

The Highland Council
Community Services Committee

5 February 2015

Agenda Item	10
Report No	COM 7/15

Roads Innovation Fund

Report by Director of Community Services

Summary

This report invites the Committee to note progress against the Action Plan and to homologate the decision to reallocate some of the funding.

The report also provides a summary assessment of the outcomes of the trial of the road recycling options and provides a strategy for deploying these techniques.

1. Introduction

- 1.1 At its meeting on 6 August 2014 the Committee noted the progress against the Action Plan presented in Report COM/34/14 and Homologated reallocation of the fund between actions.
- 1.2 This report provides a progress report with an updated Action Plan and summary of the outcomes of the recycling trials and strategy for future deployment of these techniques.

2. Action Plan

- 2.1 The updated Roads Innovation Fund Action Plan is included with this report in **Appendix A**.
- 2.2 Item 1a - Techniques for permanent patching "Jetpatcher"
The programme of works delivered by three contractors and Moray Council is almost complete except for some winter trials. The total volume of work was increased to allow the Moray Council equipment to be assessed. To accommodate the increase £69k of funding has been moved from the radiant heat budget. An assessment and recommendations will be reported to the committee in June.
- 2.3 Item 1c - Techniques for permanent patching – Radiant Heat
The technique is ideally suited for urban areas and due to the limited number of suppliers in the market the trail is concentrating on Inverness and Dingwall areas. The programme of works delivered by contractor and in-house under short term hire using Council operatives is almost complete except for some winter trials. An assessment and recommendations will be reported to the committee in June.

- 2.4 The lack of suppliers prevented expenditure of the allocation of £159k. A total of £69k has been transferred to the Jetpatching budget.
- 2.5 A report on the **Strategic Timber Transport Scheme (STTS) Bids** is to be presented to the Committee; this confirms £805k of external funding has been secured for works to the Flow County Timber Links during 2015/16. The works programme includes both road recycling using the techniques from the pilot and trialling of different specialist ditching equipment.
- 2.6 Negotiations are currently in progress to arrange the trial hire of a “MultiHog” unit with patch planer and ditching equipment. It is intended to deploy the equipment on the Flow County STTS scheme, using the opportunity also to undertake further equipment assessment of patch planers and ditching equipment.
- 2.7 Item 2 – GPS and Data Logging
A contract to install and service data logging equipment is currently at tender evaluation stage with contract award programmed for March. To manage the risk of delay to the contract award process, it is recommended that funding is extended into 2015/16 to fund the installation programme.
- 2.8 Item 3 – Drainage
The survey of roadside ditches using the RODEX survey method is ongoing. Progress has been reduced with the loss of a dedicated staff resource following their appointment to a permanent position with the Council. Reports are being prepared for the area teams to identify the sections of ditch requiring maintenance and improvement works.
- 2.9 The capital cost of the survey equipment has previously been funded. It is proposed that the remaining budget of approximately £40k is utilised in 2015/16 to employ a dedicated surveyor, either through the Graduate Intern programme or a secondment.
- 2.10 Drainage ditching trials have commenced as part of the Flow County STTS scheme. It is intended to utilise two ditching units, the “MultiHog” (para 2.6) and an excavator mounted unit.
- 2.11 To allow drainage trialling to be delivered through the STTS scheme, it will be necessary to extend the period of funding of the £100k allocation into 2015/16.
- 2.12 Item 4 – Recycling Pilot
Programme completed with four specialist contractors and in-house teams using hired and purchased specialist equipment. The purchase and hire of specialist equipment required the use of contingency funds to allow delivery of individual schemes.
- 2.13 The in-house use of specialist hired recycling equipment AZ300 Zipper on narrow low volume single track rural roads has delivered unit costs of £5-£10/m², whilst the specialist contractors on rural single/twin track roads have delivered unit costs of £11-£14/m². Both options have delivered savings

between 25% and 50% against the conventional technique of surface regulation and overlay. For suitable locations this allows an increased area of road to be repaired for the same cost.

The use of the AZ300 zipper would provide a lower cost solution for low traffic volume roads and when working with the private sector to permit timber extraction on low volume roads.

2.14 A business case has been prepared for the purchase of the AZ300 Zipper, which has been successfully trialled.

2.15 It is intended that based on the business case Highland Council purchase the AZ300 Zipper through its fleet capital budget. Officers are currently in discussion with the American manufactures of the AZ300 to negotiate provision of equipment for 2015/16, which would also support the delivery of the STTS scheme (para 2.5).

2.16 Item 5 Sconser Quarry.

The Chair and Director of CS met with Transport Scotland and their operator BEAR in January. TS/BEAR have confirmed their intention to make an application to the Scottish Road Research Board for £50k of funding to undertake a comparative study to the performance of material from Sconser and two mainland quarries and provide national guidance for quarry operators. To support the potential for increased usage of Sconser quarry material it is intended that HC would utilise the £10k allocation in partnership with Transport Scotland and BEAR during 2015/16.

2.17 Item 6 – Communities

Meetings are being held with representatives of the Black Isle Machinery Ring and discussions are ongoing to agree the nature of the work that can be delivered. It is anticipated that works will be delivered in Q1-Q3 2015/16.

2.18 Partnerships

Joint working and cost sharing are being developed with Transport Scotland's operator BEAR, who have agree to deliver gritting to 3 of the Councils remote routes saving £100 for each day gritting is required. Sharing of salt storage and ordering has ensured the Council avoids cost increases.

3. Assessment of Recycling Pilot

3.1 The Recycling pilot trialled 3 different techniques, provided by a combination of external and in-house operations. Deep (300mm) insitu cold-recycling, medium/shallow depth insitu cold-recycling and surface retexturing or cold milling.

3.2 Deep recycling is a specialist treatment suitable for specific road situations where the lower sections of the road pavement need replacing. The requirement for specialist plant and operators meant in-house delivery was not feasible. The trial site cost was £55-£60/m² compared to traditional techniques with cost of £80-£100/m². High contractor mobilisation costs to deploy plant to

the Highlands means deep recycling is not suitable to individual small schemes below about £50,000. It is intended to include this technique as part of a framework contract, to increase the volumes a possible partnership arrangement with adjacent authorities is being considered.

- 3.3 The medium/shallow depth insitu cold recycling method was delivered by three external contractors (Road Team, Colas and Stabilised Pavements) and in-house teams in Sutherland and Lochaber.
- 3.4 The rates achieved in-house and by contractors were in general found to be between 25% and 50% below the cost of a conventional regulation and overlay. There were differences between the performance and quality of product delivered by the three contracts; this is reflected in part by the differences in their costs. The “Retread process” has delivered consistent results in the pilot, schemes were delivered on time, both Colas and Stabilised Pavements provide a guarantee for their product.
- 3.5 To permit the future procurement of “Retread” work it is intended to develop a framework contract for road pavement repairs.

4. Implications

- 4.1 As yet no resource, legal, equalities, climate change/carbon clever, risk, Gaelic or rural implications have been identified arising directly from this report.
- 4.2 However it is anticipated there will be carbon savings arising from the recycling pilot, these will be evaluated at the end of the pilot business case analysis.

Recommendations

The Committee is invited to:

- i) **note** progress against the Action Pan;
- ii) **homologate** reallocation of the fund between actions as mentioned in paragraph 1.2 and detailed in **Appendix A**;
- iii) **note** the intention to purchase the “zipper” road cycling machine from capital which has successfully completed the trial; and
- iv) **note** that any underspend (estimated £310k) will be carried forward into 2015/16 to allow completion of the trials.

Designation: Director of Community Services

Date: 26th Jan 2015

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APPENDIX A

Roads Innovation Fund Action Plan

Item	Description	Overall Budget	Carry over to 2015/16	Comment	Lead
1.	Techniques for Permanent Patching				
1.a	<p><u>Plan A.</u> Pursue shared use of JetPatcher type equipment owned by neighbouring authorities to maximise utilisation for the owning authority. Moray Council and Argyll & Bute Council own such equipment and we will also contact Perth and Kinross Council.</p> <p><u>Plan B.</u> Hire JetPatcher type equipment from the market.</p>	£293,000		<p>Three commercial operators and Moray Council undertook assessment trials.</p> <p>Discussions with forth specialist for undertaking a specific winter trial.</p> <p>Programme value including materials and any specialist plant/labour along with effect of winter being assessed.</p> <p>95% completed by January 2015</p>	Area CS Manager NBSL
1.b	<p>For future years and based on the outcomes of 1.a develop a business case for leasing or owning JetPatcher type equipment to be shared between Council Areas for future use.</p> <p>The option to procure and run equipment on a shared basis with the aforementioned neighbouring Councils will be pursued.</p>	£5,000	£5,000	Report to Committee in June 2015. Extend funding into 2015/16 to complete assessment.	R&CW Manager HQ
1.c	For urban roads undertake a 6-9 month lease/hire of radiant heat equipment (reheat, add material and roll) for a large scale pilot programme of patching in Inverness and other main towns.	£90,000		Commercial operators completed, hire and lease arrangements trialled and training of in-house staff for HC delivery. 95% completed by Jan 2015.	Area CS Manager Inv.
1.d	For future years and based on the outcomes of 1.c develop a business case for leasing or owning JetPatcher type equipment to be shared between Council Areas for future use.	£5,000	£5,000	Report to Committee in June 2015. Extend funding into 2015/16 to complete assessment.	R&CW Manager HQ

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	The option to procure and run equipment on a shared basis with the aforementioned neighbouring Councils and BEAR Scotland will be pursued.				
2.	GPS and Data Logging				
2.a	<p>Following an audit of fuel management the Council's Head of Internal Audit and Risk Management has strongly recommended that we use GPS and data logging to enable better management of the use of fuel.</p> <p>We have successfully trialled GPS and data logging on 3 Gully Emptiers and 6 Winter Maintenance vehicles and shown that there are efficiencies to be gained in distances travelled and productivity. Fuel can be saved and more units of work delivered for the same cost; for example the gully emptying rate more than doubled in some cases.</p> <p>These pilots are coming to a close and need investment to enable savings to be achieved.</p> <p>It is proposed that during 2014/15 GPS and relevant data logging be installed on all heavy vehicles involved in Road Maintenance by the Area Community Services Managers. The costs are estimated to be:</p> <p>Installation on 91 HGV and 55 dedicated winter gritters @ £400</p> <p>Annual running costs of data collection @ £100</p>	£58,400 £14,600	£58,400 £14,600	<p>A follow up audit should be undertaken in the future (beyond 2014/15) to assess whether the management of fuel has improved and whether any efficiencies have been achieved.</p> <p>Contract award in progress, works to commence March 2015, awaiting confirmation of tender prices and updated contract outturn cost.</p>	<p>Fleet and Workshop Manager (installation)</p> <p>Area CS Managers (operation)</p>
3.	Drainage				
3.1	Continue the ROADEX Drainage survey of road-side ditches and watercourses near the road with feedback into maintenance programmes to help prioritise maintenance	£50,000	£40,000	Surveys in progress, previously using Graduate intern now area staff to operate equipment installed in Q4	R&CW Manager

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	work. Initial survey runs have shown that a dedicated staff resource is required to ensure consistency of survey. Locally based staff will be allocated to the work of driving the survey vehicle.			2013/14. Extend funding into 2015/16 to continue surveys.	HQ
3.2	Identify best practice in improving drainage maintenance methods including for cutting offlets and re-shaping ditches. This may identify the need for specialist plant and training for operatives.	£100,000	£100,000	Extend into 2015/16 in conjunction with STTS externally funded Flow County scheme.	Area CS Manager NBSL
4.	Recycling Pilot – Structural Maintenance				
4.a	Trials of both surface and deep recycling of road construction including associated surface dressing and drainage works – aiming to reduce cost. For example: <ul style="list-style-type: none"> i. Re-compaction of a milled surface treated with emulsion such as K1-60. Crudely trialled on the Moll road (Skye) over a 100m section, the road is low volume but has held soundly for 2 years. More extensive and controlled testing required. ii. Re-compaction of a milled surface by treating with a proprietary bitumen rejuvenating product. – again which we have trialled with 2 varying application rates on the Moll road. Both sections compacted well and have survived 2 years defect free without further treatment, but would benefit from a surface dress. iii. Hot recycled milled surfaces – normally urban locations to match existing levels. iv. Deep recycling of the road base and surface layers 	£547,000		Target cost including Surface dressing of £10/sqm. Achieved outturn costs for in-house delivery of shallow recycling of £5-£10/m ² . Utilisation of contingency fund required to facilitate hire/purchase of specialist equipment to allow in-house delivery. Mobile 2t Hot Box hired. Various sites identified with mixture of in-house and specialist contractors. Works substantially complete by December 2014. Inform these techniques with the knowledge published by our ROADDEX partners and also the TRL and others.	Area CS Manager CS

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	with added bitumen to replace oxidised material				
	v. Medium/shallow cold recycling of shallow depth road pavement with added bitumen to replace oxidised material.				
4.b	For future years and based on the outcomes of 4.a develop guidance and indicative relative costs for using these techniques compared with conventional techniques in use by the Council.	£5,000	£5,000	Preliminary report to Committee in Feb 2015. Finalised report in June 2015 after assessment of effect of winter on works.	R&CW Manager HQ
5.	Sconser Quarry Promotion				
	Transport Scotland's specification for Stone Mastic Asphalt requires a high grip and durability value for the aggregate used. The parameter concerned is the Polished Stone Value (PSV.) Transport Scotland need to be convinced that Sconser aggregate has a high enough PSV before they will allow materials from the quarry to be used in surfacing Trunk Roads.	£10,000	£10,000	The use of Sconser aggregate would reduce the cost to the Trunk Road Authority by some £15 per tonne and assist in carbon savings too. With external income the Quarry operations will be more sustainable going forward.	Area CS Manager SRC
	Undertake Grip Test surveys using the Sideway-force Coefficient Routine Investigation Machine (SCRIM) [possibly combined with laboratory PSV tests] to measure the Grip Test values (Grip Test Number) and correlate this with a PSV. The anticipated results should demonstrate similar properties to higher PSV aggregates and thus provide comfort to Transport Scotland.			Transport Scotland/BEAR application to Scottish Road Board for £50k funding for a 2015/16 comparative study of Sconser with 2 mainland quarries, to provide national guidance. Extend HC funding into 2015/16 to part fund study.	

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6.	Communities				
	Engagement / Resilience / Participation For example with farmers on the Black Isle <ul style="list-style-type: none"> • Winter – schools care homes etc. • Drainage • Use of Community Challenge Fund 	£50,000	£50,000	Discussions on-going with Black Isle machinery ring Funding to enable the Pilot and identify potential future savings. Pilot will identify H&S, Insurance and other issues for communities. Measures expected to be in place for late Winter/spring and then on-going in 2015/16. Extend funding into 2015/16 to fund delivery.	Area CS Manager SRC
	TOTAL (allocated)	£ 1,228,000	£ 288,000		
	Remaining to be allocated	£ 22,000	£22,000	Contingency and for new ideas. Deployment of mobile 2tonne Hot Box in Sutherland. Central hire of specialist ancillary equipment for recycling pilot. Partnership working with Transport Scotland/BEAR – BEAR grit 3 remote winter gritting routes, joint usage of strategic salt facility and ordering in Inverness Harbour.	HoR&T
	TOTAL FUND	£1,250,000	£310,000		