



# Final Report from Winter Resilience Review of England

To: All contacts in England,

For information: All contacts in Scotland, Wales and Northern Ireland

## Key issues

Review looks for higher supplier production/throughput

Reduced spread rates recommended

Adoption of 12 days/48 runs stockholding by local authorities

## 1. Background

The independent Review of the resilience of England's transport systems to severe winter weather was commissioned by the then Secretary of State in March 2010 following the coldest and most extended winter in the UK for thirty years and a severe winter in 2008/09, after a decade of relatively mild conditions. The Review was tasked to consider these matters and recommend practical measures to improve the response of England's transport systems to severe winter weather. While the Review's focus is England, it takes account of the wider UK context – particularly because the UK salt producers supply the whole of Britain, and Scotland and Wales were necessary and key partners in the Salt Cell. The Review has taken evidence from the Scottish and Welsh administrations and representatives of their highway authorities. The outcomes and Recommendations apply only to England, and it will be for Scottish and Welsh administrations to consider their own approach.

## 2. APSE's evidence to the review

As part of the last APSE State of the Market Survey for Highways, Street Lighting and Winter Maintenance, the Great Salt Debate at the Roads and Highways Seminar and through other meetings and contact, APSE has had with our members, views were collected regarding councils responses to the severe weather and the problems which arose. This was provided as evidence to the Winter Resilience Review on behalf of APSE members and is detailed in briefing 10/32.

APSE welcomes the fact that this evidence was incorporated into the interim report (produced in August and referred to in the final document) and that each of these issues was addressed to some degree in the interim report.

This briefing should be read alongside briefing 10/44 which can be found at

<http://www.apse.org.uk/briefings/10/10-44%20Interim%20report%20from%20Winter%20Resilience%20Review.pdf>

The final report can be found at <http://transportwinterresilience.independent.gov.uk/docs/final-report/wrr-final-report-2010-10-22.PDF>

The interim report can be found at

<http://transportwinterresilience.independent.gov.uk/docs/interim-report/wrr-interim-report-2010-07-26.pdf>

The Final report refers back to the Interim report which covers main highways issues whilst this contains material more relevant to railways and airports. However there are elements of cross over. The report notes that generally local highway authorities did a good job last winter, given the problems of salt supply but claims that representatives of small businesses, of road hauliers and bus operators and of road users said that local highway authorities needed to consult more widely at the planning stage on the networks they proposed to treat.

### **3. Salt supply - short term**

The Interim Report observed that the current supply chain for salt is fundamentally vulnerable and lacks resilience – largely as a result of the combination of highly constrained production, volatile seasonal demand uncertain in its amount, timing, duration and geographical location, and relatively low stockholding in the system (and no strategic buffer stocks).

The reports assessment from the monitoring data collected by DfT in June 2010 suggested that most local highway authorities were re-stocking for the forthcoming winter at significantly higher levels even than autumn 2009. This analysis, which has been confirmed by more recent data and discussions with the suppliers, suggested a highly vulnerable situation for the forthcoming winter.

Although the remit of this report is for England, given the nature of the market it was necessary to model and evaluate salt stocks and supplies for Britain as a whole even though the Recommendations relate to England alone.

The first key point is that current UK production capacity is sufficient only to meet the British demand in an average winter. It falls considerably short in a moderately severe winter (as in 2008/09) or a nationally severe winter (as in 2009/10). The Recommendation from the Interim Report for a strategic national stockholding of a quarter of a million tonnes to be procured by import was accepted and is being implemented; in addition the London authorities have secured a reserve stock by import; other local authorities have been importing; and the report understands that Cleveland Potash has been fulfilling some of its customer orders through import (and replenishing its own mine stocks).

This strategic stock should be made available at a premium price which (at least for salt actually used) covers the cost of the salt itself together with storage, handling and onward delivery. In this way local highway authorities are incentivised to continue to build and replenish their salt stocks in line with their normal practice, and to continue to source from the UK commercial suppliers so long as salt continues to be available – rather than to rely on the HA managed reserve stock unless they really need it.

The report notes that the mines will enter the winter season with mine stocks considerably lower than their normal target levels, as their pre-season production is virtually all needed to fulfil customer orders. And not all customers will receive their orders by the usual deadline of 1 November, so some post-October in-season production will be used to fulfil outstanding pre-season orders, rather than to build mine stocks and to start to meet in-season demand. This is the background against which the Interim report recommended that (as well as the procurement of the quarter of a million tonnes strategic reserve) the situation is reviewed again at the end of December to see if a further acquisition of (say) a quarter of a million tonnes is needed. A review of use to date by mid-December, and of weather forecasts for January, will clearly indicate whether this is needed.

The report notes that the average pre-season stockholding for the coming winter is 51 days and that there is considerable variation in capacity and stockholding at individual LHAs, with half of them with less than 48 runs capacity. This does not take account of mutual aid agreements between adjacent authorities, plans for shared regional stockpiles (for example in London) and supplier or importers' buffer stocks at nearby ports and so is likely to understate the actual capability.

Nevertheless, this analysis suggests that the level of 6 days/24 runs recommended by the UKRLG in July 2009 is too low were it adopted by LHAs as a general basis for stockbuilding in future years. Having modelled the salt supply chain with alternative pre-season benchmark resilience levels for

local highway authorities, analysis suggests that 12 days/48 runs represents a sensible balance between the ability to restock after a severe winter (and the cost of doing so) and the ability to meet the forward requirements of a severe winter given the constraints on in-season supply. As a result, 12 days/48 runs is proposed as a new benchmark resilience level, and that it should be interpreted as follows:

- a) LHAs with capacities less than 12 days/48 runs should fill their storage; they should also carefully review their history of usage and mutual aid arrangements, opportunities with surrounding authorities, and consider whether there is a case for increasing storage capacity towards 48 runs;
- b) LHAs with capacities in excess of 12 days/48 runs should consider whether and to what extent they should stock at or above these levels, taking account of their own pattern of usage, their costs, and the levels of resilience in neighbouring authorities with whom they may have or could have mutual aid arrangements.

The purpose of the 12 days/48 runs benchmark is to ensure there is enough pre-season stockholding across England and ideally across groupings of authorities – even if it is not all in exactly the right place, nor is it all at the 48 runs level – to avoid activating Salt Cell or triggering substantial imports.

Informal work, suggests that the regional figures conceal some wide variations, and this is particularly noticeable in the South East. London authorities are acquiring 25,000 tonnes strategic reserve in order to address half the regional shortfall against the 48 runs benchmark. Overall, data points to nearly half of local highway authorities having less than 48 runs capacity.

The benchmark resilience proposed amounts to, on average, holding in stock pre-season about 55% of likely usage under benchmark severe winter conditions. The recommendation would be that each local authority carry out a review of their own actual recent and earlier usage against their stock holding capacity and plans, and consider in light of existing and potential mutual aid arrangements, and the service provided by their supplier, there is a need to revisit their storage capacities.

#### **4. Salt and the supply chain – longer-term**

In the Interim Report it was identified that the UK salt suppliers can only meet the salt needs of an average winter. At the Britain level, there is a 0.9 million tonnes shortfall between the benchmark demand of 3.3 million tonnes and the UK production capacity of 2.4 million tonnes. In any particular winter this can only be made up by imports and – if available – drawing down significant stocks at the end of the previous winter and not replacing them. This report looked at four possible approaches but ruled out two which covered a typical commercial contract and establishing a trading market, both as unworkable.

However throughput increases at suppliers was considered likely with Cleveland Potash using imports to help fulfil pre-season customer orders and to replenish their own minestocks and Salt Union exploring opportunities to increase the capacity of the crushing and grading plant so as to be able to increase output from early 2011. It is envisaged that this can increase UK production and throughput by at least 0.5 million tonnes per annum above current capacity of 2.4 million tonnes.

Reducing salt utilisation and redefining standards is also considered as a way forward. Experience last winter suggested that salt spread rates might be reduced with little or no impairment to effectiveness with reductions in salt utilisation being a necessary part of improving the strategic resilience of the salt supply chain at the macro level. The DfT has already commissioned research to get this process under way. A 20% reduction in achieved spread rates would reduce demand by 0.65 million tonnes per annum across Britain, assuming no change in treated networks.

#### **5. Consultation**

The final report, again refers to the need for better consultation and engagement between highway authorities, transport providers and all bodies concerned about access to their passenger facilities and operational sites – whether bus stations and garages, railway stations, depots, and airports. This is not only about including such key access routes within treated highway networks, but to ensure through cooperation that ‘boundary’ issues – “whose responsibility is the station forecourt?” – are effectively addressed.

The report notes that market research suggests nevertheless that the public at large take a realistic view of how much it is worth investing to achieve resilience for winter conditions, given the relative infrequency of severe winter weather.

## **6. Planning**

The report points to some evidence that winter resilience planning may not receive sufficient priority or attention in smaller authorities and in some more recently re-organised local councils. It is of course entirely a matter for local authorities who are accountable to their electorates; however the reason it is important for all local highway authorities to do their winter planning well is simply because in conditions of salt scarcity “baling out” a local authority because of inadequate initial stock holding could be at the expense of those who had planned their stocks well but still needed additional supplies; this issue was a cause of some resentment last winter.

Treating winter planning as an integral part of overall resilience planning for the local authority – as for example now happens in London – can help to ensure that appropriate processes of planning, challenge and validation are applied to the development of winter resilience plans (including salt stockholding).

The reviews of winter service policy and plans that most highway authorities have carried out are referred to and the whole process seems now to attract more senior management and elected member attention than in the past. The benefits of embedding winter planning in a wider resilience planning context, with the process and disciplines this brings, are increasingly appreciated.

## **7. Footways**

The report found that very few local authorities prioritise the treatment or clearance of snow from footways. Cycleways are also becoming more important as local transport policy focuses on alternatives to private cars. It notes that local authorities should consider whether to treat footways on key access routes to railway stations, bus interchanges and town centres, and pedestrianised areas in town centres, as well as in the vicinity of schools, hospitals and health centres.

## **8. Snow Code**

The report talks about the confusion which arose last winter as to what steps individual householders, small businesses and shops could take to help themselves and others in tackling snow and ice, as the media had featured pieces relating to the potential legal liability of individuals if someone then had a fall. The report notes that some local authorities were proactive in encouraging individuals to take action and had offered reassurance to the public that reasonable action would not leave them liable.

## **9. Economics of winter resilience**

Cost estimates are provided with the average cost of severe weather is estimated at £1 billion – half being ‘hard’ cost to the economy and half ‘welfare’ costs to the individual. In each case, the main cost arises from lost time and lost journeys – both for vehicular travel and for pedestrians. Against this, the annual cost to English highway authorities of providing winter service is around £160m.

## **10. Guidance**

On evidence received, the UKRLG Report on the *Lessons of Severe Weather* of July 2009 and the updated code of practice *Well Maintained Highways* continue to provide the most comprehensive and fit for purpose advice on winter service policy and planning for local highway authorities, though with some specific features modified and reinforced by our Review and Recommendations.

## **11. Report conclusions**

Two strategic initiatives are identified – higher supplier production/throughput and reduced spread rates sitting alongside a proposed planning framework for salt supply and logistics at the England level, with proposals for stockholding and review at the individual LHA level. The key features of this are:

- a) recognition of the need to establish pre-season stockholding England-wide equivalent to some 50 runs at LHAs, assuming current stockholding in the HA and contractors, and 'usual' levels of supplier stocks at mines and elsewhere amounting to some 0.8 million tonnes.
- b) Adoption by LHAs of a benchmark 12 days/48 runs resilience, interpreted as
  - i) stock up to capacity where less than 48 runs;
  - ii) where more than 48 runs capacity, consider what stock levels to plan for in the light of local experience and possible mutual aid arrangements depending on the situation in surrounding authorities.

## **12. Highway authority good practice examples**

The report notes some examples of good practice

**Procurement** - All 22 Welsh authorities are working with the Welsh Local Government Association (WLGA) and Welsh Assembly Government to develop collaborative working arrangements in planning and procurement; an all Wales/Salt Union user group has been established; and stock monitoring is in place across Wales. The Welsh authorities are now looking into the development of strategic reserves of salt around Wales to avoid overdependence on a single location for supplies.

The Association of Greater Manchester Authorities (AGMA) is striving to develop unified technical standards for winter operations by the 10 councils. The flexibility of the council's response to the severe winter conditions experienced in 2009/10 was reduced due to a lack of interoperability between equipment and the use of different grades of salt by different authorities. Technical standards are being reviewed with view to purchasing the same grade of salt and developing a more coordinated approach to the use of gritting equipment. They are also working collaboratively to ensure integrated approaches to the cross-boundary prioritisation of the road network.

**Operations** - In Peterborough, the council has used street cleansing staff to spread salt throughout the main shopping/pedestrianised areas of the city centre. The Council treats 'pay and display' car parks and has a route of 30 pedestrian bridges and subways which receive precautionary treatments carried out by a term maintenance contractor. A secondary gritting network links the main car parks, hospital and train station to the city centre. They are currently trialling alternative de-icing/non-slip products for footbridges as an alternative to salt which can cause corrosion and trialling a new liquid spray treatment which can be applied to pavements using weed-killer spraying equipment.

Birmingham City Council's review has recommended that a procedure is developed for staff that cannot perform their normal duties to be redeployed to winter maintenance activities e.g. pedestrian walkway clearance etc. This procedure will form part of the winter maintenance plan and contain a process for managing the convergence of staff, health, safety and management issues.

**Technical** - Typical of many authorities, East Riding of Yorkshire Council has fitted all of their gritting vehicles with GPS systems that allow sections of the road that have been treated to be clearly identified along with the time and nature of the treatment. Pre-season spreader checks and calibration of all carriageway spreaders is undertaken, following summer maintenance by trained and authorised service technicians. The vehicles are equipped with two-way radio equipment so that contact can be maintained with the control room. Winter services decision-makers and scouts are issued with mobile phones and decision makers participate in appropriate specialised meteorological training and on all other aspects of their duties.

Staffordshire County Council has increased stock levels for next season, and begun restocking as early as possible. They have also continued a programme of fitting new gritters with the pre-wet system in anticipation of reducing salt usage by 30%.

**Communications** - Durham County Council has undertaken a major push to maintain effective communication with residents. In times of severe weather, communication is a vital tool in keeping everyone informed and maintaining these links has been a strategic priority for Durham. The authority's website has been upgraded and now includes severe weather warnings, automated weather forecasts daily throughout the winter, roads closed or passable with care and practical tips

for drivers. In addition Durham has set up an SMS/text facility to alert subscribers via their own mobile to impending severe weather.

### **13. Summary of recommendations**

Recommendations 18 – 20 relate solely to the rail sector and recommendation 22 relates solely to the aviation sector.

#### **Rail sector**

**Recommendation 21:** Individual rail companies and Network Rail should make regular contact with local highway authorities during the winter planning process and season to ensure the boundaries between public and railway-owned areas regarding the road and footway access to stations, depots and signalling centres are clearly understood between their organisations, and that both are treated in a coordinated way during periods of snow and ice.

#### **Salt and the supply chain**

**Recommendation 23:** The review of best practice and technical standards recommended in the Interim Report as a task for the UK Roads Liaison Group should be given added urgency, focusing on research which would underpin recommendations for the adoption of lower salt spread rates as a strategic initiative together with a timescale for adoption in early 2011.

**Recommendation 24:** The two main UK suppliers should be encouraged to continue their current initiatives to increase throughputs as a means of increasing total mine output rates.

**Recommendation 25:** A new resilience benchmark of 12 days/48 runs should be adopted for pre-season stockholding for English local highway authorities; they should then review their history of usage and mutual aid or other arrangements to consider:

- a) whether there is a case for increasing capacity towards 48 runs if it is currently less than this, in addition to filling the capacity they have; or
- b) at what level to stock – at or above the 48 runs level – where capacity exists to do so.

**Recommendation 26:** To ensure optimum resilience of the supply chain through a nationally severe winter, achieving benchmark resilience levels across Britain by the beginning of November should be treated as the key priority, facilitated where necessary by imports. The year-round monitoring system being put in place will analyse and overview this process and enable any future shortfall to be addressed.

#### **Local highway authorities**

**Recommendation 27:** Building on the UK Roads Liaison Group Report of July 2009, that the *Well-maintained Highways* code of practice continues to be regarded as best practice by local highway authorities for winter service policy and planning, as modified and reinforced by the specific recommendations of this Review.

**Recommendation 28:** Local highway authorities should in their winter planning and consultation consider the extent of treatment of footways, especially in relation to bus stops, railway stations and other public transport interchanges as well as to town centres, business premises, schools and health facilities.

The Interim Report noted 17 recommendations.

### **14. APSE Comment**

The Final Report builds on the findings of the Interim Report (discussed in briefing 10/44). The main developments include the introduction of a new resilience benchmark of 12 days/48 runs. Clearly the ideal position to be in is to have enough salt delivered and stored throughout the winter so that the final run takes the last amount of salt stored. The limiting factors of supply, unpredictability in the weather and forecasting and cost of storage make this an impossible position to realise but the point remains that salt stockholdings will always be informed guesswork. This highlights the

importance of some of the other recommendations made. Joint stockholdings, collaboration between neighbouring authorities, communication between councils and partners and citizens as well as the management of local expectations are all items which need attention if the impacts of severe weather are to be minimised.

The severe snow falls of the last 2 winters have concentrated the mind but there is no guarantee that work undertaken in the run up to the coming winter will be needed. If heavy snow fall is not a significant issue this winter, or in the next few winters to come, it will be difficult to justify a level of spending on salt stocks and vehicles which meets the recommendations of this report. The budgets cuts announced in the spending review will hit all services not least winter maintenance and it is difficult to see how the roads could be kept safe and clear of snow through means other than those traditionally used without significant investment.

The Report calls for further consideration of treatment to footpaths, bus stops, railway stations, other public transport interchanges, town centres, business premises, schools and health facilities. Although this is sensible and welcome the likelihood of an expansion of service is slight.

The Report also found that communication and engagement between councils and other bodies could be improved. There is no doubt that councils have improved this area of work and examples in the Report highlight this, but there is scope for more work in this regard, not only from councils but from all bodies involved. The Report notes that public expectations are best managed when communication is most effective. It notes an example of real-time updating through broadcast and electronic media of road conditions however finding resources to invest in hi tech solutions when usage may be infrequent will be difficult. The fact is that those areas most commonly experiencing heavy snowfall are equipped to deal with it and it is the rest of the UK which struggles handling unusual weather.

The Snow Code has been issued but it does not give a definitive legal position regarding injury claims made against those who intend to clear snow from the locality of their property. This was the main cause of concern over the past 2 winters but the code simply provides some tips about snow clearance and states that it is "unlikely you'll be sued or held legally responsible for any injuries on the path if you have cleared it carefully".

APSE welcomes the focus of the Report on ensuring winter planning is treated as an integral part of overall resilience planning for the local authority. This makes sense at a local as well as regional level.

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