

## ABERDEEN CITY COUNCIL

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COMMITTEE	Enterprise, Planning & Infrastructure	DATE	24 May 2011
DIRECTOR	Gordon McIntosh		
TITLE OF REPORT	Winter Maintenance Operations 2010 - 2011		
REPORT NUMBER:	EP&I/11/156		

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### 1 PURPOSE OF THE REPORT

This report is intended to provide Members with an overview of the strategy that the roads services operated throughout the City during the winter of 2010/11. Members will be aware that the Council budget for 2010/11 for winter maintenance was £1.50 M, The final cost was £2.55 M due to the severity of the winter. A Scottish Government grant of £351K will offset this.

### 2 RECOMMENDATIONS

- a) to note the contents of this report
- b) to instruct officers to continue with the comparison of other similar urban authorities winter services both in terms of operation and cost
- c) to incorporate, within the Winter Services Plan for 2011-2012, those recommendations in Section 13 of the Well Maintained Highways and any other relevant documents produced not already in the Winter Maintenance Plan 2010-2011
- d) to report back to Committee on 13<sup>th</sup> September 2011 with the updated Winter Services Plan

### 3. FINANCIAL IMPLICATIONS

Expenditure exceeded the Council's Revenue Budget by £613k. The increased expenditure was reported to Finance & Resource Committee on 1<sup>st</sup> February 2011.

### 4. SERVICE & COMMUNITY IMPACT

#### SOA & VDFL:

Aberdeen is an attractive place to do business 1.v,xviii,  
Aberdeen will have high quality employment opportunities for citizens 2.vii  
Ensure education is appropriate to pupil needs and ensure pupils leave school with skills essential to living 3.viii

This report has no direct implications in relation to Equalities & Human Rights Impact Assessment.

## 5. OTHER IMPLICATIONS

Lack of a Winter Services Plan will put the City at risk of snow and ice related problems and also increase the council's liability to claims for injury

## 6 REPORT

### **Background:**

#### **Winter Weather Pattern and Service Delivered**

The start of Winter Maintenance operations was again held back this year in order to achieve part of the approved budget savings. Overnight operations commenced 13 November and early morning operations commenced 22 November. Some early season frosts meant that drivers were called in to treat priority routes prior to the start of these main operations. Early morning treatments of the priority roads continued through to 24<sup>th</sup> November. What followed was a prolonged period of snow along with very low overnight temperatures causing major problems for the next 6 weeks. The end of January, February and March were milder allowing us to revert to mainly early morning operations.

October: Nil Presalts, 3 No early morning operations

November: 8 No.Presalts, 14 No. early morning operations 7 No. snow/ice operations

December: 9 No.Presalts, 26 No. early morning operations, 13 No. snow/ice operations

January: 7 No.Presalts, 23 No. early morning operations, 3 No. snow/ice operations

February: 2 No.Presalts, 10 No. early morning operations, 1 No. snow/ice operation

March: 1 No. Presalt, 4 No. early morning operations

91 nights of the winter saw road temperatures below freezing with the lowest temperatures being recorded by the sensors around Aberdeen as -13.2 °C road temperature on 22/12/2010 and an air temperature of -15.5 °C on 03/12/2010. This compared to minimum figures of -11.1 °C and -12.8 °C experienced the previous winter.

## **Staff**

### **Basic Winter Rota Operations**

	<u>Commenced</u>	<u>Finished</u>
Winter Maintenance Co-ordinators	25/10/2010	23/04/2011
Nightshift driver	13/11/2010	26/03/2011
Early morning operations	22/11/2010	28/03/2011
Standby operations	22/11/2010	28/03/2011

This rota consists of the following resources:

- 1 Winter Maintenance Co-ordinator
- 2 Night Shift Drivers
- 8 Early Morning Drivers
- 3 Plant Operators
- 3 Tractor Gritter Drivers
- 2 Kubota Drivers
- 1 Duty Officer

The Standby Rota consists of:

- 10 Drivers
- 3 Plant Operators
- 2 Kubota Drivers
- 1 Supervisor
- 1 Duty Officer

These operations were for Priority 1 & part of the Priority 2 routes along with Priority 1 footpaths as described in the approved Winter Maintenance Plan. Along with these early morning operations to the priority routes, salting was also carried out to the access roads and car parks at the two park and ride sites.

This basic operating system for staff was carried out throughout the winter but was added to when a forecast of overnight snow or low temperatures was received. Two additional overnight drivers were deployed to maintain the overnight routes and additional drivers were called in at 4.45 am to assist during extreme conditions. Drivers from the standby rota continued to work over the evening rush hour period, continuing the gritting operations or dealing with stuck or jack knifed lorries and buses until the night operation commenced.

### **Footpath Operations**

After a public consultation exercise following the winter of 2000/01, a decision was taken to increase footpath clearing operations. To meet this requirement an additional 6 No. footpath ploughs plus spreaders were leased for a period of eight years. This term was the most economically advantageous at the time and ended in October 2009.

As part of budget savings in 2008/09 a number of options were considered following benchmarking of winter maintenance operations. The approved option was to reduce footpath clearing resources by reducing the size of the fleet by 6 No footpath ploughs. This was achieved by not extending or buying the leased Kubotas.

The priority footpaths, as set out in the Winter Services Plan, were the only routes to be covered as part of the early morning operations. This change in operations was approved by the Policy and Strategy Committee in 2008. Extra early morning resources were however deployed during the most severe weather.

Footpath operations were given additional support from Environmental Services. These men were carrying out hand spreading to some footpaths. With over 1200km of footways it was not feasible to have widespread coverage as anticipated by many members of the public. With a further 480 km of remote paths and areas within our Council housing estates requiring treatment the widespread expectation of “black” footpaths and car parks was not achievable in the prevailing weather conditions we experienced this winter.

The speed that a Kubota can deal with extreme conditions on footpaths is dependant on several criteria, depth of snow, whether there is ice on the footpaths and availability of back up crews. The operation requires a back up team of one pick up plus two staff to work with two or three Kubotas in order that a continual supply of salt/salt sand can be provided to the spreader.

Street furniture, poorly parked cars and wheelie bins also make this process slower. With the extreme conditions and with a full compliment of staff it would take between 8 and 10 days to complete to treat all routes. This is not allowing for return visits to the shopping areas etc during periods of further snow.

The ability of the Kubotas to clear snow was demonstrated March 2010 when the snow remained ice free and the machines covered approx. one third of the city in one day.

### **Resources Used**

As will be seen from the above the clearing of snow from footpaths is a highly labour intensive operation. In times of severe winter weather winter operations on footpaths continue between 8 and 12 hours a day and gritting and ploughing of roads is a 24 hour operation.

The following was the labour resource used during the winter to carry out the operations

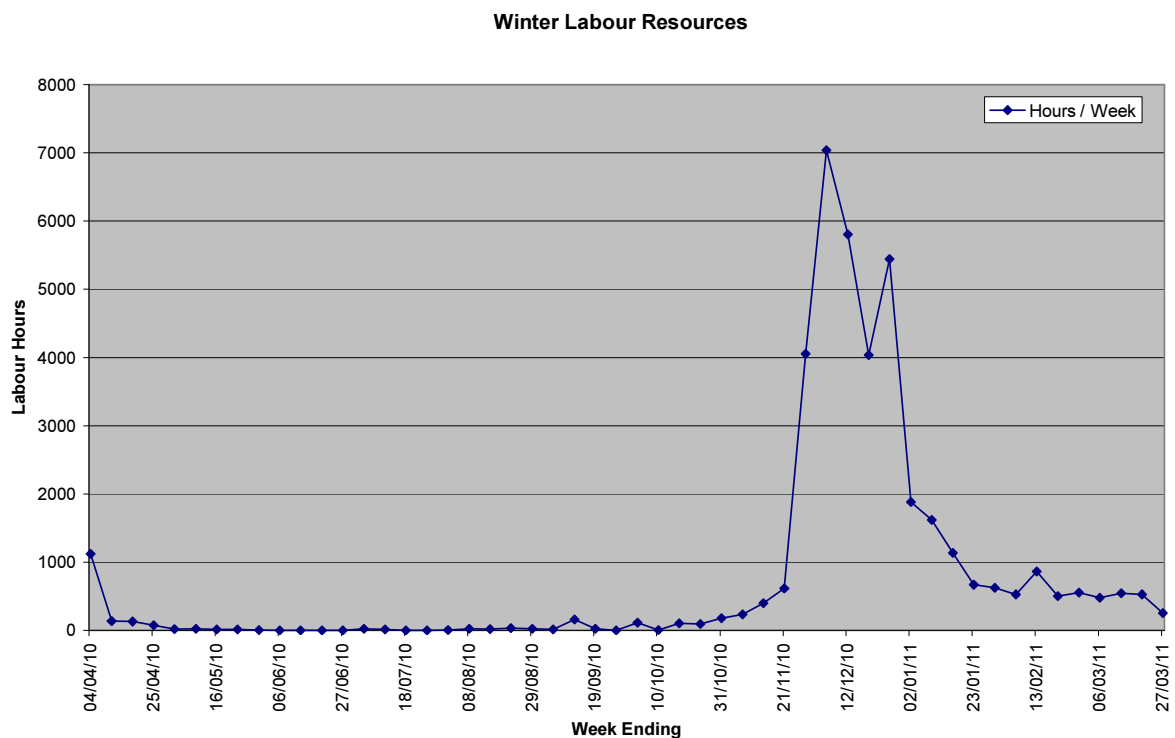
West Tullos	45
Culter	5
Bucksburn	30
Ground Services	42

Additional resources that were employed during the extreme weather period were

Various small contractors' approx 16 men plus JCB excavators  
Environmental Services

Mechanics and staff from Fleet were on call and carried out works to the plant during the period

The graph below shows the labour utilized on winter operations throughout the year .



## Grit Bins

Aberdeen City Council provides approx. 850 grit bins across the city to allow self help for people, whether pedestrian or motorist, who may be stuck, or slipping. As set out in the Winter Maintenance Plan these bins are checked and filled during the period end of October /early November. The operation, which is labour intensive, takes 5 weeks to complete. In total these bins hold around 600 tonnes of salt.

During a normal season operations take place to top up the majority of bins with some needing to be completely refilled. During this winter there was such a demand for salt that by the start of December most bins were empty and labour had to be diverted from other operations to start to fill them.

The procedure for reporting that a grit bin required filling worked well, but due to the process being labour intensive and that the majority of staff were occupied in other winter operations the timescale to fill the bins exceeded public expectations. It is also proved difficult to access many grit bins due to the accumulated depth of snow.

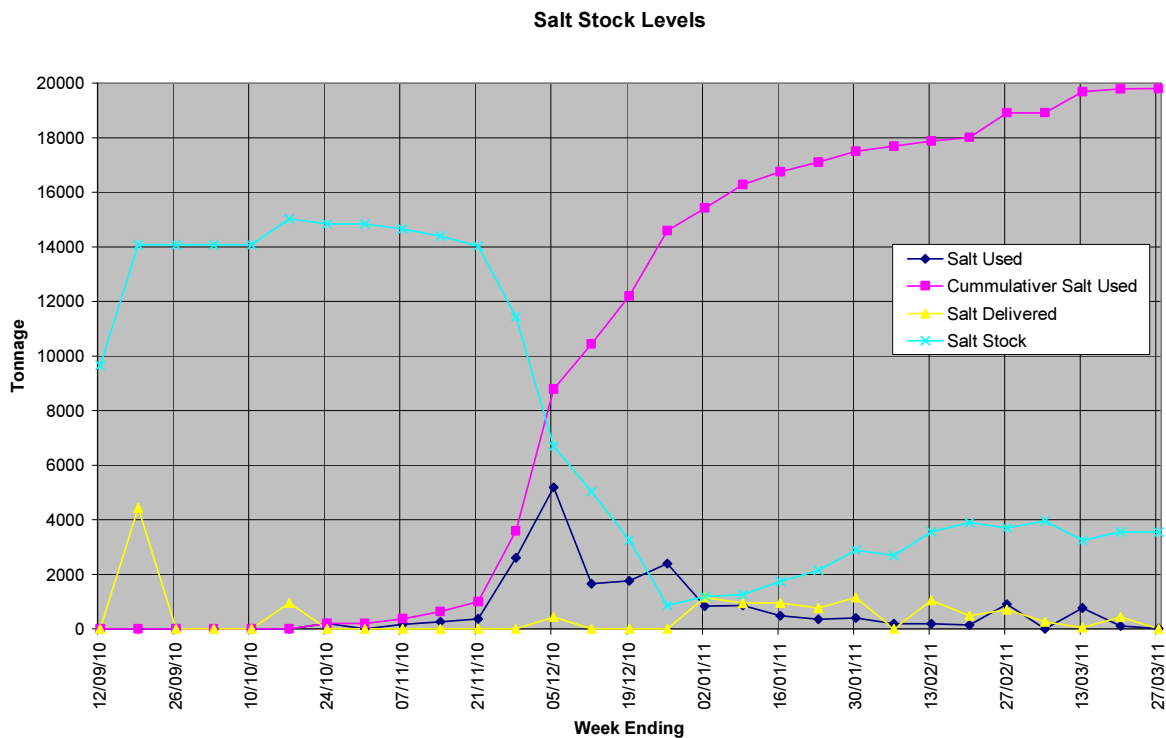
## Salt:

At the commencement of winter operations there was 9653 tonnes of rock salt in stock. During the winter period there was 13688 tonnes delivered and at the end of the winter period 3542 tonnes were left in stock. This means that a total of **19799** tonnes were used during the winter period, approx **30% more** than in a standard winter.

Monitoring of stocks early in the winter showed that we were using high levels of salt to combat the continual snow showers and the very low temperatures.

At this time it became obvious that the extreme weather was being experienced across the whole country. This alerted staff to potential issues of salt supply and measures were put in place to conserve salt. At about the same time the “salt cell” was introduced to manage salt across the whole country.

Throughout the period the salt stocks were managed to make sure that we never ran out completely. At the most critical time, we had access to 1,000 tonnes of strategic government salt. This was available to us but would have cost approx three times that of our normal supply. We did not require to call upon this contingency.



## Sand

After last winter's experiences of using sand to assist, its use was very circumspect, with only some 3,000 tonnes being used. This will still create similar problems for street sweeping and gully emptying as last year, but not to the same extent.

## **Problem Operations**

During the winter period the priority routes were for the majority of the time kept clear and travel along these routes was unrestricted. The same cannot be said for the estate roads where ploughing and latterly salting proved to be difficult. Due to the requirement to return to the priority routes these roads were often started but not completed and snow depths increased daily. Because a high percentage of people were at home during this period, or had decided to leave their cars at home due to the weather, there was nowhere to push the snow, with cars parked on either side of the streets meaning that if a plough/gritter driver had continued to push the snow in front of him damage could have been done to the parked cars.

Assistance was given to the Refuse Collection service in order that they could access some difficult areas of their routes. Assistance was also provided to the emergency services where required and access routes to Hospitals were maintained.

Any minor road or footway treated, or where a surface melt had occurred, quickly froze in the low temperatures that occurred, especially as soon as the sun went down.

Footpath operations provided major problems throughout the winter, the frozen surfaces slowing the progress of the Kubota and the ineffective salt due to the continual thawing and freezing of the surface. This was the pattern that continued through the winter, snow falling on frozen surfaces and the salt that was spread on the footpaths not fully working due to the extremely low temperatures but also because of the footfall on the pavements on top of fresh snow.

In order for salt to melt the ice, the salt has to change from a solid to a liquid and it is the brine solution that melts the ice and snow. To speed up this process it is helpful for the salt solution to be worked into the ice and snow. On the roads this is carried out by the wheels of the cars but on footpaths this is dependant on the footfall/pedestrian movements to carry out the same process. In areas of low footfall the salt does not go fully into solution so the salt forms a hole through the ice and once the solution is diluted with further snow it eventually freeze over leaving a more polished, more slippery surface.

The practice of employers allowing staff to leave early due to winter conditions leaves operating staff with major problems, gritters cannot complete their afternoon runs and are often caught up in the ensuing traffic jams, traffic light setting are not prepared for the peak arriving two hours early and in some occasions where traffic is stopped at the lights and is unable to move once the lights have changed, for whatever reason, the detector does not see movement, quickly changes the lights to the alternative carriageway increasing holdups. The detector system on a number of sets of lights has been changed and this may help next winter.

Grit bins proved to be a problem, with the quantity of materials required to fill the bins and the associated man hours meaning that the workload was greater than in normal years.

In many instances parked cars prevented the gritting vehicles progressing along their route. Road signs and letter drops did not assist. It is proposed to draw up contingency plans to cut out sections of the route should it not prove possible to access known problem areas. The consequences of delay on part of a route means a considerable delay in completing the remaining route or at worst a gritter being out of use for several hours.

### **Gritting Fleet**

A list of winter plant is given in Appendix A

As can be seen from on the appendix our gritter fleet is not a new fleet and this year with the gritters running some occasions 24 hours a day seven days a week there was a problem with the reliability of the plant. This was especially so after a similar scenario last winter. Fleet Services provided a good service in keeping the machines on the road but there were problems in obtaining spare parts for some vehicles during the period. This was due mainly to an inability of companies to be able to deliver the parts due to the prevailing weather conditions, and the age of some of our gritters means that spares are not available. Some of our fleet were unavailable for at least 50% of the winter.

### **Winter Maintenance Budgets**

<b><u>Year</u></b>	<b><u>Budget</u></b>	<b><u>Spend</u></b>	<b><u>Emergencies</u></b>	<b><u>Spend</u></b>
2005-2006	£1641K	£2218K	£0	£328K
Contingencies	£1000K			
2006-2007	£1641K	£1615K	£300K	£245K
2007-2008	£1641K	£1741K	£300K	£327K
2008-2009	£1590K	£1878K	£0	£288K
2009-2010	£1499K+£500K	£2421K	£0	£0
2010-2011	£1498K	£2195 K	£0	£0

### **Web Link to Aberdeen City Council Winter Maintenance Plan**

[http://www.aberdeencity.gov.uk/Roads/roa/roa\\_winter\\_main.asp](http://www.aberdeencity.gov.uk/Roads/roa/roa_winter_main.asp)

*In the ACC Website*

*Click on R*

*Click on Roads*

*Click on Snow Clearing*

*Winter Maintenance Plan is available as a download on the left of the page*

### **Web Link to Well Maintained Highways**

[http://www.ukroadsliaisongroup.org/roads/well\\_maintained.htm](http://www.ukroadsliaisongroup.org/roads/well_maintained.htm)

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