OS briefing paper Flood and Drainage – Nov 2022

Recommendations

1. That the contents of this paper are noted in regards to the role that the County Council plays in relation to surface water drainage, and that any further information required is highlighted.

2. That consideration is given on whether key partners such as Severn Trent Water, the Environment Agency, or the Local Planning Authorities should be invited to make representation to OSC.

Introduction

This briefing paper has been produced in response to the motion passed at full council in December 2021.

Concerns were raised regarding maintenance and capacity of both public sewers and highway drainage.

A review of policy was also requested, and this paper intends to be the initiation of this by highlighting the key policies and working practices related to flooding and drainage in Warwickshire.

Local flood risk and drainage responsibilities in Warwickshire are split amongst several parties so this paper starts with a brief summary of key duties and responsibilities. The paper then continues by highlighting key achievements in Flood Risk Management and County Highways, before providing a summary of flood risk and drainage policies within Warwickshire.

Background

One of the effects of climate change is an increase in more intense rainfall events due to more moisture in the atmosphere due to higher air temperatures which can hold more water. This intense rainfall leads to more frequent occurrences of surface water flooding. Whilst it is often perceived that this surface water flooding is due to poorly maintained, damaged, or blocked drainage systems, this is rarely the case. Surface water drains are designed to accommodate relatively modest rainfall events, and this is why during more intense rainfall, water will often sit on the surface for a short period of time and drain away when the rainfall intensity reduces.

In the majority of cases, there are no significant defects in the drainage system, but the design capacity is temporarily exceeded.

Existing drainage systems, where present, often have limited capacities with little space to up-size or undertake traditional drainage schemes. Up-sizing existing drainage systems also has the potential to pass problems downstream or to other location. This is contrary to national planning legislation.

Any project to increase the capacity of a traditional drainage system requires the whole piped system through to the point where the water is discharged to be increased in size. This can often be a substantial distance leading to significant costs and related disruption.

As an alternative to large-scale engineering projects, the Flood Risk team and County Highways are considering trialling SuDS Retrofit where highway drainage systems connect into small SuDS features such as rain gardens, tree pits, or swales.

The need for growth nationally is recognised in the planning system and all new developments should have drainage systems designed to hold and store large rainfall events to ensure that flood risk is not increased elsewhere. The Flood Team acting as Lead Local Flood Authority review all major planning applications from a surface water drainage perspective. Major planning applications are generally those that are 10 or more dwellings or an increased floor space of over 1,000 square metres. The team will make a recommendation to the Local Planning Authorities (LPAs) based on the information submitted. Unfortunately, final decision making, building control, and planning enforcement sit elsewhere.

Key achievements in Flood Risk Management over the past five years

- £724,547 funding secured from DEFRA Flood Grant in Aid and £340,000 Local Levy, using £483,237 of corporate investment.
- 102 properties protected through capital schemes over the past five years.
- 248 properties better protected by enforcement or pre-enforcement activities.
- 28 Community Flood Action Groups engaged in managing flood risk supported by the FRM team (pre-COVID restrictions). Over 50 Multi-Agency meetings with key partners and Flood Action Groups since their inception.
- 4,026 major development planning consultations reviewed as part of statutory consultee role. 100% of responses provided prior to determination, and 97% of responses provided within statutory determination period.
- 857 other technical consultations responded to.
- 382 applications for Ordinary Watercourse Land Drainage Consent, covering 1,146 structures. 92% processed within statutory period.
- 163 applications for Schedule 33 part 5 consents relating to HS2, covering 357 features. 94% processed within statutory period.
- £120,000 of income generated through discretionary services and application fees.
- 868 reports of flooding, with up to 254 of these internally affecting a property.
- Develop and maintain an asset register containing details of over 2,000 assets that affect flood risk.
- 175 CCTV drainage surveys undertaken to aid flood investigations

Roles and key responsibilities of partners in Flood Risk and Drainage

WCC Flood Risk Management (FRM)

- Oversight for local flood sources (surface water, ordinary watercourses, and groundwater)
- Investigate locally significant flooding
- Statutory consultee for Surface Water Drainage on Major Development
- Regulatory role on works to Ordinary Watercourse
- Enforcement Powers for maintenance of existing ordinary watercourses

WCC County Highways

- Ownership and maintenance of Highway Drainage systems (including gully cleansing)
- Riparian owner for watercourses (including culverted) running through or under the Highway
- Enforcement Powers to prevent water on the public Highway
- Ensure the safety of road users

Environment Agency

- Strategic overview of all flooding sources
- Statutory consultee for all developments in Flood zones 2 and 3
- Regulatory role on works in Flood zones and in and around main rivers.
- Pollution investigation and enforcement role

District and Borough Councils

- Determine planning applications as Local Planning Authority
- Responsible for the consideration of surface water drainage for Minor Development
- Planning enforcement powers
- Role in building control
- Environmental Health for pollution incidents
- Land Drainage Authority with the power to undertake Flood Risk works

Severn Trent Water (Water and Sewerage Company)

- Ownership and maintenance of public sewers - Foul, surface water, and combined
- Provide capacity within their sewer systems for growth and contribute to Local Plans
- Investigation of sewer flooding
- Non-statutory consultee on planning development

Riparian Landowners (including WCC Property Services)

- Ownership and maintenance of ordinary watercourses or main rivers running through their land
- Ownership and maintenance of private drains or sewers within their land

Homeowners, landlords, and commercial property owners

- To maintain and protect their properties as appropriate
- Ownership and maintenance of private drains or sewers within their land
- To understand their own flood risk
- To have adequate insurance protection against flooding

Other works undertaken related to December 2021 full council meeting

Planning Round Table meeting

In January, a planning applications roundtable meeting to discuss flooding and drainage was held with representation from elected members, district/borough councils, planners, the Environment Agency, and Severn Trent Water.

This meeting focused on the surface water drainage aspects of planning applications in the county, however there was representation from partners discussing their roles in the planning process.

Key areas for possible improvement were raised and it was agreed that a smaller sub-group of those in attendance would move forward actions towards achieving those improvements.

A smaller more focused meeting was held with representation from key agencies. Several actions arose from this meeting, and it was agreed that these would be progressed by correspondence and no further meetings are currently planned.

Work on these actions is ongoing, but outputs to date include:

- The introduction of a verification condition to be applied to planning approvals that will require applicants to provide a Verification Report prior to occupation to show that the drainage for the site is constructed in accordance with the approval.
- WCC FRM are in the process of updating their Local Guidance document and chargeable pre-application advice service.
- The Environment Agency clarified the use of their standing advice documents and offered training to the Local Planning Authorities.
- Investigation into how any other LLFAs are undertaking and funding post construction reviews of the onsite drainage.
- An offer of training on surface water drainage and flooding to all LPAs (members and officers).
- Discussion of opportunities to agree the review of minor development applications that are currently outside the remit of LLFAs.

STW operational meetings

Discussion during the December 2021 Full Council meeting highlighted that foul sewer flooding and communications with Severn Trent Water were of concern to members. Whilst WCC do not have a remit for foul sewers, and no powers to make STW perform better, discussions with STW have been ongoing.

Regular operational meetings to discuss problem locations were agreed and have commenced.

Initial outputs have been encouraging and some long-standing issues have progressed.

Changes to National Legislation and Policy

An update of the Planning Practice Guidance (PPG) for flood risk and costal change has recently been published. This update includes improved guidance on how surface water flood risk should be considered and provides a clearer requirement for multifunctional SuDS which have additional benefits beyond the storage of water.

In addition to this, a number of reviews are currently being undertaken into the management of surface water, improving the uptake of SuDs, and the long term maintenance of SuDS. Several of these reviews have had consultations or given opportunities for the FRM team to feed in, these include;

- A DEFRA review into the implementation of Schedule 3 of the Flood and Water Management Act 2010.
- A CIWEM review on the management of surface water.
- A National Infrastructure Commission review into surface water infrastructure.
- DLUHC proposals for changes to the planning system.

Roles and responsibilities of County Highways in Flood Risk and Drainage

Section 41 of the Highways Act 1980 places a statutory duty, to maintain the highway maintainable at public expense on to the highway authority, WCC. The establishment of an effective regime of inspection, assessment, recording and prioritisation of defect repairs is a crucial component of highway maintenance.

A Team of Locality Officers carry out inspections to ensure the ‘serviceability’ of the public highway through the efficient use of resources. These include matters relating to drainage and flooding to the public highway.

Locality Officers ensure the identification of routine drainage works, the issuing of jobs for this work and provide the necessary information to enable the CH’s Delivery Team, to arrange works to be carried out by the term maintenance contractor and may include:

- Routine Jetting of blocked or slow running gullies and associated systems including aqua kerbs and dished channels.
- Grip Cutting and spillway cleansing (Delivery Team also arrange cyclical cleanse)
- Cleansing of ditch courses and ordinary watercourses where County Highways are the responsible land owner or have riparian responsibilities.
- Maintenance of flood depth markers.
- Maintenance of culverts less than 900mm situated within the public highway.
- Responsibility for the maintenance of other assets (where the responsible owner) including trash/safety screens, penstock valves, attenuation/balancing ponds.
- Identify sites drainage improvement schemes to be delivered by Delivery Team engineers.

24 Hour Cover – Duty Rota

CH provide a 24 hour a day, 7 days a week, response to emergencies and incidents (including flooding/drainage issues) on the public highway. Emergencies are generally reported via Warwickshire Police, Warwickshire Fire and Rescue Service, Flood Risk management, Coventry Solihull Warwickshire (CSW) Resilience Team and District/Borough/Town councils.

Outside of normal 'office' hours two officers (one North and one South) provide duty cover to assess potential risks of damage and/or injury to highway users and deal with them appropriately in line with the 'Incident Response' instruction.

The 'Incident Response' instruction for flooding considers suitable 'emergency' works depending on the location and specified an appropriate response.

Enforcement

Where flooding to the highway can be attributed to private land or assets such as overgrown ditch courses, blocked culverts and drains, CH's will use relevant enforcement powers, as per the Highways Act 1980, to resolve the issue and where necessary will seek the support of the WCC Legal Team to serve a notice, to the owner occupier of said land/asset.

Implementation of Highway Drainage Improvements

CH's supports the key objectives of the Council Plan 20-25 by ensuring they manage and maintain Warwickshire's transport network in a safe, sustainable and integrated way, this has been supported through the implementation of a number of highway drainage improvements including:

- Cyclical gully emptying programme, utilising a variable frequency gully cleansing procedure.
- Introduction of state of the art jetting units with twice the capacity of previous units. They are able to deal with larger scale jobs first time, thus reducing the need for repeat site visits.
- Increased number of jetting units available on the term maintenance contract, an increase from 2 to 6 units.
- Weekly drainage operations meetings established with the Term Maintenance Contractor to discuss performance and resources/issues.
- Monthly meetings held with the Contractor to discuss the wider contract.
- Increased the drainage maintenance/scheme budget in order that more routine and planned works can be delivered.
- Streamlining the jetting process by triaging 'jetting returns' requiring further works, now instructed direct from the Delivery Team to the Contractor, thus reducing the need for multiple site visits which not only speeds up the defect repair process but helps to free up Locality Officer time to dedicate to other highway maintenance activities.
- Introduction of a mini jetting unit to clear single drainage units and small scale jobs, thus freeing up the larger units to deal with more complicated sites.
- Asset data collection in order to inform cyclical programme of cleansing/maintenance work which includes Aqua Kerb, Filter Drain, Ford and Grip cutting locations.

Public Satisfaction

For the recent NHT Public Satisfaction Survey WCC performed excellently against the peer group (consisting of County Councils and large unitary authorities) in terms of provision of drainage and response to flooding on the public highway.

The NHT Public Satisfaction Survey collects public perspectives on, and satisfaction with, highway and transport services in Local Authority areas nationally. It collects views on different aspects of highways and transport.

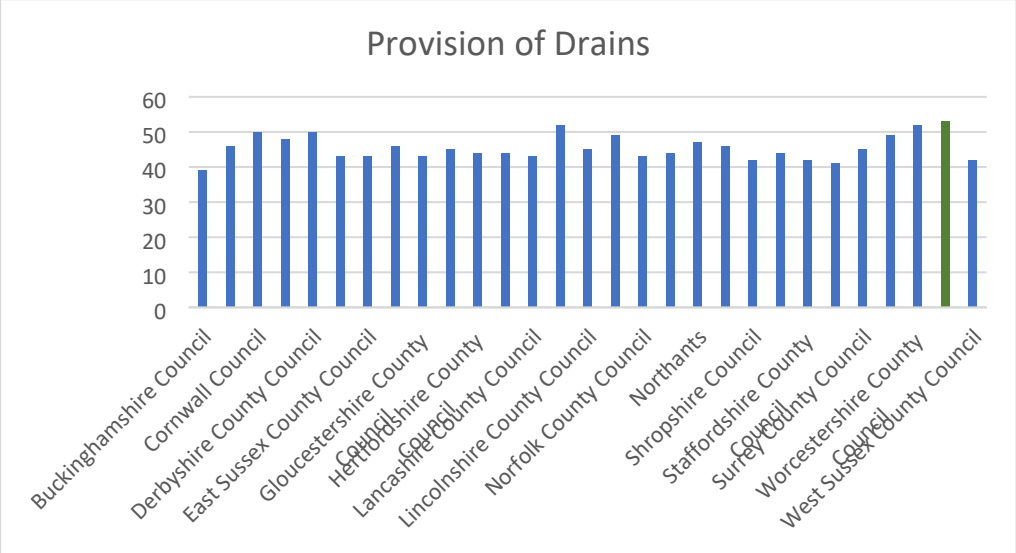
This year the survey was sent to 3,300 randomly selected households across the authority area and 801 members of the public responded. This represents an overall response rate for Warwickshire of 24.3% compared with the national average of 23.8%. This constitutes a good response rate.

WCC ranked 1st in respect to a number of key, individual, drainage activities including:

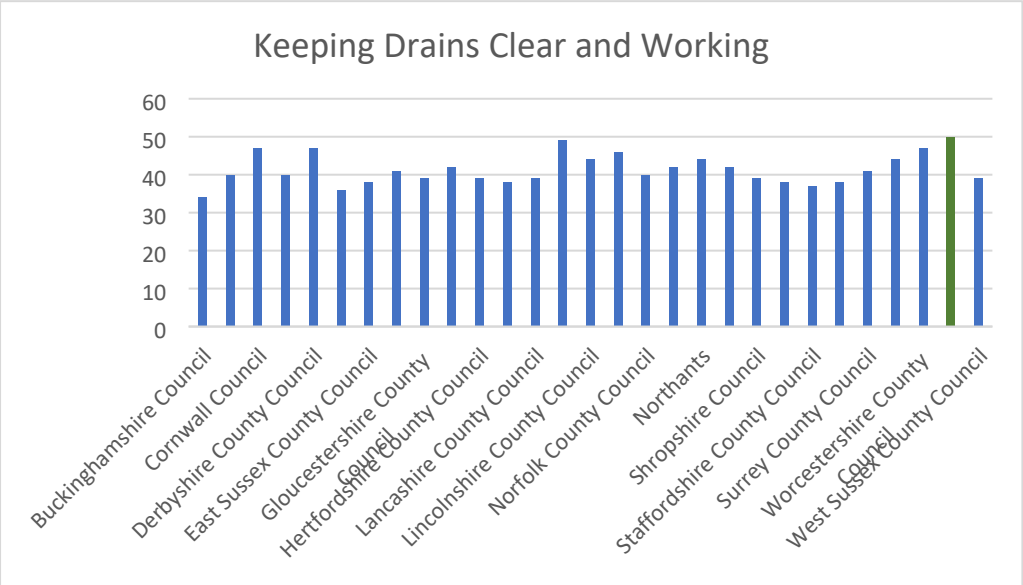
- Provision of Drains
- Keeping Drains Clear and Working
- Deals with flooding on the highway

CH have been working hard to ensure it supports the key objectives of the Council Plan 20-25 by ensuring they manage and maintain Warwickshire's transport network in a safe, sustainable and integrated way. A big part of delivering on this is to ensure that surface water can drain from the highway. The great result achieved in the NHT survey, within 3 key drainage areas, can be attributed to the investment and ongoing development of maintenance practices and solutions as detailed in this note.

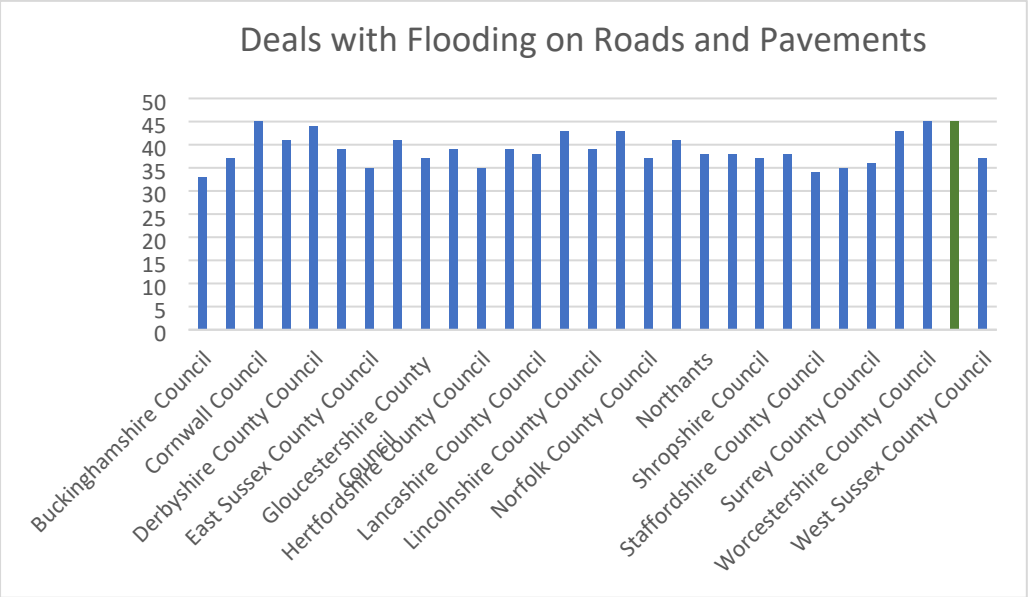
Provision of drains



Keeping drains clear and working



Deals with flooding on the highway



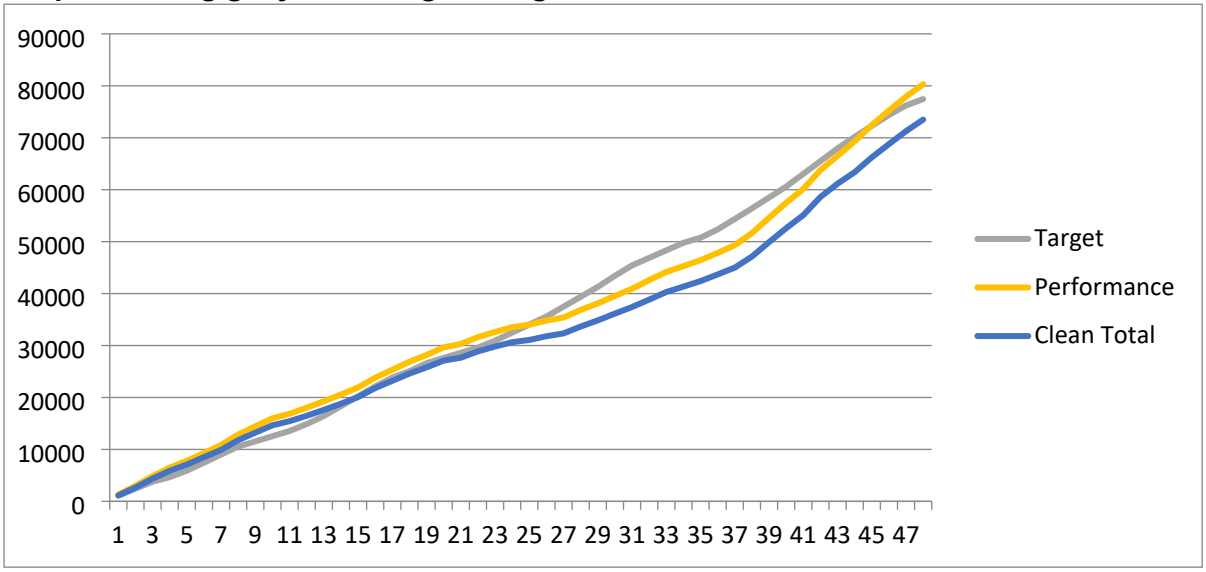
Cyclical Gully Emptying Performance Data

Gully Cleansing Data (Total)

- For year 2021/22 County Highways targeted their Contractor to attend site and cleanse 77,444 gullies.
- The Contractor exceeded their programmed target and attended 80,295 sites.
- Of these 80,295 sites a total number of 73,176 gullies were cleansed.
- **This equates to an average of 1557 gullies cleansed per week.**

(Please note each site represents 1 gully)

Graph showing gully cleansing data against weeks



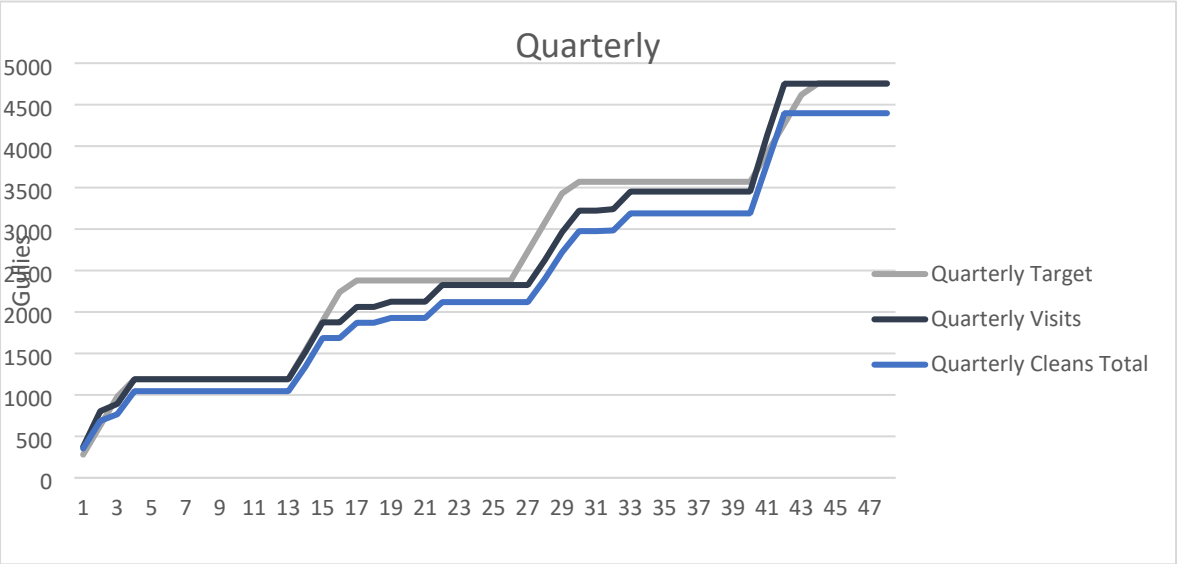
Variable Frequency Gully Cleansing

As detailed in this report County Highways introduced a variable frequency gully cleansing procedure for financial year 2021/22 in order to identify and cleanse high risk sites as part of the cyclical gully emptying programme. Based on a risk-based approach gullies were cleansed either Quarterly, 6 monthly or bi-annually.

Quarterly Frequency Cleansing Data:

- For year 2021/22 County Highways targeted their Contractor to attend site and cleanse 4753 gullies.
- The Contractor attended 4753 sites.
- Of these 4753 sites a total number of 4397 were cleansed

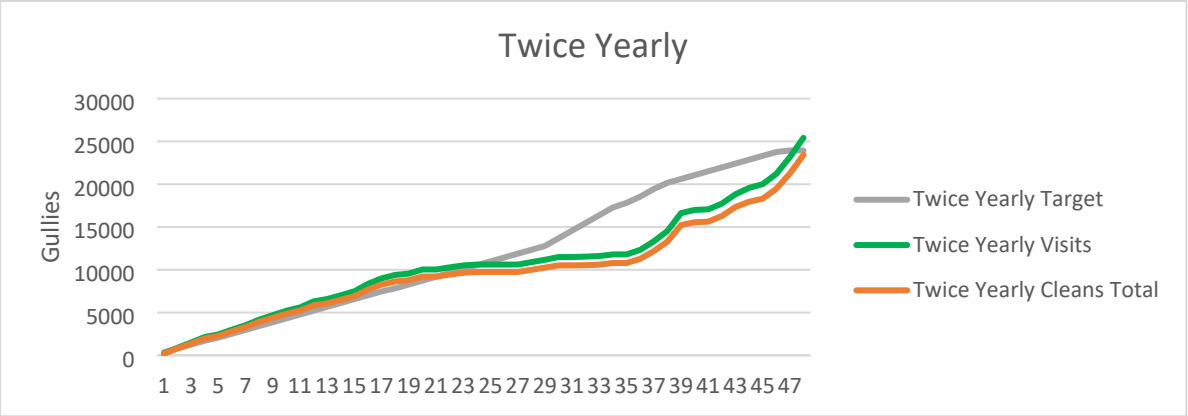
Graph showing quarterly gully cleansing data by week



6 monthly Frequency Cleansing Data

- For year 2021/22 County Highways targeted their Contractor to attend site and cleanse 23,940 gullies.
- The Contractor attended 25,422 sites.
- Of these 25,422 sites attended a total number of 23,409 were cleansed

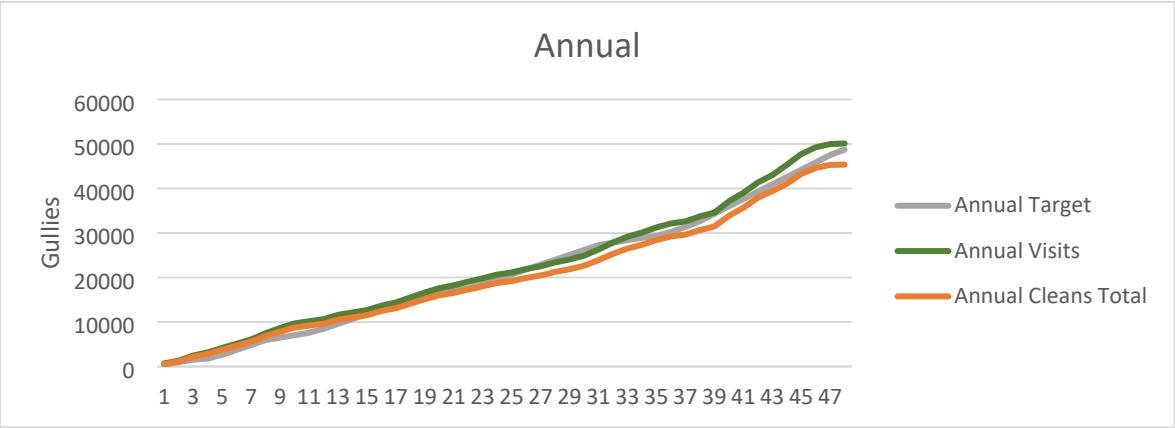
Graph showing 6 monthly gully cleansing data by week



Bi-Annual Frequency Cleansing Data

- For year 2021/22 County Highways targeted Contractor to attend site and cleanse 48,751 gullies.
- The Contractor attended 50,120 sites.
- Of these 50,120 sites attended a total number of 45,370 were cleansed

Graph showing bi-annual gully cleansing data by week



Number of Sites Visited Against Actual Cleanse

Whilst from the data provided it is possible to see that the Contractor continually exceeded their target, it is possible to observe that 7119 gullies were not able to be cleansed during their initial site visit.

This was due to one of the following reasons:

- Vehicle overrun (car parked over the gully)
- The gully required remedial works before it could be cleansed (for example jammed/ damaged lid or required digging out by hand due to silt levels).

County Highways do however have measures in place to ensure any gullies unable to be cleansed during an initial visit are repaired (where necessary) and then jetted via alternate means as follows:

- Where there is an issue with vehicle overrun, the gully is put on to an additional cleansing programme alongside a targeted letter drop asking residents to refrain from parking their vehicles within the work zone. For any particularly problematic areas County Highways instruct their Contractor to place barriers or cones in the public highway to enable to cleansing works to be facilitated.

- Gullies requiring remedial works are repaired and then jetted separately through additional works orders issued to the Contractor.

Year on Year comparison

Please see the table below to show year on year performance for 2022 (up to the week commencing 01/08/22) against 2021 data for the same period. This information is based on total number of sites attended/gullies cleansed:

2022		
Total Target	**Total Visit**	**Total Cleansed**
26,853	43,595	39,688
2021		
Total Target	**Total Visit**	**Total Cleansed**
18,330	20,566	18,799

From the table above it is possible to see that County Highways have increased the target for year 2022 in relation to the number of sites/gullies that contractor must attend and cleanse. It is possible to see that the Contractor has far exceeded their target of 26,853 and actually attended 43,595 sites. This equates to a performance of over **38%** ahead of target.

Drainage Improvement Schemes for 2021/22

As detailed in this report County Highways, via their Locality Officers, identify drainage improvement schemes to help deal with flooding on the public highway. These schemes are raised in order to either repair or improve existing drainage infrastructure.

In addition to the above drainage investigation schemes, identified through routine jetting and then triaged by the County Highways Delivery Team, are used to undertake smaller repairs to the existing drainage infrastructure.

The table below shows the number of drainage schemes and investigations delivered by County Highways for year 2021/22:

Type of Works	Jobs Completed	Spend
Drainage Scheme	144	£507,000
Drainage Investigation	200	£330,000
		Total £837,000

Chart showing 2021/22 spend for drainage schemes and investigations

The table below shows the predicted spend for drainage scheme and investigation works for year 2022/23.

Type of Works	Spend
Drainage Scheme	£370,000
Drainage Investigation	£362,000
	Total £732,000

Key policies and Working practices

The Local Flood Risk Management Strategy (LFRMS) is the overarching document that details how flood risk is managed in the County. The current LFRMS was published in 2016 and work has commenced on an update.

As part of the development of an updated LFRMS, engagement will be undertaken with key stakeholders, and prior to publishing, consultation will be undertaken, and approval sought from Cabinet.

In addition to the LFRMS, there are a number of other policies and working practices in the authority related to drainage and flood risk. These are summarised in the following table.

Policy or working practice	Owner	Status	Details	Produced	Reviewed
Local Flood Risk Management Strategy (LFRMS)	WCC Flood Risk Management	Adopted strategy	An update of the LFRMS was due in 2021, this was postponed due to delays in publishing National Strategy and then guidance. Work is now underway on the review.	2016	due
Investigation prioritisation	WCC Flood Risk Management	Adopted policy as part of LFRMS	Policy manages resource requirement by outlining that investigations and resources will be focused on high-risk areas first. Generally flooding to properties will be investigated and that to land alone will not.	2016	due
Land Drainage Act Enforcement working practice	WCC Flood Risk Management	Working practice applying investigation prioritisation policy	Enforcement using Land Drainage Act powers will only be used in high-risk locations; generally where defect is likely to cause internal flooding of a property.	2016	due

Scheme development prioritisation in Surface Water Management Plan (SWMP)	WCC Flood Risk Management	Adopted top 100 at risk locations published in LFRMS	Every square km of the County was ranked using historic and predicted flood risk as part of our SWMP. Highest risk locations prioritised for scheme development. Update is underway, ahead of LFRMS using improved and more recent flood records.	2016	due
Lead Local Flood Authority (LLFA) role as Statutory Consultee for surface water drainage on Major Development	DLUHC (Department for Levelling Up, Housing & Communities) [formerly MHCLG]	National Legislation - The Town and Country Planning Act	The Act details the different Statutory consultees and the fixed remit on what they will be consulted upon. The LLFA role is currently being reviewed by DEFRA.	2015	-
Local policies in each of the District or Borough council Local Plans	Local Planning Authority	Adopted by District or Borough Council	The Flood Risk Management team are actively involved in the development of local policies, alongside partners at the Environment Agency and Severn Trent Water.	varies	varies
Flood Risk & Sustainable Drainage Local guidance for developers	WCC Flood Risk Management	Local application of National Planning Legislation, policy and best practice such as the SuDS Manual.	Originally adopted as an appendix of LFRMS. Document is updated regularly in line with changes to Legislation, policy, and best practice. Serves as the no-cost option required for chargeable pre-application advice.	2015	2020
Ordinary Watercourse Land Drainage Consent (OWLDC) and culverting guidance	WCC Flood Risk Management	Local application of Land Drainage Act, Water Framework Directive, and best practice	Document is updated regularly in line with changes to Legislation, policy, and best practice. Serves as the no-cost option required for chargeable pre-application advice.	2012	2021

Ownership of Highway ditches	WCC Flood Risk Management and WCC County Highways	Summary of common law principles and aligned to neighbouring authorities	Leaflet on the WCC webpage.	2017	due
Highway Safety Inspection Manual	WCC County Highways	Adopted Policy	Developed in accordance with the recommendations contained in the Code of Practice for Well Managed Highway Infrastructure (WMHI) 2016. The safety inspection regime is set out within a framework of risk assessment and inspection frequency, which takes account of all road users, including those who are most vulnerable.	2020	2022
WCC Sandbag policy	WCC Flood Risk Management and WCC County Highways	Adopted policy as part of LFRMS and agreed with County Highways. However, district and borough councils will have their own policies.	Sandbags are not an effective measure against flooding and create contaminated waste that must be disposed of correctly. There is no duty for local authorities to distribute sandbags and as such a review may find that an updated policy is that sandbags will not be distributed to residents.	2014	due
Resilient Network	WCC County Highways	Procedure	County Highways have established a ‘resilient network' to which they will give priority, in order to maintain economic activity and access to key services during extreme weather.	2018	due
Variable Frequency Jetting Programme	WCC County Highways	Procedure	County Highways have established a regime of variable frequency gully cleansing, adopted for the 2021/22 financial year. The new procedure	2021	N/A

			has been established to identify high risk sites and problematic drainage systems that require cleansing on a more regular basis (3 and 6 monthly intervals).		
Highway Act enforcement	WCC County Highways: Legislation	Working Practice – In line with the Highways Act 1980	Where flooding to the highway can be attributed to private land or assets County Highways will use relevant enforcement powers to resolve the issue and where necessary will seek the support of the WCC Legal Team to serve a notice, to the owner/ occupier of said land/asset.	Varies	Varies
Routine Inspections	WCC County Highways	Working Practices	A Team of Locality Officers carry out inspections to ensure the 'serviceability' of the public highway through the efficient use of resources. Officers ensure the identification of routine drainage maintenance works and the issuing of jobs for this work.	Varies	Varies
Implementation of Highway Drainage Improvements	WCC County Highways	Working Practices	Continued review of working practices to ensure County Highways supports the key objectives of the Council Plan 20-25 by ensuring they manage and maintain the transport network in a safe, sustainable and integrated way. A big part of delivering on this is to ensure that surface water can drain from the highway.	Varies	Varies