



Newport City Council
Highway
Asset Management Plan
2019-2024



Document Control & Council Approval

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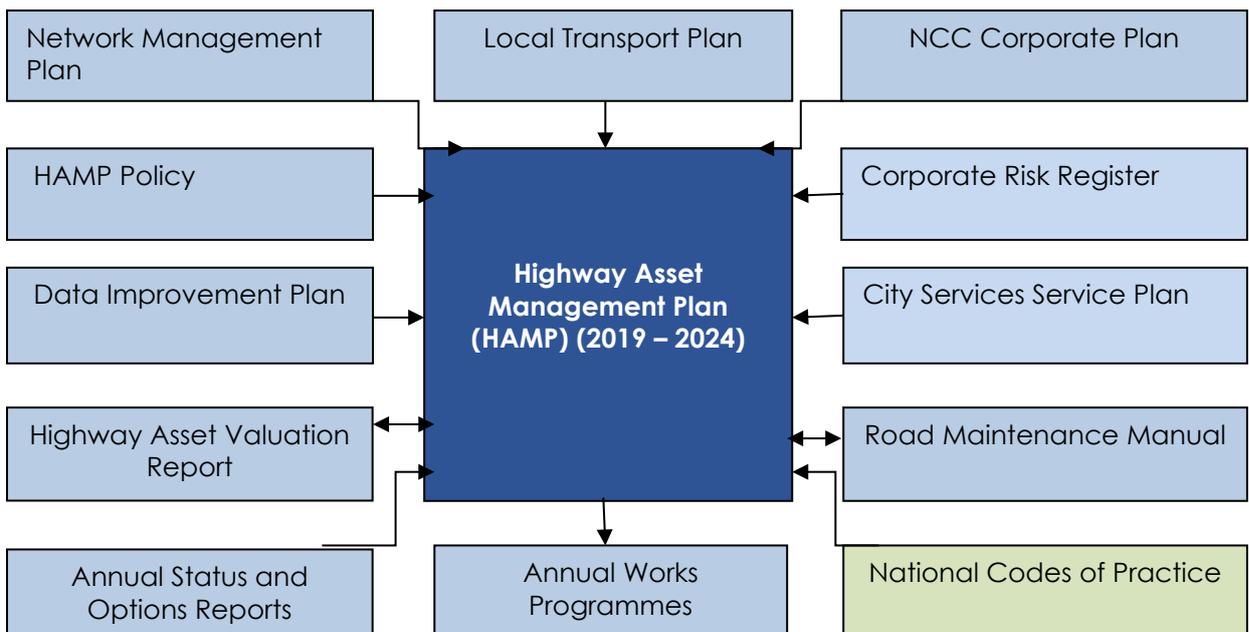
Responsibility for the Plan

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

Council Officer	Responsible for
Senior Technical Officer	Delivering and updating the HAMP

HAMP and Other Plans

The Highway Asset Management Plan (HAMP) relates to other Council plans as illustrated below:



Foreword

This plan sets out Newport City Council's plans for the management of the Council's highway asset for the next 5 years. It has been produced in accordance with County Surveyors Society Wales (CSSW) national guidance and recommended good practices.

It is widely recognised that the application of modern highway asset management practices can enable improved value for money. In these challenging times it is essential that the Council embraces these methods and strives to ensure that funding is invested as wisely as possible. This plan forms an important part of the Council's commitment to apply good asset management practice to the highway network.

The plan recognises the expectations and needs of highway users and in particular the importance that is placed upon our highway assets. The recent harsh winter has shown that our highways are susceptible to damage when bad weather occurs. The plan is designed to ensure that all highway funding is used in the most efficient and cost effective way. This plan is based upon the choices made by the Council in terms of the level of investment in the highway asset, what specific asset(s) the investment is to be directed at and the standards that highway users can expect as a result of the works undertaken on the asset and its effect on asset condition.

Cabinet Member for Streetscene

Head of City Services

1 Introduction

Overview

This HAMP sets out the Council's plan for the management of the local highway network for the next 5 years and is based upon the anticipated condition at current rates of deterioration. Of equal importance is the recognition of the increase in demand on the highway asset as a result of a projected rise in traffic levels across the city.

Scope

NCC's Highway Asset Management Policy requires a HAMP to be produced together with a Highway Maintenance Manual (HMM) and an Annual Status and Options Report (ASOR). The plan covers the period 2019-2024 and records the Council's plans for the maintenance of the "Highway asset", i.e., carriageways, footways, structures, street lighting, traffic management systems and drainage. These are the main assets that form the adopted highway network.

Purpose

The purpose of the HAMP is to

- Define the service standards that users can expect and
- Formalise the Council's strategies for how these standards will be achieved/maintained?

The plan is based upon anticipated funding levels. If these change significantly, then the plan will be amended accordingly annually.

Highway Asset Management

The Council is committed to the use of asset management planning as an appropriate way to manage the City's highway infrastructure. As noted above, a series of complementary documents guide how asset management is applied. Collectively these are designed to ensure that:-

- The highway asset continues to be maintained at an agreed level of service
- Legislative requirements are satisfied
- Exposure to risk is managed and monitored within acceptable levels
- The benefits of available funding are maximised for each asset group
- There are clear allocations of responsibility for the management of each asset group

2 Highway Assets

Highway Assets

The Council's Highway assets covered by this plan are:-

- 655km of Carriageway (consisting of 8% of A roads, 7% of B roads, 22% of C roads and 63% of U roads)
- 923km of Footway
- 741 Structures (89 Bridges, 44 Footbridges, 328 Retaining walls, 264 Culverts, 15 Subways and 1 Signal Gantry)
- 18,200 Street Lights
- 89 Traffic Signal Installations (37 Signalised Junctions and 52 Pedestrian Crossings)
- 30,679 Highway Gullies (plus associated highway drainage infrastructure)

Assets Not Covered

City Services assets not covered in this HAMP are:

- Multi storey and surface car parks
- Trees and soft estate (grassed and verge areas)
- Land appropriated to Highways but not public highway
- Public Rights of Way not on the adopted highway
- Street Furniture (signs, road markings, etc)

Asset Data

This plan is based upon current inventory data for highway assets. For some highway assets full inventory data is not currently held, therefore the data within this plan is based upon best estimates and sample surveys where actual data is not available. The Data Improvement Plan sets out how asset data is to be improved during the period covered by this plan.

Asset Value

The public highway is the only Council asset used by all residents, visitors and businesses within the city. The contribution of the local highway network extends far wider than facilitating transportation. It is fundamental to the economic, social and environmental wellbeing of the city and its management and maintenance should seek to maximise this wider contribution. In March 2017 the (gross) replacement value of the highway asset was calculated to be £1.1bn. (This is the cost of replacing the asset as new).

Highway Asset Valuation

The valuation figures below illustrate the financial value of the highway asset. The **Gross Replacement Cost (GRC)** represents how much it would cost to replace the existing asset, the **Depreciated Replacement Cost (DRC)** illustrates the extent to which the asset has been consumed (depreciated) and the **Annualised Depreciation Cost (ADC)** represents the average annual investment required in planned maintenance (renewal of the asset) required to maintain the asset. Comparing the annual capital investment against this figure provides an indication of whether long term funding needs are being met.

Asset Type	Gross Replacement Cost (GRC)	Depreciated Replacement Cost (DRC)	Annualised Depreciation Cost (ADC)
Carriageways	£652,364,000	£561,605,000	£7,732,000
Footways & Cycleways	£89,874,000	£57,301,000	£1,573,000
Structures	£336,129,643	£306,447,151	£996,916
Street Lighting	£26,040,000	£9,138,000	£972,000
Traffic Management	£6,240,000	£3,360,958	£298,000
Total	£1,110,647,643	£937,852,109	£11,571,916

3 Demands and Expectations

User Expectations

Users expect the city's highway network to be safe, available and fit for purpose. Between April 2017 and March 2018 the Council received more than 2,800 customer enquiries relating to highways. Although not all enquiries related to asset condition, the level of enquiries is indicative of the importance placed on the highway asset.

Asset Growth

The asset grows each year due to the adoption of new developments and the construction of new highway links. Over the last 5 years, 5km of carriageway has been added to the highway asset via adoption by the Council along with other associated assets such as footways, structures, street lighting, etc. New assets create the need for future maintenance and associated additional funding.

Traffic Growth



Traffic growth over the last 10 years has placed increasing pressure on the highway network. Many of the Council's highways were not designed to accommodate this level of traffic. This has created a growing need for investment in maintenance of the network.

The M4 Severn Bridge tolls were abolished for all vehicles at the end of 2018. As a result of this traffic flows in Newport are predicted to increase for all vehicles and particularly for heavy vehicles by up to 20%. The increases will impact on the whole life of our highway assets and result in the need for increased maintenance and associated revenue and capital investment. In the long term the delivery of the proposed M4 relief road will help mitigate increased traffic levels and relieve pressure on the highway network in and around Newport.

Environmental Pressures

The Council should consider how various climate change variables such as intense or prolonged rainfall; hotter temperatures and higher wind speed will impact on the highway assets that they manage and the likelihood of these events occurring. By doing this the greatest generic risks to network closure or restriction can be identified. These are likely to be

- Flooding (pluvial, fluvial, groundwater and coastal)
- Snow
- Landslips
- Scour

- Wind damage
- Heat/ water and frost damage

The latest UK Climate Projections, as developed by the Met Office and Environment Agency are used when assessing future risk and vulnerability. These projections for future changes to both average climatic conditions and also the frequency of extreme weather events, allow for an understanding of where risk levels may change, and the identification of new risks which may emerge as the climate changes. When applied alongside records of past incidents, and other information sources (such as flood maps), climate projections may also help to identify when and what action should be taken to adapt to the risks.

4 Financial

Five Year Capital and Revenue Funding Projection

Anticipated Capital Budget £k				
2019/20	2020/21	2021/22	2022/23	2023/24
£3.13m	£903k	£200k	£200k	£200k

Anticipated Revenue Budget £k				
2019/20	2020/21	2021/22	2022/23	2023/24
£1.86m	£1.86m	£1.86m	£1.86m	£1.86m

Future investment is planned to be at similar levels to current funding with the following exceptions:

- Carriageways: the level of investment will be higher if further grant funding is received from Welsh Government
- Structures: specific capital funding has been allocated for an assessment of George Street Bridge to establish current condition in order to ascertain the likely future maintenance funding requirements
- Street Lighting: Salix funding has been acquired for a “spend to save” energy efficiency LED initiative

The funding levels are stated to allow predictions of condition to be made and strategies to be developed. Significant variance to these funding predictions in the future will require an update of this HAMP. A breakdown of the funding assumptions by asset group is include in Appendix A.

5 Monitoring Performance

Management of the highway asset will be monitored using the following performance measures:

Safety	The number of Category 1 defects identified. (Cat 1 defects are assessed as requiring an immediate response within 24-hours to make safe).
Condition	The percentage of the asset in a "poor" condition
	The percentage of the asset that should be "considered for maintenance treatment"
	The number of Cat 2 (High) maintenance defects requiring a 5 day response for repair
	The number of Cat 2 (Medium) maintenance defects requiring a 21-day response for repair

In addition to these targets the Council measures and monitors performance in relation to inspections and compliance with reactive and routine repair standards in accordance with the methods set out in the Council's highway maintenance manual.

6 Service Standards and Current Investment

Carriageways

Service Standards

Safety	Measure	Target Standard	
		2019	2024
	Make safe or repair of Category 1 “safety” defects within the specified 24-hour response time. (% when response time met).	100%	100%
Condition	Repair Category 2 (High) within the specified 5-day response time. (% when response time met)	100%	100%
	Repair Category 2 (Medium) within the specified 21-day response time. (% when response time met)	100%	100%
	% in poor condition (red condition)		
	– A-Roads	2.9%	4.8%
	– B-Roads:	4.9%	3.7%
	– C-Roads	7.6%	10.4%
	– U-Roads	6.4%	9.0%
	The percentage of roads that should be considered for maintenance treatment (red/amber condition) by road class		
	– A-Roads	45.4%	54.4%
	– B-Roads:	36.1%	43.7%
	– C-Roads	40.8%	53.1%
– U-Roads	35.6%	47.4%	

Current Maintenance Regime

Routine and Reactive Repair: Repair of defects to current intervention standards & response times.

Planned Maintenance: Programme of surface treatment and resurfacing of roads requiring treatment in sections or their entire length (as opposed to repair of defects) comprising of:-

Preventative (Surface Treatment), Low cost surface treatment of roads in the initial stage of deterioration.

Corrective (Resurfacing), resurfacing roads that have deteriorated beyond the point where a preventative treatment can be applied.

Funding Allocation

The maintenance regime for 2019/20 is currently funded as follows:

Routine and Reactive Repair: £ 440k

Planned Maintenance: £1.47m

Footways

Service Standards

Safety	Measure	Target Standard	
		2019	2024
	Make safe or repair of Category 1 “safety” defects within the specified 24-hour response time. (% when response time met).	100%	100%
Condition	Repair Category 2 (High) within the specified 5-day response time. (% when response time met)	100%	100%
	Repair Category 2 (Medium) within the specified 21-day response time. (% when response time met)	100%	100%
	% in poor condition (red condition)	1%	5%
	The percentage of footways that should be considered for maintenance treatment (red/amber condition) by footway type	22%	30%

Current Maintenance Regime

Routine and Reactive Repair: Repair of defects to current intervention standards & response times

Planned Maintenance: Programme of resurfacing of footways requiring treatment in sections or their entire length (as opposed to repair of defects) comprising of:-

Preventative (Preservation Treatment), low cost surface treatment of footways in the initial stages of deterioration

Corrective (Resurfacing), resurfacing footways by replacing the bituminous surface or replacing the concrete slabs with a bituminous surface.

Funding Allocation

The maintenance regime for 2019/20 is currently funded as follows:

Routine and Reactive Repair: £ 455k

Planned Maintenance: £0k

Street Lighting

Standards

	Measure	Target Standard	
		2019	2024
Safety	Make safe or repair of emergency response Cat 1 defects/incidents within specified 2-hour response time. (% when response time met).	100%	100%
	Make safe or repair of Category 1 "safety" defects within the specified 24-hour response time. (% when response time met).	100%	100%
Condition	Repair maintenance defects within the specified 5-day response time. (% when response time met)	97.62%	98%
	% columns in poor condition (for immediate removal)	2%	3%
	The percentage of columns that should be considered for retest and inspection (Near the end of their service life)	22%	30%

Current Maintenance Regime

Routine and Reactive Repair: Repair of defects to current intervention standards & response times.

Planned Maintenance: Examples of programmed maintenance works are:-

Programme of replacing existing high/low pressure sodium luminaires with LED alternatives.

Structural Renewal (column replacement).

Funding Allocation The maintenance regime for 2019/20 is currently funded as follows:

Routine and Reactive Repair: £722k

Planned Maintenance: £1.5m

Structures

Service Standards

	Measure	Target Standard	
		2019	2024
Safety	Make safe or repair of emergency response defects/incidents within specified 2-hour response time. (% when response time met).	100%	100%
Condition	Bridge Stock Condition Indicator – average BSCLav	85	90
	Bridge Stock Condition Indicator – critical BSCcrit	85	90
	No of Council owned bridges failing assessment	1	0
	% of Council owned bridges failing European standards	1	0
	% of Council road bridges with unacceptable weight, height or width restriction	2%	1%

Current Maintenance Regime

Routine and Reactive Repair: most structures require ongoing routine maintenance that typically includes minor structural repairs, cleaning drainage and removing vegetation

Planned Maintenance: Programmes of maintenance comprising:-

Strengthening: (Council structures), structures assessed as being weak will require strengthening

Refurbishment: structures that have deteriorated into a poor or very poor condition require a level of refurbishment that is beyond that of routine maintenance

Parapet works: the strengthening or replacement of parapets.

Scour Protection: scour protection works.

Funding Allocation

The maintenance regime for 2019/20 is currently funded as follows:

Routine and Reactive Repair: £135k

Planned Maintenance: £0k

Traffic Signals

Service Standards

	Measure	Target Standard	
		2019	2024
Safety	Make safe or repair of Category 1 “safety” defects within the specified 24-hour response time. (% when response time met).	100%	100%
Condition	% of installations that exceed their average expected service life (signalised junctions)	10%	14%
	% of installations that exceed their average expected service life (pedestrian crossings)	5%	25%

Current Maintenance Regime

Routine and Reactive Repair: Repair of defects to current intervention standards and response times comprising of:-

Routine Repair: Routine cyclic maintenance, bulk lamp changes and cleaning.

Reactive Repair: Emergency repairs, vandalism, RTC damage and dangerous or faulty equipment reported as a result of routine inspection.

Planned Maintenance:-

Refurbishment of signalised junctions: The planned renewal of signalised junctions.

Funding Allocation

The maintenance regime for 2019/20 is currently funded as follows:

Routine and Reactive Repair: £114k

Planned Maintenance: £0k

7 Risks to the Plan

The risks that could prevent achievement of the standards specified in this plan (section 6) are:

Plan Assumption	Risk	Risk Management Action
The plan is based upon weather conditions being normal	Adverse weather will potentially create higher levels of defects and deterioration than have been allowed for.	Budgets and predictions will be revised and this plan updated if adverse weather causes a decline in highway network condition.
Available budgets have been assumed as shown in Appendix A	External pressures mean that Welsh Government reduces the funding available for highway maintenance	Target service standards will need to be revised to affordable levels.
Construction inflation will remain at level similar to the last 5 years.	Construction inflation will increase the cost of works (particularly oil costs as they affect the cost of highway surfacing materials)	Target service standards will need to be revised to affordable levels.
Levels of defect and deterioration are based on current data which is limited for some assets (e.g. footways and structures)	Assets deteriorate more rapidly than predicted and the investment required to meet targets is insufficient.	Reactive maintenance budgets will need to be revised.
Resources are available to deliver any improvement actions.	Pressures on resources mean that staff are not allocated to service improvement tasks such that the predicted benefits cannot be fully achieved.	Target dates will need to be revised and subsequently reported.
This plan is based upon a reactive maintenance regime across most of the highway asset groups.	This level of investment means that highway asset condition will decline and the level of defects will increase across the network. The highway asset maintenance backlog will continue to increase.	A robust regime of highway inspection will need to be maintained in order to mitigate the risk of increased 3 rd party claims on highway assets.
The M4 Severn Bridge tolls were abolished for all vehicles at the end of 2018. The predicted increase in traffic volumes of up to 20% on the M4	An increase in traffic volume on NCC's highway network will result in an increase in the rate of deterioration of the carriageway asset.	Consideration must be given to the need for additional resources for maintenance of the network. In the long term the successful delivery of the proposed M4 Relief Road will potentially mitigate the effects of the

will impact on NCC's highway network.		toll removal through Newport.
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The risk has been evaluated in accordance with the Council's corporate risk management strategy. In addition to the risks above a Highway Asset Risk Register will be maintained recording the risks associated with each asset type. A review of this register is used annually when programmes of works are developed.

Appendix A: Anticipated Five Year Funding

Asset	Works	Anticipated Funding £k				
		2019/20	2020/21	2021/22	2022/23	2023/24
Carriageways	Revenue	£438k	£438k	£438k	£438k	£438k
	Capital	£1.43m	£903k	£200k	£200k	£200k
Footways	Revenue	£455k	£455k	£455k	£455k	£455k
	Capital	£0k	£0k	£0k	£0k	£0k
Structures	Revenue	£135k	£135k	£135k	£135k	£135k
	Capital	£200k	£0	£0	£0	£0
Street Lighting	Energy Costs	£540k	£594k	£653k	£719k	£791k
	Revenue	£722k	£722k	£722k	£722k	£72k
	Capital	£1.5m	£0k	£0k	£0k	£0k
Traffic Signals	Energy/Comms Costs	<i>Included in Street Lighting energy costs</i>				
	Revenue	£114k	£114k	£114k	£114k	£114k
	Capital	£0k	£0k	£0k	£0k	£0k

Historical Expenditure

Historical expenditure invested in works on the highway asset over the last five years is being compiled and will form part of the completed plan

References

- 1) Local Transport Plan
- 2) NCC Corporate Plan
- 3) Corporate Risk Register
- 4) Network Management Plan
- 5) City Services Service Plan
- 6) City Services Highway Asset Management Policy
- 7) City Services Data Improvement Plan
- 8) Highway Maintenance Manual
- 9) Annual Status and Options Reports
- 10) Highway Asset Valuation Report