

Over Forecasting Precipitation Amounts and Subsequent Impacts to the Fine Fuels Moisture Code

Edward Plumb

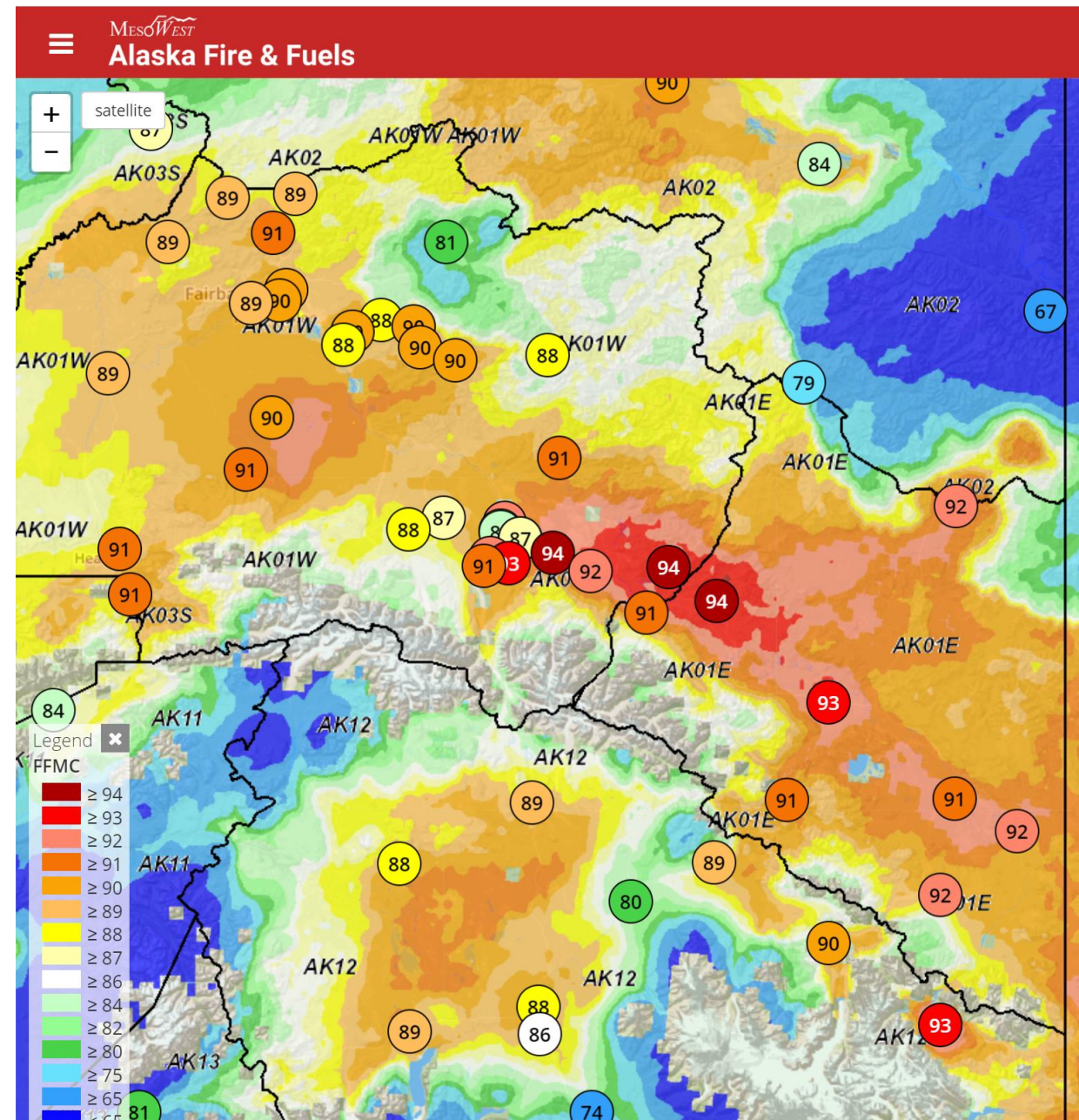
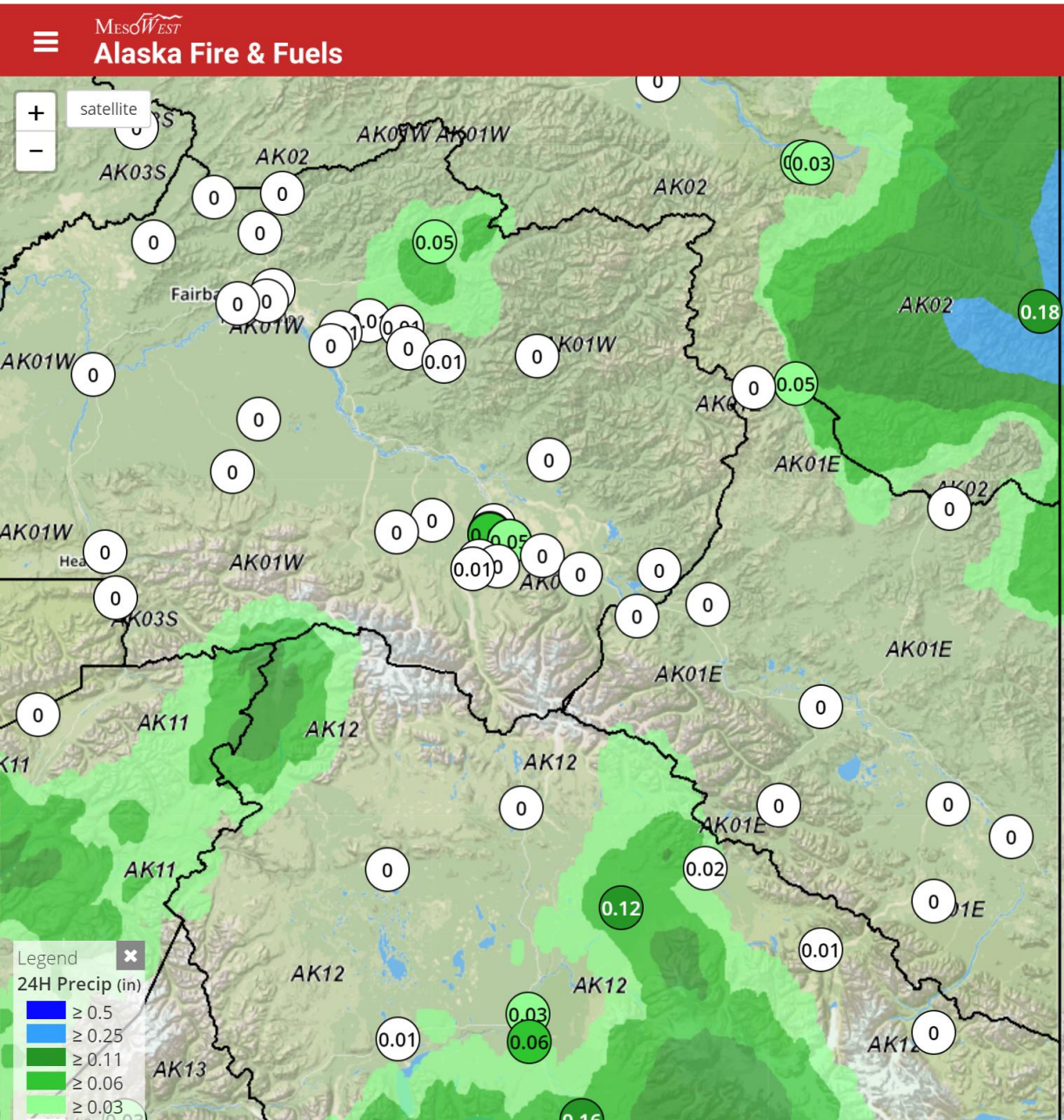
National Weather Service Fairbanks

Interagency Fall Fire Review

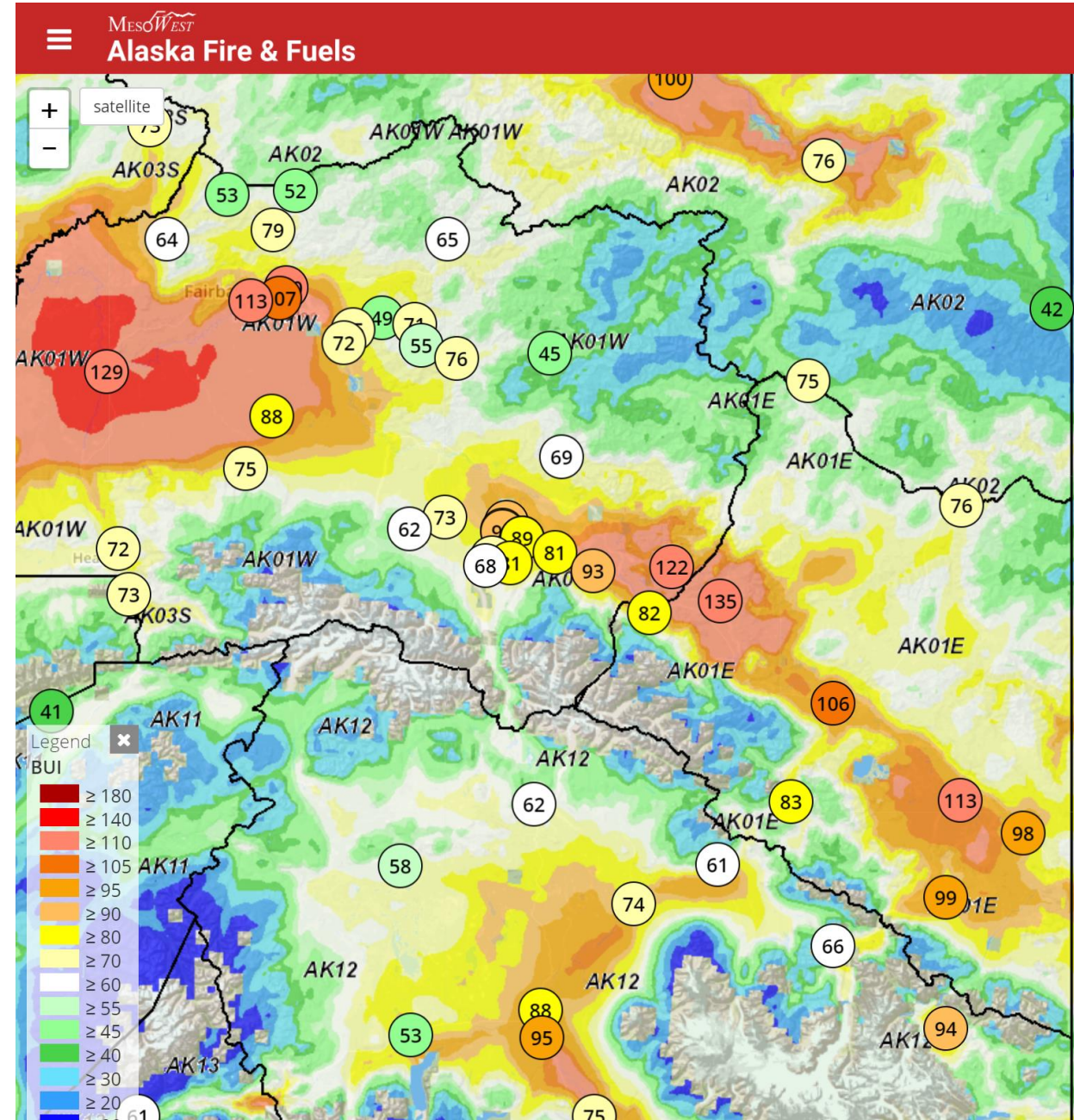
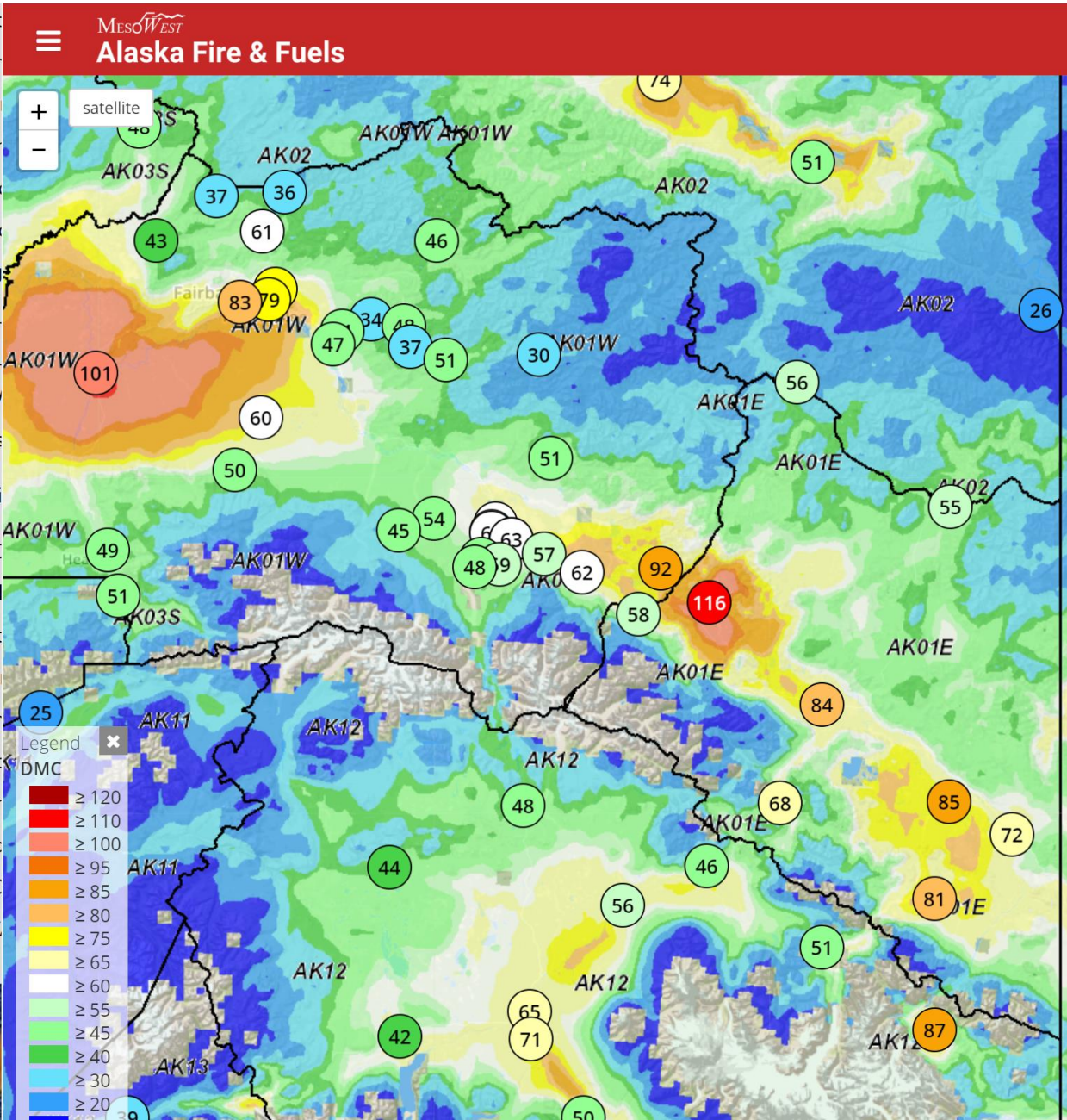
October 11, 2018

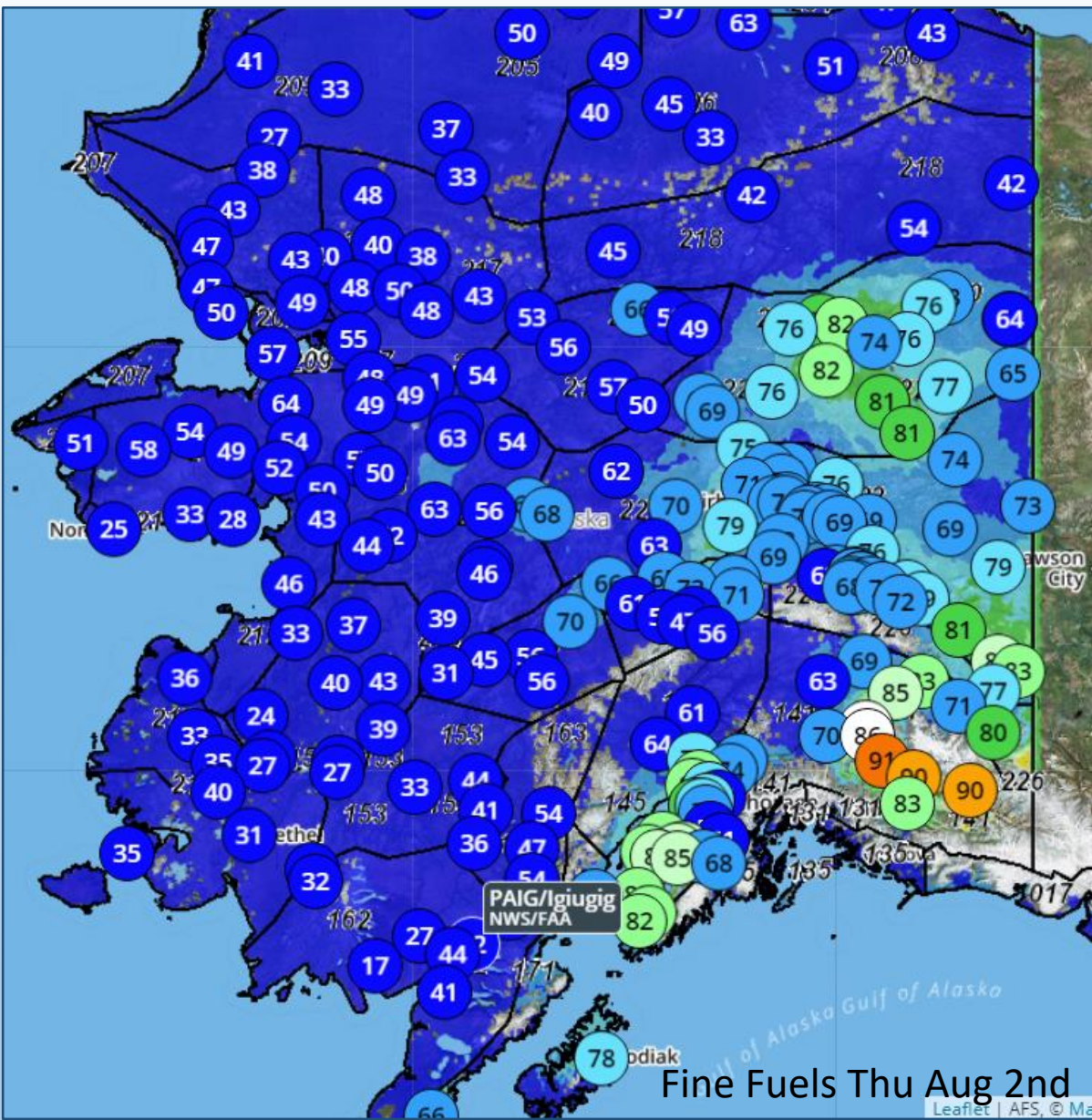


Estimating precipitation and Fuel Moisture Codes



Duff Moisture Code (DMC) & Buildup Index (BUI)





Problem

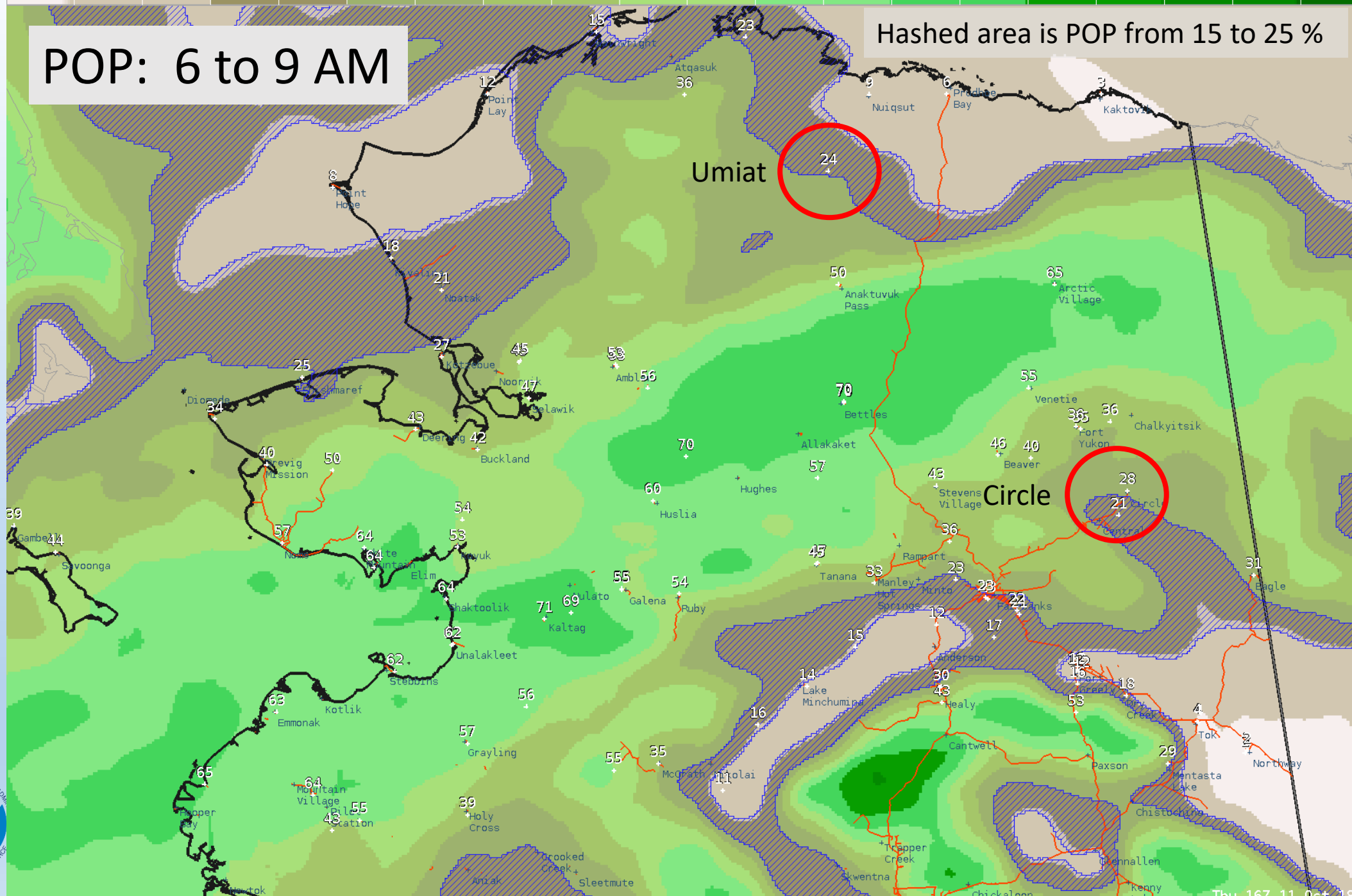
- FFMC forecast values are erroneously wet and resulting in inadequate FFMC forecasts

Cause

- NWS forecasts for low Probability of Precipitation (POP) events are causing unrealistic FFMC values.
- NWS is applying a value of 0.01" of precipitation for all areas with POP's between 15-25 %.
- Areas with POP's of 15-25% essentially have no precipitation over 75-85% of the area.
- POP 15-25% corresponds to **Isolated showers or Slight Chance of Rain**

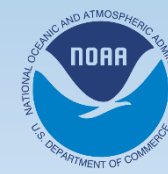
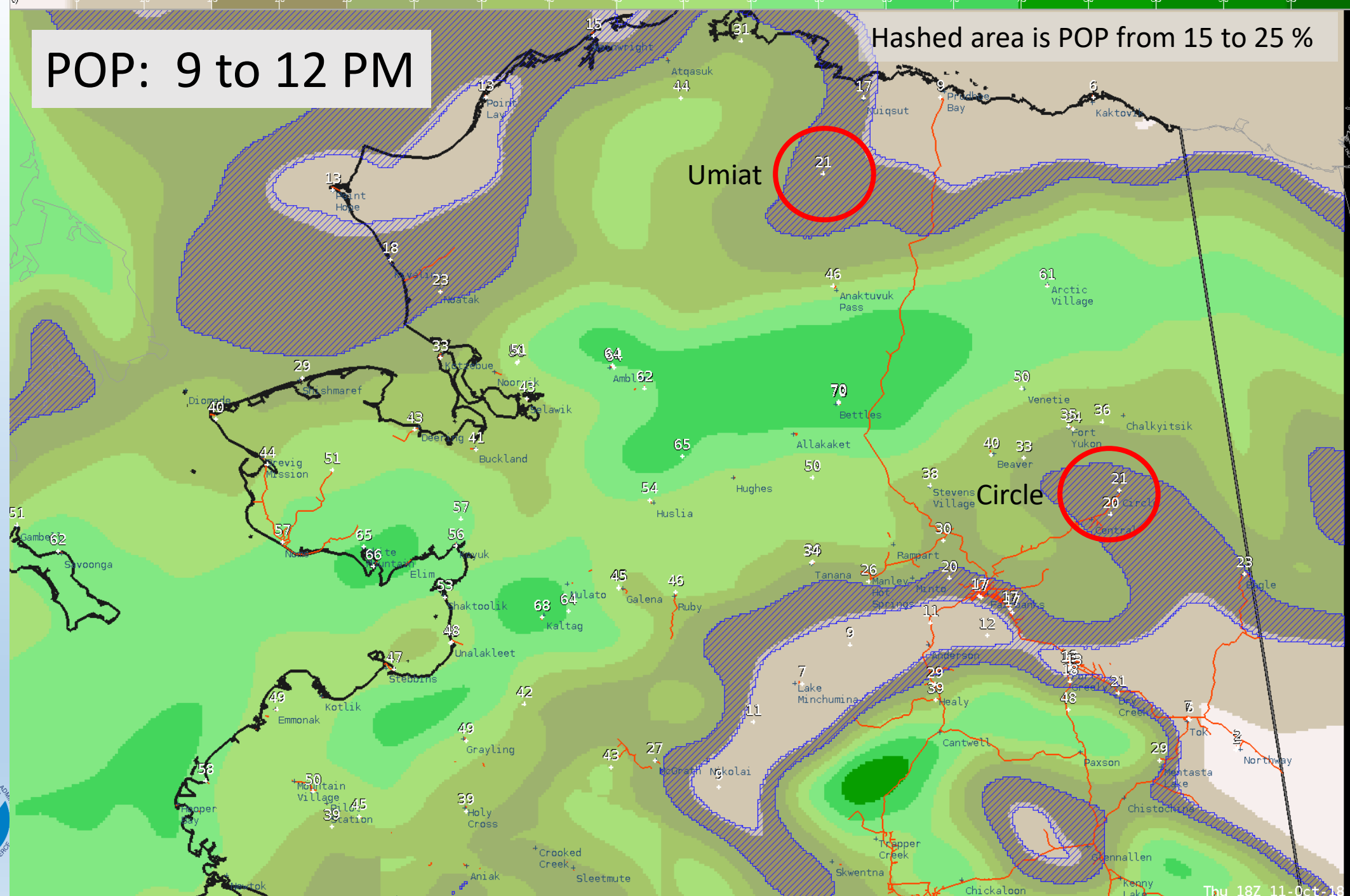
POP: 6 to 9 AM

Hashed area is POP from 15 to 25 %



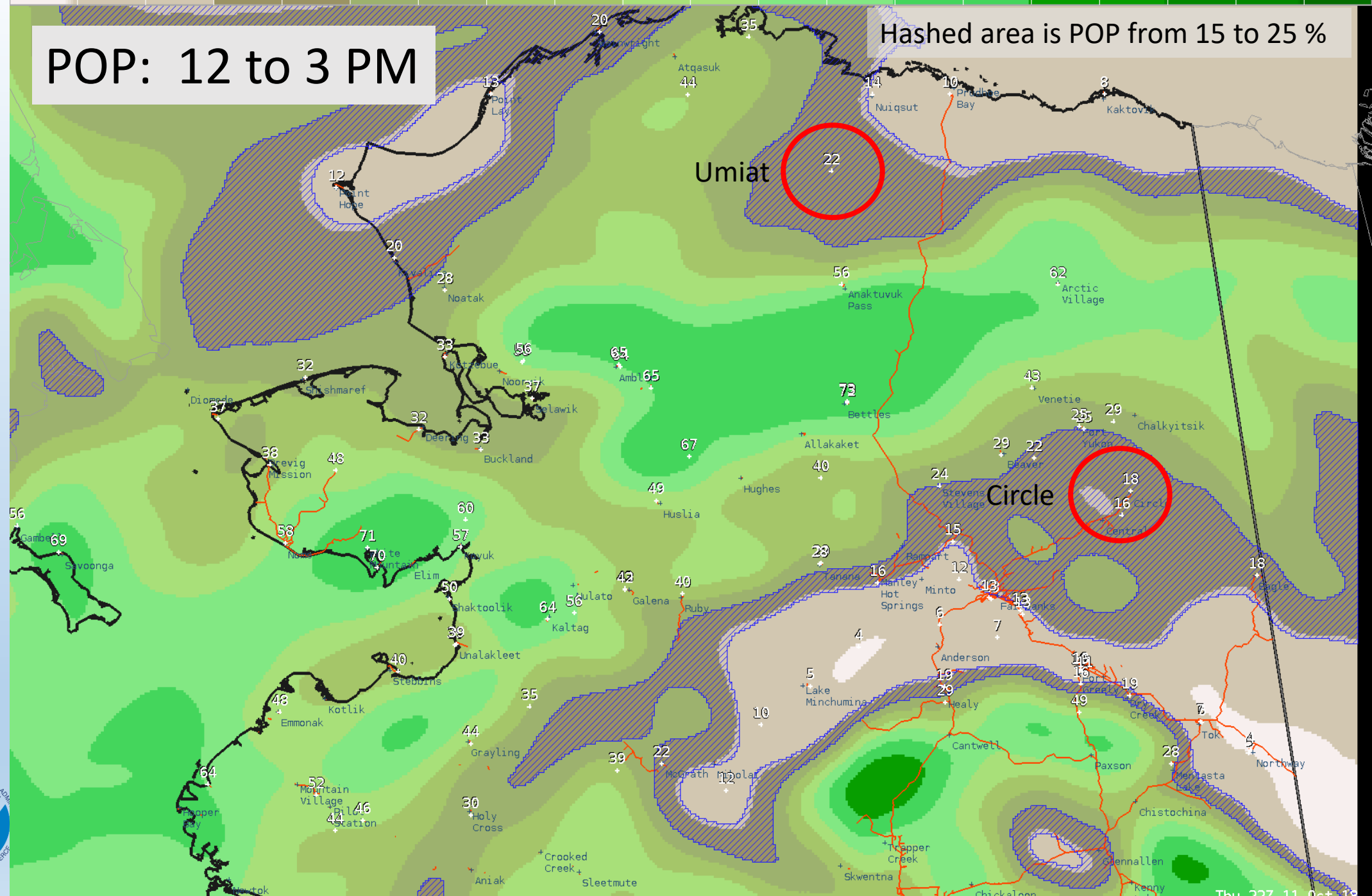
POP: 9 to 12 PM

Hashed area is POP from 15 to 25 %



POP: 12 to 3 PM

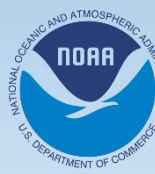
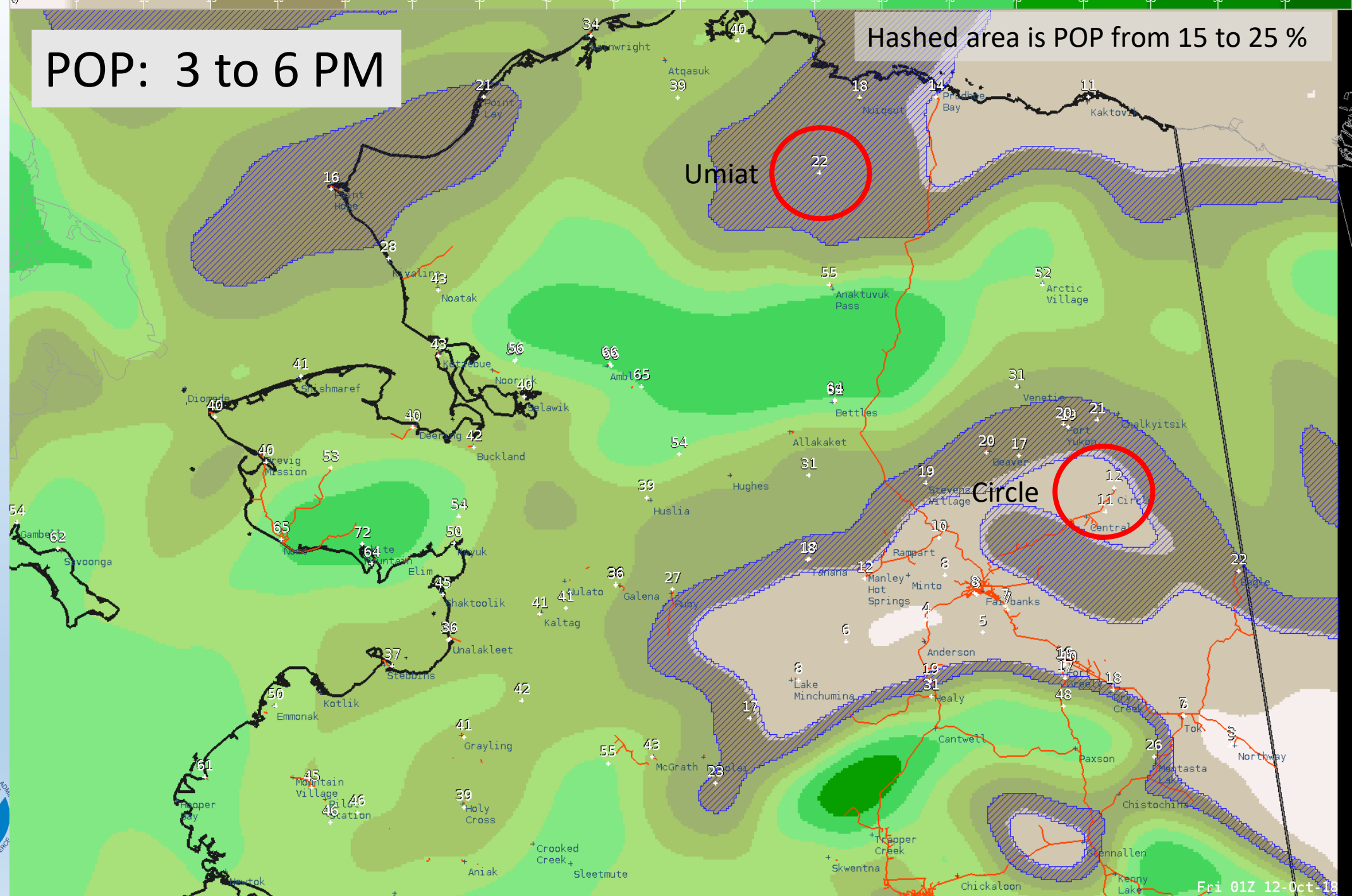
Hashed area is POP from 15 to 25 %



Thu 22Z 11-Oct-18

POP: 3 to 6 PM

Hashed area is POP from 15 to 25 %

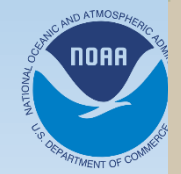
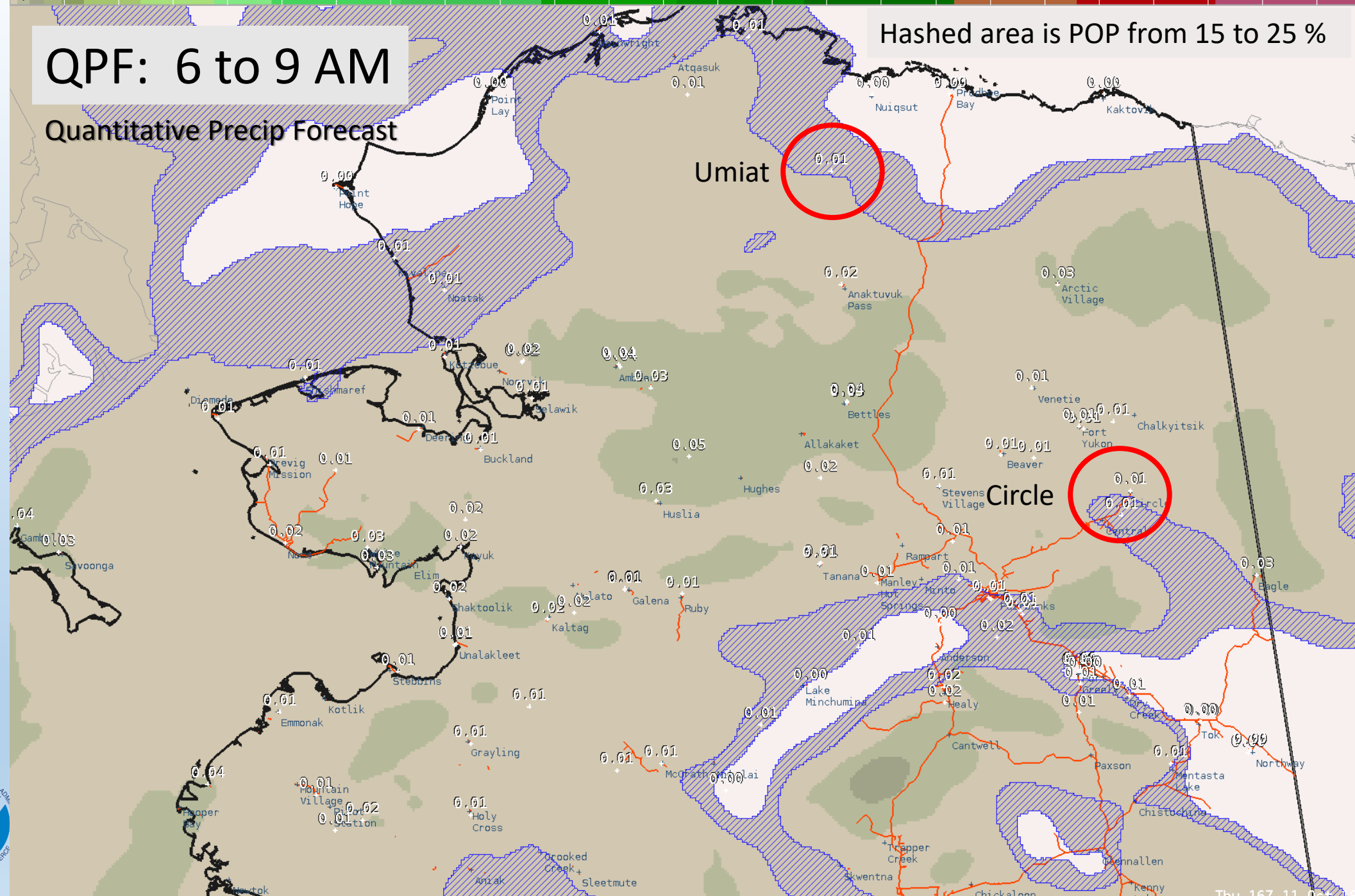


Fri 01Z 12-Oct-18

QPF: 6 to 9 AM

Quantitative Precip Forecast

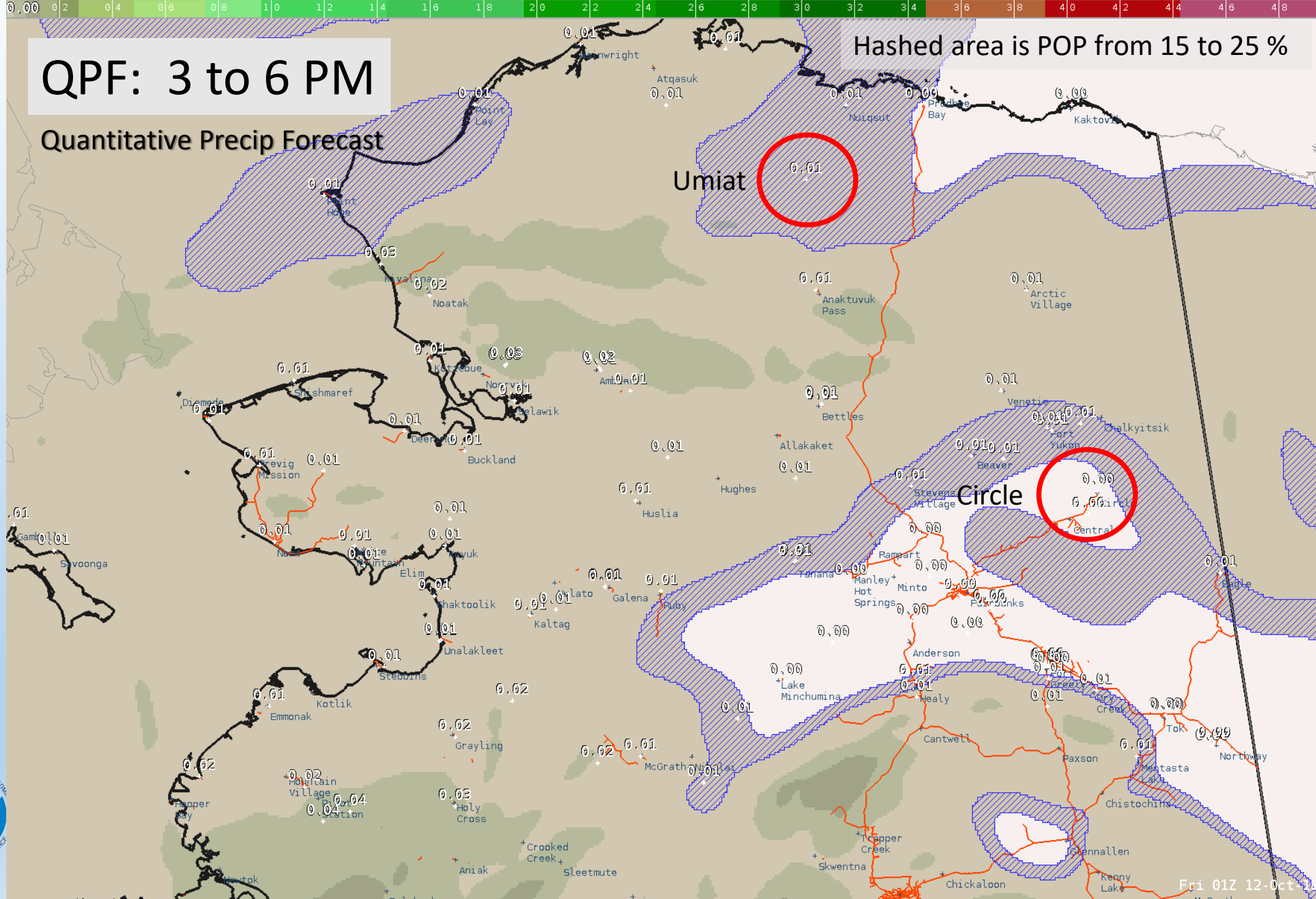
Hashed area is POP from 15 to 25 %



QPF: 3 to 6 PM

Quantitative Precip Forecast

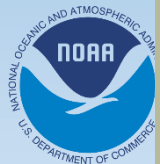
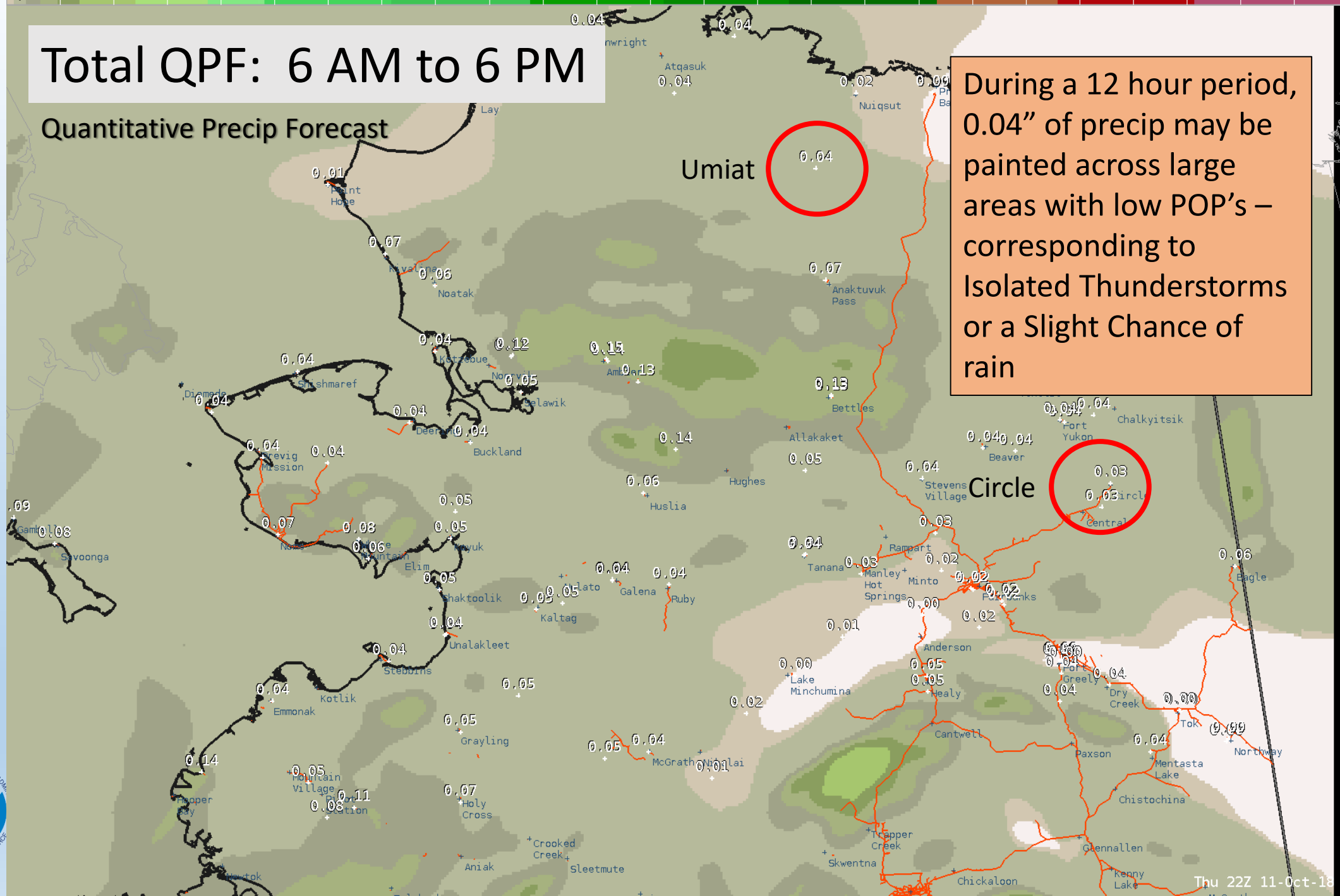
Hashed area is POP from 15 to 25 %



Total QPF: 6 AM to 6 PM

Quantitative Precip Forecast

During a 12 hour period, 0.04" of precip may be painted across large areas with low POP's – corresponding to Isolated Thunderstorms or a Slight Chance of rain



Solution

- NWS will go forward with a 30% POP cutoff for precipitation forecasts (QPF). So, no QPF will be applied to areas with POP's less than 30%.
- Limit the amount of QPF that can be applied to POP's between 30-50%.
- Someday we may be able to provide the probability of 0.03" of precipitation over a given area.

Timeline

- Change NWS forecast methodology this this fall/winter to have a test period before the 2019 fire season
- Implement prior to the 2019 NWS Fire Weather Annual Operating Plan (AOP) – April 1st.

