

PUBLIC



HIGHWAY INFRASTRUCTURE ASSET MANAGEMENT PLAN FOR STREET FURNITURE

JANUARY 2020

AN ELEMENT OF THE HIGHWAY INFRASTRUCTURE
ASSET MANAGEMENT SYSTEM

Document Information

Title	Highway Infrastructure Asset Management Plan for Street Furniture
Author:	Teri Ford/Bronwen Terry
Reviewed:	Julian Gould

Document Issue Status

Table of Amendments

NO	APPROVAL DATE	SECTION	DETAILS	AUTHOR
1	23/01/2020	All	First Issue	TF/BT
2	09/04/2021	All	See Review Schedule 1	BT

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

Contents

1. INTRODUCTION	4
2. SCOPE	4
3. ASSET CAUSES OF DETERIORATION.....	5
4. NATIONAL/LOCAL GUIDANCE AND RELATED DOCUMENTS	6
5. LEVELS OF SERVICE AND CRITICAL ASSET IDENTIFICATION.....	6
6. IDENTIFICATION OF NEW ASSETS – DATA CAPTURE	8
7. INVENTORY UPDATE AND ASSET CAPTURE.....	8
8. AS-BUILTS PROCESS AND DATA CAPTURE	9
9. INSPECTIONS AND SURVEYS	10
10. ASSET CONDITION AND ASSESSMENT	14
11. LIFECYCLE PLANNING.....	14
12. MAINTENANCE PROCESSES	15
13. BACKLOG.....	15
14. VALUE MANAGEMENT/ENGINEERING APPROACH.....	16
15. CROSS ASSET CONSIDERATION	16
16. FORWARD PROGRAMME	16
17. ANNUAL PROGRAMME	16
18. RISK REGISTER.....	16
19. COMPETENCY AND TRAINING.....	18
20. PERFORMANCE MANAGEMENT FRAMEWORK.....	19
21. COMMUNICATIONS.....	20
22. CLIMATE CHANGE ADAPTION AND CIVIL EMERGENCIES AND SEVERE WEATHER EMERGENCIES PLANS	20
23. HERITAGE AND CONSISTENCY WITH CHARACTER	21
24. CARBON REDUCTION.....	21
25. ENVIRONMENTAL IMPACT, NATURE CONSERVATION AND BIODIVERSITY	21
26. SUPPLY CHAIN COLLABORATION AND COLLABORATION IN SERVICE DELIVERY	21
27. DELIVERY	21
28. PROCUREMENT	21
29. OPERATIONAL POLICIES.....	21
30. APPENDICES	22

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

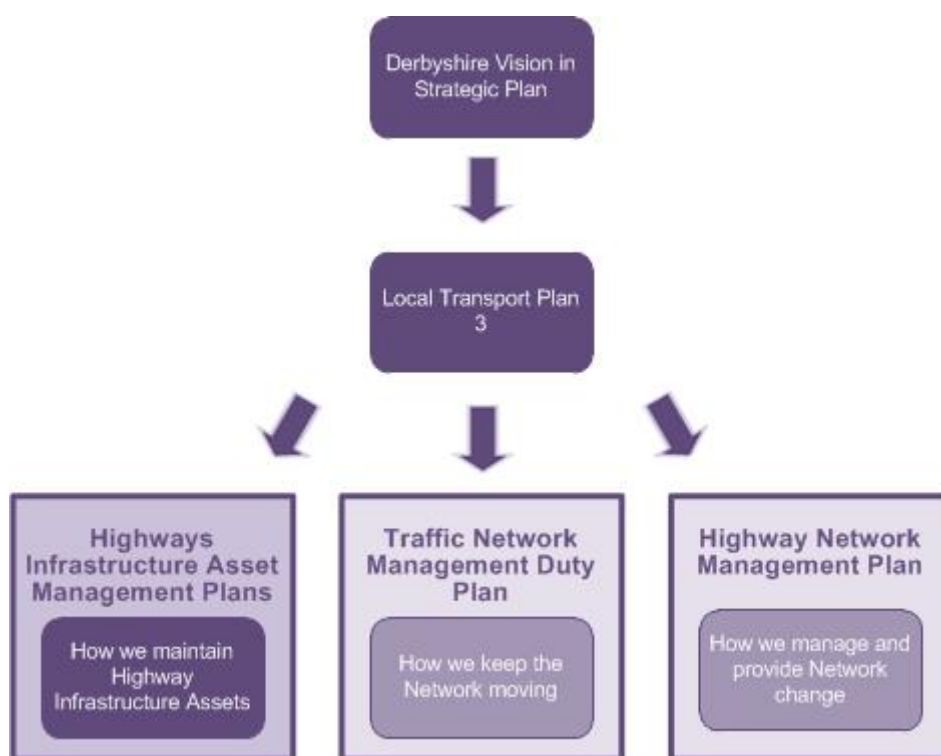
1. INTRODUCTION

This document provides the technical details that supports the Highways Infrastructure Asset Management Strategy and Plan and forms part of the Highways Infrastructure Asset Management suite of documents. It is a working document that provides the processes and information used internally by staff undertaking roles in delivery of service.

This document will recognise a number of Development Areas where Derbyshire has recognised potential improvements to the service they deliver. These development areas are aspirations only and will be reviewed on an annual basis to assess whether they are deliverable from a financial and resource perspective. A breakdown of these Development Areas can be found at the [Appendix A](#).

The following figure shows this document in context with other key documents in how the network is managed, maintained and changed:

Diagram 1: Plans and Policy Framework



2. SCOPE

This document covers the street furniture on the Derbyshire highway network that Derbyshire have a responsibility to maintain. Street furniture items can be categorised into either those that have been provided to improve traffic flow or road safety and those that have not. Street furniture that improves traffic flow or road safety includes traffic calming measures, anti-skid/high friction surfacing, pedestrian restraint systems, non-illuminated traffic signs, non-illuminated bollards and vehicle restraint systems. Other street furniture elements that do not improve traffic flow or road safety include grit bins, bus shelters, benches and tree grates/grills. The Well Managed Highway Infrastructure Code of Practice only provides information on those elements of street furniture which improve traffic flow or road safety, therefore this document only concerns itself with these elements. This

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

document does not include those street furniture elements maintained by third parties such as District/Parish/ Town councils, local land owners and businesses.

3. ASSET CAUSES OF DETERIORATION

The main causes of street furniture deterioration are itemised below

Table 1: Deterioration and Associated Defects

A. Signs and Bollards

Cause of Deterioration	Description	Typical Defects
Trees	Dirt and dust adhere to sign face due to leaf sap and other residues	Illegible, loss of reflectivity
Lack of cleaning	General dirt and dust accumulation from vehicular traffic	Illegible, loss of reflectivity
Impact usually vehicle damage	Bending of sign face, disconnection from posts	Destruction or severe impairment of the sign
Loading	Poor design of posts/wind loading	Leaning of sign and posts/sudden structural failure
Ageing	Assets approaching end of design life, affected by sunlight	Fading/sign illegible
Vandalism/ graffiti	Spray painted words, bending of sign face, damage to brackets	Sign illegible

B. Safety Fences

Cause of Deterioration	Description	Typical Defects
Loss of Tension	Bolts and tensioning components loosen over a period of time due to changes in temperature	Fence will not perform as designed under impact; deflection will be greater resulting in more severe injury or damage
Ageing/ weathering	Metal components will rust over a long period of time	Corrosion of fixings and beams and posts
Minor vehicle impact	Lesser impacts may not be recorded and therefore not repaired	Damaged beams, loose fixings, displaced post foundations
Vegetation growth	Summer growth of bushes and trees in front or to the rear of the fencing	Fence will not perform as designed under impact, working widths may be compromised
Ageing of anchor blocks, posts and foundations	Anchor splitting, post erosion and soil erosion of driven posts	Fence will not perform as designed under impact; deflection will be greater resulting in more severe injury or damage

C. Bus Shelters and Stops

Cause of Deterioration	Description	Typical Defects
Impact usually vehicle damage	Damage to structure of shelter	Bus shelter unsafe to use
Vandalism	Glass smashed	Bus shelter unsafe to use

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

4. NATIONAL/LOCAL GUIDANCE AND RELATED DOCUMENTS

The maintenance of street furniture is governed by a series of national/local documents and guidance including those items below:

- [Well-managed Highway Infrastructure: A Code of Practice 2016](#)
- [Traffic Signs Manuals](#)
- [Traffic Signs, Regulations and General Directions 2016](#)
- [Design and Maintenance Guidance for Local Authority Roads: Provision of Road Restraint Systems for Local Authorities](#)
- [Road Restraint Risk Assessment Process and TD19 Requirement for Road Restraint Systems](#)
- [Relevant Local Traffic Note](#)
- [Derbyshire County Council Highway Signs Environmental Code of Practice](#)
- [Derbyshire County Council Tourist Signing Policy and Procedures](#)
- [Derbyshire County Council Speed Management Protocol](#)
- [Derbyshire County Council Highway Network Management Plan](#)
- [Relevant sections of Design Manual for Roads and Bridges](#)
- [The Highways \(Road Humps\) Regulations 1999](#)
- [Road Traffic Regulation Act 1984](#)
- [Traffic Calming Act 1992](#)
- [Relevant Traffic Advisory Leaflets](#)
- [Derbyshire Highways Inspection Manual](#)

These documents are held on relevant website and EDRM systems. Links are provided above.

This document is a live document that will be reviewed biennially or whenever a significant change is required to any of the processes or procedures documented within it.

5. LEVELS OF SERVICE AND CRITICAL ASSET IDENTIFICATION

The Highways Infrastructure Asset Management Policy, Strategy and Plan have developed and documented the overarching Levels of Service derived from the authority's statutory duties, the national and regional guidance, stakeholder views, the management and mitigation of risk both to the service user and the authority and the volume and type of traffic using the network.

The Levels of Service that define the Council's approach to the management of the highway assets have been defined against the Network Hierarchy and the Resilient Network. These can be accessed [here](#). There are two levels of service in regards to safety on the network due to budgetary constraints. Levels of Service will be reviewed and amended regularly to take into account the budgetary position. The critical assets are defined as those on the resilient network. The table overleaf shows how the Levels of Service relate to the different network hierarchy levels.

DEVELOPMENT AREA 1: Calculating Levels of Service Following Asset Capture

Levels of Service percentage of services will be completed once full asset capture process is finished.

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

Table 2: Street Furniture (Traffic and Safety) Specific Levels of Service

	Street Furniture on Resilient Network and Critical Assets (x% of total assets See Development Area 1)	Network Hierarchies 1 to 7 inclusive (x% of total assets See Development Area 1)
	Level of Service 1	Level of Service 2
	Safety + Serviceability + Sustainability + Customer Service	Provision of safety related issues and Customer Service only
Objective	Comply with statutory obligations and to provide Network Safety and customer service RN to be prioritised to ensure availability and minimise costs where budgets allow	Comply with statutory obligations and to provide Network Safety and customer service
Standard	Comply with Code of Practice and apply asset management techniques to optimise whole life costs.	Comply with Code of Practice and apply asset management techniques to optimise whole life costs.
Impact/Risks/What it means	<p>Safety inspections and identified safety defects prioritised according to risk based approach.</p> <p>Vehicle Restraint Systems – conduct asset and condition survey, identify prioritised programme of preventative maintenance based on the risk identification process.</p> <p>Anti-skid Surfacing/Traffic Calming – update asset inventory and identify prioritised programme of preventative maintenance based on a risk based approach.</p> <p>Traffic Signs – annual reflectivity survey, with safety critical signs prioritised, reactive maintenance only and asset reviewed as part of improvements/safety inspections.</p> <p>Bollards/Pedestrian Barrier and all other street furniture – reactive maintenance only and asset reviewed as part of improvements/safety inspections.</p>	<p>Predominantly reactive maintenance</p> <p>Minimal intervention to prevent asset deterioration</p> <p>Safety inspections and identified safety defects prioritised according to risk based approach</p> <p>Likely increase in non-safety defects with potential for increase in third party insurance claims</p>

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

6. IDENTIFICATION OF NEW ASSETS – DATA CAPTURE

The following table highlights the ongoing process with regard to identifying new assets:

Table 3: Processes to Identify New Assets

Asset Type	Level of Service 1 and 2
Vehicle Restraint System High Friction Surfacing Pedestrian Guardrail Vertical Traffic Calming Measures Horizontal Traffic Calming Measures (to be retained by Highway Maintenance and included in HIAMP for Highways) Bus Shelters Non-illuminated Safety Critical Traffic Signs* Non-illuminated Non-Safety Critical Signs and Bollards	Level of Service 1 See Development Areas 2,3 ,5, 6 and 7 Level of Service 2 See Development Areas 4, 5, 6 and 7

* These have been identified through a risk based process determined through their importance and location on the network.

All data is to be recorded and stored in accordance with the [Data Management Strategy](#).

DEVELOPMENT AREA 2: Identification of Safety Critical Traffic Signs

Calculating the existing risk assessment of signs need further resource. This will be added to [Appendix B](#).

7. INVENTORY UPDATE AND ASSET CAPTURE

DEVELOPMENT AREA 3: Update Inventory on Resilient Network

- a) Complete driven asset capture survey of resilient network by end of 2021 (Highway Strategy). The process is in [Appendix C](#).
- b) Establish attributes to be captured both initially and at assessment stage and produce asset inventory capture guidance by end of 2021 shown in [Appendix C](#). This will be done by the asset owners for traffic signs, pedestrian guardrail, marker posts and non-illuminated bollards; high friction surfacing and traffic calming, bus shelters, vehicle restraint system, with input from existing attributes.
- c) First priority to capture vehicle restraint systems, high friction surfacing, speed limit signs and HGV restriction signs by end of 2021(Highway Strategy)
- d) Remainder of assets on resilient network to be captured, with safety specific assets first. It is unknown how long this element of the work will take to complete.

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

DEVELOPMENT AREA 4: Update Inventory on Level of Service 2

- a) Complete driven asset capture survey of non-resilient network by end of 2021 (Highway Strategy) The process is in [Appendix C](#).
- b) First priority to capture vehicle restraint systems, high friction surfacing, bus shelters, speed limit signs and HGV restriction signs by end of 2021 (Highway Strategy).
- c) Remainder of assets on non-resilient network to be captured, with safety specific assets first. It is unknown how long this element of the work will take to complete.

8. AS-BUILTS PROCESS AND DATA CAPTURE

Development Control Process

Where new assets are provided through the development control/planning process, the as-builts are to be provided by the developer and sent to each asset owner, who is responsible for entering them onto the Single Asset Management System as detailed in the Quality Management System. If the number of assets is small in number then this task is to be completed by the asset owner, however if the number of assets to be added is likely to be significant then this data capture process will be completed by the Highway Strategy team using the driven asset capture survey. See [Appendix C](#) for the detailed process. It is the asset owner's decision as to which process is to be adopted, if it is the latter process, then development control will include this item in the brief for the developer to contribute to the cost.

DEVELOPMENT AREA 5: Development Control Process

The Development Control process needs to ensure that developer schemes (S278 and S38) should produce an as built drawing which is checked by the Clerk of Works in construction and then sent to the asset owner for them to input. This task will be carried out by 1 person to complete all assets at the same time which is funded by developer control budget. Discussion with Development Control needs to occur to establish if fees need to be increased to cover this additional cost and to ensure the as built output meets the requirements of the single asset management system.

Internal Capital Schemes

Where new assets are provided by the internal design and construction services, the design brief is to include the production of an as-built/photograph of each new asset to the asset owner as detailed in the Quality Management System. If the number of new assets is small in number then the necessary update to the asset management system is to be completed by the asset owner, however if the number of new assets to be added to the database is likely to be significant then this data capture process will be completed by the Highway Strategy team using the driven asset capture survey. See [Appendix C](#) for the detailed process. It is the asset owner's decision as to which process is to be adopted. However, if it is to be the latter process, then a percentage of the overall scheme cost is to be allocated to the capital scheme to complete this task.

DEVELOPMENT AREA 6: Update Inventory – Internal Capital Schemes

This process needs developing and implementing.

Internal Revenue Schemes

Where ad-hoc new assets are provided by the asset owners' design team and internal construction services, it is the responsibility of the construction service team or the design team to provide the asset owner with an as built drawing and photo of the completed work so that the asset owner can update the asset database accordingly.

DEVELOPMENT AREA 7: Update Inventory – Internal Revenue Schemes

This process needs developing and implementing.

9. INSPECTIONS AND SURVEYS

Inspections provide the data required to support good asset management practice. The Well-managed Highway Infrastructure states in paragraphs B.5.12 and B.5.13 an inspection should be sufficient to:

- **Vehicle Restraint Systems** should be inspected and tested at intervals determined through risk assessment in respect of mounting height, protective treatment and integrity to ensure they remain fit for purpose. This should be done in line with relevant legislation.
- **Traffic signs:** are the most visible elements of the network, highly valued by users and contribute significantly to network serviceability through facilitating efficient and effective use of the network. They should be inspected at intervals determined through risk assessment according to their importance and location on the network. Traffic signs should be inspected both during daylight and at night time (RN only) to assess their retro-reflectivity. The results of this should influence the level of cleaning required. The inspection should identify signing that is inappropriate or no longer necessary and maybe a distraction to users or detrimental to the streetscene
- **Traffic calming:** should have been installed to improve network safety and their inspection arrangements should reflect this via risk assessment.

Risk assessments are to be undertaken to determine which assets will be routinely inspected for condition (all assets are inspected routinely for safety). The risk assessments will be provided in [Appendix D](#) once [Development Area 8](#) is completed, and the table below summarises which street furniture assets are inspected for condition:

Table 4: Asset Inspections

Assets inspected routinely for condition	Assets not inspected routinely for condition
Vehicle Restraint Systems	Pedestrian Guardrail
Traffic Signs – night time only on the RN	Traffic Calming – adhoc only
High Friction Surfacing	Bollards

All inspections must be carried out in a safe manner so as not to endanger staff or the public. All operations should have a current risk assessment and all documents are available on either the internal website or in EDRM as appropriate. All data is to be recorded and stored in accordance with the [Data Management Strategy](#).

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

DEVELOPMENT AREA 8: Condition Risk Assessments

Condition risk assessments need to be written and communicated to relevant staff members. These will be added to [Appendix D](#).

Routine Surveillance

This is undertaken via highway infrastructure asset safety inspections which are undertaken by Highway Inspectors and are designed to identify, assess, record and prioritise the repair of identified safety defects which may present an immediate danger or significant inconvenience to users of the highway. The information detailing the processes involved in completing safety inspections and the risk based approach to safety defect assessment and repair are detailed in the [Highway Infrastructure Asset Safety Inspections Manual](#).

Initial Asset Identification Inspection – Data Capture

At the point where a new street furniture asset has been provided it is the responsibility of the following to inspect the asset to ensure that it meets the design criteria:

- Externally provided schemes – the construction clerk of works
- Internally provided capital schemes – the designer, however the asset owner is to inspect all safety critical assets
- Internally provided revenue schemes – construction services technician.

Where the inspection is conducted on site the procedure in [Appendix C](#) is to be followed. Where the inspection is conducted by the driven video capture system the procedures in [Appendix C](#) to be followed.

DEVELOPMENT AREA 9: Inspection Interval

High friction surfacing is to be put into a programme for a condition inspection dependent on its location within the network hierarchy, this is discussed further along with the interval for re-inspection in the HIAM Part 2 for Highways.

Vehicle restraint systems are risk assessed, against their location and put into a priority programme for a condition inspection, the re-inspection interval is determined through the manufacturer's guidance.

Enquiry/Adhoc Inspection

As a result of a highway safety inspection or due to a customer enquiry, an adhoc inspection may be undertaken of any street furniture type. The asset information for any safety street furniture asset is provided to the traffic and safety team for assessment to establish if the asset is still required, and if it requires replacement/repair.

The following document should be followed and can be found in [Appendix C](#):

- DCC Street Furniture Management & Maintenance Document "Procedures for dealing with calls reporting street furniture problems"

Condition Inspection

As part of either the asset inventory capture survey or the routine condition inspection, a condition of the asset is determined and the condition rated as either, good, fair or poor. The

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

criteria for these are as follows: (the level of detail will change depending on what the asset inventory capture survey guidance stipulates it will record).

Table 5: Condition Criteria

Asset Type	Condition Inspection Method	Adequate Condition	Inadequate Condition
Non-Illuminated Traffic Sign	Asset Inventory Capture Survey	Legible/visible message to relevant road users Damage: that does not affect its structural integrity or is not a danger to road users Meets current regulations/routing requirements	Obscured message: sign is dirty, obscured by trees/other objects, turned to angle where it cannot be read, vandalised, non-reflective Damage: bent/leaning/corroded/missing Obsolete/Superseded: no longer to current regulations/required
Non-Illuminated Bollard	Asset Inventory Capture Survey	Damage: superficial damage that does not affect its structural integrity/ performance or is not a danger to road users	Damage: bent/leaning/corroded/missing/non-reflective
Vehicle Restraint System	Asset Inventory Capture Survey and Individual Condition Inspection	Damage: superficial damage that does not affect its structural integrity/ performance or is not a danger to road users	Damage: particularly to the rear of the fence/mounting, loss of tension Corrosion: including fence and bolts Post deterioration: including loosening of foundation and rotting of timber posts Reduction in clearance: in front/behind safety fence including obstructions Missing posts and bolts Obsolete/Superseded: no longer required
Pedestrian Restraint System	Asset Inventory Capture System	Damage: superficial damage that does not affect its structural integrity/ performance or is not a danger to road users.	Damage: particularly to the rear of the fence/mounting, loss of tension Corrosion: including fence and bolts Post deterioration: including loosening of foundation and rotting of timber posts Reduction in clearance: in front/behind safety fence including obstructions Missing posts and bolts Obsolete/Superseded: no longer required
Traffic Calming	Initial Engineer Visual Inspection	Initial engineer visual inspection and where parameters are met escalation to the lab for further testing.	In excess of specified height/ramp requirements?
High Friction Surfacing	Initial Engineer Visual Inspection	Initial engineer visual inspection and add to SCRIM programme if within relevant parameters.	Skid resistance: does not meet the required skid resistance criteria Obsolete/Superseded: no longer required

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

DEVELOPMENT AREA 10: Vehicle Restraint System Condition Inspection

Derbyshire Traffic and Safety team are all trained in Vehicle Restraint Systems and are now an intelligent client. A budget is to be allocated to procure an external company to start inspecting this asset.

All condition data from any inspection should be recorded and stored within the SAMS computer program. Data is controlled in accordance with the [Data Management Strategy](#).

DEVELOPMENT AREA 11: Night-time Safety Inspection

Derbyshire do not currently carry out night-time inspections to assess the reflectivity condition of both non illuminated road signs and non-illuminated bollards due to financial constraints. Consideration may be given to carrying out these inspections if the financial situation improves in the future.

Bus Shelters are 95% owned, inspected and maintained by District Council. The limited number Derbyshire own are inspected on monthly cleaning schedules and any defects identified for repair. If a third party reports damage to a bus shelter to Derbyshire a defect is raised and managed internally or passed to the relevant owner.

10. ASSET CONDITION AND ASSESSMENT

The table below details the asset assessment and possible outcomes for each asset type:

Table 6: Assessment Criteria

Asset Type	Assessment Criteria	Possible Outcomes
Non-Illuminated Traffic Sign	<ul style="list-style-type: none"> Desktop exercise to establish if it is still required in current context of: sign type, routing requirements, regulations, location and network hierarchy Signs to be tagged for removal with an expiry date (slippery road signs/new road layout/new speed limit etc) Program to be run annually to provide works programme Condition assessment against criteria outlined in Table 5 	Replacement/ Removal/ Cleaning
Non-Illuminated Bollard	<ul style="list-style-type: none"> Condition assessment against criteria outlined in Table 5 	Replacement/ Removal/ Cleaning
Vehicle Restraint System	<ul style="list-style-type: none"> Desktop exercise to establish if still required following guidance in "Provision of Road Restraint Systems on Local Authority Roads" Condition assessment in accordance with manufacturer's guidelines 	Replacement/ Removal/ Repair
Pedestrian Restraint System	<ul style="list-style-type: none"> Desktop exercise to establish if still required in current context of: routing requirements, regulations, location and network hierarchy Condition assessment against criteria outlined in Table 5 	Replacement/ Removal/ Repair
Traffic Calming	<ul style="list-style-type: none"> Desktop exercise to establish if still required. See Development Area 12. Analysis of recent road traffic collision data in conjunction with pre and post traffic speed data where available Condition assessment against what guidelines Crude assessment to see if t/c feature is in excess of 90m, if so refer for further testing to lab. Criteria if feature exceeds 100mm then rectify (Development area: of approximate cost per year to do a couple of these) 	Removal/Repair
High Friction Surfacing	<ul style="list-style-type: none"> Desktop exercise to establish if: <ul style="list-style-type: none"> extents can be reduced in accordance with new Derbyshire departure from standard (for those locations on approaches to a pedestrian crossing within a 30mph speed limit, a reduction of the length from 50metres to the end of the zigzags – need study from Road Safety for those locations where this has been undertaken to see if it has affected safety if it is still required in current context of: routing requirements, regulations, location and network hierarchy Assessment of the SCRIM score against the intervention criteria outlined in Table 5 	Allow to return to acceptable friction levels for normal surfacing Add to programme of resurfacing works

DEVELOPMENT AREA 12: Development of Desktop Exercises to Enable Assessment of Assets

Desktop exercises to be created to support assessment of our assets.

11. LIFECYCLE PLANNING

No lifecycle planning is completed for non-illuminated signs, non-illuminated bollards, pedestrian restraint systems and traffic calming assets for a number of reasons, these include:

- the asset information held for street furniture does not include a construction date

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

- the asset lifecycles can vary considerably in length due to an assets use and its location

However, lifecycle planning is completed for high friction surfacing and this is included in the Highways Part 2 document.

Once Development Areas [3](#) and [4](#) are completed it will be possible to calculate Gross Replacement Costs and Depreciated Replacement Costs.

DEVELOPMENT AREA 13: Vehicle Restraint System Lifecycle Planning

This is to be introduced once the initial condition inspection has been undertaken. It will be bespoke to each location and dependent on the manufacturer's guidance.

12. MAINTENANCE PROCESSES

There are three types of maintenance works undertaken:

- (a) **Reactive maintenance**, is attending to defects and other safety matters that require urgent action arising from inspections or user information in accordance with the locally determined levels of response. Before any works are commissioned the Traffic and Safety team assess the need for the asset to remain. Reactive Maintenance Process Maps can be found in the [Reactive Maintenance Teams Operational Manual](#).
- (b) **Routine or cyclic maintenance** is a do-minimum response to keep the asset in a steady state. Typical minor works include:
 - Cleaning of sign faces on the resilient network initially
 - Vegetation removal
 - Graffiti removal
 - Painting of supports and frames when required to prolong the life of the asset
 - Retightening of bands, brackets, bolts and fittingsHowever, currently there are no cyclic maintenance activities undertaken on these assets
- (c) **Planned or programmed works**, this follows the condition assessment or is completed during an improvement scheme in which the existing assets are assessed to establish if they are still required.

DEVELOPMENT AREA 14: Development of Planned Works Process Maps

Planned works process maps are currently under review and need to be developed in the future.

13. BACKLOG

As we do not do lifecycle planning on these assets, it is not possible to estimate the amount of backlog work that could exist on it.

Derbyshire should be able to estimate the backlog to provide the development areas identified which could be split into short-term (1 to 2 years), medium-term (3 to 10 years) and longer-term (11 to 20 years) investments after Development Areas [3](#) and [4](#) are completed.

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

Additionally it is assumed that annually the following requires funding:

- Replacement of some asset stock of non-illuminated signs, non-illuminated bollards, pedestrian restraint systems. This will be paid for mainly through revenue funding.
- Annual cleaning costs.
- Vegetation removal and other defects rectified through the safety inspection manual process.
- Sign removal programme (slippery road signs etc).

Unlike other assets we do not carry out cross asset assessment on street furniture assets other than considering decluttering when signs are damaged and considered for replacement.

14. VALUE MANAGEMENT/ENGINEERING APPROACH

DEVELOPMENT AREA 15: Adopting a Value Management/engineering Approach

Derbyshire would like to adopt a value management approach where by we take into account the benefits of undertaking maintenance and the risks of not undertaking maintenance which then provides a prioritised list for Value Engineering to ensure we choose the optimal solution to ensure maintenance need is met while reducing waste and inefficiencies.

15. CROSS ASSET CONSIDERATION

When considering financial requirements Derbyshire will consider allocating budget to those assets that require more financial input regardless of where the money was originally allocated.

16. FORWARD PROGRAMME

DEVELOPMENT AREA 16: Prioritised Maintenance Programme

A prioritised programme of maintenance will be identified for vehicle restraint systems, traffic calming and high friction surfacing based on its existing condition and an assessment as to whether it is still required. For all remaining street furniture assets, maintenance is completed on a purely reactive basis.

The prioritisation of the schemes identified within the forward programme will be determined annually by available budget, condition and risk.

17. ANNUAL PROGRAMME

The annual programme will generally be the first year of the forward programme in regard to vehicle restraint systems, traffic calming and high friction surfacing. All other assets are reactive maintenance.

18. RISK REGISTER

A risk can be defined as an uncertain event which influences the desired performance of an asset. A risk factor is the produce of the severity of an event and the likelihood of its occurrence. Derbyshire County Council has a well-established risk management process that overarches all service areas.

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

The risk management process concentrates on four main issues, by applying these risk management principles, the council will be able to more appropriately target resources and to deliver services and projects in a way that ensures the council's overall exposure to risk is minimised.

The following risk register identifies risks and appropriate mitigation measures.

TABLE 7: RISK REGISTERS

A. Strategic Risks

Identify Risks	Evaluate Risk	Manage Risk
Understanding the Asset	The absence of asset information compromises the ability to provide lifecycle planning and consider budgetary allocations	Identify the location of street furniture to enable lifecycle planning and budgetary allocation.
Budget Concerns	The absence of relevant finances will mean signing will go missing or deteriorate compromising the road safety of road users and damage the infrastructure surrounding the highway	Budget management and apply for additional funding where feasible Lifecycle planning Budget Management
Changes to Traffic	Changes to traffic patterns and the usage of road may alter network prioritisation of asset stock	Pre-empt network changes or travel patterns at the design and planning stages
Climate Change	Increase in the rate of replacement of existing assets	Analysis of existing asset stock to establish the need for the asset Rationalisation exercise of assets to consider future asset reduction

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

B. Operational Risks

Identify Risks	Evaluate Risk	Manage Risk
Increase to asset stock due to future road safety improvements or due to adoption of additional highway infrastructure through development schemes.	Increase in asset stock while revenue funding is decreasing. This will incur net gain on maintenance	Analysis of existing asset stock to establish the need for the asset. Rationalisation exercise of assets to consider future asset reduction.
Deterioration resulting in structural failure of the asset	Increase in the rate of replacement of existing assets	Analysis of existing asset stock to establish the need for the asset. Rationalisation exercise of assets to consider future asset reduction.
Changes to national regulations which may lead to requirements for additional asset stock	Increase in the rate of replacement of existing assets	Analysis of existing asset stock to establish the need for the asset. Rationalisation exercise of assets to consider future asset reduction. Consider adopting local criteria to deviate away from agreed national standards.
Changes to national specifications or standards or departing from European standards (e.g. Brexit)	Increase in the rate of replacement of existing assets. Use of inferior materials which don't perform.	Analysis of existing asset stock to establish the need for the asset. Rationalisation exercise of assets to consider future asset reduction. Consider adopting local criteria to deviate away from agreed national standards. Adopt local criteria for the specification of materials

19. COMPETENCY AND TRAINING

Derbyshire County Council has an internal competency specification for all highway inspectors and this is outlined in the [Highways Infrastructure Asset Safety Inspection Manual](#).

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

All inspection procedures, toolbox talks and risk assessments are reviewed, updated and then trained on an annual basis. The departmental code of practice is reviewed on a five yearly basis.

All external contractors have a minimum specification for competency when undertaking condition inspections. These can vary according to the type of work to be carried out.

All competency and training requirements are summarised within the skills matrix in [Appendix E](#) (See Development Area 18) and managed through the Derbyshire County Council MyPlan system.

DEVELOPMENT AREA 17: Enumerator Training

Training will be developed and delivered for key staff to be able to undertake the driven asset capture survey and data capture process.

DEVELOPMENT AREA 18: Skills Matrix

A skills matrix across the Highways department is required. See [Appendix E](#).

20. PERFORMANCE MANAGEMENT FRAMEWORK

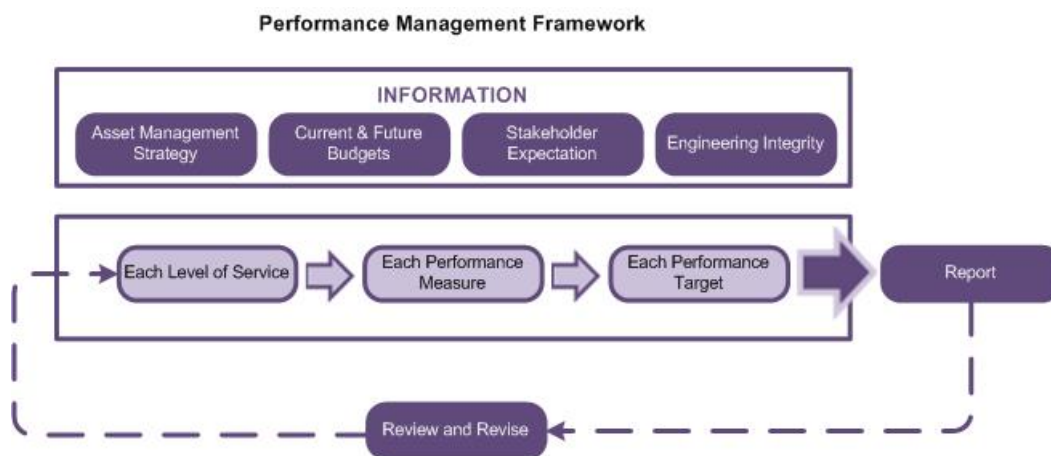
The Performance Framework is used as a tool to inform, measure, review and derive the management and decision-making processes associated with implementing corporate changes and day-to-day decisions relating to the delivery of services, linked to the network hierarchy. The figure below shows the performance management framework.

It is not intended that the Council creates a host of measurements that serve little purpose other than to demonstrate the presence of a framework. At any level, external-facing performance measures should show how well services are being delivered and whether objectives are being achieved.

Internally, a range of input and output measures may be used for monitoring purposes but the key indicators should reflect performance in key service areas to inform senior managers as well as corporate and stakeholders of the service as a whole.

The Performance Management Framework diagram is shown overleaf:

Diagram 2: Performance Management Framework



If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

The table below shows the performance measures and targets for carriageway.

Table 8: Performance Measures

Performance Measure	Level of Service 1 and 2 Targets
Safety Performance Measures	
% of 32 hour defects repaired in target time	90%
% of 9 day defects repaired within target time	90%
% of 28 day defects repaired within target time	80%
Average traffic and safety assessment time for all safety street furniture with the exception of high friction surfacing and vehicle restraint systems	20 working days (Level of Service 1 Resilient Network) 30 working days (Level of Service 2 Network Hierarchy 1 – 7)
Average assessment and repair time for vehicle restraint systems (Martins)	6 months
Average construction repair time for all other non-safety critical signs/ bollards	3 months
Serviceability Performance Measures	
Cleaning targets	3 months
Sustainability Performance Measures	
% as-builts provided	100%
% asset inventory updated	100%
Backlog	<u>See section 13: Backlog</u>
Customer Service Performance Measure	
NHT % of residents satisfied with the condition of road markings HMBI 03	56%
NHT % of residents satisfied with the number of bus stops PTBI 02	71%
NHT % of residents satisfied with the state of bus stops	62%

21. COMMUNICATIONS

This is covered within the separate [Highways Communications Plan](#).

22. CLIMATE CHANGE ADAPTION AND CIVIL EMERGENCIES AND SEVERE WEATHER EMERGENCIES PLANS

All plans relating to this area of work are included on the [Derbyshire Prepared](#) website and Derbyshire have taken or are taking action against all of the recommendations raised in the 2009 3 Counties Alliance Partnership The Effects of Climate Change on 3CAP's Highway Network Policies and Standards.

The corporate climate change manifesto can be found [here](#).

If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

23. HERITAGE AND CONSISTENCY WITH CHARACTER

Generic information that will relate to all assets and crosses all HIAM Part 2 documents and therefore included in the [Highway Network Management Plan](#).

24. CARBON REDUCTION

Generic information that will relate to all assets and crosses all HIAM Part 2 documents and therefore are included in the corporate [Carbon Reduction Policy](#).

25. ENVIRONMENTAL IMPACT, NATURE CONSERVATION AND BIODIVERSITY

Generic information that will relate to all assets and crosses all HIAM Part 2 documents and therefore are included in the [Highway Network Management Plan](#).

26. SUPPLY CHAIN COLLABORATION AND COLLABORATION IN SERVICE DELIVERY

Framework agreements are in place for the procurement of traffic sign posts and traffic signs.

DEVELOPMENT AREA 19: Additional Contractor Frameworks

Consideration needs to be given to creating frameworks for vehicle restraint systems, anti-skid surfacing and traffic calming.

27. DELIVERY

Delivery is primarily completed through the Derbyshire County Council Construction Services. The construction process is currently under review.

28. PROCUREMENT

Delivery of all works pertaining to non-illuminated signs, non-illuminated bollards, pedestrian restraint systems, high friction surfacing and traffic calming will be delivered by Derbyshire County Council contracting services.

All construction works pertaining to vehicle restraint systems will be delivered by a framework contract.

DEVELOPMENT AREA 20: Creating road materials policy

Derbyshire would like to create a Road Materials Policy which states what should be used on different sections of the hierarchy. This should be referenced in all procurement documents.

29. OPERATIONAL POLICIES

Operational Policies are covered in the [Highway Network Management Plan](#).

30. APPENDICES

APPENDIX A: DEVELOPMENT AREA SUMMARY

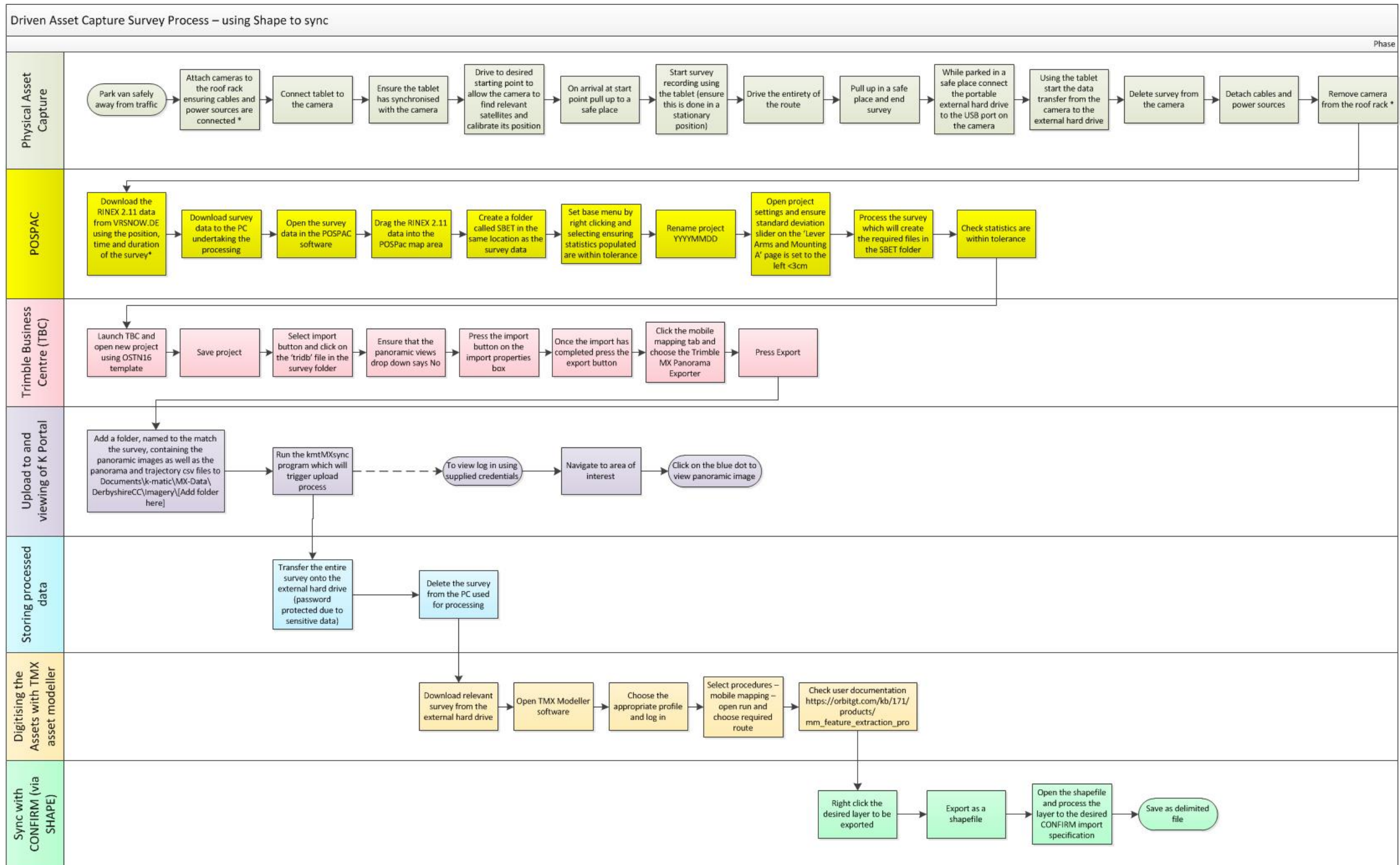
Table 9: Development Area Summary

Development Area Number	Development Area Title	Action Taken
1	Calculating levels of service following asset capture	
2	Identification of safety critical traffic signs	
3	Update inventory on resilient network	
4	Update inventory on level of service 2	
5	Development control processes	
6	Update inventory – internal capital schemes	
7	Update inventory – internal revenue schemes	
8	Condition risk assessments	
9	High Friction Surfacing inspections	
10	Vehicle restraint system condition inspections	
11	Night-time safety inspections	
12	Development of desktop exercises to enable assessment of assets	
13	Vehicle Restraint System Lifecycle Planning	
14	Developing Planned Works Process Maps	
15	Adopting a value management/engineering approach	
16	Prioritised Maintenance Programme	
17	Enumerator Training	
18	Creation of a skills matrix	
19	Additional Contractor Frameworks	
20	Creation of Road Materials Policy	

APPENDIX B: IDENTIFICATION OF SAFETY CRITICAL TRAFFIC SIGNS

This will be written as part of [Development Area 2](#).

APPENDIX C: PROCESS MAPS



If this document is printed or copied it must be treated as an uncontrolled version as it will only be correct at the dates published in the document when it was printed or copied.

APPENDIX D: RISK ASSESSMENT TO DETERMINE CONDITION INSPECTIONS

These will be written as part of [Development Area 8](#).

APPENDIX E: SKILLS MATRIX

This will be written as part of [Development Area 18](#).