Bristol City Council

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Local highways maintenance transparency report

Our highway network

Lengths of highway (km)			
A Road	*B and C roads*	*U roads*	*Total Roads*
128 km	*128 km*	*952 km*	*1209 km*

Our authority is responsible for managing and maintaining a comprehensive highways network to ensure safe and efficient travel for all road users. This network includes 1,209 km of roads, encompassing 128 km of A roads, 128 km of B and C roads, and 952 km of U roads.

In addition to roads, we oversee an extensive network of footways, cycleways, and other Public Rights of Way (PRoW), ensuring accessibility for pedestrians and cyclists. Our commitment extends beyond road surfaces to maintaining crucial infrastructure such as bridges, subways, street lighting, drainage systems, and traffic signals, all of which contribute to a well-connected and functioning transport system.

We continuously work to improve and maintain these assets, undertaking regular inspections, repairs, and upgrades to enhance safety and efficiency. Our teams also support sustainable transport initiatives, promoting cycling and walking as viable alternatives to car travel.

By effectively managing these assets, we aim to provide a safe, reliable, and accessible transport network that supports local communities, businesses, and visitors.

Highways maintenance spending figures

Highway maintenance spending							
Year	Asset Group	Capital Spend (£,000s)		Revenue spend (£,000s)		Estimate of % spent on preventative maintenance	Estimate of % spent on reactive maintenance
		DfT Funding	Local Funding	General Funding	Other Funding		
2024/25	**Total**	**17,062**	**6,862**	**4,769**	**2,044**	**77.84%**	**22.16%**
	Carriageways	5,172	1,033	1,318	0	82.48%	17.52%
	Drainage	661	0	265	0	71.42%	28.58%
	Footways	1,307	0	346	0	79.08%	20.92%
	Tree and Verge Maintenance	0	0	525	0	0.00%	100.00%
	Street Lighting	599	2,868	2,044	92	61.88%	38.12%
	Structures	7,791	2,960	243	0	97.79%	2.21%
	Traffic Signals	1,532	0	1,981	0	43.60%	56.40%
2023/24	**Total**	**11,865**	**10,517**	**3,989**	**1,815**	**79.41%**	**20.59%**
	Carriageways	4,349	990	916	0	85.36%	14.64%
	Drainage	572	0	74	0	88.59%	11.41%
	Footways	1,508	0	358	0	80.82%	19.18%
	Tree and Verge Maintenance	0	0	557	0	0.00%	100.00%
	Street Lighting	722	7,141	1,815	105	80.37%	19.63%
	Structures	2,847	2,385	98	0	98.17%	1.83%
	Traffic Signals	1,867	0	1,882	0	49.80%	50.20%
2022/23	**Total**	**9,134**	**8,980**	**3,950**	**1,668**	**76.33%**	**23.67%**
	Carriageways	3,534	965	743	0	85.82%	14.18%
	Drainage	396	0	312	0	55.97%	44.03%
	Footways	1,330	0	335	0	79.88%	20.12%
	Tree and Verge Maintenance	0	0	455	0	0.00%	100.00%
	Street Lighting	880	1,446	1,668	124	56.48%	43.52%
	Structures	1,913	6,570	138	0	98.40%	1.60%
	Traffic Signals	1,079	0	1,843	0	36.94%	63.06%
2021/22	**Total**	**6,425**	**6,291**	**3,789**	**1,572**	**70.34%**	**29.66%**
	Carriageways	3,754	1,793	767	0	87.85%	12.15%
	Drainage	102	0	117	0	46.65%	53.35%
	Footways	406	0	314	0	56.35%	43.65%
	Tree and Verge Maintenance	0	0	351	0	0.00%	100.00%
	Street Lighting	1,004	0	1,572	78	37.83%	62.17%
	Structures	616	4,498	245	0	95.42%	4.58%
	Traffic Signals	543	0	1,916	0	22.07%	77.93%
2020/21	**Total**	**8,028**	**3,175**	**3,984**	**1,785**	**66.01%**	**33.99%**
	Carriageways	5,024	746	960	0	85.73%	14.27%
	Drainage	158	0	216	0	42.34%	57.66%
	Footways	881	0	240	0	78.63%	21.37%
	Tree and Verge Maintenance	0	0	437	0	0.00%	100.00%
	Street Lighting	670	0	1,785	94	26.29%	73.71%
	Structures	673	2,429	101	0	96.84%	3.16%
	Traffic Signals	621	0	1,937	0	24.28%	75.72%

Additional information on spending

At Bristol City Council, we are committed to maintaining and improving our highway network, ensuring safe and efficient travel for residents, businesses, and visitors. Our highways maintenance funding is allocated into capital investment, which supports long-term improvements, and revenue funding, which covers routine and emergency maintenance. Within these categories, we strategically balance preventative maintenance—proactively enhancing infrastructure to reduce future costs—and reactive maintenance, which addresses urgent repairs.

Preventative Maintenance

Preventative maintenance plays a crucial role in keeping our roads and infrastructure in good condition, improving durability and reducing the need for frequent emergency repairs.

- Resurfacing: The removal and replacement of the existing surface, in order to restore the running surface and improve surface characteristics. In recent years we have resurfaced approximately 20,000 square metres of the network on average per year.
- Surface Dressing: A layer(s) of aggregate combined with one or more layers of binder to form a running surface laid over the existing surface. In recent years we have surface dressed approximately 200,000 square metres of the network on average per year.
- Micro Asphalt: A site-mixed, cold-applied asphalt surface course. A more eco-friendly alternative to hot asphalt (surface dressing). In recent years we have applied Micro Asphalt to approximately 30,000 square metres of the network on average per year.
- Slurry Seal: A thin layer of surfacing treatment used to waterproof the surface, repair minor imperfections, and extend the life of the footway. In recent years we have applied Slurry Seal to approximately 320,000 square metres of the footway on average per year.
- Pre-patching: A programme of foundation repairs to remove and replace sections of a carriageway prior to surface dressing. In recent years we have applied Pre-patching to approximately 30,000 square metres of the network on average per year.

By investing in these areas, we aim to extend the lifespan of our highway network, ensuring reliability and cost-effectiveness in the long term.

Bridges and Structures

Completed essential maintenance and component upgrades on bridges and structures, ensuring the safety and longevity of key transport links. In recent years we have maintained or upgraded approximately 15 key assets on average per year with costs in excess of £1 million.

Drainage

Upgraded drainage systems, helping to prevent water damage and surface water flooding, which can significantly contribute to road deterioration. Within the last 2 years approximately 200 Sustainable Urban Drainage Systems have been installed through planning application consultations.

Reactive Maintenance and Pothole Repairs

Despite our focus on preventative measures, some issues require immediate attention. Our reactive maintenance programme addresses urgent defects, with a particular focus on:

- Pothole repairs, which account for approximately 37% of reactive maintenance job types annually.
- Emergency repairs, including responses to damage from severe weather, subsidence, and unexpected infrastructure failures, which account for approximately 5-6% of reactive maintenance job types annually.

As well as the above we carry out reactive maintenance jobs on a wide range of defects, including bituminous surface damage, concrete surface damage, pre-cast concrete slabs (PCC slabs), pennant stone, stone setts, and tactile paving, alongside issues with drainage, street furniture, kerbing, signage, overgrowth, and street lighting.

We have a high focus on reactive maintenance for footways, notably modular paving, to provide a safe environment for pedestrians. Annually approximately 25% of our highway reactive maintenance is carried out on footways reflecting our position as an urban local authority.

While reactive repairs are essential for public safety, our priority remains reducing reliance on short-term fixes by increasing investment in preventative maintenance.

Estimate of number of potholes filled				
2020/21	2021/22	2022/23	2023/24	2024/25
2658	2464	2587	3832	4398

Bristol City Council does not operate a backlog of defects and or potholes. Any necessary repairs are undertaken within specified contractual timescales, which are monitored through KPIs.

Strategic Approach to Funding Allocation

The balance between preventative and reactive maintenance is determined through asset condition surveys, predictive modelling, and historical trends. By continuously analysing road conditions, we aim to allocate funding more efficiently to increase preventative maintenance, ultimately reducing costly emergency interventions.

Our approach includes:

- Using advanced data and road condition monitoring to identify early signs of deterioration.
- Investing in durable road materials, improving the lifespan of resurfaced roads.
- Implementing regular inspections to proactively address infrastructure concerns before they escalate.

By shifting more of our spending towards preventative maintenance, Bristol City Council is committed to delivering a high-quality, sustainable road network that meets the needs of our growing city.

Condition of local roads

Year	Percentage of A roads in each condition category		
	Green	Amber	Red
2020	28.9%	62.3%	8.6%
2021	27.5%	63.1%	9.3%
2022	26.2%	64.4%	9.0%
2023	22.8%	67.6%	9.4%
2024	21.5%	68.6%	9.9%

Survey data collected annually by Gaist Solutions Limited.

Year	Percentage of B roads in each condition category		
	Green	Amber	Red
2020	14.4%	75.0%	10.5%
2021	12.3%	75.4%	11.5%
2022	11.3%	76.1%	12.1%
2023	11.8%	76.3%	11.7%
2024	9.8%	77.8%	12.4%

Survey data collected annually by Gaist Solutions Limited.

Year	Percentage of C roads in each condition category		
	Green	Amber	Red
2020	16.7%	73.8%	8.6%
2021	14.7%	74.3%	9.0%
2022	13.4%	75.6%	9.9%
2023	11.3%	78.0%	10.0%
2024	11.9%	77.8%	10.3%

Survey data collected annually by Gaist Solutions Limited.

Year	Percentage of U roads in each condition category		
	Green	Amber	Red
2020	15.7%	66.9%	15.2%
2021	15.7%	67.1%	14.9%
2022	13.8%	68.7%	15.3%
2023	13.4%	69.6%	15.0%
2024	14.3%	70.9%	14.8%

Survey data collected annually by Gaist Solutions Limited.

Bristol City Council utilise Gaist Solutions Limited Condition Assessment surveys annually. These assess the condition of carriageways and footways using a grading system from 1 to 5, based on the severity and type of damage present. Each location is evaluated according to Gaist's detailed criteria, with the overall grade determined by the most severe damage type recorded within a given area.

To translate this grading system into the traditional Red, Amber, Green SCANNER technology categories the following condition grading principles are used:

- Grades 1 and 2 represent areas with minimal damage and correspond to Green status.
- Grades 3 and 4 indicate moderate damage and are classified as Amber status.
- Grade 5 signifies significant deterioration, requiring intervention, and is categorised as Red status.

	Grade 1		Grade 2		Grade 3		Grade 4		Grade 5	
	Area	Damage Area	Area	Damage Area	Area	Damage Area	Area	Damage Area	Area	Damage Area
Green	✓	✓	✓	✓	-	-	-	-	-	-
Amber	-	-	-	-	✓	✓	✓	-	✓	-
Red	-	-	-	-	-	-	-	✓	-	✓

This systematic approach ensures a consistent evaluation, enabling effective prioritisation of maintenance and intervention strategies.

Additional information on condition

Bristol City Council use Gaist's infrastructure modelling software to produce work schemes as part of our preventative highway maintenance planning. The software's ability to integrate multiple datasets enables a targeted approach to identifying areas requiring specific treatments, materials and ensuring resources are allocated effectively. These integrated datasets include:

- Network inspection hierarchy (frequency and prioritisation of inspection)
- Cycle routes
- Resilient network (routes vital to maintaining economic activity and access to key services during extreme weather emergencies and other major incidents)
- Winter maintenance routes (road gritting, snow clearance, and grit bins)
- Number of public enquiries
- Number of defects
- Condition reports
- Public service buildings or hubs (hospitals, doctors, schools, universities, and bus/train stations)

We can make data-driven decisions, improving the longevity and quality of the highway network while optimising maintenance budgets.

Plans

Overall strategy

Bristol City Council's previous Strategic Asset Management Plan (SAMP) for transport assets (2019) was at an early stage in asset management maturity. A new SAMP is in development in 2025 to reflect our current position and future direction. The SAMP will follow the principles and guidance from ISO5500, the international standard for asset management, outlining our direction on individual assets and how this aligns with our strategic goals.

Our bridge and structures strategy follows the use of the Structures Asset Valuation and Investment (SAVI) tool. It provides a condition based approach helping us make informed decisions about valuation, maintenance, and investment planning. We can evaluate the financial value of bridge and structure assets, ensuring accurate reporting, investment justification, and effective short-term maintenance planning while supporting long-term strategic infrastructure management.

In recent years we have launched our Street Lighting LED upgrade project which is a £12 million Bristol City Council funded initiative aimed at converting approximately 37,000 street lights to low-energy LED units by the end of 2025. The project aligns with Bristol's 2018 climate emergency declaration, aiming to reduce carbon emissions, energy consumption, and maintenance costs. Additionally, the upgrade includes a Central Management System (CMS), enabling remote control and monitoring of street lighting. This system allows dimming based on road usage, further reducing energy consumption and ensuring appropriate lighting levels throughout the night. We have also used this project as an opportunity to update our asset and inventory records in our asset management system. As part of every LED installation, our contractors conduct a full asset survey, listing materials, measurements and components, and electrical testing to ensure quality and reliability.

Bristol City Council use Gaist life cycle modelling reports for carriageways. These analyse the long-term costs and impacts of different maintenance strategies, based on our contractor rates and tailored criteria, including but not limited to:

- Inspection Hierarchy
- Cycle Infrastructure
- Resilient Network
- Winter Maintenance Routes
- Public Enquiries
- Defects Record
- Condition Inspections

This method enables highway managers to make informed decisions, balancing preventative and reactive maintenance requirements.

Independent audits demonstrated Bristol City Council as having low spend in comparison to other unitary authorities and our nearest neighbours (based on similar network types). Despite having a high total road length and high volume of motor vehicle traffic. These show the importance of having a robust preventative maintenance strategy which seeks to extend the

life of our assets. The results of the National Highways and Transport Network (NHT) survey show an overall satisfaction of above average with the condition of our network which supports our approach.

Further audits of the highways service concluded that the highway service is well managed on a day to day basis by knowledgeable and experienced staff who use established methodologies and tools recognised by the UK Highway sector as good practice.

Specific plans for 2025/26

Carriageway Preventative Maintenance

Bristol City Council prioritises preventative maintenance across the highway network, recognising that proactive investment helps extend the lifespan of road surfaces while reducing the need for more costly and disruptive interventions in the future. In situations where preventative maintenance if not the best engineering solution we will seek to continue to use that asset for as long as possible ensuring best value for money whilst ensuring safety of the public. Additionally, in order to maintain a strong and resilient foundation before carriageway surfacing works take place, we will invest a further in essential foundation repairs, such as pre-patching, which stabilise the underlying structure of the road and prevent deeper deterioration. By taking this approach, we aim to enhance the overall durability and performance of the highway network, reduce long term maintenance costs, ensuring that this essential infrastructure remains fit for purpose while delivering value for money.

Footway Preventative Maintenance

We have allocated £1.4 million to footway preventative maintenance, broken down as £900k for bituminous footways and £500k for modular footways. We utilise a depreciation model to guide investment decisions on bituminous footways employing programmes such as Slurry Seal to maximise the asset lifespan.

Bridges and Structures

Approved allocation of approximately £1 million per year for ongoing preventative maintenance across all our structures, including retaining walls and culverts. Currently, we are investing £16 million from Challenge Fund as part of the City Region Sustainable Transport Settlement (CRSTS) 1 to refurbish 8 identified New Cut River bridges, with completion expected by March 2027. Additionally, £11.6 million from the Community Infrastructure Levy funds are being spent on the New Cut River walls over the next 5 years. A £1 million asset investigation and condition study for the Frome Culvert is also planned. Looking ahead, we will soon be bidding for CRSTS 2 funding for the Saint Phillips Causeway Viaduct and Cumberland Basin road network.

Traffic Signals

We have upgraded 62 traffic signal sites by replacing halogen signal heads with more energy efficient LED units. We are aiming to upgrade a further 19 traffic signal sites within the next 10 months. Once finished, the programme is expected to deliver an average energy saving of 57% across all upgraded sites.

Average annual energy across 85 traffic signal upgrade sites		
Average energy halogen (kWh annual)	Average energy LED (kWh annual)	% Difference (rounded)
6124	2492	↓41%

Drainage

We have asset records for the 45,000 gullies within Bristol City Council and are working on a £300k programme to repair the 874 non-running gullies we have identified. This includes using innovative repair techniques such as using no dig solutions.

£700k has been allocated to a historic flooding site on Whiteladies Road to upgrade the drainage network as well as deliver improved pedestrian and cycle facilities.

Asset surveys have been undertaken for subway drainage to include detailed locations of gullies, manholes and carrier pipes, which will be used to prioritise future work programmes.

Streetworks

Street works

Bristol City Council manages street works coordination through a permit scheme established under the Traffic Management Act 2004. The scheme aims to reduce congestion and control disruptions by requiring permits for planned works on the highway. We take an active role in coordinating these works by managing road space for all users, identifying and addressing causes of congestion, coordinating planned and emergency works, and implementing contingency plans for unforeseen incidents.

We maintain quarterly coordination meetings with the 7 main statutory undertakers (utility companies) to discuss current performance levels and to benchmark them against other undertakers. Areas requiring improvement are highlighted and plans of action are devised to ensure that the level of compliance remains high. These meetings cover many aspects, from reinstatement inspections, site safety, permit compliance and future coordination of works.

Undertakers are subject to reinstatement inspections, reported each quarter, on a sample of their completed works. The number of inspections are based on their performance and may involve coring samples to check depth and quality of the reinstatement material layers.

Managing traffic and disruption

We monitor traffic levels and congestion through our traffic control centre, which was relaunched in 2017 as part of a new operations centre. The centre uses Intelligent Transport Systems (ITS) to manage the city's road network. At the heart of this system is the urban traffic control (UTC) system running SCOOT (Split, Cycle, Offset Optimisation Technique), which optimises traffic flow at junctions and crossings by collecting data from on street detectors. The system helps reduce delays, improve air quality, and provide reliable journey times, thereby supporting the city's infrastructure and services. We regularly revalidate traffic signal sites that run on SCOOT on a rolling programme and in response to changes on the highway as needed. We do this as traffic flows and behaviour can subtly change over time

due to many factors, including localised factors such as changes in nearby highway infrastructure, and also non-local factors such as housing developments changing traffic flows. Carrying out this programme of revalidation is important to keep our traffic signals running as efficiently as they possibly can.

Climate change, resilience and adaptation

Our project to replace 37,000 street lights to energy-efficient LEDs, which use 30-40% less power than traditional lighting, is expected to save up to £2 million annually in energy and maintenance costs. Energy savings are currently around £1.4 million since the start of the project, and this number will only increase as we install more LED units. The table below illustrates energy and emissions savings on this project based on monthly reports we receive from Power Data Associates Ltd.

Year	Energy (kWh annual)	% Difference compared to previous year	Carbon Emissions (CO2 tonnes annual)	% Difference compared to previous year
2024/2025	2,128,175	↓ 66.2%	475	↓ 66.1%
2023/2024	6,297,449	↓ 29.4%	1,402	↓ 24.7%
2022/2023	8,925,177	↓ 5.5%	1,863	↓ 13.8%
2021/2022	9,446,833	↓ 8.9%	2,161	↓ 16.9%
2020/2021	10,364,205	Not applicable	2,600	Not applicable

% figures have been rounded

The lanterns we remove will be reused where appropriate or recycled through the Lumicom recycling scheme in accordance with electrical component recycling guidance.

We are replacing 1120 halogen traffic signal heads with energy-efficient LEDs across 85 sites with Traffic Signal Grant (TSOG) funding. LED traffic signals offer improved reliability, visibility, and are expected to provide an average energy saving of 57% across all the upgraded sites. The TSOG funding complements our existing maintenance funded upgrade programme to cover all 385 traffic signal sites across the city. We use data from our asset management system to prioritise upgrades based on asset age and condition. With over 150 of the 385 sites past their 15 year design life, this upgrade programme will reduce maintenance needs and carbon emissions by approximately 47,000kg annually. The upgrade programme preserves existing infrastructure, minimises waste, and supports ongoing maintenance strategies. It also complements wider air quality initiatives, including real-time monitoring and smart traffic control technologies linked back to our operation centre.

Bristol City Council is trialling Brightly's Carbon Manager software to enhance its environmental reporting capabilities. This software tracks and reports on various operational aspects, including operatives, vehicle types and movements, plant types, material quantities, carbon values, and waste management. By comparing these metrics against embodied carbon values, the council aims to gain a comprehensive understanding of its carbon footprint. This initiative supports more accurate carbon accounting and helps identify areas for carbon reduction, aligning with Bristol's broader sustainability goals.

Our new Highway Maintenance contract terms emphasise the environmental responsibilities we expect from contractors. Contractors working on the highway network must ensure compliance with all relevant environmental laws, including those related to waste disposal,

greenhouse gas emissions, and handling hazardous materials. They are required to minimise the release of carbon emissions, air pollutants, and other harmful substances during their operations, considering factors such as material sourcing, transportation, work-related travel, and emissions from offices and equipment. Additionally, contractors must provide environmental management data about operatives, vehicle types and movements, plant types, material quantities, carbon values, and waste management. Contractors are also required to maintain a management system that ensures compliance with health, safety, and environmental legislation, and to supply this data upon request.

Additional information on plans

We take a proactive approach to highway maintenance when opportunities arise, integrating it with broader strategic capital works projects. For example, a strategic project may present an opportunity to incorporate carriageway resurfacing, with the associated areas and costs incorporated within the overall initiative rather than separately listed in highway maintenance figures above in this report. A notable example is the £6 million investment on the Portway, a scheme to provide bus and cycling improvements whilst at the same time an opportunity to apply long term carriageway and footway preventative maintenance and sharing of allocated road closures and diversions.

For detailed figures and costs associated with these strategic schemes, please refer to the relevant published decision pathway documents that can be accessed through the following link: https://democracy.bristol.gov.uk/.