

The background of the slide features the official coat of arms of the City of Vancouver. It is a shield divided into four quadrants. The top-left quadrant shows a sailing ship on the water. The top-right quadrant depicts a stag with large antlers. The bottom-left quadrant shows a beaver. The bottom-right quadrant features a grizzly bear. Above the shield is a crown with four maple leaves. A banner at the bottom of the shield contains the motto "A NE FOR A".

Agenda Item 7

Roads Maintenance – Gully Cleaning

Falkirk Council

Title: Roads Maintenance – Gully Cleaning
Meeting: Scrutiny Committee
Date: 11 November 2021
Submitted By: Acting Director of Development Services

1. Purpose of Report

- 1.1 The purpose of this report is to provide an update on the performance of Roads and Grounds Services in relation to the servicing of road drainage (gullies) as discussed at Scrutiny Committee on 9 September 2021. The report brings:
- details of existing service provision and performance
 - details of financial information relative to the service provided

2. Recommendation

2.1 It is recommended that the Scrutiny Committee:

- (1) notes the report on the performance of the Service in relation to maintenance of roads drainage assets**
- (2) notes that a further report will be prepared for consideration in one year's time for progress to be monitored**
- (3) considers if this report requires to be forwarded to Executive for consideration, along with any additional comments that Scrutiny Committee would like to make.**

3. Background

- 3.1 The Roads (Scotland) Act 1984 states that a Roads Authority has a duty to manage and maintain all roads that are entered in a list which is prepared and kept by them. This is known as the 'List of Public Roads' and is often referred to as "adopted roads".
- 3.2 'Well-Managed Highway Infrastructure: A Code of Practice' (hereinafter referred to as "the Code") Recommendation 7 is that Roads Authorities should adopt a risk-based approach to all aspects of road maintenance.

3.3 The Council has a total of 35,763 gully drains that must be maintained. As the Council adopts more new roads, this number rises year on year.

3.4 The number of gullies cleaned per year is indicated in Table 1.1

Financial year	Number of gullies cleaned
2018-19	21,812
2019-20	12,430
2020-21	7,573

Table 1.1 – Number of gullies cleaned per financial year

3.5 The Service has been impacted by high staff absence rates in years 2019/20 and 2020/21. Of the working days available, the Service had a full complement of operational staff for gully cleaning for only 40% of 2019/20, and for 55% of 2020/21 to date. This is discounting COVID absence.

3.6 Further, throughout the early COVID pandemic period, service provision was limited only to emergencies, known problem locations, and roads critical to resilience of the area such as Strategic and Main Distributor Routes.

4. Considerations

4.1 In recognition of the limited capacity and resultant performance and to support the Council of Future: *Transformation of Roads and Grounds* project, and Recommendation 7 of the Code, in September 2021 the Service implemented a risk-based approach to the servicing of these assets.

4.2 This approach provides a more efficient way of using existing resources to ensure that gullies most in need of cleansing are reached more often than those in a lesser need. The new approach factors in the importance of the route itself (hierarchy) as well as recognising the different gully types and capacities. Cleansing routes have been reviewed and built using these factors and since September 2021 they have been held on in-cab tablet devices for Operatives to use.

4.3 This data-led approach to managing routine and reactive maintenance digitally on tablet devices will improve effectiveness and efficiency. As data is gathered, usage will be analysed, and adjustments made to the routes. This digital approach, and intended benefits are captured in Appendix 2 which displays a dashboard of the Service's digital transformation.

4.4 Meetings with Coordinators, HR, and Trade Unions have taken place to address absence within the Service. Further Improvement Group meetings have been set up with staff, both office and operational, to discuss Council of The Future related business, and these include having a focus on the managing of absence, the impact of it in service maintenance, and its cost. The Service has made changes to processes relative to managing this

issue.

- 4.5 Additional staff have been trained in undertaking this specialist operation to provide further resilience..
- 4.6 The year 2019/20 was the fifth wettest year on record (Met Office), with six of the wettest years on record occurring since 1998. Temperature, rainfall, and sunshine for 2020 were all in the top ten highest on record; the first time this has happened in a single year – see Appendix 1. Figure 1.1 outlines future predictions based on the Falkirk Council area specifically.

	Summer precipitation change	Winter precipitation change	Summer temperature change			Winter temperature change		
			Min	Mean	Max	Min	Mean	Max
2030s (2020-49)	14 % drier	8 % wetter	+0.9 °C	+1.1 °C	+1.3 °C	+0.8 °C	+1 °C	+1 °C
2050s (2040-69)	15 % drier	14 % wetter	+1.5 °C	+1.9 °C	+2.2 °C	+1.5 °C	+1.6 °C	+1.6 °C
2080s (2070-99)	21 % drier	22 % wetter	+3.3 °C	+4 °C	+4.2 °C	+2.8 °C	+3 °C	+3 °C
2100*	36 % drier	28 % wetter		+5.7 °C	+6.2 °C	+3.9 °C	+4 °C	

Figure 1.1 – UKCP18 projections for Falkirk District based on RCP 8.5 High Emissions Scenario. Adapted from the Met Office UKCP18 User interface. Baseline 1981-2000.

- 4.7 This, whilst alarming, does not fully explain the extent of the issues facing the road gully network. Falkirk Council's Local Climate Impact Plan (LCLIP) outlines that flooding, and rainfall accounted for 31% of all reports of weather impacting on the Falkirk area between 2010 and 2019. The impact of weather events can be expected to generally increase over winters. While summers are expected to get drier overall, when it does rain during summer months, it is projected to be in increasingly intense bursts. Therefore, together with drier summer ground conditions, which reduce the speed at which water is absorbed, we may experience more 'flash flooding' over summers and experience a resultant impact on the road network.
- 4.8 For this reason, it is important to maintain a high standard of performance in the Council's gully cleaning services. The adoption of data led approaches, absence reduction measures and climate monitoring will assist in ensuring effective management of the drainage network. It is intended that this situation will be monitored closely and that a follow-up report on the progress of this work is supplied in a year's time.

5. Consultation

Nil

6. Implications

Financial

- 6.1 Revenue funding available for gully maintenance in previous years is outlined in Table 1.2.

Year	Budget
2018/19	£373k
2019/20	£333k
2020/21	£333k

Table 1.2 – Budget Allocated to Drainage Maintenance

- 6.2 This table shows a reduction in available budget of £40k since 2018. It should be noted that the budget in 2015/16 was £608,000. Further, there are additional savings pressures in forthcoming years. Savings Option DV16 ‘Roads Maintenance Budget Reduction, if approved, will see the Service yield a further £220k savings by 2022/23, through transformational changes. Some of this budget reduction is likely to affect gully cleaning capacity.

Resources

- 6.3 Staff resources in this service area have been reduced through vacancy management.

Legal

- 6.4 The Roads (Scotland) Act 1984 provides Roads Authorities with a duty to maintain a list of public roads and to ensure the roads on that list are serviceable and fit for purpose

Risk

- 6.5 Environmental considerations are fundamental to gully maintenance and alleviating flood risks across the road network. The safety of the travelling public is of paramount importance and risk is managed through the cyclical gully cleaning operation.

Equalities

- 6.6 No equality or poverty impact assessment is considered necessary for this report.

Sustainability/Environmental Impact

- 6.7 The provision of an effective road maintenance service is fundamental to the Council’s environmental aspirations. No Environmental Impact Assessment was considered necessary in the compilation of this report. Climate change and global warming is resulting in warmer wetter winters and dryer summers with intense rainfall events, putting pressure on road drainage systems. Gully

cleaning measures are targeted towards sections of the road network most at risk from these events.

7 Conclusions

- 7.1 This report provides an update relating to the existing service provision in respect of road drainage gully maintenance.
- 7.2 This report demonstrates the plans of the Service to improve the maintenance of the Council's drainage networks through the utilisation of technology and data, absence reporting, climate monitoring and new ways of working. The progress of these measures and overall performance will be reported in a year's time.

Acting Director of Development Services

Author – Gary Neill, Acting Roads and Grounds Manager gary.neill@falkirk.gov.uk

Date - 01 November 2021

Appendices

Appendix 1 – The Met Office: State of the UK Climate in 2020

Appendix 2 – Digitalisation of Service Provision Dashboard

List of Background Papers

The following papers were relied on in the preparation of this report in terms of the Local Government (Scotland) Act 1973:

Roads (Scotland) Act 1984

Falkirk Council: Local Climate Impact Plan

'Well Managed Highway Liability Risk', IHE, March 2017

'Well-Managed Highway Infrastructure: A Code of Practice', UKRLG, October 2016

The UK's climate is changing

The 21st century has so far been warmer than the past 3 centuries¹

Temperature, rainfall and sunshine for 2020 were all in the top-ten highest on record – the first time this has happened in a single year.

- One of the **least** snowy years on record¹⁰
- The number and severity of snow events has generally **declined** since the 1960s

+16.5cm

- UK sea-level has **risen** by 16.5cm since the start of the 20th century
- The rate of sea level rise has recently **increased** and is now at 3mm per year⁹

9/10

- 9 of the 10 **warmest** years for UK near-coast sea-surface temperature have occurred since 2002.⁹

8th

- 8th **sunniest** year⁷
- Sunniest spring⁷
- Sunniest calendar month (May 2020)⁷

+6.2 days

- 6.2 days **longer** leaf season⁵
- 8th highest number of growing degree days⁶

5th

- 5th **wettest** year³
- Wettest February (February 2020)^{3,4}
- Six of the top 10 wettest years have occurred since 1998³

3rd

- 3rd **warmest** year²
- All of the top 10 warmest years have occurred since 2002^{1,2}

UK decadal averages:

The decade 2011 – 2020 was:

0.5°C above 1981 – 2010 average

1.1°C above 1961 – 1990 average

UK long-term averages:

The period 1991 – 2020 was:

0.3°C above 1981 – 2010 average

0.9°C above 1961 – 1990 average

Warming has occurred across all months and all four UK nations

¹ Based on the Central England Temperature (CET) series from 1659

² In a UK temperature series from 1884

³ In a UK rainfall series from 1862 ⁴ In a rainfall series for England and Wales from 1766

⁵ Compared with a 1999 – 2019 baseline ⁶ In a CDD series from 1960

⁷ In a sunshine series for the UK from 1919

⁸ In a UK near-coast SST series from 1870

⁹ Based on the period 1993–2019

¹⁰ Alongside 2019, 2016 and 2014 based on observations from 1959

Gully Cleaning | Digital Transformation | October 2021

Gary Neill | Acting Roads and Grounds Manager | Falkirk Council

Digitisation and Route Development

This directly address inefficiencies to deliver financial savings. The project will continue to ensure that a best practice approach is taken that can deliver best value. The project will deliver a more modern, flexible and competitive workforce.

So what?

This enables us to have an end-to-end process for work both reactive and routine. This allows us to be smarter in how we allocate our resources. Now we know everything about our assets: capacity, location, and can track data effectively from each location, we can allocate resources better with a data-led approach to cleaning.

And?

Whenever a problem with a gully is reported it goes straight to a tablet in real time, is inspected and issued for cleaning to an operative who undertakes the work and records it on a the tablet.



- No Paper
- Better Records
- Greater Resilience
- Before and After Pics
- Anyone can work any tablet
- More efficient
- More effective

Our Assets | Gullies per Hierarchy

Hierarchy	Number
Strategic	1889
Main Distributor	2544
Secondary Distributor	3402
Link Road	2817
Local Access	25111

Our Assets | Road Length Growth

Year	2016/17	2017/18	2018/19	2019/20	2020/21
Total Road Length (km)	978.05	982.18	987.23	988.97	990.48
% Increase	0.39	0.42	0.51	0.17	0.15

Our Assets | Smarter Routes

Location	Hierarchical Status	Gully Types	Cleaning Frequency
Urban	Strategic Route Main Distributor Road	All	Twice per year (6 Month)
Urban	Secondary Distributor Road Link Road Local Access Road	Grahamston (cast) Or Brick built	Twice per year (6 Month)
Urban	Secondary Distributor Road Link Road Local Access Road	Pot Other	Once per year (12 Month)
Rural	Strategic Route Main Distributor Road	All	Twice per year (6 Month)
Rural	Secondary Distributor Road Link Road Local Access Road	Grahamston (cast) Or Brick built	Twice per year (6 Month)
Rural	Secondary Distributor Road Link Road Local Access Road	Pot Other	Once per year (12 Month)
Both	Any	Any	Out of Hours. Twice per year (6 Month)

Table 4.4: Frequency of Cleaning

Our Assets | Smarter Routes

By collecting our assets, digitising them and then analysing them, it allows us to better use our resources by targeting those that need cleaned most often such as:

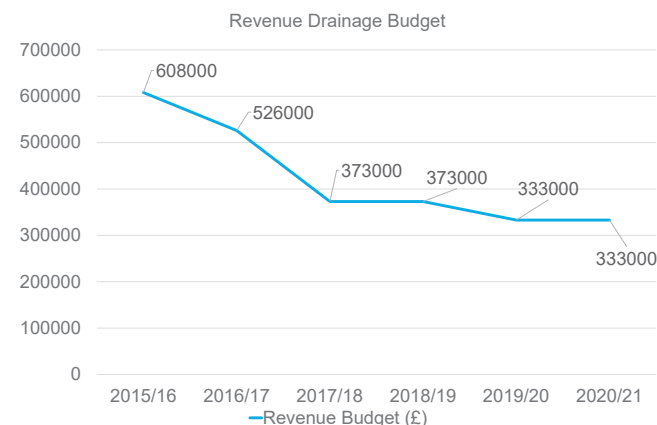
- our most used roads;
- type of gully pot and capacity;
- urban and Rural Split;
- tackle Problem gullies and locations, and
- make data-led decisions and tweak service provision;

Our Assets | Climate Change

While summers are expected to get drier overall, when it does rain at this time of year, it is projected to be in increasingly intense bursts – **see Storm Frank in August 2020**; therefore, together with drier ground conditions which reduce the speed at which water is absorbed, we may experience more 'flash flooding' over summers.

Our gullies service surface water on our ever-expanding road network. Having an effective regime is important to combat the effects of Climate Change, however, this is only one element of our response to it. As urbanisation continues coupled with the effect of Climate Change, surface water will remain a problem for our watercourses, properties and sewer systems. Short, intense rainfall events may continue to pose a risk to the network as a result.

Our Assets | Finances



Our People | Skills & Absence

The CoTF project: *Transformation of Roads and Grounds* aims to have a multi-skilled workforce empowered by upskilling and enabled by the use of technology. The service continues to work with staff, HR, and Trade Unions to address absence issues. The introduction of digital means will ensure the service is resilient to these issues to serve our communities delivering Best Value.