



REGENERATION AND ENVIRONMENT SCRUTINY COMMITTEE – FOR INFORMATION

SUBJECT: HIGHWAY GULLIES AND DRAINS - BRIEFING NOTE

REPORT BY: HIGHWAYS OPERATIONS GROUP

1. PURPOSE OF REPORT

- 1.1 This report is made in response to a request made at Scrutiny Committee on 28th June 2016 for a briefing note, outlining the procedures and processes for routine drainage and gully cleaning operations within Caerphilly County Borough Council (CCBC).

2. SUMMARY

- 2.1 The briefing note has been made in response to a request made by Scrutiny Committee (28th June 2016), outlining the procedures and processes for routine drainage and gully cleaning operations within Caerphilly County Borough Council (CCBC). This is to be placed on the Members' Portal for reference and comment.
- 2.2 The briefing note divides the road drainage maintenance aspect of Highway Operations into the practices, gully types, reporting and rectification of defects with the gullies and road drainage within CCBC.
- 2.3 This briefing note is to provide members with information for their reference and possible further comment directly to Highway officers.

3. LINKS TO STRATEGY

- 3.1 The report links directly to the Council's priority to ensure that communities are green and clean places to live and to improve residents' quality of life by maintaining the drainage systems within CCBC.
- 3.2 This briefing note also explains how the road drains and gullies are maintained and repaired to retain an effective road drainage system throughout CCBC to align with the Single Integrated Plan - A **Greener Caerphilly** which aims to: improve local environmental quality (G01).
- 3.3 This drainage maintenance regime contributes to the following Well-being Goals within the Well-being of Future Generations Act (Wales) 2016:
- *A prosperous Wales*
 - *A resilient Wales*
 - *A Wales of cohesive communities*
 - *A globally responsible Wales*

4. THE REPORT

- 4.1 This briefing note provides the members with an opportunity to gain an insight into the processes and procedures that are in place to maintain and repair the road drainage in CCBC.
- 4.2 The note is divided into a number of broad sections:
- Introduction
 - Drainage Practice
 - Types of Gullies and Drains
 - Cleansing Gullies
 - Rectifying Drainage Defects
 - Reporting of a Blocked Gully
- 4.3 The introduction gives an outline of the duties of the Highway Authority (CCBC) with the typical arrangement and disposition of road drainage in the county
- 4.4 The Drainage Practice covers the organisational set up and the quantum of drainage infrastructure in the county, with an outline programme of gully cleansing included in Appendix A of the report.
- 4.5 Types of Gullies and Drains give a quick visual reference guide to the most common versions of gullies and drainage inlets.
- 4.6 The Cleansing Gullies section provides a step-wise sequence of the gully emptier machine's operations, along with the most frequent instances of issues found whilst carrying out these operations.
- 4.7 For the Rectifying Drainage Defects, an outline is given of the most common sorts of defects found with road drainage and how these are resolved.
- 4.8 The final section is the Reporting of a Blocked Gully provides the reader with the means of contacting the required services with the salient information needed to ensure a swift and accurate response to an incident.

5. WELL-BEING OF FUTURE GENERATIONS

- 5.1 This briefing note contributes to the Well-being Goals as set out in Links to Strategy above (3.3). It is consistent with the four of the ways of working as defined within the sustainable development principle in the Act in that it supports:
- Long term asset management solutions, as the routine cleaning and inspection of the road drainage system allows for more effective and predictable resource/ financial commitment to this function into the future.
 - This routine maintenance and cleaning of the road drainage system is a central part of the CCBC prevention strategy, so reducing the need for larger scale repair operations required for poorly maintained/ inspected infrastructure.
 - The road drainage system connects to larger networks both under council ownership and of external parties (such as Welsh Water), so forming part of an integrated approach required towards the maintenance and sustainability of the county's complete drainage network going forward.
 - Linked with the above point, the road and council drainage network links in with other networks both public and private owned, so a collaborative approach is encouraged with any system that incorporates or is adjacent to assets that fall under external ownership.

6. EQUALITIES IMPLICATIONS

- 6.1 The reduction of flooding risk that comes with an effective drainage maintenance regime, should assist all members of the community, especially the less-able and elderly.

7. FINANCIAL IMPLICATIONS

- 7.1 There are no direct financial impacts from this briefing note, although any reduction in funding for this aspect of operations from the future MTFP (Medium Term Financial Plan) measures will have a direct impact on the effectiveness of this service.

8. PERSONNEL IMPLICATIONS

- 8.1 These proposals will not have any direct impact on CCBC personnel.

9. CONSULTATIONS

- 9.1 As this briefing note has been requested by the Scrutiny Committee (28th June 2016) to be placed on the Member's Portal it has not undergone any independent consultation process.

10. RECOMMENDATIONS

- 10.1 As this briefing note has been requested by the Scrutiny Committee (28th June 2016) to be placed on the Member's Portal, as an information item, it has no recommendations to give on this matter, but officers welcome any comment / query directly to them.

11. REASONS FOR THE RECOMMENDATIONS

- 11.1 With reference to 10.1, as this is an item for information only there are no recommendations.

12. STATUTORY POWER

- 12.1 Highway Act 1980.

Author: Graham Parry, Highway Operations Group Manager

Appendices:

Appendix 1 Highway Gullies and Drains - Briefing Note

CAERPHILLY COUNTY BOROUGH COUNCIL

Highway Gullies and Drains - Briefing Note



A greener place
Man gwyrddach

CAERPHILLY
COUNTY BOROUGH COUNCIL
CYMRU / CYMRU / CYMRU
CAERFFILI

Highway Gullies and Drains

Caerphilly County Borough Council (CCBC), as the Highway Authority, has a statutory duty (under the Highways Act 1980) to maintain all publicly adopted highways in the Borough. An intrinsic part of this asset is drainage.

Although older roads will have less sophisticated drainage, in some rural locations and associated minor roads, this may simply be a ditch leading to a watercourse. With most modern adopted roads drainage systems have been designed to remove water efficiently from their surface, ensuring (in so far as is practicable) the safe passage for vehicles and pedestrians. However, the law recognises the limitations of completely draining the highway in every circumstance; so for example, during torrential rainfall a driver must exercise reasonable care based on the road conditions at that time.

It is necessary to clean and maintain these drainage assets so that they can work properly. Most gullies in CCBC connect through a drain pipe typically 100mm or 150mm in diameter to the main sewer run, usually under the road. This can be either a surface water sewer, which eventually will discharge into a stream / river / sea or the “combined” sewers which ends up at a sewage treatment works; occasionally they can drain to a verge soak-away (a stone/gravel-filled pit that eases the passage of water into the surrounding ground).

Drainage Practice

The Well Maintained Highways - Code of Practice for Highway Maintenance Management, July 2005, recommends that all highway gullies should be routinely cleaned once a year.

In Caerphilly the county is divided into three areas, each area covered by a gully-emptier machine and two crew members. The crews are issued with a schedule to ensure that each gully is cleansed at least once a year (an outline annual programme for this is in Appendix A – this programme remains outline as it is subject to change due to works prioritisation and climactic conditions), though in areas prone to flooding or increased amounts of debris, they are cleaned more often.

In times of inclement weather routine cleansing can be relegated, as priority is given to instances of flooding or other urgent tasks (like winter gritting), in order to minimise inconvenience to road users.

The number of CCBC's gullies totals over 34,000, the cleaning of which is undertaken by three gully emptier lorries. These are fitted with GPS tracking, so a live record can be kept of their location and progress.

Types of Gullies and Drains



Typical Gullies



Typical Side Entry Gullies



Typical Kerb Drains



Slot Drains



Pedestrian Channels



Drainage Gratings

Cleansing Gullies

The cleaning process is usually sequenced as follows:

1. The gully is located as a works item or as part of the routine maintenance schedule
2. Operative will lift off the grating or cover, removing any vegetation in the process
3. A gully sucker (the suction gear integral to a gully-emptier machine) is lowered into the gully chamber and draws up all the detritus out of the trap, storing it in the vehicle's tank
4. When the tanker is full the material has to be taken to a special licensed tip for disposal, to comply with the requirements of The Waste Management Regulations.



A Gully-emptier Lorry in action – cleaning a gully and jetting a manhole

Some of the problems experienced during the gully cleansing operation are:

- Gullies that have been used for fly tipping, even containing car batteries, sump oil, garden refuse or hardened concrete. This is illegal and the authority can prosecute.
- Obstinate gully covers – operatives unable to lift
- Solidified contents in the gully traps which need excavating
- Damaged covers – operatives unable to lift
- Vehicles/skips etc. parked over gullies which are programmed to be cleaned.
- Gully covers stolen – a danger to both public and work force
- Gully covers dropped into the gully trap, which may then requires excavation and replacement of the pot.
- Collapsed or blocked outlet or pipe – causing water to back-up and possibly leading to local flooding

Rectifying Drainage Defects

Most gullies are designed to trap smells coming back up from the pipes but these can evaporate in very dry weather allowing odours to escape. This can usually be solved by refilling the gully pot with water, up to the trap level.

Capacity problems can occur, even when drainage installations are clean and well maintained, when the volume of water exceeds the design capacity of the drainage asset, the road can then become flooded or waterlogged. Flooding can be attributed to exceptional rainfall, a road being located in a low-lying area, change in "run-off" from adjacent areas, water courses overflowing etc.

Material carried into the drains by floods can lead to blockages, drainage grills and gratings (as on gullies) can become blocked very quickly when materials like mud is deposited on the road or when there is a heavy seasonal leaf-fall i.e. in the Autumn.

The blockages of roadside gullies can be caused by debris (due to detritus, ingress of vegetation or the collapse/ partial collapse of the drainage system); this can lead to the filling of several gullies in the network which then surcharge water onto the carriageway and surrounding areas. From this point it is advisable to carry out investigations to ascertain what the problem is and to provide a solution, which may be a more extensive rectification or repair to free up the drainage flow, this requires a longer time and dedicated resource commitment to complete.

Associated or adjacent structures, such as old brickwork chambers and old pipes, that have cracked underneath the gully network are not automatically the responsibility of the Highway Authority and would only be investigated if they form part of the Council's Asset Register.

The road's profile (in cross-section) directs water into its drains, if this has any depressions then puddles or ponding can occur. Where feasible and/ or deemed appropriate, this can be rectified by localised patching of the road surface or reprofiling of the road.

Reporting of a Blocked Gully

The Gully Crew, a Drainage Engineer or Highway Inspector will investigate any report of blocked gullies and will decide on the required action.

Actions include any or all of the following:-

- jetting of the pipeline
- camera surveys
- excavation
- replacement of gully covers, gully pots and pipework

If drainage problems are encountered they should be reported to the Customer Relations Management Team on 01443 866511, giving the relevant information such as:

- road name
- gully position with reference to features, e.g. an adjacent house or lamp column number
- name of the customer
- contact telephone number or email address

This will activate a service request that will allow officers to act on the incident and consequently advise the customer of these actions.

In addition, those who have access to the internet there is the following link for both advice and reporting:

<http://www.caerphilly.gov.uk/Services/Roads-and-pavements/Report-an-issue/Flooding-and-drainage>

APPENDIX A - Outline Annual Gully Maintenance Schedule - First Cleanse

AREA	APRIL				MAY					JUNE				JULY				AUGUST				SEPTEMBER			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HOLLYBUSH	1																								
MARKHAM	2																								
ARGOED	2																								
ABERBARGOED	5																								
BRITANIA	1																								
CEFN FFOREST	2																								
PENGAM	1																								
GLAN-Y-NANT	1																								
TIR-Y-BERTH	2																								
FLEUR-DE-LYS	3																								
PONTLLANFRIATH	9																								
MAESYCWMMER	4																								
RHYMNEY	10																								
ABERTYSSWG	1																								
PONTLOTTYN	2																								
TROEDRHWFUWCH	1																								
TIRPHIL	1																								
BRITHDIR	1																								
NEW TREDEGAR	3																								
PHILLIPSTOWN	1																								
FOCHRIW	1																								
DERI	1																								
BARGOED	11																								
GILFACH	2																								
PENPEDAIRHEOL	1																								
CEFN HENGOED	3																								
HENGOED	2																								
GELLOGAER	3																								
NELSON	7																								
SENGHENYDD	2																								
ABERTRIDWR	4																								
PENYRHEOL	4																								
PWLLYPANT	1																								
ENERGLYN	2																								
HENDREDENNY	2																								
TRECENYDD	3																								
MACHEN	2																								
DRATHEN	1																								
RUDRY	2																								
WATERLOO	1																								
GRAIG-Y-RHACCA	3																								
TRETHOMAS	2																								
BEDWAS	4																								
CHURCHILL PARK	1																								
LANSBURY PARK	2																								
CAERPHILLY	29																								
LLANBRADACH	7																								
YSTRAD MYNACH	6																								
BLACKWOOD	12																								
WYLLIE	1																								
YNYSDDU	2																								
CWMFELINFACH	2																								
WATTSVILLE	4																								
OCHRWYTH	1																								
PONTYMISTER	2																								
RISCA	12																								
CROSSKEYS	4																								
PONTYWAUN	1																								
CWMCARN	2																								
ABERCARN	3																								
PANTSIDE	4																								
HAFODYRYNYS	1																								
CRUMLIN	4																								
NEWBRIDGE	10																								
TREOWEN	2																								
TRINANT	2																								
ABERBEEG	1																								
CROESPENMAEN	4																								
OAKDALE	3																								
WOODFIELDSIDE	1																								
SPRINGFIELD	2																								
PENTWYNMAWR	2																								
Weekly Claim																									
Accumulative Balance																									

Note: this programme is subject to change due to works re-prioritisation and climactic conditions

