



Flintshire County Council

Highway Asset Management Plan

2024 - 2029

Foreword

The council's highway network is a crucial asset, integral to the daily lives of our residents and vital to the economic and social wellbeing of the area. Whether it's travelling to work, attending school, accessing services, or enjoying leisure activities, our roads, footways and highways infrastructure are an essential part of daily life.

“Maintaining our highway network to a safe and appropriate standard is a significant challenge, particularly in the face of difficult financial times. It is essential that we manage our highways infrastructure efficiently, balancing immediate needs with long-term sustainability. We must ensure that our investment today meets the demands of tomorrow, delivering value for money whilst ensuring the safety and usability of the network.

This Highway Asset Management Plan (HAMP) outlines our strategic approach for managing the council's highway assets over the next five years. The highway infrastructure asset is a significant and diverse asset including carriageways and footways, bridges and structures, street lighting, traffic signals and drainage.

Developed in accordance with national guidance, the Council is committed to the principles of recognised best practice in highway asset management to enable informed decisions to be made about the levels of investment and maintenance funding required, which will assist us with targeting our resources to where they can be most effective. This plan is the result of careful planning and analysis, taking into account the external challenges we face, such as the impact of the changing climate, budget constraints and limited resources. It is therefore imperative that we adopt a long-term approach and ensure that funding is spent in the most efficient and cost-effective way. Our commitment remains clear: to provide a safe, effectively maintained and well managed highway network that supports the economic prosperity of Flintshire.

Despite the current financial challenges, we will continue to prioritise the needs of our communities and ensure that our highway assets remain fit for purpose, now and in the future.”

Chief Officer, Streetscene & Transportation

Document Control

Version Number	Amendments Made	Date
v1	Nil – Original	09 September 2024
Next Review Due	Stage 2 consideration (tbc)	September 2026

Council Approval

Version Number	Council Committee	Date
v1	Cabinet (tbc)	14th October 2024

Responsibility for the Plan

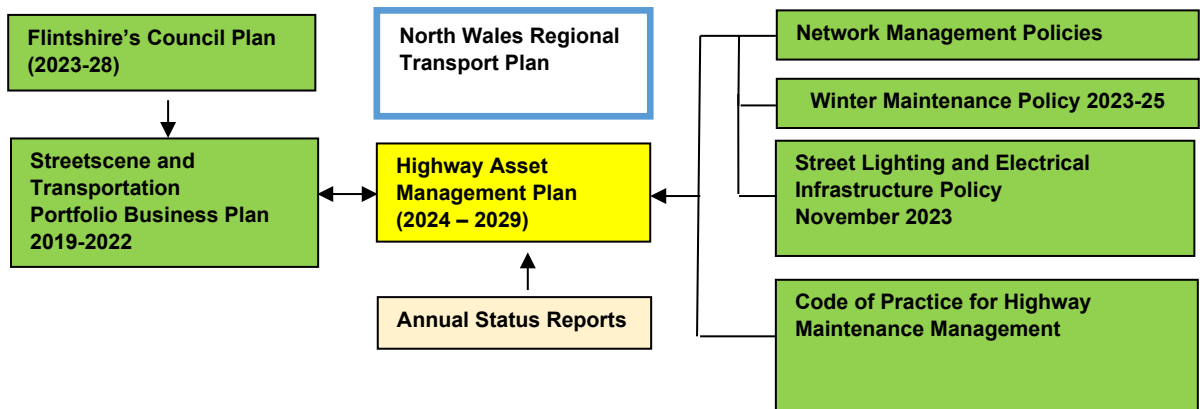
The responsibility for the delivery of and updating of this plan are shown below

Council Officer	Responsible for
Mr Barry Wilkinson	Delivery of the plan
Mr Barry Wilkinson	Updating of the plan

References

1. CSSW Highway Asset Management Planning - Recommended Practices.
2. Code of Practice for Highways “Well Managed Highway Infrastructure”, October 2016

Relationship with other Council Plans and Strategies



Summary

The council's plans for the highway asset for the period 2024 to 2029 recognise the financial constraints the council is working within. The plan targets ensuring user safety and then mitigating against deterioration. A concerted effort to reduce defects on roads will be the priority for 2024 to 2026. At the end of this period a review will be undertaken to determine if priority works are required of bridges (scour protection and strengthening) and lighting column replacement.

2024 to 2026

Carriageways: *target reduction in defects and limit deterioration*

- Annual funding of approx. £900k will be invested in surface treatments, patching and minor repairs
 - Repair of approx. 3,500 defects identified from routine inspection
 - Patching approximately 8,000 sqm of road each year
 - Surface treatments on approximately 7.6km of road each year
- Annual funding of approx. £500k on the repair of additional carriageway defects
 - Repair of additional defects approx. 7,000 per annum

Footways: *condition may deteriorate over the plan period*

- Approximately £100k p.a. will be invested in patching and slurry surfaces for footways
 - Patching approximately 1,300 sqm of footway each year
 - Slurry treatment, approximately 12,000 sqm of footway per year.
- Annual funding of approx. £150k on the repair of footways defects
 - Repair of approx. 1,500 footway defects per annum

Street Lighting: *manage column condition*

- Annual funding of £150k will be invested in life-expired columns identified by structural testing
 - Aim will be to maintain the current level in need of immediate replacement
- Annual funding of approx. £150k on the repair of street lighting faults
 - Repair defects to current standard, repairing approx. 1,500 per annum

Structures: *reduce the number of structures in a very poor condition*

- Annual funding of approximately £245k
 - Undertake refurbishment works to identified structures in very poor condition
- Flintshire Bridge Maintenance
 - The Flintshire Bridge has a detailed maintenance plan which has been approved and requires funding.

Traffic Signals, *continue to maintain in an operable state*

- Annual funding of approximately £150k.
 - Undertake planned works to traffic signals in poor or failing condition

Road Marking, *maintain markings in a legible condition*

- Annual funding of approximately £180k.
 - Remark of illegible markings identified by condition survey
 - Instigate cyclic remarking regime

2027 to 2029

At the end of 2026 a review of the HAMP will be undertaken. The review will consider the results of work to investigate if scour protection works are required at certain bridges, whether some bridges need strengthening and whether there is a need to increase investment in the replacement of aged street lighting columns. The effectiveness of the strategy between 2024 and 2026 in reducing the level of carriageway detects and minimising deterioration of all assets will be considered. Stage 2 of this plan will be published based on this assessment.

1. Introduction

This plan sets out the council's plans for our highway assets for the period 2024-2029.

Purpose

The purpose of the HAMP is to:

- Define the service standards that users can expect
- Explain the strategies to be implemented to achieve these standards

Context

This plan has been developed in accordance with the CSSW recommended highway asset management planning practices ⁽¹⁾ and the other council plans and strategies shown above. The plan is consistent with the council's corporate approach to asset management.

The standards, targets and spending assumptions contained within this HAMP will be monitored and an annual status report produced, which will be provided to senior management and members along with any recommended changes to the plan.



Stages

This plan involves 2 stages. Stage 1 from 2024 to 2026 will focus on repairing additional quantities of carriageway and footway defects with the aim of ensuring user safety and reducing exposure to defects. This will be accompanied by targeted replacement works on assets to minimise deterioration. At the end of this period a review will be undertaken and the strategy for Stage 2 will be confirmed. During stage 1 investigations will be made into issues relating to potential need for Scour protection at bridges, the strength of some bridges and the condition of street lighting columns. The results of these investigations will inform the priority for works in Stage 2.

2. Highway Assets

The highway asset is made up of roads, footways, bridges, streets lights, traffic signals and street furniture.

The council's highway assets covered by this plan are:

- 1,183km carriageways
- 938km of footways
- 21,300 streetlights on 20,370 columns
- 3,250 illuminated signs and bollards
- 52 signalised junctions
- 62 signalised pedestrian crossings
- 372 bridges and culverts
- 27 retaining walls (estimated)
- Approx. 30,000 items of street furniture

The plan does not cover bus stops, private roads and bridges, council owned bridges not on or crossing the highway network and decorative, seasonal lighting.

Data

Asset data for some assets is currently limited. Sample surveys and local estimates have been used to include them within this plan. To ensure that future plans are based on better information a Data Improvement Plan ⁽²⁾ has been created to support this plan.

3. External Pressures

This plan has considered relevant external pressures.

Asset Growth

Over the last 10 years the council taken over the maintenance of 20 km of additional road. These roads create will create need for maintenance, management and associated funding in future years as they age.

Weather

This plan assumes average winter conditions. If, harsh winters are experienced it can be expected that additional damage to road surfaces will occur and the council will need to repair significantly more potholes and to potentially adjust the standards in this plan.

Flooding

Climate change is resulting in an increased frequency and intensity of storm events. The increase in such storms places pressure on highway drainage infrastructure that the roads were not designed for and flooding can occur. Extreme flood events can damage the road. When flood events occur, resources are deployed to respond. This may involve clearing land slips or repairing part of roads eroded by flood waters. Such events may impinge upon the ability to meet the targets in this plan unless additional resources (and funding) are made available.

Service Standards

Service standards define what users can expect.

Services Standards

Service standards in this plan have been set with reference to:

➤ **Inspection**

- Routine inspections for safety and to record maintenance defects

➤ **Safety**

- The number of critical incidents/defects requiring an immediate (2hr) response
- The number of “safety” defects requiring a (24hr) response

➤ **Condition**

- The percentage of the asset in a “poor” (red) condition
- The percentage of the asset that should be “considered for maintenance”, (amber) condition
- The number of maintenance defects requiring a 7-day response

Inspection and reactive repair standards are set out in the council’s highway maintenance manual. This plan assumes those standards will be consistently met. The specific standards that users can expect from each highway asset group during the plan period are shown below (section 5).

Strategies

The strategy to be applied for each asset group to achieve the standards is given in the section below. The strategies include predictions of the types and quantities of works required to deliver the standards. The strategies aim to prioritise the repair or replacement of elements of each asset in a manner that will achieve the standard at the best possible short and long-term cost.

Works Programmes

The strategies will be used to create programmes of works. Records of potential works are maintained for each asset based on the results of inspection and condition surveys. These records are used to derive works programmes.

Funding Assumptions

The standards included in the plan are based upon levels of funding that are indicated. Significant changes in these funding levels would result in the standards in the plan needing to be revised.

4. Carriageways

The council manages 1,183km of roads; 495km of classified (A, B & C roads) and 688km unclassified

Standards

Safety

The council's targets for carriageway defect repair are:

Repair of Defects*	Standard	Anticipated Annual Quantity
Critical defects shall be made safe within	2 hours	20
Safety defects shall be rectified by	End of Next Working Day	230

**definition of critical and safety defects for carriageways are given in the maintenance manual*

Typical defects:

A **critical** carriageway defect is one that poses immediate danger to users such that it is appropriate to guard it until it can be coned off or repaired. Such defects occur rarely but warrant prompt attention to ensure user safety. The response to a critical defect refers to the time to attend the site and to make the safe site.

Safety defects are those that pose an imminent risk of injury to road users, requiring a response as soon as possible to remove a potential risk of injury to users.



Condition

Maintenance defects are defects that pose a lesser danger to users and are typically repaired to prevent them deteriorating into safety defects. The time to repair them reflects the reduced risk they pose to users.

The council's targets for carriageway maintenance defect repairs are:

Repair of Maintenance Defects	Standard	Quantity#
Maintenance defects (high priority) shall be rectified within	1 month	1,000
Maintenance defects (medium priority) shall be rectified within	3 months	2,000

#typical annual quantities

The council's targets for carriageway condition (measured by condition surveys) for the duration of the plan are:

Measured Condition	Road Class	A	B	C	U
Percentage in a poor condition shall be kept below		5%	5%	10%	20%
Percentage that should be "considered for maintenance" shall be kept below		30%	30%	30%	40%



Strategies

The strategy for carriageways comprises of:

- the continued repair of reactive repairs
- repair of minor defects
- capital investment in patching and surface treatment

Repair of Defects

Safety defects such as potholes are identified by a regime of inspection or notified to the council by users. Safety defects are assessed based upon the risk they pose to users and their repair prioritised in accordance with the council's maintenance manual. Routine and reactive repairs are expected to continue at current levels throughout the period of this plan. This plan assumes that the works gangs currently deployed to repair safety defects will continue to do so and that the quantities of repair required will be like those experienced in recent years.

Repair of Minor Defects

The condition survey has identified a large quantity of minor defects of varying sizes which do not meet the criteria for reactive repair. These defects are scattered on all road classes around the county. Funding will be provided to repair an amount of these defects. The purpose of these repairs is to reduce the number of defects present on the network and reduce the exposure of users to defects.

Patching

Patching programmes will be undertaken to repair all areas of carriageway assessed as poor condition which are not included in the resurfacing and surface treatment programmes. These smaller areas tend to be located on roads which are in generally good condition which may not be considered for planned treatments for many years.

Resurfacing and Surface Treatment

The current level of condition on classified roads (A, B and C Roads) is reasonably good. Flintshire’s classified road condition survey results rank them as having some of the best local authority roads in Wales. This has come through continual investing in planned maintenance treatments. The county procured a condition survey of the unclassified roads in May 2022. The results showed the level of poor condition of unclassified roads is much higher than the classified roads. This is due to the lower levels of historical investment.

The strategy for this plan is to invest all the planned maintenance investment on unclassified roads. Most treatments will be surface treatments as these will enable more roads to be treated. The classified roads will therefore deteriorate during the period of the plan.

Works

The strategy detailed above is expected to require the following amounts of works to be undertaken.

Reactive Repair

Between 3,000 and 3,500 highway defects are predicted to be repaired annually from identification during routine inspections.

Minor Defect Repair

Between 6,000 and 7,000 highway defects are predicted to be repaired annually.

Planned Maintenance

It is estimated that the following approximate annual quantities of treatments will be carried out during the first period of the plan.

Road Class	A	B	C	U
Resurfacing (Corrective Maintenance)	-	-	-	-
Surface Treatment (Preventative Maintenance)	-	-	-	7,000 – 8,000sqm
Patching (Corrective Maintenance)	7,000 - 8,000 sqm			

Annual Works Programme

A rolling programme is maintained of all roads where maintenance should be considered. A prioritisation process documented in the council’s highway maintenance manual is used to create an annual programme of work that is approved by council and published.

The prioritisation process ensures that the strategy is implemented and that there is a documented method for choosing which schemes get completed first.



Funding Assumptions

The works quantities detailed above are based upon the following anticipated funding levels:

Works Type	Annual Funding Required
Planned	£900k
Routine & Reactive	£500k

5. Footways

The council manages 938km of footways.

Standards

Safety

The council's targets for footway safety defect repairs are:

Repair of Safety Defects*	Standard	Quantity#
Critical defects shall be rectified or made safe within	2 hours	10
Safety defects shall be rectified or made safe within	24 hours	90

**definition of critical and safety defects for carriageways are given in the maintenance manual*

#typical annual quantities



Condition

The council's targets for footway maintenance defect repairs are:

Repair of Maintenance Defects	Standard	Quantity#
Maintenance defects (high priority) shall be rectified within	1 month	500
Maintenance defects (medium priority) shall be rectified within	3 months	1,000

#typical annual quantities

The council's targets for footway condition (measured by condition surveys) are:

Measured Condition		
Percentage in a poor condition shall be kept below		0.5%
Percentage that should be "considered for maintenance" shall be kept below		25%



Strategies

The strategy for footways comprises of:

- the continued repair of reactive defects
- patching sections of footway in poor condition
- preserving the life of footways by applying slurry treatments

Repair of Defects

Safety defects such as potholes and trip hazards are identified by a regime of inspection or notified to the council by users. Safety defects are assessed based upon the risk they pose to users and their repair prioritised in accordance with the council's maintenance manual. Routine and reactive repairs are expected to continue at current levels throughout the period of this plan. This plan assumes that the works gangs currently deployed to repair safety defects will continue to do so and that the quantities of repair required will be like those experienced in recent years.

Patching

The condition information shows that the areas of footways in poor condition are small and scattered around the county. The most cost-effective option is to repair all the poor sections with a patch. It is proposed to complete all the patches in the first year of this plan.

Slurry Treatments

The footway asset is ageing. The condition survey has clarified this ageing by identifying surface defects including cracking, chip loss and fretting. The slurry treatment is used to extend the life of the footway by covering the surface defects. The treatment will be used on footways with areas of surface defects greater than 50sqm. This will maximise the amount of treatment completed. Larger areas of surface defects are more likely to reflect age than smaller areas which may be due to some other factor.

Works

The strategy detailed above is expected to require the following amounts of works to be undertaken.

Reactive Repair

Between 1,500 and 1,600 footway defects are predicted to occur annually.

Planned Maintenance

It is estimated that the following approximate annual quantities of treatments will be carried out during the period of the plan.

Strategy	Indicative Area of Works / Year		
	2024/25	2025/26	2026/27
Programme of footways slurry treatments.	4,000 sqm	4,000 sqm	4,000 sqm
Programme of patching	1,280 sqm	-	-

Funding Assumptions

To undertake the amounts of works detailed the following funding will be required annually.

Works Type	Annual Funding Required
Planned	£100k
Reactive	£150k

6. Street Lighting

The council manages 21,300 lanterns on 20,370 columns.

Standards

Safety

The council's targets for street lighting safety faults are:

Repair of safety defects	Target Standard
Critical defects shall be rectified or made safe within	2 hours

A critical defect could be an exposed cable, or column on the verge of collapse (for example having been hit by a vehicle). The standard is to attend and make the site safe within 2 hours. NB. It may not always be possible execute a permanent repair within this timescale.



Condition

The council's targets for street lighting maintenance faults repairs are:

Repair of maintenance defects	Target Standard	
	Standard	Compliance
Maintenance defects (high priority) shall be rectified within	24 hours	90%
Maintenance defects (low priority) shall be rectified within	10 working days	90%



The council’s targets for street lighting column condition (measured by structural testing) are:

Measured Condition		Standard
Percentage in a poor condition; the percentage of street lighting columns testing results requiring instant removal or retesting in one year shall be kept below		<3%
Percentage that should be “considered for maintenance”; percentage of street lighting columns testing results requiring retesting within three years shall be kept below		<20%

Strategies

The strategy for street lighting comprises of the repair of faults together with ongoing capital investment in column replacement.

Repair of Faults

Faults are identified via inspection or from user notification.

Column Renewals

The council will continue to undertake structural column testing following GN22. At the end of 2022/23 there were 1,000 columns which were identified as to be planned for removal. It is estimated that up to 160 columns could require immediate removal annually over the period of this plan. During the first phase of this plan the quantity of columns which are renewed will be those identified as requiring immediate removal from the test result. If the testing result identify more columns than there is funding the replace then there may also be a need to remove some columns for safety reasons and not replace them instantly.



Lantern Renewals

The oldest LED lanterns have been installed for almost 10 years. There are currently no identified issues with these lanterns. A need for bulk replacement of lanterns is not anticipated during the period of this plan.

Cable Renewals

There will be no cable renewals in the first phase of this plan. Cable faults will be repaired when identified.

Works

The strategy detailed above is expected to require the following amounts of works to be undertaken.

Reactive Repair

It is expected that current levels of faults will continue during the first phase of the plan. These are typically around 5 critical faults, 10 safety faults and 1,500 maintenance faults.

Planned Maintenance

It is estimated that the following approximate annual quantities of treatments will be carried out during the period of the plan.

Strategy	Quantity
Programme of Column Renewals	160 columns

Funding Assumptions

To enable the amounts of works detailed above to be carried out the funding shown will be required:

Works Type	Annual Funding Required
Planned	£320k
Energy	£990k
Reactive	£100k

7. Highway Structures

The strategy for highway structure comprises of the targeted refurbishment of structures in a very poor or poor condition combined with a regime of routine maintenance.

Standards

Safety

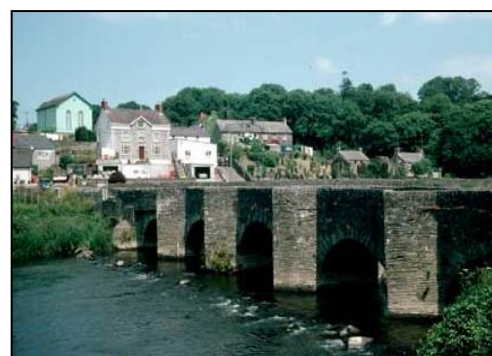
Measured By	Standard
Critical defects shall be made safe within	2 hours

Condition

		Standard
Percentage in a poor condition; the percentage of structures with a BCcrit of very poor kept below		2%
Percentage that should be “considered for maintenance”; the percentage of structures with a BCcrit of poor kept below		10%

Strategies

- The Council has 7 structures in a very poor condition and a further 45 structures in a poor condition that require refurbishment works.
- The strategy is to target addressing the works required on structures in a very poor first
- Routine maintenance will be undertaken on 20% of the structures every year.
- Reactive maintenance will be undertaken when required
- All works required on the Flintshire Bridge will be completed.



Works

The strategy detailed above is expected to require the following works to be required

Reactive Repair

The strategy requires the deployment of work gangs/other agencies on reactive repairs and emergency make safe response.

Planned Maintenance

Structure Type	Indicative No of Structures for Refurbishment Works / Year		
	2024/25	2025/26	2026/27
Road Bridges	3	1	1
Culverts and Subways	1	1	1
Footbridge	1	0	0

Funding Assumptions

To undertake the amounts of works detailed the following amounts of estimated funding will be required annually.



Works Type	2024/25	2025/26	2026/27
Reactive	£20k	£20k	£20k
Routine	£35k	£35k	£35k
Planned	£50k	£50k	£50k
Flintshire Bridge	£120k	£20k	£37k

8. Traffic Signals

The strategy for traffic signals is to carry out reactive and routine repairs required to keep the signals operating and replace them when they become obsolete or unreliable.

Standards

Safety

Measured By	Target Standard
Critical defects shall be rectified or made safe within	2 hours
Safety Defects	4 hours

Condition

Maintenance Defects	Standard
Maintenance defects (high priority) shall be rectified within	24 hours
Maintenance defects (low priority) shall be rectified within	7 Days

Strategies

- The aim of the traffic signals maintenance strategy is to ensure that all traffic signals are operating 99% of the time and all equipment remains in a safe condition.
- There are currently 6 traffic signals that are assessed as 'poor' or 'failing'. These sites will be renewed within the first 3 years of the plan.



Works

Reactive Repair

It is expected that current levels of faults will continue during the first phase of the plan. This will include 12 critical faults, 180 safety faults and 180 maintenance faults.

Planned Maintenance

It is estimated that the following approximate annual quantities of treatments will be carried out during the period of the plan.

Strategy	Quantity
Programme of Traffic Signal Renewals	2 traffic signals

Funding Assumptions

To enable the amounts of works detailed above to be carried out the funding shown will be required:

Works Type	Annual Funding Required
Planned	£150k
Energy	£100k
Reactive	£40k

9. Other Assets

Other assets that form part of the highway require maintenance as described below.

Road Marking

Faded road marking is identified by highway inspectors during routine inspections. In 2021/22 a road marking condition survey identified that more than 20% of road markings were not visible.

It is planned to complete the remark of the markings which were identified as not visible during 2024/25. From 2025/26 an annual remarking contract will be undertaken with the aim of eliminating road markings that are not visible. Faded markings that are still visible will still be present but will be remarked before they become illegible. A cyclic remarking regime will be developed once the data is gathered to determine the appropriate remarking interval.

To enable the amounts of works detailed above to be carried out the funding shown will be required:

Work Type	Annual Funding Required		
	2024/25	2025/26	2026/27
Remark Marking not visible to motorist	£180k		
Routine Marking		£180k	£180k

Traffic Signs

Traffic signs that become illegible are when identified by routine highway inspection. It is expected that new signs will be required annually within the period of the plan.

To enable the amounts of works detailed above to be carried out the annual funding will need to be reviewed in response to an asset survey.

Drainage

The strategy for managing drainage assets is:

Gullies are cleaned once per year. Some gullies require replacement when they are damaged. A gully with a missing grate is considered a 'critical' defect and requiring a 2-hour response.

Rural drainage is managed reactively where highway inspectors identify issues on routine inspections and members of the public report issues to the council. Most work requires the clearing of materials.

The council investigates all highway drainage issues where water ponds on private property and on the road.

The annual work required to maintain the drainage assets is typically:

- 10 - 15 incidents of drainage issues requiring a critical response
- 40,000 – 42,000 gullies are cleaned
- 20 - 30 gullies require replacing
- 1,000 – 1,200 rural drainage assets require reactive clearing

To enable the amounts of works detailed above to be carried out the annual funding shown will be required:

Work Type	Annual Funding Required
Reactive Repair	£20k
Gully Cleansing	£100k
Rural Drain Clearing	£50k
Drainage Asset Replacement	£20k

Street Furniture Assets

Street furniture assets include pedestrian barriers, vehicle restraint systems, benches, bins

The strategy for managing these assets is reactive with highway inspectors identifying defects as part of their routine inspections. It is expected that there will be a range of repairs required from full replacement to minor repairs.

Typically, between 100 and 150 street furniture assets will require some form of repair every year.

The annual funding which will be required to undertake this work is £50k.

10. Risks to the Plan

The risks that could prevent achievement of the standards specified in this plan are:

Plan Assumption	Risk	Action If Risk Occurs
The plan is based upon winters being normal	Adverse weather will create higher levels of defects and deterioration than have been allowed for.	Budgets and predictions will be revised, and this plan updated if abnormally harsh winters occur.
The plan is based upon normal seasonal weather conditions	Adverse weather (storm events) will create higher levels of defects and deterioration than have been allowed for.	Budgets and predictions will be revised, and this plan updated if abnormally adverse weather (e.g. flooding) occur.
Available budgets have been assumed as shown in sections 5 to 9	External pressures mean that the funding available for roads is reduced	Target service standards will be revised to affordable levels
Construction inflation will remain at level like the last 5 years.	Construction inflation will increase the cost of works (particularly oil costs as they affect the cost of road surfacing materials)	Target service standards will be revised to affordable levels.
Levels of defect and deterioration are based on current data which is limited for some assets (e.g. unclassified roads and footways)	Assets deteriorate more rapidly than predicted and the investment required to meet targets is insufficient.	Split between planned and reactive maintenance budgets will be revised.