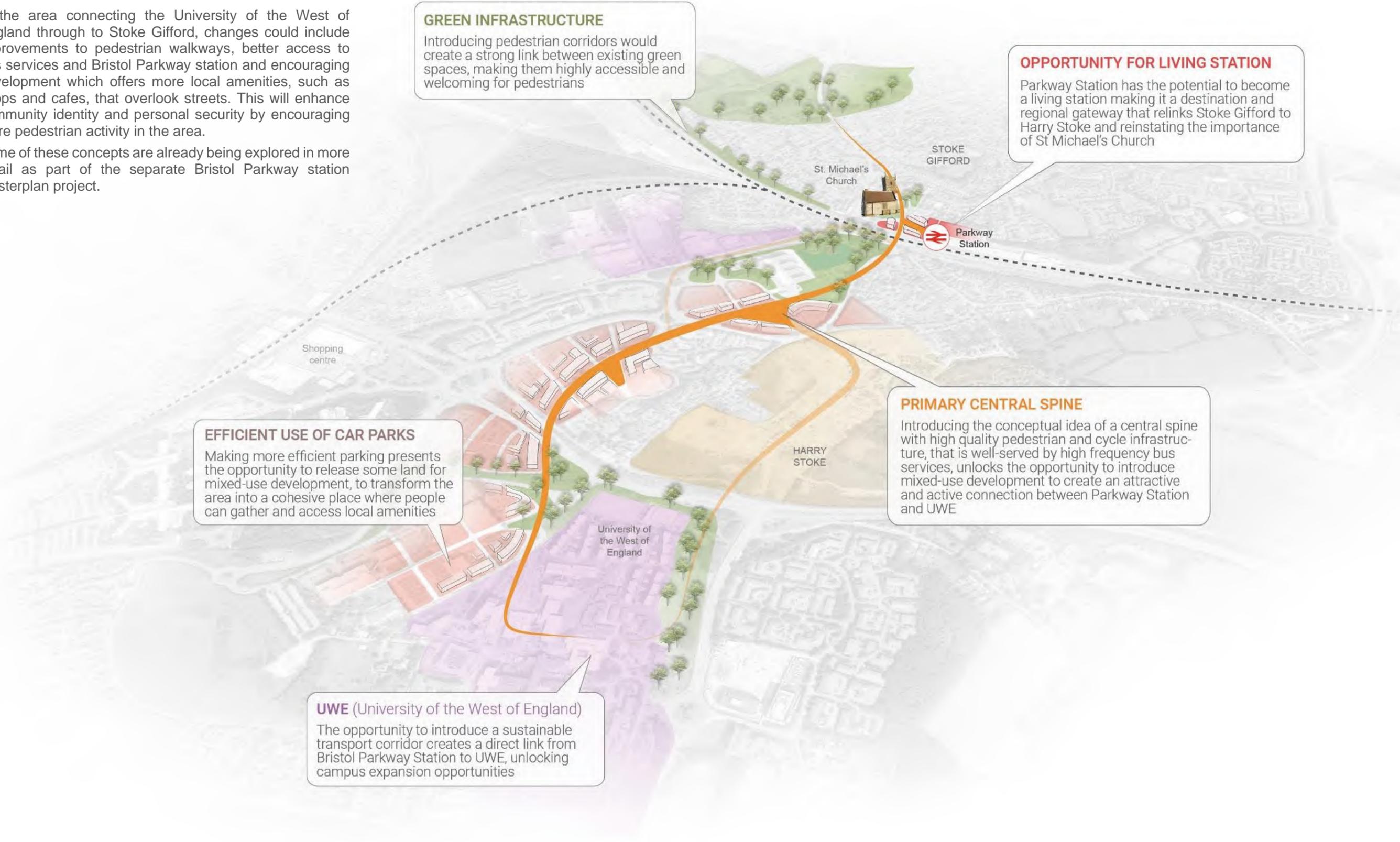
Introducing the conceptual idea of a central spine with high quality pedestrian and cycle infrastructure, that is well-served by high frequency bus services, unlocks the opportunity to introduce mixed-use development to create an attractive and active connection between Parkway Station and UWE

EFFICIENT USE OF CAR PARKS

Making more efficient parking presents the opportunity to release some land for mixed-use development, to transform the area into a cohesive place where people can gather and access local amenities

UWE (University of the West of England)

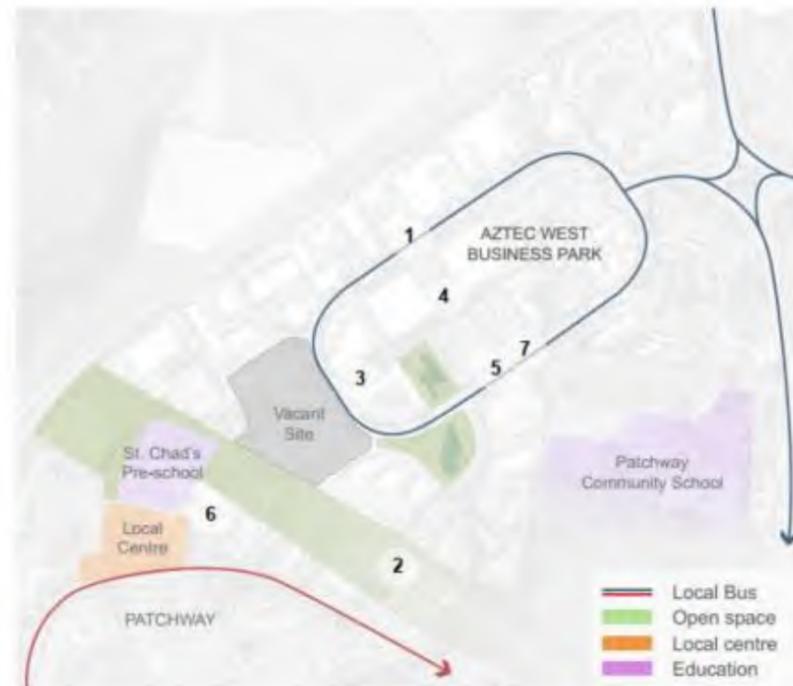
The opportunity to introduce a sustainable transport corridor creates a direct link from Bristol Parkway Station to UWE, unlocking campus expansion opportunities



5.4.3. Illustrative example of business park changes to mixed use - Aztec West Business Park

Overview and Issues

Current Layout



Aztec West was developed since the early 1980s and many of the existing buildings have perhaps only one refurbishment left in them before they become redundant.

With the long-term decline in demand for out-of-town office spaces and increased numbers of employees working at home or remotely it offers the opportunity to maintain or increase employment alongside mixed use development.

Mixed use development can connect into the surrounding local communities and mutually support wider ranges of services both within Aztec West but also through wider regeneration opportunities in Patchway,

Similar concepts could be considered for other business parks in the north fringe including the Almondsbury Business Park.

Issues

Transport

Vehicular Movement



Photo showing car dominant area, prioritising vehicular access to site

- Poor connection between Aztec West Business Park and Patchway - buses serve both areas but do not form a direct connection between them
- Streets prioritise vehicular movement and access to site

Movement

Barriers



Photo showing only access from Aztec West to Patchway (gated)



Photo looking southeast shows missed opportunity to connect Aztec West to Local Centre

- Walking and cycling routes serve both Aztec West and Patchway, but miss the opportunity to create an attractive pedestrian link between the two
- Missed opportunity to create pedestrian connection between Aztec West and north Patchway 'local centre'

Land Use

Business Park



Photos looking north-east and south-west, respectively showing lack of consistent clarity within the business park

- Land use is segregated and mono-functional
- Business Park has a lost character and sense of place

'Designated' local centre



Photo looking north-east showing unattractiveness of local centre

Car Park



Photo looking north-west showing dominance of car parks

- Local centre sits at periphery of Patchway with shops and public realm being left poorly maintained.
- Business Park dominated by car parks

Opportunities

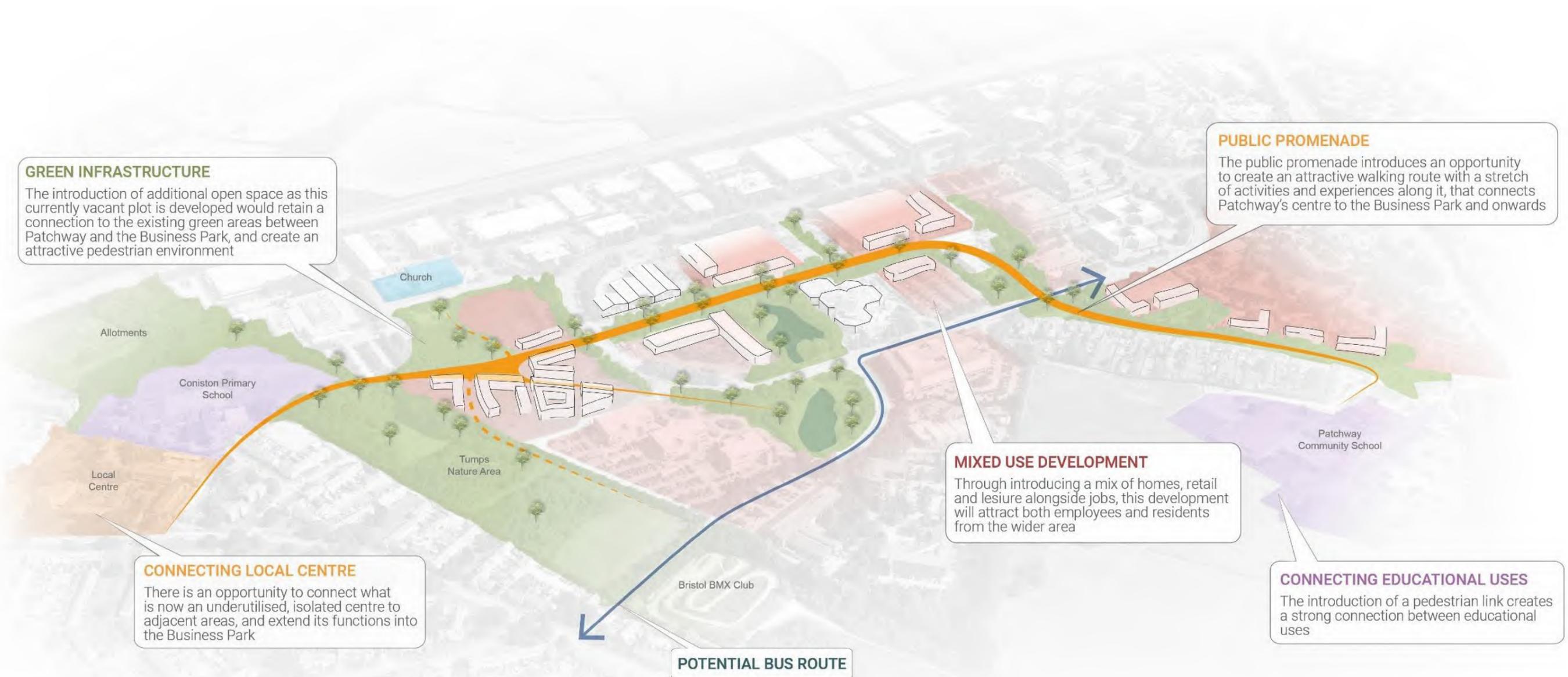
Aztec West, like many out-of-town business parks, was developed in the early 1980s and many of the older buildings may only have one refurbishment left in them before they become redundant.

As the demand for out-of-town office space changes, and the number of employees able to work from home increases, there may be opportunities to use the land differently. For example, introducing alternative uses, such as community facilities and retail, whilst increasing employment through the development of innovative and agile workspaces.

These changes could also help improve connections between Aztec West and the surrounding local communities, in particular providing a high-quality walking and cycling connection past key locations in Patchway including Coniston Primary School, Patchway Parade and the Tumps nature area to enhance and strengthen existing local facilities and access to green space.

Similar concepts could be considered for other business parks in the area, including the Almondsbury Business Park.

New bus, walking and cycling connections through Aztec West to Cribbs Causeway and the new urban centre proposed as part of the Filton Airfield site will generate more people and customers for wider retail and leisure opportunities as part of wider regeneration of Patchway.



5.4.4. Highwood Road

Overview and Issues

Current Layout



Highwood Road is almost 60m across with four lanes for vehicle traffic at its widest point. Whilst the Charlton Hayes development has enhanced the environment at the Cribbs Causeway end of the corridor, as you move towards the A38 end it is still very road dominated.

Further changes could be achieved whilst maintaining highway capacity (whether bus only or reopened to general traffic).

The road enhanced as a complete green corridor will reduce severance between the Patchway communities. Enhancing the corridor could stimulate regeneration opportunities along it.

The junction near the A38 end of the corridor is significant in scale, a simplified cross-roads arrangement would open-up further land for public realm or new development.

Issues

Movement (Pedestrian + Cycling)

Barrier



Aerial view showing how Highwood Road creates a 57m barrier between neighbourhoods and misses opportunity to act as connector



Photos showing how there is little room for pedestrian movement

- Highwood Road hinders the north-south connection along it and almost fragments neighbourhoods. It misses several opportunities to create pedestrian links which would enable northern and southern neighbourhoods to make use of facilities on either side of Highwood Road
- Priority is given to vehicular movement, leaving limited space for pedestrians to move freely
- Reduced traffic creates a significant opportunity for change

Landscape

Open Space



Photo showing how green space not well over-looked

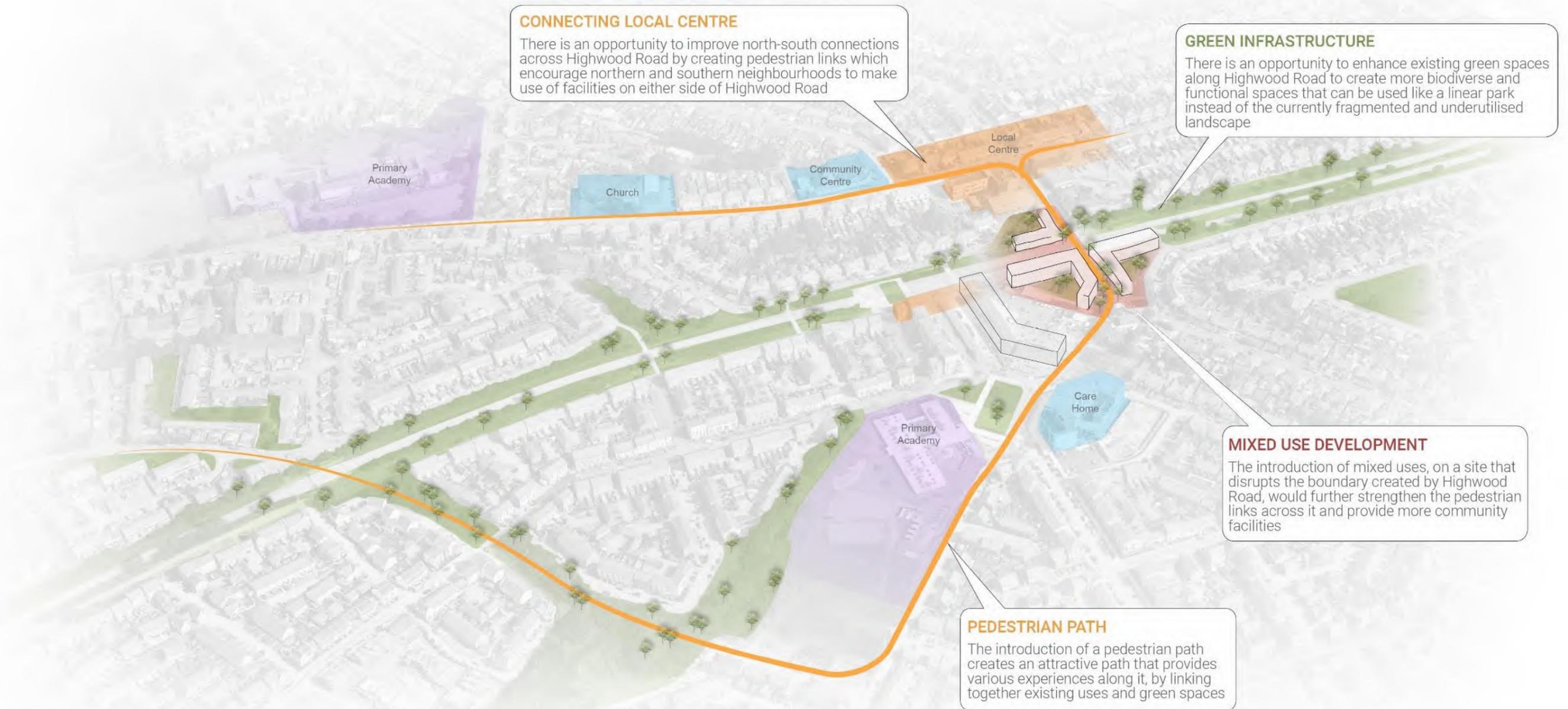


Photo showing patches of unutilised landscape

- Potential for green spaces to be connected and form an attractive walking and cycle link between areas is missed
- Landscape acts as separator that defines roads and paths, and misses opportunity to be a connector
- Open spaces are not highly accessible or well-maintained / overlooked

Opportunities

This example shows how by improving connections between the existing local centre along Rodway Road and the opposite side of Highwood Road, communities can be brought closer together. There could also be opportunity for mixed-use development, including more community facilities.



5.4.5. Bradley Stoke

Overview and Issues

Current Layout



A strong performing local centre that could be enhanced further through better local connectivity and a wider range of local retail and leisure offerings.

Bradley Stoke Town Centre is used as an example here but there are other local centres across the north fringe where similar principles could be applied.

Issues

Movement (Pedestrian + Cycling)

Barrier



Photo showing limited pedestrian movement around local centre



Photo showing poor pedestrian access to local centre

- Poor pedestrian links and access to local centre
- Local centre prioritises vehicular movement which takes away from its character and sense of place

Landscape

Open Space



Photo looking north-east showing gated, utilised open space

- Open space is underutilised
- Open spaces miss opportunity to create a pedestrian link to local centre

Land Use

Disconnected Local Centre



Photo looking north-east showing cutting off of residential area from local centre

Car Park



Photo looking south showing dominance of car parks within local centre

Diversity of uses



Photo looking south showing lack of diversity of activity in local centre

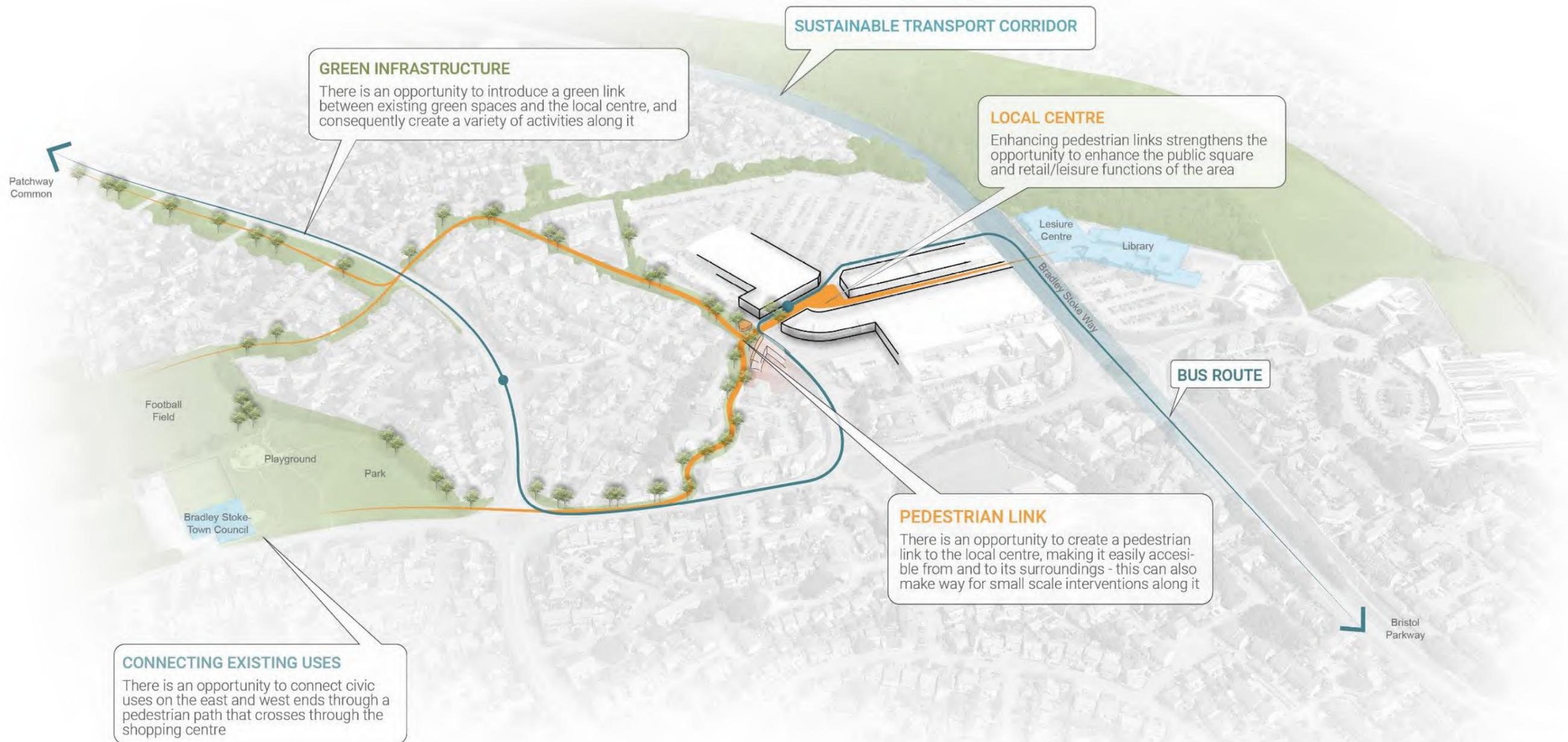
- Local centre is cut off from its surroundings and misses opportunity to connect
- Local centre has characteristics of an out-of-town shopping mall and lacks a distinct sense of identity
- Limited range of shops and restaurants and lack of suitable space for small, independent businesses

Opportunities

This drawing demonstrates how there is potential around Bradley Stoke town centre to create a local high street by improving access and public spaces.

This may also open up opportunities in the longer-term for the centre to grow to offer more amenities and night-time economy activities, such as restaurants, to support the 15-minute neighbourhoods principle. This is the principle that residents have access to most, if not all, of their needs within a short walk or bike ride from their home.

Whilst Bradley Stoke is being used as an example here, other local centres could be transformed in a similar way through small interventions.



5.4.6. A38 Gloucester Road

Issues



The A38 Junction with Gipsy Patch Lane is currently a major point of severance for pedestrians and cyclists creating both a physical and perceived disconnect between the existing communities of Little Stoke and the forthcoming communities of the old Filton Airfield.



The A38 Junction with Highwood Road is an inefficient use of land and creates a second major point of severance which need to be addressed to reconnect the former centre of Patchway on the Eastern side of the A38 with the new Town Centre along Highwood Road.



Large stretches of the A38 itself are dual carriageway with certain sections also segregated by a central reservation.

This presents a major challenge to pedestrian and cyclists wishing to cross. There is also minimal provision for bus priority creating an environment which favours travel by private car.

Opportunities

- Short term measures which seek to improve the public realm to create welcoming connections beneath the flyover.
- Long term ambitions could range from decommissioning the flyover completely or repurposing to reduce the footprint of the road and create a linear park.
- Conversion of the Highwood Road junction into a crossroad would release land equivalent close to the size of nine football pitches for development/regeneration and or public realm.
- A better connection through to Little Stoke would bring communities together, increase effective densities of population to support stronger high streets and support a more cohesive and people friendly area.
- Removal of central reservations to be replaced with frequent pedestrian islands, interspersed with planters to enable people to cross the road freely along pedestrian desire lines.
- Restrict highway traffic to single lane and reallocate remaining highway space to segregated foot/cycleways and bus priority where needed.
- A reduced highway footprint could open-up further retail and commercial opportunities to strength the A38 as a local high street.
- Similar concepts could be applied in other locations such as the A4174 through Filton.

6. Next steps

6.1. Overview

This strategic infrastructure-led masterplan sets out the potential for the north fringe to evolve and adapt over the next 30 years. The vision encompasses ideas and principles to enhance the sense of place, economy, and community facilities; create a more sustainable transport network and reduce the need to travel; reduce carbon emissions; and build a more resilient GI network to benefit biodiversity, climate resilience and social wellbeing across the area.

Whilst it is recognised that some of the potential changes set out in this report will take longer to develop and deliver, there are several place-based infrastructure projects that can start to be developed and delivered. This can act as a catalyst for further change.

Existing ongoing studies will continue to shape the masterplan

Several studies are currently being conducted to inform investment in infrastructure across the north fringe. Key studies which will be crucial to understand before finalising plans for development across the north fringe include:

- Carbon pathway studies;
- Heat network studies and Energy Planning Integrated with Councils (EPIC);
- Joint GI Strategy/Nature Recovery Network; and
- Parkway Station Masterplan.

Short-term recommendations

The figure presented on this page sets out the short-term recommendations for progressing the masterplan vision and the following sections provide more detail regarding immediate priorities including strategic planning and feasibility assessments; and short-term priorities for place-based infrastructure.

Medium and long-term priorities will need to be explored in more detail through further work.

North Fringe of Bristol Strategic Infrastructure-led Masterplan: Next Steps

Short-term recommendations

Deliver short-term place-based infrastructure

Infrastructure that will stand the test of time.

Quick win investment that can be accelerated to demonstrate the commitment and lay the foundations for change. This in turn will stimulate wider actions from stakeholders and build momentum for delivery of the masterplan.

Place-based Plans

Continuing to nurture the relationships built through the north fringe masterplan engagement to maintain involvement in taking forward place-based infrastructure projects and policies.

For areas which are closer proximity in terms of potential change it may be beneficial to develop more details site appraisals and infrastructure plans to better understand the case for change.

Phasing of changes and infrastructure pipeline

It is recognised that some of the longer-term potential opportunities will require more substantive infrastructure, with more complex business cases and the need to embed them within wider policy.

Critical to developing a longer-term pipeline of infrastructure will be consideration of current and future funding opportunities.

6.2. Deliver short-term place-based infrastructure

Table 6.1 below sets out short-term priorities for investment. These are needed regardless of any uncertainties around how longer term economic, environmental or movement needs may change. They will make tangible progress towards achieving a vision for the area and are not dependent on how uncertainties around future climate change, economy and future travel trends materialise.

Table 6-1 - North fringe Infrastructure-led masterplan: short term place-based infrastructure priorities

	<p>Formal assessment of green spaces and waterways</p>	<p>There is an immediate opportunity to understand how the existing green spaces and waterways, across the area, can be enhanced and better connected.</p> <p>A formal assessment is recommended to help identify the best options for enhancing these natural spaces to gain the maximum benefit for people and the environment.</p>
	<p>Tree planting and greening of streets across the area.</p>	<p>In residential neighbourhoods, tree planting and greening of streets is recommended to improve the quality of the environment for residents and visitors to the area as well as providing benefits for climate mitigation and resilience.</p>
	<p>Developing a strategy for rolling out 15-minute neighbourhoods.</p>	<p>Develop a detailed programme for rolling out 15-minute neighbourhoods, including working with local centres/high streets on the measures needed strengthen the diversity of local services.</p> <p>Creating 15-minute neighbourhoods, where residents have access to most, if not all, of their needs within a short walk or bike ride from their home, can have wide-reaching benefits.</p> <p>Through this approach we can create more attractive places for residents and visitors as well as reducing the need for people to travel. Improving access to community facilities in local areas can also reduce social inequality by enabling access to key facilities for those without access to a car.</p> <p>These schemes could be delivered at local centres for example: Patchway, Filton and Bradley Stoke.</p>
	<p>Further study to understand opportunities for Aztec West business park.</p>	<p>Potential opportunities to enhance Aztec West have been presented as one of the six illustrations included in the draft strategic masterplan.</p> <p>In order for these opportunities to be realised, further study of this area is recommended as a priority to shape the nature of renewal and replacement of existing buildings that are coming to the end of their life and the nature of new development coming forward to fill existing empty sites.</p>
	<p>A38 corridor review to understand how the A38 can better serve the local community.</p>	<p>A full corridor review is recommended to understand how this major road can be reimagined to better serve and connect local communities whilst retaining its function as a strategic transport corridor. The review should set out the phasing for changes to the corridor over the next 30 years.</p>



Feasibility assessment to consider options for reconfiguring the A38 Junction with Highwood Road to improve access by pedestrians, cyclists and wheelers (e.g. wheelchair users).

The existing A38 Junction with Highwood Road is extremely large and difficult to cross as a pedestrian, cyclist or wheeler. There may be opportunities to reconfigure the layout of the junction to improve access by pedestrians, cyclists and wheelers and make more efficient use of the space, potentially freeing up land for alternative uses.



Feasibility assessment to consider options for improved access across the A4174 Avon Ring Road near Abbeywood and UWE for pedestrians, cyclists and wheelers (e.g. wheelchair users).

The A4174 near Abbeywood and UWE is currently a significant physical barrier to pedestrians cyclists and wheelers. Therefore, a feasibility study is recommended to identify opportunities to improve crossing for pedestrians, cyclists and wheelers.



Progress walking, cycling and wheeling schemes to bridge the gaps between existing proposals along main routes.

There are several schemes planned to improve connections for pedestrians, cyclists and wheelers. However in the strategic masterplan, some remaining gaps in provision have been identified which could be improved to ensure all major routes are covered by continuous high-quality connections. Local connections and provision along quiet routes can then be developed as other developments come forwards.



Improving access to existing and planned new rail stations for pedestrians, cyclists and wheelers (e.g. wheelchair users) by improving connections and providing more last mile options (e.g. e-scooters, bike parking at stations).

Improving access to Bristol Parkway, Henbury, Filton Abbeywood, Filton North and Patchway will be critical to get the best out of the rail network. This can be achieved by ensuring there are good bus connections to all stations, as well as high quality facilities to support users travelling to stations by foot, bike or other wheeling modes.



Developing options for improved bus services in local neighbourhoods as part of the delivery of the Bus Service Improvement Plan.

The delivery of the Bus Service Improvement Plan provides the opportunity to improve bus connectivity into residential areas through either making changes to existing bus services or providing new services to meet demand.

This may include a review of the success of the Dynamic Demand Responsive Transport (DDRT) trial in the north fringe as part of the Future Transport Zone pilot, the preparation of a costed proposal for pilot feeder bus and/or DDRT to further expand accessibility of the bus network.

6.2.1. Supporting policy considerations

Beyond infrastructure, this masterplan points to several policy areas that need to be developed if the aspirations are to be met and the outcomes realised.

	<p>More people walking and cycling and higher standards for public transport</p> <p>Measures to reduce demand for travel by car, address severance, and enable a step change in public transport</p>	<p>Connectivity to provide access for all</p> <p>Infrastructure built to be accessible to all and issues of major severance points resolved</p>	<p>Revised parking standards for new development</p> <p>Review of current parking standards for new developments to encourage reduced car dependency</p>	<p>Make better use of underutilised land currently used for parking</p> <p>Review of current and future parking provision across the north fringe to identify opportunities for repurposing</p>
	<p>Access to open space</p> <p>Increased investment to improve access to existing open space</p>	<p>Introducing more Green Infrastructure* into the street environment</p> <p>Street tree strategy to increase Green Infrastructure across the entire north fringe</p>	<p>Higher standards for integrating Green Infrastructure*</p> <p>Higher standards for integrating Green Infrastructure with grey infrastructure (transport, new developments etc.)</p>	<p>Improving strategic Green Infrastructure* connections</p> <p>Building wildlife corridors to contribute towards strategic Green Infrastructure connectivity as part of the nature recovery network</p>
	<p>Meeting energy needs of the area</p> <p>Resilient and green energy supply</p>	<p>Innovative approach to water management</p> <p>Prioritise investment in wastewater management solutions which have wider benefits for the environment and reduce waste</p>	<p>Improving efficiency</p> <p>Promote collaboration and innovation to develop a more circular economy for water, waste and energy in domestic and commercial settings</p>	<p>Leading the way with digital</p> <p>Building a fast, high powered, digital network suitable to support market leading growth and innovation</p>
	<p>Stronger and more diverse local economy</p> <p>Support for small businesses and encouraging high streets that enhance local identity</p>	<p>Encourage collaboration between key players in the north fringe</p> <p>Collaboration groups to steer planning across energy, waste management, future skills needs, community infrastructure desires, supply chain</p>	<p>Developing the skills for tomorrow</p> <p>Better planning for post-16 education to give people the opportunity to develop skills which will be vital to drive forwards the green economy</p>	<p>Invest in flexible workspaces</p> <p>Increased investment in improving facilities to support education and employment in the green innovation sector</p>
	<p>Health care</p> <p>Better local access to healthcare facilities</p>	<p>Encouraging mixed use and higher densities</p> <p>Local plan policies which encourage mixed use and higher densities in new and existing developments</p>	<p>Retrofitting existing development</p> <p>Retrofitting of homes to improve energy efficiency and energy supply</p>	<p>Community facilities for everyone</p> <p>More places for people and groups to strengthen community cohesion</p>

A healthier, more sustainable, and equitable north fringe by 2050

*Green Infrastructure is the term used to describe the natural environmental features of an area and the natural connections (or network) between these features.

6.3. Place-Based Plans

There is an opportunity to build on dialogue and stakeholder relationships across key businesses, private sector infrastructure providers, landowners and health and education providers to help plan for and drive forward key concepts of the masterplan.

Through ongoing dialogue there will be a better understanding of both the potential proximity of when future change could be realised and what further work should be progressed to unlock the potential of the area.

Set out in this section is an appreciation of specific areas where further work may be warranted to develop an understanding of the potential opportunities, and what measures would be required to realise them.

Opportunity area masterplans

Of the areas considered within this masterplan, there are already active conversations underway around the UWE/Abbeywood to Stoke Gifford Area and in relation to the development at the former Filton Airfield. It is recommended that the principles set out within this masterplan are taken into discussions and further work in relation to those locations to strengthen the outcomes.

The remaining areas that could merit further consideration of how the masterplan concepts and principles could be developed are Cribbs Causeway and the business parks at Aztec West and Woodlands. Of these two locations, there is less urgency around the Cribbs Causeway area as the retail market appears to be holding up stronger than similar retail locations around the country and there is, therefore, more time to consider longer term uses.

In terms of the business parks, Aztec West is an area that could be subject to incremental change in the nearer term given the age of some of the buildings and due to the remaining undeveloped plot adjoining the Patchway residential area. This presents an opportunity to influence how positive change takes place to start to turn Aztec West looking outwards and integrating with the surrounding communities. Conversely, in the absence of developing this opportunity, the market may deliver different forms of growth at this location that miss out on acting as a catalyst for wider regeneration.

As part of the development of further place-based plans it will be important to consider the findings of the Combined Authority and South Gloucestershire Council employment land reviews and, in due course, the updated South Gloucestershire Local Plan.

Formal assessment of strategic ecological networks

There is an immediate opportunity to understand how the existing GI across the north fringe can be enhanced and better connected. An understanding of the potential interventions could inform future investment programmes and potential developer contributions to start to deliver change.

A more formal assessment of Habitat identification, Biodiversity Net Gain Baseline calculation and assessment of possible interventions to improve biodiversity net gain could be undertaken. This will also

allow more detailed consideration of the potential carbon benefits associated with Biodiversity Net Gain and green/blue infrastructure.

A high-level strategic quantification and valuation of other benefits can be undertaken, including increased flood protection and urban cooling to adapt to climate change, air pollutant removals, water quality, and recreational and educational opportunities.

6.4. Phasing of changes and infrastructure pipeline

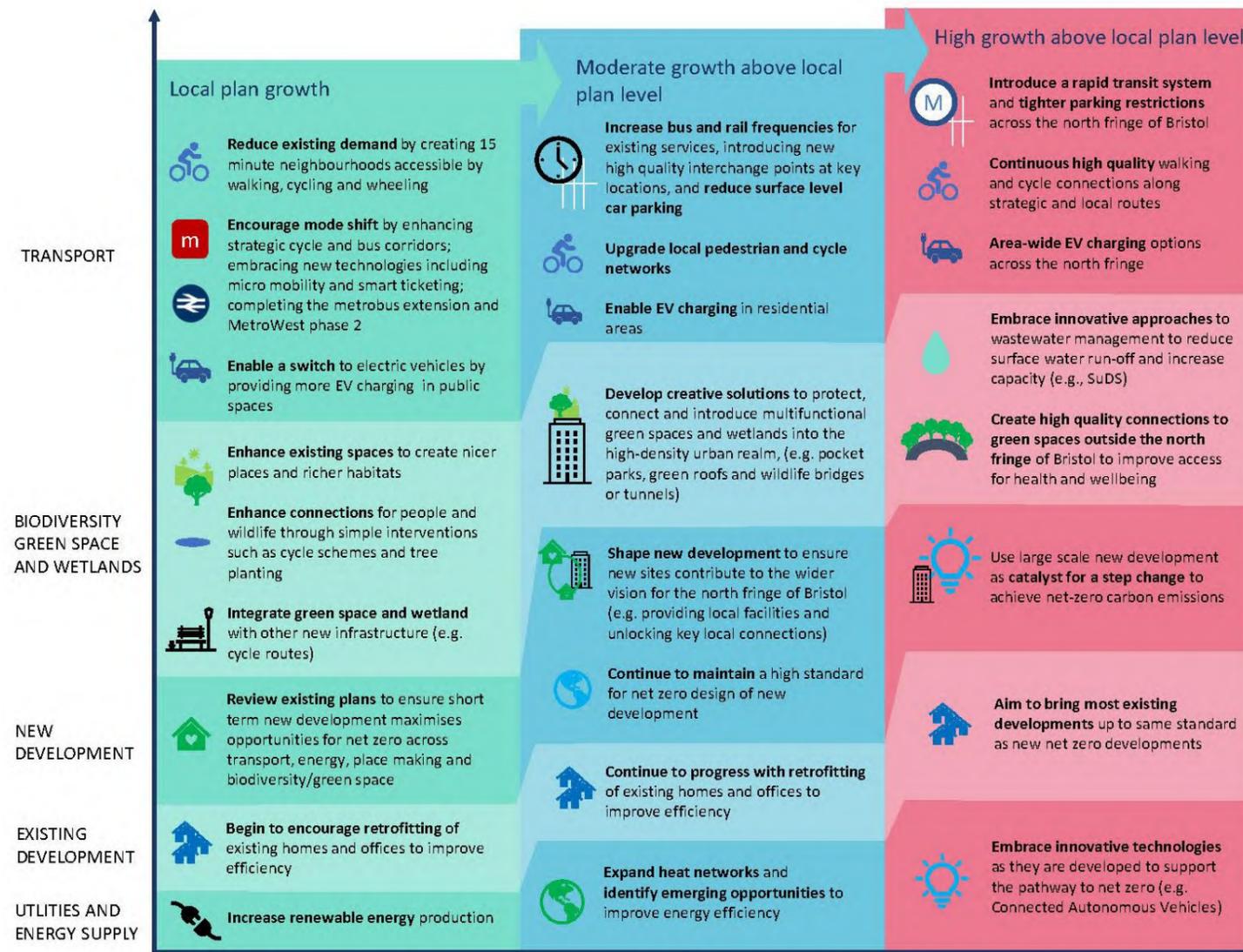
Given the complexity of the area and the current and future potential for change, there is a need to develop a conveyor belt of

interventions to ensure a sustained delivery of infrastructure proposals to fully realise the future potential of the area.

The infrastructure programme should be developed in line with the principles of increasing investment and growth as set out in the illustrative example below.

The precise nature of what is needed in the medium and longer terms to support growth in the north fringe should be driven by the updating of local planning, transport, and economic policy alongside any further development Place-Based Plans for the areas identified within this report.

It is recognised that this masterplan covers a longer period up to 2050 and, as such, could contain potential options beyond current



Illustrative example of how infrastructure will need to respond to increasing levels of growth across the north fringe, to maximise opportunities for sustainable transport and provide important services to meet the needs of business and residents of the north fringe

plans. The principles identified in this masterplan should be built into future policy reviews and longer-term infrastructure programmes should be maintained and updated.

When planning future growth, place-making and infrastructure projects, the importance of inclusive and sustainable design must be prioritised to ensure any interventions will contribute towards the pathway to net zero carbon and reduce social inequality, whilst enabling economic growth. This means, any new proposals should consider the latest standards and guidance emerging from the latest net zero strategies, inclusive design principles and environmental regulations.

Providing the right infrastructure at the right time

It will be crucial that a holistic approach to planning and development is applied to ensure the right pieces of infrastructure come forward at the right time to support planned growth. This will ensure that as new development comes forward, people continue to have access to necessary education, employment, and healthcare services as well as ensuring there is sufficient provision of green space and sufficient capacity in our transport and utilities networks to support increased demand.

Future proofing utilities

Creating future-proofed utilities networks will be paramount to: enable the roll-out of electric vehicles through the provision of green electricity; enabling home-working and encouraging inwards investment from research and development and advance engineering sectors through the provision of high performing digital networks; and keeping carbon emissions down and responding to the impacts of climate change through delivering innovative solutions to wastewater management and the design of new developments. This will require a joined-up approach ensure that infrastructure investment is both resilient to future changes in utility provision and able to provide sufficient capacity for energy, wastewater, and digital connectivity to support economic activity and continued growth across the north fringe.

Realising opportunities for public transport

The phasing of transport infrastructure will also need to align with the phasing of development. In the first instance small scale interventions can be implemented, including the creation of 15-minute neighbourhoods and improved walking cycling and wheeling connections, to reduce travel demand. Then, as the intensity of development is increased, there will be new opportunities to ramp up the frequency of public transport services as these become more viable due to increased demand. This will need to be timed with a reduction in capacity for private car use to encourage a shift towards more sustainable travel behaviours in the north fringe.

Maintain high standards for multifunction GI as the level of growth intensifies

Finally, as places grow and evolve, high standards for GI must be maintained and therefore there will be a need to identify innovative solutions to integrate GI into the urban realm to ensure as the north

fringe grows, people continue to have access to high quality open space and key wildlife corridors are preserved.

6.5. Funding long-term infrastructure

The West of England is in a strong position to deliver ambitious infrastructure programmes to support inclusive, sustainable growth.

The Combined Authority builds on 15 years or more of joint working that has seen a gradual ramping up of investment. This includes joint working on major infrastructure projects prior to the Investment Fund such as the metrobus network, and the delivery of a range of projects through the Local Enterprise Partnership including the £202m Local Growth Fund, £500m Economic Development Fund and £57m Revolving Infrastructure Fund programmes.

Funding for economic infrastructure

The local authorities between them control access to various 'internal' funding programmes which can be used to fund economic infrastructure, town centre regeneration and affordable and specialist housing. This includes the funding generated from business rates growth in the Filton Enterprise Area.

Regional Funding

The Combined Authority has various funding routes for housing schemes which could be relevant.

Investment Fund

As part of devolution, the Combined Authority was awarded £900m, that being £30m per year over 30 years, half as revenue and half as capital, which has been used to create the Investment Fund.

Transforming Cities Fund

Initially awarded in late 2018, with a further allocation announced in 2019, £103m capital grant has been allocated for the development and construction of major transport schemes to help influence modal shift and encourage more use of public transport. The funds must be spent by March 2026 and form part of the Combined Authority Investment Programme (including the Investment Fund) of £450m up to that period.

City Region Sustainable Transport Settlement (CRTS)

The newly announced CRTS provides over half a billion pounds to the West of England to take forward transport priorities. The government has indicated this could be the first of an ongoing programme of 5-year settlements that would give the certainty to fund a long-term ambitious programme of transport improvements in the region.

Government Funding

The government's flagship 'levelling up' policy will be further developed during 2022, following the release of the Levelling Up White Paper in January 2022. The second round of the Levelling Up Fund closes on 6 July 2022 which offers £20m for regeneration and transport projects and a limited number of large transport schemes which can bid for £50m. Thinking of levelling up at a wider scale, for

real estate impacts to be seen there needs to be a consideration on how best to geographically realign the UK's knowledge economy so that the economic benefits of productive industries are better shared.

In some cases, the government will likely need to incentivise heavily to secure private investment into physical real estate as part of the process for improving the attractiveness of places. Recalibrating this business sector composition is what can truly move the dial on levelling up and enable other parts of the country to replicate at commensurate scale that which has occurred in the capital. Within this context, the government will need to focus on holistically improving key regional business districts – as well as the infrastructure, living, retail and cultural offer supporting them - in a way which can facilitate the increased occupation and retention of service industries. A critical part of this will be the provision of high-calibre office and laboratory space to help attract those businesses, and so we can expect increased collaboration between government and the private sector. This process should also intersect with other areas of critical importance to real estate and the government alike such as the push towards net zero carbon.

Government and business research and development budgets are being increased particularly for sectors like life sciences. The north fringe should position itself to capture a larger share of these investments by showing the investors that the supporting physical infrastructure and skills base exists for long term growth of key research sectors.

The north fringe is already a successful innovation district of national significance but as competition increases in other regions to capture a wider share of the knowledge economy and high value talent and skills base, the north fringe needs to continuously improve its economic capabilities and capacity.

Other current external /government funding

Major Road Network

The Western Gateway Sub-national Transport Body has prioritised the A4174 corridor improvements scheme. Subject to business case approval this will provide improvements that will address capacity issues on the ring road.

Single Housing Infrastructure Fund

Details awaited on the scope and timescales of this funding which has been trailed in 2020 and 2021 Budgets. The original Housing Infrastructure Fund has been used successfully by local authorities to provide infrastructure for larger housing sites

Other DLUHC programmes

This includes Town Deal, Future High Streets Fund. Both currently closed with no future rounds announced. Region/City- wide regeneration programmes which could include housing schemes in a package.

Homes England

The Affordable Housing Programme 2021-2026 can be accessed by local authorities, RSLs and private sector developers and

partnerships comprising these bodies. The funding is for the supply of new build affordable housing.

Loans are also available to private sector developers through the Home Building Fund for unlocking housing sites.

One Public Estate(OPE) revenue funding

Funding is made available for projects that will unlock public sector sites for economic growth, new housing, and service transformation. Typically, it will fund detailed feasibility, master planning and business case stage. Typical project funding would be £100-£200k. This would need to be put forward as part of a West of England OPE programme bid.

Land Release Fund

This fund provides capital funding for pre-construction, land acquisition and enabling infrastructure works to unlock local authority land for housing. 2021 round was focused on brownfield sites. Grant size up to £15k per unit. Future funding round anticipated but no date announced. Business Cases would have to be brought forward as part of a West of England programme proposal.

Shared Prosperity Fund/Community Renewal Fund

These are UK Government's replacement programmes for EU structural funds which will be administered at West of England level. Details are awaited but they are likely to include housing and regeneration within their scope.

UK Subsidy Control

These regulations will replace EU state aid law. The principles will be the same in that the subsidy provider such as a local authority will have to demonstrate that unfair subsidy is not being provided to private sector partners. Details awaited from Government on new subsidy regime and compliance.

Private Sector Funding

Through the potential scale of development unlocked over the next 30 years there could be significant developer contributions towards enabling infrastructure to complement public sector investment. More detailed development of area specific masterplans and site appraisals will identify the scale of private sector money that could be levied and the timescales over which it might be realised.

Delivery partners for economic infrastructure

A primary driver is the continuing strength and capacity of the technology in the area reflected in the Local Industrial Strategy (LIS) and partnerships to boost the knowledge economy and skills base in the north fringe. The north fringe should position itself as one of the UKs leading inward investment locations for technology specialisms including aerospace, composites, digital and robotics. Focus should be on infrastructure to support SMEs and start-ups both from the existing supply chain to the major NF businesses and new entrants. This will include innovation and incubation accommodation, business support and skills development centres, and specialist technology centres like the National Composites

Centre. A range of key partners should be engaged by the local authorities to deliver the Local Industrial Strategy priorities and objectives:

- Aerospace primes – Airbus, GKN, Rolls Royce, BAe with their substantial supply chains
- Other technology sectors e.g., Advanced manufacturing, Defence, Emerging materials technologies, digital, microelectronics research and design, financial and business services sector, Sustainable and low carbon energy research, development, and manufacturing
- UWE – a key partner for innovation, research and technology transfer and partnerships with business.
- South Gloucestershire and Stroud College- important to support local skills base supporting key sectors
- MoD Abbey Wood – longer term potential for business and innovation collaborations with defence sector
- Developers and major landowners- key sites which can be the focus of future knowledge economy developments – Filton Airfield, Horizon 38, Cribbs Causeway, Aztec West and Almondsbury Business Park, UWE campus, Aviva campus. MoD campus.

6.6. Delivery Planning

This masterplan demonstrates potential growth opportunities across the north fringe and the place-based outcomes that they could support.

These areas of change are likely to support medium to long term economic and housing growth, including beyond the proposed new Local Plan period. Levels of growth that could be supported at these sites will depend on the strategic and site level infrastructure necessary.

It is acknowledged that much of growth will be market driven which will determine the timescales of developments, although some targeted growth may need public sector interventions for strategic and policy reasons, and this is covered in further detail below.

This type of area-wide master planning forms part of the wider evidence-base for local economic, planning and transport policy development along with the development of infrastructure programmes by both the public and private sector. It provides a high-level view of the future, stakeholder views and the priorities for further studies, scheme, and policy development to start to take forward the vision.

The proposals set out in the Strategic Masterplan, in their current form, will require further study before proposals can be translated into commitments in the emerging Local Plan.

Intervention strategy

In terms of meeting the long-term aspirations of the masterplan it is envisaged that a combination of the following delivery approaches would be used by the public sector and private sector partners:

- Market Led approach. This is likely to account for most of the new development. Developers and owners will respond to structural changes in the market, but the asset values of current land uses and operational requirements such as car parking, will mean that growth scenarios of the type shown above could take a long time to occur. Equally where there is a permanent shift in demand patterns the private sector will respond quickly, and institutional funding will follow. The public sector role would largely be limited to guiding and influencing through planning policy. Site infrastructure would be funded, overall, by the developers.
- Strategic Infrastructure investment – growth areas would be supported by public sector led strategic infrastructure programmes across the north fringe including transport improvements, utilities upgrades, green and blue infrastructure and improved public realm. This infrastructure will be designed to improve existing communities as well as growth areas. From an economic development perspective, the public sector partners may choose to intervene at a strategic level to support high quality economic growth across the north fringe - for example through inward investment campaigns, skills, enterprise, and business support initiatives.
- Targeted Project Interventions - the public sector may decide to intervene proactively with the growth area partners to ensure the optimum economic benefit and housing outputs are delivered. The type and scale of interventions will vary particularly where external funding from government is proposed but could include:
 - Local authority land acquisition and direct development like Bristol and Bath Science Park
 - partnership projects with industry like the GKN technology centre and National Composites Centre
 - skills and innovation projects with UWE and South Gloucestershire and Stroud College
 - Partnership/Joint Ventures with landowners to create high quality employment/R &D offices
 - Other site-specific infrastructure projects – public realm, utilities, low carbon infrastructure, health, and social amenities - in exchange for landowners committing to developments that will achieve the masterplan aspirations

Choosing Project Interventions and business cases

In considering what level of intervention is appropriate, the local authorities and other public sector partners will need to consider the cost-benefit of strategic and site-specific infrastructure projects against the potential housing and high-quality jobs outputs. Projects could then be prioritised for internal regional funding and considered for business cases to government and other external funding opportunities.

When selecting projects deliverability will be key. Government funding programmes are usually seeking 'oven ready' projects

which can be delivered in less than 5 years. This suggests the following key criteria for selecting interventions -

- Having public sector owned land or legal control of land with third parties
- Having planning permission or the firm prospect of achieving it quickly
- Having local match funding alongside government funds
- Having stakeholder and political support for the project
- Having 'hard' economic outputs for high quality jobs and housing outputs to justify value for money
- Having robust governance and project management structures
- Showing how the interventions have a strong strategic fit and will contribute to achieving the wider vision and aspirations for the area and projects act as a catalyst for further activity
- Showing added value on factors like low carbon impacts and social value enhancements
- Having agreed procurement and delivery methods for the capex and operational stages of the project

6.7. Conclusions

This masterplan sets out a place-based vision for the north fringe that can strengthen its role as a leading economic area whilst also enhancing and strengthening the connectivity, cohesion, and character of local communities.

The infrastructure-led strategic master plan for the north fringe has provided an opportunity for the local authorities and stakeholders to look at the area now and the opportunities for change over the next 30 years. The output is a vision for the area supported by a high-level view on the infrastructure and wider policies that could realise the opportunities identified.

The principles for inclusive, sustainable growth through applying place-based incremental change to the north fringe should inform the development of infrastructure programmes and economic, planning and transport policy.



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