

SUBJECT:	INVESTMENT IN HIGHWAYS OPERATIONS FOR MAINTENANCE DRAINAGE NETWORK IN LINE WITH CODE OF PRACTICE 'WELL MANAGED HIGHWAYS INFRASTRUCTURE'
MEETING:	CABINET
DATE:	April 14th 2021
DIVISION/WARDS AFFECTED:	ALL

NON-PUBLICATION

N/A

1. PURPOSE:

To deliver a maintenance programme in line with the Code of Practice 'Well-managed highway infrastructure'. Changing from reliance on specific guidance and recommendations in the previous Codes to a risk-based approach determined by appropriate analysis, robust data and continuous review. The Code is designed to promote the adoption of an integrated asset management approach to highway infrastructure based on the establishment of local levels of service through risk-based assessment. The Code, as with previous codes, recognises that "prevention is always better than cure".

Invest in highways maintenance to establish a pro-active 'find and fix' regime. To reverse the impact of budget reductions and savings pressures, that has resulted in a reactive maintenance programme and on the basis of need regime.

There are 6 ways to help keep the drainage assets free flowing and clear:-

- Prevent debris covering the inlets and restricting flow
- Prevent debris entering the pipe and restricting the flow
- Prevent debris entering the outfalls and restricting flow
- Identifying damage to the infrastructure quickly
- Maintain the surface course of the road to prevent loss of material into the drains
- Prevent run off from adjacent land that silt up the drainage system

The proposal seeks additional funding to:-

- Sweep roads appropriate to local conditions
- Empty gullies and prove pipes and outlets appropriate to local conditions
- Repair damaged infrastructure where it cannot be cleared
- Upgrade the capacity where viable

2. RECOMMENDATIONS:

- 2.1 To increase funding for highways maintenance of drainage assets in line with the Code of Practice 'Well-managed highway infrastructure'.
- 2.2 To increase funding for sweeping the priority routes to support maintenance of drainage assets
- 2.3 To deliver a cyclical programme of maintenance for drainage assets along the County priority routes
- 2.4 To identify and plot all drainage assets across the county as part of a risk based assessment and provide maintenance records regarding asset management

3. KEY ISSUES:

The impact of climate change being felt across the globe and brings with it particular challenges in Monmouthshire across a range of services. The additional pressures this causes to existing budgets, when coupled with many years of austerity, is now at a critical point. The highway network is at the mercy of these changes in climate. Whether through rain, snow, heat or cold they all impact negatively on the asset.

The intention of this Code of Practice 'Well Managed Highway Infrastructure' is that Authorities will develop their own levels of service and the Code therefore provides guidance for authorities to consider when developing their approach in accordance with local needs, priorities and affordability. Delivery of a safe and well maintained highway network relies on good evidence and sound engineering judgement.

Recent impacts of high rainfall in very short time periods, raised the public's concerns regarding capacity and maintenance for the existing MCC Highway drainage infrastructure. Whilst endeavoring to work to best practice guidance, keeping an estimated 25,000 drainage assets clear, maintained when required and upgraded where necessary, is increasingly difficult within current resources. Highway drainage has historically been designed to cope with a 1 in 10 year flood, in the last 18 months we have had 5 of these flooding events.

Between 2007 and 2011 a "find and fix" regime was implemented where the 25000 drains were systematically cleaned and where necessary repaired. The success of this programme reduced the number of complaints regarding blocked drains and standing water during rain events. With a reduction in issues regarding drainage and the need to reduce budgets 2 gulley cleansing vector machines and 2 mechanical sweepers were removed from service between 2011 and 2015. Currently there are 2 gulley vectors and 2 large mechanical sweepers maintaining the network.

The highway drainage network is maintained on a reactive/proactive regime with the two remaining vectors and sweepers. Where residents, highways inspectors and motorists report that drains and gullies need maintenance, the area is visited and all drains and gullies linked to that system are cleared. This approach has worked extremely well, as many of the gullies remained in pristine condition following the "find and fix" programme. The weather patterns linked to climate change, the intensity of rainfall and a reactive maintenance regime risks the network becoming compromised during these major rain events. Over the last 18 months, with these major rain

events being so close together, resources are being overstretched and teams are moving on to the next job with a reduction in proactive whole system approach.

This work programme has been identified by the Cabinet Member has a key priority for future grant applications and capital investment along with a full schedule of prioritised maintenance works. It is recognised that whilst this will not resolve £80m capital budget pressure to improve the entire network it will provide a transparent focus of funding to priority roads that is easily accessible and communicated to the public and other stakeholders. The Code of Practice highlights the need for better communication with all stakeholders.

Preventing properties and communities from flooding will always be a challenge. Whilst a “find and fix” programme is unlikely to have reduced the impact of recent events in Magor and Portskewett, investing in targeted cyclic maintenance and repairs is best practice to reduce flooding on the highways network. Most of the recent flooding is a result of saturated ground and water courses over-topping but free-flowing drainage systems will clearly improve the situation during normal rain events.

To manage the network effectively and in line with the Code of Practice the assets should be identified and plotted. This information can be used to overlay maps of previously flooded areas and critical infrastructure to allow better targeting of resources as part of the risk based assessment. This can be achieved with a variety of GPS data systems that can provide comprehensive details of where the drainage asset is located, the last time it was maintained, any issues, the next proposed visit etc. There is an estimated 25000+ drainage assets across the county, the vast majority cause few problems and flow freely, others are prone to blocking during intense rainfall and need additional and more frequent maintenance. All this data can be captured for future scheduling.

Many of the drainage assets across the county are managed by third parties. Welsh Water Dwr Cymru manage the main sewage systems. Natural Resources Wales manage the main water courses and their tributaries. Landowners have riparian ownership of many of the roadside field ditches. Developers manage systems prior to adoption. Welsh Government through SWTRA manage some the main routes through Monmouthshire and are responsible for maintenance. For the road user and residents there is little to distinguish where this ownership lies. Delivering improvements to our network will have a positive impact for residents but this can't be done in isolation and we will continue to work closely with partners on holistic solutions.

Some areas such as flood plains are designed to hold water and slow down the flow. Many of these flood plains include highway infrastructure and communication will be key to managing expectations regarding access and usage of these areas.

4. EQUALITY AND FUTURE GENERATIONS EVALUATION (INCLUDES SOCIAL JUSTICE, SAFEGUARDING AND CORPORATE PARENTING):

Improvements to the road network positively supports many aspects of the Equalities and Future Generations evaluation. Well maintained networks encourage active travel, delivers well connected communities, reducing litter and debris entering watercourses increasing biodiversity

and reduces standing water that can increase deterioration of the network resulting in additional capital and carbon intensive repairs.

Moving forward new developments are addressing the impact on the existing drainage systems and sustainable urban drainage systems (SUDS) are part of the design and planning process.

5. OPTIONS APPRAISAL

The Code promotes a risk based assessment approach to managing highways infrastructure. It highlights the need for a maintenance programme that maintains and keeps clear the drainage and gully systems proactively and captures data on each asset for scheduling future interventions.

This proposal seeks to establish a 'find and fix' programme, using capital and revenue investment. The operational delivery of this can be achieved in several ways.

- The additional resource could be incorporated into the existing work programme and continue an enhanced reactive regime.
- The additional resource could start at the top/bottom of the county and clear all 25000 drains
- The additional resource could be focussed on the MCC Priority routes and Presalting Primary network.

The priority and precautionary salting routes cover approximately 40% of the network and incorporate the roads most frequently used where snow and flooding impact our communities most. These routes are used by our emergency services, public transport and link our communities to towns and villages across the county.

For this reason the proposal is to invest the additional resource to maintain the priority routes and freeing up the existing resource to focus on reactive/proactive regime across the rest of the network.

Initial budget estimates for data collection systems has been sought and we will continue to work with APSE, CSS and neighbouring authorities to identify a system that meets our needs and where possible links to neighbouring authority systems.

Alternative fuelled vehicles have been investigated and while some manufacturers are producing electric versions of sweepers and vactors the range is very limited and more suitable for cities. We will continue to investigate the use of alternative fuel for the smaller vehicles while the larger machines are refined for rural use.

6. EVALUATION CRITERIA

This "find and fix" proposal is likely to be a four year programme and when completed we will have brought the drainage network back up to a standard comparable to 2011. If successful there should be a reduction in service requests relating to drains and gulleys.

This will be monitored over the 4 year period and reviewed at that point with a decision to continue to fund the programme, expand or decrease the priority network, cease the programme and reduce budget spend to existing levels.

7. REASONS:

The Code of Practice guidance seeks to proactively maintain the highway network through risk based assessments of the assets. Delivering services in line with the Code coupled with robust and accurate data of maintenance regimes can be used as evidence when defending claims against the highway authority.

Climate change is impacting negatively on the highways network. The public perception is that the network and particularly highways drainage systems are being neglected by the authority contributing to a greater impact of flooding. Whilst the network is not designed to deal with the volume of rain in recent flood events like Storm Dennis and Storm Christoff the Code of Practice identifies the need for well maintained infrastructure based on asset risk assessments as key to managing the highway network.

8. RESOURCE IMPLICATIONS:

Investment is required for:-

- An additional 18t road sweeper machine with operator. (these are the large HGV sweepers that Highways use to sweep the carriageways).The cheapest and most effective way to lessen debris, leaf, grass and hedge cuttings, stone, road chippings, dirt or mud etc. from blocking or entering the drainage system
- 18t MVC combination tanker / chassis with operator and driver (these are the large HGV gully emptier and jetter machines that Highways use to empty gullies and jet pipes), with latest electronic tracking to support asset monitoring. The only way to remove debris that has entered the drainage system or to investigate blockages and damage.
- Traffic management team (5ton flatbed truck with two operatives), to support MVC and Sweeper. These teams will target the Primary Presalting Network, which tends to be high speed and present the greatest risk to traffic and workers

SWEEPER COSTS : 9 YEAR LEASE	CAPITAL	4 YEARS	note	EACH YEAR
SWEEPER AND CHASSIS	165,000	101,970		25,493
MAINTENANCE / TRANSPORT			average	9,482
FUEL			historical	9,680
TIPPING			currently tendering	50,629
DRIVER			32,786	32,786
9 YEAR LEASE RECOVERY, 40% RESIDUAL AT END YEAR 4 +vat			TOTAL	128,070

MVC COSTS : 9 YEAR LEASE	CAPITAL	4 YEARS	note	EACH YEAR

JETTER AND CHASSIS	192,000	118,656	180,000	29,664
DATA COLLECTION		12,000	estimate	6,000
MAINTENANCE / TRANSPORT			average	9,482
FUEL			historical	9,240
TIPPING			currently tendering	31,483
DRIVER			32,786	32,786
OPERATOR			32,786	32,786
9 YEAR LEASE RECOVERY, 40% RESIDUAL AT END YEAR 4 +vat			TOTAL	151,441

TRAFFIC MANAGEMENT COSTS	CAPITAL	4 YEARS	note	EACH YEAR
5TON TRANSIT CREWCAB CHASSIS	45,000	37,080		9,270
MAINTENANCE / TRANSPORT			average	4,570
FUEL			historical	3,900
SIGNS and CONES and T/M			absorb in revenue (£5k)	
CHAPTER 8 OPERATIVE			32,786	32,786
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VAN ABSORBED INTO FLEET AT END YEAR 4 + vat			TOTAL	83,312

SUM	362,823
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The proposal will be funded through an uplift in highways maintenance budget and the capital programme.

Welsh Government have provided additional funding during 2020/21 and agreed additional funding again in 2021/22 for supporting repair of highway assets and infrastructure and those damaged by flooding.

9. CONSULTEES:

This is a joint proposal between Highways Operations and Highways and Flooding in conjunction with the Cabinet Member. The proposal has been reviewed by Senior Leadership Team. Strong Communities Select comments and suggestions will be included in this proposal prior to being recommended to Cabinet for approval.

Strong Communities Select supported the report and the need for additional funding for highways maintenance. Recommendations included :-

Stronger education and enforcement of parking on grass verges causing issues with drains. Civil Parking Officers will support in this process in areas where people are parking causing damage to infrastructure

Using mowers that capture grass cuttings and/or mulchers that shred the grass finer and collecting hedge clippings. Grounds maintenance have purchased cut and collect mowers and mulchers with grant funding to support Pollinators and biodiversity. Where possible the sweeper schedules and grass/hedge cutting will be aligned to reduce material entering drainage systems. Communicating with home and landowners on the importance of maintain drainage systems and clearing hedge and grass clippings from the highway. We will continue to work with home and landowners where these issues are identified.

Improved communication regarding repairs. The Code of Practice also identifies the need for improving communication on work programmes and will continue to be a priority through MyCouncilServices.

10. BACKGROUND PAPERS: Budget pressure briefing paper, Code of Practice 'Well Managed Highways Infrastructure

11. AUTHOR: Carl Touhig

12. CONTACT DETAILS:

Tel: 01633 875845

E-mail: carltouhig@monmouthshire.gov.uk