SCOTS Road Asset Management Project
Notes / PI Definitions

If you cannot see these notes in full please click on View → Zoom and select a lower p

General Notes

Please read these 'General Notes' before going to the 'Results', 'Asset' and 'Summary' pages.

The SCOTS 'Performance Management Task' is undertaken via the annual APSE performance networks data collection exercise. Howeve subject to the APSE PI parameters and therefore will not necessarily reflect the published APSE outputs.

The 'Headline figures for Scotland 2016-17' published on the 'Summary' tab of this report are the SCOTS interpretation of data for the 201 and may not correspond with APSE published trends and data.

Authority names shown in RED on the 'Results' and 'Asset' tabs indicate authorities who have not returned their data.

Confidence Ratings (H = High, M = Medium, L = Low) indicate the level of confidence that the SCOTS Performance Group have in the acc anticipated that these Confidence Ratings will improve in future years as more reliable and accurate data is available.

'Ideal Position' markers have been used to indicate, where applicable, it is desirable to be high (↑) or low (↓) for each PI / Stat. In some cas indicated with a ↕ symbol. Desirable high or low positions can be subjective, depending upon each authority's policy objectives and circum only as a guide.

Please note that the averages for Family Groups and the overall Scotland average for each PI is calculated using the Microsoft 'Average' fu authority outputs. It is not calculated by using total input raw data across the whole sample.

The PI and Stats results are presented in two ways. Firstly, all results for every asset type and all authorities / family groups are shown on
across all PIs for every authority 'at a glance' but this report format is not printer friendly.

Secondly, results for all authorities / family groups are shown split out into the asset types 'Customer Services', 'Carriageways', 'Footways',
Systems & Street Furniture' and 'Street Lighting'. This enables greater focus on the asset type and these report formats are printer friendly
'Traffic Management Systems', 'Street Furniture' and 'All assets service delivery' which will print on A4 portrait).

The 'PI Definitions' (below) are provided as an explanation / interpretation of each PI / Stat and these can be easily accessed by clicking or
type' reports (e.g. the cell referenced 3.1.01 (PI 37) on the 'Customer Services' tab). By clicking on the 'Return to report' hyperlink after the
the 'Asset type' report tab. Please note, there are no links to the PI Definitions from the overall 'Results' tab.

Not every PI will have a 'PI Definition' and therefore some cell references cannot be clicked on - these will display the message "No PI Defi

A summary of the data reported has been included for each asset type. These summaries have been prepared by the SCOTS Performanc
clicking on the 'Summary' tab and are printer friendly (A4 portrait) with one asset summary per page.

Each individual asset type summary can also be accessed directly by clicking on the hyperlink in the top left corner of each of the 'Asset ty
summaries from the overall 'Results' tab.

Return to 'Introduction' page

PI Definitions

SCOTS headline financial PI

0.1.01 Total expenditure by carriageway network length (£ per Km)

This is a high level SOLACE Indicator that will be used by and reported at Chief Executive level.

Effective budget monitoring arrangements are crucial to the delivery of best value with systems of financial management being essential in

Return to report

CUSTOMER SERVICES

Carriageways and footways are major public assets which are highly valued by the community. Maintenance of these assets attracts a hig
authorities have a duty to ensure that services are responsive to the needs of citizens, and not the convenience of service providers.

3.1.01 % of customer enquiries/requests for service closed off within Council's own identified response times.

Managing complaints and requests for service effectively can make a significant difference to the public perception of service delivery, not
as a whole. The efficiency and courtesy of response to enquiries and requests for service determine, to a large extent, the local opinion of

All communications received from whatever source and how they are dealt with, including nil returns are crucial to the management and de
failure to maintain.

Each authority will have its own target response times and these times will depend on the type of enquiry/request for service, the urgency c
authority.

Return to report

3.2.01 % of abnormal load notifications dealt with in time

"Abnormal indivisible load" is defined in the Road Vehicles (Authorisation of Special Types) (General) Order 2003 as-

a) load that cannot without undue expense or risk of damage be divided into two or more loads for the purpose of being carried on a road,
b) owing to its dimensions, cannot be carried on a motor vehicle (N3 motor vehicle) or trailer (O4 vehicle) or a combination of such vehicles
Construction and Use Regulations; or

c) On account of its weight, cannot be carried on a heavy motor vehicle at category N3 or a trailer at category 04 or a combination of such
i) The Authorised Weight Regulations (or, if those Regulations do not apply, the equivalent provisions in Part 4 of the Construction and Use
ii) Part 2 of the Construction and Use Regulations.

Notifications for Abnormal Indivisible Loads are required where loads or vehicles exceed maximum vehicle weight, axle weight or dimensio

Weight:
Gross weight or axle weights exceeding Construction and Use Regulation or Authorised Weight limits up to 80,000kgs (78.74 tons)
Gross weight (of vehicle carrying the load) exceeding 80,000 kg (78.74 tons) up to 150,000kgs (147.63 tons)
Gross weight (of vehicle carrying the load) exceeding 150,000kgs (147.63tons).

Width:
Width exceeding 3.0 metres (9'6") up to 5.0 metres (16'5")
Action required: 2 clear days notice to the police.

Width exceeding 5.0 metres (16'5") up to 6.1metres (20')
Width exceeding 6.1 metres (20')

Length:
When exceeding 18.75 metres (60'1") up to 30 metres (98'5") rigid - (Vehicle or train of vehicles)
Action required 2 clear days notice to the police.

When exceeding 30 metres (98'5") rigid
Action required **Highways Agency Special Order** (8 weeks notice) to Police and 5 clear days notice with indemnity to Road and Bridge A

Return to report

3.3.01 % of enquiries made under the Freedom of Information Act that were dealt with within the allowable tim

Any person or organisation who requests information, subject to certain conditions, under the terms of this Act is entitled to receive the info

Return to report

3.3.02 Total number of enquiries received under the Freedom of Information Act

Under the terms of this act, persons have a right to request information held by the authority. Any person or organisation who requests inf
terms of this Act is entitled to receive the information within 20 working days.

Return to report

CARRIAGEWAY ASSETS

Safety

It is crucially important that all those involved in the road maintenance service have a clear understanding of their powers and duties, their and mitigate risk. Authorities have a general duty of care to users and the community to maintain the road network in a condition fit for pur such as rectification of defects arising from safety and serviceability inspections and investment priorities.

The main purpose of carriageway maintenance is to maintain the road network for the safe and convenient movement of people and goods serviceable and sustainable network.

1.1.01 % of Cat 1 defects made safe within response times

Cat 1 defects are safety/dangerous defects that require prompt attention because they represent an immediate or imminent hazard or there When considering network safety, it is crucial that authorities recognise the consequential implications that failure to make safe, repair and timescales, when defending public liability insurance claims.

Return to report

1.2.01 % of safety inspections completed on time

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network and should i require urgent attention as well as those where the locations and dimensions are such that longer periods of response would be unaccepta aspect of an authority's strategy for managing liabilities and risks.

Return to report

1.3.02 Total number of 3rd party claims

Managing claims effectively can make a significant difference to the public perception of service delivery. It is therefore important that auth claims management. These procedures can protect the authority from unjustified and fraudulent claims.

Return to report

1.3.03 Total number of 3rd party claims per Km of carriageway

This output will allow for meaningful benchmarking to take place, considering the number of 3rd party claims per km of network rather than comparable.

Return to report

1.4.01 % of carriageway network subject to precautionary salting treatment

Precautionary salting routes are those deemed to be of primary importance and which form a strategic network. These routes will include emergency service establishments. The % of an authority's network treated as precautionary will vary depending on the importance of the

Return to report

1.4.02 % carriageway network deemed top priority

Top priority/High priority routes have been developed by most authorities following the severe winter of 10/11. Routes will have been ident routes open during times of significant snowfall and to allow traffic to flow freely on these routes. These routes will be treated when continu significant accumulations in excess of 100mm over a substantial part of the Council area and expected to remain in untreated locations for disperses it.

Return to report

1.4.03 Route efficiency

This considers the length of non treated route built in to the gritting route, and considers how routes have been developed to minimise non

Return to report

1.4.04 Average route length

This considers the number of routes/gritters required to treat precautionary routes and achievable routes for gritters.

Return to report

1.4.05 Total actual length treated with precautionary treatment

Precautionary treatment is undertaken on the top priority routes within the council area, generally these form a strategic network including

Note. For the purposes of the PI process "precautionary treatment" for carriageways is classed as a pre planned treatment or action based

Return to report

1.4.06 % top priority routes completed on time

Top priority routes are those designated by each authority as the highest priority roads based on their winter treatment hierarchy. This may total precautionary treated network length, where no “priority” or snow routes have been developed.

Return to report

1.4.07 Total salt usage by total network length

This includes salt usage for all treatments – precautionary, secondary, reactive, etc on all parts of the carriageway network for the whole of in snow (priority) events. This figure should be divided by the total carriageway network length.

Return to report

1.4.08 Total salt usage by total actual precautionary treated length

This is the actual annual tonnage used to carry out the precautionary treatments to the routes for the whole of the year multiplied by the nu This figure should be divided by the length of network normally subject to treatment of salt on a precautionary salting run, multiplied by the

Return to report

1.4.09 Average salt usage (tonnes) per precautionary run

This gives the salt usage per total number of precautionary treatment runs.

Return to report

1.4.10 The stated (policy) time for completion of treatment of your highest priority routes

Highest priority routes are those designated by each authority as the highest priority roads based on their winter treatment hierarchy and n extreme prolonged winter weather/conditions. This provides the time given, within the authority's Winter Service Plan/Policy, for completio

Return to report

1.4.11 The stated (policy) time for mustering

This relates to the time permitted within the Winter Service Plan/Policy to allow operatives who have been called out to reach their gritter a

Return to report

Condition/Asset Preservation

Well-Managed Highway Infrastructure: A Code of Practice sets the core objectives for maintenance could be considered to be:

Network Safety:
Complying with statutory obligations
Meeting users' needs for safety

Customer Service:

User experience/satisfaction
Communication
Information
Levels of service

Network Serviceability:
Ensuring availability
Achieving integrity
Maintaining reliability
Resilience
Managing condition

Network Sustainability:
Minimising cost over time
Maximising value to the community
Maximising environmental contribution

Authorities will have service standards detailed within their Road Asset Management Plans.

2.1.01 % of carriageway length to be considered for maintenance treatment

The statutory performance indicator (RCI) for the condition of the Scottish local authority road network is defined as “the percentage of the maintenance treatment”, i.e. has reached a condition where more detailed monitoring or investigation is appropriate, to establish if and whe

The RCI is derived from survey data collected over the previous 2 years and the results are presented graphically.

Return to report

2.1.02 to 2.3.09 and 2.3.14 - % of carriageway area treated (various treatment types)

Many Councils could improve their planning of structural maintenance, establishing long-term strategies for maintenance, based on conditi management strategies. It is anticipated that improved planning of structural maintenance works will result in a reduction in the requiremer published by "SCOTS" State of the Scottish Road Network recognises that the lack of investment in road maintenance results in downwarc roads.

Return to report

2.3.10 to 2.3.13 - % of roads to be considered for maintenance treatment

The report published by "SCOTS" State of the Scottish Road Network recognises that there is a growing concern that carriageway assets required to maintain them in an optimal state of repair. The report recognises that the latest SRMCS results show that the condition of loca deteriorate.

Return to report

Financial

Your Road Asset Management Plan will present the investment required in the maintenance of the carriageway asset to maintain the core sustainability of the asset, together with ensuring suitable levels of customer care. There is a requirement to focus on the whole life of the beyond reactive maintenance work requires authorities to have sufficient financial flexibility to allow this to happen. Focussing on the whol authorities to have an asset management regime in place which considers the optimal use of the asset, demonstrates best value and prud value for money, authorities should ensure that maintenance work is carried out in good time, endeavouring to ensure that maintenance cc deteriorate to the extent that routine maintenance is no longer possible.

6.1.01 Total carriageway maintenance expenditure by carriageway length

Effective budget monitoring arrangements are crucial to the delivery of best value with systems of financial management being consistent v responsiveness. Budgetary control systems should be in place that enable easy and electronic retrieval of information for the effective fina Where these systems aren't currently in place, budget headers should be amended to suit more transparent and retrievable financial repor of works planning and programming within the context of road asset management is likely to require greater flexibility than has previously b

Return to report

6.1.02 Total cost per Km of carriageway travelled for precautionary salting treatment

This gives you the cost per kilometre of treatment of precautionary routes.

Return to report

6.1.03 Total carriageway contractor maintenance expenditure by carriageway network length (excluding client

Operational cost of carriageway maintenance works per kilometre.

Return to report

6.1.04 Total carriageway maintenance expenditure by carriageway area treated

Net unit cost of carriageway maintenance per square metre.

Return to report

6.3.01 Total cost of addressing total backlog by road length

The SCOTS Financial Model has defined the Headline Backlog as the carriageway maintenance funding required to clear all of the red anc
allows a comparative budget valuation to be calculated which can be monitored on an annual basis.

Return to report

6.3.02 Total cost of reactive maintenance

Reactive maintenance involves a degree of urgency, attending to the rectification of Cat1 defects and other matters requiring urgent attenti
requests in accordance with the specified standards of response. Making safe a defect either through repair (temporary or permanent), or
reactive maintenance works.

Return to report

6.3.03 Total settled cost of 3rd party public liability claims

Managing claims effectively can make a significant difference to the public perception of service delivery. It is therefore important that auth claims management as these procedures can assist in defending the authority against claims.

Return to report

6.3.04 Cost per km of planned maintenance

Planned maintenance is undertaken primarily in the interests of providing for a sustainable outcome and to add community value to the net planned maintenance schemes may be more expensive than reactive or routine maintenance at initial cost, but should be designed to have value for money. Planned works should align with the objectives of the authority and deliver value for money.

Return to report

6.3.05 Cost per km of reactive maintenance

Reactive maintenance involves a degree of urgency, attending to the rectification of Cat1 defects and other matters requiring urgent attenti requests in accordance with the specified standards of response. Making safe a defect either through repair (temporary or permanent), or reactive maintenance works.

Return to report

6.3.06 Cost per km of routine maintenance

Routine maintenance is primarily for the purpose of providing defined standards of network serviceability, maximising availability, reliability

Return to report

FOOTWAY ASSETS

Safety

The generic term “footway” should be taken to include footways and footpaths.

Authorities have a general duty of care to users and the community to maintain the footway network in a condition fit for purpose through d
rectification of defects arising from safety and serviceability inspections and investment priorities.

The main purpose of footway maintenance is to ensure the safety of walking surfaces for users with the core objectives being to deliver a s
network.

11.1.01 % of Cat 1 defects made safe within response times

Cat 1 defects are safety/dangerous defects that require prompt attention because they represent an immediate or imminent hazard or there
When considering network safety, it is crucial that authorities recognise the consequential implications that failure to make safe, repair and
timescales, when defending public liability insurance claims.

Return to report

11.2.01 % of safety inspections completed on time

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network and should i
require urgent attention as well as those where the locations and dimensions are such that longer periods of response would be acceptable
aspect of an authority’s strategy for managing liabilities and risks.

Return to report

11.3.02 Total number of 3rd party claims

Managing claims effectively can make a significant difference to the public perception of service delivery. It is therefore important that auth
claims management. These procedures can protect the authority from unjustified and fraudulent claims.

Return to report

11.3.03 Total number of 3rd party claims per Km of footway

This output will allow for meaningful benchmarking to take place, considering the number of 3rd party claims per km of footway rather than comparable.

Return to report

11.4.01 % of footway subject to precautionary salting treatment

Precautionary salting routes are those deemed to be of primary importance and which form a strategic network. These routes will include emergency service establishments. The % of an authority's footway treated as precautionary will vary depending on the importance of the

Return to report

11.4.02 % of footway network deemed top priority

Top priority / high priority routes have been developed by most authorities following the severe winter of 10/11. Routes will have been ider routes open during times of significant snowfall. These routes will be treated when continuous snow is forecast and likely to give significant substantial part of the Council area and expected to remain in untreated locations for a prolonged period before a natural thaw disperses it

Return to report

11.4.03 Tonnes of salt used

Total tonnage of salt used on footways for the year.

Return to report

11.4.04 Total actual length treated with precautionary salting treatment

Precautionary salting routes are those deemed to be of primary importance and which form a strategic network. These routes will include emergency service establishments. This gives the total length of these precautionary salting routes regardless of whether or not they were not.

Return to report

11.4.05 Number of grit bins per Km of footway network

Gives number of grit bins per kilometre of footway length.

Return to report

Condition/Asset Preservation

Well-Managed Highway Infrastructure: A Code of Practice sets the core objectives for maintenance could be considered to be:

Network Safety:
Complying with statutory obligations
Meeting users' needs for safety

Customer Service:
User experience/satisfaction
Communication
Information
Levels of service

Network Serviceability:
Ensuring availability
Achieving integrity
Maintaining reliability
Resilience

Managing condition

Network Sustainability:
Minimising cost over time
Maximising value to the community
Maximising environmental contribution

Authorities will have service standards detailed within their Road Asset Management Plans.

Footway condition data will be required to meet the requirements of the CIPFA Code of Practice on the Highways Network Asset.

12.1.01 % of footway length to be considered for maintenance treatment

There is currently no national survey carried out to assist in condition reporting for footways, as exists for carriageways. Currently, the defi requirements for serviceability is a matter for local individual authority determination. It is recognised that to secure continuous improveme particular network integrity, it is necessary to know and report the condition of footways to assist with the development of longer term works management purposes.

Return to report

Financial

Your Road Asset Management Plan will present the investment required in the maintenance of the footway asset to maintain the core obje of the asset, together with ensuring suitable levels of customer care. There is a requirement to focus on the whole life of the asset, minimis maintenance work requires authorities to have sufficient financial flexibility to allow this to happen. Focussing on the whole life cost of the asset management regime in place that considers the optimal use of the asset, demonstrates best value and prudent stewardship. To pro authorities should ensure that maintenance work is carried out in good time, endeavouring to ensure that maintenance costs do not escala that routine maintenance is no longer possible.

16.1.01 Total footway maintenance expenditure by footway length

Effective budget monitoring arrangements are crucial to the delivery of best value with systems of financial management being consistent w responsiveness. Budgetary control systems should be in place that enable easy and electronic retrieval of information for the effective fina these systems aren't currently in place, budget headers should be amended to suit more transparent and retrievable financial reporting. It planning and programming within the context of road asset management is likely to require greater flexibility than has previously been the

Return to report

16.1.02 Cost per Km of footway travelled for salting treatment

This gives you the cost per kilometre of treatment of precautionary routes.

Return to report

16.1.03 Total footway maintenance expenditure by footway length (excluding client cost)

Operational cost of footway maintenance works per kilometre.

Return to report

16.1.04 Total footway maintenance expenditure by square metres of footway area treated

Net unit cost of footway maintenance per square metre.

Return to report

16.3.01 Total cost of reactive maintenance

Reactive maintenance involves a degree of urgency, attending to the rectification of Cat 1 defects and other matters requiring urgent attent requests in accordance with the specified standards of response. Making safe a repair either through repair (temporary or permanent), or reactive maintenance works.

Return to report

16.3.02 Total settled cost of 3rd party public liability claims

Managing claims effectively can make a significant difference to the public perception of service delivery. It is therefore important that auth claims management as these procedures can assist in defending the authority against claims.

Return to report

16.3.03 Cost per km of planned maintenance

Planned maintenance is undertaken primarily in the interests of providing for a sustainable outcome and to add community value to the net planned maintenance schemes may be more expensive than reactive or routine maintenance at initial cost, but should be designed to have value for money. Planned works should align with the objectives of the authority and deliver value for money.

Return to report

16.3.04 Cost per km of reactive maintenance

Reactive maintenance involves a degree of urgency, attending to the rectification of Cat 1 defects and other matters requiring urgent attent requests in accordance with the specified standards of response. Making safe a repair either through repair (temporary or permanent), or reactive maintenance works.

Return to report

16.3.05 Cost per km of routine maintenance

Routine maintenance is primarily for the purpose of providing defined standards of network serviceability, maximising availability, reliability

Return to report

BRIDGES & STRUCTURES ASSETS

Safety

With reference to Well-Managed Highway Infrastructure: A Code of Practice – Part C Structures

It is recommended that all highway structures should be subject to a regular Principal Inspection not more than six years following the prev assessment has been carried out to define an alternative interval.

Principal Inspections comprise a close examination, within touching distance, of all accessible parts of a structure, including, where relevar and waterways, utilising suitable access and/or traffic management works as necessary. Closed circuit television may be used for areas o parts of a structure, confined spaces and underwater inspections.

It is recommended that all highway structures should be subject to a regular General Inspection not more than two years following the prev

General Inspections comprise a visual inspection of all parts of the structure and, where relevant to the behaviour or stability of the structur inspected without the need for special access or traffic management arrangements. Riverbanks, for example, in the vicinity of a bridge sh flooding or for conditions, such as the deposition of debris or blockages to the waterway, which could lead to scour of bridge supports or fl

31.1.01 % of principal inspections carried out on time

Number of Principal inspections carried out at their specified frequencies as identified in the Structures Lifecycle Plan as a % of the total nu year.

Return to report

31.1.02 % of general inspections carried out on time

Number of General inspections carried out at their specified frequencies as identified in the Structures Lifecycle Plan as a % of the total nu year.

Return to report

32.1.01 Bridge Stock Condition Indicator - average BSClav

The Bridge Stock Condition Indicator is the numerical value of a bridge stock condition evaluated as an average of the Bridge Condition In each bridge.

Return to report

32.1.02 Bridge Stock Condition Indicator - critical BSCIcrit

The Bridge Stock Condition Indicator is the numerical value of the critical condition index for a bridge stock evaluated using the BSCIcrit va

Return to report

32.3.01 % of bridges subject to monitoring/special inspection regimes

Number of Council owned bridges subject to monitoring/special inspection regimes as a % of the total number of Council owned bridges.

Return to report

32.3.02 No of Council owned bridges failing assessment

Number of Council owned bridges failing assessment.

Return to report

32.3.03 No of privately owned bridges failing assessment on Council road network

Number of Privately owned bridges within Council's road network failing assessment.

Return to report

Functionality

34.1.01 % of Council owned bridges failing European standards

Number of Council owned bridges failing assessment as a % of the total number of bridges.

Return to report

34.2.01 % of Council road bridges with unacceptable weight, height or width restriction

Number of bridges (Council owned) weight/height/width restricted as a % of the total number of bridges.

Return to report

34.3.01 No of Council bridges weight restricted (excluding acceptable weight restrictions)

Number of Council bridges weight restricted where the restriction does not affect the road network.

Return to report

34.3.02 No of Council bridges with imposed width / height restriction

Number of Council bridges width and/or height restricted where the restriction affects the road network.

Return to report

Financial

36.1.01 Annual budget allocated as a % of cost of identified work (from AMP)

Annual budget allocated to structures maintenance work (including capital and revenue allocations) as a percentage of the estimated cost

Return to report

36.2.01 % of allocated budget spent per annum

Annual actual expenditure (including capital and revenue allocations) as a percentage of the total annual budget allocated to structures ma

Return to report

36.2.02 Cost of identified potential work as a % of total structures valuation

Estimated cost of identified work for bridge stock as a percentage of the total structure valuation.

Return to report

36.3.01 % of budget spent repairing 3rd party damage

Cost of repairing 3rd party damage as a % of the total budget.

Return to report

36.3.02 Cost to remove unacceptable restrictions by weight/height/width

Cost of removing unacceptable restrictions by weight/height.

Return to report

TRAFFIC MANAGEMENT SYSTEMS

41.1.01 % of faults rectified within target time

Percentage of traffic signal faults repaired within set target time.

Return to report

41.1.02 % of faults rectified on first visit

Percentage of traffic signal faults repaired at first visit to locus.

Return to report

46.1.01 % spend on Traffic Management Systems

This is the proportion of the TMS budget spent on planned maintenance of traffic management systems.

Return to report

STREET FURNITURE

56.1.01 % spend on Street Furniture

This is the proportion of the total budget (Roads & Lighting) spent on street furniture

Return to report

ALL ASSETS SERVICE DELIVERY

61.1.01 Km inspected per Safety Inspector (carriageways & footways)

This is the length of safety inspection undertaken per FTE Safety Inspector.

Return to report

STREET LIGHTING ASSETS

Safety

Street lighting installations comprise large, heavy structures and lanterns of considerable weight at heights typically between 5 and 12 met
standard mains supply can be lethal in the typical British street environment where the general public may not understand the dangers of i

There is an extensive body of legislation which places an unequivocal obligation, some absolute, on a street lighting authority to protect the
specifically, but possibly with more exacting demands, there is a general duty of care towards the public.

The arduous and unpredictable service conditions of street lighting plant lead to an inevitable deterioration over time of even the best equi
used far beyond their intended service life, assuming that this was ever realistically defined.

Although the hazards resulting from the deterioration of such equipment may seem obvious, ensuring that its condition is adequate is not a
limited funding demands that clearly informed decisions are made to apply the money available effectively in maintaining an acceptably lov
increased budgets to attain this.

In contrast to the real but uncertain nature of structural hazards, it is possible to be more specific about danger from electrical hazards. Th
Electricity at Work Regulations 1989, which apply to personnel working on street lighting equipment. The HSE Memorandum of Guidance
Regulations, where the risk is very often that of death, for example, from electrocution and where the nature of the precautions which can b
insulation, the level of duty to prevent that danger approaches that of an absolute duty". Where there is an absolute duty, cost considerati

21.2.01 % of columns with a valid structural inspection (within last 6 years)

The most likely reasons for structural failure of lighting columns are impact damage, which should be reported, or detected during routine
gradual and often unseen process. For the reasons already stated it is essential that deterioration is detected before the probability of colla

Some failure modes are not externally visible while others can be detected by visual inspection. There are several techniques for testing th
However, there is clearly no point in incurring the expense of testing where a visual inspection is sufficient to decide on the basis of amass
the Institute of Lighting Professional Technical Report 22 (TR22), that columns are unsound.

It is reasonable to assume that most deterioration takes place over many years and those older columns are more likely to fail than newer direct correlation due to many variations in column construction, service conditions and maintenance. Thus to ensure structural safety, an on both age profile and local knowledge, should be undertaken.

By inspecting and testing a proportion of its columns each year, according to a systematic plan, a lighting authority should ensure that no c

Return to report

21.2.02 % of street lanterns with a valid Electrical Test Certificate.

Similar considerations to those already described for structural inspection and testing apply to electrical condition.

BS 7671 (IEE Wiring Regulations) does not specify a maximum interval between test but states that it should be appropriate to the circums & 622.2 of the 17th Edition:2008). IET Guidance Note 3, 5th edition, 2008, recommends a maximum period of six to eight years for highwa Guidance Note. It follows that a proportion of the lighting stock should to be inspected and tested each year, but where rapid deterioration undertaken.

Inspection and testing are not alternatives; they must both be undertaken as appropriate to potential hazards. Some faults can only be dete conditions, such as perished insulation, will not necessarily preclude apparently satisfactory test results.

Inspection and testing procedures should be based on an intelligent interpretation of BS 7671, the advice in Guidance Note 3, and good pr

Return to report

Condition/Asset Preservation

The street lighting installation in any authority's area is likely to be a significant asset whose replacement value greatly exceeds the annual maintained by systematic replacement of old equipment which is beyond its safe or useful service life.

The useful service life depends on variable equipment quality and service conditions but in general columns older than 30 years and lanter nearing the end of their life.

22.2.01 Faults as a % of street lighting stock

The vast majority of street lighting depends on electrical and electronic materials and components which conform to the well known “bath t
increase in fault numbers as the equipment reaches the end of its life.

Reliability in street lighting systems depends on a suitable choice of equipment and materials for the circumstances of its use and on the w

Unacceptable failure rates can be detected and investigated by monitoring the number of faults in relation to the overall lighting stock.

Return to report

22.2.02 % of columns which have exceeded their Expected Service Life

While many columns are still serviceable well beyond their recommended service life it is necessary to carefully monitor the condition of ar
the percentage of older columns is exceptionally high, it is likely that the replacement rate is not keeping pace with structural deterioration a
needed.

Return to report

22.2.03 % of lanterns which have exceeded their Expected Service Life

Lanterns will often include control gear and reflectors which deteriorate with time. Where remote control gear has used it will normally be re
lantern replacement is a reasonable measure of control gear age too.

Even without age related deterioration, technical developments have been considerable over the last twenty years bringing benefits in opti

To improve on existing efficiency and to benefit from LED developments, an authority should consider the economics of replacing lanterns

Return to report

22.3.02 % of columns replaced

This is a measure of an authority’s success in maintaining the value of the lighting stock asset.

Return to report

22.3.03 % of lanterns replaced

This is a measure of an authority's success in maintaining the value of the lighting stock asset.

Return to report

Customer Service

In general terms, reliability and quality of street lighting is immediately obvious to users. Expectations of serviceability and reliability are hig
technology may be poor.

23.1.01 % of repairs within 7 days

Ideally, all faults would be repaired on the day they were identified but realistically this is unlikely to be attained for many reasons. This limi
time ago as a Statutory Performance Indicator but is no longer used for this purpose. It is however a reasonable target for **all** repairs with
taking longer than this to repair should be explained or investigated.

The ideal target figure for this measure is 100% but some street lighting failures will be due to electricity supply faults which require a respo
Companies. Electricity Companies have a wide range of responsibilities, some of which must take priority over street lighting when resourc
mismatch in agreed National repair targets set by OFGEM. As a result, many of these electricity supply faults are not corrected within seve
high speed roads, where significant traffic management is necessary before a lighting fault can be investigated, the risks of undertaking an
the fault.

Return to report

23.2.01 Average time taken to repair (days)

The time taken to repair a fault depends on the availability of replacement parts, the general technical and diagnostic skills of personnel, av administration and fault reporting systems. The time to repair is defined so that a fault which is repaired on the day it is reported is counted figure one day.

The actual average time taken to repair faults is a measure of the efficiency of all aspects of the fault repair system.

Return to report

23.2.02 Public calls as a % of faults

Many authorities have a formal system for detecting and reporting street lighting faults, usually by having a “night scout” making regular pa impractical to have every light inspected every night and intervals of a week or more passes between patrols are common. During this time faults.

Recording the percentage of faults reported by the public is a measure of how demanding the public is in its expectations of the lighting se operation is.

Return to report

23.2.03 Public calls as a % of street lights

This measure uses faults reported by the public as a gauge of public tolerance of street lighting faults and the effectiveness of the authority

Return to report

23.3.01 % of street lights giving modern white light

Recent findings and research strongly suggest that full spectrum light sources have many advantages over monochromatic sources such a luminous efficacy of the SOX source as determined by current definitions.

The benefits of white light are recognised in the latest British Standards by allowing “S-Class” designs to be one grade lower than schemes

SOX technology is now obsolescent and therefore inappropriate for new installations. As all modern lamp technologies, except ordinary hi
rendition (R_a) of better than 0.6, the defined limit for “white” light, this measure is an indication of the modernity of the lighting sources used

Return to report

23.3.02 % of street lights which are LED

Total of LED luminaires including older luminaires fitted with LED retrofit gear trays as a percentage of street lighting stock (not signs nor b

Return to report

Availability

Availability in the context of these indicators is a summary of the means taken to detect faults and the success of applying that information.

24.3.01 Number of night inspections annually

The number of times an entire system is inspected in each year will influence the repair times. The number of columns each inspector can
which determines the length of hours of darkness, geographic considerations and the ratio of lights on roadways to those which can only b

The cost of making a given number of inspections will thus vary between authorities but it is still useful to record the number of inspections

Return to report

Financial

Financial measures give some indication of the efficiency of application of allocated funds and also the authority’s financial commitment to
lighting asset.

26.1.01 Actual capital investment as a % of annual depreciation (from AMP)

The street lighting asset will depreciate in value unless adequate capital investment is made to replace aged street lights.

The Planned Capital Investment level is the capital investment required to avoid a decline in the total asset value; it is derived from the Ass

The Actual Capital Investment expressed as a percentage of the Annual Depreciation is an indication of the authority's commitment and ab

Return to report

26.1.02 Depreciated Replacement Cost (DRC) as a % of Gross Replacement Cost (GRC)

It is important to establish by how much the asset is financially depreciating. This measure is an indication of depreciation.

The Gross Replacement Cost is the calculated overall cost of installing new equipment which would meet acceptable modern standards if

The existing street lighting asset has a residual value, the Depreciated Replacement Cost, (DRC), which is a fraction of the Gross Replace
Management Plan using criteria such as age and type of equipment.

Return to report

26.2.01 Average cost (client) of repairing routine faults (e.g. component replacement)

Within a single authority's area the average repair and inspection costs can be a useful measure of the effectiveness of repair techniques.
be possible provided factors such as the travelling distances are similar.

Return to report

26.2.02 Individual cost of night inspecting a street light per light

Night Scouting is an important way of detecting faults and initiating repairs quickly. The cost of this inspection is a good indication of an aut
best value for the money spent on scouting.

Return to report

26.2.03 Revenue allocation per street light excluding electricity costs

The Revenue budget allocation per street light is a measure of the funding allocated to maintaining and operating each street light. In insta authority will have to amend and redefine its policy and service levels to meet budgetary constraints.

Energy charges should be separately recorded to indicate the overall efficiency of the equipment being used and the effectiveness of ener

Return to report

26.2.04 Capital allocation per street light – replacement

A continuing capital investment is essential to maintain the quality of the lighting asset.

An inadequate capital allocation will lead to deteriorating stock as equipment will be kept in service beyond its economic service life.

Return to report

26.2.05 Total investment in infrastructure per street light

This indictor is a summation of both the average capital and revenue investment in the street lighting asset and shows the authority's comr adequately funded.

Return to report

26.3.02 Energy cost per street lamp

Total energy costs for street lighting only, divided by the number of street lights. In general, rural areas will have a lower cost per street lam

Return to report

Environmental

There is now growing awareness of the need to reduce energy consumption to conserve fossil fuel reserves and to reduce greenhouse ga design and operational techniques. Where it is not already required, lighting authorities are likely to have to demonstrate to government ho

There has been a sharp increase in energy costs in recent years and the trend is likely to continue. It is in every authority's interest to mini used is applied as efficiently as possible.

27.1.01 Average annual electricity consumption per street light (kwHrs)

Average energy consumption per street light will take account of the factors affecting the average load connection per street light but will al controlled and techniques such as variable lighting levels are suitably applied.

Return to report

27.3.01 Co2 emissions (kg) per street light

It is generally accepted that it is desirable to minimise carbon dioxide emissions and minimisation is likely to become a statutory requireme reduced by using energy from renewable sources.

Return to report

27.3.04 % of street lights dimmable

A return for the percentage of lamps which are dimmable is one measure of how an authority is managing it's energy consumption and will this will increase as LED use increases.

Return to report

27.3.03 Change in energy consumption from year to year (kWH)

Shows the percentage increase or decrease in energy used from previous year. There may be slight growth from adoption of new develop
with the rollout of LED luminaires.

Return to report