SUBJECT:	**METHODOLOGY FOR PRIORITISING HIGHWAY RESURFACING AND MAINTENANCE PROJECTS**
MEETING:	**Cabinet**
DATE:	**1st December 2021**
DIVISION/WARDS AFFECTED:	**All**

1. PURPOSE:

1.1 To seek approval of the methodology for prioritising highway resurfacing and maintenance projects.

2. RECOMMENDATIONS:

2.1 That Monmouthshire County Council adopts the methodology of prioritising the highway resurfacing and maintenance schemes as detailed within the Highway Prioritisation Handbook at Appendix 1. This evidenced-based prioritisation is in accordance with the Highway Management Plan and in line with the requirement of the national code of practice “Well Managed Highway Infrastructure”.

2.2 That Cabinet supports the development and extension of this asset management approach to other aspects of the Highways service including highway structures.

3. KEY ISSUES:

3.1 The highway network is a key and highly visible community asset, supporting the national and local economy and contributing to the character and environment of the areas that it serves. National legislation requires highway authorities to establish highway policies and guidance in order to effectively manage their statutory duties. The new code of practice titled “Well Managed Highway Infrastructure” is a key document for all highway authorities to adopt in moving to a new asset and risk management base approach for the county highways.

3.2 The key principles set out within the new Code are addressed within the MCC Highway Management Plan, adopted by the Council in 2018, and are crucially important for the delivery of value for money and also for the authority to meet

its legal obligations as well as the objectives set out within MCC's own corporate plan.

3.3 Our highway network is an essential asset to our communities, businesses and visitors, supporting safe and convenient movement by foot, cycle, public transport and car. Recent examples of embankment failures and deterioration of Monmouthshire's highway bridges and county lanes, has brought increasingly widespread recognition of the importance of highway maintenance, and the high value placed on it both by users and the wider community. The County has 2000 km of road and numerous bridges, retaining walls and other structures to maintain. The highway refurbishment budget is £1.3m per year and in recent years the Council has benefitted from an additional annual WG grant of approximately £630,000. This budget needs to be carefully prioritised, cognisent of the impact of the progressive deterioration of safety, reliability, and quality, eventually requiring even greater levels of investment in the future. The metholodology proposed here seeks to ensure that funding decisions are evidence-based, meaning that benefits from expenditure are maximised and that decisions made are robust.

3.4 The adoption of the MCC Highway Management Plan in 2018 and the proposed adoption of the Highway Prioritisation Handbook at Appendix 1 will together enable the authority to achieve value for money by moving to a new financial and technical process for preparing the short and longer term resurfacing and maintenance programme. The Handbook is in line with the requirements of the new Code of Practice which states that an asset and risk management approach should be adopted. This will also help to address the responsibilities set out under the Traffic Management Act 2004 and the many other statutory legislative requirements which relate to the highway service.

3.5 The Highway Prioritisation Handbook at Appendix 1 sets out the asset management methodology and starts with establishing a base for prioritising the whole network and creating a herarchy which takes in to account factors such as level of traffic, bus routes and connectivity to key facilities including hospitals and schools. This hierarchy is then applied as a weighting in combination with other factors including the results of machine based carriageway surveys, visual inspections as well as data from insurance claims and customer feedback, in order to apply a scoring system for future planned works. This scoring system allows limited funding to be used effectively by targeting the appropriate treatment and also to prepare an evidenced based one-year firm carriageway resurfacing programme and a three-year indicative programme. There however needs to remain some fleixiblity to the programe in order to allow for factors such variations in budget, changes in the deterioration of the carriageway and footways, for example due to flood

events or severe winter weather, as well as potential conflict with utility works or other events which come to light outside the co-ordination process.

3.6 In addition to effectively targeting limited resources, the adoption of asset management techniques can be used to explain decisions on expenditure and also support future bids for additional maintenance funding from Welsh Government. It will also prepare the authority to meet any requirements of asset depreciation accounting, and will help manage community expectations by clearly communicating how and why funding is being prioritised.

3.7 Effective management and stewardship of the local road network has the potential to aid regeneration, social inclusion, community safety, health and the environment, but this will need a planned long-term programme of investment, efficiently managed and supported by effective technical and management systems. The handbook shown in Appendix 1 offers effective performance management and provides an important link to both the MCC Corporate Plan and more specifically the 2018 Highway Management Plan.

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

4.1 A Wellbeing of Future Generations Equalities Impact Appraisal has been completed in relation to the adoption of the asset management approach to prioritising the highway forward resurfacing programme and is shown in Appendix 2. The Highway Management Plan and its methodology for establishing a highway forward programme of works as set out above and within the Highway Prioritisation Handbook at Appendix 1 demonstrate compliance with the well-being five ways of working, supports the well-being goals and identifies that moving to a risk and asset management approach is expected to have a positive impact on the planning and resources required to develop and deliver a well maintained and efficent local highway network within Monmouthshire. Our highway network is an essential asset to our communities, businesses and visitors, supporting safe and convenient movement by foot, cycle and public transport, not just by car. Promoting and encouraging active travel and public transport are key aspects of addressing the climate emergency.

5. OPTIONS APPRAISAL

Options	Benefits	Risks	Comments/Mitigation
Do Nothing	None	Funding is not prioritised where it is most needed, decisions are not robust, community	

		expectations are not managed.	
Approve the methodology	Funding is prioritised where it is most needed, decisions are robust, community expectations are managed.	Community concerns are not identified as a priority when looking at a Couty-wide perspective.	

5.1 The Highway Programme established in the early 00's has now concluded having served the authority for the best part of 20 years. This programme was a subjective programme established using the Engineers' appraisal of the road network. However, with the decline of Capital Investment and no increase in the Revenue Budget the highway Programme has needed to evolve to take into account Asset Management Principles. This is also in line with the requirements of the MCCs adopted Highway Management Plan which follows the recommendations of the new Code of Good Practice. This approach also supports the authority's statutory defence against claims and offers value for money by applying targeting limited resources on a priortiised basis and in line with the Wellbeing and Future Generations Act.

6. REASONS

6.1 The proposed methodology for prioritising the highway programme provides an evidence based system for preparing the short and long term resurfacing programme in accordance with the requirements of the new code of practice and MCC's Highway Management Plan.

6.2 The handbook shown in Appendix 1 sets out how the carriageway resurfacing programme will be prioritised in accordance with the risk and asset management based approach. This is in accordance with the new code 'Well-managed highway infrastructure' which Highway Authorities were required to adopt back in 2018. This handbook, along with other improvements for managing the highway network are listed within the gap analysis and actions of the 2018 MCC Highway Management Plan.

6.3 The adoption of an asset management system ensures that limited funding is targetted and prioritised to those roads and footways which offer the best return on investment and when combined with a robust safety inspection programme will allow the authority to successfully defend third party claims. The effective use of machine based surveys will support highways in making a business case for future Welsh Government funding and meet the reporting requirements for any future depreciation accountancy sysem. The longer term programme will also help to inform MCC's medium and longer term financial planning.

7. RESOURCE IMPLICATIONS:

7.1 The Highway Prioritisation Handbook has been prepared by Highways officers using existing resources and budget. The Highways Management Plan sets out MCC's key actions required to meet the recommendations of the new code of practice and this is set out within the gap analysis which also includes the need to establish a longer term investment plan in order to maintain the highway infastrucure in a serviceable condition. The methodology and resultant prioritisation do not in themselves have any resource implication: the budget available will simply influence how far down the priority list we get in each year.

7.2 The collection of information including machine based surveys and visual inspections is carried out by a combination of existing staff and specialist contractors. This process is managed by the Highway Asset & Street Works Team assisted by the in-house Highway Design Team with the preparation of the contract documentation and supervision of the works. The contractual element is usually carried out by MCC's Highway Operations team supplemented by external contractors. The recent approved changes to the highway staffing structure will further support the delivery of the highway capital programme and reduce the reliance on employing consultants.

8. CONSULTEES:

Enterprise DMT
SLT
All Member Seminar 19th October 2021

9. BACKGROUND PAPERS:

The new Code of Practice "Well Managed Highways"
MCC's Highway Management Plan
MCC's Highway Prioritisation Handbook (Appendix 1)

10. AUTHOR:

Mark Hand (Head of Placemaking, Regeneration, Highways and Flooding)
Paul Keeble (Group Engineer – Highways)

11. CONTACT DETAILS:

E-mail: markhand@monmouthshire.gov.uk Tel: 07773 478579
E-mail: paulkeeble@monmouthshire.gov.uk Tel: 01633 644733

Appendix 1: Highway Prioritisation Handbook

Appendix 2: Wellbeing of Future Generations Equality Impact Assessment

Appendix 1

Highway Prioritisation Handbook

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1.0 Overview

1.1 Purpose

The purpose of this document is to explain the process used to produce the Highway Programme.

1.2 Background

The Highway Programme established in the early 00's has now concluded having served the authority for the best part of 20 years. This programme was a subjective programme established using the Engineers' appraisal of the road network.

However, with the decline of Capital Investment and no increase in the Revenue Budget the Highway Programme has needed to evolve to take into account Asset Management Principles.

1.3 Why have a Highway Programme?

It allows us to:

- Provide a planned maintenance programme for the next 3 years using a defined carriageway surfacing prioritisation-scoring system.
- Provide a weighted score enabling priority within each hierarchy to be provided for capital spending.
- Target capital expenditure where it is most effective and needed to hopefully prolong the asset's life.

2.0 Prioritisation and Scoring System

2.1 Carriageway Condition Assessment

All roads with the exception of the unclassified 'green lanes' in Monmouthshire have been surveyed by a company called GAIST and assigned a condition rating ranging from 1-5 where:

1 is structurally sound and requires no investigatory work

And

5 is structurally unsound and requires investigatory work and appropriate action soon.

2.2 Scheme Scoring

Once the roads have been surveyed – the sections of carriageway are scored in accordance with the factors set out in **Appendix A.**

The length of carriageway identified that requires treatment will have a series of factors contributing to its overall score. They include:

Factor 1: **Carriageway Hierarchy Score**.All roads in Monmouthshire have been individually assessed and assigned a functional hierarchy which reflects the needs, priorities and actual use. The Table in below lists the categories which routes are assigned to.

Category	Type of Road General Description	Description
Strategic	Trunk and some Principal 'A' class roads between Primary Destinations	• Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
Main Distributor	Main Urban Network and Inter-Primary Links. Short – medium distance traffic	• Routes between Strategic Routes and linking urban centres to the strategic network with limited frontage access. • In urban areas speed limits are usually 40mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety
Secondary Distributor	B and C class roads and some unclassified urban routes carrying bus, HGV and local traffic with frontage access and frequent junctions	• In residential and other built up areas these roads have 20 or 30 mph speed limits and very high level of pedestrian activity with some crossing facilities including zebra crossings. On street parking is generally unrestricted except for safety reasons. • In rural areas these roads link the larger villages, bus routes and HGV generators to the Strategic and Main Distributor Network.
Link Road	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions	• In urban areas these are residential or industrial interconnecting roads with 20 or 30 mph speed limits, random pedestrian movements and uncontrolled parking.

Category	Type of Road General Description	Description
		• In rural areas these roads link the smaller villages to the distributor roads. They are of varying width and not always capable of carrying two-way traffic.
Local Access Road	Roads serving limited numbers or properties carrying only access traffic	• In rural areas these roads serve small settlements and provide access to individual properties and land. They are often only single lane width and unsuitable for HGVs. • In urban areas these roads typically form a loop road around an estate with cul-de-sacs and no through road streets branching off them.
Minor Road	Rural - Little used roads serving very limited numbers of properties. Urban – typical housing estate roads	• Locally defined roads • In urban areas - these are typically estate roads with no through access. • In rural areas - these are typically a single car width unsuitable for HGVs. These roads typically end at a field and sometimes serve no properties.
Green Lane	Little used roads – typically serving no properties	• An un-metalled rural Route serving field access. • Sometime all existence of a metalled road ceases to exist and could only be passable on foot

Factor 2: The GAIST Survey, which has a RAG rating applied, as per the table below – which will transpose as an overall score.

The Carriageway and Footway surveys use 5 condition grades. Grade 1 is the best grade and Grade 5 is the worst grade. They are defined in Figure 3 below:

Grade 1	Damage-free
Grade 2	Signs of wear and indicators of risk
Grade 3	Serviceable
Grade 4	Functional impairment
Grade 5	Structural or severe surface impairment

Factor 3: The Engineering Assessment - having assessed the site a score ranging from 0-50 will be applied.

EA1	- No visible Defects
EA2	- cracking & crazing
EA3	- potholes and more defined cracking
EA4	- large pothole/edge deterioiration/rutting/extensive deep cracking

Factor 4: My Monmouthshire(MyMons) is a way of communicating with the Council by providing online access and an app to enable 24/7 self-service access. The app is an easy way to quickly contact the council and enables people to report an incident using a photo or a video from their phone. MyMons received from independent households/organisations in the past 3 years will be counted and a score attributed against the number received.

Factor 5: Third Party Claims: This is for the number claims or incidents and or damage to vehicles and personal injury due to condition of the highway made against the authority from the past 3 years. They will be counted and a score attributed.

Once all 5 factors have been considered an overall score is established.

It is at this point that the scheme identified within a hierarchy gets its priority (due to its score).

Applying this approach allows for a consistent approach highlighting those routes whose characteristics differ from those within its own hierarchy peer group.

3.0 Network Review and Monitoring

The network will be re- assessed using the guidelines and factor-based point scoring approach on an annual basis to assess if there has been any changes to the visual condition of the road, which would affect the programme and/or the score, attributed to it.

It is recommended that an annual reassessment is undertaken and documented.

The GIS database and Excel spreadsheet will be the ‘software’ to conduct the review on and record the appropriate findings.

4.0 Role Of The Programme

Having a Highway Programme allows for forward planning and budget forecasting – highlighting potential shortfalls.

It must be remembered that the programme is of a fluid nature – where there are circumstances outside officers' control, which may affect the programme. They include:

1. Statutory Undertaker works – which could mean pushing a scheme back by 12 -18 months to avoid a scenario where a newly refurbished carriageway is dug up shortly afterwards for planned utility works.

2. Adverse weather conditions such as floods and severe winters or unforeseen geotechnical failures might cause damage to routes, meaning their priority need increases and other projects move down the priority list

3. Lack of materials or workforce, for example if works need to be contracted out to be completed.

4. Grants – for example to align programmed highway refurbishment with grant funded public realm or active travel improvements. Not all impacts on the programme are negative. When additional money from grants is provided, this can help to accelerate works, funding additional schemes within a given year.

Appendix A

FACTOR		FACTOR DESCRIPTION		SCORING MATRIX
1.	Route Category	Base score for route category:		**VARIABLE** Defined baseline score + All other weighted factors which have gone into make up the overall functional hierarchy of the carriageway
		Main Distributor	100	
		Secondary Distributor	75	
		Link Road	40	
		Local Access Road	25	
		Minor Road	15	
		Green Lane	0	
2	GAIST Survey	GAIST - Red/Amber/Green Rating(RAG Rating)		Maximum score for a section of road identified is 50
		Condition 5	50	
		Condition 4	40	
		Condition 3	30	
		Condition 2	20	
		Condition 1	0	
3	Engineering Assessment	EA1 – No visible Defects	0	Maximum score 50
		EA2 – cracking & crazing	10	
		EA3 – potholes and more defined cracking	30	
		EA4 – large pothole/edge deterioiration/rutting/extensive deep cracking	50	
4	MyMons	The number of independent MyMons received over the past 3 years		Maximum Score 30
		1	10	
		2	20	
		3 or more	30	

FACTOR		FACTOR DESCRIPTION		SCORING MATRIX
5	Third Party Claims	The number of third Party Claims received over the past 3 years 1 2 3 or more	 10 20 30	Maximum Score 30