

Committee(s)	Dated:
Streets & Walkways Sub Committee Planning & Transportation Committee	27 February 2018 26 March 2018
Subject: Highway Infrastructure Code of Practice	Public
Report of: Director of the Built Environment	For Information
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Summary

The Department of the Built Environment (DBE), their term highway maintenance contractor, JB Riney, and their term maintenance highway structure consultants, Arcadis Ltd, are responsible for the construction, maintenance and safe repair of highways, lighting, street furniture and highway structures for most of the Square Mile.

As noted in a more detailed report to Streets & Walkways Sub Committee late last year, DBE has delivered a 'steady state' position to nationally accredited standards over recent years i.e. the network as a whole is getting no worse, and if anything, it has slightly improved. This has been done despite past budget cuts by capitalising on additional sources of investment, through service efficiencies and by using better data and analysis to inform a more considered highway maintenance regime.

This and other aspects of the highway, street lighting and structural maintenance function will be considered as part of the move towards adopting the Government's new Code of Practice for Well Managed Highway Infrastructure by autumn 2018. In moving towards adopting that Code, an Action Plan will consider the balance between reactive and planned maintenance, additional funding streams that might be made available, a new risk management approach to highway and structural inspections, and the adoption of a formal corporate policy for maintaining these items.

Recommendation(s)

Members are asked to note this report, including the Action Plan to be implemented as the key step towards adopting the new Code of Practice later this year.

Main Report

Background

1. The City Corporation is the Highway Authority for all the public highway and City walkway areas in the Square Mile, except for those streets that fall within the Transport for London Road Network (or 'Red Routes').

2. As such, the City is responsible for maintaining its streets, footways and walkways, including:
 - inspecting them for defects, undertaking repairs and resurfacing;
 - changing or enhancing streets, through major projects or in conjunction with developments;
 - maintaining signs, bollards, street furniture, nameplates and drainage;
 - looking after all the powered & illuminated street furniture in the City, from road signs to street lights;
 - maintaining highway structures, from bridges and viaducts to pedestrian underpasses and utility pipe subways.
3. The City's term contractor, JB Riney, works in partnership with City officers to identify highway and electrical defects, prioritise them, order the works and undertake the repairs. This results in a lean, joined-up and efficient process, with the City undertaking various monthly sample checks to ensure defects are correctly identified, repaired and invoiced.
4. In terms of Highway Structures, these are inspected in accordance with the Inspection Manual for Highway Structures by Arcadis Ltd, who are appointed by the City to perform these duties and to advise on their status using a bespoke IT software package (Bridgestation) designed for recording the condition of structures.

Current Position:

5. As noted in the detailed report on Highway Maintenance to Streets & Walkways Sub Committee in November 2017, DBE has delivered a 'steady state' position to nationally accredited standards over recent years i.e. the network as a whole is getting no worse, and if anything, it has slightly improved. Despite past budget cuts, this has been done by capitalising on additional sources of investment, through service efficiencies and by using better data and analysis to inform a more considered highway maintenance regime.
6. This approach has ensured that only around 7% of the City's road network requires resurfacing at any one time, and that accident rates for trips and falls remain extremely low. Furthermore, projects such as the switch to LED lighting demonstrate how the City is responding to the challenges of sustainability, energy saving and budget limitations.
7. However, detailed analysis suggests that the number of occasions where Riney are now completing temporary (as opposed to permanent) repairs is increasing. This is because fixing all the identified defects within the budgets available requires cheaper, more affordable short-term materials to be used, even though this can increase lifetime costs as these materials usually have a shorter lifespan.
8. In addition, DBE's local risk budget for road resurfacing (£266k pa) currently represents less than half the target spend (£683k pa) necessary to replace streets in the 20 years before they typically wear out. That leaves a funding gap

historically filled through TfL grants, major development schemes and DBE income from building site licences. This dependency on TfL's budget position and the buoyancy of the City economy has now become an issue with TfL's recent suspension of resurfacing funding for London's boroughs for the next two years, worth an average of £135k pa to the City.

9. This vulnerability to a funding gap is highly relevant given the City's historic expectation that its streets should be maintained to the highest of standards. This is exemplified by the high inspection frequencies embedded in the Riney contract, as well as particular specification details such as the 15mm definition of a trip that requires fixing in the Square Mile, compared to often 25mm or more elsewhere.
10. A similar position can be found in relation to the maintenance of highway structures, where limited annual repairs and maintenance budgets mean that the condition of the City's highway structures is gradually deteriorating in the long-term. This will inevitably result in several major set-piece schemes being brought forward in future years.

Well Managed Highway Infrastructure – A Code of Practice

11. In October 2016, the UK Roads Liaison Group (commissioned by the DfT) introduced a new benchmark for highway maintenance called 'Well-Managed Highway Infrastructure – a Code of Practice'. The Code is intended to apply throughout the UK, and is designed to promote an integrated asset management approach to highway infrastructure, based on localised risk management rather than Government-specified levels of service. It recommends that local service levels should be based on good evidence and sound engineering judgement, combined with local needs, priorities and affordability.
12. Changing from a reliance on specific guidelines (as in previous Codes) to a risk-based approach will involve appropriate analysis, policy development and approval from Members, and so a transition period was given for authorities to adapt to the new Code. Work is well underway to meet that timetable, so the following paragraphs represent an interim update before full adoption of the Code this autumn.

Code of Practice themes

13. The new Code is in four parts; Overarching Principles, Highway Maintenance, Street Lighting and Highway Structures. In total, it sets out 36 recommendations against which authorities should be judged, the first of which is formal adoption of the Code.
14. In terms of the general themes, the Code's key areas are:
 - Setting out and agreeing policies that inform maintenance operations;
 - Adopting an integrated risk-based approach towards maintenance, including priorities, inspections and responses;

- Maintaining an accurate and sustainable asset register, including condition surveys and appropriate record keeping;
- Establishing a performance management framework that is monitored and reported;
- Preparing financial plans for sustainable investment, including whole life costing and lifecycle planning;
- Creating three to five year rolling programmes of investment;
- Using materials that take into account area character, heritage considerations, environmental impact and carbon costs;
- Planning for, and learning from, extreme weather events;
- Minimising street clutter.

15. Discussion at the most recent London Technical Advisors Group (for London's highways professionals) suggests the City is well placed to adopt this overall approach and respond to its challenges having progressed as far as anyone in terms of embedding the key principles. In particular:

- Last July the term contract with Riney adopted a risk-management approach for managing its highway defects to ensure better prioritisation of repairs given the limited funding available;
- a five-year resurfacing programme is already co-ordinated with the City's long-term public realm enhancement programme, and takes into account key road surface deterioration risk factors;
- an extensive asset register is in place that helps manage and monitor the condition of the road network;
- comprehensive asset surveys, plus management information from Riney & Arcadis, help inform short & long-term plans and actions, which are benchmarked via London's Transport Asset Management Board and the national Annual Local Authority Road Maintenance (ALARM) survey;
- the City Public Realm Manual establishes a palette of materials based on sound road safety, sustainability, heritage, engineering and whole life costing principles;
- highway insurance claims remain low, but are closely monitored for trends and issues;
- winter maintenance resilience (including gritting, snow clearance and flood relief) is well-established within the Cleansing & Highways teams, and

forms part of the City's Business Continuity and Emergency Planning protocols.

Proposals

16. Having completed a gap analysis against the Code's 36 recommendations (see Appendix 1), officers have compiled an Action Plan to be implemented now, before a Final Implementation / Sign Off next autumn. In summary, the key elements of that plan (with the corresponding Code recommendation number) involves:

Action Plan

- (2) Developing an asset management framework for highway structures, approved by Members;
- (3) Drafting, consulting and gaining approval for a highway asset management policy in the context of the City's aims & objectives, statutory requirements, available funding and the forthcoming Transport Strategy;
- (4) Engaging with Members and the public regarding standards and performance levels through this policy review;
- (7) & (16) Reviewing the implications of adopting a risk based approach for highway structures;
- (25) Considering the implications of the current security level in the context of maintaining additional security measures on-street, and the response to emergency situations;
- (27) Making data results & analysis available to stakeholders via the reporting process to Committee and other channels;
- (28) Securing future funding streams into the longer-term to provide more certainty and the opportunity for longer-term planning.

17. Addressing these actions will be a focus for the coming year, but from that list, the priority would appear to be establishing a formal Member-approved policy and reviewing the implications of a risk based approach to the City's highway structures. This will need to be in the context of more developed financial plans that consider the current funding constraints, longer-term life cycle costs and other financial implications of adopting the Code.

Corporate & Strategic Implications

18. The key actions outlined above will set out the assumptions already implicit in the way the City maintains its highways, lighting and structures, but they will have to do so in the context of high public expectations and limited financial resources.

Health Implications

19. Maintaining a safe highway for the public is a statutory function that remains central to the City's core highway maintenance operation, and although the level of successful claims made against the City is minimal, this will undoubtedly remain the focus of any future policy proposal.

Conclusion

20. Through the intelligent use of data analysis, DBE ensure the City's highways, lighting and structures are safe and fit for purpose today and for the future. Standards remain high and the City continues to innovate ways to improve its service delivery.
21. However, previous budget reductions have created a reliance on third party and supplementary revenue funding to fill the funding gap needed to maintain and replace the City's highways and structures before they exceed their design life and wear out. An understanding of these expectations, risks and issues will be central to establishing the new highway asset management policy required of the new Code of Practice.

Appendices

- Appendix 1 – Well Managed Highway Infrastructure Recommendations – Current Status

Background Papers

- Highway Maintenance Efficiency Report (24 Nov 2017 - Streets & Walkways Sub Committee)

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Appendix 1: Well Managed Highway Infrastructure – A Code of Practice

(RAG: Status - Red, Amber, Green)

No.	Title	Wording	Update	RAG	Next Steps
1.	Use of the Code	This Code should be used to develop, review and formally approve highway infrastructure maintenance policy.	The Code will now form the template for the policy document which will guide operational decision making	G	<i>Adoption of the code as standard practice; see how existing operational standards may need to be adapted in accordance with the Code.</i>
2.	Asset Management Framework	An Asset Management Framework should be developed and endorsed by senior decision makers.	Asset management framework already embedded within the term contract for highways & lighting, but not for structures.	A	<i>Asset management framework for structures to be developed and contained within the policy document for Member approval.</i>
3.	Asset Management Policy and Strategy	An asset management policy and a strategy should be developed and published. These should align with the corporate vision and demonstrate the contribution asset management makes towards achieving this vision.	The historic principles of how the City's streets are maintained are well-established, but a formal policy has not been brought to Members for approval.	A	<i>A highway asset management policy should be drafted, consulted on and reported for approval in the context of the City's aims & objectives, statutory requirements and available resources.</i>
4.	Engaging and Communicating with Stakeholders	Relevant information should be actively communicated through engagement with relevant stakeholders in setting requirements, making decisions and reporting performance.	Ad hoc engagement with Members & public has historically driven maintenance expectations.	A	<i>Further work is required to engage with Members and the public regarding standards and performance levels, through the policy review noted above and a co-ordination of public feedback.</i>
5.	Consistency with other Authorities	The approach of other local and strategic highway and transport authorities should be considered when developing highway infrastructure maintenance policies.	Benchmarking in place for maintenance regime and intervention levels across London. Various industry working groups attended, & boundary maintenance agreements in place with all neighbouring authorities	G	<i>Continue to liaise with other boroughs plus TFL on all levels to ensure that a systematic approach is maintained. Complete Westminster boundary agreement. Review boundary responsibilities with TfL.</i>

No.	Title	Wording	Update	RAG	Next Steps
			except Westminster.		
6.	An Integrated Network	The highway network should be considered as an integrated set of assets when developing highway infrastructure maintenance policies.	Highway maintenance & lighting responsibilities are already joined up under the term contract with JB Riney, and the wider aspects (inc structures, cleansing, road safety, Public Realm Manual etc) all lie within DBE.	G	<i>Embed this approach into the policy documentation, and continue to maintain intra-DBE connections.</i>
7.	Risk Based Approach	A risk based approach should be adopted for all aspects of highway infrastructure maintenance, including setting levels of service, inspections, responses, resilience, priorities and programmes.	New risk-based approach to defects and intervention levels will be implemented from July. Implications of risk based approach for structures to be assessed.	A	<i>Rollout, review and embed new processes with JB Riney as part of their five-year contract extension. Consider implications for maintenance of structures with Arcadis.</i>
8.	Information Management	Information to support a risk based approach to highway maintenance should be collected, managed and made available.	All defects & repairs for highways (Highway Mgt System - HyMS) and Structures (Bridgestation) are recorded on the asset register. Riney also use mobile tablets for highways.	G	<i>Continue to collect and act upon inspections and defects via the mobile devices.</i>
9.	Network Inventory	A detailed inventory or register of highway assets should be maintained.	All assets are mapped on HyMS & Bridgestation, with attributes that range from type to age. Asset condition is also recorded & mapped.	G	<i>Ensure that the HyMS & Bridgestation asset registers are continually updated and that new items are registered as part of the process.</i>
10.	Asset Data Management	The quality, currency, appropriateness and completeness of all data supporting asset management should be regularly reviewed.	Monthly safety & service inspections and yearly condition reviews are utilised to do this.	G	<i>Continue to press for the prompt production of 'as built' drawings from schemes to enable HyMS to be updated.</i>

No.	Title	Wording	Update	RAG	Next Steps
11.	Asset Management Systems	Asset management systems should be sustainable and able to support the information required to enable asset management.	HyMS' supplier (Symology) is under contract until 2022, with a highly developed product to meet the City's needs. Bridgestation developed & managed by LoBEG for London authorities.	G	<i>DBE, IS and Symology continue to work to develop the functionality of the system, including on-line fault reporting this year. DBE work with LoBEG to develop Bridgestation, which is also being purchased by other bridge owners.</i>
12.	Network hierarchy	A network hierarchy should be defined which include all elements of the highway network.	This is fully defined within the contract. Intervention levels and the repair regime have been fully revisited as part of the Riney contract extension & found to be robust.	G	<i>Reviewed at intervals in conjunction with the City Transportation team and District Surveyors (from Bridgestation purposes).</i>
13.	Whole Life / Designing for Maintenance	Authorities should take whole life costs into consideration when assessing options for maintenance, new and improved highway schemes.	Lifecycle planning for 561 City streets in place. Durable products like York stone and Hot Rolled Asphalt prolong lifespans and help simplify reinstatements. Use of other materials are limited to where they deliver specific alternative benefits. Similar approach being developed in Bridgestation.	G	<i>Continued development of the lifecycle model, where the choice of material, its construction & a depreciation factor determines the expected life cycle of the highway and for appropriate structures.</i>
14.	Risk Management	The management of current and future risks associated with assets should be embedded within the approach to asset management.	Lessons learnt from quarterly insurance meetings help to address risks, with new materials (e.g. Ultra Crete for potholes) help reduce further risks.	G	<i>Continue to utilise existing materials, but be open to exploring new ideas that are safe and still deliver best value.</i>
15.	Competencies and Training	The appropriate competency required for asset management should be	Riney highway inspectors are fully trained and larger	G	<i>Regular reviews of training needs will be undertaken, considering</i>

No.	Title	Wording	Update	RAG	Next Steps
		identified, and training should be provided where necessary.	process/repairs must be approved by a CoL officer. Officers are fully versed in asset management processes. For structures, qualified engineers work with Arcadis for inspections & advice.		<i>competencies and appropriate courses as required. Approved inspectors for structures may also be considered.</i>
16	Inspections	A risk-based inspection regime, including regular safety inspections, should be developed and implemented for all highway assets.	A full & comprehensive highway inspection regime is already established within the term contract. However, a review of the highway structures regime is required to consider potential impact of adopting new code.	A	<i>To be reviewed as part of the policy discussion, particularly if the risk-management approach for structures results in the need for further funding.</i>
17.	Condition Surveys	An asset condition survey regime, based on asset management needs and any statutory reporting requirements, should be developed and implemented.	Inspection regime in place, including visual and automated surveys, or national & CoL standards. Coring programme of utility reinstatements also in place.	G	<i>Continue with existing approach in accordance with HMEP.</i>
18.	Management Systems and Claims	Records should be kept of all activities, particularly safety and other inspections, and procedures established to ensure efficient management of claims whilst protecting the authority from unjustified or fraudulent claims.	All inspections, defects & works are already recorded. All insurance claims are also recorded & reviewed, with the service adapted where appropriate.	G	<i>Quarterly review process to continue.</i>
19.	Defect Repair	A risk-based defect repair regime should be developed and implemented for all highway assets.	Set by the intervention levels & response times within the contract which are suitable and sufficient for an urban, high footfall, high quality	G	<i>A full inspection regime is already in place with a risk management strategy about to be introduced.</i>

No.	Title	Wording	Update	RAG	Next Steps
			area.		
20.	Resilient Network	A 'Resilient Network' should be identified to which priority is given through maintenance and other measures during extreme weather.	A winter maintenance gritting regime is well-established for the Square Mile, with prioritised areas and routes routinely reviewed.	G	<i>Review of winter maintenance regime required in time for next winter.</i>
21.	Climate Change Adaptation	The effects of extreme weather events on highway infrastructure assets should be risk assessed and ways to mitigate the impacts of the highest risks identified.	Plans in place for a variety of weather-related issues, including heat waves, snow and heavy rain. Sustainable Urban Drainage Schemes investigated for all public realm projects to remove storm water from sewer system	G	<i>Programmed review of weather-related plans; further investigation of SUDS to be encouraged wherever possible.</i>
22.	Drainage Maintenance	Drainage assets should be maintained in good working order to reduce the threat and scale of flooding. Particular attention should be paid to locations known to be prone to problems.	Drainage assets and regularly checked, flushed and repaired as necessary. A cross-departmental flood risk working group keeps matters under review.	G	<i>Continue to monitor & review.</i>
23.	Civil Emergencies and Severe Weather Emergencies Plans	The role and responsibilities of the Highway Authority in responding to civil emergencies should be defined in the authority's Civil Emergency Plan. A Severe Weather Emergencies Plan should also be established.	Corporate & DBE emergency plans are in place, including a multi-agency flood plan (last reviewed and updated in 2016).	G	<i>Continue to monitor & review.</i>
24.	Communications	Severe Weather and Civil Emergencies Plans should incorporate a communications plan to ensure that information is disseminated to highway	Major event communication is agreed within the emergency plan and would be co-ordinated centrally.	G	<i>Regularly tested through a range of corporate & departmental exercises.</i>

No.	Title	Wording	Update	RAG	Next Steps
		users through a range of media.	Smaller problems would be communicated on a local level by officers via existing social media feeds.		
25.	Learning from Events	Severe Weather and Civil Emergencies Plans should be regularly rehearsed and refined as necessary. The effectiveness of the Plans should be reviewed after actual events.	Emergency planning exercises are undertaken at DBE & pan-London level. Heavy rain impact on Lower Thames St in 2016 fed back into Cleansing/TfL plans, and issues where two or more properties are affected by flooding are investigated and publicised.	A	<i>Considering the implications of the current security level in the context of maintaining additional security measures on-street, and the response to emergency situations</i>
26.	Performance Management Framework	A performance management framework should be developed that is clear and accessible to stakeholders as appropriate and supports the asset management strategy.	HMEP report to committee reviews previous performance and condition showing clear trends in condition, whilst highlighting best practice (i.e. Coring programme)	G	<i>Performance Monitoring Framework outlined in this report, and will be reiterated in the upcoming policy review.</i>
27.	Performance Monitoring	The performance of the Asset Management Framework should be monitored and reported. It should be reviewed regularly by senior decision makers and when appropriate, improvement actions should be taken.	HMEP committee report reviews previous performance showing trends in condition, highlighting best practice (i.e. coring) etc. Bridgestation also highlights condition indicators for structures	A	<i>Data is available at a technical level for officers (street condition, coring etc), but results & analysis needs to be made available to stakeholders via reporting to Committee & publication, and fed into the policy review process.</i>
28.	Financial Plans	Financial plans should be prepared for all highway maintenance activities covering short, medium and long-term time horizons.	Detailed budgets are known & understood, but typically have just a one-year time horizon.	A	<i>Future funding streams to be agreed into the longer-term to provide more certainty and the opportunity for long-term planning. This applies to both</i>

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					<i>Highways (revenue) and Structures (supplementary revenue).</i>
29.	Lifecycle Plans	Lifecycle planning principles should be used to review the level of funding, support investment decisions and substantiate the need for appropriate and sustainable long-term investment.	Lifecycle planning for carriageways is underway. This is expected to inform long-term investment funding decisions.	G	<i>Financial analysis for different scenarios is being produced that is likely to illustrate the weakness and risks to DBE's current long-term funding position for planned highway maintenance.</i>
30.	Cross Asset Priorities	In developing priorities and programmes, consideration should be given to prioritising across asset groups (i.e. carriageways, footways, structures, lighting etc) as well as within them.	Maintenance budgets have recently been reallocated to ensure appropriate allocations to street lighting, granite setts, planned footway maintenance, coring etc.	G	<i>New budget allocations to be monitored & reviewed.</i>
31.	Works Programming	A prioritised forward works programme for a rolling period of three to five years should be developed and updated regularly.	A five-year resurfacing programme already in place.	G	<i>Ideally this will be extended to a ten-year plan, co-ordinated with major projects, developments & utility works</i>
32.	Carbon	The impact of highway infrastructure maintenance activities in terms of whole life carbon costs should be taken into account when determining appropriate interventions, materials and treatments.	Environmental factors are included in the choice of materials, but the street lighting shift to LED is expected to deliver significant carbon savings.	G	<i>Seeking Member approval at Gateway 5 for the street lighting project to commence.</i>
33.	Consistency with Character	Determination of materials, products and treatments for the highway network should consider the character of the area as well as factoring in whole life costing and sustainability.	The City's existing street scene manual provides clear guidance regarding the approved palate of materials.	G	<i>Any new materials to be tested and approved before final adoption.</i>
34.	Heritage Assets	Authorities should identify a schedule of	All heritage assets are	G	<i>Continued co-ordination with</i>

No.	Title	Wording	Update	RAG	Next Steps
		listed structures, ancient monuments and other relevant assets and work with relevant organisations to ensure that maintenance reflects planning requirements.	mapped on HyMS, and details are flagged to those wanting to excavate the highway.		<i>heritage officers and works promoters.</i>
35.	Environmental Impact, Nature Conservation and Biodiversity	Materials, products and treatments for highway infrastructure maintenance should be appraised for environmental impact and for wider issues of sustainability.	Sustainability of materials and their impact is implicit in the choice of materials within the street scene manual.	G	<i>Riney monitoring the downstream environmental impact of highway maintenance operations e.g. vehicle emissions, supply chain impacts.</i>
36.	Minimising Clutter	Opportunities to simplify signs and other street furniture and to remove redundant items should be taken into account when planning highway infrastructure maintenance activities.	We have a policy for de-cluttering our streets, which in turn minimises maintenance impacts.	G	<i>Embed policy into new urban realm schemes.</i>