

Lancashire County Council Highway Services – Winter Service

Summary of the outcome of the decision to reduce the treatment intervention level from +1C to +0.5C during winter 2018/19

Following approval at Cabinet last year the county councils' intervention level for instructing winter treatment was reduced from forecast to fall below +1.0C to forecast to fall below +0.5C. Gritting of the whole route will be instructed if the minimum forecast road surface temperature (RST), of the coldest point on that route is forecast to fall below +0.5C and hazards are forecast to be present.

A condition of the approval was that a report would be prepared for Scrutiny committee to consider following the first season with a reduced intervention level. This report presents the data and sets out the experience of reducing the intervention level.

The provision of the winter service for the county council requires not only the management of risks but also gives an opportunity to investigate changes to current practice based on experience, evidence, changes in national guidance, best practise, collaboration and technology advances.

The report presented to cabinet last year identified the potential opportunity and risk elements associated with reducing the intervention level, the opportunities were presented as;

Opportunity

- To reduce the number of network treatments during the winter period, resulting in reduced downtime and expenditure.
- Reduction in the amount of natural mineral due to reduced salt usage.

Treatment Reductions

The data below shows a summary of the previous two winters based on number of route treatment when comparing treatment intervention levels, given the same scenario and third shows the actual outcome following the first winter with a reduced intervention level.

Summary of Winter Season 2016-17

Winter period November to March with +1C intervention level

- 3046 individual route treatments undertaken countywide
- 1469 in Area East
- 851 in Area South
- 726 in Area North

Winter period November to March with +0.5C intervention level

- 2641 individual route treatments would have been undertaken countywide
- 1286 in Area East
- 750 in Area South
- 605 in Area North

Summary of Winter Season 2017-18

Winter period November to March with +1C intervention level

- 4388 individual route treatments undertaken countywide
- 2146 in Area East
- 1237 in Area South
- 1005 in Area North

Winter period November to March with +0.5C intervention level

- 3899 individual route treatments would have been undertaken countywide
- 1941 in Area East
- 1109 in Area South
- 849 in Area North

Summary of Winter Season 2018-19 with a Reduced Intervention Level

Winter period November to March had we retained +1C intervention level

- 2275 individual route treatments undertaken countywide
- 1130 in Area East
- 542 in Area South
- 603 in Area North

Winter period November to March with +0.5C intervention level implemented

- 1963 individual route treatments undertaken countywide
- 970 in Area East
- 463 in Area South
- 530 in Area North

As can be seen from the data had the implementation of the intervention level reduction to +0.5C from +1.0C over the past winter not been introduced it would have resulted in an increase of 312 individual route treatments countywide.

This reduction is in line with the results gathered over the previous two winters when the intervention level was +1.0C. The data gathered over the last three winters suggests that there will always be a reduction in the number of route treatments whether it is a cold harsh winter or a mild winter.

This has resulted in an actual saving over the last winter of approximately £82,000.00 which is in line with the data gathered over the two winters prior to this one.

Salt Reduction

This reduced number of route treatments resulted in a reduction of the salt used on the network equating to a substantial amount.

Given the reduced number of treatments for the last winter, this has resulted in a salt usage reduction of approximately 1185t. This contributes significantly to the cost saving but is also a major reduction in the amount of natural mineral used.

The potential risks were presented as;

Risk

- The severity of the weather is not as forecast by the contracted, third party forecaster and actual conditions are worse than forecast.

- The forecast is misinterpreted by the county council Area Duty Officer (ADO) leading to a lack of appropriate action being taken by the county council to ensure that the safe passage along a highway is not endangered by snow or ice.

Likelihood of the actual conditions being worse than forecast

The end of season reports provided by the county council's forecast provider show that over the past winter forecasts for Lancashire are accurate in more than 90% of cases. However overall there is a slightly pessimistic bias in interpretation of the forecast model data, this has resulted in the percentage of forecasts which are too optimistic i.e. forecast indicated RST's wouldn't fall below zero but did, of 3.0% compared to 4.5% for pessimistic forecasts i.e. forecast indicated that RST's would fall below zero but didn't. The figures for last winter are in line with the previous two end of winter reports that indicate that overall there is a bias towards a forecast being pessimistic.

Therefore the impact of a forecasting error could be high, however the likelihood of it occurring proved to be very low and in line with previous winters'.

Misinterpretation of the forecast by Area Duty Officer (ADO) – There is the potential for the ADO to misinterpret the forecast and an inappropriate decision being made leading to potentially hazardous conditions. However the likelihood of this is low as all county council ADO's have been trained in the decision making process, are very aware of the council's winter policies, so misinterpretation should not occur. In addition there is always a senior ADO on duty scrutinising the decisions taken by the other three ADO's.

In addition all county council decision makers have recently undertaken the Institute of Highway Engineers (IHE) Professional Certificate in Winter Services Decisions Makers course, this is recognised national accreditation and acknowledges competence in this specialist field.

The experience from last winter was that the decision making process wasn't affected by the change to intervention level and no increased risk to the county council from misinterpretation has been evidenced.

Other mitigating factors to be considered are:-

- A decision to treat a route forecast to fall below +0.5°C is in relation to the coldest section only of that route, other sections of the route will have RST's above +0.5C.
- The council has good access to a reliable forecasting service and has numerous weather monitoring stations spread across the network, from Rossendale in the east, representing the high level Pennine routes, to Mere Brow in the west close to the west Lancashire coast ensuring a good coverage of the whole network.
- All forecasting companies have extensive data available to them, including the numerous weather stations on and around the Lancashire highway network, and have highly developed 24Hr ALARM systems to notify ADO's of any change to weather patterns and RST forecasts – such alarms are used.
- The decision maker (ADO) retains the authority to deviate from route based forecast (RBF) if the forecaster expresses low confidence in the model and believes the actual scenario is likely to be more pessimistic. This happens on occasions and the forecaster communicates any concerns he has about predicted RST's in a "forecast summary text" format or through the alert system.

- Staff are retained on a 24Hr standby throughout the winter season to ensure they can respond in short timescales to any foreseen or unforeseen weather situations.
- There is still 0.5°C to mitigate any errors in the forecast, therefore should the forecast deteriorate gritting would still be triggered prior to hazardous conditions forming.

In Summary

The evidence gathered over this and the previous two winters would support retaining the intervention level at +0.5C for coming winters'.