

4 October 2024



Highways Asset Management

**Report of Alan Patrickson, Corporate Director of Neighbourhoods
and Climate Change**

Electoral division(s) affected:

Countywide

Purpose of the Report

- 1 To provide an update to Members of the Environment and Sustainable Communities Overview and Scrutiny Committee in relation to highways asset management service delivery.

Executive summary

- 2 Members will be provided with current data in relation to highways maintenance within the county together with relevant performance data.
- 3 The overall condition of the classified network remains consistent with previous years. Investment has been focused on the unclassified road network which has led to an improvement in the overall condition. The condition of the classified network remains above national average with a slight deterioration over previous years.
- 4 The percentage of footways that are classified as requiring maintenance is 31% (based on 2023/24 data). Investment into footway capital improvement projects has been paused following the announcement of central governments "digital rollout programme".
- 5 Structures overall are generally in 'fair' condition; however a number of structures are coming to the "end of their design life". This has resulted in an increase in the structures maintenance backlog figure.
- 6 Investment continues into replacing life expended streetlighting columns and is funded through streetlighting capital budgets.
- 7 Independent public satisfaction surveys demonstrates that the overall satisfaction in highways is good however the data from the most recent surveys has not yet been released.

- 8 DCC's Highways maintenance backlog is in the process of being recalculated as a consequence of a change in the reporting criteria and also as a consequence of hyperinflation within the construction industry.

Recommendations

- 9 Environment and Sustainable Communities Overview and Scrutiny Committee are recommended to:
 - (a) note the information provided in the report and the supplementary presentation.

Background

- 10 At the Environment and Sustainable Communities Overview and Scrutiny Committee held in October 2023, the committee received a report providing an overview in relation to highways in the county. The report contained data in relation to the condition of highway assets, maintenance backlog and public satisfaction. the data available was dated 2022/23.
- 11 It was requested by Members that a further highways assets management report would be provided and would include current data for 2023/24.

Highways Maintenance

- 12 The Highways Act 1980 sets out the main duties of a local highway authority in respect of highways maintenance. In particular, Section 41 imposes a duty to maintain the adopted highway at public expense.
- 13 The Highways Act does not specify the level of maintenance although national Codes of Practice offer guidance in line with best practice. The purpose of highway maintenance is to maintain the highway network for the safe and convenient movement of people and goods.
- 14 The highway network is the council's largest and highest value asset. It is used every day by nearly all County Durham residents and businesses together with many visitors. The highway network is therefore fundamental to economic and social activity in County Durham.

Service Delivery Model

- 15 The current service delivery model for highway construction, maintenance and design is via the in-house provision, which is supplemented as required with external resource, this is referred to as a mixed economy model. This comprises of an in-house Highway Services team supplemented by a competitively procured supply chain of external sub-contractors. Over 50% of Highway Services work is delivered via external resource with less than 50% by in-house staff.
- 16 In addition to highway maintenance, the Highway Services team delivers highway improvement and civil engineering works on behalf of other directorates within the council.
- 17 The Strategic Highways team undertake the client, policy, capital budget and asset management functions in relation to highway maintenance.

Inventory

- 18 The inventory is a database containing details of the individual assets that make up the highway network. It is vital to know what assets exist and where so they can be inspected, surveyed and maintained to appropriate service levels.
- 19 The 2023/24 inventory is summarised in the table below:

Asset	Unit	Adopted	DCC Unadopted	Private Unadopted	Total
Carriageway					
A	Km	417.14	0	0	417.14
B	Km	406.05	0	0	406.05
C	Km	695.48	0	0	695.48
Unclassified	Km	2,324.69	18	117	2,459.69
Sub-Total		3,843.40	18	117	3,978.40
Drainage					
Gullies	Number	110,633	1,371	3,864	115,868
Structures					
Road bridges	Number	487	0	0	487
Footbridges	Number	51	455	0	506
Street lighting					
Columns/ Lanterns	Number	83,676	0	0	83,676
Lit Signs	Number	5,737	0	0	5,737
Traffic Management					
Traffic lights	Number	69	0	0	69
Pedestrian crossings	Number	73	0	0	73
Unlit signs	Number	63,460	808	2,277	66,381

Highway Maintenance Plan

- 20 The Highway Maintenance Plan sets out service levels for safety inspections, service inspections, condition surveys, reactive maintenance and routine maintenance.
- 21 The main types of highway maintenance are:

Type of Maintenance	Description
Reactive	Responding to inspections, complaints, or emergencies
Routine	Regular consistent schedule, generally for carriageway and footway repairs
Programmed	Flexibly planned schemes primarily of resurfacing, reconditioning and reconstruction

Highway Safety Inspection Regime

- 22 The council is committed to ensuring that the adopted highway is maintained in a safe condition as far as reasonably practicable. All adopted roads and footpaths in County Durham are inspected by the team of Highway Inspectors at a frequency appropriate to their usage which varies between 2 weeks and 12 months. Defects are assessed against intervention criteria set out in the Highway Safety Inspection Manual and reactive repairs are undertaken to those defects which exceed the intervention criteria in accordance with the response times set out in the Highway Maintenance Plan.
- 23 The council's Highway Safety Inspection Manual and Highway Maintenance Plan are aligned with the National Code of Practice.
- 24 The council also rely on reports from the public to identify highway defects that may arise in between scheduled safety inspections. These should be reported to the Customer Services team by one of the following routes:
- (a) website: <http://www.durham.gov.uk>
 - (b) email: help@durham.gov.uk; or
 - (c) telephone: 03000 261000.

Condition Surveys

- 25 Condition surveys are primarily intended to identify deficiencies in the highway condition which, if untreated, are likely to adversely affect its long-term performance and serviceability.
- 26 Condition surveys help determine programmed maintenance subject to the Highways Asset Management Plan (HAMP) and available budgets.
- 27 The types of survey undertaken, and frequencies are as follows:

Asset	Survey	Frequency
A - Roads	Surface Condition Assessment for the National Network of Roads (SCANNER)	100% surveyed in one direction only annually
B - Roads		100% surveyed in one direction only annually
C – Roads		100% surveyed in one direction only annually
Unclassified Roads	Coarse Visual Inspection (CVI)	Minimum 25% annually

Footway Hierarchy 1, 1a, 2, 3, 4	Footway Network Survey (FNS)	Minimum 25% annually
Carriageway Hierarchy 2,3a & 3b	Skid Resistance – using Sideway-force Coefficient Routine Investigation Machine (SCRIM)	Annually Both Directions
Carriageway Hierarchy 4a and 4b		Not routinely undertaken
All locations	Vehicle Restraint Systems	On a 2-year cycle if more than 10 years old or a 5-year cycle if less than 10 years old
All highway structures with a span > 1.5m	Structures – General Inspections	Every 2 years
All principal road network and other significant structures	Structures – Principal Inspections	Frequency varies between 6 and 12 years depending upon risk assessment
Any structure identified through the general inspection or from reports	Structures – Special Inspections	As required
All structures on rivers subject to fast changing environment or deep water	Underwater Inspections	Every 2 years or following severe flood conditions

Highway Asset Management Plan

- 28 The HAMP sets out the council's long-term plan for managing the highway asset by applying programmed capital maintenance subject to available budgets to maintain the condition of the highway.
- 29 The HAMP applies asset management principles to ensure that the right maintenance treatment is selected at the right time to ensure a safe, serviceable and sustainable highway network.
- 30 The HAMP aims to minimise whole life costs, but this is not always possible as budget constraints may result in not all the right treatments being undertaken at the right time particularly where there is an existing maintenance backlog. In this case the budget is prioritised based on the following criteria:
- (a) safety;
 - (b) return on investment; and
 - (c) network hierarchy.

- 31 The council was one of the first highway authority in the United Kingdom to achieve British Standard BS ISO 55001:2014 Asset Management in 2015 and this quality management system underpins the council's asset management approach.
- 32 Highways continue to maintain accreditation in a full suite of integrated management systems including Asset Management, Quality, Collaboration, Environmental and Health and Safety. This demonstrates our continued commitment to the benefits of embedded management systems.

Condition

- 33 Condition is summarised as follows for the major asset groups:

Asset	Description	Performance						Good Condition Target	Fair Condition Target
		2018/19	2019/20	2020/21	2021/22	2022/23	2023/24		
A – Roads	% where maintenance should be considered	2.6%	3.0%	3.1%	3.7%	2.6%	2.8%	0.0%	4.0%
B – Roads		4.7%	3.3%	3.0%	3.3%	2.9%	3.2%	0.0%	4.0%
C – Roads		3.7%	2.3%	2.6%	3.5%	2.4%	2.9%	0.0%	4.0%
Unclassified Roads	% where maintenance should be considered	21.0%	21.3%	22.5%	25.0%	23.0%	17.0%	0.0%	8.0%
All Roads	% where maintenance should be considered	14.1%	11.7%	11.1%	16.15 %	14.9%	11.3%	0.0%	6.4%
Footways	% structurally unsound	21.5%	20.9%	22.5%	31.0%	31.0%	Not Known	0.0%	5.0%
Structures	Bridge Condition Index – Principal roads	80.7	81.1	82.0	85.0	85.3	85.3	100.0	95.0
	Bridge Condition Index – Non-Principal Roads	79.9	80.1	81.0	85.0	85.5	85.5	100.0	95.0
	Other (using form of Bridge Condition Index)	66.0	66.0	66.0	80 83.9	79.9 83.7	79.9 83.7	100.0	85.0
Street Lighting	% columns > 40 years	13.3%	13.9%	14.1%	14.0%	15.5%	15.5%	0.0%	5.0%
	% lanterns > 20 years	15.8%	15.3%	15.4%	11.6%	9.0%	9.0%	0.0%	5.0%
	% lit signs where replacement should be considered	17.1%	17.1%	17.1%	16.8%	16.6%	16.6%	0.0%	5.0%

- 34 The good condition target represents where the maintenance backlog will be zero with no defects. This is an ideal theoretical target which is not realistic in practice.
- 35 The fair condition target represents a realistic target of acceptable condition subject to available funding.
- 36 The figures above illustrate the percentage of structural maintenance required to improve the road network. The classified road network is within target, but the unclassified network and our footways remain a key priority.

Highway Structures Condition

- 37 The condition of the bridge stock is measured by the use of a Bridge Condition Indicator (BCI). This provides a measure of the physical condition of the highway bridge stock.
- 38 The annual condition is determined by improvement works carried out during the year together with the annual inspection of the stock undertaken that year which will determine its rate of deterioration.
- 39 The BCI scores range from 100 (best possible condition) to 0 (worst possible condition) and can be interpreted broadly as the “percentage service potential” of a structure. Thus, a value of 100 implies that the structure has retained 100% of its service potential; a value of 60 implies that the structure has lost 40% of its service potential; while a value of 0 implies that the structure is no longer serviceable.
- 40 The following table explains the range of BCI scores in more detail:

BCI Range	Comments
<u>$90 \leq x \leq 100$</u>	Bridge stock is in a very good condition. Very few bridges may be in a moderate to severe condition.
<u>$80 \leq x < 90$</u>	Bridge stock is in a good condition. Some bridges may be in a severe condition. Potential for rapid decrease in condition if sufficient maintenance funding is not provided. Minor to moderate backlog of maintenance work.
<u>$65 \leq x < 80$</u>	Bridge stock is in a fair condition. A number of bridges may be in a severe condition. Maintenance work historically underfunded and there is a moderate to large backlog of maintenance work. Essential work dominates spending.
<u>$40 \leq x < 65$</u>	Bridge stock is in a poor condition. Many bridges may be in a severe condition. Maintenance work historically significantly underfunded and there is a large to very large backlog of maintenance work. A significant number of structures likely to be closed have temporary measures in place or other risk mitigation measures. Essential work dominates spending.
<u>$0 \leq x < 40$</u>	Bridge stock is in very poor condition. Many bridges may be unserviceable or close to it. Historical maintenance work grossly underfunded and a very large maintenance backlog. Only essential maintenance work performed. Many structures likely to be closed have temporary measures in place or other risk mitigation measures. All spend likely to be on essential maintenance.

- 41 Durham County Council uses Bridge Condition Indicators. The severity, extent and priority of defects on highway structures are recorded as part of the principal and general inspections which are used to produce Condition Indicators for individual structural elements on a bridge, for a bridge as a whole and finally for the overall inventory of highway bridges.
- 42 The overall average condition of the bridge stock is less than fair however additional funding was approved in financial year 2023/24 to develop feasibility studies and detailed design on the red RAG rated top 10 priority structures. The £5 million investment will be utilised through financial years 2024/25 and 2025/26. Additional capital investment will be required to fund the actual construction works.

Footway Condition

- 43 Investment into footway capital improvement projects has been paused following the announcement of central governments “digital rollout programme”. Extensive broadband installation continues to impact on the footway network and until this programme nears completion footway funding has been reallocated to other areas, including the Unclassified network. Safety critical footway repairs have continued however in the longer-term additional investment will be required when the capital footway maintenance programme is reintroduced.
- 44 Cyclic safety inspections continue to be carried out at specific frequencies that are determined by a number of local factors including traffic volume and composition, use with particular reference to the vulnerable, importance of the route to access local facilities, accident history and traffic sensitivity.
- 45 Safety inspections are undertaken by a team of 16 Highways Inspectors who complete over 11,000 cyclic safety inspections each year throughout the County. The frequency is identified in the Highway Safety Inspection Manual after taking into account the factors detailed above.

Category	Name	Description	Frequency
1a	Prestige Walking Zone	Very busy areas of towns and cities with high public space and streetscene contribution	2 weekly
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes.	1 month
2	Secondary Walking Routes	Medium use routes through local areas feeding into primary routes, local shopping centres.	3 months

Category	Name	Description	Frequency
3	Link Footways	Linking local access footways through urban areas and busy rural footways.	6 months
4	Local Access Footways	Footways associated with low use, short estate roads to the main routes and cul-de-sacs.	1 year









- 46 The Highway Inspector will then apply a risk-based approach to initiating a repair of the identified defect based on their local knowledge, the number and composition of road users and the risk of injury. The defect is then identified for repair within agreed response times as detailed in the Highway Safety Inspection Manual.
- 47 Footpath inspections assist in the development of future capital footpath works alongside the Footway Network Surveys, reported CRNs, third party highway claims and member queries.
- 48 Additional revenue budget has been allocated to footpath repairs to ensure they remain safe and serviceable; consideration will be given to reimplementing the capital footway replacement schemes once the digital broadband install programme is nearing completion.

Maintenance Backlog

- 49 The highway maintenance backlog is the value of capital maintenance required to bring the highway infrastructure assets to a good, or 'as new' condition.
- 50 DCC's backlog figure has increased, this is as a consequence of a change in the reporting criteria and also as a consequence of hyperinflation within the construction industry. Significant debate continues both nationally and across the region regarding the calculation of the figure.
- 51 The construction industry has faced "unprecedented levels of demand" with the shortage of product availability placing significant pressure on civil engineering projects at a local and national level. A perfect storm of Brexit, Covid 19, high levels of demand, global conflict, rising oil and gas prices have combined resulting in inflation running at its highest level for 10 years.

Public Satisfaction

- 52 The Council participates in the National Highways & Transportation (NHT) Public Satisfaction Survey, which is undertaken by IPSOS/MORI. In 2012 it was agreed that we would participate biennially.
- 53 These public satisfaction surveys have shown that a well-maintained highway network is very important to residents.
- 54 Durham's theme scores are generally very favourable, unfortunately the data for 2023/24 is not yet available, the most recent data is shown below (2021/22):

Theme	Description	Score	NHT Average	Trend	Gap
	Overall	52%	50%	-2%	2%
	Accessibility	65%	68%	-6%	-3%
	Communications	45%	46%	-6%	-1%
	Public Transport	49%	51%	-7%	-2%
	Walking/Cycling	51%	51%	-3%	0%
	Tackling Congestion	49%	44%	-1%	5%
	Road Safety	51%	52%	-2%	-1%
	Highway Maintenance	47%	46%	-2%	1%

Budgets

- 55 The table below shows the budget allocation for capital highways works 2023/24, and a comparison with previous years:

Funding Stream	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	£ millions					
Local Transport Plan	9,564	9,564	9,564	6,596	6,596	6,596
Incentive Fund	2,008	1,992	1,992	1,649	1,649	1,649
Pothole Fund	1,297	662	8,448	6,596	6,596	6,596
Additional Highway Maintenance Fund	5,269	-	-	-	-	-
Local Authority Funding	7,486	8,864	6,431	9,100	13,410	20,156
Total	25,624	21,082	26,435	23,941	28,251	34,997

- 56 As Local Transport Plan (LTP) settlements have remained steady for a number of years and as a consequence of hyperinflation the actual benefit from investments have reduced. As an example, in some areas of construction, inflation has increased by up to 40%, this has the net effect of reducing the amount of work delivered on the ground. With the worth of capital budgets reducing, the condition of the highway network continues to deteriorate resulting in increased revenue costs and an increase in the highways maintenance backlog.
- 57 In the current financial climate, it is vital that we continue to align our available maintenance budgets, where they will have the greatest impact.

Investment

- 58 In order to make improvements to our highway network, there will always be a need for high levels of funding. Using the nationally accredited lifecycle modelling toolkits, produced by Highway Maintenance Efficiency Programme (HMEP), the level of funding can be determined.
- 59 The current investment levels are allowing our classified carriageway asset to remain in a reasonably steady state, albeit a slight decline in 2023/24 whilst investment is focused into the unclassified network.
- 60 In 2022-23 it was recognised by the Council that the condition of its A, B, and C network was slightly better than the national average whilst the Unclassified network condition was worse. The Council agreed to the provision of an additional £8.8 million of investment into the Unclassified network over a 3-year period. So far, this investment has reduced the percentage of network that requires investment from 23% to 17%. This trend is expected to continue in financial year 2024/25 and bring the condition of the Unclassified network in line with the national average.

Department for Transport's Incentive Fund

- 61 The council continues to benefit from the maximum Band 3 efficiency rating under the DfT's Incentive Fund, this rating helps ensure the council maximises funding from the DfT's Incentive Fund.

North East Combined Authority

- 62 Following the introduction of the North East Combined Authority (NECA), May 2024, Durham continue to work collaboratively with the region. As the combined authority establishes itself it is difficult at this point to understand the benefits Durham's highways network will achieve but Durham is well placed to influence decision making.

Net Zero Roads

- 63 The Council has continued to support and introduce environmental initiatives to reduce carbon emissions. Working with Rainton Construction our framework surfacing contractor to develop new road surfacing techniques that incorporate plastic and rubber crumb. More recently as part of our net zero roads initiative working alongside Rainton Construction and Low Carbon Materials Durham have become the first authority in the UK to use net zero road surfacing within its road resurfacing programme. This new type of asphalt incorporates aggregate designed to lower the carbon footprint, this new material will play a key role in increasing the authorities carbon savings.

ROWIP 4

- 64 The introduction of the Rights of Way Improvement Plan (ROWIP 4) includes the councils ambitious plans to improve and develop footpaths, bridleways and byways. The strategic objectives of the plan are to:
- (a) enhance the network so it is fit for the 21st century;
 - (b) promoting a network that contributes to the green economy;
 - (c) empowering communities and individuals to “move more”; and
 - (d) ensure the network is accessible to people of all abilities.
- 65 Funding the aspirations of the plan will be critical to its success, capital funding has been secured whilst key stakeholders and members have the opportunity to contribute and make a difference.

Artificial Intelligence

- 66 Highways have introduced Artificial Intelligence (AI) technology into their fleet of Highway Inspectors vehicles, this is starting to provide the following benefits:
- (a) assist with defect identification, assessing network condition and ultimately scheme identification;
 - (b) daily monitoring of condition;
 - (c) reduces the number of site visits;
 - (d) significant fuel cost and staff time savings; and
 - (e) robust defence against third party public liability claims

Conclusion

- 67 The report provides an update on how highway maintenance is managed and delivered in County Durham.
- 68 This includes the highway inventory, condition, maintenance backlog, funding and performance.
- 69 The report also provides an update on recent initiatives introduced in Highways.

Background Papers

None

Other useful documents

None

Author(s)

Paul Anderson

Tel: 03000 268105

Appendix 1: Implications

Legal Implications

Durham County Council, as the local Highway Authority, has a statutory duty under the Highways Act 1980 to maintain the adopted highway at public expense.

Finance

As detailed in the report.

Consultation

None.

Equality and Diversity / Public Sector Equality Duty

None.

Climate Change

Highways continue to explore opportunities to reduce waste, save energy and reduce carbon emissions.

Human Rights

None.

Crime and Disorder

None.

Staffing

Highway maintenance is delivered by the Council's in-house Highway Services team supported by a supply chain of competitively procured external sub-contractors.

Accommodation

None.

Risk

None.

Procurement

External sub-contractors are procured through a competitive tendering process which is reviewed on a regular basis to ensure value for money is achieved.