

APSE Highways Seminar 2016

Delivering a Winter Maintenance Service

A Case Study from Lancashire

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Boxing Day Floods & Landslips



Tackling Flooding

- The Winter Snow Code....**Self Help**
- **Flood Code**
- Clean gully grids of debris..... **Action**
- Get yourself some sandbags..... **Action**
- Cur grips in verges..... **Action**
- Report blocked gullies and culverts - **Inspect**

Engaging Parish Councils



Lancashire County Council

- Population 1.2m plus Blackburn & Blackpool
- Network 7,000 km, treat 2.900km (41%),
- 48 No Priority Routes, 24 No Pennine Hills
- Treatment efficiency 67% (2,900km / 4,300km),
- 9 No depots all with domes or barns,
- 65 No Gritters...34% spare capacity,
- Currently store 32,000t Safecote & Rock salt

WM Budget & Cost of Salting Treatments

- Budget £4.2m 2015/16
- The cost of providing a precautionary Safecote treatment across the County includes management costs, labour, plant and materials and can be summarised as follows:-

Spread Rate/SqM	Management costs	Labour	Plant	Materials	Total
7.5gms	£ 1,505.00	£ 6,740.00	£ 6,342.00	£ 6,018.00	£ 20,605.00
10gms	£ 1,505.00	£ 6,740.00	£ 6,342.00	£ 8,025.00	£ 22,612.00
15gms	£ 1,505.00	£ 6,740.00	£ 6,342.00	£ 12,035.00	£ 26,622.00
20gms	£ 1,505.00	£ 6,740.00	£ 6,342.00	£ 16,052.00	£ 30,639.00
30gms	£ 2,180.00	£ 11,290.00	£ 6,664.00	£ 24,072.00	£ 44,206.00
40gms	£ 2,180.00	£ 11,290.00	£ 6,664.00	£ 32,104.00	£ 52,238.00

How do you make Efficiency Savings in WM

- Reduce the treatment network... **Politics**
- Stop treating secondary routes... **Politics**
- **Route Optimisation / Efficiency...** **Techno**
- **Introduce Route Based Forecasting...** **Techno**
- Reduce labour costs / fleet size... **Unit £**
- **Engage & Educate...**
 - the WM Managers **Expectation**
 - the Public **Expectancy**

**Managing the Managers from 2012 -
Engage, Educate & Challenge**

Attitude to Risk & Change

“You will never be criticised if you over treat the network (within reason) but you will probably hear from the Chief Executive if you fail to or undertreat”.

Managing the Managers from 2012 - Engage, Educate & Challenge

Use of Safecote: A lack of confidence in the product ...
Over treating the network.

Why Safecote?

What is Safecote?

Benefits:

Improved salt spreading efficiency...

Extends the resilience of the treatment...

Includes an effective de-icer...

We are paying more for this product so spread according to the treatment mix and consider resilience.

Managing the Managers from 2012 - Engage, Educate & Challenge

Use of RBF: A lack of confidence in the RBF forecast with a preference for the domain forecast.
Significantly over treating the network.

Why RBF? Treat individual routes rather than all routes...
Allows us to better understand what is happening across an area and treat accordingly.

We are paying for this product so utilise the RBF forecast delivered by the computer modelling and the professional forecaster – only use the domain if forecaster directs you.

What does RBF Provide....

Route	Min RST	Time RST <0c	Ice	Hoar Frost	Rain	Snow
A	-1	0100 - 0800	N	Y	N	N
B	0.7		N	N	N	N
C	1.1		N	N	N	N

Segment Summary Route A & B?

Segment	"A" RST	"B" RST	Ice	Hoar Frost	Rain	Snow
1	1.2	1.4				
2	-0.5	1.1				
3	-1.0	0.7				
4	0.7	1.2				

Managing the Managers from 2012 - Engage, Educate & Challenge

Exactrak: GPS Navigation System.
Records Spread width & Rate of Spread.
Theoretical salt Usage

Problems? Driver has followed the route...
Driver has set the right rate of spread...
Driver is adjusting the rate of spread...
Monitor Salt Usage...
Match records in Vaisala – Vehicle / Driver / Time

Important to carry out random checks this is happening.

Waiting for Salt & Traffic Action to cause melting....

Pre-treatment 15 g Salt at 1930Hrs (Snow <2cm)

1.5cm snow at 0430hrs

Mobilise Second Treatment 0658Hrs...arrive 0740Hrs

0615Hrs



0710Hrs



Engage & Educate Public

Sub-Text to Messages such as Twitter....

Priority routes only cover a **third** of the highway **network** and **ice patches** can develop on treated surfaces caused by **water run-off** from fields or other sources. **Ice is most likely on untreated surfaces.**

Winter Fatality - Motorcyclist



Service Developments 2015/16

Route Optimisation Project with Met Office

- Target is to ensure all routes less than 3Hrs and deliver some efficiency savings,
- Task to gather all the data required – road widths, existing routes, double passes, junctions, network restrictions,
- Agree various design parameters – design spread rate (20g), vehicle speed, safecote density, contingency for run-off etc.
- The “route smart” model was run last week with two depots removed - Hyndburn or Garstang depot,
- The model has generated 45 No routes for desktop validation by the MO followed by LCC driven route assessments.

Service Developments 2015/16

Exactrak Route Management Systems

- Current used to provide route tracking and speed, rate of spread and salt usage estimate data,
- Invested in 54 new units which will provide navigation for drivers and the ability to automatically apply salt where it is required (location and spread width) as the driver follows the route.....but not linked to RBF yet.

Service Developments 2015/16

Moved to RBF and dropped Domain Forecasts:

- If Decision Maker had previously been influenced by domain forecasts then the option has been removed,
- All routes treated the same is now an exception,
- Significant cost saving to the Council over Domain based forecasting,

Upgraded Cameras at Weather Stations & Communications Software to Datex 2:

- Improved visibility of weather events and quick data updates.

Service Specific Issues 2015/16

Treatment Route Data Monitoring Tables

- Average gritting and travelling **distances**,
- Average travelling **time**,
- Average **salt usage** per route for various spread rates,

Review Pay to Drivers – Standby & Hourly Rate

- Benchmarking with N & S Direct Mng Group
- Market Supplement and 3 Year sign-up,

Separate Decision Maker / Ops Manager roles.

Service Specific Issues 2016

- Lowering of Treatment Trigger Level to 0.5c
 - roads do not freeze at 0.5c (cost, environment),
 - use of RBF gives 0.1 degree forecast,
 - alerts issued if RST's falling lower than expected,
 - will be supported by a risk assessment.

Many Council WM Policy state “Expected to fall below 1°C”generally standard....but some Councils now state “Expected to fall below freezing”.

Service Developments 2015/16 – BOROUGH Councils

LCC engaged with BC's for years on WM Mutual Aid in relation to clearing footways of snow.

Issues arising:-

- Started work on footways before LCC requested aid,
- Treated non-priority footways first,
- Used LCC salt on non-adopted highway and other,
- Both LCC and BC turned up at same location to clear snow of footways,
- Problems getting records from BC's.

BC's – Memorandum of Understanding 2015

Key Clauses

- LCC will contact the BC and request support in clearing ice and snow from adopted footways on a defined list of priority footways.....*no work to start until instructed and priority footways cleared first....*
- BC assistance and resources will be agreed on a daily basis between the respective Council's representatives.....*Coordination...*
- The County Council will provide sand / salt mix or **rock salt free of charge** for use on adopted footways.....*LCC salt to be used on adopted roads*
- Borough Councils will provide **any available labour, transport** , equipment ...they can free of charge during normal working hours ...*no obligation to provide resources until they have given a commitment to ...LCC,*
- The County Council will **indemnify the BC's fully against all claims.....**
- **BC's to keep records and.....train their staff.....prepare risk assessments.**

SUMMARY- Overview of LCC WM Service Issues

- ***Costs of The Service....£4m / annum,***
- ***How we are trying to make the service as efficient as it is effective,***
- ***Educating Managers and setting out expectations of them....Safecote...RBF...Exactrak...***
- ***Investing in Route Optimisation, Exactrak and Weather Station Cameras....Technology,***
- ***Reviewed pay grades and mutual aid arrangements with Borough Councils,***
- ***Still much more to do....THE END for NOW.***

THE END

Derek Heap – APSE 2016

Questions