Bristol City Council Highway Strategic Asset Management Plan

Contents

Foreword

"Bristol's highway network is the city's most valuable public asset. Every day it supports thousands of journeys by residents, businesses or visitors keeping Bristol connected and moving. This network is essential to our ambition of being a vibrant, inclusive city that meets the social, environmental, and economic needs of our communities.

Over the past few years, our teams have worked tirelessly to create accurate digital records of all the council's highway assets. This has been a huge undertaking, involving detailed inspections, data collection, and the use of new technology to ensure we have a clear picture of what we own and how it's performing. These efforts mean we can make better decisions, plan smarter investments, and respond more effectively to challenges. We are also striving to make our work more transparent by publishing information about how we manage highway assets. This isn't always easy balancing technical detail with clarity for the public, and dealing with the complexity of a network that spans thousands of streets.

This Highway Strategic Asset Management Plan sets out how Bristol City Council will manage and maintain the highway network to deliver on our corporate priorities. National guidance has reinforced the importance of robust asset management, linking funding opportunities to how well authorities adopt best practice. Our commitment is clear; we will apply an asset management approach to the highway service to achieve best value, make the most efficient use of public funds, and deliver a safe, reliable network for everyone who depends on it.

Shaun Taylor

Head of Traffic & Highways Maintenance"

Executive summary

This document presents the Strategic Asset Management Plan (SAMP) for the council's public highway network. The SAMP provides the strategy for managing and maintaining the assets that make up the highway network. It defines the direction and identifies the priorities and actions to achieve long-term aims.

The SAMP includes the framework and tools for managing highway assets as effectively as possible into the future within existing constraints such as funding. Individual highway asset strategies and funding requirements are set out in greater detail in Appendix 2.

The highway network is the most extensive of the council's public assets, highly visible and highly valuable. The network and its associated assets are critical to how the city functions. They enable the movement of people and goods for business, leisure, education, social activities, health and growth. The value in these assets is not just in their physical form but in how they are used to realise the City's objectives.

This SAMP supports how we want to change as a city, providing a joined-up approach to managing our diverse and changing transport infrastructure. The highway asset strategy is led by the Transport and Planning strategies for the region and supports the long-term view of movement and place.

In particular, the Bristol Transport Strategy, the Joint Local Transport Plan, the Local Plan and the City Centre Framework provide strategic direction for how we use, maintain and manage the highway network. The Joint Local Transport Plan sets out the challenging vision for the next 5 years: "To achieve carbon neutral transport by 2030 requires a substantial modal shift away from cars to public transport, cycling and walking."[1]

However, the highway asset management strategy is also about supporting the assets themselves which inevitably deteriorate over time and through use. Managing the life of the assets through maintenance interventions is essential to provide a safe, serviceable and sustainable highway network.

Bristol City

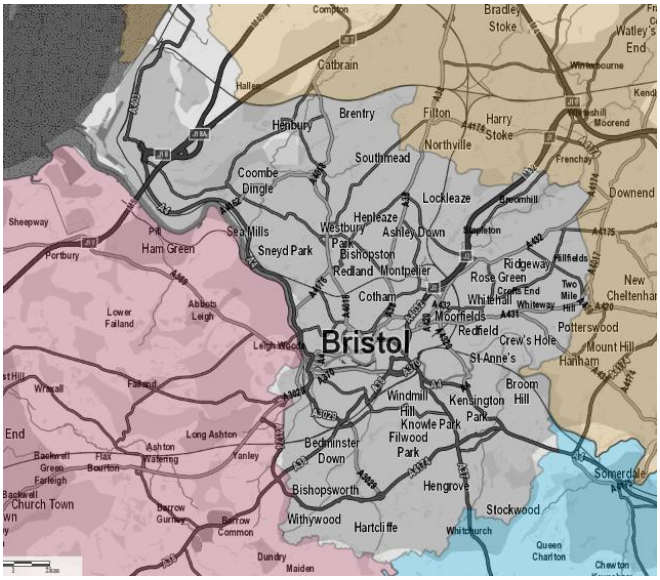
Bristol is the largest city in the southwest of England, with a population projected to exceed half a million people by mid-2025. Bristol has an increasing population compared to the national average, requiring a critical focus on measures to reduce congestion and promote safer and alternative ways for traveling into and across the city centre.

[1] Joint Local Transport Plan 4, 2020 – 2036; available here

The council's network comprises 1,209km (751 miles) of roads plus on and off-road footways, cycleways and rights of way, and includes bridges, subways, drainage, verges and trees, traffic lights, streetlights, road markings and signs.

The city has a high volume of motor vehicle traffic and some of the highest levels of car ownership in England. Nonetheless, it also has high numbers of pedestrians and cyclists. There are two major watercourses flowing through the city, which constrain movement and require additional infrastructure to support and protect land and highways. Within the city centre there are severances to amenities due to the major A-road network.

Bristol is part of the wider West of England Combined Authority (WECA), with South Gloucestershire and Bath & North East Somerset. People travel across the West of England to access employment in Bristol and there are many journeys from Bristol to neighbouring areas such as the northern fringe of the city in South Gloucestershire. Daily travel patterns are varied – planning for movement in the city centre must be different from plans for movement in and between residential areas and local centres.[2]



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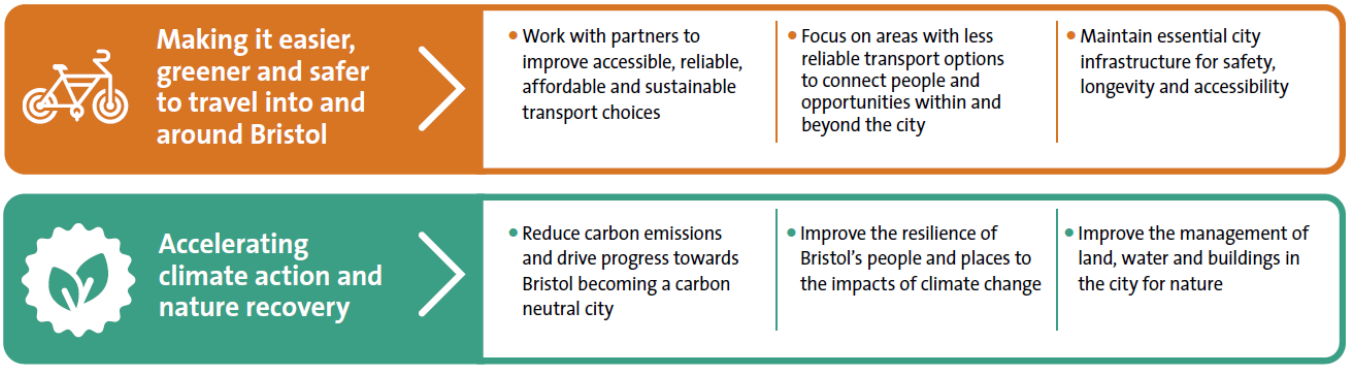
Context

This Strategic Asset Management Plan (SAMP) is part of a suite of documents that set out the council's vision for the city and how to achieve this on behalf of residents, businesses and visitors.

The SAMP supports the priorities identified in the corporate and transport strategies for Bristol and the wider West of England region. It feeds into the operational plans for managing and maintaining highway and transport assets.

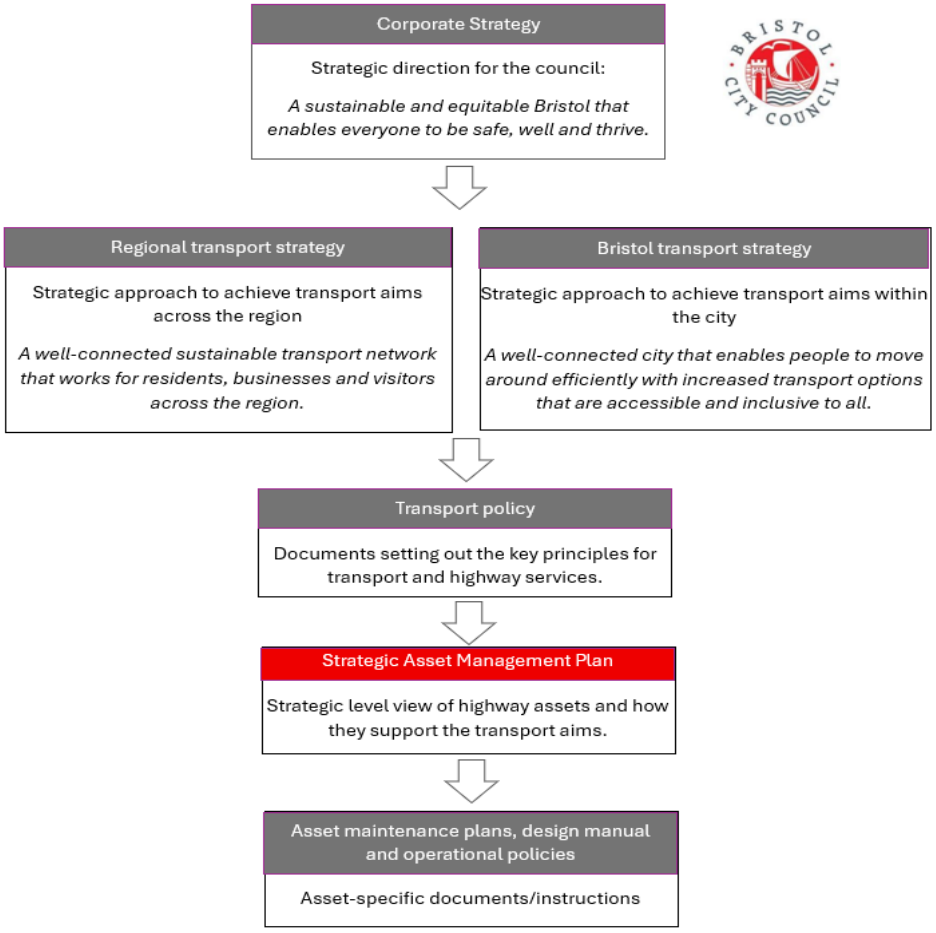
[2] The City Centre Framework, 2020; available here.

The highway network is an enabler for achieving the council's ambitions for health, wellbeing, education, employment and housing. Highway assets support the following priorities in particular within the Corporate Strategy 2025 - 2030



The West of England's joint Local Transport Plan (LTP) summarises the vision for the Bristol, North Somerset, South Gloucestershire and Bath & North East Somerset region as 'Connecting people and places for a vibrant, inclusive and carbon neutral West of England.'

The figure below shows how the Strategic Asset Management Plan fits within the council's approach.



Bristol Transport Strategy and Highway Asset Management

Bristol City's Transport Strategy set out the council's objectives to achieve a healthy, equitable and sustainable city. The current levels of car use are not sustainable; with an increasing population, we need to ensure that everyone can move easily and safely around the city without reliance on private car use.

Below are the objectives for transport within and outside the city.

- Provide transport improvements to accommodate increased growth in **housing, jobs & regeneration** on an already congested network with complex movements from within and outside the city boundary.

- Enable **equality** within an inclusive transport system that provides realistic transport options for all.

- Create **healthy places**, promoting active transport, improving air quality, and implementing a safe systems approach to road safety.

- Create **better places** that make better use of our streets and enable point to point journeys to be made efficiently.

- Enable **reliable journeys** by minimising the negative impacts of congestion and increasing network efficiency and resilience.

- Support **sustainable growth** by enabling efficient movement of people and goods, reducing carbon emissions and embracing new technologies.

These objectives are essential to provide a healthy and prosperous city for future generations, and the highway asset management teams are working closely alongside strategy and planning colleagues to make this future happen. However, it is important to note the asset management challenges in achieving these objectives.

Some of the challenges are about behaviour change in the ways that people travel. This requires incentives such as accessible and reliable public transport, easy-to-navigate walking routes, and safe cycle lanes. Highway asset management plays an important part in this, as people are more likely to engage with active and sustainable transport if there are good quality surfaces on pedestrian, cycle and bus routes. Over the years, maintenance funding for this complex and evolving network has not kept up with the asset lifecycle – in other words, the rate of renewal for highway assets have not kept up with the rate of deterioration. Although Bristol City Council intervenes with preventative maintenance to slow deterioration and prevent asset failure, limited resources must be prioritised across the whole city.

Other challenges relate to historic issues. Space, buildings and geography limit the opportunities for expanding the highway network, which means that usually all modes of transport must be accommodated within existing boundaries. Repurposing the network is achieved through capital projects but may impact on – for example – parking space and revenue (which is being addressed by a coherent kerbside strategy) or may increase certain maintenance requirements.

The highway network supports a greater weight and volume of traffic than when it was originally constructed, along with associated traffic management and safety items such as signage, lighting, traffic signals. For the city to thrive, increasing bus travel is essential but it is worth noting that the local road structure is not to modern standards, so HGVs and LGVs can cause accelerated deterioration in the sub-layers. It is very expensive and disruptive to fully reconstruct or re-engineer a carriageway for additional strength and thus cannot be undertaken for most bus routes throughout the city. However, major new capital projects such as in the city centre provide opportunities for stronger layers to be constructed in existing roads.

Actively managing transport in a complex city requires the tools to do so, such as traffic signals, signage and dedicated bus and cycle lanes. This generally increases the amount of highway assets over time. For traffic signal sites, the number of sites has declined slightly over the years (from 355 in 2015 to 350 in 2025) but there are additional traffic signal sites planned within forthcoming projects.

Attractive and inviting city spaces are important tools to encourage more active and healthy use of the city's environment. At times, this may include the use of bespoke or new items to enhance the quality of the public realm. A maintenance palette has been introduced to provide consistency and to minimise ongoing revenue costs that would arise from a plethora of different items to source and maintain. Bespoke items are usually more expensive to purchase, require storage and are used in smaller quantities so do not achieve economies of scale in material quantity or repair rates.

There is therefore a critical link between the transport ambitions for the city and the condition of the highway network that delivers these ambitions. Changing the city's approach to transport is a necessity and none of the challenges outlined above diminish this requirement. Resources to maintain the network will ensure that it continues to be fit for purpose and able to achieve the ambitions. The purpose of this SAMP, and of the Transport Strategies, is to provide strategic discussion, understanding and collaboration across all teams to overcome challenges and move towards the future vision.

Background

In 2019, Bristol City Council undertook a review of its asset management position on highway infrastructure, aiming to achieve a greater level of maturity over time. This review set out the direction for critical assets and included a roadmap that identified issues or potential improvements.

Appendix 3 provides an evaluation of the progress against the roadmap. Many of the aspirations have been introduced, such as implementing a data strategy for all highway assets, analysing data for maintenance and lifecycle planning, and use of technology to increase efficiency, manage traffic and identify condition of different assets.

Scope

Bristol City Council Highways Strategic Asset Management Plan encompasses the physical assets on the network and their current and future contribution to the overarching local and regional strategies. It defines the levels of service provided and how these are achieved, taking budgets into account.

The Transport Authority function was integrated into the West of England Combined Authority in 2020. Bristol City Council continues to own and maintain the assets, but some elements are now managed by the Combined Authority (CA). An example of this is bus passenger information, where the CA manages and updates the information on bus stop posters, timetables and the real-time information screens.

Stakeholders

The term 'stakeholder' refers to anyone with an interest in the organisation's business. To make appropriate decisions on highway asset management, the needs of stakeholders using that asset are considered alongside the engineering needs.

Internal stakeholders include Elected Members, senior managers and the asset teams providing the levels of service. Communication with internal stakeholders includes presentation and approval of reports at the relevant Policy Committees (details here) , such as the quarterly performance measurement report. More information on the Transport & Connectivity Policy Committee is here. The Highways Head of Service presents annual analysis from lifecycle modelling for critical assets (carriageways, footways, structures). For 2025, information has been collated for Members on a range of the highway assets, their maintenance needs and funding estimates.

External stakeholders include members of the public, partner organisations such as the emergency services and other interested parties. Engagement with external stakeholders can range from detailed consultation on plans and strategies - which then inform the direction of corporate objectives and this SAMP - to information on proposed maintenance works and responses to individuals. In July 2025, Bristol City Council published its local highway maintenance transparency report to help local taxpayers see where Department for Transport and local funding is being spent (available here).

National Highways & Transportation Survey

As part of its commitment to understanding the needs of stakeholders, Bristol City Council participates in the annual National Highways & Transportation Survey (NHT). The survey is sent to residents across councils on an annual basis to gauge public

perception of the local highway authority's performance, and to ascertain which services the public feel are the most important.

Overall, the national perception across all local authorities surveyed is that highway maintenance has worsened. As the Council's most visible asset, the condition of the highway network is often seen as a reflection of the authority's performance.

The results from the 2024 NHT survey show that residents' perception of Bristol's highway maintenance is above the national average, for example, for speed of repair and condition. The exceptions are cleanliness of streets and condition of road markings.[3] The teams scored highly on communication across a range of services and assets.

The survey highlights the importance that Bristol residents place on access to amenities, public transport and ease of walking and cycling – which Bristol City Council has prioritised for improvements in its Corporate Strategy.

Benchmarking and efficiency

Bristol City Council is a member of the South West Highways Alliance for information sharing on current issues and benchmarking on items such as fees, salaries and best practice. Nationally, the council is part of the Local Council Roads Innovation Group (LCRIG), a sector-led platform for members to actively participate in the continuous improvement of local roads. Bristol City Council participates in the ALARM survey by the Asphalt Industry Alliance which analyses road condition across the UK.

Benchmarking is also undertaken on specific items such as pavement licences and response to DfT funding criteria, in communication with other core cities. Through partners, such as Gaist (highway survey and asset management company), there are opportunities to see best practice and discuss developments and trends through meetings and events including with other local councils.

Funding

Funding to manage and maintain highway assets is divided into two streams:

- capital investment, which supports long-term improvements and renewal of assets.
- revenue funding, which covers routine and emergency maintenance, and ongoing costs such as premises, energy and staffing.

Between 2016-17 and 2021-22 there has been a decrease in net expenditure of 45.4% from £21.6m to £11.8m in highways funding. Inevitably, this limits the level of maintenance and renewal that can take place across the city, and there are many demands on available budgets within individual asset services as well as across all

[3] The future strategy for road markings from 2025 onwards is addressed later in this document.

assets that comprise the highway network. To maximise the council's ability to preserve and protect the asset, funding bids are made as when funds become available (e.g. through the Department for Transport) and opportunities for maintenance and renewal are included in transport initiatives where possible.

Capital funding

Capital funding for highway assets is received from the Department for Transport (DfT) in the form of an annual grant based on a set formula allocation for each local authority.

The formula is calculated primarily on the length of the carriageway network with a small weighting given to the number of bridges and streetlights. The way that funding is allocated under this formula is particularly difficult for cities such as Bristol because it does not account for the high proportion of cycleways and footways, the amount of use across the network, or the myriad of different assets required to manage this network.

For the West of England, the DfT has consolidated the capital funding into a single source known as the City Region Sustainable Transport Settlement (CRSTS) and allocated to the West of England Mayoral Combined Authority (previously known as WECA). Details on the allocations can be found here.

Bristol City Council (BCC) receives its annual capital funding from the DFT formula through its CRSTS regional grant. This provides some of the necessary funding to support the large number of assets across the city which total an estimated replacement cost of £5.5 billion.

As well as the annual CRSTS allocation, BCC has been fortunate to secure further capital funding from a CRSTS Challenge fund as well as regular internal funding ranging from £5m to £15m annually for the city's assets as at 2025-26. The funding is provided from various sources including the Community Infrastructure Levy (SCIL), Prudential borrowing, Clean Air Zone (CAZ) funding and capital receipts.

Where possible, maintenance needs for asset are included in Citywide projects. New assets or maintenance and renewal of existing assets are provided by capital funding through transport projects, contributing around 5% of costs annually. Funds are also obtained via developer contributions, and specific projects e.g. Local Electric Vehicle Infrastructure funding (LEVI).

Revenue funding

Highway revenue spend focuses on everyday service needs, safety and functionality rather than longer-term improvements. Revenue funding for highways is allocated from Bristol City Council which must balance its financial resources across all the local services it provides. All local council revenue budgets have declined over the years, whilst inflation and economic uncertainty have increased costs.

Unfortunately, despite the large investment locally, the total capital and revenue funding does not meet the current lifecycle requirements across the highway assets.

Inflation

High levels of inflation experienced since 2021 have impacted on contract prices for maintenance works in the UK. Inevitably this has resulted in a significant reduction in the total output of annual maintenance programmes wherever budgets have remained the same or have not increased in line with building & construction price inflation.

As an example, the impact of inflationary increases for Traffic Signals means that the budget is now sufficient to repair and maintain only 5% of the stock per year on a rolling programme, down from 7%.

Strategic Asset Management

One of the most fundamental principles of strategic management is that it considers the whole asset (the entire network) rather than individual assets. By doing so, it enables the council to realise the full potential value of the network. This is achieved by collaborating across individual disciplines (engineering, planning, finance, performance), teams or activities to adopt a strategic approach aligned with corporate objectives.

Another fundamental principle is an emphasis on long-term planning, based on a transparent and demonstrable decision-making process that can be evidenced to stakeholders.

The Department for Transport provides essential capital funding towards the provision, replacement and upkeep of transport and highway assets. From 2025-6, a portion of this funding is contingent on the local authority demonstrating best practice, including a strategic approach to managing critical transport assets.

Asset management framework

The framework sets out how we plan strategically and across disciplines/activities for a range of different assets. It is data-led in conjunction with existing knowledge and expertise. The tools that make up this framework include:

- Data collection and management
- Risk management
- Lifecycle modelling and financial planning
- Performance management
- Works management
- Knowledge and professional development

Data collection and management

Data can include type of asset, condition, age, construction, materials or components, repair history and location. Accurate, accessible and reliable data is fundamental to good decision making. For example, knowing current condition and past performance can help predict what will happen in the future. Knowing what we have is important for planning maintenance and contract requirements.

Good data is also critical to strategic and financial planning, to share information and to understand, assess and balance risks and requirements across all the highway assets.

Risk management

Risk refers to an uncertainty of outcome, usually negative. Assessment of risk is based on the likelihood of something happening (probability) against the impact if it happens.

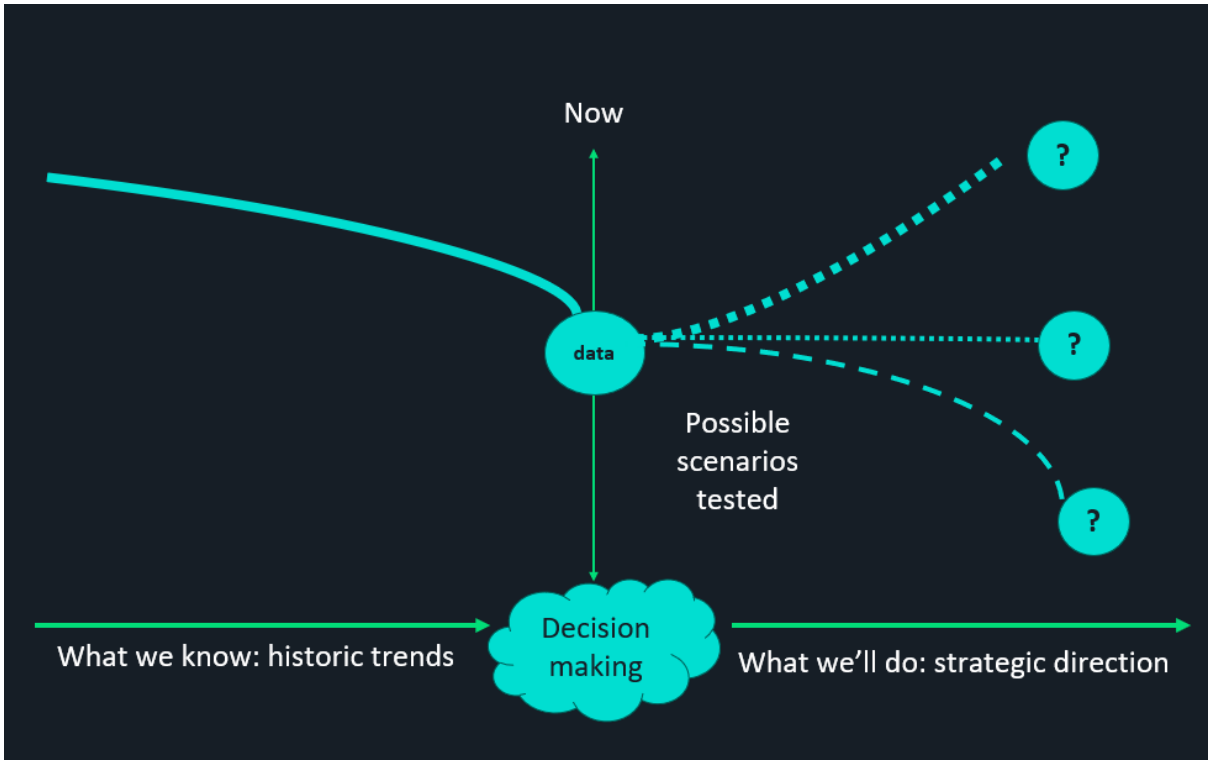
Understanding and managing risk is fundamental to effective asset management, particularly where there is ageing infrastructure and limited funding for maintenance. Safety is a primary focus, but other important risk factors include asset loss or damage, financial consequences and major disruption.

Bristol City Council Highways has adopted a risk-based approach, documented in service policies and procedures. This approach defines the most critical assets – those that account for the greatest proportion of long-term costs (and safety implications) within the asset groups. For the carriageway and footway, a hierarchy of maintenance and inspection has been developed which reflects the level of risk within that asset group - for example, a busy, strategic A road is inspected for possible safety defects more frequently than a small residential street.

Lifecycle modelling and financial planning

A lifecycle strategy sets out the overall method for long-term asset management. This is particularly important with high value, high-cost assets where wholesale replacement is rarely an option – for example, the carriageway/footway network and critical structures such as bridges.

We use modelling to analyse and understand the future condition of the asset, depending on what actions are taken in the present day. A lifecycle strategy considers the overall objectives and vision for the city and region, taking into account available funding over the medium to long term. For example, if parts of the asset are in poor condition but budgets are unlikely to increase, what is the best combination of maintenance treatments to use and where best to use them to prolong life or slow down deterioration?



Annual lifecycle modelling is undertaken for carriageways and footways using Gaist condition data and lifecycle modelling service. The bridges and structures strategy follows the use of the Structures Asset Valuation and Investment (SAVI) tool.

Performance management

The purpose of performance management is to ensure that the service achieves its aims. Key performance indicators (KPIs or PIs) are formalised targets that can be measured to track performance against the target. However, numbers alone are not always the full story: judgement on performance needs to be understood in the context of the scale of the task and whether there are mitigating circumstances.

Bristol City Council has a performance management framework which operates at all levels, from corporate to individual operational services - for example, at a corporate level, the Highways team provide quarterly pothole reports to Committee, whereas at an operational level, a team must meet its routine inspection schedules.

Works management

Deciding and planning works over 1 – 3 years is dependent on the annual budget as well as asset and stakeholder needs. Highway assets have more maintenance requirements than there is available funding and therefore local authorities draw up a long list of candidate schemes (logical extents of carriageway for various maintenance treatments) and a 'short list' is then prioritised for action.

Bristol City Council use engineering criteria centred on condition and high usage - safety and functionality - to select candidates for schemes. However, in line with

corporate objectives, additional social and economic criteria are considered when prioritising work. Priorities include cycle routes and access to medical, educational and multi-modal transport locations. The number of public enquiries or complaints are also considered when prioritising which schemes to carry out each year. Where possible, works will be co-ordinated to provide best value for money and least disruption to the city.

Knowledge and professional development

Bristol City Council's asset management approach has a strong focus on professional development, certification, and adherence to international standards. The learning and development framework aims to provide staff with the knowledge and tools necessary to deliver and manage public infrastructure and services.

This aligns with the Institute of Asset Management (IAM) certification pathway. Staff are expected to engage with IAM endorsed modules and courses that cover critical areas such as asset lifecycle activities, risk management, stakeholder engagement, and strategic decision making. These learning materials provide practical guidance, ensuring that staff understand the principles of asset management and can apply them effectively in the context of Bristol's transport network.

IAM certification and courses are based around International Organisation for Standardisation (ISO) documentation, specifically the ISO 55000 series, to promote international best practice. ISO 55000 sets the standard for asset management systems, and its integration into the performance framework ensures that Bristol's highways operations are not only compliant but also continuously improving. Staff are expected to implement these standards, which encourage accountability, performance measurement, and long-term value for the authority.

In addition to formal training and certification, Bristol City Council's highways asset management performance framework recognises the invaluable role of informal learning and attendance of Continuing Professional Development (CPD) courses and events. Self-learning and shadowing experienced colleagues are vital, often understated, components of professional growth. These practices allow staff to develop problem solving skills, contextual knowledge, and decision-making skills that formal courses may not fully capture.

Appendices

The following appendices provide more detail on the asset management services within the SAMP, including the asset inventory, the 2019 road map, and the future contribution to Bristol City Council's corporate objectives.

Temple Way 1940s. Courtesy of Bristol Museums ref 27154

Temple Way, 2024. ©Gaist

Appendix 1: Asset inventory

Asset group	Number of Assets	Team responsible for asset
BNET items (Bristol fibre cabling)	5,625	BNET/CCTV
Bridges, subways, walls, gantries, culverts and other structures	2,586	Structures
Bus shelters including metro	609	Public Transport
Bus signs	748	Public Transport
Carriageways	1,209 km	Strategic Highway Maintenance Highway Maintenance & Asset Management
Clean Air Zone signs	305	Strategic Highway Maintenance Highway Maintenance & Asset Management
CCTV cameras	1,545	Traffic Signals team
Electric vehicle charging points	73	Highway Electrical Asset
Drainage assets including sustainable drainage systems	476	Strategic Highway Maintenance
Flood management assets	907	Flood risk management/highway maintenance
Footways Cycleways Bus lanes	Approx 2,400 km of footway (1,491 miles)	Strategic Highway Maintenance Highway Maintenance & Asset Management
Gulleys	46,340	Strategic Highway Maintenance
Grit bins	1,026	Highway maintenance
Highway verge	892	Highway maintenance via Parks
Illuminated bollards	2,231	Highway Electrical Asset
Illuminated signs		Highway Electrical Asset
Legible City (Wayfaring Signs)	93	Highway Maintenance & Asset Management
Road markings: lines	1,420, 0108 metres (1,420 km)	Strategic Highway Maintenance
Road markings: hatched	3,133	Strategic Highway Maintenance
Road markings: text, symbols	18,645	Strategic Highway Maintenance
Parking assets	2,222	Parking
Streetlights	36,579	Highway Electrical Asset team
Street name plates	11,011	Highway maintenance
Signs - Warning, regulatory, directional information, other	46,349	Strategic Highway Maintenance Highway Maintenance & Asset Management
Taxi ranks and coach parking	63	Public Transport
Traffic Signals	364	Traffic Signals
Variable message signs and school wigwags	40	Traffic Signals

Appendix 2: Asset strategies

The following section summarises the current and future asset strategies that in combination provide the overall strategy for the highway network (SAMP) and its contribution to the city.

Asset management and data

Following recommendations in 2019, Bristol City Council has invested in the way it holds and manages asset data. Data for critical assets is collected via surveys, inspections and fault reporting, using up to date technology wherever possible, and held on a specialised asset management software system, Confirm.

A dedicated Highways Asset Management team oversees the software system, and this holds data on all the council's physical assets (except housing).

Working across services, the system is regularly updated to capture changes, renewals or additional assets in the city. Inspection and maintenance records are held against unique street referencing, and the system also manages automated inputs from other sources such as Gaist SafetyView and FixMyStreet public reports.

The Asset Management team are custodians of the Local Street Gazetteer, a statutory requirement on councils to maintain a central database for street data within the local authority. Data is held as an asset against the street record. Bristol City Council's gazetteers are maintained to the Data Entry Convention (DEC) set by Geoplace, the organisation appointed to manage the national database repository.

The data is accessible to the public via https://maps.bristol.gov.uk/pinpoint/

Data collected in our asset management software system is used to support a wide range of reporting and transparency functions, including DfT single data list returns, public transparency reports, ALARM surveys, and internal quarterly performance reports. This data underpins responses to Freedom of Information (FOI) requests, evidence for claims and insurance, and serves as the foundation for many of the self-service GIS map layers available on Bristol Pinpoint.

Challenges and constraints

Technology has enabled faster, more accessible ways for people to report problems to the local authority, for example, via Fix my Street, a public app for reporting issues. However, staff and financial resources have not increased in line with the social media expectations for rapid replies and resolutions. In general, public expectations are higher but support for local authorities is lower.

Future plans

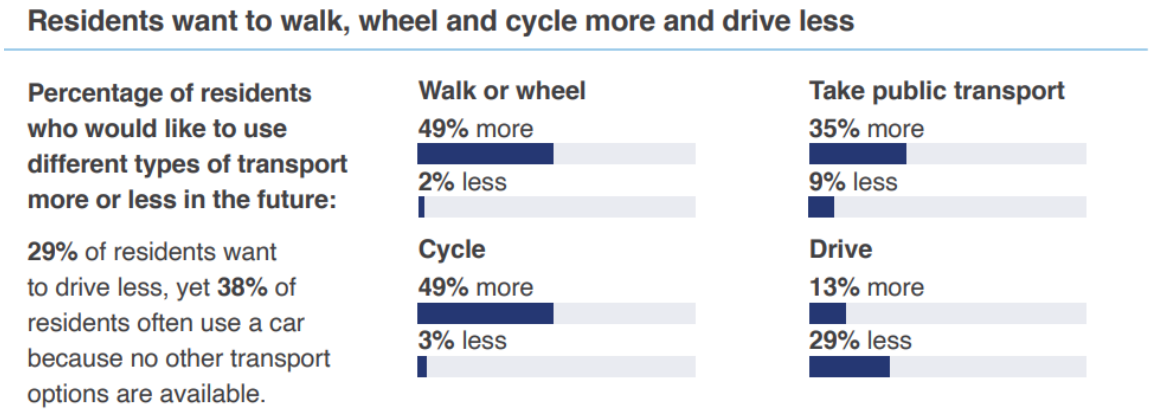
Good asset data is held in a well-functioning software system. Future aims are to:

- Explore ways to store technical drawings ‘(as built’) on the asset management software system.
- Continue to improve the automation of other systems providing data into Confirm.

Strategic Transport Policy

Bristol City Transport Strategy and Joint Local Transport Plan (LTP) are led by corporate priorities from the local administration and the West of England combined authorities. The purpose is to deliver vision-led planning for transport infrastructure which in turn informs the strategies for individual asset groups.

The council engages with the public to ascertain local preferences for how to invest in the asset. The Walking and Cycling Index is a long-running series that uses a credible surveying method. It consistently shows that there is more support for investing in walking, wheeling and public transport: Walking and Cycling Index 2023: Bristol



Realising the ambitions for transport requires changing infrastructure and revenue streams. Bristol's One City Climate Strategy aims for the city to become carbon neutral and climate resilient by 2030. This means a fundamental shift in transport modes and with it, the asset management requirements for the highway network.

To move from a 'car first' approach, transport projects encourage people to use public transport, walking and cycling so that private traffic reduces. Repurposing of the highway for dedicated bus and cycle use is in progress, with capital funding assigned to sustainable transport projects. Bristol City Council has funding to install electric vehicle (EV) charging points to assist the transition to cleaner air quality.

Challenges and constraints

Maintenance

Capital funding provides for redesign of the highway network, but this may not result in an equal increase in revenue to cover any additional items. This tension is discussed in the main document, reflecting the challenge of maintaining ageing infrastructure that must support the increasing number of people travelling sustainably but has insufficient funds 'to go round.' Conformity to the agreed materials palette limits the pressure on the annual maintenance budget but may also limit the types of street furniture used in public spaces.

Change management

The target set by the One City Climate Strategy requires a substantial 40% reduction in vehicle miles; the city is gradually moving towards this goal, but car use and consequent congestion is still high.

Future plans

The strategy documents set the future direction. Supporting policy documents are to be supplemented and updated by:

- Transport Movement Strategy - infrastructure requirements for strategic corridors over the next 5-10 years, including scheme lists with costings and priority.
- Kerbside Strategy - support the transport vision by diversifying this prime highway asset (EV, cycle hangers, charging points).
- Transport Investment Strategy - revenue streams (parking, fines, advertising, Clean Air Zone) and the financial impact of changes to transport modes.

Network management

This service's core responsibilities of ensuring journey time reliability and minimizing traffic congestion contribute to the city's transport strategy and to the management of the highway. These responsibilities extend to all types of users of the highway network and to all modes of travel. There is close cooperation with Traffic Signals, particularly in planning for disruptions such as roadworks. There are no physical assets in this service.

The service also oversees utility and other works on the highway. It is self-funding and predominantly operates via the national Street Manager database. Streetworks inspections are logged on the council's highway asset management system, Confirm.

Challenges and constraints

Journey time performance indicators are reliant on minimal disruption. Due to the constrained nature of the city and volume of traffic, there are persistent congestion management difficulties during roadworks and events. A key challenge in a growing city with limited capacity is to improve the efficiency of our movement corridors. The movement of people needs more space-efficient transport to counteract the levels of congestion caused by the number of private car journeys.

Future plans

The current 2-year period sees major roadworks in the city as part of capital projects to improve sustainable transport. The management of the network and any actions required will be re-assessed once the works are complete.

Future aims include:

- Making a full transition of inspection records to Street Manager to improve efficiency via one system.
- Developing a coring programme to test the structural quality of reinstatements.
- Conducting a feasibility study for lane rental.
- Where roads are protected after resurfacing but need to be dug up again for utility work, continue work with Highways team for ensuring full or half width carriageway reinstatements.

Transport Development Management

Transport Development Manager (TDM) is a statutory consultee on behalf of Highways for Local Plan developments. The role is to ensure quality control in meeting the objectives for the city through advice and oversight of developments. Principally this requires developers to make physical and financial contributions to healthy and sustainable transport infrastructure, reduce negative transport outputs, and deliver safe, accessible and maintainable new environments.

TDM represents the Highway Authority's role as a statutory consultee to the planning process, and as the technical approval and inspections authority for street works resulting from new developments.

The service's role is to make sure that all new developments fulfil the following policy requirements:

- contributing to successful master planning
- making physical and financial contributions to healthy and sustainable transport infrastructure
- making walking and cycling the easiest travel choices
- avoiding negative and harmful transport impacts
- delivering safe, accessible and maintainable new environments

The team manage developer contributions for highway additions and improvements, which may include 'commuted sums' – a payment at agreed rates to cover maintenance for specific highway assets (e.g. new traffic signals, sustainable drainage) for a period of up to 5 years. All new highway assets are recorded on the council's Confirm asset management system.

There is a defined TDM guide (TDMG) and QA process guide (TDM processes) which planning applicants must follow. The TDMG includes design guidance for infrastructure functions such as drainage, parking, street furniture and the material palette that should be used. There is close liaison with highway asset managers, both in developing the guide and on individual planning applications.

TDM ensures that new roads are built to a standard fit for adoption as public highway even if they are not to be adopted at the time. This serves for future proofing whilst making sure that new streets are safe and sustainable (e.g. for emergency vehicle access).

On new planning applications, Bristol City Council is actively encouraging the creation of green infrastructure and Sustainable Drainage System (SuDS). SuDS are a flood defence which serve the highway network by reducing the amount of rainfall onto hard surfacing. They rely on natural means such as rainwater gardens and ponds to filter and gradually release water into the ground. SuDS reduce the impact of new developments on flooding, whilst also delivering amenity and environmental benefits. To work effectively, SuDS need to be good quality, fit for purpose. They also require a maintenance regime to be funded into the future.

Bristol City Council's Transport Development Guidance and West of England guidance on drainage is available here. Approximately 200 Sustainable Urban Drainage Systems have been installed in 2 years up to 2025 through planning application consultations.

Challenges and constraints

There are considerable constraints due to the historic nature of the city. Existing and new infrastructure competes for space. Development work must account for geology (how stable is the sub-structure), protecting the environment and enhancing biodiversity. For both planning applications and in-house works, new highway layouts should comply with modern access standards and priority for bus and active travel – this can be hard to achieve on historic bridges or streets.

There are issues on how to cost commuted sums for complex items such as Sustainable Drainage Systems (SuDS).

Legislation does not allow for commuted sums for trees or planted areas although these need at least 5 years' maintenance and are an essential element of a healthy city.

Future plans

The TDM guidance and process are at a mature level; future aims to improve these include:

- Obtaining 'as-built' plans. These will be asked for at an earlier stage whilst the developer is still engaging with the process.
- The commuted sums process will be refined to help longevity of new assets.
- E-bikes, scooters and on-street EV charges are all issues to consider at design and implementation stages, as well as where responsibility lies for ongoing safety and maintenance of assets such as cross-pavement charging solutions.
- There needs to be a formal process, agreed across highway asset owners, for departure from the TDM particularly around materials and street furniture.

Engineering Design

The team design transport schemes, tender and manage works contracts and supervise council projects, small schemes, and projects funded by developer contributions. Engineering Design creates and repurposes highway assets rather than maintains them.

Bristol City Council's transport projects are funded by CRSTS and strategic infrastructure funds. The standards applied to works are in accordance with Bristol Highways Specification and Standard Details as well as the TDMG and QA process and national highway standards. It is these works that re-create the highway environment to facilitate more active, healthy and sustainable transport modes.

Future plans

High quality, attractive public spaces encourage healthy active travel, but bespoke materials can cause difficulties for maintenance. As with developers, a process for departures from the TDMG need to be considered, agreed across teams and documented.

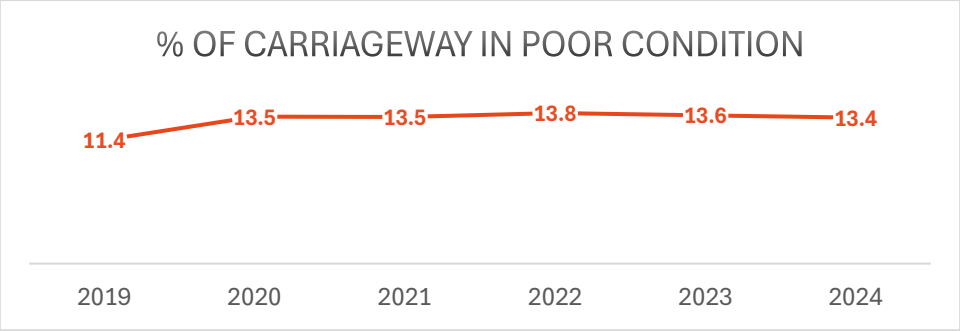
Carriageways

Carriageways are the largest physical highway asset and fundamental for all transport modes. Bristol City Council maintains 1,209 km of carriageways. Compared to the median of other similar local authorities (metro & unitary), Bristol has a high total road length, a high volume of motor vehicle traffic, and a very high proportion of principal roads (A roads) and non-principal roads in need of maintenance.

The breakdown of road class by total carriageway area is:

A roads	B roads	C roads	Unclassified roads
14%	6%	7%	73%

An accurate digital survey of road condition is undertaken annually. In 2024, the survey showed around 13% of the carriageway in poor condition, holding steady over the past 4 years after a 2% decline in 2019. However, locations where maintenance will be required to prevent deterioration to poor condition is around 70% of the total carriageway area. Bristol is in line with other local authority networks surveyed by Gaist.



Lifecycle modelling reveals that the current levels of capital maintenance funding in Bristol City Council are insufficient to avoid a decline in network condition over the long-term.

At 2025 investment levels (annual capital funding for resurfacing and preventative works), the carriageways can be held at a steady state for a time but then deterioration rapidly picks up. This is due to inflationary increases as well as a limit to the amount of preventative dressing that can be carried out. This relates particularly to roads that have previously been surface dressed or where there are significant repairs required prior to the surface treatment – in these cases, more expensive resurfacing may be required. The most recent lifecycle modelling shows that £8 million per annum is required to maintain a steady state and avoid further increases in reactive repairs each year.

Bristol City Council's maintenance work is informed by the lifecycle modelling, and our balance of preventative and structural maintenance has been tested and proven to be

the most effective long-term approach within the current budget regime. However, a more efficient approach is to undertake preventative maintenance at an earlier stage in a road's lifecycle if sufficient budget was available.

Types of schemes include:

- preventative maintenance, which consists of applying surface treatments to mid-life carriageways to prevent further deterioration.
- resurfacing, where the original road surface is removed and new material laid.
- patching for locations with insufficient size for resurfacing but which benefit from localised structural intervention.
- specific to construction type, for example cobblestones or concrete.

Schemes are generated from the annual condition data, using engineering criteria to identify suitable locations (the long list of candidates). Additional criteria are applied to every scheme to rank them into priority order. This is not solely based on classification of road: additional scores are given to carriageways that support the city's corporate aims – for example, roads that provide cycle routes or access to medical, educational, transport and retail locations.

The council strategically balances preventative maintenance—proactively enhancing infrastructure using durable materials to reduce future costs—and reactive maintenance, which addresses urgent repairs.

Reactive or safety maintenance identifies safety defects through routine inspections and responds to any safety concerns by assessing and, if required, making safe. Bristol City Council uses a technology-based imagery solution, SafetyView, for capturing inspection data on its carriageways, enabling a rapid assessment of safety across the network. The council was instrumental in developing this technology in collaboration with other local authorities and Gaist, the asset management technology company.

Bristol City Council's Safety Maintenance Strategy documents its risk-based approach. This determines how frequently each carriageway or footway should be inspected – the network hierarchy for the public highway. The response to potential issues is by assessment of the site to determine what requires quicker attention compared to where the location and size are such that a longer response period is acceptable. Issues are assigned Category 1 or Category 2 priority response, with a Category 3 classification for minor condition variances that are not currently a safety hazard. An out of hours service is available for highway safety emergencies.

A winter service is provided by Bristol City Council for the public highway. This is funded through revenue budgets and involves the salting (gritting) of main carriageway routes. Priority 1 routes comprise the primary routes through the city and links to the wider regional primary and strategic road networks. Priority 2 links the network of local access

roads to the Priority 1 network. 1,026 grit bins are provided and maintained by Bristol City Council highways, for the public to use on local roads.

For heavy snow and other network-wide challenges, a core resilient network identifies critical sections of strategic and priority 1 carriageways on which to focus resources in the first instance.

Skid resistance on a carriageway is improved by surface and resurfacing treatments. The authority has no approved SCRIM policy. Annual testing (SCRIM) is not considered necessary because the network is almost fully an urban network with minimal national speed roads. There are a few rural lanes on the very outskirts. The road network is predominantly 20mph (90%) where the macro texture of the road does not need to meet skid resistance targets due to the low speeds, and the average speed in the city is below 20mph.

When taking into consideration that the higher speed roads are on the strategic network, which are allocated the highest priority in the hierarchy, and with other datasets, it is a reasonable risk-based assumption that higher speed roads that would fall into any SCRIM category are already going to be suffering from other asset depreciation and would be receiving treatment.

Performance indicators

The council must report road length statistics and the condition of principal and non-principal roads to the Department for Transport on an annual basis. The DfT has also asked local authorities to publish a Local Highway Maintenance Transparency report, which is available here.

The Highways team provide a quarterly report on potholes to the Transport & Connectivity Committee.

Challenges and constraints

Managing a complex asset in a changing environment inevitably brings constraints, demands and issues. A strategic approach involves addressing these (sometimes competing) demands and seeking a balance where possible.

Funding and resources

Insufficient funding is clearly a challenge, as carriageways will eventually deteriorate at a faster rate than maintenance and renewal can be delivered, whilst in-house staffing and financial resources limit what can be provided at any one time.

New assets such as signs, lines and other street furniture add to the maintenance bill with no corresponding increase in budget.

It can be difficult to attract contractors for work on smaller schemes in more confined locations compared to working in larger county councils.

Reducing the use of weed killer for environmental reasons is positive but plant growth on the highway can push apart surface materials, negatively impacting on the waterproofing and durability of the surface.

Transport priorities

There are maintenance pressures arising from today's ambitions to create a better future environment. Much of Bristol's network has grown up over centuries and is not constructed to modern standards. A good example of this is the creation of bus lanes; concentrating heavy vehicles and creating narrow lanes accelerates rutting and other structural problems. Conversely, in terms of transport priorities, people are more likely to use buses if they are reliable and efficient – so bus lanes are a good tool to encourage travel away from individual car use. Recent transport projects in the city centre are allocating capital funding to strengthen the carriageway.

Creating sustainable transport routes challenges the way in which maintenance is undertaken and a shift to different techniques may not be easily attainable within available resources. For example, on carriageways, the most cost-effective treatments have traditionally used large machines (gritter lorries, resurfacing plant). Segregated smaller cycle lanes cannot be accessed by these machines and alternatives such as smaller plant are more resource-intensive and expensive. On a positive note, reallocating space away from private and heavy vehicles will reduce damage to the carriageway over time.

Public realm

Bespoke or conservation items may be difficult and expensive to repair and replace and incur additional costs to source, store and replace. This can include types of bollards, kerbing, paving, railings and cycle racks. The quality of items is also critical as poor quality results in faster deterioration. The TDMG has been developed to specify the types and standards of materials and equipment for in-house and external development projects.

Animated spaces in local neighbourhoods (such as LTNs) may use temporary rather than permanent solutions for trials, for example, planters rather than in-ground solutions. These are often subject to individual agreements rather than central ownership and can cause difficulties if the local neighbourhood does not take responsibility for ongoing maintenance.

Future plans

Annual condition surveys, regular inspections, lifecycle modelling and scheme identification ensure that Bristol City carriageways are subject to continuous assessment, with actions led by data and engineering expertise.

The highway teams support the beautification of areas and are open to trialling new ideas and products.

Future aims are to:

- Continue to use data to make smarter decisions and supplement local knowledge.
- Revisit the risk-based approach, using other datasets to help manage the network and tell us where to focus.
- Analyse future resilience needs by gathering more data on geology, age and climate change predictions.
- Review the procedure for approving departures from Bristol City Council's Transport Design Manual specifications.
- Reduce waste going to landfill.
- Look at whether we can do things differently – for example, setting a lifespan for street trees to avoid long-term maintenance problems.
- Where possible, use available funding to proactively enhance historic design challenges rather than solely focusing on maintenance, such as upgrading cycle lanes through opportunities like Active Travel England funding.

Footways

A long-term approach to maintenance of footways supports active and sustainable travel, social inclusion and independent living. Bristol City Council has a comprehensive public network of footways. The number of footways is approximately double that of carriageways and consist of a variety of materials including concrete flags and blocks, natural stone, brickwork and cobbles, bituminous surfacing and concrete.

The allocation of funding for footways is 8% of the budget compared to 82% on carriageways. Overall, BCC's carriageways are in a worse condition whereas footways deteriorate at slower rate, with walking and wheeling causing very little damage to the surfaces. For bituminous surfaces, the Strategic Highway Maintenance team is carrying out a 10-year strategy of a sealant layer (slurry seal) to re-waterproof and substantially prolong the footway life.

For non-bituminous surfaces, types of treatment include renewal and repair for modular footways (flags and bricks), cobbles and concrete, with patching for small areas of bituminous surfaces. Once a maintenance need is identified through the condition surveys, schemes are prioritised according to corporate objectives and social value criteria as well as condition, number of defects and public reports.

As with carriageways, footways are inspected on a schedule throughout the year to proactively pick up and repair any safety defects.

On a 2-yearly basis since 2020, a survey of all non-bituminous footways is commissioned to provide condition data and identify areas for maintenance schemes. In 2024, the proportion of these footways in poor condition was 10% of the total (non-bituminous) area, an increase of 4% since 2020. A further 65% were in serviceable condition but will deteriorate if there are insufficient maintenance funds over time. For bituminous footways, the slurry seal programme is continuing to prevent deterioration.

Lifecycle modelling is undertaken biennially to inform the footway strategy for non-bituminous footways. This shows that an annual average expenditure of £830,000 over a 30-year period would keep footways at their current state. This would require an uplift from the 2025 budget of £500,000.

Challenges and constraints

Parking on footways

Vehicles parking on the footway will cause a faster level of deterioration as footway structure and materials are not designed to take the weight of cars, vans and lorries. Parking controls and a shift towards more active travel (cycling, walking and wheeling) reduce the negative impacts of parking on footways.

Funding

As with carriageways, funding limits the amount of maintenance that can be undertaken. Elevated annual investment would be needed to reduce the level of non-bituminous footways in poor condition as the asset is ageing faster than it can be replaced.

Materials

Natural stone and any bespoke flags or blocks used on footways are more expensive to source and repair, as well as needing a sufficient supply in storage in case they cannot be sourced in the future.

Climate change

The treatment regime for bituminous footways is an efficient and cost-effective method of preserving the lifespan. However, excessive heat negatively impacts on the sealant material and consequently reduces asset life. As with all highway assets, extreme weather events accelerate deterioration.

Future plans

The current and future strategy for footways is a long-term approach to the preservation of the existing surfaces and structure.

Future aims include:

- Continue with the bituminous footway treatment but explore different material mixes for climate change resilience.
- Continue to use condition data, lifecycle modelling and scheme identification to maximise value for money and check that the strategy is providing the best returns.
- Support active travel strategies, for example, by prioritising schemes on well-used routes.

Structures

Structures, as with carriageways, are a fundamental element of the highway network, literally supporting transport options. They are a complex group of assets due to type, age and ownership, as well as their criticality in terms of access and safety. This asset group encompasses bridges, subways, underpasses, culverts, sign gantries, high masts for streetlights, vaults, chambers and cellars, retaining earthworks and retaining walls.

Even with a 'singular' asset type such as bridges, there are many variations including vehicular, pedestrian or both, number of arches or supports, what is underneath (water, rail, road, gorge), age of construction, different components (which may need different maintenance and repair regimes) and whether it is owned by Bristol City Council or another organisation such as Network Rail.

Irrespective of ownership, the council has an interest if a structure interacts with the highway network. There is good coordination and data sharing with Network Rail regarding their structures, and an agreed in-house protocol for retaining walls over a certain height (1.38m) with the council's Building Control which works with private owners.

The team is directly responsible for 643 assets in total:

Bridges	300
Walls	241
High mast lighting columns	63
Sign gantries	8
Culverts	31

Following on from the 2019 asset roadmap, the Structures team have developed and refined the current strategy for inspection and repair. General inspections on the assets are carried out every 2 years to ascertain condition. These are on target to complete within the 2-year timescale. Good practice suggests that principal inspections (which scrutinise components of the structure in greater detail) are scheduled every 6 years per asset and these are currently being undertaken in conjunction with the general inspections. The team has recently been using drone technology as a safer and more efficient method of inspecting at height.

The condition data is input into the Structures Asset Valuation and Investment (SAVI) tool. This identifies high to low-risk components using specific trigger criteria to prioritise 12 – 18 months, 5 year and 10-year work plans subject to budgets. The in-house Project Delivery team deliver maintenance works, with larger schemes overseen by the Senior Engineer. The current regime ensures that small scale repairs are done 'right first time' – for example, ensuring that replaced items receive the necessary applications of paint for longevity.

As of 2025, the funding allocation is £800,000 per year for ongoing preventative maintenance across all structures. To keep these assets in their current condition requires £4.2 million per year, a gap of £3.4 million from the actual budget. There are also structures in poor condition which require additional capital investment to avoid potential critical failure, including bridges, culvert, viaduct and a number of historic retaining walls of disputed ownership.

The Floating Harbour and river asset condition survey undertaken in 2019/20 identified 194 retaining river wall assets within the Floating Harbour and New Cut waterways. 11 highest priority structures requiring stabilisation have received funding for works but there remains a gap of £8.217 million to complete these projects. A further 60 locations have been identified as potentially critical. River walls, as with other structures, have costly maintenance needs due to geotechnical and ecological complexities.

All known structures, even those not owned by the council, are recorded on the Confirm asset management system. Structures data is updated from inspections, and additional information is recorded as and when. (e.g. private retaining walls, for which asset data is incomplete). Cleansing the data has enabled the team to remove assets that are not their responsibility to inspect. Non-adopted structures are only included on the inspection regime if they are in frequent public use.

New structures that have an impact on the highway network need technical approval by the Structures team, whether the council is to adopt them or not. Details are on the council website here. The Structures team work closely with the Transport Development team on planning applications. Structures that have previously been built need to be brought up to the current technical standards by the owner if requesting adoption by the council.

Performance Indicators

The KPI is based on the amount of unprogrammed or unplanned work and the measurement of failure is if this is high. The team are meeting their target of keeping unforeseen repairs at a low rate.

Inspection targets as set out in CS450 national standards are being met.

Challenges and constraints

Funding

Condition data and SAVI modelling show a significant budget shortfall of over £3 million. The failure or unplanned closure of a structure has a major impact on the highway network and in some cases may isolate areas of the community. It is also more expensive to repair failed structures than to apply preventative maintenance to retard major deterioration.

Private ownership

Walls, vaults and cellars in private ownership may have a role in supporting and retaining the highway, but owners do not always have the funds to fix problems. In these cases, the council will monitor and if necessary, make the highway safe or close off access to protect the public. There is incomplete data on retaining walls and ownership can be unknown particularly for historic walls – which are often costly to maintain and repair.

Reactive works

There are certain items which do not have a regular inspection regime and therefore maintenance is on a reactive basis.

Maintenance

Small issues can reduce the lifespan of structures over time. With sufficient funding, a two-person team could be on constant rotation undertaken cleaning, painting, removing vegetation and minor restoration.

Vehicle restraint systems (VRS): if these are on structures, then it is for the structures budget to repair, but the city would benefit from a single point of responsibility for all VRS.

Outfalls and culverts require specialist contractors for the inspections. The large culverts in the city are in poor condition, and their maintenance requirements are unknown. There is a risk of failure of such assets.

Future plans

Maintenance of inspected structures is prioritised via SAVI and this will continue, with regular inspections on a cyclical basis for adopted structures.

Future aims include:

- Expand the use of drone and other technology for assessing condition.
- Seek to increase in-house knowledge by looking at ways that staff can shadow consultants and contractors on projects.
- Discuss opportunities for a single Vehicle Safety Restraint maintenance strategy and budget across services.

Drainage

An often unseen but critical element of highway infrastructure, good drainage prevents flooding, mitigates risk from standing water and supports active travel. With the growing risk of extreme rainfall events, the council faces challenges from surface water run-off on highways and from rising river levels.

Highway surface water (rainfall) is traditionally absorbed through drainage infrastructure of gullies, catchpits, drainage kerbs and associated pipework. In previous centuries, property foul water systems may have been connected to the same underground infrastructure. However, this is no longer viable given the number of properties, the amount of hard landscaping and the amount of rainfall with which the existing drainage system must cope.

Asset data is held in Confirm for the 45,000 gullies within Bristol City Council; asset surveys have been undertaken for drainage infrastructure, including detailed locations of gullies, access covers, some carrier pipes and subway drainage. This is used to prioritise future work programmes.

As of 2025, the Highways team is conducting a repair programme for 874 gullies identified as non-running. This includes using innovative repair techniques such as no dig solutions. A further £700,000 has been allocated to a historic flooding site on one of the City's roads to upgrade the drainage network as well as deliver improved pedestrian and cycle facilities.

Cleansing is on a cyclical basis for 10,500 gulleys on the main routes in the city, with the remaining being on a reactive basis. This is a legacy risk-assessed system that needs to be reviewed to concentrate available funds on where they are most needed. There is currently insufficient information on every gulley's silt levels; a remote sensor system trial did not provide the level of detail required for a risk-based assessment. A system of manual inspection is now collating this data over a 2-year period.

Subway drainage asset data has recently been collected and the infrastructure cleared. An estimated £300,000 is required for subway drainage repairs to reduce flooding following the asset condition survey.

Suds may be installed on new planning applications and transport projects where highway space permits. These are a very effective, natural means of managing surface water problems and require a maintenance regime which is funded by commuted sums from developers. If created by the council, the costs are absorbed into the existing highway maintenance regime.

Challenges and constraints

Funding

At the current levels of investment, it will take 17 years to repair non running gullies. A risk-based approach will be developed for the cleansing regime, but funding constraints may limit the number of gullies that can be included in a scheduled programme.

Maintenance

Going forward, SuDS are an essential tool for cleaner, natural management of water, providing attractive public amenities and encouraging local ecology to flourish. It can be challenging on street to maintain SuDS drainage systems if they need additional servicing that cannot be provided through the gulley cleaning contract and machinery (such as litter picking, removing detritus and caring for plant growth).

Future plans

For the original drainage infrastructure system, the future strategy is to ensure that all elements work at optimum performance, whilst avoiding additional pressure from new infrastructure. However, funding is insufficient to repair all the gullies that are not functioning, and there is an unknown amount of subterranean highway carrier pipes which may also require repair and maintenance.

Future aims include:

- Complete data collection on gulley silt levels.
- Use gulley information, flood risk data and any other relevant data for a risk-based assessment of the cleansing regime e.g. maintenance matched with complaints and leaf-fall.
- Work with Flood team to develop SuDS that are more effective and require less maintenance.

Flood risk

Although most flood risk and mitigation assets are remote from the carriageway, they play an intrinsic role in preventing water overflowing onto transport networks. Bristol City Council has a team responsible for flood risk management that work closely with other risk management authorities such as the Environment Agency, Harbour Authority, and Wessex Water. Council assets include flood defences, attenuation basins and other SuDS features, trash screens, culverts, and land drainage assets.

Due to the significant impact from flooding, oversight of flood mitigation also extends to assets which are not owned by council. The council and Environment Agency (EA) have powers to do works regardless of owner where there is public interest for flood management. Both the council and EA can also use enforcement powers to force a landowner to do works. More information on Bristol's flood risk strategy and who is responsible for the assets is available here.

For the council's flood defences, all asset data is held in the Confirm system, and regular inspections are carried out cyclically on a 2-year cycle. The maintenance is managed through contracts with a schedule of activity and frequency outlined for each asset. Any new assets need to be built with consideration for a 100-year lifespan in a changing climate.

Performance Indictors

Above 90% of the assets inspected must meet the target condition grade of 3, where 1 is very good and 5 is very poor. This is being met.

Challenges and constraints

Public realm and accessibility

Flood defence structures compete for space and may conflict with priorities for attractive public realm spaces, accessibility and sustainable transport.

Maintenance

Developers can be reluctant to install SuDS because of the cost particularly the cost of ongoing maintenance. Conversely, failure to install SuDS can cause longer term problems in dealing with flood risk.

Use of flood data

Flood data could be used more widely in prioritising workload for drainage maintenance – this could form part of the risk assessment for the gulley regime. The high-risk flood data needs updating to reflect the latest modelling.

Future plans

- Review flood management asset list to determine where responsibility best sits.
- Review current practices to identify ideal future actions.

- For non-council owners of flood management assets, use EA or council enforcement rights if necessary to ensure adequate maintenance.
- Encourage the creation of more SuDS and rain gardens through Transport Development Management.

Traffic signals

Signalised junctions play a vital role in the management and flow of traffic on the highway network, and in prioritising walking, wheeling, cycling and bus travel.

Encompassing over 400 traffic signals, Variable Messaging signs (VMS), CCTV, car park signs, the team deliver design, maintenance and traffic control.

There are 348 traffic signal sites that include junctions and Pelican, Puffin and Toucan crossings. Asset data is held in IMTRAC, a specialised traffic signals management system, integrated with the wider West of England region.

0 - 5 years old	46
6 - 10 years old	63
11 - 15 years old	74
16 - 20 years old	84
20 years and older	82

Traffic Signals are considered end of life after 15-20 years owing to availability of spares. Bristol's oldest site is currently over 30 years old. Traffic signal replacement can sometimes be prioritised based on condition, as well as age, resulting in some younger sites being replaced before older sites. Major capital projects include modern replacements although these tend to focus on main transport corridors and therefore do not always coincide with the poorest condition assets.

The service receives both capital and revenue funding. In 2025-26, this included £850,000 for upgrading/refurbishing from the capital CRSTS allocation, and £850,000 revenue for routine maintenance and fault repairs. Planning applications with new traffic signal assets must provide ongoing maintenance contributions in the form of commuted sums via Transport Design Management.

The current strategy includes a 5-year programme of refurbishment or replacement of end-of-life equipment via CRSTS funds, upgrading locations to modern technology standards. As of 2025, the average cost per site is £150,000 with rising inflation. In 5 years, 20-25 sites will have been updated but the number of sites older than 20 years will increase to 125. An additional £1 million per annum would keep the assets in a steady state.

Traffic signal technology has become much more adaptive. The original pre-programmed set timings are being superseded by dynamic responses to traffic movement. Live data gathered via vehicle detectors adjusts traffic flow to reduce delays. Bristol City Council uses Urban Traffic Control (UTC), a centralised system to co-ordinate traffic signals across the city. The council is transitioning to a new model, Fusion, which integrates multi-modal data sources to optimise signals for all users, including pedestrian and cyclist as well as vehicular movement.

Working closely with Network Management, traffic signals are adaptive to events, major roadworks and re-allocation of transport space.

Performance indicators

The contractual PI is that the asset is available at 89.9% at all times, and this is being well met. The type of asset and its components are graded according to criticality. Service failure points (SFP) are awarded for poor performance. A performance table is updated regularly; the contractor can be put into special measures should there be failure to perform.

Challenges and constraints

Funding

The city contains a significant proportion of assets at end-of-life, requiring a "firefighting" approach. Current funding allows for a 5% annual replacement rate versus an ideal 10%. Staffing resources are limited by available revenue funding.

Congestion

Despite an increase in the number of dynamic traffic signals, it is a challenge to co-ordinate high volumes of vehicle traffic at peak times. There are persistent congestion management difficulties during roadworks and external major events.

Future plans

The roll-out of Fusion will continue and this is anticipated to enhance traffic signal effectiveness by up to 25%. In turn, this will provide benefits in planning for, and prioritising, other modes of transport compared to private vehicles.

Future aims include:

- Support the asset's needs through commuted sums from developers and CRSTS for renewal of assets.
- Reduce maintenance burden by decommissioning redundant equipment or items that are not useful.
- Look to the future potential reduction of VMS with the increase of in-car data and car park guidance systems.

Electrical assets (HEAT)

This covers a diverse range of assets which require electrical expertise, including streetlights, lights on high masts, illuminated signs, illuminated bollards, subway pumps, electrical equipment on swing bridges, EV chargers and power sources for events in the public realm.

The service has a revenue budget for maintenance, repairs, faults and the electrical testing programme. Capital is used for upgrades and new equipment. Through the West of England, funding has been received for the replacement of cast iron brackets and of non-compliant kit. Electrical vehicle chargers are supplied and maintained by Bristol City Council's corporate partner Ameresco as part of Bristol City Leap; however, the electrical asset team must authorise installations and may be commissioned to provide the electrical design.

One of the aims in the 2019 asset management roadmap was to implement a wireless communications management system (CMS) to monitor electrical assets remotely. This has now been rolled out for all streetlights as part of the programme to upgrade to energy-efficient LED lamps. LEDs require less energy, last longer than traditional streetlamps, and can be dynamically controlled through the CMS. The LED/CMS projects has saved 1,400 tonnes of carbon (equivalent to 44000 trees) and £1.4m of revenue.

The CMS allows the council to dim or enhance lighting, send energy readings every half hour for 35,000 assets, and enables faults to be reported remotely. Fault reporting is connected to the Confirm asset management system for proactive responses to any issues, rather than relying on public reports or night scouting. This also flags up if work has been undertaken where National Grid is responsible for rectifying faults.

A rolling annual electrical testing programme is in place, covering all electrical assets every 6 years. Assets in use by the public, such as EV chargers and events power supplies, are tested annually. Routine maintenance and testing are funded through revenue whilst upgrades and renewal are via capital investment and CRSTS funds.

60% of the street lighting inventory can be automatically updated through the system, removing human errors in entering asset data. The asset data collected during the LED/CMS rollout enables lifecycle modelling to be developed.

Challenges and constraints

Equipment

Many illuminated bollards are coming to end of life and are expensive to replace at £1,500 per unit (2025 prices). With the upgrade in streetlighting, most of these sites are suitable for non-illuminated bollards, saving energy and installation costs, but each location requires an individual road safety assessment for which there are currently insufficient in-house resources.

Heritage cast iron street lighting columns and brackets are bespoke, expensive to replace and difficult to source suitable, reliable modern replacement castings. There is a 5-year programme of replacement due to costs.

Other electrical equipment requires upgrades to meet Electricity at Work standards or replacement due to reaching end of life. Obsolete electrical technology on the public highway requires removal or replacement. If the business is no longer operating, the council must provide the funds and resources to remove and make good.

Funding

An increase in electrical items can place a strain on budget and staffing resources. For example, the council retains a duty of care for EV charging on its street lighting infrastructure: there are 150 units in place and a further 450 planned. The council is employing 2 additional consultants to oversee the installations.

Emerging technologies

Technology is fast paced, and it can be difficult to find sufficient time and budget for staff's continuing professional development and training.

Events

The team maintains electrical power supplies for small to large-scale events. This provides carbon reductions compared to the use of generators. However, the maintenance and replacement of these assets are expensive. Power supplies need frequent repair and testing, with some beyond life that require upgrading.

Future plans

Electrical asset management is a cornerstone of the council's strategy to reduce energy and carbon usage. Well-lit public spaces and streets encourage people to move around the city by more sustainable methods.

Future aims include:

- Upgrading illuminated signs to CMS and LEDs. This eliminates the need for any night scouting whilst providing lower energy costs and remote fault reporting.
- CMS system to be fully automated to the Confirm asset management system, requiring zero human intervention.
- Structural testing with inventory attributes and values to be reviewed and updated ready to let a new contract by 2029 (ensures accurate asset pricing).
- High mast lights to be added to CMS/LED roll out.
- Upgrades of events equipment to reduce reliance on diesel generators and contribute to carbon reduction.
- Upgrade of non-compliant/end-of-life electrical equipment (programme for 2026).

Road markings, signs and street furniture

These assets support the council's objectives for safe, resilient transport networks. Street furniture such as benches and bollards can enhance and protect public spaces whilst road markings and signage are vital for the control of parking and the safe movement of all users.

Existing non-illuminated signs and street furniture are inspected and repaired or replaced if required as part of the safety maintenance regime. Outdated asset data has made it difficult to develop a planned maintenance strategy for road markings and signs. The current regime is to assess the top 3 roads in every ward plus any safety critical ones.

Street signs, road markings and street furniture such as bollards or pedestrian railings may be replaced, removed or changed as a result of capital expenditure on new transport projects or due to new developments.

The asset and condition data for road markings and non-illuminated signs has been updated via a full network survey in 2025 and will inform a future maintenance strategy. A recent initiative transferred a small portion of the existing budget to the Parking team for upkeep of essential parking management signs and lines.

Challenges and constraints

New public realm design, transport initiatives and new developments can increase the number of signs, lines and street furniture in certain locations but there is not a corresponding increase in annual maintenance budgets.

An example of this is the 20mph small repeater signs in quantities throughout the city which are fading -there was no additional budget assigned for their maintenance when the 20mph projects were completed.

Not all highway assets qualify for commuted sums for maintenance from private developments.

Future plans

Future aims include:

- Analysing data from the recent signs and road marking survey to update asset inventory, assess condition and make decisions on a future maintenance strategy.
- Review results of recent trial with devolving a portion of the road marking budget to Parking.
- Work closely with Road Safety to identify safety critical signs and lines for works programmes.

Parking services

Parking strategy is integral to promoting and accommodating the council's objectives for sustainable transport. Parking is one of the policy tools for managing demand to reduce individual car use, poor air quality and congestion.

Highway assets include on-street infrastructure of signing, lining, parking machines and Clean Air Zone (CAZ) driver information, as well as CAZ and Fixed ANPR Bus Lane cameras. Parking assets also encompass surface car parks and Park and Ride sites. Assets are recorded on the Confirm asset management system.

The Highway Maintenance team look after signs and road markings. All on-street parking is a mix of cash and electronic (87% cashless).

The service comprises its own maintenance team and infrastructure officers, funded by parking revenue and a management fee for the Docks' car parks. EV charging in car parks is facilitated by the team but installed and maintained by the relevant supplier.

Challenges and constraints

Car parks rely on the structure of assets which are used on a daily basis. Some car park structures are reaching end of life. There is a strategy for the managed decline for Temple Gate but no plan for Trenchard Street yet.

EV on-street charging is a rapidly developing environment, with plans to install up to 450 more chargers on lamp columns, as well as new technology that may enable residents to put in infrastructure across the highway. However, this does not provide a guaranteed parking space for electric-powered vehicles and there will need to be clarity on responsibility for enforcement going forward.

Parking re-lining and signing, although essential for enforcement, may not always be a priority for Strategic Highway Maintenance within limited maintenance budgets.

Parking revenue is affected by changes in road space, such as repurposed for active travel leading to loss of parking bays.

Future plans

The strategy for parking is part of the wider strategic transport policy initiatives and is a key part of the planned Kerbside and Investment strategies. Tourism and commuting place demand on parking and bring in revenue but moving to different transport modes requires the strategy to change and evolve.

Future aims include:

- Review outcomes of the trial budget from Highway Maintenance for parking signing and lining works; use recent survey data to plan maintenance options.

- Machine reduction in on-street parking to save costs and remove excess street furniture. The replacement programme for machines starts in 2027.
- Assess and provide a long-term plan for parking enforcement of lamp post EV charging.

Public Transport Infrastructure

This service has a clear role in supporting the council's objectives to provide accessible and active transport and to increase connectivity throughout the city and region.

Public Transport highway assets comprise all bus stop infrastructure: shelters, any solar panels and green roofs on shelters, real-time display boards, signs, and bus stop surfaces. Bristol City Council is the lead responsible authority for Metrobus assets in the area including the wider region of South Gloucestershire and North Somerset, with support from these councils.

The team provide for design, maintenance and renewal of these public transport assets. New installations and renewals are provided through capital projects, such as sustainable transport initiatives. Maintenance of existing infrastructure is carried out by a mix of the Public Transport team, bus shelter contractors and highway maintenance.

Challenges and constraints

Solar panels provide benefit, but in most cases the power supply is quite limited and is not compatible with powering the digital displays within shelters. However, the energy can be used for other council purposes.

Green roofs are low maintenance and sustainable; the city would like to retrofit more existing bus shelters but there is no funded plan yet.

Future plans

The Transport Investment Strategy is looking at the various revenue income streams, including CAZ, bus shelter advertising and others. The approach to maintenance and enhancements for Public Transport Infrastructure will be considered as part of that strategy.

Green roofs will be incorporated into all new bus stops that are installed, funded through the capital projects,

Road safety

The purpose of the Road Safety service is to provide the reasons and need for safety assets. This supports transport policy for safe alternatives to cars and contributes to the council's objective for safe, resilient and accessible infrastructure. Highways or other teams maintain most physical road safety assets; the Road Safety team has direct responsibility for safety cameras, 'watchmen' cameras and school wigwags.

Safety cameras are funded through Speed Awareness course fees although the income from these provide approximately 20% of the costs of needed for maintenance and operation, thereby adding pressure to the Road Safety revenue budget. School wigwags are being upgraded by the Electrical Asset team as part of their maintenance contract.

The team are responsible for advising on projects as well as directly designing road safety schemes. The role includes review of safety audits, highlighting layout issues at the project design stage, and advising on crossing removal. Smaller schemes are carried out by the Road Safety team, larger schemes by the Engineering Design team. There is some overlap with Structures, such as reviewing bridge parapet heights.

Road Safety interventions may add assets to the existing highway infrastructure. This includes Vehicle Activated Signs (VAS) and high friction surfacing with maintenance falling to Traffic Signals and Highway Maintenance, respectively.

This does put pressure on existing budgets – for example, Traffic Signals has a revenue budget which covers approximately 70% of the current VAS. The longevity of high friction surfacing is usually less than that of the carriageway surface and so alternatives will be considered, such as increasing the skid resistance of the existing surface rather than adding an additional surfacing.

Challenges and constraints

The challenge for asset management includes the discussions around the wish to develop potential new road safety interventions, the design layouts, and the materials used, and how/if these can be maintained in the longer term.

Bicycles and e-scooters have different safety requirements to cars although safety maintenance funding has not risen in line with demand.

Future plans

The Road Safety strategy supports risk-based asset management for safer travel. The development of the new Road Safety strategy will look to identify potential opportunities for joined up approaches and processes with asset management and maintenance activities. Future aims include:

- Assessing whether high friction surfacing installation should have a written policy. Although there are set criteria and final design must be agreed on a site-

specific basis, it would be helpful to have guidelines on which the assessment is based.

- Exploring new technology for identifying casualty data such as through vehicle remote sensors.
- Being alert to network needs for autonomous vehicles.
- Developing a speed limit strategy.
- For safety cameras, continue to investigate ways to minimise maintenance burdens: new technology relies less on roadside and in-road sensors. Watchmen cameras are end of life and outdated technology; these could be discontinued rather than replaced, or options sought for alternative equipment that may be cheaper to install, run and maintain.

Public rights of way

Encompassing 178 km of routes away from vehicles, public rights of way offer opportunities for active travel within and on the outskirts of the city, in line with corporate objectives for sustainable choices. Rights of way assets include signs and gates. These are maintained through the general Highway Maintenance revenue budget. All asset data has been transitioned from the original system to the Confirm highway asset management system.

The rights of way strategy is supported by a capital budget for annual planned refurbishment, renewal and improvements, from funds through the Transport Development Management work and the Department for Environment, Food and Rural Affairs (DEFRA). In 2025-26, this budget was £100,000. The team actively seek additional external funding.

The council has published a Rights of Way Improvement Plan (ROWIP) which sets out proposed actions to improve the network.

Challenges and constraints

The service relies on outdated definitive map from 1966 which results in operational inefficiencies and legal vulnerability.

There has been an increase in claims based on 20 years use as a right of a way, which the council welcomes from an active travel perspective but which expands the network significantly with no corresponding increase in maintenance or staff budget. Where appropriate, the team will anticipate or agree claims to avoid expensive legal proceedings.

Future plans

There are good relationships and liaison with the area's stakeholder group and neighbouring authorities, which enables the strategy to move forward.

Future aims include:

- Revision of the ROWIP with neighbouring Bath & North East Somerset and South Gloucestershire Councils.
- Conversion of a vacant part-time role to a fulltime apprentice to boost staffing resource and grow in-house expertise.
- Continue to seek funding from external sources.
- Consolidate the definitive map by 2026/27 and aim for an update every 5 years.
- Explore options for increasing public awareness of the rights of way network, such as a monthly PROW feature on the council website.

Green highways

Green infrastructure has an important role in providing resilience to climate change and in improving the city for nature. Assets include verges and street trees. The Highway Maintenance revenue budgets cover the cost and the Parks service deliver the strategy for cutting verges and managing street trees.

In the longer term, verges could be managed to enhance biodiversity, and more street trees can be planted to provide shady, cooler streets as the environment becomes warmer. This requires a future strategy, funding and appropriate ongoing maintenance. There can be competing demands – for example, street trees provide shade but interfere with drainage infrastructure as roots expand to seek water.

Bristol, like other local authorities, has parcels of unallocated land which were originally set aside for highway purposes but never used. These spaces can be problematic in attracting unauthorised camps, litter, and fly tipping; the highway maintenance team and budget is used to deal with the issues in the absence of designated ownership.

Appendix 3: Actions from the 2019 Roadmap

Not met
Met/in progress
To be started

SAMP 2019 roadmap: summary of actions
Undertake consultation in advance of retendering of CONFIRM system to ensure the future asset management IT system supports the council's asset management strategy. This will feed into the data strategy (action 9)
Develop asset data strategy.
Define roles for managing and development of asset management system.
Agree data protocol for as-built data to go into CONFIRM.
Determine how pre-existing as-built data can be imported into CONFIRM. Depends upon action above, agree data protocol.
Agree data protocol for signage information. This should link to the signage plan (action 30) and data strategy.
Commission QA process. All new capital projects to go through QA process.
Review transport key performance indicators to ensure asset management performance monitoring supports transport strategy performance monitoring.
Prepare for and commence transport asset management reporting to Cabinet.
Analyse current and predicted demand for transport to inform policy to deliver transport strategy.
Develop cycle path management strategy.
Develop strategy for management of cycle hire infrastructure.
To develop effective deterioration and service impact models to help forecast future asset health.
To identify the most cost-effective technologies for monitoring asset condition, to inform investment decision-making.
Include asset management good practice in the professional development of relevant personnel.
Establish formal, regular lines of communication between departments to identify opportunities for efficiency such as shared projects. Should link to action for policy/tool for to decide when works should be scheduled together.
To minimise maintenance expenditure and disruption by maintaining the carriageway in a safe condition.
To maintain footway pavements in a safe condition.
To maintain cycle paths in a safe condition.
To maintain bus lanes
To maintain street furniture in a safe condition.
Publish Highway Maintenance manual.
Agree future carriageway inspection strategy, technologies, and programme.
Develop deterioration models for the carriageway.
Evaluate costs and benefits of service impact modelling for maintenance prioritisation.
Publish Highway Maintenance manual.
To integrate cycle network asset management decision-making with highways decision-making to minimise disruption to cyclists.
To ensure signage is relevant, legible, and complete.

Develop plan for management of signs and signage data. This should link to the signage data protocol.
To maintain lines and road studs to support road safety.
Complete placement of road gully sensors.
To maintain high gully availability at minimum whole-life cost and risk.
To improve the information available on asset status and condition.
To identify and manage the risk presented by bridges and structures.
To formalise the department's relationships with other bridge and highway structure owners and share inspection information.
To implement a streamlined process for stakeholder engagement.
To identify the most cost-effective technologies for monitoring asset condition, to inform investment decision-making.
Complete consolidation of existing structures asset data and perform gap analysis to inform remedial inspections. Should contribute to action 9, develop asset data strategy
Create framework to use results of biannual general inspections to model deterioration of structures and predict maintenance requirements.
Obtain budget for major outfall inspection and commence biannual inspections.
Create framework to schedule principal inspections by risk and statutory requirements.
Investigate possibility of transferring ownership of bridges and structures from Harbour to Transport. A wider review of asset ownership could also be considered.
Improve business case development process by streamlining stakeholder consultation process. This could link to the QA process.
Create framework and assign responsibilities to retain outputs from Approval in Principal process within asset management IT system.
Recommence monitoring of the Avon Gorge rockface (Parks responsibility)
To maintain street lighting and illuminated street furniture to support road and footway safety.
Complete safety and condition survey of street lighting and illuminated street furniture.
Implement a communications management system to monitor street lighting assets remotely.
Review maintenance strategy for bus stop infrastructure.
To maintain bus stop infrastructure in a safe condition with high availability.
To consistently evaluate the costs and benefits of high-friction surfaces and install them only where cost beneficial.
To apply lowest whole-life cost approaches to installing and maintaining high-friction surfaces.
Develop high-friction surface policy.
Develop specification for high-friction surface installation.
Record new and maintained high-friction surfaces in CONFIRM.
To agree an equitable cross-department funding arrangement for maintenance of high-friction surfaces.
Agree budget strategy for maintenance of high-friction surfaces
To minimise disruption by co-ordinating works to the carriageway where appropriate.
Develop decision-making policy/tool to decide when works will be scheduled together.

Appendix 4: Future aims

The asset strategies detailed in Appendix 2 support the Bristol City Council's Transport Strategy objectives, listed below:

Provide transport improvements to accommodate increased growth in **housing, jobs & regeneration** on an already congested network with complex movements from within and outside the city boundary.

Enable **equality** within an inclusive transport system that provides realistic transport options for all.

Create **healthy places**, promoting active transport, improving air quality, and implementing a safe systems approach to road safety.

Create **better places** that make better use of our streets and enable point to point journeys to be made efficiently.

Enable **reliable journeys** by minimising the negative impacts of congestion and increasing network efficiency and resilience.

Support **sustainable growth** by enabling efficient movement of people and goods, reducing carbon emissions and embracing new technologies.

1. Provide transport improvements for increased growth	
Obtain 'as-built' plans from developers at an earlier stage.	TDM
Refine the commuted sums process to ensure the longevity of new assets.	TDM
Establish a formal process for any departures from the agreed Transport Design Manual, particularly for materials and street furniture.	TDM/Engineering/ Highways
Support the renewal of traffic signal assets through developer contributions (commuted sums) and regional transport funding (CRSTS).	Traffic Signals
2. Inclusive and realistic transport options for all	
Consider maintenance and enhancement needs for Public Transport Infrastructure as part of a new Transport Investment Strategy.	Strategic Transport/Public Transport
Develop a Transport Investment Strategy that considers revenue streams from parking, the Clean Air Zone, and fines.	Strategic Transport
Explore options to increase public awareness of the rights of way network.	Rights of Way
Develop a Transport Movement Strategy to identify infrastructure requirements for strategic corridors over the next 5-10 years.	Strategic Transport
3. Healthy places: active transport, air quality and road safety	
Discuss creating a single maintenance strategy and budget for Vehicle Safety Restraint systems.	Structures/ Highways

Assess whether a written policy is needed for the installation of high-friction surfacing.	Road Safety
Investigate ways to minimise maintenance for safety cameras, such as using technology with fewer in-road sensors.	Road Safety
Explore new technology, such as vehicle remote sensors, for identifying road casualty data.	Road Safety
Develop a city-wide speed limit strategy.	Road Safety
Use funding to proactively improve historic design challenges such as on cycle lanes.	Highways
Support active travel by prioritising maintenance schemes on well-used footway routes.	Footways
Consolidate and update the definitive map for Public Rights of Way	Rights of Way
Revise the Rights of Way Improvement Plan (ROWIP) in collaboration with neighbouring councils.	Rights of Way
Work closely with Road Safety to identify safety critical signs and lines for works programmes.	Road markings/road safety
4. Better places - better use of streets, easier point to point journeys	
Explore setting a lifespan for street trees to avoid long-term maintenance problems.	Highways
Incorporate green roofs into all new bus stops.	Public Transport
Reduce the maintenance burden by decommissioning redundant equipment.	Traffic Signals
Analyse data from the recent signs and road marking survey to inform a future maintenance strategy.	Highways
Develop a Kerbside Strategy to manage kerbside space for uses like EV charging and cycle hangers.	Strategic Transport
Consider the design and maintenance needs for e-bikes, e-scooters, and on-street EV charging.	TDM
Review the results of a trial that devolved a portion of the road marking budget to the Parking services team.	Road markings
Use recent survey data to plan maintenance for parking-related signs and lines.	Road markings/Parking
Reduce the number of on-street parking payment machines to save costs and remove street furniture.	Parking
Develop a long-term plan for the enforcement of EV charging on streets with lamp post chargers.	Parking
5. Reliable journeys - minimising negative impacts of congestion and increase network reliability and resilience	
Analyse future resilience needs by gathering more data on geology, age, and climate change predictions for carriageways.	Highway asset management
Explore different material mixes for footway treatments to improve climate change resilience.	Strategic Highways
Work with the Flood team to develop more effective and lower-maintenance Sustainable Drainage Systems (SuDS).	Drainage

Encourage the creation of more SuDS and rain gardens through the transport development management process.	Flood risk
Continue to use data and lifecycle modelling to make smarter decisions for carriageway and footway maintenance.	Carriageways & Footways
Revisit the risk-based approach for managing the carriageway network, using multiple datasets.	Carriageways
Complete data collection on gulley silt levels to inform maintenance.	Drainage
Use flood risk data and other information to create a risk-based cleansing regime for drainage gullies.	Drainage
Review the flood management asset list to clarify responsibilities.	Flood risk
Use enforcement powers where necessary to ensure adequate maintenance of privately-owned flood management assets.	Flood risk
Transition all street works inspection records to the national Street Manager system to improve efficiency.	Network management
Carry out a feasibility study for a lane rental scheme.	Network management
Develop a coring programme to test the structural quality of utility reinstatements.	Network management
Ensure full or half-width carriageway reinstatements are carried out after utility works on protected roads.	Network management
6. Efficient movement of people and goods, reducing carbon emissions and embracing new technologies	
Reduce waste from carriageway maintenance that goes to landfill.	Highways
Upgrade illuminated signs and high masts to CMS and LEDs to lower energy costs and enable remote fault reporting.	Electrical Assets
Upgrade events equipment to reduce reliance on diesel generators.	Electrical Assets
CMS system to be fully automated to the Confirm asset management system, requiring zero human intervention.	Electrical Assets
Structural testing and inventory to be updated ready for new contract tender	Electrical Assets
Explore ways to store technical ‘as-built’ drawings on the asset management software system.	Asset management
Improve the automation of data flowing into the central asset management system.	Asset management
Expand the use of drones and other technology to assess the condition of structures.	Structures
Increase in-house knowledge by arranging for staff to shadow specialist consultants and contractors.	Structures
Stay informed about network requirements for autonomous vehicles.	Road Safety
Consider the potential future reduction of Variable Message Signs (VMS) as in-car data and guidance systems become more common.	Traffic Signals