Transport and Environment Committee

10.00am, Tuesday 25 August 2015

Roads Asset Management – Spray Injection Patching

Item number	7.17
Report number	
Executive/routine	Executive
Wards	All

Executive summary

This report is in response to a motion from Councillor Mowat on the use of the Velocity pothole repair system in Edinburgh. The report outlines the results of trials of this system on Edinburgh's roads and plans for extending its use alongside other new maintenance techniques as part of a new approach to roads asset management.

Links

Coalition pledges	P28, P33, P44, P45
Council outcomes	CO8, CO19, CO21, CO22, CO23, CO24, CO25, CO26, CO27
Single Outcome Agreement	SO4

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Report

Roads Asset Management – Spray Injection Patching

Recommendations

1.1 It is recommended that the Committee:

1.1.1 notes the progress made in developing strategic asset management for the roads and associated infrastructure in Edinburgh, including proposals to introduce innovative repair systems such as spray injection patching;

1.1.2 notes that a further report giving full details of the proposals for the Road Asset Management Plan (RAMP) will be presented to Committee for approval later this year; and

1.1.3 discharges the motion from Councillor Mowat.

Background

2.1 At its meeting on 2 June 2015, Committee approved a motion by Councillor Mowat that:

"Committee: Notes that Edinburgh's roads continue to suffer from potholes and cracked surfaces and that this is a concern to all road users and especially cyclists and asks officers to consider how the Velocity pothole repair system which provides a cost effective, greener, faster permanent could contribute to the Council's road maintenance programme.

Calls for a report to Committee in one cycle and notes that the Council is currently pursuing this approach."

2.2 Spray Injection Patching is a road repair system that is used extensively throughout the United Kingdom. The system uses high volume low pressure air to clean the road surface defect, before applying a bituminous emulsion bond coat. Aggregate is then propelled, using high volume air at low pressure mixed with bituminous emulsion. The material is compacted as it is applied. The repair can be trafficked immediately after laying.

2.3 The main advantage of the system over traditional excavate and renew methods, is the speed that it can be carried out. It has a reported low ‘cost life index’ and resultant high potential for value for money.

2.4 Its main disadvantages are that it is not suitable for all road defects (particularly structural failures) and road types. There are also potential safety issues where the system is used in urban areas (related to wind borne emulsion and propelled chippings).

Main report

3.1 The Road Surface Treatments Association (RSTA) in conjunction with the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) published a Code of Practice in August 2013 for Innovative Patching Systems, which includes spray injection patching.

3.2 The Code of Practice states that the system can provide the following benefits:

- reduced costs (up to 50% lower);
- rapid installation (up to 4 times faster);
- minimal disruption to road user;
- zero waste generated;
- low carbon footprint up to 85% lower; and
- some techniques require no excavation so no risk of hand arm vibration.

3.3 The system is in line with the principles of 'Well Maintained Highways' A Code of Practice for Highway Maintenance Management, including those of good asset management practice and sustainability.

3.4 The patching system was trialled in Edinburgh in July 2013. Sites were chosen in the South West Neighbourhood and included a heavily trafficked main arterial route, a low use rural carriageway and a structural failure on an urban bus route. The repairs have been monitored since the trial and have performed well and in most cases have either kept the road in a reasonable condition, or have slowed the deterioration of the defect.

3.5 Similar trials have also been attended by officers from the Transport Review Team in other Council areas.

3.6 It is considered that repairs such as spray injection patching are most suitable for revenue funding and it is proposed that this system be included in the 'palette' of road and footway asset management techniques, that are planned to be introduced in Edinburgh in 2016. It is proposed that the system will be used primarily in rural areas but will be trialled further in urban areas.

3.7 Services for Communities (SfC) Transport is currently developing the roads (and associated infrastructure) strategic asset management plan. This will involve aligning revenue funded repairs, such as spray injection patching, with proactive surface treatments and renewals funded from the capital budget. Work on developing the delivery aspect of the plan is ongoing.

Measures of success

4.1 The assessment of the condition of the city's roads is measured annually, and independently, by the Scottish Road Condition Measurement Survey (SRCMS). This survey shows the percentage of roads that should be considered for maintenance intervention. The results are published annually by Transport Scotland in the Scottish Transport Statistics. The data for all Councils in Scotland are summarised as the Road Condition Index (RCI).

4.2 The use of Spray Injection Patching alongside the adoption of other roads maintenance treatments as described in section 3.6 will improve Edinburgh's RCI scores, and will deliver better value for money and reduce the pressure on maintenance budgets.

Financial impact

5.1 It is anticipated that the cost of the revised asset management strategy, will be funded from the existing capital and revenue budgets.

Risk, policy, compliance and governance impact

6.1 The proposed asset management accreditation and assurance system will monitor and manage compliance and risk.

6.2 There are no significant compliance, governance or regulatory implications anticipated as a result of approving the recommendations in this report.

Equalities impact

7.1 An improvement in the condition of the roads asset in Edinburgh will benefit all road users, including those with mobility difficulties.

Sustainability impact

8.1.1 The proposals in this report will help achieve a sustainable Edinburgh because the principles of strategic asset management, support sustainability in terms of reducing whole life costs, recycling and waste minimisation. In addition to this, improved road asset condition will improve ease of travel and safety on the road network.

Consultation and engagement

9.1 Councillor Mowat has been consulted on the contents of this report.

9.2 A presentation of the development of the RAMP was made to the Transport Forum on 28 August 2014.

Background reading/external references

RSTA Code of Practice for Innovative Patching Systems Issue 1 August 2013.

'Well Maintained Highways' Code of Practice for Highway Maintenance Management (Roads Liaison Group).

Scottish Transport Statistics, Transport Scotland (all issues).

BS ISO 55001:2014 Asset Management.

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Links

Coalition pledges	**P28** - Further strengthen links with the business community by developing and implementing strategies to promote and protect the economic well being of the city.
	P33 - Strengthen Neighbourhood Partnerships and further involve local people in decisions on how Council resources are used.
	P44 - Prioritise to keep our streets clean and attractive.
	P45 - Spend 5% of the transport budget on provision for cyclists.
Council outcomes	**CO8** - Edinburgh's economy creates and sustains job opportunities.
	CO19 - Attractive Places and Well-Maintained – Edinburgh remains an attractive city through the development of high quality buildings and places and the delivery of high standards and maintenance of infrastructure and public realm.
	CO21 - Safe – Residents, visitors and businesses feel that Edinburgh is a safe city.
	CO22 - Moving Efficiently – Edinburgh has a transport system that improves connectivity and is green, healthy and accessible.
	CO23 - Well-Engaged and Well-Informed – Communities and individuals are empowered and supported to improve local outcomes and foster a sense of community.
	CO24 - The Council communicates effectively and internally and externally and has an excellent reputation for customer care.
	CO25 - The Council has efficient and effective services that deliver on objectives.
	CO26 - The Council engages with stakeholders and works in partnership to improve services and deliver on agreed objectives.
	CO27 - The Council supports, invests in and develops our people.
Single Outcome Agreement	**SO4** - Edinburgh's communities are safer and have improved physical and social fabric.
Appendices	Appendix 1 – Road Condition Index (RCI) by City and Year

Appendix 1: Road Condition Index (RCI) by City and Year.

City/ Year	2008	2009	2010	2011	2012	2013	2014
Edinburgh	39	34	33	35	33	28	34
Aberdeen	22	25	31	35	32	24	23
Dundee	25	23	26	28	26	23	34
Glasgow	25	25	30	34	31	26	27
Scotland	37	34	36	38	36	29	29

Source: Scottish Transport Statistics (all editions) published by Transport Scotland.

Extract from Scottish Road Maintenance Condition Survey - Not National Statistics

Notes

1 The Road Condition Index (RCI) is a national indicator of road condition. The value gives an indication of the percentage of the road network that requires some form of maintenance ranging from minor to major works. RCI 'Scanner Surveys' are carried out independently for all Local Authorities.

From 2007-08 the basis of the statutory road performance indicator in Scotland changed to the UK Standard RC. More detailed information on the changes can be found at the following web link http://scots.sharepoint.apptix.net/srmcs/General%20Publications/SCANNER%20RCI%20Explanatory%20Notes.p

2 While it has been possible, following the change to the indicator, to calculate the equivalent RCI value for all classified roads from 2005-06, it has not been possible to do this in a reliable manner for unclassified roads, owing to a lack of cracking data for those years. As unclassified roads represent a significant part of the total road network, RCI data for the network is similarly not available for this period. It is important to note that owing to the different formulation, no valid comparison can or should be made between the two series.

3 The categories used to indicate the condition of the road are described in Section 3.7 of the text. In brief: amber - further investigation should be undertaken to establish if treatment is required red - the road has deteriorated to the point at which it is likely repairs to prolong its future life should be undertaken. - See more at: http://www.transportscotland.gov.uk/statistics/j357783-07.htm#sthash.C5jzokj4.dpuf