

# **Southend on Sea Borough Council Highway Safety Inspection Policy and Guidance**

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This Highway Asset Policy and Guidance has been developed for the officers of Southend on Sea Borough Council and is not intended for any other organisation whether a public body or a private organisation.

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## **1 Background**

- 1.1 Southend-on-Sea Borough Council (SBC) as a highway authority has a duty to ensure all highway assets are fit for purpose and must demonstrate that risks associated with highway assets are managed effectively.
- 1.2 SBC has a statutory duty to maintain all the highway assets, as stated in Section 41 of The Highways Act 1980 (The Act). Section 58 of The Act provides SBC with a defence against any alleged failure to maintain highway assets. Part of the defence is for SBC to have a regime of highway asset inspections in place, which consist of highway safety inspections and other asset inspections purposely designed to monitor asset condition, identify any defects and take appropriate rectification measures.
- 1.3 Well-managed Highway Infrastructure published in October 2016, recommends that all highway asset inspections are not prescriptive, but based upon local risk assessments and designed around the local highway network.
- 1.4 An effective risk-based Asset Inspection Policy is an essential element of good highway asset management and therefore this document provides the SBC risk-based Highway Safety and Asset Inspection Policy and Guidance (Policy and Guidance).

## **2 Introduction**

- 2.1 Highway asset management is a key service that SBC provides to its community and to the wider travelling public. Highway assets not only have the greatest monetary value of all assets, but where well managed, the highway assets are essential in the day to day lives of residents, visitors and the business community.
- 2.2 This Policy and Guidance includes the process to develop the risk assessed highway inspection policy and supporting guidance. Also included is the delivery of the formal highway safety inspections as well as inspections of other highway assets which SBC as a highway authority are the owners of or have a duty to maintain.
- 2.3 This Policy and Guidance has been developed as a risk assessed asset strategy and includes a risk matrix to help highway inspectors and asset specialists manage all defects found and determine the appropriate action and timescales to complete those actions.
- 2.4 This Policy and Guidance also explains the different types of asset inspections and the importance of having an accurate record of the quantities and condition of all highway assets.
- 2.5 Risk assessed asset specific hierarchies that use all relevant asset factors and appropriate weightings are an important aspect of this Policy and Guidance. From these hierarchies the inspection frequencies for the different types of

asset inspections are determined.

- 2.6 Defect intervention levels and timescales to rectify are also set out, together with an explanation on the different asset inspections.
- 2.7 The importance of competent officers undertaking all highway asset inspections is also included. Whether these competent officers are SBC staff or those of a service provider, all must have the correct competencies for the asset inspection to be undertaken.

### **3 Highway Asset Risk Management**

- 3.1 In accordance with Well Managed Highway Infrastructure, Code of Practice and ISO 31000, Risk Management (47), risk management is an important part of the Policy and Guidance and also part of the decision making process for asset management planning.
- 3.2 For the purposes of the Policy and Guidance, a risk is defined as an uncertain event which has an effect on the desired performance of an asset or a series of assets. A risk factor is the product of the severity of an event and the likelihood of its occurrence. Risk management includes calculating the risk factors, defining the category of risk and timescales to rectify any potential defects to mitigate the risk. Risk assessment is the output from the risk management approach. The relevant risk matrix is in Appendix A.
- 3.3 A risk assessed highway safety inspection or highway asset inspection requires a number of fundamental elements to be developed before the asset inspections can take place.
- 3.4 The development of the Policy and Guidance requires good knowledge of the quantities of all highway assets, their location on the network and their respective condition. An ongoing programme and process of updating the highway assets and condition is necessary to demonstrate continuous improvement and to ensure the data being used is always current.
- 3.5 Relevant network factors and appropriate weightings are required to develop a series of asset hierarchies. The intervention levels for all defects found as a result of the asset inspection will be risk assessed for the severity of the defect, its location on the network and the resulting timescale to make safe and rectify the defect.
- 3.6 Concise notes relating to the methodology and outputs for all elements covered are an essential part of the Section 58 defence.

#### **4     Highway Asset Inspections and Asset Condition**

- 4.1     The main purpose of asset inspections, whether as a highway safety inspection or asset specific inspection, is to identify any assets which, for whatever reason, the desired performance has changed and as a result there may be a risk that there is a potential danger to the public or the integrity of the asset itself may become compromised. This change in the performance may be as a result of unforeseen occurrences, for example, a pothole has starting to or has already formed in a footway, a mandatory road sign has fallen and is missing, a pedestrian guard rail has been damaged by a lorry or a street lighting column has been hit by a car.
- 4.2     The regular programme of safety and asset inspections provides a systematic monitoring of the highway asset condition and determines whether the asset condition has changed since the last inspection. The inspections will identify any defects to the asset attributes, if any intervention is required, what the intervention should be and the timescale.
- 4.3     SBC has good knowledge of all its highway assets in respect of the quantities, their condition and a measure of the asset residual life for different assets as a baseline as of November 2018. The process followed is set out in the Data Management Strategy and is attached at Appendix B.
- 4.4     The Policy and Guidance requires that for all highway asset types, the designated highway asset owner assesses the up-to-date highway asset information and develops and agrees a programme of updating and reviewing a proportion of the current asset data annually to ensure that the asset data (quantities and condition) is as current as is practical.
- 4.5     This updating is a continuum and may only be reduced once the quality of all aspects of the asset data has been assessed as being comprehensive.
- 4.6     Good quality asset data is used to support good asset management and support the Policy and Guidance. This includes specialist and detailed highway asset condition surveys which contribute to determining highway asset residual life and feed into future work programmes in the short, medium and long term.
- 4.7     To facilitate access to all asset data for all those who require access, the data is held in one of the designated data management systems as set out in Appendix C.

## **5 Network Hierarchies**

- 5.1 A risk assessed highway asset hierarchy should not be developed only using traffic flow information as the hierarchy would result in the most frequent inspections taking place on roads and footways with the greatest usage and these tend to be the assets in the best condition.
- 5.2 The risk assessed asset hierarchies must take into consideration all the relevant factors such as asset condition, insurance claims, locations of known defects, locations of schools etc. which all contribute to increase the risk that a hazard may occur.
- 5.3 The Policy and Guidance requires the asset owners to develop their highway asset hierarchy factors and the reasons for each so that there are robust asset specific hierarchies.
- 5.4 Once the hierarchy factors have been agreed, then a process of factor prioritisation and weighting is required. To help the asset owners Appendix D sets out the main factors to be included. This is not an exhaustive list and others may be asset specific.
- 5.5 Due to the dynamic nature of the highway network, the hierarchies require review to an agreed timescale and where appropriate amended. This is an important part of the Policy and Guidance.

## **6 Asset Inspection Frequencies**

- 6.1 The risk assessed frequencies for highway safety inspections and asset inspections are determined from the respective asset hierarchies. The optimum frequency for inspections is derived from the respective asset hierarchies. The greater the priority number, the more frequent the inspection.
- 6.2 The SBC highway safety inspection and asset inspection frequencies are set out in Table 1.

**Table 1 – Highway Safety and Asset Inspection Frequencies**

<b>Frequency priority</b>	<b>Frequency</b>
Priority 1	Daily
Priority 2	Weekly
Priority 3	Monthly
Priority 4	3 monthly
Priority 5	6 monthly
Priority 6	Annually
Priority 7	Bi-annually

- 6.3 These highway safety inspection and asset inspection frequencies provide the asset owner with a variety of timescales for them to apportion the asset hierarchies with appropriate risk assessed frequencies.

## **7 Intervention Levels and Timescales**

- 7.1 The intervention levels and timescales for all defects found during highway safety inspections and asset inspections have been developed using acceptable intervention levels and are set out in Table 2 below. The actual treatments and timescales for each defect found are determined by highway inspectors or asset owners and reflect the defect dimensions, location on the network and the defect specific risk assessment carried out on an individual defect basis.
- 7.2 The highway inspector or asset owner is able to determine the appropriate intervention level that is most appropriate for each defect found during an asset inspection.
- 7.3 The factors to be taken into account include:
- hierarchy priority number
  - location of defect on/in asset or on network
  - severity of defect
  - other relevant information
- 7.4 Table 2 provides the defect intervention levels found during highway safety inspections and asset inspections by the highway asset inspectors and asset owners. These allow SBC to risk assess each defect and determine the optimum intervention level and timescales to rectify for all defects found during highway safety inspections and asset inspections.
- 7.5 Dependent on the defect rectification timescale all works ordered will require a retrospective or works permit to be issued.

**Table 2 – Intervention Levels**

<b>Asset Type</b>	<b>Intervention Levels</b>	<b>Actions and Timescales</b>
Carriageways	40mm or greater in depth AND extending in one direction greater than 300mm	Emergency – Up to 2 hours CAT 1a – Up to 24 hours CAT 1b – Up to 7 days CAT 2 – Either 28 days or part of works programme
Footways	Slabs with trip hazard of 20mm or greater Pothole 20mm or greater and extending in plan by more than 600mm Broken or misaligned kerbs causing a trip hazard of 20mm deep or greater Unfilled gaps of 20mm or greater Projecting or sunken ironwork 20mm or greater Overgrown or over hanging vegetation causing carriageway deviation or restricting width to less than 750mm	Emergency – Up to 2 hours CAT 1a – Up to 24 hours CAT 1b – Up to 7 days CAT 2 – Either 28 days or part of works programme
Cycleway	As footways	Emergency – Up to 2 hours CAT 1a – Up to 24 hours CAT 1b – Up to 7 days CAT 2 – Either 28 days or part of works programme
Footpaths	Footpath defects - Risk based decision	Any defects identified from whatever source, risk based decision on timescale for completion
Statutory undertakers equipment	10mm	To be reported to the equipment owner for rectification. If not rectified at defined timescale, SBC to address and recover any costs
Street furniture	Damaged or showing signs of deterioration and not operationally usable	Make safe within 2 hours and permanent repair within 1 month or longer when new equipment has to be ordered.



Street lighting	Damaged, exposed wires or not working	Make safe if damaged or exposed wires – within 2 hours If out fix within 5 working days. Where there are more than 2 lights in a row or 3 in 5 not working – fix within 1 working day. Where the fault is on the Suppliers incoming cable the repair time will be dependent on the Network Operators service level agreement.
Illuminated signs	Illuminated signs where damaged or not working	Mandatory Signs - When not working fix within 1 day Others – When not working 5 working days
Traffic signals	Damaged traffic signal equipment or where bulbs not working	Fix within 2 hours
Variable message signs (VMS)	Damaged VMS – Risk based decision	Fix within 5 working days
Bus stop infrastructure	Flag sign, timetable case or post damaged or missing. Damaged shelter. Damaged, exposed wires. Lighting not working. Real time passenger information screens damaged or exposed wires.	Make safe within 2 hours Report to equipment owner for rectification. Where not rectified to agreed timescale, SBC to address and recover any costs
Highway Structures, retaining walls, and other highway structures	Damaged parapet walls, defective retaining walls, and other defects	For parapet walls, make safe within 2 hours, final repair within 1 month, unless a listed structure. For other structures – risk based decision
Highway Trees	Defective trees as a result of damage or disease.	Make safe within 2 hours and permanent rectification within 1 month. Other works, risk based decision
Highway Drainage	Ponding to carriageways of approximately 25% of carriageway width, blocked gullies or offset kerbs, flooding of properties	Make safe within 2 hours and permanent repair within 1 month Flooding of properties, risk based decision Other – risk based decision
On street parking meters	Damaged parking meters	Make safe within 2 hours and permanent repair when equipment can be supplied.
Electric vehicle charging posts	Damaged charging posts or exposed wires.	Inform equipment owner.

## **8 Highway Safety Inspections and Highway Asset Inspections**

- 8.1 The different asset inspections used for good asset management are determined by the asset owners and summarised as follows.

### **Highway Safety Inspections**

#### **Carriageways, Footways, Footpaths, Highway Street Furniture, Bus Stop Infrastructure, Cycleways**

- 8.2 The highway safety inspection includes the following, but this list is not exhaustive.

- potholes in carriageways
- damaged kerbs
- defective manhole covers and gulley gratings
- flooding or standing water on carriageways
- loose or damaged road signs or posts
- dirty or obscured mandatory road signs
- damage to tree boughs
- worn or defective road markings at intersections
- potholes in footways or cycleway
- tree root damage
- obstruction of footway/cycleway from trees or hedges
- defective statutory undertakers trenches or equipment
- Any other defects found during the safety inspection

- 8.3 Whether the highway safety inspection is undertaken as a walked inspection or from a slow moving vehicle there will be a high level of confidence that the inspection will identify all asset defects. Where no defects are found a 'Nil Return' will be logged on the computer software called Symology Insight.

#### **Street Lighting, Traffic Signals, Variable Message Signs,**

- 8.4 For street lighting columns and illuminated signs the significant defects that may be found by the highway safety inspectors will be loose or missing doors, damaged equipment or cables exposed and the need to make safe and subsequent rectification. If any of these defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.
- 8.5 For traffic signals and variable message signs, safety defects from the highway safety inspection will include damage to signal heads, poles and cabinets, exposed wires and loose or missing doors. If any of these defects are found the highway inspector will contact the asset owner and manage the make safe

process. The defect details and action taken will be logged on Symology Insight.

### **Structures, Retaining Walls, and Other Structures**

- 8.6 Highway structures, retaining walls and other highway defined structures generally deteriorate over time and will be managed by the structures team via General Inspections (GI) and Principal Inspections (PI).
- 8.7 It is however important that during the highway safety inspection that due regard is taken with respect to the bridges or culvert, retaining walls and other defined structures. The associated assets may include carriageways and footways, parapet walls, safety fencing, bridge joints, other brickwork, obstructions to culverts and bridges and the like. If any defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.

### **Highway Drainage Inspections – Gullies and Outfalls**

- 8.8 Highway drainage assets can be divided into two broad types, those fully buried and those that have part of the asset at or above ground level. The highway safety inspections will include those highway drainage assets that have part of the asset above or at ground level. Gullies will be inspected to determine whether they are full and offlet kerbs will be checked to see if they are blocked. Additionally any evidence flooding on the road and the depth of water ponding during or just after inclement weather will be noted and logged on Symology Insight.
- 8.9 Any obstructions to highway drainage outfalls have the potential to cause water back up and flooding further upstream. All public highway outfalls will be inspected during the safety inspection. If any defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.

### **Highway Tree Inspections**

- 8.10 Highway trees are those situated on the highway and defects may be associated with root damage to the footway, cycleway or highway verge. These will be identified as part of the highway safety inspection.
- 8.11 Any defects associated with the tree canopy may be identified from the highway safety inspections if there is bough damage or signs of disease. If any of these defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.

### **On-Street Highway Parking Meters**

- 8.12 If the highway inspector identifies any defects when undertaking the safety inspections, these will be noted. The defect details and action taken will be logged on Symology Insight for the parking service provider to take the appropriate action.

### **Bus Stop Infrastructure**

- 8.13 Bus stop infrastructure asset inspections to include bus stop flag, timetable case, pole, raised alighting kerbs, bus shelters and any associated electrical equipment. Additionally where there is real time bus information screen, any screens found damaged or wires exposed.
- 8.14 If any defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.
- 8.15 If the real time screens are blank or suffer signal failures then this is self-reported through the bus real time computer program, Inforoute.

### **Highway Asset Inspections**

#### **Street Lighting, Traffic Signals, Variable Message Signs**

- 8.16 All electrical equipment is required to be inspected, nominally every 6 years. For new electrical equipment, the asset owner may determine the frequency of electrical inspection to be less frequent than 6 years. For equipment coming to the end of its design life, more frequent electrical inspections may be required.
- 8.17 Street lighting columns may require structural testing during their design life. If sample testing is used, the output from that testing may be used to determine whether additional structural testing is required to ensure column safety. As columns move towards the end of their design life, structural testing frequencies may increase.

#### **Structures, Retaining Walls, and Other Highway Structures**

- 8.18 All designated highway structures are inspected either as a Principal Inspection (PI) or as a General Inspection (GI). The frequencies of inspections at present are 12 year cycle for PIs and 6 year cycle for GIs.
- 8.19 Specialist inspections such as checking for scour will be determined by the asset owner from the outputs of the PI and GI and all other relevant information.

### **Highway Drainage Inspections – Gullies and Outfalls**

- 8.20 The highway drainage assets that are part or fully above ground, including gullies and offset kerbs are visually inspected by a highways inspector to see if they are damaged. If any defects are found, the highway inspector will contact the asset owner and manage the make safe process. The defect details and action taken will be logged on Symology Insight.

### **Highway Tree Inspections**

- 8.21 The asset specialists undertake bi-annual inspections of highway trees and from these inspections, the works programme is developed and the asset specialist determines the timescales for rectification.

### **On-Street Highway Parking Meters**

- 8.22 On-street parking meters are inspected by the parking service provider's staff on a sector basis each day. This is to identify those that have been damaged, not working or in need of some form of maintenance. The service provider's staff will determine what action is required and the timescales for rectification.

### **Bus Stop Infrastructure**

- 8.23 Bus stop infrastructure asset inspections will be undertaken by a number of asset owners.
- 8.24 The bus shelters are classed as highway structures and the responsibility of the structures team.
- 8.25 The electrical equipment within the bus shelters is the responsibility of the street lighting team and they will arrange for the 6 year electrical testing to be carried out.
- 8.26 The footway, raised kerbs, flag, timetable case and pole are the responsibilities of the highways team and they will arrange for the appropriate asset inspections to be carried out with other assets on the network.
- 8.27 If any defects are found, the highway inspector will contact the asset owner. The defect details and action taken will be logged on Symology Insight.
- 8.28 The real time bus information equipment is the responsibility of the asset owner and they will determine the appropriate risk based asset inspections to be programmed and carried out. The outputs from the real time inspection are to be uploaded into Inforoute.



## **9      Competencies and Training**

- 9.1      Any person, whether SBC staff or those from SBC service providers tasked with undertaking highway safety inspections or any other asset inspections must have the appropriate competencies and have completed the required training in accordance with the SBC Asset Management Competencies Matrix (found at Appendix F).
- 9.2      Where the individual is in training or does not have the full competencies set out in the Asset Management Competencies Matrix, they must be supervised by a competent person who, at the conclusion of the highway safety inspection or asset inspection, will sign off the inspection output.

## **10     Highway Asset Inspection Process**

- 10.1    The operation of this Policy and Guidance requires the highway inspector or asset specialist to complete the highway safety inspection or asset inspection in accordance with the frequencies determined by this Policy and Guidance. These will either be derived from Symology Insight or by the respective asset owners.
- 10.2    Highway safety inspections will primarily be undertaken as walked inspections. To use a slow driven inspection with a driver and spotter, a risk assessment is required and a concise note held in Symology Insight.
- 10.3    All defects found as part of the highway safety inspection will be photographed and date stamped, logged and the highway inspector will undertake a risk assessment to determine the actions in the short term together with the timescale for the permanent repair. This information will be logged and uploaded into Symology Insight. The Defect Risk Assessments are set out in Appendix E.

## Appendix A – Highway Asset Management Risk Matrix

Impact 	Very Low	Low	Medium	High
Probability 				
Negligible	1	2	3	4
Low	2	4	6	8
Noticeable	3	6	9	12
High	4	8	12	16
Response Category	Category 2 (Low)	Category 2 (Medium)	Category 2 (High)	Category 1

### Highway Safety Inspections

Category Response Times:

Category 1 – Depending upon the defect and its location, repair or make safe as an emergency within 2 hours or within 24 hours

Category 2 (High) – Depending upon the defect and its location, repair within 48 hours and 7 days.

Category 2 (Medium) or (Low) – Depending upon the defect and its location, repair as part of future maintenance works,

### Asset Inspections

The frequency for each asset inspection is a product of the factors used to develop the asset specific hierarchies.

The defect response times follow the highway safety inspections is determined by the asset expert when undertaking asset inspections the appropriate intervention and associated response time. The rectification timescale may be anything from make safe as an emergency to no action needed.

## **Appendix B – Data Management Strategy**

### **Highways Infrastructure Asset Data Management Strategy**

*September 2016*

#### **Purpose of the Strategy**

The purpose of our Highways Infrastructure Asset Data Management Strategy is to effectively manage our transport infrastructure assets by proactively collecting all relevant data to a frequency and level of quality that ensures Southend's asset management policy is delivered.

It is acknowledged that all data will be held in suitable decision support systems (DSS) which are accessible to all those requiring data access and data security is in accordance with the Southend corporate data security policy.

SBC have developed this Data Management Strategy so that SBC can:

- Complete regular life-cycle planning scenarios for all transport infrastructure assets to support Southend's investment modelling.
- Hold and update the most relevant transport infrastructure asset inventory attributes in line with best practice.
- Undertake regular condition surveys of transport infrastructure assets in accordance with the respective Codes of Practice.
- Process all inventory and condition data to develop prioritised annual, 3 and ultimately 5 year works programmes.
- Calculate the Southend transport infrastructure asset valuation in line with the CIPFA asset valuation requirements.

In developing this Strategy, the ambition is to:

- Maintain in a serviceable condition and fit for purpose, Southend's transport infrastructure assets.
- Run regular lifecycle planning scenarios for its transport infrastructure assets to inform Southend's investment modelling.
- Establish an accurate transport infrastructure asset inventory to support its decision making.
- Collect transport infrastructure asset condition data using accredited systems and processes and that the outputs are a priorities works programme using optimum interventions.
- Understand the depreciated replacement cost and gross replacement costs for our transport infrastructure assets.



## **Strategic Priorities**

It is important that we have a clear understanding of the scope of our transport infrastructure assets, its condition, the optimum investment need, and that the subsequent output is an optimum annual works budget. These will be aligned with the strategic asset management priorities and delivers our asset management policy.

The key data management priorities are that:

- All critical asset data will have a designated owner, and that owner have responsibilities to comply with the corporate and local data management requirements.
- All data whether procured or from internal condition surveys, is appropriately date stamped and its 'ownership' is with Southend.
- Data collection is undertaken on a risk based approach for frequency, method of collection and the reliability and repeatability of outputs.
- All data collected, or processed is held in the most appropriate DSS for the type of critical asset the data relates.
- SBC will undertake a review of the present number of DSS used to hold transport infrastructure data so that we can reduce system overlap, multiple uploading of data, and the costs of holding multiple system licences.
- SBC will archive and dispose of critical asset data only when data has been superseded, the relevant asset has been disposed of and the archived data to be disposed complies with any corporate requirements.
- All data quality, updating, collection and processing is reviewed on a regular basis in accordance with any corporate requirements.

## **The Highways Infrastructure Asset Management Plan (HIAMP)**

The HIAMP is made up of the complete suite of highways documents. Our HIAMP contains transport infrastructure asset specific policies and data relating to our respective transport infrastructure asset condition and inventory. These policies are supported by evidence, generally in accord with national policies and affordability which are set out as the affordable levels of service for Southend. Data management is required at various stages in the asset management policy preparation, in supporting our HIAMP.

## **Delivering our Objectives**

This strategy defines our data management objectives:

1. Use the most cost effective asset collection process and DSS in which to invest our increasingly limited resources.
2. Focus on reducing the numbers of asset systems being used to:-
  - a. hold critical asset management data and
  - b. deliver improvements to the present and future value of the transport infrastructure assets.
3. Increase the number of our asset management staff who are better informed about our transport asset management inventory and condition data and the number who are more proactively involved in using this data to improve the condition of the transport infrastructure.

## Appendix C – Asset Management Systems

AM System	Assets Held	Comments
Symology's Insight	Gazetteer, all highways assets, highway structures and sea defences, street furniture	Used to hold highway safety inspections and to generate the safety inspection programme.
Bridgeman	Structures - Principle Inspections and General Inspections	In process of migrating asset records to Symology Insight
Deadsure	Street lighting and illuminated signs	No. of columns, installation date, light source, also used for payment of energy. Self-reporting of columns out via central management system
Ezytreez	Highway trees	Record of tree species, dimensions of each tree and other relevant information.
IMTRACK	Traffic signals and variable message signs.	No. of traffic signals, dates when installed, energy usage. Self-reporting of light faults.
Inforoute	Bus real time passenger information signs	No. and type of real time passenger information signs. Self-reporting of signal failures and screens down.

## **Appendix D – Asset Hierarchy Factors and Template**

The following are some of the factors which will be used to develop the different asset hierarchies. Each highway asset owner will determine the factors most relevant for their asset and appropriate weighting to be used for each factor to determine the respective highway asset hierarchy.

- Asset usage i.e. traffic flows, pedestrian usage, cyclist usage
  - HGV percentage
- Historic insurance claims
  - carriageways
  - footways
  - footpaths
  - trees
  - other
- Road condition index (RCI)
  - Carriageways
- Other carriageway condition surveys
  - Deflectograph
  - SCRIM
  - Gaist condition data
- Footway network condition
  - From the footway network survey
- Highway Structures condition Indicators (check the indicator)
  - Weight limits, width and any height limits
  - Outputs from GIs and PIs.
- Rights of way
  - Any condition survey results
- Resilient network
- Salting routes
- Locations of schools
- Location of shopping centres
- Location of hospitals
- Significant employment hubs
- Other factors

## Asset Hierarchy Template

The Excel version of this template, once populated will produce the risk based asset hierarchy for SBC Highway assets.

Hierarchy Factors		Weightings		
		<b>Carriageway</b>		<b>Footway</b>
Traffic Flows		10		10
- HGV percentage		10		
insurance claims				
- carriageways		10		
- footways				10
- trees		10		
- other				
Road Condition Index (RCI)				
- carriageways		10		
Footway Network Condition				10
Resilient network		10		10
Salting Routes		10		
School				10
Shopping centre				10
Hospital				10
Employment hub		10		
<b>Total</b>		<b>80</b>		<b>70</b>

## Appendix E – Defect Risk Assessment

- 1.1 For defects where the investigation level is reached or exceeded is to be evaluated based on a risk assessment that identifies the overall seriousness of the defect and its location on the network to determine speed of response to remedy the defect. In all cases Category 1 and Category 2 (H) defects will be directed to the service provider immediately they are found.

### Category Response Times

#### Category 1

- 1.2 Emergency - Up to 2 hours

CAT 1a – Up to 24 hours

CAT 1b – Up to 7 days

#### Category (2H), 2(M), Category 2(L)

- 1.3 CAT 2 – Either 28 days or part of works programme

- 1.4 Record Category 2 (H), (M) and (L) defects to inform planned carriageway & footway maintenance programmes and help priorities for future repair during scheduled maintenance works.

**Note: Category 2 (H), (M) and (L) defects are recorded but no rectification action is required.**

#### Category 1 Defect

- 1.5 All defect identified during highway safety inspections as Category 1 requires the highway inspector to risk assess the action to be taken for the make safe and any permanent repair. There are options available although the risk assessment may determine that a combination of actions may be appropriate.

- 1.6 Immediate Action (within 2 hours)

Highway inspector determines whether to stay on site and keep the area safe. The service provider responsible for the asset type involved will be contacted immediately and order raised as a Priority 1.

- Temporary Action

Temporarily make defect safe and used when it is unlikely or impracticable to be permanently repaired within 24 hours. The 'temporary make safe' is recorded in Symology Insight. It is expected that the permanent repair is completed within 28 days. The service provider responsible for the asset type involved will be contacted immediately and order raised as a Priority 2.

- Permanent Action

Permanent repair to a Category 1 defect within 24 hours following any temporary make safe and are restricted to those defects which constitute imminent danger.

## **Category 2**

- 1.7 These are defects which following a risk assessment do not represent an immediate or imminent hazard or risk of short term asset deterioration. They are categorised as either high (H) medium (M) or low (L). Category 2 (M) and (L) defects will be recorded and reports provided to Highway Maintenance Engineers.
- 1.8 Defects associated with statutory undertakers' equipment or other private equipment will be notified to the owner. Where the defect is a Category 1, owner must be informed to take the appropriate action. If that action is not taken as required, SBC may make the defect safe, and recover any costs from the asset owner. The intervention Levels for Utility Apparatus is 10mm.
- 1.9 All safety fence defects shall be dealt with in the same way as all other defects faults, in accordance with the defect location and severity. In all work undertaken will be reported to the relevant Team Leader.

## Appendix F - Asset Management Competencies Matrix

### Asset Management Competency Requirements

ICE Rating	<b>Skill Level 0 - No Knowledge</b>	You have no knowledge of the subject
	<b>Skill Level 1 - Appreciation</b>	At this level staff should have a general understanding of this area of work and the basic relevance and importance of the topic
	<b>Skill Level 2 - Knowledge</b>	In addition to having a general awareness of the topic, this level requires staff to know how work is carried out in this field, and to be able to do so with guidance and supervision
	<b>Skill Level 3 - Experience</b>	Here, the requirement is to demonstrate an understanding of the principles involved and to be able to complete tasks and projects in this field independently or under supervision
	<b>Skill Level 4 - Ability</b>	This level requires staff to demonstrate a full understanding of the principles to be able to complete tasks and projects in this field independently and be able to guide, train and supervise others effectively

	Skill / Name	Director	Head of Service	Asset Manager	Group Manager	Highway Engineer	Technician Engineer	Street works Coordinator	Inspectors	Highway Officers
Legal / Regulatory	Asset Management Understanding	2	2	4	3	3	2	1	2	2
	Law - Highways	2	2	2	2	3	2	1	1	1
	Law - Street Works	2	2	2	2	3	2	4	1	1
	Law - Environmental	2	2	2	2	3	2	1	0	0
	Law - Insurance	2	2	2	2	2	2	1	0	0
	Law - OJEU Procurement	2	2	2	2	2	2	1	0	0
	Law - Statutory Orders	2	2	2	2	3	2	1	0	0
	Regulations - CDM	2	2	3	3	4	2	1	0	0
	Emergency Planning	2	2	2	2	1	1	1	0	0
	Sustainable Energy Management	1	1	2	2	1	1	1	0	0
	Lifecycle Management	1	1	3	3	1	1	1	1	1
	Whole Life Costing	1	1	3	2	2	2	1	0	0
	Performance Management	4	4	3	2	2	2	1	0	0
	Risk Management	4	4	3	2	2	2	1	0	0



Technical	Monte Carlo Risk Assessment	1	1	3	2	2	2	1	0	0
	Project Management	3	3	3	3	3	3	1	0	0
	Data/Information Management	2	2	3	3	2	2	1	1	1
	Procurement Management	2	2	3	3	2	2	1	0	0
	Contract Management	3	3	3	3	3	3	1	0	0
	Financial Management	4	4	3	3	3	3	1	1	1
	People Management	4	4	3	3	3	3	1	0	0
	Business Awareness	4	4	3	3	1	1	1	0	0
	Research	2	2	2	2	1	1	1	0	0
	Report Writing	4	4	3	3	4	3	1	0	0
	Risk Balancing	4	4	4	4	2	0	1	1	1
	Strategic Thinking	4	4	4	4	1	0	1	0	0
	Decision Making	4	4	4	4	1	0	1	3	3
	Convergent/Divergent Thinking	4	4	3	3	1	0	1	0	0
	Business Continuity	4	4	2	2	1	0	1	0	0
	Prince 2 / MS Project	1	1	3	3	3	2	1	0	0
	Communication	4	4	4	4	4	2	3	2	2
	Geometric Design	1	1	3	3	4	4	1	1	1
	Road Restraint Systems	1	1	2	2	4	3	1	1	1
	Value Engineering	2	2	2	2	4	3	1	1	1
	Material Engineering	1	1	2	2	4	3	1	1	1
	Highway Engineering	1	1	2	2	4	3	1	1	1
	Bridge Structural Engineering	1	1	2	2	4	3	1	1	1
	Drainage Engineering Inc. SUDS	1	1	2	2	4	3	1	1	1
	Network Management	2	2	2	2	4	3	4	3	3
	Traffic Management	2	2	2	2	4	3	4	3	3
	Operational (service) Delivery	3	3	4	4	4	3	1	1	1
	Works Cost Estimates	2	2	4	3	4	3	1	1	1
	Purchase Order	2	2	4	3	4	3	1	0	2

