

Report to: Cabinet
Date of meeting: 27 June 2023
By: Director of Communities, Economy and Transport
Title: Highway Maintenance Investment.
Purpose: To provide an update on the one-off £5.8m investment in Highway maintenance approved by Cabinet in November 2021; and following the latest assessment of road conditions to advise on the impact of the 2022/23 winter on road condition and recommend additional investment.

RECOMMENDATIONS: Cabinet is recommended to:

- (1) Note what has been achieved with the £5.8m additional investment approved in November 2021.**
 - a) note the impact of the 2022/23 winter on road condition and, in accordance with our highways asset management plan agree the following to bring investment in 2023/24 to £28.2m Agree additional one off £5.6m spend on highways maintenance comprising £2.5m patching work and £3.1m drainage work, to be funded from the Priority Outcomes and Transformation Reserve, which includes the balance on the 2022/23 Services Grant set aside for one-off investment;**
 - b) Agree to increase the capital programme for 2023/24 by £5.1m to maintain steady state and;**
 - c) Agree, subject to the County Council agreeing to increase the Capital Programme, that a further £5m be spent on highway maintenance to provide early improvements and resilience.**
 - d) Agree to lobby the Government, directly and with other partners, to provide funding for highways sufficient to ensure East Sussex roads are adequate for the needs of residents and businesses.**

1 Background Information

1.1 There is no doubt that the weather during recent winters and this winter in particular has taken its toll on the county's roads. The number of potholes forming has been greater than previous years and the level of public complaint continued to increase over the winter period echoed by reports in local and national press about road condition. It has been a challenging year for the operatives who have worked in difficult weather conditions to make the roads safe. We continue to work to reduce the pothole backlog and recognise there is much to do.

1.2 The County Council uses a robust asset management discipline for its highways management work which recognises the importance of timely interventions to slow the rate of deterioration. This approach and our intervention policies determine how work is prioritised. The asset management approach ensures the funding available is used to best effect and we receive the highest banding of funding available from the Government. The funding for our highways comes from both Government, which has been substantially reduced in recent years (see para 9.5), and the County Council resources. The level of revenue and capital funding is determined through the business planning (Reconciling Policy, Performance and Resources) which enables difficult choices to be made between social care demands to support vulnerable people of all ages and the services used by the whole population. Following this process the Cabinet recommended to Council additional investment of £3.1m per year in the Capital Programme from 2022/23 to 2031/32.

1.3 In response to the regular road condition assessment Cabinet approved a one-off additional investment of £5.8m in November 2021, for the following highway improvement works:

- Patching £2.5m
- Pavements / Footways £1.8m
- Lines and road markings £0.5m
- Road signs and signposts £1.0m

1.4 The investment was to provide additional improvements to the county's roads over and above the annual capital maintenance programme of £18.1m, to create a visibly positive impact for all road users.

1.5 In Cabinet approving this additional investment it was envisaged that the associated maintenance would start in the spring of 2022 to avoid working through the winter months, which is not generally conducive for these sorts of activities.

1.6 However, the early part of 2022/23 presented challenges in delivering this work with the post-COVID recovery affecting the construction market and availability of resources, combined with significant price increases and supply chain problems. This resulted in a slower start than anticipated, particularly the road markings and road signs replacement programmes.

1.7 The winter of 2022/23 also presented an added challenge arising from a significant increase in the number of potholes reported and in need of repair during the first three months of this year, with resources having to be diverted away from capital work to increase the resources available to repair potholes and keep the network safe.

1.8 East Sussex was not alone and as widely reported in the national press, most Highway Authorities in the UK have experienced similar weather conditions with similarly large numbers of potholes and deterioration to their road networks.

2 Supporting Information

3 Carriageway Patching Programme - £2.5m

3.1 The Council's budget for carriageway patching has traditionally been approximately £1.0m each year which has resulted in a backlog of patching work. Patching is the most cost-effective way of dealing with those potholes and 'untidy' stretches of road that do not meet the Council's intervention criteria for repair from revenue budgets. In light of the backlog, Cabinet agreed to invest an additional one-off sum of £2.5m to enable more sections of road (not at intervention level) to be repaired as part of a larger patching programme.

3.2 The programme for the additional £2.5m of patching commenced in January 2022 and continued in parallel with the tail end of the 2021/22 programme and the 2022/23 programme.

3.3 The additional investment has enabled an additional 1,117 carriageway patches to be completed up to the end of March, at over 735 sites. A map illustrating the distribution of the additional patching works is included in Appendix 1.

3.4 The patching programme has been delivered by three additional patching contractors.

4 Footways Repair Programme - £1.8m

4.1 The additional investment in footway repairs has delivered 367 footway patching/surfacing schemes covering 280 sites, with expenditure to the end of 2022/23 totalling £1.675m. A map illustrating the distribution of the additional schemes is included in Appendix 2.

4.2 This is less than planned because resources had to be diverted away from footway works during January and February of this year to support the pothole repair works. This has delayed some footway schemes, with approximately £60k worth of work to be carried forward into the 2023/24 programme and will be completed by Balfour Beatty.

5 Lines and Road Markings - £0.5m

5.1 This work got off to a slow start due to nationwide resource shortages, delaying the start until the autumn/winter when the number of suitable days for this type of work are fewer. As the wet and cold winter has extended into March and April it has impacted productivity and to date only £208k of works have been completed. However, resources have been increased from one to two additional refresh crews and as the warming weather arrives productivity should increase enabling the remaining £292k worth of works to be completed during 2023/24.

6 Road Signs - £1.0m

6.1 The road signs replacement programme is a significant project in its own right with many hundreds of individual signs and posts needing to be replaced, ranging from the standard warning or traffic management signs to bespoke directional and information signs.

6.2 Despite long delivery times for signs and posts in the early part of the year, this programme has now installed 1,133 new road signs at a cost of £548,443.

6.3 The remaining works and budget of circa £452k will be undertaken in 2023/24 and part of 2024/25 with the entire programme forecast to be completed by 31 March 2025.

7 Winter of 2022/23 and the Impact on Road Condition

7.1 The winter of 2022/23 has been one of the wettest on record including the wettest November on record that was followed by an intense cold period of frost, ice and snow in early December, another cold period in early 2023, and the wettest March for 40 years. The combination of recent winters has taken its toll on the condition of the County's roads. There is much evidence of the impact of cold and wet winters on pothole numbers. A recent survey of pothole numbers from a number of highway authorities, published in the national press, confirmed that the increased number of potholes and deterioration in road condition is not unique to East Sussex but is evident across the country.

7.2 This winter in particular generated a significant increase in the number of potholes with 15,016 repaired between the beginning of January and 22 May this year. In response to the weather and the increase in the number of potholes our contractor increased the number of repairs gangs by two and a half times the usual number, working longer hours and at weekends to keep up with demand. Despite this, the percentage of potholes repaired within the prescribed timescales fell from around 98% during the year to just over 81% during this period.

7.3 The focus on potholes meant diverting resources away from footway maintenance and other planned capital maintenance, which has impacted the 2022/23 capital with some works having to be moved to 2023/24.

7.4 As well as an increase in the number of potholes forming there has been a visual deterioration in road condition across the county which has resulted in higher usual number of public complaints about road condition, and a three-fold increase in the number of pothole related claims compared to recent years.

7.5 To continue to tackle the current higher than normal level of potholes awaiting repair, Balfour Beatty's pothole repair gangs commenced working on 24 April, before the start of their contract and additional resources have been retained to deal with a small backlog of pothole repairs left over from the end of the Costain contract.

7.6 There can be no doubt that the impact of the winter weather has detracted from the successful delivery of the additional patching works and also increased the backlog of patching works required.

8 Drainage

8.1 The recent wet winters has also seen an increase in highway flooding that has caused damage to the road surface. This has added to an already large backlog of drainage improvement works. Common sense would dictate that any work to repair roads damaged by surface water would need to be in combination with repairing or improving the drainage network. The improvements required to deal with the accumulated backlog is estimated to be **£3.1m**.

9 Road Condition and Funding

9.1 We employ asset management principles to deliver a more efficient and effective approach to management of highway infrastructure assets through longer-term planning and ensuring that levels of service are defined and achievable for available budgets. It supports making the case for funding, for better communication with stakeholders, and facilitates a greater understanding of the contribution highway infrastructure assets make to economic growth and social well-being of local communities. Highway maintenance is funded from both the Council revenue budget and capital budget in adherence with CIPFA accounting rules. Pothole repairs, and other cyclical maintenance such as gully emptying and grass cutting do not add to the value of the highway asset and therefore are funded from the revenue budget. Planned maintenance such as patching, resurfacing

and surface dressing improve the overall fabric of the road and increase value of the highway asset and are therefore funded from the Council capital budget.

9.2 The repair of potholes is a reactive maintenance activity, funded from the Council's revenue budget (23/24 budget is £1.465m) and governed by set intervention criteria and prescribed repair timescales. Whilst all Highway Authorities repair potholes in this way to keep the highway safe, in accordance with the Highways Act, the reactive nature of these repairs is an expensive form of maintenance. Long term programmes of planned maintenance provide the most efficient way of working and provide best value for money.

9.3 The Council's maintenance contract with Costain and now with Balfour Beatty provides for the repair of potholes as a fixed-price, lump sum, each year. The contractor is expected to repair potholes to the Council's specification set out in the Contract. The Contract includes performance measures and targets linked to payment. This places the responsibility on the contractor to work as efficiently as possible and to ensure good quality of workmanship. Under this lump sum arrangement, whilst repeated repairs do not reflect at all well on the Council, it is the contractor's commercial risk and the Council does not pay for failed or repeated repairs. To ensure adherence to the specification Council Officers carry out random checks on the quality of repairs carried out by our contractors.

9.4 In 2022/23 Cabinet increased the capital programme budget for planned maintenance from £15m to £18.1m per annum to maintain the Council's 10-year road condition targets of 4% of Principal roads, 4% of Non-Principal Roads and 14% of Unclassified Roads in need of repair. This was based on investment modelling undertaken in 2021/22 to determine the level of investment required to maintain the road condition at this level from the previous the targets of 6%, 8% & 15%. The £18.1m comprises £14.6m for resurfacing/surface treatments and larger scale patching, £1m for small-scale patching and £2.5m for surface dressing.

9.5 The Government formula grant funding, which in part recognises and rewards our asset management approach to highway maintenance has amounted to circa £60m since 2020/21 compared to expenditure by the Council of £105m and therefore the Council has to provide the additional £45m from borrowing, as detailed in the table below:

Highways Capital Programmes Expenditure vs Funding	Actuals			Budget *	Total £m
	2020/21 £m	2021/22 £m	2022/23 £m	2023/24 £m	
Highways Structural Maintenance	20.49	16.26	22.14	20.19	79.09
Bridges and Structures	1.48	1.67	1.99	4.74	9.87
Street Lighting and Traffic Signals	1.33	1.74	2.83	4.69	10.58
Visually Better Roads		0.19	4.32	1.29	5.80
Total Expenditure	23.30	19.85	31.28	30.91	105.34
Structural Maintenance Grant (Needs and Incentive)	10.34	7.38	7.38	7.38	32.46
Pothole and Challenge Fund	7.71	-	-	-	7.71
Pothole Funding	-	5.90	5.90	5.90	17.70
Traffic Signal Maintenance Grant	-	-	0.25	-	0.25
Additional Maintenance & Pothole Repair Funding	-	-	-	2.36	2.36
Total Grant Funding	18.05	13.28	13.53	15.64	60.48
Gap funded from borrowing or revenue	5.25	6.58	17.75	15.28	44.86
	23%	33%	57%	49%	43%

* adjusted for 2022/23 variances

9.6 When considered as a whole network the 4%, 4%, 14% targets equate to an overall 10% of the County's roads in the worst 'red' condition, approximately 200 miles, with the unclassified network particularly affected. Approximately 47% of the County's roads are in 'amber' condition and showing signs of stress with some defects, whilst the remaining (43%) are recorded as 'green' or good condition roads. Even achieving these targets means that 53% of the County's roads are in need of some maintenance.

9.7 However, as seen from the significant increase in the number of potholes, road condition has deteriorated faster following the particularly wet and cold winter of 2022/23. Whilst no condition

survey data is available yet for 2023/24 to measure how much the roads have deteriorated (new surveys will be undertaken in the summer) it is estimated there has been a significant deterioration in road surface condition which in some cases has caused sudden failure of the road surface.

9.8 The increase in small-scale patching works from the £2.5m one-off additional investment, to address those potholes that do not meet intervention level, provided a noticeable difference to road condition and prevented further deterioration of road surfaces. This addressed some of the estimated £4m backlog of small-scale patching works, however following the 2022/23 winter it is estimated that the backlog has risen to **£2.5m**. Further targeted patching works over this summer would provide early improvements to those weakened roads in preparation for the coming winter months.

9.9 Since the end of the COVID restrictions and the downturn of the UK economy, energy and construction material costs, particularly oil and bitumen-based products have increased considerably. As a result, the cost of highway maintenance has increased significantly which will mean fewer maintenance schemes can now be delivered for our budgets. This, in addition to the effect the winter has had on our roads, will impact our ability to achieve the Council's road condition targets without a corresponding increase in budget.

9.10 Using the latest highway maintenance prices from the recent highway contract procurement, the condition information from the surveys in September 2022, and by estimating the impact that the 2022/23 winter has had on road condition, further investment modelling has been undertaken to determine the levels of investment now needed to maintain the Council's Road condition targets of 4%, 4% and 14%.

10 Investment Modelling

10.1 The deterioration of roads is a natural process affected by the weather and the volume of traffic using our roads, but the main culprit is water. There can also be no doubt that utility company excavations in the highway weaken the fabric of roads. We operate a Permit scheme for utility companies which specifies quality conditions. We employ inspectors to check the quality of their work on a random basis, including coring. Roads in good condition and that are sealed to prevent the ingress of water deteriorate at a slower rate.

10.2 The principles of asset management recognise the importance of timely interventions to slow the rate of deterioration. As roads age the bitumen that binds the aggregates in a road surface oxidises and loses its flexibility allowing cracks to form and water to penetrate the fabric of the road. Continued wetting in winter breaks down the bond between the bitumen and the stone and very dry summers (we have had some of the hottest driest summers in the last decade) can dry out the underlying subsoil upon which the road is built. This is particularly relevant in East Sussex with extensive Weald Clay across the central part of the County which shrinks, forming cracks in the road structure allowing water ingress. The best way to preserve roads is to make sure they are watertight for as long as possible.

10.3 A number of different funding scenarios have been considered to assess the impact on road condition:

- i. funding continuing at current levels;
- ii. the funding required to maintain steady state road condition in terms of the overall percentage of poorest condition (red) roads;
- iii. the funding required to improve condition from steady state; and
- iv. the funding required to achieve steady state or improve road condition from steady state with earlier 'front loaded' investment in the first two years to accelerate road condition improvement.

10.4 Alongside these funding scenarios we have developed a maintenance strategy to bring about improvements to provide resilience against future wet winters.

10.5 The strategy will comprise a programme of resurfacing and patching with a larger, more extensive, programme of surface dressing. Surface dressing is significantly cheaper than resurfacing and patching and offers an affordable, and well tested, maintenance technique that seals the carriageway to the ingress of water, prevention of which is key for the integrity of the road surface. This approach would enable a far greater proportion of the county's roads to be addressed, and focussing on the largest proportion of the network, the unclassified roads which are in poorest

condition. This will provide improvements to road condition and the resilience of the network and compliments our resurfacing programme as the emphasis switches to more resurfacing and less surface dressing in later years.

10.6 In devising any maintenance strategy it is not simply a matter of addressing those 'red' roads because 'amber' and 'green' sections of road will deteriorate. It is the amber condition roads that represent the largest condition category and as such handle the greater proportion of journeys across the network. It is very likely therefore that the majority of road-user journeys will be on roads that are in some degree of disrepair (57% of roads are amber or red roads). This naturally creates the impression to residents and road users that the whole road network is in poor condition. Adopting our strategy which initially comprises a greater proportion of surface dressing, focused on rural and urban estate roads, will enable the investment to be spread further and has the greatest impact on overall road condition over time, and represents best value for money for the Authority.

10.7 Recent winters have impacted significantly and accelerated the deterioration of roads and increased the likelihood of sudden surface failure. It is worth noting the cost of improving all roads to good condition would be in excess of £300m. It is likely that future winters will continue to feature above-average rainfall levels with short cold and icy periods that will further accelerate deterioration. Earlier, heavier, investment of preventative maintenance comprising resurfacing, patching and surface dressing followed by regular lighter intervention of surface dressing and preservation would restore road condition quicker, slow the rate of deterioration, and provide better resilience to the more 'extreme' winters.

10.8 We have tested out investment and maintenance plans and completed modelling to understand what improvement to condition would occur by increasing planned investment.

10.9 This modelling suggests that if funding continues at current levels of **£18.1m** per annum for the next 10 years road condition will deteriorate further and the Council targets of 4%, 4% and 14% will not be achieved. The modelling suggests that the overall proportion of red roads will increase from an average of 10% to 20% of all roads and the proportion of roads in disrepair (i.e. amber and red roads) will increase from the current average of 57% to 59% of all roads, even with greater emphasis on surface dressing of unclassified roads.

10.10 Modelling suggests that an annual investment of **£23.2m** (total £232m over 10 years at 2023/24 prices) is required to maintain road condition at 4%, 4% and 14% ('**steady state**'). This is based on current prices, estimated road condition and building in resilience for future winters. This strategy focuses a third of the funding on surface dressing as a preventative treatment to seal the road surface to protect against water ingress and bitumen oxidation whilst improving skid resistance. It particularly targets the unclassified road network which is the largest proportion of the County's roads and in the poorest condition. Whilst the proportion of 'reds' remains the same at the end of the funding period at around 10% of the overall network, road condition is improved as amber roads are targeted increasing the proportion of green condition roads overall.

10.11 From the modelling an annual investment of **£23.2m** to achieve Steady State and 'front loaded' (total £242m at 2023/24 prices) represents best value for the Council. This provides an opportunity not only to arrest the deterioration rate and provide better resilience for future wetter winters, but also to improve the condition of the network early in the investment cycle. This approach would reduce the overall proportion of red roads by 2% (from 10 to 8%) after 2 years of investment and maintain red roads at 8% for the remaining 8 years while the overall proportion of roads in disrepair (amber plus red roads) would reduce from the current 57% to 52% after 2 years of investment with a further 3% reduction from 52% to 49% over the remaining 8 years.

11 Funding and Affordability

11.1 Decisions on future capital investment needs to be considered in the context of the impact on the Treasury Management (TM) capacity to fund the investment and the revenue budget, whereby the cost of funding and Minimum Revenue Provision needs to be included within the Medium Term Financial Plan (MTFP). The revenue impact has been calculated based on the average cost of borrowing (interest and principal repayment) over a 30-year asset life, plus the

required minimum revenue provision, at an estimated £750k per annum for every £10million borrowed.

11.2 Increasing annual investment from 2023/24 to maintain the current targets of 4%, 4% and 14% (Steady State) requires £23.2m per annum, which is an increase of £5.1m per annum. This will require an additional £1.5m from revenue over the MTFP to 2026/27.

11.3 In addition, a further £5m investment in 2023/24 and 2024/25 will improve road condition, on top of the investment to maintain steady state, taking investment to £28.2m for the two years, returning to £23.2m from 2025/26. This additional investment will require £750k revenue funding to be incorporated within the MTFP. Currently there is no provision for the £5m additional investment for 2023/24 in the capital programme that was approved by Council in February. It is required that any additional investment, that is over and above the delivery outcomes in the approved programme, be agreed by Council. Therefore it is recommended as part of the Quarterly Monitoring Report that is on the agenda of this meeting that the Capital Programme be increased by this amount for 2023/24.

11.4 In summary, the modelling assumes that the increased investment commences from 2023/24, which will need to be funded in year, with the impacts in 2024/25 and beyond forming part of the RPPR process and development of the 2024/25 MTFP. In 2023/24, total additional capital investment is £10.1m, at a revenue cost of £757,500.

11.5 It is also assumed that these additional one-off investments and additional drainage and patching of £3.1million and £2.5million respectively, may be funded from reserves. The Terms of Reference for the Priority Outcomes and Transformation Reserve agreed by Council to include investments that meet the Council's priority outcomes, which includes highways. It is thereby proposed that the investment in 2023/24 of £5.6m is funding from this reserve, which includes the balance of the 2022/23 Services Grant (£4.905m), which had been set aside for one-off investments.

12 Communications and Lobbying

12.1 We will work closely with our new contractors to enhance public communications about highways. This will include assigning some extra resource (using existing resources) to work exclusively on highways issues over the next 12 months, enabling us to offer more public information about our work and strengthen conversation with local communities.

12.2 The council is also working with regional partners to lobby national government to underline the serious shortage of funding to local authorities for highways work. We are drawing attention to the positive effect that more investment would have not only for individual cyclists, drivers and walkers but also on the economy of the South East.

13 Conclusion and Reasons for Recommendations

13.1 The additional £5.8m one-off investment in highway maintenance was successfully delivered in 2022/23 with the exception of some of the road markings and sign replacement works that have been delayed to the current financial year due to supply chain and weather issues. The additional £2.5m in patching paid dividends and was clearly noticeable in the autumn of 2022.

13.2 However, the exceptional winter of 2022/23 has partly mitigated the effect of the additional patching programmes and increased the backlog of patching works (to deal with non-intervention level potholes) to £2.5m. Therefore, further one-off investment of £2.5m is recommended to continue to tackle the backlog of patching and prevent intervention level potholes forming. This will provide additional early resilience to a weakened network during the current year in preparation for the coming winter months.

13.3 The very wet winter has generated the highest number of carriageway potholes since the contract with Costain began in 2016 with the relationship between wet winters and pothole numbers clearly evident. Alongside this there has been a visible deterioration in carriageway condition with some areas experiencing sudden surface failure.

13.4 The experience of the 2022/23 winter, and the impact it has had on the network, has shown that road condition will continue to deteriorate at an accelerating rate if similar winters are experienced in the future and funding continues at current levels.

13.5 The investment modelling undertaken considers how to address this and the levels of funding required. The modelling is based on using up to date maintenance costs to account for higher costs since 2021/22; the last condition information available from the September 2022 road condition surveys; estimating the impact on condition on the network following the 2022/23 winter; and using some engineering assumptions about the make-up (construction materials) of the roads.

Based on the outputs from the modelling additional investment is needed to achieve our current road condition targets known as steady state. Road condition targets, across the different types of highways, of 4%, 4% and 14% (averaged as 10% overall). The level of investment needs to be increased from £18.1m to £23.2m per annum as a minimum. As set out in paragraph 10.2 and 10.3 above it is therefore proposed that:

- A total investment programme of £28.2m is implemented for 2023/24 to provide the opportunity for early condition improvement to arrest the network deterioration rate and provide better resilience for future winters.
- A further £28.2m total investment programme is considered through the RPPR process for 2024/25 and through the same process consideration given to increasing the current capital programme by a further £5.1m per annum for 2025/26 and beyond.

13.6 Further investment in road condition also needs the current £3.1m backlog of drainage issues to be addressed to protect the proposed investment in improving road condition. This and the ongoing patching of non-intervention level potholes through the investment of another £2.5m to reduce the accumulated backlog. This one off funding is in addition to the £28.2 increase in the capital programme. £28.2m.

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LOCAL MEMBERS

All.

BACKGROUND DOCUMENTS

None.