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Transport for Buckinghamshire

Carriageway & Footway Maintenance Schemes

Introduction

This report builds on a report and presentation given to Aylesbury Vale District Council's Environment and Living Committee in 2016. The original report focussed on carriageway scheme prioritisation, this report refreshes that information and includes commentary on footway maintenance and safety inspection and repairs.

The County Council's Highway Infrastructure Asset Management (HIAM) Policy describes the principles adopted to achieve the authority's strategic objectives and the HIAM Strategy sets out how this Policy is achieved by taking a systematic approach that seeks to deliver most efficiently and effectively over the long term.

The works programmes developed are the outcome from the asset management planning process. Works programmes are therefore aligned to the strategy and optimised to achieve the performance targets and deliver the best value for money.

The Department for Transport's Incentive funding self-assessment questionnaire encourages authorities to develop longer term programmes of works which are prioritised to best achieve the strategic objectives of the organisation. Having these longer term programmes allows authorities to programme work efficiently to give best value and to inform the public and other stakeholders of future works improving satisfaction.

TfB also takes a balanced strategy to determining the carriageway programme, this aims to produce a mix of treatments targeted at both preventative treatments which offer the best value for money in the longer term and deeper resurfacing work to repair those roads which are not in an acceptable structural condition.

In line with the national Code of Practice (Well Managed Highways) TfB operates a programme of safety inspections of the highway to identify defects. Defects in excess of certain thresholds are risk assessed and prioritised for repair based on the danger they pose to users of the highway. Very dangerous defects could be repaired immediately or within 2 hours and those which are very unlikely to cause injury or accident may be included in future programmes of work. TfB also has frequent contact from the public identifying potential defects which are inspected and repaired in accordance with the same risk assessed principle.



Our Network

There are over 3200km of carriageways in Buckinghamshire, the majority of which are low use rural roads and estate roads. In contrast, the majority of traffic uses our more important A and B class roads. The classification system is historic and difficult to amend. TfB has therefore categorised all of our roads into a Maintenance Hierarchy. This reflects the actual use and importance of the roads and allows us to target our limited budgets on the roads which are the most important. The table below shows in broad terms how the hierarchies have been determined. In a few cases some Unclassified roads sit in the highest hierarchies. The pie charts below show how the carriageways are split by Classification and Hierarchy.

Hierarchy Category	Hierarchy Name	e General Description		
2	Strategic Route	The Most Heavily Trafficked generally A roads		
3a	Main Distributor	Other heavily trafficked roads		
3b	Secondary Distributor	Lightly trafficked A Roads, Most B Roads, busy C Roads and traffic-sensitive bus routes		
4a	Local Interconnecting Link Roads	Most other C roads and non traffic-sensitive bus routes		
4b	Local Access Roads	Roads providing local access		





In addition to the carriageways we also have 2200km of footways. These are also split into four hierarchies ranging from Primary and Secondary Walking routes to linked and local access footways. We also have a number of estate and remote footways which are currently being assessed.

Network Conditions

Road condition is measured for the classified road network using nationally recognised methods which record the condition of sections of road as either red (worst), amber or green (best). Due to the timing of the surveys, they inevitably lag a little behind the actual condition, but the impact of increased investment is now becoming clear with steady improvements across all classifications of roads over the last 5 years as shown in the table below.

	2013			
	Red	Amber	Green	
A	6	24	70	
В	7	30	63	
С	8	32	60	

2018					
Red	Amber	Green			
4	26	70			
3	26	71			
5	29	66			

For the Unclassified roads the survey used is different and only records roads in poor or adequate condition. In 2013/14 33% of Unclassified Roads were in poor condition. This had improved to 29% in 2018/19.

For our main roads our condition is similar to our neighbours, however, overall our Unclassified roads are worse than our neighbours.

For our footways overall around 20% are in poor condition although for our more important footways over 90% are in good or fair condition.



Development of the Programmes



Once the candidate schemes have been identified using various technical data, including our collected condition data, a period of consultation is undertaken. As well as other teams in TfB, each County Councillor and his Local Area Technician (LAT) have a meeting to discuss the priorities for all roads in their respective Division. Alongside recommendations and suggestions for schemes in their division, Members are provided with information and maps for the works undertaken in the Division, the technical condition of roads, customer contacts, defects repaired and other information which is available. Most members also visited sites often with their LATs either before or after the meetings.

For the more heavily trafficked higher hierarchy roads Members are provided with a list of potential road repair schemes for their division over the next 3-4 years for their comment and input. For local roads Members, assisted by Officers, determine their local priorities and lists of schemes in priority order are created and circulated.

Schemes on the Strategic Network are prioritised using multi-criteria analysis that considers each scheme's contribution to achieving the corporate objectives. The prioritisation criteria listed below are used to develop a Value for Money ranking for each scheme:

- Hierarchy
- Condition Data
- Requests from the Public
- Reactive spend
- Insurance Claims

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• Safety (skidding resistance)

A four year rolling programme is developed taking account of consultation feedback, engineering judgement and coordination with other programmes. County Councillors regularly liaise with local stakeholders and the prioritisation process takes account of customer feedback and contact throughout the year.

For footways our condition data is more crude and there are fewer defects and customer contacts to consider. Therefore, candidate schemes are generally identified through the consultation process with local Members and their LATs. They are prioritised in a similar manner to the carriageway schemes and a four year rolling programme is developed.

Capital Maintenance Programme Overview

Budgets are typically £15M per Annum for carriageways and £1.5M per annum for footways. In addition smaller "plane and patch" programmes are also funded. In 2018/19 one off funding from the DfT allowed a larger plane and patch programme in excess of £4M.

The overarching strategy is for Strategic Roads to remain at their current condition (steady state) and to target remaining funds at the Local Roads which are, in general, in a worse condition. The developed programme of work balances preventative treatments with the need to repair roads which have failed. The approach is informed by data, a requirement of the DfT's questionnaire, but also ensures BCC's Members and TfB Local Area Technicians (LATs) are fully involved in decision making and that localism is at the core of the way we develop and implement our programmes. The balanced approach has been shown to give the best overall value for money in the longer term when compared with either a worst first or preventative maintenance only approach.

TfB also tries to ensure that the budget is spent across the County although the more heavily trafficked roads in the south of the County generally attract slightly more spend as they deteriorate more quickly.

In 2019 there will be approximately 58 Local Road schemes and 32 Strategic Road schemes, although this is subject to detailed design and assessment. A plan showing the indicative 4 year rolling programme is included as Appendix 1. It must be emphasised that this programme is subject to annual review and changes to budget so amendments to the programme are inevitable. We are currently planning 21 footway schemes around the County.

Optimising the Programme

Programmes are reviewed with our Supply Chain and opportunities for long term integration and collaborative working are identified and exploited whenever possible to deliver efficiencies and to minimise the occupation of the network.

The annual programme of works is delivered following the principles below:

- To minimise disruption on the network
- Maximise opportunities for collaborative working between works programmes



- Offer the opportunity to integrate larger and smaller scale works.
- To provide collaboration opportunities for smaller scale maintenance minimising the number of road closures and reducing traffic management costs ("Fence to Fence" approach).

Typical Indicative Programme Delivery Dates:

Treatment	From	То	
Resurfacing	May	October	
Surfacing Dressing Preparatory Work	April	May	
Surface Dressing	May	July	
Microsurfacing Preparatory Work	May August		
Microsurfacing	July	October	
Plane and Patch	April	September	
Jointing	August	September	
Footways	September	March	

Reactive Maintenance

TfB operates a programme of safety inspection on all highways. The establishment of an effective regime of inspection, assessment, recording and prioritisation of defect repairs is a crucial component of highway maintenance, providing a robust framework to address key objectives to maintain the highway in a safe and serviceable manner, as required by Section 41 of the Highways Act 1980, and is consistent with the overall Asset Management Strategy. These inspections involve a driven site inspection where defects (not just potholes) are recorded, risk assessed and prioritised for repair. The table below shows the inspection frequencies for different hierarchies of roads and footways.

Carriageway Hierarchy Classification	Frequency of safety inspection	Hierarchy Category
1	Not currently used	
2	Monthly	Strategic Road
3А	Monthly	Main Distributor Road
3B	Monthly	Secondary Distributor Road
4A	Quarterly	Local Link Road
4B	Annually	Local Access Road

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Footway H Classification	lierarchy	Frequency of safety inspection	Hierarchy Category
1		Monthly	Primary Walking Route
2		Quarterly	Secondary Walking Route and Safer Routes to School
3		Annually	Linked Footway
4		Annually	Local Access Footway

Each defect above certain thresholds is risk assessed and a category assigned which dictates the response to be made. This is shown in the table below:

Cat 2L	N/A	Consider repair within future programmes of planned maintenance works
Cat 2M	28 DAYS	No temporary repair necessary. Attend and permanently repair within 28 working days
Cat 2H	5 DAY	Attend within 5 working days and make safe or permanently repair. If repair is temporary then raise additional P3 defect for permanent repair within 28 working days
Cat 1	2 DAY	Attend within 2 working days and make safe or permanently repair. If repair is temporary then raise additional P3 defect for permanent repair within 28 working days
Emergency	2 HOUR	Attend within 2 hours and subsequently make safe or permanently repair. If repair is temporary then raise additional P3 defect for permanent repair within 28 working days

Whilst the number of defects is generally decreasing the number occurring is still high and is very weather dependent. Over the last 6 months TfB have repaired 19,705 defects including street lights and less urgent repair. The table below shows the more urgent defects from the last 6 months. These will predominantly be carriageway defects.

	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19
Cat 1 defects						
repaired (2 days)	82	118	81	140	114	48
Cat 2H defects						
repaired (5 days)	956	1042	750	1059	1504	1229
2 and 5 day defects						
repaired (combined)	1038	1160	831	1199	1618	1277







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