

**Protocols for the reduction in use of salt and preservation of remaining stocks.**

Winter Service Policy supplementary revised from Dec 2010 draft.

**Storage Capacity , Stock Transfers and replenishment times**

Storage capacity in all 15 “Operational” salt stores has been increased by 3,500tonnes to approximately 14,000tonnes, since 2009, through phase 1 of the covered tunnel construction programme. In addition to this, in April 2011, a secondary “Strategic Stockpile” has been placed at Connel Salt Slab with 4,435tonnes currently stored under a proprietary sheeting cover. The 3,000tonne Dome in Helensburgh, although an operational store has an element of strategic storage.

For national salt resilience purposes, daily usage is calculated on 2 Priority WRC1-3 network treatments and one WRC4 “other routes” treatment in each 24hr period.

This equates to 375tonnes/day at normal use levels, 600tonnes/day for heavy snow.

The Strathclyde Emergencies Co-ordination Group, Roads sub-group agreed that Roads Authorities should achieve a minimum storage capacity of equivalent to 70% of the average total salt usage of the last three severe winters. This equates to a minimum 14,350tonnes for Argyll and Bute. However the target tonnage for the start of this season, 28<sup>th</sup> October, is 17,000tonnes including the strategic stockpile.

This equates to 45 continuous days supply at Winter Policy treatment levels.

As the national salt supply contract has an allowance of 21days to fulfil delivery from point of order, the minimum resilience required in normal conditions equates to four weeks operations or approximately 60% of the new capacity, at 10,000tonnes. In practice, reduced quantities of 6,000tonnes before replenishment are acceptable. This equates to a resilience of 16 days operations, at normal treatment levels.

Within this total quantity, material may require to be moved between stores to preserve a degree of individual resilience in each of the operational stockpiles around the network. Internal transfers between stores ensure adequate stocks are available as much as practicable to maintain a consistent treatment regime throughout the network. In this way the hierarchy of route treatments can be preserved as per the policy, for as long as practicable within any delivery shortage period.

**Operational Decision techniques to Manage Salt use.**

Winter Service Policy 2011 already recognises the need to preserve salt primarily for the prevention or treatment of ice on higher speed carriageways. 3Grit:1Salt mixes are already utilised in Grit Heaps and Bins and in the reactive treatment of footways. Salt preservation techniques can be instigated on carriageway treatments where forecasts or conditions indicate that a mixture of salt and grit will provide the best treatment to aid traction. The winter operations decision to use 50/50 mixes should only be for this purpose, rather than to preserve supplies.

In periods of falling snow, Grit only should be used on “return” ploughing legs until such time as snowfall ceases and there is an expectation that salt will melt any residual snow after ploughing.

In settled constant dry conditions Residual Salt levels on carriageways allow the curtailment of further treatments, as part of the daily operational plan.

### **Reduction in Salt use in treatments, to preserve remaining stocks.**

Where salt stock levels reduce and replenishment quantities are doubtful in either quantity or timescale, the use of salt will be curtailed under the following procedures.

Salt Preservation level

Circumstances

Authorised by.

#### **SP1            Total Operational Stocks reduce to 6,000tonnes            Winter Manager**

This level will be reached in conditions of reasonably prolonged hazardous conditions or where extreme conditions reduce the effectiveness of salt. The supply chain for salt replenishment may become of national importance and Transport Scotland and Strathclyde Emergency Co-Ordination Group advice may be received.

#### **First Operation:- Activate replenishment from Strategic Stockpile (+4,400tonnes)**

Depending on the likely delay in replenishment, part or all of the Connel stockpile may be moved to operational stores and the permanent sheeting replaced. The quantity will be determined by the potential delivery date for shipping. The total stock will provide a further 12 days resilience within the operational stores, at normal use rates.

**Resilience:- 27days at normal use levels 375t/day : 16days heavy snow 600t/day**

#### **Second Operation:- Activate Salt Preservation Measures.**

Salt treatments will be reduced. Spread rates adjusted from 40g/m<sup>2</sup> to 20g/m<sup>2</sup>, or 20g/m<sup>2</sup> to 10g/m<sup>2</sup>. Further reductions in the salt content of all carriageway treatments will be achieved by mixing Grit and Salt together, firstly at 1Grit:1Salt then 2Grit:1Salt. In extreme frosts where RSTs remain below -5C all day, and salt is considered to be ineffective, additional treatments of pure Grit on all routes can be instructed to aid traction. Grit heaps, bins and footway treatments will remain at 3grit:1Salt.

**Resilience:- 32days at reduced use SP1 = 188t/day : 20days heavy snow**

#### **SP2            Total stocks reduce to 4,000tonnes            Head of Service**

Salting treatments will be curtailed to Priority 1&2 pre-treatment routes only (1205 km) The SP1 salt mixing techniques will be used in all further SP levels.

All other treatments will be of pure Grit including replenishment of grit bins / heaps.

**Resilience:- 25 days at reduced use SP2 = 156t/day : 15 days heavy snow**

#### **SP3            Total Stocks reduce to 2,000tonnes            Executive Director**

Salting will be reduced to one treatment per 24hr forecast period, of the Priority 1&2 network, usually 06:00hrs mornings, in advance of the majority of traffic movements.

All other treatments will be of pure Grit including replenishment of grit bins / heaps

**Resilience:- 25 days at reduced use SP3 = 78t/day : 15 days heavy snow**

#### **SP4            Total stocks reduce to 1,000tonnes            Chief Executive**

Salting reduced to Priority 1 and Priority 2 "A" class routes only 06:00hrs. (492km)

All other roads and mobilisation times, Grit only.

**Resilience:- 32 days at reduced use SP4 = 31t/day : 20 days heavy snow**

#### **SP5            Total Stocks reduce to 700 tonnes            Chief Executive**

Effectively 2 days resilience at original policy normal use. The trigger point for application to Scottish Executive Emergency Salt stockpile. Release of salt, allowing replenishment out with the normal constraints of the national salt supply contract.

**Resilience:- 22 days at reduced use SP5 = 31t/day : 13 days heavy snow**

**Total resilience SP1 (2<sup>nd</sup> Op) > SP5 (end) = 68 days : 41 days heavy snow.**