Forecast Guidance 2/16/21

700mb temp 12Z today -10.1C
700mb temp 12Z tomorrow (forecast) -14C

Then and Now:

Today’s weather story has to be the insane snowfall in the Cottonwoods. As forecast in the previous guidance, moist northwesterly flow, cold temperatures aloft, and a couple disturbances embedded within the flow have led to very heavy snow and scary avalanche conditions in the last 36 hours. Totals as of ~5pm local time Tuesday are ridiculous: 31” at Alta, 29” at Snowbird, and similar 2’+ totals in Big Cottonwood. With snow expected to continue through much of Wednesday, I'm excited to watch just how high storm totals (and weekly totals, also including the last storm) can get.

The valleys have seen snow as well, with as much as 8” accumulating on the eastern benches already.

Short Term (Through Thursday):

Daytime heating and probably some lake enhancement are supporting convective snow/graupel showers across N. Utah, while orographic showers continue over the mountains. The lake will become an increasingly important piece of the forecast tonight and into tomorrow morning, as 700mb temperatures cool to -15C by mid morning Wednesday. Expect to see lake effect snow in the valley beginning just before the morning commute tomorrow, and lasting through about lunchtime.

One thing to note is that the low level northwesterly flow will weaken somewhat through the night and into the morning. It is possible that during this period flow will become partially blocked, and orographic showers will back down from the highest terrain and lead to enhanced valley/bench/lower canyon snow.

This prolonged period of unsettled weather will eventually come to a close Wednesday afternoon, upstream ridging turns flow more northerly and subsidence dries the mid levels. Even then, some residual lower level moisture could support spotty light valley snow through the night Wednesday. By Wednesday night, total accumulations of 4-8” are likely in the lower valleys, with 7-14” possible on the benches. The Cottonwoods will likely see an additional 12-24” for storm totals in the 35-45” range (Alta and Snowbird could exceed 4’).

Thursday will be uneventful under the influence of upper ridging, but this break from inclement weather will be short.
Long Term:
An upper disturbance will fight a generally losing battle to Thursday’s ridge before it arrives early Friday morning (Right). Impacts from this wave will be light, but a few inches (<6”) of mountain snow is possible with minimal valley impacts.

A second disturbance will follow, this one stronger than the first. A period of valley snow is possible on Saturday, and the Cottonwoods could see another round of heavy snow.

More details as we get a bit closer. A bit of a longer break seems possible after next weekend, but ensembles still suggest active weather will return again near the end of February.
Sources, by order of appearance:

@UDOTavy via Twitter
https://maps.weatherbell.com/