



PACIFIC NORTHWEST SNOWFIGHTERS



Winter Maintenance Scenario Based Roundtable
Exercise
Issues with Policy and Levels of Service



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Today's Agenda

- What are your levels of service?
- Experiences in Fort Collins
- The Dalton Highway Experience
- What would you have done
- So Why do we have policies?



Levels of Service

- Different for different types of road (arterial, collector, residential, major highway)
- Policy document should determine what you do and when you do it (set priorities)
- Policies are a political decision, and that creates issues...
- What are yours?



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Sharing Part One

Discuss in your groups for a few minutes
What are your levels of service?

Then we will collect the data



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Case Studies

City of Fort Collins, CO

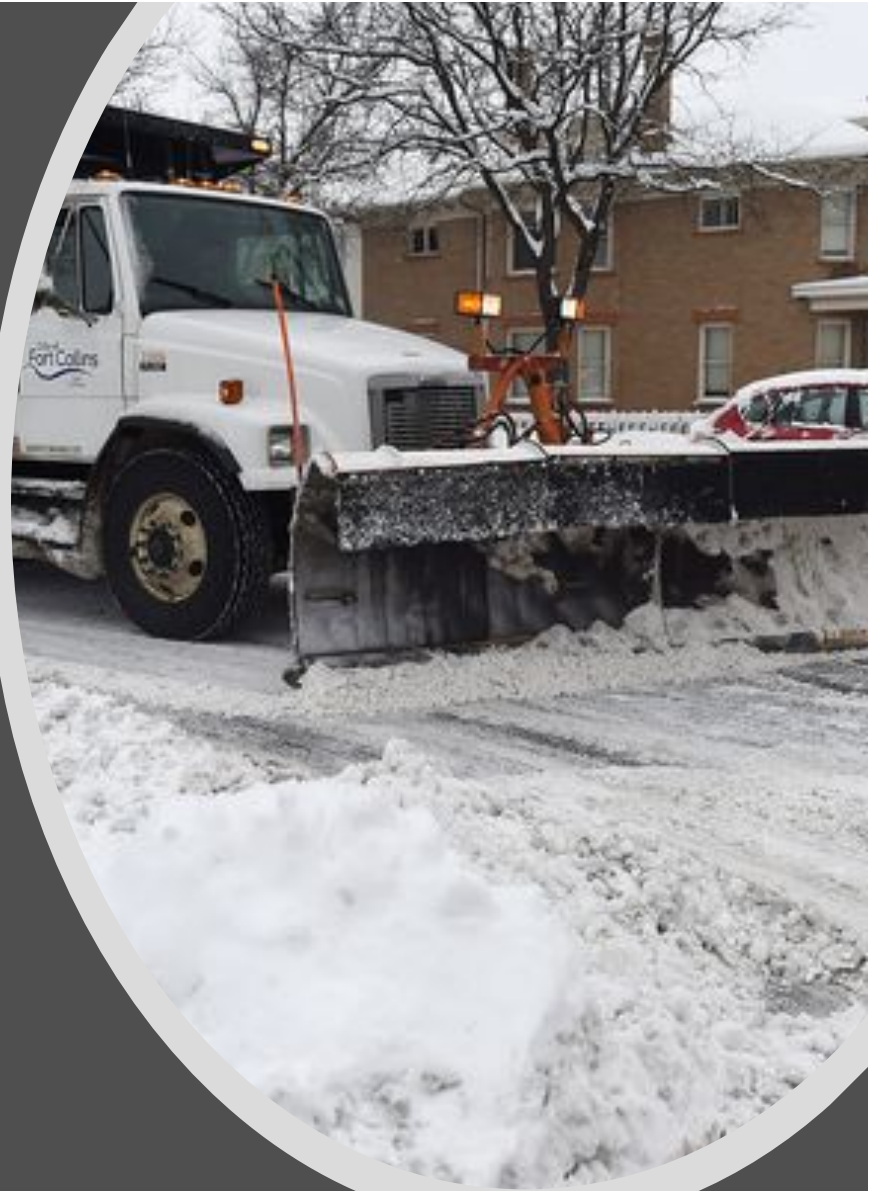
The Dalton Highway, AK



Case Study: Fort Collins

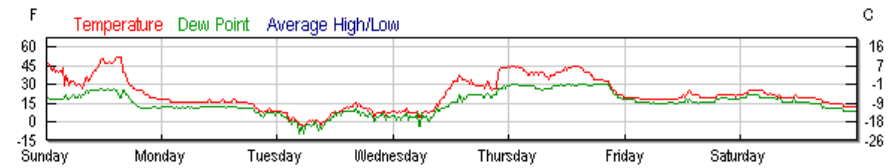
Overview

- Fort Collins
 - Pop. 170,000
 - Lane Miles 1,957
 - Fleet: 24 plow trucks
- Policy
 - Priority Routes 1-3
 - Priority 4: normally not plowed
- Weather
 - 250 Sunny Days/year
 - 14-17 snow events/year
 - Average snowfall: 58"



2014 Winter Storm

Weekly Weather History Graph



- Conditions
 - Date: February 4th-5th
 - Low Temps: -11 °F
 - High Temps: 10 °F
 - Snowfall: 3"-4"
- Problem
 - Traffic compacted snow in neighborhood roads
 - Snow formed into ice
 - Temperature stayed cold for many days



How Do You Establish Policies When Snow and Ice Maintenance Is So Unpredictable?

MASTER SNOW REMOVAL PLAN

2017-2018



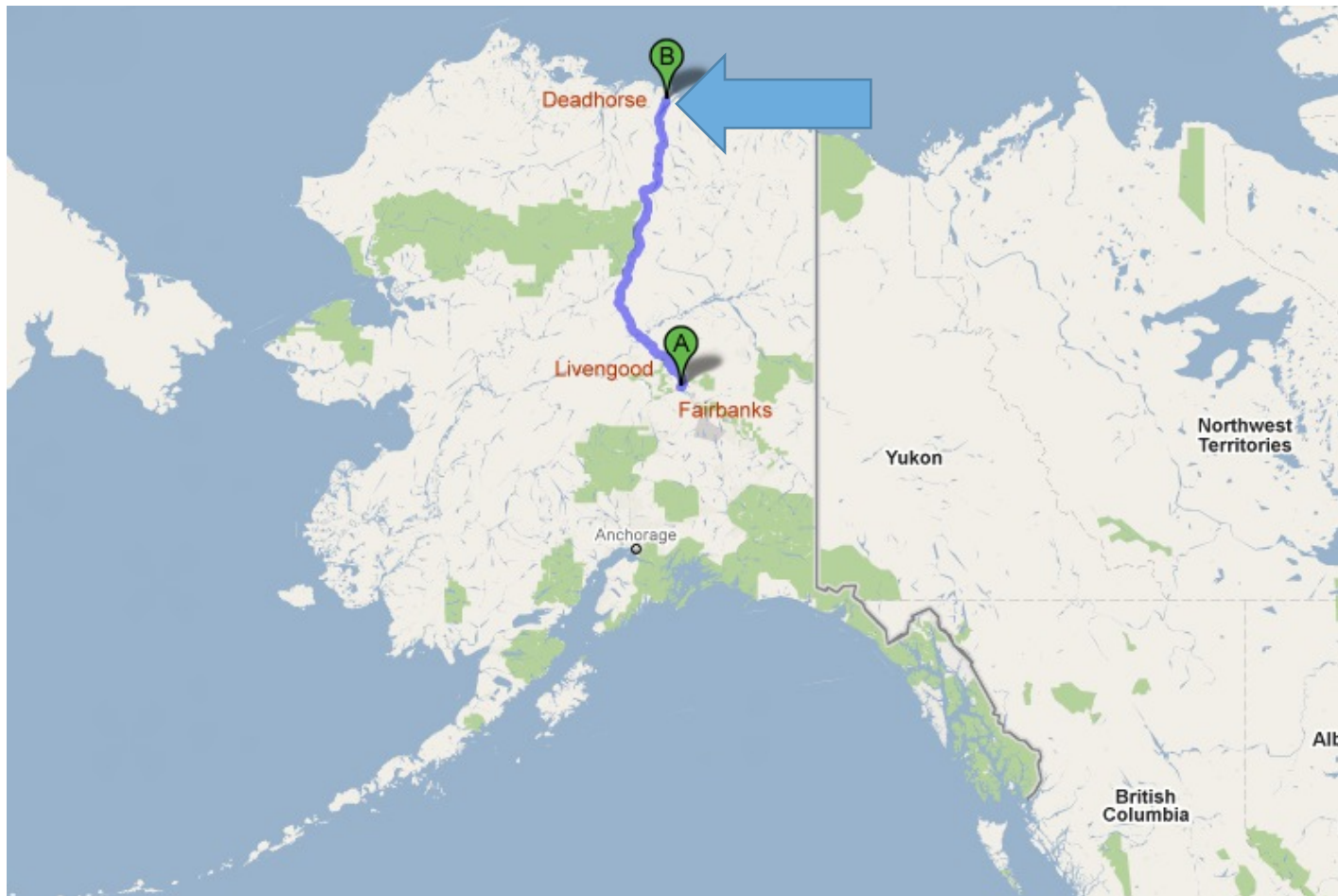
- Policies and Guidelines
 - Establish Policy
 - Include language which allows for flexibility
- Adoption
 - Support for City Council
 - Education and Community Outreach
- What Causes Deviation
 - Triggers
 - Responses



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Dalton Highway Flood(s)





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Dalton Highway Flood - Disaster in the Arctic

The impacts of the ice and flooding were dramatic:

- 24 miles of the road were impacted;
- 28 days the road was closed;
- Two state disaster declarations issued; and
- \$17 million for emergency repairs.



PRS 2018



The Aufeis Flood – Cause and Effect

Hydrology

- Heavy rain events in the Brooks Range during the Fall
- Sag River frozen all the way to the bottom
- Water pushed to surface, expanded beyond typical flood plain
- “A perfect sequence of snowfall, temperatures and winds lined up to create a massive sheet of ice that expanded for miles”





Timeline

- **March 20** – First water on road, eight locations, the largest spot is 12 inches deep and 200 feet long
- **March 30** – Overnight closure due to storm



- **April 1 - April 4** - One lane traffic with traffic control thru April 4
- **April 5** - Aufeis flooding causes prolonged closure of the highway, south of Deadhorse

As many as 1,100 truck loads backlogged





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Impact to North Slope Operations

- Busiest construction season in recent years
- Ice road dependent drill sites - less than one month to go
- High levels of North Slope activities - fuel at minimum levels
- Disruption in the supply of specialty chemicals - threat to production
- Shortage of drilling fluids - potential to shut down rig operations
- Supplies of groceries getting low



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Air Operations Resources

Lynden Air Cargo C-130/L-382



Everts Air Cargo DC-6



The DOT&PF Response

- Find the Road
- Find the Sag River Channel
- Divert the Water
- Open the Dalton Highway
- Prioritize the Traffic

..... Keep the water out and the trucks moving

Where is the Dalton
Highway?
April 7



Crews work
to divert water
and reinforce berms
along the road
April 11





Trench operations divert water
away from the road



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Aerial Sanding





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UIC Ramps Up April 10

- ADOTPF
- ConocoPhillips
- BP
- Alyeska Pipeline Service Company
- ExxonMobil
- North Slope Borough





Unified Incident Command Goals

- Keep all responders and the public safe;
- Re-establish Dalton Highway traffic flow;
- Ensure accurate and timely release of information to stakeholders and the public;
- Coordinate to optimize highway traffic flow;
- Develop a logistics plan to support North Slope needs; and
- Protect infrastructure and the environment.





UIC Communications



- Daily public stakeholder meetings in Deadhorse
- Daily SITREPs




- Issued numerous Press Releases
- Numerous Media Events



Highway reopens to limited, pre-authorized traffic

April 13



An aerial photograph showing a long, single-file line of semi-trucks on a road that has been cleared through a vast, snow-covered landscape. The trucks are moving from the top-left towards the bottom-right of the frame. The surrounding area is a flat, white expanse of snow with some faint tracks and shadows. The sky is clear and blue.

Road opens progressively
to all loads. Pilot car
operations end April 28
April 13 - April 28

Warmer temperatures start to melt snow and ice on the road

May 5



Breakup arrives with another round of flooding

May 17



Highway closes again

May 17





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Water recedes dramatically in a day, near Mile 394 May 24-25



PNS 2018

Repair work begins

May 28, 2015



Rolling....

June 5, 2015





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Sharing Part Two

Which of Your Policies Could Trip Your Agency
Up?

How Would Your Agency Cope with Truly
Extreme Conditions?

Do you have a plan for that?



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So Policies are Useless, Right?

- Not exactly – they do serve a number of purposes!
- Guidance for “normal” situations
- Means of figuring out the resources we normally need
- Liability Protection
- But clearly they do not cover every situation...



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How Can We Improve Things?

- Train for non-standard as well as “normal” events
- Recognize that the policy and the plan are guidelines, not straightjackets
- Put a phrase into the policy that indicates in certain cases you will not follow policy – and say who determines when those cases occur
- Expect the unexpected...