

The Highland Council
Community Services Committee

4 June 2015

Agenda Item	8
Report No	COM/21/15

Roads Innovation Fund Action Plan Report

Report by Director of Community Services

Summary

This report invites Members to note progress against the Action Plan and to approve the recommendation to reallocate some of the funding.

Members are invited to note the intention to enter into a partnership arrangement with Moray Council to secure usage of their “Jetpatcher” and agree options for future collaboration.

1. Introduction

- 1.1 At its meeting on 5 February 2015 the Committee noted the progress against the Action Plan presented in Report COM/7/15 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 trials of techniques for permanent patching (“Jetpatcher” and Radiant Heat) and a strategy for future deployment of the roads innovation fund techniques.

2. Action Plan

- 2.1 The updated Roads Innovation Fund Action Plan is included with this report in **Appendix A**.
- 2.2 A total of £303k of unspent allocation has been brought forward into the 2015/16 budget to allow completion of the remaining elements of the trials and development of additional trials.
- 2.3 Item 1a - Techniques for permanent patching “Jetpatcher”
The programme of works delivered by three contractors and Moray Council has been completed. The output unit rates are summarised in **Table 1**.
- 2.4 Item 1c - Techniques for permanent patching – Radiant Heat
The programme of works delivered by contractor and in-house under short term hire using Council operatives has bene completed. The output unit rates are summarised in **Table 1**.

2.5 Item 2 – GPS and Data Logging

The contract to install and service data logging equipment to 238 vehicles in the Councils' fleet of vehicles above 7.5 tonnes has been awarded. Installation commenced on 1st June and will be completed by the end of August. The facility will bring savings in fuel economy, vehicle maintenance whilst enabling improvements in operational efficiencies. Separate funding has been secured which has permitted the reallocation of £73k. It is proposed to bring forward an additional trial of forestry related carriageway repairs techniques and separately to undertake trials of gully repair and reinstatement.

2.6 Item 3 – Drainage

The survey of roadside ditches using the RODEX survey method is ongoing. Reports have been prepared for area teams to identify the sections of ditch requiring maintenance and improvement works. Works are in progress on the Black Isle and in Lochaber.

2.7 The capital cost of the survey equipment has previously been funded. It is intended that the remaining budget of approximately £40k is utilised in 2015/16 to support and develop the capability within the areas to undertake surveys.

2.8 Drainage ditching trials have commenced as part of the Flow County STTS scheme. It is intended to utilise two ditching units, the "MultiHog" and an excavator mounted unit. The "MultiHog" unit with patch planer has been hired and deployed to the Flow County STTS scheme; the ditching equipment is being secured.

2.9 To allow drainage trialling to be delivered through the STTS scheme, the allocation of £100k has been extended into 2015/16.

2.10 A review of the operating procedures for maintenance, repair and replacement of road gullies has identified that revisions are required. It is intended to utilise this opportunity to trial alternative techniques for gully repair and replacement by transferring £20k of the freed funding from vehicle tracking to fund the gully trial.

2.11 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.

2.12 Negotiations to purchase the AZ300 Zipper are progressing. It is expected that it will be deployed on the Flow Country and Lochaber STTS schemes in 2015/16.

2.13 Item 5 Sconser Quarry.

TS/BEAR/Highland Council have submitted 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 HC will utilise the £10k allocation in partnership with Transport Scotland and BEAR during 2015/16.

2.14 Item 6 – Communities

Meetings have been held with representatives of the Black Isle Machinery Ring. It has not proved possible to develop a process that would offer benefits to both parties. Alternatives are now being reviewed and assessed.

2.15 Partnerships

Further joint working and cost sharing are being developed with Transport Scotland and their operator BEAR.

2.16 Forestry Carriageways Trails.

It is proposed to utilise £53k funding from the Vehicle Tracking and GPS project to support the trialing of alternative carriageway repair techniques in STTS funded schemes such as gravel with surface dressing, use of reinforcement and tyre bales for soft ground.

3. Assessment of techniques for permanent patching “Jetpatcher” and radiant heat.

3.1 The pilot trialled 3 different contractors and Moray Council for “Jetpatcher” works and Contract with in-house operation for radiant heat works.

TABLE 1 Road Repair Systems - Comparative Rates

“Jetpatcher” Systems	Test Area	Unit Cost £ per m² laid
Archway Roadmaster	Caithness	Under review
Moray Council “Jetpatcher”	Nairn / B&SD	£17.66
Velocity	Lochaber	£18.77
Nuphalt Jetpather	Inverness/ Ross & Cromarty	£25.20
Radiant Heat		
Nuphalt Thermal Hire	Inverness	£27.65
Nuphalt Thermal Contract	Inverness	£35.00

3.2 Of the three providers, one operating in Caithness had operational issues resulting in remedial works which the contractor has reworked at their expense. The remaining two contractors and Moray Council delivered to a uniformly acceptable standard. The unit rates for Moray Council are below that of the commercial operators; however the differences are not significant.

3.3 It is proposed that the Council enter into discussions to secure a partnership agreement with Moray Council covering the inner Moray Firth area. Preliminary discussions have been held and further meetings are being arranged.

- 3.4 To enable “Jetpatching” to be utilised across the Highland it is intended to prepared a framework contract to allow procurement from external contractors . To secure reasonable unit rates it is intended to develop a framework in conjunction with other Local Authorities.
- 3.5 Separately the business case for either joint purchase or sole purchase of a “Jetpatcher” body is being prepared, which will include operational procedures and monitoring to ensure maximum productivity.
- 3.6 The radiant heat trial has successfully established that in-house is more cost effective than contracted. The technique is comparable to “Jetpatching” in cost but provides a finished product that has fused joints with increased long term structural integrity. It is a slower process which is suitable for urban areas especially where traditional patch repairs cannot be undertaken. It is intended to develop a framework contract to allow seasonal hire of equipment.
- 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

Members are invited to:

- i) note progress against the Action Plan;
- ii) approve the reallocation of the fund between actions as detailed in **Appendix A**;
- iii) note the intention to enter into a partnership arrangement with Moray Council to secure usage of their Jetpatcher and agree options for future collaboration; and
- iv) note that an underspend of £303k has been brought forward into 2015/16 to allow completion of the trials.

Designation: Director of Community Services

Date: 26th May 2015

Author: Robin Pope

APPENDIX A

Roads Innovation Fund Action Plan

Item	Description	Overall Budget	Transferred into 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		<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>Alternative funding secured from the Fleet budget. Allocation being reassigned</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. Area staff trained and provided with support to	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.			undertake surveys operating equipment installed in Q4 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	Extended into 2015/16 in conjunction with STTS externally funded Flow County scheme.	Area CS Manager NBSL
			£20,000	Includes £20k for trial of new techniques of gully repair and replacement	Area CS Manager RSC
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:	£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 .	Area CS Manager CS
	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.			Utilisation of contingency fund required to facilitate hire/purchase of specialist equipment to allow in-house delivery. Mobile 2t Hot Box hired.	
	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.			Various sites identified with mixture of in-house and specialist contractors. Works substantially complete by December 2014.	
	iii. Hot recycled milled surfaces – normally urban			Inform these techniques with the knowledge published by our ROADDEX partners and also the TRL and others.	

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	locations to match existing levels.				
	iv. Deep recycling of the road base and surface layers 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 progress, assessment of effect of winter on works now completed.	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. It has not proven possible to develop proposals that offer benefit to all parties. Alternatives being considered	Area CS Manager SRC
7	Forestry Schemes road repair techniques. For example <ul style="list-style-type: none"> • use of gravel surfaces • road pavement reinforcement • tyre bales across soft ground 		£53,000	Two public road schemes have secured STTS funding in 2015/16 in the Flow County and Lochaber. Use the Lochaber scheme to trial techniques additional to those being used in the Flow County.	Area CS Manager LNBS
	TOTAL (allocated)	£ 1,228,000	£288,000		
	Remaining to be allocated	£ 22,000	£15,000	Contingency and for new ideas. Deployment of mobile 2tonne Hot Box in Sutherland. Central hire of specialist ancillary	HoR&T

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				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.	
TOTAL FUND		£1,250,000	£303,000		