

REPORT TO INFRASTRUCTURE SERVICES COMMITTEE – 10 MAY 2018

MID-SEASON REVIEW OF ROADS WINTER SERVICES

1 Recommendations

The Committee is recommended to:

1.1 Note the findings of the Roads Service's review of winter services in relation to the storm events during December 2017 and February/March 2018; and

1.2 Approve the proposed developments to winter services and the timescales for their introduction.

2 Background/Discussion

2.1 The Winter Budget for the 2017/18 season was £4,332,000. In an average winter we can use 40,000 - 45,000 tonnes of salt and the labour resource required is approximately 56,000 hours.

2.2 To date we are projecting outturn costs in the region of £7,115,000 for this season, we are also predicting salt usage of approximately 61,000 tonnes and labour to be in excess of 70,000 hours.

2.3 The Council's policy objective in relation to winter maintenance is defined as:

The reduction as far as practicable of the effects of adverse weather conditions on the movement of people and vehicles to permit safe travel in Aberdeenshire.

In order to achieve this objective it is recognised that a priority treatment system is required, which will concentrate initially on the more important routes and then be extended to the less important routes when practicable.

Within these overall parameters the Director of Infrastructure Services is requested to try to curtail the level of expenditure within the sum provided in the annual budget bearing in mind the conditions which pertain and the overall policy objective.

2.4 To enable a practical approach to road treatment the Service has established a Primary Route Network made up of roads serving as the main routes between communities or major traffic distributors within communities. The Primary Route Network is made up of 32 individual routes, covering approximately 30% of the overall network length.

2.5 Each Primary Route has a frontline plough/gritter dedicated to it and these 32 plough/gritters are staffed from with a rota of 115 LGV drivers on formal weekly standby throughout the winter period.

- 2.6 Primary Routes receive the highest level of service, including pre-planned precautionary pre-salting treatments based on forecast conditions, and are the main focus during severe weather events. The level of service on the non-primary routes will be generally reactive, based on conditions on the ground.
- 2.7 Following heavy falls of snow, roads will be cleared in order of their priority. However, this will be dependent on operational circumstances, and moving on to lower priority routes may be delayed if repeat clearing/treatment of higher priority routes is necessary to achieve adequate removal of snow/compacted snow/ice. Priority 3 roads would not normally be cleared until all routes of a higher priority are adequately cleared, except in the case of access for emergency services.
- 2.8 **December 2017 Severe Weather**
- 2.8.1 Overnight snowfall on Thursday 7/Friday 8 December resulted in accumulations of snow covering most of the Aberdeenshire Council area. This was followed by a prolonged period where temperatures rose to at or above freezing during the day and then dipped well below freezing overnight. This was accompanied with a period of snow, sleet and rain until Monday 18 December. Due to the freeze/thaw/refreeze conditions any lying snow on roads and footways compacted relatively quickly and then turned to ice.
- 2.8.2 During the winter period the Service receives detailed weather forecasts, which as well as providing information on conditions across Aberdeenshire also provide detailed route based forecasts covering each of the 32 Primary Routes. The weather forecast accurately predicted both the snowfall, and the prolonged period of freezing temperatures.
- 2.8.3 While most publicly available weather forecasts focus on ambient air temperature, for winter maintenance purposes our main focus is on the Road Surface Temperatures (RSTs). These were below zero on 21 nights during December with the lowest recorded RST of -8.2 recorded on the 9 December.
- 2.8.4 From the 7 December onwards there were 12 consecutive days when RSTs were well below zero. Many of these days saw a mixture of wintry precipitation, including snow, with significant accumulations in places. While not unprecedented, this prolonged pattern is relatively uncommon in Aberdeenshire, with the last such event being 2010.
- 2.8.5 What has also been unusual this winter is the number of nights where RSTs have been sub-zero and it has been raining. This has been experienced across the UK and not only in Scotland. The phenomenon of rain falling onto frozen surfaces is not dissimilar from freezing rain in terms of the outcome – sheet ice - with little chance of preventing this from happening.
- 2.8.6 During December there were a number of days where daytime temperatures rose above zero with sunshine. This led to snow/ice melt in areas which then froze again overnight.

2.8.7 The combination of low RSTs and rainfall over a prolonged period resulted in conditions that were extremely difficult to deal with.

2.9 **Response to the December event**

Carriageways

2.9.1 The advice given in our Winter Maintenance Operational Plan relating to snow clearing of carriageways is as follows:

- 1) Clear Primary Network (Repeat clearing/treatment of the Primary Route Network may be necessary to achieve adequate removal of snow/compacted snow/ice).
- 2) Clear Priority 3 Roads (not normally be cleared until all routes of a higher priority are adequately cleared). Repeat clearing/treatment of priority 3 routes may be necessary to achieve adequate removal of snow/compacted snow/ice.
- 3) Farmers should be engaged to assist with clearing Priority 3 Roads.

2.9.2 In response to the snow event, priority was given to the Primary Route Network in accordance with our Operational Plan. In addition to carrying out the planned morning and evening treatments the 32 frontline gritters were retreating/snow clearing on the Primary Route Network as required, and where possible also treating the secondary network.

2.9.3 They were operating for an average of 10.5 hours every day throughout the period.

2.9.4 As well as having our 32 frontline gritters deployed extensively throughout the period, a total of 22 back-up gritters were operating an average of 5.5 hours per day. The back-up gritters were mainly operating on the secondary road network, however also assisted with the Primary Network as required.

2.9.5 In addition to the internal fleet of ploughs and gritters, contractual arrangements are in place with approximately 120 local farmers, who provide a snow ploughing service on minor rural roads. This additional resource only ploughs and does not carry out any salting operations.

2.9.6 The arrangement is flexible, in order to allow farmers to carry out snow clearing in addition to running their farming business. This is mutually beneficial as it allows farmers to plan the snow clearing around other commitments and clearing these secondary roads is of benefit to the farmer and neighbouring community, allowing a higher level of service to be provided, as the routes can be cleared earlier than we would get to them.

2.9.7 The actual period of ploughing required will be dependent on local road and weather conditions.

2.9.8 During this period these ploughs were deployed on the rural network. The informal, flexible arrangement with the farmers generally works reasonably

well and the feedback received from our Road Supervisors was that this was the case during the December snow event.

Footways

- 2.9.9 With regard to footways, the advice given in the Winter Maintenance Operational Plan for Snow Clearing is as follows:
- 1) Following heavy falls of snow, in general footways will be cleared in order of their priority, however this will be dependent on operational circumstances.
- 2.9.10 Following the overnight snowfall on Thursday 7/Friday 8 December footway crews were operating all day on Friday. Thirty-six footpath tractors were operating throughout Aberdeenshire. However, it is fair to say that the challenging conditions experienced resulted in resources being stretched.
- 2.9.11 Over the weekend period while ploughs and gritters continued operations on the road network, the deployment of footway tractors dropped significantly over that period. On the Saturday 17 footpath tractors were operating, with 9 operating on the Sunday. The following week (Monday to Friday) there were on average 36 footway tractors operating each day.
- 2.9.12 The challenging conditions being experienced also impacted on our ability to re-fill grit bins. There are currently in the region of 1,620 grit bins across Aberdeenshire. Keeping this number of bins topped up obviously needs a considerable resource. Although the Service was proactive in filling bins prior to the event, they were quickly emptied and no refilling took place over the weekend period.
- 2.9.13 The operation of back up gritters and footway tractors is not planned on a formal rota basis. Out of hours and at weekends we rely on the good will of staff to volunteer, as there is no compulsion to work overtime. Changes to terms and conditions in recent years has seen a reduction in the number of staff willing to volunteer for additional winter working. In addition, we also had a number of staff were on annual leave or off sick during December.

Emergency Calls

- 2.9.14 In addition to providing the winter service, Roads teams are responsible for providing a 24 hour call out service in response to requests for assistance from Police Scotland. During the winter period some of these calls are obviously winter related, however many are not and there is still a need to make resources available to respond to routine call outs. This can further stretch resources when also dealing with severe weather events.

2.10 **Performance**

- 2.10.1 In general terms it does appear that the Winter Operational Plan is sufficient to deliver the Council's policy objective in relation to winter maintenance. The route hierarchy works well and allows resources to be targeted initially on the more important routes and then be extended to the less important routes when practicable. The response to the event in general was in accordance with our Operational Plan.

Carriageways – Use of resources

- 2.10.2 During the December event, all frontline gritters were operational and they were assisted by the back-up gritters and farmers ploughs. They achieved 100% of planned precautionary treatments, completing normal gritting of the Priority 1 roads within 2½ hours of the physical start of operations as per our Operational Plan requirements.
- 2.10.3 In addition to operating 32 frontline gritters extensively throughout the period, 22 back-up gritters were operating during the day. However, during a prolonged period of severe weather such as this, keeping that plant running does put a strain on available resources. The controlling factor on keeping plant operation is compliance with the LGV Drivers' Hours Regulations, in particular the maximum number of driving hours and the need for minimum rest periods. Ensuring that these regulations are complied with does reduce the flexibility of staff deployment and has a knock-on effect on the availability of staff to do other non-driving duties.

Carriageways – surface conditions

- 2.10.4 As explained earlier, conditions were challenging. The sleet and rain prior to the overnight snow on 8 December meant that efforts to establish a de-bonding layer of salt prior to the forecasted snowfall were largely ineffective.
- 2.10.5 The purpose of precautionary treatments is to prevent the formation of ice, or to weaken or prevent the bond of freezing rain or snow to road surfaces. While the precautionary treatments were carried out at a higher spread rate, the heavy rain still resulted in significant washed off. Therefore, the very quick drop in temperatures with a wet road surface devoid of salt resulted in a layer of ice forming on (and adhering to) the road surface.
- 2.10.6 The subsequent period of very low temperatures accompanied by freezing rain and sleet onto an established layer of ice compounded the initial problem and added to the difficulty in dealing with the conditions, resulting in requirement to retreat the Primary Network frequently.
- 2.10.7 In response to the conditions, treatment changed from the usual salt only treatment to both salt/sand mixes and sand only treatments. This change occurred about 5 days into the event when it was evident that salt only treatments were not wholly effective in dealing with persistent ice.

Footways – use of resources

- 2.10.8 Following the overnight snowfall, the response on Friday 8 December on footways was generally good, with 36 footway tractors operating throughout Aberdeenshire. This allowed the targeting of the 101km of F1/F2 priority footways as per the Operational Plan. The response over the weekend was in line with normal patterns of reduced availability, with 17 footpath tractors operating on Saturday and 9 operating on the Sunday.

- 2.10.9 The availability of staff to operate footway tractors is reduced at weekends. 115 LGV drivers are required to be on standby in order to service the carriageway Primary Route Network. The rota system requires them to take weekend breaks in accordance with Regulations. During severe weather events the fleet of back-up gritters is required to deal with conditions on the wider carriageway network. During this specific December event 17 were operational on the Saturday and 14 on the Sunday.
- 2.10.10 A level of staff unavailability through illness and leave is expected. Leave in the first three weeks of December tends to be higher than normal as staff due to work on the winter rota over Christmas and New Year take that leave entitlement prior to year-end.
- 2.10.11 The availability of remaining staff to volunteer for winter duties is affected in December, particularly on the lead up to Christmas, as many have other non-work commitments.

Footways – surface conditions

- 2.10.12 The timing of the initial snow event, and the initial response to it, proved to be critical for the ensuing footway conditions. The lower level of resources over the weekend period resulted in less footway clearing than would have been the case had the event occurred midweek. Any footways that still had a covering of snow beyond the first weekend quickly turned to hard packed ice that was difficult to deal with.
- 2.10.13 The following week, there continued to be on average 36 footway tractors operating each day, however the slight thaw and re-freezing made conditions extremely difficult.
- 2.10.14 To supplement our efforts there was some evidence of “self-help” with members of the public clearing footways in their area, which is a message we have promoted for a number of years. Although very welcome, it was very limited, but where it did occur footway conditions were good; particularly where snow clearing was carried out on the first day of snowfall.
- 2.11 The Aberdeenshire area was not alone in experiencing difficult conditions during this period of extreme weather. Many other Scottish Local Authorities had similar difficulties with many experiencing difficult driving conditions and ice on footways.
- 2.12 **The February Storm Event (the “Beast from the East”)**
- 2.12.1 The storm event that occurred towards the end of February again proved to be challenging. Difficult driving conditions were experienced with many roads blocked for limited periods due to drifting snow. The response to this event was again in line with the Winter Plan and confirmed that the Plan can function satisfactorily.
- 2.12.2 The February event had more snowfall and drifting snow was problematic, however roads and footways were returned to a usable state relatively quickly. Feedback from the public was that the Roads Service had performed well.

- 2.12.3 It is important to note that the prevailing weather conditions were significantly different in February and no doubt this impacted on the efficacy of the response. Firstly, the conditions were much drier in the lead up to the event allowing for a much more effective debonding layer to be applied to the network prior to the first snow. Secondly, the temperatures remained consistently cold, leading to much less thaw and refreezing meaning that snow accumulations remained “powdery” which is much easier to remove from surfaces.
- 2.12.4 It is probably also the case that the timing of the event was favourable, with a lot of the initial response being carried out during the working week. In addition January and February tend to be periods where fewer staff are on leave.
- 2.12.5 The public response is also interesting, and comparison of the two events adds more anecdotal evidence to the view that the higher the accumulations of snow the greater tolerance shown by the public. While that is understandable, it is not always the case that the difficulty in managing the network is directly related to the amount of snow. While the salt wash-off, freezing wet road surface, freezing rain and adhering ice that occurred in December might not have looked as bad as the snow event of February, from the Roads Service’s perspective it posed far more of a challenge to effectively address.

2.13 **Post December 2017 Actions**

- 2.13.1 Following the events in December the Service took immediate action to:
- 1) Ensure that all staff were clear of the requirements of the winter plan regarding snow clearing and that the Policy changes of recent years were not being incorrectly interpreted.
 - 2) Ensure more direct contact with farmers in advance of a snow event.
 - 3) Prepare a series of social media information posts that could be issued during extreme weather events
- 2.13.2 Police Scotland have provided figures on road collisions. The method for recording non-injury and damage only statistics has changed from that used by Grampian Police, so accurate comparisons with previous years cannot be made. However, the method for recording slight and serious injuries, and fatalities has not changed. The statistics indicate that the month of December 2017 experienced significantly lower numbers of fatalities and injuries than the same month in the four preceding years.

December Road Collision Statistics

	2013/14	2014 /15	20115/16	2016/17	2017/18
Fatal	5	4	1	1	1
Serious	8	7	8	7	2
Slight	24	17	10	19	9

2.14 **Proposed Future Actions – Short Term**

2.14.1 The Roads Winter Service remains one of the most important aspects of service delivery. There have been numerous changes to this function in recent years. While the Service reviews performance and readiness annually, the events this winter indicate that a further in-depth review is warranted.

2.14.2 This initial short-term review has identified some areas for initial focus:

Snow Clearing

2.14.3 Improved and clearer planning of snow clearing as opposed to frost/ ice prevention. The focus of the Operational Plan currently is on preventative treatments of the Primary Route Network. More detailed planning and recording of actions following snow events are required.

Communication

2.14.4 Develop a more robust communications strategy to provide the public with regular information prior to and during extreme weather events. Clearly designate staff with specific communication duties during these events. Improve web site and social media content. Improve information provided to Elected Members. Develop improved complaint handling processes with a more consistent standard of response.

Self Help

2.14.5 Promotion of the Snow Warden scheme, including improved engagement with Community Councils. Explore other opportunities to work with communities to facilitate self-help initiatives. Review the provision and management of grit bins.

Weather Forecast Information

2.14.6 Improve the use of longer term weather forecast information to prompt readiness action based on 5 - 10 day forecasts.

Route Planning and Recording

2.14.7 Define a Secondary Route Network in greater detail and plan and record treatment decisions and actions.

Resources

2.14.8 Develop proposals to improve the availability of labour resources, particularly outwith normal working hours. Investigate utilising an increased pool of available labour ensuring they have the appropriate skills/competencies.

2.14.9 It is intended to address the above aspects prior to winter 2018.

2.15 **Proposed Future Actions – Medium Term**

2.15.1 The short-term proposals focus on ensuring that the Winter Operational Plan can fulfil the current stated policy. However, there is also further work required to consider whether the current policy statement and expectations

are appropriate, proportionate and deliverable. This broader question will require a more in-depth review. A number of issues have been highlighted for this second stage, albeit it is far from exhaustive and to some extent will be developed further during the short-term review. Further areas for review include:

- 1) Road network winter hierarchy – updating the assessment procedure to follow a more risk-based approach and introducing more tiers of road classification for winter treatment. It should be noted that risk consideration should not be limited to injury risk. Other risks (such as economy, reputation) should be included.
- 2) Service standards - considering whether the planned winter treatment regime could be more targeted, again on a risk-based approach.
- 3) The impact of critical infrastructure, transport and large businesses on winter service plans and service standards.
- 4) Performance measuring, with a focus on outcomes.
- 5) Staff rota patterns and hours of availability.
- 6) Treatment decision making and de-icing materials and spread rates.
- 7) Expanded use of vehicle telematics and tracking.
- 8) Provide more real-time information to the public.
- 9) Plant/vehicle suitability.
- 10) Coordination of Roads, footway, car parks, schools, other Council properties for winter services.
- 11) Partnering/supporting communities to maximise self-help.

2.15.2 It is intended to address the above aspects prior to winter 2019.

2.16 Delivering the proposed reviews and developments will require additional professional and technical staff resources. The Service has estimated that an additional two members of staff will be required for a period of 18 months.

2.17 Any proposals for changes to policy would follow the Council's Policy Review Framework and details would be presented to Committee.

2.18 The Head of Finance and Monitoring Officer within Business Services have been consulted in the preparation of this report and their comments are incorporated within the report and are satisfied that the report complies with the Scheme of Governance and relevant legislation.

3 Scheme of Governance

3.1 The Committee is able to consider and take a decision on this item in terms of Section F.1.1 of the List of Committee Powers in Part 2A of the Scheme of Governance as the relates to policy issues and resource matters of the Roads, Landscape and Waste Management Service.

4 Implications and Risk

4.1 An equality impact assessment is not required because the proposals do not have a differential impact on any of the protected characteristics.

- 4.2 There is a staffing and financial implication in engaging additional staff to assist in carrying out the reviews. This has been estimated at £168,000. This would be met from the 2018/19 and 2019/20 Winter and Other Emergencies Budget of £4,396,000 (2018/19).
- 4.3 The following Risks have been identified as relevant to this matter on a Corporate Level: ACORP001 Budget Pressures - the proposals will consider how to deliver an effective winter service within the available budget. ACORP006 Reputation Management – the proposals will detail how communication channels including social media will be used to manage the provision of information to the public. ACORP010 Environmental Challenges – the proposals will detail how the Service responds to extreme weather events.

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