



Open Report on behalf of Andy Gutherson, Executive Director – Place

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| Report to: | Highways and Transport Scrutiny Committee |
| Date: | 23 January 2023 |
| Subject: | Highways - Gully Cleansing, Drainage Repair Schemes and Surface Water Flooding |

Summary:

This report sets out the reactive, cyclic, and planned aspects of highways drainage maintenance including low-level flooding response.

The report aims to ensure the Committee is updated on all aspects of highway drainage maintenance and that any comments or recommended changes or actions are recorded to inform future decisions.

Actions Required:

The Highways and Transport Scrutiny Committee is invited to:

- (1) Consider and comment on the detail contained in the update; and,
- (2) Recommend any changes or actions to relevant Officers and Executive Portfolio Holders.

1. Background

The management of highway drainage assets in the county is undertaken by many teams across the highways service. To further enhance the delivery of the maintenance and improvement works on our highway drainage systems, Technical Services Partnership (TSP) were tasked with developing the role of Highway Drainage Asset Lead to co-ordinate the teams (reaching beyond the Highways service), to be the highway drainage focal point and delivering consistency across all the teams. With the joined-up approach, the ability to attract external funding/deliver improvements through partnership working is also enhanced.

Furthermore, government advice is predicting significant changes to our climate and by 2050 it is expected that winter rainfall in the UK will increase by 59%. Many of our drainage systems were designed and built when only low order storms were considered and as such, they will struggle to cope with expected future rainfall predictions, giving rise to flooding, either more frequently and/or with greater severity. This will impact on the

travelling public in terms of flooded highways or even worse, flooded property as a result of flooding from the highway.

To effectively manage our highway drainage systems, like any other highway related asset, the aims of the Highway Drainage Asset Lead are to:

- To develop an asset management system that triggers timely and cost-effective evidence based actions to achieve a robust and resilient highway drainage system
- To connect the existing highway drainage activities & functions through leadership and encourage innovation
- To develop preventative rather than reactive actions
- To seek partnership funding opportunities
- For LCC to aspire to be a leader in highway drainage asset management

Much work has been done to date to develop the highway drainage activities, building upon the existing good work undertaken by the various teams. The tasks completed to date have looked deeper into the strategic and operational function of these teams to develop a more co-ordinated approach offering efficiency and effectiveness. The outcomes from the aims will be:

- Robust and resilient highway drainage assets
- Evidence & risk-based asset management decisions
- Reduction in number of complaints or claims
- Decrease in reactive actions

Major tasks completed to date are:

HIAMS (Highways Infrastructure Asset Management Strategy) 2022

Highway drainage now has its own section within the strategy and highlights the challenges faced. Those challenges to developing our awareness are:

- To obtain the best possible data of our highway drainage assets.

Further detail of how this is being addressed is covered in Legacy Data Capture below.

- To develop cyclic maintenance regimes for all our highway drainage assets.

Modern drainage systems need to be maintained to ensure they do not increase the risk of flooding and, in the case of SuDs, require different maintenance regimes to that of present, as they use 'soft engineering' e.g., swales, grass channels, ponds. The majority of drainage systems we adopt, or design have a flow control to limit the outflow of water and storage within the system to hold to reduce the risk of flooding. Without carrying out regular maintenance these systems become overgrown with vegetation, blocked by debris and/or silt up reducing their performance and/or their life expectancy.

- To understand how risks associated with climate change impact on highway drainage systems and to develop a plan for adaption.

Whilst highway drainage assets that have been adopted or improved in the last decade or so have been designed to accommodate the climate change scenarios applicable at the time, our older assets can struggle to cope with more extreme rainfall events resulting in flooding. We need to understand the magnitude of the issue to develop a long-term plan of adaptation.

Highway Drainage Legacy Data Capture

This project is reviewing the data we hold on our highway drainage systems as the confidence we have is variable depending on the actual component. For example, we have high confidence in our gully data but low confidence in the data we hold on flow control devices. Since the early 2000's highway drainage systems typically contain ancillary devices and structures that help mitigate the risk of flooding. These are prominent in newer developments, and they help to store highway storm water runoff and release it at a controlled rate so as not to cause any impact downstream and to the development itself.

To manage and maintain these systems effectively we need to attain sound data. With the increasing adoption of highway sustainable drainage systems, we will need to introduce different maintenance regimes, alongside our traditional methods.

The project is split into phases as follows:

Phase 1 – review of digital adopted development drawings and records

This is currently ongoing with WSP's ICRC team reviewing and noting discrepancies for inclusion or amendment on our asset management records.

Phase 2a – review of minor repairs procured through TSC
Currently underway.

Phase 2b – review of paper based adopted development drawings and records.
Due to commence 23/24

Phase 3 – review of other paper records and highway officer information
Due to commence 24/25

As the data on drainage assets increases, we will be able to expand the cyclic maintenance regimes to incorporate more of our assets and introduce condition monitoring. This will have the benefits of ensuring our drainage assets are operating at their respective design standards and be able to plan preventative maintenance so

Partnership Working/External funding

Quarterly meetings are held with Anglian Water to review and discuss common areas/locations of concern and develop partnership approach to resolve them.

Drainage Cleansing

There are 190,000 highway drainage assets including gullies, catchpits and offlets across the county that Lincolnshire County Council is responsible for, all of which are visited on an annual basis for routine cleansing.

Following the previous drainage subcontractor ACL going into liquidation in 2022, our Highways Works Term Maintenance Contractor, Balfour Beatty Living Places, brought in Flowline to continue routine drainage maintenance.

For several years now we have been exploring ways to move to a targeted approach to gully cleansing so that assets can be cleaned at a frequency that is based on risk, rather than a default clean once per year for every gully. When we tried to do this prior to 2020 we felt that the data we had available was unreliable, and so it has been problematic to develop a true targeted cleanse. As part of their proposal, Flowline put forward some ideas for this. This risk is based on silt levels and other factors like complaints, road hierarchy, reported blocked connections, Section 19 reports, and EA flood areas as well as local knowledge from the Local Highways teams.

A trial of this approach, which would see every asset (gully, offlet and catchpit) cleansed at least once every two years with high-risk ones being cleaned twice a year, started in September.

A total of 74,736 assets have been cleaned since 1st April 2022 until. Of those, 46,603 are part of the targeted cleanse trial which started in September. Those cleaned prior to that were to complete the annual cleanse which was delayed when ACL went into liquidation. The programme runs over 18 months until the end of March 2024, so we are now on schedule. To complete it we need 4 routine tankers, 1 traffic management tanker and the hand crew. The hand crew is focussed on cleansing inaccessible assets assigned to them. Once they deal with those, they move onto issues identified by the tanker crews to look at such as jammed lids.

Customer Transactions

When the public report blocked drains or flooding through the Customer Service Centre or on the LCC website (integrated with Fix My Street), the Local Highways Team will inspect the report on site and the following steps will be provided:

- If the gully is simply blocked and is either due very shortly (next month or two) on cycling programme, or isn't causing anything other than a minor nuisance, a status will be selected which gives the message "We have assessed your report and the drain will be cleaned on the next programmed schedule."
- If cyclic cleansing isn't expected shortly, and/or there is an issue which warrants more immediate intervention, then an off programme jetting job will be raised from site. The customer will receive updates to inform works are scheduled, and then completed. As even full jetting often doesn't solve the drainage issues, we are

adapting our automatic reporting so that a “works are complete” message doesn’t go out after these works as it can be misleading.

- If more significant drainage works than off-programme jetting is required, then a job will be raised for CCTV investigation, root cutting or minor repair works.
- In areas where none of the reactive options are appropriate, either because the issue is very low priority and risk, or because longer term works and investigations with partner authorities are needed which may take over 4 months maximum, a status will be used where the member of the public is notified of "no immediate action proposed" but this is backed up with a bespoke explanation from the officer on the site-specific actions required. Internally, a Forward Programme Brief will be raised within the Asset Management System which will be prioritised and allocated to an Engineer to design works as funding becomes available for large-scale drainage schemes.
- Where drainage or flooding are caused by Riparian maintenance issues, the report may be moved to a status indicating enforcement action is being taken. Whilst the Local Highways Teams may often be involved to informally try and encourage landowners to maintain their watercourses, in Lincolnshire the Internal Drainage Boards have delegated powers to carry out formal enforcement action, for example to enforce that a ditch is cleared out or a culvert is repaired.

Minor Drainage Improvements

We now have an annual £600,000 budget for minor drainage improvement, which is for small scheme scale works that typically take less than a week to complete and include a variety of works as detailed below:

Replacing sections of damaged highway pipes
Installing additional gullies and manholes where ponding occurs
Increasing the size and capacity of the drainage system over small lengths
Repairing bank or ditch slips

This which enables problematic small schemes that occur during each period of severe weather we deal with. We have several drainage gangs working in the County and a programme planned which will spend the full allocation this financial year.

Minor Works Gangs

We continue to run a full programme of drainage investigation works, responding to a variety of local issues not covered by either the reactive or planned budgets.

When the off-programme jetting cannot solve a problem, these gangs will carry out a more detailed investigation. They are set up with CCTV equipment and tools to carry out minor civils repairs or root cutting. We have been focussing the programme of works for these crews on longstanding highways drainage issues which were exposed during recent

flooding events and are not necessarily just down to blocked gullies. With changing weather patterns and an ageing drainage asset, new problems are continuously coming to light which feeds this programme.

In 2021/22 these crews attended and dealt with 291 sites, they have attended a further 64 since April and have 177 designed and ready to go for the rest of the year. We will continue to adjust this programme as more detail is collected from any heavy rainfall events where remediation work is identified and agreed.

The same approach will continue in the 2023/24 financial year, and recent flooding events have highlighted new issues developing and different types of drainage issues being exposed by varying weather patterns so the crews will be invaluable.

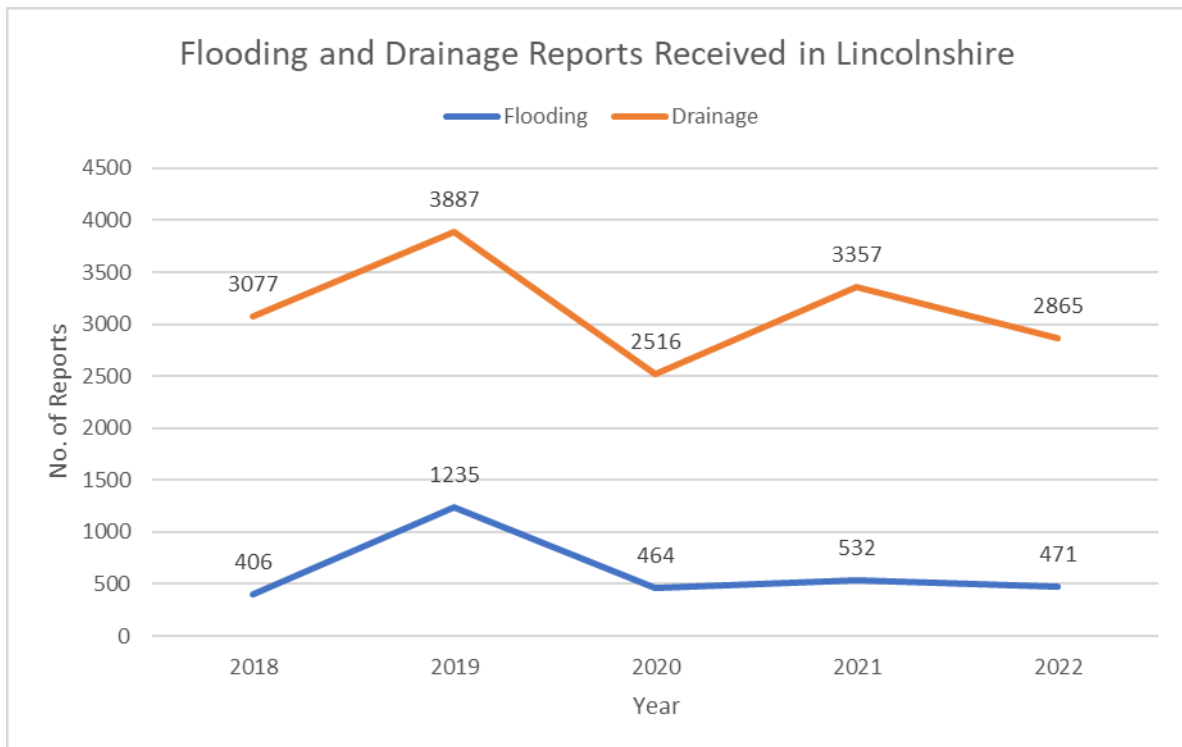
Flooding Response Data and S19 Investigations

The benefits of the mobile version of our asset management system mean that emergency crews attending flooding as first responders can capture photos on site and document extent and severity of flooding, which can then be used to inform follow up response as well as Section 19 investigations by the Floods and Water Management team where internal property flooding has occurred.

We have mapped all flooding and drainage reports through the CSC and Fix My Street for the last 10 years and are currently overlaying this with the S19 data from the Floods and Water team to ensure that the two sets of data do correlate, and to inform the prioritisation of the various levels of work identified in this report.

In 2022 we received 2865 drainage reports and 471 flooding reports for the whole county. This compares with:

- 3357 drainage and 532 flooding reports in 2021
- 2516 drainage and 464 flooding reports in 2020
- 3887 drainage and 1235 flooding reports in 2019
- 3077 drainage and 406 flooding reports in 2018



2. Conclusion

The Committee is asked to consider and comment on the detail contained in the report and recommend any changes or actions to the Executive Member for Highways, Transport and IT.

3. Consultation

a) Risks and Impact Analysis

As this is an update report inviting comment and questions, no decisions are being proposed for Scrutiny and so an Impact Assessment has not been carried out. The report updates on the results of previous decisions which have been subject to risk and impact analysis.

4. Background Papers

No background papers within Section 100D of the Local Government Act 1972 were used in the preparation of this report.

This report was written by Richard Fenwick, Head of Highways Asset and Local Management Services, who can be contacted on 01522550452 or richard.fenwick@lincolnshire.gov.uk.

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