BOROUGH OF POOLE
HIGHWAY ASSET MANAGEMENT STRATEGY

Contents

1 Introduction

1.1 The Borough's purpose is to improve the quality of life for the people of Poole and is underpinned by the following priorities and values:

- Promoting the health and wellbeing of our population especially the most vulnerable
- Ensuring all children and young people have the chance to achieve their full potential
- Promoting Poole's economic growth and regeneration by attracting investment in business, housing and jobs for all
- Protecting and enhancing Poole's beautiful environment in a sustainable way so that it is a great place to live, work and play
- We put residents at the heart of everything we do
- We use public money to achieve the greatest benefit where it is needed most

1.2 Asset Management Objectives

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

Asset management enables use of available finance to maximise the life and serviceability of highway assets. It is most effective when clear objectives are identified for the short, medium and long term. Inventory and condition data can then be used to determine the investment required to support these objectives. The effects of underinvestment can also be highlighted.

Decisions can be made regarding interventions that could reduce the whole life costs of maintenance.

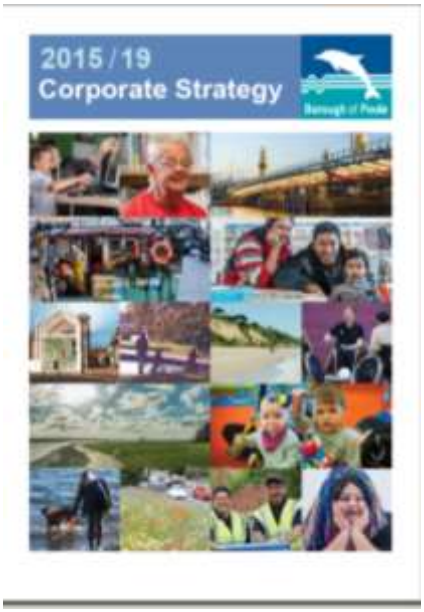
The process builds on current systems to form a continuous improvement framework.

This strategy details the long term approach for the management of Poole's highway asset and allows planning for the future.

The strategy will be used to inform the highway maintenance schemes that are to be implemented within the forward programme.

1.3 Alignment to Corporate Strategy

The Corporate Strategy 2015-2019 outlines the steps that will be taken by the Council to deliver their priorities and recognises the importance of the investment in the Borough's infrastructure. Three of these priorities are linked to Highway Asset Management.



- Promoting the health and wellbeing of our population especially the most vulnerable. It is essential that essential services can be accessed by or delivered to everyone.
- Promoting Poole's economic growth and regeneration by attracting investment in business, housing and jobs for all. Provision of an efficient transport system is key to this objective.
- Protecting and enhancing Poole's beautiful environment in a sustainable way so that it is a great place to live, work and play.

1.4 Asset Management framework

This strategy document together with the Policy will form the link between the Growth and Infrastructure Business Plan and individual service delivery plans.

The Highway Infrastructure Asset Management Guidance published by UK Roads Liaison Group (UKRLG) sets out a framework which describes all asset management activities and processes that are necessary to develop, document, implement and continually improve asset management practices. These activities and the approach to their delivery should be clearly documented and accessible to relevant stakeholders. The guidance recognises that individual authorities need to be flexible in the application of the framework to accommodate their own requirements.

The framework is presented in three parts:

Organisational Context – this describes the organisation and the environment in which local highway services are delivered. The context links the Council's vision and priorities with the asset management mission and objectives.

Asset Management Planning – This describes the key activities for asset management planning and defines the aspirations for the highway asset and the levels of service.

Implementation and Delivery – This describes the enablers that support implementation of asset management. Enablers are the activities which promote positive asset management.

The responsibility for delivering this framework sits with Growth and Infrastructure and Streetscene Services, part of Environmental and Consumer Protection Services

Stakeholder and Organisational Context

National Transport Policy

Local Transport Policy
Bournemouth, Poole and Dorset LTP 3 – Strategy Document 2011-2026

Corporate Vision
Borough of Poole Corporate Strategy 2015 -2019

Stakeholder Expectations
NHT surveys, Poole Peoples Opinion Survey Council members

Legal Constraints
Duty of Care

Financial Constraints
DfT Model, Incentive and Challenge Funding

Planning

Strategic

Asset Management Policy

Asset Management Strategy

Tactical

Asset Hierarchy
A road hierarchy to reflect the needs of all users

Asset Data and Information
Routine surveyed data collection to inform work programme

Performance Measures and Service Levels
Setting standards that communicate our service to stakeholders

Lifecycle Planning
Analysis and funding needs for the major asset types

Works Programme
Development based on prioritisation process

Implementation

Enablers

Leadership and Commitment

Asset Management Information Systems

Performance monitoring and benchmarking

Supply Chain management

Risk Management

Collaboration and Communication

Operations and Service Delivery

Routine and Cyclic Maintenance

Capital Programme and Project Delivery

Safety and Serviceability Inspections

Asset Management Improvement Action Plans

1.5 Asset Management Approach

The objective of asset management is to provide a basis on which future investment strategies can be considered.

The key themes that define an asset management approach are:

- **Strategic approach** – a systematic process taking a long-term view.
- **Whole life cost** – the life cycle of an asset is considered before investment decisions are taken.
- **Levels of Service** – providing defined levels of service and monitoring performance.
- **Optimisation** – maximising benefits by balancing competing demands.
- **Risk management** – identification and analysis of risks.
- **Resource allocation** – allocation of resources based on assessed needs.
- **User focus** - explicit consideration of stakeholder expectations.

Having an Asset Management approach to highway maintenance will be essential to the delivery of a good highway management service in the future and will influence the availability of centrally available funding. It is therefore important that we prepare and continually improve our asset management practices.

1.6 Performance Monitoring

Measuring performance allows a systematic approach to measure progress in the implementation of Asset Management.

A performance management framework will be established, with levels of service, performance measures and targets to support the delivery of the strategy, forward programme and continuous improvement. It will enable demonstration of effective use of funding in meeting levels of service and provide a link between the corporate vision, this strategy, levels of service and maintenance operations.

1.7 Levels of Service

Levels of service for asset groups can be defined alongside performance measures and targets. They are statements that describe the performance of highway assets.

The use of levels of service will allow the Authority to determine whether or not it is meeting user expectations.

They can be used to provide more detailed information to customers about what they can expect. They can also influence how priorities are assessed and funding allocated and how the effectiveness of investment is measured.

Levels of Service can be defined around the following headings:

A safe and serviceable highway network

A network that provides accessibility for communities

A network that enhances and promotes healthy lifestyles

A network that contributes to wider economic growth

A network that is appropriately maintained to conserve its integrity for current and future service users.

2 The Existing Asset

The following table outlines the quantity of major assets on the Council network:

Asset Type	Quantity	Condition
Carriageway	536 km	Asset condition is considered to be average.
Footway	900km (estimated)	A programme of surveys is being undertaken and planned for future years to gather footway inventory and condition data. This will be held alongside the date for carriageways.
Structures	109 structures	The Bridge Condition Indicator for the Highway Structure stock is 83.
Drainage	24,762 gullies	A gully cleaning programme is in operation. Information on drainage assets is collected when site specific investigation is carried out into particular drainage issues.
Street Lighting	17,536 columns	Following a programme of replacement the majority of lanterns are now LED. Approximately 50% of columns have bene replaced.
Traffic Signals	141 junctions and crossings	Traffic signal equipment is generally in good condition.

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Inventory and condition data on the major asset groups is held in industry specific databases. Inspection and survey schedules for each asset group take note of national guidance and statutory requirements.

The inspection schedules have been reviewed in line with Well Managed Infrastructure published in October 2016

The current inventory quality and coverage is excellent for certain areas such as carriageway, structures and street lighting, but poor in areas such as drainage. There is some data relating to street furniture with all bins and most benches now plotted.

A programme of work is underway to collect footway inventory and condition data.

The drainage inventory and condition data is updated as site specific surveys and investigations are carried out. Gully locations are currently being plotted when serviced as part of the new programme. It will take approximately 4 years to gather a full set of data.

3 Highway Asset Hierarchy

Currently the carriageway asset is managed according to a hierarchy as set out below:

Hierarchy Category	Category Name	Classification / Description
CARRIAGEWAYS		
1	Primary Network (Resilient Network)	A – Roads HGV / Freight Routes Minimum Winter Service Network Major Road Network (Proposed – DoT) Highways England Diversion Route from A31
2	Secondary Distributer Network	B – Roads Traffic Sensitive Streets (New Roads & Street Works Act 1991) Precautionary Winter Network Bus Routes
3	Link Roads & Local Access Roads	All other carriageways
FOOTWAYS		
1	Key Walking Routes	Busy shopping areas and main pedestrian routes e.g. High St, Ashley Road, etc.
2	Primary Walking Routes	Footways adjacent to the Primary Network (Resilient Network)
3	Secondary Walking Routes	Footways adjacent to Secondary Distributer Network
4	Other Walking Route	All other footways including link paths and Rights of Way
CYCLEWAYS		
1	National Cycleway Network	A series of traffic-free paths and quiet, on –road cycling and walking routes, that connect every major town and city
2	Strategic Cycle Network (BoP)	A service of traffic-free paths, on-road cycling and walking routes and tracks/trails that inter connect across the conurbation.
3	Cycle Trails	
BRIDLEWAY		
1	Bridleways	All bridleways

4 Strategies for Main Asset Groups

The highway network plays a key part in supporting of the Borough's economy and achieving the priorities contained in the Corporate Strategy 2015 – 2019:

- Promoting the health and wellbeing of our population especially the most vulnerable
- Ensuring all children and young people have the chance to achieve their full potential
- Promoting Poole's economic growth and regeneration by attracting investment in business, housing and jobs for all
- Protecting and enhancing Poole's beautiful environment in a sustainable way so that it is a great place to live, work and play

One the primary principles of the asset management practice adopted by Poole is the use of preventative maintenance measures, in particular the use of relatively low cost surfacing treatments on all parts of the network.

For each asset a brief description of the condition is provided along with a statement of the desired outcome this strategy seeks to achieve. The maintenance approach required to deliver each outcome is also described.

On road cycleways will be considered with the carriageway that they form part of. Shared use paths will be treated as footways and footpaths.

4.1 Carriageways

Carriageways form the majority of the asset and with a value of £720 million represents 65% of the overall asset value (excluding land).

Herbert Avenue after resurfacing

An overview of Poole's roads is shown below:

Length of network			
Class	Rural	Urban	Total
A	25.5 km	25 km	50.5 km
B	0	31.2 km	31.2 km
C	2.3km	57.1km	59.4km
Unclassified	15.5	380.1km	395.6 km
Total	47.9km	467.9km	536.7km

Current Condition

Asset condition is average. Currently, 19% of the overall network could be considered for maintenance.

In some cases the structure and use of the asset has evolved rather than been designed, consequently the structure is inconsistent and is not always fit for purpose. The unclassified network is at most risk of rapid deterioration. Typically these roads have little structure and consist of a thin layer of bituminous surfacing laid over a stone base.

There are some concerns over the future condition of this asset due to:

- Insufficiency of future budgets to maintain A and B roads.
- Use of older estate roads as bus routes increasing the rate of deterioration
- Minor roads, forming vital link for local communities being heavily used, but with little structure are at risk of rapid deterioration due to water ingress and overloading.

Desired outcome

Maintaining the carriageway condition with minimum whole life cost

Proposed Asset Strategy

The adoption of lifecycle planning will enable a baseline funding requirement to be established. Investment can then be targeted where it will return the greatest whole life cost.

Maintenance should be undertaken just before the onset of rapid deterioration and in advance of the requirement for structural treatments. Resurfacing and surface treatments are the only interventions desired. Implementing surface treatments will prolong the life of the structure by stopping the ingress of water.

A prioritised programme of work will be developed using the output of condition surveys combined with information from the highways inspectors, pothole data, and feedback from other stakeholders and engineers site visits.

Current and project traffic volumes and any likely changes in use, for example becoming part of a bus route, are considered especially when specifying materials.

Commonly three types of surface treatments are currently used on our Highway network: Surface Dressing, Micro Asphalt and Carriageway Sealing. Sites are selected from our prioritisation matrix and appropriate treatments applied.

Typically an evolved, thinly constructed residential road can expect to be surface dressed every 10-15 years with carriageway sealant also being considered as a mid-life upgrade option where applicable. Micro Asphalt is used on sites where Surface Treatment is not suitable such as locations with lots of turning movements or where the existing carriageway is too heavily worn for Surface Dressing to be effective.

Carriageway Sealant is used to arrest deterioration of the existing carriageway due to it being a means to rejuvenate the bitumen and prevent cracking, surface water ingress and oxidisation. This material lasts for up to 7 years before being re-applied or an alternative treatment is laid over it. This preventative measure is commonly targeted at residential roads that, aside from utility trench reinstatements, are in a generally acceptable condition.

4.2 Footways and Footpaths

The majority of footways are in urban areas and are bituminous. There are areas of flagged footways and modular footways particularly in the town and local shopping centres. These footways are essential for users to connect homes with businesses, school and other leisure facilities. For many these are their only links to travel and access public transport. The estimated value of the footways is £155 million. An estimate of the areas is shown below

Widened footway on Ashley road

Construction Type	Estimated Area - m²
Bituminous	1,873,592
Concrete	1,107
Slabs	10,467
Block Paving	33,442
Total	2,069,728

Current condition

The condition of footways is not routinely measured. Following routine inspection, only safety defects are repaired.

From data that is held, it is estimated that around 40% of bituminous footways could be considered for maintenance.

A programme of surveys has commenced to gather inventory and condition data. Over a period of 6 years the whole network will be surveyed.

There are some concerns over the future condition of this asset due to:

- Sufficiency of future budgets to maintain footway network.
- Limited condition data on a large part of the asset.
- Tree roots causing major structural damage to footways.
- Insufficiency of resource to develop the forward programme.

Desired outcome

Maintaining footway condition with minimum whole life cost

Proposed Asset Strategy

The adoption of lifecycle planning will enable a baseline funding requirements to be established.

A prioritised programme of work will be developed using the output from the Footway Maintenance Survey (FMS) and other data held. This gives each section of footway surveyed a red, amber, yellow or green rating together with a narrative on the type of defect. This information will be considered alongside other factors such as the location and level of use of the footway and how this supports delivery of the Council's strategic objectives.

Localised treatment will be considered first with longer lengths of resurfacing only undertaken when it can be economically justified.

For bituminous footways a programme of surface treatment will be established to protect against water ingress and localised rapid deterioration.

Any footways no longer used will be identified and routine maintenance reduced to minimum.

A more detailed survey of the pedestrianised High Street in Poole town centre has been undertaken to provide defect data to enable a programme of maintenance to be established and to be available to support any funding opportunities that may arise.

4.3 Structures

Towngate Bridge and Poole Station subway

The Council is responsible for a wide range of highway structures which are summarised below:

Type of Structure	Number
Bridge or culvert with span greater than 1.5m	37
Bridge or culvert with span less than 1.5m	9
Retaining Wall	20
Subway	26
Footbridge	10
Sign Gantry	7

The gross replacement value of these structures is £200 million

Current Condition

Detailed inventory and condition data is held for all highway structures.
Currently the Bridge condition indicator is 83 , which is considered to be very good.

Significant previous investment in the bridge stock has resulted in its current condition with a minimal backlog of work required which helps to reduce pressure on the routine maintenance budgets.

Desired outcome

The aim is to maintain the bridge stock in its overall current condition with appropriate interventions to deliver value for money.

Statutory duties will be met by undertaking routine inspections and maintenance.

Proposed Asset Strategy.

The principles set out in Well Managed Highway Infrastructure : A Code of Practice will be followed to prioritise inspections and works programmes.

A future aspiration is to use the CIPFA Structures Asset Management Planning Toolkit and the Bridge Management System to:

- Develop lifecycle planning and prioritisation
- Assist with asset valuation and financial planning
- Identify the appropriate level of funding for future maintenance.

It is anticipated that this toolkit will be made available through the Structures Asset Management Database.

4.4 Drainage

This asset group covers a wide range of features which assist in the Council's duty to safely drain the highway and meet its obligations under the Water Framework Directive.

Current Condition

Although asset data exists for the majority of highway gullies there is very little inventory or condition information held on the piped system and its outfalls.

The cost of collecting such data would be very high and cannot be justified. Data is collected on a site by site basis when flooding issues are investigated.

A risk based gully emptying regime is now in place with areas known to be vulnerable to blockages given greater priority and emptied more frequently. Data from historic cleaning and from new visits is being used to produce a flexible schedule of works based on gully condition e.g. empty, half full or full. Roads with full gullies will have frequencies increased and those which have empty gullies will have the frequency extended. Leaf fall and flood risk have also been taken into account.

Desired outcome

To meet statutory duties and maintain a safe, in flood risk terms, highway by continuing to assess and prioritise high risk flooding issues and programme them accordingly. The Council works in partnership with other organisations to deliver wider benefits where possible to manage flood risk.

A drainage priority matrix has been developed to assist with prioritising schemes that will deliver the best outcomes to reduce the number of residential and business properties at risk of flooding and result in fewer flooding related safety concerns.

Proposed Asset Strategy

To implement the use of the scheme prioritisation matrix to demonstrate that works are being delivered in the most cost effective manner.

As part of the design process for any major carriageway maintenance scheme an assessment to whether drainage asset data is required or repairs may be needed prior to the construction of a scheme. This will allow additional asset information to be captured and ensure a prolonged service life of the carriageway.

A risk based approach to the collection of highway drainage asset data will continue to be used.

4.5 Street Lighting

The Borough currently maintains 17,536 street lighting columns.

In July 2014 a business case for investment in the authority's street lighting stock was approved and in July 2015 a contract for an LED replacement project was let.

The works were broken down as follows:

Year 1 to 31 March 2016 – conversion of 8,640 lanterns to LED units
Year 2 to 31 March 2017 – replacement of 4,390 columns over 40 years old and associated lanterns
Year 3 to 31 March 2018 - replacement of 4,390 columns over 40 years old and associated lanterns

A newly installed lamp column with LED lantern

Current condition

On completion of the LED Replacement project all columns over 40 years old will have been replaced. All lanterns will have been converted to LED units except for those mounted on specialist high masts and listed heritage lighting.

At this time it is anticipated that 42% of the stock will be over 25 years old.

As part of this programme of work a central management system (CMS) has been installed. This will enable greater efficiencies in identifying faults and will help to reduce ongoing maintenance costs. As the replacement programme proceeds the asset inventory has been updated.

Our Mayrise street lighting inventory package has recently been upgraded to a hosted system which will provide greater frequency of critical software updates and improved management of our maintenance records. We have also purchased an adaptor which will allow the CMS system to be integrated with Mayrise, further enhancing our management of street lighting in Poole.

Customer satisfaction – NHT Survey

In the 2018 survey, 71% of residents in Poole who took part were satisfied with the street lighting service (KBI 25). This is higher than the national average of 65%.

Desired Outcome

The replacement programme will result in reduced energy savings of approximately 70%.

Additionally there will be reduced maintenance costs with the use of LED equipment and the CMS system which will allow us to more proactively maintain our lighting stock. This will help us to improve our service and maintain our customer satisfaction levels.

Proposed Asset Strategy

The principles of Well Managed Highways will be adopted.

On completion of the replacement programme, the HMEP lifecycle planning toolkit has been used to determine a programme of work required to maintain the stock with no columns over 40 years old dependent on levels of available funding.

4.6 Traffic Signals and ITS

Refurbished traffic signals at Hatchpond Junction

The Council is responsible for the Signals equipment listed below:

Type of Installation	Number
Signal controlled Junction	58
Toucan Crossing	20
Puffin Crossing	57
Pelican Crossings	6
Other ITS	Various VMS, RTI, CCTV

These installations perform an important role in managing traffic flow and improving road safety for all network users.

Current Condition

The equipment associated with traffic signals is in relatively good condition. Over the last few years there have been opportunities to replace equipment as part of wider initiatives for example the Local Sustainable Transport Fund programme of works.

Inspections of the equipment are carried out by the Council's maintenance contractor.

In recent years there have been opportunities to replace and upgrade equipment as part of wider improvement through initiatives such as the Local Sustainable Transport Fund awarded by the DfT for capital investment between 2012 and 2015 and with the DLEP Local Growth Deal Investment since 2016.

This capital investment has reduced the long term revenue maintenance burden. Through upgrading signal control systems to Extra Low Voltage (ELV) this requires less infrastructure such as ducting at the implementation stage. This in conjunction with the use of LED lamp

technology provides equipment that has a longer life cycle with lower maintenance costs and lower power consumption. This technology is being used at all new sites.

Desired Outcome

To maintain as a minimum the current condition and continue with the current maintenance regime and programme of planned equipment replacement. To reduce operating costs using ELV and LED technology.

Proposed Asset Strategy

To develop and implement good practice policies laid out in the Code of Practice for Management of Electronic Traffic Equipment.

A lifecycle planning process will be used to determine a cyclic programme for replacement.

Continued use of energy and cost saving technologies within the traffic signals assets. Schemes such as replacement of old-style halogen signal heads with LED lighting heads and traffic signal sites to be changed to using extra low voltage (ELV) will form part of the works programme.

5 Data and Information Management

Asset data is essential to allow informed decision making to support the asset strategies outlines for each asset group and to help to drive continuous improvement.

The Council routinely collects condition data relating to the highway network. The whole network is surveyed each year. The data is then analysed for deterioration.

Additionally a programme of footway condition surveys is being developed.

An asset information strategy has been developed to provide guidance for the use and storage of this data and to ensure that data required is always available.

The data is held in industry specific data bases

Carriageway and Footway – UKPMS and PMS provided by WDM
Structures – AMX provided by AMX Solutions
Street Lighting – Mayrise provided by Yotta
Traffic signals – Inview provided by Siemens
Street furniture - QGIS

In order that the data remains fit for purpose the collection processes and data management will be regularly reviewed and maintained.

6 Risk Management

Risk Management Background

Managing risk is an integral part of the management of the highway asset. All activities from identification and prioritisation of repair of defects to the establishment of budgets have risks associated with them.

Risk can be defined as 'the uncertainty surrounding events and their outcomes that may have a significant effect (either enhancing or inhibiting) on the achievement of the aims and objectives of the organisation, its operational performance, or ability to meet the expectations of stakeholders'.

The management of risk demands the identification and analysis of risks, by noting the likelihood of the risk occurring and the impact should it happen. Ranking the risks in such a way enables assessment of those issues that require particular action and prioritisation.

The objective of applying risk management within asset management is to identify the specific risks associated with the management and operation of the network and by doing so ensure that these are managed in a structured, appropriate and auditable manner.

The use of a robust system of risk management helps to:

- Deliver objectives more effectively
- Sustain service improvement by implementing cost effective actions
- Minimise unacceptable errors and serious incidents
- Develop positive risk awareness
- Uphold the Council's reputation

The Borough of Poole has adopted the following risk matrix for ranking its risks:

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

Risks are evaluated in terms of their significance (ie impact and probability), and in order to determine a risk ranking the two factors are multiplied together. It is this factor that identifies the overall seriousness of the risk and consequently the appropriateness of the action required.

An understanding of the following is essential to be able to manage risk appropriately:

- Which assets are critical to the functioning of the network
- What could affect the delivery of the required performance
- Level of funding
- Level of risk that is acceptable
- Options to mitigate risk deemed unacceptable.

Risk Management Strategy

The Council have in place a Risk Management Strategy which describes how they seek to identify, analyse and priorities the risks to achieving its objectives. The Council's risk culture is that these risks should be managed rather than avoided.

The Council is committed to ensuring that awareness and consideration of risks is a part of every day management processes.

The Growth and Infrastructure Business Plan includes a high level risk register that describes and ranks the more significant risks along with mitigation actions. It also includes performance indicators, future targets and agreed resources for delivering actions.

7 Sharing Good Practice

The Borough of Poole is committed to developing and implementing best practice and will make best use of the following forums to achieve this:

South West Highways Alliance
Highway Maintenance Efficiency Programme (HMEP)
South West Asset Managers Group
South West Bridge Conference
South West Lighting Engineers Group
South West Traffic Signals Group
South West Benchmarking Club
Chartered institute of Public Finance and Accountancy Highways Asset Management network (CIPFA HAMPNET)
UK Roads Board
UK Bridges Board
South West Region Winter Service group

8 Strategy Review

Effective from date	Sept 2018
Review date	Sept 2020
Review frequency	Two yearly