PUBLIC

HIGHWAY INFRASTRUCTURE ASSET MANAGEMENT PLAN FOR DRAINAGE

JANUARY 2020

AN ELEMENT OF THE HIGHWAY INFRASTRUCTURE ASSET MANAGEMENT SYSTEM

Document Information

Title Highway Infrastructure Asset Management Plan for Drainage
Author: Teri Ford/Bronwen Terry
Reviewed: Glyn Dutton

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
3	26/01/2022	All	See Review Schedule 2	BT
4	16/10/2023	All	See Review Schedule 3	BT

Contents

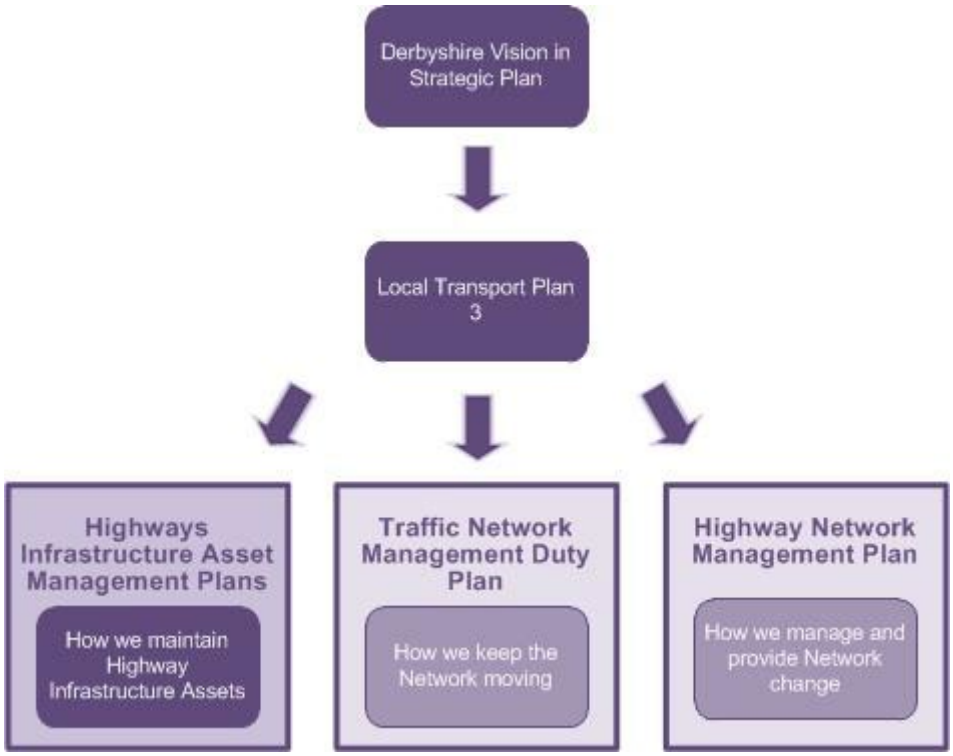
1. INTRODUCTION

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 in 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 drainage assets on the Derbyshire highway network that Derbyshire have a responsibility to maintain. Highway drainage is provided to safely and efficiently capture surface water run-off and convey it away from the highway to alleviate flooding and protect metalled areas. Highway drainage includes the following:

- any drainage assets that convey water courses under the highway and this is managed by the Structures section
- any drainage assets that convey highway water away from the highway and this includes gullies, highway drains, ditches, grips, drainage pipes, connections, manholes, catchpits, headwalls, trash grids, soakaways, interceptors, swales,

balancing ponds, pumping stations, kerb drainage, linear drainage, soughs, sustainable drainage systems (SuDS) and drainage channels.

- all drainage assets ≥ 900mm will continue to be maintained by Structures, with the one's <900 to be maintained by Highways.

This document, however does not include those drainage elements that are maintained by third parties such as Utilities, Highways England, the Environment Agency, Canal and River Trust, local land owners and businesses.

Cross footway channels and drains that are used to convey roof water from properties, from a downpipe, into the carriageway channel is the responsibility of the owner(s) of the down-pipe. Should defects be noted during any inspection regime then these will be brought to the attention of the property owner(s) who will be required to undertake the necessary repairs. In the event of a presence of a safety risk Derbyshire would take action to reduce the risk and recharge where feasible.

Ditches are not generally maintained by the highway authority and are usually the responsibility of the adjoining landowners. However, there are some drainage ditches which are maintained by the Highway Authority, which are undertaken on a risk based approach. Landowners who are advised to maintain their ditches, to prevent flooding, may be made aware of any ecological interest associated with their ditches and given advice on how to maintain ditches and wildlife together plus any respective contact details for specific advice.

This document does not include those responsibilities and duties required by the Lead Local Flood Authority, these are conducted by the Flood Risk Management team. Further details of their work can be found on Derbyshire website. However, this team liaise closely with both the Highways Maintenance and Structures sections. The Flood Risk Management team has a duty under Section 21 of the Floods and Water Management Act 2010 to maintain an asset register. The Asset register will contain features which are likely to have a significant effect on flood risk. The process to create this register is currently underway.

The Well Managed Highway Infrastructure states in Recommendation 22:

“Drainage assets should be maintained in good working order to reduce the threat and scale of flooding. Particular attention should be paid to locations known to be prone to problems, so that drainage systems operate close to their designed efficiency.

3. ASSET CAUSES OF DETERIORATION

The main causes of drainage assets deterioration are itemised below:

Table 1: Deterioration and Associated Defects

A. Gullies/Manholes/Drainage/Kerbs

Cause of Deterioration	Description	Typical Defects
Wear and tear/ ageing	Action of vehicular traffic and weathering	Defective ironworks
Blockage	Combination of exposure of the site and type and volume of the run-off	Standing Water
Theft	Theft of over ground assets	Missing assets

B. Underground Drainage Assets

Cause of Deterioration	Description	Typical Defects
Wear and tear/ ageing	Action of vehicular traffic, ground disturbance, root ingress and poor cyclic maintenance	Difficult to observe/ predict or maintain but can include cracks, collapses and displaced joints.
Intrusion	Intrusion from tree roots and utilities	Blocked or broken connections/ systems.

4. NATIONAL/LOCAL GUIDANCE AND RELATED DOCUMENTS

The maintenance of drainage assets are governed by a series of national documents and guidance including:

- Well-managed Highway Infrastructure: A Code of Practice 2016
- Guidance on the Management of Highways Drainage Assets 2012
- The Highways Act 1980
- The SuDS Manual (CIRIA 753)
- Flood Risk Regulations 2009
- Flood and Water Management Act 2010
- National Planning Policy Framework

These documents are held online and 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.

Derbyshire County Council has also produced a series of local documents:

- Preliminary Flood Risk assessment May 2011 (including 2017 update)

- Local Flood Risk Management Strategy
- Flood Contingency Plan
- Culvert Policy
- A series of flooding guidance notes

These documents are all available either on the Derbyshire County Council website or on the Derbyshire Resilience website. Links are provided above.

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, 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 drainage assets have been defined against the Network Hierarchy and the Resilient Network. These can be accessed online 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 drainage critical assets will defined as part of Development Area 1. The table 2 shows how the two levels of service relate to the network levels. The drainage critical assets are defined as those drainage assets which produce a significant flood risk that would pose a risk to life, property, infrastructure or provide an impassable road for more than 2 hours. It has been split into those assets that are the responsibility of the highway division, and those assets that are the responsibility of another body. The register has been derived from risk assess scoring those assets which have been identified through a combination of the following areas:

- Previous historical flooding locations
- Environment Agency surface water flood map
- Flooding enquiries
- Local knowledge
- Located on the resilient network

The register is held within the asset management system and the drainage critical assets register and methodology to define will be added to Appendix B once Development Area 1 is completed

DEVELOPMENT AREA 1: Drainage Critical Assets

Establish the definition, methodology, criteria, risk assessment process to define the critical assets Guidance notes and the asset register are currently under review. The table below shows how the Levels of Service relate to the different network hierarchy levels.

Table 2: Drainage Specific Levels of Service

Drainage on Resilient Network or Critical Assets Register

(To be completed as part of Development Area 1)

Level of Service 1

Safety + Serviceability + Sustainability + Customer Service

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

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:

Programme of inspections and determination of condition.

Lifecycle planning and programme to tackle backlog of improvements to alleviate highway flooding.

Progressive mapping of underground systems and condition underway using a risk based approach.

Safety inspections and identified safety defects prioritised according to risk based approach.

Gully drainage assets proactively maintained through intelligent cyclic maintenance with a risk based approach.

Officer observation and all other non-safety repair requests added to the programme to be dealt with in accordance with the timescales set out in the HIAMP.

Drainage on Network Hierarchies 1 to 7 inclusive

(To be completed as part of Development Area 1)

Level of Service 2

Provision of safety related issues and Customer Service only

Objective:

Comply with statutory obligations and to provide Network Safety and customer service

Standard:

Lifecycle planning leading to 3-10 year forward programme with prioritised annual programming.

Predominantly reactive maintenance

Minimal intervention to prevent asset deterioration

Safety inspections and identified safety defects prioritised according to risk based approach.

Likely increase in non-safety defects with potential for increase in third party insurance claims.

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 and Record New Assets

Structure Type	Resilient Network Level of Service 1 and Network Hierarchies 1 – 7 Level of Service 2
Culverts <0.9m in diameter will be managed by Highways. Culverts ≥ 0.9m will be managed by Structures.	Development Area 3
Gullies	We have details of all of these; therefore any new assets will be recorded as as-builts through Section 38/278 acquisitions, and added onto the asset management system through Development Areas 13, 14 and 15. This is done for the entire network.
Highway drains	Flood risk team do hold information and also record any information from site surveys. Utility companies also hold some data. See Development Area 7
Ditches	Development Area 5
Grips, trash screens and linear drainage (kerb inlets etc)	Development Area 6,8 and 11
Drainage channels	There is no current plans to gather data for this asset group.
Drainage pipes, connections, non-return valves, pumping stations, catchpits, headwalls and soughs	Development Area 8 and 11
Manholes	Development Area 9
Interceptors and Pump Systems	Development Area 10 and 12
Sustainable drainage systems (swales, balancing ponds, soakaways etc)	There is data held on what we currently have, some information may exist on previous as-builts for new infrastructure and is covered by Development Area 11

All data is to be recorded and stored in accordance with the Data Management Strategy. For all drainage assets the attributes recorded into the asset management system need to be determined.

7. INVENTORY UPDATE AND ASSET CAPTURE

DEVELOPMENT AREA 2: Attributes to be Collected

Establish the attributes to be collected for each drainage asset within asset management system. To be established by Highway Maintenance, Flood Risk Management and Highways Strategy in a new working group. Once established then all those undertaking site work should use the mobile asset management system app to record any asset located at the time of survey.

DEVELOPMENT AREA 3: Culvert Desktop Analysis

Analysis of previous desktop exercise to identify possible locations where new culvert assets may exist. Asset Management have identified areas where culverts exist but this needs to be digitised into the asset management system. Once this exercise has happened then a formalised inspection regime can be instigated.

DEVELOPMENT AREA 4: Highways Drains

Derbyshire require As Built documentation to enable data to be added to the asset management system to allow levels of service to be allocated.

DEVELOPMENT AREA 5: Ditches Desktop Analysis

Desktop exercise required to cross reference the Environment Agency digital river network with the highway boundary. This area of work is reliant on the highway boundary being digitised by the Highway Searches team. Once the assets are identified they require digitisation into the asset management system.

DEVELOPMENT AREA 6: Grips and Trashscreens Information Gathering

The area teams hold records (both paper and in heads) regarding grips and trash screens. This information will require analysis and digitisation into the asset management system.

Once this exercise has happened then a formalised inspection regime can be instigated.

DEVELOPMENT AREA 7: Water Utility Companies Available Information

Flood Risk Management to request the existing plans held by water utility company information. This has been gathered from one utility company but still awaiting the 2 remaining utilities. If necessary information can be requested using a statutory power as the Lead Local Flood Authority. This information will show all public sewers owned and maintained by the Water Companies, and may also show other drainage systems which may be Derbyshire County Councils responsibility This information once received requires digitisation into the asset management system.

DEVELOPMENT AREA 8: Other Collected Information Via Driven Capture Survey

Information should be captured through the driven capture survey.

DEVELOPMENT AREA 9: Manhole Desktop Analysis

The outputs from Development Areas 6 and 7 should be cross-referenced to identify those manholes that are maintained by Derbyshire.

DEVELOPMENT AREA 10: Interceptor and Pumps Desktop Analysis

Derbyshire currently have paper copies of 6 locations, these require digitisation and identification of the manufacturer and their guidelines. An interceptor needs a licenced contractor to remove and process waste. List of contractors used to be ascertained to enable attributes to be added to the asset management system. There are 12 – 14 different types of Oil Interceptors available or in place in Derbyshire

DEVELOPMENT AREA 11: Digitisation of Paper Documentation

Those records that have previously been recorded as an interim measure on paper and previous scheme as-builts ie by maintenance/design engineers and those within the flood team, these require digitisation into the asset management system.

DEVELOPMENT AREA 12: Section 278 and 38 New Assets

The methodology of how we gather data relating to new assets as a result of section 278 and 38 developments needs to be improved.

Risk assess the remaining network for potential issue sites and do those next using the following criteria:

- Flooding enquiries
- Historical flooding data
- Environment agency surface water map

For certain assets, approximate information can be established from extrapolating from known surface drainage features such as gullies/manholes or from recent maintenance records or recent highway improvements. Therefore each asset should have a confidence level for how accurate we think the data is likely to be (it is unlikely that we will be establish a 100% confidence level in all the data due to the complex nature of where water goes/who owns what).

Some assets are considered more sustainable and these will have a bigger impact on highway land. These include swales (shallow open ditches), soakaways and pond. Discussions need to take place with Development Control to discuss the costs involved for them producing autocad drawings and inputting them onto the asset management system and creating consistent design layers.

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 13: 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 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 14: 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 15: Update Inventory – Internal Revenue Schemes

This process needs developing and implementing.

9. INSPECTIONS AND SURVEYS

The following highway drainage assets are routinely inspected to ensure they safely and effectively capture surface water run-off and convey it away from metalled areas, in order to alleviate flooding and protect the fabric of roads and footways.

- Culverts ≥0.9m in diameter are inspected by the structures section and these inspections are detailed within the Structures HIAM Part 2 document.

- Culverts <0.9m in diameter are inspected by the Highway Drainage Team on a risk based approach
- Gullies are inspected as part of cyclic cleansing across the County.
- Manholes are ideally inspected on a 5 year basis although there is no current guidance reflecting this. Pumps and interceptors are inspected in accordance with manufacturer's guidance as a minimum with this increasing where risk is identified.
- Hydrobrakes and Hydrodynamic Separators are inspected. The methodology differs according to the specifics of each asset.

The remaining drainage assets are inspected by the maintenance section reactively when an adhoc enquiry of an issue has been received.

DEVELOPMENT AREA 16: Technological Advances and Inspection Processes

Technological advances need to be considered when reviewing all inspection processes.

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 drainage asset of any type has been provided or identified, all attribute data required by the asset management system will be provided. Where a new 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 and it will be accepted by Network Planning as the asset owner.
- Internally provided revenue schemes –the construction services. Where a new asset has been identified the following will be undertaken:
  - Culverts: an initial inspection which will include a risk assessment to establish the appropriate interval time to the next inspection
  - Interceptors: These are given a RAG rating on initial inspection as these are high priority as can attract fines if they fail. The rating is based on critical flooding areas.

DEVELOPMENT AREA 17: Adding RAG Ratings to Specific Drainage Assets

- Trash screen on culverts where there is a significant risk of nearby property flooding should also be given a RAG rating on initial inspection.
- Assets which provide protection to a watercourse or groundwater in terms of pollution should also be considered for a RAG rating.
- Soakaways, hydrobrakes and hydrodynamic separators should also be considered for RAG rating on initial inspection as they are prone to fail.

All remaining drainage assets: inspections will be conducted based on their risk rating. This is established through a risk assessment of the criteria of flooding enquiries, historical flooding data, environment agency surface water map and location on the network hierarchy. Guidance for this process can be found on this website.

DEVELOPMENT AREA 18: Consistent Inspection Processes

Derbyshire are to implement a new process to ensure inspections of new assets are carried out in a consistent way across the entire county which may lead to efficiency savings in some areas and take into account risk. Inspection times will be based on specific site based risk assessment. Process maps for new assets inspections, cyclic inspections and maintenance of assets will also be will be developed as part of this process. Process maps will be added to Appendix C.

Enquiry/Adhoc Inspection

As a result of a highway safety inspection requesting additional investigation into the underlying cause of a safety defect or due to a customer enquiry, an adhoc inspection may be undertaken of any drainage asset type.

All drainage customer enquiries will be risk assessed in accordance with the matrix in Appendix D. This will lead to the allocation of a RAG rating to each enquiry.

Red ratings will take first priority of drainage resources for reactive works or investigation as required.

Amber ratings will lead to a risk assessment of the location and the potential for works to be carried out prior to the next cyclic gully cleanse.

Green ratings will lead to a risk assessment of the location and the decision that no immediate works are required but the gully will be cleansed inline with our cyclic maintenance schedule.

Cyclic Inspection – Gullies only

See Development Area 18 above.

Pre/Post Event Inspection (Safety Inspection)

An inspection will occur for those assets on the drainage critical assets register prior to and after each major rainfall event, where the trigger criteria are met. The trigger criteria are as follows:

- Red and some yellow rainfall warning and are detailed further in the Adverse Weather Implementation Plan. This is available internally.

Within the adverse weather policy there is reference to what needs to be checked pre event. These include known flooding spots and known wooded areas near resilient network. As part of the Flood Contingency Plan on the Derbyshire Prepared website the Council are required to arrange clearance of critical assets to water flow on county council owned land and highways.

All condition data should be recorded and stored within the asset management system. Data is controlled in accordance with the Data Management Strategy.

10. ASSET CONDITION AND ASSESSMENT

Condition of Assets

Derbyshire record the condition of gullies only via cyclic cleansing. This information is then added to SAM's.

11. LIFECYCLE PLANNING

DEVELOPMENT AREA 19: Adding All Condition Data to SAMs

Derbyshire would like all condition data stored within SAMs However, currently this data is not all fully within the system and it is not currently used as a lifecycle planning tool. It would allow for Gross Replacement Costs and Depreciated Replacement Costs to be calculated. It also can produces and reports both national and local performance data.

Therefore, currently there is little lifecycle planning being undertaken for drainage assets.

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. Reactive Maintenance Process Maps can be found in the Reactive Maintenance Teams Operational Manual.

(b) **Routine or cyclic maintenance** is a do-minimum response, reacting to concerns from inspections to ensure that it is able to safely and efficiently capture surface water run-off and convey it away from metalled areas. This type of maintenance does not improve the general condition of the asset but should improve its efficiency. A risk based approach (gully intelligent) is used to prioritise the cyclic maintenance works identified. Typical minor works include:

- Gully cleansing
- Trash Screens
- Oil Interceptors
- Manholes

(c) **Planned or programmed works**, are identified on a risk based approach. Schemes are developed to improve the longevity and overall condition of the drainage asset. Typical works include the following:

- Piped drainage repair
- Clearing of ditches, swales, ponds
- Repairs to manholes, catchpits etc
- Installation of sensors to automate remote reporting of performance of critical drainage assets
- Other flooding preventing schemes
- As part of local safety schemes, major developments, transport schemes (may include – resurfacing, reprofiling, patching, drainage improvements eg new gullies, drainage runs etc)
- Provision of new drainage infrastructure.
- Contribution to collaborative schemes to deal with flooding.

DEVELOPMENT AREA 20: Development of Planned Works Process Maps

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

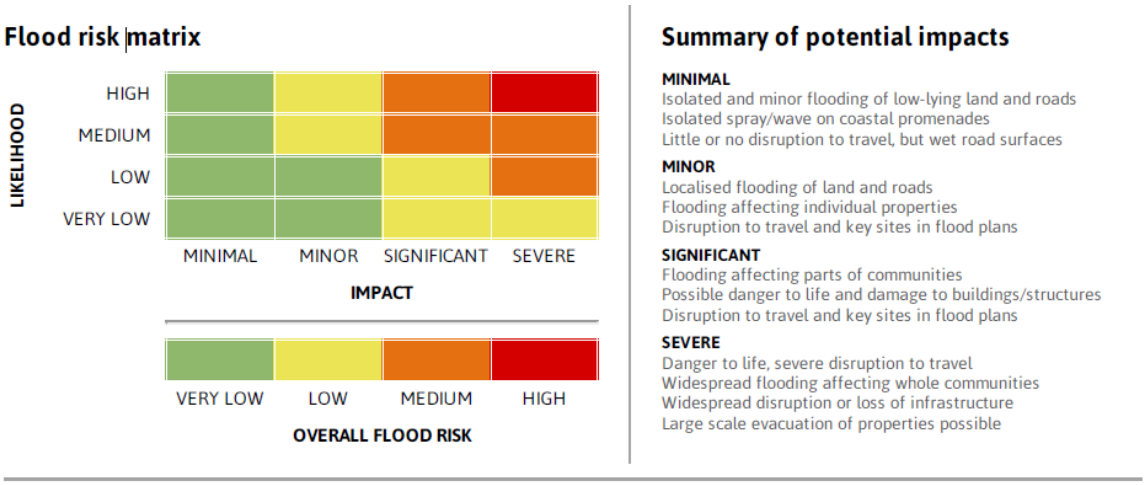
Maintenance requirements when flooding is predicted

Derbyshire can receive 4 types of flood warning – green, yellow, amber and red. These warnings are communicated to Derbyshire via the Flood Forecasting Centre. Derbyshire also receive alerts for adverse weather events via Emergency Planning. This area is covered in depth in the Adverse Weather Policy.

Maintenance action will be categorised based upon the likelihood and the impact of the flood event.

The image overleaf shows the flood risk matrix which supports the categorisation of action of flood risk:

Diagram 2: Flood Risk Matrix



DEVELOPMENT AREA 21: Flooding Maintenance Response Process

Derbyshire would like to develop a maintenance response process for when a flood warning is received. Green warnings will be noted but no action taken. Yellow warnings will be actioned only if we also receive additional information from emergency planning. All decisions will be recorded. Amber and Red warnings will involve discussion with Emergency Planning and will follow the response process set out in the Adverse Weather Policy (currently under review). As part of Development Area 1 an inventory of critical assets will be developed alongside relevant maintenance regime. These will be individually added to the asset management system as an asset which will detail asset owner, maintenance requirements, risk matrix and have the ability to record action taken against it.

13. BACKLOG

Until Derbyshire complete Development Area 1 to ascertain a list of critical assets backlog cannot be calculated.

The Flood Risk Management team are key stakeholders and must be involved in all planning of this area of work.

14. VALUE MANAGEMENT/ENGINEERING APPROACH

DEVELOPMENT AREA 22: Adopting a Value Management/engineering Approach

Derbyshire would like to adopt a value management approach whereby 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

This is based on a number of areas and include:

1. Pumping stations and interceptors which have a critical lifespan which defines when the asset is likely to die.
2. Gullies use intelligent cleansing to predict future requirements and support the forward programme of works on this asset.
3. Network need – ie problems areas are identified a RAG rating is applied and then this leads to a prioritisation of drainage schemes.

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

17. ANNUAL PROGRAMME

This is formed from the first year of the forward programme depending on the capital allocation available and can be found on the Derbyshire website.

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.

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 4: Strategic Risk Register

Risk: Understanding the Asset

Evaluation of Risk: The absence of asset information compromises the ability to provide lifecycle planning and consider budgetary allocations.

Managing the Risk: Identify the current state of the drainage assets to enable lifecycle planning and budgetary allocation.

Risk: Budget Concerns

Evaluation of Risk: The absence of relevant finances will means drainage assets deteriorate compromising the road safety of road users and damage the infrastructure surrounding the highway.

Managing the Risk: Budget management and apply for additional funding where feasible. Lifecycle planning. Budget Management.

Risk: Changes to Traffic

Evaluation of Risk: Changes to traffic patterns and the usage of road may alter network prioritisation of asset stock.

Managing the Risk: Pre-empt network changes or travel patterns at the design and planning stages.

Risk: Climate Change

Evaluation of Risk: Climate change can increase deterioration causes, affecting the lifecycle of some assets and their components meaning intervention will be required sooner than expected.

Managing the Risk: Lifecycle planning/inspections to encompass climate predictions.

19. COMPETENCY AND TRAINING

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. A guide for inspection is has been written to standardise inspection activities.

All external contractors undertaking condition inspections are required to meet the same minimum Derbyshire specifications. This is included in the requirements in the tender documentation. The agency agreement with High Peak, North East Derbyshire and South Derbyshire district councils requires the same level of competence with the control/monitoring devolved to Derbyshire to manage it.

All competency and training requirements are summarised within the skills matrix in Appendix E. and managed through the Derbyshire County Council PDR system. This will be developed as part of Development Area 23.

DEVELOPMENT AREA 23: Skills Matrix

Skills matrix needs to be developed which will support the Councils PDR system.

20. PERFORMANCE MANAGEMENT FRAMEWORK

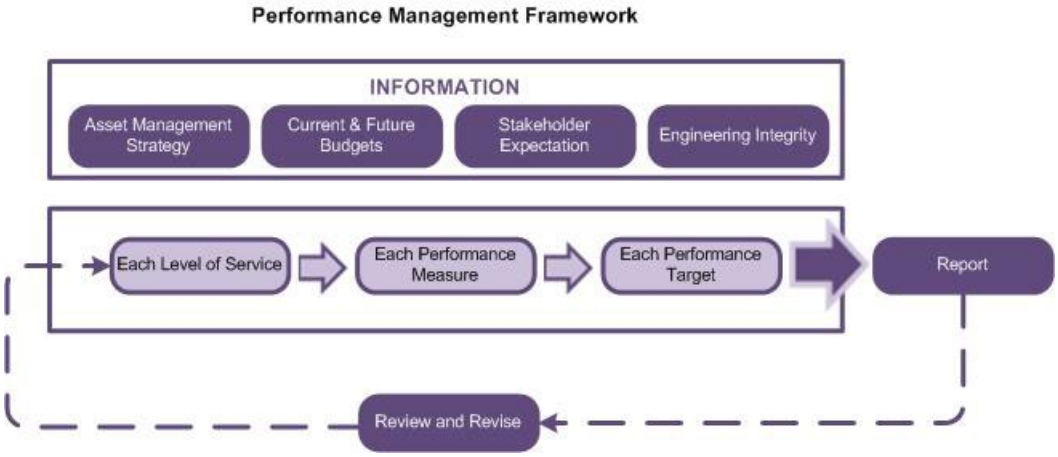
The Performance Framework is used as a tool to inform, measure, review and drive the management and decision-making processes associated with implementing corporate changes and day-to-day decisions relating to the delivery of services, linked to the network hierarchy. The figure below shows the performance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

Diagram 3: Performance Management Framework



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

Table 5: Performance Measures

Performance Measure	Level of Service 1 and 2 Target
Safety Performance Measures	
% of urgent defects repaired in target time	100%
% 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%
Serviceability Performance Measures	
% of cyclic gulley cleansing completed within target time	90% (80% for Level of Service 2)
Sustainability Performance Measures	
Backlog	See Development Area 1

% requested as-builts provided	100%
% asset inventory updated	100%
Customer Service Performance Measures	
NHT % of residents satisfied with the provision of drains HMBI 11	49%
NHT % of residents satisfied with how Derbyshire keep drains clear and working HMBI 12	46%
NHT % of residents satisfied with how Derbyshire deal with flooding on roads and pavements HMBI 22	43%

21. COMMUNICATIONS

All information relating to communication is contained with the 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 Polices and Standards.

The corporate climate change manifesto can be found here.

23. HERITAGE AND CONSISTENCY WITH CHARACTER

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.

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 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

Gully cleansing and jetting are carried out using term contracts.

Data is held by utilities and as part of Development Area 7 this data will be collected to enable improved service delivery.

27. DELIVERY

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

28. PROCUREMENT

Derbyshire use a variety of suppliers according to service need and locality requirements. We have an in-house service provider for construction works and we also use external providers which are sourced via a framework system.

29. OPERATIONAL POLICIES

Operational Policies are covered in the Highway Network Management Plan.

APPENDICES

APPENDIX A: DEVELOPMENT AREA SUMMARY

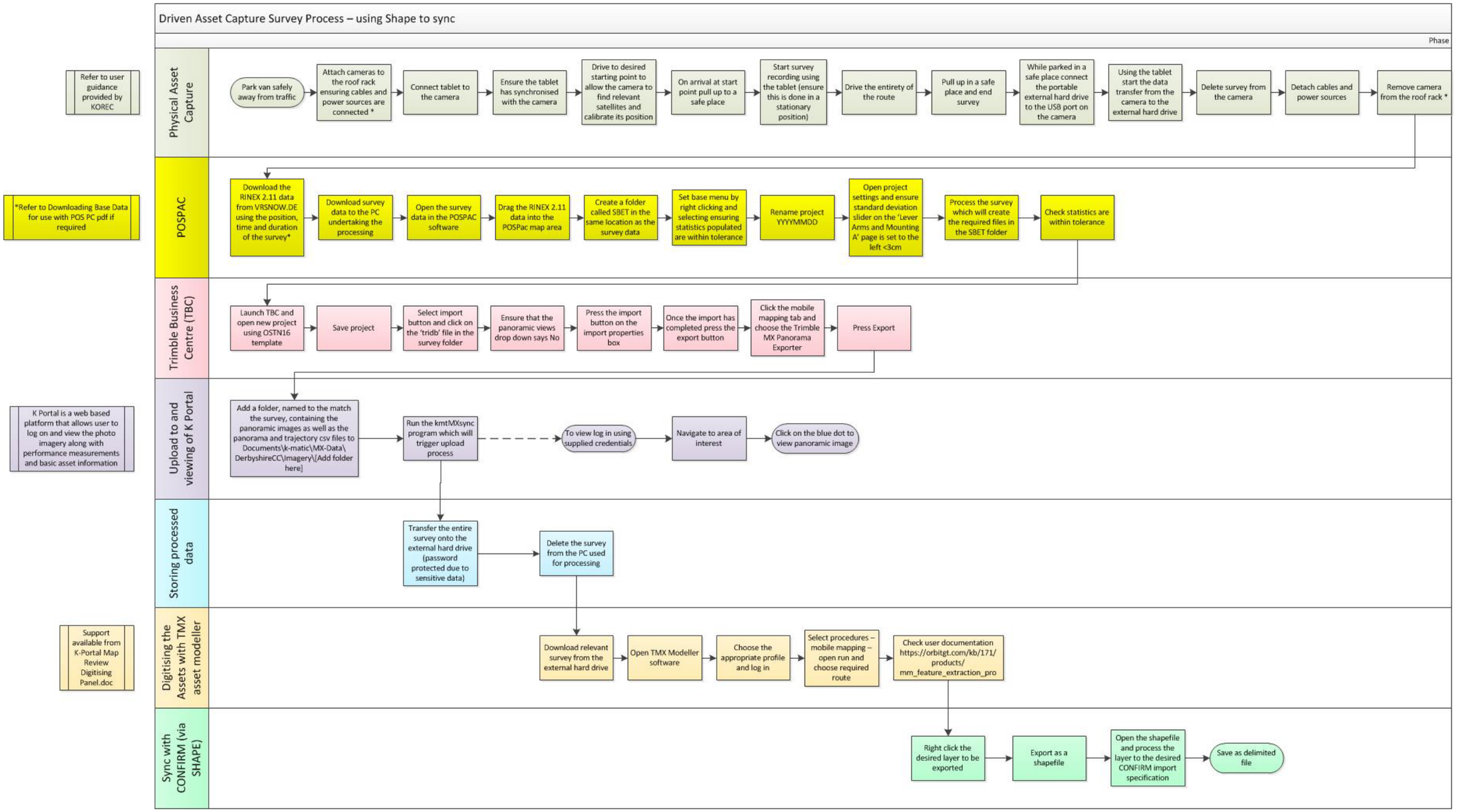
Table 6: Development Area Summary

Development Area Number	Development Area Title	Action Taken
1	Identification of critical assets	
2	Identification of attributes to be collected	
3	Culvert Desktop Analysis	
4	Drainage As Built Creation	
5	Ditches desktop analysis	
6	Grips and trashscreen information gathering	
7	Water utility company information gathering	
8	Driven capture survey	
9	Manhole desktop analysis	
10	Interceptor desktop analysis	
11	Digitisation of paper documentation	
12	Section 278 and 38 new assets	
13	Creation of development control processes	
14	Update inventory internal capital schemes	
15	Update inventory internal revenue schemes	
16	Review of inspection activities in light of technological advances	
17	Adding RAG ratings to specific drainage assets	
18	Ensuring consistent inspection processes	
19	Adding all condition data to SAMs	
20	Development of Planned Works Process Maps	
21	Flooding Maintenance Response Process	
22	Adopting a value management/engineering approach	
23	Creation of a skills matrix	

APPENDIX B: DRAINAGE CRITICAL ASSETS REGISTER

To be added as part of Development Area 1.

APPENDIX C: PROCESS MAPS



APPENDIX D: EXAMPLE OF DRAINAGE ENQUIRY PRIORITISATION

Network Hierarchy 15%		1 to 2 (Resilient Network)	3 to 4	5 to 6	7
		100	75	50	0
Score	50	7.5			

Safety Classification (roads/footway) 35%		Full width /Ice Banding	Half width/Ice Banding	ponding	none
		100	75	50	0
Score	50	17.5			

Note - Incidents of Flash Flooding would usually be reported through to Control and deal with reactively eg flood boards

Incidents of flooding 25%		Frequent affetcing more than one Property internally	Frequent affecting one Property internally	Occassional affecting more than one property internally	Occassional affecting one property internally	No flooding to property
		100	90	60	50	0
Score	90	22.5				

Frequent would be deemed to be more than 2 occurrence's of flooding in the last 10 years. Occasional would be 2 or less occurences in the last 10 years

Traffic Speed 25%		50+	30-50	<30
		100	50	0
Score	50	12.5		

RAG Rating		High (61-100)	Medium (30-60)	Low (<30)
sum	60		60	

Note - An enquiry can be escalated to a higher RAG rating, based upon the user's local knowledge, or any further information which has been received.

(HMEP - Guidance on the management of highway drainage assets 2012)

APPENDIX E: SKILLS MATRIX

This will be added as part of Development Area 23.