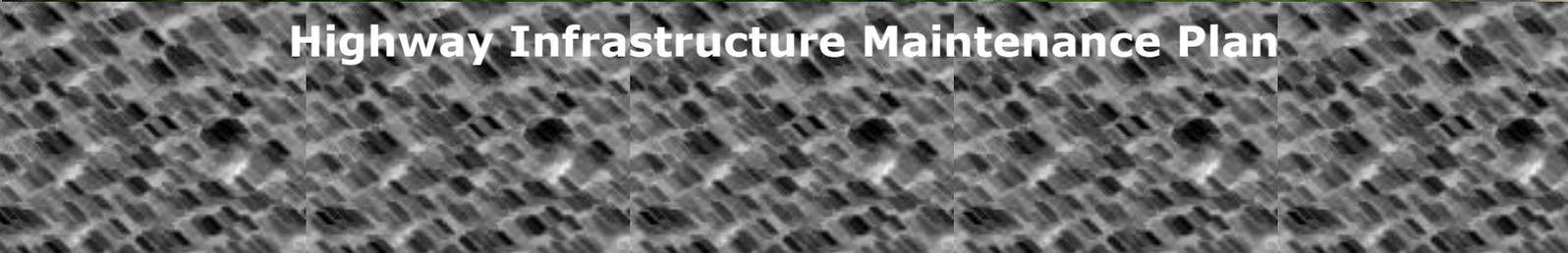


HIGHWAYS,
TRANSPORT
&
PLANNING

HIGHWAY INFRASTRUCTURE MAINTENANCE LEVELS 2019/20



Highway Infrastructure Maintenance Plan



Highway Infrastructure Maintenance Levels

Contents

Introduction	3
Background	3
Purpose	3
Scope	3
Maintenance Responsibilities	4
Reactive	4
Routine	4
Cyclic	4
Programmed	4
Regulatory	4
Winter Service	4
Statutory Obligations	4
The Highways Act 1980	4
Railways and Transport Safety Act 2003 and Highways Act 1980	4
The Traffic Management Act 2004	4
New Roads and Street Works Act 1991 (NRSWA)	5
The Health and Safety at Work Act 1974 and CDM Regulations 2015	5
Road Traffic Regulation Act 1984	5
Road Traffic Act 1988	5
Climate Change Act 2008	5
Traffic Signs Regulations and General Directions 2016	5
The Equalities Act 2010	5
The Localism Act 2011	5
Public Nuisance	5
Wildlife and Countryside Act 1981	5
Town and Country Planning Act 1990	6
The Local Government Act 2000	6
Risk Based Approach	6
Standard Risk Assessment	6
Issues to Consider	7

Network Hierarchy	7
Initial Risk Assessment.....	8
Mitigating factors:.....	8
Delivering the Service.....	9
Highways Asset Management.....	10
Strategic Objectives.....	11
Business Priorities.....	12
Achieving the Right Balance	13
Financial Backdrop.....	13
Appendices	14
Service Level Analysis - Safety Plus Reactive Service.....	15
Service Level Analysis – Highway Condition Surveys.....	17
Service Level Analysis – Drainage Management.....	20
Service Level Analysis – Highway Trees	23
Service Level Analysis – Pedestrian Guardrail.....	26
Service Level Analysis – Highway Structures	28
Service Level Analysis – Traffic Systems.....	31
Service Level Analysis – Winter Maintenance.....	35
Service Level Analysis – Vegetation Management.....	37
Service Level Analysis – Graffiti.....	40
Service Level Analysis – Signs, Bollards and Road Markings.....	41

Introduction

Delivery of a safe and well maintained highway network relies on good evidence and sound engineering judgement. The intention of this Highway Infrastructure Maintenance Plan is to demonstrate how the Highways, Transport & Planning Service in West Sussex will develop levels of service in accordance with local needs, priorities and affordability.

Background

Highway maintenance contributes in varying degrees to the core objectives of safety, customer service, sustainability and serviceability. These objectives may be summarized by the key words Safety, Traffic, Access and Damage (STAD). Levels of service and delivery arrangements need to be established having regard to these objectives and be focussed on outcomes, rather than on inputs mainly related to maintenance type. The Highways Infrastructure Maintenance Plan sets out the service levels that can be expected by customers and explains the rationale behind the setting of those service levels.

Purpose

Highway authorities have certain legal obligations with which they need to comply, and which may be the subject of claims for loss or personal injury, or of legal action by those seeking to establish poor or non-compliant activities by highway authorities. In such cases the principles of the "Well-managed Highway Infrastructure" Code of Practice may be a relevant consideration. Where this authority elects in the light of local circumstances to adopt policies or approaches different from those suggested by the Code, it is essential that they are identified, together with the reasoning for such differences, and are approved by the Cabinet Member for Highways and Infrastructure and published. The purpose of this Highway Infrastructure Maintenance Plan is to demonstrate how the Highways, Transport & Planning Directorate complies with the principles behind the Code and in particular to illustrate the risk based approach used to establish revenue funded highway maintenance service levels.

Scope

The West Sussex Highways, Transport & Planning service is moving towards adopting a risk-based approach and a risk management regime for all aspects of highway maintenance policy. This will include investment, setting levels of service, operations, including safety and condition inspections, and determining repair priorities and replacement programmes. This decision making process will be undertaken against a clear and comprehensive understanding and assessment of the likelihood of asset failure and the consequences involved. The scope of this Highway Infrastructure Maintenance Plan is to cover all aspects of the West Sussex Highways, Transport & Planning service excluding the following:

- Highway Improvement and New Construction including planned works e.g.:
reconditioning of roads
- Network Management, Including Management of Utilities

- Provision of Home to School Transport and the Blue Badge Scheme
- Parking Strategy and On Street Parking Enforcement
- Management and Maintenance of Public Rights of Way

Maintenance Responsibilities

The main maintenance work types are as follows:

Reactive

Responding to inspections, complaints or emergencies;

Routine

Regular scheduled maintenance and small scale repairs;

Cyclic

Grass cutting and landscape maintenance, gully emptying, bridge drainage clearance;

Programmed

Planned works primarily reconditioning or structural renewal of roads and footways;

Regulatory

Inspecting and regulating the activities of others; and

Winter Service

Keeping the highway free of ice and snow so far as reasonably practical.

Statutory Obligations

The Highways Act 1980

Sets out the main duties and powers of Highway Authorities and in particular it imposes a duty to maintain highways maintainable at public expense in a condition fit for purpose. Almost all claims against authorities relating to highway functions arise from alleged breach of this section. The Act provides a defence against action relating to alleged failure to maintain on grounds that the authority has taken such care as in all the circumstances was reasonably required to secure that the part of the highway in question was not dangerous for traffic.

Railways and Transport Safety Act 2003 and Highways Act 1980

Lays out duties for the winter service, and the duty to ensure that so far as is reasonably practicable, safe passage along a highway is not endangered by snow or ice.

The Traffic Management Act 2004

The Act establishes a duty for local traffic authorities 'to manage their road network with a view to achieving, so far as may be reasonably practicable having regard to their other obligations and policies, to secure the expeditious

movement of traffic on the authority's road network, and to facilitate the expeditious movement of traffic on road networks for which another authority is the traffic authority'. This can be summarised as a duty to facilitate and secure the efficient movement of traffic on the highway network.

[New Roads and Street Works Act 1991 \(NRSWA\)](#)

NRSWA regulates the activity of various companies and agencies that have statutory powers and obligations to work in the highway. Local authorities have a duty to co-ordinate works on the highway.

[The Health and Safety at Work Act 1974 and CDM Regulations 2015](#)

Health and Safety legislation provides a general requirement for highway, traffic and street authorities to carry out work in a safe manner, and establish arrangements for the management of construction works.

[Road Traffic Regulation Act 1984](#)

Legislation providing powers to regulate or restrict traffic in the interest of safety.

[Road Traffic Act 1988](#)

Provides a duty for Highway Authorities to promote road safety, including a requirement to undertake accident studies, and take such measures as appear appropriate to prevent such accidents occurring.

[Climate Change Act 2008](#)

Obliges a highway authority to reduce greenhouse gas emissions and prepare to adapt to longer term climate change.

[Traffic Signs Regulations and General Directions 2016](#)

Legislation that sets out the conditions and standards for traffic signs and road markings.

[The Equalities Act 2010](#)

Invokes the Public Equality Duty.

[The Localism Act 2011](#)

This legislation confers on local authorities the power, with certain limitations, to do anything that individuals generally may do for the benefit of the authority, its area, or persons resident or present in its area. It also introduced measures such as the community right to challenge.

[Public Nuisance](#)

An action without lawful cause or excuse which causes anger, injures health or damages property.

[Wildlife and Countryside Act 1981](#)

Protects animals, plants and habitats within the UK.

Town and Country Planning Act 1990

Provides planning protection to trees in Conservation Areas or protected by Tree Preservation Orders (TPOs).

The Local Government Act 2000

Provides for the general duty of best value and aims to improve local services in terms of both cost and quality.

NB – this is not an exhaustive list of applicable legislation.

Risk Based Approach

West Sussex County Council manages its highway infrastructure by effective highways asset management and compliance with the principles of the Well-managed Highway Infrastructure Code of Practice.

Well-managed Highway Infrastructure was published in October 2016, replacing Well-maintained Highways, Management of Highway Structures and Well-lit Highways. Like its predecessors, Well-managed Highway Infrastructure is a national, non-statutory code of practice which sets out a series of general principles for highway maintenance. It is endorsed and recommended by the Department for Transport and its production has been overseen by the UK Roads Liaison Group (UKRLG) and its Roads, Bridges and Lighting Boards.

"We inspect, repair and maintain our highways to keep them safe and provide the best highway service we can to West Sussex's residents, visitors and businesses, whilst co-ordinating activities on the highway to minimise disruption to road users and facilitate utility services. We do this by balancing asset management principles, local operational needs and available resource."

(Roger Elkins, Cabinet Member for Highways and Infrastructure)

Standard Risk Assessment

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Issues to Consider

A risk based approach needs to be adopted for all aspects of highway infrastructure maintenance, including setting levels of service, inspections, responses, resilience, priorities and programmes. The following four factors (STAD) have been considered when assessing risk:

Safety

- Likelihood of increase in injuries and fatalities (KSI);

Traffic

- Likelihood of delayed traffic movement, due to deteriorating highway network, leading to reduced customer service;

Access

- Potential to disadvantage accessibility for vulnerable road users and reduced network sustainability; and

Damage

- Increase in deterioration to the highway asset leading to increased reactive maintenance costs and reduced network serviceability.

Network Hierarchy

A risk based approach also needs to consider the different levels of risk according to the status of the road type on the road network hierarchy. This is to take account, for example, that the Safety and Traffic risk implications will be different on a major road network route, when compared to a route on the rural road network. The following four road classifications have been considered when assessing risk as shown in the example below:

Major Road Network

The criteria used to define the Major Road Network are:

- Roads where traffic flow is greater than 20,000 vehicles per day (vpd);
- Roads where traffic flow is greater than 10,000 vpd and in addition, the proportion of heavy goods vehicles (HGVs) or large goods vehicles (LGVs) on that section of road is greater than 5% or 15% respectively; and
- Any road section that falls close to several of the thresholds is also eligible for inclusion

Resilient Road Network

- A Resilient Road Network is identified in the Code of Practice as that which receives priority through maintenance and other measures in order to maintain economic activity and access to key services during disruptive events. The process for identifying the Resilient Network considers which routes are absolutely essential and which can be done without for a time. These decisions did not simply follow road

classification or categorisation. An economically rational approach is taken to spending on resilience, ensuring that enough is invested, with the right prioritisation, and avoiding wasteful and economically unjustified expenditure.

Other Urban Road Network

- Defined as any urban road, within a 40mph speed limit or less, that is not on the Major Road or Resilient Road networks.

Other Rural Road Network

- Defined as any rural road, outside a 40mph speed limit or less, that is not on the Major Road or Resilient Road networks.

Initial Risk Assessment

An initial risk assessment has been completed for each area which is subject to a service level analysis. The example below shows an initial risk assessment for winter weather (snow and ice) across four classes of road on the network and against the four initial risk factors (Safety, Traffic, Access and Damage).

	Initial Risk			
	Safety	Traffic	Access	Damage
Major Road Network	25	20	20	12
Resilient Road Network	25	20	20	12
Other Urban Roads	16	16	16	12
Other Rural Roads	16	16	16	12

Mitigating factors:

Once risks have been identified and assessed, the techniques used to manage the risk fall into one or more of these four major categories:

- Avoidance (eliminate - withdraw from or not become involved)
- Reduction (optimize - mitigate)
- Sharing (transfer - outsource or insure)
- Retain (retain - accept and budget)

Generally speaking avoiding a risk means not performing an activity that could carry risk or mitigating the risk by implementing a service level which eliminates the risk entirely. Risk reduction or "optimization" involves reducing the severity of the risk or the likelihood of the risk from occurring by implementing appropriate service levels. Sharing risk may be briefly defined as sharing with another party the burden of loss or the benefit of gain, from a risk, and the measures to reduce a risk. In Highways, Transport & Planning this is not often possible or practical. Evaluating and retaining the risk means accepting the risk and accepting any consequential loss. In most cases, once a risk is identified in this Highway Infrastructure Maintenance Plan it is either avoided by eliminating the risk entirely or reduced by mitigating the risk.

If the outcome of a risk assessment reveals an undesirable risk then, subject to available budget, mitigating measures will be considered based on the model shown above and implemented if appropriate. The risk will then be reassessed based on the residual risk remaining after the mitigating measures have been taken into account as shown in the winter weather example below:

Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage
Precautionary salting and snow clearance determined by road temperature information and weather forecast.	9	4	4	6
Precautionary salting and snow clearance determined by road temperature information and weather forecast.	9	4	4	6
Invoke parish and district winter maintenance plans.	9	12	15	12
Invoke parish and district winter maintenance plans.	12	12	12	12

Delivering the Service

The main goal of Highways, Transport & Planning is to deliver the highway service with the following overall prime outcome:

- To deliver an efficient, safe and sustainable highways service, within the available budget.

West Sussex County Council has established a set of key objectives within the [West Sussex Transport Plan 2011-2026 \(LTP3\)](#). LTP3 reflects the following transport priorities:

- Delivering sustainability
- Improving accessibility
- Improving safety, health and security
- Reducing pollution

- Reducing congestion
- Improving quality of life
- Promoting economic growth

Highways, Transport & Planning aim to translate those objectives into the following outcomes:

- Safer roads
- Improved standard and condition of the Area Network
- Reduced congestion for users
- Better “real time” Area Network information
- Fewer events which lead to disruption on the Area Network
- Minimise amount of reactive or responsive services
- Improved customer satisfaction
- Improving asset management and whole life cost decision making
- Effective, efficient and economical service delivery
- Meeting targets for social, economic and environmental aspects of sustainability
- Supporting the local economy

When determining the balance between structural, preventative and reactive maintenance, the Highways, Transport & Planning service in West Sussex adopts the general principle that “prevention is better than cure”.

Highways Asset Management

West Sussex County Council maintains 4,400km (2,750 miles) of highway network and associated assets. Typically, assets are roads, footways, street lights, street furniture, traffic signals, gullies and drains, trees, grass verges, signs, road markings, bridges and other structures. These assets help to ensure that journeys around and through the county are safe and reliable.

It is recognised that the local highway network is West Sussex’s most valuable asset we own. It plays a vital part in delivering the vision in West Sussex County Council’s strategic statement going forward. Roads enable safe and reliable journeys, which support social and economic prosperity. They also facilitate the transport of services essential to health and wellbeing, such as emergency services, medical services and food transportation.

Asset management is widely accepted as a means to deliver a more efficient and effective approach to management of highway infrastructure assets through longer term planning and ensuring that levels of service are defined and achievable for available budgets. It supports making the case for funding, for better communication with stakeholders, and facilitates a greater understanding of the contribution highway infrastructure assets make to economic growth and social well-being of local communities.

West Sussex is facing significant challenges in maintaining a safe and reliable highway network during a time of diminishing resource, ageing highway assets and increasing public expectation.

The Government changed the rules for funding highway maintenance several years ago. A proportion of government funding is now dependent on local authorities being able to evidence that they fully use asset management techniques in highway maintenance. Asset management describes a common sense approach to the maintenance and future investment decisions for all the assets that make up our highway.

The County Council must ensure a well-managed highway infrastructure that is fit for purpose, not only now but for future generations. This document outlines how the County Council will comply with the principles of Well-managed Highway Infrastructure, have a robust decision-making process, an understanding of the consequences of those decisions, and how the associated risks are managed to ensure highway safety.

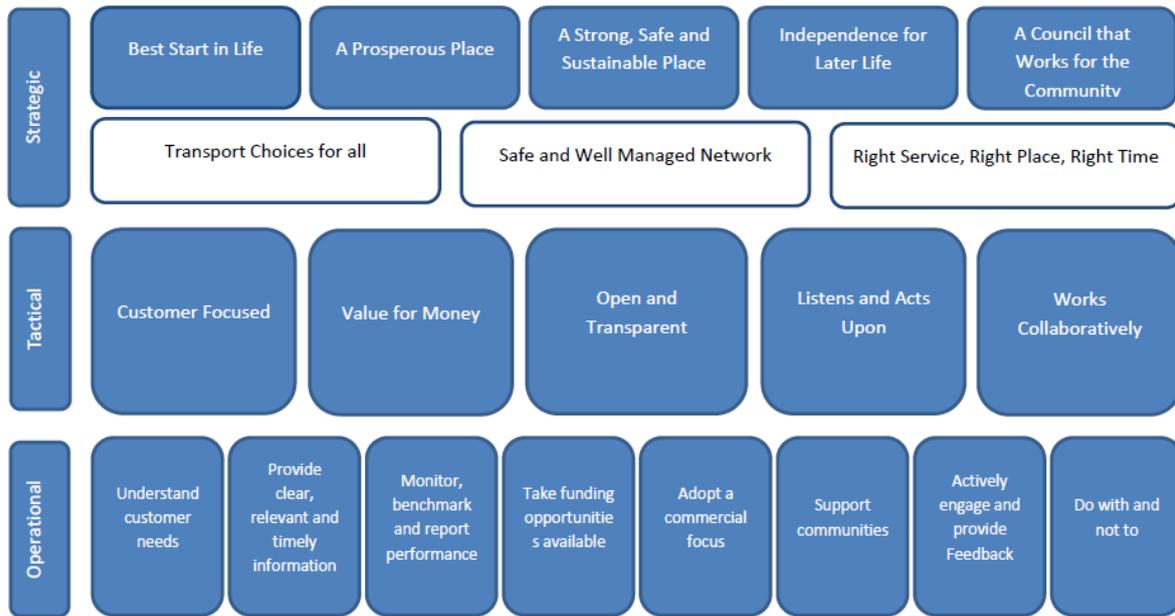
Strategic Objectives

The County Council's main objectives are to improve the quality of life for the people of West Sussex focussing on the following key themes at a strategic level:

- Best start in life
- A prosperous place
- A strong safe and sustainable place
- Independence for later life
- A council that works for the community

These corporate aims and how they link to highway infrastructure themes are illustrated in the following diagram:

West Sussex – A Place to Live, Work and Do Business



Business Priorities

The County Council has set out its long term vision and strategy for transport in the West Sussex Transport Plan 2011-2026 (WSTP). The WSTP aims to improve the quality of life for the community and businesses in West Sussex through transport infrastructure improvements. This WSTP is supported by local plans for new housing and employment development being prepared by local planning authorities and together these set out ambitious plans for investment in new or improved highway infrastructure over the 10-15 years

The County Council has adopted [The West Sussex Plan 2017-2022](#) which identifies “A Prosperous Place” as one of its key priorities. This will include delivery of the Strategic Transport Improvement Programme (STIP) to facilitate the identification and delivery of strategic transport improvements. This STIP aims to deliver the objectives of the Coast to Capital Strategic Economic Plan and central Government commitments set out in the Coast to Capital Growth Deal. The STIP will be delivered by the Highways, Transport & Planning service which is responsible for management and delivery of highway improvements.

The Highways, Transport & Planning Service is responsible for delivering the County Council’s Highway Authority functions for nearly the entire road network within the county area. It also develops transport policies and implements a whole range of maintenance and improvement schemes aimed at assisting travel and improving road safety, while minimising the impact of its operations and transport in general on the environment.

These business priorities translate into the following key outcomes:

- Fewer people killed or seriously injured on West Sussex’s roads

- Customer satisfaction by providing 'the right services in the right way for the right people'
- Maximising lifespan and minimising lifecycle costs of the highway and its assets and improving maintainability by embedding asset management principles into everything we do
- Growth and economic prosperity through an efficient highway and transport infrastructure
- Everyone can choose to travel safely, efficiently and pleasantly to employment, education, social and cultural opportunities

Achieving the Right Balance

Planning for highway maintenance should take into account and add value to other elements of local transport policy and strategy wherever possible, including supporting economic growth, regeneration, public health, resilience, emergency services, walking and cycling, bus and freight partnerships, casualty reduction and prevention, travel planning, safer routes to school, and routes to stations and other interchange facilities.

In striving to achieve this, the Highways, Transport & Planning service is faced with the constant demand to continue to deliver a quality service in an environment of budget pressures and increasing customer expectation. This Highway Infrastructure Maintenance Plan has a key role to play in determining affordable service levels, and to work with stakeholders to ensure that the service continues to be delivered to required quality and at affordable cost, that provides customer satisfaction.

Financial Backdrop

West Sussex County Council is committed to delivering efficiencies in the service, particularly for routine revenue services. The directorate has an ambition that further efficiency could be generated throughout the life of the Highway Infrastructure Maintenance Plan.

In addition to a review of service levels on a risk managed basis in line with the principles of Code of Practice 'Well-managed highway infrastructure' the service is constantly reviewing service operations using the following themes:

- Efficiencies leading to reduced cost and affordability
- Less duplication and a reduction in waste
- Integration and co-location of teams and systems
- Common strategies and objectives
- Maximising innovation and working with contractors to drive cost efficiency
- Identify and allocate the risk through collaborative management

Appendices

Service Level Analysis

[Appendix 01](#) - Safety Plus / Reactive service

[Appendix 02](#) - Highway Condition Surveys

[Appendix 03](#) - Highway Drainage

[Appendix 04](#) - Highway Trees

[Appendix 05](#) - Pedestrian Guardrail

[Appendix 06](#) - Structures

[Appendix 07](#) - Traffic Systems

[Appendix 08](#) - Winter Maintenance

[Appendix 09](#) - Vegetation Management

[Appendix 10](#) - Graffiti

[Appendix 11](#) - Signs, Bollards, and Road Markings

Service Level Analysis - Safety Plus Reactive Service

FUNCTION	Safety Plus / Reactive Service (under Safety Plus regime)
DESCRIPTION	
To maintain the highway in safe condition and assist in defending against any litigation claims	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • Cyclic condition inspections as part of the wider highway inspection regime and targeted inspections informed by fault reports from customers • Carry out Safety Plus inspections to identify hazardous (to any user of the highway including drivers, pedestrians, equestrians and cyclists) defects, so that they may be made safe or repaired within a pre-determined response time. These are known as intervention defects. • Other less urgent defects that are not intervention defects are recorded through to necessary officers and actioned if budget available. • The Safety Plus inspection regime also assists in providing the evidence for a defence in any case of litigation brought against the County Council where lack of adequate maintenance of the highway has been alleged by a third party. • Make safe or permanent repairs to defects within defined timescales 	
WEST SUSSEX STANDARDS – what we won't do:	
<ul style="list-style-type: none"> • Repairs to private roads • All repairs that do not meet our intervention levels 	
This means that:	
<ul style="list-style-type: none"> • Continue to review the resources required to undertake Safety Plus Inspections 	

Appendix

- Ensure Safety Plus inspection regime is aligned to asset management principles
- Continue to review the performance of the Safety Plus regime
- Continue to review against Code of Practice 'Well Maintained Infrastructure'

The risk assessment for Safety Plus is included within the Safety Plus Inspection Policy.

Service Level Analysis – Highway Condition Surveys

FUNCTION	Condition Assessment of carriageway, footways and cycle ways
DESCRIPTION	
<p>Highway Infrastructure Assets Technical Surveys support the understanding of the inventory, function, criticality, sensitivity, characteristics and use of roads, footways, cycleways and various assets comprising the highway network. Asset data, information and knowledge are key enablers to the delivery of an effective Asset Management approach. Consistent and reliable asset information and data is essential for the County Council to continue to make informed decisions and fulfil the service delivery requirements. There are a number of different asset management related processes and systems that are supported by the data and information funded through this budget area, and in use across the Highways, Transport and Planning services including:</p> <ul style="list-style-type: none"> • Asset Register and Highway Inventory – for Roads, Footways & Cycleways, Traffic Signals, Signs and Lines. • Pavement Management System - road, footways and cycleway condition survey and recording regime supporting the core highway maintenance objectives of : <ul style="list-style-type: none"> ○ Network safety ○ Network serviceability ○ Network sustainability • Development of maintenance programmes : <ul style="list-style-type: none"> ○ Lifecycle Planning, ○ Maintenance need and priority assessment, ○ Forward Integrated Investment Planning, ○ Annual Delivery Programmes, <p>Performance Monitoring and Visualised Asset Management Systems</p>	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • A risk-based approach to highway maintenance needs founded on information that is sufficiently robust to enable decisions on levels of service to be taken and reviewed over time. 	

Appendix

- Collate, manage and make available highway network information and inventory data in ways that are sustainable, secure, meet statutory obligations, and facilitate transparency for network users
- Support the requirement to maintain information for the purpose of Street Works management, including:
 - identifying streets described as traffic sensitive
 - identifying structures and other features described as special engineering difficulty
 - identifying reinstatement categories
- Collaborate and co-ordinate with District and Borough Council's to manage and improve National Street Gazetteer, and National Land and Property Gazetteer
- The timely update of accurate inventory information to Government each year for road length, provision of local maintenance funding, and national valuation purposes
- Manage the capture, review and analysis of road, footway and cycleway network condition data
- Analyse and investigate condition data, alongside information from Safety and Service Inspections, and customer enquiries, to identify future maintenance needs and investment priorities, alongside local and regional economic objectives and drivers
- Produce integrated forward plans, and Annual Delivery Programmes for the future maintenance, renewal and protection of Highway Infrastructure Assets

WEST SUSSEX STANDARDS: What we won't do:

- The regular and timely completion of safety inspections as part of the "Safety Plus" strategy.
- The principal, general and safety inspections for West Sussex Highway Structures
- The capture, collation, recording and management of Inventory data for Highway Structures and Intelligent Traffic Systems

Appendix

- The capture and analysis of highway drainage systems condition data or below ground infrastructure
- The capture, management and recording of land drainage and flood alleviation infrastructure
- The direct assessment and prioritisation of Local Transport Improvement Plan or Community Highway Schemes
- The direct funding Local Transport Improvement Plan or Community Highway Scheme feasibility studies and business cases.
- The capture of data and information for the detailed design of specific schemes and programmes of work approved in the Annual Delivery Programmes specific

This means that:

WSCC will:

- Deliver a proactive approach to the collection, recording and management of data and information

And will use data and information to:

- Monitor trends in the condition of the highway network
- Inform effective decision making
- Consider alternative treatment strategies
- Consider whole life costing to ensure most effective treatment is used

Service Level Analysis – Drainage Management

FUNCTION	Drainage Management
DESCRIPTION	
<p>To maintain where possible a functioning and efficient surface water drainage system preventing ponding, flooding by:</p> <ul style="list-style-type: none"> • Periodically empty silt from gullies, manholes, soakaways and catchpits • Inspect culverts and cleanse as necessary • Cleanse pipe and filter drains as necessary • Clear highway ditches, channels and grips where necessary 	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • Emergency response where there is deemed to be an immediate or imminent risk to highway safety or of internal property flooding from the highway • Cyclic maintenance of highway gullies defined hotspots / high priority (twice yearly) • Cyclic maintenance of highway gullies defined medium priority (yearly) • Cyclic maintenance of all other highway gullies defined low priority (every four years) • Targeted cyclical maintenance of known manholes, catchpits and soakaways (4 year programme) • Targeted maintenance of highway drainage identified via reports of defects or flooding and where there is a high risk to highway safety and/ or the risk of internal property flooding • Investment for investigation of drainage defects where there is a high risk to highway safety and/ or the risk of internal property flooding • Capital investment for drainage renewals and improvements where there is a high risk to highway safety and/ or the risk of internal property flooding 	

Appendix

- Enforcement of drainage and highway rights where there is a risk to highway safety and the risk of internal property flooding
- Work with adjacent landowners to maintain highway drainage system outside of the highway boundary (i.e. ditches)
- Where appropriate maintain or cut grip to remove excess water off rural highway roads
- Maintain limited maintenance on highway balancing / attenuation ponds
- Enforce the requirements of landowners to take responsibility for clearing ditches and other riparian responsibilities.

WEST SUSSEX STANDARDS: What we won't do:

- Routine Maintenance of any drainage asset serving non-highway land, sewers or property even if it drains the highway
- Maintain highway drainage serving private streets or un-adopted roads
- Investigate drainage defects where there is a medium or low risk to highway safety and the risk of internal property flooding
- Action to investigate or remediate minor ponding on the highway
- Drainage renewals and improvements where there is a medium or low risk to highway safety and the risk of internal property flooding
- Provide highway drainage to drain water from land other than the adopted highway
- Provide property level protection to prevent flooding from the highway or any other source
- Install additional drainage to compensate for undulations in road or altered profiles
- Installation of additional drainage to accommodate flows of water from private land, springs or failed third party assets such as water mains or down pipes

Appendix

This means that:

WSCC will:

- Continue to recognise the importance of highway drainage systems
- Continue to monitor, review and improve its performance on flooding hot spots
- Act as land drainage authority and enforce land owners to perform their riparian responsibilities
- Clear/recut grips as required
- Identify locations that have a greater amount of detritus than average and increase cleansing frequency at these locations

Risk Assessment Matrix 03 – Drainage Management

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: Highway Drainage

Means of Assessment: Visual inspection at times of high rainfall within two hours of event

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

- Safety** Increase in injuries and fatalities
- Traffic** Delayed movement to traffic due to more defects and road closures
- Access** Increased disadvantage to people with limited mobility due to delays
- Damage** Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: Decline in drainage asset condition leads to more flooding.

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	25	16	12	16	Road made safe for highway users (road closed, lane closure or flood signing provided), flooding cleared and repairs ordered if required. Priority given to mitigating internal property flood damage.	4	3	3	4
Resilient Road Network	20	16	12	16	Road made safe for highway users (road closed, lane closure or flood signing provided), flooding cleared and repairs ordered if required. Priority given to mitigating internal property flood damage.	4	2	3	4
Other Urban Roads	9	8	9	12	Road made safe for highway users (road closed, lane closure or flood signing provided), flooding cleared and repairs ordered if funding available. Priority given to mitigating internal property flood damage.	3	4	6	15
Other Rural Roads	12	8	9	16	Road made safe for highway users (road closed, lane closure or flood signing provided), flooding cleared and repairs ordered if funding available. Priority given to mitigating internal property flood damage.	4	6	4	12

Service Level Analysis – Highway Trees

FUNCTION	Highway Trees
DESCRIPTION	
<ul style="list-style-type: none"> Maintain as far as practically highway trees in a safe condition 	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> Emergency response where there is deemed to be an immediate or imminent risk to highway safety Safety inspections as part of the wider highway inspection regime and targeted inspections informed by fault reports from customers Cyclic professional safety inspections of highway trees following the approach contained within “WSCC tree policy” Targeted maintenance of all highway trees identified via reports of defects or where there is a high risk to highway safety and/ or a risk of property damage Investigation of tree defects where there have been reports of a high risk to highway safety, members of the public or a risk of damage to property Prioritise dead, dying, dangerous and diseased trees Cyclic maintenance of tree pollarding at a reduced frequency Cyclic management of epicormic growth Provision of replacement tree planting for trees within conservation areas or those covered by TPOs Investigation of bus route tree and vegetation issues and enforcement of notices where there is a high risk to highway safety Support self-funded of new tree planting where there is significant benefit to the asset and wider community 	
WEST SUSSEX STANDARDS: What we won’t do:	
<ul style="list-style-type: none"> Maintenance of non-highway trees 	

Appendix

- Maintenance of highway trees and soft landscape assets within private streets or un-adopted roads
- Investigation of tree reports which are nuisance issues and are low risk
- Provision of replacement tree planting outside of conservation areas or those not covered by TPOs
- Clearance of fruit or berry fall, leaves or minor branches
- Cutting back of trees for utility cables, TV reception or solar panel issues
- Cutting back of trees to abate private shading or right to light issues
- Cutting back of highway trees overhanging private property
- Removal of trees to prevent falling leaves, seeds, sap or insect or birds' droppings
- Maintenance of trees or soft landscape for aesthetic reasons
- Reduction in height of trees which is perceived as being too large or tall

This means that:

WSCC will:

- Prolong the cyclical pollarding frequencies
- Actively work with local tree wardens to help manage highway tree stock
- Promote communities to enhance where appropriate to fund tree planting programmes
- Consider where appropriate allowing privately funded works to highway trees or vegetation to abate nuisance issues

Appendix

Risk Assessment Matrix 04 – Highway Trees

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: Highway Trees **Means of Assessment:** Visual inspection and tree condition surveys

		Impact					Potential Risks: Safety Increase in injuries and fatalities Traffic Delayed movement to traffic due to more defects and road closures Access Increased disadvantage to people with limited mobility due to delays Damage Increase in reactive maintenance costs leading to increased revenue budget pressure
		1	2	3	4	5	
Likelihood	1	1	2	3	4	5	
	2	2	4	6	8	10	
	3	3	6	9	12	15	
	4	4	8	12	16	20	
	5	5	10	15	20	25	

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	25	16	12	9	Complete regular cyclical tree inspections. Assess tree ownership and action required. Prioritise high priority works and ensure necessary works are completed by responsible party within financial constraints	9	6	6	8
Resilient Road Network	25	16	12	9	Complete regular cyclical tree inspections. Assess tree ownership and action required. Prioritise high priority works and ensure necessary works are completed by responsible party within financial constraints	9	6	6	8
Other Urban Roads	25	12	12	16	Complete regular cyclical tree inspections. Assess tree ownership and action required. Prioritise high priority works and ensure necessary works are completed by responsible party within financial constraints	9	4	9	12
Other Rural Roads	20	12	9	9	Complete targeted tree inspections generated from enquiries. Assess tree ownership and action required. Prioritise high priority works and ensure necessary works are completed by	9	4	4	8

Service Level Analysis – Pedestrian Guardrail

FUNCTION	Pedestrian Guardrail
DESCRIPTION	
<p>To maintain where possible a safe walking path for pedestrians</p> <ul style="list-style-type: none"> Periodically inspect condition and suitability of pedestrian guard rail 	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> Emergency response where there is deemed to be an immediate or imminent risk to highway safety Cyclic condition inspections as part of the wider highway inspection regime and targeted inspections informed by fault reports from customers Maintenance / replacement of damaged and hazardous guardrail within public highway Installation of new guardrail as part of a safety or highway improvement scheme Removal of guardrail where it is assessed as no longer required Recover costs for damaged guardrail when known culprit has been identified 	
WEST SUSSEX STANDARDS: What we won't do:	
<ul style="list-style-type: none"> Maintenance of any pedestrian guardrail which is located on private streets or un- adopted roads. Repairs considered minor / cosmetic damage Cyclic replacement of pedestrian guardrail 	

Appendix

- Installation of new pedestrian guardrail which is not part of a safety or highway improvement scheme
- Installation or upgrade of pedestrian guardrail to ornamental guardrail
- Painting of guardrail

This means that:

WSCC will:

- Actively pursue full recovery costs when damage has occurred
- Work with community partners if they wish to enhance condition of guardrail eg: painting

Risk Assessment Matrix 05 – Pedestrian Guardrail

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: Pedestrian Guardrail Means of Assessment: Visual site safety assessment

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

- Safety** Increase in injuries and fatalities
- Traffic** Delayed movement to traffic due to more defects and road closures
- Access** Increased disadvantage to people with limited mobility due to delays
- Damage** Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: Visible deterioration or damage to pedestrian guardrail.

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	25	16	6	12	Damaged area coned off and made safe. Assessment completed. Works ordered and repairs completed or barrier removed if no longer required.	6	1	1	4
Resilient Road Network	20	12	6	9	Damaged area coned off and made safe. Assessment completed. Works ordered and repairs completed or barrier removed if no longer required.	6	4	2	4
Other Urban Roads	16	8	6	6	Damaged area coned off and made safe. Assessment completed. Works ordered and repairs completed or barrier removed if no longer required.	6	4	4	4
Other Rural Roads	12	4	6	4	Damaged area coned off and made safe. Assessment completed. Works ordered and repairs completed or barrier removed if no longer required.	6	4	4	1

Service Level Analysis – Highway Structures

FUNCTION	Highway Structures
DESCRIPTION	
<ul style="list-style-type: none"> • Manage WSCC’s highway structures stock to ensure that it remains safe for use and fit for purpose • Obtain the required data to enable effective asset management and planning • Identify works (planned or reactive) in accordance with WSCC Structures Lifecycle Plan and within the constraints of the budget 	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • Undertake General, Principal and Safety inspections of WSCC owned highway structures in accordance with the WSCC Structures Lifecycle Plan. Principal Inspections often require the use of specialist access equipment, traffic management and liaison with other bodies (e.g. Network Rail) • Identify, record and monitor defects • Instruct safety critical works to be undertaken • Identify replacement/refurbishment schemes and agree scope of works required prior to instructing consultants to design • Manage the highway structures revenue budget • Compile, verify and maintain inventory data • Emergency response where there is deemed to be an immediate or imminent risk to highway safety (e.g. following reports of RTC’s) including instructing any repair works that are necessary • Instruct specialist contractors to undertake regular electrical and mechanical servicing of 3065 Adur Ferry Bridge and 3031 Ferry Footbridge 	

Appendix

- Monthly routine maintenance openings of 3065 Adur Ferry Bridge in Shoreham-by-Sea
- Issue Routine Maintenance work to the Term Maintenance Contractor each month, monitor their progress and respond to any safety critical defects that they report.
- A targeted approach to the management of substandard structures in accordance with BD79
- Maintain Scheduled Ancient Monuments in accordance with the requirements of Historic England and the Ancient Monuments and Archaeological Areas Act 1979.
- Instruct specialist panel engineers to produce Section 10 and Section 12 reports to ensure that WSCC complies with their statutory duties under The Reservoirs Act 1975.
- Process requests for abnormal load movement
- Process Special Engineering Difficulty enquiries on behalf of statutory undertakers where permits are rejected by the Streetworks team on the grounds that works are to be undertaken in the vicinity of highway structures
- A targeted approach to component renewal, prioritised based on the risk to safety and the risk of accelerated deterioration
- A targeted approach to upgrading and asset replacement, prioritised based on the risk to safety and the risk of accelerated deterioration
- Management of low height bridges together with remedial works to bridge signing and liaison with Network Rail and other bridge owners following bridge strikes
- Technical Approval of new highway structures including those promoted by developers

WEST SUSSEX STANDARDS: What we won't do:

- General Inspections of highway structures owned by Highways England, Network Rail and Environment Agency.
- Non safety critical general maintenance
- A planned targeted approach to the management of substandard structures

Appendix

Risk Assessment Matrix 06 – Highway Structures (to be completed)

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: **Structures** Means of Assessment: **Add means of assessment here**

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

- Safety** Increase in injuries and fatalities
- Traffic** Delayed movement to traffic due to more defects and road closures
- Access** Increased disadvantage to people with limited mobility due to delays
- Damage** Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: **Add scenario here (for example: Decline in road condition leads to more safety critical defects)**

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	0	0	0	0	Add Mitigating Actions Here (for example: Data analysis to determine the most appropriate renewal and preservation methods and the timescale for delivery).	0	0	0	0
Resilient Road Network	0	0	0	0	Add Mitigating Actions Here (for example: Data analysis to determine the most appropriate renewal and preservation methods and the timescale for delivery).	0	0	0	0
Other Urban Roads	0	0	0	0	Add Mitigating Actions Here (for example: Data analysis to determine the most appropriate renewal and preservation methods and the timescale for delivery).	0	0	0	0
Other Rural Roads	0	0	0	0	Add Mitigating Actions Here (for example: Data analysis to determine the most appropriate renewal and preservation methods and the timescale for delivery).	0	0	0	0

Service Level Analysis – Traffic Systems

FUNCTION	Intelligent Traffic Systems (ITS) Asset Management
DESCRIPTION	
<p>Traffic signals, vehicle activated signs and miscellaneous electrical equipment are maintained through a traffic signal maintenance contract.</p> <p>The contract enables WSCC to ensure that the electrical assets are maintained in a safe and efficient operational status and also provides the mechanism to collect current conditional data. This is essential to ensure that the life cycle planning (LCP) is based on accurate data and that the funding is allocated to the correct area, which assists in achieving an efficient network.</p> <p>It also includes the facility to deliver the electrical installation, equipment and civils works for the refurbishment programme, new installations and other chargeable works i.e. new detection, road traffic collisions</p> <p>The contract is continuously monitored to ensure supplier compliance and quality of submission, with all activities including routine works recorded on a fault management system. This generates Key Performance Indicator reports and allows WSCC engineers to analysis the data and feed into the appropriate reports and LCPs.</p>	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • Three levels of response times dependent on severity of the reported fault. These are <ul style="list-style-type: none"> ○ 2 Hours for critical faults – these are faults that are deemed to be an immediate or imminent risk to highway safety i.e. electrical safety ○ 6 Hours for urgent faults – these are faults that will cause congestion or if combined with an additional fault i.e. red lamp out could become a potential safety issue. ○ 24 Hours for non-urgent – these are faults that do not affect operation or are safety related i.e green lamp out, single bleeper driver not working • Cyclic inspection of all installations [once a year] and targeted inspections informed by fault reports from customers in accordance with items 1 to 12 from table 2.2 in TD 24/97 	

Appendix

- Bulk lamp changes for any Halogen bulb sites once per year
- Electrical test requirements to be carried out every year to test earth bonding and electrical safety system i.e. Residual Current Device test
- Remote monitoring system on the majority of traffic signals junctions, automatically identify faults to WSCC for analysis and where appropriate reporting
- Targeted maintenance of all installations identified via reports of defects or damage and where there is a high risk to highway safety.
- Investigation of defects where there is a high risk to highway safety
- Traffic signal renewals and improvements where there is a high risk to highway safety or obsolete equipment
- Technical Approval of all traffic signal designs to ensure compliance with standards and optimised operation.
- Advice and approval of suitable sites for vehicle activated signs (i.e. speed warnings) on the highway network
- Recover costs for damaged equipment when known culprit has been identified
- Work with other service providers i.e. bus companies, visually impaired, to improve their experience in using the traffic signals assets.
- Deliver through the contract the traffic signals and VAS refurbishment programme as identified in the works programme.

WEST SUSSEX STANDARDS: What we won't do:

- Maintenance of any signal installation on non-highway land or non-authority roads
- Investigation of any signal installations on non-highway land or non-authority roads
- Enforcement of traffic signals under The Traffic Management Act 2004
- Routine replacement of non-statutory and non-safety critical assets

Appendix

- Painting of traffic signal poles, controller cabinets or any other ITS assets
- WSCC recognises the importance of conservation but given resource challenges we cannot always agree to meet conservation requirements but will liaise with conservation officers on new schemes in such areas to consider minor adjustments alongside other factors such as cost, lifecycle and maintenance.

This means that:

WSCC will:

- Actively pursue full recovery costs when damage has occurred
- Maintain accurate data on the condition status and type of equipment used at the various sites across West Sussex. This will be used to inform the life cycle plan on sites which need to be considered for future investment / refurbishment.
- Develop an asset management life cycle plan to identify equipment that is the obsolescence due to the ageing technology and the availability of spare components.
- Operate a fault management system to ensure appliance to contract targets and keep track of all faults and reoccurring issues.
- Maintain the equipment in a safe condition and optimised method of control.
- Ensure that all new or refurbished sites include the most cost effective method of control, reduced energy technology ie LED's and the lowest possible life cycle costs.
- Approve all developer or third party schemes that contain electrical equipment to ensure compliance to WSCC standards, ensuring limited component proliferation to minimise future maintenance costs.
- Maintain an electricity unmetered supply (UMS) report to ensure that WSCC are compliant to the requirement of the service provider whilst obtaining any cost down when new more efficient energy equipment is installed.

Appendix

Note - Traffic systems assets are either on and fully working, or off and inactive. The various components at a site can normally be replaced or repaired independently of other aspects in order to extend the life of the overall asset. This means that once any faults, damage or other issues have been addressed that the residual risk returns to the minimal level of the original design. However there are now increasing occurrences when this is not feasible due to either, the wiring or compatibility of replacement components to the 'on-site' technology. i.e. LED signals heads are not compatible with controllers over 10 years old. When this occurs the only solution is switch off or refurbish.

Risk Assessment Matrix 07 – Intelligent Traffic Systems

Service Standard Risk Assessment

Function: **Traffic Systems** Means of Assessment: **Periodic inspection, condition status and fault management**

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

- Safety** Increase in injuries and fatalities
- Traffic** Delayed movement to traffic due to more defects and road closures
- Access** Increased disadvantage to people with limited mobility due to delays
- Damage** Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: **Decline in traffic signals, VAS and other electrical systems condition will lead to more reactive maintenance, fault calls, network congestion**

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	25	20	25	20	Data analysis to help inform the life cycle plan and identify the critical sites. This will determine the most refurbishment and obsolescence programme and timescale for delivery within available funding.	12	12	12	12
Resilient Road Network	25	20	25	20	Data analysis to help inform the life cycle plan and identify the critical sites. This will determine the most refurbishment and obsolescence programme and timescale for delivery within available funding.	12	12	12	12
Other Urban Roads	16	12	15	12	Data analysis to help inform the life cycle plan and identify the critical sites. This will determine the most refurbishment and obsolescence programme and timescale for delivery within available funding.	8	6	8	6
Other Rural Roads	16	9	12	12	Data analysis to help inform the life cycle plan and identify the critical sites. This will determine the most refurbishment and obsolescence programme and timescale for delivery within available funding.	8	6	6	4

Service Level Analysis – Winter Maintenance

FUNCTION	Precautionary Salting & Snow Clearing
DESCRIPTION	
<ul style="list-style-type: none"> • Whilst there is no statutory duty to salt in anticipation of ice occurring, ice can present a hazard to the user of safety of the highway user. In order to prevent this hazard, it may be necessary to precautionary salt. • The clearing of snow from the highway is a duty of the highway authority under the Highways Act 1980. The policies, procedures and practices associated with these tasks are described in detail in the annual Winter Maintenance Plan. 	
WEST SUSSEX STANDARDS – what we will do:	
<p>Precautionary Salting of:</p> <ul style="list-style-type: none"> • Major Road Network (P1) • Other Primary routes and County distributors (P2) <p style="padding-left: 40px;">Approximately 28% of the highway network</p> <p>Snow Clearing Network</p> <ul style="list-style-type: none"> • Based on the precautionary salting network plus all heavily used pedestrian precincts and footways with support from Town & Parish Councils <p>Salt Bins</p> <ul style="list-style-type: none"> • Ensure all known highway salt bins are at least 75% fill at the start of season <p>Community support / Parish winter plans</p> <ul style="list-style-type: none"> • Ensure reasonable Parish / Town Council requests for bulk stock of hippo bags are delivered by 1st November 	

Appendix

WEST SUSSEX STANDARDS: What we won't do:

- Increase salting network based on high public expectation for salted roads

This means that:

WSCC will:

- Monitor significance of legal judgements on Winter Maintenance issues
- Control environmental pollution due to salt, storage and distribution
- Promote use of sustainable transport options where possible
- Seek alternatives to rock salt and traditional salt distribution techniques
- Continue to publicise winter decisions
- Continue to invest in accuracy of local weather forecasts

Risk Assessment Matrix 08 – Winter Maintenance

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: Winter Maintenance Means of Assessment: Road surface forecasts and weather reports

		Impact					Potential Risks:
		1	2	3	4	5	
Likelihood	1	1	2	3	4	5	
	2	2	4	6	8	10	
	3	3	6	9	12	15	
	4	4	8	12	16	20	
	5	5	10	15	20	25	

Safety Increase in injuries and fatalities
Traffic Delayed movement to traffic due to more defects and road closures
Access Increased disadvantage to people with limited mobility due to delays
Damage Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario:	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	25	20	20	12	Precautionary salting and snow clearance determined by road temperature information and weather forecast.	9	4	4	6
Resilient Road Network	25	20	20	12	Precautionary salting and snow clearance determined by road temperature information and weather forecast.	9	4	4	6
Other Urban Roads	16	16	16	12	Invoke parish and district winter maintenance plans.	9	12	15	12
Other Rural Roads	16	16	16	12	Invoke parish and district winter maintenance plans.	12	12	12	12

Service Level Analysis – Vegetation Management

FUNCTION	Grass Cutting & Vegetation Management (excluding Trees)	TYPE	Routine Maintenance
DESCRIPTION			
<p>Includes:</p> <ul style="list-style-type: none"> • Periodic cutting of urban and rural roadside grass and preservation of sight lines for safety; • Data driven, risk based, and safety led additional cuts on roundabout and junction approaches; • Management of planted sites and stewardship of 'notable' verges; • Preservation of rural verges as havens for rare flowers and wildlife. • Periodic cutting of highway hedges • Control of noxious weeds – Japanese's Knotweed & Giant Hogweed • Selective control of unwanted growth in paved areas 			
WEST SUSSEX STANDARDS – what we will do:			
<p>Urban Grass Cutting</p> <p>Up to 5 cuts per year</p> <p>Rural Grass Cutting</p> <ul style="list-style-type: none"> • Rural verges – 1 swathe twice a year plus 1 overall cut; • Embankments and cuttings – visibility only; • Visibility splays – as necessary. <p>Hedge Cutting</p> <ul style="list-style-type: none"> • Cutting of highway hedges as required generally every other year <p>Weed Control</p> <ul style="list-style-type: none"> • Maintain an annual programme to control Japanese's Knotweed & Giant Hogweed • Selective weed spray using non- herbicides in paved areas as necessary 			

Appendix

WEST SUSSEX STANDARDS: What we won't do:

- Increase no of urban cuts even in particularly times of rapid growth
- Maintain a safe passage of pedestrians on verges so they don't have to walk in the road
- Remove grass cuttings
- Repair damage caused by over-riding and parking on verges;
- Cut hedges routinely for aesthetics
- Routinely spray kerb channels
- Routinely spray footways

This means that WSCC will:

- Allow 'top up' amenity cuts by partner authorities at their expense
- Work closely with partner authorities to carry out litter picking in advance of rural grass cutting
- Work with interested organisations to increase bio-diversity
- Promote conservation of the ecology and roadside verges
- Encourage households to cut the grass across their own frontage
- Possible use of community groups or volunteers to improve amenity value
- Maintain the number of urban cuts to 5 cuts per year in line with recommended safety levels
- Maintain visibility splays to maintain safety at junctions
- Continue to manage grass verges of particular botanical or entomological interest
- Enhance operating procedures for sponsored planting
- Use only non-residual herbicides such as Glyphosate on paved surfaces
- Identify possible uses for grass cuttings
- Enforce landowners to maintain their hedges to a satisfactory standard
- Use glyphosate products sparingly and endeavour to source alternative products or techniques where possible.
- Take account of the council's recently agreed Pollinator Action Plan

Appendix

Risk Assessment Matrix 09 – Vegetation Management

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: **Vegetation Management** Means of Assessment: **Visual inspection**

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

- Safety** Increase in injuries and fatalities
- Traffic** Delayed movement to traffic due to more defects and road closures
- Access** Increased disadvantage to people with limited mobility due to delays
- Damage** Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: **Overgrown vegetation causing visibility and/or obstruction issues. Includes noxious weeds.**

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	20	9	15	4	Cyclic grass cutting and treatment of noxious weeds.	6	4	4	2
Resilient Road Network	20	9	15	4	Cyclic grass cutting and treatment of noxious weeds.	6	4	4	2
Other Urban Roads	15	6	25	9	Cyclic grass cutting and treatment of noxious weeds. For overgrown vegetation assess ownership and action as required. Prioritise high priority works and ensure necessary works are	4	1	3	2
Other Rural Roads	20	6	20	6	Cyclic grass cutting and treatment of noxious weeds. For overgrown vegetation assess ownership and action as required. Prioritise high priority works and ensure necessary works are	4	1	3	2

Service Level Analysis – Graffiti

FUNCTION	Graffiti & Flyposting Removal
DESCRIPTION	
To keep West Sussex infrastructure clear of graffiti / fly posting	
WEST SUSSEX STANDARDS – what we will do:	
<ul style="list-style-type: none"> • Remove all incidents of graffiti and fly posting from public view on WSCC maintained infrastructure, where practical to do so, and within a maximum period of 5 working days. • Remove all offensive incidents of graffiti and fly posting on WSCC maintained infrastructure within 1 working day 	
WEST SUSSEX STANDARDS – what we won't do:	
<ul style="list-style-type: none"> • Contribute to graffiti and flyposting removal on 3rd party infrastructure 	
This means that:	
<ul style="list-style-type: none"> • Support parties removing graffiti and flyposting to seek financial support and partnership opportunities from any repeatedly affected property owners, to reduce or compliment level of funding required 	

Risk Assessment Matrix 10 – Graffiti (not required)

Service Level Analysis – Signs, Bollards and Road Markings

FUNCTION	Signs, Road Markings, Road Studs, Posts & Bollards (not including lit signs)
DESCRIPTION	
<p>To aid the direction and movement of traffic on the network, we will:</p> <ul style="list-style-type: none"> • Maintain certain signs for visibility, legibility and correctness • Maintain and renew certain road markings to ensure effectiveness and replace others where required as soon as possible after surfacing works • Maintain and renew certain reflective road studs to ensure effectiveness. Periodically clean traffic signs when carrying out other works in the vicinity 	
WEST SUSSEX STANDARDS – what we will do:	
<p>Traffic Signs</p> <ul style="list-style-type: none"> • Cyclic condition inspections as part of the wider highway inspection regime and targeted inspections informed by fault reports from customers • Make safe damaged Give Way & Stop signs and place temporary sign within 24 hours – supply additional signage if required and repair within 28 days • Permanent replacement according to priority of signs, where missing, obscured, damaged so the legend isn't clear or the colours are significantly faded as below: <ul style="list-style-type: none"> Regulatory signs including Speed Limit Terminals and repeaters, No Entry, One Way, Stop / Give way, and other banned movements excluding parking signs. Bridge Height signs (warning & regulatory). Chevrons Direction signs and ADS - primary destinations – Major Road Network only. • Replacement of other safety critical signing only where hazard is still present and risk assessment identifies as safety critical. 	

Appendix

- Installation of new non-lit signs as part of a crash remedial or highway improvement scheme only
- Clean signs and clear vegetation for sightlines; as and when required when carrying out other works in the vicinity.
- Targeted non-lit sign cleaning, current budget provides for approximately 5% of the A road network for cleaning
- Removal of clutter in the form of defunct or redundant signs and posts: where there is an identified safety risk to the highway user, where there is an obstruction to inclusive mobility or where signing can be rationalised as part of development or a new highway scheme.
- Enforcement action to remove any non- highway signing within the highway where it poses a significant safety risk to highway users
- Review of lorry signing strategies
- Installation of tourist destination signing funded by 3rd party

Road Markings & Road Studs

- Cyclic condition inspections as part of the wider highway inspection regime and targeted inspections informed by fault reports from customers
- For A, B and C Roads, make safe with temporary signage for missing >75% faded, Give Way & Stop lines within 5 days
- Replace according to traffic flows and accident potential primarily focusing on:

Double White Line systems (all roads) when 75% faded / 50% cats eyes are missing/ ineffective

Classified roads (A/B/C) junction markings when 75% faded.

Zig zag lines on approaches to a pedestrian crossing when 75% faded

SLOW markings on roads with nation speed limits

Safety critical roundabout markings

Safety critical yellow box junction markings

Safety critical letters, arrows and symbols

- Replacement of existing lines after resurfacing works when required
- Provide or renew Access Protection Lines at customer's expense
- Installation of new Road Markings and Road Studs as part of a crash remedial or highway improvement scheme

Posts

- Replace / remove posts that have collapsed and / or showing significant decay in urban areas.
- Replace Hazard Marker posts where positioned to indicate a significant roadside hazard

Bollards

- Replace/ remove bollards that have or are about to collapse in urban areas.

WEST SUSSEX STANDARDS – what we won't do:

Traffic Signs

- Replacement or provision of all other warning signs with current funding levels.
- Replacement or provision of any non-safety critical signing on any part of the network including: Information signs such as no through road signs or unsuitable for lorries signing
- Non-primary route direction signing
- Village signs
- Maintenance of any signs which are located on private streets or un-adopted roads.
- Installation of any new signs which are not standard highway signs relating to messages for the users of the highway
- Cyclic cleaning of all highway signs
- Erection of neighbourhood watch signs
- Cyclic renewal of aging sign stocks not considered to be a risk to the highway user or safety critical.
- Replacement of any non-standard or non- safety critical signing such as village gateways

Appendix

- Provision of specialist conservation style signing

Road Markings & Road Studs

- Maintenance or Installation any of remaining Road Markings or Road studs
- Centre line markings
- Other Junction markings
- Other SLOW markings
- Other Yellow box junction markings
- Other Roundabout markings
- Other Letters, Arrows and symbols
- All yellow lines
- Edge of carriageway markings
- Cycle and bus lane markings
- Hatching markings
- Non-safety critical letters, arrows and symbols
- KEEP CLEAR markings
- Parking bay markings
- Speed limit roundels
- Access Protection lines at Council's expense
- Disabled bays
- Maintenance of any Road Markings or Road Studs which are located on private streets or un-adopted roads
- Installation of parking restriction lining which is not part of a safety related scheme
- Amendments to or replacement of yellow parking restrictions which form part of the parking strategy managed by the Boroughs or Districts
- Installation of any road markings which are not standard highway markings (TSRGD 2016) Safety critical double yellow line corner protection

This means that:

- Non- replacement of Yellow lines in urban areas may lead to lack of parking enforcement.
- Requests for disabled parking bays and protection of accesses increasing
- Increasing requirements for vegetation clearance
- Future innovation may require more investment in road markings due to autonomous vehicles
- Street clutter will be reduced
- Income will be generated for approved tourist signs

Appendix

- Priority is on maintaining mandatory signs and markings
- We will use innovative design details and new materials where benefit may be shown to reduce theft, potential for accident damage, increase durability, reduce costs or protect the environment
- Continue to work with our partners to help them enforce parking issues

Risk Assessment Matrix 11 – Signs, Bollard and Road Markings

Well Managed Highway Infrastructure: A Risk Managed Approach - Service Level Risk Assessments

Service Standard Risk Assessment

Function: **Signs Bollards and Markings** Means of Assessment: **Visual inspection**

		Impact				
		1	2	3	4	5
Likelihood	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Potential Risks:

Safety Increase in injuries and fatalities
Traffic Delayed movement to traffic due to more defects and road closures
Access Increased disadvantage to people with limited mobility due to delays
Damage Increase in reactive maintenance costs leading to increased revenue budget pressure

Risks rated as 'High' will be deemed to have exceeded tolerance levels and will be subject to escalation to the Senior Management Team for review and action. The target residual rating for a risk is expected to be 'medium' or lower - Highways and Transport Risk Management Policy and Strategy (2019-2021)

Scenario: **Signs, lines, studs and bollards not meeting Safety Plus intervention criteria within financial constraints**

	Initial Risk				Mitigating Actions	Residual Risk			
	Safety	Traffic	Access	Damage		Safety	Traffic	Access	Damage
Major Road Network	20	9	15	4	Safety critical and regulatory signs (other than parking related) and safety critical road markings and studs will be replaced when they fail to meet intervention levels.	9	9	9	9
Resilient Road Network	20	9	15	4	Safety critical and regulatory signs (other than parking related) and safety critical road markings and studs will be replaced when they fail to meet intervention levels. Prioritised within financial constraints.	9	9	9	9
Other Urban Roads	15	6	25	9	Safety critical and regulatory signs (other than parking related) and safety critical road markings, studs, and hazardous bollards and posts, will be replaced when they fail to meet intervention levels.	12	12	12	9
Other Rural Roads	20	6	20	6	Safety critical and regulatory signs (other than parking related) and safety critical road markings and studs will be replaced when they fail to meet intervention levels. Prioritised within financial constraints.	9	9	12	9