Manchester City Council
Report for Information

Report to: Neighbourhoods and Environment Scrutiny Committee – 11 October 2017

Subject: Highway Maintenance

Report of: Strategic Director, Highways, Transport and Engineering

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Summary

This report is to provide the Committee with an update on the Highways Delivery Plan, including information on changes to the management of Highways and the progress made in delivering its Highways Maintenance investment and Gully Cleansing Drainage Programme.

Recommendations

The Committee is asked to note:

a) The positive progress in implementing management and process improvements in multiple aspects of the service.
b) The ongoing work programme around clearing a historic backlog of work and embedding continual service improvement.
c) The scale and pace of change to create 'one team' in line with Our Manchester principles and approach.
d) The capacity gaps at a senior level and positive progress against these gaps.
e) The current status of Year 1 programme of Highways Maintenance Investment and the early start to developing the programme for Years 2 and 3.

Wards Affected: All

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

- Highways Asset Management Policy and Strategy Report of the Deputy Chief Executive (Neighbourhoods and Growth Executive 2nd December 2015
- Highways Maintenance Report of the Deputy Chief Executive (Neighbourhoods and Growth Scrutiny) 26th January 2016
- Highways Improvement Report to Neighbourhoods and Environment Scrutiny Committee November 2016.
- Review of Highways Senior Management Structure to Deliver Capital Investment Report of Chief Executive Personnel Committee 21st February 2017
- Highway Service Update Report to Audit Committee of 31st August 2017.

1 Introduction

1.1 The city's highway network is the largest and most visible community asset for which the City Council is responsible. It is used daily by the majority of people who live and work in the city and is fundamental to the economic, social and environmental wellbeing of the community. Our ability to offer a reliable and resilient highways system is not only important for existing businesses; it is also a determining factor in attracting new businesses, particularly those with a time-critical need for logistics and commercial transport links.

1.2 Over the last 18 months the Highways Service has undergone a significant number of changes:

1.3 Following the approval in December 2015 of the Highways Asset Management Policy and Strategy, the highways service has undertaken an in depth assessment of what is required to improve the network to ensure it supports the city's strategic priorities around growth and connectivity, liveability and neighbourhoods.

1.4 In March 2016 Council subsequently approved £80m for a five year maintenance strategy which seeks to bring the City's roads back to a good standard, to be delivered alongside a programme of proactive maintenance to restore quality and integrity of the highways asset over the more medium to long-term. Council also agreed a further £20m for the delivery of major infrastructure schemes to support growth.

1.5 In February 2017 Members approved the creation of a new integrated management and delivery structure. Consequently, opportunities have now been created to address issues of process, technology and people integration which had been impacting on performance and service delivery. This introduced the new post of Strategic Director, Highways, Transport & Engineering and the introduction of a new post of Director or Operations (Highways).

2 £100m investment in Highways Improvement

2.1 Manchester's highway network includes over 1,300 km of road length, 2,600 km of footway length and over 350 bridges and structures. Based on the latest valuations, the total highway asset has an indicative gross replacement value of over £2.7billion, making it the Council's most valuable asset.

2.2 The level of highways capital maintenance funding in the city had fallen over the four year period 2012 – 2016. The reduced level of funding available added to the backlog of maintenance and the level of funding was insufficient to sustain the network in the current condition.

2.3 As reported to Members, the cost of bringing the Council's highway network to a standard of good condition would be in the region of £160m. The service currently has Member approval for £80m over 5 years and this highways capital investment allocation will be primarily spent on improving the condition

of Manchester's roads, footways and drainage, as well as supporting maintenance of the bridge network.

2.4 An additional £20 million of the funding has been allocated to support the delivery of major transport scheme priorities that will accommodate the wider growth priorities across the Regional Centre. The funding will be used to identify and deliver short, medium and longer-term priorities that support commercial and residential growth over the next 20 years. Schemes and Investment Cases will be developed and delivered reflecting known transport priorities.

2.5 In terms of scheme prioritisation and delivery, the Council's Highway Asset Management Strategy (HAMS), approved at Executive in December 2015, details the approach to prioritising roads that are most important to the Council's Growth objectives – the greatest priority for maintenance funding is the Key Route Network (KRN), followed by roads of local significance for communities classified as the Community Network (CN). The CN captures about 35 percent of Manchester's overall highway network.

2.6 The following proposed annual programmes of work are included:

i. ***Road resurfacing programme*** – using the principles outlined in the Highway Asset Management Strategy, prioritising the worst condition roads on the Key Route and Community Networks.

ii. ***Footway reconstruction programme*** – prioritising worst condition footways on the KRN and community networks, targeting multiple Wards each year and tying-in with the road resurfacing programme where possible. Works can also include kerb repairs.

iii. ***Road and footway preventative programmes*** – targeting about 6 Wards each year (different from those in the resurfacing programme) and selecting all roads suitable for these treatments (predominantly 'mid-life' condition) within each Ward. This approach will reduce set-up costs and help delivery in terms of coordinating diversion routes and reducing disruption.

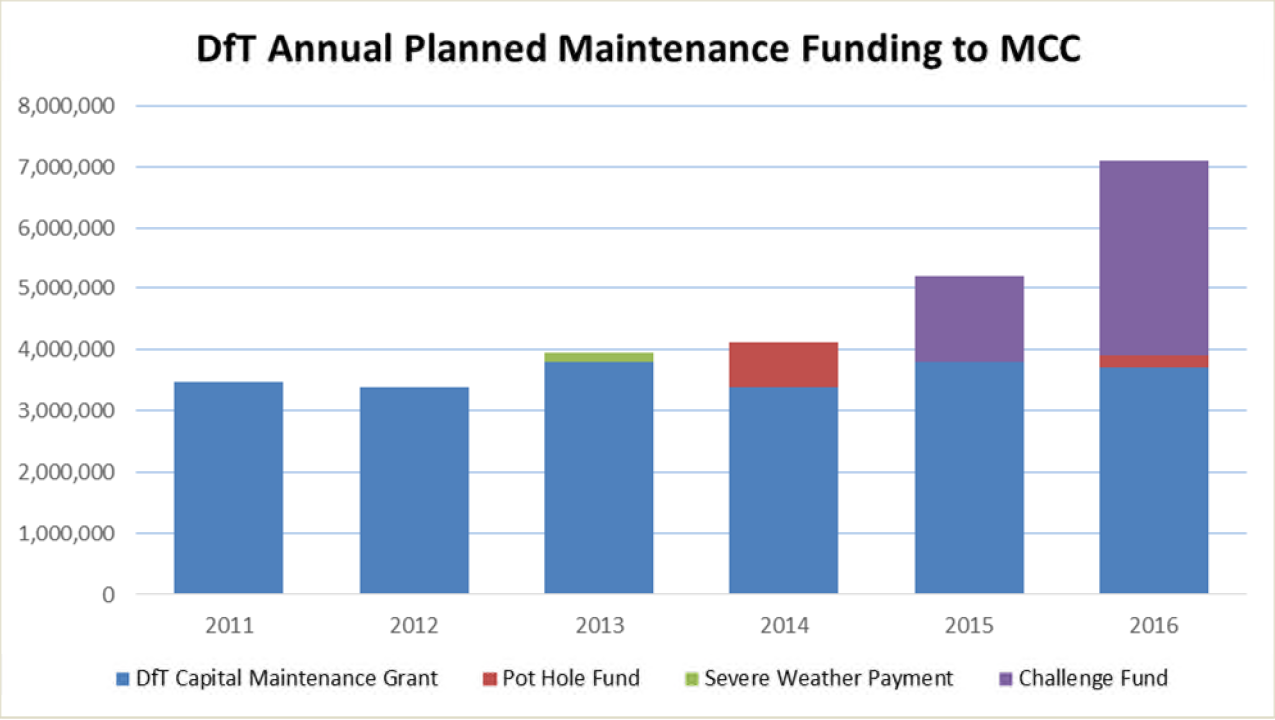
iv. ***Drainage improvement programme*** – repairing broken or defective drainage gullies and pipework will help prevent future damage such as potholes, and reduce the amount of maintenance that is required. This is additional to gully cleaning operations before and after resurfacing works.

v. ***Bridges and structures*** – the existing capital and revenue funding levels were not adequate to allow the Council's structures to be inspected and maintained to a 'good' condition. However, an additional £7.2m capital allocation over-and-above the £100m Investment Programme will help us complete the required inspections and programme prioritised capital repairs.

2.7 Individual schemes, comprising the road and footway resurfacing programmes, will be selected and prioritised based on the latest condition information (50 percent of the highway network is surveyed each year). Coordination with other infrastructure works across the City will also be checked using GMRAPS (Greater Manchester's Road Activity Permitting System) in order to minimise disruption.

3 Success in DfT Challenge Funding

3.1 The following chart demonstrates that the Council has been successful in securing additional central government funding for planned maintenance over recent years. This has not necessarily increased flexibility around where monies are spent due to the fact that submissions are tied to specific business cases; i.e. Challenge Funding was secured specifically to deliver Key Route Network (KRN) improvements on routes including Hyde Road, Stockport Road and Palatine Road.



4 Creating a Five year Capital Maintenance Programme

4.1 In agreeing the five year investment of £80m for highways maintenance a longer term rolling programme of capital maintenance work will be developed in liaison with local Members, which allows for investment decisions to support strategic priorities, provide better coordination with other work programmes and projects, better allocation of resources and budgets and greater clarity of what can be expected for stakeholders. An indicative split of the £80m funding over the 5 year period is shown in the table below.

Maintenance programme:	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Highway Asset Surveys	£150	£150	£150	£150	£150	**£750**
Drainage	£1,500	£500	£500	£500	£500	**£3,500**
Large Patching Repairs	£1,500	£1,500	£1,000	£1,000	£1,000	**£6,000**
Disabled Bays / line markings	£10	£20	£20	£20	£20	**£90**
Network Maintenance	£0	£40	£40	£40	£40	**£160**
Carriageway Resurfacing schemes	£2,000	£8,000	£8,000	£6,000	£6,000	**£30,000**
Footway schemes	£500	£2,500	£2,500	£2,000	£2,000	**£9,500**
Carriageway Preventative schemes	£5,300	£6,700	£6,000	£6,000	£6,000	**£30,000**
Total:	**£10,960**	**£19,410**	**£18,210**	**£15,710**	**£15,710**	**£80,000**

4.2 In addition to the generic budgets for asset condition surveys, installing disabled bays and network maintenance costs (relocating signs, reducing street clutter etc.), we have also allowed annual budgets for drainage and large patching repairs.

4.3 A preventative strategy is key to ensuring that a significant number of roads can be protected from total failure. Treating roads before they become critical is essential and is based on a 'just in time' engineering approach. This might be one or two winters prior to major defects occurring – by which time it would expose the council to emergency pothole repairs and more substantial structural repair. In each year Members have allocated £6m per annum to protect an extensive part of the network from total failure.

4.4 It is important to recognise that National Government funding decisions and resulting under-investment since 2010 has led to significant deterioration of our network; and that once the condition has fallen into serious disrepair, this becomes much more expensive to rectify. The Council is currently tackling the effects of a sizeable backlog of repairs. As the substantial capital programme incrementally tackles known problem areas the overall backlog of defects will reduce and only over time will the number of potholes reduce. This should create fewer revenue funding pressures and might even help to facilitate future prudential borrowing for the remainder of the £160m highways backlog.

5 Determining the Type of Planned Maintenance

5.1 The life expectancy of a brand new road is approx. 40 years but obviously this figure varies greatly based on volume and type of traffic, weather conditions and any utility repairs. Through its life, small potholes may appear which result in water ingress and this becomes much more frequent with age.

5.2 In approving the Manchester Asset Management Strategy the council recognised the need to understand the appropriate type of planned maintenance; the right choice and a timely approach is the single biggest way to guarantee value for money.

5.3 Based on the available funds and the principles of the Asset Management Strategy, the following annual programmes have been agreed:

a. Road resurfacing programme – using the principles outlined in the Highway Asset Management Strategy, prioritising the worst condition roads on the KRN and community networks, targeting for example a number of Wards in the North, Central area and the South. This approach will reduce set-up costs and help delivery in terms of coordinating diversion routes and reducing disruption. It is however relatively expensive when compared with other options and does require works over a number of days.

b. Footway reconstruction programme – prioritising worst condition footways on the KRN and community networks, targeting a cluster of Wards each year and tying in with the road resurfacing programme where possible. Works would also include kerb repairs where necessary.

c. Road and footway preventative programmes – targeting about 8 Wards each year (different from those in the resurfacing programme) and selecting all roads suitable for these treatments (predominantly mid-life condition) within each Ward. This is a relatively cost effective approach and will reduce set-up costs and help delivery in terms of coordinating diversion routes and reducing disruption. Surface dressing requires a road to be closed for a single day. Microasphalt enables a road to be re-opened within an hour.

d. Drainage improvement programme – repairing broken or defective drainage gullies and pipework will help prevent future damage such as potholes, and reduce the amount of maintenance that is required. This is additional to gully cleaning operations before and after resurfacing works.

e. Large patching programmes – repairs on roads that are largely in a good condition but localised structural repairs of between 30mm and 100mm depth are required to improve the condition of the asset. This will be based on local intelligence and reports from Highway Inspectors and residents.

5.4 An important element of improving the lifespan of all roads is to make sure that any utility repairs are undertaken before the Council undertakes any resurfacing or preventative work. The GMRAPS system provides a controlled and precise way to advance notify utility companies of our planned works.

Where utility companies have work planned they can either accelerate their programme or the Council can reschedule ours such that the resurfacing is undertaken after the utility repair work.

6 Governance

6.1 The Provision of Highways Maintenance has a considerable number of formal approval stages in respect of Members and various financial processes. As a universal service to residents, businesses across the City and the travelling public from across the City Region and beyond the service is at the heart of creating a lasting impression of Manchester.

6.2 Over the last five years all 153 English Highway Authorities have been preparing for a new regime for accountability to meet DfT requirements around sound asset management principles, the creation of long term forward programmes of investment and auditable methods to value assets as part of the Whole of Government Accounts returns. This has included consultation with residents around more community informed decisions to invest.

6.3 Since 2013 Highways Officers have been working with our service provider (Gaist) to establish and maintain a clear technical understanding of how the network is deteriorating and the point at which optimum funding is achieved. The £80 million investment over five years represents an investment of between £15m and £20m per annum. This is typical of a council the size of Manchester. To support Highway Authorities, DfT have invested in the Highways Maintenance Efficiency Programme (HMEP), which provides an essential link between asset condition, choice of roads and optimum investment strategy to secure VFM.

6.4 Through the work with Gaist, it is possible to readily allocate a condition rating to each and every road – Grade 5 being the most deteriorate and Grade 1 being in very good condition. In this way funding can be allocated on a clear and transparent process that satisfies DfT, Local Members and the communities they represent.

6.5 Grade 5 roads are those section of carriageway that are most likely to need full reconstruction. This work targets the most significant sections of specific roads. Conversely a road that is grade 2 is most likely to benefit from targeted patching at very localised areas of failure. A grade 3 or 4 road is probably most likely to benefit from pre patching or Jetpatcher followed by micro surfacing or preventative works. As illustrated in the section above it makes a lot of sense to extend the life of a road by up to ten years through preventative works and ensure that full structural works are targeted at the smaller number of roads that are genuinely life expired.

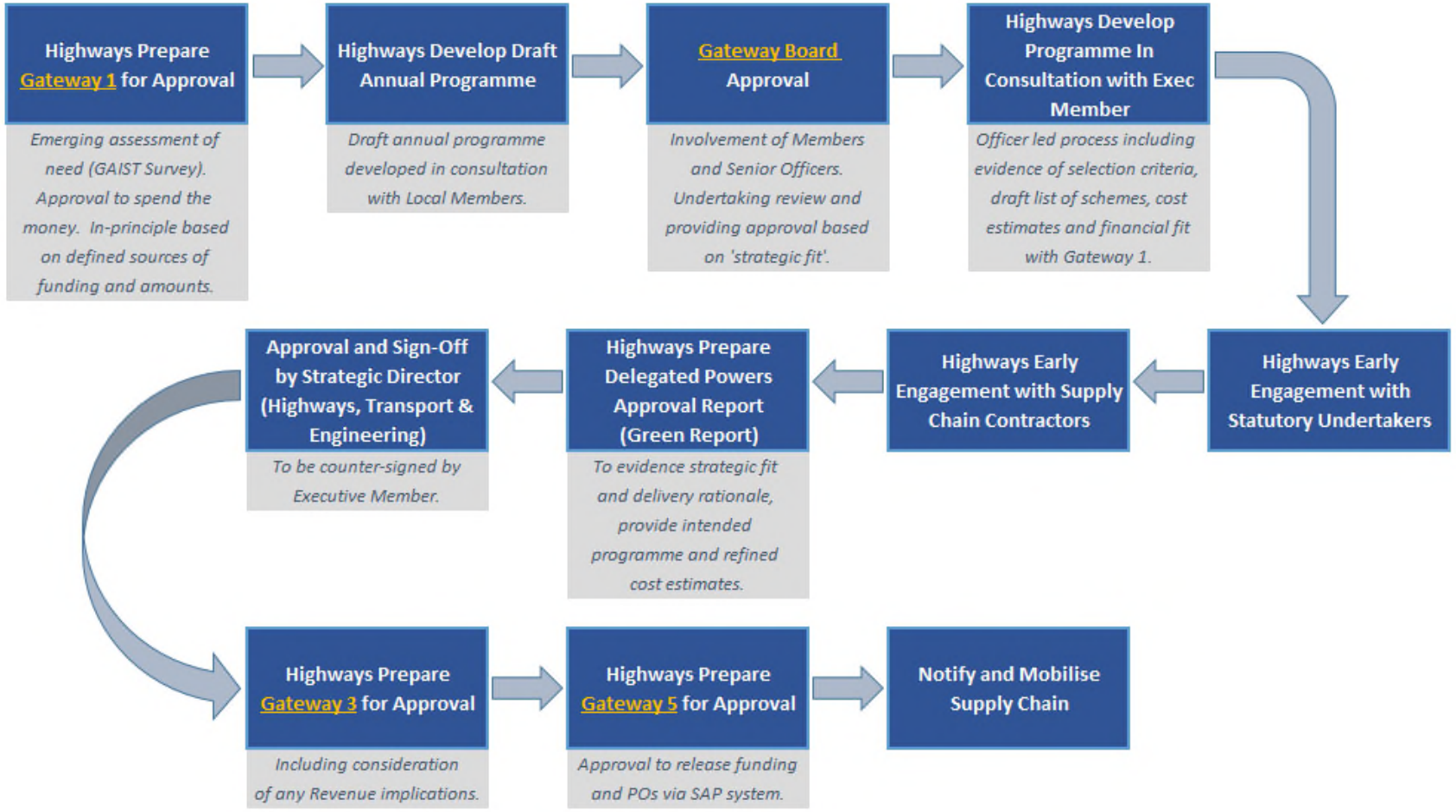
6.6 This approach also applies to footway works. Indeed a common approach for planned maintenance of highways assets is set out in the attached flow chart. This is a constant and live annual process however many councils have been expected to have a 3-5 year rolling programme. This is important because selected roads scheme will be affected and delayed or brought forward by

virtue of utility companies who have a statutory right to dig up roads. By giving them our programme early we can however dictate to them that they repair their assets well in advance of our works.

6.7 The simple flow chart overleaf is at the heart of providing clear and demonstrable member input at specified points. It also shows the financial review points. This is important as there are considerable interactions and interface prior to being able to actually commission the road surfacing companies to fix our roads.

MCC Typical Approval Process for Planned Maintenance

Applicable for Preventative Work; Carriageway / Footway Resurfacing; Patching and Drainage



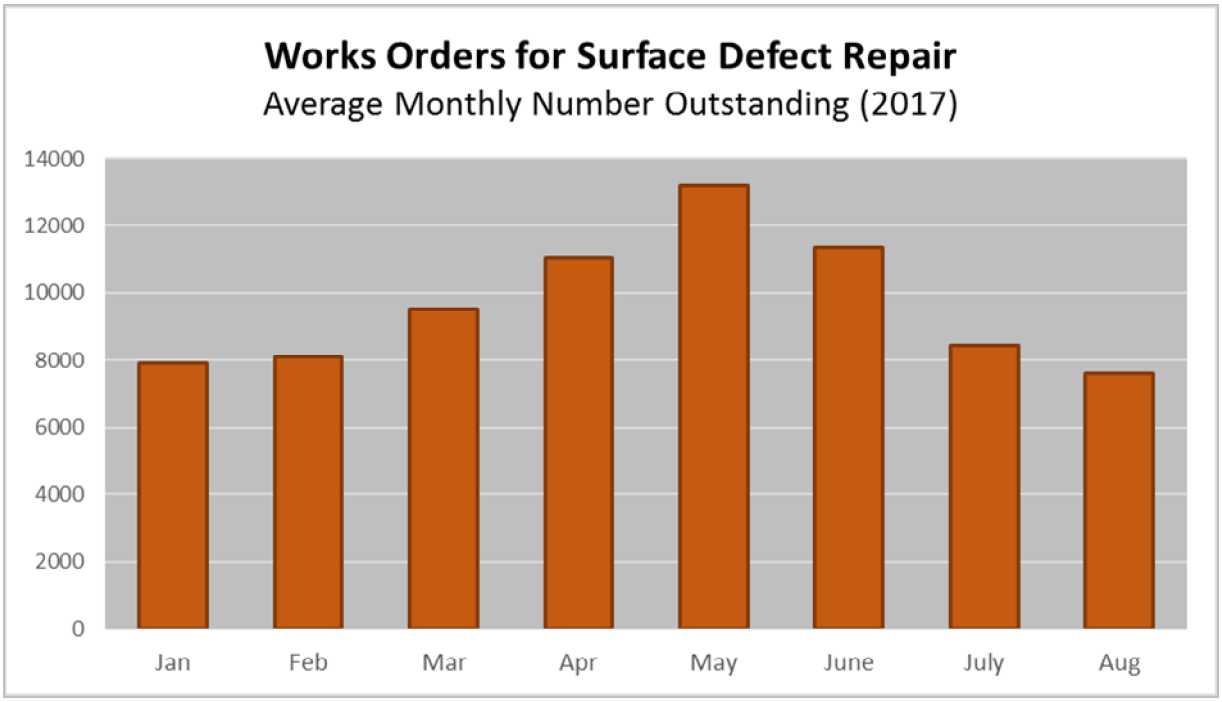
7 Pothole Repairs – Performance Improvement

7.1 The Service has been working with considerable focus over recent months to contain and reduce a historically growing backlog of potholes and associated repairs to the carriageway and footpaths. Significant work has been undertaken and remains ongoing around enhancements in both the allocation of work and in the monitoring of performance of individual repair teams – within Manchester Contracts and via sub-contractors.

7.2 The operational management team responsible for delivery and recovery of the work backlog have been meeting each week since late March to baseline and monitor the position and to effect an appropriate recovery plan. This has included the procurement of additional repair resource; enhanced tracking of workflows; and the identification and embedding of more in-house technical and administrative resource to assist with work coordination, quality checking, financial certification, and permit applications.

7.3 Although the backlog was increasing earlier in the year, a significant amount of contingency planning has been undertaken in the intervening period that has now resulted in a larger number of repair teams (in-house and sub-contracted) being deployed across the City on a daily basis. The management team is also undertaking work to streamline the historic lag between works being completed by the contractor(s) and records being received / updated within the Symology database.

7.4 The historic backlog performance is shown in the following chart and demonstrates very clearly an improving situation since late May when the additional resource became fully deployed. By the end of August, the backlog was just under half that of late May.



7.5 Over the summer 2017 interim management arrangements at Manchester Contracts have been undertaking daily monitoring of both work allocated and delivered by each respective service provider. This is dis-aggregated by each individual repair team such that the service can track any over or under-allocation of work and likewise identify and mitigate any specific matters of either poor or under performance through regular discussion with provider.

7.6 In addition to the increased numbers and greater efficiency around the quantity of repairs being undertaken, the service has also since August 2016 been completing regular random sample inspections around the quality of repairs delivered. Assessed against criteria such as being sawn-cut and squared-off; the use of like-for-like materials; being compacted and levelled; and edge sealed, checks undertaken jointly with inspection and Manchester Contracts repair representatives have awarded a Pass or Fail rating and any that are failed have been returned to the contractor for explanation and remediation at their cost. This process has contributed to a significant improvement in the generalised quality of work.

8 Service Innovation – Spray Injection

8.1 The service has also procured, for appropriate locations, two Jet Patching suppliers who bring additional cost-effectiveness to the service given their specialist methods of high volume repairs relative to conventional means. This process is used with good effect across the industry and with regard to longevity, previous trials within Manchester have shown that in the right circumstances and at appropriate locations, Jet Patching can offer a suitable repair that lasts as long as conventional methods with the offer of reduced whole-life costs.

8.2 The Jet Patching process has the additional benefit of repairing in a quantity controlled and quality checked way, a greater volume of defects than have been ordered, thereby providing further longevity and greater potential for future reduction in the numbers of Inspector identified defects.

8.3 The benefit of Jetpatcher is that once on site to tackle known defects the cost is marginal to repair all adjacent defects on the road. The Jetpatcher team is therefore instructed to also fill in other adjacent defects – even where not currently at intervention depth. The daily work programme for Jetpatcher is governed by roads that are known to have a significant number of defects that have reached intervention criteria. Untreated the Council may be liable for the harm and damage that might result.

8.4 Since August 2017 the spray injection has resolved over 2,600 defects that have been reported by the public or recorded by highways inspectors. The total defects treated is however far greater at 8,400. This tackles defects at marginal cost and ensures that we don't simply wait until a defect gets large enough to cause damage. When next visiting the road a Highways Inspector will see far fewer defects.

8.5 As well as fixing the specific defects that warrant action, Jetpatcher usually fixes four or five times the number of defects. The volume of material used provides an easy auditable trail and Inspectors can provide assurance.

9 Cyclical Drainage Programme

9.1 A comprehensive review of existing cyclical drainage process and activity was undertaken through late 2016 and early 2017 as part of the Pothole & Drainage Improvement Programme. This review identified a considerably under-resourced service with a very limited cyclical capacity that was being regularly re-deployed to deal with reactive work, thereby further increasing pressure on the delivery of a planned cleansing programme.

9.2 Inefficiencies were also noted in the scheduling of cleansing activity and the recording of outcomes together with very limited performance management and poor follow-up activity around jetting and excavation / repair.

9.3 The review sought to understand current best practice and lessons learned from other Greater Manchester Districts and Core City Authorities similar to Manchester and as part of this process there was proactive engagement with several in the formulation of a more appropriate future strategy for the Council – one which will aim over the coming months for the service to visit and cleanse every gully across the City, encompassing more appropriate performance management and forward programming of jetting and excavation / repair activity as necessary in a more coordinated and prioritised way.

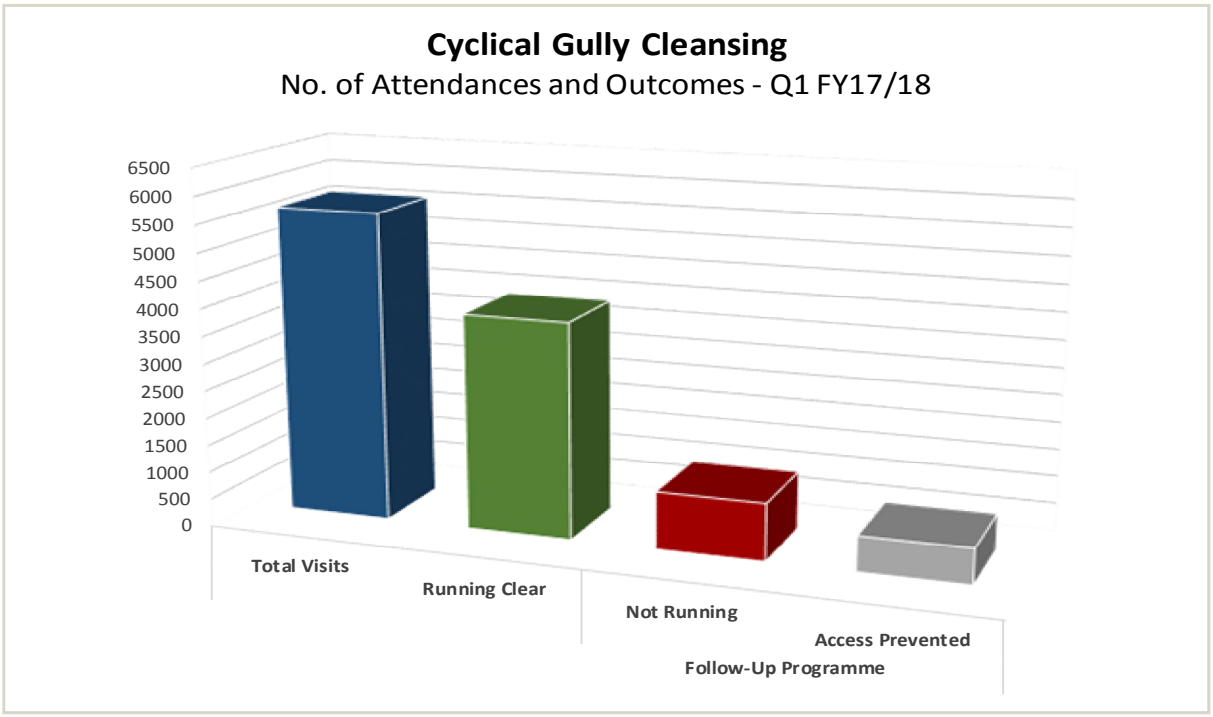
9.4 A proposed strategy (referred above) was reported and subsequently agreed earlier this year. In order to meet the objectives of a targeted clean of every one of the recorded 116,000 gully assets and to thereby significantly enhance the standard of the gully network, this strategy outlined the need for a dedicated management resource and increased operational team. The strategy ensures follow-up monitoring after a period of months to determine silt level build-up rates and provide more robust intelligence to underpin any future prioritised programme of cleansing.

9.5 Based around more effective management together with improvements in the efficiency of delivery and greater accuracy around the recording of outcomes, this proposed strategy would build-on on the circa £1.45m annual spend in FY2016/17 to project a significant enhancement to the highway drainage network for an additional £1.1m bringing the proposed two-year programme to circa £4m (£2m per annum).

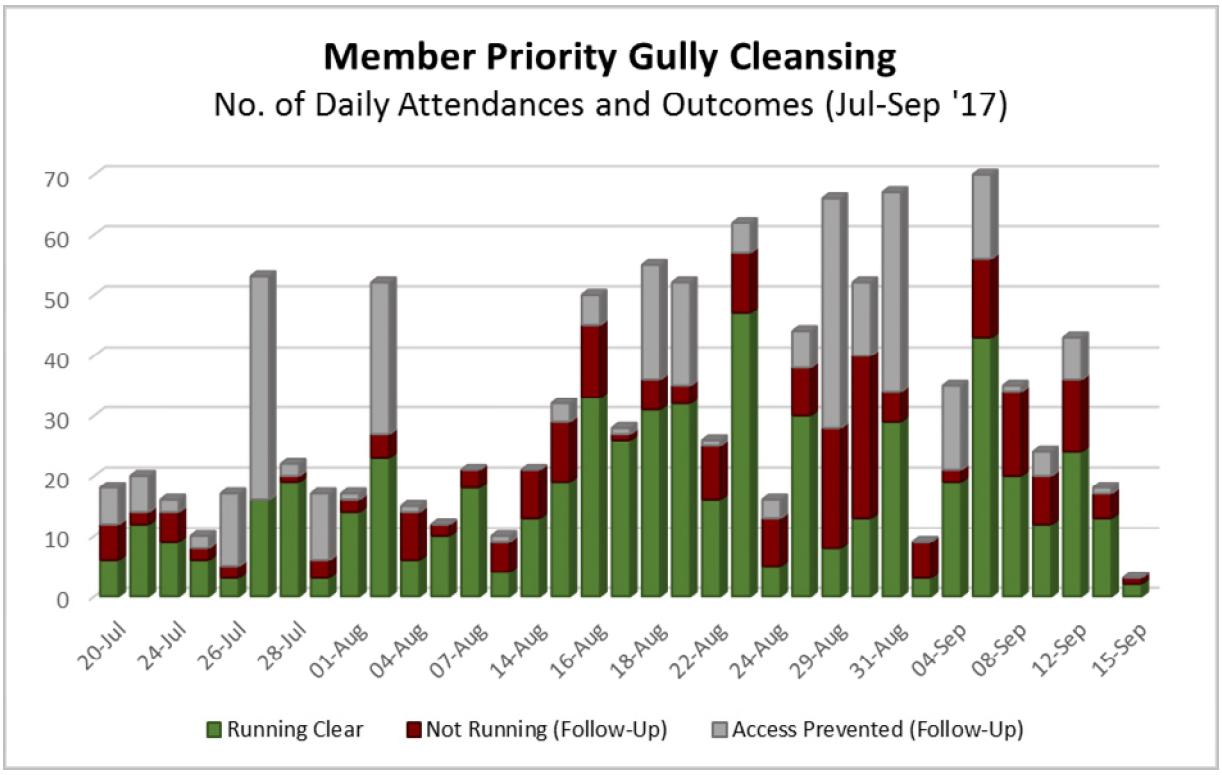
9.6 With a considerably enhanced network and much improved future intelligence on condition, it is hoped and intended that the service will be in a much stronger position through 2018-19 to consider future maintenance priorities and cost-effective methods of delivery.

9.7 In the interim, the service is continuing to deliver priority cleansing and associated follow-up activity. As shown in the following chart, more than 5,600 individual gully sites were visited in the first quarter of FY17/18 with

circa 70 percent of these left running clear. Of the remainder, circa 1,000 gullies have been added onto an emerging list for follow-up jetting and/or excavation and repair. A further 650 gullies could not be attended due to the presence of parked vehicles or other access difficulties and again, operational managers are in the process of programming follow-up attendance either for different times of the day or via targeted engagement with residents, Neighbourhood and/or Parking Teams.



9.8 With specific regard to drainage and gully cleansing improvements ongoing, the service is currently working through a list of recently identified priority locations offered by Members. Performance and outcomes are presented in the following overleaf.



9.9 This shows that through the course of late July to mid-September, the team has visited over 1,100 individual gully hotspot locations and have left 53 percent running clear. Of the remainder, circa 230 locations have been identified for inclusion within a follow-up programme (comprising further investigation, jetting and/or excavation and repair) and 290 locations need a re-visit due to access restrictions and as per the cyclical programme referenced earlier, attendance will either be undertaken at alternative times of the day or via a targeted engagement with residents, Neighbourhood and/or Parking Teams.

10 Ensuring that the contractor is both efficient and effective

10.1 Each road scheme is subject to a site visit by an experienced engineer to check that the condition data is up to date and to determine the best value option for treatment. For major schemes (such as those undertaken recently along the Oxford Road and Wilmslow Road corridor), the Council will undertake core samples to determine condition of underlying layers to enable more robust cost estimates.

10.2 In Year 1, any resurfacing and preventative works will have to be undertaken using existing frameworks in order to enable us to commence the Year 1 programme in a timely way – the frameworks are TC040 for resurfacing and TC041 for preventative works. Both frameworks have 3 appointed companies who have been through a competitive selection process based on cost and quality criteria, including due consideration of Value for Money, social value, and quality of work.

10.3 While existing contracts will be used for Year 1, we need to determine the best option for the procurement of Years 2-5. The Major Infrastructure Framework should be in place later this year and provides wider opportunity to procure future resurfacing contractors at a competitive rate; another option would be to go to market with the works as a total package. We are working to determine further which option provides us with the best value and least risk without compromising the quality of work.

10.4 The reactive maintenance service at ManCon also makes considerable use of TC36 for civil engineering. This contract is currently being substantially reshaped to provide a better reactive service and reflect the importance of spray injection and other specialist treatments. The new TC36 contract will also ensure a much stronger focus on quality and assurance surrounding works.

11 Managing the quality of the work undertaken

11.1 A key element of value for money is checking the quality of the work both during and after completion of the works. Final payment is not made until the works have been satisfactorily completed. We also put in-place contractually, a two year guarantee and retain 5 percent of the contractor's agreed fee until the expiry of the two-year period.

12 Procurement, Supply Chain and Finance

12.1 As is typical in the provision of Highways services across the UK, major maintenance is usually provided by specialist engineering contractors. Deploying specialist equipment and expert work gangs Councils commission the delivery of resurfacing programmes to companies who compete competitively for work.

12.2 Early engagement with the supply chain is essential to ensure that they can manage programmes of work across a number of providers and in so doing minimise the risk of peaks and troughs in workload.

12.3 A major development over the last decade has been the way in which councils collaborate up across regions to reduce the number of times they each go to market by joining forces. Through the HMEP, Councils have also been standardising what they ask of the supply chain and have been getting increasingly better at contract and commercial management. MCC takes part in a number of AGMA arrangements and a new contract (TC886) for the provision for Major Highways schemes and Infrastructure allows all GM councils to piggy back the work of MCC. In turn MCC currently benefit from a number of contracts arranged by Stockport and Trafford.

12.4 All significant contracts by value in Highways have been identified across the annual Capital spend of £15m-£20m plus circa £3m work at Man Con. The vast majority of works have been mapped against specific contracts and there is now substantially increased assurance.

- New Management arrangements have made substantial progress in creating new and appropriate contracts to meet Manchester's growth needs
- Stronger Contract Management and works inspection is now in place
- Some contracts – particularly at ManCon have had a short term extension in order to provide continued service delivery in advance of new and better contracts.
- We are considering the relative merits of very small specialist contractors alongside a more strategic relationship with a specific number contractors.
- We will work as part of GMCA to lever in value and we are seeking to secure greater social value.
- We will look to use local labour / apprenticeships to utilise the local workforce where possible.

13 Conclusion

13.1 The Highways Service continues to respond the historic challenges associated with a declining network condition.

13.2 Management change and better use of modern interventions and technology is starting to arrest the decline in road condition and the backlog of defects is now on a positive trend.

13.3 The significant investment over the next five years has yet to substantively feed through into works on the ground and until this occurs there is a risk of continued increase in highways defects.

13.4 The service is creating new approaches to service monitoring including summary / dashboard information at ward level that will support continued member engagement on local priorities.