

Solihull Council Highway Services

Highway Maintenance Plan 2019

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1. Introduction

Solihull Council is the Highway Authority for all highways maintainable at public expense within the borough of Solihull; with the exception of Trunk Roads and Motorways. As a Highway Authority the Council has to fulfil a number of statutory duties, many of which are contained in the Highways Act, 1980. A number of other Acts impose additional duties and give the Council powers relating to the management of highways.

A number of national guidelines exist for the provision of highway maintenance, the Council seeks to work in accordance with the latest guidance and that has been published in the development of this plan. In particular this plan reflects the guidance in the Code of Practice 'Well-managed Highway Infrastructure' (CoP) published by the UK Roads Liaison Group (UKRLG). For the avoidance of doubt, wherever this Highway Maintenance Plan (HMP) differs from the code, then this plan shall be taken as the Council's approach to highway maintenance.

The Authority benchmarks and works with neighbouring authorities and other interested parties such as Highways England and West Midlands Highways Alliance to work towards a level of consistency in standards and cooperation in managing the highway network for users.

2. Policy Framework

The Code of Practice (CoP), Well-managed Highway Infrastructure supports by using an asset management approach to highways maintenance. This plan sets out how the Council will manage the network following the recommendations in the CoP and compliments the Council's Highway Infrastructure Asset Management Plan (HIAMP)

The CoP makes 36 recommendations which have been reproduced in this plan (within the text boxes) along with our interpretation of how the Council aims to follow the guidance provided and implement it within our highway environment.

2.1. Recommendation 1 – Use of the Code

This Code, in conjunction with the UKRLG Highway Infrastructure Asset Management Guidance (HIAMG), should be used as the starting point against which to develop, review and formally approve highway infrastructure maintenance policy and to identify and formally approve the nature and extent of any variations.

This HMP sits alongside the HIAMP, which details the mechanisms that will be deployed as we work towards attaining the Council's objectives.

This will be through planned delivery against the life cycle plans for all major components of the highway asset which are made up of the following:

- Carriageways
- Structures
- Drainage
- Footways and Cycle ways
- Street Lighting and Traffic Signals

This plan sets out a risk based approach, which will be embedded in every-day decision making. In developing this plan we have referred to the relevant guidance, used our expert local knowledge & intelligence and evaluated the risks to set our initial standards for undertaking inspection and maintenance activities.

In recognition that we operate in a dynamic environment where risks evolve and change we will keep our standards under regular review so that they are appropriate to manage and control the risks adequately.

For certain standards; where noted, it is intended that these standards are to evolve as the maintenance service environment changes and further understanding of risk arises. For example, we would increase the inspection intervals for problem areas and reduce inspection intervals where major reconstruction work has been undertaken and the condition of the asset is good. This evolution of service will be undertaken in a comprehensive and considered manner, as laid out in this plan, and be subject to ongoing annual review and approval through the Council's governance processes.

2.2. Recommendation 2 – Asset Management Framework

An Asset Management Framework should be developed and endorsed by senior decision makers. All activities outlined in the Framework should be documented.

This Plan and Framework has been considered and approved by the Cabinet member. It will be reviewed annually or when changes are made.

(HIAMG Recommendation 1)

2.3. Recommendation 3 – Asset Management Policy and Strategy

An asset management policy and a strategy should be developed and published. These should align with the corporate vision and demonstrate the contribution asset management makes towards achieving this vision.

(HIAMG Recommendation 3)

The HIAMP sets out the Council's Asset Management Policy and Strategy which is published on the Council's web site. The following definition provides a useful explanation of asset management:

"Asset management is a strategic approach that identifies the optimal allocation of resources for the management, operation, preservation and enhancement of the highway infrastructure to meet the needs of current and future customers."- Association of Directors for Environment, Planning and Transportation 2004 Framework for Highway Asset Management.

Through our highway asset management planning we will develop specific lifecycle plans for major assets that detail how we will collect information about condition and then utilise, where resources allow, a system of planned interventions designed to preserve, maintain and enhance our highway assets. This will take account of the following factors:

- Minimising whole-life cost and maximizing cost/benefit
- A risk based approach to highway asset management and maintenance
- Network priorities and policies and this Highways Maintenance Plan.
- Agreed levels of service

Where resources restrict the ability of the Council to deliver all planned interventions across all highway assets we will ensure the standards and risk based approach outlined in this plan will deliver, as a minimum; maintenance activities with the intention of keeping the highway safe for all reasonably practicable use. To ensure the Council meets its duty towards the maintenance of the highway across its full extent it is essential that we direct resources towards the highest priorities and deploy the most effective ways to minimise risk utilising the risk based approach within this plan.

3. Stakeholders and Communication

3.1. Recommendation 4 – Engaging and Communicating with Stakeholders

Relevant information should be actively communicated through engagement with relevant stakeholders in setting requirements, making decisions and reporting performance.

(HIAMG Recommendation 2)

Neighbourhood Coordinators undertake highway inspections but also work in conjunction with key stakeholders within their allocated community areas. This ensures an open dialogue with community stakeholders in respect of the highway environment along with other community matters.

A range of stakeholders are encouraged to comment on the plan, these include the interests of Members, contractors, highways users, the West Midlands Combined Authority (WMCA) and neighbouring authorities.

Local business and key partners, such as the NHS and the Police who rely on the network for delivery of their services are consulted.

Through this way of working we ensure that the delivery of our investment programmes is informed by the intelligence gained through working alongside the community within localities. We also ensure that the work undertaken at a local level complements the activity delivered through our borough wide programme of maintenance and improvement works.

Future work programmes are approved and shared with Members and the public and scheduled or planned work details are set out in simple to understand letters so that when works are taking place residents are clear on the process and who they may contact within the Council if they have additional questions.

4. Other Authorities

4.1. Recommendation 5 – Consistency with other Authorities

To ensure that users' reasonable expectations for consistency are taken into account, the approach of other local and strategic highway and transport authorities, especially those with integrated or adjoining networks, should be considered when developing highway infrastructure maintenance policies.

The Council is a founding member of the Highway Infrastructure Management Group (HIMG). HIMG is a collective of the seven West Midlands Councils sharing best practice to drive improvements and efficiencies within the highways disciplines of the region.

Agreements are in place with our neighbouring authorities for cross boundary maintenance and winter service provision.

The Council is also a member of the West Midlands Highway Alliance (WMHA) which includes Authorities in the greater West Midlands region. This group looks at best practice development and peer reviews to help share knowledge and build efficient practices that support the CoP, the DfT incentive fund submission and asset management best practice.

The Council is part of a partnership with Warwickshire County Council and Coventry City Council for the delivery of its highways maintenance programmes through a joint single provider.

5. Integrated Network Management

5.1. Recommendation 6 – An Integrated Network

The highway network should be considered as an integrated set of assets when developing highway infrastructure maintenance policies.

The Council's policies relating to the highway asset are detailed in the HIAMP. This plan details the minimum levels of service that arise from the Council's duty to maintain the highway assets when considered in the context of these wider policy objectives, as well as providing more detailed operational policy for specific areas of service.

The main highway assets are;

- Carriageway surface and structural condition
- Footway surface and structural condition
- Structures structural condition
- Street lighting condition and performance
- Drainage cleansing, condition and performance

The HIAMP details the methodology that will be used to achieve the policy objectives. The Forward Programme and a series of Annual Plans will detail the specific activities that are planned each year and the medium term along with the resources assigned to achieve those objectives.

This plan, and the risk based approach it details, enables the wide variety of highway assets to be managed as an integrated set. It details an approach to assessing and undertaking maintenance that is used across all assets.

6. Risk Based Approach

6.1. Recommendation 7 – Risk Based Approach

A risk based approach should be adopted for all aspects of highway infrastructure maintenance, including setting levels of service, inspections, responses, resilience, priorities and programmes.

This plan details our risk based approach to highway maintenance activities, which is in line with latest industry practices outlined in the CoP.

The purpose of risk based approach is the consistent application of a decision making process to:

- Correctly evaluate the risk posed to highway users by all defects or deficiencies in the highway asset;
- Prioritise resources so that the risk is managed effectively;
- Ensure the efficient use of available resources;
- Understand performance and address any gaps in resources or performance;
- Ensure value for money;
- Enable monitoring of outcomes.

The principle of risk based approach is to assess the likelihood of injury or damage as a result of any defect along with the potential consequences if that event should it occur. Decisions will be informed by data and knowledge derived from analysis of previous maintenance activities, such as highway safety inspections and other sources including condition surveys, complaints, accident, incident & claim data.

The consequences of defects in the highway can include:

- Injury and fatality to highway users, ;
- Safety hazards resulting in unacceptable risk to the community;
- Disruption to traffic;
- Accessibility being compromised;
- The devaluing of place;
- Dissatisfaction; and,
- Economic disruption to businesses.

Prescriptive intervention levels for defects are not used in this plan. They can be wasteful of resources with defects that present a low risk often being measured and then repaired ahead of other defects that by virtue of their location and other risk factors; may cause a greater hazard. A risk based approach utilises the expertise of the inspector to correctly and consistently evaluate defects in accordance with the guidance established in [RECOMMENDATION 14 – RISK MANAGEMENT](#). Expertise and consistency of inspectors is ensured by training to industry recognised standards and regular comparative inspections, as detailed in [RECOMMENDATION 15 - COMPETENCIES AND TRAINING](#).

6.2. Recommendation 14 – Risk Management

The management of current and future risks associated with assets should be embedded within the approach to asset management. Strategic, tactical and operational risks should be included as should appropriate preventative and mitigation measures.

(HIAMG Recommendation 11)

The key to selecting the appropriate action for a defect is the risk assessment process. All defects that reach the investigatory level should be evaluated for their significance and the likelihood of injury or damage to a highway user.

Response times for remedial action on defects will depend on where the defect is located on the network. The response time is linked to the priority of the roads as defined in the asset management policy and strategy, with the Strategic Network being the highest priority.

The Highway Infrastructure Asset Management guidance document produced by HMEP and the UKRLG provides a method and risk matrix to support the risk based approach to responding to defects.

Impact of Event Occurring

The impact of a risk occurring is measured on a scale of 1 – 5 (1 negligible impact, 5 highest impact) as detailed in the table below:

The vulnerability of all highway users, including motorcyclists, cyclists and pedestrians will be reflected in the risk assessment carried out when deciding the category of the defect. In all other areas the degree of regular use of the network by all users, will be considered in the risk assessment.

Impact rating	Score	Description	Possible Indicators
Very High	5	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in serious injury or a fatality.	<p>Impact will result in injury or fatality and / or serious damage to property.</p> <p>Highway users will instinctively react to avoid the defect and this will place them in peril.</p> <p>The defect could destabilise a vehicle and this will place highway users in peril.</p>
High	4	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in injury or serious claim against the Council.	<p>Impact will result in injury, possibly serious to persons from which they are likely to recover. Damage to property is serious.</p> <p>Highway users will instinctively react to avoid the defect.</p> <p>The defect could destabilise a vehicle</p>
Medium	3	<p>The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in minor injury or claim against the Council.</p> <p>If untreated the defect will contribute to the deterioration in the overall condition of the Highway Asset. The defect is likely to deteriorate further before the next safety inspection.</p>	<p>Most impacts will not result in any injury but if injury was to occur it would be less serious or temporary in nature.</p> <p>Highway users are unlikely to react to avoid the defect and the impact will not interrupt their passage.</p> <p>The defect will be felt and recognised as a defect by most Highway users, and its presence will be a negative influence on their perception of the Highway Asset.</p> <p>If untreated the defect will accelerate the local deterioration of the Highway Asset.</p>
Low	2	<p>The Hazard presented by the defect, or due to the short term structural deterioration in the defect, is unlikely to result in injury or claim, but the defect will contribute to the deterioration in the overall condition of the Highway asset.</p> <p>The defect is unlikely to deteriorate further before the next scheduled safety inspection.</p>	<p>The defect will be recognised by Highway Inspectors as requiring attention, but is unlikely to be felt and recognised as a defect by most Highway users.</p> <p>The defect is very unlikely to cause injury</p>

Negligible	1	<p>The Hazard presented by the defect, or due to the short term structural deterioration in the defect, is unlikely to result in injury or claim, but the defect will contribute to the deterioration in the overall condition of the Highway asset.</p> <p>The defect is unlikely to deteriorate further before the next scheduled safety inspection.</p>	<p>The defect will be recognised by Highway Inspectors as requiring attention, but is unlikely to be felt and recognised as a defect by most Highway users.</p> <p>The defect will not normally cause injury.</p>
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Likelihood of Event Occurring

The likelihood of an event occurring is measured on a scale of 1 – 5 (1 negligible likelihood, 5 highest likelihood) as detailed in the table below;

Probability rating	Score	Description	Possible Indicators
Very High	5	More than a 75% chance of occurrence before the next inspection.	<p>Vehicular, cycle and / or pedestrian flows are high.</p> <p>A high percentage of vulnerable users may pass through the site.</p> <p>The location of the defect and the topography of the site will mean that it is difficult to a highway user to recognise and hence avoid the defect.</p> <p>Forward visibility may be compromised.</p>
High	4	55 – 75% chance of occurrence.	<p>Vehicular, cycle or pedestrian flows may be high, but differing modes are less likely to share the Highway at this location.</p> <p>Responsible Highway users may be able to recognise and take action to mitigate the impact of the defect.</p> <p>Forward visibility is good.</p>
Medium	3	35 – 55% chance of occurrence.	<p>Vehicular, cycle or pedestrian flows may be high, but differing modes are less likely to share the Highway at this location.</p> <p>The majority of responsible Highway users will be able to recognise and take action to mitigate the impact of the defect.</p> <p>Forward visibility is good.</p>

Low	2	15 – 35% chance of occurrence.	<p>Vehicular, cycle or pedestrian flows are moderate or low.</p> <p>Different transport modes are unlikely to share the Highway at this location.</p> <p>The majority of responsible Highway users will be able to recognise and take action to mitigate the impact of the defect.</p>
Negligible	1	Less than 15% chance of occurrence.	<p>Vehicular, cycle or pedestrian flows are very low.</p> <p>The speed differential between users is very likely to be low.</p> <p>The majority of responsible Highway users will be able to avoid the defect.</p>

Risk Factor

The risk factor is the product of the impact and the likelihood and determines the nature of the risk.

The risk matrix below determines the risk factor from the impact and likelihood assessments and should be used to guide the appropriate response required:

Risk Assessment matrix, Defect Categories and Response Times

LIKELIHOOD OF EVENT OCCURRING	IMPACT OF EVENT OCCURRING				
	NEGLIGIBLE	LOW	MEDIUM	HIGH	VERY HIGH
NEGLIGIBLE	1	2	3	4	5
LOW	2	4	6	8	10
MEDIUM	3	6	9	12	15
HIGH	4	8	12	16	20
VERY HIGH	5	10	15	20	25
KEY TO RISKS – (Appropriate timescale for action or repair)					
No action will be taken	Consider adding to a future program of works	Make safe or repair within 28 days	Make safe or repair within 7 days	Make safe or repair within 2 hours	

The timescales in the table commence at the point in time that the Council (or its Service Provider) has knowledge of the defect, has undertaken the risk assessment and categorised the defect. In the event that the Council (or its Service Provider) has knowledge of the defect (for example as a result of a report from a member of the public), but has yet to be able to quantify the risk associated with the defect, the defect shall be progressed as if it is a very high risk defect.

Defects identified out of normal working hours are reported to the Out Of Hours Team or Duty Officer (Highways) who will respond based on the information provided by the person and in accordance with the risk table above. If insufficient information is available then the defect will be considered very high risk and the appropriate response made. Provision is made for an appropriate response during non-working days via the Out of Hours Team and / or the Duty Officer (Highways).

The Duty Officer has a guidance document to ensure that they are able to ensure appropriate responses are taken to ensure a safe network.

Timescales are designed to enable highway defects to be, wherever practicable, actioned by a permanent repair. This balances the immediate risk posed to highway users with the ongoing risk that will be posed as a consequence of a failed temporary repair. In some situations, it may be necessary to respond to certain defects as an emergency, responding as soon as possible (often within 2 hours).

7. Information Management

7.1. Recommendation 8 – Information Management

Information to support a risk based approach to highway maintenance should be collected, managed and made available in ways that are sustainable, secure, meet any statutory obligations, and, where appropriate, facilitate transparency for network users

The essential elements of an effective highway maintenance strategy are:

- A relevant inventory
- A defined maintenance hierarchy
- Clear policies, objectives and standards for maintenance
- Results from scanner/condition surveys.
- Traffic volumes
- Complaints
- Accident and claim data

Network Inventories

Asset Data

The Highways Act 1980 requires highway authorities to maintain a register of roads maintainable at public expense. There is a further requirement under the New Roads and Street Works Act 1991 to maintain information for the purpose of:

- Identifying streets, described as ‘traffic sensitive’, where works must be avoided at certain times of day;
- Identifying structures under or over the street which need special consideration when work is planned; and,
- Identifying reinstatement categories used by Statutory Undertakers in their reinstatement of roads and footpaths.

This information is maintained and updated on a regular basis to take into account new developments, changes or amendments to the network and is managed within the framework of the National Street Gazetteer (NSG) in a format that the Statutory Undertakers can access electronically.

Detailed inventories of the various components of the highway asset, including street lighting and structural assets, are similarly maintained in electronic formats within Highway Management Systems. These systems are used to collect and store defect information such as the occurrence, type and response times. This enables performance monitoring and reporting to key decision makers and network users. This data is used to inform the risk based approach set out in this plan.

7.2. Recommendation 9 – Network Inventory

A detailed inventory or register of highway assets, together with information on their scale, nature and use, should be maintained. The nature and extent of inventory collected should be fit for purpose and meet business needs. Where data or information held is considered sensitive, this should be managed in a security- minded way.

The Network Inventory register is part of the HIAMP.

7.3. Recommendation 10 – Asset Data Management

The quality, currency, appropriateness and completeness of all data supporting asset management should be regularly reviewed. An asset register should be maintained that stores, manages and reports all relevant asset data.

(HIAMG Recommendation 5)

Our approach to Data Management is detailed in the HIAMP.

7.4. Recommendation 11 – Asset Management Systems

Asset management systems should be sustainable and able to support the information required to enable asset management. Systems should be accessible to relevant staff and, where appropriate, support the provision of information for stakeholders.

(HIAMG Recommendation 12)

Symology is the asset management system used to maintain the Council's highway asset data. Over 25 years' worth of asset information is held within the system which is updated as new works are undertaken or assets are defined. This supports the asset management function and programme development.

8. Functional Hierarchy

8.1. Recommendation 12 – Network Hierarchy

A network hierarchy, or a series of related hierarchies, should be defined which include all elements of the highway network, including carriageways, footways, cycle routes, structures, lighting and rights of way. The hierarchy should take into account current and expected use, resilience, and local economic and social factors such as industry, schools, hospitals and similar, as well as the desirability of continuity and of a consistent approach for walking and cycling.

The network maintenance hierarchy is the foundation of the system of routine safety inspections.

The maintenance hierarchy adopted by the Council reflects the needs, priorities, strategic importance and actual use of each road in the network. The dynamic nature of the network is taken into account as this hierarchy is regularly reviewed, as detailed below, to reflect changes in street characteristics, use and risk.

The maintenance hierarchy currently serves to inform the frequency and method of safety inspection and is used as a weighting factor as part of the risk based approach to inform the response times for routine or reactive maintenance alongside the overarching network hierarchy that is established as part of the HIAMP.

The Council has adopted the hierarchy from the previous CoP 'Well Maintained Highways'.

The Council believes that the highway asset should provide a network that facilitates the efficient and safe movement of people and goods whilst protecting the quality of life within communities. The Highway asset supports economic growth in the area and prosperous development of the community for business and commerce as well as underpinning the ability of the Council and other public services to deliver its services to the community

The Local Transport Plan sets out the Council’s policy objectives in regard to all our public places; which should be safe and enjoyable for all to use responsibly. Our highway infrastructure is vital to a functioning borough, should be resilient to the impact of weather and climate and available for all to use, whether they choose to travel by vehicle or through more sustainable modes, such as walking or cycling. This plan describes a system of maintenance that is designed to keep, in as far as is reasonably practicable, our highway asset safe for use by all transport modes.

Resilient Network and Minimum Winter Network

Solihull has defined a resilient network and winter service network as detailed in the Council’s Winter Service Plan. This has priority on programme development as it enables transport to move freely through and around the borough. It also considers public transport routes, links to health provision and key economic centres. The approved winter network is 56% of the total road network which equates to 560km.

9. Lifecycle/Designing for Maintenance

9.1. Recommendation 13 – Whole Life / Designing for Maintenance

Authorities should take whole life costs into consideration when assessing options for maintenance, new and improved highway schemes. The future maintenance costs of such new infrastructure are therefore a prime consideration.

For the major asset groups, the Council will utilise the asset management approach, as detailed in the HIAMP, in conjunction with the risk based approach, outlined [above](#), to target its maintenance resources. Programmed maintenance will be directed towards timely proactive treatments in accordance with the asset management policy and strategy established in the HIAMP. This approach presents better value for money, minimises disruption to the travelling public, and is the most effective means of maintaining the overall condition of the asset throughout its lifecycle. This is achieved by identifying assets that are approaching condition thresholds so that cost effective interventions can be made and targeted condition levels can be achieved where possible. Timely intervention has proved effective at halting the overall deterioration of the network and reducing the demand for reactive maintenance in response to defects that present an immediate hazard to highway users, ‘prevention is better than cure’.

Programmes of capital maintenance are maintained on an on-going basis, as part of the Forward Programme with confirmed work for the coming year prioritised, procured, commissioned and delivered as part of each year’s Annual Plan.

Routine and reactive maintenance is managed throughout each year utilising the resources identified in each year’s Annual Plan. As a minimum the levels of service in regard to the timescale for response and the quality of repair will be as described in this plan.

10. Competencies and Training

10.1. Recommendation 15 – Competencies and Training

The appropriate competencies for all staff should be identified. Training should be provided where necessary for directly employed staff, and contractors should be required to provide evidence of the appropriate competencies of their staff.

All inspectors of highways will be trained to a standard that allows registration on the National Register of Highway Inspectors (IHE). The registration should be continuous and any continuing professional development required is carried out. The training will cover:

- Inspector training and accreditation.
- UKPMS training.
- Health and safety training.
- Risk assessment training.
- Staff annual performance and development reviews and competency assessments.

The inspection process will be managed by suitably qualified and experienced highway engineers and overseen by the Asset and Contract manager

Standard Setting

It is important that inspectors are inspecting consistently and applying the parameters correctly. An inspection guide has been developed that helps the inspector undertake the risk based approach and guides them through risk options. This will be achieved by holding bi-annual standard setting workshops where several inspectors separately inspect a section of network and then their results are compared. This will be followed by a further joint inspection to resolve differences. This process will give a measure of the reproducibility of the inspections.

11. Inspections and Surveys

11.1. Recommendation 16 – Inspections

A risk-based inspection regime, including regular safety inspections, should be developed and implemented for all highway assets.

Safety Inspections

This plan describes the regime of safety inspections that the Council will deploy. Associated processes and procedures for condition inspection, assessment and recording for major assets is described in the HIAMP.

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. Section 41 of The Highways Act 1980 requires the Council to maintain the highway for which they are responsible. Section 58 of the act provides a statutory defence to a claim made for breach of the Section 41 duty to maintain. This document provides a framework for the Council to use in that defence.

The Council's safety inspection regime forms a key part of the Council's strategy for managing risk. It comprises the following elements:

- frequency (and mode) of inspections
- items for inspection
- degree of deficiency
- nature of response

The frequency of safety inspections for individual network sections has been determined from the 2005 edition of the UKRLG Well-maintained Highways Code of Practice for Highway Maintenance Management. In accordance with the 2005 edition of the code these are based upon a risk based consideration of:

- Category within the network maintenance hierarchy
- Traffic use, characteristics and trends
- Incident and inspection history
- Characteristics of adjoining network elements
- Wider policy or operational considerations.
- Complaints about condition
- Claims received
- Condition assessments (UKPMS)
- Traffic flows and changes in use
- Defect interventions recorded

Feature	Category	Frequency
Carriageway	Strategic Route	1 month
	Main Distributor	1 month
	Secondary Distributor	1 month
	Link Road	3 month
	Local Access	Annual
	Rural Access lanes	Every 2 years

Footways	Prestige Area	2 per month
	Primary Walking Route	1 month
	Secondary Walking Route	3 months
	Link Footway	6 months
	Local Access footway	annual
	Urban metalled PROW's	Every 3 years
Cycle Route	Part of Carriageway	As carriageways
	Remote from Carriageway	6 months
	Cycle Trails	1 year

Risk based Inspection Frequency

Where a road use changes or complaints have been received regularly and/or reactive works have been carried out regularly, safety inspection frequency may be altered, (this may include the use of additional inspections). Similarly, surfacing schemes may trigger a review of the inspection frequency for a certain area due to the reduction in risk. Frequency changes will be determined via risk assessment that takes account of the above considerations and will be reviewed by Highway Services using and recorded by the Asset and Contract Manger (with the reason for doing so) annually.

A separate guidance document is provided for an inspector that sets out what and how the inspection should be undertaken. This provides guidance on the risk based approached detailed within this plan to establish a response time to defects identified.

Defect Investigation Levels

Authorities must guard against applying fixed measurements without regard to the particular circumstances of each defect. When assessing the risk associated with defects consideration will be given to its location, the volume of traffic, the nature of such traffic, etc., usage by children, elderly and disabled persons, and the extent of visibility at the site. The CoP does not set out specific intervention levels and refers to existing legal precedents.

11.2. Recommendation 17 – Condition Surveys

An asset condition survey regime, based on asset management needs and any statutory reporting requirements, should be developed and implemented.

Solihull undertakes other condition surveys that can be used to manage the road network, this includes Scanner and Detailed Visual inspections. Other surveys are undertaken as and when required to further support the management of the network.

12. Management Systems, Recording and Monitoring of Information

12.1. Recommendation 18 – Management of Systems and Claims

Records should be kept of all activities, particularly safety and other inspections, including the time and nature of any response, and procedures established to ensure efficient management of claims whilst protecting the authority from unjustified or fraudulent claims.

Maintenance activities and correspondence regarding enquiries are recorded in the Council's Customer Relationship Manager and the Symology asset management systems. These records are utilised for performance monitoring and in the investigation of claims. The procedures for dealing with claims managed within the Council's Insurance Services team and are fully recorded to detect and prevent unjustified and fraudulent claims.

13. Defect Recording and Repair

13.1. Recommendation 19 – Defect Repair

A risk-based defect repair regime should be developed and implemented for all highway assets.

During a safety inspection, where a defect is observed that may be considered a risk, details are recorded and a risk assessment undertaken. This is done within the asset management computer programme system Symology. The risk assessment will determine the time scale for potential repair that is detailed in the risk matrix detailed in [6. Risk based Approach](#). Where a temporary repair has been undertaken a follow up non-urgent permanent repair will be undertaken within 28 days or within a pre-planned maintenance.

All other issues identified are either added to the respective works programme or monitored at future inspections.

Repair instructions are detailed in Symology which generates order to the contractor and monitors performance.

14. Resilient Network

14.1. Recommendation 20 – Resilient Network

Within the highway network hierarchy a 'Resilient Network' should be identified to which priority is given through maintenance and other measures to maintain economic activity and access to key services during extreme weather.

When developing the Winter Service Plan, consideration was given to the travelling through and around the borough. Important facilities such as hospitals, train stations and economic centres were also considered. This resulted in a substantially resilient network being developed that covers 56% of the road network in the borough. The routes covered are published on the Council's website and shared with other third parties such as neighbouring authorities, the emergency services and other public service providers.

15. Climate Change and Adaptation

15.1. Recommendation 21 – Climate Change Adaptation

The effects of extreme weather events on highway infrastructure assets should be risk assessed and ways to mitigate the impacts of the highest risks identified

Under the Flood and Water Management Act 2010, the Council is a Lead Local Flood Authority and has put in place a Local Flood Risk Management Strategy. A dedicated team is responsible for Flood Risk Management, Highway Drainage and Tanker Services, ensuring a joined up approach is taken.

Work undertaken by the Environment Agency to map surface water flood risk is used day to day by the Flood Risk Management, Highway Drainage and Tanker Services team when investigating reports of flooding on the highway. A Surface Water Management Plan is currently being put in place by the team to help better understand the risk to the Borough and to inform a future works programme. Where new highway drainage is proposed as part of a new development or where alterations to the highway are proposed, then an additional 40% capacity allowance is made for Climate Change, in accordance with current Environment Agency guidance.

A piece of work to identify highway culverts that exist throughout the Borough has been recently undertaken and identifies the potential risk associated with each due to blockage. Further work is now being undertaken to better understand the capacity and condition of each of these assets in order to inform a future works programme.

Over recent years, the team have also installed remote camera and high water alarm systems at key trash screens within the Borough. Each of these systems help alert Officers to emerging issues, ensuring that the potential impact of flooding can be mitigated as far as possible.

16. Planning for Responding to Network Disruptions

16.1. Recommendation 22 – Drainage Maintenance

Drainage assets should be maintained in good working order to reduce the threat and scale of flooding. Particular attention should be paid to locations known to be prone to problems, so that drainage systems operate close to their designed efficiency.

The Council's in house Tanker Services team are responsible for the cleansing of the Borough's highway drainage network, which currently consists of over 39,000 gullies and associated pipework, and aims to cleanse each gully once per annum.

The team introduced new ways of working in 2015 which saw the introduction of a dedicated asset management system for drainage. The system allows Tanker Services to capture assets in the field, report work that has been completed and log request for follow up investigatory works. The system allows Officers to determine the state of the network at any moment in time and has helped to provide a way of prioritising repair work to those assets that have regularly required intervention.

The authority has an approved Winter Service Plan; this has been developed following the guidelines of the Well Managed Infrastructure COP. This sets out the routes and priorities that the service will follow during the winter season to limit the effects of snow and ice on the road network.

Recommendations 23, 24 and 25 are included and detailed within the Council's Emergency Plan.

16.2. Recommendation 23 – Civil Emergencies and Severe Weather Emergency Plans

The role and responsibilities of the Highway Authority in responding to civil emergencies should be defined in the authority's Civil Emergency Plan. A Severe Weather Emergencies Plan should also be established in consultation with others, including emergency services, relevant authorities and agencies. It should include operational, resource and contingency plans and procedures to enable timely and effective action by the Highway Authority to mitigate the effects of severe weather on the network and provide the best practicable service in the circumstances.

16.3. Recommendation 24 – Communications

Severe Weather and Civil Emergencies Plans should incorporate a communications plan to ensure that information including weather and flood forecasts are received through agreed channels and that information is disseminated to highway users through a range of media.

16.4. Recommendation 25 – Learning from Events

Severe Weather and Civil Emergencies Plans should be regularly rehearsed and refined as necessary. The effectiveness of the Plans should be reviewed after actual events and the learning used to develop them as necessary.

17. Performance Management

17.1. Recommendation 26 – Performance Management Framework

A performance management framework should be developed that is clear and accessible to stakeholders as appropriate and supports the asset management strategy.

(HAMG Recommendation 4)

17.2. Recommendation 27 – Performance Monitoring

The performance of the Asset Management Framework should be monitored and reported. It should be reviewed regularly by senior decision makers and when appropriate, improvement actions should be taken.

(HIAMG Recommendation 13)

A range of performance measures have been identified to support the Asset Management strategy. These are considered by the Strategic Highways Contract Board which consists of the Cabinet Member, Opposition spokespersons and Assistant Director.

Typical measures are;

- Safety Inspections carried out on time
- Contractor repair times
- Contractor repair quality
- Customer satisfaction

18. Financing of Highways Maintenance

18.1. Recommendation 28 – Financial Plans

Financial plans should be prepared for all highway maintenance activities covering short, medium and long term time horizons.

Highway maintenance and services are developed, delivered and measured through a Forward Programme and Annual Plan. These plans will both inform and be prepared in line with the Council's Medium Term Financial Strategy with the aim of delivering its long term objectives.

This Plan sets out the minimum performance that is required by the Council for it to continue to meet its duty to maintain the highway. (Section 41, Highways Act 1980) This ensures that the risk to highway users is managed in a robust and cost effective way and the Council can demonstrate a thorough and reasonable system of inspection and repair, whilst delivering on the wider objectives across all assets, as expressed through the HIAMP and other related policies and plans.

18.2. Recommendation 29 – Lifecycle Plans

Lifecycle planning principles should be used to review the level of funding, support investment decisions and substantiate the need for appropriate and sustainable long term investment.

(HIAMG Recommendation 6)

Through our highway asset management planning we develop specific lifecycle plans for major assets that detail how we will collect information about condition and then utilise, when resources allow, a system of planned interventions designed to preserve, maintain and enhance our highway assets. This will take account of the following factors:

- Minimising whole-life cost and maximizing cost/benefit
- Risk based approach
- Network priorities and policies set out in the Local Transport Plan and this Highway Maintenance Plan.
- Agreed levels of service

When allocating resources priority to deliver planned interventions across highway assets, we will use the standards and risk based approach outlined in this plan to deliver, as a minimum, maintenance activities with the intention of maintaining the highway and maintaining highway safety in a reasonably practicable way. To ensure that the Council meets its duty towards the maintenance of the highway across its full extent it is essential that resources are directed towards the highest priorities and deploy the most effective ways to address these. This plan seeks to address this issue through a risk based approach.

19. Priorities and Programming

19.1. Recommendation 30 – Cross Asset Priorities

In developing priorities and programmes, consideration should be given to prioritising across asset groups as well as within them.

When developing work programmes, a hedge to hedge approach is adopted. This considers all highway assets at the same location and allows for all required maintenance works to be co-ordinated along with that of utility companies to provide a better customer experience.

19.2. Recommendation 31 – Works Programming

A prioritised forward works programme for a rolling period of three to five years should be developed and updated regularly.

(HIAMG Recommendation 7)

A three year prioritised works programme is used to forward manage the works planned to maintain the network. This is a live document that is updated as new schemes are identified and re prioritised to ensure the network is in a safe condition. This programme is shared with the Strategic Highways Board on a quarterly basis.

20. Sustainability and Highway Infrastructure Maintenance

20.1. Recommendation 32 - Carbon

The impact of highway infrastructure maintenance activities in terms of whole life carbon costs should be taken into account when determining appropriate interventions, materials and treatments.

Sustainability is a key part of the Council's vision. The delivery of highway maintenance is undertaken in accordance with good environmental management procedures so as to minimise environmental impact and sustain Solihull's biodiversity and character.

In the selection of materials, and treatment, their environmental impact is considered. We aim to maximise the environmental contribution and sustain the boroughs biodiversity, character and heritage by the adoption of good environmental management procedures in highway maintenance works.

As a member of the West Midlands Highway Alliance the Council has signed up to a low carbon concordat (September 2013). Through that concordat the Council is committed to the delivery of at least 20% of its surfacing works using low carbon materials such as low warmed foamed asphalt. We intend to go further to minimize our carbon footprint and these low carbon materials have been adopted as the material of choice for all our resurfacing activities. This unless there is a valid technical reason why they cannot achieve the required performance in any particular circumstance, or it is impracticable to use such products.

Whilst most works are undertaken in accordance with approved works specifications, it is recognised that this should not limit the Council's ability to promote Environmental Sustainability. We take advantage of locally sourced, and recycled materials, as well as environmentally friendly methods to promote value and innovation, and to drive continuous improvement. In each case departures from the approved standards will only

take place following an assessment of risk, and with approval of the Asset and Contract Manager (Highways).

21. Materials, Products and Treatments

21.1. Recommendation 33 – Consistency with Character

Determination of materials, products and treatments for the highway network should take into account the character of the area as well as factoring in whole life costing and sustainability. The materials, products and treatments used for highway maintenance should meet requirements for effectiveness and durability.

This Plan focuses on a methodology and means of maintaining the network to meet the challenges of safety, serviceability and sustainability, in order to provide best value for the Council and local community, by taking into account;

- Complying with statutory obligation
- Meeting the users need for safety
- The character of the area
- The current and desired future usage of the area.

21.2. Recommendation 34 – Heritage Assets

Authorities should identify a schedule of listed structures, ancient monuments and other relevant assets and work with relevant organisations to ensure that maintenance reflects planning requirements.

The planning process ensures that important features within Solihull are maintained with appropriate materials and standards to ensure the integrity and character remains. The policies are with Planning and are outside of this plan.

22. Nature, Conservation and Biodiversity

22.1. Recommendation 35 – Environmental Impact, Nature, Conservation and Biodiversity

Materials, products and treatments for highway infrastructure maintenance should be appraised for environmental impact and for wider issues of sustainability. Highway verges, trees and landscaped areas should be managed with regard to their nature conservation value and biodiversity principles as well as whole-life costing, highway safety and serviceability.

The Council has a duty to 'Enhance & Conserve' Biodiversity (under the Biodiversity Duty (Section 40) under the Natural Environment and Rural Communities (NERC) Act 2006)

Highway works can have adverse effects on biodiversity but with care most of these can be avoided or mitigated. By managing our working practices we can actually enhance biodiversity. Threats to biodiversity connected with highway works can include:

- Lack of management leading to the deterioration and loss of open habitats. Absence of mowing can lead to the dominance of coarse grasses and eventual colonisation by scrub. To maintain the value of the extended area of highway land beyond the normal cut swathe it may be desirable in certain situations to carry out a full width cut, e.g. to control scrub on grassland sites.
- Intensive management leading to the detriment of species and habitats, e.g. frequent mowing can prevent plants from flowering and reduces the value of verges for many invertebrates.
- Failure to identify significant constraints such as protected species and SSSIs.
- Physical damage caused by the movement and storage of vehicles, plant and materials.
- Inappropriate restoration and reseeded of damaged or disturbed areas.
- Inappropriate tree planting, e.g. on flower-rich grassland verges
- Use of insensitive management techniques, e.g. flailing of hedgerows and severe pollarding and root pruning of urban trees.
- Poor timing of works leading to harm to species, e.g. scrub removal during bird nesting period and mowing grassland before rare flowers set seed.
- Unnecessary salt contamination and other pollution incidents.
- Lack of control of invasive weeds and non-native plants.
- Use of kerbing and badly designed drainage openings can sometimes trap and kill significant numbers of small mammals, reptiles and amphibians in certain locations.
- Roadway repairs due to undermining by animal works. Care must be taken not to harm animals in spite of damage done by them to the network, and all repairs should consider a mutually beneficial solution for human and animal use of land.

It is hugely important that we manage the risks posed by these works in order to not only reduce our negative impact on highways biodiversity, but to conserve and enhance these areas. Animal road casualties also represent a significant threat to biodiversity and it is important that we manage our network in such a way that we can reduce this risk. National statistics suggest that 47,000 badgers (25% of the population) and between thirty and seventy million birds are killed annually on the UK roads for example (English Nature.

1996). Animals on highways can also contribute to the causes of road traffic accidents and as such, managing this can be mutually beneficial.

23. Environmental Intrusion

23.1. Recommendation 36 – Minimising Clutter

Opportunities to simplify signs and other street furniture and to remove redundant items should be taken into account when planning highway infrastructure maintenance activities.

The Council has developed a declutter policy, this is aimed at reducing unnecessary signage, road markings and other assets not required through legislation on the highway network.

A developer's guide has been produced by the Highway Services that provides direction on what items should be limited in future developments.

