Science Vale
Movement and Place Plan

Local Transport and Connectivity Plan – Supporting strategy

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SCIENCE VALE

OXFORDSHIRE COUNTY COUNCIL

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Vision for Science Vale

To be a place that is:

Healthy and pleasant for its communities, that enhances its position as a place for world-leading research, enterprise and innovation and significantly contributes to the economic prosperity of Oxfordshire and the whole of the UK.

To enhance the sense of place, including the mix of rural and urban, by enabling sustainable development, protecting the surrounding natural and historic environment, improving climate resilience, and enhancing biodiversity, whilst also encouraging a shift in travel behaviours.

To have an inclusive, accessible, and integrated transport system, which improves and removes barriers to walking, wheeling and cycling and public transport, whilst reducing traffic congestion and reliance on private vehicles.

© Harwell Campus

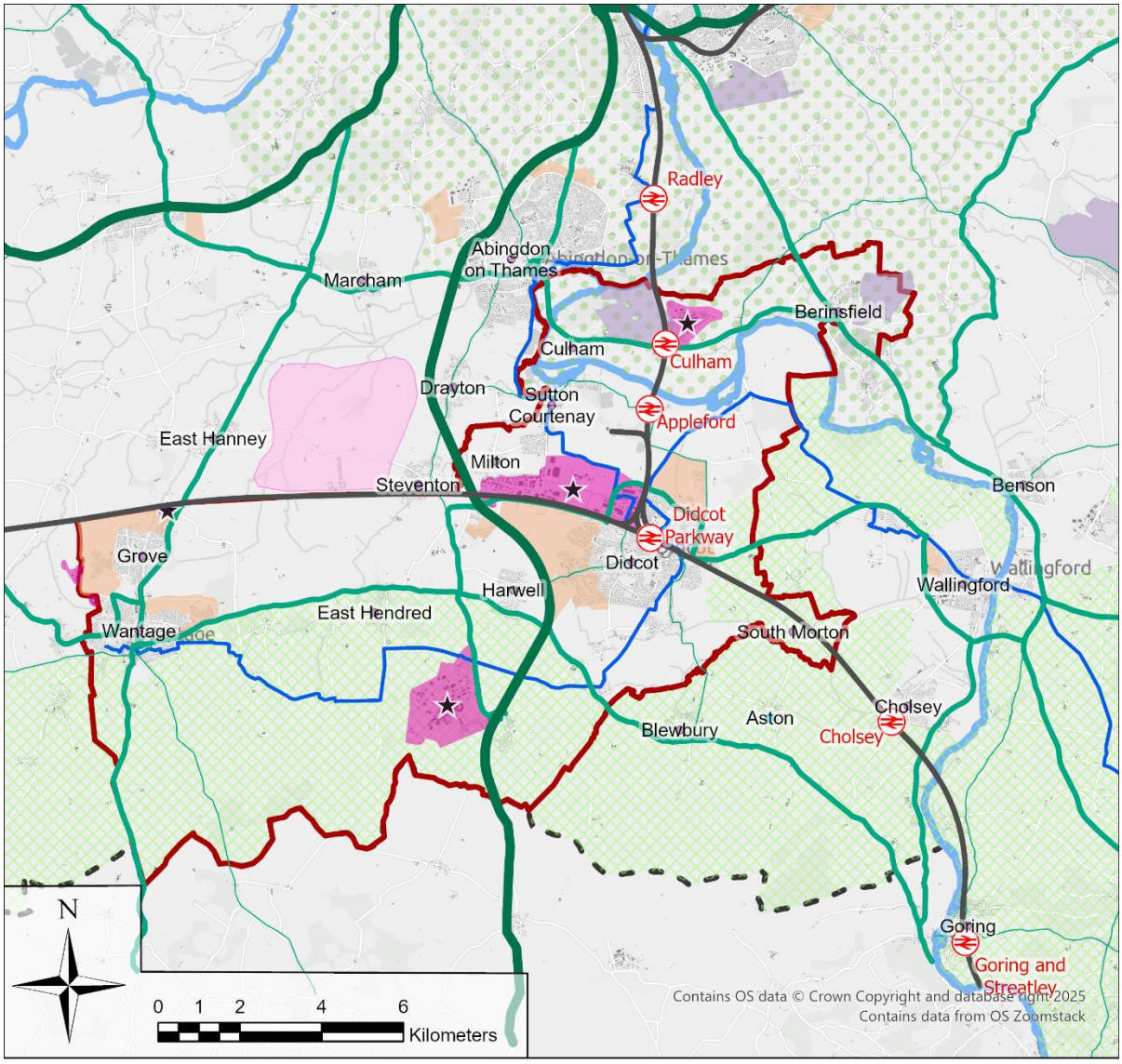
Area context

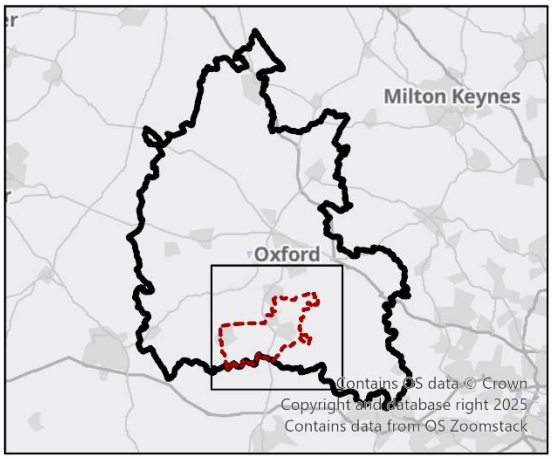
Science Vale is a significant part of Oxfordshire, an area with a concentration of world-class innovative research and enterprise. Spread across the districts of South Oxfordshire (SODC) and Vale of White Horse (VoWHDC), Science Vale covers the towns of Wantage and Didcot, the villages of Culham, East Hendred, West Hendred, Chilton, Ardington, Harwell, Upton, East Hagbourne, West Hagbourne, North Moreton, South Moreton, Sutton Courtenay, Milton, Appleford, Long Wittenham, Little Wittenham, Clifton Hampden, and Berinsfield; as well as the employment sites at Culham Campus, Harwell Campus and Milton Park, as outlined in **Figure SV1**. It should be noted, the defined area to inform this Movement and Place (MAP) Plan was considered as the most logical approach based on the official boundary for the Science Vale area. Although it is recognised people and communities will move across this boundary and as such, this is recognised throughout this plan. This is particularly recognised between Science Vale and Abingdon-on-Thames and Wallingford, with trips being made into and out of Science Vale for work, school, and leisure.

A significant amount of the northern Science Vale is situated within the Oxford Green Belt, while much of the southern area is situated within the North Wessex Downs National Landscape. The North Wessex Downs is the third largest National Landscape in the UK and covers an area of 1,730 square kilometres[1].

Science Vale is also home to approximately 73,000 people[2], primarily centred around Didcot, Wantage, and Grove. We observe that those who live in the area may not relate to the term Science Vale, however we note the importance of this for funding and strategic planning. These areas are served by a variety of local amenities and services including 37 schools, seven medical centres, five libraries, two community hospitals, shopping centres, and leisure facilities including five leisure centres, three museums, and a cinema.

Map of Science Vale





Legend

- Rail Stations
- National Rail Line
- Strategic Road Network
- A Road
- B Road
- National Cycle Network Route
- Primary Employers
- Employment Areas

Currently Allocated Sites landuse

- Housing
- Housing and Employment
- NSIP
- Oxford Greenbelt 2020
- Areas of Outstanding Natural Beauty
- River Thames
- Buildings
- Science vale boundary
- Oxfordshire boundary

Figure SV1: Map of Science Vale

The area is home to major employment sites with a focus on the sciences (Culham Campus, Milton Park, and Harwell Science and Innovation Campus), and two Enterprise Zones (Science Vale UK and Didcot Growth Accelerator). Science Vale also benefits from several other employment sites including Southmead Industrial Estate in Didcot, Williams F1 Team in Grove, and Tower Business Park in Berinsfield. In 2025, it was estimated that there were more than 41,000 jobs in Science Vale, with this projected to grow to more than 48,000 in 2050[3].

In between the employment and residential areas in Science Vale there is beautiful countryside for those living, working and visiting the area with some of this area forming a part of the North Wessex Downs National Landscape. This includes Wittenham Clumps, the largest publicly accessible green space in Oxfordshire. Large parts of the northern part of Science Vale are located within Oxford's Green Belt. The open green space is important for providing recreational opportunities, but also from a health perspective.

The surrounding countryside outlined above is connected to the towns, village and employment sites in Science Vale through a variety of cycle routes and pathways of varying quality and accessibility, including routes that can be used by equestrians. National Cycle Routes 5 and 544 run through Science Vale, composed of quiet roads, bridleways, byways, and purpose-built paths, the quality of which varies significantly. Further Public Rights of Way provide access to nature, while The Ridgeway, Thames Path National Trails, as well as Vale Way and Oxford Green Belt Way Recreational Routes extend through the area. The Wilts & Berks Canal is a further feature in Science Vale, which is sought to be re-established as a navigable waterway and walking, wheeling, and cycling route along its entire length between Melksham, Wiltshire for the Kennet and Avon Canal and Abingdon-on-Thames for the River Thames.

Geographically, Science Vale is in an advantageous location, with good accessibility to a wide range of regional and national destinations by rail, coach and road, including Oxford, London, Reading, Heathrow Airport, Gatwick Airport, Swindon, Southampton, Bristol, Cardiff, Swansea, Cheltenham and Birmingham. It is also noted that Science Vale is also located within close proximity to the proposed South East Strategic Reservoir Option (SESRO). SESRO is a Nationally Significant Infrastructure Project (NSIP) being developed by Thames Water to build a reservoir to the northeast of Grove. If built, it would ensure drought resilience and protect water supplies across Southeast England[4].

Didcot Parkway Rail Station is the busiest station by number of services[5] and the second busiest by passenger numbers[6] in Oxfordshire. It is on the electrified Great Western mainline which runs east-west connecting Science Vale by rail services to London, Bristol, Cheltenham and South Wales, and its Oxford branch runs north connecting Science Vale to

Oxford and Banbury. Science Vale also is home to a comprehensive bus network centred around Didcot. The bus network provides a range of connections between the rural and urban areas of Science Vale and as well as to other key regional destinations such including Oxford, Faringdon, Newbury, Wallingford, Abingdon-on-Thames, and Reading.

In terms of road network, the A34 runs north-south through Science Vale and provides direct road links to the M4 and M40. Supporting the strategic road network and providing local connections between leisure, residential and employment areas is network of key movement corridors. The key travel corridors in Science Vale include the A4130, A415, A417, A4074, A34 and A338. These corridors provide routes for those using their bicycles, horses, car, motorcycles and other powered two-wheelers to travel throughout Science Vale.

We recognise that Science Vale is a primarily rural area, that has a sparce population, and in some areas, they currently have limited alternatives to using the car as their primary mode of transport. Furthermore, there are areas with a high percentage of elderly people (15% of population are over 65)[7] who also may not be able to access the alternative modes available.

Given its accessible location and the increasing number of employment opportunities, more people are choosing to call this area their home. It is predicted that Science Vale will grow significantly in the future, with an anticipated 18,000 new homes and over 200 hectares of new employment floorspace planned by 2041. As a result, the population projected to increase to more than 170,000 in 2050[8], which is equivalent to the population of Oxford City in 2021. A significant amount of the employment floorspace that is allocated in Science Vale is located on brownfield sites that have some former use – for example Harwell Campus (93-hectare allocation) was previously the United Kingdom Atomic Energy Authority's main research centre.

Key facts and figures

170,000 residents in 2050

73,000 residents

18,000 new homes by 2041

3 Major employment areas with a focus on technology

H^RWELL

Milton Park

CULHAM CAMPUS

41,000 workers

Other key employers

WILLIAMS RACING TESCO ASDA

200 hectares of new employment land by 2041

2 Enterprise Zones

7,000 new jobs by 2050

21 bus routes

37 schools
7 medical centres
5 leisure centres
5 libraries
3 museums
2 community hospitals
1 cinema
1 National Landscape

3 railway stations

Didcot Parkway Station is **second busiest** in Oxfordshire and gets the most services

68% of residents travel to work by driving

39% of residents in Didcot commute to work for less than five kilometres

89% of households in South and Vale own a car or van

Challenges and opportunities

Dealing with the challenges Science Vale is facing currently will help to improve the lives of those living in the area. These challenges affecting the Science Vale area include population and employment growth, traffic congestion, poor air quality, road safety issues, public transport issues, climate and environmental concerns, and deprivation. The council also needs to ensure the local transport network helps to deliver net-zero by 2040.

The choices we make and the opportunities we take to resolve these challenges impact people differently and to varying degrees and must be carefully considered. We must recognise this and ensure that the objectives and actions outlined later in this chapter make Science Vale better for everyone, whilst also accepting that due to the rural nature of Science Vale and its demographics, some people will need to continue using a private vehicle for their journeys.

A challenge common to all MAP Plan documents is the need to deliver against the policies and targets of the Local Transport and Connectivity Plan (LTCP). As this document forms part of the LTCP, it should be read alongside the LTCP and its supporting strategies, with this MAP Plan helping to achieve the policies and targets within the LTCP.

Population and employment growth

The growing population in Science Vale presents many opportunities for people living and working in the area, but it also brings challenges that we need to address. This is complicated by a large amount of Science Vale being situated within either the Oxford Green Belt or the North Wessex Downs National Landscape. The population of Science Vale area is projected to increase[1] from 73,000 in 2023 to approximately 170,000 in 2050[9], meaning an approximate annual increase of 3,500 people. If the existing mode share was to project into the future in a similar way, combined with the level of growth anticipated, then the levels of traffic congestion across Science Vale will be unsustainable.

Large strategic residential and employment sites are allocated within both the currently adopted South Oxfordshire Local Plan 2011-2035 and Vale of White Horse District Local Plan 2031. SODC and VoWHDC are preparing a Joint Local Plan (South and Vale JLP) to guide future housing and employment growth across the two districts. The plan will set out what

[1] **Calculation:**
1) 2021 Population / 2021 Number of Houses = Population per dwelling
2) Local Plan Allocations (assuming same level of growth up to 2025) x Population per dwelling = future population growth
3) Future population growth + 2021 Population = Population in 2050.

types of development are needed and where they should be located, providing a framework for planning decisions. The JLP has an up-to-date evidence base, and both the JLP and its evidence base have been used, where required, to inform this MAP Plan. The JLP has been submitted to the Secretary of State for Housing, Communities and Local Government for independent examination.

Within Science Vale, the JLP allocates a number of sites, including the two garden communities in Didcot and Berinsfield. Over the period up to 2041, Science Vale area is allocated[10] to provide approximately 17,927 dwellings[2], with further employment and residential allocated outside Science Vale boundary but having a key interaction with Science Vale area.

The South and Vale JLP also identifies significant employment land allocations. These are complemented by adopted Local Development Orders (LDOs) for Didcot Technology Park and Milton Park, as well as two Enterprise Zones covering Harwell Science and Innovation Campus, Milton Interchange, and Didcot Quarter. Together, these allocations and designations provide around 200 hectares of employment land in Science Vale, supporting economic growth and innovation in the area through to 2041.

Wallingford and Abingdon-on-Thames are closely linked to Science Vale due to the existing population sizes and number of people travelling between these towns and Science Vale. The two towns are also expected to experience further growth, through allocations and the spatial strategy. In the vicinity of Abingdon-on-Thames there are 3,750 dwellings allocated in adopted local plans and 8.8 hectares of employment land with Wallingford allocated for 555 new dwellings and 1.09 hectares of employment land. In the emerging South and Vale JLP, the existing allocation at Dalton Barracks Garden Village is proposed to be increased from 1,200 to 2,750 dwellings and sets out an area for employment of 7.4 hectares[11]. While the sites at Abingdon-on-Thames, Wallingford and Daltan Barracks Garden Village are outside Science Vale boundary, their interaction with Science Vale is high, with Science Vale being a key trip attractor for those living in these locations.

[2] **Housing**: Berinsfield Garden Village (1,700 dwellings), Land adjacent to Culham Campus (3,500 dwellings), Rich's Sidings and Broadway, Didcot (100 dwellings), Land at Didcot Gateway (200 dwellings), Vauxhall Barracks, Didcot (300 dwellings), North West of Grove (600 dwellings), North West of Valley Park (800 dwellings), Ladygorve East (642 dwellings), Didcot North East (2,030 dwellings), Milton Heights (400 dwellings), Monks Farm (885 dwellings), Grove Airfield (2,500 dwellings), Valley Park (2,550 dwellings), Crab Hill (1,500 dwellings), Land East of Sutton Courtenay (175 dwellings).

Employment: Berinsfield (5 ha), Culham Campus (2.3 ha), Harwell Science and Innovation Campus (93 ha), Southmead Industrial Estate (2.7 ha), Didcot A Power Station (29 ha), Grove Tech Park (5.4 ha), Former Esso Research Centre (11 ha), Land next to Milton Interchange (8.2 ha), Didcot Quarter (15.22 ha), Didcot Tech Park (23.4 ha), Milton Park (5.36 ha).

Economic growth

Science Vale is a significant area of economic growth, with the area accounting for about 4% of the research and development (R&D) employment in England and 13% of the South East region[12], which is critical to support wider economic development in Oxfordshire.

The key to this economic development is the three large employment sites that have a focus on science, innovation, and technology:

- **Milton Park -** Milton Park is a science, technology and business park, home to over 250 business and employing over 9,000 people. Milton Park has a combined turnover of £10.8 billion, generating £68.3 million of grant funding and £2.14 billion of equity investment over the last decade, which is over 7% of the UK's life sciences investment[13].
- **Culham Campus -** The UK's Atomic Energy Authority's (UKAEA's) fusion research at Culham Centre received £346.7 million in funding between 2009 and 2019. Globally the private fusion sector generated over £3.2 billion in private investment[14] to help grow this sector, with this in addition to the revenue of the non-fusion related businesses. It was also announced by the UK government that Culham Campus had been chosen as the UK's first AI Growth Zone. The AI Growth Zones will revitalize local communities, helping to attract billions of pounds in private investment, creating cutting-edge AI jobs and reinforcing 'Britain's position as a global leader in the technology'[15].
- **Harwell Science and Innovation Campus -** is home to clusters for Space, Clean Energy, Life Sciences, Health/Bio-Tech and Quantum Computing and is home to over 7,500 scientists, engineers and innovators and £3bn of scientific infrastructure[16]. All of the Science and Innovation businesses at Campus continue to grow with the number of organisations at the site being over 200. Many of the clusters are expected to grow over the coming years. For example, the global space sector is anticipated to continue expanding, with annual revenue estimated to reach £798 billion by 2040, increasing from £279 billion today[17]. Harwell Science and Innovation Campus is critical to this growth with the UK currently providing £14.8 billion towards the global income in this sector.

A key employer in Science Vale area is also Williams F1, which has an annual revenue of £127 million[18] and recently received an investment of £100 million[19].

Spatial context and population density

Science Vale covers a large area (c. 150 square kilometres) and is home to a range of communities including towns, suburban estates, large and small villages, hamlets, and employment sites, which are geographically spread across the area, meaning they can be isolated and separate from each other. The population density in Science Vale is 2,234 people per square kilometre[20], this is much lower than in our urban areas (such as, Banbury & Bicester) as would be expected by an area covering a significant amount of rural settlements. Therefore, transporting people from homes to their place of employment is one of the biggest challenges in the area. This is further complicated by the presence of multiple sites that are important for biodiversity which can limit the opportunities to make improvements to the public transport and walking, wheeling, and cycling infrastructure.

Lower population density and greater travel distances, makes it less feasible and affordable to provide frequent public transport, and can also result in longer journey times and limited operating hours[21]. Generally, rural areas are connected via movement corridors, in the form of A-roads, which can be congested[22] in some locations at peak times. Congestion can also form a barrier for those walking, wheeling and cycling or using public transport because of longer journey times and reduced punctuality of bus services.

The growth in Science Vale includes housing and employment sites at Berinsfield and Culham Campus (residential site is on land adjacent to Culham Campus), which are spatially separate from the key service centre of Didcot, as well as the key service centres outside Science Vale, namely Abingdon-on-Thames and Wallingford and are in rural areas. The sites will have a local centre, with a range of day-to-day services, however, due to the location of these sites it may require the existing and new populations of these areas to travel greater distances to reach some facilities. This includes leisure and non-food retail and in some circumstances employment and secondary education, reducing the opportunities to walk, wheel, cycle, and use public transport.

Modal share and traffic congestion

The movement of motorised vehicle traffic has been an important concern for the community, planners, and designers for many years, particularly in areas where settlements, employment sites and leisure facilities are isolated and separated from each other, such as in Science Vale. Typically, this creates places that feel unwelcoming and unattractive for those who do not use a car particularly in areas that function as public realm. Public realm areas are the spaces between buildings that are accessible to people, including streets, squares, green spaces, and pedestrian areas.

Significant levels of motorised vehicle traffic are experienced in Science Vale, particularly along the primary road network and key areas, such as in A34, A4130, Broadway/ Station Road in Didcot, Mill Street and A417 in Wantage[23]. In 2023 an assessment of A Road Delay was produced (see Figure SV2 below), this map indicated that congestion was prevalent at a number of locations during the AM peak hour, including along the A415 between Berinsfield and Culham, around the Milton Interchange, the A4130 to the west of Didcot, the Chiltern Interchange, and on all of the A-roads in Wantage.

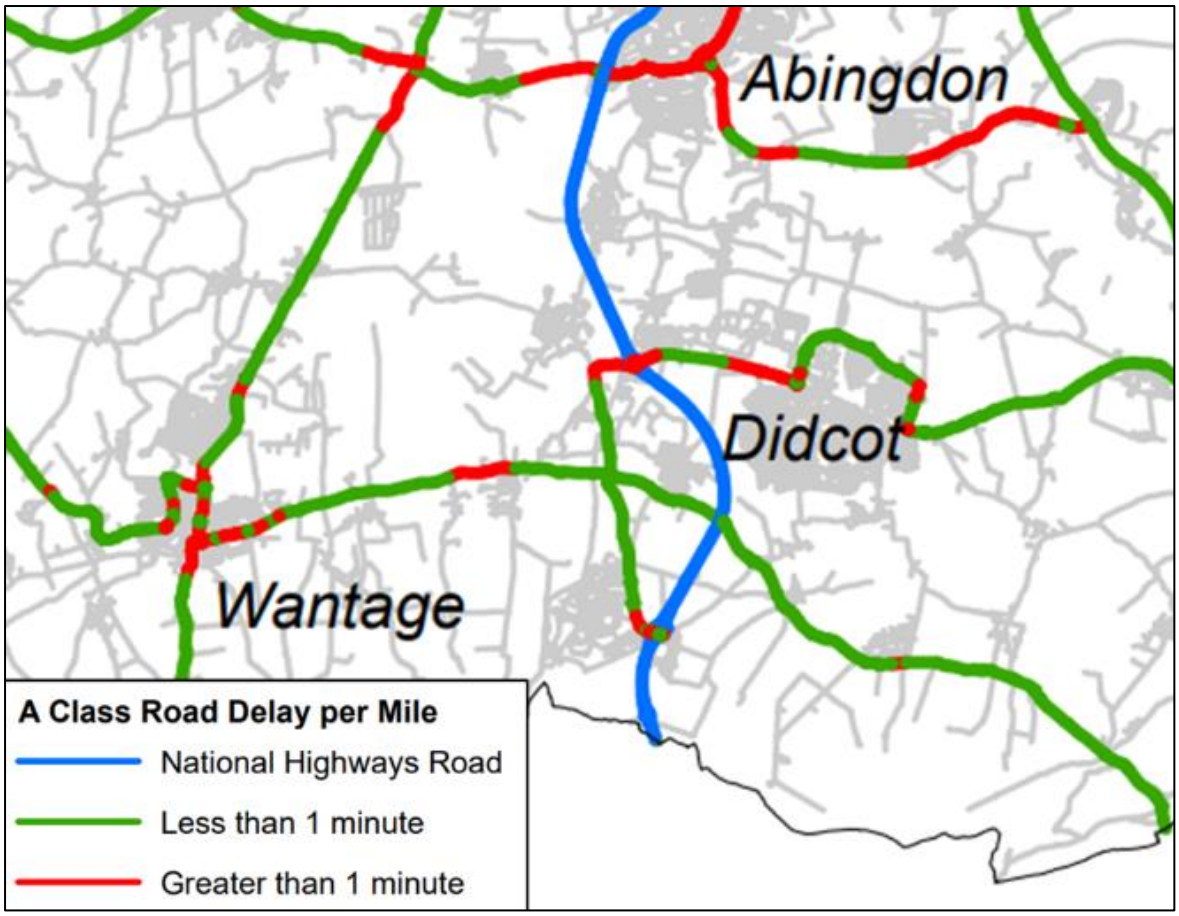


Figure SV2: OCC - A Road Delay Map

It is evident from census data that there is a high level of car dependence in the area, with approximately 68% of residents driving to work based on the 2011 census (72% in 2021)[24]. While the use of journey to work and mode share data from the 2021 census is not considered robust, for much of Science Vale the 2021 data display a similar pattern to 2011, so, to provide further context this has been included. Car ownership data also indicates a high level of car dependence with more than 80% of households owning a car[25]. Census data demonstrates that commuters to Science Vale come from many parts of Oxfordshire and neighbouring counties. However, many commuters live in the area or close to the area where they work. 48% of commuting trips are internalised within Didcot[26]. Census data also illustrates a similar pattern in Wantage and Grove[27] (51%), and for people who live in the

same Census Midde Super Output Area (MSOA) as Harwell Science and Innovation Campus and Milton Park[28]. These trips occurring over short distances are where walking, wheeling, and cycling could provide viable alternatives.

Residents in Science Vale, particularly in Didcot, Wantage, and Grove, travel short distances to get to work, as outlined in Table SV1 below:

Table SV1: Census 2011 - Percentage of Commutes of Different Lengths[29]

Place	Less than 2km	2km – 5km	5km-10km	Over 10km
Didcot	22% *(25% 2021)*	17% *(17% 2021)*	23% *(20% 2021)*	38% *(38% 2021)*
Wantage and Grove	23% *(24% 2021)*	9% *(10% 2021)*	16% *(12% 2021)*	52% *(54% 2021)*
Rural Villages	11% *(11% 2021)*	20% *(20% 2021)*	24% *(26% 2021)*	45% *(43% 2021)*

As outlined above, significant numbers of people in Science Vale travel distances of less than five kilometres to get to and from work. These short distance trips have the propensity to be undertaken by walking, wheeling and cycling and public transport patronage; however, at present these trips are largely undertaken by car or van.

Walking is the primary choice (44%) for residents commuting less than two kilometres, although this is closely followed by driving (36%). Increasing the distance of commutes to less than five kilometres, driving becomes the preferred mode by the majority (68%), with this further increasing for trips of less than ten kilometres (76%)[30]. In terms of public transport, for trips less than two kilometres, only 1.5% use public transport. For journeys of less than five kilometres, it is slightly higher at 8.7% and 9.9% for trips less than ten kilometres.

Air quality

Poor air quality is the largest environmental risk to public health in the UK, with an estimated cost to society of more than 20 billion pounds every year[31]. In Science Vale, CO_2 and Particulate Matter levels along the key strategic roads and urban areas are high[32]. Transport is responsible for a significant amount of greenhouse gas emissions in the UK, and we can tackle this by changing the way we travel. Daily Air Quality Index can be found on the DEFRA webpages alongside health messages and actions individuals should be taking.

No_2 and Particulate $Matter_{2.5}$ ($PM_{2.5}$) are the key pollutants considered in local air quality management. The annual mean modelled concentrations in 2023 for Science Vale were 10.96 µg/m^3 for NO_2 and 8.12 µg/m^3 for $PM_{2.5}$. The maximum annual concentrations within the Science Vale boundary were 14.14 µg/m^3 for NO_2 and 10.96 µg/m^3 for $PM_{2.5}$. All concentrations exceed the annual mean 2021 air quality guidelines recommended by the World Health Organisation of 10 µg/m^3 for NO_2 and 5 µg/m^3 for $PM_{2.5}$ [1].

The Air Quality Lifecourse Assessment Tool (AQLAT) is currently being developed by the University of Birmingham for Oxfordshire County Council. The tool looks at health savings when air pollutant concentrations are reduced. Data is currently available for Vale of White Horse. The AQLAT was used to calculate the health savings that would be seen if pollution levels reached those set out in the World Health Organisation 2021 air quality guidelines for NO2 and PM2.5. The following savings could be seen in 10 years: £1.36m in NHS cost savings, £638k social care cost savings, 117 early deaths prevented, 100 asthma cases prevented, 63 coronary heart disease cases prevented, 11 lung cancer cases prevented, and 36 stroke cases prevented. This shows the importance of lowering air pollution concentrations/levels in Science Vale.

We must reduce the use of polluting forms of transport, if we are to achieve our net-zero targets and to provide better air quality in the area. This can be achieved through providing transport choice and incentives for modal shift. Expanding EV charging infrastructure in the area, which is currently limited[33], will help ease the transition to zero-emission vehicles. It is also recognised that Science Vale is typically a rural area with a sparce population in some areas which currently have limited alternatives other than using the car.

Road safety

People in Science Vale have been involved in collisions with motorised vehicles. Of the 78 killed or seriously injured incidents (KSIs) recorded in the last five years, seven people lost their lives, including one pedestrian, with the remaining six being motorised vehicle drivers/ passengers. Of the 71 serious collisions ten involved pedestrians, 18 involved cyclists, 15 involved the elderly community and one involved a child. All recorded KSIs involve motorised vehicles in some form or another, with the 78 KSIs record equating to 1.3 KSIs collisions per month. The KSIs were recorded throughout Science Vale although there were 14 cluster sites with either a fatal collision or two serious collisions. It is also noted that 28 (35%) of the KSI collisions were recorded within the built-up areas of Didcot, Wantage, and Grove where motorised-vehicle speeds are lower and there is a greater level of vulnerable users.

The Local Transport Connectivity Plan (LTCP) adopted a Vision Zero approach which aims to eliminate all KSIs on Oxfordshire's roads and streets, with the Council seeking to "*have zero, or as close as possible, road fatalities or life-changing injuries"* by 2050. Minimising road danger is fundamental in creating a safe environment for those walking, wheeling, riding a bike, equestrians, motorcyclists and using those using public transport.

Safety within the transport network must be understood in a broader sense than road safety or the physical separation of active travellers from vehicles. It is essential to address the barriers that prevent vulnerable groups—such as women, LGBTQ+ communities, people from the global majority, and older or younger individuals—from feeling safe and confident when travelling. This includes tackling place-based issues such as poor lighting, lack of natural surveillance, and other environmental factors that contribute to perceptions of risk. Recognising that many reasons for avoiding sustainable modes are unrelated to road safety, this plan and the LTCP commits to creating inclusive, welcoming spaces that enable everyone to travel freely and securely.

Public transport

The existing local bus network provides a range of connections within Science Vale and to other destinations such as Oxford, Newbury, Wallingford, Abingdon-on-Thames, and Reading. The bus network serving Didcot is considered to be the most comprehensive, in terms of number, frequency and coverage, of any urban area outside of Oxford. However, this should not preclude further enhancements to the bus network, particularly in Science Vale's rural areas. Furthermore, there are currently no high-frequency (minimum of four buses per hour) bus services operating in Science Vale although Milton Park to Didcot Parkway benefits from a high-frequency service provided via multiple services which operate concurrently. Most bus routes in Science Vale operate at a frequency of between every 20 minutes and 30 minutes, with the remaining being hourly or less frequent.

Additionally, the quality of the bus infrastructure varies significantly across the area, with limited provision of real-time information (RTI), raised kerbs, onward travel maps and shelters, with seating and lighting. According to the latest report from the DfT, Oxfordshire had the biggest decline (from 2019 to 2023) in overall bus passenger satisfaction among the local authorities in the survey.[34]

The area formerly used the Didcot connector brand for buses in and around Didcot. However, there is currently no distinct operator branding, with many different colour buses operating in the area, nor is there a coordinated bus map or consistent numbering strategy for the buses in Science Vale. These features can be found in Oxford and other major areas such as Birmingham, Reading, Manchester. Some of the Science Parks sponsor branded buses on routes which serve their area and beyond. Consistent public transport branding, numbering strategy and wayfinding can have a benefit on patronage and help those with visual impairments[35].

In addition to buses, Science Vale is served by rail. There are currently three rail stations located within Science Vale: Didcot Parkway, Culham, and Appleford. Building a new station at Wantage and Grove is also currently being explored, with a business case being developed[36]. Didcot Parkway is the second busiest rail station by passenger numbers in Oxfordshire[37], serving 2.3 million passengers in 2023 connecting the area to key destinations such as Oxford, London, Reading, Bath, Swindon, Gloucester, Bristol, and Cardiff. Didcot Parkway is also the busiest station in Oxfordshire by number of services, with a total of 197 services per day, which is 15 more services per day than at Oxford station[38]. Didcot Parkway is also a significant bus and rail interchange with the station forecourt being the main bus hub in Didcot with all bus services serving the town (12 services) using the bus interchange. The bus routes provide connections between Didcot Parkway and destinations including Wantage, Grove, Wallingford, Newbury, Abingdon-on-Thames, Henley-on-Thames, and the surrounding villages, along with all three of the major Science Parks in the area.

Whilst Culham and Appleford have significantly fewer passengers than Didcot Parkway, these stations serve as access points for many residents and visitors. rail services from these stations provide access to travelling to Oxford and Didcot Parkway with onward rail connections available from these stations to Reading, South Wales, the Midlands, Cheltenham, Bristol and London. Culham station serves 72,232 passengers per year with 54 services per day, with Appleford serving 7,306 and having 21 services per day[39]. Generally, both stations have limited station facilities and frequently require a change of trains to reach a number of the top ten destinations[3], although Culham rail station also benefits from the provision of bus service (route 45 to Cowley, Berinsfield, Abingdon-on-Thames) providing an interchange between bus and rail[40].

[3] Top Ten Destinations

Culham – Oxford, Didcot Parkway, Reading, Radley, London Paddington, Banbury, Hanborough, Swindon, Oxford Parkway and Bicester Village.

Appleford – Oxford, Didcot Parkway, Reading, London Paddington, Banbury, Radley, Leamington Spa, Swindon, Culham and Bristol Temple Meads.

Improving access to public transport and its availability, integration and reliability is an effective way to address the transport challenges faced in Science Vale. More dependable and more frequent services, as well as more inclusive and better infrastructure, will enable people to shift from cars to public transport. This will also need to be supported by behaviour change incentives and measures.

Climate change and resilience and the environment

We recognise the need to take action to tackle climate change. The LTCP has a 2040 net zero transport target that puts addressing the climate emergency at the forefront, by seeking to decarbonise the transport system which will contribute to a climate-positive and net-zero future. The emerging South and Vale JLP also recognises this, as it sets out policies that aim to make the districts more resilient to the impacts of climate change and to reduce their environmental impact.

Some areas in Science Vale are at risk of flooding. Large areas in the northern part of Science Vale such as Culham, Appleford, Clifton Hampden and Burcot are at high long-term risk of flooding from the River Thames[41]. A high flood risk is defined (by Defra and the Environment Agency) as a chance of flooding of greater than 1 in 30 (3.3%) each year[42]. Transport links to the area including Clifton Hampden Bridge and Tollgate Road become impassable due to flooding, disconnecting these villages, requiring long diversion routes to other bridges. In addition, the long-term flood risk from surface water in Science Vale area shows that major built-up areas are at elevated risk of flooding including Didcot, Berinsfield, Wantage and Grove[43].

Given the size of the area there are a range of different habitats important for biodiversity within Science Vale, which comprises part of the North Wessex Downs National Landscape, including woodland, wetlands, grassland, and bracken[44]. Ensuring a greater range of biodiversity can have benefits for the environment by reducing carbon emissions, pollution, and flood risk, improving food security, and improving health outcomes[45].

This plan seeks to frame its objectives within Oxfordshire's climate emergency declaration and net zero commitments to emphasise the urgency and interconnected nature of climate action. Climate resilience must also go beyond flooding to address a wider range of risks, including extreme heat, storms, high winds, and even wildfires in rural areas. Preparing for

these hazards requires measures such as heat-resistant materials, wind-proof structures, and contingency planning, aligning with the Climate Change Adaptation Route Map for Oxfordshire and ensuring transport networks remain safe and reliable under changing conditions.

The MAP Plan will seek to support Oxfordshire's Local Nature Recovery Strategy by designing projects to strengthen opportunities for ecological connectivity and recovery and deliver measurable biodiversity gains. It will ensure that the Council's transport proposals "have regard" to the Local Nature Recovery Strategy and actively contribute to nature recovery and environmental resilience.

Deprivation

Deprivation impacts the lives of some people in our communities. According to the Index of Multiple Deprivation (IMD), most neighbourhoods in Science Vale are amongst the least deprived in the country, with neighbourhoods in Wantage, Grove, and Ladygrove in Didcot being amongst the 10% least deprived. However, there are some neighbourhoods, which are in the 40% most deprived in the country including Berinsfield and areas of west Didcot, with large parts of south Didcot being in the 50% most deprived, meaning there is a level of contrast in deprivation across the area[46]. However, it is important to note that the level deprivation in Berinsfield has improved over the last five years thanks to the work of the local community, business and councils. Furthermore, Berinsfield has the greatest range of facilities of any village in the Science Vale.

Deprivation typically results in health inequalities by reducing life expectancy and increasing the prevalence of long-term health conditions. This is supported by census data which indicates that of the top ten census output areas for the amount of people with bad or very bad health, seven are in the most deprived areas of Science Vale (out of 55 output areas)[47]. People in deprived areas are more likely to rely on public transport for essential journeys, which can have further implications due to the effects of poor affordability[48].

Data on Transport-Related Social Exclusion (TRSE) indicates that transport may be contributing to social exclusion in parts of Science Vale. Areas such as Great Western Park, Grove, Milton Heights, West Hanney, and much of Didcot are classified as areas in the top 30% nationally that are most at risk of TRSE. This risk appears to be driven by a combination of relatively higher deprivation in areas of Didcot and longer journey times by public transport or poorer access to key services such as healthcare, education, food shopping, and employment in rural areas. Addressing TRSE in the Science Vale will require improving

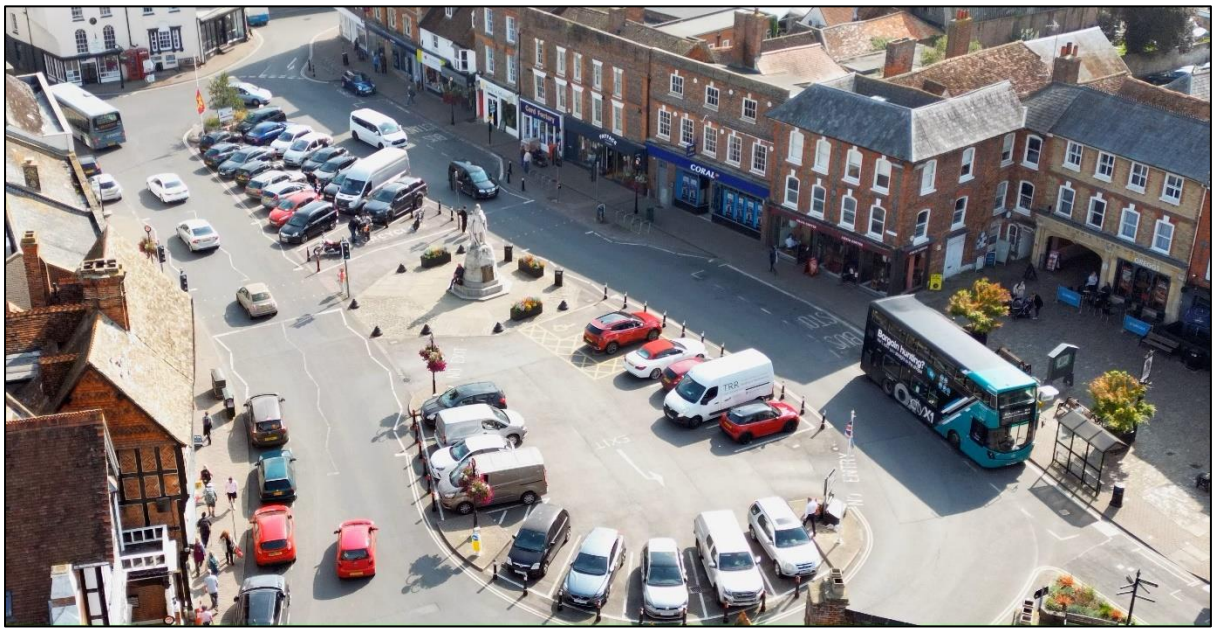
both the quality and affordability of transport options and the proximity and accessibility of essential services.

Summary of Challenges and Opportunities

The challenges and opportunities section for the Science Vale MAP Plan provide the context for the following objectives and actions. What follows will outline how the Science Vale will grow sustainably and economically, at the same time balancing the needs of the local community over the following 25 years with a people first approach.

The objectives and actions will seek to improve the natural environment and deliver an inclusive transport system within Science Vale, making streets safer and better for walking, wheeling, cycling and public transport, enhancing access to schools, workplaces, town centres, villages, and district centres. There will also be a focus on improving connections between rural, suburban and town communities within Science Vale. The objectives and actions also recognises that Science Vale is typically a rural area with a sparce population including a significant elderly population people (15% of population are over 65)[49] and some people travel large distances, so in some cases there are limited alternatives other than using the car.

Enhancing public spaces and street spaces will be a key part of the MAP Plan, the objectives and actions will support the delivery of schemes which will enable people to be more active and enjoy social lifestyles. Every objective and action will support the aim, vision and targets of the LTCP and create a greener, fairer, and healthier county.



Planned infrastructure delivery

Work has already started to improve transport in Science Vale. There are a number of significant transport infrastructure projects that are either currently in progress or planned. The significant schemes include:

- **Didcot and surrounding area infrastructure improvements (HIF1)** – The scheme includes four elements to support Didcot as a vibrant garden town and helps to facilitates the housing and employment growth in the area. The elements include improvements to existing roads, the construction of new roads, and new walking and cycle routes to facilitate new and enhanced bus services. The Secretary of State for Housing, Communities & Local Government determined the planning element of HIF1, granting planning permission for the scheme in December 2024; with the Secretary of State determining the Compulsory Purchase Order element in June 2025. The four schemes are as follows:
    - Widening of the A4130
    - Didcot Science Bridge
    - Didcot to Culham River Crossing
    - Clifton Hampden Bypass
- **Wantage Eastern Link Road (WELR)** – The new road runs between the A417 to the east of Wantage and the A338 to the north of Wantage. It was completed and opened in December 2024.

- **Steventon Lights Integrated Transport Scheme** – The A4130 Steventon Lights Integrated Transport Scheme aims to provide improved bus journey time savings and reliability, enhanced walking, wheeling, and cycling facilities, improve safety for all road users, reduce congestion and capacity issues and improve journey time reliability and facilitate growth in both housing and employment in Science Vale area.
- **Milton Heights Bridge for walking, wheeling and cycling –** A walking, wheeling and cycling bridge over the A34 to the south of the Milton Interchange to connect Milton Heights and the new strategic development sites located to the west of Didcot.
- **Didcot Northern Perimeter Road 3 (NPR3)** – The NPR3 is a strategic transport infrastructure project in Didcot and will extend the existing A4130 Didcot Northern Perimeter Road (NPR), linking the A4130/ B4016 junction to the A4130 and Hadden Hill junction.
- **Didcot Central Corridor (DCC)** – The DCC project aims to make Didcot a better place for residents and visitors by improving connectivity and public space along three important routes - the 'Gateway Spine,' 'Cultural Spine' and Foxhall Road.
- **Grove Northern Link Road (GNLR)** – There is an existing requirement for a movement corridor to serve the Grove Airfield, north west of Grove, and Monks Farm allocated sites. The GNLR will provide access from the allocated sites to the A338.
- **Strategic Active Travel Network (SATN)** – is a proposed countywide network of walking, wheeling and cycling routes. There are a number of key routes within Science Vale that are currently being developed with detailed design being established.
- **Frilford and Marcham Improvements** – Frilford and Marcham are located on the north-western fringe of Science Vale. As a result of their key location on the road network, there are major traffic congestion problems during peak hours, which are expected to worsen. This scheme will provide the capacity needed to facilitate growth and improve journey times through Frilford as well as air quality around Marcham.
- **Rowstock Integrated Transport Study** – Focuses on improvements to the Rowstock roundabout, A417/ Featherbed Lane junction, A4130/ Featherbed Lane junction and Featherbed Lane. The scheme aims to provide improved bus journey time savings and reliability, encourage the use of sustainable modes of transport, and mitigate congestion.
- **Didcot Local Cycling and Walking Infrastructure Plan (LCWIP)** – was approved in December 2023 and provides a ten-year plan for the delivery of cycling and walking

interventions that will maximise the uptake of walking, wheeling and cycling, and that will help to ensure the travel needs of the growing populations of Didcot and surrounding areas will be met.

- **Wantage and Grove Local Cycling and Walking Infrastructure Plan (LCWIP)** – was approved in December 2025. The LCWIP provides a ten-year plan for the delivery of cycling and walking interventions in Wantage and Grove. It will help to ensure that the those that love, work and visit the area can travel throughout the area on foot or by bicycle.
- **Safeguarded land** – Existing and emerging Local Plans for South and Vale safeguard land for potential future highway and walking, wheeling and cycling schemes across Science Vale.
- **EV Charging Points** – The county council has ambitious plans, as part of Oxfordshire's LEVI programme, to deliver at least 1,200 new public EV charging points across Oxfordshire by end of 2027, with this including at least 486 low power EV charging points in South and Vale.

The location of the schemes listed above is outlined on Figure SV3 below.

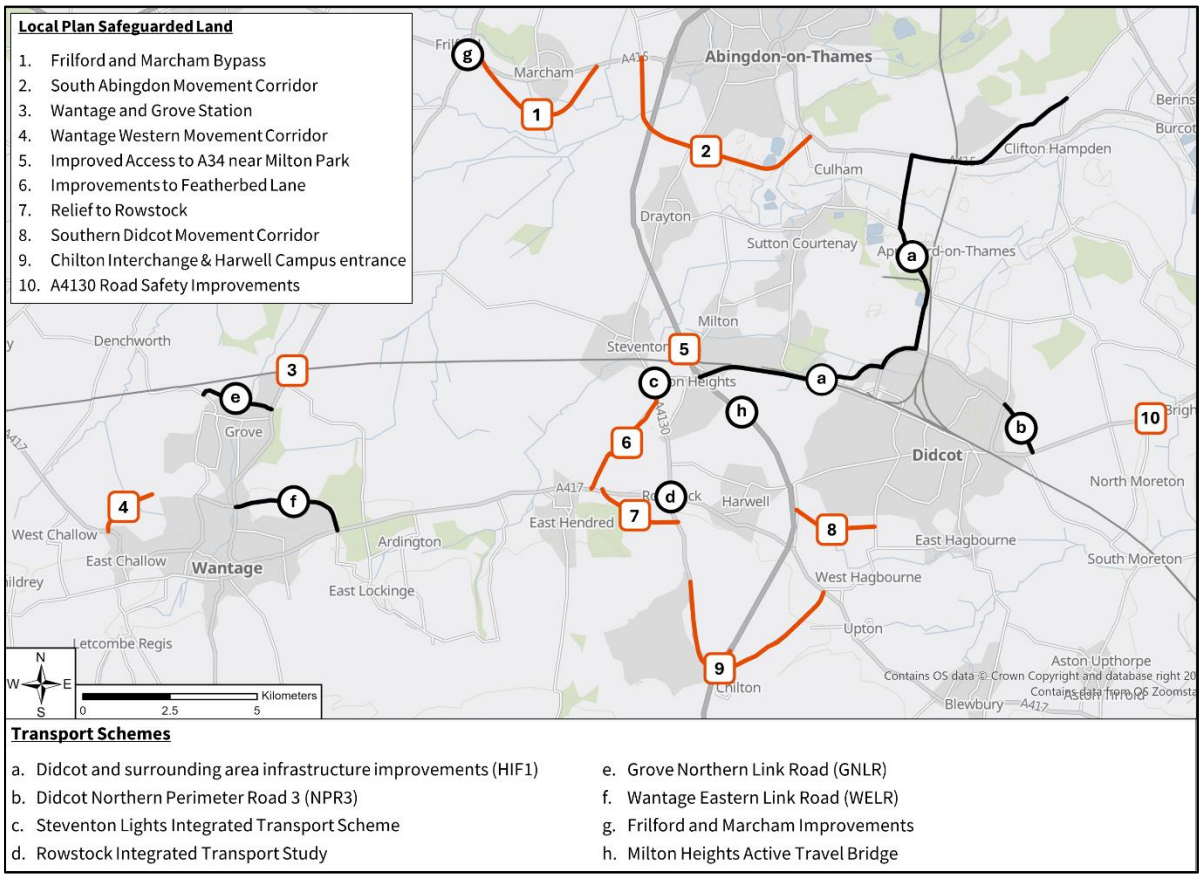


Figure SV3: Map showing location of transport infrastructure projects

Vision for Science Vale

To be a place that is:

Healthy and pleasant for its communities and that enhances its position as a place for world-leading research, enterprise and innovation.

Develop inclusive, accessible, and integrated transport system

Contributes towards the economic prosperity of Oxfordshire

Improve and remove barriers to active travel and public transport

Enhance sense of place

Reduce traffic congestion and reliance on private vehicles

Enable sustainable development

Protect the natural environment, enhance biodiversity and improve climate resilience

Build on its position as a hub for innovation

Objectives and actions

Oxfordshire's transport system affects the lives of all residents in Science Vale by connecting communities, supporting businesses, and enabling journeys for education, leisure, and work. It is therefore vital that we improve the transport system for those who live and work within Science Vale and the surrounding towns of Wallingford and Abingdon-on-Thames. We must also support OCC's nine Local Transport Connectivity Plan (LTCP) priorities and targets, the existing and emerging Local Plans from South Oxfordshire District Council (SODC) and Vale of White Horse District Council (VoWHDC) and national planning requirements.

This section defines how Science Vale Movement and Place (MAP) Plan will help to achieve the targets of the LTCP, whilst also helping to address challenges that are specific to Science Vale and were observed from the review of the evidence base. Each objective will be supported by a series of actions that set out how the objective will achieve the aims and targets of the LTCP. The detail of this will be contained in a delivery plan which will set out the priorities for funding bids and the delivery of schemes, this will be developed with our partners. Once funding for a scheme has been secured further engagement with our communities will be undertaken to support with scheme development. We will specifically seek to engage with groups with protected characteristics as defined under the Equality Act 2010.

The objectives and actions below have been grouped into topic areas with this being ordered in accordance with the transport user hierarchy. There is a clear shift between Local Transport Plan 4 (LTP4) and LTCP on having a focus on place-shaping as part of the MAP Plan, with this focusing on the place-wheel set out in the '*MAP Plans: An Introduction*'.

The previous local transport plan (LTP4) included Area Strategies, with a total of 43 schemes proposed in Science Vale. In the eight years since the LTP4 was adopted, 32 of these schemes have either been completed, partially completed, or are currently being progressed. Where LTP4 schemes have not been completed or progressed, they have been assessed to determine whether they are still relevant for this MAP Plan. Where required, LTP4 schemes have been carried forward and updated. The transport priorities set out in existing end emerging Local Plans for SODC and VoWHDC are also included in the MAP Plan

A number of the schemes have been completed including north-facing slips at the Chilton Interchange, Milton Interchange, a new and upgraded multi-modal interchange at Didcot Parkway with place-shaping features, place-shaping improvements to the Thomson Avenue entrance at Harwell Science and Innovation Campus, the opening of WELR. the

establishment of strategic cycle routes as part of Science Vale Active Travel Network (SVATN) and bus improvements including a new bus route between Grove, Wantage, Milton Park and Didcot (the X36), and new hourly bus services between Didcot and Newbury (X34), a new fleet and increased frequency on the X40 River Rapids service and the improved frequency of the X32 bus between Oxford and Didcot.

Place shaping

Objectives SV1 and SV2 focus on the place aspect of the MAP Plans and are directly aligned with **Policies 8 to 14** of the LTCP as well as its key place shaping Outcome which is to create: Sustainable, well designed, thriving communities where healthy behaviours are the norm and which provide a sense of belonging, identity and community. The actions supporting SV1 and SV2 reflect a shift towards designing transport interventions that actively support the creation of vibrant, inclusive, and sustainable communities. Rather than viewing transport purely as a means of movement, place shaping emphasises how infrastructure can enhance the character, functionality, and social fabric of local areas. This approach is vital for achieving LTCP outcomes such as improved public health, reduced inequalities, and stronger local economies.

Objectives SV1 and SV2 focus on place shaping. These will help to make Science Vale a better to live and work as well as helping to provide transport choice on short and medium length trips such as to and from:

- **School**
- **Local Shops**
- **Community Facilities**
- **Work**
- **Healthcare Facilities**
- **Local Bus Stops**

Objective SV1

Enhance public realm in settlement centres.

Why this objective?

Didcot Town Centre and Wantage Market Place are the principal areas for retail and activity in Science Vale, with Didcot acting as a primary service centre for the area. These areas experience elevated levels of vehicular and pedestrian traffic, with cars remaining the preferred mode of travel. High car usage is a barrier to the achievement of the Healthy Streets

approach and the councils Active Travel Strategy. Car dominance makes the places used by the community feel disconnected for those walking and cycling and creates a greater accessibility issue for those that have mobility challenges.

Car dominance is also an issue at Didcot Parkway Station, which is poorly integrated with the town centre even though it is only a short distance away, with there being opportunities to make the route between the station and the town centre clearer for all users.

There are further locations in Science Vale where there are high levels of motorised-vehicle use coupled with elevated levels of walking, wheeling and cycling movements, including Broadway, Cow Lane, and Station Road in Didcot and Mill Street and Newbury Street in Wantage[50]. The resultant effects of this are lower levels of walking, wheeling and cycling, increased risk, reduced safety, high pollution (atmospheric and noise) levels and negative impacts on health, in particular for those with respiratory issues or who are vulnerable[51]. This presents opportunities to re-purpose the highway by providing improved segregation and infrastructure as well as by reducing the number of motorised vehicles in areas with high levels of walking, wheeling and cycling movements. This can help with the achievement of the targets and vision contained in the LTCP and the supporting Active Travel Strategy.

The improvement of public realm should also be achieved in our rural settlements and at local centres. This is important around key facilities (shops, public houses, schools etc.) and bus stops which are often key focal points and provide interchange between walking, wheeling, cycling and public transport.

It is noted that SODC and VoWHDC have adopted a number of documents to support the improvement of central Didcot these are the Didcot Green Infrastructure Strategy (2024), Didcot Wayfinding Strategy (2024) and Didcot Public Art Plan (2024). A number of schemes in the Green Infrastructure Strategy are currently going through the detailed design process, with these aiming to be implemented in 2026, including Station Road and the link between Broadway to Didcot Parkway railway station. Meanwhile, the Public Art Plan is being used to improve the safety and usability of the key Cow Lane underpass.

Provision of attractive and well-designed walking, wheeling and cycling infrastructure, as well as bus stops, is fundamental to embedding the Healthy Streets Approach (linked to LTCP **Policy 8**), which seeks to improve the public realm and accessibility for all. The Healthy Streets approach provides guidance and a design check tool to ensure that new walking, wheeling, and cycling schemes improve the human experience of streets and encourage walking, wheeling, and cycling. Public realm improvements can be achieved by re-

allocating space from motorised vehicles to those walking, wheeling, and cycling. These changes can make these places more vibrant and more connected for people.

We will deliver **Objective SV1** through the following actions:

1.1 Investigate options for the development of schemes for improved public realm, walking, wheeling, cycling, and public transport in:

a. Market Place, Wantage
b. Central Didcot
c. Villages
d. Local centres

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

1.2 Work with partners to support the delivery of the improved public realm, walking, wheeling, cycling, and public transport identified in Action 1.1.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

Objective SV2

Create a sense of togetherness, place, inclusiveness, and community in new and existing places.

Why this objective?

Whilst providing infrastructure is essential in promoting sustainable travel, it cannot be the only solution for influencing travel behaviour. Collaboration and community involvement are just as important in the creation of successful places. A key aspect of the LTCP is the development of liveable neighbourhoods and Healthy Streets to support healthy place-shaping. Healthy place-shaping is one of the ways that we seek to deliver the council's ambition to create *"thriving communities for everyone in Oxfordshire"* – where people want to live, work and be part of something different. It is a collaborative approach which aims to create sustainable, well-designed thriving communities where healthy behaviours are the norm, with this focusing on the Healthy Streets, Safe Streets and Liveable Neighbourhoods approaches. The delivery plan for the Didcot Garden Town shares the same principles, with three defined pillars of 'unified identity', 'inspiring green living,' and 'creative collaboration.'[52]

As outlined by Homes England, the key to well-designed places is Character, Community and Climate. Place-shaping is fundamental to this to empower communities to have a sense of belonging and pride in their local area as places change over time[53]. It is also important to work with SODC and VoWHDC to ensure all schemes are delivered in accordance with

their Joint Design Guide, the OCC Street Design Guide and any other adopted guidance to support good design and place shaping. Examples of place-shaping schemes that have been introduced in Oxfordshire include the Active Community's Schemes run by SODC and VoWHDC, SODC's and Hammerson's Orchard Centre public realm redevelopment in Didcot and OCC's redevelopment of Frideswide Square in Oxford. We will ensure that we have the community at the heart of the design process and that we deliver interventions that will contribute to making Science Vale a healthier, more successful place in line with our vision for the area. This can include the introduction of themed wayfinding, community maps, art installations, green spaces and rest areas, all features which are currently lacking across the urban areas and centres within Science Vale.

Another key aspect to ensuring togetherness and inclusiveness in our communities is the provision of leisure, community and shopping facilities in suitable locations that are aligned with existing and emerging SODC and VoWHDC Local Plan spatial strategies. Due to the nature of leisure and community and shopping trips, they are more likely to be undertaken by car. This is demonstrated by NTS 2023 data, which indicates that nearly half of car trips undertaken are for leisure (26%) or shopping (22%), with only a limited number related to commuting (18%), and the remaining split between business (13%), education (8%) and escort (13%)[54]. Therefore, changing how we travel (or at least the distance of travel) to leisure destinations is important. This can be done by creating more local leisure facilities in Didcot and Wantage and community hubs in the larger villages, which can also help to improve health outcomes, reduce isolation and loneliness, improve community cohesion, and enhance places for those who live there.

Most villages and towns in Science Vale have community facilities (such as a village hall). However, the use and range of functions provided at these facilities vary and they often do not operate to their full potential. As such, the development of existing community hubs to provide more services can be important. This may include weight loss clinics, stop smoking services, yoga, council services, cognitive behavioural therapy courses, mental health awareness, employment workshops, healthy eating/ cooking classes, and activities to combat social isolation.

There are a range of existing leisure destinations in Science Vale, including small shopping areas, a cinema, pubs, restaurants, four leisure centres, walking routes, multiple golf courses, numerous football pitches, bowls greens, and three museums. Science Vale is also home to a large amount of green space providing residents with leisure opportunities including the North Wessex Downs National Landscape, an array of recreational walking and cycling routes (The Ridgeway, Thames Path National Trails, Vale Way and Oxford Green Belt Way) and PRoW within the Oxford Green Belt. The area is also home to Wittenham

Clumps, the largest publicly accessible green space in Oxfordshire. Access to green open space provides benefits for public health by providing opportunities for exercise.

For a wider choice of leisure opportunities (such as ten-pin bowling, mini golf, league football (Oxford United)) residents in Science Vale would be required to travel to locations outside their area, such as Oxford, Reading or Swindon. Therefore, providing a wider range leisure facilities such as board game cafes, multi-entertainment venues, mini-golf, soft play, trampoline centres in Didcot and Wantage and community hubs in the larger villages can reduce the need for travel. It can also help to bring community services closer to the community, giving easy access to amenities tailored to the needs of the community and providing places where everyone can meet, learn, and collaborate, whilst also retaining the rural feel of the Science Vale area.

We will deliver **Objective SV2** through the following actions:

2.1 Work with partners to develop and implement schemes that will enhance spaces for people walking, wheeling, and cycling and that create liveable neighbourhoods across Science Vale.
Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

2.2 Collaborate with partners to support accessible new or enhanced wayfinding, and introduce murals, artwork, rest places, pocket parks, green spaces, and community parks.
Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

2.3 Work with partners to develop themed art installations.
Social & Community | Culture & Assets

2.4 Work with partners to enhance and upgrade timetables (for buses, activities and events) and local guides/ maps for recreational routes (Thames Path, The Ridgeway, Oxford Green Belt Way, and Vale Way) which showcase the local area and its history.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Culture & Assets

2.5 Support the district councils when they update their Joint Design Guide.
Economic Growth | Social & Community

2.6 Seek opportunities to address sub-standard crossing points (including dropped kerbs and tactile paving) to support accessibility and inclusivity.
Travel & Connectivity | Health & Wellbeing

2.7 Work with partners to remove or improve access control barriers to support accessibility and inclusivity in accordance with our Access Control Barrier Policy.
Travel & Connectivity Health & Wellbeing

2.8 Investigate opportunities to develop OCC's 'Oxfordshire Way' scheme. The Oxfordshire Way is about providing our communities with support networks that assist with their health and wellbeing.
Travel & Connectivity Health & Wellbeing Social & Community

2.9 Work with partners with a view to provide more community hubs and mixed-use hubs.
Health & Wellbeing Social & Community Culture & Assets

2.10 Work with partners with a view to provide more local work/ hot desk hubs.
Economic Growth Social & Community Climate & Environment Culture & Assets

2.11 Support opportunities to provide multi-use leisure destinations (e.g. bars/cafés with a range of leisure facilities), in sustainable locations.
Economic Growth Social & Community Climate & Environment Culture & Assets

2.12 Liaison with workplaces, stakeholders, and partners to join different employment groups together to share ideas and best practice.
Economic Growth Social & Community

2.13 Work with schools, developers, and businesses to ensure that Travel Plans contain initiatives to support healthy journeys and assist with delivering and monitoring them.
Travel & Connectivity Economic Growth Health & Wellbeing Social & Community

2.14 Work with partners in the community to remove social and economic factors that prevent people from cycling by providing education, training, and access to free or reduced-price equipment.
Travel & Connectivity Economic Growth Health & Wellbeing Social & Community

2.15 Ensure the continued protection of the areas historic character including in conservation areas as part of new or improved transport projects and infrastructure schemes involving or near to heritage assets or conservation areas.
Social & Community Culture & Assets

Walking, wheeling, and cycling

The next six objectives outlined in this MAP Plan focus on walking, wheeling and cycling and support the LTCP in its vision to create an inclusive and safe net-zero Oxfordshire transport system. It is intended that the objectives and actions in the section will also improve routes and safety for those riding horses. Walking, wheeling and cycling are key to delivering the Council's priorities over the next 25 years and to mitigate the biggest challenges that are facing the Science Vale. As set out in the Council's Active Travel Strategy,

there are five priorities which are key to achieving a high-quality inclusive, safe, and accessible walking, wheeling and cycling network, these are:

- Commitment and governance – a clear promise at all levels across the council to treat walking, wheeling and cycling as a policy priority.
- Walkable communities – a compact urban realm with easy to reach destinations on foot, by wheel or cycle.
- Inclusive cycle networks – that are safe, identifiable, visible, comprehensive and of high quality, including links across and between towns and villages.
- Managing motor traffic – through measures such as modal filters, reducing traffic speeds, reducing road capacity, and increasing the cost of parking.
- Building the cultural norm – a local social consensus and practice that supports and promotes walking and cycling and enables residents to build their lives around walking, wheeling and cycling modes for local journeys.

Objectives SV3 to SV8 focus on providing transport choice on short and medium length trips such as those to and from:

- **School**
- **Local Shops**
- **Community Facilities**
- **Work**
- **Healthcare Facilities**
- **Local Bus Stops**

The urban areas and travel corridors in Science Vale suffer from high levels of CO_2, and PM (Particulate Matter) with the levels of NOx being low overall across Science Vale, but with pockets showing high concentrations. The delivery of a high-quality inclusive, safe, and accessible walking, wheeling and cycling network will reduce these air quality issues and help to improve the health of our communities.

Objective SV3

Deliver a comprehensive, comfortable, direct, safe, coherent and inclusive walking, wheeling and cycling network.

Why this objective?

A significant percentage of trips in Science Vale are within distances where walking, wheeling and cycling modes represent a realistic alternative to private vehicle use. As set out earlier, 34% of residents in Science Vale travel to work within a distance of five kilometres, of which approximately 36% are undertaken by a car or van[55]. Furthermore, the number of people walking and cycling has been reducing since the end of Covid-19, following a significant increase in walking and cycling levels during the height of the pandemic[56], which indicate that higher levels of walking and cycling are achievable.

Work on improving walking, wheeling and cycling conditions in Didcot has already started with the production of the Local Cycling and Walking Infrastructure Plan (LCWIP) for Didcot in 2023, with this delivered in accordance with **Policy 3** of the LTCP: '**LCWIPs**'. The LCWIP described the existing walking and cycling provisions in the area as "*generally poor*". It also found several issues such as a lack of segregated infrastructure, narrow footways, and high traffic volumes and speeds. The LCWIP proposed various routes creating a walking, wheeling and cycling network in Didcot and surrounding villages. The LCWIP for Wantage and Grove was also approved in December 2025 this sets out the baseline situation in Wantage and Grove, and the improvements that are required to promote walking, wheeling and cycling. Provision of a comprehensive network is key to ensure the provision of inclusive and attractive walking, wheeling and cycling routes as outlined in **Policy 2** of the LTCP. LCWIP's can also support the implementation Quality Pedestrian Corridors (QPCs). Therefore, given that Didcot, Wantage and Grove have LCWIPs it is important to work with our partners to deliver the schemes set out in the LCWIPs.

Outside the urban areas the Science Vale Cycle Network (SVCN) aims to improve routes for walking, wheeling and cycling, between the three main employment locations and key urban centres. Some routes in the SVCN have already been completed. SVCN is a precursor to the SATN, a county-wide project for walking and cycling infrastructure, which incorporates the SVCN routes and expands upon them, in line with **Policy 4 'Strategic Walking, wheeling and cycling Network'** of the LTCP. The SATN routes will help to ensure connectivity between settlements in Science Vale, particularly the villages and more rural communities, providing connections to key local facilities and services.

The SATN and LCWIPs are also supported by a range of other schemes including the DCC, NPR3 and HIF1 which provide a range of walking, wheeling, and cycling improvements. Science Vale is also home to an array of recreational walking, wheeling, cycling and horse-riding routes (The Ridgeway, Thames Path National Trails, Vale Way and Oxford Green Belt Way) and well as a comprehensive PRoW within the Oxford Green Belt and North Wessex Downs National Landscape.

Successful promotion and education of walking and cycling in Science Vale could provide significant health benefits associated with physical exercise. It is therefore important to enable the use of walking, wheeling and cycling on these short-distance commutes by delivering a comprehensive walking, wheeling and cycling network as this is fundamental

to achieving the targets of the LTCP and to achieving the priorities of the Active Travel Strategy.

We will deliver **Objective SV3** through the following actions:

3.1 Work with partners to deliver the walking, wheeling and cycling schemes contained within adopted documents (such as the Didcot LCWIP and Wantage and Grove LCWIP).

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

3.2 Work with partners to deliver the high-quality Strategic Active Travel Network (SATN) routes in the local area, including but not limited to between:

- Didcot and Milton Park;
- Didcot and Harwell village & Harwell Science and Innovation Campus;
- Didcot and Harwell Science and Innovation Campus via Upton;
- Didcot and Wallingford;
- Didcot and Culham Campus;
- Wantage & Grove and Harwell Science and Innovation Campus;
- Wantage & Grove and Abingdon-on-Thames;
- Grove & Wantage and Milton Park;
- Abingdon-on-Thames and Berinsfield via Culham Campus;
- Milton Park and Abingdon-on-Thames.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

3.3 Liaise with partners to develop new walking, wheeling and cycling schemes (including SATN routes) to improve the network so that it is easy to navigate, cohesive and safe.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

3.4 Liaise with partners to improve walking, wheeling and cycling routes to mobility hubs, bus stops and rail stations.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

3.5 Investigate changes to the PRoW network to enable use by a wider range of Non-Motorised Users (NMUs) for different journey purposes.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

3.6 Work with the community and partners to deliver behaviour change programmes and initiatives to support the delivery of walking, wheeling and cycling schemes, provide the skills and confidence to walk, wheel and cycle and to influence modal patterns away from car usage.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

Objective SV4

Ensure developments deliver comprehensive on-site and off-site walking, wheeling and cycling provision.

Why this objective?

Significant levels of housing and employment growth are planned to take place in Science Vale over the next 25 years, with this anticipated to result in the population more than doubling from 73,000 to 170,000[57] and the number of jobs increasing from 41,000 to 48,000[58] because of the provision of 200 hectares of employment land and approximately 17,882 dwellings in the South and Vale JLP up to 2041, with further allocations expected to be provided in future local plans.

Whilst several infrastructure schemes (DCC, LCWIPs and SATN) have been developed to enable walking, wheeling and cycling movements and encourage a shift towards sustainable transport. The infrastructure schemes are unable to link directly to development sites in every situation, especially since the spatial strategy for the end of the plan period (2050) is yet to be determined.

To ensure that there are no missing links between new developments and key walking, wheeling and cycling corridors it is required that all new developments provide suitable on-site and off-site walking, wheeling and cycling connections to key infrastructure schemes. Thus, ensuring that new developments create sustainable, healthy communities by providing safe, well-connected routes that reduce the need for travel, maximise walking and cycling and are fit for the future. This is aligned with the healthy place shaping priorities set out in **Policies 8 to 14** of the LTCP.

We will deliver **Objective SV4** through the following actions:

4.1 Ensure developments deliver walking, wheeling and cycling provision identified in LCWIPs and SATN.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

4.2 Ensure developments address any gaps in the provision of walking, wheeling and cycling routes, including connections to existing networks, public transport stops, routes identified in LCWIPs and SATN and between developments.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

4.3 Ensure developments prioritise walking and cycling within developments and ensure that provision integrates with off-site routes.
Travel & Connectivity | Health & Wellbeing | Social & Community

Objective SV5

Improve accessibility for Non-Motorised Users (NMUs) travelling via waterways and greenways.

Why this objective?

Waterways and greenways are important routes for those walking, wheeling, and cycling, as well as those who ride horses. Typically leisure trips can involve family and friends walking, wheeling or cycling along greenways and waterways to be in touch with the local nature. In addition, some people will use these routes for general travel or commuting. According to the latest Active Lives Survey, a high percentage of respondents in the South and Vale districts said they have walked or cycled for leisure (83% walked, 18.5% cycled) or travel (61% walked, 16.5% cycled) in the last year[59]. While the level of those walking and cycling is generally quite high, this has been declining. This decline in cycling participation is not isolated to South and Vale. According to the latest statistics from DfT, cycling traffic levels in England are down from the peak in 2021 during the COVID pandemic, and the latest provisional data shows that they are now even lower than 2019 pre-pandemic levels.[60] Therefore it is important we have high quality routes that encourage people to walk, wheel and cycle including along waterways and greenways.

There are a number of opportunities for leisure walking and cycling trips within Science Vale via waterways and greenways. This includes along the National Cycle Network, the Thames Path National Trail, the Ridgeway, Vale Way, the Oxford Green Belt Way and sections of the Wilts & Berkshire Canal near Wantage. Science Vale is also home a comprehensive PRoW network within the Oxford Green Belt and North Wessex Downs National Landscape. Whilst these routes may have a primary role in supporting leisure, they also connect commuter routes (e.g. Didcot to Wantage via Harwell Science and Innovation Campus using the SVATN with aspirations for the future to create connections through to Swindon). Currently, these routes are of mixed quality and would benefit from updgrades to improve accessiblity and use, in particularly during bad weather or the hours of darkess.

Given that greenway and waterway routes are almost entirely segregated from road traffic but may also be longer than using roads or other cycle links for key destinations, there is potential for greater levels of use for leisure and during the summer. Improving the quality of these routes will benefit communities by providing access to rural areas and create opportunities for outdoor physical and social activity.

Greenways and waterways are valuable for the rural communities in Science Vale as these areas often have fewer dedicated walking and cycling routes as well as providing routes for

equestrians. Furthermore, rural areas have fewer local facilities and services, increasing the need for the community to travel. Greenways and waterways are important to achieving safe, inclusive, and accessible cycle and walking networks in rural areas, as detailed in **Policy 54** of the LTCP. Furthermore as outlined earlier, SODC and VoWHDC have adopted the Didcot Green Infrastructure Strategy which is important in helping to improve access along greenways, with a number of the projects included in this document focusing specifically on this. These routes provide opportunities for exercise and social activity, support economic sustainability, tourism and provide benefits to biodiversity and climate resilience whilst reducing reliance on private car usage.

We will deliver **Objective SV5** through the following actions:

5.1 Identify opportunities for improvements along and access to waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway).
Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

5.2 Support the delivery of improvements along and access to waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway).
Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

5.3 Collaborate with partners including the Walk Wheel Cycle Trust and Canal and Riverside Trust to develop wayfinding and signage, help-points, and mapping along waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway), through extending the scope of the Didcot Wayfinding Strategy.
Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

5.4 Explore options with partners to provide place shaping (e.g. pocket parks, outdoor gyms, and other green spaces) along waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway) working in line with the Didcot Green Infrastructure Strategy.
Health & Wellbeing | Social & Community | Culture & Assets

Objective SV6

Reduce walking, wheeling and cycling severance caused by physical barriers.

Why this objective?

Science Vale contains physical barriers including Great Western Mainline, Science Line (Cherwell Valley Line), River Thames and the A34 which create severance by limiting the number of crossing points, increasing journey length which can deter people from walking,

wheeling and cycling. This discourages the use of sustainable travel modes which in turn limits the ability for modal shift. This has a negative impact on transport infrastructure, creating a greater reliance on private vehicle use, leading to congestion, increased journey time, safety concerns and poorer health outcomes linked to air quality and social isolation.

In the absence of multi-modal provision, car journeys tend to be the easiest and quickest option, which is a significant obstruction to the achievement of the LTCP vision and targets[61]. Removing barriers across physical obstructions is important to encourage a shift to walking, wheeling and cycling modes and public transport as well as to ensure inclusivity by providing an accessible and fair transport system for all residents. The removal of barriers is crucial to help achieve the provision of inclusive and attractive cycle and walking networks as outlined by Wheels for Wellbeing[62].

Delivering routes on or near to desire lines will be vital in creating modal shift to walking, wheeling and cycling to ensure inclusivity by providing an accessible and fair transport system for all residents. It will support LTCP targets of removing 1 in 4 vehicle journeys by 2030 and 1 in 3 by 2040. The removal of barriers is crucial to help achieve the provision of inclusive and attractive cycle and walking networks as outlined in **Policies 1-4, 6, 8-10, 14 and 22** of the LTCP.

We will deliver **Objective SV6** through the following actions:

6.1 Explore the reallocation of highway space at the Culham and Clifton Hampden River crossings to improve provision for walking, wheeling and cycling and public transport - subject to the delivery of the Didcot to Culham River Crossing.
Travel & Connectivity | Health & Wellbeing | Social & Community

6.2 Work with partners to remove walking, wheeling and cycling barriers across the Great Western Mainline, Science Line (Cherwell Valley Line) and the Local Road Network.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

6.3 Work with partners and stakeholders to create new links over the River Thames and Science Line (Cherwell Valley Line) serving Culham rail station, Culham Campus and strategic sites.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community

6.4 Work with National Highways to continue developing plans for the Milton Heights walking, wheeling and cycling Bridge.

Travel & Connectivity | Health & Wellbeing | Social & Community | Culture & Assets

6.5 Work with partners to deliver the Milton Heights walking, wheeling and cycling Bridge.

Travel & Connectivity | Health & Wellbeing | Social & Community

6.6 Explore the opportunities to improve walking, wheeling and cycling across the A34, including connections with Didcot.

Travel & Connectivity | Economic Growth | Social & Community

Objective SV7

Introduce shared micromobility schemes, subject to central government legislation.

Why this objective?

Policy 38 of the LTCP touches on the use of shared micromobility with it noting that micromobility should be embedded into the public transport and walking, wheeling and cycling networks. Small-scale bike and e-bike hire schemes are in operation at Didcot Parkway with these operated in conjunction with the major employment centres locally. However, there are no settlement-wide bike hire or micromobility schemes in operation in either Didcot, Wantage or Grove to help assist with first and last mile travel or travel within the settlements.

Subject to national legislation, there are opportunities to explore the introduction of shared micromobility schemes (such as e-scooters and e-bikes) within Science Vale areas of Didcot, Wantage and the larger villages that link to the large employment sites. This would help to support a shift towards walking, wheeling and cycling; in particular, to help assist with the integration of first and last mile trips and therefore contributing towards reducing private motorised vehicle use.

Case Study: Shared e-scooter trial in Oxford

An e-scooter trial was launched in Oxford in 2021 in partnership with e-scooter operator Voi, following government's decision to legalise rental e-scooters in 2020. This trial extends until May 2026. Shared e-scooters can be used on the road, cycle lanes and shared cycle/footpaths within the trial area but not on pavements. An inbuilt GPS device tracks the scooters to ensure compliance, and they are regularly serviced so they are safe and fit for use.

Over 200 e-scooters are available for hire across Oxford from as little as 25p per minute with a £1 unlock fee, with use controlled via a smartphone app. There are also special rates for students, and those on low incomes and Voi offered free rides to NHS and emergency service staff. Once the trial ends the Council and DfT will review the effectiveness of the scheme and decide upon future implementation.

We will deliver **Objective SV7** through the following actions:

7.1 Work with partners to create a shared e-scooter and e-bike network, at locations such as mobility hubs, district and community centres, bus stops, leisure, and employment facilities (such as in Didcot and at Harwell Science and Innovation Campus, Milton Park, and Culham Campus).
Travel & Connectivity | Economic Growth | Social & Community

7.2 Support shared e-scooter and e-bike schemes that link employment sites with residential sites and public transport interchanges.
Travel & Connectivity | Economic Growth | Social & Community

Objective SV8

Develop a network of cycle parking, hubs, and hangars.

Why this objective?

Science Vale covers a large area and within it many trips of varying distances are made. Cycling can play a vital role in providing a suitable alternative to motorised vehicle use on trips between two and eight kilometres[63] (e.g. Harwell Science and Innovation Campus to Didcot, Wantage to Harwell village, Harwell village to Milton Park, Blewbury to Didcot, Wantage Culham Campus to Didcot, Milton Park to Didcot, Wantage to Harwell Science and Innovation Campus). The level and quality of cycle parking varies significantly throughout Science Vale, with there being a lack of provision of covered, secure, and easy-to-use stands. Furthermore, there is also limited provision for alternative bikes (e.g. cargo bikes, tricycles, tandems).

Case Study: Walking, wheeling and cycling hub, Harwell Science and Innovation Campus

Harwell Science and Innovation Campus have recently introduced a walking, wheeling and cycling hub, which provides high-quality facilities for those walking, wheeling and cycling as well as using public transport. The travel hub provides a secure and heated waiting area with RTI, toilets and shower facilities, lockers, cycle parking, cycle maintenance facilities and onward travel information. This allows users of all modes to enjoy high quality waiting facilities, that are safe and secure.

As set out by Active Travel England transport hubs should be at the heart of local walking and cycling networks to allow easy interchange. They allow people who are walking, wheeling or cycling to connect to public transport services. They also have opportunities to provide shared mobility schemes. They should ideally be inexpensive or free and be situated in locations where there is good natural or active surveillance. Drop-off points and blue badge parking should be provided with level access to a clearly signed entrance[64].

Where cycle parking is provided it is not always located in areas that will encourage its use. There is also limited cycle parking at bus stops and some train stations to support integration between modes and first and last mile travel. Overall, the quality and provision of cycle parking should be improved throughout Science Vale to encourage cycling and to ensure that cyclists have access to safe, secure, and easily accessible parking and facilities for repair and maintenance in accordance with the council's Parking Standards and LTN1/20. All cycle parking, hubs, and hangars will be designed to a high quality, for safety and security. This should help to achieve an inclusive and attractive cycle network as outlined in **Policy 2** of the LTCP.

We will deliver **Objective SV8** through the following actions:

8.1 Review and define the locations for cycle parking, hubs, and hangars including auditing existing locations.
Travel & Connectivity | Health & Wellbeing | Culture & Assets

8.2 Work with partners to deliver new, and improve existing, cycle parking. To include the provision for non-standard cycles (e.g. tricycles, cargo bikes, tandems, mobility scooters and adapted bicycles), cycle repair/ maintenance hubs and charging for e-bikes, at appropriate locations, including key transport interchanges. We will also seek to ensure all cycle parking is designed to a high quality so where appropriate, green walls, green roofs, solar panels and landscaping will be provided on and around the cycle parking.
Travel & Connectivity | Health & Wellbeing | Culture & Assets

8.3 Support the development of a cycle hub at Culham Station.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Culture & Assets

8.4 Develop a cycle parking map showing capacity and levels of use at cycle parking, hubs, and hangars.
Travel & Connectivity | Health & Wellbeing

Public Transport

Objectives SV9 to SV13 focus on public transport and build on the six policies set out in the LTCP. Increased public transport use will help to reduce the number of private motorised vehicle trips, improve connectivity, and improve air quality. Public transport is key to enabling multi-modal journeys, with public transport interlinked with walking, wheeling, and cycling for first and last mile connectivity.

Objective SV9 focuses on enhancing integration between different modes of transport, to support trips of all lengths, for the following purposes:

- **Leisure**
- **Work**
- **Healthcare**
- **Shopping**
- **Holidays and Travel**

According to the latest National Travel Survey[65], on average public transport trips undertaken by bus account for approximately 6% of trips between two kilometres and 15 kilometres, with rail trips accounting for approximately 3% of trips between eight kilometres and 15 kilometres and 8% of all trips greater than 15 kilometres[66]. Meanwhile, private motorised vehicle trips account for the majority of trips greater than two kilometres (between 67% and 84%). We understand that there will be regional differences in these statistics. The local bus operator has indicated that there has been strong and sustained patronage growth across Science Vale since 2019 and that this increase in patronage is not accounted for in this data.

As set out earlier, within Science Vale the average mode share for public transport is only 7.5% (10% in Didcot, 5% in Wantage)[67] despite 42% (60% in 2021) of residents in Science Vale commuting between two kilometres and 20 kilometres[68]. Therefore, it is important to ensure that where possible, trips with distances between two kilometres and 20 kilometres are taken by public transport.

Multimodal

An important aspect of encouraging a shift towards public transport is providing seamless integration between different modes of transport so that barriers to the use of public transport can be removed, allowing multi-modal journeys.

Objective SV9

Create a network of mobility hubs.

Why this objective?

Mobility hubs encourage walking, cycling, and public and shared transport by linking up these different modes, creating an integrated and inclusive transport network. This can support first and last mile travel. Whilst the council has developed a Mobility Hub Strategy, which forms a part of **Policy 23** of the LTCP, to cover Oxfordshire, it is important to understand the opportunities for these within Science Vale. In addition, to providing integration between modes, mobility hubs can also have a role to play in place-shaping by co-locating other services at or near hubs such as shops, grocery and parcel lockers, community libraries and community facilities.

Science Vale already has an important transport interchange in the form of Didcot Parkway which is a major interchange hub providing connections between rail, bus, cycles, and walking. However, due to the size of the Science Vale area and the presence of large employment sites, two town centres, district/ local centres, larger villages and smaller villages, there are opportunities to provide linking hubs, suburban hubs and rural hubs, and mini hubs, as detailed in the Mobility Hub Strategy, throughout Science Vale including along key movement corridors. The provision of a range of mobility hubs is important to encourage the conversion of rural trips to sustainable modes of transport and will help to further improve the bus network. Delivering a network of Mobility Hubs across Science Vale will support **LTCP Policies: 1, 2, 7-9, 12-14, 18-23, 28, 29, 38, 39 and 50.**

We will deliver **Objective SV9** through the following actions:

9.1 Explore opportunities to provide or improve mobility hubs at major interchanges and along key movement corridors:

a. Didcot Parkway Rail Station.
b. Culham Station Rail Station.
c. Proposed Wantage and Grove Rail Station.
d. A34 Corridor.
e. A4074 Corridor.

Travel & Connectivity | Economic Growth | Social & Community

9.2 Support the implementation of the Mobility Hub Strategy, including linkage hubs, suburban and rural hubs, and mini hubs.

Travel & Connectivity | Economic Growth | Social & Community

Buses

Buses are the main mode of public transport in England[69], and they provide a sustainable alternative for trips that are less achievable by walking, wheeling or cycling due to their distance or the route. There is a wide network of public transport services within Science Vale, although, there are a number of challenges to achieving further increases to bus patronage. Increasing bus usage is essential to achieving our net-zero targets and the visions of the LTCP. Studies suggest that if everyone switched one car journey a month to the bus, the UK's carbon dioxide emissions would be reduced by 2 million tonnes a year[70].

SV10 and SV11 centre on improving bus services and infrastructure to enable wider bus use for trips to and from:

- **Town and Cities**
- **Leisure Facilities**
- **School**
- **Work**
- **Healthcare Facilities**
- **Transport Hubs**
- **Holidays and Travel**

From 2019 to 2023, overall satisfaction of bus passengers across the county declined by 16 percentage points, the highest among the local authorities in the survey. Furthermore, there are no long-distance bus or coach services within Science Vale which limits public transport links across longer distances and to airport. Overall, the level of bus service within the core areas of Science Vale and important travel destinations outside Science Vale (e.g. Abingdon-on-Thames and Wallingford) is good, with several bus routes serving these locations. This is shown by bus patronage figures, which show that strong and sustained in passenger patronage growth has taken place across Science Vale since 2019. However, some of the more rural areas (e.g. Berinsfield) have limited connections to the rest of Science Vale, reducing opportunities for public transport use.

Objective SV10

Enhance bus services.

Why this objective?

There is clear evidence to support faster and more frequent bus services resulting in increased patronage and reduced costs for passengers and operators[71]. Furthermore, journey time, waiting times and the ability to travel flexibly are significant factors in determining transport choice, as well as cost.[72] Delivering more reliable, faster, frequent, extended operation and new bus services is key to supporting the population and job growth in the Science Vale area, strengthening **Policy 18** of the LTCP. It also needs to be ensured that bus services are suitable and affordable for the communities they serve.

Didcot is the main hub for bus services within Science Vale with over 60% of services operating from Didcot Parkway bus interchange. The bus interchange provides a link between local services for the key local destinations of Wallingford and Abingdon-on-Thames as well as Oxford, Newbury and Henley-on-Thames. There have been a number of improvements to the bus network in Science Vale delivered as part of LTP4 area strategies. As a result, the bus network serving Didcot is considered to be most comprehensive, in terms of number, frequency and coverage, of any urban area outside of Oxford.

However, this should not preclude further enhancements to the bus network, particularly in Science Vale's rural areas. Whilst some bus services in Science Vale combine to create high-frequency bus services between some destinations (such as between Harwell Science and Innovation Campus/ Milton Park and Didcot), there are no high-frequency (minimum of four buses per hour)[73] bus routes in Science Vale (although some examples of combined routes offer this for limited origins and destinations), which limits opportunities for passengers to be able to 'turn up and go' at the majority of bus stops, this can reduce the attractiveness of public transport. While a high frequency service can be hard to achieve in urban areas, further coordination of routes along corridors would help to create more corridors that benefit from a higher level of service. The improvement of early morning, evening and weekend bus services has also taken place in Science Vale since 2020, however, we must strive to further to improve this offering.

When compared to other travel modes (driving and rail) bus journeys within and to destinations outside Science Vale can take significantly longer (e.g. bus ride from Didcot Parkway to Oxford City Centre can take 68 minutes, versus approximately 34 minutes if driving). In addition, there are no long-distance bus or coach services within Science Vale, limiting public transport links across long distances.

It is important to work with our partners to help improve our bus services, as they play an important part. Science Vale has seen some examples of this such as the Milton Park and Thames Travel subsidy and investment scheme which introduced a £20 a year bus pass for staff living within five kilometres of Milton Park, which increased bus travel amongst employees by 18%. A second example is OCC and Milton Park combined funding which has helped to improve the frequency of bus X32 between Oxford and Didcot from two per hour to three per hour. We would seek to achieve more of these type partnerships within Science Vale, as they can provide benefits to the wider community.

Additionally, Science Vale is expected to experience significant growth with 18,000 new homes and more than 200 hectares of employment land[74] planned over the South and Vale JLP period, and as such there will be a requirement to ensure that these developments are provided with bus services, in support of **Policies 18** and **22** of the LTCP.

We will deliver **Objective SV10** through the following actions:

10.1 Work with partners to provide faster bus services, with consideration given to increasing frequencies (including "turn up and go" services) and the introduction of express or 'limited' stop services and the optimisation of existing services.
Travel & Connectivity | Economic Growth | Social & Community

10.2 Work with partners to provide new bus services in Science Vale including to places outside Science Vale, to locations that are currently underserved and to new developments.
Travel & Connectivity | Economic Growth | Social & Community | Health & Wellbeing

10.3 Work with bus operators to ensure improved reliability, attractiveness and resilience of services.
Travel & Connectivity | Economic Growth | Social & Community

10.4 Work with bus operators to improve the service level in the early morning, and late evenings to support employment and the night time economy.
Travel & Connectivity | Economic Growth | Social & Community

10.5 Work with bus operators to improve the service level on weekends, in particular on Sundays.
Travel & Connectivity | Economic Growth | Social & Community

10.6 Work with operators to provide long-distance coach services connecting to Science Vale.

Travel & Connectivity | Economic Growth

10.7 Work with partners to support communities with education and training to remove barriers to public transport use and increase confidence to enable greater use of buses.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Climate & Environment

Objective SV11

Enhance bus infrastructure.

Why this objective?

There are a number of infrastructure challenges resulting in barriers to the use of buses:

- The quality of bus stop facilities and the infrastructure provided varies significantly across Science Vale, with poor levels of Real Time Information (RTI) (only 10% of bus stops in Science Vale have RTI), raised kerbs, crossing facilities, shelters, seating, lighting, and cycle parking.
- The bus numbering in Science Vale can be confusing and inconsistent (e.g., 'X' may have multiple meanings – express or cross-county service).
- There is no standardised livery (i.e. multiple bus colours) or scheme for buses which may create confusion for passengers.
- At key bus interchanges, there is limited opportunity to change between different modes, for first and last mile connections.
- The vast majority of bus services within Science Vale are operated by diesel buses, with extremely limited services operated by zero-emission buses.

As alluded to earlier, Didcot Parkway bus interchange is an important transport interchange that suits the requirements to form part of the network of mobility hubs, providing bus and rail interchange alongside bike hire, extensive cycle parking, a coffee shop, onward travel information and a convenience store. The bus interchange at Didcot Parkway station whilst being of good quality and recently upgraded in 2015-16 is congested at times and is unable to cope with the predicted levels of bus service demand going forward. It is also being used for people picking up and dropping off passengers

typically to use rail connections, resulting in delays to bus services. The routing of buses between Didcot Parkway and the town centre and through the town centre should also be reviewed.

Based on the above, there are several opportunities to develop the bus network in Science Vale. The provision of an effective and efficient bus network is vital for the financial, environmental, and social health of the community in the area. The use of buses is also essential to achieving a net-zero transport network and replacing and removing car trips from the network as required by the LTCP.

We will deliver **Objective SV11** through the following actions:

11.1 Work with partners to develop a strategy for the redesign of Didcot Parkway Bus Interchange and Didcot Town Centre, including reviewing routing through the town centre.
Travel & Connectivity Social & Community

11.2 Identify opportunities for the improvement of bus infrastructure (e.g. waiting facilities, crossing facilities, location for new bus stops, Real Time Information, application of AI, raised kerbs, lighting, shelters, CCTV, onward travel maps).
Travel & Connectivity Social & Community Culture & Assets

11.3 Work with partners to develop a strategy for consistent bus branding and route identification across Science Vale.
Travel & Connectivity Culture & Assets

11.4 Identify opportunities for bus priority and improvement measures including bus lanes, removal of parking and traffic signal priority within Science Vale.
Travel & Connectivity Economic Growth

11.5 Work with partners to introduce the bus priority and improvement measures identified in Action 11.4.
Travel & Connectivity Economic Growth

11.6 Work with partners to promote and improve personal safety by:

a. Advertising personal safety apps/ tools for use by users; and
b. Improving routes to and from bus stops, including improved lighting, removal of overgrown vegetation and CCTV.

Travel & Connectivity Health & Wellbeing Social & Community Climate & Environment

11.7 Work alongside partners to deliver a zero-emission bus network across Science Vale.
Travel & Connectivity Economic Growth Health & Wellbeing Social & Community Climate & Environment

Rail

The rail network is also a vital component in supporting Oxfordshire's economic development and has a critical role in supporting planned housing and employment growth anticipated in Science Vale. Increased rail use will help reduce the usage of private vehicles, contributing to the delivery of the LTCP vision.

The MAP Plan supports and will work alongside the asks and commitments of OxRAIL 2040: A Plan for Rail which covers the changes required to the local rail network to support the LTCP targets, but also the importance of rail as a place shaper.

SV12 and SV13 focus on enhancing rail connectivity and facilities, to improve access for those travelling to and from:

- **Holidays and Travel**
- **Town and Cities**
- **Work**

And to support

- **Improved Air Quality**
- **More Rail Freight**
- **Decarbonisation**

Objective SV12

Support improvements to the rail network in the short term.

Objective SV13

Support improvements to the rail network in the medium to long term.

Why these objectives?

As is the case for bus services, the rail network also focuses on Didcot Parkway, which is the second busiest rail station in Oxfordshire[75] and provides fast and frequent connections along the Great Western Mainline. Didcot Parkway provides good east-to-west connections. However, north-to-south connections are currently limited. Culham and Appleford Stations on the Science Line (Cherwell Valley Line) are far smaller and are only served by local stopping services between Banbury and Didcot Parkway. This results in a number of popular journeys from these stations, including those in the top 10 destinations of each station, not being direct[76], which is less convenient to those using these stations.

Culham and Appleford have limited passenger facilities. Furthermore, Appleford has no connections to local public transport services or strategic walking, wheeling and cycling routes[77]. Didcot Parkway has good levels of onward travel links, while improvements could be made to crossing points and local onward travel maps. Trains on the Great Western mainline that stop at Didcot Parkway are primarily operated by electric or bi-mode trains.

However, towards Oxford and along the Science Line (Cherwell Valley Line) all services are operated by diesel trains.

Given the above, there are several opportunities to develop the rail network in Science Vale to improve access, service provision, infrastructure, and connectivity around Culham, Wantage and Grove, and Didcot, where significant population and job growth is expected. Furthermore, as part of OxRAIL 2040: Plan for Rail there are proposals for the introduction of a new station at Wantage and Grove, with a business case being developed[78]. Any station at Wantage and Grove is anticipated to be served by an hourly train service between Oxford and Bristol, improving accessibility and reducing journey times for those in Wantage, Grove and the surrounding villages.

The rail network is also vital to supporting OxRAIL 2040: Plan for Rail, which is part of **Policy 21** of the LTCP.

We will deliver **Objective SV12** through the following actions:

12.1 Work with Network Rail to ensure the electrification of the rail line between Didcot Parkway and Oxford.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Climate & Environment | Culture & Assets

12.2 Work with Network Rail and East West Rail to achieve the extension of East West Rail services to Didcot Parkway and in the future Wantage and Grove, to provide services between Science Vale and Milton Keynes and onwards towards Cambridge.
Travel & Connectivity | Economic Growth | Social & Community

12.3 Collaborate with partners to improve the accessibility and infrastructure at Culham Rail Station.
Travel & Connectivity | Economic Growth | Culture & Assets

12.4 Work with partners to lobby for additional services and capacity improvements along the Science Line (Cherwell Valley Line) at Didcot Parkway, Culham and Appleford.
Travel & Connectivity | Economic Growth | Climate & Environment | Culture & Assets

12.5 Collaborate with partners to deliver the Strategic Outline Business Case for Wantage and Grove Station.
Travel & Connectivity | Economic Growth | Social & Community

We will deliver **Objective SV13** through the following actions:

13.1 Work with partners to improve capacity, accessibility, passenger facilities and direct services at Culham.
Travel & Connectivity | Economic Growth | Social & Community | Culture & Assets

13.2 Support partners to provide the further enhancement of services on the Science Line (Cherwell Valley Line) from Didcot Parkway, Culham and Appleford.
Travel & Connectivity | Economic Growth | Climate & Environment

13.3 Develop a strategy with Network Rail to support increased freight capacity through Didcot Parkway.
Travel & Connectivity | Economic Growth | Climate & Environment

13.4 Work with partners to develop a framework to enable the opening of Wantage and Grove Station.
Travel & Connectivity | Economic Growth

13.5 Work with partners to open a station at Wantage and Grove, subject to the Outline Business Case.
Travel & Connectivity | Economic Growth | Social & Community | Culture & Assets

Car Club and Car Share

Car clubs and car sharing are covered by the term shared mobility. Shared mobility schemes help to reduce car ownership and use, improve air quality, and encourage a shift towards the use of walking, wheeling and cycling or public transport, as set out in **Policy 39** of the LTCP. They enable those who do not own a car or own a single car and need occasional uses of a second car, to have quick short-term access to a vehicle from as little as an hour.

SV14 focuses on providing an alternative to car ownership for people who make occasional, medium or long distance, trips for:

- **Holiday and Travel**
- **Business Travel**
- **Large Purchases**
- **Daytrips**

Objective SV14

Support the development of a car club network and car share schemes.

Why this objective?

There are presently no car club spaces or vehicles within Science Vale. Although, there are currently three vehicles provided on the edge of Science Vale in Abingdon-on-Thames (two vehicles) and Wallingford operated by co wheels.

Car ownership in South Oxfordshire and Vale of White Horse is high, with 88.6% of households owning at least one car[79]. This is much higher than the national average (76.5%). A comprehensive network of zero-emission car club vehicles located at employment sites, transport interchanges, leisure facilities and within residential areas, would help reduce car ownership. This is most easily seen in data from CoMoUK, which indicates that on average, every car club vehicle in the UK replaces between 14 and 32 private cars[80]. As such, this would help to reduce car mileage and congestion to the benefit of those walking, wheeling, cycling and using public transport.

Furthermore, the reduction in car ownership has benefits in relation to on-street parking in residential areas. Cars that are parked on-street reduce the available road width and can become obstacles for those cycling and for buses. The impact of on-street parking on bus services is discussed the 'Bus Services & New Residential Developments' document produced by GoAhead and Stagecoach. This document nots that on-street parking is one of the biggest hindrances to efficient bus operation in residential areas[81], therefore, the use of car clubs should help to reduce this.

Car share involves people sharing trips with at least one other person rather than travelling separately. While Liftshare does operate within Science Vale area there is no coherent network shared between the employment locations, although Milton Park and Harwell Science and Innovation Campus do operate their own high-profile car share schemes. residents of Oxfordshire can join Liftshare to find car sharing opportunities. As outlined earlier, car sharing once per week can reduce trips by 20%[82]. In addition, car sharing can reduce the costs of travelling, cuts congestion and pollution and can help to alleviate parking issues; it also has social benefits by proving networking opportunities and allowing users to making new friends[83]

Case Study: Liftshare & Mobilityways

Liftshare is the United Kingdom's leading car share provider. It is a free to use car sharing platform that allows individuals to find car share trips, either as a passenger or driver, whilst also working with 700 business/ organisations[84]. Liftshare is open anybody over the age of 18.

Liftshare has recently integrated the multi-modal Mobilityways App to aid user for any potential journey, regular or occasional The Mobilityways App allows users of Liftshare to undertake messaging on the go, track their CO2 and miles savings, and plan multi-modal trips[85]. Mobilityways is also a useful tool for helping to achieve behavioural change tool in particular when used by major employers and at key trip attractors.

The development of a car club network and car share schemes supports **Polices 29, 31, 35, 39, 49 and 54 of the LTCP.**

We will deliver **Objective SV14** through the following actions:

14.1 Collaborate with partners to provide a comprehensive network of car clubs, including the prioritisation of parking for car clubs.
Travel & Connectivity | Social & Community | Climate & Environment

14.2 Ensure car clubs use zero emission vehicles, where possible.
Travel & Connectivity | Health & Wellbeing | Climate & Environment

14.3 Work with developers and business to provide EV charging and parking to support car clubs/ car share and to encourage/ promote car sharing to their employees.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Climate & Environment

14.4 Develop a car share awareness/ expansion programme through collaboration with partners.
Travel & Connectivity | Social & Community | Climate & Environment

14.5 Encourage businesses to use Liftshare & Mobilityways.
Travel & Connectivity | Social & Community | Climate & Environment

Demand management

Being home to significant employment sites, Science Vale sees a considerable volume of commuting traffic. A particular issue is that the large employment sites are situated in rural areas away from residential areas, which limits the viability of public transport, walking, wheeling and cycling options. This results in high levels of car usage, also enabled by an abundance of car parking. There is also an issue with congestion. Congestion limits opportunities to provide transport choice: buses are unable to operate efficiently resulting in delays, congested routes are less attractive to those walking and cycling, and air quality is reduced.

The focus of Objective SV15 is to enable communities to have transport choice by improving safety, access and inclusivity for those:

- **Walking**
- **Wheeling**
- **Cycling**
- **Using Micro-mobility**
- **Buses**

By delivering the demand management measures set out in **Policies 34 & 35,** in LTCP we will be able to provide efficient running of public transport, create space for people to cycle where they need to go and walk to local amenities, work and school. By creating space for other modes of transport to thrive, we will reduce congestion as people will have a choice in how they move, and we will be able to create places for people to enjoy. This also allows people who have no choice to use their vehicle, a quicker and less stressful journey.

Therefore, there are situations where it will be necessary to discourage private car use through demand management measures. Although it is important to set out that any proposals for demand management will only be proposed in locations with good levels of sustainable alternative travel options. It is also recognised that the area is typically a rural in nature with a significant proportion of elderly people (15% of population are over 65)[86], which currently typically limited alternatives other than using the car.

Objective SV15

Implement demand management measures in areas which are well served by sustainable transport.

Why this objective?

Demand management, includes reducing public and private car parking, implementing Controlled Parking Zones (CPZs), Workplace Parking Levies (WPLs), other on-street parking or movement restrictions (loading bans, clearways, banned turns, red routes, Low Traffic Neighbourhoods (LTNs) and low emission zones, use of modal filters or charging schemes. These types of schemes will be considered at locations within Science Vale to help mitigate the following issues:

- **Modal share** – The mode share in Science Vale is car-dominated, with more than 68% of residents travelling to work by driving[87].
- **Car for short journeys** – A considerable number of trips for those working or living in Science Vale are over short distances that could be undertaken by either walking, wheeling and cycling modes or public transport[88].
- **Sharing road space** – There are multiple locations within Science Vale where there are high motorised vehicle flows in areas where there is significant integration with walking, wheeling and cycling movements (e.g. Didcot Town Centre). This poses a risk to the safety of road users whilst also impacting the health of those walking, wheeling and cycling[89]. It also makes those areas less attractive and less pleasant places for Non-Motorised Users.

- **Parking** – In town centres free or cheap car parking can increase the convenience of driving a car, discouraging people from travelling via walking, wheeling and cycling or public transport[90].
- **Availability of Employment parking** - Several of the large employment sites in Science Vale have significant car parking for staff. This issue is not solely for existing sites, but also for new sites being brought forward as part of the South and Vale JLP or speculatively.
- **Congestion** – There are a number of locations throughout Science Vale where existing and future traffic flows are likely to cause significant congestion and delay, whilst also impacting air quality. Investment in new infrastructure to improve this is planned, but measures to manage and reduce traffic volume and flow on certain roads through measures such as modal filters or charging schemes needs to be considered.
- **Pollution/ air quality** – Areas of Science Vale suffer from high levels of pollutants including NOx, CO2 and PM that impact the health of residents and in particular school children[91].

Demand management has many benefits including improvements to safety and air quality in locations with elevated levels of motorised traffic and latent demand of walking, wheeling and cycling modes. It can be particularly useful in locations with high numbers of vulnerable people, such as school students, who tend to walk and cycle more, and those with health conditions. Another benefit to demand management is that it can help to encourage a shift towards walking, wheeling and cycling and public transport, particularly on short trips within settlements. This is a significant issue as a large number (52%) of residents who commute less than five kilometres, do so by driving a car[92].

By delivering this objective, we will be able to improve road safety and air quality in the area. As in the LTCP, we will adopt a Vision Zero approach, making sure that any infrastructure development or improvements will incorporate design aiming for zero road fatalities and serious injuries. Redirecting vehicular traffic away from areas with high NMU activity will also improve air quality and allow people to breathe safely.

A reduction in car parking availability is a successful way of reducing car trips, which in turn helps to decarbonise transport and generate a shift towards sustainable transport modes[93]. As such, where possible, a reduction in the levels of car parking, in line with Oxfordshire Vehicle Parking Standards, should be implemented alongside sustainable transport improvements. Better provision for sustainable transport modes could include improved footway and cycle ways, improved cycle parking, provision for shared micromobility, e-bikes and charging, changing and toilet facilities, prioritisation of parking for car clubs/ car-pools/ car sharing, bus service improvements and bus priority improvements.

We will deliver **Objective SV15** through the following actions:

15.1 Identify locations for potential demand management measures in suitable locations including restricting car parking availability.
Travel & Connectivity Climate & Environment

15.2 Work with partners to develop a strategy for the implementation of demand management measures.
Travel & Connectivity Climate & Environment

15.3 Support the removal of on-street parking along routes with high footfall or cyclist users, including those identified in LWCIPs, DCC, SATN and priority bus routes, to support the delivery of cycleways, where appropriate.
Travel & Connectivity Climate & Environment Health & Wellbeing

15.4 Consideration of the provision of new or extended Controlled Parking Zones.
Travel & Connectivity Climate & Environment

15.5 Continue to work with our partners to reduce the number of existing parking spaces at existing employment locations, including but not limited to Milton Park, Harwell Science and Innovation Campus, Culham Campus and Williams F1.
Travel & Connectivity Climate & Environment

Infrastructure development

As set out in **Policy 36** of the LTCP, the general approach is that new road capacity should only be provided where other options have been explored first. This includes to provide new or improved walking, wheeling, cycling, public transport facilities, to improve safety or to improve highway capacity for private vehicles where it provides benefits to other road users and to improve air quality. This MAP Plan will seek to apply these principles in the development of new schemes. To ensure that all infrastructure schemes align with our transport vision, we take a 'decide and provide' approach rather than the traditional 'predict and provide' approach, when assessing impacts.

The policy indicates that there are situations when new or upgraded road infrastructure may be the appropriate solution. Where this is the case, this is reflected in this MAP.

Objective SV16 to SV19 focus on enabling those travelling within our community's urban areas to have transport choice, whilst improving journeys and reducing congestion for those who need to use their car, to the benefit of those making trips to and from:

- **School**
- **Shops**
- **Community Facilities**
- **Work**
- **Healthcare Facilities**
- **Towns and Cities**
- **Leisure Facilities**
- **Holidays and Travel**

Using the 'decide and provide' approach we will assess all transport options and decide if new or upgraded infrastructure should be provided. There are benefits to new or upgraded infrastructure, and these include tackling congestion and pollution which provide benefits to health, supporting the economy, and ensuring the county remains an attractive place to work and live. Highway improvements can speed up bus journey times and provide dedicated bus corridors. They can also improve safety for motorcyclists and other powered two-wheeler users, who are more vulnerable to injury. Furthermore, the delivery of new or upgraded infrastructure is key to the delivery of new walking, wheeling and cycling schemes, as the schemes can both directly include new facilities, but also facilitate changes to be made on existing roads, such as a lowering of vehicle flow and speed which promotes re-prioritisation of road space on existing roads. Schemes can help to remove severance and physical barriers for walking, wheeling and cycling users as set out in Objective SV6.

Objective SV16

Deliver movement infrastructure schemes.

Objective SV17

Develop future movement infrastructure schemes.

Why these objectives?

As set out earlier in this chapter, there are several infrastructure schemes that are currently being delivered and progressed in Science Vale. In addition, there are a number of areas of land that are safeguarded for transport schemes in the emerging South and Vale JLP. These infrastructure schemes include the NPR3, WELR, and HIF1, which provide alternative routes for traffic travelling through urban areas and help to support the reduction of motorised traffic in areas with high walking, wheeling and cycling movements such as Didcot town centre. This will in turn allow the re-purposing of highway space at other locations to benefit those walking, wheeling and cycling, as well reducing congestion for bus services so that operate faster and more reliably. Furthermore, many of the planned infrastructure schemes also provide high quality walking, wheeling and cycling infrastructure or bus infrastructure, for example, HIF1 will provide 19 kilometres of walking, wheeling and cycling routes, while the Steventon Lights Integrated Transport Scheme provides new and improved walking, wheeling and cycling facilities as well as bus priority measures to improve journey times and reliability. Where considered necessary will also seek to provide new and improved parking for motorcyclists and powered two-wheelers in line with Manual for Streets.

This will allow the implementation of walking, wheeling and cycling and public transport schemes. Meanwhile, other schemes will provide new walking, wheeling and cycling routes (Milton Heights Bridge) or provide bus priority measures. These schemes are integral to the achievement of the LTCP vision and targets, as they help to support the improvement of walking, wheeling and cycling and public transport provision in the area. Implementing this objective will help reach LTCP targets and support **LTCP Policies 1-3, 8, 9, 10, 12-16, 18-20, 22, 23, 27, 29, 31, 33, 36-39, 45 and 46.**

We will deliver **Objective SV16** through the following actions:

16.1 Support the delivery of:

a. HIF1 (Widening of the A4130, Didcot Science Bridge, Didcot to Culham River Crossing and Clifton Hampden Bypass).
b. Steventon Lights Integrated Transport Scheme.
c. Milton Heights walking, wheeling and cycling Bridge.
d. Northern Perimeter Road Phase 3.
e. Grove Northern Link Road.

Travel & Connectivity **Economic Growth** **Health & Wellbeing** **Culture & Assets**

We will deliver **Objective SV17** through the following actions:

17.1 **Consider** exploring previously identified potential:

a. A4074 Corridor Study (including Golden Balls).
b. Didcot Central Corridor.
c. Frilford and Marcham Improvements
d. Rowstock Area Travel Study.

Travel & Connectivity **Economic Growth** **Health & Wellbeing** **Social & Community** **Culture & Assets**

17.2 **Explore** options for the walking, wheeling and cycling transport schemes safeguarded in the South and Vale JLP:

a. Historic canal route safeguarded for active travel (Wilts & Berks Canal).
b. Abingdon-on-Thames - Drayton via B4017 (SATN).
c. Abingdon-on-Thames - Marcham via A415 (SATN).
d. Abingdon-on-Thames - Berinsfield via A415 (SATN).
e. Peep-O-Day Lane - Sutton Courtenay (Active Travel).
f. Berinsfield - Oxford via A4074 (SATN).
g. Berinsfield - Oxford via Marsh Baldon (SATN).
h. Milton Park - Steventon via Cinder Track (SATN).
i. Harwell Science and Innovation Campus - Wantage via Ardington (SATN).
j. Harwell Science and Innovation Campus - Milton Park via Hungerford Road, Milton Hill, and Milton Heights Active Travel Bridge (SATN).

k. Harwell Science and Innovation Campus - Harwell village via Winaway (SATN).

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Culture & Assets

17.3 **Consider** exploring previously identified potential:

a. Southern Didcot Movement Corridor.
b. South Abingdon-on-Thames Movement Corridor.
c. Wantage Western Movement Corridor.
d. Improvements to Featherbed Lane / Steventon Junction, Relief to Rowstock and Harwell to Didcot Busway.
e. A4130 Road Safety Improvements.
f. Improved Access to A34 near Milton Park.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Culture & Assets

Objective SV18

Develop Corridor Movement and Place Strategies for existing key routes.

Why this objective?

Science Vale is a large area and as a result travel between leisure, residential and employment areas is primarily along key corridors regardless of the mode of travel. The key travel corridors in Science Vale include the A4130, A417, A415, A4074, A34 and A338. Whilst a percentage of residents within Science Vale area commute over short distances, the number travelling to work over a greater distance is also significant, with 40% of residents travelling greater than ten kilometres[94].

Due to the length of the trips along these corridors and thus time incurred, there can be more difficulties in shifting these trips to walking, wheeling and cycling or encouraging the use of public transport, although with the correct strategy and funding, these obstacles can be overcome. The reduction in the length of car trips, which can be achieved through using mobility hubs or transferring car drivers to a bus for some of the journey can have a significant impact on carbon emissions and congestion. This is likely to reduce the need for highway improvements, improving air quality, and reducing pollution.

Because of the unique nature of travel corridors, it is important to undertake a comprehensive approach when exploring issues and opportunities for their improvement. It is also important to ensure that the resolution of issues in one location on the corridor does not result in a worsening or development of new impacts at other locations along the

corridor. The completion of corridor strategies is important to support **Policies 52** and **53** of the LTCP. We recognise that journeys in Oxfordshire are mixed, with movement both within and between towns. In Science Vale, this includes trips within the area such as Didcot, Wantage and Grove, and between key travel destinations outside Science Vale such as Wallingford and Abingdon-on-Thames , which have a high level of interaction between them and Science Vale due to trips being made into and out of the area for work, school, and leisure.

We will deliver **Objective SV18** through the following actions:

18.1 Develop Corridor Movement and Place Strategies on corridors identified in LTCP Part 1: a) A4074 b) A34.
Travel & Connectivity | Economic Growth | Climate & Environment

18.2 Implement the measures and strategies in the Corridor Movement and Place Strategies.
Travel & Connectivity | Economic Growth | Climate & Environment

18.3 Consider locations for other Corridor Movement and Place Strategies with this potentially including along the A417, A415, A338 or A4130.
Travel & Connectivity | Economic Growth | Climate & Environment

Objective SV19

Support the safeguarding of land for movement schemes.

Why this objective?

The adopted Local Plans safeguard land for a number of potential transport schemes across Science Vale. The emerging South and Vale JLP proposes to retain many of these and includes a number of additional walking, wheeling and cycling schemes. The council will continue to work with the district councils to safeguard this land where appropriate and identify new locations for safeguarding in the development of future Local Plans.

The council will look to explore further public transport and walking, wheeling and cycling safeguarding schemes such as bus interchanges or depots, Quality Pedestrian Corridors and smaller mobility hubs (suburban and rural hubs and mini hubs). This is in support of **Policy 23** with the LTCP.

We will deliver **Objective SV19** through the following actions:

19.1 Continue to collaborate with the district councils to safeguard land within Local Plans for movement schemes.

Travel & Connectivity | Economic Growth | Social & Community | Climate & Environment

19.2 Review whether the safeguarding of land for movement schemes needs to be retained in future Local Plans.

Travel & Connectivity | Economic Growth | Social & Community | Climate & Environment

19.3 Work to identify new areas where the safeguarding of land would be required for future movement schemes.

Travel & Connectivity | Economic Growth | Social & Community | Climate & Environment

19.4 Collaborate with partners to explore and identify locations for bus depots, stops and interchanges to support the growth in public transport and walking, wheeling and cycling.

Travel & Connectivity | Economic Growth | Social & Community | Climate & Environment

Freight, deliveries, and servicing

Objective SV20 concentrates on freight, deliveries, and servicing, building on **Policies 47** to **50** set out in the LTCP and the associated Freight and Logistics Strategy. Due to the nature of freight and logistics, movement can be allocated into three key brackets: long-distance, local, and last mile. The movement of goods is essential to supporting the lives of our communities. However, there are several complex challenges surrounding the freight system, particularly at the local level.

SV20 focuses on improving and reducing the impact of freight, deliveries, and servicing. The benefits of this on the community are:

- **Improved Air Quality**
- **Decarbonisation**
- **Reduced HGVs Use**
- **Improve Road Safety**
- **More Local Access**

Freight, deliveries, and servicing are generally undertaken by Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs). They contribute to emissions and congestion and have impacts on our environment. Furthermore, they present the greatest risk to walking, wheeling and cycling users, reducing the safety of the most vulnerable in society. As such, it is necessary to ensure that goods are moved in a net-zero, efficient and safe manner if we are to achieve the vision and targets of the LTCP.

Objective SV20

Improve freight, deliveries, and servicing.

Why this objective?

Science Vale is home to a significant amount of employment land including the four key employment sites, plus Southmead Industrial Estate, and multiple distribution centres. As

such, there is a significant amount of HGV and LGV traffic in the area, with this likely to increase as a result of large-scale construction projects which will take place in Science Vale over the coming years. The large employment centres are normally multi-operator, so existing consolidation is limited. The continuing rise of e-commerce grocery and parcel delivery is also resulting in an increasing number of LGVs.

HGVs and LGVs pose a greater risk to the safety of pedestrians and bike riders due to their size, shape, and weight, which cause issues in the achievement of Vision Zero, a key policy of the LTCP, to eradicate deaths on Oxfordshire's roads. Most HGVs and LGVs are also diesel-powered, which has an impact on pollution and air quality. The urban areas and travel corridors in Science Vale suffer from high levels of Carbon, CO_2, and PM, with the levels of NOx being low overall across Science Vale, but with pockets showing high concentrations.

To help mitigate the impacts of HGVs, the council has an existing HGV routing strategy which restricts HGVs in certain areas. In Wantage, however, there are no formal restrictions to stop HGVs from avoiding the guidance in the routeing strategy. Furthermore, within Didcot, there are no restrictions to stop HGVs from travelling through the town centre, where there are a large number of walking, wheeling and cycling users. Due to the strategic transport network in Science Vale, there are opportunities to help reduce the impacts of HGV and LGV traffic through consolidation management, use of the railways, last mile transport, and implementation of new restrictions.

We will deliver **Objective SV20** through the following actions:

20.1 Work with the district councils to continue the electrification of food-waste collection vehicles and encourage all fleet vehicles to be zero-emission (e.g. refuse vehicles, vans).
Travel & Connectivity **Health & Wellbeing** **Climate & Environment**

20.2 Explore opportunities to introduce HGV restrictions, for through vehicle trips, in Didcot and Wantage, in areas with high walking, wheeling and cycling movements (e.g. upon delivery of HIF1 and NPR3).
Travel & Connectivity **Health & Wellbeing** **Climate & Environment**

20.3 Explore opportunities for a zonal network (different requirements for different areas) of zero emission parcel deliveries in Didcot, including opportunities for future expansion, to help improve air quality and reduce HGV traffic in high footfall areas.
Travel & Connectivity **Health & Wellbeing** **Climate & Environment**

20.4 Implement a zonal network of zero emission parcel deliveries in Didcot.
Travel & Connectivity **Health & Wellbeing** **Climate & Environment**

20.5 Collaborate with partners to introduce opportunities for first and last mile deliveries hubs using cargo bikes and e-cargo bikes at employment sites in Science Vale.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Climate & Environment

20.6 Collaborate with partners to explore opportunities to provide micro consolidation hubs at the Science Parks and other multi-operator employment sites.

Travel & Connectivity | Economic Growth | Climate & Environment

20.7 Support the rollout of parcel/ grocery lockers at key transport locations such as Didcot Parkway, Culham, Wantage and Grove, Mobility Hubs, and local and district centres to support integrated travel.

Travel & Connectivity | Economic Growth | Social & Community

20.8 Explore the opportunities to deliver rail freight hubs in Science Vale.

Travel & Connectivity | Economic Growth | Culture & Assets | Climate & Environment

20.9 Investigate the opportunities for a trial of autonomous HGVs and truck platooning in Science Vale, in line with Objective SV22.

Travel & Connectivity | Economic Growth

Climate resilience

In 2019, the County Council declared a Climate Emergency and prepared a climate action framework in response. The emerging South and Vale JLP recognises the need to take action to tackle climate change, given the challenges Science Vale faces. It sets out policies that aim to make the districts more resilient to the impacts of climate change and to reduce their environmental impact. It is also important that we are ensuring biodiversity and climate impacts are key factors in developing transport schemes.

SV21 focuses on ensuring Science Vale is more resilient to climate events, to the benefit of:

- **Biodiversity**
- **Air Quality**
- **The Local Economy**
- **Reduced Damage**
- **Reduced Flooding**
- **Reduced Cost**

The county's LTCP, through **Policies 27** to **30**, also puts addressing the climate emergency at the forefront, with the goal of decarbonising the transport system by 2040, contributing to a climate-positive future, and improving resilience for our communities. An important feature is ensuring schemes are delivered in accordance with PAS 2080 - a global standard by the British Standards Institution for managing whole-life carbon in buildings and infrastructure.

Objective SV21

Develop a Climate Resilience Strategy for Science Vale.

Why this objective?

Science Vale is susceptible to flooding, with the long-term flood risk from surface water the built-up areas of Science Vale. Flood risk may also come from rivers. Large areas in the northern part of Science Vale such as Culham, Appleford, Clifton Hampden and Burcot are at high long-term risk of flooding from the River Thames. While flooding is a big issue, climate resilience also includes reducing impacts from excessive cold, excessive heat and drought, and elevated levels of pollution, which has a benefit on health and wellbeing. Science Vale is also home to the North Wessex Downs National Landscape, the Oxford Green Belt and numerous sites of special scientific interest which need to be protected.

We will deliver **Objective SV21** through the following actions:

21.1 Investigate opportunities to improve resilience to climate change in areas with the highest risk.
Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Climate & Environment

21.2 Support wider use of and green and blue infrastructure for movement schemes, where applicable.
Travel & Connectivity | Health & Wellbeing | Social & Community | Climate & Environment

21.3 Support wider use of Sustainable Drainage Systems (SuDS) and at new developments, where applicable.
Health & Wellbeing | Social & Community | Climate & Environment

21.4 To support the delivery of a net zero transport network by 2040 (a target of the LTCP), all infrastructure developments should aim to minimise whole life carbon emissions following PAS2080 standard (in accordance with **Policy 27** of LTCP).
Health & Wellbeing | Social & Community | Climate & Environment

21.4 Develop a strategy to provide greening or application of solar panels on bus stops, train stations, signage, mobility hubs, etc.
Travel & Connectivity | Health & Wellbeing | Social & Community | Climate & Environment

21.5 Support schemes that achieve greening and re-wilding of places, contributing the Local Nature Recovery Strategy.
Health & Wellbeing | Social & Community | Climate & Environment

21.6 Support schemes and help to implement proposals to reduce air pollution.
Health & Wellbeing | Social & Community | Climate & Environment

21.7 Support the implementation of projects in the Didcot Green Infrastructure Strategy.

Travel & Connectivity | Economic Growth | Health & Wellbeing | Social & Community | Climate & Environment

Innovation and new technologies

Objective SV22 concentrates on innovation and new technologies for our communities. Innovation can mean a number of things depending on the context. However, in accordance with LTCP, innovation is defined as anything which is new or being applied in new ways or contexts to traditional approaches. This can range from new technologies to new processes or approaches. Further details regarding this are outlined in the council's Innovation Framework. Science Vale is already an important hub for innovation and new technologies but there are opportunities to further grow this to give Science Vale a primary position on the global stage, to the benefit of those who live and work in the area, but also across Oxfordshire.

Objectives SV22 is in relation to innovation. The benefits of this are:

- **New Technology**
- **Decarbonisation**
- **The Local Economy**
- **Green Transport**
- **Business Growth**
- **Digital Connectivity**
- **Green Freight**

Objective SV22

Continue to develop Science Vale as a local, regional, national, and global hub for testing new and innovative technologies.

Why this objective?

Science Vale is a key area for local and regional economic growth and is a nationally and internationally important hotspot for enterprise, engineering, and innovation. Science Vale is home to a significant amount of the country's scientific research and development as well as high technology businesses. Therefore, there are opportunities for innovative technologies and approaches that could be considered to help improve public transport such as automation, improved customer experience and smart technology. However, we accept there is risk and potentially significant cost associated with innovation and creating new technologies, which must be considered.

Science Vale is already a global innovation hub and a hub for testing new technologies. There is however an opportunity to grow its position as a global innovation hub, building

on its current credentials. A clear opportunity exists to make Science Vale a hub for testing new technologies. The testing of recent technologies and innovations will be focused on those that have benefits for movement and place, helping to achieve the vision and targets of the LTCP.

By developing a test hub, Science Vale would continue to be on the international stage for innovation. This will help drive growth in the area, which would in turn provide benefits to the community through improved services, productivity and more efficient transport. Innovation can potentially also have added benefits in terms of helping to tackle inequality, quality of life and the climate emergency[95]. The test hub would also support opportunities for funding bids and could help to be a template for the implementation of schemes across all areas of Oxfordshire. It would also allow a range of technologies that could be assessed simultaneously ensuring they interact appropriately.

Case Study: Self-driving bus trials, Science Vale

A number of self-driving bus trials have taken place in the UK over the last few years including three within Science Vale, with others having taken place in Edinburgh, Cambridge and London. The first of the trials in the Science Vale is the on-site self-driving bus at Harwell Science and Innovation Campus, which operates daily connecting business within the science park, it started operating in 2021. The second was a six-week self-driving bus trial that operated between Didcot Parkway Station and Milton Park. The third was a self-driving bus trial around Milton Park which ran throughout 2023. The trials are aiming to show that self-driving buses can work on a small scale, before they are introduced more widely. The presence of trials within Harwell and Didcot demonstrates the importance of Science Vale for innovation at a national and global level. In the long run, the benefits of self-driving buses potentially include cost reductions, improved safety for occupants and other road users, and reduced emissions[89]. The self-driving bus operates without active involvement, but a safety operator is onboard to monitor the vehicle and the passengers.

©Harwell

© FirstBus

We will deliver **Objective SV22** through the following actions:

22.1 We will seek to explore the following (but not limited to):

a. Zero-emission self-driving vehicle network.
b. Zero-emission public transport network
c. Electric charging hubs for e-bikes, buses, commercial vehicles, and cars, etc.
d. 5G/ 6G and further generation networks along key travel corridors, such as the A34, Science Line (Cherwell Valley Line) and Great Western mainline.
e. Explore potential deployment of Artificial Intelligence to improve local transport (e.g. improving efficiency or environmental performance).
f. Unmanned Aerial Vehicles (UAVs) (e.g. drone) deliveries at Harwell Science and Innovation Campus, Milton Park, and Culham Campus, including trials.
g. SMART infrastructure (combining physical and digital infrastructure).

Travel & Connectivity **Economic Growth** **Health & Wellbeing** **Social & Community** **Climate & Environment**

22.2 In turn we will:

a. Facilitate forthcoming new technology to inform future movement and place networks.
b. Pro-actively seek funding opportunities to deliver and support innovation.
c. Facilitate forthcoming new technology on our transport network.
d. Undertake monitoring and evaluation of schemes.
e. Support the county and other Local Authorities (LAs) by providing data and insights (Living Lab).

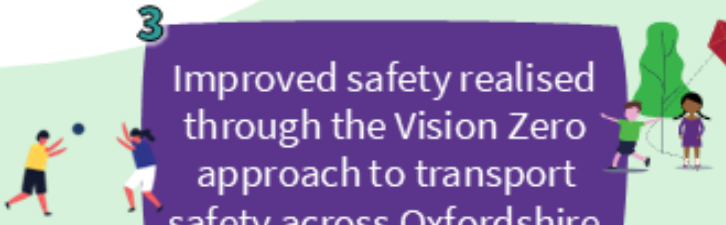
Travel & Connectivity **Economic Growth** **Health & Wellbeing** **Social & Community**

Our 9 defined outcomes:

1. A place that works towards delivering on net-zero carbon transport network

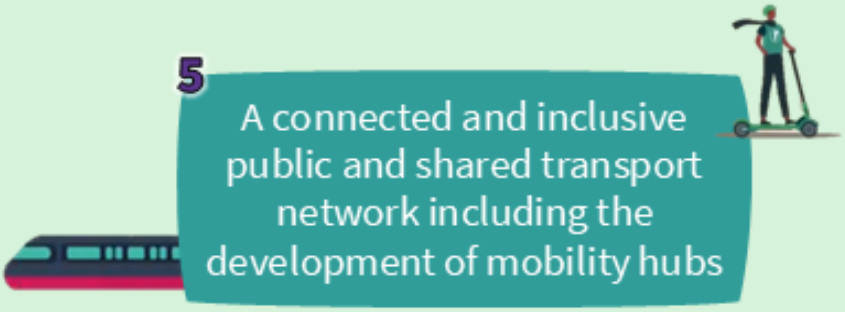
2. A place with a transport network that clearly reflects the priorities of the transport user hierarchy

3. Improved safety realised through the Vision Zero approach to transport safety across Oxfordshire



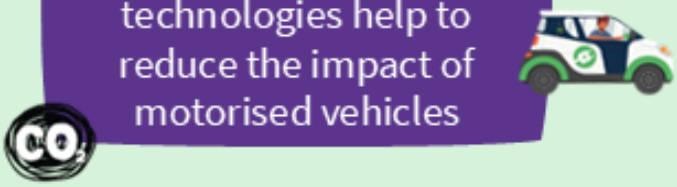
4. A comprehensive, safe, inclusive walking, wheeling and cycling network through the implementation of the LCWIP and Strategic Active Travel Network

5. A connected and inclusive public and shared transport network including the development of mobility hubs



6. A place where freight movements are appropriate and safe

7. A place where EV charging, and other low-carbon technologies help to reduce the impact of motorised vehicles



8. Improve air quality to safe levels, to remove the need for Air Quality Management Areas on transport grounds

9. A place where people are more receptive to active travel, sustainable modes and want to promote travel changes.

Objectives and related outcomes

The table below sets out the objectives identified for Science Vale and their connection to the nine MAP Plan outcomes.

Table SV2: Summary of Objectives in relation to the nine MAP Plan outcomes.

Objective		Outcome								
		1	2	3	4	5	6	7	8	9
SV1	Enhance public realm in settlement centres.	✓	✓	✓						✓
SV2	Create a sense of togetherness, place, inclusiveness, and community in new and existing places.	✓	✓	✓	✓					✓
SV3	Deliver a comprehensive, comfortable, direct, safe, coherent and inclusive walking, wheeling and cycling network.	✓	✓	✓	✓	✓			✓	✓
SV4	Ensure developments deliver comprehensive on-site and off-site walking, wheeling and cycling provision.	✓	✓		✓	✓	✓	✓	✓	✓
SV5	Improve accessibility for Non-Motorised Users travelling via waterways and greenways.	✓	✓		✓					✓
SV6	Reduce walking, wheeling and cycling severance caused by physical barriers.	✓	✓		✓				✓	✓
SV7	Introduce shared micromobility schemes, subject to central government legislation.	✓			✓	✓			✓	✓
SV8	Develop a network of cycle parking, hubs, and hangars.	✓	✓		✓	✓			✓	✓
SV9	Create a network of mobility hubs.	✓				✓		✓		✓
SV10	Enhance bus services.	✓	✓			✓			✓	✓
SV11	Enhance bus infrastructure.	✓	✓			✓			✓	✓
SV12	Support improvements to the rail network in the short term.	✓	✓			✓			✓	✓
SV13	Support improvements to the rail network in the medium to long term.	✓	✓			✓			✓	✓
SV14	Support the development of a car club network and car share schemes.	✓				✓		✓		✓
SV15	Implement demand management measures in areas which are well served by sustainable transport.	✓	✓		✓	✓		✓	✓	✓
SV16	Deliver movement infrastructure schemes.	✓	✓	✓			✓		✓	✓
SV17	Develop future movement infrastructure schemes.	✓	✓	✓			✓		✓	✓
SV18	Develop Corridor Movement and Place Strategies for existing key routes.	✓	✓	✓			✓		✓	✓
SV19	Support the safeguarding of land for movement schemes.	✓	✓	✓			✓		✓	✓
SV20	Improve freight, deliveries, and servicing.	✓		✓			✓	✓	✓	✓
SV21	Develop a Climate Resilience Strategy for Science Vale.	✓						✓	✓	
SV22	Continue to develop Science Vale as a local, regional, national, and global hub for testing new and innovative technologies.	✓	✓	✓		✓	✓	✓	✓	✓

Conclusion

This MAP Plan sets out a clear vision for a thriving, sustainable, and inclusive future for the area of Science Vale delivering a total of 22 Objectives, with all of these helping to achieve the nine Movement and Place outcomes. Within the period of this MAP Plan a significant amount of growth is anticipated in population (97,000) and jobs (7,000) over the coming decades, up until 2050, but with that brings many opportunities. There is a focus throughout about the protection of the natural assets, enhancing community life, and transforming transport networks to be low-carbon, accessible, and resilient. By fostering collaboration, innovation, and evidence-based delivery, Science Vale aims to remain at the forefront of scientific progress and environmental stewardship, ensuring healthy lifestyles and economic vitality for all.

The next steps will involve delivering and developing the objectives by implementing the actions in walking, wheeling, cycling, public transport, and infrastructure improvements, alongside robust monitoring and ongoing community engagement. The Plan calls for strengthened partnerships, safeguarding land for future movement schemes, promoting new technologies, and continually reviewing objectives to adapt to evolving challenges. By placing people, the environment, and innovation at its core, Science Vale is equipped to meet future demands and remain a pioneering place to live, work, and discover.

This MAP Plan has identified a large number of schemes to deliver the objectives and actions, as noted above. As set out in the Action Plan (Appendix B), four are currently be delivered, eight are actively being progressed with partners and stakeholders and seven will need further collaboration and engagement workshops. The council will work towards sharing a detailed delivery plan with stakeholders and reviewing funding opportunities.

This document is the continuation of the journey supporting the long-term investment in people who live and work within Science Vale and the surrounding areas. It will be a focal point for those investing in Science Vale and help secure additional funding to achieve the vision of the MAP Plan and LTCP. Our Five-Year Transport Delivery Plan, which sits alongside this document, provides the detail of the schemes to be delivered to support progress towards our longer-term ambitions and targets. As additional funding is secured in the future, subsequent updates of the Delivery Plan will take place as we will know more about the objectives which can be delivered. The MAP Plan will be a live document which will be monitored, and subsequent updates will be shared in greater detail, as funding is secured. We will engage with residents to deliver the identified schemes. Continued engagement with councillors, town and parishes and key stakeholder during scheme design and prioritisation will be essential to ensure that local insight informs practical implementation.

SCIENCE VALE

Objective SV1: Enhance public realm in settlement centres.

1.1 Investigate options for the development of schemes for improved public realm, walking, wheeling, cycling, and public transport in:

a. Market Place, Wantage
b. Central Didcot
c. Villages
d. Local centres

1.2 Work with partners to support the delivery of the improved public realm, walking, wheeling, cycling, and public transport identified in Action 1.1.

Objective SV2: Create a sense of togetherness, place, inclusiveness, and community in new and existing places.

2.1 Work with partners to develop and implement schemes that will enhance spaces for people walking, wheeling, and cycling and that create liveable neighbourhoods across Science Vale.

2.2 Collaborate with partners to support accessible new or enhanced wayfinding, and introduce murals, artwork, rest places, pocket parks, green spaces, and community parks.

2.3 Work with partners to develop themed art installations.

2.4 Work with partners to enhance and upgrade timetables (for buses, activities and events) and local guides/ maps for recreational routes (Thames Path, The Ridgeway, Oxford Green Belt Way, and Vale Way) which showcase the local area and its history.

2.5 Support the district councils when they update their Joint Design Guide.

2.6 Seek opportunities to address sub-standard crossing points (including dropped kerbs and tactile paving) to support accessibility and inclusivity.

2.7 Work with partners to remove or improve access control barriers to support accessibility and inclusivity in accordance with our Access Control Barrier Policy.

2.8 Investigate opportunities to develop OCC's 'Oxfordshire Way' scheme. The Oxfordshire Way is about providing our communities with support networks that assist with their health and wellbeing.

2.9 Work with partners with a view to provide more community hubs and mixed-use hubs.

2.10 Work with partners with a view to provide more local work/ hot desk hubs.

2.11 Support opportunities to provide multi-use leisure destinations (e.g. bars/cafés with a range of leisure facilities), in sustainable locations.

2.12 Liaison with workplaces, stakeholders, and partners to join different employment groups together to share ideas and best practice.

2.13 Work with schools, developers, and businesses to ensure that Travel Plans contain initiatives to support healthy journeys and assist with delivering and monitoring them.

2.14 Work with partners in the community to remove social and economic factors that prevent people from cycling by providing education, training, and access to free or reduced-price equipment.

2.15 Ensure the continued protection of the areas historic character including in conservation areas as part of new or improved transport projects and infrastructure schemes involving or near to heritage assets or conservation areas.

Objective SV3: Deliver a comprehensive, comfortable, direct, safe, coherent and inclusive walking, wheeling and cycling network.

3.1. Work with partners to deliver the walking, wheeling and cycling schemes contained within adopted documents (such as the Didcot LCWIP and Wantage and Grove LCWIP).

3.2. Work with partners to deliver the high-quality Strategic Active Travel Network (SATN) routes in the local area, including but not limited to between:

- Didcot and Milton Park;
- Didcot and Harwell village & Harwell Science and Innovation Campus;
- Didcot and Harwell Science and Innovation Campus via Upton;
- Didcot and Wallingford;
- Didcot and Culham Campus;
- Wantage & Grove and Harwell Science and Innovation Campus;
- Wantage & Grove and Abingdon-on-Thames;
- Grove & Wantage and Milton Park;
- Abingdon-on-Thames and Berinsfield via Culham Campus;
- Milton Park and Abingdon-on-Thames.

3.3. Liaise with partners to develop new walking, wheeling and cycling schemes (including SATN routes) to improve the network so that it is easy to navigate, cohesive and safe.

3.4. Liaise with partners to improve walking, wheeling and cycling routes to mobility hubs, bus stops and rail stations.

3.5. Investigate changes to the PRoW network to enable use by a wider range of Non-Motorised Users (NMUs) for different journey purposes.

3.6. Work with the community and partners to deliver behaviour change programmes and initiatives to support the delivery of walking, wheeling and cycling schemes, provide the skills and confidence to walk, wheel and cycle and to influence modal patterns away from car usage.



Objective SV4: Ensure developments deliver comprehensive on-site and off-site walking, wheeling and cycling provision.

4.1 Ensure developments deliver walking, wheeling and cycling provision identified in LCWIPs and SATN.

4.2 Ensure developments address any gaps in the provision of walking, wheeling and cycling routes, including connections to existing networks, public transport stops, routes identified in LCWIPs and SATN and between developments.

4.3 Ensure developments prioritise walking and cycling within developments and ensure that provision integrates with off-site routes.

Objective SV5: Improve accessibility for Non-Motorised Users (NMUs) travelling via waterways and greenways.

5.1 Identify opportunities for improvements along and access to waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway).

5.2 Support the delivery of improvements along and access to waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway).

5.3 Collaborate with partners including the Walk Wheel Cycle Trust and Canal and Riverside Trust to develop wayfinding and signage, help-points, and mapping along waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway), through extending the scope of the Didcot Wayfinding Strategy.

5.4 Explore options with partners to provide place shaping (e.g. pocket parks, outdoor gyms, and other green spaces) along waterways and greenways (including the River Thames, disused Wilts & Berks Canal and the Ridgeway) working in line with the Didcot Green Infrastructure Strategy.

Objective SV6: Reduce walking, wheeling and cycling severance caused by physical barriers.

6.1 Explore the reallocation of highway space at the Culham and Clifton Hampden River crossings to improve provision for walking, wheeling and cycling and public transport - subject to the delivery of the Didcot to Culham River Crossing.

6.2 Work with partners to remove walking, wheeling and cycling barriers across the Great Western Mainline, Science Line (Cherwell Valley Line) and the Local Road Network.

6.3 Work with partners and stakeholders to create new links over the River Thames and Science Line (Cherwell Valley Line) serving Culham rail station, Culham Campus and strategic sites.

6.4 Work with National Highways to continue developing plans for the Milton Heights walking, wheeling and cycling Bridge.

6.5 Work with partners to deliver the Milton Heights walking, wheeling and cycling Bridge.

6.6 Explore the opportunities to improve walking, wheeling and cycling across the A34, including connections with Didcot.

Objective SV7: Introduce shared micromobility schemes, subject to central government legislation.

7.1 Work with partners to create a shared e-scooter and e-bike network, at locations such as mobility hubs, district and community centres, bus stops, leisure, and employment facilities (such as in Didcot and at Harwell Science and Innovation Campus, Milton Park, and Culham Campus).

7.2 Support shared e-scooter and e-bike schemes that link employment sites with residential sites and public transport interchanges.

Objective SV8: Develop a network of cycle parking, hubs, and hangars.

8.1 Review and define the locations for cycle parking, hubs, and hangars including auditing existing locations.

8.2 Work with partners to deliver new, and improve existing, cycle parking. To include the provision for non-standard cycles (e.g. tricycles, cargo bikes, tandems, mobility scooters and adapted bicycles), cycle repair/ maintenance hubs and charging for e-bikes, at appropriate locations, including key transport interchanges. We will also seek to ensure all cycle parking is designed to a high quality so where appropriate, green walls, green roofs, solar panels and landscaping will be provided on and around the cycle parking.

8.3 Support the development of a cycle hub at Culham Station.

8.4 Develop a cycle parking map showing capacity and levels of use at cycle parking, hubs, and hangars.

Objective SV9: Create a network of mobility hubs.

9.1 Explore opportunities to provide or improve mobility hubs at major interchanges and along key movement corridors:

a. Didcot Parkway Rail Station.
b. Culham Station Rail Station.
c. Proposed Wantage and Grove Rail Station.
d. A34 Corridor.
e. A4074 Corridor.

9.2 Support the implementation of the Mobility Hub Strategy, including linkage hubs, suburban and rural hubs, and mini hubs.

Objecti

Objectives and Actions

Objective SV12: Support improvements to the rail network in the short term.

12.1 Work with Network Rail to ensure the electrification of the rail line between Didcot Parkway and Oxford.

12.2 Work with Network Rail and East West Rail to achieve the extension of East West Rail services to Didcot Parkway and in the future Wantage and Grove, to provide services between Science Vale and Milton Keynes and onwards towards Cambridge.

12.3 Collaborate with partners to improve the accessibility and infrastructure at Culham Rail Station.

12.4 Work with partners to lobby for additional services and capacity improvements along the Science Line (Cherwell Valley Line) at Didcot Parkway, Culham and Appleford.

12.5 Collaborate with partners to deliver the Strategic Outline Business Case for Wantage and Grove Station.

Objective SV13: Support improvements to the rail network in the medium to long term.

13.1 Work with partners to improve capacity, accessibility, passenger facilities and direct services at Culham.

13.2 Support partners to provide the further enhancement of services on the Science Line (Cherwell Valley Line) from Didcot Parkway, Culham and Appleford.

13.3 Develop a strategy with Network Rail to support increased freight capacity through Didcot Parkway.

13.4 Work with partners to develop a framework to enable the opening of Wantage and Grove Station.

13.5 Work with partners to open a station at Wantage and Grove, subject to the Outline Business Case.

Objective SV14: Support the development of a car club network and car share schemes.

14.1 Collaborate with partners to provide a comprehensive network of car clubs, including the prioritisation of parking for car clubs.

14.2 Ensure car clubs use zero emission vehicles, where possible.

14.3 Work with developers and business to provide EV charging and parking to support car clubs/ car share and to encourage/ promote car sharing to their employees.

14.4 Develop a car share awareness/ expansion programme through collaboration with partners.

14.5 Encourage businesses to use Liftshare & Mobilityways.






Objective SV15: Implement demand management measures in areas which are well served by sustainable transport.

15.1 Identify locations for potential demand management measures in suitable locations including restricting car parking availability.

15.2 Work with partners to develop a strategy for the implementation of demand management measures.

15.3 Support the removal of on-street parking along routes with high footfall or cyclist users, including those identified in LWCIPs, DCC, SATN and priority bus routes, to support the delivery of cycleways, where appropriate.

15.4 Consideration of the provision of new or extended Controlled Parking Zones.

15.5 Continue to work with our partners to reduce the number of existing parking spaces at existing employment locations, including but not limited to Milton Park, Harwell Science and Innovation Campus, Culham Campus and Williams F1.

Objective SV16: Deliver movement infrastructure schemes.

16.1 Support the delivery of:

a. HIF1 (Widening of the A4130, Didcot Science Bridge, Didcot to Culham River Crossing and Clifton Hampden Bypass).
b. Steventon Lights Integrated Transport Scheme.
c. Milton Heights walking, wheeling and cycling Bridge.
d. Northern Perimeter Road Phase 3.
e. Grove Northern Link Road.

Objective SV17: Develop future movement infrastructure schemes.

17.1 **Consider** exploring previously identified potential:

a. A4074 Corridor Study (including Golden Balls).
b. Didcot Central Corridor.
c. Frilford and Marcham Improvements
d. Rowstock Area Travel Study.

17.2 **Explore** options for the walking, wheeling and cycling transport schemes safeguarded in the South and Vale JLP:

a. Historic canal route safeguarded for active travel (Wilts & Berks Canal).
b. Abingdon-on-Thames - Drayton via B4017 (SATN).
c. Abingdon-on-Thames - Marcham via A415 (SATN).
d. Abingdon-on-Thames - Berinsfield via A415 (SATN).
e. Peep-O-Day Lane - Sutton Courtenay (Active Travel).

f. Berinsfield - Oxford via A4074 (SATN).
g. Berinsfield - Oxford via Marsh Baldon (SATN).
h. Milton Park - Steventon via Cinder Track (SATN).
i. Harwell Science and Innovation Campus - Wantage via Ardington (SATN).
j. Harwell Science and Innovation Campus - Milton Park via Hungerford Road, Milton Hill, and Milton Heights Active Travel Bridge (SATN).
k. Harwell Science and Innovation Campus - Harwell village via Winaway (SATN).

17.3 **Consider** exploring previously identified potential:

a. Southern Didcot Movement Corridor.
b. South Abingdon-on-Thames Movement Corridor.
c. Wantage Western Movement Corridor.
d. Improvements to Featherbed Lane / Steventon Junction, Relief to Rowstock and Harwell to Didcot Busway.
e. A4130 Road Safety Improvements.
f. Improved Access to A34 near Milton Park.

Objective SV18: Develop Corridor Movement and Place Strategies for existing key routes.

18.1 Develop Corridor Movement and Place Strategies on corridors identified in LTCP Part 1: a) A4074 b) A34.

18.2 Implement the measures and strategies in the Corridor Movement and Place Strategies.

18.3 Consider locations for other Corridor Movement and Place Strategies with this potentially including along the A417, A415, A338 or A4130.

Objective SV19: Support the safeguarding of land for movement schemes.

19.1 Continue to collaborate with the district councils to safeguard land within Local Plans for movement schemes.

19.2 Review whether the safeguarding of land for movement schemes needs to be retained in future Local Plans.

19.3 Work to identify new areas where the safeguarding of land would be required for future movement schemes.

19.4 Collaborate with partners to explore and identify locations for bus depots, stops and interchanges to support the growth in public transport and walking, wheeling and cycling.

Objective SV20: Improve freight, deliveries, and servicing.

20.1 Work with the district councils to continue the electrification of food-waste collection vehicles and encourage all fleet vehicles to be zero-emission (e.g. refuse vehicles, vans).

20.2 Explore opportunities to introduce HGV restrictions, for through vehicle trips, in Didcot and Wantage, in areas with high walking, wheeling and cycling movements (e.g. upon delivery of HIF1 and NPR3).

20.3 Explore opportunities for a zonal network (different requirements for different areas) of zero emission parcel deliveries in Didcot, including opportunities for future expansion, to help improve air quality and reduce HGV traffic in high footfall areas.

20.4 Implement a zonal network of zero emission parcel deliveries in Didcot.

20.5 Collaborate with partners to introduce opportunities for first and last mile deliveries hubs using cargo bikes and e-cargo bikes at employment sites in Science Vale.

20.6 Collaborate with partners to explore opportunities to provide micro consolidation hubs at the Science Parks and other multi-operator employment sites.

20.7 Support the rollout of parcel/ grocery lockers at key transport locations such as Didcot Parkway, Culham, Wantage and Grove, Mobility Hubs, and local and district centres to support integrated travel.

20.8 Explore the opportunities to deliver rail freight hubs in Science Vale.

20.9 Investigate the opportunities for a trial of autonomous HGVs and truck platooning in Science Vale, in line with Objective SV22.

Objective SV21: Develop a Climate Resilience Strategy for Science Vale.

21.1 Investigate opportunities to improve flood resilience in areas with the highest risk. As per Appendix A.

21.2 Support wider use of blue infrastructure for movement schemes, where applicable.

21.3 Support wider use of Sustainable Drainage Systems (SuDS) and at new developments, where applicable.

21.4 Develop a strategy to provide the greening or putting solar panels on of bus stops, train stations, signage, mobility hubs, etc.

21.5 Support schemes that achieve greening and re-wilding of places.

21.6 Support schemes and help to implement proposals to reduce air pollution.

21.7 Support the implementation of projects in the Didcot Green Infrastructure Strategy.

Objective SV22: Continue to develop Science Vale as a local, regional, national, and global hub for testing new and innovative technologies.

22.1 We will seek to explore the following (but not limited to):

a. Zero-emission self-driving vehicle network.
b. Zero-emission public transport network
c. Electric charging hubs for e-bikes, buses, commercial vehicles, and cars, etc.
d. 5G/ 6G and further generation networks along key travel corridors, such as the A34, Science Line (Cherwell Valley Line) and Great Western mainline.
e. Explore potential deployment of Artificial Intelligence to improve local transport (e.g. improving efficiency or environmental performance).
f. Unmanned Aerial Vehicles (UAVs) (e.g. drone) deliveries at Harwell Science and Innovation Campus, Milton Park, and Culham Campus, including trials.
g. SMART infrastructure (combining physical and digital infrastructure).

22.2 In turn we will:

a. Facilitate forthcoming new technology to inform future movement and place networks.
b. Pro-actively seek funding opportunities to deliver and support innovation.
c. Facilitate forthcoming new technology on our transport network.
d. Undertake monitoring and evaluation of schemes.
e. Support the county and other Local Authorities (LAs) by providing data and insights (Living Lab).

Glossary

Term	Definition
Access Control Barriers	Access control infrastructure such as bollards used to address a safety issue or prevent illegal motor vehicle access. It must not limit access for people walking, wheeling and cycling.
Active travel	Active travel refers to modes of travel that involve a level of activity. The term is often used interchangeably with walking and cycling, but active travel can also include trips made by wheelchair, mobility scooters, adapted cycles, e-cycles, scooters, as well as cycle sharing schemes[lxx].
Air Quality Management Area	If a Local Authority identifies any locations within its boundaries where the Air Quality Objectives are not likely to be achieved, it must declare the area as an Air Quality Management Area (AQMA)
Annual Mean Concentration	The annual mean is the average concentration of a pollutant measured over one year.
Car club	Car clubs provide residents, visitors, or businesses with access to a vehicle as a short-term rental, usually by the hour. Car clubs may also include other vehicles such as vans alongside cars. Car club operating models include commercial car clubs, peer-to-peer commercial car sharing and community car clubs.
Car share	Lift sharing, also known as car sharing, car-pooling or ride sharing is the coordinated matching up of lifts between drivers and passengers who share a common or similar route.
Congestion	Where the traffic flow on a piece of transport infrastructure, such as a road, exceeds its capacity, resulting in slow or stationary traffic.
Connected and Autonomous Vehicle (CAV)	Vehicles equipped to exchange information with surrounding environment and can operate in a mode which is not being controlled by an individual
Controlled Parking Zones (CPZs)	An area where parking is only permitted in designated parking bays, and the rest of the kerbside space is restricted by yellow lines. Any illegally parked cars are issued with a parking ticket.
Decide and Provide	This is an approach which involves deciding on the preferred future and provide the means to work towards that which can accommodate uncertainty.
Defra	Department for Environment, Food and Rural Affairs -_A department of the UK Government of the United Kingdom that is responsible for environmental protection, food production and standards, agriculture, fisheries, and rural communities.
Demand Management	A variety of methods through which the use of a transport network can be influenced with the purpose of affecting when, how, and how often people or goods travel. Examples include parking charges, restrictions on waiting, and congestion charging.
Department for Transport (DfT)	A department of the UK Government of the United Kingdom that is responsible for the transport network.

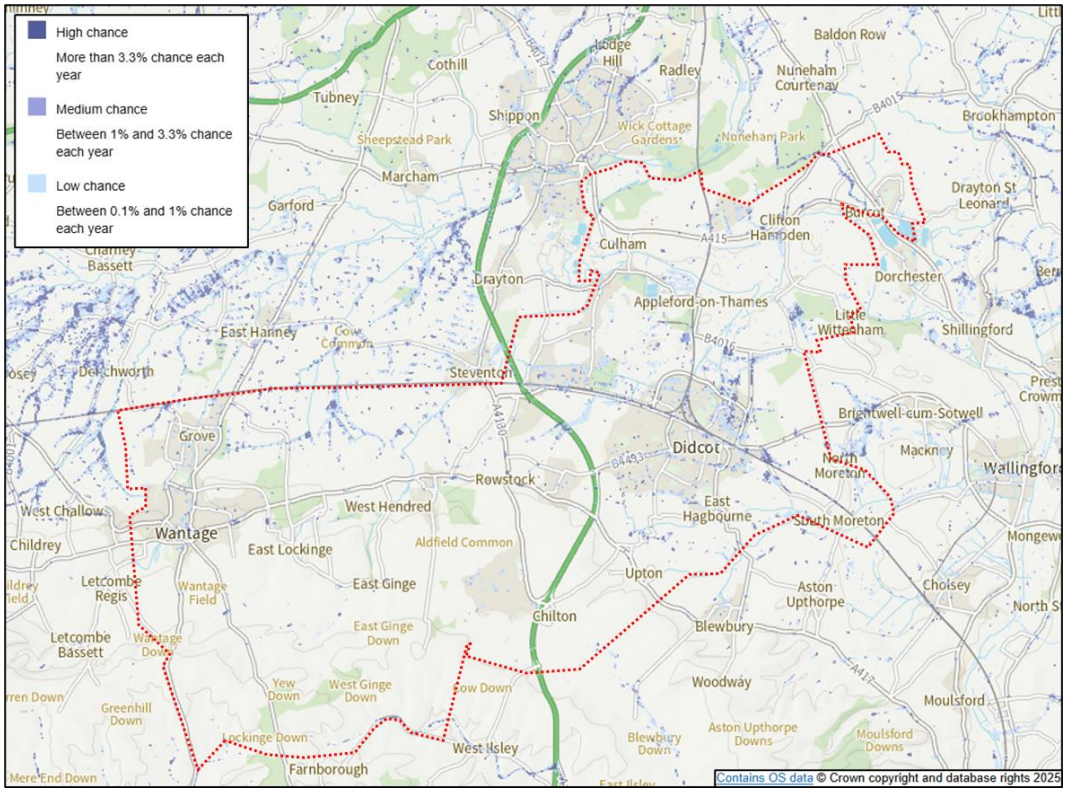
Term	Definition
Electric vehicle (EV)	A vehicle that uses an electric motor for propulsion, comprising BEV's, as well as plugin hybrid electric vehicles that have an attached petrol or diesel engine to power the battery engine.
E-scooter	A stand-up scooter powered by an electric hub motor in its front and/or rear wheel
Fatal collision	A collision in which at least one person is killed.
Flood Zone	Areas which the Environment Agency have judged are at risk of flooding, whether from rivers or surface flooding. These are classified in order of the level of risk.
Freight	Freight is the general term for goods transported from one place to another by any means. Freight can therefore be moved in a variety of ways including by Heavy Goods Vehicles (HGV), Light Goods Vehicles (LGV), rail, cargo bikes and emerging modes such as drones.
Go-Ahead Group	Bus operator who manages Thames Travel, Oxford Bus Company and Pulhams.
Great Western Main Line	The Great Western Main Line (GWML) a mainline railway that runs between London Paddington and Bristol Temple Meads. It connects to other mainlines and branch lines such: • Reading to Penzance • Didcot to Banbury • Swindon to Swansea • Swindon to Gloucester/ Cheltenham • Henley Branch Line
Healthy Streets	A human-centred framework for embedding public health in transport, public realm and planning.
Heavy Goods Vehicles (HGV)	Commercial trucks that feature a gross combination mass of over 3500kg. In the UK HGVs have a max legal length of 16.5m.
Injury collision	A collision involving human injury or death.
KSI	Killed or seriously injured.
Light Goods Vehicles (LGV)	Commercial trucks that feature a gross combination mass of under 3500kg.
Local Cycling and Walking Infrastructure Plans (LCWIPs)	LCWIPs are a strategic approach to identifying cycling and walking improvements at the local level. They enable a long-term approach to developing local cycling and walking networks over the next ten years and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle.
Local Transport and Connectivity Plan (LTCP)	Oxfordshire County Council's new Local Transport Plan.
Local Transport Note (LTN) 1/20 - Cycle Infrastructure Design	Guidance for local authorities on delivering high-quality, safe cycle infrastructure. Cycle Infrastructure Design
Micromobility	Micromobility refers to a range of small, lightweight vehicles that are driven by users personally. This includes electric bikes (e-bike): Bicycles with a battery-powered assist and electric scooter (e-scooters): Motorised stand-up scooter with an electric motor. It can also include private e-scooters, rollerblades and 'hoverboards.'

Term	Definition
Mobility Hub	Mobility hubs are an existing concept with examples of ongoing and complete hubs both within the UK and across Europe. We have sometimes used the term 'transport hub' in Oxfordshire. The underlying concept remains the same, but we have chosen to use 'mobility hub' moving forward as it aligns with national work and better captures the overall experience of travelling.
Mode Share	Percentage of share of each mode of transport.
Movement and Place (MAP) Plan	A part of Oxfordshire's Local Transport and Connectivity Plan. It provides more detail on how this plan will be delivered in a number of specific areas of Oxfordshire, such as the infrastructure schemes to be delivered.
Multi-modal	Using two or more modes of transport, like bus, train, walking, or cycling, in one journey.
National Cycle Network (NCN)	The UK-wide network of signed paths and walking routes for walking, wheeling, and cycling outdoors. Routes forming part of the National Cycle Network shall be designed in accordance with current best practice design guidance, in collaboration with the local community and provide convenient links to key destinations – connecting cities, towns and countryside.
National Travel Survey (NTS)	A household survey designed to monitor long-term trends in personal travel and to inform the development of policy. It is the primary source of data on personal travel patterns by residents of England within Great Britain.
Non-Motorised Users (NMU)	A 'non-motorised user' (or NMU) is someone walking or cycling, or a horse rider.
Oxides of Nitrogen (Nox)	Combustion processes emit a mixture of nitrogen oxides (NO_X), primarily nitric oxide (NO) which is quickly oxidised in the atmosphere to nitrogen dioxide (NO_2). Nitrogen dioxide has a variety of environmental and health impacts. It is a respiratory irritant which may exacerbate asthma and possibly increase susceptibility to infections. In the presence of sunlight, it reacts with hydrocarbons to produce photochemical pollutants such as ozone. NO_2 can be further oxidised in air to acidic gases, which contribute towards the generation of acid rain.
Park and Ride	A facility dedicated to allowing people to park their cars and taking their onward journey by another form of transport. Most commonly a bus or a train.
Particulate Matter (PM)	Particulate Matter (PM) is everything in the air that is not a gas and as such it is made up from a huge variety of chemical compounds and materials, some of which are toxic. Due to the small size of many of the particles that form PM, some of these toxic compounds may enter the bloodstream and be transported around the body, entering the heart, brain and other organs. When reporting UK emissions, PM is classified according to particle size: PM10 refers to particles smaller than 10 micrometres in diameter, while PM2.5 refers to finer particles smaller than 2.5 micrometres. By definition, PM10 emission measurements or estimates include PM2.5, meaning that the total mass of PM10 emissions is always greater than that of PM2.5.

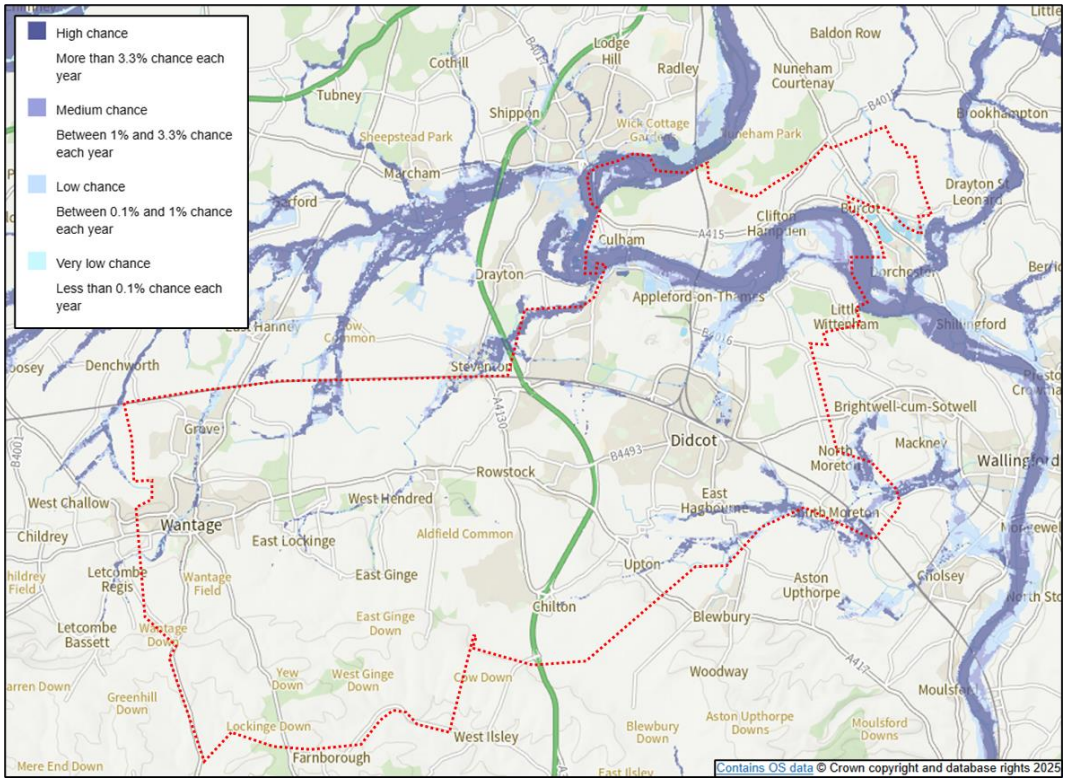
Term	Definition
Place shaping	Creating places which improves the quality of life for residents, enables growth and supports vibrant sustainable communities.
Predict and Provide	Predict and Provide can be broadly described as an approach to transport planning that uses current or historical traffic patterns to determine the future need for infrastructure.
Public realm	The public realm is the publicly accessible spaces between buildings that allow people to move around and interact. It includes streets, squares, parks, and other outdoor spaces.
Public Right of Way (PRoW)	Network of routes where public use is legally protected.
Quality Pedestrian Corridors (QPC)	A quality pedestrian corridor is a walkway that is comfortable, safe, and well-connected, with adequate space for pedestrians. It also includes features like lighting, signage, and crossing facilities.
Real Time Information (RTI)	Live tracking of bus and rail services provided either via information screens or applications.
Safeguarded Land	A designated area of land in planning which has been protected against future development for a specific purpose, for example a major infrastructure project.
Section 106 (S106) contribution	A financial contribution made by a developer under Section 106 of the Town and Country Planning Act 1990, often for a specific purpose (e.g. new infrastructure).
Severance	This refers to barriers to movement and consist of hard severance features – such as rivers, major roads and railways and soft severance features – minor roads.
Shared Mobility	Shared mobility is about the shared use of vehicles, be they cars, bicycles, scooters, or even ridesharing services, rather than the traditional model of individual ownership. It encompasses a variety of modes and services that users can access on-demand, often through a digital platform or app.
SODC	South Oxfordshire District Council
Strategic Road Network (SRN)	Roads managed by National Highways comprising motorways and some A roads
Strategic Walking, wheeling and cycling Network (SATN)	The Strategic Walking, wheeling and cycling Network is a proposal for a countywide Walking, wheeling and cycling network of walking and cycling routes. Oxfordshire towns already have LCWIPs, creating a network of walking and cycling routes within towns. The SATN will connect these networks, enabling longer-distance walking and cycling across the county. Some of these routes already exist, others are proposed and will be developed in the future.
Sustainable drainage systems (SuDS)	Designed to manage stormwater locally (as close its source as possible), to mimic natural drainage and encourage its infiltration, attenuation, and passive treatment.
The National Byway	The National Byway is part of Britain's cycle-touring network – a meandering signposted route following the quietest lanes through villages. Its route stretches to Wiltshire in the south and Dumfries & Galloway in the north, Powys in the west and Cambridgeshire in the east.

Term	Definition
Transport User Hierarchy	The new hierarchy of road users ensures that those who can do the greatest harm have the greatest responsibility to reduce the danger they may pose to others. At the top of this hierarchy (as most vulnerable) are people who are walking, in particular children, disabled people and older adults. Therefore, a person cycling assumes responsibility to look out for the safety of those walking. In the same way, a driver has responsibility for those walking, wheeling, cycling and horse riding.
Unmanned Aerial Vehicles' (UAV)	Remote-controlled aircraft or small aerial devices which do not have an on-board pilot.
Walking, wheeling and cycling	Walking, wheeling and cycling refers to modes of travel that involve a level of activity. The term is often used interchangeably with walking and cycling, but walking, wheeling and cycling can also include trips made by wheelchair, mobility scooters, adapted cycles, e-cycles, scooters, as well as cycle sharing schemes.[lxxxviii]
VoWHDC	Vale of White Horse District Council
Zero Emission Zones (ZEZs)	An area where all vehicles except those with zero tailpipe emissions are restricted or charged.

Appendix A



Long term flood risk from surface water in Science Vale[98]



Long term flood risk from rivers in Science Vale[99]

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