

**REPORT TO: PLANNING AND TRANSPORTATION COMMITTEE -  
27 SEPTEMBER 2004**

**REPORT ON: WINTER MAINTENANCE POLICY AND LEVEL OF SERVICE  
2004/2005**

**REPORT BY: DIRECTOR OF PLANNING AND TRANSPORTATION**

**REPORT NO: 626-2004**

## **1 PURPOSE OF REPORT**

1.1 The purpose of this report is to explain the winter maintenance operations and to seek Committee approval for the proposed winter maintenance policy and level of service for winter 2004/2005.

## **2 RECOMMENDATIONS**

2.1 Committee is asked to approve the policy and level of service for winter 2004/2005 as outlined in this report. The principal changes in the proposed level of services from previous years are:

- Commencement of nightshift cover one week earlier;
- Increased treatment of footways to include weekends and public holidays; and
- The extension of the trial using the salt additive to cover approximately 20% of the gritters.

## **3 FINANCIAL IMPLICATIONS**

3.1 The winter maintenance budget for 2004/2005 is £752,000. The demand on the budget is subject to weather conditions and every effort will be made to contain expenditure within the overall budget. Expenditure will continue to be monitored weekly and reported to the Depute Chief Executive (Finance) during the winter months.

3.2 The combination of an Ice Prediction System, Thermal Mapping, the utilisation of a weighbridge and the trial use of pre-treated salt will continue to result in the most efficient use of resources.

## **4 LOCAL AGENDA 21 IMPLICATIONS**

4.1 The use of salt as a de-icing agent has potentially detrimental effects on the roadside environment due to its capability of damaging vegetation by dehydration. However, effective control of rate and angle of spread of the salt will minimise the risk of such damage to verges.

4.2 Salt can also cause damage to bridges and other structures by accelerating corrosion of structural steel and steel reinforcement within concrete. Major structures such as the Tay Road Bridge are treated with an alternative to salt in the form of non-corrosive de-icing materials. However, these materials are many times more expensive and less effective than salt which prohibits their use on the overall

road network at the present time. Any damage caused by salt on bridges and other structures must subsequently be dealt with through routine maintenance works.

- 4.3 Any new developments which may ultimately lead to a reduction in the use of salt within the constraints of the budget, will continue to be monitored by officers of the Department. The nightshift gritter is equipped to spread pre-wetted salt which enables more efficient precautionary salting to be carried out on dry roads when frost conditions are forecast, and further reduces salt bouncing onto roadside verges or being swept into the road channels by traffic. The former property is particularly relevant to nightshift operations when overnight frost preceded by dry conditions is forecast.
- 4.4 A proportion of the salt stock was treated last winter with a salt additive and the treated salt trialled with one gritter (three routes). The use of this additive is believed to result in improved performance in terms of adhesion and duration of the salt's presence on the road surface, and to enable lower spread rates to be applied to the road surface. The additive is also claimed to improve the salt's performance at very low temperatures and significantly reduce the corrosive effects of salt on winter maintenance vehicles. The material used is a biodegradable food industry by-product which is understood to have no adverse effects on the environment, and has been approved by SEPA. Observations made last winter indicated that, with the recommended 25% lower spread rate, the salt's effectiveness exceeded that on conventionally treated routes. Due to the possible public liability implications of reducing salt coverage, it is considered that more objective analysis of this material's performance is required before applying to all routes. It is therefore proposed to extend the trial further this winter (to 2 or 3 vehicles), to further observe and if possible measure its performance, and to seek results of similar trials from other authorities. The costs of treating salt with the additive is offset by the effects of reduced spread rates and the longer residual life of salt on the road surface.

## 5 EQUAL OPPORTUNITIES IMPLICATIONS

- 5.1 The winter maintenance policy and level of service will contribute to the continued activity of elderly and mobility impaired citizens within the limits of available resources.

## 6 POLICY

- 6.1 **Dundee City Council will operate a priority system of winter maintenance which, as far as reasonably practicable, will permit the safe movement of vehicular and pedestrian traffic on the more important parts of the road network while minimising delays directly attributable to the adverse weather conditions and will aim to provide a suitable level of service on footways subject to available resources.**
- 6.2 The objective of this policy is to enable the Council to comply with its statutory duty to:-
- “take such steps as they consider reasonable to prevent snow and ice endangering the safe passage of pedestrians and vehicles over public roads” (Roads (Scotland) Act 1984).**

- 6.3 Tayside Contracts operate and maintain a fleet of dedicated winter maintenance vehicles to carry out winter maintenance operations on the roads and footways maintained by Dundee City Council Planning and Transportation Department.
- 6.4 These roads and footways have been prioritised as high or low depending on their importance etc as referred to later in this report.
- 6.5 The City Engineer will receive a road related weather forecast specific to the City early each afternoon during the winter maintenance period to assist him in deciding if Tayside Contracts should treat the roads and footways. Subject to the nature of the forecast, the instruction to Tayside Contracts can be to pre-treat the roads that evening and/or instruct the high priority route crews to report to the depot at a specific time the following morning. At that time a more accurate assessment of conditions can be made by the Dundee Winter Maintenance Controller using the Ice Prediction System (real time data) and any updates to the forecast, leading to a decision to either send the crews out or to stand them down.
- 6.6 The Ice Prediction System will also take data from outstations, such as air and road temperatures, precipitation, road wetness and presence of salt, available to the weather forecast provider to refine the accuracy of the forecast, which, in combination with thermal mapping survey information will automatically produce a graphical image of minimum expected road temperatures for the high priority network. This enables selective gritting to be carried out on a route basis when freezing is likely to be restricted to relatively few locations.
- 6.7 Winter maintenance is an expensive operation and the Director of Planning and Transportation will continue to investigate new methods/systems that may offer opportunities to reduce costs. Consideration will be given to further extending the use of treated salt, referred to in 4.4 above, subject to further evaluation and legal advice on public liability aspects.

## 7 BACKGROUND

- 7.1 The basis for establishing priority routes is proposed as follows **in relation to the formally adopted road network:**
- i All strategic routes
  - ii Main service bus routes
  - iii Other heavily trafficked roads
  - iv Other adopted roads
- 7.1.1 In order that treatment of major road (i-iii above) can be provided within an acceptable timescale, the number and length of high priority routes must be held to a level commensurate with available resources.
- 7.2 Night Shift Cover
- 7.2.1 A limited night shift cover will operate on certain routes of major importance within Dundee City because of the need to treat these roads outwith high priority treatment times.
- 7.2.2 The night shift will operate from 16 October 2004 to 26 March 2005 between 21.00 hours and 05.30 hours. Following experiences of early-season frosts in

recent years, it is proposed to commence the nightshift cover one week earlier than last year. With the pre-wetted system, this vehicle can effectively patrol strategic roads in marginal conditions. The length of this night shift route is approximately 125 kilometres.

- 7.2.3 The night shift crew will be based at Fairmuir Depot and can be instructed to patrol or treat these routes, initially based on the early afternoon forecast. Subsequent forecast updates or changes in actual conditions may result in this instruction being amended by either the Winter Maintenance Controller or a duty standby supervisor (Assistant Controller) depending on the time of this decision.

### 7.3 Priority Routes

- 7.3.1 The respective categories together with their approximate relevant lengths covered are as follows:

<u>Priority Route Category</u>	<u>Hours of Cover</u>	<u>Lengths (Approximately)</u>
High Priority Routes	0500-2200	470 route kilometre
Low Priority Routes	0730-1600	450 route kilometre

Cover may be extended on low priority routes during snow conditions as authorised by the Director or nominated manager.

### 7.4 High Priority Routes

Periods of Cover

1 16 October 2004 - 26 March 2005

The night shift will operate between these dates (1 crew).

2 21 October 2004 - 30 March 2005

The main standby system will operate for all priority routes (12 crews).

3 31 March 2005 – 6 April 2005

A reduced limited standby system will operate for all categories of priority routes (1 crew). In addition, arrangements have been made for suitable staff to be on the first week's summer standby (both the Department and Tayside Contracts) to deal with a "winter" contingency.

- 7.4.1 As part of the standby system between 21 October and 6 April, Mondays to Saturdays, regular early morning reporting at 0600 hours will operate (with the facility to call the crews out as early as 0500 hours for high priority routes if conditions dictate). During periods of anticipated relatively mild weather an operational decision may be taken daily to temporarily suspend this, though road temperatures will still be monitored.

- 7.4.2 On Sundays and public holidays reporting of standby personnel will only be carried out if required.

7.4.3 It should be noted that while the standby crews' initial priorities are as detailed above, some flexibility in the deployment of these standby crews throughout the City is operated, depending upon the prevailing weather conditions and the requirements of the service, but high priority routes will still be treated first.

#### 7.5 Low Priority Routes

7.5.1 All resources will initially be concentrated on high priority routes, and it is only when these high priority routes have been adequately dealt with that resources will be deployed on low priority routes.

7.5.2 It is inevitable that many culs-de-sac do not receive prompt treatment because large purpose-built winter maintenance vehicles have difficulty in manoeuvring due to parked cars and unsuitable turning points. It is thus not practicable to include most culs-de-sac within normal gritting routes due to the unacceptable route times which would result.

7.5.3 Tayside Contracts have purchased one large tractor with suitable attachments, which can be utilised in clearing culs-de-sac. A "small" demount gritter can also be allocated to clearing culs-de-sac on completion of work on high priority roads with width and weight restrictions. However, it would not be cost effective to purchase further such items of plant for such infrequent use.

7.5.4 Dundee Contract Services have a small number of similar large tractors which are made available to Tayside Contracts in snow conditions on the understanding that one of them may be required for commitments to Social Work Department prior to being available for roads. In heavy snow conditions, Tayside Contracts will pursue availability of further tractors on hire from other contractors whose normal activities are curtailed by the snow. However, the total available plant is still unlikely to be sufficient to treat all culs-de sac prior to thaw conditions taking effect.

#### 7.6 Weight Limited Bridges

7.6.1 Mandatory bridge assessments in recent years have led to an increase in the number of weight limited bridges in the City and in some reductions of pre-existing weight limits. While the above "small" demount gritter can be used on several such bridges, it is still too heavy to treat those with 3 tonne limits. Hand gritting has been carried out at these bridges in the past but this is considered to be inefficient in terms of salt used and response times. A trailer gritter attached to a pick-up truck partially loaded with salt was used at these locations last year with limited success, and a more robust alternative is presently being investigated. After treating these bridges this equipment would be allocated to assisting in treating culs-de-sac.

#### 7.7 Unadopted (Private) Roads

7.7.1 Following discussion at Committee when the 1998/99 Winter Maintenance Policy and Level of Service Report was approved, investigations were carried out on the feasibility of providing a winter maintenance service on unadopted roads. It was established that quite apart from the problem of insufficient resources, the law made no specific provision to undertake this work and any insurance cover may be invalidated if such work was undertaken. While the general legal position has changed since 1 April 2003 with the establishment of the general "Power to Advance Well-Being" under Section 20 of the Local Government in Scotland Act

2003, the use of any new general powers to extend winter maintenance to unadopted roads would be subject to ensuring that private roads were not given unreasonable priority before any adopted roads, otherwise the Council may be found to be in breach of their statutory duties in, for example, a case brought against the Council by someone injured on a public road due to winter conditions.

7.7.2 The Director of Finance at that time indicated that inevitable/unavoidable damage to unadopted footways and carriageways from winter maintenance operations due to the vulnerability of unmade and substandard surfaces would not be met by the Insurance Fund. The Public Liability insurance held by the Council responds to unforeseen loss or damage rather than inevitable/unavoidable damage. This is standard insurance market practice for this class of cover. In addition, as the Roads (Scotland) Act 1984 makes no provision to carry out winter maintenance operations on unadopted roads the Council's insurers may question our actions if claims from these areas were brought against the Council.

#### 7.8 Adopted Footways

7.8.1 Adopted footways are also categorised into high priority routes and low priority lists. The high priority routes are those which the footway snow ploughs deal with first, namely shopping areas and main bus routes, and the low priority footways are dealt with by the same method once the high priority routes have been treated to a reasonable standard.

7.8.2 Whilst the Department's aim is to clear all adopted footways, the total lengths involved mean this can take some days, particularly in recurring snow or when ice has formed and daytime temperatures remain very low. In such circumstances a number of footways may still be untreated when a thaw occurs. However, the above aim and actions compare very favourably to the situation nationally. Many Roads and Highways Authorities throughout the country only treat selected footways. Since this high level of service has been provided for many years, a correspondingly high public expectation has evolved in the city, sometimes unrealistically so.

7.8.3 The fleet of footway tractor ploughs is available during the winter maintenance period to treat ICE or SNOW. HOAR FROST on footways will not be treated unless prolonged over a number of days, due to ineffectiveness of salt relative to normal daytime temperatures in such conditions.

#### 7.9 Adopted Footways – High Priority Routes

7.9.1 During snow or ice conditions these routes will have coverage from 0600 hours to 2100 hours on all days including Saturdays, Sundays and public holidays. This represents an increase in provision relative to previous years and may increase costs due to premium payments on these days. In practice the previous restrictions have often been superseded by the exceptions provisions (7.13) in such emergencies. Cover outwith normal working hours will be by operatives who participate in the Winter Maintenance Standby Rota.

7.9.2 The standby period for footways will be from 27 November 2004 to 3 March 2005.

#### 7.10 Adopted Footways - Low Priority Routes

7.10.1 These footways will have similar coverage to high priority routes and will be treated after the high priority routes have been adequately dealt with.

#### 7.11 Grit Bins (Adopted Road/Footways)

7.11.1 Following yearly increases in the provision of grit bins, there are now approximately 470 approved locations throughout the city. This continued increase, together with reductions in manual workforces, has led to the situation where resources to service the bins in snow conditions are now fully stretched resulting in possible delays in replenishment during severe conditions.

7.11.2 It is the Council's current policy that new grit bins will be provided on request on adopted roads/footways, only at locations where the undernoted criteria are met, and that no further grit bins be provided where the carriageway or footway (as appropriate to the request) is not adopted, other than on Housing Footpaths as referred to below (7.12.2)

7.11.3 The criteria referred to above are:

- 1 the location is not on a High Priority gritting route (carriageway or footway as appropriate to the request), **AND**
- 2 the location has a gradient greater than 6%, **OR**
- 3 the location is on a tight bend **OR**
- 4 the location incorporates a series of steps (within the adopted road boundaries) **OR**
- 5 the location is within a sheltered housing area and is the main link road to local shops or public transport.

#### 7.12 Footways/Footpaths Maintained by Other DCC Departments

7.12.1 As in previous years, in adverse conditions, communication will be maintained between roads control staff and supervisory staff of Waste Management Department (for Housing), DCS (Ground Maintenance) and Leisure and Arts. This will enable information to be exchanged and the unavoidable misdirected requests from customers to be attended to.

7.12.2 To improve the winter maintenance service on Housing Department footpaths, it is proposed to locate and service additional grit bins on such footpaths which meet criterion 2 (gradients) or criterion 4 (steps) as applied on the adopted network (and listed in section 7.11.3 above). Housing Department staff are presently identifying suitable locations meeting these criteria, which must also be close to carriageways or parking areas to facilitate replenishment of salt/grit from pick-up trucks. It is also proposed to trial the use of manually operated barrow gritters by the deployment of a small number of "hit squads" that can be allocated to locations where particular problems are being experienced. It is envisaged that additional labour required through the above initiatives will be provided on request by Leisure and Arts and/or DCS Ground Maintenance.

### 7.13 Exceptions

7.13.1 Exceptions to the foregoing paras 7.1-7.10 may be granted for **snow** emergencies but will be subject to approval from the Director, or in his absence the City Engineer.

### 7.14 Communications

7.14.1 Though generic in nature some details of the most recent Winter Maintenance brochure are now out-of-date. It is proposed that a new brochure is produced this year with copies distributed to Council reception points, libraries, filling stations etc.

7.14.2 Up-to-date information similar to the brochure's content is also available on the Council's website, along with full details of the High Priority carriageway gritting routes.

7.14.3 During snow conditions, relevant calls from the public to the Council's switchboard and the Clarence/Confirm lines, will be redirected to the Dundee control room at Marchbanks salt depot, which will be staffed accordingly. A control room number for snow conditions is also displayed on the A-Z section of the Council's website

## **8 CONSULTATIONS**

8.1 The Chief Executive, Depute Chief Executive (Support Services), Depute Chief Executive (Finance), and Assistant Chief Executive (Community Planning), Director of Education, Director of Social Work, Director of Housing, Director of Economic Development, Director of Dundee Contract Services, Director of Leisure & Arts, Head of Waste Management, Head of Environmental Health and Trading Standards, Legal Manager, Principal Insurance and Risk Management Officer, Chief Constable and the Managing Director of Tayside Contracts have been consulted and are in agreement with the contents of this Report.

## **9 BACKGROUND PAPERS**

9.1 None.

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City Engineer

KL/MJG/EH

15 September 2004

Dundee City Council  
Tayside House  
Dundee



**APPENDIX****CHRISTMAS/NEW YEAR PERIOD: DETAILS OF COVERAGE****Adopted Roads**1 Night Shift Route

Night shift will operate as normal throughout the period with standby providing cover at other times to give a 24 hour coverage.

2 Other Routes

The coverage for all other routes will be by standby only as follows:

Friday 24 December	Weekday cover
Saturday 25 December	Weekend/Holiday cover
Sunday 26 December	Weekend/Holiday cover
Monday 27 December	Weekend/Holiday cover
Tuesday 28 December	Weekend/Holiday cover
Wednesday 29 December	Weekday cover
Thursday 30 December	Weekday cover
Friday 31 December	Weekday cover
Saturday 1 January	Weekend/Holiday cover
Sunday 2 January	Weekend/Holiday cover
Monday 3 January	Weekend/Holiday cover
Tuesday 4 January	Weekend/Holiday cover
Wednesday 5 January	<b>WEEKDAY COVER</b>

Cover

	<u>Weekdays</u>	<u>Weekends and Holidays</u>
High Priority	0500 to 2200	0500 to 2200
Low Priority*	0730 to 1600	Nil

(\* subject to provision for exceptions in snow emergencies)

**Adopted Footways**

Full coverage in snow conditions throughout holiday period.