

The Essex experience of Pre-Wet salting...

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Essex CC Gritting policy – facts & figures

+2,000 miles of roads carrying about 80% of traffic.

40% of the network with 57 routes.

Access routes to hospitals, fire and ambulance stations

Public Service bus routes (4 or more a day – 5 days a week)

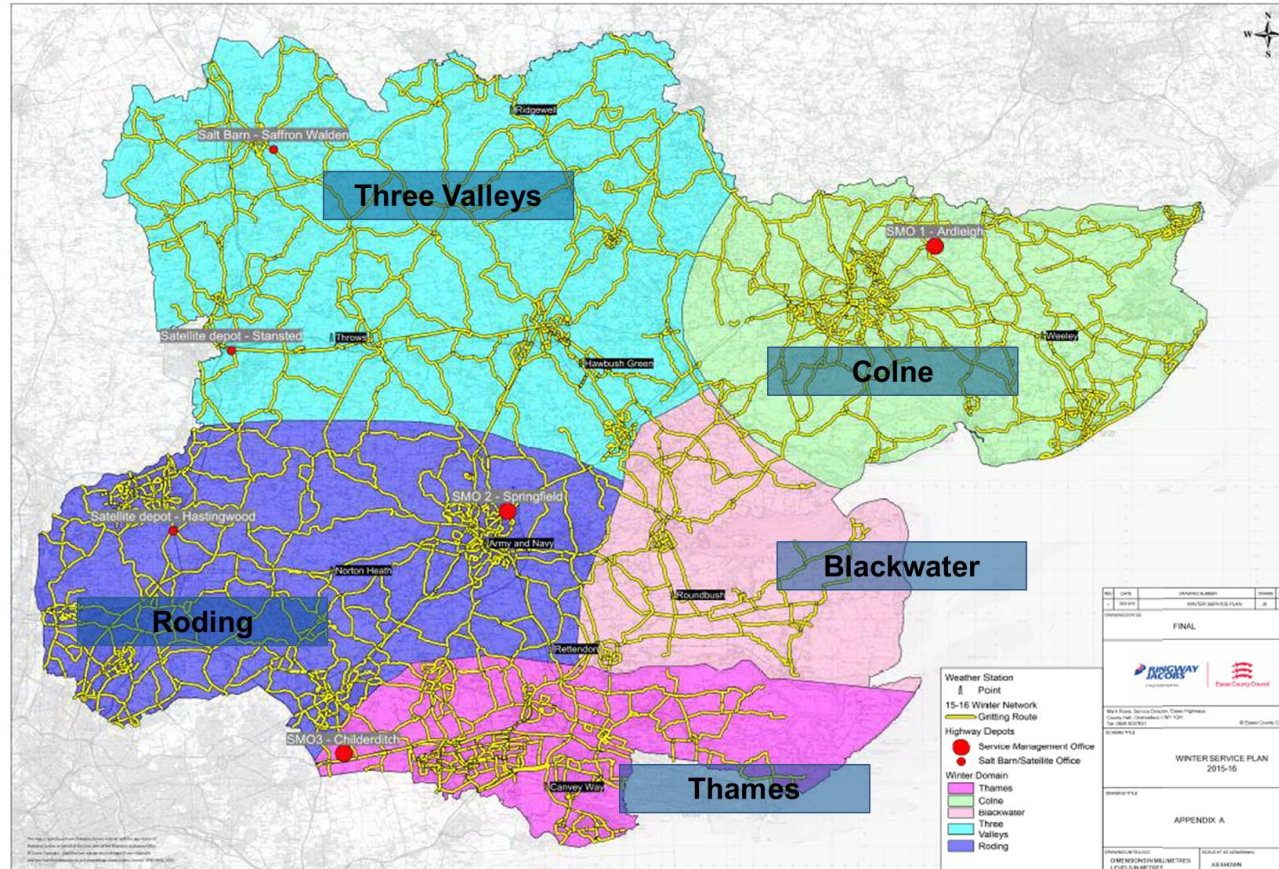
Other High Risk Sites, such as a severe gradient or higher than usual traffic levels

Access routes to a settlement or parish of +50 households

The Winter Access Rural Network (WARN) – ensures rural communities are not too far from the treated network

Access routes to sites of strategic national importance - defence, fuel refineries, financial, medical, etc







Why did Essex choose Pre Wet?

HST 2012 – 2022: 10 year integrated services contract + 5 year extension? Ringway Jacobs & Essex CC partnership.

Austerity driving efficiency agenda.

10 year contract allowed opportunities for invest to save.

Pre-Wet is a Ringway group favoured winter treatment and was offered as a contractual efficiency.





What is our set up?

6 depots with varying capacity of saturators and storage.

Varying demands at each depot. Between 4 & 16 routes per depot.

You need the estate to accommodate the saturators, any brine storage & logistical safe access.



Essex Highways



Problems and challenges?

Using Pre-Wet since 2013

Gravity fed saturators – filter bed clogging – replace every 2/3 years.

Lifespan?

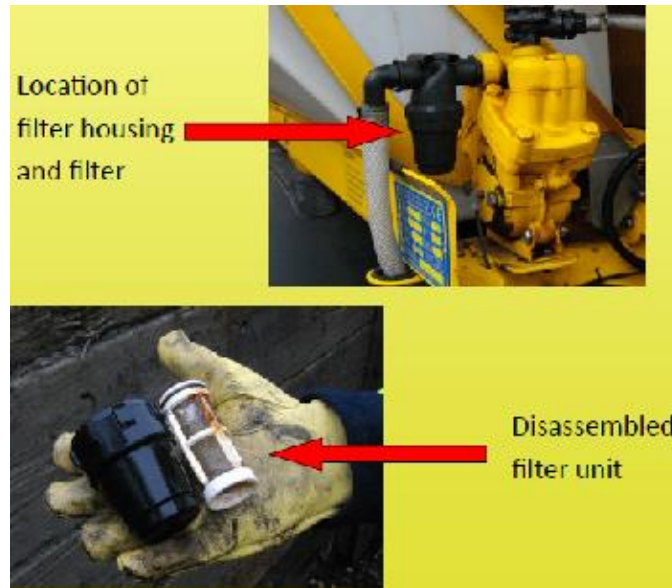
Keeping white salt.....white.



Problems and challenges?

Fleet:

Filter cleaning in line from brine pump.



Problems and challenges?

Poor water flow rates (not pressure) from water utilities.

	Routes		Brine Tanks			Vehicles			Depot Flow		Recharge time (hrs)		8/10g Run	0.01	20g Run	0.02
	Treated Length (km)	No. Routes	Internal Diameter (mm)	Height (mm)	Volume (litres)	Veh Brine Capacity (litres)	18TN (6c.u. m)	26TN (9c.u. m)	Design Flow (litres/hour)	Actual Flow (litres/hour)	Design (hours)	Actual (hours)	Brine Required	Recharge Time	Brine Required	Recharge Time
Ardleigh	659.9	12	3350	2950	26002	31648	11	1	3500	1440	7.43	18.06	10888.35	7.56	21776.7	15.12
Halstead	242.9	4	2750	1500	8909	10848	3	1	3500	1698	2.55	5.25	4007.85	2.36	8015.7	4.72
Springfield	895.2	16	3850	2980	34692	42496	14	2	3500	750	9.91	46.26	14770.8	19.69	29541.6	39.39
Stansted	419.2	7	2800	2950	18165	18200	7	0	3500	1500	5.19	12.11	6916.8	4.61	13833.6	9.22
Childerditch	619.9	10	3350	2950	26002	27344	7	3	3500	787	7.43	33.04	10228.35	13.00	20456.7	25.99
Hastingwood	418.2	8	2650	2950	16271	20800	8	0	3500	1000	4.65	16.27	6900.3	6.90	13800.6	13.80
Totals	3255				130040	151336							53712		107425	

Begin saturator refilling immediately after loading vehicles.

Storeman to assist during the day.



Problems and challenges?

Brine needed per depot		Average Spread Width (m)		6.5													
Ardleigh		26002		1440		Halstead		8909.4		1698		Springfield		34692		750	
Brine Required	Full Recharge Time	Brine Available	Brine Surplus	% Brine Available	Brine Required	Recharge Time	Brine Available	Brine Surplus	% Brine Available	Brine Required	Recharge Time	Brine Available	Brine Surplus	% Brine Available			
12868	8.94	26002	13134	100%	7578.5	4.46	8909	1331	100%	23543	31.4	34692	11149	100%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	17456	23.3	31399	13943	100%			
25736	17.87	26002	266	100%	9473.1	5.58	8909	0	94%	34913	46.6	30818	0	88%			
25736	17.87	11786	0	46%	9473.1	5.58	8909	0	94%	34913	46.6	6000	0	17%			
12868	8.94	20880	8012	100%	7578.5	4.46	8909	1331	100%	23543	31.4	10875	0	46%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	17456	23.3	34692	17235	100%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	15140	20.2	34692	19552	100%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	17456	23.3	34692	17235	100%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	10144	13.5	34692	24548	100%			
12868	8.94	26002	13134	100%	0	0.00	8909	8909		6665.1	8.9	34692	28027	100%			
12868	8.94	13134	266	100%	4736.6	2.79	8909	4173	100%	10144	13.5	28027	17883	100%			
12868	8.94	26002	13134	100%	4736.6	2.79	8909	4173	100%	10144	13.5	34692	24548	100%			
0	0.00	26002	26002		4736.6	2.79	8909	4173	100%	10144	13.5	34692	24548	100%			
Average % Brine Available				96%					99%					77%			
Occasions not all vehs Pre-Wet				8					10					28			
% Not full pre-wet				16%					17%					44%			
Total Winter Service																	
Average % Brine Available				94%													
Occasions vehs not Pre-Wet				66													
Pre-Wet Design Potential				19%													





Concerns?

Educating our supervisors & drivers of the potential benefit with cost savings.

Low spread rates – We studied Appendix H guidance.

Reputational loss and litigation against the private sector.



Proving the economic case?

Quick Analysis of Year4 Treatments									
52 Shouts - Yr4					Pre-Wet		Dry		Treated
	Spread Rate	Number of Treatments			Spread Rate		Spread Rate		
	20g	9	£ 107,668.10		22g	£ 145,055.35	16g	£ 136,650.98	
	16g	10	£ 95,704.98		17g	£ 124,542.48	12g	£ 113,875.81	
	10g	30	£ 179,446.84		10g	£ 219,780.84	10g	£ 284,689.53	
	12g	3	£ 21,533.62		13g	£ 28,571.51	10g	£ 28,468.95	
	Salt Saturator		£ 26,307.55						
		52	£ 430,661.09			£ 517,950.18		£ 563,685.28	
Potential Saving Delivered by Pre-Wet based upon Yr 4 Treatments							£ 87,289.09		£ 133,024.19
Quick analysis since we started recording when we were able to deliver pre-wet					59%		£ 51,500.56		£ 78,484.27
Pre-wet was delivered on 59% of actions instructed									





Opinions and non-cashable benefits?

Opinions from...?

Our Client

Our Drivers

Remember non-cashable benefits?

Increased resilience, less salt loss, less damage to passing vehicles



So what system is best then?

You decide!

If one system is best, we would all be using it.

Conclusion -

**If you haven't done so already;
move away from dry salting.**



