

Hounslow Highways Asset Management Plan - 2026



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1 Executive Summary

- 1.1 The Service Provider is responsible for managing the highways asset and street scene for the London Borough of Hounslow under the Highways PFI Contract. The streets are vital to all aspects of everyday life. The Service Provider is committed to a programme of improving the management efficiency of that asset in terms of Customer Service, Safety, Serviceability and Sustainable Preservation of the infrastructure.
- 1.2 All of these aspects are brought together in this Strategic Asset Management Plan, which is referred to as the Highways Asset Management Plan (HAMP). The HAMP sets out the objectives and targets for delivery and improvement of the Network, procedures for efficient management of the asset lifecycle. The HAMP aims to balance the needs of customers, who expect a high-quality service, with the desire to preserve the integrity and value of the highway network for future generations.
- 1.3 This HAMP is written to be consistent with all appropriate parts of the associated Codes of Practice, the Contract documents and Method Statements for the Highways PFI and based on the principles set out in BSI ISO 55001:2014. The HAMP is a structured document that sets out:
 - The scope, inventory and condition of the existing assets
 - A definition of outcome-based 'Levels of Service' and asset management objectives
 - Planning to achieve the asset management objectives and risk management including the decision-making process, delivery procedures and 'Lifecycle' maintenance strategies.
 - The evaluation of performance and continuous improvements
 - Recording information and communication
- 1.4 Hounslow's HAMP has been in place for a number of years, and with the PFI project the approach to asset management is well defined. A workshop was held on 24th February 2026 with the following objectives
 - Understand any changing aspirations of the Authority;
 - Ensure that the plan is delivering the right level of service;
 - Report on progress to date;
 - Appreciate the needs of the stakeholders; and
 - Explain the way forward, based on latest asset inputs.

The output from the workshop has been incorporated within the body of the annual review to continuously improve the HAMP and asset management system.

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2 Introduction

2.1 Context & Objective of the HAMP

- 2.1.1.1 This HAMP sets out the vision for improvements in the management, operation and funding of Hounslow's highways network for the 25 year PFI contract.
- 2.1.1.2 The HAMP is a strategic document which outlines how the asset management system will meet the defined levels of service and asset objectives.
- 2.1.1.3 We have completed the Core Investment Period, December 2017, which is a key part of the HAMP, our highway network is:
- Providing a better level of service to residents and street users
 - In a better condition and meet the contract performance standards (asset objectives)
 - Of higher value as measured by the Whole of Government Accounts
 - Providing the services that Customers want, based upon a true understanding of their needs and expectations.
- 2.1.1.4 The highway is the most valuable publicly owned asset managed by the Service Provider. The HAMP takes all parts of the asset together, and sets out the approach that considers and prioritises between them in delivering the highway management service. It balances the preservation and enhancement of the highway network with the best use of resources for the delivery of services to Hounslow's residents and to the users of the highway network.

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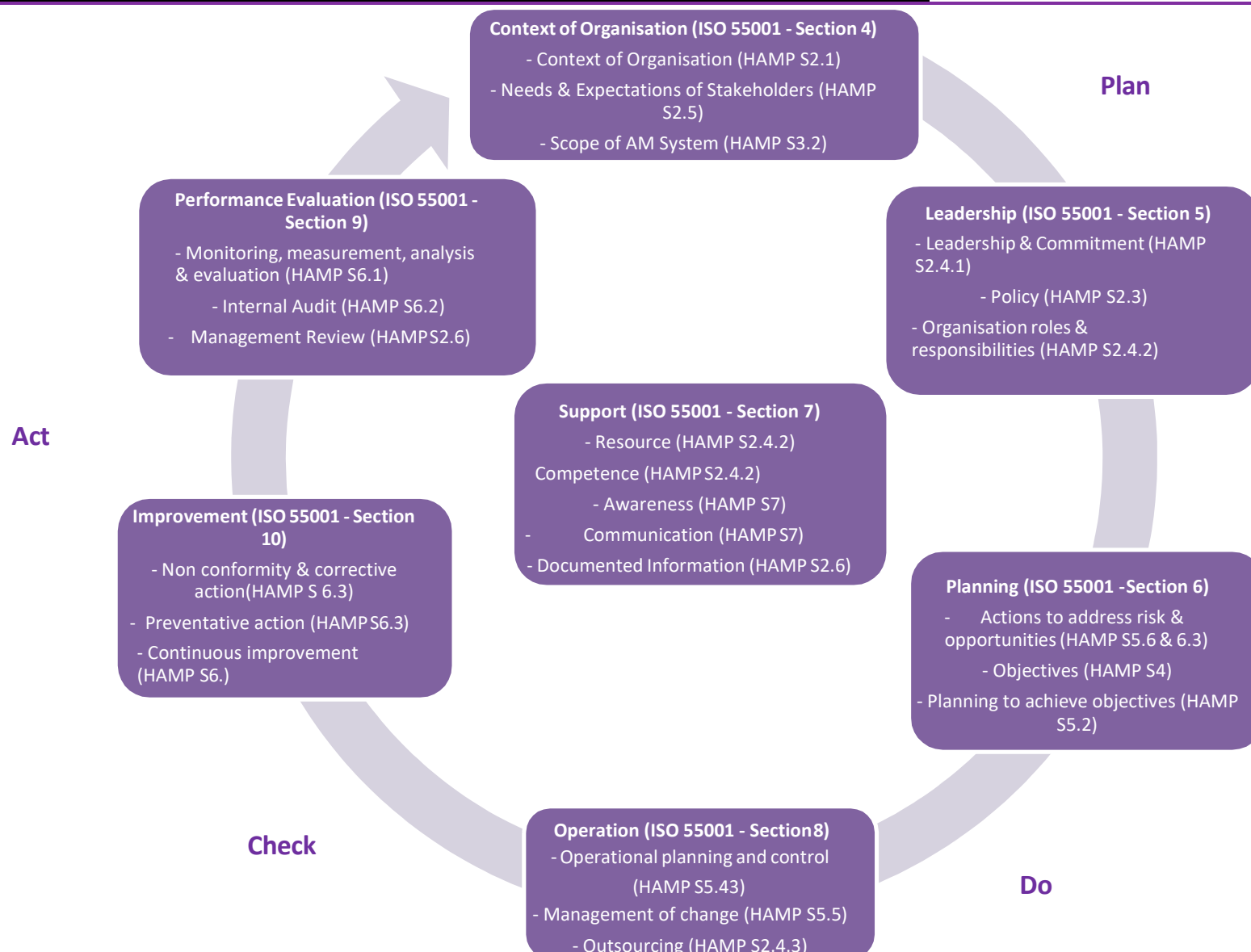
2.2 HAMP Structure

2.2.1.1 The main body of the HAMP is a statement of current practice and future plans and aspirations for the main elements of good asset management planning. The HAMP comprises a number of the following key sections:

- Section 2 explains the context of the HAMP, the relationship with the asset management system, the organisation and leadership and the interaction with key stakeholders.
- Section 3 explains the asset management system and in particular the scope of the asset management system, the assets covered, knowledge of the assets and information control. The Asset Register for the assets that exist within Hounslow's highway network and the condition are included in Appendix C.
- Section 4 sets out the Levels of Service that will form the basis for target setting, strategic planning and service monitoring and improvement for all assets.
- Section 5 explains the asset management and decision making process, the planning stages to achieve the level of service including lifecycle management plans and the risk management processes. The
- Section 6 outlines how performance is evaluated including continuous improvement.
- Section 7 describes communication both internally and with key stakeholders.

2.2.1.2 The relationship between the HAMP and ISO 55001 is shown graphically in Figure 2.0.

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Figure 2.0 – Relationship between HAMP structure & ISO 55001 requirements

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2.3 Asset Management System & Relationship to other Hounslow Documents

- 2.3.1.1 The Asset Management System is supported by VINCI Construction UK Ltd's (our parent company) Integrated Management System, which complies with the requirements of ISO 9001, 14001 and 45001 (Figure 2.1). The integrated management system is delivered via the "The Way We Work" (TWWW).

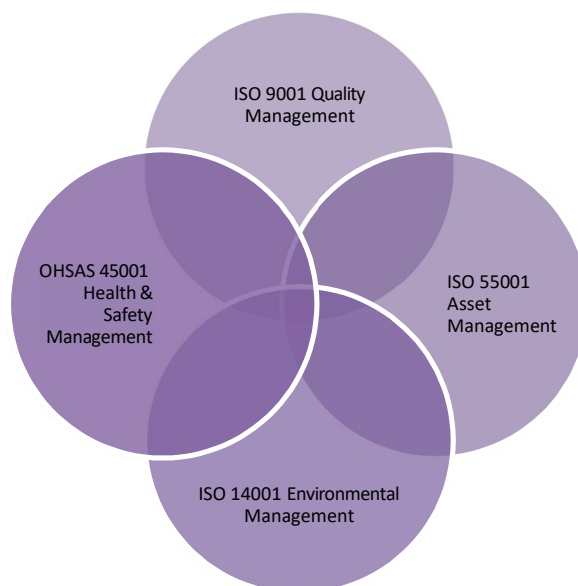


Figure 2.1 – Integrated Management System

- 2.3.1.2 VINCI's vision, strategic direction, business plans and policies are defined and available at [Policies & Indicators](#). In particular, VINCI's approach to asset management is defined as part of the VINCI Asset Management Policy Statement.
- 2.3.1.3 The [Hounslow Highways Business Plan](#) sets out the objectives for the division as a whole and complements the HAMP.
- 2.3.1.4 A number of other standard, documents and other regulatory information already exist that set out the London Borough of Hounslow policy and practice that either directly or indirectly have implications for the HAMP. These are listed in [Schedule 35](#) of the Contract. The HAMP does not replace these, but complements them by showing how the Service Provider will support these within the restrictions of the Contract.

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2.3.1.5 The key elements and relationship within the asset management system are shown in Figure 2.2.

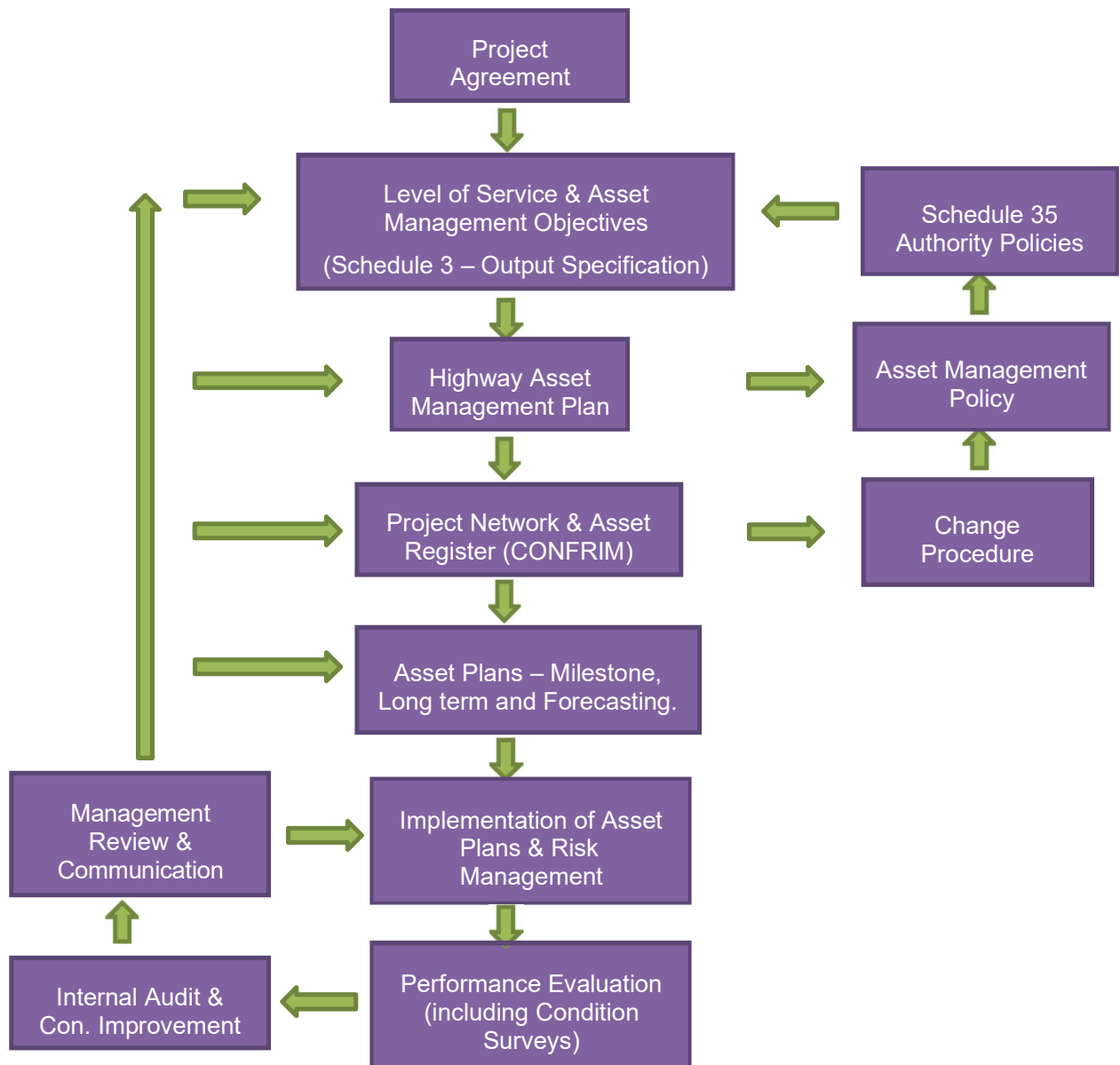


Figure 2.2 Key elements and relationships asset management system

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2.4 Leadership & Support

Leadership and Commitment

- 2.4.1.1 Leadership and commitment with respect to the asset management systems is critical to deliver the levels of service and asset objectives defined by the Project Agreement.
- 2.4.1.2 The asset management system is regularly discussed and reviewed as part of the [Hounslow Highways board](#). The purpose of the Hounslow Highways board is “To ensure the Company’s prosperity by collectively directing the Company’s affairs, more specifically, directing the Company’s affairs as they relate to the London Borough of Hounslow Highway Maintenance PFI contract, whilst meeting the appropriate interests of its shareholders and relevant stakeholders.”
- 2.4.1.3 The Hounslow Highways board is chaired by the VINCI Construction UK Ltd Chief Executive who provides the overall leadership. The board is comprised of the term service director, Ringway regional director, Hounslow Highways service director, Reginal Financial Controller and Managing Director, Ringway.
- 2.4.1.4 The Hounslow Highways Service Director has direct responsibility for the contract including the leadership of the asset management system and delivery of the asset objectives. This includes the production of the annual service report.
- 2.4.1.5 The Network Manager is responsible for ensuring the HAMP, asset management policy, asset management system and asset strategies are updated and continue to be compatible with the organisation objectives.
- 2.4.1.6 The Network Manager is responsible for producing monthly compliance reports for the Service Director & Hounslow Highways board. This will include key risks and continuous improvement opportunities. These will be reviewed by senior leaders as part of the monthly Hounslow Highways board meetings.
- 2.4.1.7 The Network Manager is responsible for ensuring the asset management system achieves its intended outcome. The Network Manager is supported in this through:
- ☐ Business & Assets Analyst Manager – Responsibility for updating the Asset Optioneering Model, for collation of survey data and calculation of Network Performance Gap (NPG)
 - ☐ Jean Lefebvre UK Ltd – Responsibility for assessment of annual surveys, annual review of network condition and treatment performance
 - ☐ Design & Construction Manager – Responsibility for ensuring the planned and reactive maintenance is undertaken in accordance with the HAMP
- 2.4.1.8 Delivery for planned maintenance is the responsibility of the Design & Construction Manager and reactive maintenance is the responsibility of the Operations Manager.

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2.4.1.9 The Network Manager is also responsible for cross-functional collaboration within the organisation. As part of this part of this the Network Manager will liaise with the design & Construction Manager, Operations Manager and Business Manager and work in collaboration with all interested parties.

Support & Resources

2.4.1.10 The Network Manager is responsible for ensuring the resources for the asset management system are available and directing resources to ensure the effectiveness of the asset management system. These are defined with the [Network Management team](#) structure which is stored on the DMS.

2.4.1.11 The Network Manager is also responsible for:-

- Defining roles and responsibilities for the network management team (see [Method Statement MS01](#) for Job descriptions)
- Determining the required competency for each role based on education, training and experience and reviewing the competency of the team on annual basis. This has been developed using a [competency framework](#).
- Identifying training and future needs. This is conducted via the [staff training](#) procedure and the appraisal system.

2.4.1.12 Operational and control of planned work is managed by the Design & construction manager and of reactive work is managed by the operations manager.

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Outsourcing

- 2.4.1.13 The Network Manager is also responsible for outsourcing of any activity which can have an impact on the asset management objectives. This should be in accordance with the [Purchasing, subcontractor and services provision](#).
- 2.4.1.14 The list of approved suppliers is stored on eSource.
- 2.4.1.15 As part of this process both internal and external companies are utilised to provide specific support.
- 2.4.1.16 Key task outsourced include:-
- Jean Lefebvre (UK) – Internal technical consultancy providing pavement engineering and asset management support.
 - Xais-PTS International – UKPMS survey contractor, data delivery
 - Causeway- indicator reporting.
 - WSP – Principal and general inspection of structures
 - 4WAYS – Designers for street lighting
 - Siemens – CONFIRM license
 - XAIS Asset Management Ltd – Expert Asset
 - Highway Quality Solutions Limited – Utility and call-off coring.
 - Eurovia Surfacing and Eurovia Specialist – Operational delivery of carriageway schemes
 - Electrical Testing Ltd.- Lamp column testing and Structural Testing
 - Gavigans – Operational delivery of Major Maintenance schemes
 - MBM – Operational Delivery
- 2.4.1.17 Significant one-off projects are procured on a project by project basis in accordance with the purchasing procedure.
- 2.4.1.18 The Network Manager will ensure the competency of all outsourced activities and the awareness of the HAMP and asset management system. Copies of appropriate insurance and accreditation will be held on the e-connect.
- 2.4.1.19 The Design & Construction Manager and Operations Manager will ensure the competency of all operational elements.
- 2.4.1.20 The performance of outsourced resources will be reviewed on annual basis by 360 degree review.

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2.5 Stakeholders (Interested Parties)

- 2.5.1.1 The London Borough of Hounslow authority and customers are key stakeholders for the highway maintenance PFI project and delivering the enhancements to the highway network.
- 2.5.1.2 The needs and expectations of stakeholders are defined as per Annex Stakeholder Table [Stakeholder Plan Annex](#)
- 2.5.1.3 Stakeholder Mapping has also been carried out for external stakeholder to fully understand the impact of each stakeholder ([see Stakeholder Mapping](#)):-
- 2.5.1.4 Stakeholder requirements for recording information and reporting are defined by the Project Agreement and relevant method statements. Monthly monitoring reports and an annual service report are provided to the authority to demonstrate compliance with the objectives.
- 2.5.1.5 The strategic nature of the London Borough of Hounslow network requires significant consultation with key stakeholders. Key stakeholders and consultation plans have been identified and a communication strategy is in place as defined by [Method Statement MS01](#) Section 1.2.1.20.
- 2.5.1.6 Hounslow Highways will ensure regular consultation and engagement with the authority and other key stakeholders as per the process defined by [Method Statement MS11](#) and in accordance with the Hounslow Highways PR Strategy 2016/17.
- 2.5.1.7 Customer consultation and feedback forms a key part of the asset management system and includes publishing the programme to the website, answering enquiries (Fix my Street) through the hub and the use of social media. Customer feedback enquires, complaints and compliments are monitored and reported through CONFIRM as part of the PFI contract. In addition to this a customer's survey will be conducted every two years commencing from October 2016. The last survey was conducted in November 2025.

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2.6 Communication, Document Control & Review

- 2.6.1.1 The HAMP is loaded on TWWW for the client to access.
- 2.6.1.2 The HAMP will be reviewed annually by the Network Manager and checked and approved by the appropriate director..
- 2.6.1.3 The annual authority review considers:
 - Performance of the asset over the previous year including trends
 - Industry developments
 - Changes in process and issues relevant to the management system
 - Contract and other changes
 - Service improvements and opportunities for continuous improvement
 These changes are recorded on the epi.
- 2.4.1.3 Following discussion with the Authority it is anticipated that the changes to the footway surfacing materials will be made, this has now been finalized:
 - Conservation Area (Like for Like)
 - Shopping Area (Modular Paving)
 - Church and Parks entrance (Modular Paving)
 - Rest of area (black asphalt)

In addition to this the following management reviews are conducted, which consider and/or influence the asset management system: -

- Construction Programme Review/Commercial meetings –Monthly
- Network Management SCRUMS Meeting –.Three times a week
- Hounslow Highways Senior Management Team –Monthly
- Hounslow Highways Board Meeting –Quarterly
- Authority Monitoring Meeting –Monthly
- IMS Management Review – Annually

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3 Asset Management System

3.1 Assets covered by the HAMP

3.1.1.1 The Highways Asset Management Plan applies to the whole of the highway network, and covers the full range of asset components that exist within Hounslow's Highways for which the Service Provider is responsible.

3.1.1.2 The asset covered by the HAMP include:-

- Carriageways (including road lining, markings, road studs, traffic calming features and street furniture)
 - 42.5km of Borough Principal Roads (PR),
 - 13.9km of B Roads,
 - 44.90km of C Roads
 - 332.6km of urban unclassified roads (UC)
- Footways and Cycleways
 - 779km
- Bridges and Structures including culverts, retaining walls and subways
 - 45 bridges and structures
- Street Lighting including illuminated signs, bollards and advertising
 - 16,104 street lights
- CCTV
- Highway drainage, including gullies
 - 19,613 gullies
- Unlit Signs, including directional, informational signs and street name plates
- Trees and Vegetation including grassed and other landscaped areas associated with the highway
 - Grass Verges: 386,770 sq.m.
 - Hedges – 35,684 sq.m.
 - Combined Hedges & Shrubs- 95,009 Sq.m

The motorways and all-purpose trunks roads that traverse the Borough are not part of this plan; they are the responsibility of national Highways or Transport for London.

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3.1.1.3 The HAMP makes reference to those items within the street that are the responsibility of third parties, such as utility providers, but nonetheless have implications for the quality of service provided by our highway network. Collaboration with utilities including advanced work programming and inspection are in place to maintain the integrity and life of the infrastructure assets.

3.1.1.4 In addition to these, the HAMP covers the activities and processes associated with service delivery related to the following assets:

- Street Lighting and electrical testing
- Planned Maintenance and improvement schemes
- Inspections and Assessments (condition surveys)
- Whole street environmental improvement schemes
- Reactive small-scale maintenance, in response to public reports and arising from routine inspections
- Winter Maintenance Service
- Structural Testing and inspection
- Highway drainage maintenance and improvement works
- Maintenance of Highway Structures
- Street Cleansing and associated activities such as the removal of illegally dumped waste, fly-posting and graffiti
- Tree Maintenance & Management
- Highway Grounds Maintenance
- Environmental Law enforcement and removal of abandoned vehicles
- Highway Law enforcement (excluding parking enforcement)
- Maintenance of illuminated and non-illuminated street furniture
- Monitoring of statutory undertakers
- Co-ordination of works on the highway as proxy Permitting Authority
- Management of highways liability claims

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3.2 Asset Management System Certification Scope

- 3.2.1.1 The scope of registration to ISO 55001, i.e., as it appears on the certificate for Ringway Hounslow Highways' locations is: The Asset Management System in relation to governance of highways, footways and structures assets within the London Borough of Hounslow to meet or exceed the performance aims established in the Highways Maintenance Contract for a period of 25 years from January 2013.
- 3.2.1.2 The enhanced, detailed scope for the certified asset management system (which does not appear on the certificate) is:-
- Planned and reactive maintenance of 43.0km of carriageway surface,
 - Planned and reactive maintenance of the 779km of footways (including the footway surfacing kerbing and edging)
 - Structures, numbering 45, in relation to the performance standards defined in Table 4.1.
- 3.2.1.3 The above scope has been [mapped](#) to show the activities within the scope. The assets included represent over 97% of the value of all assets based on the Whole of Government Accounts – Gross Replacement Costs 2025 (excluding land prices).
- 3.2.1.4 Road marking, drainage, ironwork, street lighting and electrical testing, CCTV, maintenance of illuminated and non-illuminated street furniture, street cleansing, trees/vegetation, whole street environment schemes, winter maintenance, environmental Law enforcement, highway Law enforcement, monitoring of statutory undertakes are outside of the certified asset management system scope.
- 3.2.1.5 Assets which the Service Provider is not responsible for are also outside of the direct asset management system scope. This includes the motorways and all-purpose trunk roads managed by Highways England and Transport for London, respectively.

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3.3 Knowledge of the Asset

Background

3.3.1.1 To develop an asset management strategy and associated business processes and systems, it is essential to have a thorough and up-to date knowledge of the assets involved. This includes, but is not limited to:

- The extent of the highway network itself
- The extent and detail of every asset type and component present within that highway network
- Information about the quality and condition of each asset component, and the quality of service that is provided
- Information about the historical life cycle of the assets, including age and dates of major maintenance interventions and improvements
- The asset data for the network is stored within the Management Information System. The Asset data is updated on regular basis..

3.3.1.2 Data sets include:

- Asset Inventory
 - carriageways, bridges, segregated footpaths and highway lighting, street furniture, road markings, drainage,
 - carriageway construction
 - Video survey of assets, particularly drainage
- Asset Condition
 - Historical as from 2012
 - Current
 - Projected
- Operational data
 - Scheme planning and works
 - Routine Maintenance
 - Winter Maintenance
 - Traffic and congestion
- Financial data
 - Budgets, expenditure
- Traffic, Streetworks etc.

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3.4 Asset Systems

3.4.1.1 The key systems for managing the asset are:

- Confirm (Highway maintenance and inspections)
- March PMS and Expert Asset (Pavement Management)
- Asset Optioneering Model
- Bridge Station, for structures
- Confirm Works ordering
- Confirm Streetworks
- Street Manager
- ESRI
- CMS

3.4.1.2 The asset inventory is recorded using CONFIRM (asset management solution from Siemens) in accordance with the information strategy ([Method Statement MS05](#)).

3.4.1.3 A schematic of the information flow for the various different systems is shown in Figure 3.0.

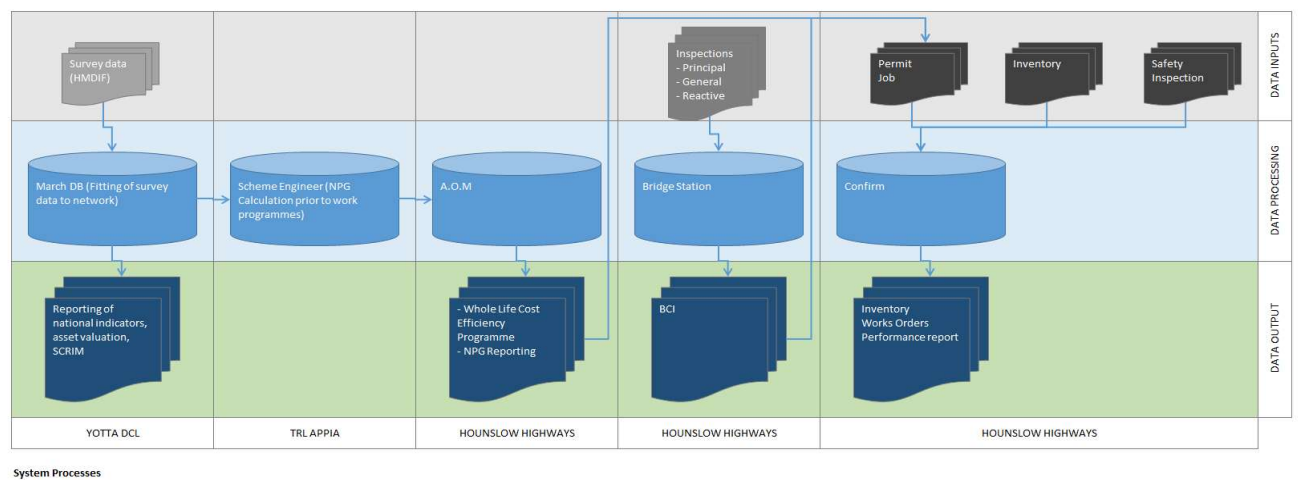


Figure 3.0 – Asset inventory and flow of information for core system

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3.4.1.4 The carriageway condition, performance standards and planned works programme data is managed using a range of systems including MARCH PMS, Expert Asset and the Asset Optioneering Model. A schematic of the information flow is shown in Figure 3.1.

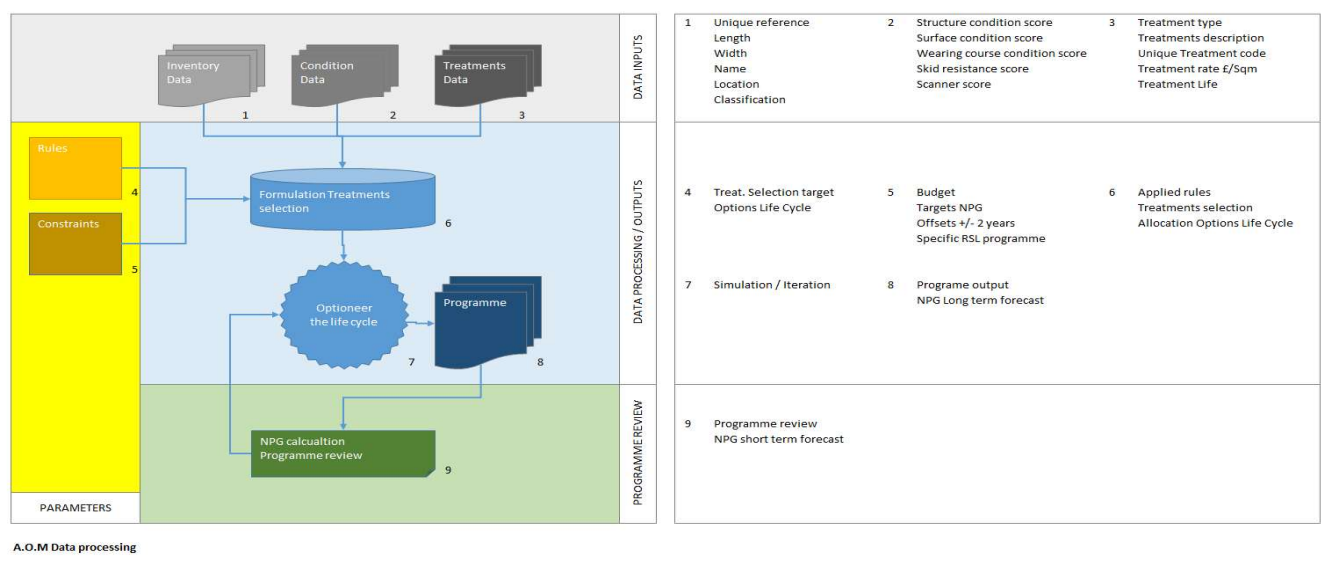


Figure 3.1 – Carriageway: Performance standard and work planning asset management system relationships

Street Network Asset Data

3.4.1.5 The asset data will be held against a number of different referencing systems to ensure information can be collected and analysed effectively, the three main systems to be used are:

- the National Street Gazetteer (NSG)
- Road Sections Lengths (RSL), for measurement against the PFI condition indices the network has been split into a number of Road Section Lengths
- Footway Section Lengths (FSL)
- GPS co-ordinates

Asset Inventory and the Asset Register

3.4.1.6 All location, dimensions and physical characteristics of all the assets within the Borough highway network, are included within the asset database, with the information being continuously checked and updated to ensure it remains current.

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- 3.4.1.7 This data is continuously updated in Confirm, the Asset Register, gives details of the overall quantities of inventory items recorded as part of the inventory survey.

Asset Valuation Data

- 3.4.1.8 The key drivers for Asset Valuation (AV) are:
- 1 To emphasize the need to preserve the highway infrastructure by placing a monetary value on highway infrastructure assets – but not forgetting that the AV represents the monetary (capital) value of the assets and not the service provided by the assets, i.e. what the assets are ‘worth’ to society.
 - 2 To demonstrate asset stewardship by monitoring the AV over time; however, AV should not to be used in isolation but should be used in combination with other recognized Performance Measures and Performance Indicators (PIs).
 - 3 To support Whole of Government Accounts and promote greater accountability, transparency and improved stewardship of public finances.
 - 4 To support Highway Asset Management – Asset Valuation provides one facet of the robust financial framework that Asset Management should operate within.
- 3.4.1.9 Asset Valuation is undertaken in accordance with the CIPFA document and will continue to support the submission of the Whole of Government Accounts. (WGA).
- 3.4.1.10 The Asset Valuation is completed annually to a timescale in accordance with the contract to support the production of the Hounslow accounts and the submission to central government for the production of the Whole of Government Accounts. The [asset valuation](#) information is located MIS.

3.5 Data Management and Information Systems

- 3.5.1.1 The Asset Data is stored within the Management Information System. This is updated on an on-going basis through:
- Staff on site checking asset data
 - Schemes being completed and asset records being updated
 - Maintenance records
 - Third party updates (e.g. Utilities)
- 3.5.1.2 This information is available through the web interface and used in the programming of future works.
- Documents are controlled in accordance with the [Document Control](#) procedure.

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- 3.5.1.3 In order for the full value of asset data to be realised, effective mechanisms are in place to ensure that data is made available, in an appropriate form, to ensure that the Service Provider and the Authority can make full use of the data.

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4 Level of Service & Asset Management Objectives

4.1 Objectives

4.1.1.1 The objectives of the Highways Asset Management Plan are to:

- Achieve the service level requirements as stated within the London Borough of Hounslow PFI contract – detailed in section 4.2
- Provide a high of service to residents and streetusers
- Maintain the network value as measured by the Whole of Government Accounts
- Provide the services that Customers want, based upon a true understanding of their needs and expectations.

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4.2 Level of Service Requirements

- 4.2.1.1 The London Borough of Hounslow PFI contract is a performance based contract with a defined level of service for each asset.

The level of service and asset management objectives are defined under the project agreement in accordance with [Schedule 3 "Output Specification". Schedule 3, Section F \(Performance Standards Spreadsheet\)](#) .

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4.3 Network Performance Gap – Carriageway and Footways

4.3.1 Link and Place Categorisation

- 4.3.1.1 The classification of the road section lengths for both link and place significance is represented in a 'Link & Place' matrix. The 'Link' status is closely related to the Carriageway Hierarchies as described in Well Maintained Highways (Roads Liaison Group, 2005) as there is good relation between the carriageway hierarchy and the 'Link' status, although some sections have been increased in significance due to important bus or cycle routes. The 'Place' status is based more on the catchment areas of major land uses on or alongside the street, or on the heritage or cultural significance of the buildings. Local knowledge has been used to define the 'Places' that are significant to the whole of the Borough, or are of local importance. The 'Link & Place' matrix used within the London Borough of Hounslow, along with the definitions of each category, is given in Table 4.2 and 4.3

Table 4.2 – Link & Place Descriptions

Category		Description
Link Status	1 Strategic Route	Principal roads between primary destinations. (TfL Network)
	2 Main Distributor	Major urban network and inter-primary links. (Borough Principal Road Network)
	3 Secondary Distributor	Classified roads (B & C) and other roads of more than local importance including unclassified urban bus routes.
	4 Link Road	Roads linking between the Main and Secondary Distributor Network.
	5 Local Access Road	Roads serving limited numbers of properties carrying only local access traffic.
Place Status	A Regional	Destinations of regional (London) or national significance(e.g. regional shopping centres, heritage sites, sporting venues)
	B Borough	Places that contribute and important and valued role to the whole Borough, although they may not be widely known at a London or national level.
	C Area	Streets/Places that serve a role (e.g. shopping or commercial uses) at an area or town level but are not frequently accessed by users from other wider areas.
	D Neighbourhood	Local streets/Places acting as destinations to local users such as small local centres and streets with corner shops.
	E Local	Most local access streets with no interest from wider area. Used for 'Place' activities only by adjoining frontages.

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Table 4.3 – Link & Place Ranking

		Place Status level				
		Regional	Borough	Area	Neighbourhood	Local
Link status level	Strategic route	1A	1B	1C	1D	1E
	Main distributor	2A	2B	2C	2D	2E
	Secondary distributor	3A	3B	3C	3D	3E
	Link Road	4A	4B	4C	4D	4E
	Local Access Road	5A	5B	5C	5D	5E

4.3.2 Structure of the Network Performance Gap

4.3.2.1 The Network Performance Gap (NPG) measures the difference between the target condition and the actual condition of roads and footways throughout the PFI period. The NPG is a composite of the output from a selection of different condition surveys depending on their location and significance within the network and 'Link & Place' of the road section length. The indicators that contribute to the NPG, along with the relevant survey used to obtain the information required to calculate the indices are given in Table 4.4.

Table 4.4 – Condition Index and Surveys

Condition Index	Survey
SRI	SCRIM
MSCI	SCANNER
SCI _{ST}	Detailed Visual Inspection (DVI)
SCI _{WC}	
SCI _{SF}	
FCI	Footway Network Survey (FNS)

4.3.2.2 The formula for the calculation of the NPG is given in Appendix B; this is extracted from the Highways PFI Contract Schedule 3.

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4.4 Bridge Condition

4.4.1.1 The condition of the bridges asset is measured through the use of the Bridge Condition Indicator, the asset condition must meet the following

- The Average Bridge Stock Indicator weighted by deck area (BSClav) for the structure stock value shall not be less than 90 supported by the appropriate inspection, testing and monitoring regime in accordance with the Code of Practice for the Management of Highway Structures.
- No structure shall have an average Bridge Condition Indicator (BCIav) value less than 80 supported by the appropriate inspection, testing and monitoring regime in accordance with the Code of Practice for the Management of Highway Structures.

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5 Planning - Asset Management Process & Decision Making

5.1 The Annual Highways Asset Management Process

5.1.1.1 The Highways Asset Management Plan is reviewed and revised following the receipt of the Annual Road Condition Surveys, in September to November each contract year. The review will consider the following:

- Asset Data
- Deterioration patterns
- Contract service levels and achievement
- Current industry best practice
- Financial impact of any changes
- Works undertaken and their impact on condition

5.1.1.2 In addition to this the specific plans have been developed for individual asset types, which will also be updated and reviewed. The following asset plans are including in Appendix A1 – A4, respectively.

- Road Carriageways Management Plan
- Footways and Cycle Tracks Management Plan
- Bridges and Structures Management Plan
- Drainage Management Plan

5.1.1.3 A [skid resistance policy](#) is also documented in accordance with HD 28/15 skid resistance.

5.1.1.4 The [safety inspection strategy and plan](#) documents the plan and inspection regime for the network.

5.1.1.5 Asset management plans also exist for the following assets, which are available from the DMS.:-

- Annual Landscape policy and Operational Plan
- Street Lighting Strategy & Plan
- De illumination Plan

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5.2 Asset Condition Surveys

5.2.1.1 The asset condition surveys are a key driver for the planning to achieve the asset management objectives and ascertaining if the objectives have been achieved.

5.2.1.2 Asset condition surveys are scheduled as follows:

- Carriageways and footways survey are conducted annually by UKPMS accredited inspectors/vehicles at the following timescales:-
 - Detailed Visual Inspection (Full network) – February to July
 - Footway Network Surveys (Full network) – February to July
 - SCANNER (Link 1-3) – April – July
 - SCRIM (Link 1-3) – Early, mid and late season in accordance with the skid policy.
- High Friction and Skid Resistance secondary inspections are conducted by Jean Lefebvre (UK) following receipt of the survey data in accordance with the timescales set out in the Skid Policy.
- Safety inspections are conducted in accordance with the Safety Inspection Plan and Strategy.
- Structures conducted January to March at the following frequency:-
 - Principle inspection – Every 6 years
 - General inspection – Every 2 years
 - Routine inspections – Annually or as required by the inspection plan

5.2.1.3 Hounslow Highways undertake a detailed validation process of all survey data, this includes:-

- Maintaining records of all inspectors accreditations
- Maintaining records of survey vehicle accreditations/calibrations
- Ensure independent auditing/certification is conducted in accordance with agreed procedures
- Internal validation of data by comparison with previous year's survey data.

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5.3 Planning to Achieve Asset Management Objectives

- 5.3.1.1 Following the completion of the annual condition surveys the compliance against each performance standard is assessed.
- 5.3.1.2 For the Network Performance Gap (Schedule 3 PS 1), the [Asset Optioneering Model](#) is re-run to determine any changes in the predicted condition, to ensure the asset objectives are achieved to optimise the investment solutions for footways and carriageways based on whole life costing principles. The model is re-run when changes occur to the inputs, rules or programme to understand the impact upon the Network Performance Gap as per Figure 5.0.

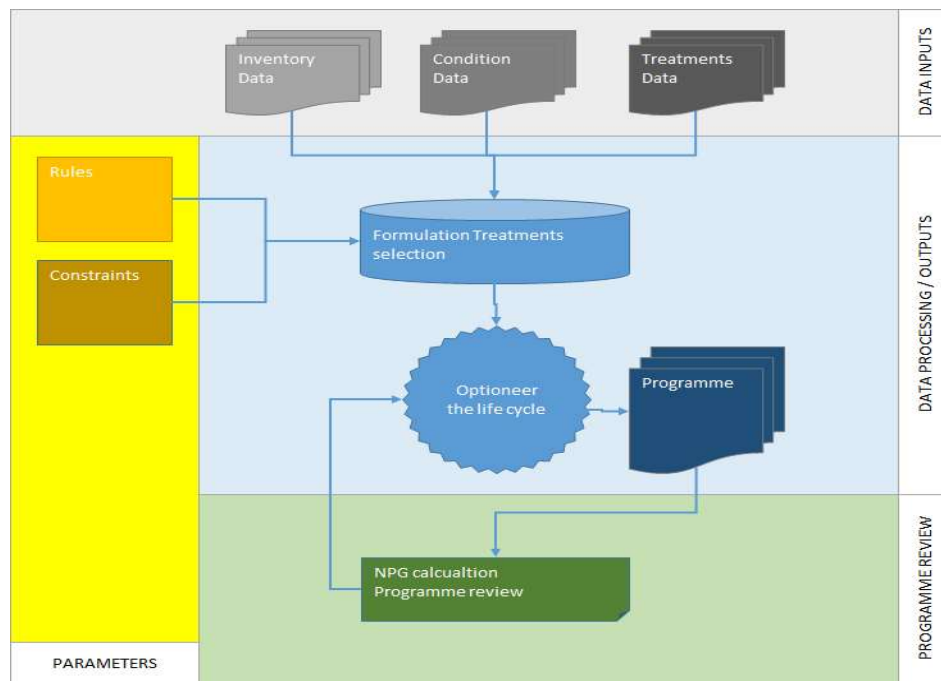


Figure 5.0 – NPG planning and monitoring process

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5.3.2 Value Management & Priority Setting

- 5.3.2.1 “Value Management is about getting the right project, whilst Value Engineering is done to get the project right.” (*Value Management in Construction, Harry Hammersley, 2002*).
- 5.3.2.2 Value Management is defined, in the Highway Maintenance Code of Practice (*Well-maintained Highways, Roads Liaison Group, 2005*) as: “a process that may be used to prioritise the competing needs of highway schemes, identified through condition and economic prioritisation. It provides a structured, consistent and quality approach for assessing the benefits of undertaking maintenance and the associated risks of not undertaking maintenance. The outcome should be a prioritised programme of schemes that will be entered into the HAMP”.
- 5.3.2.3 The development of the investment programme is based on optimising the whole life cost of the asset and determined service lives, with the intervention dates based on standard deterioration profiles. These will then be revised annually in accordance with the actual measured deterioration of the Network.
- 5.3.2.4 The priority of the sequencing of works is based on the maintenance of the asset condition to the required level within the contract for the relevant asset type.
- 5.3.2.5 Prioritisation and scheme selection is based on the following:-
- Achievement of the performance standards and impact of non-achievement
 - Value engineering and whole life cost
 - Network integrity including safety inspections and reactive maintenance
 - Budgetary, operational and environmental constraints
 - External and stakeholder consideration.

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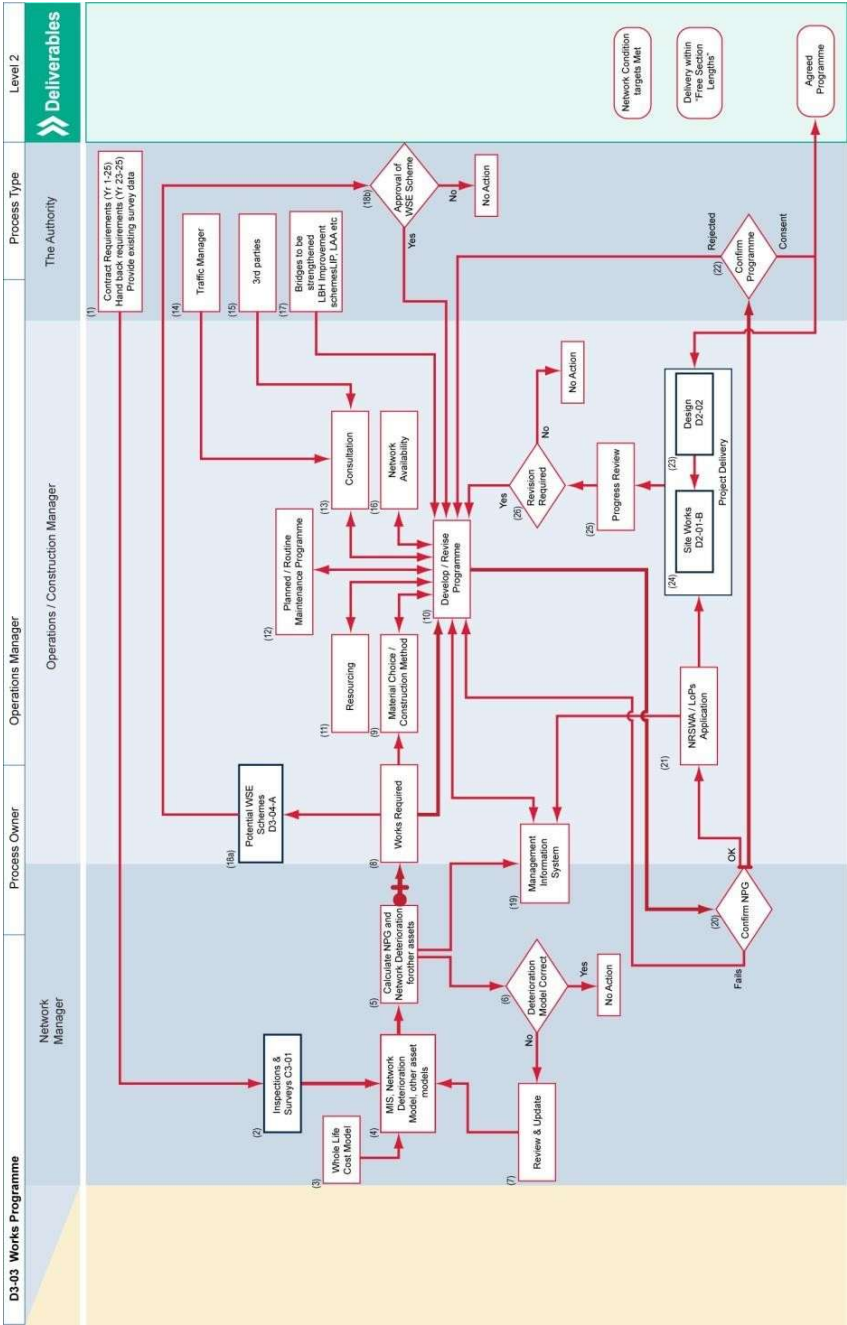
5.4 Planning of Works and Options

5.4.1 Options and Priorities

- 5.4.1.1 The approach to option identification is set out in [Method Statement MS02](#) Works Programming. This is covered as part of Level 2 Process, D3-03 Works Programme, shown in Figure 5.1.

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Figure 5.1 – Level 2 Process Map, D3-03 Works Programme



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- 5.4.1.2 The operational control of planned works is managed by the construction team based on the programme provided by the network management team. A summary of the process is shown in Figure 5.2.

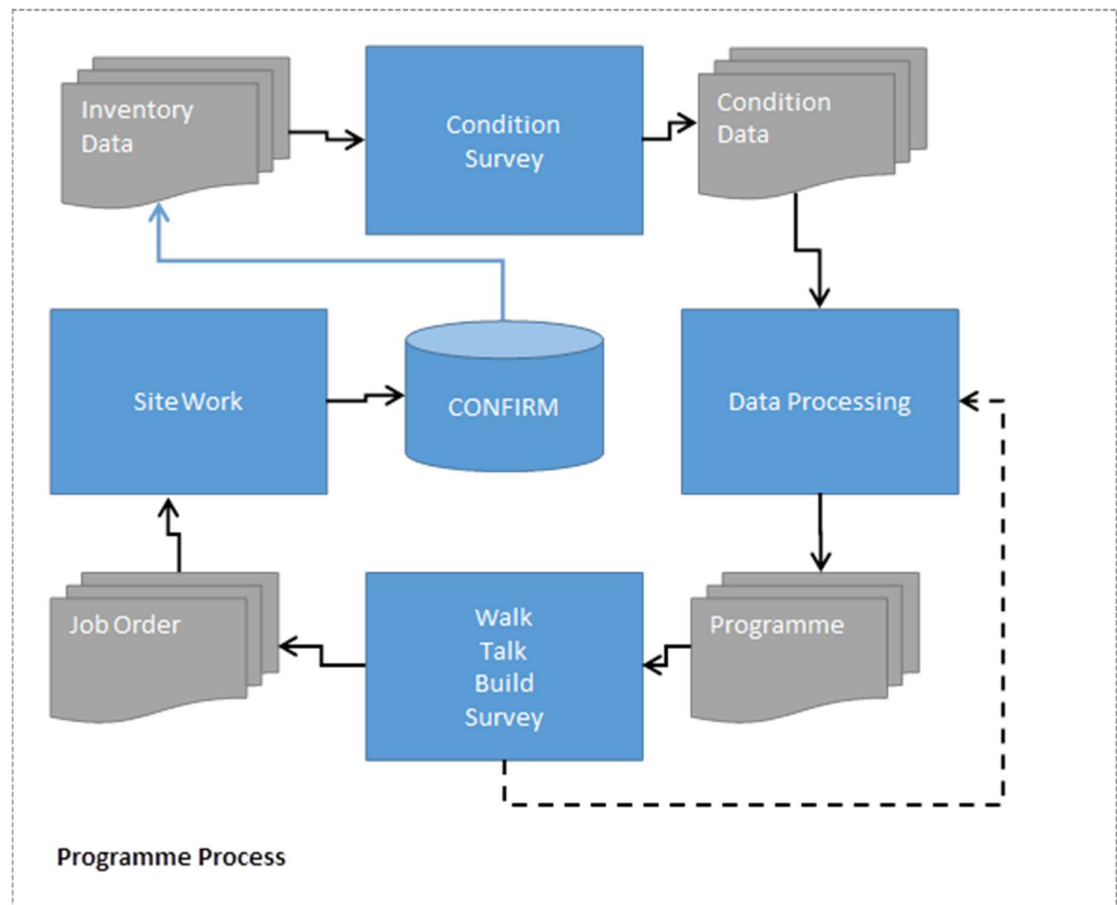


Figure 5.2 – Summary of operational process from planning to operation and control

- 5.4.1.3 Scheme design is based on Method Statement 30 – Compliance with Quality Design. Early contractor involvement (including outsourced activities) is gained as part of the scheme design and programming. This is achieved through the “walk talk and build survey” process for carriageway and footways and the construction review ([see process diagrams](#)).
- 5.4.1.4 Further investigations are identified and are managed by the construction team.

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- 5.4.1.5 The scope of operation works are agreed by all parties and an initial task (job) order signed. This task order specifies the scheme extents, the operation and the value of the works.

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5.4.1.6 A project pack is produced and stored on the Epi, which typically contains:-

- Task order
- Pre-start audit
- Construction pack
 - Description of the works
 - Service drawings
 - Permits and TTRO
 - Resident communications
 - Traffic management
 - Site risk assessment and method statements
 - Site induction and sign in
 - Incident reporting
 - Daily records
 - Compliance evidence
- Any early warnings
- Photographs
- Daily and site testing records
- As built drawing

5.4.1.7 Following the completion of the work a final task order is signed. Independent certification is also undertaken in accordance with Method Statement 04 – Commissioning and Certification Process. Records of the completed work are then record in CONFIRM.

5.4.1.8 Any changes to the work are managed using an early warning system and discussed as part of the construction reviews. Any changes to the programme of work or changes that can influence the asset objectives are discussed with the network management team as part of the strategic technical review.

5.4.1.9 The operational and control for reactive maintenance is based on the safety inspection strategy and plan

5.4.1.10 Safety inspections are conducted and managed by the Network Management team. The repair of these items is managed by the Operations team.

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5.5 Works Programming

- 5.5.1.1 The following programmes have been produced to manage the forward works and integrate activities on the network with third parties:
- Detailed annual programme and
 - Outline remainder of contract programme, this will list schemes by year.
- 5.5.1.2 [These programmes](#) which are available on DMS are developed from the asset models, knowledge of the network and inspection results to ensure the required network condition is met.
- 5.5.1.3 As part of the programme the compliance against the level of service is forecast and monitored.
- 5.5.1.4 For construction work this is reviewed as part of the strategic technical review.
- 5.5.1.5 For cyclic assets and routine maintenance is conducted in accordance with the [Strategy](#).

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5.6 Management of Change

- 5.6.1.1 Change can occur for a variety of reasons and can influence the asset management system. Change can occur as part of the contract at both network level and/or operational level. Change can also relate to political, economic, social, technological, legislative and environmental factors outside of the contract.
- 5.6.1.2 Contractual changes to the asset management system including the (project network, performance standards and call-off schemes) can have low, medium and high level implications at network level. For these instances the contract change process will be used. This is defined in Schedule 14 & 15 of the contract and the process defined as part of Method Statement 28. This takes into account low, medium and high level changes.
- 5.6.1.3 Change can also be implemented to improve the asset management system as discussed in Section 10.
- 5.6.1.4 The potential for political, economic, social, technological, legislative and environmental factors outside of the contract will be evaluated as part of the PESTLE analysis, which forms part of the annual business plan. This will be reviewed and updated on an annual basis. The monthly and annual monitoring reports will be utilised to capture key changes, which will feed into the business plan.
- 5.6.1.5 Stakeholder (interested party) changes will be reviewed as part of the HAMP review “needs and expectations of stakeholders” and the stakeholder mapping.
- 5.6.1.6 The risk of change and the consequence of change is evaluated as part of the risk management review.
- 5.6.1.7 Operational change can also occur because the programmes are live programmes. Where programme changes occur for various reasons, the forecast of compliance against the level of service is updated. In addition to this any impact on the lifecycle will also be assessed.
- 5.6.1.8 It is also acknowledged that changes may occur to an annual capital works programme due to deterioration, safety defects or call of works. The following [process](#) should be followed prior to change to the programme:-
- Network Manager receives request for change in writing
 - The Network Manager reviews the request and evaluates if a change to the programme should be considered and the impact of the change.

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- If a change to the programme is considered suitable the Network Manager should record the change required, the reason for the change, the value engineering impact (whole life cost and performance standard impact).
 - Potential changes will be discussed by Network Manager and Construction Manager at the strategic technical review
 - A final decision on all changes will be made by the Service Director. In accordance with the process.
 - If the request is accepted the programme will be adjusted accordingly. If not accepted then requestor will be informed of the decision
 - A record of all programme change requests will be maintained on the DMS.

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5.7 Risk Management

5.7.1 Overview

- 5.7.1.1 Internal and external factors and influences can make it uncertain whether and when they will achieve their objectives. The effective this uncertainty has on the achievement of the objectives is “risk”.
- 5.7.1.2 Effective risk management improves decision making at both a strategic and operational level, enabling organisations to allocate funding more effectively and providing greater transparency in the way decisions are made.
- 5.7.1.3 Within an Asset Management context, Risk Management ensures that:
- Increases the likelihood of achieving objectives
 - Causes of physical failures can be identified
 - Levels of acceptable risk can be evaluated
 - Critical risks are identified and managed
 - Consequences of failure can be identified including loss of service
 - Risks can be avoided or reduced through pro-active management
 - Compliance with the relevant legal and regulatory requirements
- 5.7.1.4 Risks can rarely be eliminated altogether so risk management is about reducing the exposure of the organisation to risks in accordance with needs, prioritises and affordability following a systematic risk management process.
- 5.7.1.5 Risks are managed in accordance with VINCI Group Policy – [Risk Management](#). The process for [Risk Management](#) is defined on TWWW and covers risk identification, risk analysis assessment and control stages in accordance with the principles set out in ISO 31000:2009 and Well Managed Highways.
- 5.7.1.6 Risk management is incorporated into the asset management process (Section 5.3) and a risk based approach is taken when setting the level of investment, level of service, operations, inspections and programme of works. The various plans should be read in conjunction with the defined risk register.

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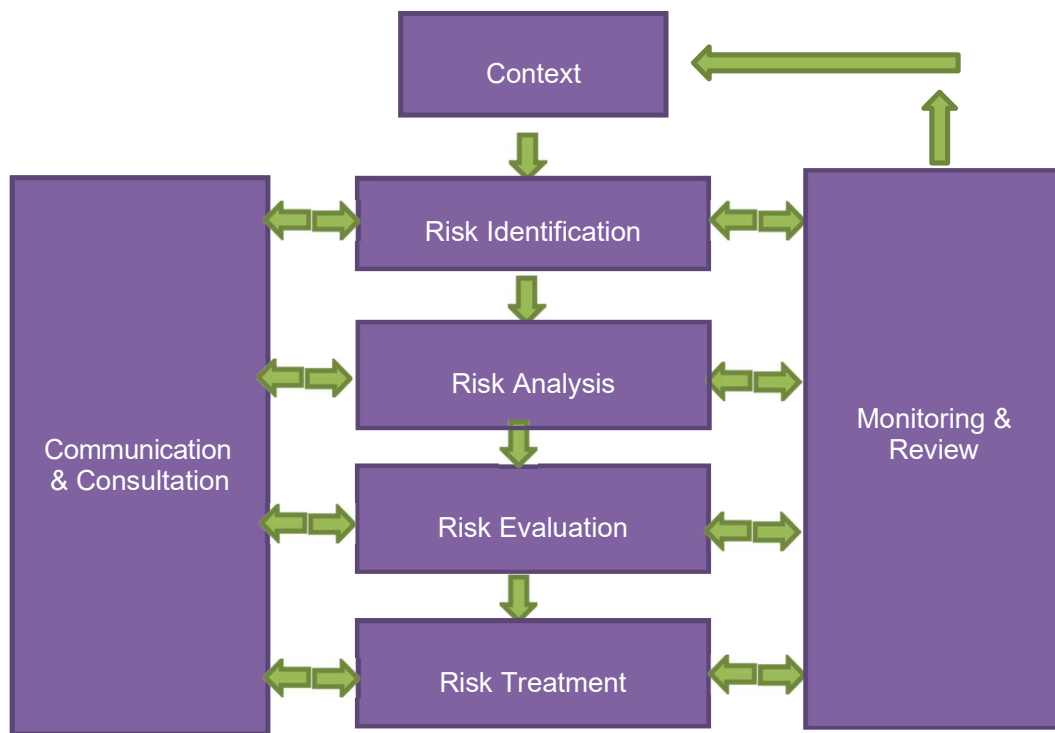


Figure 5.3 – Risk Management

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5.7.2 Risk Identification

5.7.2.1 Risk identification is the formal recognition and documenting of events that have the potential to adversely affect the Service Providers ability to deliver a quality service to the customers. There are different types of risk which include:

- Achievement of assets objectives (performance standards)
- Safety
 - Including the safety of both road users and the safety of those involved in delivering the service (e.g. road workers) and any resulting public liability claims.
- Natural Events
 - This predominately includes the weather and its effects and as such we have little or no real control over timing and impact.
- Physical Risks
 - This includes risks where the physical failure of the asset could lead to failure. For example:
 - ⇒ The collapse of a structure
 - ⇒ Street-lighting failures
 - ⇒ Collapse of drains leading to flooding
- External Risks
 - Includes risks associated with legislative and economic changes outside our direct control such as:
 - ⇒ Oil price rises affecting the cost of bituminous materials
 - ⇒ Dramatic increases in inflation increasing costs
 - ⇒ Changes to key pieces of legislation
 - ⇒ Changes in government policy
 - ⇒ Failure of external organisations to deliver services
- Internal & Corporate Risks
 - Includes the reliance on key personnel for service delivery, the potential loss of valuable information if systems fail, changes of policy within the London Borough of Hounslow resulting in changes in priority and funding etc.

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5.7.3 Risk Analysis and Evaluation

5.7.3.1 Risk analysis is a process by which we determine which events are the most critical to us and our ability to deliver the required level of service. Determining the level of risk involves considering the causes and sources of risk, their positive and negative impacts and the likelihood that those consequences can occur.

5.7.3.2 Determining the *impact* of the event occurring Considerations are likely to include:

- Loss of life, or injury
- Failure to meet statutory requirements
- Loss of revenue
- Repair costs
- Third party losses
- Reduction in the service provided, e.g. reduction in the level of network availability if closures are required in order to undertake unplanned maintenance activities

5.7.3.3 Determining the *likelihood* of the event occurring (frequency of occurrence) is critical as part of the risk assessment. This will often be based on the Service Providers experience but might also make use of other information if it exists such as:

- Numbers of claims
- Statistics for flood events
- Accident statistics

5.7.3.4 Both the likelihood and consequences are evaluated using a numerical rating 1-6 as defined in the group procedure and the degree of control document.

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5.7.4 Risk Process & Treatment

- 5.7.4.1 Following the risk analysis a risk evaluation will be undertaken to establish the need for treatment.
- 5.7.4.2 The systematic approach to risk management enables the Service Provider to assess the cost of acceptance of a risk or to plan appropriate risk reduction actions. There are a number of actions that the Service Provider takes to reduce risk including:
- Carrying out appropriate maintenance to reduce the likelihood of a physical failure occurring, for example by timely replacement of lighting columns
 - Reducing the impact of a failure by producing appropriate contingency plans
 - Insuring against the consequential loss
 - A combination of the above
- 5.7.4.3 The Mitigation of risk reduces the programme impacts.

5.7.5 Reporting of Risks, Communication and Monitoring.

- 5.7.5.1 Regular assessment of risk in relation to performance standard achievement are undertaken by the Network Manager. Risks are managed, updated quarterly and reported via a risk register contained on DMS.
- 5.7.5.2 Risks are reviewed on a monthly basis at the Hounslow Highways board as part of a cyclic process and documented as part of the board reports.

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6 Performance Evaluation & Continuous Improvement

6.1 Performance Evaluation

Data Collection & Analysis

- 6.1.1.1 Asset performance and condition data will continue to be collected via the survey programme and compared against the defined levels of service for the respective assets (see section 5.2).
- 6.1.1.2 The survey programme is set out in *Method Statement 10 Inspections, Assessments and Performance Monitoring*. As part of this programme the carriageway and footway condition surveys will continue to be completed by the NPG Surveyor in accordance with the PFI Contract on an annual basis.
- 6.1.1.3 In addition to this structure inspections, street lighting/powered apparatus inspections, safety inspections, street works inspections, arboriculture and horticulture Inspections and serviceability & other inspections will be managed by the Network Manager in accordance with the PFI contract at defined frequencies.
- 6.1.1.4 The Network Manager will continue to analyse the survey data as it is received to confirm its validity in accordance with the principles set out in section 5.2 and 5.3.
- 6.1.1.5 Compliance will compared against the target levels of service and checked to establish if the network is behaving as predicted. The process will follow the [Business Performance Process](#).

Reporting

- 6.1.1.6 For years 2018 to 2037 the condition will be reported annually on the contract anniversary.
- 6.1.1.7 Progress of the maintenance, investment, programmed, routine, reactive and cyclical works continues to be reported within the Monthly Monitoring Report.
- 6.1.1.8 The performance against each of the performance standards is reported in the form of a monthly monitoring report, which is held on DMSF.

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6.2 Internal Audit

- 6.2.1.1 Internal auditing will be conducted in accordance with the Internal Audit Procedure defined by the TWWW – [Internal Audit](#).
- 6.2.1.2 Internal audits will be conducted at planned intervals to ensure the asset management system conforms to the organisation's own requirements and ISO 55001. An audit schedule is used to define the timescales and frequency of reporting.
- 6.2.1.3 The scope of the audit will include:-
- Annual audit of the management system in relation to ISO55001
 - Annual audit of the performance compliance
- 6.2.1.4 The internal auditing procedure is defined by [Internal Audit Process Flow Chart](#).
- 6.2.1.5 The internal audit will be complemented by:-
- Annual auditing of condition surveys with regards to the relevant standard (e.g. NPG surveys in relation to UKPMS) following receipt of the data
 - Internal and external IMS audits.
 - Monthly audits of specific activities and teams by the performance office.
 - Monthly audits of all completed job packs by the performance officer.
 - Site and plant audits.
 - Validation reports by the UKPMS surveyor.
 - Independent certification.

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6.3 Improvement Opportunities & Non Conformity

6.3.1.1 All employees are encouraged to identify improvement opportunities and report non-conformance, incidents, complaints relating to the asset management system.

6.3.1.2 [Improvement Opportunities and Non-Conformance](#) shall be reported using the procedure defined by TWWW. As part of this process the “Report it” tool is used to report improvement opportunities, non-conformances and positive observations. Where necessary, action plans are developed assigning responsibility for designated tasks and timescales.

The key components for improving the asset management system include:-

- Internal auditing (section 6.2)
- A review of the asset objectives
- Integrated Management review
- Network management team meetings and working groups
- Risk management

6.3.1.3 The monitoring and effectiveness of the asset management system will be assessed based on the:-

- Annual and monthly monitoring reporting.
- Compliance of the asset objectives in accordance with the performance standards and reporting timescales.
- The number of non-conformities, observations and improvement opportunities and timescales for correction/preventative action being implement. This will be tracked using report it.
- Independent certification and stakeholder feedback.
- Performance monitoring dashboards.

6.3.1.4 The Network Manager is responsible for agreeing and implementing improvements, preventative and corrective actions relating to the Asset Management system.

6.3.1.5 The results of any action shall be monitored to ensure their effectiveness.

6.3.1.6 In addition to the above, the continuous improvement process is defined by [Method Statement MS22](#) – “Innovation, Continuous Improvement and Added Value” should be followed.

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6.3.1.7 In addition to the asset management system specific elements of the system will be continuously review to measure the effectiveness of the system and target continuous improvements. These include but are not limited to:-

- The accuracy of the input data (e.g. condition/inventory data):-
 - Internal audit
 - Data validation e.g. UKPMS
 - Comparisons with previous year's survey data
 - Review and update to the inventory
 - Meeting with survey provider and agreement of survey rules on an annual basis
- The asset performance and accuracy of plans:-
 - A review of the compliance of the asset objectives
 - Deterioration modelling
 - Asset valuation and national indicator reporting
 - Cost to completion
 - Walk talk and build output comparison with model outputs
- The performance of completed works will also be evaluated to ensure value for money and continuous improvement including:-
 - Independent certification of schemes
 - Onsite testing and quality control checks – For carriageways and footways this is covered by the [Formula Road](#) quality plan.
 - Internal auditing of works (e.g. production and installation of asphalt)
 - Annual review of asset condition data for completed work and reporting (e.g. carriageway DVI, SCRIM and SCI performance)
 - Coring of completed work to assess compliance.
 - Annual review of lessons learnt and training.

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7 Communication & Awareness

7.1.1 Internal Communication of the HAMP & Asset Management System

- 7.1.1.1 The Network Manager is the owner of the Highways Asset Management Plan and will communicate the plan to the remainder of the team.
- 7.1.1.2 The Network Manager will be responsible for the day to day implementation of the plan and using the plan in the programming of the forward works.
- 7.1.1.3 The Network Manager will arrange regular formal and informal briefing sessions for relevant staff on the HAMP. As part of this the Network Manager will ensure that staff members who can have an impact on the achievement of the asset management objectives are aware of:-
- The asset management policy
 - Their contribution to the effectiveness of the asset management system
 - Their work activities, associated risks and opportunities
 - The implications of not conforming to the asset management system requirements,
- 7.1.1.4 The HAMP will also be a relevant reference document for designers in the completion of schemes.

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7.1.2 Communication and Consultation with Stakeholders (Interested Parties)

- 7.1.2.1 Communication with stakeholders will be conducted in accordance with the Hounslow Highways PR strategy. This document outlines the communication strategy in terms of communication audience, methods, timings and measures for success.
- 7.1.2.2 The communication strategy is design to be pro-active and use a wide range of communication methods including area forums, lay assessor's, website, social media and newsletters...etc.
- 7.1.2.3 The HAMP in addition to the associated policies are available to the London Borough of Hounslow and are reviewed on a defined basis.. Any changes in the service levels or condition targets will be managed as part of the Change Protocol in accordance with the PFI Contract (see Change Management).

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8 Appendices

A1 Road Carriageways Management Plan

A2 Footways and Cycle Tracks Management Plan

A3 Bridges and Structures Management Plan

A4 Drainage Management Plan

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A.1 Road Carriageways Management Plan

A.1.1 Overview

A.1.1.1 Our road carriageways (the paved road construction which carries traffic) comprise the most valuable single asset within our highways asset management plan. One of the key challenges for the introduction of Asset Management to the management of our road network is the introduction of a Life Cycle Planning approach to the management of investments in our carriageways.

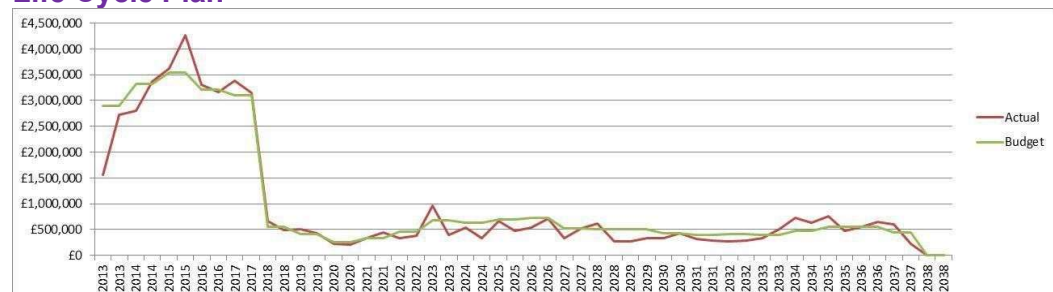
A.1.1.2 Through the Highways PFI we take a longer term approach to the management of the asset through the life cycle, as such we:

- Look at the asset performance over multiple treatments
- Needs-based assessment of maintenance requirements based upon UKPMS surveys and deterioration modelling
- A measured improvement and removal of the maintenance backlog over the 5 year Core Investment Programme Period

A.1.1.3 To deliver the improvement in Network condition we will:

- Implement predictive models that allow the future implications of investment options upon future condition, quality of service and asset value and preservation, including the ability to assess and prioritise on whole-life cost principles
- Implement a value management process for determining the most appropriate scheme options, and for balancing the requirements of service quality and asset preservation and structural improvement
- Monitor the Asset Value

A.1.2 Life Cycle Plan



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Road Categories

A.1.2.1 Table 4. sets out the Road Categories used within London; these are set by Transport for London, and are linked to responsibilities for maintenance

- Category 1 roads are maintained by DfT
- Category 2 roads are maintained by TfL
- Category 3 roads are maintained by LBH
- Category 4, 5 and 6 roads are maintained and funded by LBH.

Table 1 – Description of Road Categories

Category	Hierarchy	Type of Road	Detailed Description
1	Motorway	Limited access Motorway regulations apply	Routes for fast-moving long distance traffic. Fully grade separated with restrictions on use.
2	Strategic Route	Trunk Roads and some Principal "A" roads between primary destinations	Routes for fast-moving long-distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
3	Main Distributor	Major Urban Network and Inter-Primary links. Short to medium distance traffic.	Routes between Strategic Routes and linking urban centres to the strategic network with limited frontage access. In urban areas speed limits are usually 40mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.
4	Secondary Distributor	Classified Road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions.	In rural areas these roads link the larger villages and HGB generators to the Strategic and Main distributors Network. In build-up areas these roads have 30mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On-street parking is generally unrestricted except for safety reasons.
5	Link Road	Roads linking between Main and Secondary Distributor network with frontage access and frequent junctions.	Residential or industrial interconnecting roads with 30mph speed limits, random pedestrian movements and controlled parking.

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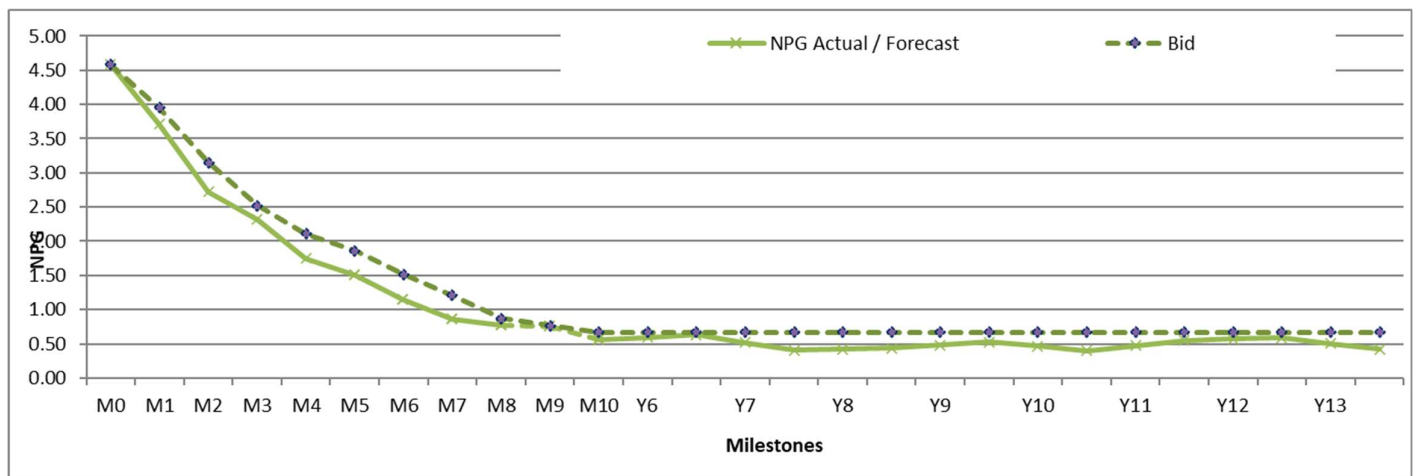
Category	Hierarchy	Type of Road	Detailed Description
6	Local Access road	Roads serving limited numbers of properties carrying only access traffic.	Often residential loops or cul-de-sacs.

A.1.3 Funding mechanisms

A.1.3.1 The PFI funding is in place to remove the maintenance backlog and maintain the Network in the required contractual condition.

A.1.3.2 The Funding in place is set to improve the Network Performance Gap at the rate given in Table 2.

Table 2 – Improvement in the Network Performance Gap



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A.1.4 Current state of inventory and asset register

- A.1.4.1 The asset inventory is good. This will be maintained throughout the PFI through the repeat surveys and checking as part of the maintenance and other activities on the Network.

A.1.5 Condition assessment

- A.1.5.1 Carriageway Condition is monitored using industry-standard surveys, contracted out for cost effectiveness and quality control. The range of survey types utilised in any given year will vary, but will generally be selected from Table 3:

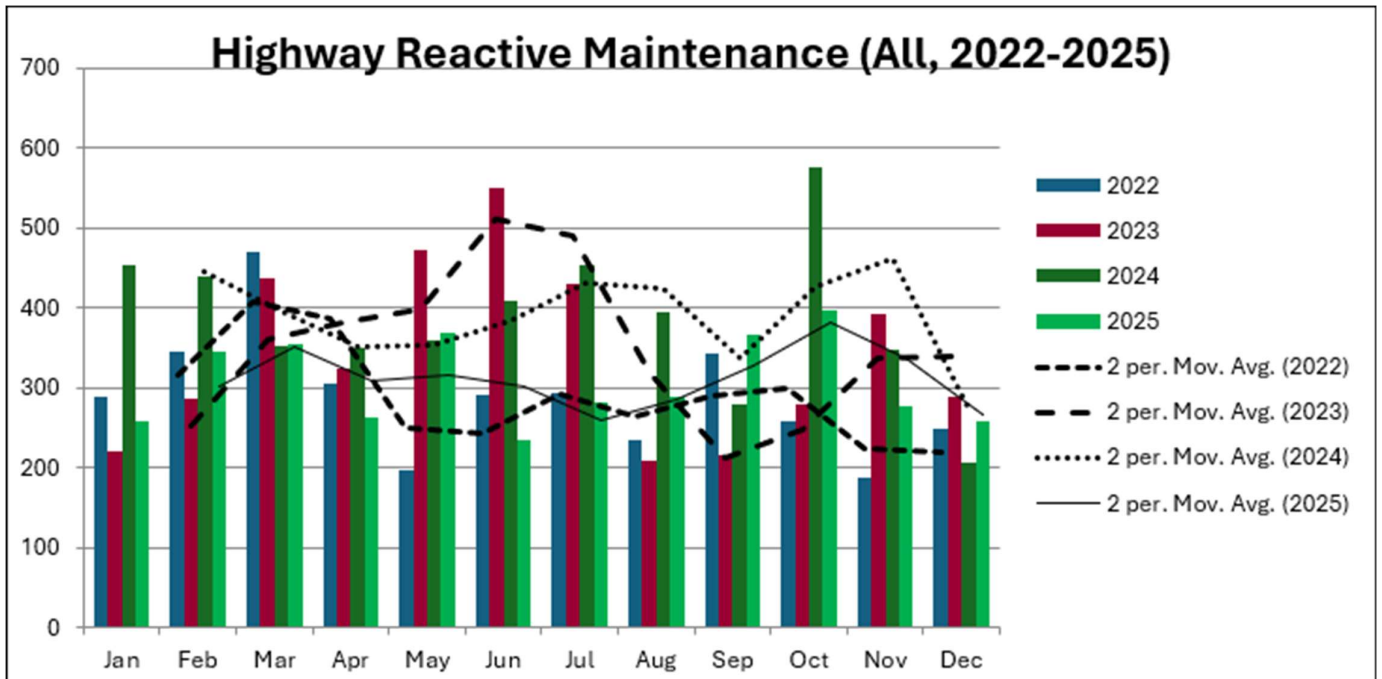
Table 3 – Pavement Condition Surveys

Type	Application	Coverage	Standard
Visual (DVI/FNS)	General and structural condition	All Road Classes	UKPMS
SCANNER	General Condition and Performance	Principal and Classified	UKPMS
SCRIM	Safety (skidding resistance)	Principal	UKPMS

A.1.6 Defect maintenance

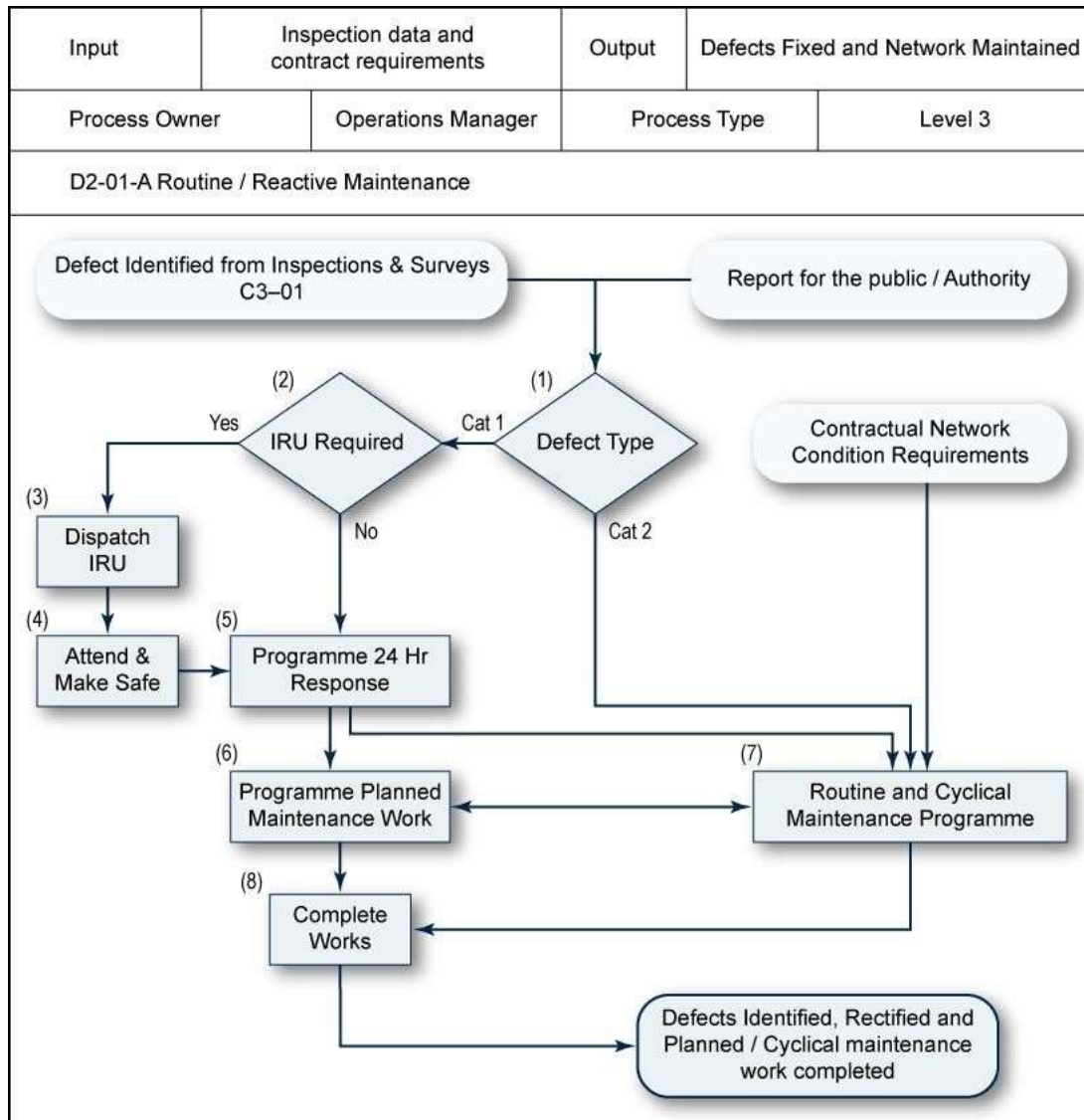
- A.1.6.1 Where defects are identified through surveys, public reports etc. these will be managed in accordance with Process D2-01 A Routine / Reactive Maintenance, see Figure 2 and described in *Method Statement 01 Network and Infrastructure Condition* and the Safety Inspection Strategy and Plan.
- A.1.6.2 The number of reactive repairs over time is showbelow:-

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Figure 2 – Reactive and Responsive Maintenance Process Map



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A.1.7 Carriageways Life Cycle Management

Lifecycle Stage 1. Creation or Acquisition of Carriageways

- A.1.7.1 Hounslow's network is a well-developed, mature network, and as such there are few instances of new provision; those few new roads are mainly new adoptions, as part of housing and business developments, and the occasional new road as part of a traffic improvement initiative.
- A.1.7.2 Any new roads will be designed and constructed in accordance with the Street Scene Design Guide and accrued via the Accrual / DE accrual process within the PFI Contract and *Method Statement 28 Changes to the Project Network*.

Lifecycle State 2 – Routine and Reactive Maintenance for Carriageways to maintain Safety and Serviceability

- A.1.7.3 The process for the delivery of routine and reactive maintenance is given in section A.1.6 above. Routine maintenance activities are described below.

Responsive maintenance

- A.1.7.4 Repairs to defects in response to public and ad-hoc reports.

Safety inspection maintenance

- A.1.7.5 Repairs of defects identified as part of our rolling programme of routine safety inspections.

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Lifecycle Stage 3 – Renewal or Replacement of Carriageways and Associated Items

A.1.7.6 Renewal or replacement activities, to return carriageways and/or associated items to “as new” capacity and condition (or to current standards, which may be better than the original standards, given advancements in technology), encompasses the following:

- Planned carriageway maintenance
 - Resurfacing
 - Surface Dressing
 - Thin surfacing
 - Strengthening
 - Planned patching
 - Reconstruction
- Replacement of lining
- Replacement of ironwork

A.1.7.7 Once the maintenance back log has been addressed during the CIPP the Network will be maintained at the NPG. The process for the management of the Network at this level is covered in Process Map D2-01 Network and Infrastructure Condition and *Method Statement 01 Network and Infrastructure Condition*.

Lifecycle Stage 4 – Upgrading of Carriageways and Associated Items

A.1.7.8 The upgrading of carriageway to result in improvements in the service provided could encompass the following:

- Enhancement schemes
- Provision of anti-skid, special surfaces, etc.
- Widening, realignment, etc.
- Provision of bus lanes, cycle lanes, etc.
- Lining improvements
- Safety schemes
- Traffic improvement schemes
- Safe routes to schools
- Improvements to strength of roads to cope with Airport HGV traffic

A.1.7.9 Improvements to the Network will be funded by the Authority, TfL or other external sources. In addition there is WSE funding available via the PFI for small scale improvements.

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A.1.7.10 Any improvements will be designed in accordance with the correct standards and the process set out in *Method Statement 30 Compliance with Quality Design*

A.1.7.11 The lining is refreshed in line with the Asset Optioneering Model for lining. Link 1 is refreshed every 2 years, Link 2 every three years, Link 3&4 are refreshed every four years and Link 5 every 5 years. If the RSL's does not need refreshing, it's inspected in the next cycle.

Lifecycle Stage 5 – Decommissioning and Disposal of Carriageways and Associated Items

A.1.7.12 We rarely, if ever, have occasion to remove carriageways from the network of adopted highways. Decommissioning of carriageways would generally only take place in conjunction with disposal of the whole street which would only happen in exceptional circumstances. Small lengths of carriageway might be removed from the network as part of major developments, new developments and traffic improvement schemes, but change of use does not, as such, constitute decommissioning. Where sections are removed from the Network this will be completed in accordance with Accrual / De accrual process in the contract and described in *Method Statement 28 Changes to the Project Network*.

A.1.8 Non-Asset Options

A.1.8.1 Non-asset options are those that allow the performance or capacity of the carriageway to be adjusted by other means, including:

- Managing Demand
- Influencing Perception
- Amend Standards & Targets

A.1.8.2 The nature of the carriageway network is such that there are relatively few non-asset options available to us, but those that we would consider include:

- Traffic management to discourage use of a particular part of the network – width restrictions, 20mph limits etc.
- Management of expectations from customers, including the mechanisms for communicating with and consulting stakeholders and customers.

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A.2 Footways and Cycle Routes Management Plan

A.2.1 Scope

A.2.1.1 The footway and cycle track asset group comprises the surface and structure of the Footways and Cycletracks within the Borough, both those associated with carriageways and those remote from carriageways.

A.2.2 Footway Hierarchy

A.2.2.1 Footway and Cycle Track Hierarchy is a key part of the inventory data and is used to reflect both pedestrian and cyclist needs, priorities and usage of the network by using a structured classification system which is detailed in the Well Maintained Highways. Footway Hierarchy will not necessarily be determined by the road classification, but the functionality of the footway and scale of use. In urban areas the contribution of the footway to the public space and street scene is particularly important.

Table 4 – Footway Hierarchy

Category	Category Name	Description
1 (a)	Prestige Walking Zones	Very busy areas of towns and cities with high public space and streetscene contribution.
1	Primary walking Routes	Busy urban shopping and business areas and main pedestrian routes.
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.
3	Link Footways	Linking local access footways through urban areas and busy rural roads.
4	Local Access Footways	Footways associated with low usage, short estate roads the main routes and cul-de-sacs.

A.2.2.2 In assigning footways to a particular Hierarchy, the following factors are taken into account:

- Pedestrian volume
- Current usage and proposed usage
- Accident and other risk assessment
- Age and type of footway (e.g. old flagged footways may require more frequent inspection than newly laid); and
- Character and traffic use of adjoining carriageway

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- A.2.2.3 The national standard hierarchies for cycle routes, recommended in Well Maintained Highways have been adopted by the Council for its Cycle Route Hierarchy.

Table 5 – Cycle Route Hierarchy

Category	Description
A	Cycle lane forming part of the carriageway, commonly 1.5 metre strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entries allowing cycle access)
B	Cycle track a highway route for cyclists not contiguous with the public footway or carriageway. Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or un-segregated.
C	Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority, but may be maintained by an authority under other powers or duties.

A.2.3 Survey and Inspection Regimes

Inspection of Footways

- A.2.3.1 The inspection of footways, as part of the highway network, is fundamental to the planning of maintenance works. It is part of a highway authority's statutory duty to demonstrate that the needs of the highway user are being addressed in a 'reasonable' manner.
- A.2.3.2 The inspection regimes for footways may be different from those used on the carriageway of the roads on which they are situated, because their importance to users is different. A central shopping street, with pedestrian priority, would be an obvious example.
- A.2.3.3 The inspections will be conducted in accordance with the Safety Inspection Strategy and Plan.

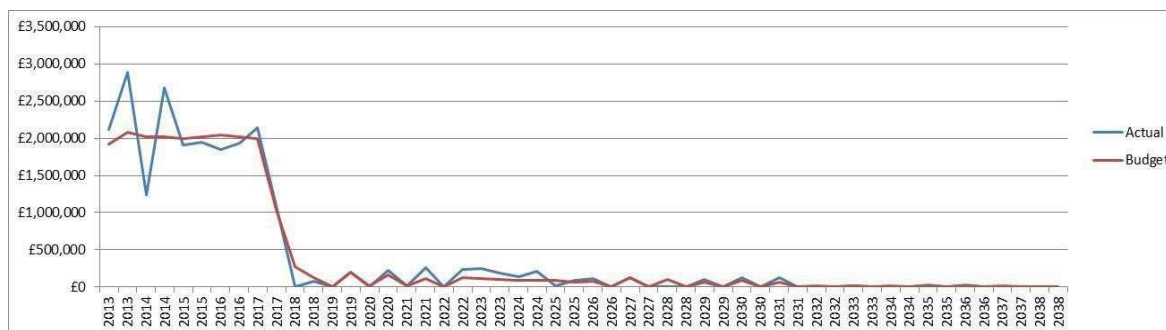
A.2.4 Condition of Footways and Cycletracks

- A.2.4.1 The condition of the footways and cycle tracks independent of the carriageway is measured through the Footway Network Survey (FNS).
- A.2.4.2 The overall condition is then included within the calculation of the NPG.

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A.2.5 Footways and Cycletracks Life Cycle Management

Lifecycle Profile Footways



A.2.5.1 Hounslow's network is a well-developed, mature network, and as such there are few instances of new provision. Asset creation is usually as a result of major works that either creates the asset where one previously did not exist or when improvements are made to the asset, which surpass its original capacity.

A.2.5.2 Any new footways or cycletracks to be included within the Network will be accrued via the Accrual / De accrual process within the PFI Contract and *Method Statement 28 Changes to the Project Network*.

Lifecycle Stage 2 – Routine and Reactive Maintenance for Footways and Cycletracks to maintain Safety and Serviceability

A.2.5.3 The process for the delivery of routine and reactive maintenance is given in section A.1.6 above. Routine maintenance activities are described below.

Responsive maintenance

A.2.5.4 Repairs to defects in response to public and ad-hoc reports.

Safety inspection maintenance

A.2.5.5 Repairs of defects identified as part of our rolling programme of routine safety inspections.

Routine Maintenance

A.2.5.6 General day-to-day maintenance on the footways and cycle tracks that is necessary to maintain them in a safe condition for users is identified and programmed in a timely manner in accordance with the policy on Highway Safety and Defect Inspections. The options and typical treatments available for both day-to-day maintenance and planned maintenance works, are determined in

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accordance with Table 6, these will be in accordance with the requirement of Schedule 3 Part 2 Annex 6.

Table 6 – Footway Maintenance and Treatment Options

Maintenance Option	Typical Treatment
Do Nothing	Footway or cycle track is safe and no works are required
Do Minimum	Make safe with minor repairs
Medium Life	Extensive patching works Micro Asphalt surfacing Relay flags and paving
Long Life	Resurface Replace flags and paving Reconstruction
Improvement	Change dimensions (realignment), type of construction, etc. Changes dependant on use and demand.

A.2.5.7 Planned maintenance works typically fall in to the Medium, Long Life and Improvement options identified above. These elements of planned maintenance are identified and used to create a proposed programme of works.

A.2.5.8 The identification of need for replacement or renewal of footways and cycletracks and associated items comes from a number of sources, including;

- Condition assessment surveys, the analysis of which are outlined in the process description above
- Local knowledge by area engineers and inspectors, and from other officers
- Public and member reports
- Reviews of long-term programme
- Opportunities presented to carry out works in conjunction with works to other asset components e.g. carriageway works

A.2.5.9 Every street in the Borough forms part of our long-term works programme with a priority for renewal or replacement allocated on the basis of UKPMS processing of the most recent survey data.

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Lifecycle Stage 3 – Renewal or Replacement of Footways and Cycletracks

A.2.5.10 Renewal or replacement activities, to return footways and cycletracks to “as new” capacity and condition (or to current standards, which may be better than the original standards, given advancements in technology), encompasses the following:

- Micro Asphalt surfacing or Slurry Sealing
- Relay paving
- Resurface
- Replace flags and paving
- Reconstruction

A.2.5.11 The identification of options for renewals or replacement schemes considers the following:

- The division of overall levels of budget between the different treatment types (resurfacing, surface treatment, strengthening etc.)
- The locations for which treatments will take place
- Extent of treatment at those locations
- The type of treatment to be carried out
- The detailed design and specification of that treatment
- If and how the carriageway works will be combined with works to other asset components
- The balance between preventative maintenance schemes, which may not be in the worst condition, but which are of better value, and treatments to carriageways in worst condition.
- Target FNS and NPG condition

Lifecycle Stage 4 – Upgrading of Footways and Cycletracks

A.2.5.12 The upgrading of footways and cycletracks, to result in improvements encompasses the following:

- Enhancement schemes
- Provision of special surfaces, etc.
- Widening, realignment, etc.
- Safety schemes
- Traffic improvement schemes
- Safe routes to schools

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A.2.5.13 Improvements to the Network will be funded by the Authority, TfL or other external sources. In addition there is WSE funding available via the PFI for small scale improvements.

A.2.5.14 Any improvements will be designed in accordance with the correct standards and the process set out in *Method Statement 30 Compliance with Quality Design*

Lifecycle Stage 5 – Decommissioning and Disposal of Footways and Cycletracks

A.2.5.15 We rarely, if ever, have occasion to remove footways and cycletracks from the network of adopted highways. Decommissioning would generally only take place in conjunction with disposal of the whole street which would only happen in exceptional circumstances. Small lengths of might be removed from the network as part of major developments, new developments and traffic improvement schemes, but change of use does not, as such, constitute decommissioning.

A.2.5.16 Where sections are removed from the Network this will be completed in accordance with Accrual / De accrual process in the contract and described in *Method Statement 28 Changes to the Project Network*.

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A.3 Structures

A.3.1 Introduction to Structures

- A.3.1.1 Bridges are essential components of the UK transport infrastructure and their safety and serviceability is therefore vital in the smooth functioning of the transport systems/network. Society expects and perceives bridges to be safe and the fact that there have been no cases of catastrophic bridge failures in recent years is due largely to the skills and ability of professional bridge engineers and managers.
- A.3.1.2 Service Provider is responsible for the inspection, maintenance, repair, replacement, assessment and management of all highway structures. All inspection records are loaded on to the Bridge Station. The code of practice was launched in September 2015 the code of practice is being updated and likely to be published in September 2026. The objectives of the codes are to encourage and assist highway authorities and other owners to implement Good Management Practice, harmonise practices, coordinate approaches and share their experiences and practices. The code emphasises the need for a holistic approach to highway structures management that gives due consideration to the wider highway network and local environment in which the structures exist. This code covers all aspects of highway structures management, except for the design of new structures or alterations/upgrades to existing structures.

A.3.2 Inventory (Physical Attributes)

- A.3.2.1 The asset grouping comprises bridges (both vehicular and pedestrian), culverts, subways, and retaining walls. Bridges are of various types and spans and their construction is mainly brickwork/masonry, concrete or steel. There are also subways serving the areas.
- A.3.2.2 Within the Borough there are a significant number of structures that carry the highway infrastructure which are owned by other statutory bodies such as Department for Transport, Network Rail, Environment Agency, London Underground Limited and British Waterways Board.
- A.3.2.3 Hounslow Highways carry out inspections to all LBH structures. Hounslow Highways is also responsible for inspection and maintenance of footway/carriageway surfacing to bridges owned by other bodies such Network Rail, London Underground Limited. Details of the assets are recorded under individual structures inspections file and are electronically held in Bridgestation.
- A.3.2.4 The Network Manager will monitor changes to the asset record within Confirm/Bridge Station. The extent of the inventory is indicated in the following table by area and type of construction.

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Table 7 – Structures by area and type of construction.

Location	Brick Arch	Reinforced Concrete	Steel	Pre-stressed Concrete	Steel Jack Arch	Masonry Arch	Timber	Various
Cranford	2	1	2					
Feltham	4	5	2		1		1	
North Feltham	2	1	1		1		1	
Isleworth	5	3		1	1			
Chiswick			6					
Kempton		1	1					
Kempton Park	1							
Hounslow	1	1	2					
Hounslow West		1	1					1
Bedfont	1	2	1	3				
Hanworth				2				
Twickenham		1			1			
Brentford	5	2	7			1		
Hatton		1						
Osterley	5							
Boston manor								
Hayes								
Heston								
Whitton								
Totals	26	19	21	6	2	1	2	2

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Table 8 – Structures Assets by type and ownership

Owner	Bridge	Footbridge	Culvert	Subway	Retaining Wall	Other	Totals
London Borough of Hounslow	26	16	1		1	2	46* *Including Strand on the Green Call Off
Network Rail	17	8					25
London Underground	9						9
British Waterways Board							
Other							
Total	52	24	1		1	2	80

A.3.2.5 Many bridges will have elements of brick column steel or concrete within their structure therefore the figures contained are based on the major component and should be used only for indicative purposes.

A.3.3 Condition Assessment

Condition Monitoring Measures

A.3.3.1 The results of inspections are now recorded in accordance with the Bridge Condition Index procedures. This system has been in procedure since April 2002. Amendments to the procedure were published in May 2004. As the Structures Manager receives each new completed inspection form the Bridge Station system is updated and the overall condition of the asset is recalculated.

A.3.3.2 The condition of a bridge element is recorded in terms of the severity of damage/defect and the spatial extent of the damage/defect. This is done in accordance with Management of Highways Structures, with the condition being measured with the Bridge Condition Index (BCI)

A.3.3.3 A BCI value of 100 implies that the bridge has retained 100% of its service potential; a value of 60 indicates that the bridge has lost 40% of its service potential; while a value of zero implies that the bridge is no longer serviceable.

A.3.3.4 Element Condition Score (ECS) uses a severity scale 1 (best) to 5 (worst) and an extent scale of A (non-significant) to E (>50% area affected). The severity and extent values for an element are combined to produce ECS. The scoring reflects the view that the extent of damage is less critical than severity of damage.

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A.3.3.5 Element Condition Factor (ECF) reflects the influence of the condition of an element has on the overall condition of the bridge. It is evaluated using the element importance classification and ECS.

A.3.3.6 Element Condition Index (ECI) indicates the contribution of the condition of an element makes to the overall health of the bridge. The ECI is determined by adjusting ECS to account for ECF as shown below:

$$ECI = ECS - ECF \text{ but always } > \text{ or } = 1$$

A.3.3.7 This shows that except for elements of “very high” importance, the damage is less critical for the overall bridge than it is for that element.

A.3.3.8 The Bridge Stock Condition Index (BSCI) provides an overview of change in condition of a bridge stock and can be used as a high level strategic tool to compare stocks from different groups as well as different authorities to benchmark performance and bidding for funds.

A.3.3.9 The table below shows the interpretation of the $BCSI_{Av}$ $BCSI_{Crit}$ values in terms of the general condition of the bridge stock.

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Table 9 - Interpretation of BSCI_{AV} and BSCI_{Crit} values

BSCI Range	BCSRange	Bridge Stock Condition based BSCI _{AV}	Bridge Stock Condition based on BSCI _{Crit}
100 → 95 Very Good	1.0 → 1.3	Bridge stock is in a very good condition. Very few bridges may be in a moderate to severe condition.	Very few critical load bearing elements may be in a moderate to severe condition. Represents very low risk to public safety.
94 → 85 Good	1.31 → 1.8	Bridge stock is in a good condition. A few bridges may be in a severe condition.	A few critical load bearing elements may be in a severe condition. Represents a low risk to public safety.
84 → 65 Fair	1.81 → 2.7	Bridge stock is in a fair condition . Some bridges may be in a severe condition. Potential for rapid decrease in condition if sufficient maintenance funding is not provided. Moderate backlog of maintenance work.	Wide variability of conditions for critical load bearing elements, some may be in a severe condition. Some bridges may represent a moderate risk to public safety unless mitigation measures are in place.
64 → 40 Poor	2.71 → 3.7	Bridge stock is in a poor condition. A significant number of bridges may be in a severe condition. Maintenance work historically underfunded and there is a significant backlog of maintenance work.	A significant number of critical load bearing elements may be in a severe condition. Some bridges may represent a significant risk to public safety unless mitigation measures are in place.
39 → 0 Very Poor	3.71 → 5.0	Bridge stock is in a very poor condition. Many bridges may be unserviceable or close to it. Maintenance work historically underfunded and there is a huge backlog of work.	Many critical load bearing elements may be unserviceable or close to it and are in a dangerous condition. Some bridges may represent a high risk to public safety unless mitigation measures are in place.

Inspections

- A.3.3.10 The conditions of all structures are monitored through general, principal inspections and routine surveillance inspections. Ad-hoc special inspections may be carried out following specific events such as vehicle impact or flooding.
- A.3.3.11 General inspections are carried out every two years and principal inspections every six years. Inspections are carried out in accordance with Departmental Standards BA 63/94 and BD 63/94. General inspections are remote visual inspections whereas principal inspections need to be carried out from within touching distance.

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Destructive and/or non-destructive testing may also be incorporated with the principal inspections.

Strength assessments

- A.3.3.12 All of the Council's structures have been assessed to carry 11.5t axle load and 40T gross vehicle weights permitted on UK roads.
- A.3.3.13 Every 12 years, following the Principal Inspection, each structure will also have an assessment review to confirm the original assessment is still valid. Where this indicates that the condition or requirements have change significantly a more detailed inspection will be completed.

Service Standards for Bridge Management

- A.3.3.14 The Highways Act 1980 requires that roads are maintained to allow the passage of all Construction and use vehicles, i.e. those up to 40/44t. Additionally the contract requires:
- The Service Provider shall ensure that each Structure is maintained to meet the agreed Levels of Service such as carrying load effects associated with HA and HB loading requirements supported by the appropriate inspection, testing and monitoring regime in accordance with the Code of Practice for the Management of Highway Structures.
 - The Service Provider shall ensure that each Structure is maintained to meet the agreed Levels of Service such that the Average Bridge Stock Condition Indicator weighted by deck area (BSClav) for the structure stock value shall not be less than 90 supported by the appropriate inspection, testing and monitoring regime in accordance with the Code of Practice for the Management of Highway Structures.

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- The Service Provider shall ensure that each structure is maintained to meet the agreed Levels of Service that no structure shall have an average Bridge Condition Indicator (BCIav) value less than 80 supported by the appropriate inspection, testing and monitoring regime in accordance with the Code of Practice for the Management of Highway Structures.

A.3.4 Creation & Acquisition

- A.3.4.1 Any new bridge would be accrued into the Project Network in accordance with the Accrual Process and Method Statement 28.

A.3.5 Routine & Reactive Maintenance

- A.3.5.1 Following general and principal inspections the routine maintenance works will be programmed and carried out. The routine works such as vegetation removal, and graffiti cleaning are done on an annual basis. The rehabilitation works are incorporated into the bridge strengthening works.
- A.3.5.2 Reactive maintenance covers the immediate safety of the structure. For example if a bridge parapet or beam is hit by a vehicle then immediate action is required to keep the structure or part of the structure safe (from collapse) and in serviceable condition. This may lead to a special inspection to the damaged element which can be planned for repair/replacement in the future.
- A.3.5.3 When a bridge strike or other immediate safety concern occurs a bridge engineer/inspector will visit the site to confirm the immediate safety of the structure and take appropriate action, this could range from closing the bridge to ordering a special inspection, protection measures or immediate works.

A.3.6 Replacing Existing Bridges

- A.3.6.1 The replacement of bridges and structures are determined from the failed load assessment along with the condition assessment and the risk assessment. Along with these there are other factors which influence the replacement projects are as follows:
- Increased traffic loading over the years
 - Require widened lane due to increased traffic volumes
 - Major weak elements within the structure
 - Age of the structure reaching its end of service life

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A.3.7 Strengthening Existing Bridges

A.3.7.1 The upgrading and/or strengthening of bridges are identified through similar means to replacing a bridge, but the strengthening programme involves different set of assessment, rehabilitation design that opposed to the replacement scheme. The strengthening scheme also at times includes the do nothing option, however normally it is not considered as a viable case.

A.3.7.2 The factors that influence the strengthening options are as follows:

- Replace like for like material
- Add new material/element
- Add external pre-stressing
- Upgrade/change the parapet type

A.3.8 Disposal Plan

A.3.8.1 The removal of a bridge from the Project Network will be in accordance with the Accrual / De accrual process and Method Statement 28.

A.3.8.2 If a structure is demolished any materials will be managed in accordance with current environmental legislation, with an emphasis placed on recycling where practical.

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A.4 Drainage Management Plan

A.4.1 Introduction to Highways and Land Drainage

- A.4.1.1 Highways and Land Drainage are essential components of the UK transport infrastructure and their efficient function and serviceability is therefore vital in the smooth functioning of the transport systems/network during wet and adverse weather condition. .
- A.4.1.2 Hounslow Highways is responsible for the inspection, maintenance, repair, replacement, assessment and management of all highway drainage on adopted public highway.
- A.4.1.3 A very important feature of road construction is drainage. New roads include designed drainage systems intended to remove water efficiently from the surface of the highway to provide a safe passage for all vehicles and pedestrians.
- A.4.1.4 Older roads may have less sophisticated drainage, but all have features designed to take the water away from the road surface. It is necessary to clean and maintain these drainage provisions so that they can work properly.
- A.4.1.5 Problems can occur even when drainage provisions are clean and well maintained. Flooded and waterlogged roads result when the amount of water arriving on the road is greater than the capacity of the drainage facilities that take it away. Exceptional rainfall, a road being in a low lying area, changes in 'run off' from adjoining land and rivers overflowing are some situations that can lead to the road flooding or being waterlogged even when drains are in good working order. Material carried into the drains by floods can also lead to them becoming blocked. Drainage grills and gratings (e.g. on gullies) can become blocked very quickly when materials like mud are deposited on the road or when there is a heavy fall of leaves. If a flooded road is caused by a ruptured water main the water company will be responsible for repairing the damage.
- A.4.1.6 Water is directed to drains by the road profile. Puddles (ponding) tend to occur if there is a depression in the road. This can be rectified where necessary by local patching of the road surface.
- A.4.1.7 Wherever possible it is encouraged to have sustainable drainage systems for highway drainage. The features of this system are swales (form of a ditch sometimes with small embankments either sides of it), soakaways (concrete or brick chamber with or without base and opening in the chamber walls and infiltration trenches and filter drains.

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A.4.1.8 All above features allow rainwater to infiltrate the ground thereby reducing the amount of water discharging in to the sewers and rivers thus avoiding flooding.

A.4.1.9 The following notes give guidance on responsibilities for dealing with various types of flooding:

Flooding from Public Sewers

A.4.1.10 The water company, Thames Water, own and manage the network of public foul and surface water sewers. Therefore, Thames Water is the responsible authority to resolve problems with respect to overflowing public sewers.

Flooding from Private Sewers or Drains

A.4.1.11 Private sewers or drains are the responsibility of the owners.

Flooding from the Public Highway

A.4.1.12 Hounslow Highways services are responsible for dealing with flooding from the public highway or reporting blocked road gullies or gratings.

Flooding from a Burst Water Main

A.4.1.13 Thames Water is responsible for their supply up to and including the water stopcock.

Flooding from a Main River

A.4.1.14 The main rivers are the responsibility of the Environment Agency. In addition, the Agency provides a "Floodline", which is a 24 hour advice and information service for floods and flood warnings.

Flooding from Watercourses other than Main Rivers

A.4.1.15 Watercourses, other than main rivers, are the responsibility of riparian owners. A riparian owner is a one who has a property or land is on, or very near, a watercourse. Riparian owners have a duty to keep the watercourse clear of any obstruction to flow and the Council can serve legal notices on riparian owners to deal with obstructions. .

Provision of Sandbags to Protect against Flooding

A.4.1.16 The London Borough of Hounslow make sandbags available to residents of the Borough during extreme situations, to enable them to protect their homes from flooding. However, residents who are aware that their homes are at a high risk of flooding, e.g. as a result of the close proximity of a watercourse, are recommended to obtain sandbags from a builders' merchant to enable early preparation, as at

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times of flooding the Council's contractor may not be able to reach all properties before flooding occurs.

A.4.2 Inventory (Physical Attributes)

A.4.2.1 The drainage asset grouping comprises Gullies and their associated connections to the public sewer system, culverts and soakaways. The water courses through the Borough and owners are given in Table 10.

Table 10 – Water Courses within Hounslow and the Owner / Responsible Party

Watercourse/River	Owner/ Responsible Party	Land Drainage Authority
Osterly Border Watercourse	Riparian	LB Hounslow
Trumpers Wood Ditch	Riparian	LB Hounslow
Wyke Green Golf Course	Wyke Green Golf Course	LB Hounslow
Osterly Park	National Trust	National Trust
Cranford Infants School drain	Riparian	LB Hounslow
Heathrow Ind Trading Este	Riparian	LB Hounslow
Bedfont Close/Caines Lane	Riparian	LB Hounslow
Hounslow Heath Golf Course	Riparian	LB Hounslow
Westmacott Jubilee Way W/C	Riparian	LB Hounslow
Crematorium Drain	Riparian	LB Hounslow
Catherine Parr	Riparian	LB Hounslow
Portlane Brook	Environment Agency	Environment Agency
Upper Feltham Brook	Environment Agency	Environment Agency
Church Rd Drain	Riparian	LB Hounslow
Moatside Lakes	Riparian	LB Hounslow
The Parkway	Riparian	LB Hounslow
Jersey Rd	Riparian	LB Hounslow
Greenman Lane	Riparian	LB Hounslow
Farm Land Faggs Rd	Riparian	LB Hounslow
Ashford Rd	Riparian	LB Hounslow
Castleway	Riparian	LB Hounslow
Brabazon Rd	Riparian	LB Hounslow
Harlequin Close	Riparian	LB Hounslow

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Watercourse/River	Owner/ Responsible Party	Land Drainage Authority
Duke of Northumberland River	Environment Agency	Environment Agency
Longford River	Royal Parks	Royal Park
River Crane	Environment Agency	Environment Agency
River Brent	Environment Agency	Environment Agency
SSSI Syon Park	Environment Agency	Environment Agency

A.4.2.2 Within the Borough there are about 22073 gullies and circa 75km of associated pipe works connections to the public sewers within the Borough's road network.

Number of Gullies

A.4.2.3 Table 11 details the number of gullies per area committee and the initial approach to maintenance. As is gathered on performance this will be moved to a risk based approach with a varying frequency.

A.4.2.4 Link 1 are cleansed on yearly basis, Link 2 &3 are cleansed on 18 months basis and Link 4 &5 every two years.

Table 11 – Number of Gullies by Area Committee

Location	Number of Gullies	Initial Maintenance Provision
Feltham, Bedfont and Hanworth (West Area)	6700	
Chiswick Area	3002	
Isleworth and Brentford Area	4278	
Hounslow central Area	4126	
Cranford and Heston	3967	

A.4.3 Condition Assessment

A.4.3.1 Condition Assessment of gullies is made during gully cleaning operation and the maintenance programme is made for various remedial works required for gullies following the assessment. However, reactive maintenance will be carried out as result of requests made by the members of public.

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Current conditions - Inspections

- A.4.3.2 During a cleaning operation Drainage Technicians assess the condition of the gully grating and the frame with regard to its structural condition. Further assessment of the gully pot and its connection to the public sewer is carried out by water testing the system following cleaning operation as necessary.

A.4.4 Performance Indicators

- A.4.4.1 The performance indicators from the Highways Contract given in Table 12 refer to drainage and standing water.

Table 12 – Performance Indicators Referring to Drainage

Service Delivery Output Element	Performance Targets - Network Performance
Gullies & Pipe work and Soakaways	The Service Provider shall ensure that all non-functioning Gullies, Catch pits and Soakaways are functioning within 14 days.
Gullies & Pipe work and Soakaways	The Service Provider shall ensure that all Gullies, Catch pits and Soakaways are free from malodours within 14 days.
Project Network Drainage	The Service Provider shall ensure that 95% of instances of standing water which are not the result of an Event Storm on the Project Network are rectified within 2 hours and 100% of instances within 4 hours from the cessation of the cause.
Project Network Drainage	The Service Provider shall ensure that 95% of instances of standing water which are the result of an Event Storm on the Project Network are rectified within 2 hours and 100% of instances within 6 hours from the cessation of the cause.

A.4.5 Life Cycle Plan

Routine and Reactive Maintenance

- A.4.5.1 The Service Provider needs to carry out work on assets only within the Project Network. The annual cyclic maintenance includes the following activities:
- Annual cleaning gully pots and associated pipe work connection to the public sewers and watercourses.
 - Clean gully gratings and frame including apply necessary lubricant to facilitate maintenance.
 - Clean Council owned drainage and inspection chambers.
 - Clean chamber covers including application of lubricants
 - Clean soakaways pits/chambers

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- Inspection of highways drainage system
 - Produce defects schedule – general defects are cracked gully gratings and frame, defective fitting of grating into the frame and defective/collapsed pipe work
 - Carry out works identified in the schedule
 - Update the inventory of drainage asset

Reactive Maintenance

- A.4.5.2 The reactive and pro-active daily maintenance involve repair and/or replacement of all missing, damaged and defective gullies and associated pipe works. Reactive maintenance will normally be carried out upon receipt of complaints from members of the public, Councillors and officers of the Council when they found defective asset during their site visits.

Enhancement of the system

- A.4.5.3 Where enhancements to the system are identified these will be included within the Network Safety and Integrity Report for consideration by the Council. Any enhancements will be included within the Project Network either via the change or accrual processes within the Contract.