



Storm Prediction Center

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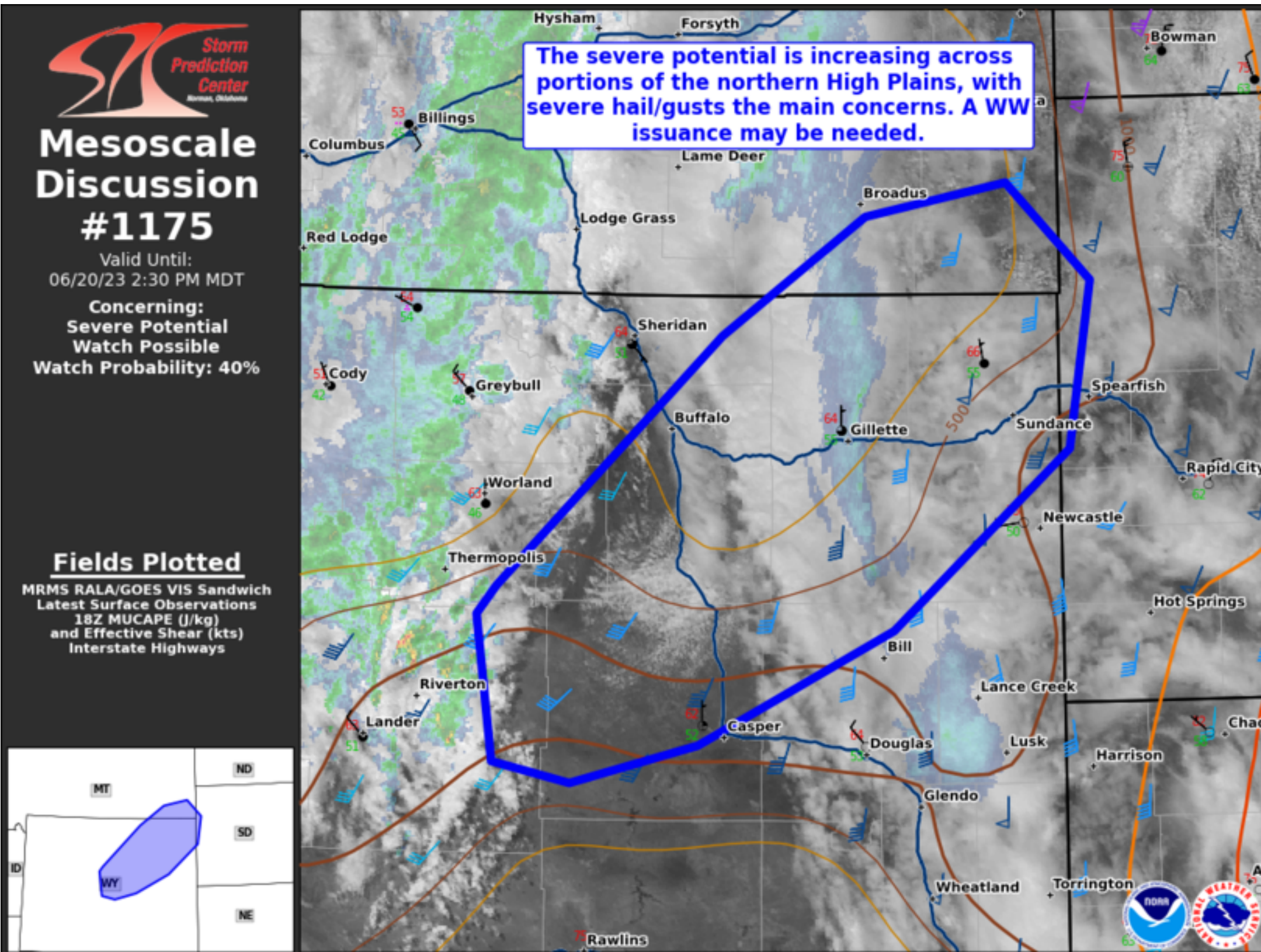
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Mesoscale Discussion 1175

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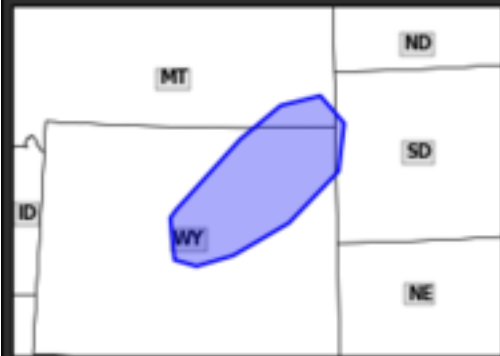
Mesoscale Discussion #1175

Valid Until: 06/20/23 2:30 PM MDT

Concerning: Severe Potential Watch Possible Watch Probability: 40%

Fields Plotted

MRMS RALA/GOES VIS Sandwich Latest Surface Observations 18Z MUCAPE (J/kg) and Effective Shear (kts) Interstate Highways



Mesoscale Discussion 1175
NWS Storm Prediction Center Norman OK
0153 PM CDT Tue Jun 20 2023

Areas affected...portions of northeast Wyoming into extreme southeast Montana

Concerning...Severe potential...Watch possible

Valid 201853Z - 202030Z

Probability of Watch Issuance...40 percent

SUMMARY...The severe threat is increasing across portions of the northern High Plains. Severe wind and hail are expected to be the primary hazards with the stronger storms. A Severe Thunderstorm Watch issuance may be needed to address the pending threat.

DISCUSSION...The combination of orographic lift, diurnal heating, and deep-layer ascent from a mid-level trough approaching from the west, are all contributing to an increase in anafrontal thunderstorm development. These storms are developing amid increasing mid-level flow, with strengthening southwesterly flow above 700 mb contributing to 50+ kts of effective bulk (speed) shear. With the RIW VAD and RAP forecast soundings both depicting relatively straight, elongated hodographs, transient supercells and short line (possible bowing) segments are the expected storm modes. Though overall buoyancy is modest, the presence of 7-8 C/km mid-level lapse rates suggests that large hail may accompany the stronger storm cores. Downward momentum transport of the stronger flow aloft in higher-terrain areas may also support severe gusts. A Severe Thunderstorm Watch issuance may be needed pending greater storm coverage, most likely once storms progress east and north of the Big Horn Mountains.

..Squitieri/Hart.. 06/20/2023

...Please see www.spc.noaa.gov for graphic product...

ATTN...WFO...UNR...CYS...BYZ...RIW...

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43420798 43570785 44790635 45380536 45540439 45060382

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