HIGHWAYS INFRASTRUCTURE ASSET MANAGEMENT STRATEGY

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Contents

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Introduction

This strategy document is to assist Council Members and service stakeholders in demonstrating how highway infrastructure asset management is shaped and delivered to support the Authority's Corporate Plan 2022-2026 'Building a Fairer Newham' and their statutory maintenance obligations under the Highways Act 1980. It will set out the platform against which Highways Infrastructure Asset Management (HIAM) is to be implemented and achieved and it provides the basis for Newham Council to adopt sound highway's asset management principles in order to achieve greater efficiency and value for money and to bring the benefits of economic prosperity to the wider community. The strategy also sets out the benefits of investing in the highway infrastructure and how asset management activities are implemented, measured, reviewed and improved. This headline strategy position shall be valid for a period of 3 years from 2023/24 to 2026/27 and is then subject to review reflective of the corporate priorities, themes and objectives at that time.

The London Borough of Newham encompasses around 472km (293 miles) of adopted roads and around twice that length of adopted footways along with 53 No. bridges and 24 other highways structures such as culverts and retaining walls.

The highways infrastructure is by far Newham's most valuable public asset valued at around £940m for adopted roads and footways and over £562m for bridges and other highways structures. The effective and efficient management and maintenance of this primary asset is therefore of paramount importance as it underpins the fabric of Newham's economy, commerce, regeneration and vibrancy.

We are working with other Newham Council service areas regarding their particular owned infrastructure assets which are maintained at public expense, in order to align the management and maintenance of their infrastructure assets with the Highways Act 1980 and with the guidance and recommendations given by the Highways Code of Practice 'Well-Managed Highway Infrastructure' October 2016.

The consideration of various partnership influences with internal and external organisations must also be reflected by the implementation of the strategy to avoid 'silo' working arrangements. Works, services and consultations undertaken via these organisations will inevitably impact on the delivery of works and services delivered by the Authority's highways asset maintenance groups and vice-versa.

The table below provides examples of partnership organisations who will have an impact on the delivery of infrastructure works and services.

Internal Partners:	**External Partners:**
All in-house highways infrastructure asset groups Planning Authority (+Legal & Finance) Environmental Services Housing Services Parks & Greenspace Cemeteries and Crematoriums etc…	DfT/National Highways…etc. Transport for London Network Rail Canals & Rivers Trust Contractor & Consultant Organisations Regional Highways Alliance Groups Public Stakeholder Organisations & Minority Groups (various) Transport Organisations etc…

In recognition of UK Government's guidance and direction through the Highways Maintenance Efficiency Programme (HMEP), we can realise operational efficiencies and determine service priorities by adopting the following principles:

- Adopt a long-term strategic approach to highways maintenance management
- Consideration of stakeholder expectations needs and aspirations
- A systematic approach to maintenance management activities
- Optimal allocation of resources
- Management of investment over the asset life cycle
- Efficient asset performance management

The adoption of these principles will enable us to set and realise short, medium and long-term operational objectives in order to manage and maintain our highways and transport assets. This will be achieved through:

- The collection of core asset inventory and condition data as a platform from which to make informed decisions and develop annual and forward priority works programmes
- The setting of asset performance targets and service levels that supports Corporate Priorities and addresses customer needs and expectations within the limitations of funding and resource availability
- A determination of priority highway infrastructure maintenance and investment needs through a process of “Condition Appraisals” and “Value Management” taking account of lifecycle planning principles in order to realise annual and future funding needs and to identify timely and affordable maintenance solutions
- The undertaking of durable pothole repairs, reflective of customer and operational safety needs, traffic management requirements and street works coordination measures
- The installation of long life and energy efficient LED street lighting lanterns throughout the borough, including all roads that are adopted from developers

Newham's Corporate Plan 2022-26:

Newham's Corporate Plan 2022-2026 'Building a Fairer Newham' provides the platform for improving the quality of life for people living and working in Newham and for those visiting and investing in Newham.

Newham's Corporate Plan sets out to help residents through tough times and to live a happy, healthy and well life. It has been developed as the Council's strategy to deliver the Mayor and Administration's Manifesto and guide the Council's direction for the period 2022-2026.

The plan is based around a set of key principles:

- Responding to the climate emergency through tangible actions; and preventative approaches that elevate the health, well-being, and happiness of our residents, as well as their safety.

- Delivering an inclusive economy agenda anchored by a commitment to Community Wealth Building so that inequality, poverty and racial disproportionality can be tackled alongside the housing crisis
- Investing in our children and young people so that Newham is the best place for them to thrive and flourish
- Wanting the best for our communities so that they can live in safe and clean neighbourhoods
- Involving residents in decision-making as part of our people-power agenda of participatory democracy
- Transforming the Council so that it is fit-for purpose for the 21st Century and able to deliver optimal services for our residents within the framework of good governance and transparency

and it gives rise to eight community priorities:

- A healthier Newham and ageing well
- Newham's inclusive economy to support you in these hard times
- Your neighbourhood
- Safer Newham
- Homes for our residents
- Supporting our young people
- People powered Newham and widening participation.
- A campaigning Council

Newham will apply strategic Highways Infrastructure Asset Management processes and practices that supports these key principles and community priorities which provides a holistic approach that encompasses all facets for the delivery of highways and transportation services. This provides the platform for Newham to deliver safe, serviceable and robust highways and transport infrastructure services and will help identify the priority needs of the

service and will promote and support the current and future interests of our customers and external stakeholders.

The HIAMS will form the operational and managerial basis for the identification and determination of the delivery of priority planned and reactive works and schemes for each of the core asset groups of highways, bridges, highways flood risk, street lighting and traffic signals, which are managed by Transport for London on behalf of the Councils and will demonstrate how key stakeholders engage and align with the services and how they may impact on the desired outcomes for service delivery.

Newham's Highways Infrastructure Asset Management Strategy Model

Newham's 'Asset Maintenance Management Strategy' is modelled to provide connectivity between top level governance protocols and operational service delivery processes in order to provide an asset service outcome which is fit for purpose and reflects the existing and future priority and functional needs of the Council and its stakeholders.

Newham's Strategy model is based on the HMEP "Highway Infrastructure Asset Management Guidance Document" as shown in the framework below:

The Strategy Model comprises of the following framework components which transforms governance protocols into operational outcomes.

GOVERNANCE:

Governance considers the organisation and its political and stakeholder environment through which Newham's highway services are delivered; it comprises of the following entities:

Corporate Initiatives - Local Policy and Strategy:

Newham's 'Highway Infrastructure Asset Management Strategy' and service delivery functions and activities are developed and aligned to various operational and managerial service plans and policies and shall underpin and support the corporate initiatives and environment offered by the various strategies, service plans and priorities given by the following:

- Corporate Plan 2022-2026 'Building a Fairer Newham'
- Council Objectives, Vision, Priorities and Principles
- Borough Plan
- The Council's Forward Plan & Key Decisions
- Highway Infrastructure Policies & Strategies

These policies, plans and processes create the interconnected building blocks aimed at delivering a strong economy where businesses can grow, where people can live in a better environment, safely and healthily and where families can thrive. This is promoted through the delivery of modern value for money services and further supported by strong leadership and governance working in partnership and collaboration with key stakeholders and service providers.

The holistic delivery of these plans and policies is supported by Newham's "HIAMF Group" who represent all the key Highways and Transport service groups. This infrastructure working group meet regularly to review holistic cross-service works programmes, progress and operational initiatives, to consider performance, operational efficiency and potential conflict issues, and to review best practice arrangements, Government & Industry Guidance, Directives and Good Practice.

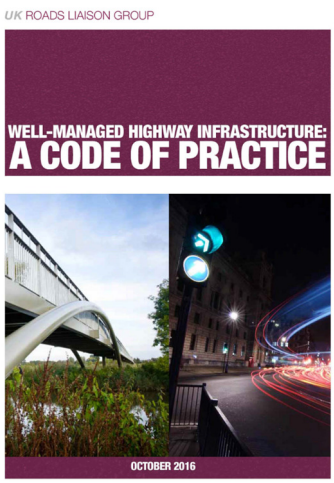
Newham will take account of the advice, guidance and good practice initiatives offered to them through the following government and industry sources:

- HMEP - Guidance Docs and Toolkits
- DfT - Protocols and directives
- RSTA – preventative maintenance processes, products and good practices
- ALARM Survey - Performance and Delivery
- CIPFA – HAMP Network initiatives and Whole of Government Accounts (WGA)
- ADEPT – National Guidance and Asset Management direction
- APSE – Industry coordination, alliances, collaboration and benchmarking

National & Regional Policy and Strategy

National, regional and local policy strategy and guidance will be assimilated into Newham's Highway Infrastructure Asset Management service delivery functions and activities in order to align and coordinate with overarching and cross-boundary service delivery initiatives impacting on highways infrastructure asset management. Whilst there are a number of industry good practice guides available, the main asset management guidance document is the Highways Code of Practice 'Well-Managed Highway Infrastructure' which was released in October 2016.

Newham are working towards full compliance with the Code of Practice and have implemented the main recommendations of the Code.



Stakeholder Interaction

Stakeholder engagement is encouraged and indeed welcomed in order to fully capture and acknowledge the needs, wishes and aspirations of all highways users and to support the review of service delivery strategies, priorities and levels of service.

This will be achieved through the following:

- Feedback from Ward Members and Service Managers (reflective of Community interests and aspirations)
- Newham's Customer Services – reporting system, website, apps
- Traffic & Transportation Services
- Emergency Planning (Resilient Network, Critical Assets & Infrastructure)

Funding Provisions

Various funding sources are potentially available for the delivery of highway maintenance and management services, these will be utilised to best effect reflective of a strategic and prioritised approach to service delivery and considering the political environment in which we operate and the existing and future needs of our customers.

- LTP annual capital budget allocations
- DfT Grants, Challenge Fund, Incentive Fund
- Newham Council annual revenue funding
- Commuted sums where the provision of traffic control equipment, highways, bridges (including other highways structures) drainage and flood risk assets has been made via a private developer
- Insurance claims against third parties in respect of damage to highway authority property

Data

Infrastructure asset records are set up against which inventory & condition data is collected, registered, processed and managed. This forms the platform from which condition performance and trend measures are collated and service level target setting protocols are established. From this platform the future priority needs of the infrastructure assets can be established, modelled and implemented.

PLANNING:

Planning describes the key activities, processes and drivers employed in the strategy, and advises on how these should be applied and implemented.

Plan & Strategy and Council Priorities

The Highways Infrastructure Asset Management Plan and Strategy have been adopted and embraced by Newham Cabinet in support and recognition of the Council's Corporate Plan 2022-2026 and vision which is framed around a set of key principles that give rise to eight community priorities (as described above).

These are delivered through connected services underpinning the health and well-being of people going about their daily business in their place of work and in their living and learning environments and they provide the direction and protocols that should be adopted to support.

Newham highways service delivery initiatives and affordable and sustainable priority maintenance solutions that meet the current and future needs of our stakeholders.

Service Levels and Performance

Levels of service for each major asset group are identified reflective of a consideration of stakeholder expectations aligned to the Corporate Plan and Borough Strategy and balanced against our ability to provide affordable maintenance solutions and services within funding limits and resource availability.

Service levels for the following Asset Groups will be set reflective of the stakeholder customer expectations and these will be monitored against measured performance and target criteria.

Asset Group	Asset/Service	Service Level Data Collected
Highways	Carriageway Footway Winter Services	Service Level / Performance Indicator Definition Target Performance Data Required Measurement Reporting Frequency
Bridges & Other Highway Structures	Bridges Retaining Walls Subways	
Highways Flood Risk/Drainage	Gully Trash Screen Soakaway Highway Water Course	
Street Lighting	Lighting Units Lighting Column Traffic Signs	
Street Scene	Fencing Highway Verges Trees Litter Litter Bins Spillages	
Highway Operations	Vehicular Crossings Road Markings	

Asset Group	Asset/Service	Service Level Data Collected
Network Management	Street Works Traffic Management	
Public Rights of Way	PROW Footpaths	

Maintenance Hierarchy

Presently all roads are allocated to a designated 'Hierarchy' in accordance with the Highway Infrastructure Code of Practice 2016, which is primarily based on traffic volumes and road characteristics.

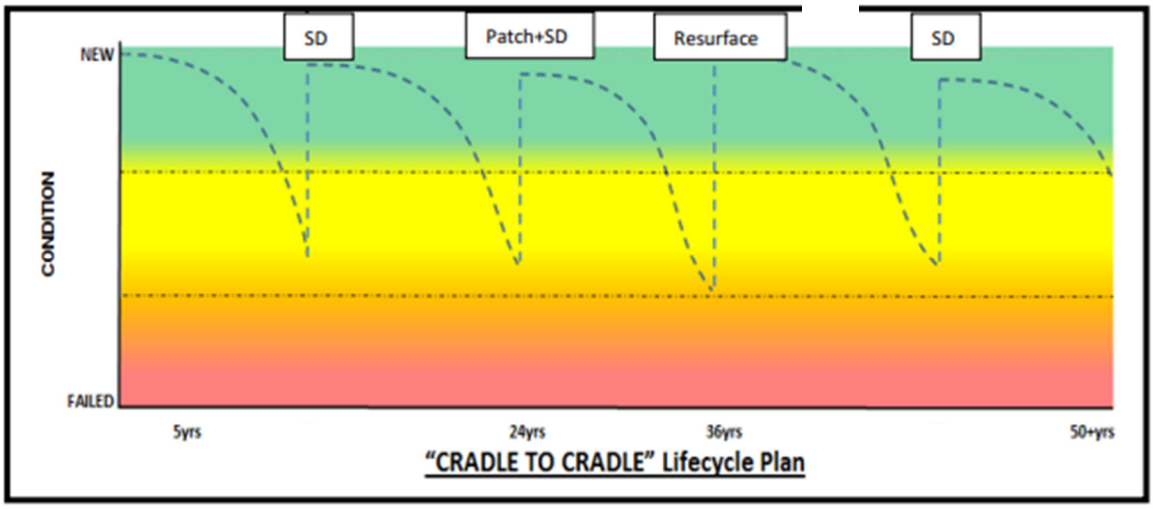
Life Cycle Planning

We acknowledge and appreciate the principles of the life cycle planning processes in order to consider asset performance, maintenance interventions and indicative works priorities. When applied to condition projection modelling initiatives, this will support highway investment planning considerations to inform on asset performance and budget optimisation for our current and future investment needs for highways asset maintenance.

A life cycle planning approach will be implemented for all major assets where possible to assess the impact of different levels of funding on asset performance and asset maintenance needs. Investigating current and future levels of funding will allow a required performance target or given condition to be achieved for each asset. By identifying the levels of funding required, whole life costs can be minimised and resources can be allocated accordingly.

In support of this we have adopted a balanced approach to lifecycle planning by employing a "cradle to cradle" life cycle maintenance strategy. This strategy is demonstrated indicatively in the diagram below in respect of the carriageway asset. This comprises of selected 'worst first' schemes (or newly constructed highways) followed in

future years by a defined cycle of cost effective 'preventative' and surface maintenance treatments aimed at considerably prolonging the service life of the highways asset and optimising its performance and serviceability.



Works Programmes

Annual and forward priority highways work programmes are developed reflective of a consideration of maintenance management lifecycle planning initiatives, asset performance and condition modelling, and value management considerations within budget availability and resource constraints. This process supports the determination of our annual and future funding needs, and it promotes the identification of affordable and timely maintenance solutions.

The sites selected for priority maintenance shall be reflective of service levels and performance targets aimed at securing a safe, serviceable and sustainable network environment which adequately supports Newham Council's Corporate Priorities.

The proposed annual priority works programmes are presented to senior Council Officials for final review, approval and funding, upon which they are registered on Newham Council's website for public information.

ENABLERS:

Enablers describe the functions that support the implementation of the Highway Asset Management Model.

Leadership & Organisation: We will continually promote understanding and buy-in to the Highway Asset Management Plan, Strategy and Plan from senior Council leaders in order to seek optimal investment in service delivery within the constraints of the Council's financial provisions. The Council's appreciation of highways asset management protocols will enable them to make informed choices and will provide them with the ability to defend their decisions reflective of a risk-based approach to asset maintenance management.

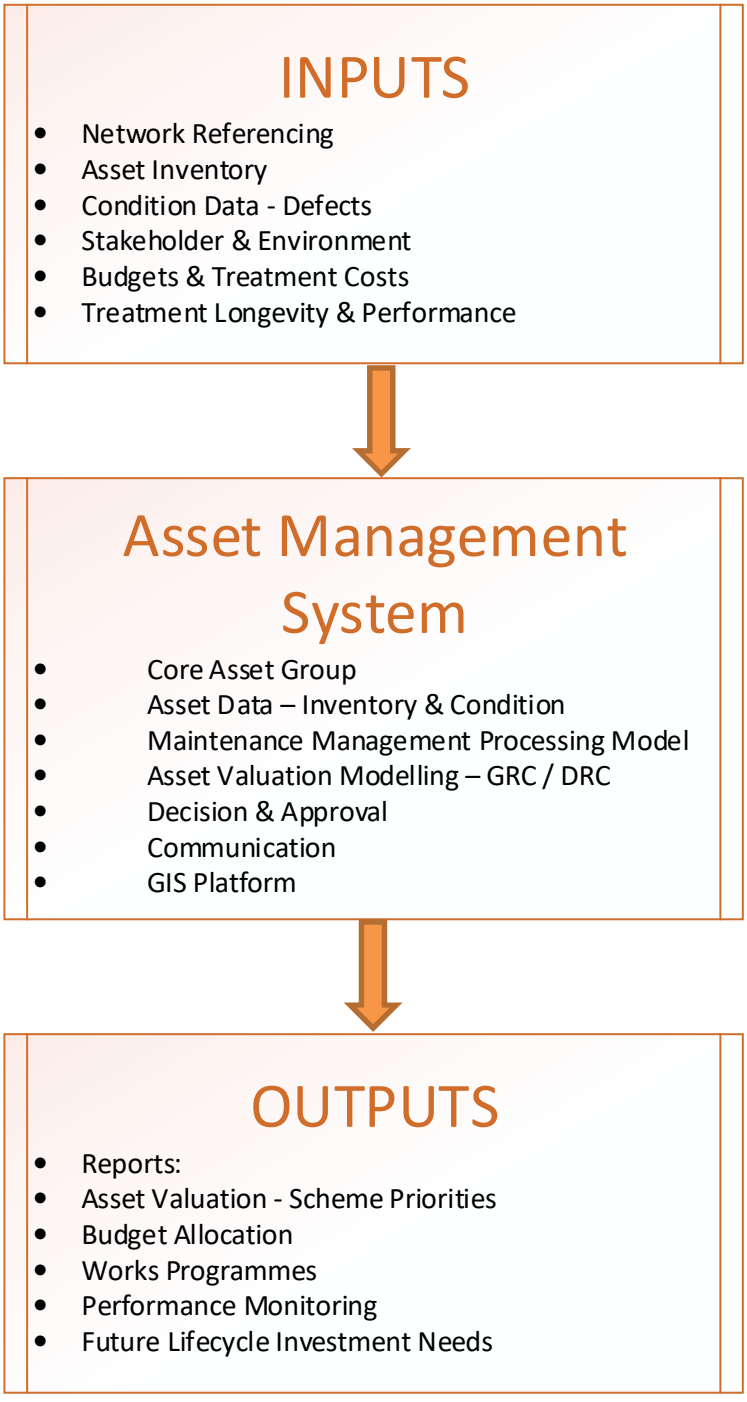
Risk Management: We will identify, evaluate, manage and mitigate service delivery risks as far as is reasonably practicable. Any potential threats to achieving our operational objectives and core priorities will be identified and we shall seek to manage and mitigate those threats within the provisions and limitations of our operational and funding resources and reflective of Council Policy and direction. A Risk Register is set up to account for operational and fiscal threats and their impact and likelihood with mitigating control measures to address the risks. This shall include a 'Resilient Network' which may influence maintenance priorities for highways, bridges, highway flood risk and transport services and related critical infrastructure.

The following Asset Groups and entities contribute to the Risk Register:

Asset Group	Risk Data
Infrastructure General	Risk Consequence Event Probability Risk Rating Mitigation
Highways	
Flood Risk/Drainage	
Highway Operations	
Bridges & Other Highway Structures	
Street Lighting	
Public Rights of Way	
Network Management	

Highway Asset Management System: We employ robust asset management systems and principles to facilitate service functionality, identify priority investment needs, consider 'invest to save' initiatives, determine budget needs and invoke procurement processes.

This process is modelled as follows:



Inputs - identify the various supporting data components that feed into and underpin the development, provision and operation of the asset management system. The quality, currency, appropriateness and completeness of all data supporting asset management should be regularly reviewed to reflect the current status of the highways asset in order to apply modelling processes that will provide meaningful and correct outputs.

Highway Asset Management System - comprises of the functional components that support the operational decision making and reporting processes that may feed into a single or multiple AM systems which are used to model asset condition and determine priority works programmes and investment planning needs.

Outputs - provide the information and data required to support the asset management process. These outputs relate to the operational service delivery aspects of the asset management process that give rise to priority works programming and fun ding allocations.

Performance Monitoring: where available and suitable, industry established performance monitoring processes will be utilised to review condition trends, to support benchmarking initiatives and to attain continuous asset improvement. By highlighting improvements which are underway, and by making progress more transparent, it can be demonstrated how the condition of assets are improving and what more needs to be done. Increasing the visibility of asset performance is essential in managing costs, promoting quality services and meeting customer expectations.

Implementation: The implementation process will take on a gap analysis approach to identify where our service delivery position presently stands and where we need to be reflective of achieving our declared service levels and in support of the Council's Priorities. We shall review our service delivery plans and investment levels and appraise our asset inventory and condition data in order to identify gaps in asset data, systems, performance and service level, we shall then develop a staged implementation plan to address any

deficiencies and to seek approval from senior decision makers to fund and action the plan over time.

SERVICE DELIVERY:

This final process demonstrates how the works and services are to be procured and delivered.

Programme, Service Delivery & Procurement:

Prioritised works and services shall be delivered via the Highways Framework contracts.

We shall engage in robust cost-effective procurement processes for the programmed delivery of works and services in order to secure their correct, timely and quality delivery and to ensure value for money.

Procurement will be through the industry standard competitive tendering and framework arrangements in accordance with Newham's financial and procurement procedure rules and they shall be inclusive of collaboration and alliance initiatives with other Local Authorities in order to secure best value services.

Delivery:

Various modes of service delivery may be used reflective of the nature of the works, the capabilities of the Highway Authority and the resources it can offer at any point within the year.

- **In House** – Use of the internal provision of highway services and staff remaining within the employment of the Highway Authority.
- **External Sub Contractor & Multiple Providers** – A highway authority managed contract with various specialist organisations to ensure the delivery of relevant highway maintenance service elements for a defined task or period of time.
- **Framework** – The Highway Authority will use framework contracts for the provision of particular services where appropriate.

Asset Impairments/Failures:

From time to time the impairment of a major infrastructure asset may be encountered which results in a critical failure of the highway infrastructure, e.g., bridge failure due to flooding or major road collapse following severe weather effects or wash-out. These are exceptional circumstances which shall be addressed by reprioritising annual works programmes and/or by securing additional capital reserve funding.

Data Management and Information Systems:

Highways infrastructure asset group inventory and condition data provides the foundation upon which asset management processes are founded and further developed. The quality and completeness of these data sets and their continued update and management is essential to the functionality and processes of asset management, it is therefore imperative that this data be effectively collected, stored, managed and updated.

A data information strategy is being developed for implementation in 2023/24 to support the asset management strategy.

Newham holds various service core asset data on the following industry systems and platforms:

Asset Group	Data Set	System
Highways	Network Referencing Model	• Horizon's (UKPMS) • Alloy • Metis Portal
	Inventory	
	Condition Assessment Data	
	Inspection Data	
	Performance Data	
	Value Management Model	
	Lifecycle Model	
	Condition Projection Model	
	Asset Data Works Data	

Asset Group	Data Set	System
Bridges & Other Highway Structures	Bridge Management Database	• Bridgestation
Flood Risk/Drainage	Section 19 (Flooding Incidents) Drainage assets Works Data Section 21 (Register of Drainage Structures)	• Excel files • Arc GiS • Symology Insight
Street Lighting	Street Lighting Asset Inventory Energy (Monthly) Works Data Electrical Testing Inspection Data	• Symology Insight • Alloy Asset Management system

The collection and update of this data shall be carried out by trained in-house staff or by external specialist survey organisations accredited in quality data collection processes.

Review Process:

The Highways Infrastructure Asset Management Strategy shall be reviewed at least every 2 years (or earlier reflective of any changes to Corporate Policy and Service Priorities) and in response to developing Government, Industry and HMEP initiatives and statutory changes. Such changes shall be applied to the Highway Infrastructure Asset Management Plan during its annual review.

Newham's Key Asset Groups:

This overarching Highways Infrastructure Asset Management Strategy shall be applied to the following key highways asset groups. Each of these key asset's groups are subject to evidence-based decision-making processes and strategic considerations shall be applied in support of service delivery.

Key Asset Group	Decision Evidence	Strategic Considerations
Highway (carriageway + footway)	• Newham's Corporate Plan &Priorities • Stakeholder Interests • Asset Condition Safety and Serviceability • Affordability and Whole Life Costs – Budget Optimisation • Works Coordination, Programming and Deliverability	• Levels of Service • Desired Outcomes • Prioritising Investment Decisions • Future Demand
Bridges (and other highway structures)		
Flood Risk & Drainage		
Street Lighting		

For each key asset type the following strategic entities are considered:

- Levels of Service
- Performance Monitoring
- Desired Outcomes
- Life Cycle Planning
- Prioritising Investment Decisions
- Future Demand

CARRIAGEWAY and FOOTWAY:

Newham's adopted road network is approximately 472km (293miles) in length with a footway network of around twice that length. These key highways assets are maintained through a combination of 'reactive' safety and routine maintenance repairs, alongside 'planned' structural schemes and preventative maintenance treatments. Ward Members and Service Managers are informed of the maintenance prioritisation processes for these assets through technical workshop presentations that are used to identify annual priority scheme selections. The maintenance management strategy employed in determining how, when and where the roads and footways are to be maintained is implemented reflective of the following considerations aimed at improving the overall asset condition:

Levels of Service

Levels of Service are derived for various aspects of highway asset maintenance reflective of stakeholder needs and expectations. They can be taken from works associated with the following range of maintenance activities.

Reactive Safety Maintenance: the definition of how safety defects are identified and actioned is provided in the" Highways Safety Inspection Manual" which is aligned to the Highways Code of Practice 'Well-Managed Highway Infrastructure' October 2016. The identification of safety defects that require urgent maintenance are sourced from a combination of highway safety inspections and from third party reports, eg, police, public, Ward Members and Council staff.

Routine Maintenance: local permanent highway repairs are undertaken in order to maintain the roads and footways up to a serviceable standard and fit for purpose reflective of risk, usage and trafficking. In order to achieve best service level efficiencies, these works are planned and programmed in local areas to promote economies of scale and value for money. Such works promote the continued safety and serviceability of the highway and act as pre-patching works in preparation for surface dressing and other preventative treatment measures.

Planned Structural Maintenance: schemes for reconstruction, strengthening and resurfacing are identified through a process of annual condition evaluations via industry standard condition survey techniques, e.g., SCANNER, AEI, DVI, CVI, FNS.

The condition data is modelled to provide a defect condition index and then fine-tuned and prioritised through a Value Management scoring process which includes socio-economic considerations and weightings. Such works address the 'upper-amber' and 'red' zoned priority schemes which will mitigate the adverse effects of the condition performance index.

Planned Preventative Maintenance: preventive treatment programmes are in part generated from the extensive programmes of routine maintenance patching, part from the annual condition assessments surveys, part from the analysis of SCRIM data in consideration of network hotspots and in consideration of life cycle planning treatment interventions. Preventative treatment programmes aim to capture those parts of the network requiring low-cost early maintenance before more expensive surface or structural treatments are required thereby prolonging asset life in support of lifecycle planning initiatives. Such works tend to address the 'lower-mid amber' zoned schemes which will promote asset serviceability.

Performance Monitoring

Levels of service are measured and monitored against set target levels which show how the asset is performing against defined criteria. Service levels are derived through stakeholder engagement via customer enquiries and complaints and via their LOHEG platform.

Carriageway and footway performance monitoring is derived through the annual condition surveys such as SCANNER, SCRIM, CVI and FNS which provide the core condition data necessary to process and analyse performance measures through condition index trends.

Performance monitoring can also be achieved by engaging in benchmarking processes with like-minded Authorities.

Desired Outcomes

Highways services effectively underpin the delivery of most other Council run services and external services, without which the infrastructure, industry and commerce would quickly fall into a state of decline.

The desired highway maintenance outcome is to keep the network in a safe and serviceable condition, to prolong its service life as far as is reasonably viable and affordable and to provide the highway user with a good travel experience and a pleasant environment in which to live and work.

Highway maintenance is undertaken to promote betterment in service condition with resultant aim to deliver condition performance indicators that equal or exceed the national average values.

Reactive Maintenance: Where possible, safety defects shall be robustly fixed first time in order to secure an asset repair which needs no further intervention. Where this is not possible, e.g. due either to traffic management needs or street works coordination conflicts or the need to make safe without undue operational delay in order to keep the highway safe, then in these instances urgent temporary safety repairs will be undertaken and these may be followed up with permanent routine repair later as necessary. In practice such temporary repairs may be considered as semi-permanent as they often offer a prolonged service life.

Planned Maintenance: Structural maintenance schemes and preventative maintenance treatment programmes will reflect lifecycle planning initiatives and will inform on future annual budget needs for highway maintenance. Such works will also help mitigate against poor network performance and aim to show a measured betterment via performance indicator figures through the National Indicators. Such measures will be reflected in the Whole of Government Account submissions for annual GRC and DRC. A coordinated strategic approach to planned maintenance provides the correct balance of structural and preventative maintenance needs and secures the most out of restricted annual funding provisions.

Life Cycle Planning

Life cycle planning and condition projection modelling initiatives look at treatment intervention milestones for various road hierarchies or classes of road. They assist in determining priority works programmes and they provide indicative future works programmes. Such data processing allows for current and future funding investment needs to be determined reflective of levels of service and condition performance criteria.

This budget optimisation modelling allows operational decisions to be made through informed choices and the life cycle planning data sets will continually be updated and monitored in the highways asset management system.

Prioritising Investment Decisions

Reactive Maintenance: Maintenance investment needs will be determined in order to secure quality and robust repairs reflective of a risk based and affordable approach. Defect investigation and intervention levels will be in accordance with the Safety Inspection Policy, and actionable defect and repair criteria will be reviewed in order to secure more cost-effective ways of delivering value for money alongside affordable and sustainable highways services.

Planned Maintenance: The priority investment processes for planned schemes is a two stage process driven by the condition status of the highway and then fine-tuned by 'Value Management' evaluations. The annual scheme selection process identifies the schemes most important to the Highway Authority for priority maintenance funding and delivery. This process also recognises the maintenance needs for many other schemes on the network that are not sanctioned due to funding constraints, such schemes are re-evaluated the following year. Pending eventual scheme selection, those schemes not making the annual programme cut will continue to be safety inspected, monitored and placed under reactive maintenance regimes. Higher risk sites may also be subject to increased safety inspections pending eventual scheme selection.

Future Demand

Traffic growth in Newham has marginally increased in the period 1993 to 2019 from 857 million vehicles km to 944 million vehicles km, averaging at 909 million vehicles km over this time period (ref source data: https://www.gov.uk/government/statistical-data-sets/road-traffic-statistics-tra TRA8904). Note: the figures for 2020 and 2021 are not used as they are significantly skewed by the effects of the coronavirus pandemic.

In this same period road degradation effects relating to the percentage of classified and unclassified roads in Newham where maintenance should be considered is shown to be significantly variable, …see below (ref source data: Department for Transport: Road Condition Statistics)

Percentage of classified roads where maintenance should be considered.

(March 2007 to March 2022):

RDC0120: A Roads 2008 to 2021 CI Range 5% to 27% CI Ave 11%	RDC0120: B and C Roads 2008 to 2021 CI Range 8% to 25% CI Ave 14%

Percentage of unclassified roads where maintenance should be considered.

(March 2007 to March 2022):

RDC0130 Unclassified Roads 2008 to 2021 CI Range 18% to 40% CI Ave 23%

By adopting transparent and objective priority works processes, good investment planning and programming regimes, and better customer communication protocols, highway stakeholders will gain better clarity of what can realistically be expected, afforded, and delivered within annual budget and engineering resource constraints and how future schemes are evaluated, prioritised and selected.

Future investment needs will be informed by a consideration of lifecycle planning protocols and condition projection modelling and through budget optimisation via highway investment planning, reflective of highway safety, serviceability and sustainability demands aligned to Newham Council's Corporate Plan 2022-2026 and its key principles and community priorities.

The overall performance and condition of Newham's Road network can vary considerably year on year reflective of maintenance investment deficiencies, works planning and implementation constraints. These entities need to be addressed in order to create a road network that is service able, sustainable and fit for purpose, reflective of future stakeholder demands of the needs of the service.

BRIDGES and OTHER HIGHWAY STRUCTURES

The Highway Authority own and maintain 53 bridges, 24 other highway structures including retaining walls. These structures are a vital part of the Highway infrastructure allowing free passage across the borough. In keeping with our duty of care to the public we inspect all structures periodically in line with current practice and also a risk based approach where issues are known, a number of these structures are owned and maintained by others, but the public have rights of access over or under them. The maintenance of the structures is undertaken on a risk-based approach with safety to the public placed as the highest priority.

Levels of Service

Reactive Safety Maintenance: The identification and repair requirements of safety defects generally resulting from vehicle impacts on structures are received from third party sources eg, the police, members of the public, other departments of the Council, the call centre and Ward Members. Any repairs required are actioned on a priority basis dependant on the severity of the damage.

Routine Maintenance: The condition of Highway Structures is determined from the inspections that are undertaken on a regular basis. The frequency and detail of inspections is outlined in the Highways Code of Practice 'Well-Managed Highway Infrastructure' October 2016. Reactive maintenance is a 'do minimum' response, reacting to concerns from inspections to ensure that a structure is 'fit for purpose' and 'safe for use'. This type of maintenance does not improve the general condition of the structure to any large degree but is considered as maintaining the structure in a steady state.

Planned Structural Maintenance: Following more detailed inspections that look at all aspects of the structure and at the maintenance history, schemes are developed to improve the longevity and overall condition of structures. Dependant on the importance of the structure to the network, works could include the strengthening or replacement of complete structures that have reached the end of their serviceable life.

Planned Preventative Maintenance: Programmes of preventative maintenance are undertaken on component parts of structures that have a finite life eg, bridge expansion joints, bearings, paint systems. If undertaken in a timely manner, they extend the working life of structures.

Performance Monitoring: Bridges (and Other Highway Structures) performance monitoring is accomplished through General and Principal inspections providing Bridge Condition Indices data necessary to process and analyse performance measures and trends. General Inspections are undertaken once in every two years, and Principal Inspections are caried out once every 6years for our structures. If warranted a Special Inspection is undertaken upon request for a reported issue such as asset impairment, bridge strike, flood scouring, etc.

Desired Outcomes

The purpose of planned and preventative maintenance works is to improve the overall condition of the highway structure stock as measured using the nationally agreed Bridge Condition Indices as an indicator and to achieve a structure stock that is in a 'steady state' condition. This is only possible subject to the adequacy of annual funding provisions and engineering resources to inspect, identify, design, procure and deliver the necessary bridge maintenance works and structural schemes.

Prioritising Investment Decisions

Reactive maintenance investment needs are based on the identification and extents of defects determined from the General Inspection Programme. Action is then determined on a risk-based approach dependent upon location and importance of the defect.

Planned structures schemes are determined by their importance to the network and to the local communities. Schemes are evaluated based upon their value for money, importance to the network, resilience impacts, and the expected time required for scheme delivery reflective of design inputs, ecological surveys and permissions, site assess approvals and traffic management arrangements etc.

Future Demand

The increasing volume and weight of traffic has the serious effect of increasing the deterioration rate of our structure stock especially the older stock. By having a transparent robust inspection and reporting regime, stakeholders will have a more informed view of structure stock condition and be able to target investment based on good sound information according to needs. By involving other service departments and stakeholders during preparation and execution of schemes, greater understanding of the issues and problems will be realised.

HIGHWAY FLOOD RISK and DRAINAGE

Levels of Service

Reactive Safety Maintenance: The identification of safety defects is from a combination of safety inspections which are carried out in conjunction with the highway inspection programme, identification during routine gully cleansing and reports from third parties e.g., police, public and Ward Members.

Safety repairs are carried out within the service level response timeframe agreed with Highway Operations. Non-urgent safety defects are treated as planned works on a risk-based approach whilst emergency and urgent safety repairs are temporarily made safe until appropriate permanent repairs can be carried out. When necessary, the use of signage or road closures may be required to ensure public safety is maintained.

There has been an increasing occurrence of gully grate thefts around the Borough in recent times and these are dealt with as emergency safety repairs followed up by their permanent replacement using anti-theft gully grates, this is having a significant impact on annual drainage maintenance funding provisions.

Cyclical Maintenance: A routine cyclical cleansing programme of highway drainage assets operates continually and the frequency of these depends on historic data and the locations of the gullies.

Looking ahead to the future , it is proposed to undertake Proactive Gully Cleansing on a more risk based approach, targeting resources and the frequency of cleansing where they are needed most, taking into account factors such as maintenance hierarchy, flood risk, highway classification, extent and reoccurrence of silting, etc.

Gullies will be classified under the following priority:

- 8-weekly (high risk flood zones due to road usage e.g. heavy silting)
- 6-monthly (high risk flood zones based on LLFA data)

- Yearly (regular maintenance zones able to operate on yearly cleans)
- Ad-hoc (low maintenance zones able to operate on 24-36 month cleansing cycles)

These priority levels are already being tested and are subject to change where necessary.

Routine Maintenance: is carried out on a reactive basis centred on reports from external bodies, members of the public and as identified during highway asset inspections. Repairs and cleansing are carried out as required to ensure the highway is safe to use and water can be conveyed away from the surface. Repairs are undertaken in order to bring the highway and drainage system to a serviceable standard and fit for purpose reflective of risk, usage and trafficking.

Planned Maintenance: Schemes may be determined whilst undertaking cyclical maintenance or through flood risk investigatory works. Further planning and detailed design allow major works to be undertaken to upgrade existing drainage systems, the installation of new drainage systems or carry out major repairs.

Performance Monitoring: Gully cleansing is monitored based on the percentage of gullies cleansed to program. 5% checks are carried out by the Highways Operation Supervisor each week to ensure gullies are being cleansed adequately.

Desired Outcomes

The desired outcome is to ensure the highway network is safe to use and future maintenance can be planned and undertaken to preserve and promote asset serviceability.

Reactive Safety Maintenance: Safety defects are normally rectified in the first instance. Where this is not possible due to traffic management needs or the availability of products, materials or resources, the asset will be made safe without delay and followed up with permanent repair.

Cyclical Maintenance: Regular maintenance is carried out to ensure assets remain functional and serviceable to prevent disruption to users of the highway.

Planned Maintenance: Allows us to plan and undertake major works to create solutions whilst looking ahead to future requirements to ensure drainage systems are functioning and fit for purpose.

Life Cycle Planning:

Life cycle planning is an aspect that the Highway Drainage team is looking to carry out in the future when all asset information has been collected and collated, currently assets are being replaced or repaired on a reactive basis when we become aware they have reached their end of life. No future planning for replacement of assets is programmed.

Prioritising Investment Decisions

Investment in highway flood risk and drainage maintenance needs to be sustained in order to ensure functioning assets and be delivered based on a value for money approach.

Flooding issues will be prioritised primarily to protect asset resilience, essential critical infrastructure, residential property and business and to facilitate the uninterrupted use of the highway network. Investment is selected on a cost / benefit basis to deliver maximum results from budgets.

When a Section 19 investigation is triggered under the Flood and Water Management Act 2010 funding for works can be applied for via the DEFRA Local Levy Funding Scheme or Grant in Aid.

The progress to resolve historical flooding incidents will continue, whilst moving to a planned maintenance programme can ensure resources are used effectively and efficiently. The use of technology and pragmatic engineering processes can ensure that stakeholder's priorities

and customer demands are met subject to annual funding provisions and resource availability.

Future Demand

As traffic grows**,** housing stock and the size of the highway network increases to meet the needs a growing population, the highway flood risk infrastructure will increase accordingly increasing pressure upon budgets. Climate change is an important factor to be considered in future priorities. The impact of increased short duration storms on the highway drainage system is accounted for in the design of new highway drainage assets, however existing systems will need to be maintained and upgraded to remain effective and operational, which will require significant future investment.

STREET LIGHTING

Newham presently has 19646no lighting points installed throughout the borough providing lighting on arterial roads, bus routes, residential streets and footpaths. This stock is currently being reduced as a process of de-illumination proceeds.

Levels of Service

Lighting repairs are carried out annually as part of reactive maintenance. The target time for carrying out a repair is 7 working days for residential road lights and 28 working days for traffic sensitive routes.

Faults caused by loss of supply will be targeted to be repaired in line with our Service level agreement with the local distribution network operator and should not exceed 28 working days.

Currently, approximately 1% of lighting column stock is replaced annually in addressing the deteriorating condition of concrete columns, however with the capital investment programmes that Newham have (or expect to have) this figure will likely change to somewhere in the region of 3-5%.

The Street Lighting team operate a 24/7/365 emergency service responding to knock down equipment.

Performance Monitoring

Newham Council monitors its own performance on a quarterly basis and the results are uploaded to the internal reporting system. Any performance issues are questioned, and programmes of improvement implemented.

Desired Outcomes

The desired outcome is that Newham's roads and footpaths are illuminated, and lighting columns are structurally sound with a planned column replacement programme that at least matches the rate at which columns come to the end of their design life.

Life Cycle Planning

The current specification of the lighting columns is for 40 years so any new columns installed increase the replacement requirements of the stock.

Prioritising Investment Decisions

Reactive Maintenance: Highways have a central management system on which lighting outages are reported daily. Every failure and lost connection is attended as part of our reactive maintenance protocols. At every visit a visual inspection report is recorded onto our asset management system with regards to the column condition, from this any high-risk columns are identified and programmed for replacement.

Planned Maintenance: We undertake a 6 yearly structural and electrical testing programme of our street lighting assets. The Highway Authority has embarked on a full structural assessment of its columns; based on the results of these inspections a full replacement programme will be devised.

Street lighting investment is required to address policy on carbon and energy reduction and integrate with Council Policy in other areas such as “Smart Networks” addressing Wi-Fi and Smart phone innovations & any connection requirements.

Future Demand

As housing developments continue and road extents increase there will be an increase in demand for street lighting. Additional resources will be required as lighting columns will required for other additional services such as banner advertising, CCTV & smart cities requirements.