Capital Prioritisation Policy for Highway Assets
Roads, Footways, Structures, Drainage, Safety Barriers & Intelligent Traffic Systems
April 2020 – Version 5

SURREY

Contents

Introduction

Surrey Roads have among the highest levels of road use in the UK. They provide access to jobs, schools, services and businesses. It is essential that we spend our Capital funds in the most cost-effective way possible so that the highway network can be used to help make Surrey's economy strong and effective and can help to fulfill the Council's purpose;

*"To ensure good quality public services for the residents of Surrey so they remain healthy, safe and confident about the future***."**

The Council is facing financial challenges and uncertainty over the medium-term. Working against a backdrop of increased demand and reductions in funding the Council has developed a budget that is balanced, sustainable and resilient. This will enable transformation and overcome financial uncertainty to deliver the priorities for Surrey, as set out it the Community Vision for Surrey in 2030.

Our approach to how we balance the allocation of budgets across all the various asset types has seen us develop a 15-year strategy for managing our highway assets. We continually review our strategy, and this has seen our officers modelling the deterioration of the network and engaging with the public and elected members to establish service levels. Feedback has shown an appreciation for council services that look after the most vulnerable in society, and further investment in pavements will benefit healthy lifestyles and ensure no one is left behind.

It is necessary that whatever funds are available are spent on the right schemes at the right time and that schemes are prioritised using optimisation methodologies to maximise risk reduction and minimise whole life costs.

The Highway Infrastructure Asset Management Guidance document describes the programme development process as shown in the figure below:

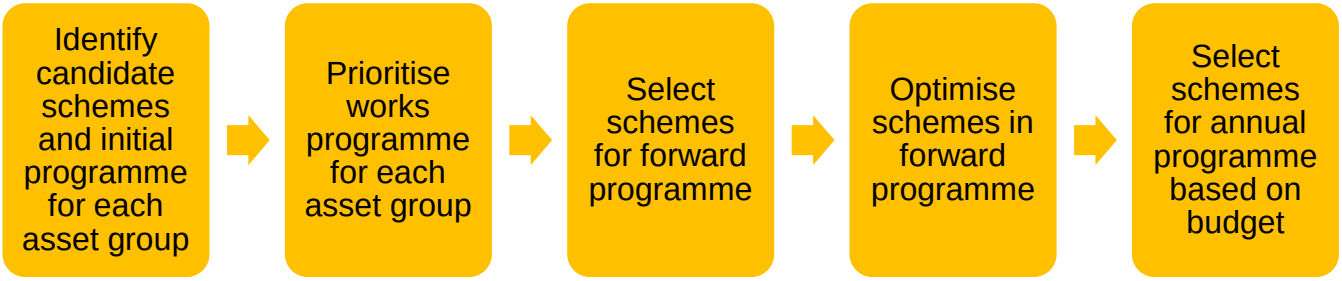

Figure 1: Developing a programme of works

The methods that we use to optimise our programme have been developed from best practice methods found in “Well-Managed Highway Infrastructure – A Code of Practice” and through discussions within National Forums and with other Local Highway Authorities,

- **Highway Maintenance/Improvement Issues** – we will analyse condition data available for each asset to identify need for maintenance and/or improvement.
- **Network Hierarchy** - we will ensure that greater priority is given to roads and key assets on roads that have the greatest usage or need.
- **Risk** – we will give a higher priority to schemes that pose a risk to public safety.
- **Value for Money** – we will use the right treatments at the right time in order to produce cost effective solutions.
- **Network Management** - we will ensure works are programmed to minimise disruption to users and maximise benefits to the community by combining schemes for different assets together where possible.

Each asset has its own set of prioritisation criteria and weighting sets based on the principles above which take into account the unique attributes and requirements of each asset. These criteria will be reviewed and approved by the Cabinet Member for Highways every 2 years (in line with the Asset Strategy update frequency) so that they can take account of changing requirements and priorities.

Prioritisation glossary

Full term and acronym in brackets	Acronym (where relevant)	Description
Bridge Condition Index	BCI	This is the industry standard measurement of bridge condition derived from inspections. Inspections are carried out in accordance with The Inspection Manual for Highways Structures 2007 by trained bridge inspectors. General Inspections (visual) are carried out every 2 years, principal inspections (detailed/tactile) every 6 years and at-risk structures are inspected at a frequency determined based on the level of risk.
Bridge Management System	BMS	A System use to store, manipulate, manage and retrieve data and information related to Bridges.
Chartered Institute of Public Finance and Accountancy	CIPFA	The CIPFA code of Transport and Infrastructure Assets provides details of how Local Authorities should value their Highway Assets in order to provide information required by HM Treasury for Whole of Government Accounting.
Controller type (ITS assets)		The computer intelligence within each ITS asset which controls the operation of the individual asset itself.
Engineers Visual Assessment		Engineers from Asset Planning Group make a visual assessment of a site and score the site based on a list of defined criteria.
Parapet		A wall/rail/fence that runs along the outside edges of the bridge deck, or retaining wall, parallel to the direction of traffic flow. The purpose of the parapet is to prevent users from accidentally falling off the bridge or retaining wall.
Flow Duration Curve	FDC	Graph that shows the proportion of time during which discharges of water equal or exceed a specified measure
Highway Safety Inspection	HSI	Inspections of the highway are carried out at specified intervals based on the road hierarchy to identify safety defects and order works that fit into the inspection matrix.
Lifecycle Planning		By considering an asset over its whole lifecycle, it is possible to select the optimum point to intervene with the optimum treatment. Surrey County Council is using tools newly developed by the Highway Industry to carry out this work on key highway assets to better inform future programmes of work.
Major Maintenance		Significant structural work to an asset. For roads or pavements this generally involves removing one or more layers of the existing surface and replacing them, for bridges, safety barriers or drainage assets this could involve replacing all or significant parts of the structure.

Full term and acronym in brackets	Acronym (where relevant)	Description
Outstation type (ITS assets)		The electronic equipment which allows each ITS asset to communicate with our central monitoring systems, enabling us to remotely monitor operations.
Planned Maintenance		Programmes of work that make permanent long-term improvements to highway assets. This type of work is more cost effective than reactive maintenance as it allows time for the most appropriate and cost-effective treatments to be identified and allows for co-ordination of works on different highway assets.
Preventative Maintenance		Preventative Maintenance treatments are used in a similar way as varnish is used to preserve and prolong the life of a window frame. Unlike Major Maintenance they generally don't involve removing and replacing, but instead are applied on top of what is existing to preserve where the underlying structure is still intact. On roads, treatments such as surface dressing are used to reinstate skid resistance and seal against the ingress of water to the lower layers of the road structure. Although it may not seem like an obviously sensible use of resources to treat a road that is still in fairly good condition when other worse roads are left untreated, spending money on preventative maintenance improves the resilience of the highway network and prolongs the life of highway assets in a cost efficient way, leading to an overall long term improvement.
Horizon		Surrey's long term planned maintenance programme covering the main asset types. It is compiled based on 5-year funding projections although the final list cannot be guaranteed.
Intelligent Transport Systems	ITS	SCCs; Traffic Signals, Variable message signs, Over Height Vehicle detectors, rising bollards, Fire Station warning signals and car park count equipment.
Refurbishment (of ITS)		Component by component replacement/upgrade/modernisation of existing ITS assets with minor improvements to operation when appropriate.
Reactive Maintenance		Maintenance that is carried out due to an imminent safety risk. This could include pothole repair on roads, pavements (footways) or cycle routes, replacement of regulatory white lines, broken or missing ironwork, repair of bent or out of shape rails, barriers, road signs or traffic signals, and trees or vegetation with an obvious danger of falling. Although the intent is to make permanent first-time fixes this is not always possible and temporary fixes are sometimes required with a permanent fix to follow. Reactive Maintenance costs more in the long term than Planned Maintenance.

Full term and acronym in brackets	Acronym (where relevant)	Description
Road Restraint Risk Assessment Process	RRRAP	Tool to assist assessing the need for a vehicle restraint (safety barrier) and, if so, its performance requirements.
Sideway-force Coefficient Routine Investigation Machine	SCRIM	Vehicle that measures the Skid Resistance of the road surface.
Special Vehicle / Special Order Vehicle	SV/SOV	These relate to the load capacity of highway structures. They are abnormal load vehicles, such as mobile cranes and large construction plant on low loaders, which are heavier than normal 40/44t vehicles permitted on the highway.
Surrey Priority Network	SPN	The network by which Surrey manages and maintains the public highway within the county. The SPN defines hierarchies for all elements of the highway network including roads, pavements and cycle routes. It reflects the needs, priorities and actual use of each element of the network and is used to identify needs-based provision of services and identify appropriate levels of service.
Wetspot		“Wetspot" is a term used by the lead local flood authority (Surrey County Council) to describe the location of a flood incident that has been reported.

Table 1: Glossary of highways terms used within this document

Roads prioritisation value management scoring

1. Highway maintenance/improvement issues

Condition	Score
Engineers Visual Assessment	Max 278

Table 2: Max score for road prioritisation based on Engineers visual assessment of road

2. Network hierarchy

Hierarchy of road	Score
SPN1&2	100
SPN3	50
SPN4a	25
SPN4b	10

Table 3: Scores for road prioritisation based on the SPN hierarchy of the road

3. Risk

Prioritise potential risk to public and take account of varying rates of deterioration between HSI visits

Risk	Score
SCRIM	100
Skid Accidents	40
Claims history	100
Number of reactive gang visits to repair pothole defects	Max 100*

Table 4: Scores for road prioritisation based on different types of risk

4. Value for money

Budget will be split at a ratio determined through deterioration modelling for preventative maintenance schemes and needs based schemes in order to achieve a cost-effective balance of preserving roads that have not yet fully deteriorated and fixing those that have.

A long-term programme of work ‘Horizon’ will be published giving opportunity to achieve efficiency through cross asset priority. Early contractor engagement can then seek to achieve innovative solutions for further cost savings.

5. Network management

No score is currently proposed, and the value will be determined during the work’s programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust its place in the programme so that we can combine activities in order to maximise financial efficiencies.

Footway prioritisation value management scoring

1. Highway maintenance/improvement issues

Condition	Score
Engineers Visual Assessment	Max 200

Table 5: Max score for footway prioritisation based on Engineers visual assessment of footpath

2. Network hierarchy

Hierarchy of footway	Score
Footway Cat 1	100
Footway Cat 2	50
Footway Cat 3	25
Footway Cat 4	10

Table 6: Scores for footway prioritisation based on the SPN hierarchy of the footway

3. Risk

Prioritise potential risk to public and take account of varying rates of deterioration between HSI visits

Risk	Score
Claims history	100
Footway defects recorded 1-5	10
Footway defects recorded 6-20	25
Footway defects recorded 21-50	50
Footway defects recorded 51-100	100

Table 7: Scores for footway prioritisation based on number of footway defects recorded or claims

4. Value for money

Budget will be split at a ratio determined through deterioration modelling for preventative maintenance schemes and needs based schemes in order to achieve a cost-effective balance of preserving Footways that have not yet fully deteriorated and fixing those that have.

A long-term programme of work ‘Horizon’ will be published giving opportunity to achieve efficiency through cross asset priority. Early contractor engagement can then seek to achieve innovative solutions for further cost savings.

5. Network management

No score is currently proposed, and the value will be determined during the work’s programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust its place in the programme so that we can combine activities in order to maximise financial efficiencies.

Structures prioritisation value management scoring

1. Highway maintenance/improvement issues

The Bridge Condition Index is the industry standard measurement of bridge condition derived from inspections. Inspections are carried in accordance with The Inspection Manual for Highway Structures 2007 by trained bridge inspectors.

BCI Range	**Average Stock Condition**	**Critical Stock Condition**	**RAG Status (red, amber, green)**
100-90 Very good	Bridge stock is in a **very good** condition	Represents **very low risk** to public safety	Green
90-80 Good	Bridge stock is in a **good** condition	Represents **low risk** to public safety	Green
80-65 Fair	Bridge stock is in a **fair** condition	Some structures may represent a **moderate risk** to public safety	Amber
65-40 Poor	Bridge stock is in a **poor/substandard** condition	Some structures may represent a **significant risk** to public safety	Amber
40-0 Very poor	Bridge stock is in a **very poor/substandard** condition	Some structures may represent a **high risk** to public safety	Red

Table 8: Bridge condition index

- Condition Factors

Factor number	Description of factor
F1	**Assessment rating** Score 0 for 40T and full SV/SOV or for meeting long term ad carrying aspiration for this route Score 1 for 40T assessment rating with insufficient SV capacity Score 8 for 17T & 7.5T assessment rating Score 10 for 3T assessment rating Score 15 for < 3T assessment rating
F2	**Condition Score (BCI)** Score 1 for BCI score 90 - 100 Score 3 for BCI score 80 - 90 Score 5 for BCI score 66 - 80 Score 8 for BCI score 40 - 65 Score 12 for BCI score 0 - 39
F3	**Heritage Factor** Score 1 for no heritage or local interest Score 3 for not listed but has local interest Score 5 for listed structure

Table 9: Scoring for bridge prioritisation based on condition factors

- Improvement Factors

Factor number	Description of factor and scoring recommendations
F4	**Substandard features of bridge** Score 1 for adequate road & footway widths Score 4 for bottleneck (road on bridge narrower than on approaches) or humpback bridge Score 6 for inadequate or non-existent footway provision if there is scope to improve Score 8 for multiple sub-standard features
F5	**Parapet Resilience** Score 1 for H4a parapet or welded steel half through type Score 2 for N1 to N2 parapet or riveted steel/wrought iron half through type Score 4 for brickwork/masonry parapet Score 5 for any BACO parapet system Score 8 for cast iron, corrugated sheet parapet, timber post & rail or concrete post/steel rail
F6	**Substandard features of bridge that could be improved** Score 1 for adequate road width & at least 1.2m footways or verges at each side Score 4 for single sub-standard feature that can be addressed Score 8 for multiple sub-standard features which can be addressed

Table 10: Scoring for bridge prioritisation based on improvement factors

2. Network Hierarchy

The network hierarchy reflects the impact of disruption caused by lane or road closures for construction work.

Factor number	Description of factor and scoring recommendations
F7	**Road Classification** Score 1 for SPN 4a or 4b Score 4 for SPN 3 Score 6 for SPN2 Score 10 for SPN1
F8	**Network impact of failure/closure** Score 1 if adequate alternative is available with short diversion Score 3 if diversion adds less than 4 miles to journeys Score 6 if diversion route is longer than 4 miles Score 8 if there is no alternative route
F9	**Effect of Weight Restriction** Score 1 for little or no inconvenience Score 4 for significant inconvenience (no alternative route)
F10	**Integrated Transport** Score 1 for no bus route and/or not strategically important route Score 5 for bus route or strategically important route

Table 11: Scoring for bridge prioritisation based on network hierarchy

3. Risk

This section includes project risk, due to programming issues and the interests of third parties.

Factor number	Description of factor and scoring recommendations
F11	**Likelihood of Failure** Score 1 for no signs of distress if failure will be gradual & preceded by extensive cracking Score 4 for no signs of distress if the failure mode predicted would be sudden Score 8 for signs of distress such as cracking, deflection or delamination
F12	**Consequence of failure** Score 1 for road over non-navigable watercourse or stream low risk of casualties Score 4 for road over river or canal Score 8 for road over road or railway
F13	**Accident History** Score 1 for no accident history in vicinity of bridge in past 10 years Score 5 for 1 to 3 accidents in the vicinity of the bridge in the past 10 years Score 10 for more than 3 accidents in the vicinity of the bridge in the past 10 years

Factor number	Description of factor and scoring recommendations
F14	**Risk of Scour** Score 1 for Low Risk – structures with good flood resilience / piled foundations Score 5 for Medium Risk – structures with good flood resilience / shallow foundations Score 10 for High Risk – structures with poor flood resilience / unknown foundation type

Table 12: Scoring for bridge prioritisation based on Risk factors

4. Value for Money

Our Bridge Management System (Bridgestation) will enable lifecycle planning to indicate if intervention maintenance will reduce costs over the life a structure.

A long-term programme of work 'Horizon' will be published giving opportunity to achieve efficiency through cross asset priority. Early contractor engagement can then seek to achieve innovative solutions for further cost savings.

5. Network Management

No score is currently proposed and the value will be determined during the work's programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust its place in the programme so that we can combine activities in order to maximise financial efficiencies.

Drainage prioritisation value management scoring

Works to resolve Wetspots

The Wetspot database is used to prioritise, plan and programme future works efficiently, so that our limited resources can be used to best effect. We pass on information relating to Wetspots which fall outside SCC's remit to the responsible 3rd party organisations or individuals such as landowners.

For the remaining sites the Wetspot scoring system is used to prioritise whether works are carried out to try and reduce the risk; the higher the score the more likely that works will be done. Scores range from 400 for very high risk sites to 1 for exceptionally low risk areas.

The scoring thresholds depend on the available budget and resource but currently:

Score	What it means
Over 150	Wetspots with a score of over 150 are further investigated with a view to developing mitigation actions, and those with the highest scores are prioritised. These works could be carried out by the local areas highways team as part of local Highways revenue budgets or included in wider Capital works programme for the current or future years. Those Wetspots with no immediate capital solution are kept on the list and reviewed regularly to identify risk reduction measures.
50-150	Wetspots with a score between 150 and 50 are regularly reviewed with local officers to ensure the score hasn't increased and if the site is still at risk. It is unlikely that Wetspots with these scores will have specific works budget allocated out to address them, however if other works are being carried out in the area these sites may be included in those works.
Below 50	Westpots with a score lower than 50 are considered low risk and are included for information only. Wetspots with a score this low represent only minor nuisance and are unlikely to present significant inconvenience to the public. If new information becomes available the Wetspot may get rescored or we may try to address the problem if we are carrying out other works in the area. If the flooding does not reoccur within 2 years the Wetspot may be classed as dormant and although not removed from the database, it is considered resolved.

Table 13: Wetspot overall scoring matrix

Estimated Max score = 400

Scoring factors

1. Network Hierarchy and Road Type

Hierarchy of Road	Points
SPN 1	40
SPN 2	20
SPN 3	10
SPN 4a	5
SPN 4b	5

Table 14: Wetspot scoring based on hierarchy of road

Speed limit (mph)	Points
30 or less	0
40	5
50	10
60	20
70	35
N/A	0

Table 15 Wetspot scoring based on road speed limit

Footway Hierarchy	Points
1	5
2	3
3	1
4/ None	0
N/A	0

Table 16 Wetspot scoring based on footway hierarchy

2. Risk Frequency

Estimated frequency of flooding	Points
<once a year	1
Once a year	10
1-2 times a year	15
3-5 times a year	20
>5 times a year	30

Table 17: Wetspot scoring based on flooding frequency

Does flood water remain on road for more than 12 hours?	Points
No	0
Yes	20

Table 18: Wetspot scoring based on how long flood water remains on road

3. Risk Impact

Extent of flood	Points
It does not flood the highway	0
In the carriageway channel or similar	2
Half way across road	20
Completely across road	30
Only floods adjacent land	1

Table 19: Wetspot scoring based on extent of flood

Maximum depth of water in road	Points
N/A	0
<50mm	0
50mm-100mm	5
100mm-200mm	10
>200mm	15

Table 20: Wetspot scoring based on maximum depth of water in road

Footway flooding	Points
There is no footway	0
Footway is not affected	0
Footway not affected but vehicle splash affects pedestrian access	2
1 of footways is flooded	2
Both footway's flooded (or there is only 1 footway)	5

Table 21: Wetspot scoring based on footway flooding

Safety*	Points
Confirmed minor injury due to/exacerbated by Wetspot	30
Confirmed major casualty accident due to/exacerbated by Wetspot	100
Emergency Services highlighted area as High Risk	30

Table 22: Wetspot scoring based on safety

Forward driver visibility (considering bends/dips)	Points
<20m	15
20m-50m	10
50m-100m	5
>100m	0

Table 23: Wetspot scoring based on forward driver visibility

Internal Property Flood numbers	Points
0	0
1	20
2	40
3	60
4	80
5+	100

Table 24: Wetspot scoring based on number of internal properties flooded

Repeated internal property floods (in last 5 years)	Points
0	0
1	30
2	60
3	90
4	120
5+	150

Table 25: Wetspot scoring based on number of repeated internal property floods in last 5 years

External Property Floods - Only applies if property not internally flooded	Points
0	0
1	5
2	10
3	15
4	20
5+	25

Table 26: Wetspot scoring based on number of external proeprty floods

Repeated external property floods (in the last 5 years)	Points
0	0
1	10
2	20
3	30
4	40
5+	50

Table 27: Wetspot scoring based on number of repeated external property floods

Causes major congestion	Points
No	0
Moderately affected	8
Yes- severely affected	15

Table 28: Wetspot scoring based on major congestion impact

Did the road have to be closed?	Points
No	0
Yes	20

Table 29: Wetspot scoring based on whether the road had to be closed

Residential damage (*Impact of external flooding- including garages & outbuildings (only applies if property not internally flooded)*	**Points**
None	0
Low- minor flooding, does not cause any damage or affect access e.g. garden flooding and contents only damage or temporary superficial damage to structure	5
Medium- Moderate flooding, causes little damage/ some access may be hindered e.g. permanent non-structural damage	10
High- Large flooding, damage caused/ affects some access e.g. permanent structural damage	15

Table 30: Wetspot scoring based on amount of residential damage

Economic/ social Impact of flooding *(Internal/ external non-residential properties when a flood is in a position to directly affect the operation of, or the access to a business or social organisation including but not limited to; places of worship, community centres and shopping centres)*	**Points**
None	0
Low	1
Medium	5
High	10

Table 31: Wetspot scoring based on economic or social impact of flood

Damage to the highway *(Is there evidence that flooding is damaging the highway)*	**Points**
No	0
Yes- Slight damage, no action necessary	1
Yes- Some damage, may need repair at some point	10
Yes- Damage evident, will need repair very soon	20
Yes- Major damage, repair urgent	40

Table 32: Wetspot scoring based on amount of damage to highway

Additional Resource (*Has the problem resulted in a callout (tankers/ sandbags/ flood boards) or does the location require additional regular maintenance?) Please detail in textbox (question 35/36).*	**Points**
No	0
Yes- Once	5
Yes- More than once	10
Yes- Every time it rains	20

Table 33: Wetspot scoring based on amount of additional resource required to deal with callout

Critical Services (*Severely restricts access to/ functionality of services and/ or infrastructure (e.g. schools, surgeries, care homes, hospitals, etc.))*	**Points**.
None	0
Low- e.g. public transport/ village hall	5
Medium- e.g. day centres/ schools	10
High- e.g. care homes/ GPs/ schools	20
Very High- e.g. hospitals	30

Table 34: Wetspot scoring based on critical services nearby

Miscellaneous	**Points**
Foul Sewage Surcharge	20

Table 35: Misc. wetspot scoring based on whether there is foul sewage surcharge

*__Safety scores__ allocated during the desktop exercise used to produce the wetspot list will be validated by site safety assessments on each site by drainage engineers. They will use an agreed checklist to ensure that subjectivity is not a factor in the scoring system to ensure consistency of scores across the county. If an engineer carrying out a site safety assessment identifies that a site poses a significant and immediate safety risk they will highlight this the Drainage Asset Team Leader to “boost” the scheme to the current years’ programme.

4. Value for Money

The budget will be prioritised based primarily on the risk score of wetspots as this is a reactive service. Around 10% of the annual capital budget for the year is reserved for investigatory work for the programme pipeline and for contributions to other capital programmes which are able to address drainage issues as part of their works. Typically these minor schemes would have a total value of less than £25,000.

5. Network Management

No score is currently proposed and the value will be determined during the works’ programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust

its place in the programme so that we can combine activities in order to maximise financial efficiencies.

Notes

Given the low number of wetspots with confirmed accidents, repeated property flooding, and the importance of issues with a threat to life, the “Confirmed injury due to/exacerbated by wetspot” score is set high enough to ensure that these wetspots sit at the top of the list or thereabouts. The “Risk” element of schemes with no accident history or specific perceived risk, will be reflected in the SPN score.

Due to the importance of acknowledging safety concerns from emergency services, an official report on safety risk from one of these agencies will be acknowledged via a score in the miscellaneous section.

Safety barrier prioritisation value management scoring

1. Highway Maintenance/Improvement Issues

Condition	Score
Red - Very Poor - Unlikely to perform as designed/known accident site	Priority 1 programme
High Amber - Poor - Might perform as intended	Priority 2 programme
Low Amber – Isolated minor defects – sufficient integrity and likely to perform as intended	Priority 3 programme
Good - All elements satisfactory, expected to perform	None

Table 36: Scoring for safety barrier prioritisation based on condition

2. Network Hierarchy

Hierarchy of road	Score
SPN 1	3
SPN2	3
SPN3	2
SPN4a	1
SPN4b	1
High speed roads (70 mph)	Score x 1.5

Table 37: Scoring for safety barrier prioritisation based on hierarchy of road

3. Risk

Prioritise risk to public (if barrier is protecting from more than one hazard then the most aggressive is taken into account)

Risk	Score
Bridge or retaining wall above 3m without parapet protection	7
Bridge – Rail	7
Bridge – Motorway	5
Known Accident Location (*New Safety Barrier Scheme)	5
Central Reservation	4
Structure	4
Bridge – Road/River/Canal/Subway	3
Slipway road	2
Parallel Carriageway (not central reservation)	2
Junction Box/Electrics	1
Hazard other	1
Verge	1
Embankment	1
Bridge – Stream	1
Road Sign/post	1
Private Property/Access	1

Table 38: Scoring for safety barrier prioritisation based on risk to associated hazards

4. . Value for Money

A long-term programme of work ‘Horizon’ will be published giving opportunity to achieve efficiency through cross asset priority. Early contractor engagement can then seek to achieve innovative solutions for further cost savings.

5. Network Management

No score is currently proposed and the value will be determined during the works programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust its place in the programme so that we can combine activities in order to maximise financial efficiencies.

Notes

Safety barrier in red condition are to be treated ahead of safety barrier in amber condition. Red schemes will be programmed first using the Asset Priority Index in descending order, followed by amber schemes programmed second in descending order.

Asset Priority Index = Network Hierarchy x Risk + Value for Money

Whilst it is recognised that the safety barriers provide an additional protection historically a few safety barriers have been erected that under current assessment would not meet with the criteria for new infrastructure. At these sites the works scheme may not replace a barrier as a barrier may not be assessed to be required, or it may not be possible to install a new barrier compliant with standards at the location. Instead the approach referred to in the UK Roads Boards Liaison Groups “Provision of Road Restraint Systems for Local Authorities” would be used and alternative measures may be installed if the level of risk justifies it. These alternative measures could include installing containment kerbing, bollards or additional signing/lining.

Intelligent Transport Systems prioritisation value management scoring

1. Highway Maintenance/Improvement Issues

We use 6 monthly site Inspection data to inform Street Furniture condition

We score against 5 criteria to prioritise sites for refurbishment.

Improvements are built into the scheme on a scheme by scheme basis.

Street Furniture (sub-criteria description)	Score (weighting factor multiply score by 1.75)
Excellent Condition (LED & 0-3yr)	0
Good Condition	1
Fair Condition but Operational	2
OK - starting to deteriorate / tungsten halogen signal heads	3
Poor - signs of corrosion	4
Very poor / very rusty	5

Table 39: Scoring and weighting for street furniture

Controller Type (sub-criteria description)	Score (weighting factor multiply score by 1.75)
New E.L.V. and latest technology	0
E.L.V. with E.L.V. Heads	1
L.V. controller and with E.L.V. Heads	2
L.V. controller and with L.V. Heads	3
Obsolete controller with spares available	4
Obsolete controller with few or no spares available	5

Table 40: Scoring and weighting based on Controller Type

OutstationType (sub-criteria description)	Score (weighting factor multiply score by 1)
New latest technology (0-3yr)	0
Latest Technology	1
Fit for purpose. No foreseen future proofing issues	2
Fit for purpose in current year	3
Obsolete but spares available	4
Obsolete - few or no spares available	5

Table 41: Scoring and weighting based on Outstation Type

Method of control (sub-criteria description)	Score (weighting factor multiply score by 0.5)
Conforms to latest specification. Optimum method of control	0
Conforms to latest specification.	1
Site requires validation	2
Obsolete but fit for purpose	3
Obsolete, upgrading would give major improvement	4
Needs reviewing - not fit for current purpose	5

Table 42: Scoring and weighting based on method of control

2. Network Hierarchy

The nature of Intelligent Traffic Systems is such that they are critical to the flow of traffic and essential to reduce congestion. It therefore maybe more beneficial to schedule upgrades or repairs to equipment on lower SPN roads at the same time as major junction upgrades to ensure e.g. signal timings are synchronised.

3. Risk

Additional Factors	Score (weighting factor multiply score by 1)
No issues	0
Minor known issue	1
Major known issue / several minor issues	2
Multiple known issues / high fault rate	3
Very high fault rate	4
Electrically unsafe / structurally unsound	5

Table 43: Scoring and weighting based on additional risk factors

4. Value for Money

Our annual capital refurbishment programme is delivered through our 5 year contract which was awarded following a full contractual Tender process, scored against both quality, innovation and costs, ensuring we have achieved a best value supplier for these activities. When refurbishing each site, we implement improvements where possible which save on future maintenance and reduce operating costs. These include installation of LED signals, the installation of ground access 6m signal poles and where suitable the use of above ground detectors.

5. Network Management

No score is currently proposed and the value will be determined during the works programming phase on scheme by scheme basis.

Through programme coordination and visibility of future SCC schemes which may affect other key highway asset or major improvement scheme, we adjust its place in the programme so that we can combine activities in order to maximise financial efficiencies.