

WINTER OPERATIONS ACROSS THE POND

LESSONS LEARNED FROM THE
UNITED KINGDOM

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October 17, 2019



The Most Livable
City in America

OVERVIEW

- Quick Preview of UK Presentation
- Lessons Learned from Cold Comfort UK
- APWA North American Snow Conference
- AASHTO Maintenance Committee Annual Meeting



ColdComfort

PART OF TRANSPORT NETWORK

October 24, 2019

Harrogate, England May 15-16, 2019

2019 Road Salt Symposium



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TEMPERATURES

	December	January	February
Historic	-6.8°C	-9.1°C	-6.2°C
2018/2019	-3.4°C	-9.8°C	-10.7°C
2013/2014	-10.9°C	-13.3°C	-13°C

Coldest United States City
(of 100 most populous)



THE 2018/2019 COLD SNAP WASN'T LONG BUT IT HAD LASTING EFFECTS

- Long lasting cold subsurface temperatures
 - Increased salt usage



WHAT WORKED?



The Frostbite
City in America



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WHAT DIDN'T WORKED?



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THINGS TO CONSIDER IN THE FUTURE

Ice Breakers



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ALLIANZ FIELD

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MNUFC



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LESSONS LEARNED EQUIPMENT



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GRITTER = SALTER OR SANDER



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LESSONS LEARNED TECHNOLOGY



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PAVEMENT TEMPERATURE MONITORING

- Mild temperatures that bounce above and below freezing.
- Kent County-SE of London.
 - 2x size of Hennepin Cty.
 - Utilize over 100 temperature sensors.
- Netherlands
 - 1,100 mi²; 7 Cty. Metro: ~3,000 mi²
 - Utilize approximately 200 temperature sensors





Residual Salt Sensor

- Mobile sensor
- Has been used for years in Japan. Found @ PIARC

Testing in England & Scotland this winter season



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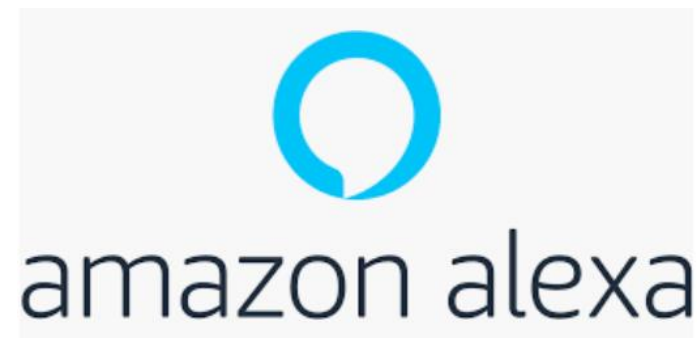
Netherlands

- Pilot project putting 25,000 friction sensors on cars



CUSTOMER SERVICE W/ ALEXA

- Ayrshire Roads Alliance in Scotland
- Developing system that will allow people to notify public if they have plowed/treated a road, submit a complaint, and it could do push notifications.



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APWA SNOW CONFERENCE

- Winter Mtce. Supervisor Certificate Course
- Liquids Presentation Series
- Exhibit Floor
- New Technology

Interested in joining the
Winter Maintenance
Subcommittee?



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NORTH AMERICAN
SNOW 2019
CONFERENCE
SALT LAKE CITY, UT



NORTH AMERICAN
SNOW 2020
CONFERENCE
CLEVELAND, OHIO
APRIL 19-22, 2020

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AASHTO MAC ANNUAL MEETING

- SICOP Pooled Fund Program

- ClearRoads, Aurora, TRB

- Ice Breaker Study coming soon

- FHWA Workshop

- Impacts of Automated Vehicles on Highway Infrastructure
- We're at Levels 1 & 2 in the US. Hype is around Levels 4 & 5
- Car companies are saying Levels 4 & 5 will be available to coordinated fleets (i.e. Uber, Lyft) and not the public in 2030.
- Freight is on different path. Focusing on platooning.
- Ideal conditions will be needed for full autonomy. (6" striping, no snow, good pavement conditions.



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QUESTIONS



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