Welcome, Introductions, and Overview

After reviewing the agenda for the day and meeting guidelines, Dean would provide an overview of RARET as a tri-county emergency transportation coordination coalition. RARET’s mission statement was reiterated and their scope of work and role in winter weather were reviewed. Once attendees were clear on what RARET is and what they do, the baton was passed to Reid Wolcott from the National Weather Service to begin the presentation.

Winter Outlook

Reid began with a National Weather Service (NWS) overview. He noted that his office, Seattle, is one of 122 offices nationally and is the office serving most of Western Washington. They have two meteorologists on staff 24/7.

Shifting focus to the updated outlook for this winter, this is the third La Nina year in a row, weakening as we move through winter. La Nina in the pacific northwest is cooler and wetter conditions, but La Nina is never quite the same year-to-year. Looking at the longer range outlook the next two weeks could likely feature below normal temps, with an uncertain chance of extreme cold middle of next week. This would fit as part of a national trend. This two week periods features potential hazards of high risk of cold temps across state with the window of Dec 21st through 23rd as the most likely time for this to occur. There is a risk of heavy snow in mountains and moderate snow in lowlands. Broadening to the 4 week

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outlook, indications of below norm temps and wet are observed, if precipitation increases that could mean snow. Widening the net further to the Jan/Feb/March outlook low temps more rain is still the trend. We still have drought conditions, and it is important to note that drought stressed trees are vulnerable to wind events. This could lead to higher frequency than normal power outages for areas with above ground power lines. By end of season, we hope to resolve drought conditions, but as of right now we are still in moderate drought. Additionally, this is a flood prone time of year and burn scars throughout the region exacerbate that risk. Lowland snow events are at higher risk, and we expect a better than average snowpack. Overall, these outlooks are indicative of season long trends. But these projections are not so helpful for the short-term events that cause many of our disruptions to area transportation system.

**NWS TOOLS**

The conversation would shift next to NWS tools which may be relevant to those involved in and adjacent to transportation topics. Specifically, the tools covered would broadly fall under the umbrella of probabilistic forecasts. These forecasts transition away from single scenario (determinant forecast). Now paired with various regions and their scenarios, percent chance of precipitation (snow). Communications differ across the weather patterns. Ranges for wind; highlight map for freezing rain, temp range. These communication tools help show the range of scenarios, the situational awareness.

These probabilistic tools can help make objective decisions. The ranges they provide can help support cost/benefit analysis of taking preventative action. See the slide below outlining a basic cost/loss decision making method which outlines this idea.
NWS wants to help support these risk-based probability decisions with new tools like the Winter Storm Severity Index (WSSI). This tool shows impacts-based context for snow and winter weather. This helps frame winter weather in a ranked comparison: minor, moderate, major, and extreme. This framing can help structure transportation and communication decisions. To put the framing in perspective, the level of moderate is most closely aligned to warning criteria. Reid noted that WSSI is not a specific forecast of closures and does not have a way to account for antecedent conditions. That being said, it is a good tool for situational awareness and communication. The tool considers multiple weather factors, such as local climatology, snow accumulation, snow rate, ice accumulation, wind, and temperatures. Additionally, non-weather factors considered include urban areas (higher impacts), land use, forest classification, and foliage. Probabilistic WSSI (PWSSI) is an experimental tool that looks at the probability of reaching different impact levels.

Where are these tools headed? See the slide below:
Reid would provide the link tree below for quick navigation of these resources:

Winter Storm Severity Index (WSSI)

- [WSSI Day 1-3](#) (Available as KML, SHP, REST Service)
- [WSSI rolling 24-hour window out to 72 hours](#)
- [WSSI User Guide](#)
- [WSSI Story Map](#)

Probabilistic WSSI (PWSSI) — **RECOMMENDED**

- [PWSSI rolling 24-hour window out to 168 hours (7 days)](#)
- PWSSI rolling 48 & 72 hour windows & other GIS services - Coming Soon
- [PWSSI User Guide](#)
- [PWSSI Feedback Form](#)

**Q&A**

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Q: As these tools integrate with each other would it create a sort of historic dataset? What would that collaboration look like?

A: I do not know the ins and outs with the relationship at the headquarters. Social Vulnerability Index (SVI) used at the national level, and that right now is not directly integrated with our service. If integration were to happen they would be updated in tandem. It would not just be static. A challenge with using something like SVI is differences in resolution and how to integrate them.

Q: Is this tool useful to help assess triggers for snow response? Presently many follow the leads of school districts.

A: potential value tool for trigger, takes more into consideration than just forecast. However, this tool is still in development. For now, perhaps the probabilistic snow fall rate is helpful more in line with a situational awareness role.

NEXT MEETING

RARET Workgroup on Jan 25th
2023

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