

APPLYING LONG-TERM THINKING TO WINTER MAINTENANCE OPERATIONS

TODAY'S PRESENTERS

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- Winter Maintenance operations require long-term thinking because actions which appear good in the short-term can actually be harmful in the long-term. Join us for this "soup to nuts" approach to winter maintenance planning.
- We'll feature examples for measuring operational performance and deploying sustainable practices.

TODAYS AGENDA

- Long Term Thinking
- Resilience and Efficiency in operations
- Quantifiable performance measures
- Minimizing environmental impacts
- Sustainability in Operations
- Technology and Innovation

Long Term Thinking

- “Past performance is not a predictor of future events”
- Expectations are increasing – can we meet them?
- We cannot know what will happen, but we can certainly imagine what might happen...

Three Questions to Ask

- What magnitude of events will I likely see in the future?
 - What will be my new normal?
- How can I respond to events that exceed my capacity?
- Do my tools allow me to communicate effectively how I am performing both internally and externally?



Job One

- Does our current operational framework reflect best practices?
- What are those best practices?
- Where can I find out about them?
- The Top Ten List...



In the Top Ten

- Adequate funding for operations and sustainability
- Using sustainable winter maintenance practices
- Accurate and timely weather forecasts
- Optimal route planning
- Equipment, equipment calibration, and equipment maintenance program

More Top Ten

- Efficiency in operations – intelligent use of resources
- Communications between operations controllers and drivers
- Snow plans
- Standards in winter services
- Defined levels of services

How the Top Ten Helps

- Serves as a starting point to figure out operational needs
- Used to guide future research (the Winter Maintenance Peer Exchange process)
 - “winter wins the budget battle”
 - Efficiency in operations – 46%
 - Performance standards – 43%
 - Optimal route planning – 41%
 - Using sustainable winter maintenance practices – 34%

Efficient Operations – Long Term...

What will the transportation system we care for look like in 20 – 30 years?

- New, expanded modal responsibilities?
- Expanding system, or shrinking?
- Impact of autonomous vehicles?
- Optimal winter maintenance operations allow maintenance enhancements elsewhere

Performance Standards

Do you have clear standards? Were your customers involved in setting them?

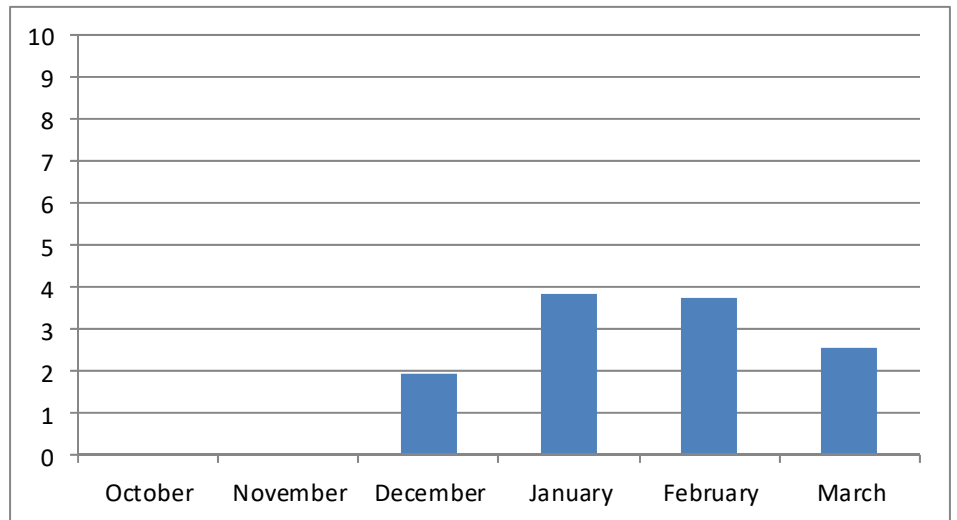
- Collected into a snow plan?
- Various forms
 - Time to bare pavement
 - Time to regain speed
 - Time to regain traction or grip
- Different levels for different facilities
- LOS cuts both ways – do not over-perform...

Performance Measurements

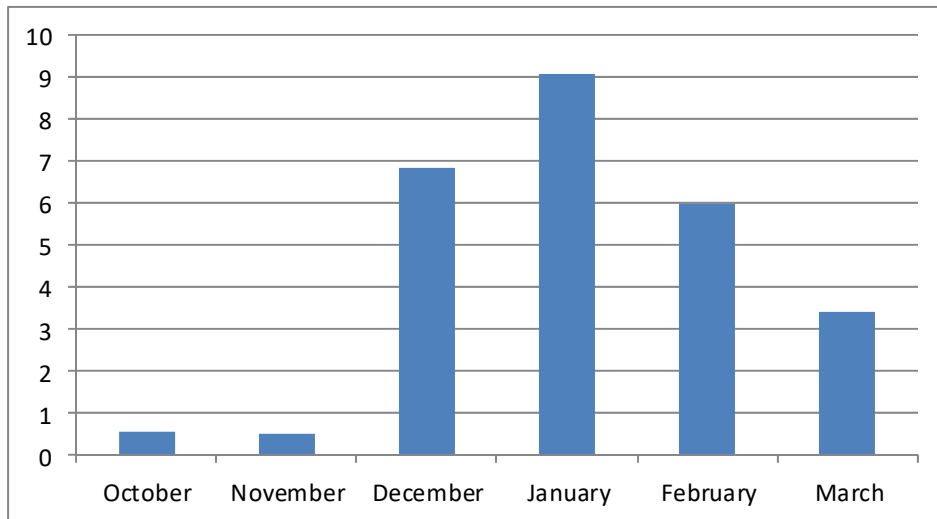
What gets measured, gets done

- If you only measure tons of salt used, you will use more salt than you need to...
- Use outcome based measures instead of output based ones
- Normalize your measures with winter indices

Moline 2013-14
 Total Salt Used = 13,420 Tons
 Tons/Index Point = 499



Moline 2012-13
 Total Salt Used = 11,200 Tons
 Tons/Index Point = 848



Using the Winter Index

Performance Tools and The Long Term

We do not know what the climate will do for our particular location, but it will change...

- Have to balance risks and rewards - resilience
- Have to break away from what we have always done
- Just as being proactive is BMP in winter maintenance, so being proactive in planning is needed

Sustainability and the Long Term...

- By definition, it is long term thinking!
- NOT JUST environmental awareness!
- Again a balancing trick
 - Social
 - Economic
 - Environmental
- No one sustainable solution
- One size ***emphatically*** does not fit all
- But, sustainability does impact all aspects

Technology and the Long Term...

Not a Means to an End – a Force Multiplier

- Have to make sure that the new technology is tied into changes in practice
- If you get the new technology, but still do the same old thing...
- So, once again tie technology choices into key performance goals

The Force Multiplier

Suppose a data-transmission solution costs you \$1,000 per block of data moved today

- In 18 months, it will cost \$300
- In 36 months it will cost \$100
- In 54 months it will cost \$30
- In 72 months (6 years) it will cost \$10
- Is it affordable then? If so, start planning for it now...

Dealing with “Beyond Design” Events

- Liaise with other agencies – multiagency agreements and planning are key
- A dynamic outlook requires you to look forward – capital expenditures need to be this way
- Performance measures can build a case for long term changes
- Sustainability provides a method to involve customers

EOC as a Tool

Do you do EOC exercises on winter events?

- So the players know who is who
- So the available equipment is known to all
- So you know your capabilities when EOC is deployed
- So you can practice using the command process established by NIMS



What Ifs and Implementation

- We have to use imagination to deal with possible new scenarios
 - Trains us away from “the way we have always done things”
- All capital purchases are long term in their implications
 - That new truck will be with you for 15 years or more
- How can we extend the use of our resources?
 - Use water trucks to anti-ice
 - Use heavy GVW vehicles to plow (garbage trucks)
 - Equip all small trucks with (small) plows

Relying on the past to plan for winter might not be sufficient in these times of changing climate and more frequent extreme events

Long-term thinking about the climate and your capabilities allows you to control your own destiny rather than reacting to changes after the fact



Performance Standards and Performance Measures create a vocabulary for discussing winter maintenance with employees and the public

Performance Measures can help
make the case for changes in
operations by playing “what-if”
scenarios



Sustainable solutions provide the balance between the environment, budget and public expectations and create the framework for discussions between the different groups with competing interests

Technology is always offering new solutions, but remember, technology is only a force multiplier to achieve efficiencies in activities



Utilize social media and other forms of communication with employees and the public – they thirst for information



Practice for the “beyond design” events with other agencies so when they really happen you already have a relationship with the others who are there to “help” you

Questions?