

Weather and Air Quality: Reflection and Outlook During Smoke Conditions

Presenter: Megan Christiansen
Date: August 12, 2024

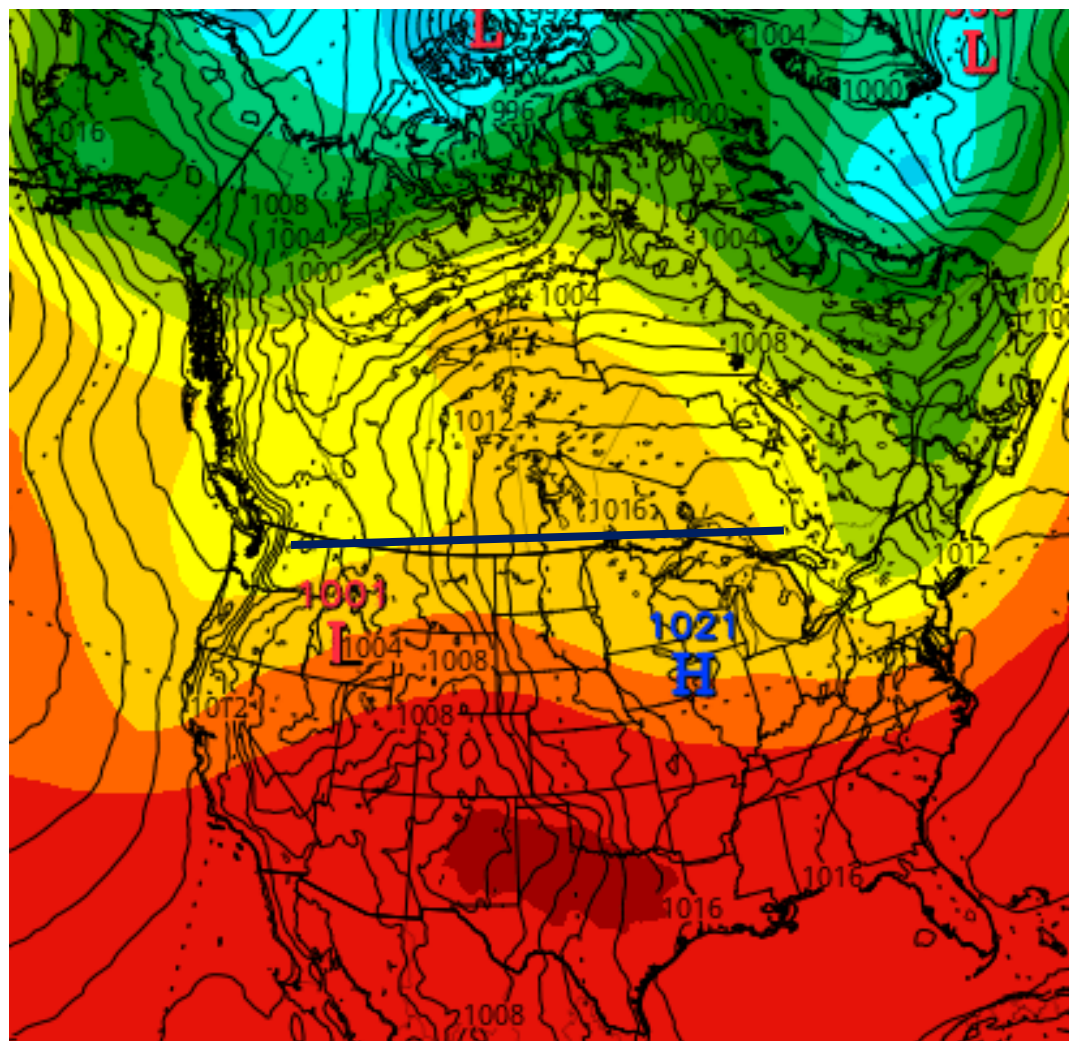


FireAQ is funded by NASA HAQ. We thank NASA GMAO and
NRL for the model data products.

EARTH SCIENCE
APPLIED SCIENCES

Current Status: August 12, 2024

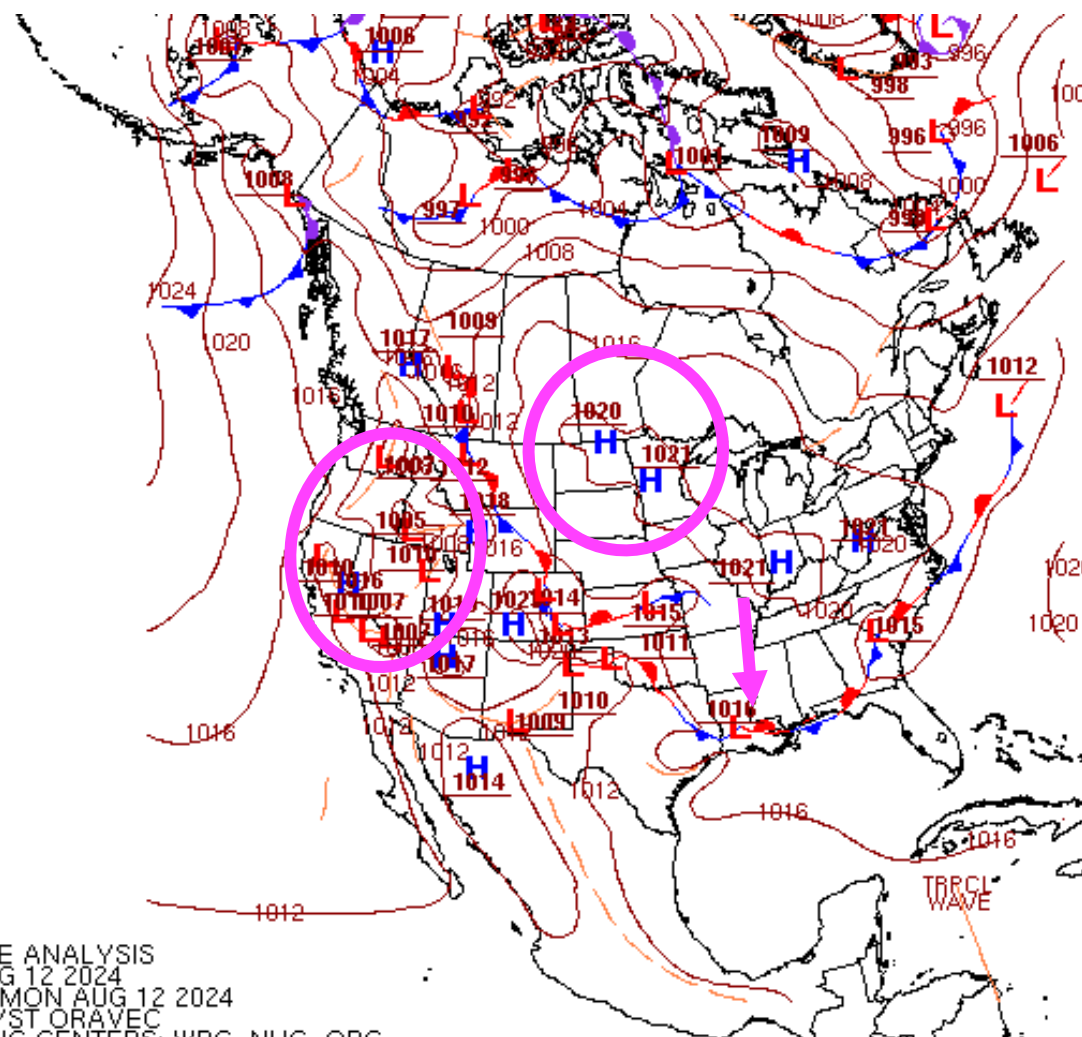
500 mb Contours



GFS 500mb Geopotential Height (dam) & MSLP (mb)

Init: 06z Aug 12 2024 Forecast Hour: [12] valid at 18z Mon, Aug 12 2024

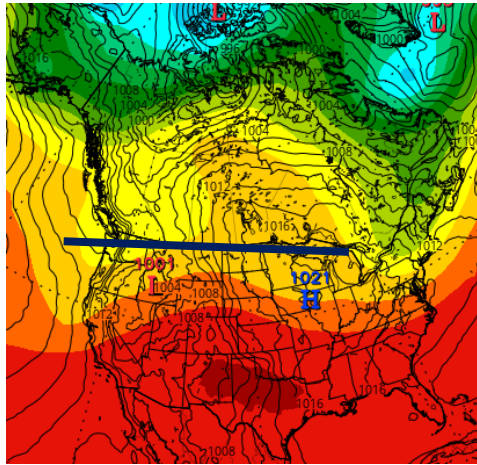
Surface Analysis



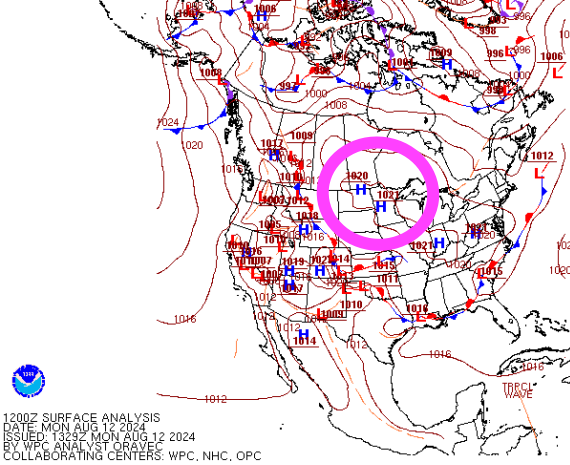
1200Z SURFACE ANALYSIS
DATE: MON AUG 12 2024
ISSUED: 1329Z MON AUG 12 2024
BY WPC ANALYST ORAVEC
COLLABORATING CENTERS: WPC, NHC, OPC

Current Status: August 12, 2024

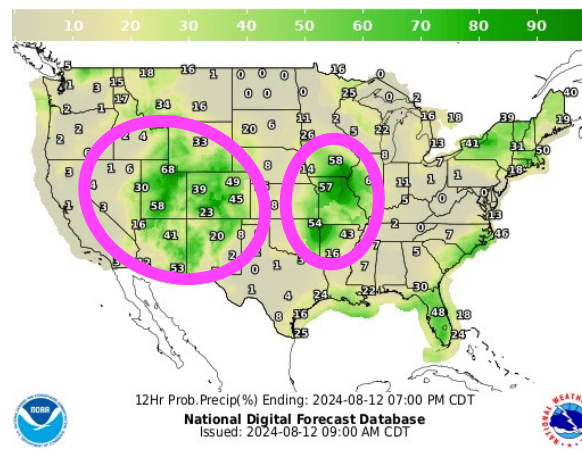
500 mb Contours



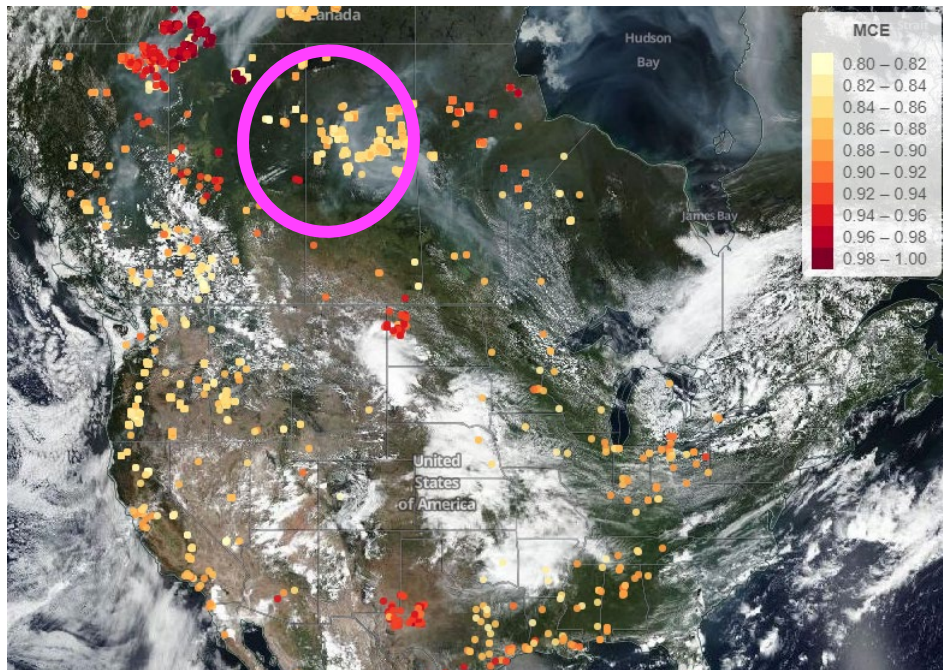
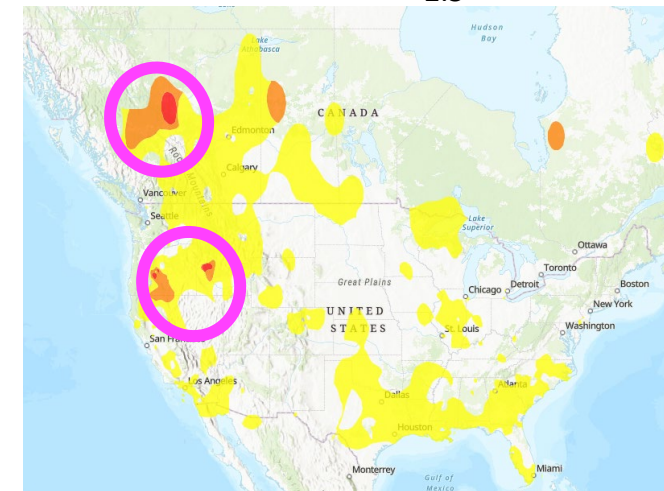
Surface Analysis



Precip. Prob.

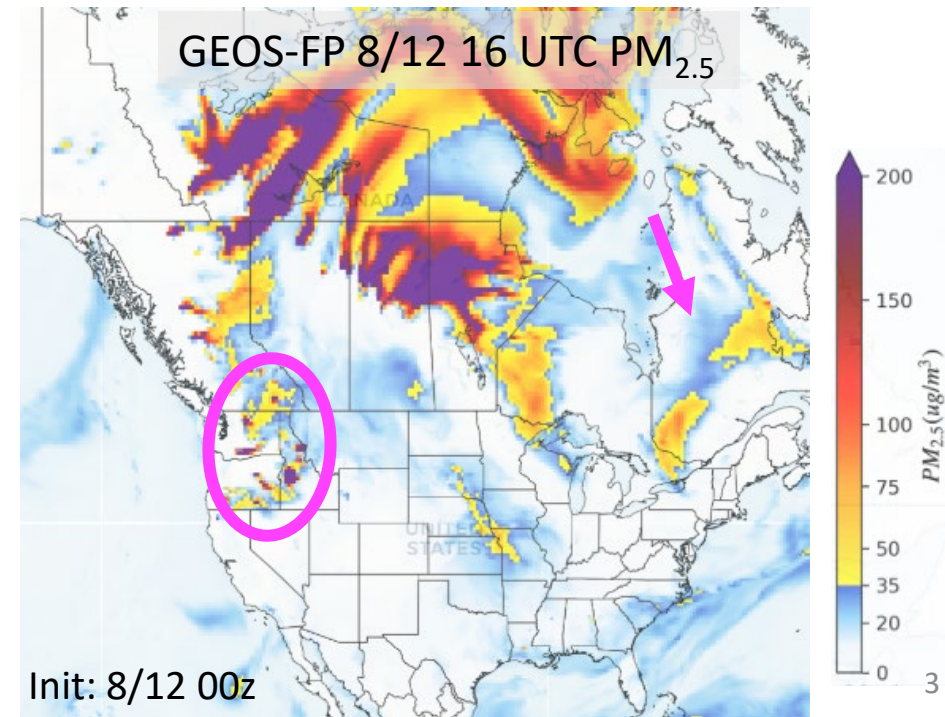


AirNow PM_{2.5} AQI



Sun 8/11

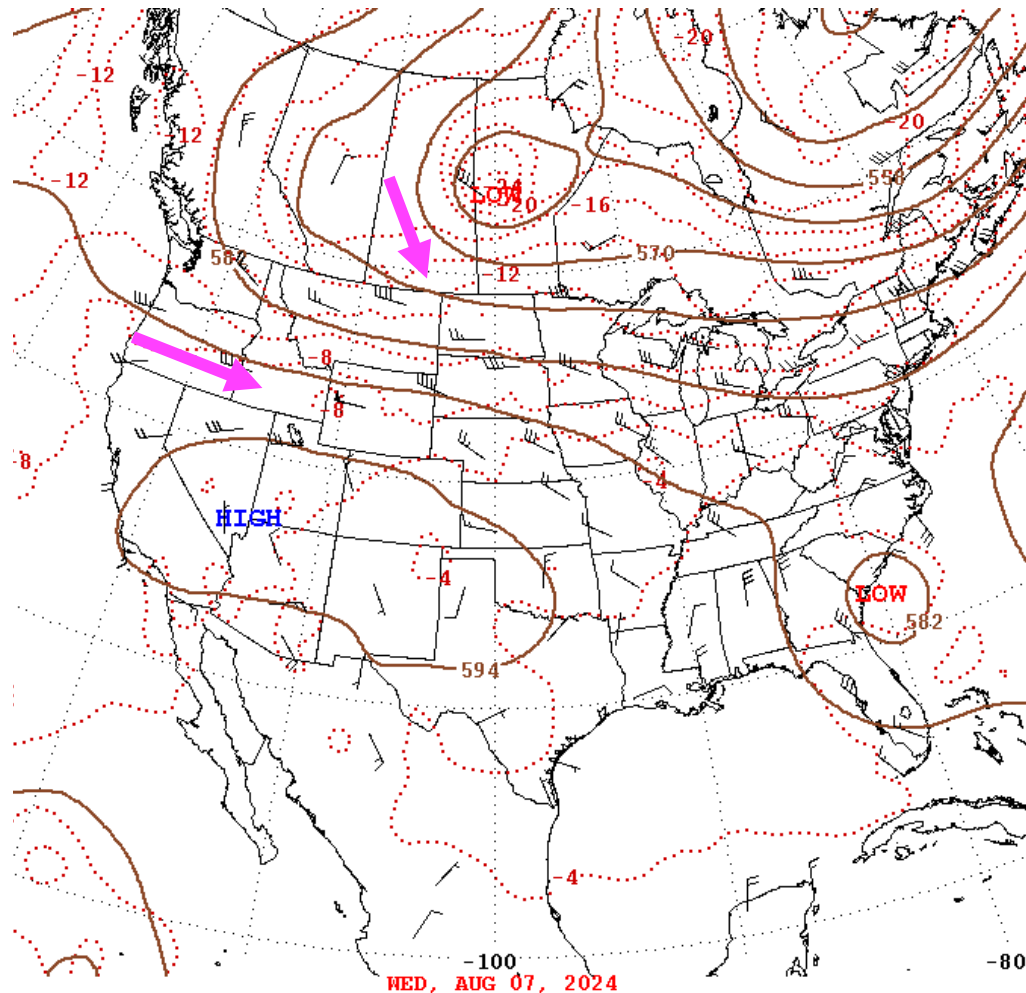
GEOS-FP 8/12 16 UTC PM_{2.5}



FILDA2 MCE http://esmc.uiowa.edu:3838/fires_detection/

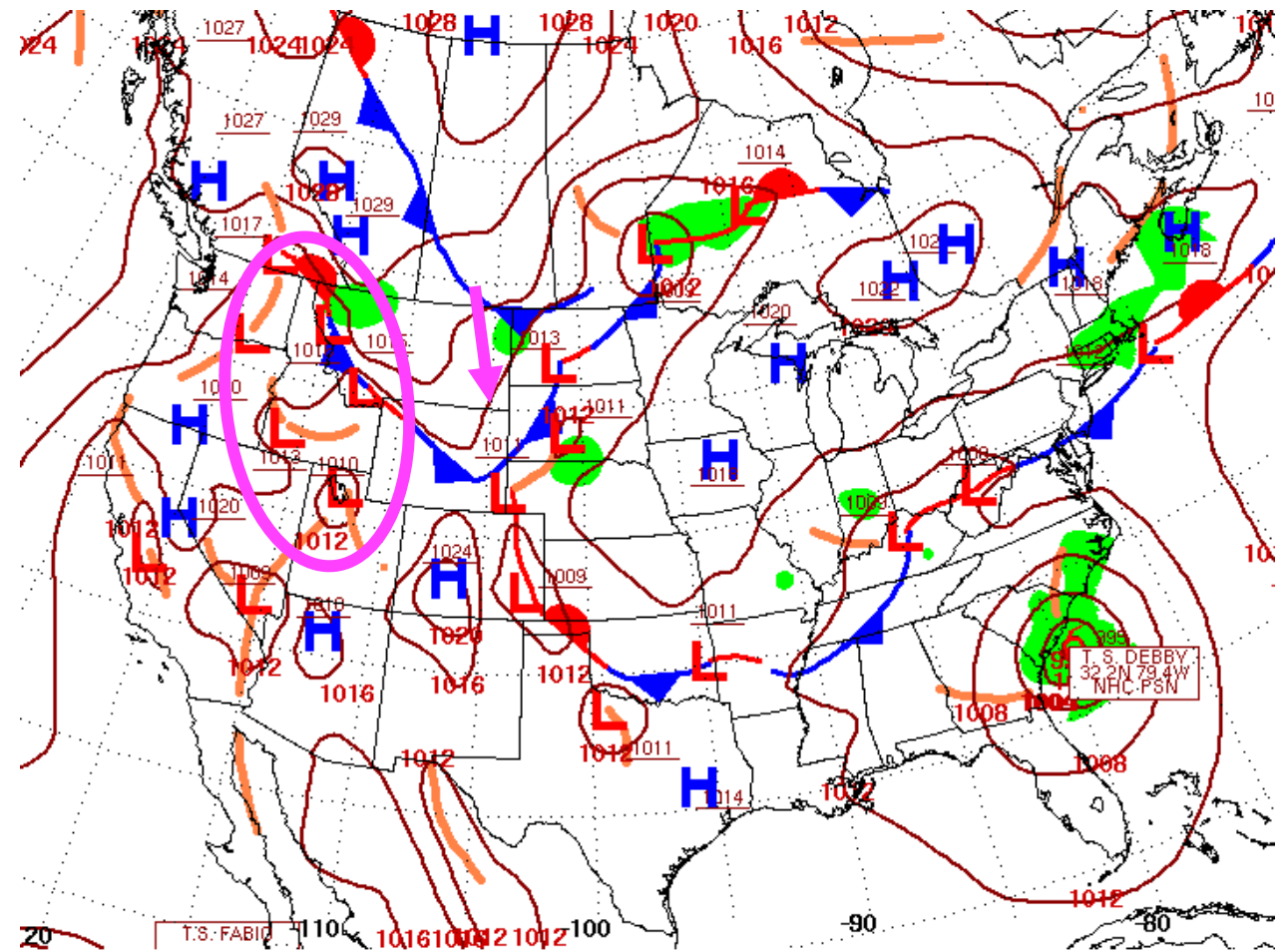
Air Quality Reflection: Wednesday August 7, 2024

500 mb Contours



500-Millibar Height Contours at 7:00 A.M. E.S.T.

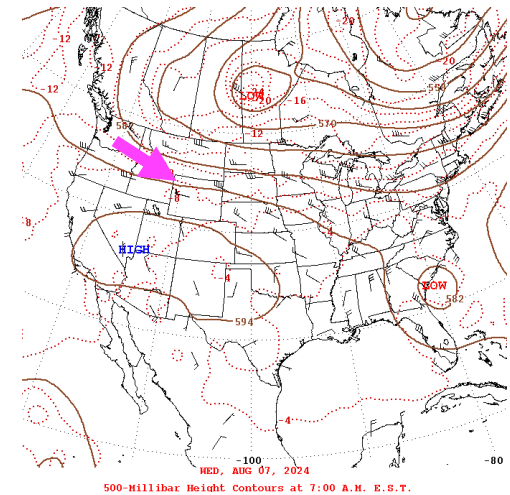
Surface Weather



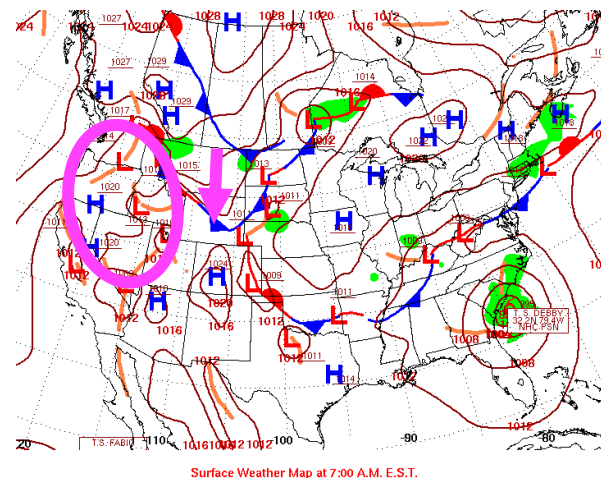
Surface Weather Map at 7:00 A.M. E.S.T.

Air Quality Reflection: Wednesday August 7, 2024

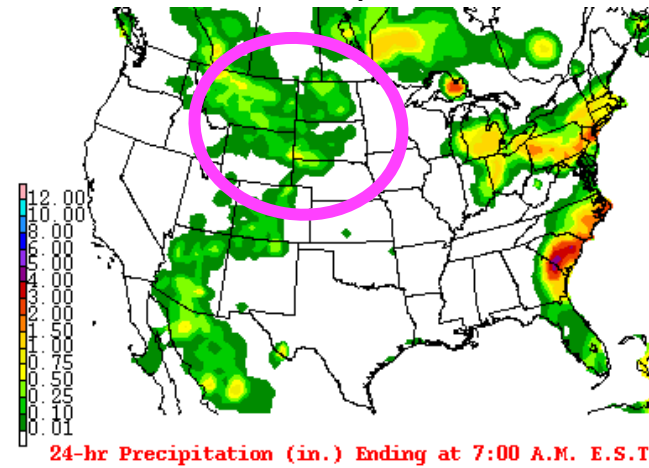
500 mb Contours



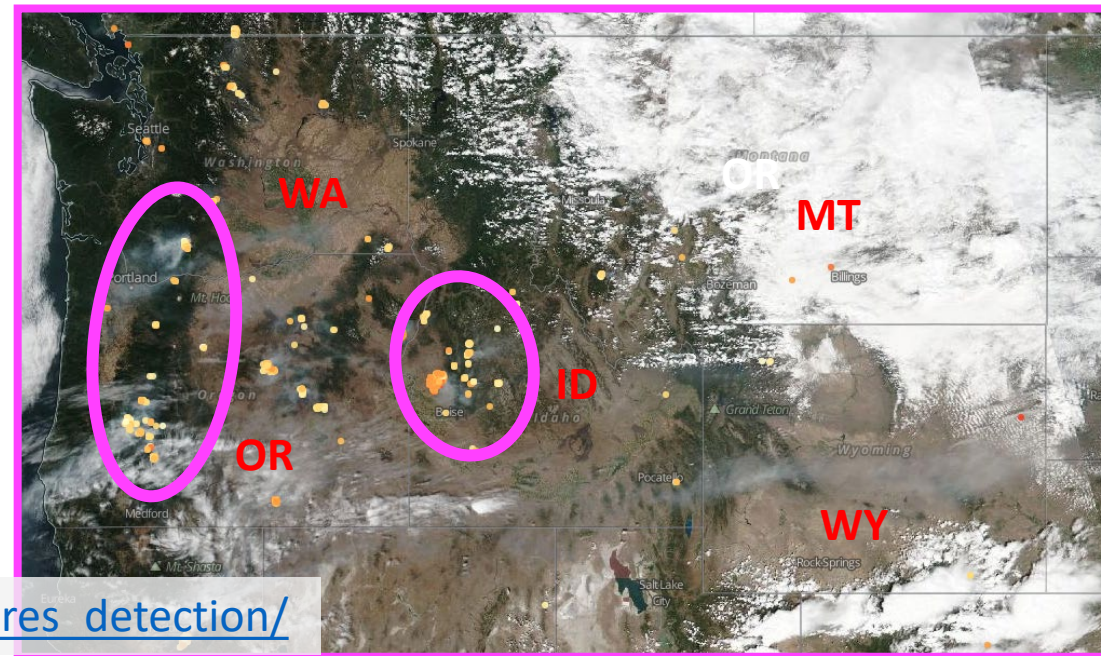
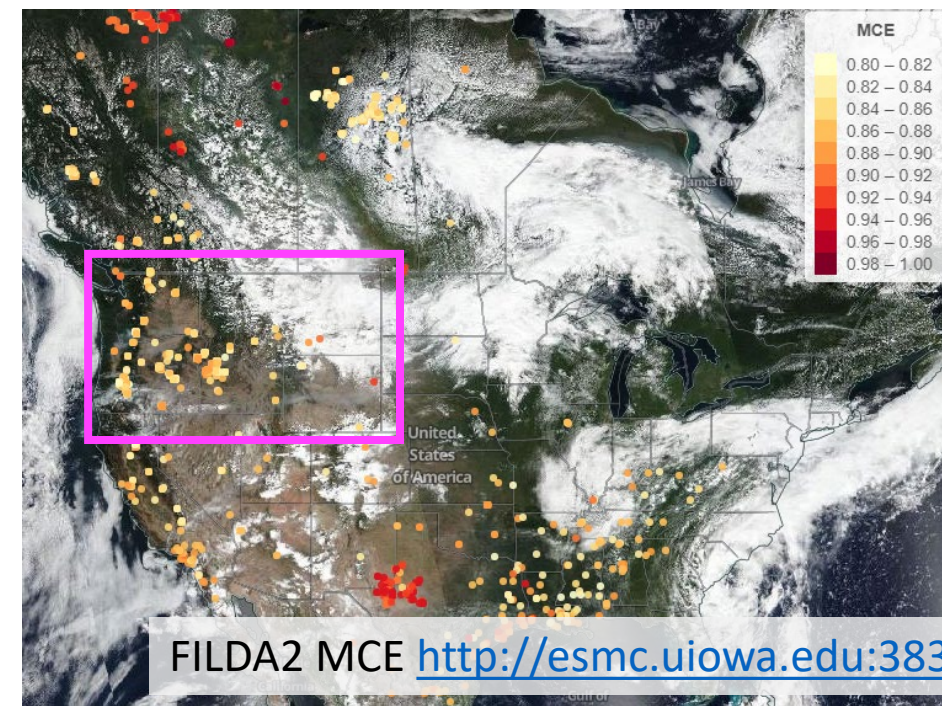
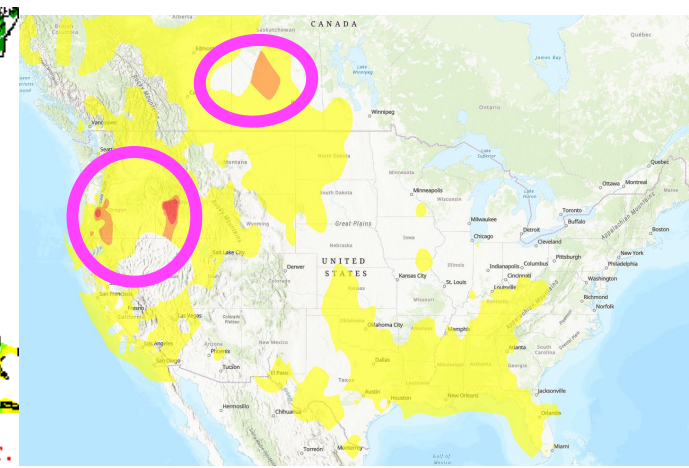
Surface Weather



Precipitation



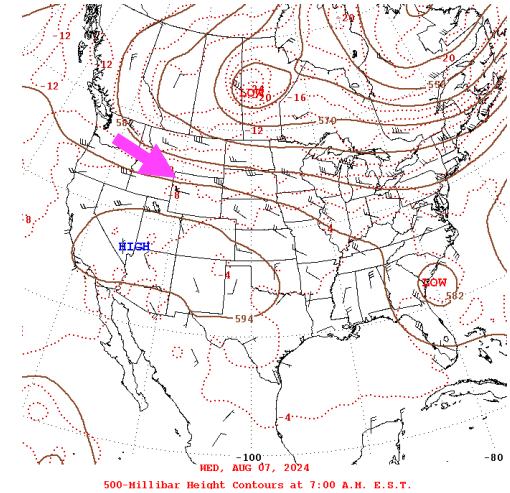
AirNow AQI



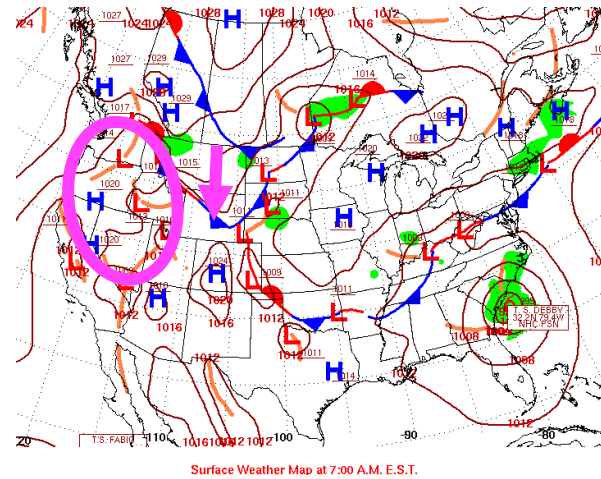
FILDA2 MCE http://esmc.uiowa.edu:3838/fires_detection/

Air Quality Reflection: Wednesday August 7, 2024

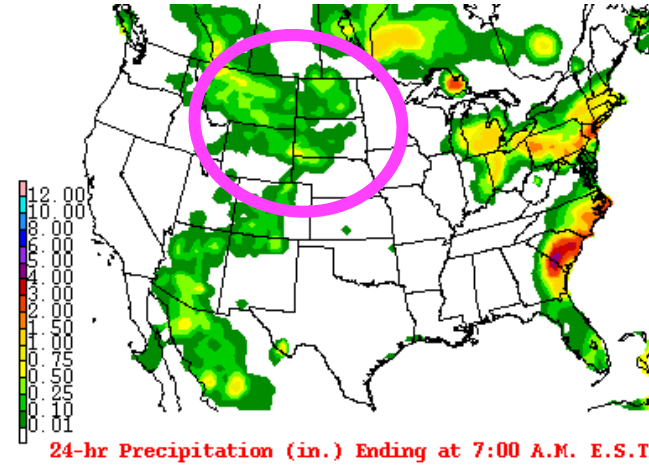
500 mb Contours



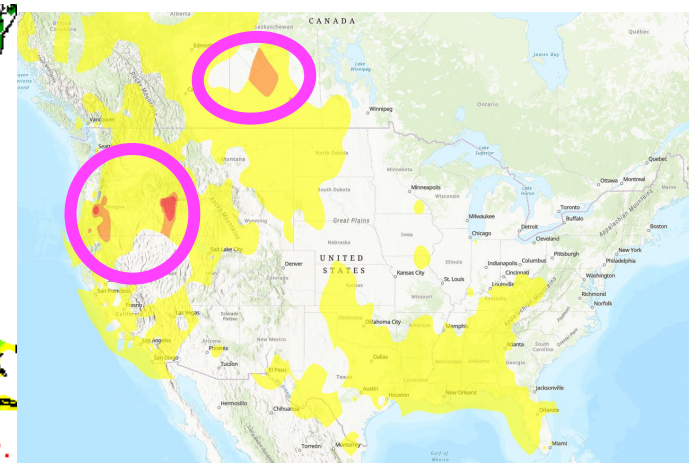
Surface Weather



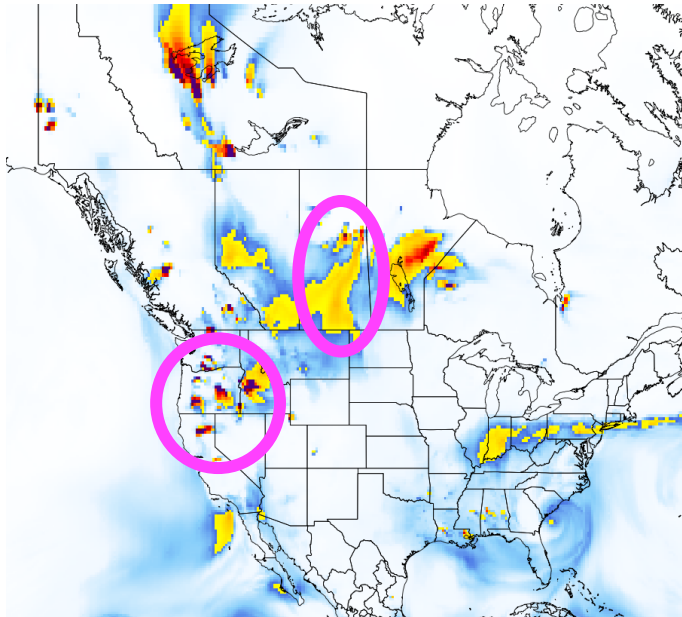
Precipitation



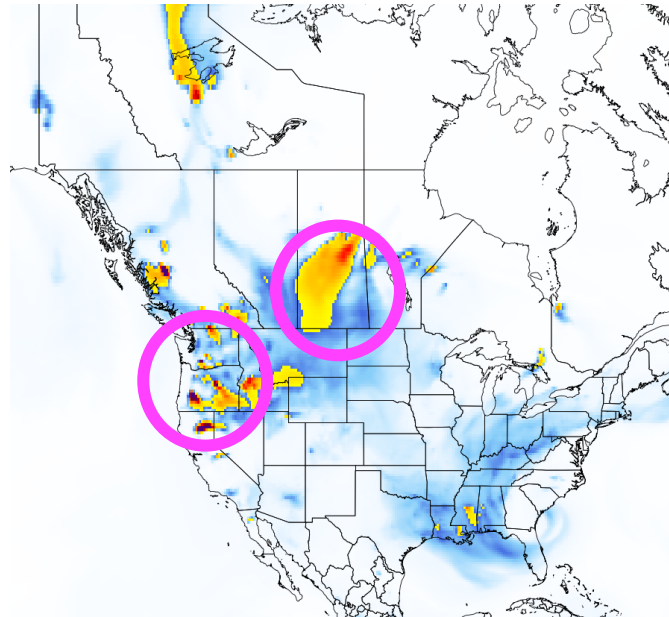
AirNow AQI



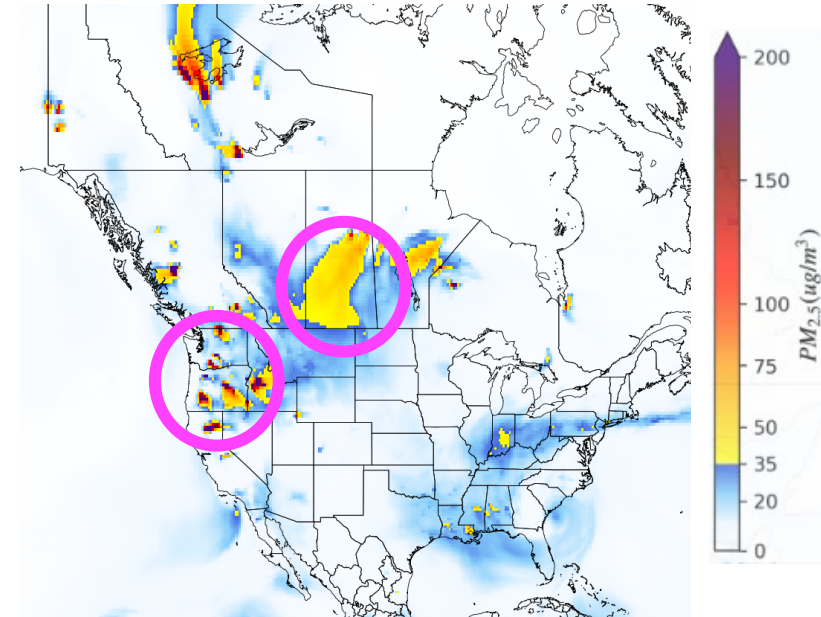
GEOS-FP



GEOS-CF

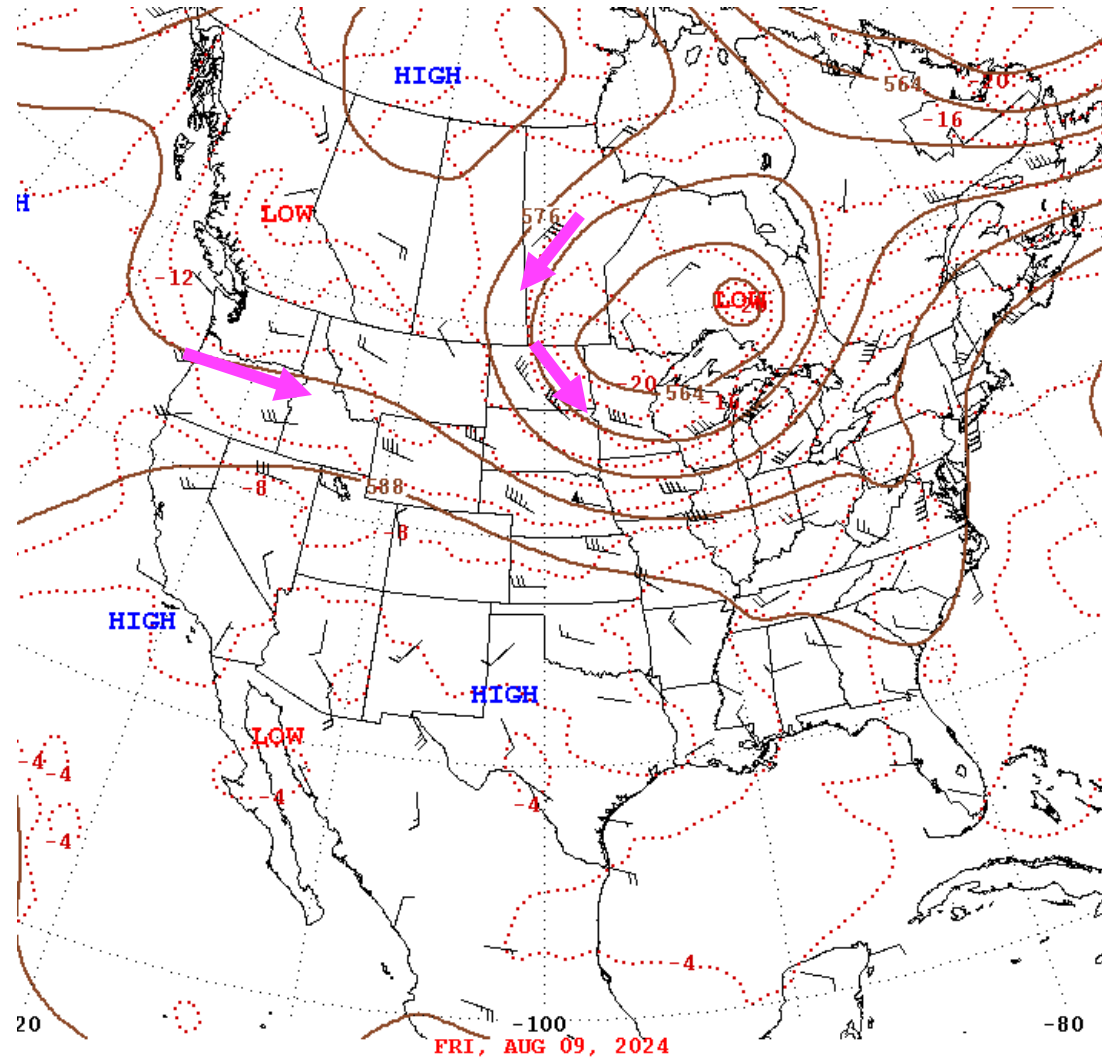


Ensemble

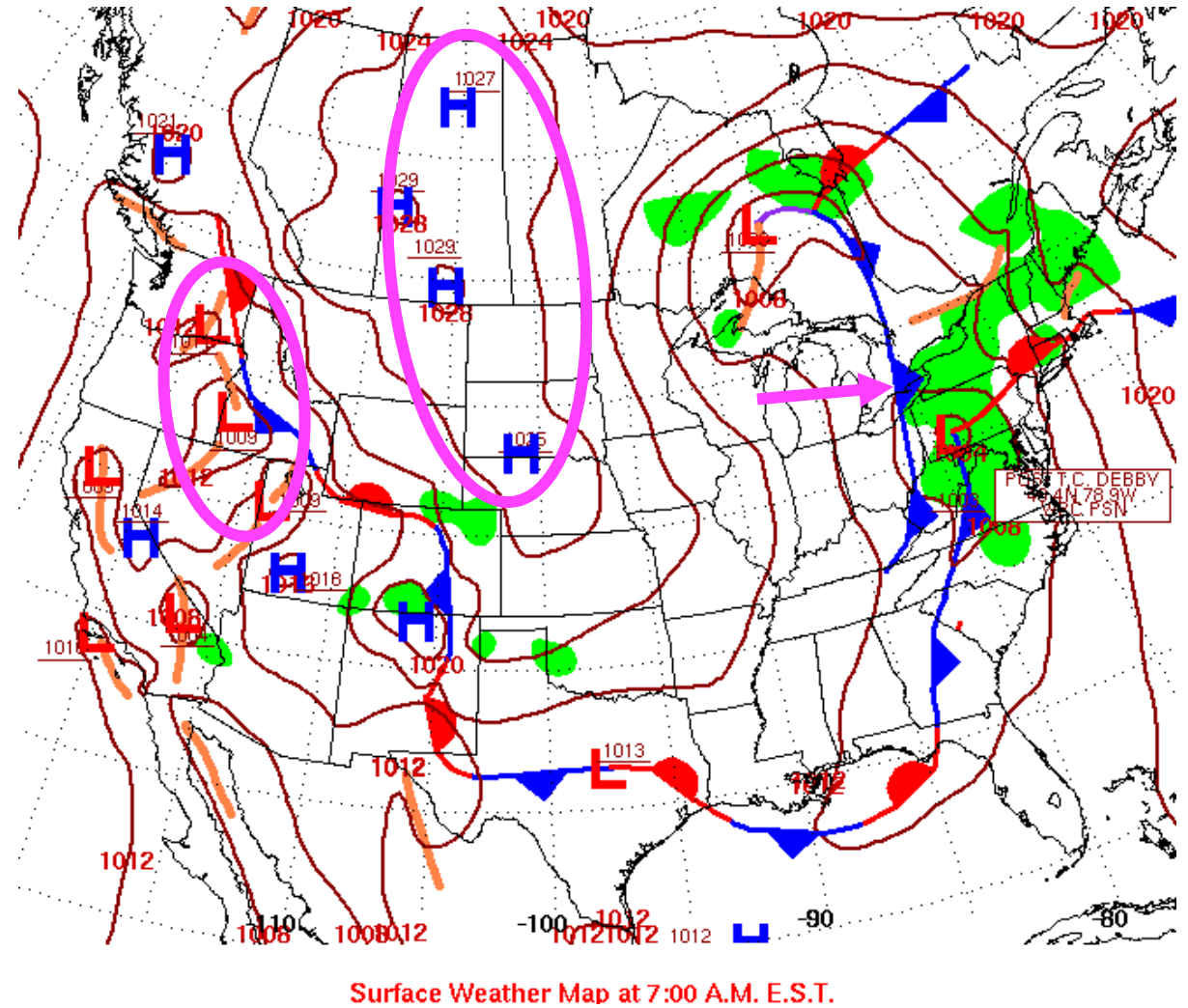


Air Quality Reflection: Friday August 9, 2024

500 mb Contours

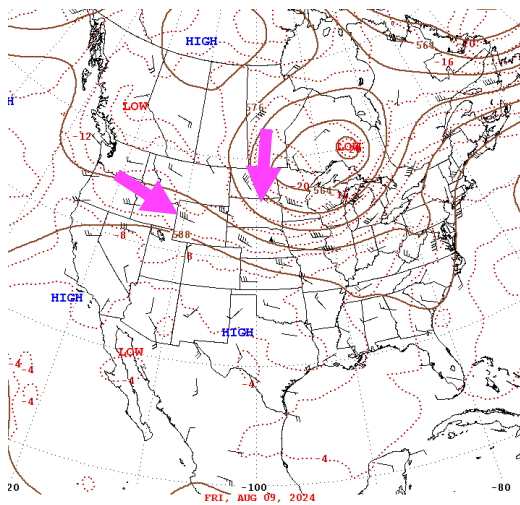


Surface Weather

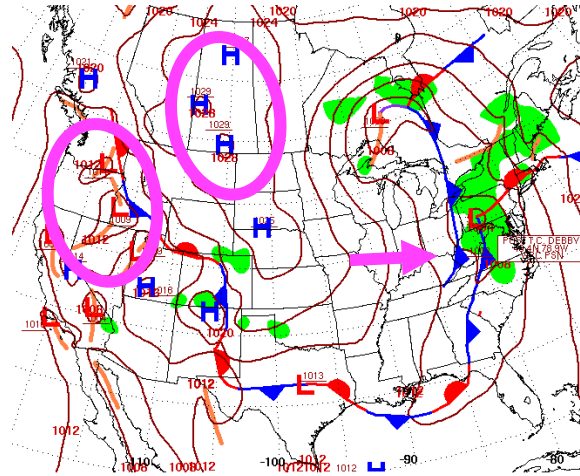


Air Quality Reflection: Friday August 9, 2024

500 mb Contours



Surface Weather



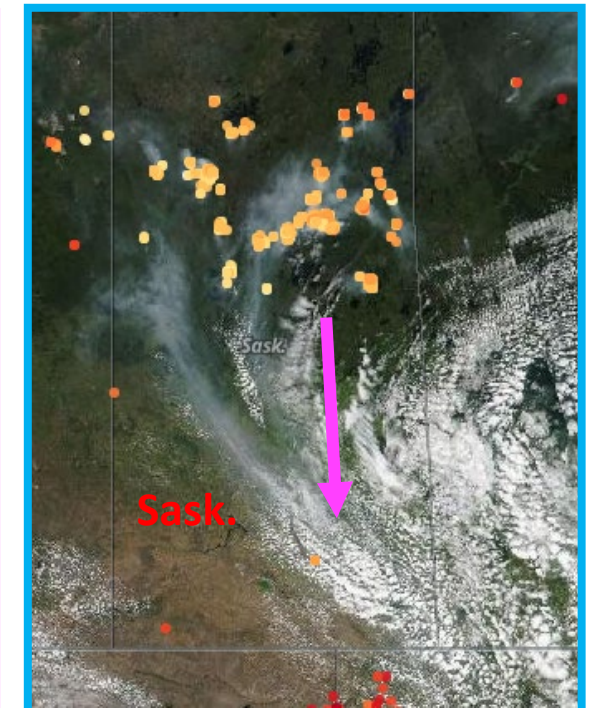
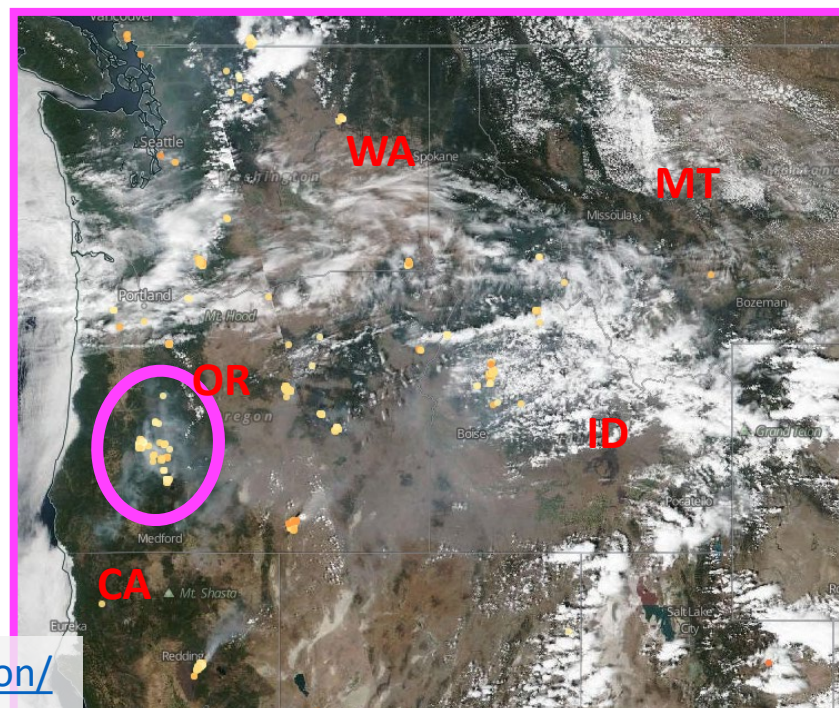
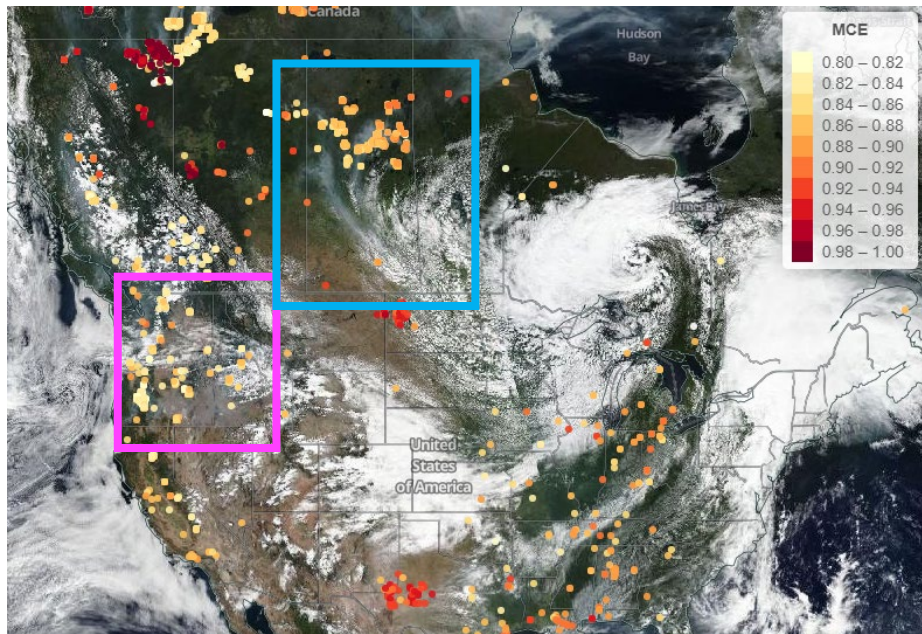
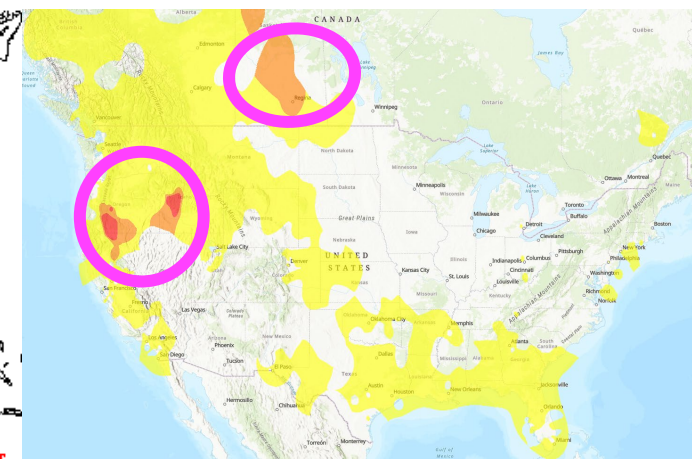
Surface Weather Map at 7:00 A.M. E.S.T.

Precipitation



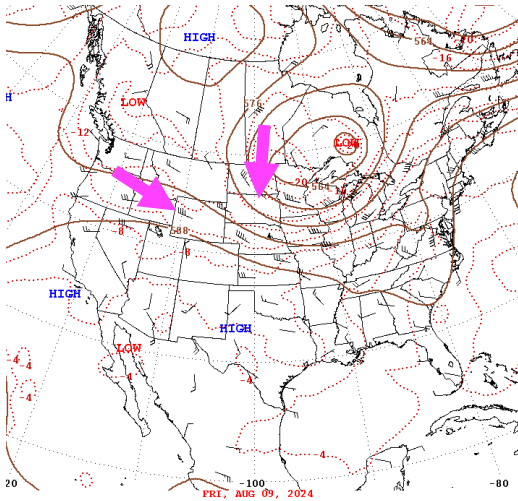
24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

AirNow AQI

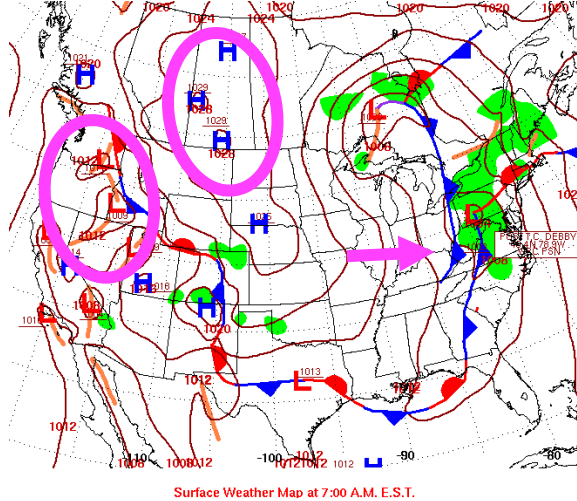


Air Quality Reflection: Friday August 9, 2024

500 mb Contours



Surface Weather

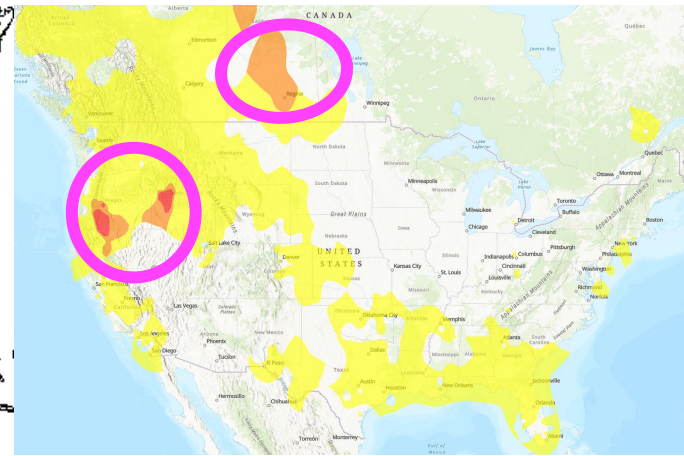


Precipitation

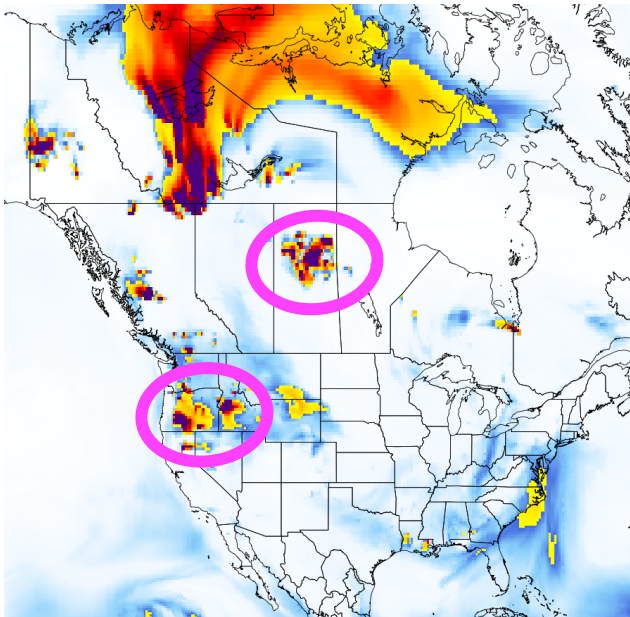


24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

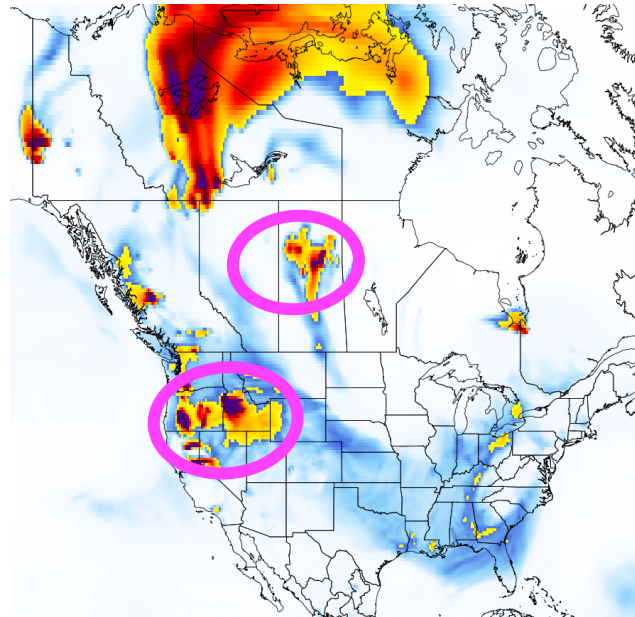
AirNow AQI



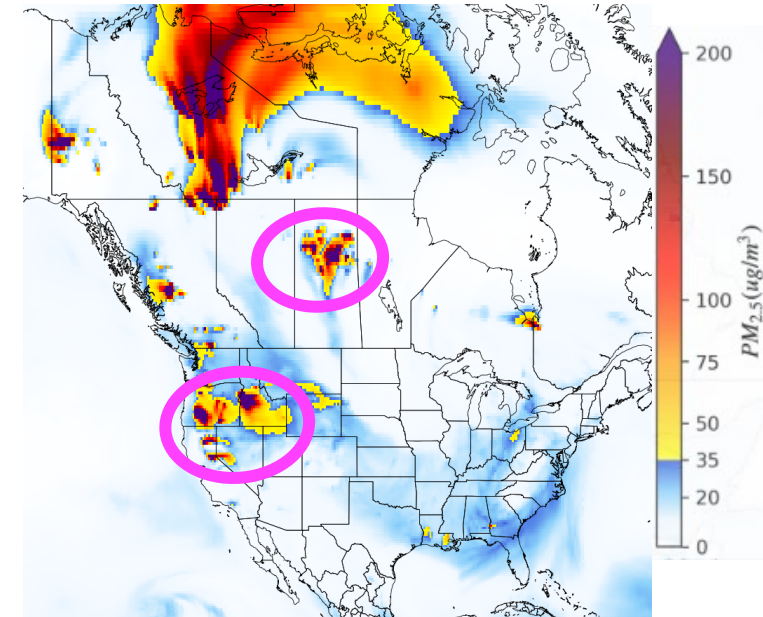
GEOS-FP



GEOS-CF

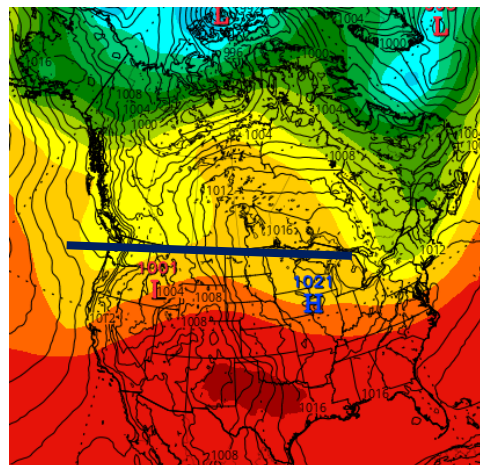


Ensemble

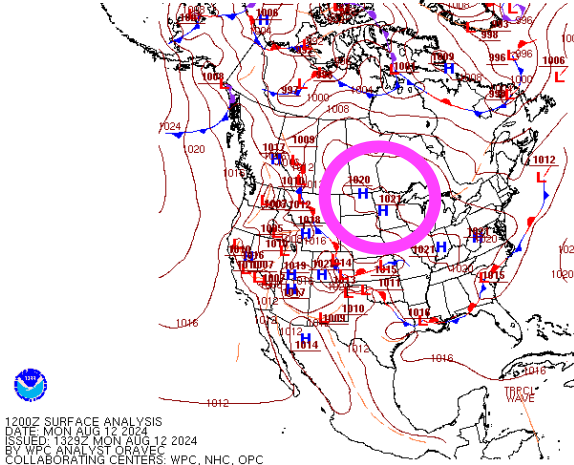


Current Status: August 12, 2024

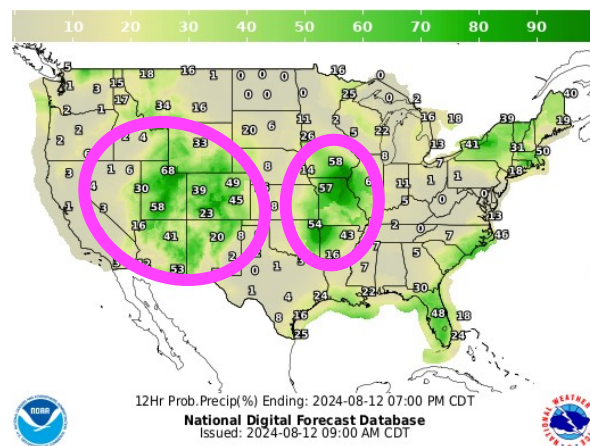
500 mb Contours



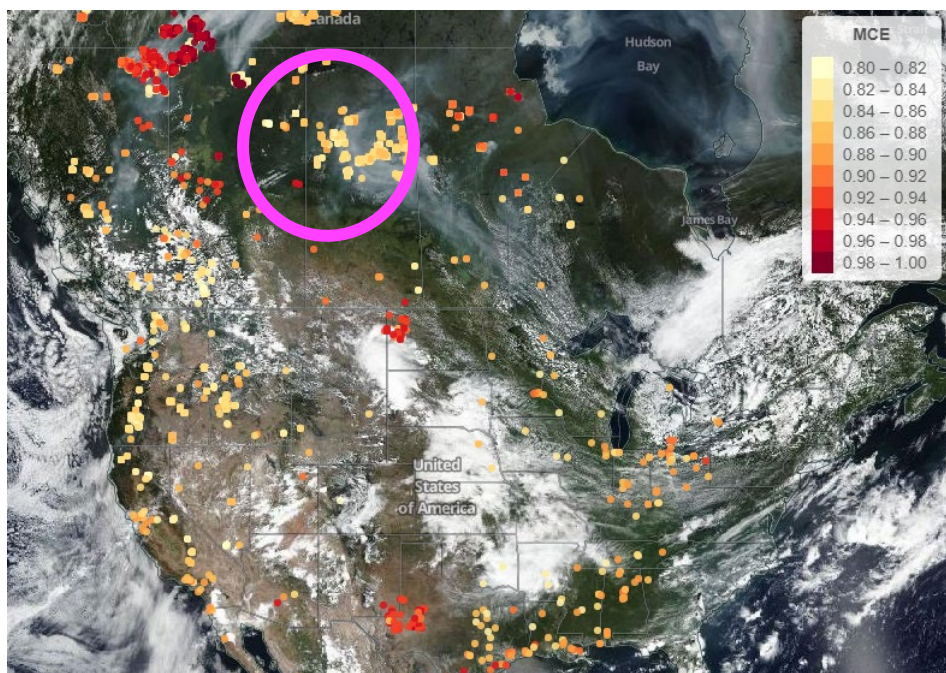
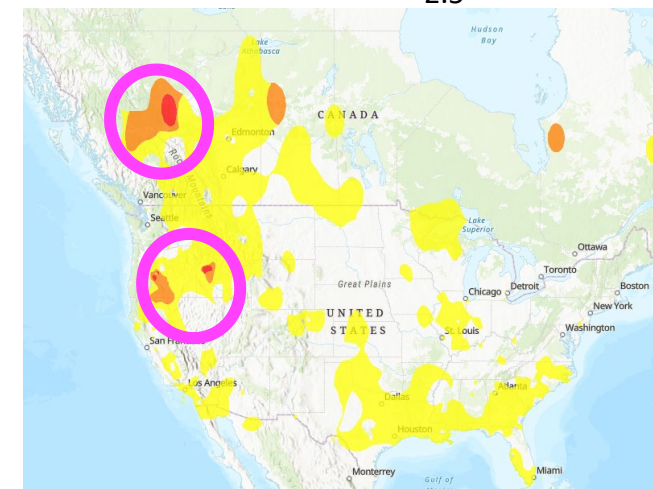
Surface Analysis



Precip. Prob.

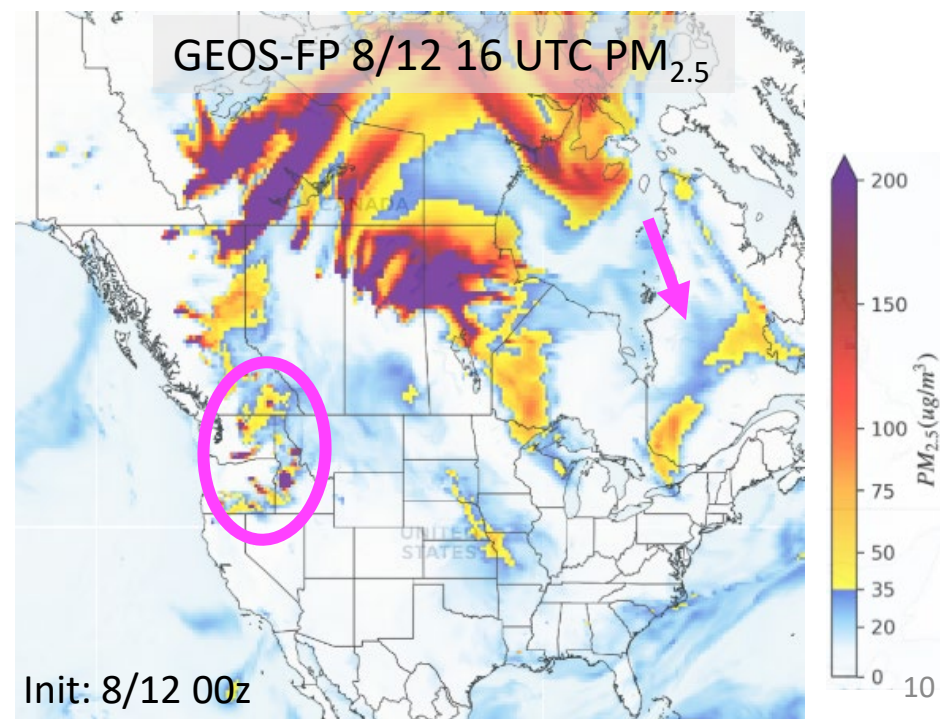


AirNow PM_{2.5} AQI



Sun 8/11

GEOS-FP 8/12 16 UTC PM_{2.5}

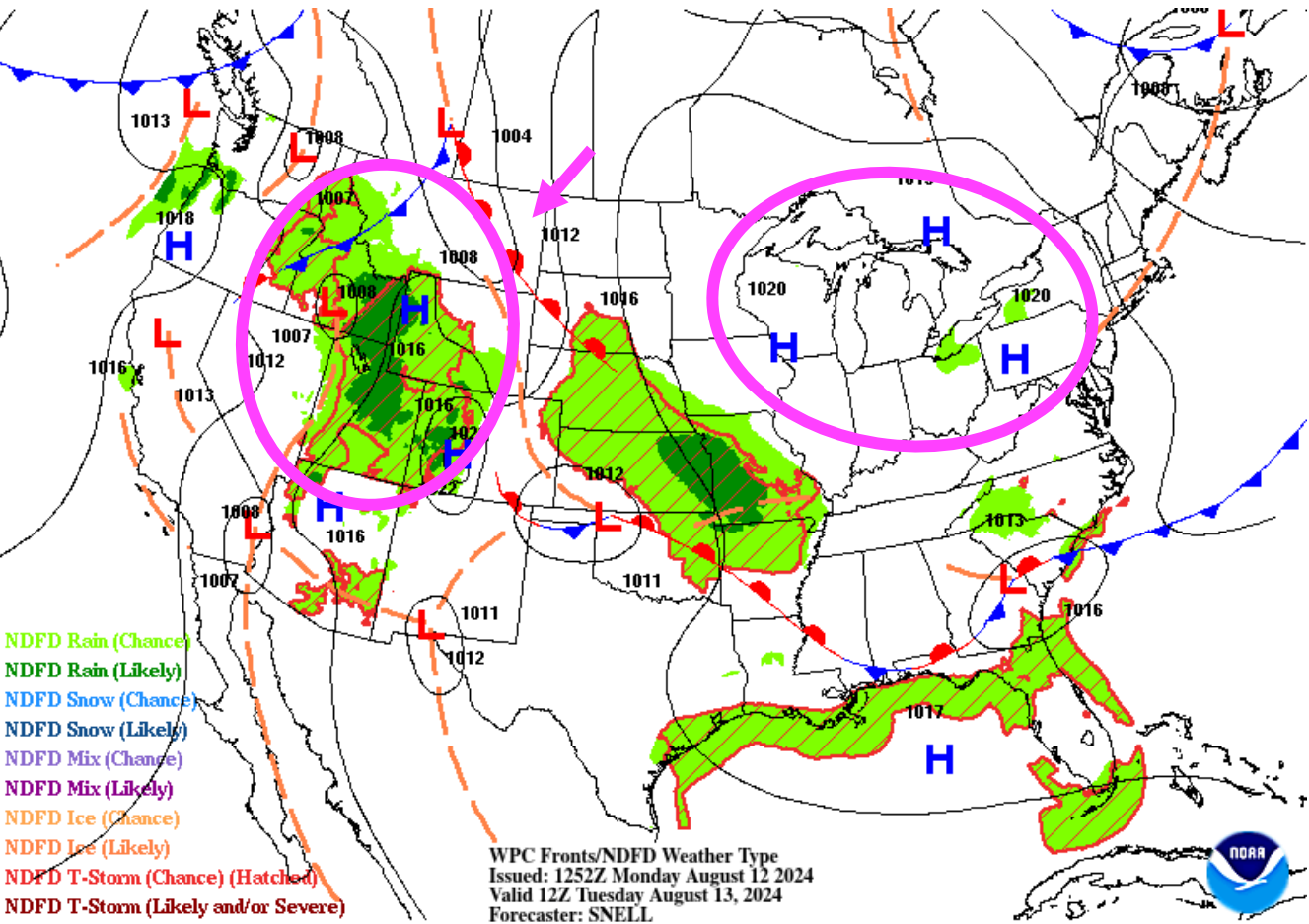


FILDA2 MCE http://esmc.uiowa.edu:3838/fires_detection/

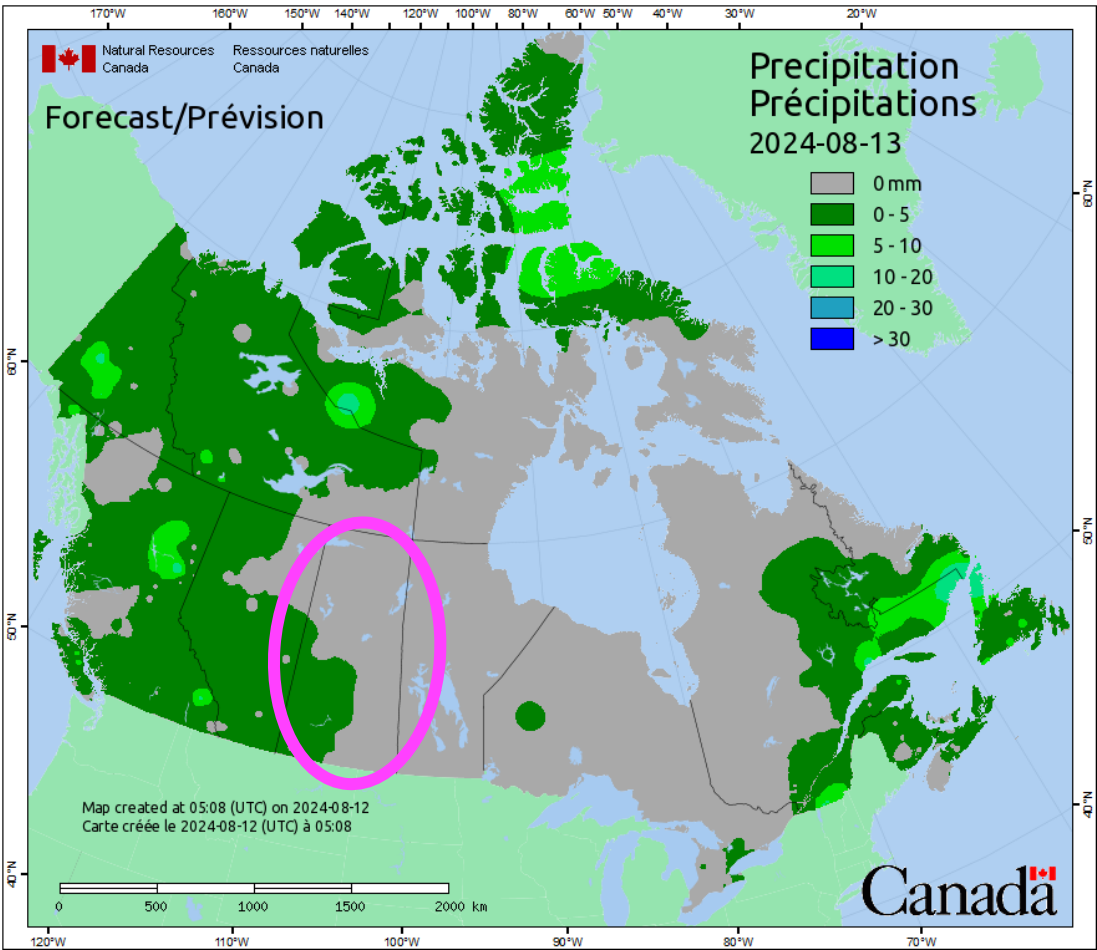
Outlook: Short Range (1–3 days)

Surface Forecast (Tuesday 8/13)

US NWS Forecast

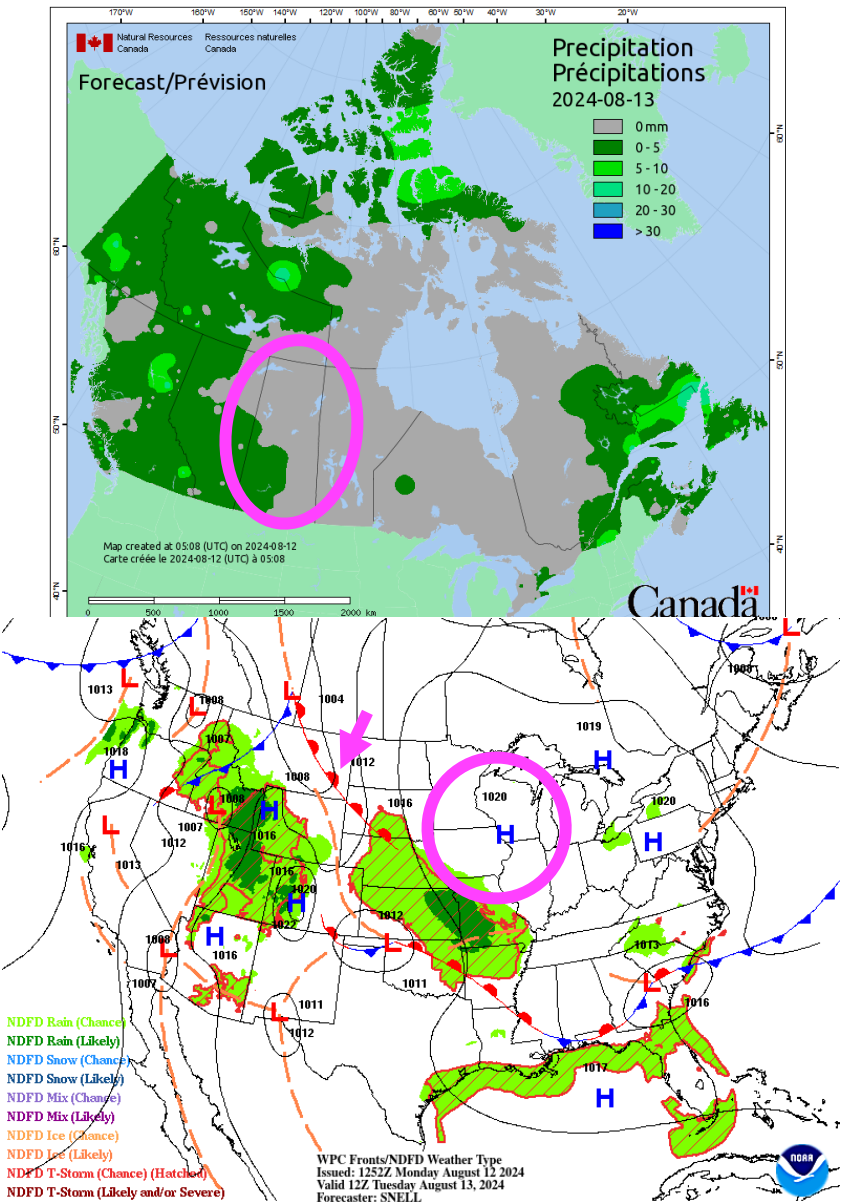


Environment Canada Forecast



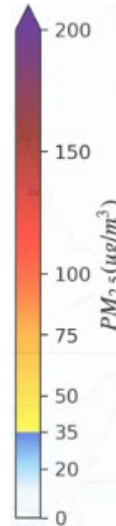
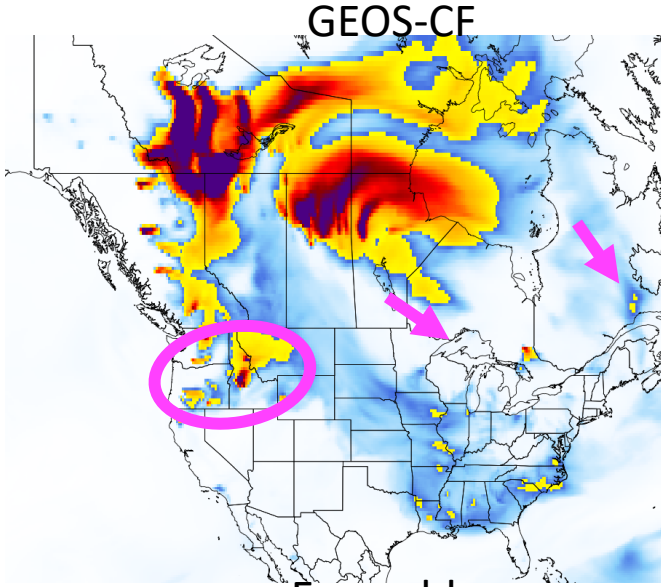
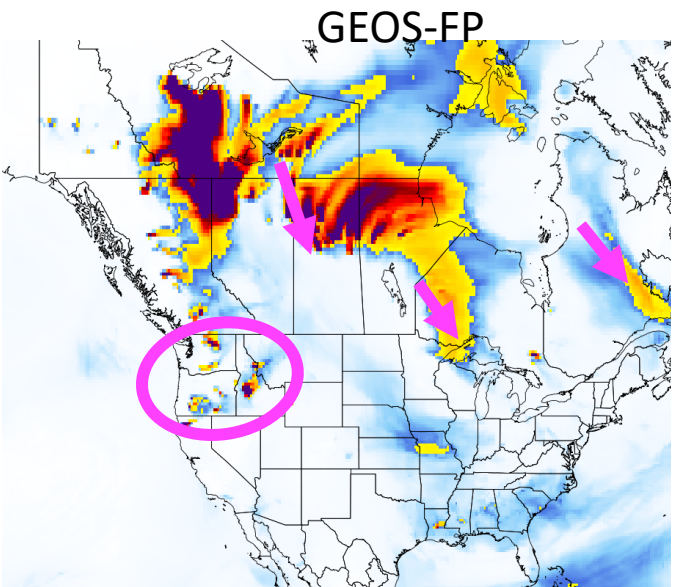
Outlook: Short Range (1–3 days)

Surface Forecast

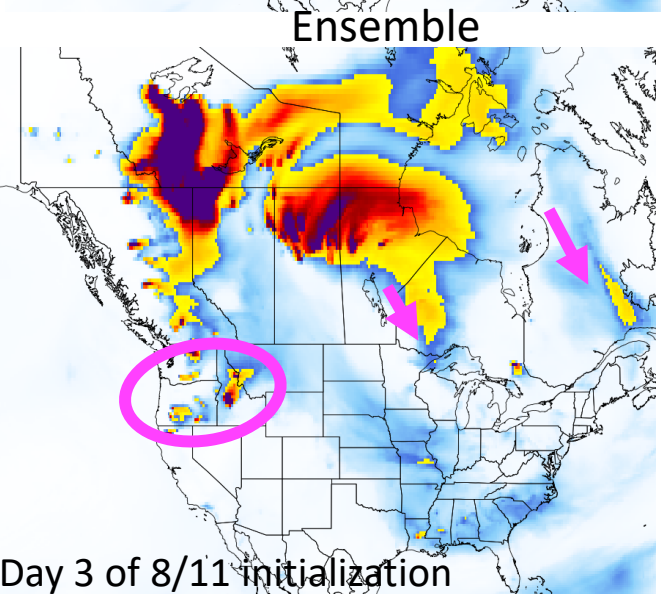
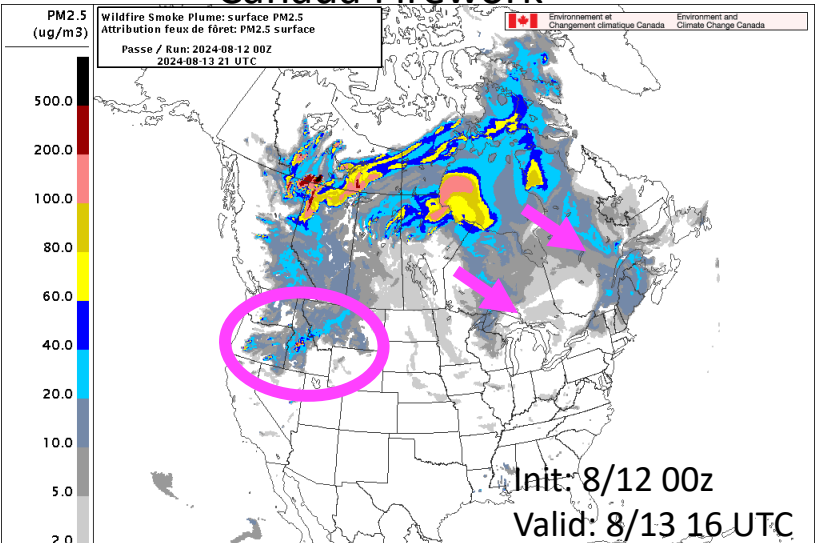


(Tuesday 8/13)

Model Means PM_{2.5}



Canada Firework

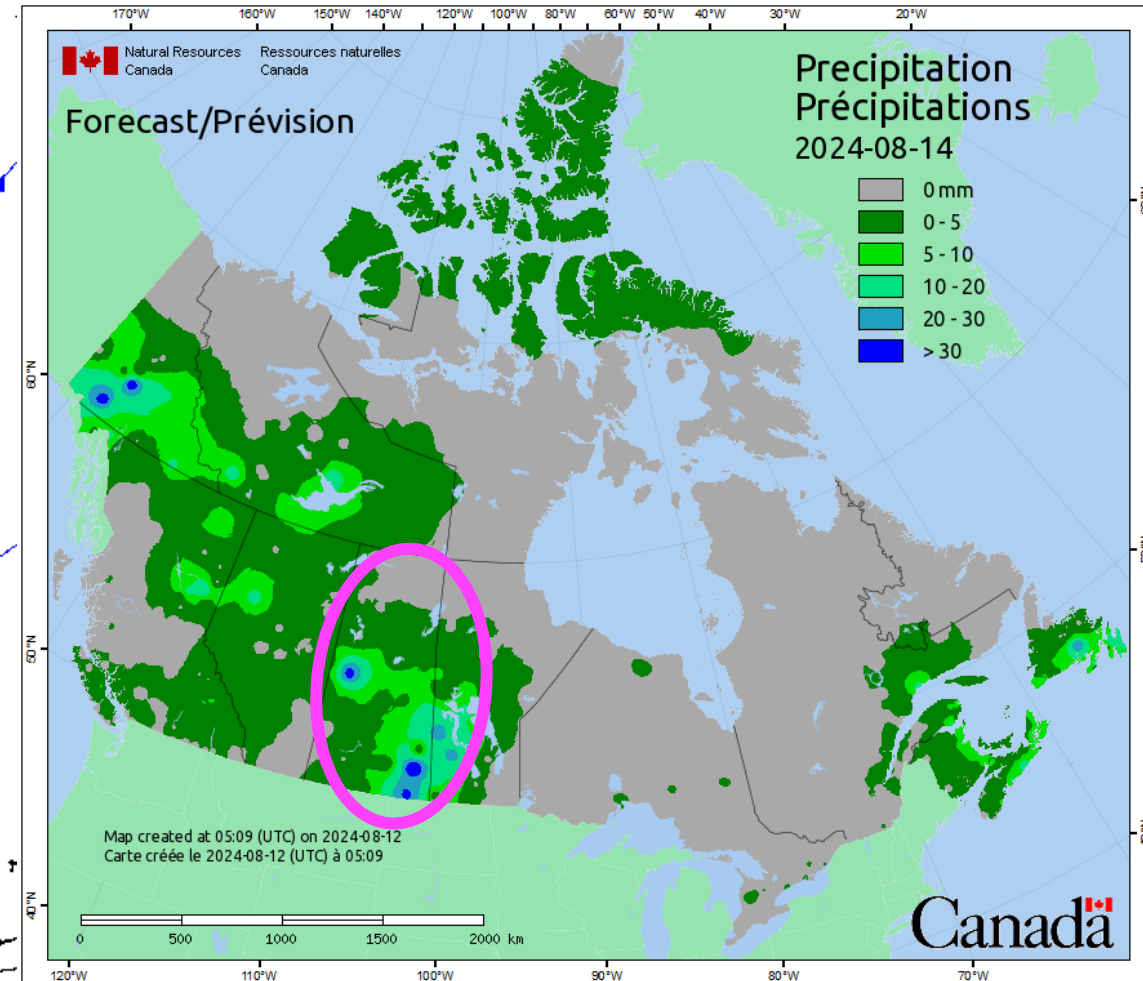
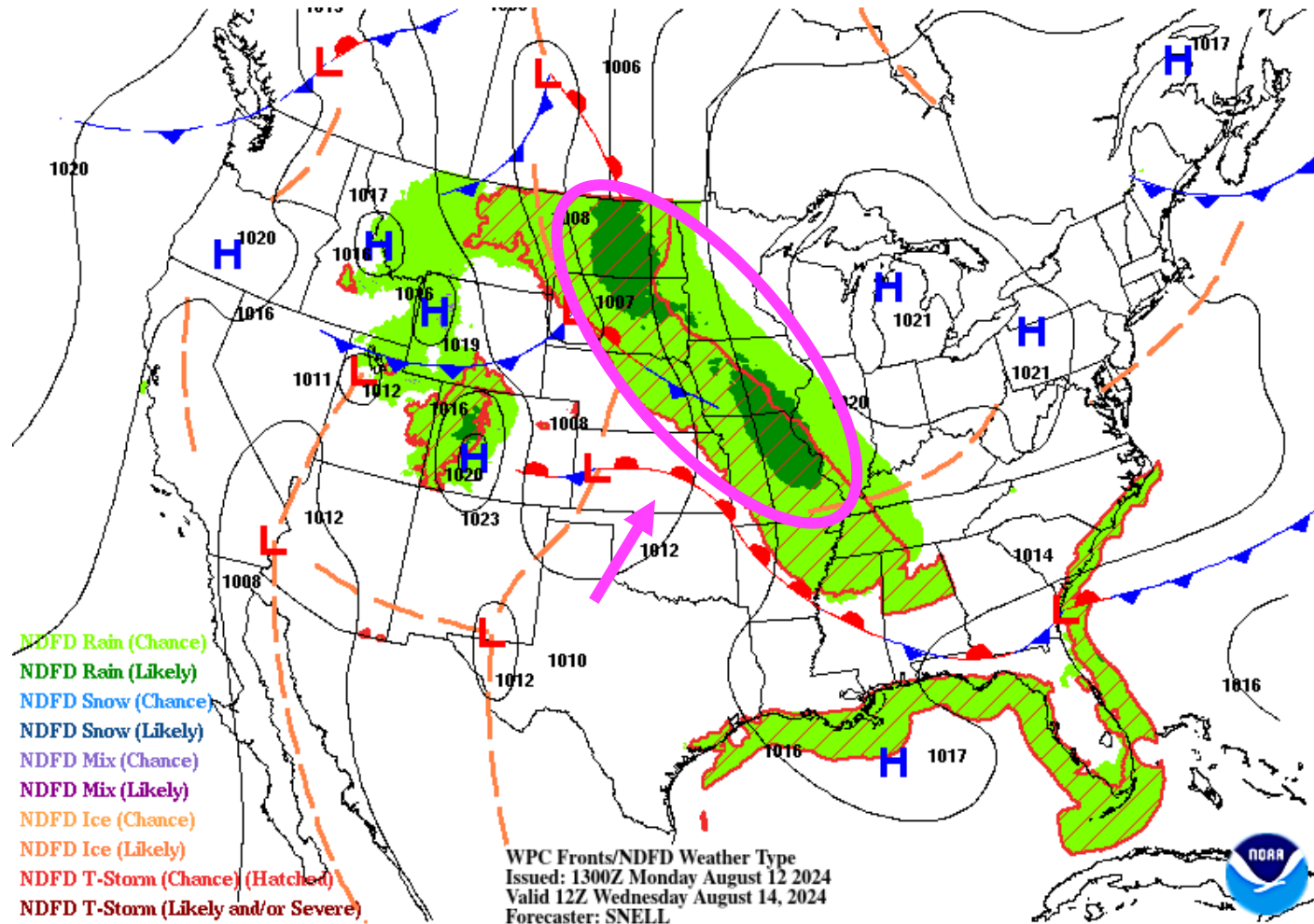


Outlook: Short Range (1–3 days)

Surface Forecast (**Wednesday 8/14**)

US NWS Forecast

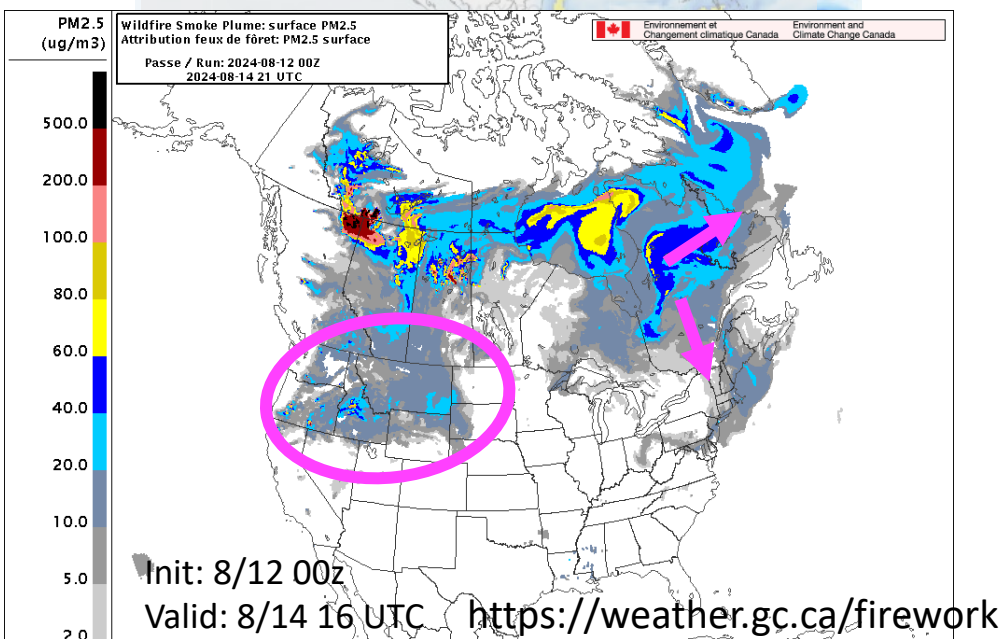
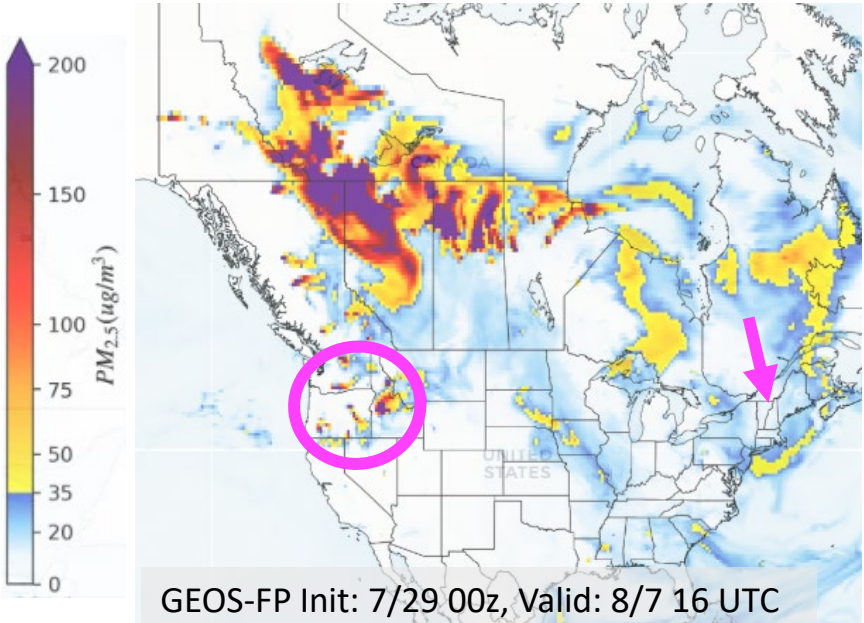
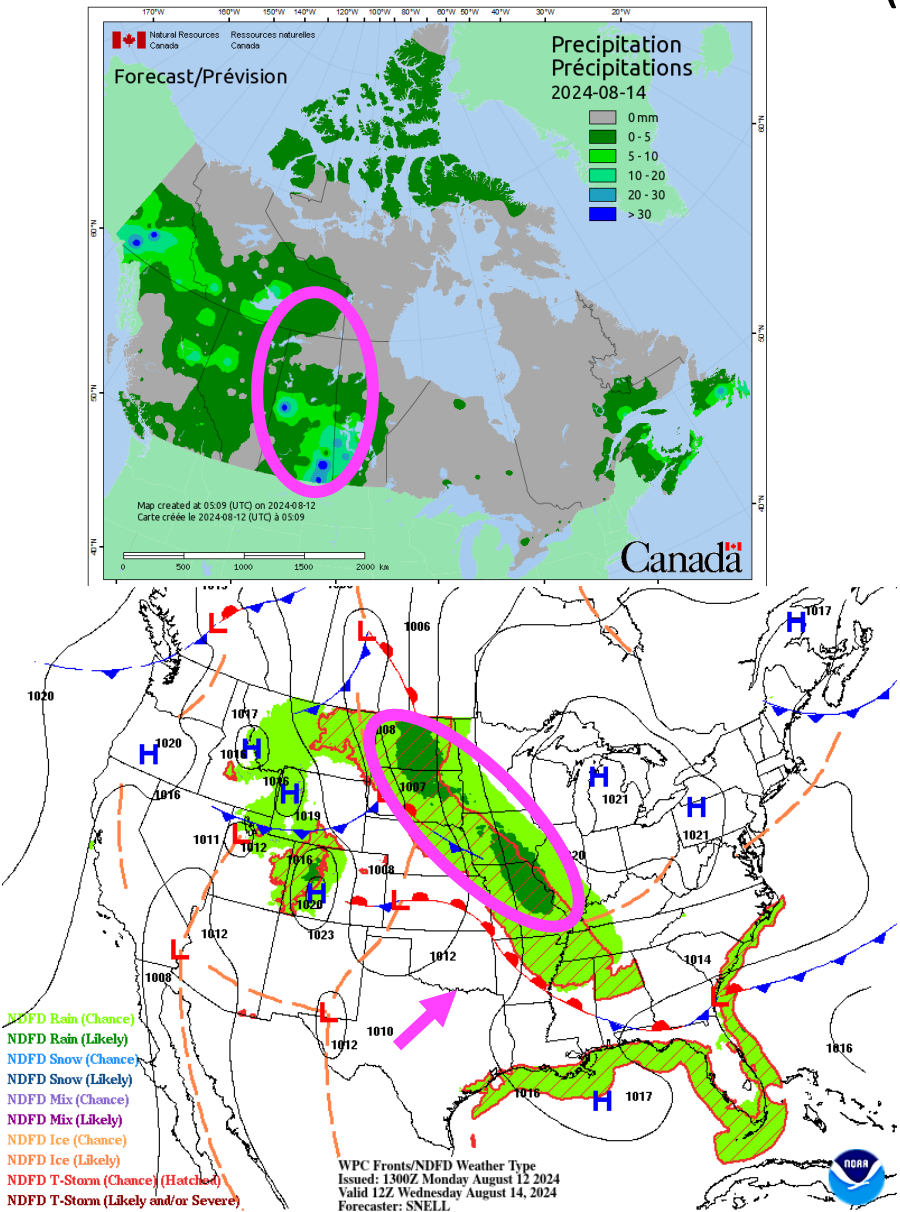
Environment Canada Forecast



Outlook: Short Range (1–3 days)

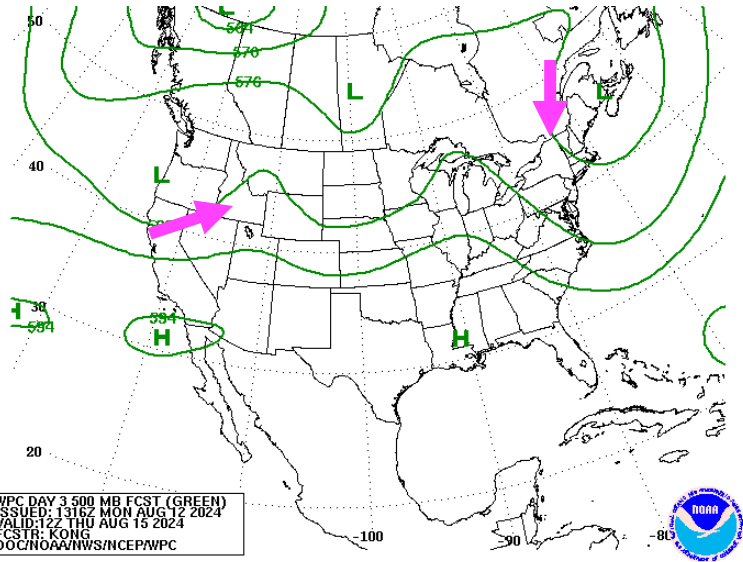
Surface Forecast

(Wednesday 8/7)

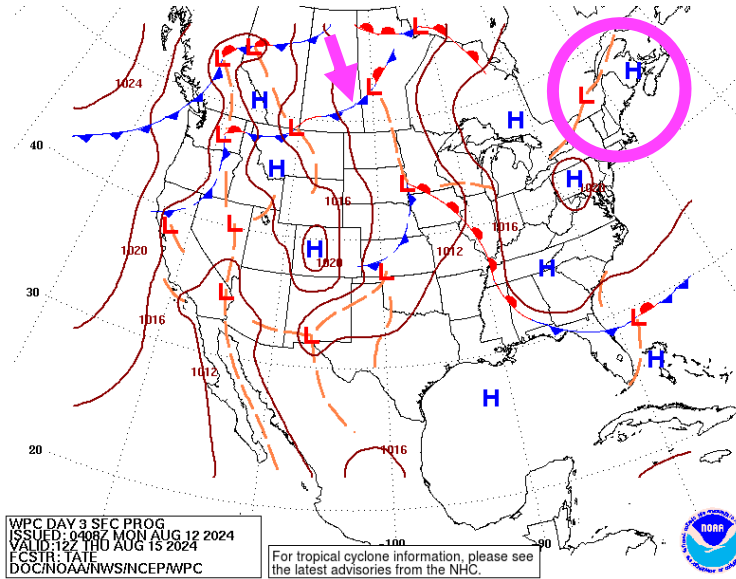


Outlook: Medium Range

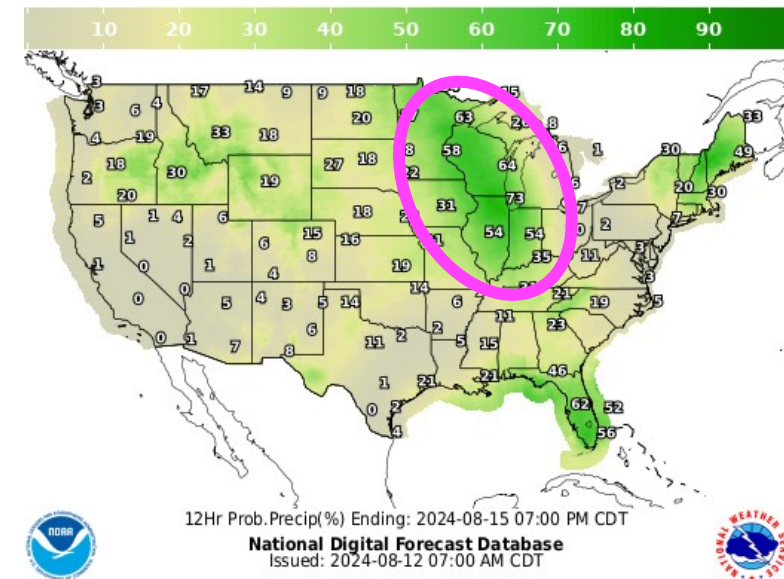
500 mb Contours



Sea Level

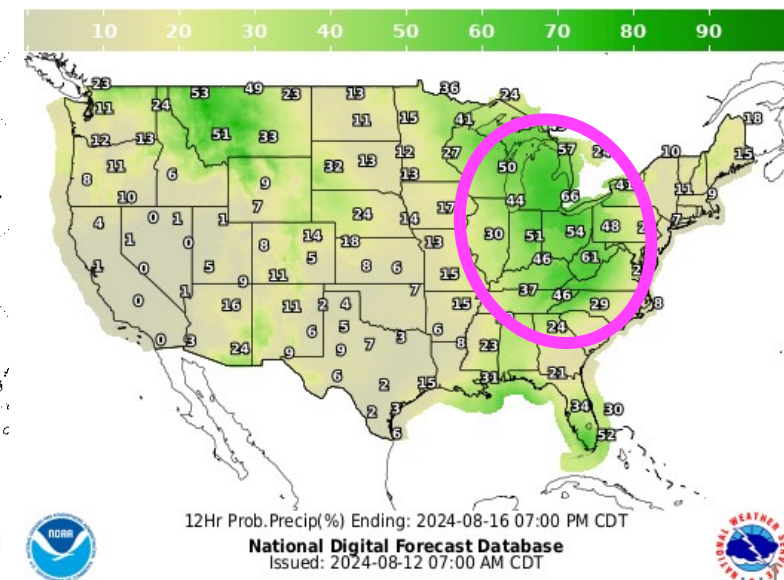
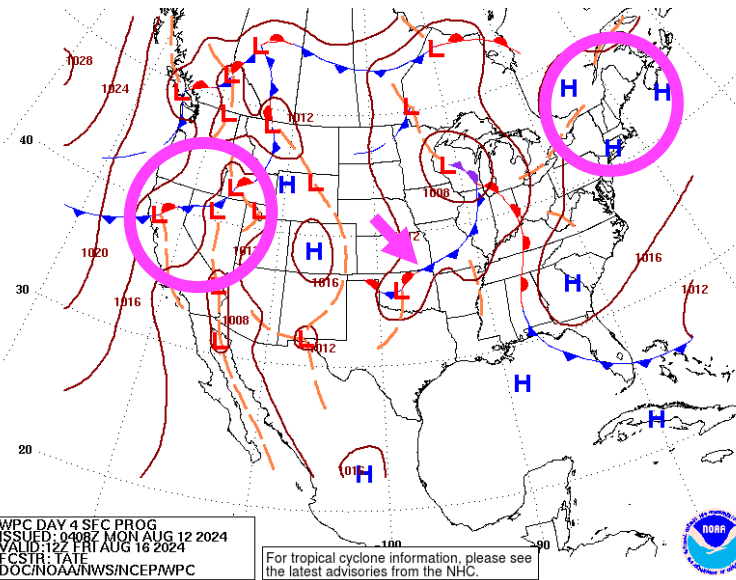
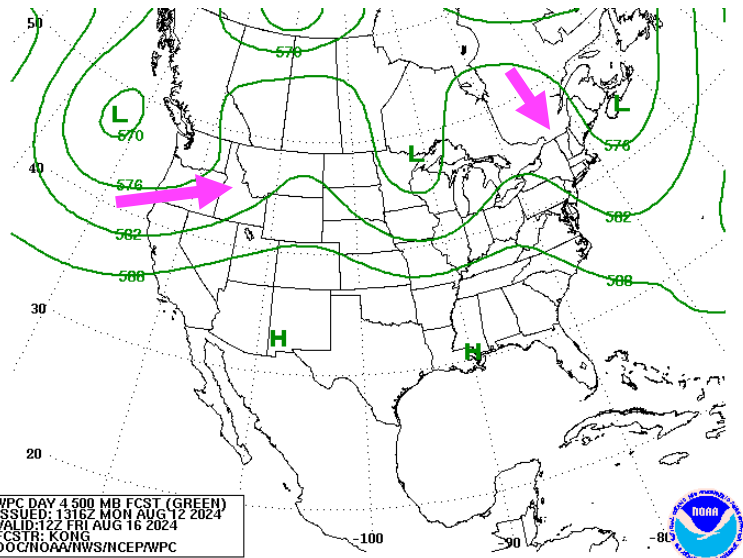


Precip Prob.



Thurs
8/15

Friday
8/16

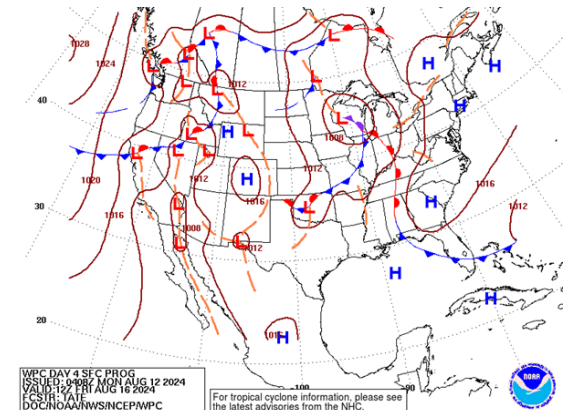
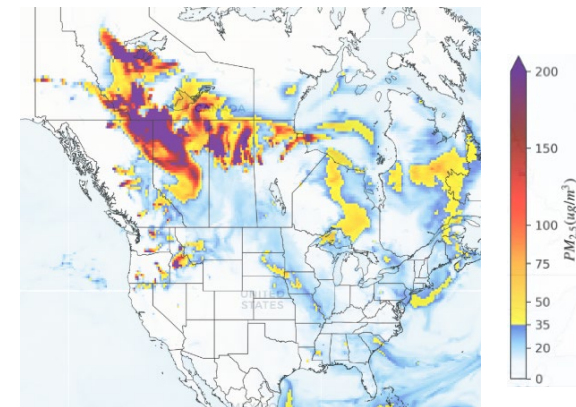
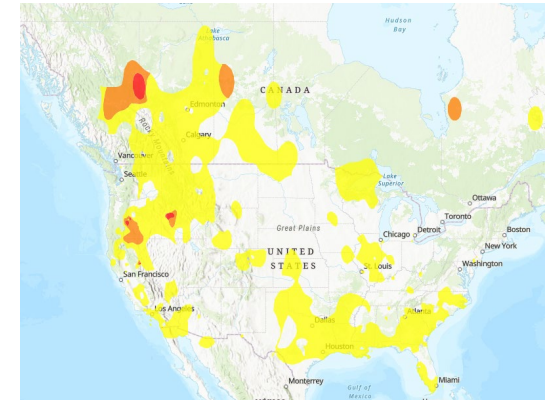


Summary

Monday : Sask. Wildfire smoke is being transported aloft into the northern Midwest US. CA, OR, ID fires are continuing to impact local AQ with minor transport east

T → W : Canadian wildfire smoke (Sask. and NT) will continue to be transported into the US – aged smoke from the NT is likely to impact the northeast and Sask wildfire smoke to impact the Midwest. Chances of rain in Midwest on Wednesday could help to clear up the AQ.

Th → F: Should Canadian wildfires continue, the high pressure system over the northeast will promote the transport of smoke aloft to the surface. Western US wildfire smoke likely to remain near the surface with the local high pressure systems.



WPC DAY 4 SEC PROG
US NHC 0000Z 12 AUG 2024
CST/EST
DO NOT ADVISE WPC

For tropical cyclone information, please see the latest advisories from the NHC.