

Highways Gully Cleansing Operation Plan Statement

1. Introduction

- 1.1. This plan has been developed in line with the requirements of the 2016 Code of Practice “Well-managed Highway Infrastructure” (WMHI) ¹, Guidance of the Management of Highway Drainage Assets and other approved codes of practice. The plan outlines how the Council cleans its highway drainage assets and provides guidance on the way in which gullies are inspected, assessed and maintained and how the relevant data is stored and utilised.
- 1.2. Related to this document is the Council’s Transport Asset Management Strategy, which provides a framework for highway asset management and investment in Stockport. It clearly sets out what drainage asset management means to the Council and outlines procedures, processes and systems to ensure transport assets are maintained in a safe condition and are fit for use.
- 1.3. In terms of assets, Stockport currently has approximately 72,000 gullies (with associated connections) and 22.4km of highway culvert (less than 1.5m span) owned or part owned by Stockport Council.²
- 1.4. Stockport’s Local Flood Risk Management Strategy (SLFRMS) (2016) provides an overall assessment of local flood risk in Stockport, setting out objectives and measures for how Stockport Council will manage and reduce local flood risk.
- 1.5. One of the strategy’s objectives focuses on the resilience of Stockport’s drainage assets and how the council will develop a maintenance plan for the regular clearing of highway gullies based on a prioritised risk-based approach. By adopting a risk-based approach, the council will be able to make more efficient use of gully cleaning resources and budgets and reduce the impacts of flooding such as road closures and property damage.

2. Legal and Policy Framework

- 2.1. There is a statutory obligation on Highway Authorities to maintain the public highway under The Highways Act 1980. This establishes the main duties of Highway Authorities in England and Wales.
- 2.2. An important part of that maintenance relates to highway drainage systems and in particular road gullies in vehicular highways.
- 2.3. Moreover, under the Flood and Water Management Act 2010, Stockport Council has been designated as the Lead Local Flood Authority (LLFA) which gives local authorities a role in managing local flood risk, helping with infrastructure development and redevelopment and working with other bodies in dealing with flood risk.
- 2.4. The Council is also required to ‘develop, maintain, apply and monitor a Local

¹ [Well Maintained Highways Infrastructure, 2016](#)

² Stockport Council Highways Asset Management Plan 2020 Update

Flood Risk Management Strategy (LFRMS)' which has formed the basis of this gully cleansing policy.

- 2.5. In terms of planning, through the implementation of the Flood and Water Management Act 2010, sustainable drainage systems (SuDS) were intended to be mandatory for all major development throughout England and Wales. The 2019 NPPF requires all major development to incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems used should:

- a) take account of advice from the LLFA;
- b) have appropriate proposed minimum operational standards;
- c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and
- d) where possible, provide multifunctional benefits.

- 2.6. At a local level, the council's planning policy SD-6 'Adapting to the impacts of Climate Change' states that where planning permission is required, areas of hard standing or other surfaces should be of a permeable construction or drain to an alternative form of SuDS. This also includes roads, as well as private car parks that may be adopted by the council at a later date.

3. Asset management and data gathering

- 3.1. Most drainage assets are hidden underground, with many historic plans and drawings no longer available due to the age of some of the assets.³ In recent years, the council has made great strides in locating and surveying the extent of the borough's drainage assets and our records have improved significantly.⁴
- 3.2. Nevertheless, a lot of work remains to try and capture all the relevant data associated with Stockport's drainage assets.
- 3.3. Stockport Council uses the gully management and asset mapping software Gully Smart (developed by KaarbonTech) to display the physical infrastructure and status of gullies and to simplify the ongoing updating of inspection and maintenance records. The software layers an asset's location on top of an Ordnance Survey (O.S.) basemap and utilises O.S. and Environment Agency (E.A.) GIS data to allow users to manage and mitigate risk factors.
- 3.4. The system allows for data to be captured on different work types including inspection, routine maintenance and repair. Reports can then be created which provide officers with information about different aspects of the asset, such as Key Performance Indicators (KPIs), inspection activity or repair work completed.
- 3.5. Gully Smart is also used by Totally Local Company (the council's contractor) to

³ Stockport Council Transport Asset Management Strategy

⁴ Stockport Council Transport Asset Management Strategy

respond to gully cleansing requests and undertake maintenance activities. A GPS system is installed in the council's two gully wagons which enables the location of the gully vehicle to be traced. This allows the service area to review progress and allocate emergency jobs more effectively.

- 3.6. Gully crews as well as Stockport Council engineers are able to undertake field inspections and record information about the assets on a handheld device.
- 3.7. The data captured from these routine or reactive inspections allows the council to prepare cleansing frequencies and co-ordinate planned maintenance repair programmes e.g. replacement of damaged gully covers.
- 3.8. Asset data can also be utilised in a web feature service (WFS) format to allow for further analysis of gullies using more feature rich GIS software such as QGIS. This enables the council officers to overlay additional data on top of the asset. For example, the council's highways team may want to identify gullies located on sections of road where works are planned, or which gullies are located on the Resilient Route Network.
- 3.9. The ongoing use of Gully Smart and QGIS will ensure the council has a clear picture of the size and condition of the asset, which will improve the long-term planning and maintenance of gullies.

4. Risk based approach to identification of gully cleansing priorities

- 4.1. In line with the risk-based approach that the WMHI code of practice advocates, the council uses a number of factors to determine the risk associated with each gully asset.
- 4.2. Gullies are assessed on an individual basis with consideration given to the likelihood of a blockage occurring and the impact that may have on properties and the highway network.
- 4.3. The following factors are used to determine the likelihood of a blockage occurring:
 - Mean time to failure (which accounts for factors such as leaf accumulation and root ingress)
 - Mean siltation rate (which accounts for factors such as surface water run-off rates and the amount of sediment it tends to contain)
- 4.4. The following factors are used to determine the impact a blockage may have on properties and the highway network:
 - Highway inspection schedule (which accounts for factors such as the Resilient Route Network and modelled highway usage)
 - Fluvial flood zones
 - Surface water flood zones

- Neighbouring property elevation in relation to gully
- 4.5. Multi-Criteria Decision Analysis is carried out by assigning weighting scores to each gully according to their geo-spatial relationship to the considered factors. Weightings were decided during several meetings between council officers from the GIS, Flooding and Highway departments. This is developed via specialist software and the results are then viewed in QGIS.
- 4.6. Using available inspection information, mean time to failure and average siltation rates are calculated. Mean time to failure is a reflection of the risk of failure to the asset which could arise from environmental features such as impact of trees. Impact scores are determined for the gully assets from the factors outlined in 4.4 using the scoring system shown in Table 1. The severity of impact is then used to allocate a target percentage of the time value in accordance with Table 2.

Factor	Criteria	Score
Highway inspection schedule inc Resilient Route Network	Monthly	3
	Quarterly	2
	6 monthly	2
	Annual	1
Fluvial flood zones	3	3
	2	2
	1	1
Surface water flood risk	High	10
	Medium	7
	Low	4
	Very Low	1
Neighbouring property elevation in relation to gully	Below	10
	Slightly Above	5
	Above	1

Table 1 – Impact score weightings

Impact Score	Target Silt/Fail Time Percentage
High	65
Medium	70
Low	90

Table 2 – Target percentage of time taken to, on average, fully fill with silt, or to develop a fault

- 4.7. Finally, the calculated cleaning frequencies are grouped according to table 3.

Days to Reach Target Percentage	Cleaning Frequency
< 365	Within 6 Months
365 - 729	Yearly
730 - 1094	Every 2 Years

Table 3 – Cleaning frequency groupings

- 4.8. In order to create an actionable gully cleaning schedule, individual asset cleaning frequencies are averaged for each road in the borough. Note that a road in this case is defined as having a distinct unique street reference number (USRN) recorded in the street gazetteer. Therefore, long roads, such as the A6, may be composed of several shorter roads.
- 4.9. As an additional layer of resilience, some areas of the borough are identified as ‘flooding hotspots’, where surface water accumulation is a persistent issue. Gullies within hotspot areas are assigned the ‘Within 6 months’ cleaning frequency regardless of the results of the multi-criteria decision analysis.
- 4.10. This exercise is designed to be reviewed at appropriate intervals when cleansing cycles have been completed, additional asset information has been obtained e.g. silt level surveys or programmed repairs have taken place. This will enable the council to review cleaning frequencies periodically with increasing accuracy as more data is collected.

5. Routine Gully Cleansing and Maintenance

- 5.1. Stockport’s routine gully cleaning cycles are set out below:
 - Within a six-monthly cycle (including flood hot-spot locations)
 - Yearly
 - Every 2 years
 - Every 3 years
- 5.2. Gullies are inspected using the frequency assigned to that section of road. Frequencies for gullies identified as flood hot-spots will be considered on an individual basis and targeted within the six-monthly cycle.
- 5.3. Gullies emptied every three years tend to be located on estate roads and where modelled highway usage is low, properties are elevated above the carriageway surface, low siltation rates have been recorded and the gully has a low tendency for faults to develop.
- 5.4. Less common drainage assets such as kerb drains and slot drains will be incorporated within the cleansing regime.

6. Planned Maintenance Works

- 6.1. Stockport Council also undertakes planned maintenance works. These works are often determined when cyclical maintenance has identified a drainage defect. Contractors carrying out the cleaning will report back (via Gully Smart or WinCan report from CCTV survey) defects on the drainage system. Defects include damaged gully lids and frames, defective pipes, damage to brickwork and gully pots. Priority will be given based on the risk assigned to the defect.

- 6.2. The Council is undertaking a borough-wide gully cover replacement programme where access issues or defects have been reported. With the expectation that this proactive approach will result in a reduction of failed cleansing visits in the long term.

7. Reactive Gully Cleansing and Maintenance Works

- 7.1. The council will also respond to priority gully cleansing requests from councillors, members of the public and businesses. However, the monitoring work undertaken by council staff and their contractors should reduce the number of requests that are received as the system becomes more embedded. The borough-wide gully grate/frame replacement programme will also assist in reducing this issue.
- 7.2. Members of the public can inform the council of a blocked gully on the council's website using the on-line form. The public provide information about the location as well as the impact on the highway or if there's visible damage.
- 7.3. Enquiries are logged via CONFIRM and a council officer will then carry out a site assessment to determine whether a cleanse is required.
- 7.4. The operational teams carry out routine cleansing of gullies in ward areas across the borough but will divert resources to reactive work if needed. As crews undertake maintenance, information is captured and added to Gully Smart so engineers have records of the works being undertaken. In order to ensure that the routine cleansing system is effective (using available resources), reactive gully cleansing requests must be prioritised.
- 7.5. Officers will carry out site visits to all reports of blocked gullies at their own discretion. In most cases, officers are advised to carry out inspections shortly after periods of substantial/heavy rainfall - this helps assess if the gully is actually blocked and holding water or simply down to capacity of the drainage system/surface water flooding. There will be periods following heavy rainfall when the main drainage system is at full capacity and this will not allow surface water to drain into the highway gullies. This will be considered in the reactive reporting process.
- 7.6. In order that we can focus on urgent issues, prioritise effectively and maximise the time spent on the routine gully cleansing programme the Council will investigate reactive gully reports that relate to the following:-
- Where cars are having to drive on the opposite side of the road due to a blocked gully
 - Where pedestrians are having to walk off the pavement into the road due to a blocked gully
 - Where the road is not passable due to blocked gullies
 - Where surface water from the highway is entering business premises
 - Where surface water from the highway is entering private property
 - Where there is a build-up of surface water at a bus stop
 - Where there is a build-up of surface water at pedestrian crossings

Other reports of significant flooding will be considered and prioritised using available resources. All other issues will be picked up by our routine cleansing activity.

- 7.7. When undertaking reactive gully cleaning activities, consideration will have to be given to routing navigation to ensure wagons reach as many assets within a short a time frame as possible. If a reactive request is received for an area where routine cleansing is already taking place, the operational team in that area will attend to the gully and record condition information as part of routine operations. This will provide a more effective delivery arrangement.

8. Specific issues

- 8.1. There are specific issues relating to the maintenance of gullies.

8.2. Issue of Parked Cars Over Gullies Preventing Gullies from Being Cleansed

- 8.3. Stockport Council undertakes a planned approach to cleaning gullies where vehicles are parked over the drainage assets. Times and dates are agreed with the contractor regarding when the gully cleansing will take place. Nearer the planned maintenance date, letters are sent to local residents reminding them of the cleansing activities and to park their car away from the planned works. Advisory signs are also attached to lamp columns reminding drivers not to park along the section of road during the specified date/time when the cleansing activities are due to take place. The Council will continue to investigate opportunities to reduce the impact of the issue on cleansing operations.

8.4. Planning and Drainage Issues

- 8.5. Policy SD-6 of the Core Strategy 'Adapting to the impacts of Climate Change' states that where planning permission is required, areas of hard standing or other surfaces should be of a permeable construction or drain to an alternative form of Sustainable Urban Drainage System (SUDS). This includes both road surfaces as well as private car parks.
- 8.6. Although traditional drainage systems are usually proposed by developers, Stockport Council, as LLFA, may mandate that permeable solutions are installed instead. Several roads in Stockport have already been constructed with permeable surfacing (either permeable block paving or asphalt) and more are in the pipeline. The council will therefore establish the ways in which these drainage assets are cleansed and maintained and how the cost of managing these assets varies from existing maintenance regimes.
- 8.7. Consideration also needs to be given to how water drains away from unadopted areas, other drainage systems e.g. culverts and discharges onto the public highway and the flood risk caused by these. The council is looking to improve the maintenance and management of highway culverts including mapping of assets and condition on the QGIS system.

- 8.8. Stockport Council will ensure roles and responsibilities between relevant parties are agreed upon and clearly set out in Maintenance Plans accompanying planning applications. The council's flood management and highway maintenance team will work with the council's planning department to prepare a report explaining the additional costs that might be incurred installing, cleaning and maintaining permeable paving and other less-common types of drainage systems.
- 8.9. To cover the extra costs of maintaining permeable paving, highway authorities will require developers to pay a commuted sum to the council as a contribution towards the future maintenance and upkeep of the drainage asset. This will occur as a part of Section 38 Agreements between the highway authority and the developer.
- 8.10. Street Sweeping and Highway Drainage
- 8.11. It is important to remove debris from the drainage channels of roads to reduce the need to empty gullies and to prevent gulley covers from becoming blocked. Street sweeping is therefore a contributing factor in keeping drains clear and preventing flooding.
- 8.12. The Council also supports any activities that encourage the public to address littering problems themselves.
- 8.13. The Council's on-line reporting form will be reviewed and updated in line with this Operation Plan and our prioritised risk-based approach for gully cleansing activities. The changes will provide more clarity on the Council's priorities, taking into consideration our limited resources and will assist with the implementation of a more effective service. The on-line reporting system will provide updates on the status of each case and whether the gully will be attended to as part of a scheduled programme, the reported blockage was due to a capacity issue, a reactive visit and clean is required or where follow-up repairs are needed that may also involve root cutting with specialist equipment, gully cover replacement, a trial excavation or CCTV camera survey.

9. Review

- 9.1. This gully cleansing operational plan statement will be reviewed every 5 years. The gully cleansing hierarchy will be reviewed annually.
- 9.2. Amendments to the hierarchy will be approved by the Director of Place Management in consultation with the Cabinet Member.