



Resources & Public Realm Scrutiny Committee

6 September 2016

Report from the Strategic Director for Regeneration and Environment

For Information

Wards affected: ALL

Road Resurfacing Strategy

1.0 SUMMARY

1.1 This report looks at how we resurface our roads. It commences by discussing Brent's Highway asset (all the roads, pavements, drainage gullies etc.) Our highways infrastructure is the asset most used by the public and the most visible, and is currently valued at £3.89bn.

1.2 This report then goes on to discuss the following

- How are we choosing where to surface?
- How the new software tool we are about to acquire will make a difference.
- How are we communicating these decisions, do the public have confidence that we are choosing the right roads?
- Is resurfacing the priority or should we be looking at potholes instead?
- How we ensure the quality of road resurfacing

2.0 Brent's Highway Asset

2.1 Our highways infrastructure (including roads and pavements) is the asset most used by the public and the most visible. The latest estimate for the value of this asset is just over £3.89bn, and Brent's highways assets include:

- 505 km (315 miles) of roads;
- 847 km (529 miles) of pavements;
- 53 bridges and structures;
- 24,500 road gullies;
- 10,000 street trees; and
- 22,848 street lights and other illuminated street furniture.

- 2.2 In common with other Highway Authorities, Brent has an increasing maintenance requirement which cannot be met through a standstill budget. Currently estimated in Brent at £100m, more defects are appearing year on year. Against this, public expectations are rising with more customer reports of highways defects every year asking for these to be repaired.
- 2.3 This is not a problem specific to Brent as all local authorities across London, and indeed England, are experiencing a backlog of highway maintenance repairs. With cuts to local authority funding across London, increasingly there are insufficient resources to deal with road and pavement repairs. However, in Brent we are looking to address the imbalance and put investment and programmes in place to improve the overall condition of our footways and roads.
- 2.4 Towards the end of the last financial year £200k was identified through savings and invested to bring forward carriageway patching and repairs to approximately 1200 potholes that had been identified over the previous 6 months. This work will be substantially completed by the end of July and has been running in parallel to scheduled and reactive inspections and repairs.
- 2.5 This year 2016/17 we are investing a further £2m in our planned maintenance programme to move to a more proactive approach; prevention is better than cure. It includes an area patching programme to address locations considered too big for reactive repairs but requiring early intervention to prevent the road deteriorating further. Through this work we can pick up locations with multiple potholes, cracking, rutting etc. Officers are currently working with the contractor to identify locations and priority and welcome nominations from members that can be considered as part of the process.

3.0 How are we choosing where to surface?

- 3.1 To improve the way we maintain our highways, the council adopted the Highway Asset Management Plan (HAMP) in February 2014. The HAMP sets out a strategy based on the need to repair our assets on a regular basis, before they fail, so as to extend their lifespans and reduce higher long term repair costs, and provide the best value for money to local people
- 3.2 The strategy initially involves introducing a programme of major resurfacing works along with preventative maintenance, which will take the form of regular thin surface repairs to water seal roads and improve their anti-skid properties. Thin surfacing is cheaper than the cost of major resurfacing works but can extend the life of a road considerably by approximately 7-10 years, meaning that you can treat more road than for the price of major resurfacing
- 3.3 Each year we assess the network to determine the current condition. This is done using independent surveyors carrying out condition surveys to nationally agreed standards. We have full survey coverage of the borough's roads and pavements so we can assess the priority for resurfacing right across the borough. These surveys give us a "Condition Index" for all the sections of road and pavement; the "Condition Index" is in the form of a number. It is a measure of the number and severity of the defects one section of road or pavement has, and allows us to compare the condition of one section to another.
- 3.4 We then taken account of a range of factors to define relative priorities for maintenance. We use a scoring system to identify roads and pavements suitable for major resurfacing, preventative maintenance or upgrades that assess the following:
- Network Condition - condition-based on outcomes of annual condition surveys and inspection programmes;
 - Network hierarchy and traffic usage, including proximity of local schools / colleges;
 - Risk - Level of risk in terms of numbers of accident claims, historic pothole repair records and/or collision history; and

- Value for Money - The cost effectiveness of preserving roads that have not yet fully deteriorated and fixing those which have.

- 3.5 We continue to take account of councillor nominations for road maintenance and, where a number of schemes attract the same or similar scores, we prioritise councillor nominated schemes earlier in our proposed maintenance programmes. We may also deviate from priority order where, for instance, a section of road in relatively good condition may be resurfaced if it is on a street where the rest of the road needs maintenance and it would be illogical, or impractical, not to resurface the whole street.
- 3.6 This year 2016/17, as a result of member feedback from business, we are prioritising our High Streets to assist regeneration by improving the look and feel of the environment
- 3.7 Also new this year 16/17 pavement upgrades include slabs being replaced with asphalt, which will help to make pavements more resilient and durable, and fit for purpose for the demands of today. Asphalt is more flexible than slabs and is less likely to crack and create trip hazards in the long term. Dropped crossings and street corners will be surfaced using concrete block paving, to ensure long term resilience. By using asphalt, we are able to make our limited resources stretch further, meaning more pavements can be repaired, making the borough a safer, more accessible place to live.



Newly upgraded footways; note that the road is programmed for resurfacing on completion of the pavements

4.0 The Asset Management Tool

- 4.1 We are investing in an asset management tool as part of our drive towards an intelligent evidenced based approach to asset management. The tool will enable officers to identify the most appropriate time for planned intervention of specific roads and optimise the benefit to be achieved from varying levels of funding. This approach will, over time, enable us to move away from reliance on reactive repair to maintenance and provide long term planning and visibility of programmes.
- 4.2 The goal for the service to satisfy Brent asset management aspirations could include
- Brent condition data hosted and displayed spatially on a web based “Brent Information Gateway”.
 - Options analysis and deterioration modelling enabling the Brent officers to explore longer term network performance outcomes of different budget scenarios.
 - Programme development functionality enabling Brent engineers to form a programme of work over a number of years from a model run to deliver network performance outcomes in accordance with the Brent asset management strategy and action plan;
 - Network Performance reporting from the model.
 - Programme development would enable schemes to be modified to reflect local priorities and practical considerations by editing their extent, treatment type and year of programme in which they are carried out.
 - Network Performance reporting to reflect any changes to the modelled scenario included in the proposed programme of works.

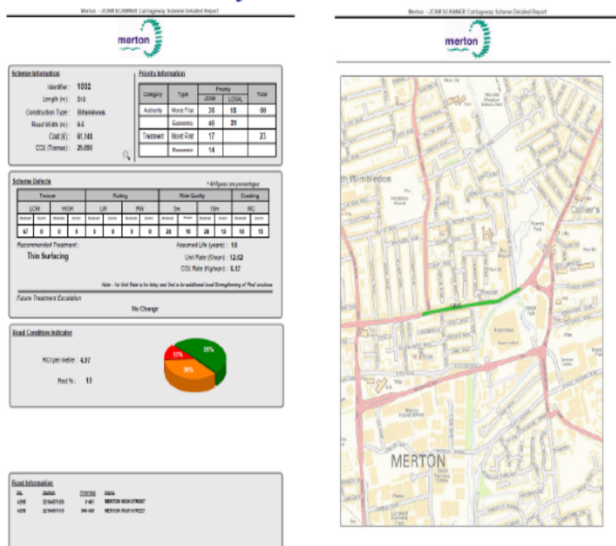
Network R.A.G.



Network RAG after 5 Years Deterioration



The asset management tool will predict network condition under different funding scenarios



The asset management tool will allow multi-criteria prioritisation of resurfacing

- 4.3 A timeline for the implementation of the asset management tool is included in Appendix A.
- 5.0 **How are we communicating these decisions & do the public have confidence that we are choosing the right roads?**
 - 5.1 The above method of choosing which roads we resurface are detailed in the Highway Asset Management Plan, which is available on the council website. An outline of the methodology is included in every annual Cabinet Report for approval of the Highways Maintenance Programme, which is taken to Cabinet in February or March each year. These reports are public documents which are posted on the Council's website.
 - 5.2 Additionally this information is included in replies to the many enquiries from Councillors and Members of the public we receive every year regarding resurfacing. Officers are also working on improving the information on the council's website regarding resurfacing in an "FAQ" format.
 - 5.3 Earlier this year, the Head of Highways and Infrastructure Tony Kennedy held a successful series of well-attended member's briefings, which aimed to inform members about the challenges faced by our highway asset, outline a way forward, and answer member's questions about how the highway network is managed.
 - 5.4 The Condition Index we use measures the structural condition, taking account not just superficial defects like potholes, but also defects indicative of deeper lying problems, which may not be apparent to the casual observer or the lay person.. The major resurfacing programme addresses the structural condition of the roads, not just the surface condition.
 - 5.5 In terms of decisions, we do know that whichever streets we resurface, there are many streets in a similar condition which we would also like to resurface but funds are limited. The £2m additional funding in 2016/17 is a start to address the highway maintenance backlog and the change of emphasis to do more pavements will help address resident concerns in this area.
 - 5.6 One objective measure of whether we are choosing the right roads for resurfacing is how the overall condition of the roads is varying over time. There are many variables that influence the condition of the roads (increasing traffic volumes, adverse winter weather, changes in weather patterns resulting in long periods of drought followed by intense rainfall) and the effects of the

various factors are impossible to disaggregate. However, the trend in road condition is illustrated below

Year	% of roads where maintenance should be considered		
	A class roads	B and C class roads	Unclassified roads
2008/2009	8%	9%	23%
2009/2010	11%	9%	23%
2010/2011	9%	7%	27%
2011/2012	9%	6%	26%
2012/2013	8%	9%	20%
2013/2014	13%	11%	21%
2014/2015	16%	16%	21%

5.7 It can be seen that whilst the condition of the unclassified roads has been fairly stable over recent years, the condition of classified roads (A, B and C roads) is deteriorating.

5.8 We do know that whichever streets we resurface, there are many streets in a similar condition which we would also like to resurface but funds are limited. The £2m additional funding in 2016/17 is a start to address the highway maintenance backlog and the change of emphasis to do more pavements will help address resident concerns in this area.

6.0 Is resurfacing the priority or should we be looking at potholes instead?

6.1 There needs to be a balance between reactive repairs (e.g. repairing potholes) which are required to keep the highway safe, and planned works which are needed to preserve and extend the life of the road or pavement. Reactive maintenance is inherently inefficient and more expensive than planned maintenance and so, whilst there will always be a need for it, ideally the amount carried out should be minimised.

6.2 In April 2011 the then Parliamentary Under-Secretary for Transport announced an initiative to review the pothole problem under the umbrella of the Department for Transport sponsored Highways Maintenance Efficiency Programme (HMEP). A Project Board was appointed involving a range of key stakeholders from the public and private sectors,

6.3 The review considered how local highway authorities in England currently deal with potholes, as well as wider stakeholder views and implications. The review identified good practice through consultation, in order to demonstrate how potholes and other related aspects of highway maintenance may be dealt with more efficiently and effectively.

6.4 The review was published in a report "Prevention and a Better Cure – Potholes Review" in April 2012

6.5 The review noted that there are three types of maintenance activities:

- ***"Routine (cyclic and reactive) maintenance – This is work that is planned and performed on a routine basis to maintain the condition of the highway or to respond to specific conditions and events. Routine maintenance activities restore the highway asset to a safe state but do not increase its structural capacity.***

- ***Preventative maintenance – This is a planned strategy of cost-effective treatments to an existing highway in order to preserve it, prevent water ingress, reduce the rate of future deterioration and increase service life, without increasing its structural capacity. Preventative***

maintenance is typically applied to highways with some remaining service life and comprises road surface treatments that include crack sealing, surface dressing, slurry or micro-surfacing and thin and hot-mix asphalt overlay.

• **Structural maintenance** – *This consists of structural enhancements that extend the service life of existing highways either by restoring structural capacity through the elimination of age-related surface cracking, or by strengthening existing highways to accommodate existing or projected traffic.*

- 6.6 One of the key recommendations of the review was that “ **Local highway authorities should adopt the principle that ‘prevention is better than cure’ in determining the balance between structural, preventative and reactive maintenance activities in order to improve the resilience of the highway network and minimise the occurrence of potholes in the future**”
- 6.7 The review does not detail how this should be done. However, in February 2014 a report went to Cabinet detailing a new Highway Asset Management Planning (HAMP) approach for Brent, which provides a systematic long term methodology for maintaining the borough’s highways. At that time Brent adopted a “worst-first” approach to highways asset management. We identified the worst condition roads and developed a one year programme of road resurfacing and reconstruction.
- 6.8 The HAMP approach involved introducing a programme of major resurfacing works along with preventative maintenance, which takes the form of regular thin surface repairs to water seal roads and improve their anti-skid properties. Thin surfacing cheaper than the cost of major resurfacing works but can extend the life of a road considerably. Since then, two year’s programmes (2014/15 and 2015/16) of preventative maintenance have been implemented.
- 6.9 It should be noted that the requirement for permanent repairs are built into the London Highway Alliance contract. If, in an emergency, a temporary repair is required initially, then the specification requires that a permanent repair follows within 28 days. No temporary reinstatements are allowed for and 7- and 28- day repairs. This not only means a neat job but also a longer lasting repair.
- 6.10 For normal highway defects, e.g. potholes, on inspection any defects are categorised as High, Medium or Low priority. All high and medium priority defects are marked with white paint by our contractor. We have finance in place to repair high priority defects but limited funding to address those categorised as medium priority. Medium priority defects will be subject to assessment by an officer to determine if immediate repair is required. Low priority defects are noted, for record purposes only.

7.0 The quality of road resurfacing

- 7.1 In December 2012, the Cabinet took the decision to adopt Transport for London’s London Highways Alliance Contract as the Council’s method of delivery for highways maintenance services from 1 April 2013, and approved the award of a call-off contract with Conway AECOM for core highways maintenance services and improvement schemes
- 7.2 TfL’s procurement strategy was designed to encourage competition and provide opportunity for a wide range of bidders to be involved e.g. by forming consortia or joint ventures. Borough representatives were included in the design of the Strategy and the evaluation of tenders. The Strategy included a rigorous pre-qualification process would assess the generic capability of bidders to deliver the requirements TfL led the tender evaluation process with assistance from officers from the participating boroughs. Checks were carried out by the evaluation panel to ensure that bidders had put in prices and quality commitments that were

sustainable i.e. the tendered levels of service must in overall terms be deliverable for the tendered sums. The Contract must provide excellent value for money for Brent's residents and be a viable business concern for the provider.

- 7.3 FM Conway is the contracting arm of ConwayAecom, which has more than 50 years' experience in the design and delivery of successful highways maintenance programmes for both public and private sector clients. Our services encompass all of the essential activities needed to keep the UK's roads in optimum condition. They carry out rapid response pothole repair programming through to complete road resurfacing and civil construction projects.
- 7.4 FM Conway has Sector 16 accreditation from the Highways Agency (now "highways England") for the laying of all bituminous products. They specialise in the design, project management and delivery of machine-lay surfacing and road resurfacing projects. Their self-delivery teams operate an extensive and technologically advanced fleet to ensure that all surfacing projects are completed to a good standard. They invest heavily in the production of their own asphalt, aggregate and concrete products. The asphalt production process is housed at their asphalt plants in Erith Heathrow. The plants combine a high production output with energy saving technology
- 7.5 The ConwayAecom joint venture use FM Conway's surfacing division for all aspects of Road Pavement construction. Local in house teams provide core services which include:
- Supply of bituminous materials from their Heathrow manufacturing facility
 - Carriageway planing and resurfacing
 - Roadmarking and ironwork adjustments
 - High friction surfacing
 - Rhinopatch (infra-red patching)
 - Traffic Management accredited to National Highways Sector Schemes
 - Materials Guidance, specification and innovation for use in busy urban environments
- 7.6 The Contractor is required to carry out works to Road Pavements (including minor repairs and resurfacing) to the contract specification. Highways England produces standards and documentation relating to the design, construction and maintenance of highways; these documents are referenced in the contract specification.
- 7.7 Brent Officers also check the quality of resurfacing firstly by surveying the sites concerned to evaluate their condition and determine a suitable specification. The site survey addresses the following
- Surface water drainage
 - Kerb alignment
 - Existing adjacent levels in relation to proposed new carriageway levels
 - The stabilisation and regulating of the road profile
 - Site Safety and any precautions required including any special Traffic Management Measures
 - Make note of existing road markings with exact location
 - Proposed replacement of Anti-Skid Road Surfacing
- 7.8 Officers check the estimate provided by the contractor resurfacing based on the rates included in the LoHAC Contract.
- 7.9 Officers visit site throughout the duration of the work to ensure that traffic management measures conform to Chapter 8 of the Road Traffic Sign Manual and check work in progress. They check all works are carried out in a safe manner with due regard for vehicle

visibility sight lines, pedestrian safety, and is in accordance with all specifications and conditions outlined within the contract

7.10 During the removal of the old road surface ("planing off"), officers make sure:

- A sweeper is on site at all times, and the road is swept at regular intervals
- Work is carried out in a safe manner and joints/manholes/boxes/gullies are ramped before the road is open to traffic
- Surfaces which could not be taken out by machine, e.g. around boxes, manholes etc. are broken out
- Depths are checked in various locations to confirm they are within acceptable limits
- Temporary signing is appropriately positioned on site before the road is opened to traffic:- "Temporary Road Surface", "No Road marking", "Loose Chippings", "Ramp", etc.

7.11 At the carriageway resurfacing stage officers can:

- Ensure the surface is thoroughly swept and a tack coat applied prior to surfacing
- Check that all joints are sealed with hot bitumen
- Check the temperature of the material during surfacing

7.12 The following are to be checked during surfacing:

- Joints are properly cut and trimmed
- Chippings are spread uniformly
- There is an adequate fall in the surface for rain water to run to the nearest gully
- Compaction is carried out correctly and no roller marks are left on the surface
- Depths in various locations to conform they are within acceptable limits
- All metal covers are cleaned and free from tack coat and asphalt
- Ironwork where necessary is adjusted to new levels

7.13 The Engineer must ensure that all road markings are replaced as soon as possible.

7.14 On completion of the work officers measure the total resurfacing area at each individual site jointly with the Contractor's Agent, as the programme proceeds, and agree final costs.

7.15 Regarding the quality of defect repairs, the contractor is required to submit "before and after" pictures of the repair. This requirement must be fulfilled before payment is made. Likewise payment will not be made until officers are happy with the quality of the repair, including the reinstatement of any line markings.



Newly resurfaced Road

8.0 FINANCIAL IMPLICATIONS

- 8.1 In 2016/17 there are two highway maintenance programmes in progress. The one-off investment of £2m for 2016/17 referred to in this report are allocated as set out below and the annual highway maintenance programme of approx. £3.5m is detailed in section 8.6.
- 8.2 Of the one-off investment of £2m, £1.7m or 85% is to be spent directly on additional investment in roads and pavements. Of the existing backlog about 86% relates to pavements and the backlog for roads is below the London average. As a result, the advice from highways officers is that the historical split of funding, which was 50/50 should be more heavily weighted towards the pavements, with an allocation of 65/35. This makes the investment in pavements about £1.1m and the investment in roads about £0.6m.
- 8.3 For the maintenance of the various structures – principally bridges – in the borough an immediate allocation of £0.1m is proposed for remedial works. Additionally, a further £0.1m is proposed to improve the inspection regime in order to base future decisions on better information.
- 8.4 The balance of £0.1m is proposed to be spent on improving the management information on which to base future investment decisions, including investment in structural and financial modelling tools. The Strategic Director for Regeneration and Environment and the Chief Finance Officer will determine the balance of this between external and in house expertise, subject to the total of the £0.1m allocated to this heading not being exceeded.
- 8.5 The proposed programme of an additional one-off £2m investment will not fix all of Brent's roads and pavements in a single year. As part of the budget setting round for 2017/18 and future years proposals will be brought forward for a new investment programme, taking

account of all of the available sources of funding (from the council, TfL and other sources) and the affordability of this against other council priorities.

- 8.6 The table below summarises the proposed allocation of Brent capital funding for highways maintenance during 2016-17:

Schemes	% of Capital Budget	Amount (£ 000's)
BRENT CAPITAL – Footways		
Major footway upgrade	42.54%	1,510
Footway upgrades – short sections	4.23%	150
Improvements to the public realm	3.52%	125
Sub-total	50.28%	1,785
BRENT CAPITAL – Carriageways		
Major resurfacing unclassified roads	27.18%	965
Preventative maintenance unclassified roads*	11.27%	400
Major resurfacing of B&C roads	5.63%	200
Road resurfacing – short sections	4.23%	150
Renewal of Road Markings	1.41%	50
Sub-total	49.72%	1765
Sub Total Brent Capital		3550
TfL Funding for Principal Roads**		901
TOTAL HIGHWAY MAINTENANCE PROGRAMME		4451

*around 30% of value of £1.365m unclassified carriageway resurfacing programme

**value could increase if TfL agree to deliver reserve schemes.

- 8.7 The provisional allocation for 2016/17 assumes the same division of funding.
- 8.8 Up to £5k of carriageway maintenance allocation and £25k of footway allocation will be used to undertake condition surveys during 2016/17. These surveys will assist preparation of a long term asset management programme.
- 8.9 The approach to major road resurfacing and preventative maintenance assumes an approximate percentage split of funding of 70% and 30% respectively.

9.0 LEGAL IMPLICATIONS

- 9.1 The Highways Act 1980 places a duty on the council to maintain the public highway under section 41. Breach of this duty can render the council liable to pay compensation if anyone is injured as a result of failure to maintain it. There is also a general power under section 62 to improve highways.

10.0 DIVERSITY IMPLICATIONS

- 10.1 The £3.55m Highways Capital Scheme 2016-17 Programme (which are the same in nature to the £2m Highway Investment Programme) have been subject to screening there are

considered to be no diversity implications that require full assessment. The works proposed do not have different outcomes for people in terms of race, gender, age, sexuality or belief.

- 10.2 In addition, the design criteria used in all highway work does take note of the special requirements of various disabilities. These will take the form of levels and grades associated with wheelchair users, for example road crossing points, and for partially sighted / blind persons at crossing facilities. The highway standards employed are nationally recognised by such bodies as the Department for Transport. This programme of works continues the upgrade of disabled crossing facilities at junctions which were not constructed to modern day standards. All new junctions are designed to be compliant at the time of construction.
- 10.3 Strengthened areas of footway are far less susceptible to damage and will therefore aid the movement of pedestrians that may find it difficult to walk on uneven pavements.
- 10.4 We make sure accessibility ramps are provided to aid wheelchair users and those with prams. We make sure high visibility barriers and tapping rails are provided to allow those with visual impairments to negotiate the works as they are in progress
- 10.5 We make sure of the visibility of the required signage, also where temporary work is being carried out.
- 10.6 We monitor of the quality of the work to ensure that the finished surface is to specification and does not form a mobility hindrance; and that signage and road markings are correctly provided as aid to movement.

BACKGROUND PAPERS

None

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