Highway Investment Strategy

Carriageways and Footways

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Table of Contents

Glossary of Key Terms

Technical Terms

Backlog	The cost to bring all **'red'** (poor) condition assets into **'green'** condition (or alternatively, the defective network quantified in financial terms).
Steady State	The cost to maintain the asset in the same condition as it is today with no deterioration or improvement over the full assessment period.

Scenarios

Current Funding	No additional funding provided and thus continuing with the base level of funding of £9.0 million/year for both carriageways and footways.
Return to Current	A temporary £4 million increase over two years to £13.0 million/year before returning to the base level of funding of £9.0 million/year.
Sustained Increase	A sustained £4 million increase over the full assessment period (£13.0 million/year) with no reduction in funding.
Steady State Plus	Reversing deterioration to an appropriate level of service (to meet target condition) before maintaining this condition going forward.

Introduction: What is Barnet's context?

The London Borough of Barnet (Barnet) adopted a new **Highway Infrastructure Asset Management Plan** in 2022, setting out the Council's strategic approach to managing its highway network. As well as this document, Barnet also has a **Long Term Transport Strategy (2020 to 2041)** (currently under review) and a new corporate plan through the **Our Plan for Barnet (2023 to 2026)**. These documents set out a series of highway-related objectives and commitments to Barnet's constituents including creating a **better place to live, work and visit** and **encouraging active travel** (i.e. walking and cycling). Similarly, Barnet declared a climate and biodiversity emergency in 2022, accompanied by the **BarNET ZERO** campaign through which Barnet committed to become a **net-zero carbon Council by 2030** and **Borough by 2042**.

Delivering these promises will require additional, sustained investment into Barnet's highways. Promoting active travel requires a **well-maintained footway network to facilitate walking and good carriageways for cyclists to travel through safely**. Maintenance strategies will also need to be carefully selected going forward to minimise carbon from highway maintenance and **support a move towards net zero carbon**.

Within the corporate plan, Barnet also committed to developing a new highway investment strategy this financial year – this will **need to align with the various strategic Council objectives and commitments**. This investment planning exercise seeks to understand the investment needed to maintain the borough's carriageways and footways under various scenarios going forward to deliver these corporate objectives.

Our Plan for Barnet (2023 to 2026)

"In 2023/24, we will develop a new highway investment strategy to improve the quality of our highways and footways and support more sustainable forms of travel."

Today, Barnet face a challenge in terms of the level of sustainable funding required in coming years (particularly in light of the absence of previously relied upon TfL funding for the principal road network) – this is further reinforced by the findings of the latest **ALARM Survey 2023**.

The current economic climate and high inflation have also meant less work can be delivered with limited highway funding available. The following figures demonstrate significant price rises across certain construction materials (from 2021 to 2022):

Precast Concrete Paving	**+32%**
Gravel / Sand / Clay	**+60%**
Natural Stone	**+23%**

ALARM Survey 2023

The Annual Local Authority Road Maintenance (ALARM) survey seeks to benchmark and highlight links between local road maintenance funding and condition in England & Wales, using data on asset condition, budgets and various pressures faced. The following figures set out 2023 London averages:

Backlog **£36 million** (↑45%)

Shortfall **-£7.3 million** (↑43%)

Barnet undertake annual visual condition surveys via a third-party to inform its maintenance works programme and monitor asset performance. This investment modelling exercise uses this condition data to forecast the trends that Barnet can expect given its current context and the pressures faced. The exercise found that a failure to address funding shortfalls would lead to **further severe deterioration** of the highway network, counteracting key transport objectives and potentially significant increases to reactive maintenance expenditure and third-party claims, both of which pose significant financial and reputational risks to the Council.

It should be stressed, this report only assesses the funding need for carriageways and footways, the Council's most valuable asset with a total valuation of approximately **£1.6 billion** (2021)*. Further investment will be required for Barnet's other highway assets (such as drainage and structures).

**subject to update in 2023*

Today: What is the situation?

Barnet are spending approximately **£9.0 million/year** on the planned maintenance of its carriageway and footway network in the 2023/24 financial year. This is typically split between the two assets as follows:

Carriageways **£5.6 million/year** **Footways** **£3.4 million/year**

However, following a recent funding agreement through Cabinet, Barnet increased planned investment into its carriageways by an additional £8million divided over 2 years – this brings the total carriageway budget to £13.0million/year (+£4.0M/year) through to the end of the 2024/25 financial year.

The following is an overview of Barnet's network based on the condition data collected via third-party annual surveys undertaken by XAIS and how this relates to the reactive maintenance regime.

Condition

Carriageways — Budget: £9.6M/year

Today, around **14%** (around 100km) of Barnet's carriageways are in a '**red**' condition (i.e. have reached the end-of their life) with a total state of disrepair of **54%** (or 370km) including the '**amber**' carriageways.

Road Class.	Length		RAG Condition
Principal*	101 km	15%	**37%** / **52%** / **11%**
Unclassified	592 km	75%	**48%** / **38%** / **14%**
Total	**693 km****		**46%** / **40%** / **14%**

**includes classified (B&C) roads*
***subject to review (asset growth expected with adopted roads)*

Backlog **£37M**

Footways — Budget: £3.4M/year

Barnet's footways are built in two styles; Type 1 (concrete flag) and Type 3 (bituminous & block). In total, **10%** (or 160km) of footways are in a '**red**' condition with **37%** (or 590km) in an overall state of disrepair.

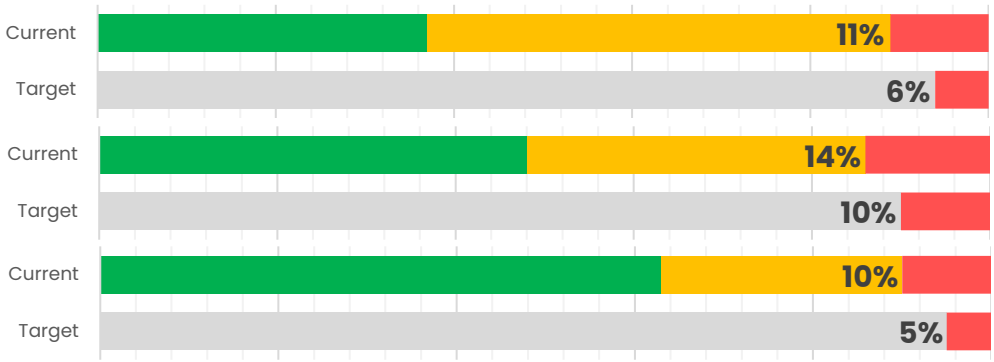
Type	Length	RAG Condition
Total	**1,591 km**	**63%** / **27%** / **10%**

Backlog **£27M**

Condition Targets

The following '**red**' condition targets have been defined as the desirable level of service for Barnet's highways, benchmarked against what a successfully operating transport network looks like for London.

CW	**Principal**	**6%**
	Unclassified	**10%**
FW	**All Footways**	**5%**



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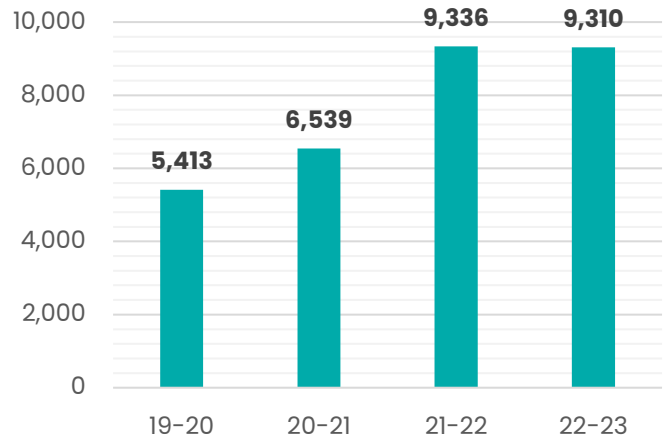
Reactive Maintenance Regime

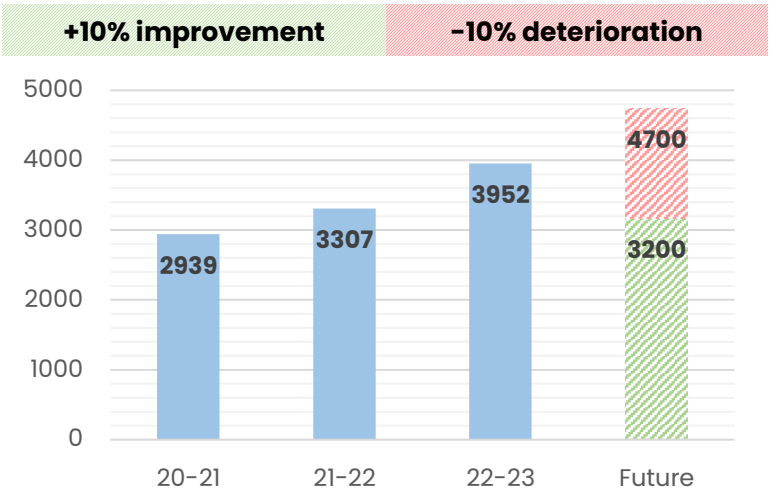
In line with the statutory duty placed on the Highway Authority to maintain public highways (**Section 41 of the Highways Act 1980**), Barnet undertakes reactive maintenance of its highways. Through this service, the Council reactively repairs safety and serviceability issues as they arise, typically including dangerous carriageway potholes, footway trip hazards and faulty street furniture. These repairs are short-term and thus not considered to improve network condition (but keep the highway in a serviceable condition).



Around 9,300 reactive defects were identified on Barnet's carriageways and footways in 2022/23, a significant increase (almost 100%) in the past four years. Several factors have contributed to this sharp rise in defects including climate change (and a resulting increase in heavy rainfall events), a return to normal traffic volumes following the COVID-19 pandemic, but particularly the severe decline in network condition in recent years, which have allowed minor signs of wear and tear to propagate into serious highway defects.

Carriageways — 2022/23 Defects: ~4,000

Around 4,000 reactive carriageway defects (such as potholes) were identified by Barnet in 2022/23, a significant increase (**~50%**) in the past three years. Associating defect data to the condition of carriageway sections they are identified on allows us to forecast how reactive pressures might change with worsening (or improving) network condition. The following demonstrates how the network condition **improving or deteriorating by ±10%** could influence expected reactive defect volumes reinforcing an invest-to-save business case.



Condition	Principal	Unclassified
Red	24	12
Amber	12	6
Green	6	2

The findings demonstrate '**red**' roads (i.e. those that have reached end of life) are responsible for **4 times** as many reactive defects as a recently resurfaced '**green**' road. In a similar manner, principal roads (which carry the highest volumes of traffic) are **2 times** as likely to develop defects when compared to unclassified roads.

Footways — 2022/23 Defects: ~5,300

Condition	Footways
Red	4.3
Amber	3.9
Green	3.0

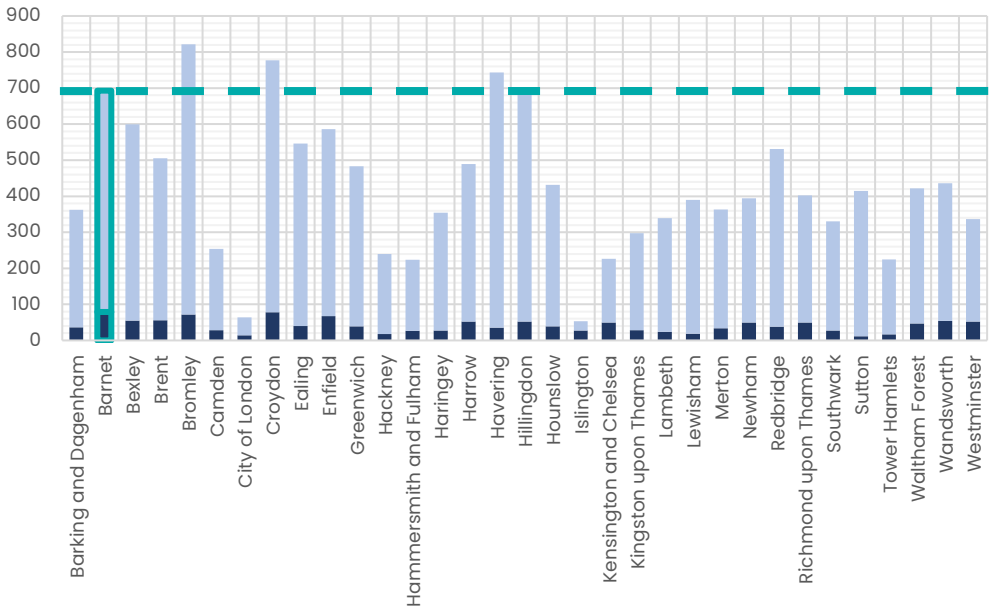
Similarly, over 5,300 reactive footway defects were identified in 2022/23. As expected, total reactive defect volumes are higher than carriageways due to higher risk on footways in urban London boroughs. However, the correlation between worsening condition and reactive defects is weaker, generally due to lower investigatory levels (trip risks) and the often random occurrence of safety defects on footways (e.g. vehicle overrun).

Benchmarking: How do we compare to others?

Comparisons with other London Boroughs help to illustrate how Barnet compare against authorities with similar context and pressures – the following section shows where Barnet sits against the rest of London.

Network Size

Barnet have the 4th largest highway network in London and, more significantly, the most principal roads. The latter is particularly important to note as principal roads have the highest use – Barnet thus have a large proportion of roads which require a higher level of service to be maintained but deteriorate rapidly.



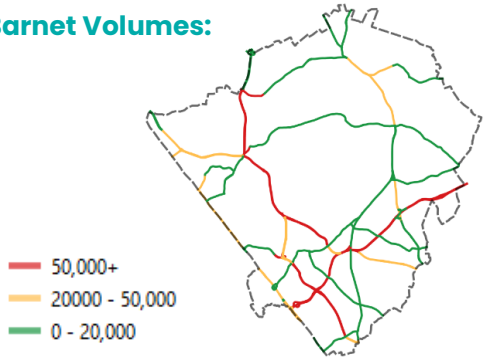
Total Network Length		
1st	Bromley	821 km
2nd	Croydon	777 km
3rd	Havering	744 km
4th	**Barnet**	**693 km**

Principal Road Length		
1st	**Barnet**	**79 km**
2nd	Croydon	78 km
3rd	Bromley	72 km

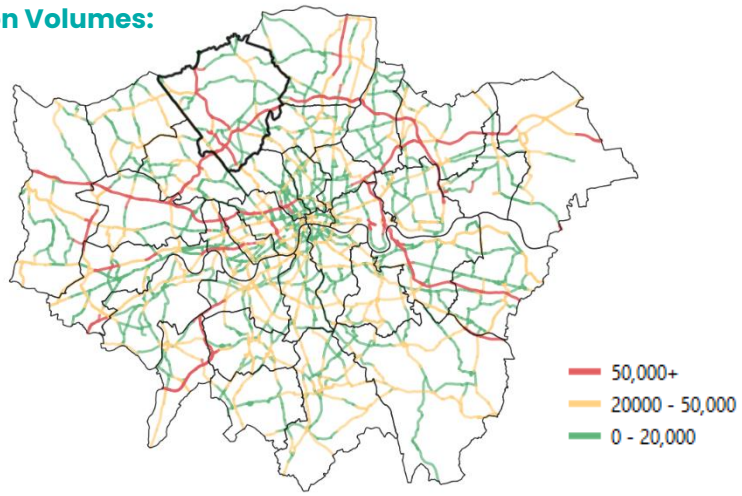
Usage (Traffic Volumes)

Further to the comparisons of network length, Barnet's principal roads (both TLRN and BPRN) carry the highest traffic volumes in all of London, given its strategic location as a key corridor to/from the north. Note, this includes both the TLRN (TfL-owned) and BPRN (Borough-owned) principal roads, as these traffic volumes would reasonably be expected to propagate through the Borough's non-principal network as they travel to or across the Borough. A significant proportion of heavier vehicles using these routes also means large stresses on roads (and faster deterioration).

Barnet Volumes:



London Volumes:



Total Volume > 50,000 AADF		
1st	**Barnet**	**48 km**
2nd	Redbridge	36 km
3rd	Ealing	33 km

HGV Volume > 1,000 AADF		
1st	**Barnet**	**53 km**
2nd	Hillingdon	48 km
3rd	Enfield	44 km

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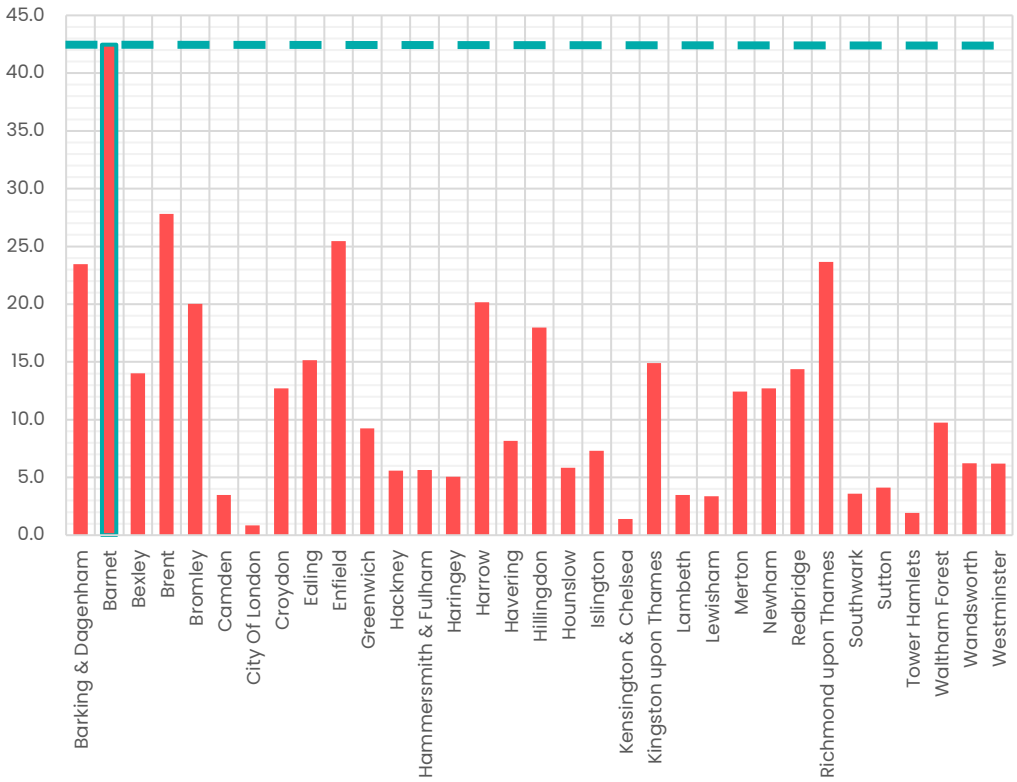
Asset Condition (Principal Roads)

Annual pan-London carriageway condition surveys are undertaken on all Borough-owned principal roads via TfL and the London Highway Engineers Group (LoHEG); note, this uses a different condition survey methodology (Vaisala RoadAI) than Barnet's annual third-party survey (XAIS). The results of the 2022/23 Vaisala survey have been used to benchmark Barnet's principal road condition against others.



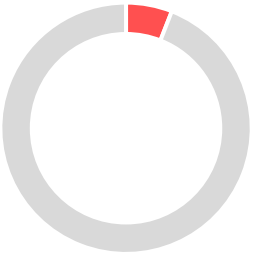
Reinforced by the size of Barnet's highway network and its level of use (both covered above), Barnet have the most '**red**' principal roads in London.

It should be noted, as well as carrying the most traffic in the Borough, principal roads will have higher treatment rates as they require additional traffic management (and other ancillaries) compared to a typical scheme.

'Red' Principal Roads		
1st	**Barnet**	**43 km**
2nd	Brent	28 km
3rd	Enfield	25 km

Historic results from pan-London BPRN condition surveys also illustrate a continued decline in the condition of these principal roads in Barnet over the past decade, reinforcing ALARM survey findings.

2009/10



6% red

2014/15

21% red

2023/24*

31% red

** based on initial LoHEG 2023/24 results (subject to minor changes following audits)*

This reflects the lack of previously relied upon TfL funding for BPRN maintenance – no sizeable sum has been received from TfL since 2017, largely due to the impacts of both COVID-19 and Hammersmith Bridge on TfL's finances. However, the statutory duty to maintain Barnet-owned public highways remains Barnet Council's (**Section 41, Highways Act 1980**); any litigation arising from failure to meet this duty will be against Barnet, the Highway Authority. As such, Barnet must continue with strategic steps made since 2022 to the way it funds principal road maintenance – while external funding streams should be sought, sustained internal investment into the BPRN at scale will be necessary if Barent are to reverse deterioration and return to an appropriate level of service on the most vital transport routes in London.

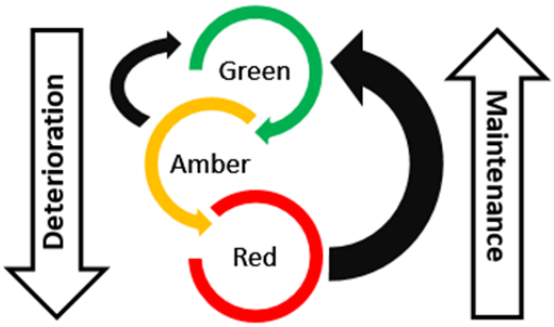
Methodology: How do we undertake forecasting?

Barnet have engaged Metis Consultants Ltd (Metis) to undertake lifecycle modelling and develop investment plans for the borough's carriageway and footway networks. Having provided extensive consultancy support to various local authorities for over a decade, Metis have a valuable understanding of highways, the strategic drivers for transport networks, and the necessity for robust, comprehensive investment plans that are fit for purpose today and in the future. The following sets out the methodology:

Condition Forecasting

Metis have developed a dynamic investment model to assess how Barnet's network condition is expected to change under different funding scenarios. This model forecasts the condition of the asset over a 10-year period by assessing deterioration lifecycles against achievable maintenance.

Inputs were collated from Barnet officers and supporting datasets (budgets, condition, and treatment rates/types). Where information was not available (e.g. asset lives), informed assumptions were made in collaboration with Barnet officers using engineering judgement and Metis' experiences with other authorities with similar networks.



Condition forecasting model concept

Change in Condition = Deterioration (G → A → R) – Maintenance (R → G | A → G)

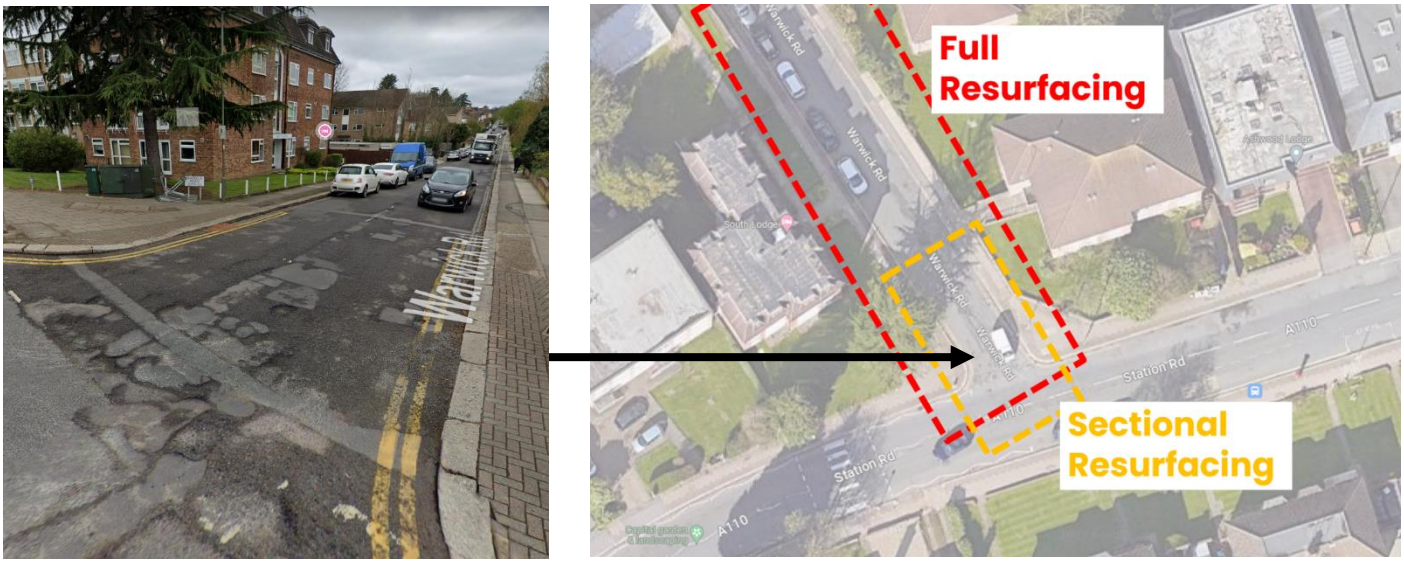
Deterioration takes place sequentially, going from '**green**' to '**amber**' to '**red**'. The rate of this deterioration will depend on the carriageway level of usage (i.e. road classification) and their **estimated useful life**. It is assumed that the deterioration will remain constant throughout the asset life. The amount of maintenance achievable under the **available budget allocation** is the key factor in determining how the network condition can be expected to change. As well as funding allocation, term maintenance contract **treatment costs** and **maintenance strategy** will also influence condition change. The input data used to undertake this modelling exercise has been provided in **Appendix 1**.

It is important to note that while this investment model enables Barnet to explore general trends in network condition, it is impossible to predict the exact condition of any one specific road using this method. Similarly, condition will vary over the 10-year period of the forecast moving around the targets from one year to the next dependent on climatic conditions, maintenance undertaken and traffic effects on the network. 10-year analysis period has been selected to recognise trends in treatment costs and provides a good balance between accuracy and longer-term planning and funding.

Carriageway Investment Plan

Maintenance Strategy

An effective maintenance strategy optimises mid- to long-term performance and maximises value for money. To understand what strategy will provide the best return on investment, Barnet have explored various highway maintenance strategies which seek to balance the need to resurface whole roads with a targeted 'sectional resurfacing' approach (while also ensuring practical considerations are captured).



Under this approach, opportunities to intervene on defective sections of road (such as the Warwick Road example above) with more targeted sectional resurfacing schemes would be sought, where appropriate.

However, a holistic strategy must be employed to deal with the various types and stages of defectiveness reasonably expected in Barnet. For example, with a more sectional-focused resurfacing programme, an allowance would still be made for deeper (partial) reconstruction into the carriageway base course to deal with structural issues (which include public reports of vibration issues on concrete roads).

Maintenance Strategy 1	**Full Road Resurf. Focused**	10% recon.	**60% full**	30% sectional
Maintenance Strategy 2	**Sectional Resurf. Focused**	10% recon.	30% full	**60% sectional**

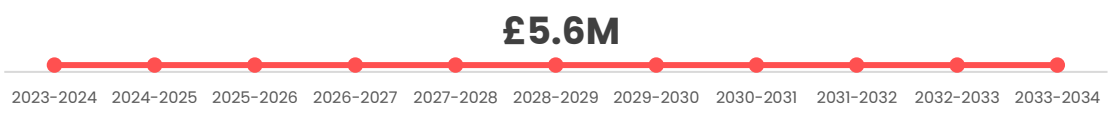
Maintenance Strategy 2 (MS2) is recommended for implementation going forward to allow for the most efficient use of limited resources which target smaller areas of severe defectiveness and the highest community benefit, but allowing for reconstruction and full road resurfacing, where practically required.

Investment Scenarios

The following section sets out a series of scenarios modelling expected network condition trends under various funding strategies seeking to achieve different performance outcomes over the next 10 years.

Scenario 0: Current Funding

Funding:



This scenario assesses how Barnet's carriageways would perform if the base investment continued at the current **£5.6 million/year**, typically split 50:50 between principal and unclassified (£2.8 million each).

Continuing at current funding levels will lead to severe deterioration of the network with '**red**' condition carriageways forecasted to increase to **209km** (+115km) of the network over 10 years due to the significant shortfall.

When quantified in financial terms using the backlog, there is a significant increase by 2033 to **£82 million** (+£45 million).

Backlog **£82M** **↑£45M**

Using the relationship between condition and reactive regime, the number of defects (e.g. potholes) are expected to reach **~5,200/year** (+1,200) as the overall disrepair (including '**amber**') reaches **68%** (**470 km**) of the entire carriageway network by 2033. At this level of deterioration, Barnet would find itself in a very difficult position to recover from going forward.

Classification	Red Condition			
Principal	**29km**	+18km	**29%**	+18%
Unclassified	**180km**	+97km	**30%**	+16%

Scenario 1: Return to Current

Funding:

Based on the recently agreed funding increase, this scenario assesses how carriageways are expected to perform with **£9.6 million/year** (+£4.0 million) for 2 years. It assumes budgets return to around **£5.6 million/year** for the last 8 years (after the 2024/25 financial year).

The temporary funding increase enables Barnet to prevent deterioration for the first 2 years, keeping roads in a '**red**' condition at 14% (+0%). Barnet will focus this initial 2-year increase on bigger schemes to **improve large extents of heavily deteriorated roads**, a mix of principal and unclassified roads providing a poor (and sometimes dangerous) level of service. However, this funding is still not sufficient to improve the overall network condition.

Similarly, given the limit in the period over which this funding increase is provided for, a return to current carriageway funding (£5.6 million/year) would see significant network deterioration over the full 10-year analysis period explored, as was demonstrated in **Scenario 0**. By 2033, the amount of roads in a '**red**' condition reach around 191km (+97km). When quantified financially as a backlog, this equates to **£75 million** (+£38 million), meaning around twice as many roads than today will be in a severe state of disrepair in 10 years' time due to the lack of a sustained funding increase.

Classification	Red Condition			
Principal	**23km**	+12km	**22%**	+11%
Unclassified	**169km**	+86km	**29%**	+15%

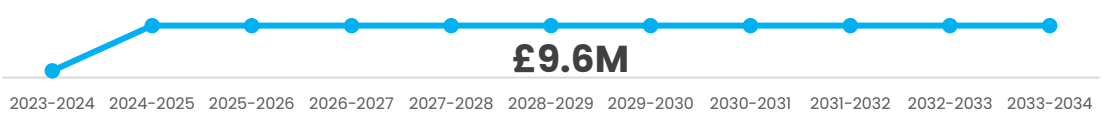
Backlog **£75M** **↑£38M**

At this level of deterioration, reactive defects are expected to increase to **~5,000/year** (+1,000). While slightly reduced compared to the previous scenario, this increase still means more third-party claims, a significant financial and reputational risk to Barnet.

This scenario demonstrates that **a <u>sustained</u> increase to planned maintenance funding** must be a key consideration for any new highway investment strategy if Barnet seek to reverse recent deterioration to achieve (and more importantly, maintain) an appropriate level of service on its carriageway network.

Scenario 2: Sustained Increase

Funding:



Further to the previously discussed investment scenario, the following assesses network performance if the increase to **£9.6 million/year** (+£4.0 million) is sustained over the full 10 year period modelled.

By sustaining the £4.0 million increase going forward, Barnet can maintain its carriageways in broadly the same condition, avoiding further deterioration. However, there is still a shortfall from the funding required to achieve targets.

Similar to **Scenario 1**, the funding increase will be focused on extensive, heavily deteriorated sections on a mix of principal and unclassified roads. However, following the 2024/25 financial year, the focus of the funding increase will switch to target more sectional resurfacing schemes and enable efficient use of resources.

Overall, 13% (-1%) or 90km of all carriageways are expected to be in a '**red**' condition by 2033; a moderate improvement to principal roads contributes with 7% (-4%) in a '**red**' condition after 10 years (almost reaching Barnet's condition targets). However, unclassified road remain in the same condition (+0%) and additional funding is needed to meet targets.

Classification	Red Condition			
Principal	**7km**	-4km	**7%**	-4%
Unclassified	**83km**	+0km	**14%**	+0%

Backlog **£34M** **↓£3M**

When quantified in monetary terms, the improvement to principal road condition means there is a slight reduction in the total backlog over 10 years which reaches **£34 million** (-£3 million) by 2033.

Similarly, there is a slight reduction in the expected reactive defects to **~3,900/year** (-100) by 2033, as Barnet moves towards a more planned-focused regime for maintaining its carriageway network.

While this scenario demonstrates a significant improvement can be achieved on previous scenarios with sustained investment, it also makes it very clear that the recent funding increase (even if sustained) is insufficient to meet targets – **additional funding is still required to achieve Barnet's condition targets**.

Scenario 3: Steady State Plus

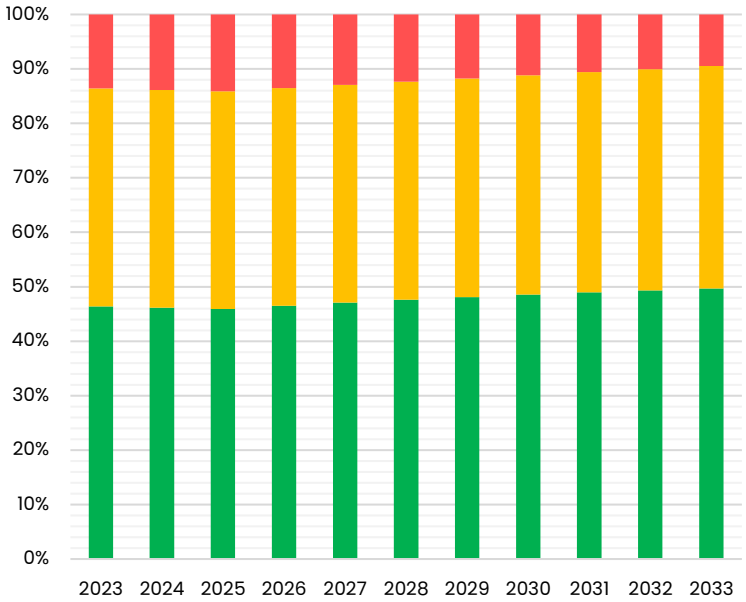
Budget

This scenario assesses the optimal solution for planned highway maintenance, with Barnet adopting a planned-focused approach to maintenance with a further increase to **£11.0 million/year** after 2024/25. This would enable Barnet to meet its condition targets and achieve Steady State Plus over the 10 years.

With this investment strategy, Barnet would make large improvements to its carriageway condition. The initial £4.0 million/year increase over the first 2 years would be allocated in a same manner to previous scenarios, before moving focus towards achieving Steady State Plus with a further increase to **£11.0 million/year** (+£5.4 million/year) to maintain carriageways.

This £11.0 million/year enables Barnet to begin to reverse network deterioration with a substantial improvement to unclassified roads to achieve its target of 10% of the network in '**red**' condition. The remaining funding is spent on achieving the 6% '**red**' target condition on principal roads. By 2033, Barnet will have achieved its Steady State Plus targets, equating to 9% (-5%) or 66 km (-32 km) of all carriageways in a '**red**' condition.

In financial terms, the maintenance backlog is reduced to **£25 million** (-£12 million) by 2033.



Classification	Red Condition			
Principal	**6km**	-5km	**6%**	-5%
Unclassified	**60km**	-23km	**10%**	-4%

Backlog

£25M ↓**£12M**

Roads in a good state of repair (or a '**green**' condition) also improves to **50%** (+4%). This leads to a reduction in the expected reactive defects to **3,600 defects/year** (-400), reinforcing an invest-to-save business case.

Once Steady State Plus has been achieved in 2023, funding can be reduced to **£9.5 million/year** to maintain the network at the condition target and prevent any regression of substantial improvements.

Conclusion

It is recognised that while the **Scenario 3: Steady State Plus** strategy would be ideal for improving highway infrastructure condition and achieving a better level of service, officers recognise recent pressures on local authority finances and the current economic climate and thus recommend that the **Scenario 2 'Sustained Increase'** investment strategy is adopted at this point in time, subject to future reviews of the MTFS.

Whichever option is carried forward, it is vital that budgets are indexed year-on-year to meet inflationary pressures (**Appendix 3**) and prevent a reduction in the works that can be delivered on the ground.

Footway Investment Plan

Intervention Strategy

Barnet have also explored intervention strategies for footway network. Both strategies employ a realistic treatment split between footway reconstruction and resurfacing (67%) and sectional patching (33%).

A 'red' condition concrete flag footway in Barnet

An 'amber' condition concrete flag footway in Barnet

Intervention Strategy 1	Targeting footways in a 'red' condition only
Intervention Strategy 2	Targeting footways in both 'red' and 'amber' condition

Constraints due to rapid inflation on footway construction materials limit opportunities for early interventions. Understanding the lower risk presented by '**amber**' footways, Barnet propose to implement **Intervention Strategy 1 (IS1)**, a late intervention strategy targeting '**red**' condition footways going forward

Investment Scenarios

Scenario 0: Current Funding — Budget: £3.4M/year

This scenario forecasts how Barnet's footway network is expected to perform over the coming 10 years if Barnet continues at its current footway maintenance funding level of **£3.4 million/year**.

With 13% (+3%) of footways expected to reach a '**red**' condition by 2033, it is evident that current budgets are not sufficient to maintain the asset and deterioration is expected. This equates to 203km (+44km) poor footways in 10 years' time. Over this period, overall disrepair (including '**amber**' footways) also reaches 49% (+12%) of the asset, indicating there will be a large increase in footways which will soon turn '**red**'.

In financial terms, the '**red**' backlog increases to **£34million** (+£7 million) by 2033.

Backlog **£34M** **↑£7M**

Continuing at current funding levels would lead to an elevated risk of trips and personal injury on the network and detract from key objectives.

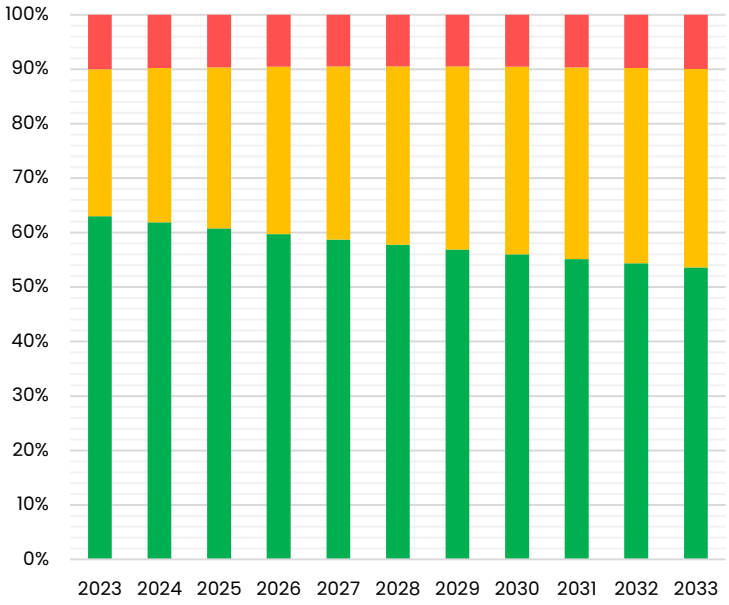
Red	**203km**	+44km	**13%**	+3%
Red & Amber	**780km**	+191km	**49%**	+12%

Scenario 2: Sustained Increase — Budget: £4.3M/year

This scenario seeks to understand the investment need to maintain the footway network in today's condition over the next 10 years. Essentially, it sets the minimum investment needed if Barnet are to prevent further deterioration of its footway network (although there is no overall improvement either).

At **£4.3 million/year** (+£0.9 million), Barnet can maintain footways in today's condition, preventing further deterioration of the network. With 10% (or 159 km) of footways in a '**red**' condition by 2033, Barnet would maintain its footway backlog at £27million by 2033 (±£0m) with no net improvement or deterioration.

Backlog **£27M** **±£0M**



Classification	Red Condition			
Red	**159km**	+0km	**10%**	+0%
Red & Amber	**739km**	+150km	**46%**	+9%

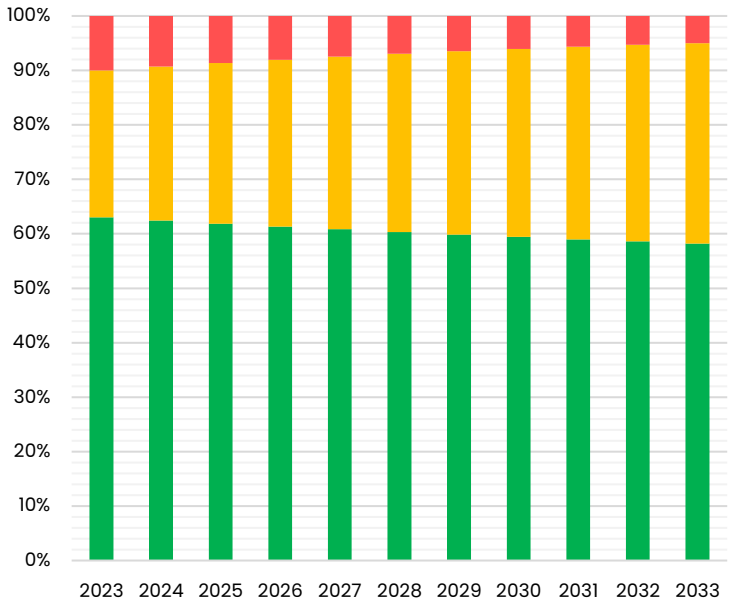
However, at this footway condition level, Barnet would not meet level of service targets (5% for footways). Additional funding is required if the borough is to reverse deterioration and achieve this performance target, fulfil pledges to encourage active travel modes (such as walking) and make the borough a vibrant and attractive place for people to live, work and visit.

Scenario 3: Steady State Plus — Budget: £5.9M/year

This scenario looks at the funding required to improve the condition of footways to achieve Steady State Plus, meeting performance targets by 2033 before maintaining this level of service moving forward.

A long-term strategy is investigated (10 years) due to limits in terms of what is operationally realistic to deliver on the ground within this timeframe. Similarly, only scenarios for achieving the '**red**' target (IS1) are explored.

Backlog **£14M** **↓£13M**



With **£5.9 million/year** (+£2.5 million/year), Barnet could make a substantial improvement to its footway network, meeting its condition targets for footways in a severe state of disrepair (i.e. a '**red**' condition) which are reduced to 5% (-5%) over the next 10 years.

This equates to a reduction in the '**red**' backlog to **£14 million** (-£13 million). However, under this strategy, overall disrepair still increases to 42% (+5%) due to an increase in '**amber**' footways.

Classification	Red Condition			
Red	80km	-79km	5%	-5%
Red & Amber	665km	+76km	42%	+5%

Conclusion

Carriageways & Footways:

Sustained highway maintenance investment is key if Barnet is to reverse recent trends of significant deterioration on its extensive carriageway and footway networks. While the 'Steady State Plus' strategy would be ideal for improving highway infrastructure condition and achieving a better level of service, officers recognise recent pressures on local authority finances and the current economic climate and thus recommend that the **Scenario 2 'Sustained Increase'** investment strategy is adopted.

Implementing this strategy will enable Barnet to prevent further deterioration of its network until the Council's Medium Term Financial Strategy (MTFS) is reviewed in 2030 – at this point, an elevated funding level should be sought for highway maintenance to achieve 'Steady State Plus'. It is essential that this budget is also adjusted year-on-year to account for inflationary pressures (see **Appendix 3**), particularly given recent price trends in the highway construction industry.

While the Council is encouraged to seek external funding from bodies such as TfL and DfT, a previous dependence on these unreliable streams has contributed to significant deterioration (particularly on the principal road network) – as such, it is vital that sustained internal funding is allocated towards highways. This will enable better planning over longer-term horizons and support the delivery of key corporate aims (as outlined in the **Long Term Transport Strategy** and **Our Plan for Barnet**), from well-maintained town centres, attractive public realm to improved active travel measures..

Other Assets:

While this exercise quantified the need for general carriageway and footway planned maintenance, it should be stressed that further investment is still required for Barnet's other highway assets, including:

Carriageway Reconstruction — **~£3.0 million/year**

Solving serious structural issues (which can cause residential vibration) with deep treatments.

Reactive Maintenance Works — **~£2.5 million/year**

Responsive repairs to fix reactive defects (e.g. potholes) to ensure a safe, serviceable network.

Drainage Maintenance — **~£2.5 million/year**

Fulfilling statutory LLFA duty via various planned, reactive and routine maintenance activities.

Highway Structures Maintenance — **~£1.5 million/year**

Maintaining assets (such as bridges, tunnels and culverts) to keep vital transport links running.

Other Highway Assets — **~£1.0 million/year**

Repair, replacement and other costs to keep the highway network in a serviceable condition.

Next Steps: Recommended Implementation Plan

Following the findings of this investment modelling and planning exercise, various activities have been identified which will support Barnet to implement the investment strategy, achieve performance targets and deliver key Council objectives. These have been listed below:

Works Programming Strategy

In line with the newly developed maintenance strategies, it is recommended that Barnet Highways undertake an exercise to update its value management processes for maintenance planning and develop works programmes which align with this new strategy.

To do so, Barnet would work to understand the relevant criteria (as well as asset condition) for prioritising maintenance works, develop a decision matrix for treatment/intervention-type selection and deliver this for the 2024/25 programme. This will support the Council find opportunities for improving value for money with the additional capital investment by intervening at the right time with the right treatment.

Monitoring Performance

With the introduction of a new investment strategy and changes to how asset management activities are undertaken, it is vital that Barnet monitor the performance of changes in its approaches.

To achieve this, it is recommended that Barnet Highways develop a Performance Management Framework and KPI reporting suite with the appropriate tools and processes to monitor how new materials, intervention strategies and processes perform going forward. This will focus on understanding the impact of additional investment into the network, understanding whether new intervention approaches are performing as expected and ensuring that Barnet progressing against targets.

Improving Asset Knowledge

Through this commission, some areas of concern were noted with regards to the data Barnet holds against highway assets it is responsible for maintaining (e.g. length of maintainable network) – this is essential for making informed asset management decisions, and monitoring condition and performance of these assets. To address this, Barnet should seek to audit the data currently held on its asset management system (Confirm), identify gaps in data, and develop an Asset Information Strategy to collate and collect any information required. Following the improvement of the asset data held, a Data Maintenance Manual should be developed to ensure all data held is kept accurate and current.

Carbon & Sustainability

In May 2022, Barnet declared a Climate & Biodiversity Emergency. Recognising that urgent action is required, the Council set targets of becoming a Net Zero Carbon Council by 2030 and Borough by 2042.

To deliver these ambitious goals, a highway-specific roadmap must be developed to identify the biggest carbon contributors within the service area and find opportunities for carbon reduction. As such, it is recommended that Barnet Highways undertake work to develop a strategic and detailed approach to carbon reduction through the development of a Carbon Management Framework and a subsequent exercise to baseline the carbon associated with each individual service area it is responsible for.

It is also noted that to implement these carbon-saving changes and achieve the BarNET ZERO goal, there will be an associated investment need – this exercise should also seek to quantify and address this need.

Summary Table: Carriageways & Footways

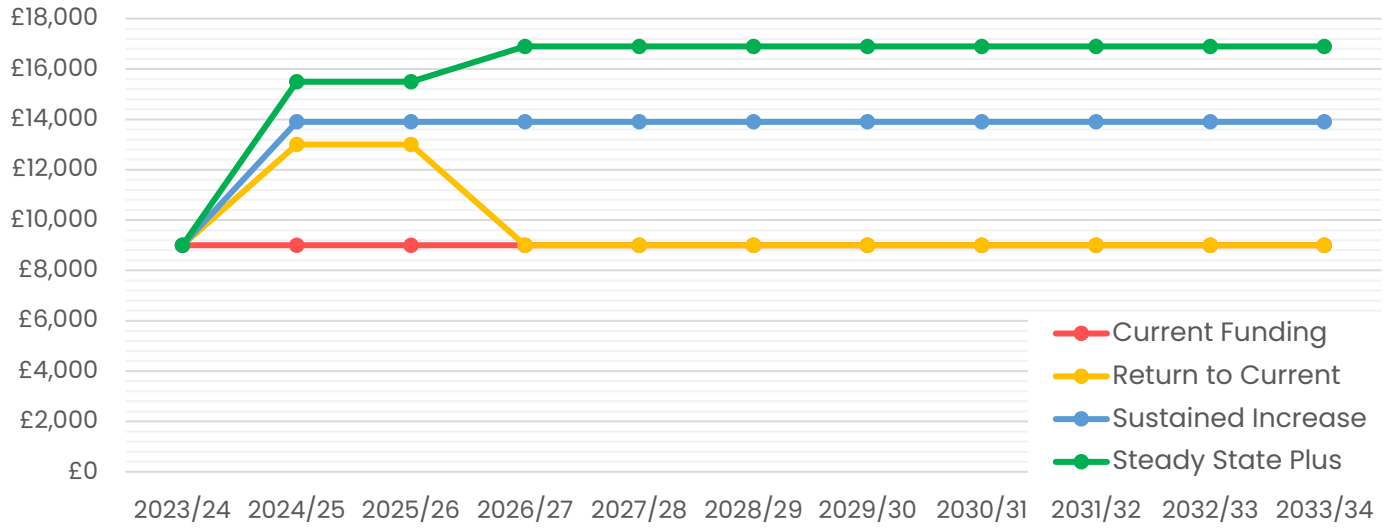
Based on the investment modelling exercise undertaken with Barnet, the following table summarises the outcomes expected under various highway maintenance funding scenarios over the coming 10 years.

Maintenance Strategy:

Understanding that an effective maintenance strategy must draw from a suite of treatment options which optimise mid- to long-term performance, Barnet propose to implement the following strategies:

Carriageway Strategy	**MS1**	Focused on sectional resurfacing targeting smaller areas
Footway Strategy	**IS1**	Late intervention strategy targeting '**red**' only

Funding Strategy:



Annual Budgets:		**Carriageways**	**Footways**
0	**Current Funding**	Continue at £5.6m base funding for the next 10 years	Continue at £3.4m base funding for the next 10 years
1	**Return to Current**	Increase to £9.6m for 2 years before returning to £5.6m	
2	**Sustained Increase**	Sustained increase to £9.6m over the full 10 years	Sustained increase to £4.3m for the next 10 years
3	**Steady State Plus**	Increase to £9.6m for 2 years before increasing to £11.0m	Sustained increase to £5.9m for the next 10 years

Expected Condition:		**'Red'**	**Backlog**	**'Red'**	**Backlog**
0	**Current Funding**	**209km** (↑16%)	**£82m** (↑£45m)	**203km** (↑3%)	**£34m** (↑£7m)
1	**Return to Current**	**191km** (↑14%)	**£75m** (↑£45m)		
2	**Sustained Increase**	**90km** (↓1%)	**£34m** (↓£3m)	**159km** (±0%)	**£27m** (±0%)
3	**Steady State Plus**	**66km** (↓5%)	**£25m** (↓£12m)	**80km** (↓5%)	**£14m** (↓£13m)

Appendix 1: Carriageway Inputs

Carriageway Statistics (incl. Condition)

Road Class.	Length	Width	% Red	% Amber	% Green
Principal*	101 km	9.8 m	11%	52%	37%
Unclassified	592 km	7.7 m	14%	38%	48%

includes classified (B&C) roads

Carriageway Asset Life

Road Class.	Est. Life	Commentary
Principal	15 years	Highest trafficked roads in Barnet so deteriorate the fastest
Unclassified	30 years	Lower traffic volumes so more typical deterioration profile

Treatment Rates

Treatment Type	Description	Principal	Unclassified
Partial Reconstruction	Reconstruct into base layer (~240mm)	£120/m²	£110/m²
100mm Resurfacing	Deep plane & inlay (incl. binder course)	£70/m²	£60/m²
40mm Patching	Shallow lane & inlay (wearing course)	£45/m²	£35/m²

Appendix 2: Footway Inputs

Footway Lives and Rates

Footway Type	Description	Est. Life	Unit Rate
Type 1	Concrete flag detail. Areas of civic importance.	40 years	£65 / m2
Type 3	Bituminous and blocked detail. Elsewhere.	50 years	£79 / m2

Footway Statistics (incl. Condition)

Footway Type	Length	Width	% Red	% Amber	% Green
Type 1	318 km	2.2 m	10%	27%	63%
Type 3	1,273 km	2.2 m			

Appendix 3: Inflation Forecast

The following reflects the impacts of inflation on budgets* and the need for Cabinet to consider year-on-year price rises when setting highways budgets, particularly given today's economic climate.

Inflation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
@ 3%	£5.0	£5.2	£5.3	£5.5	£5.6	£5.8	£6.0	£6.1	£6.3	£6.5	£6.7
@ 5%	£5.0	£5.3	£5.5	£5.8	£6.1	£6.4	£6.7	£7.0	£7.4	£7.8	£8.1
@10%	£5.0	£5.5	£6.1	£6.7	£7.3	£8.1	£8.9	£9.7	£10.7	£11.8	£13.0

based on £5 million/year budget (values in £ millions) – note, inflation today is ~10% annually.