

Weather and Air Quality: Reflection and Outlook During Smoke Conditions

Presenter: Megan Christiansen
Date: August 14, 2023

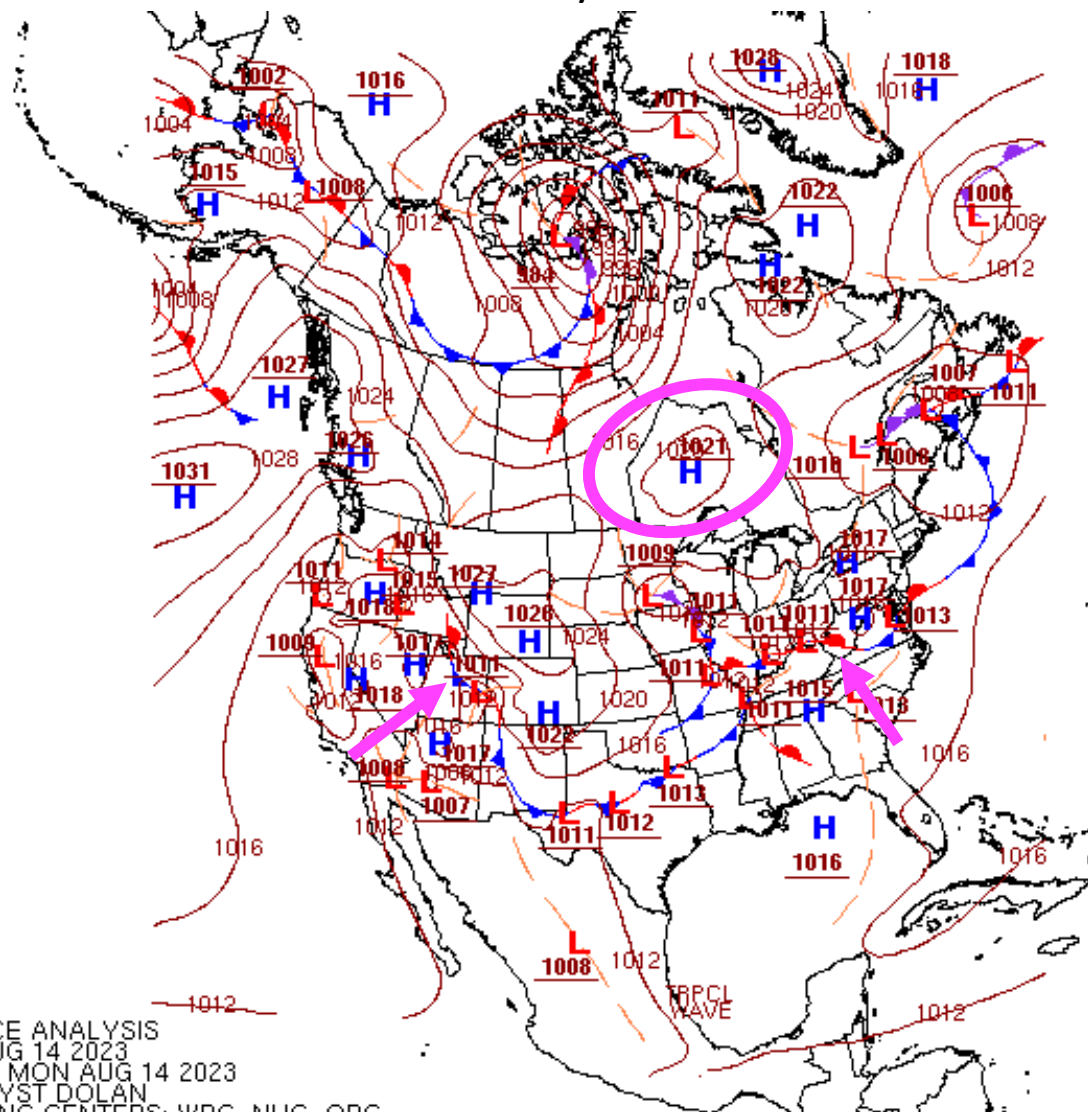


FireAQ is funded by NASA HAQ. We thank NASA GMAO and
NRL for the model data products.

EARTH SCIENCE
APPLIED SCIENCES

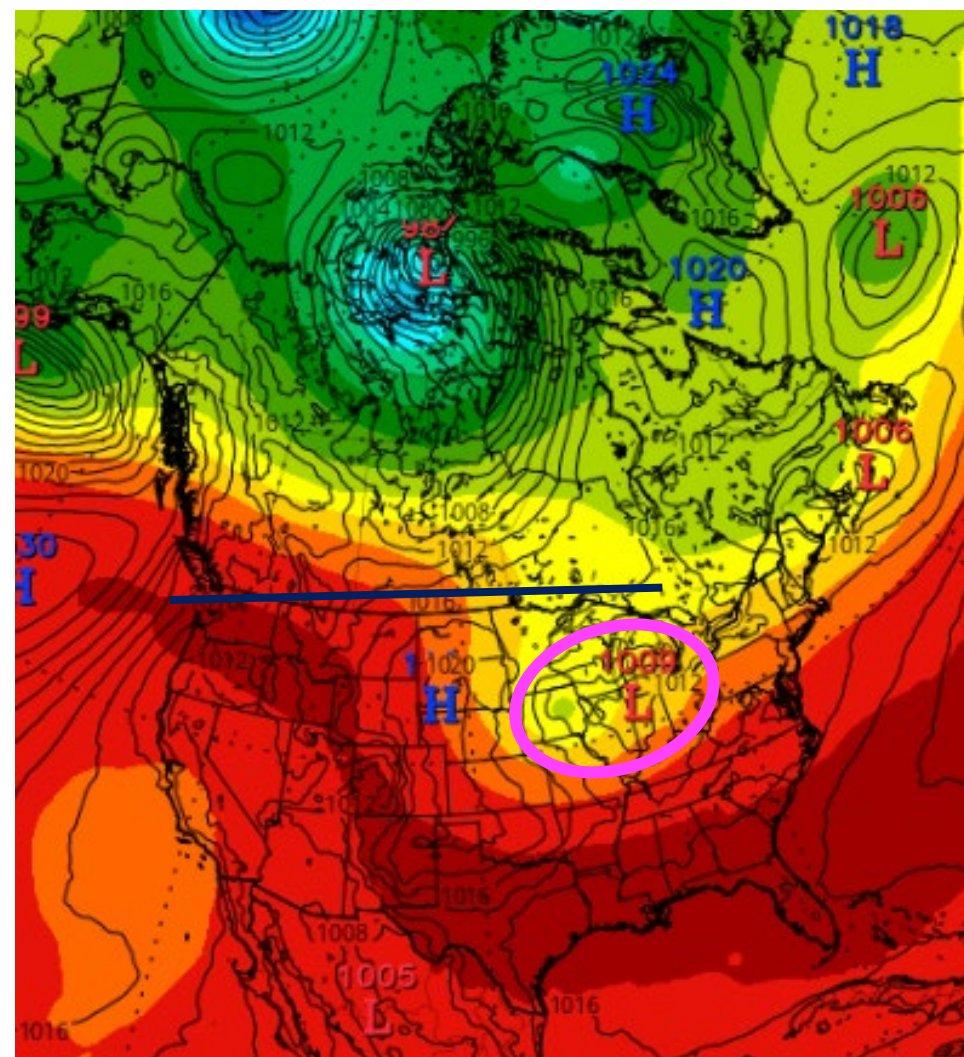
Current Status: August 14, 2023

Surface Analysis



0900Z SURFACE ANALYSIS
DATE: MON AUG 14 2023
ISSUED: 1023Z MON AUG 14 2023
BY WPC ANALYST DOLAN
COLLABORATING CENTERS: WPC, NHC, OPC

500 mb Contours

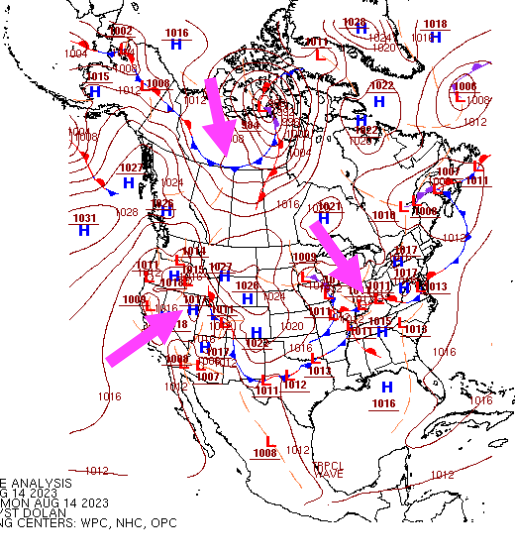


GFS 500mb Geopotential Height (dam) & MSLP (mb)

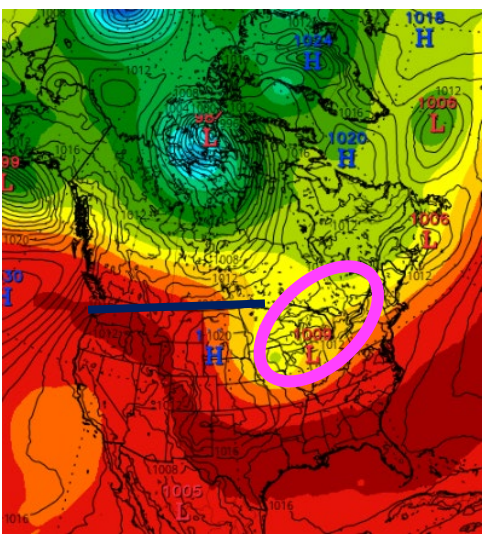
Init: 06z Aug 14 2023 Forecast Hour: [12] valid at 18z Mon, Aug 14 2023

Current Status: August 14, 2023

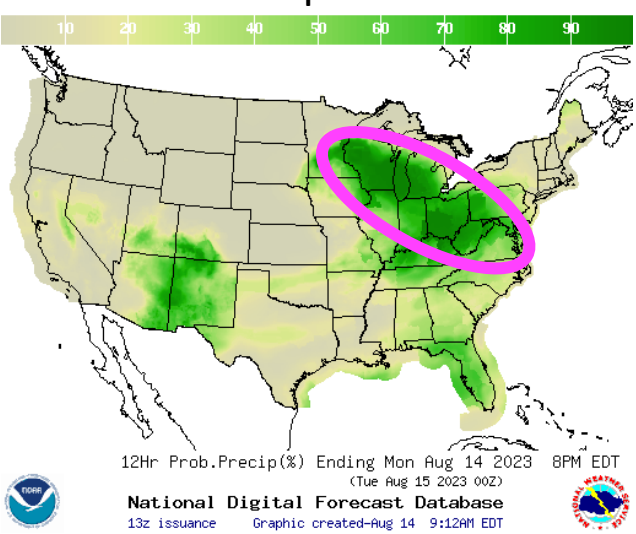
Surface Analysis



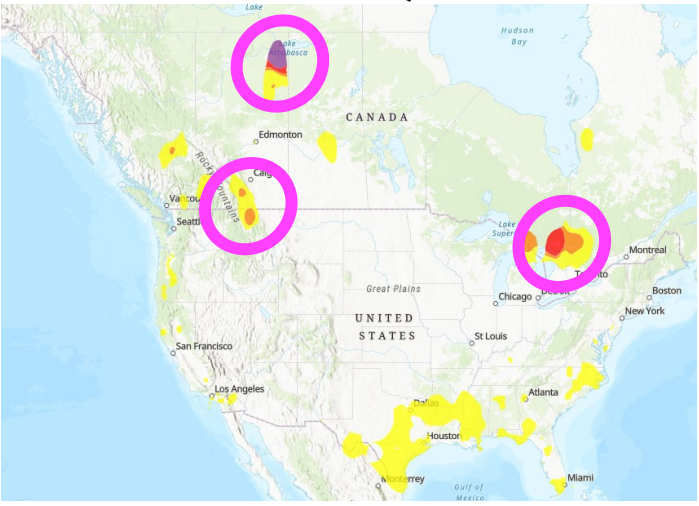
500 mb Contours



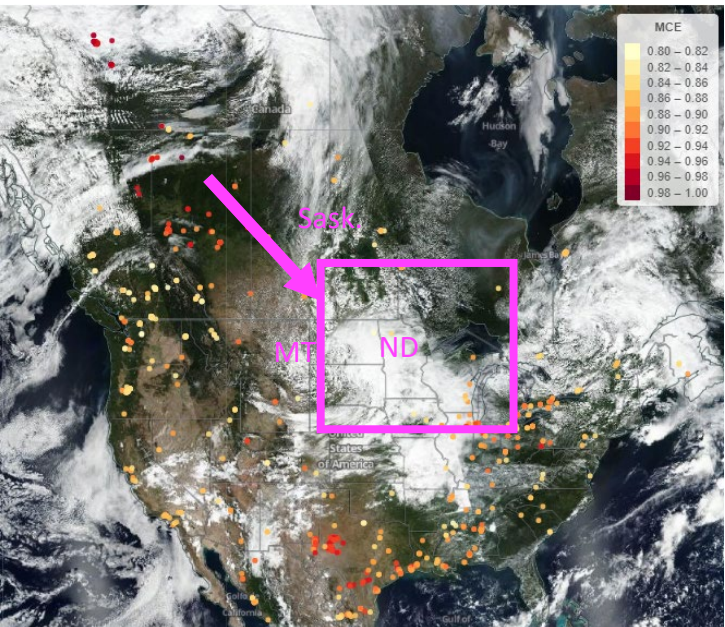
Precip. Prob.



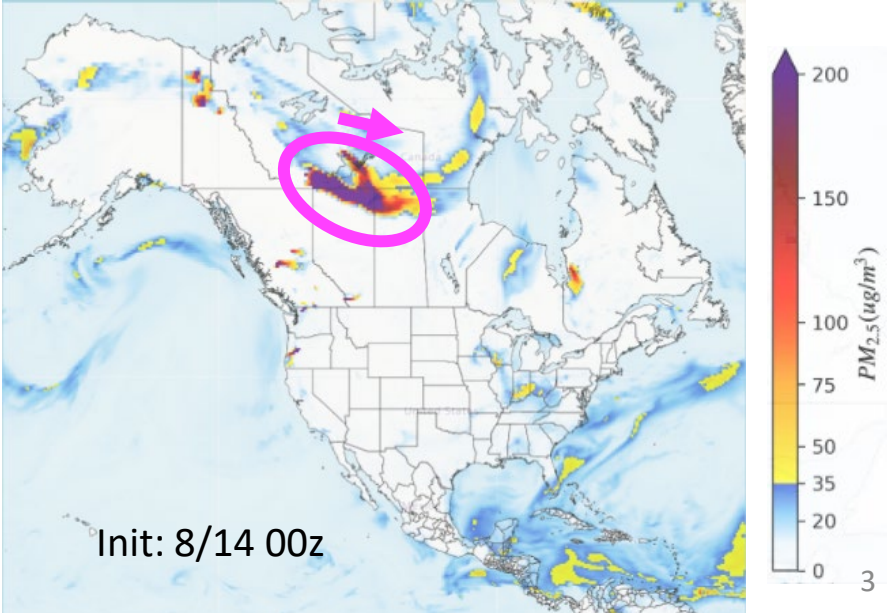
AirNow AQI



FILDA2 MCE
(Sun 8/13)

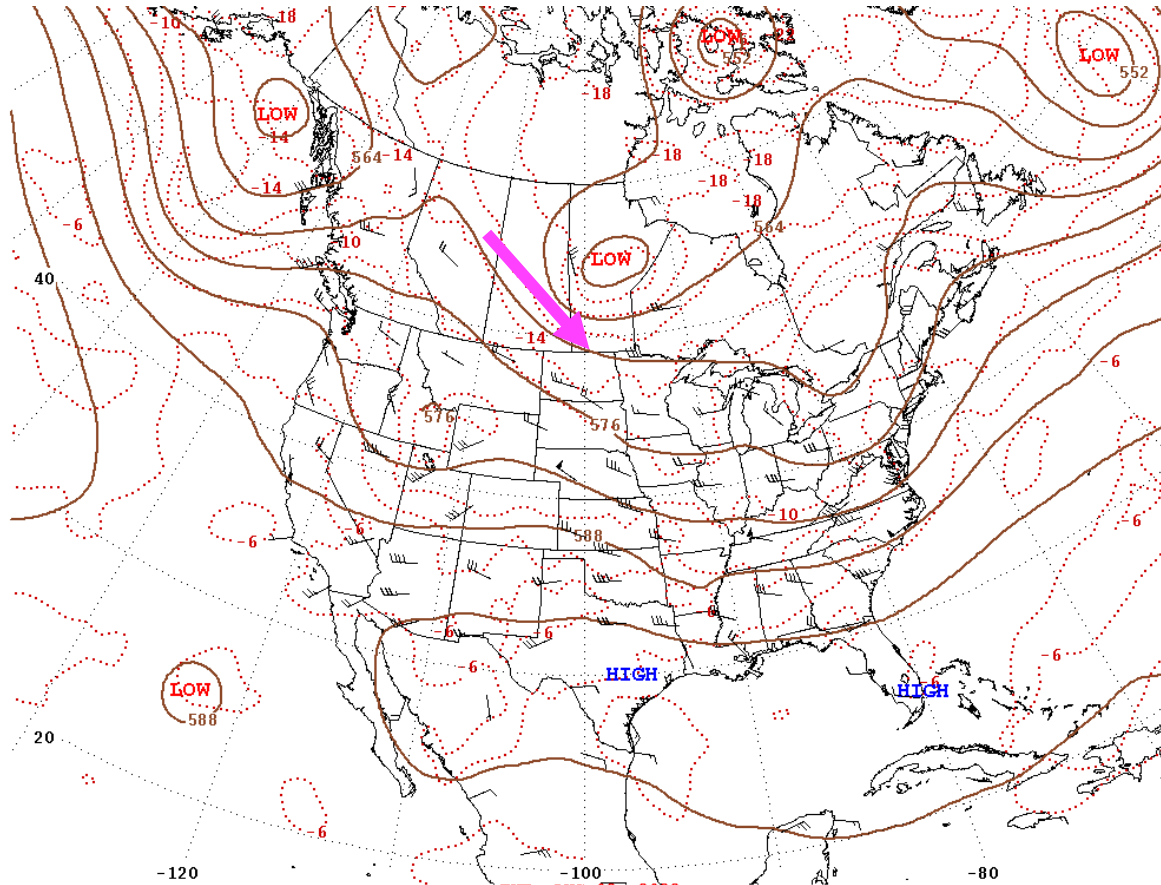


GEOS-FP 8/14 16 UTC PM_{2.5}



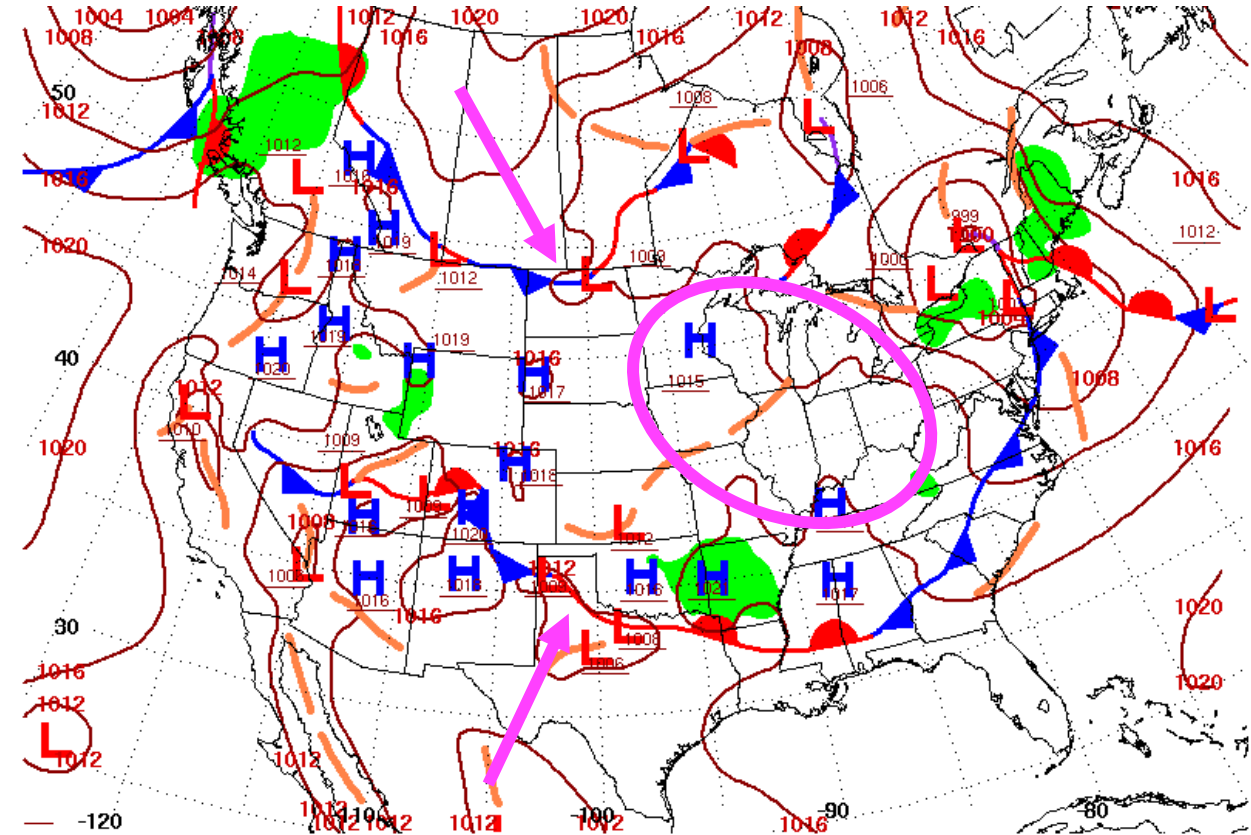
Air Quality Reflection: Tuesday August 8, 2023

500 hPa Contours



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

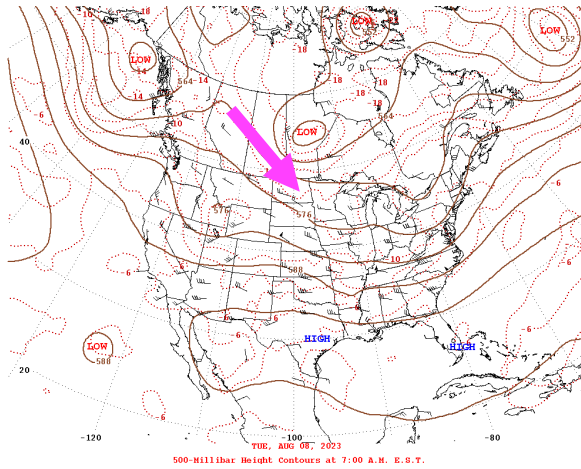
Surface Weather



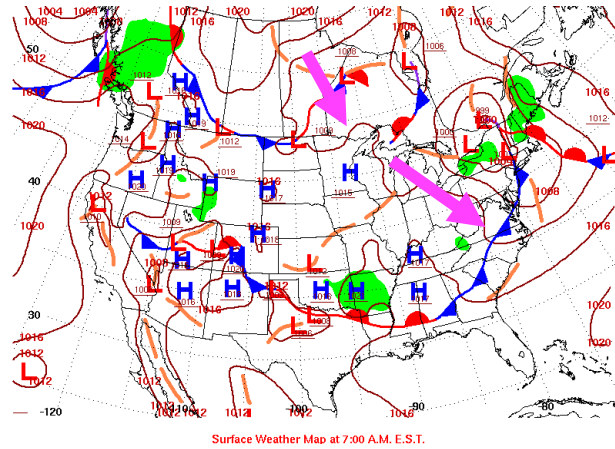
Surface Weather Map at 7:00 A.M. E.S.T.

Air Quality Reflection: Tuesday August 8, 2023

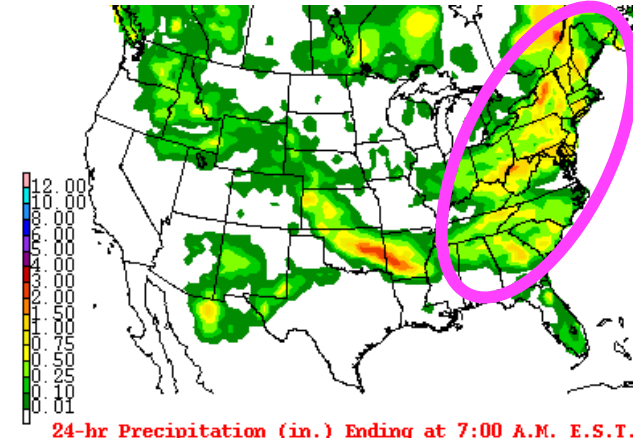
500 hPa Contours



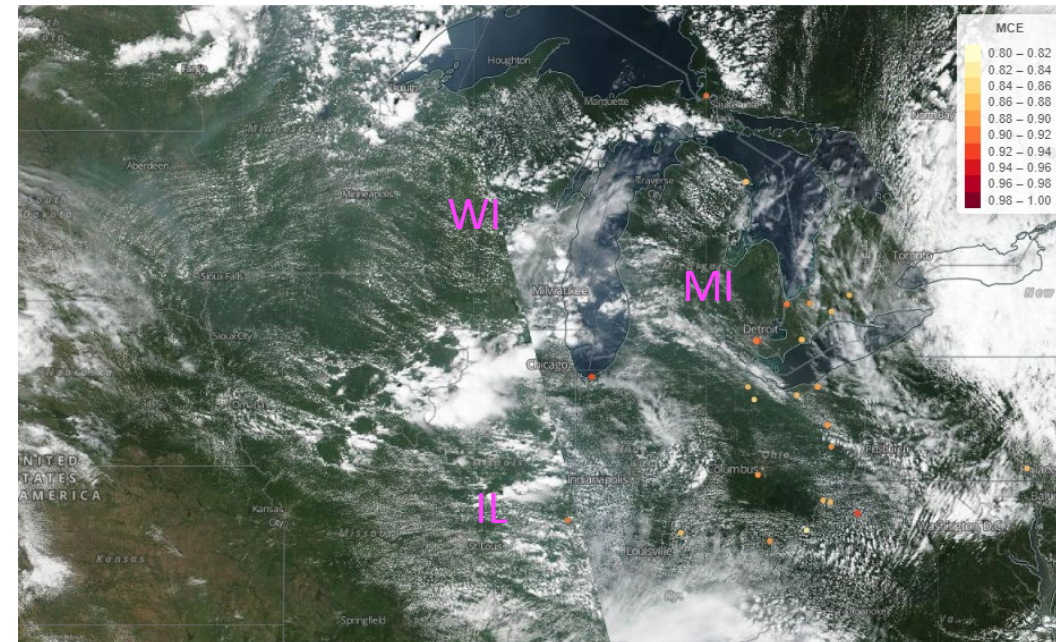
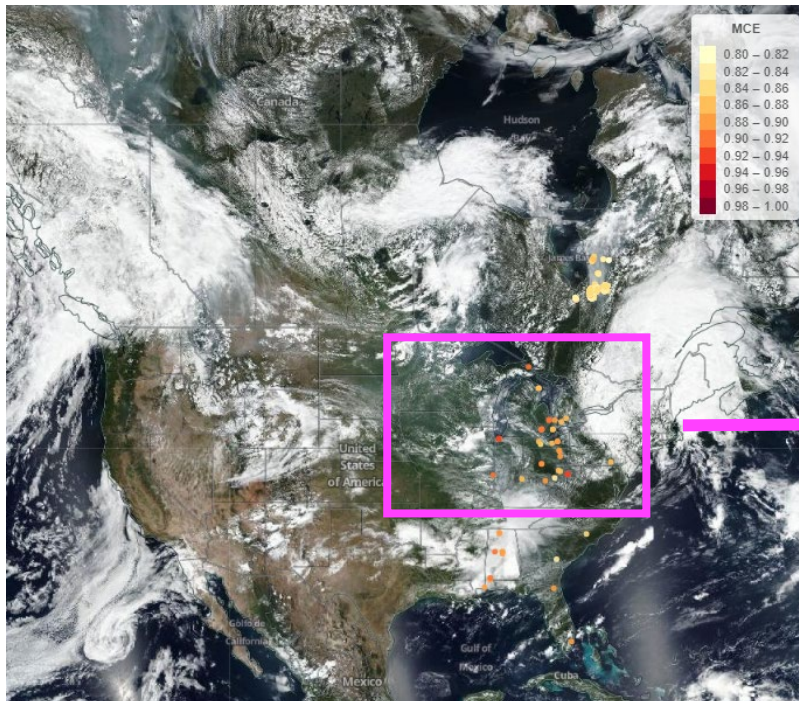
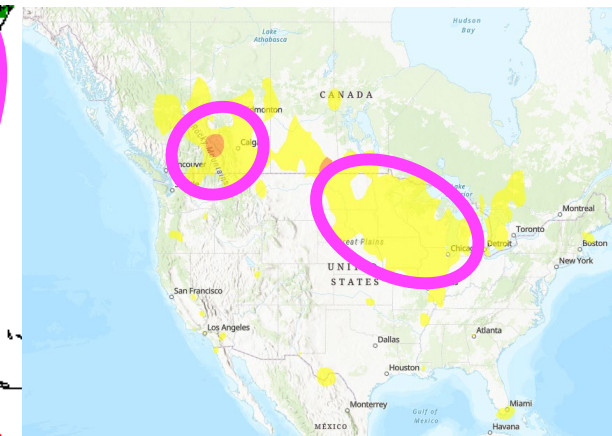
Surface Weather



Precipitation



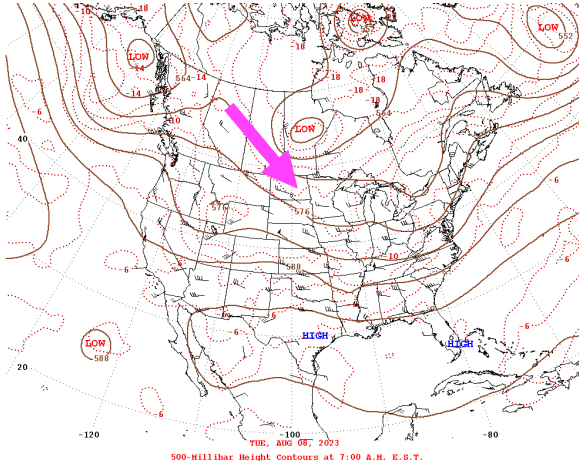
AirNow AQI



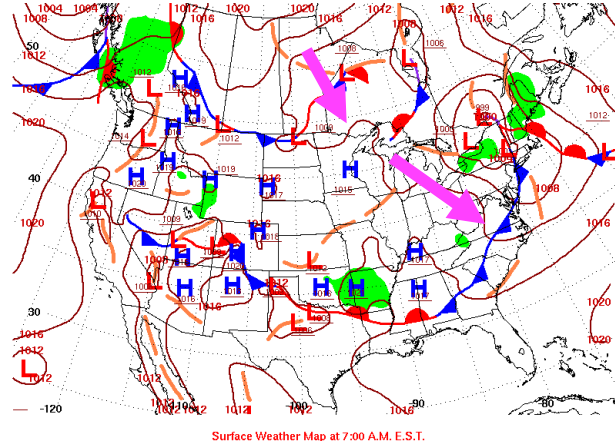
FILDA2 fire anomalies (displaying MCE)

Air Quality Reflection: Tuesday August 8, 2023

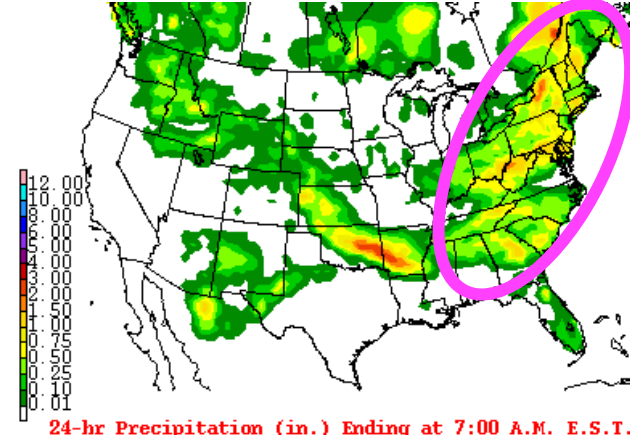
500 hPa Contours



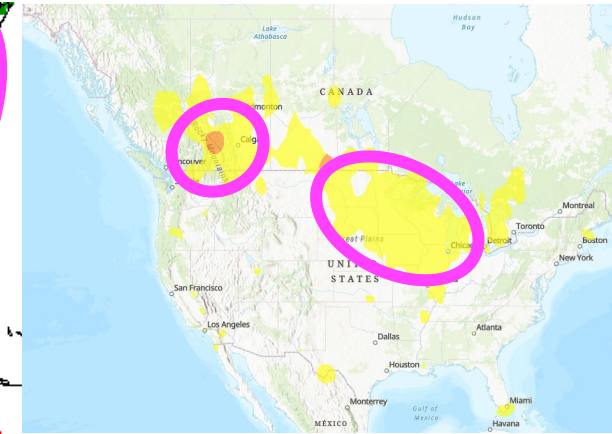
Surface Weather



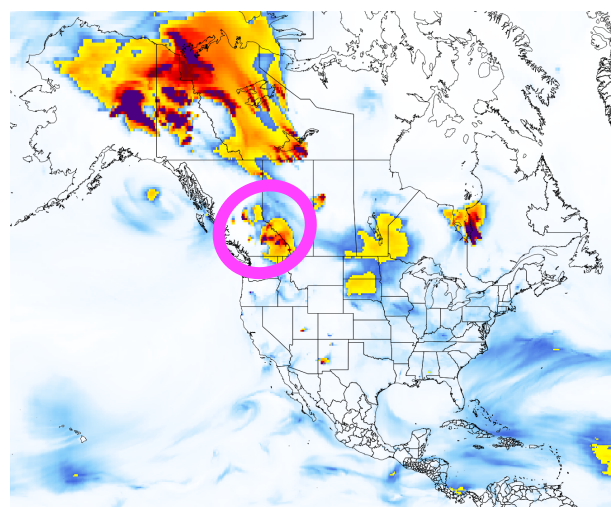
Precipitation



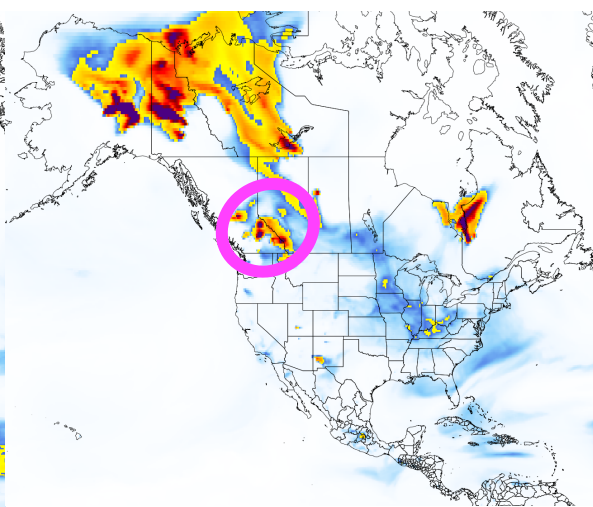
AirNow AQI



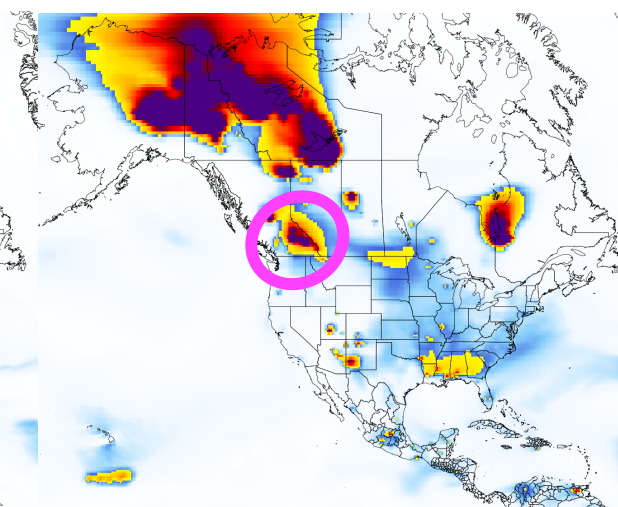
GEOS-FP



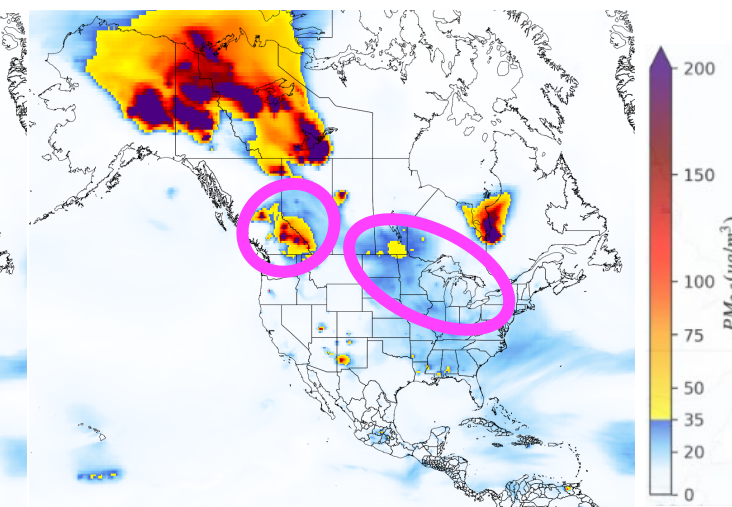
GEOS-CF



NAAPS

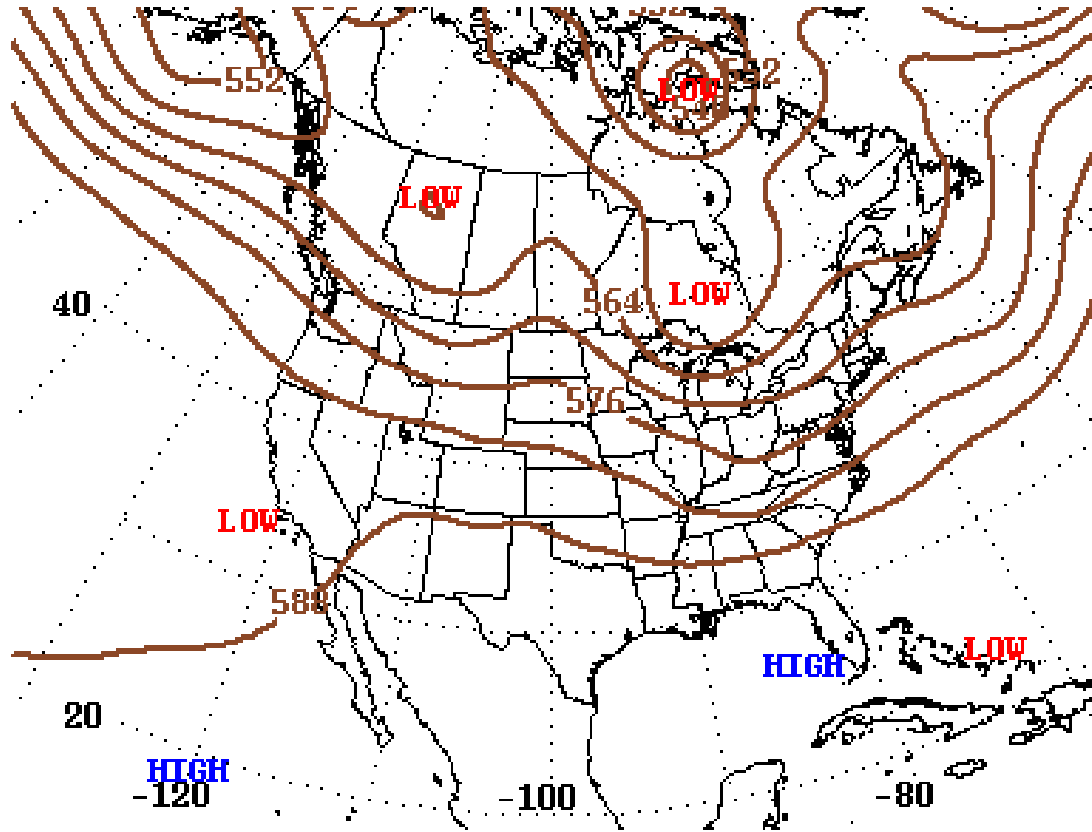


Ensemble



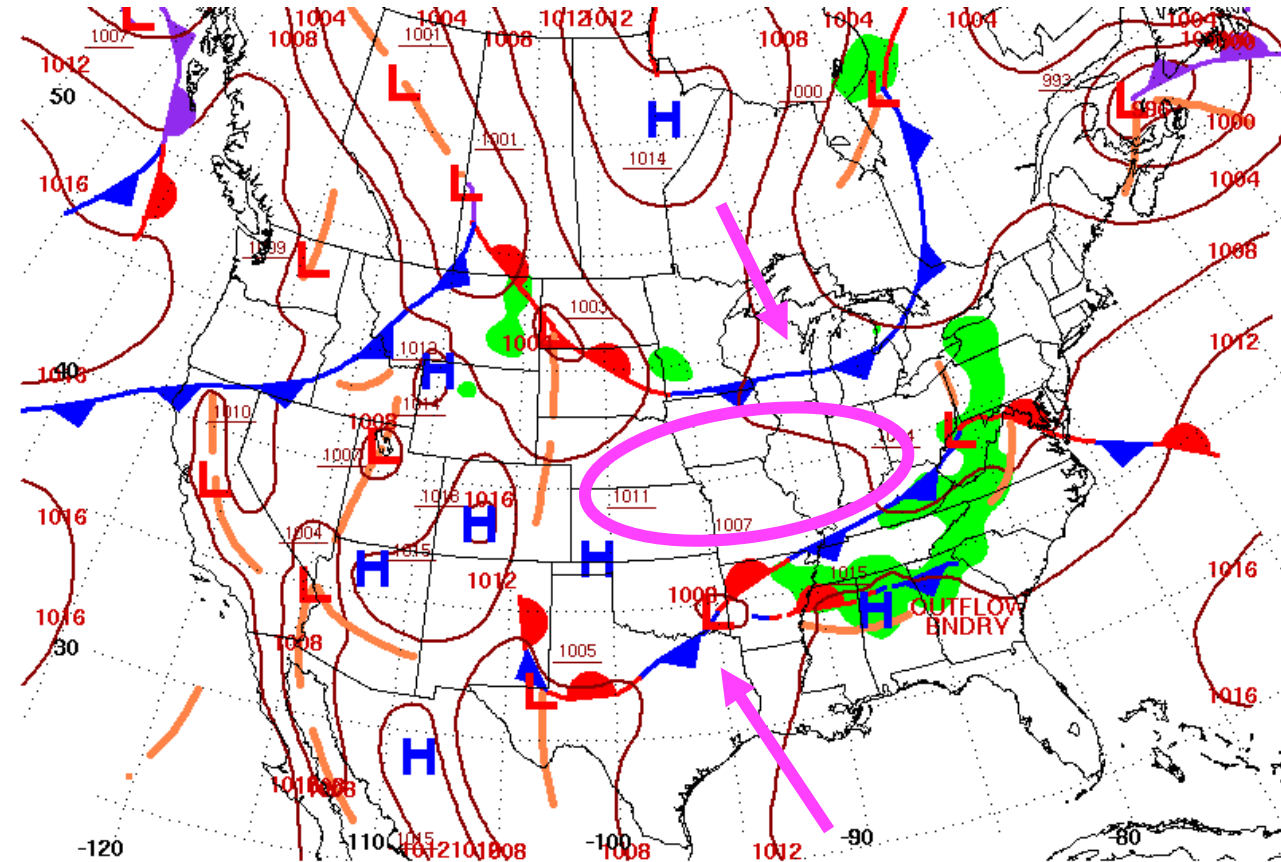
Air Quality Reflection: Thursday August 10, 2023

500 hPa Contours



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

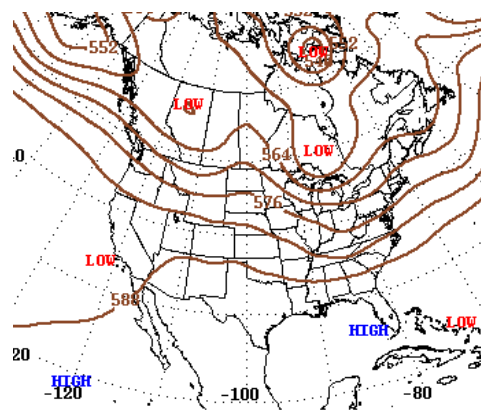
Surface Weather



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

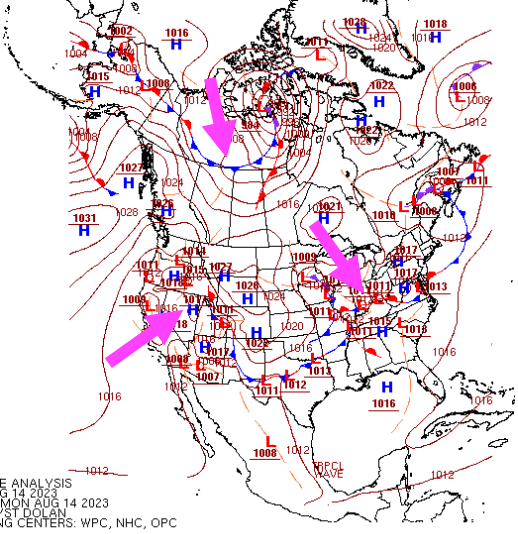
Air Quality Reflection: Thursday August 10, 2023

500 hPa Contours

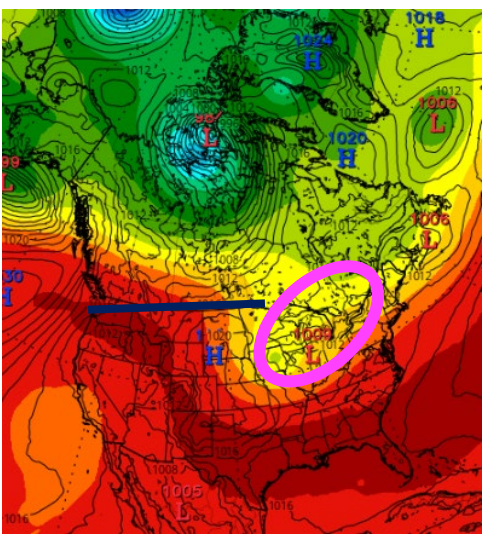


Current Status: August 14, 2023

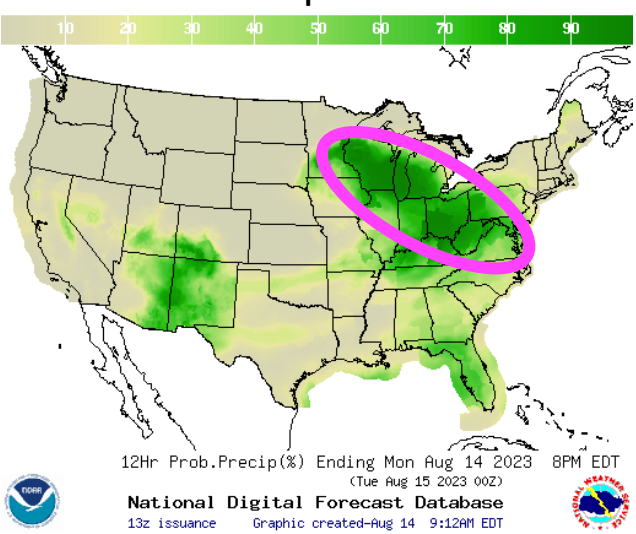
Surface Analysis



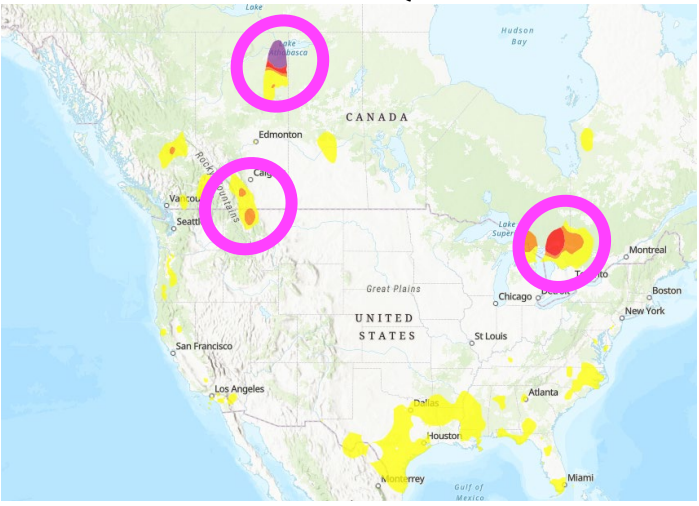
500 mb Contours



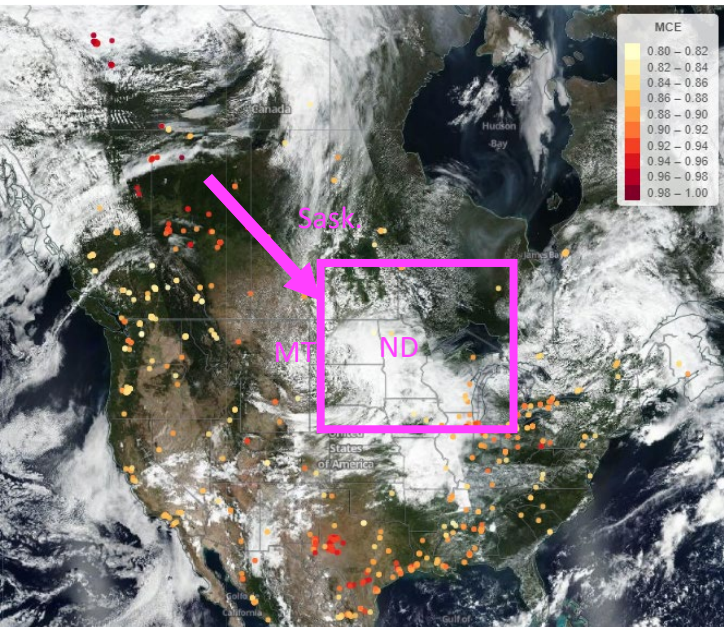
Precip. Prob.



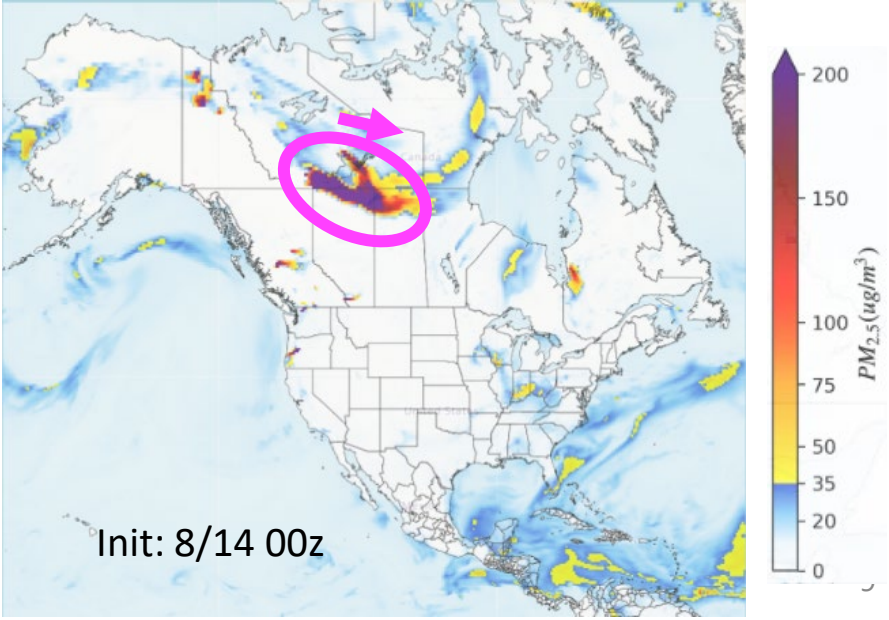
AirNow AQI



FILDA2 MCE
(Sun 8/13)



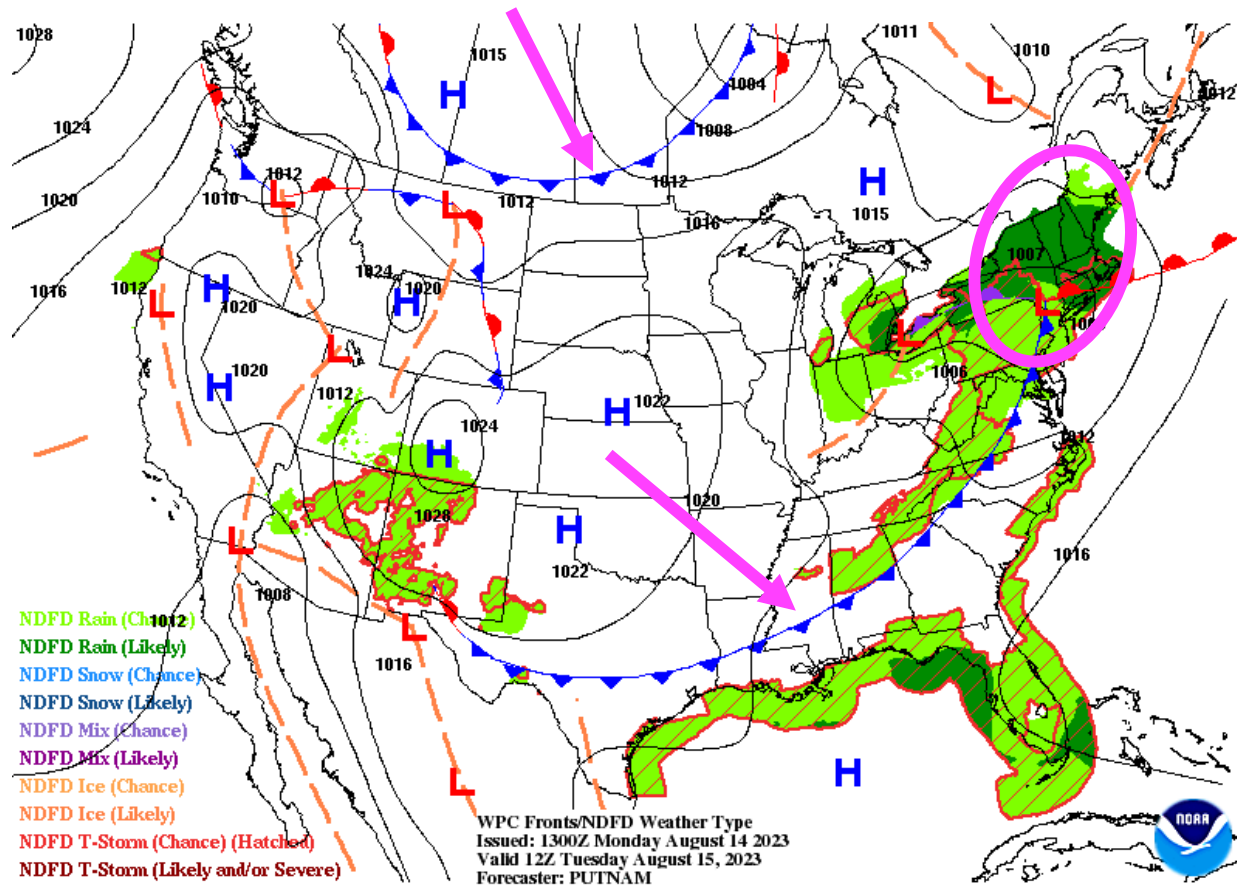
GEOS-FP 8/14 16 UTC PM_{2.5}



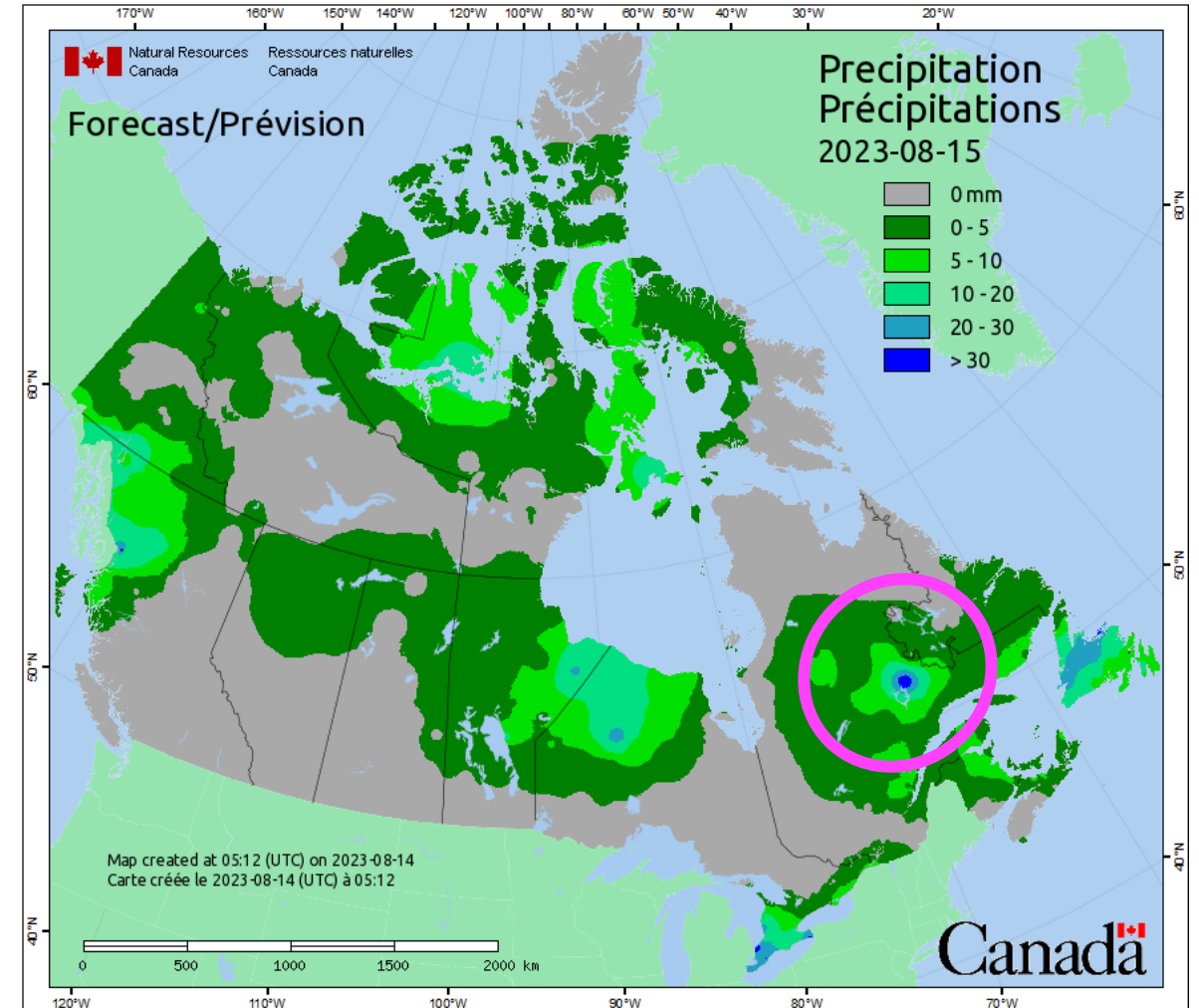
Outlook: Short Range (1–3 days)

Surface Forecast (**Tuesday 8/15**)

US NWS Forecast

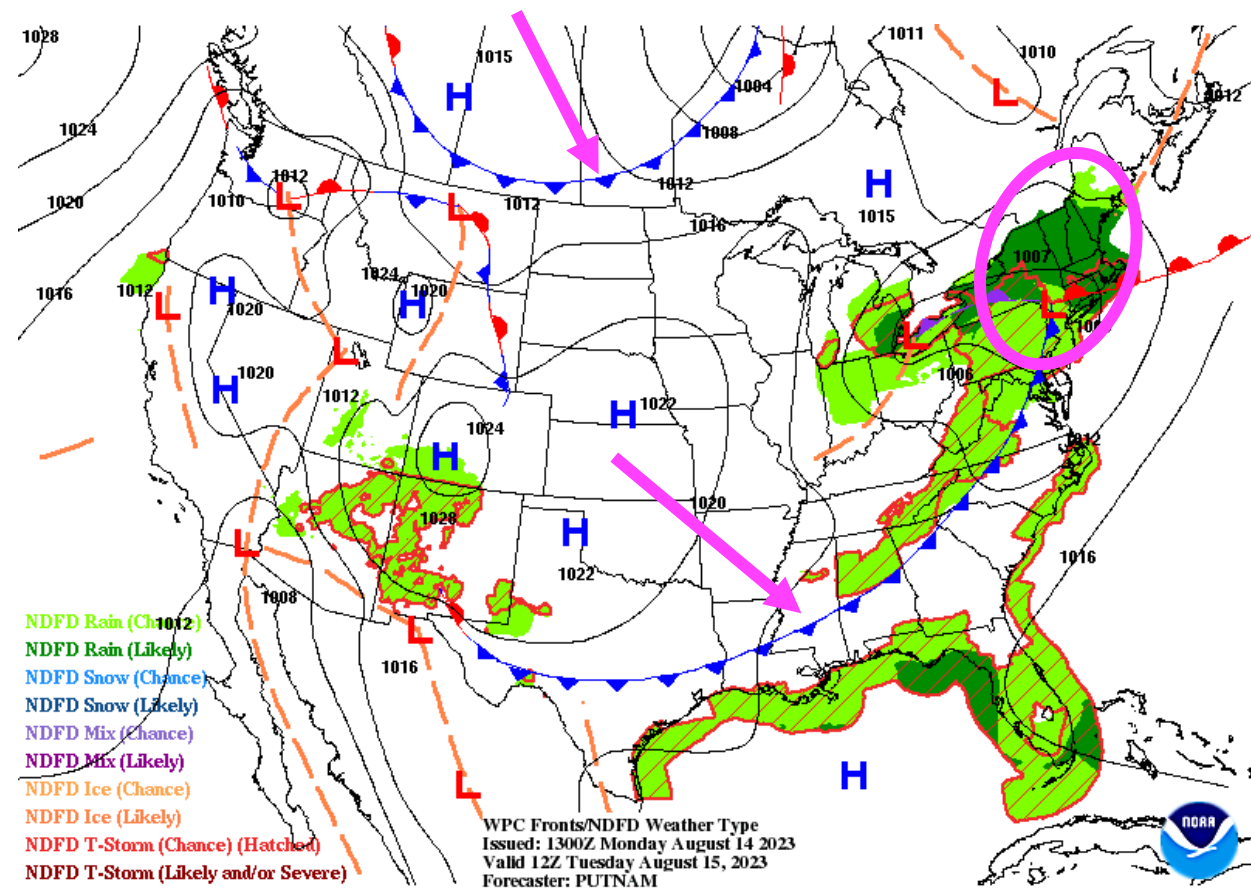


Environment Canada Forecast



Outlook: Short Range (1–3 days)

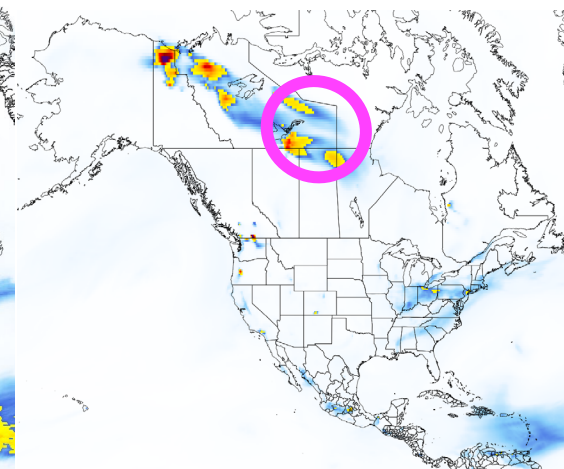
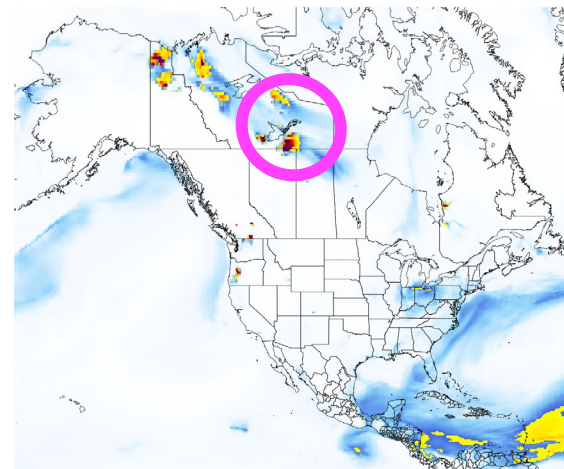
Surface Forecast (Tuesday 8/15)



Model Means $PM_{2.5}$ (Tues 8/15)

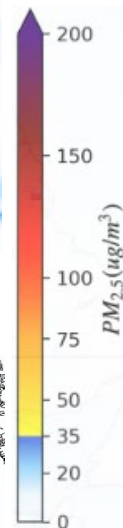
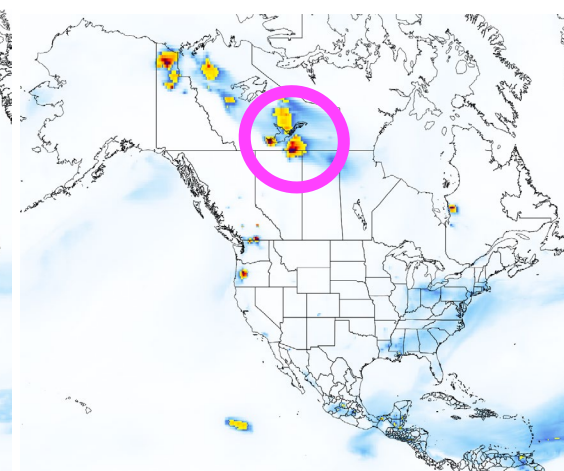
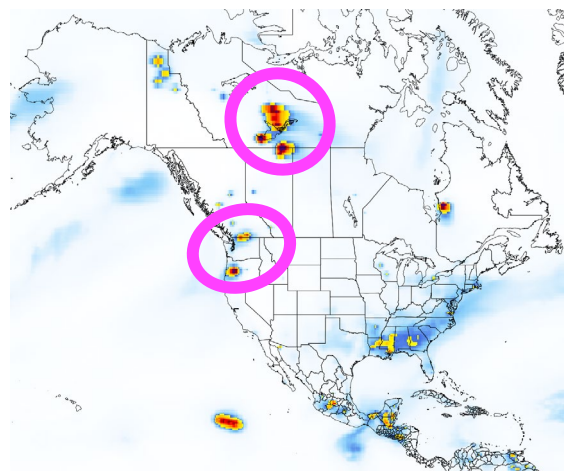
GEOS-FP

GEOS-CF



NAAPS

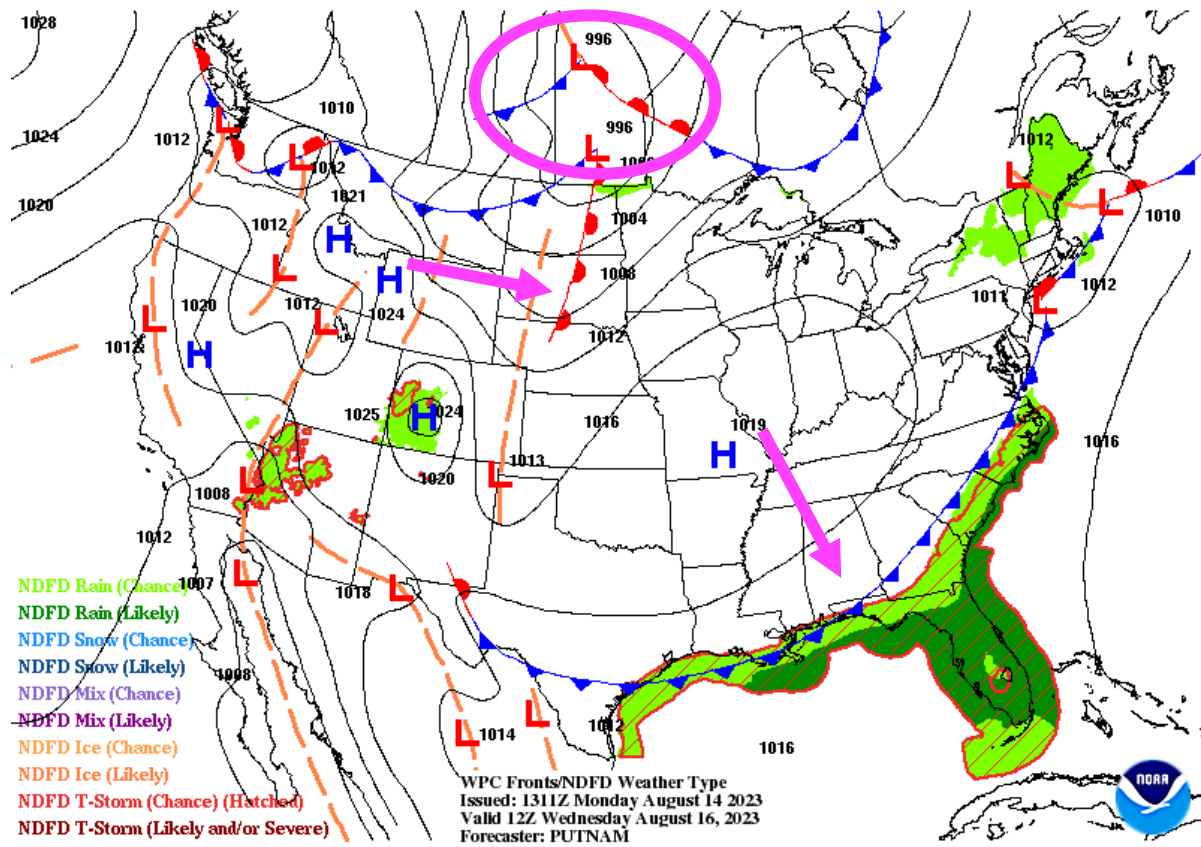
Ensemble



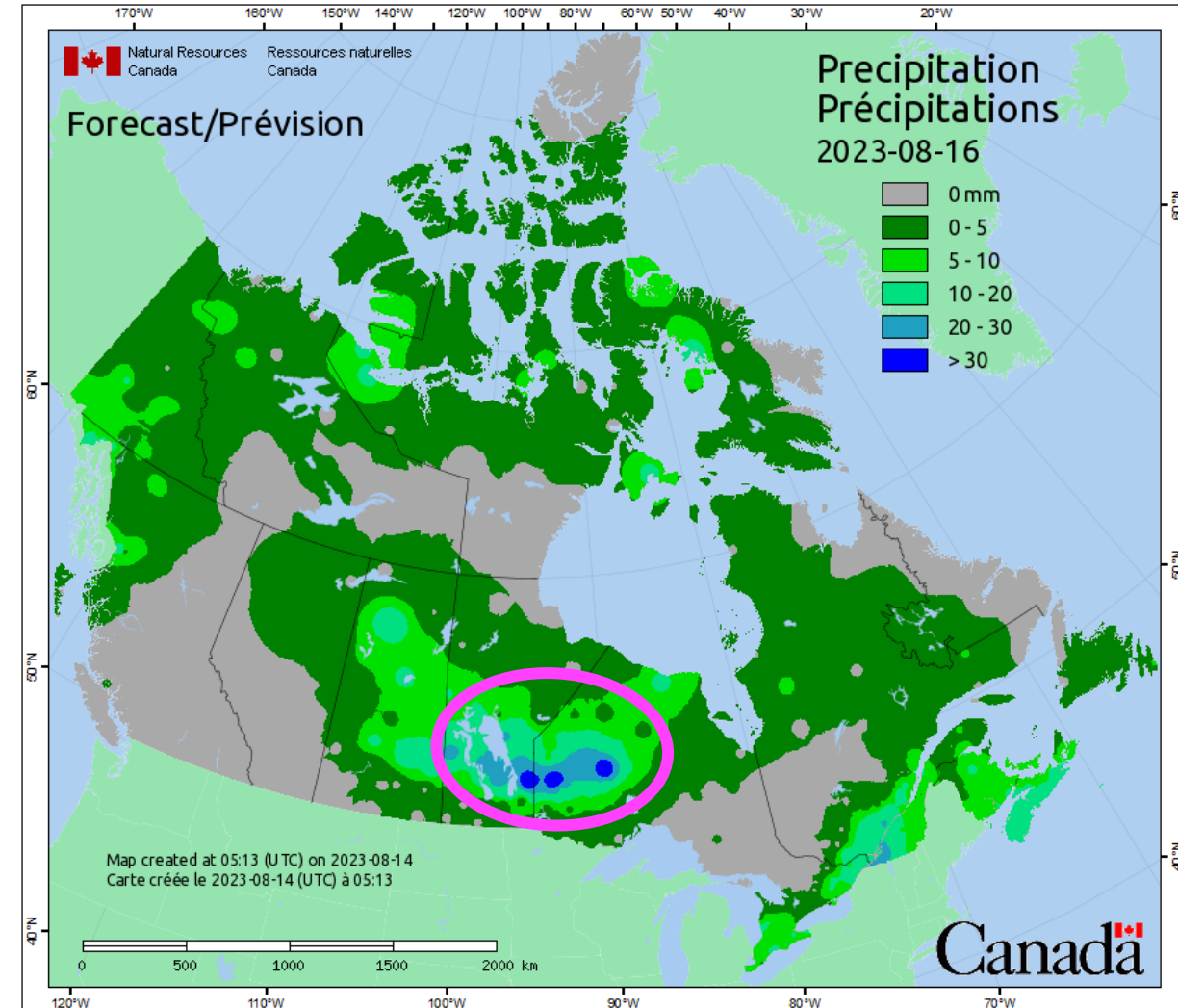
Outlook: Short Range (1–3 days)

Surface Forecast (**Wednesday 8/16**)

US NWS Forecast



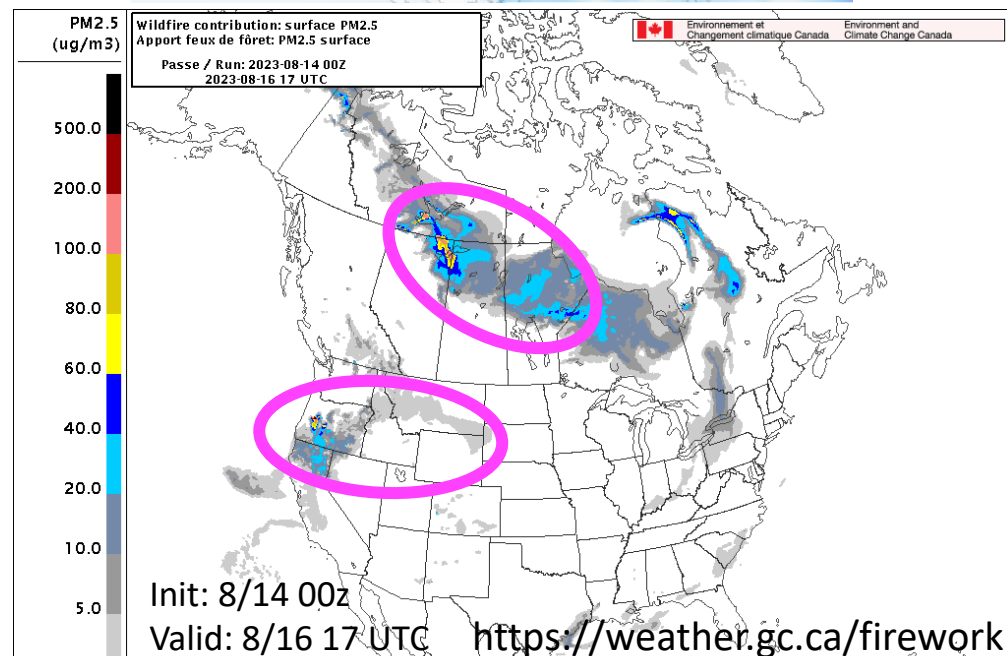
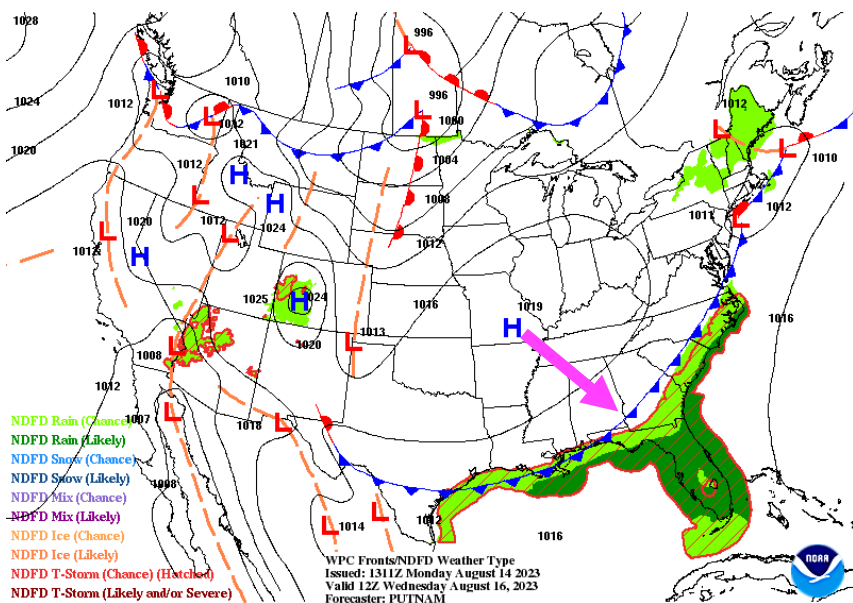
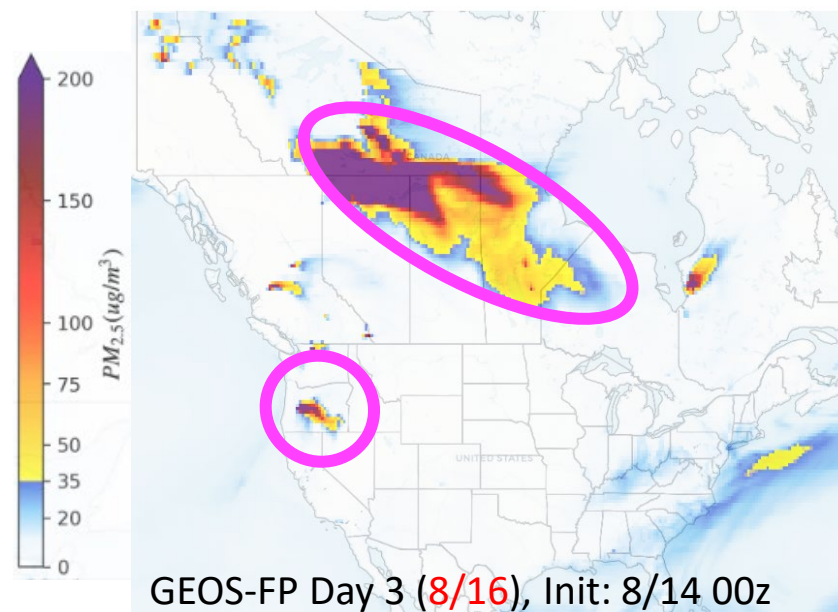
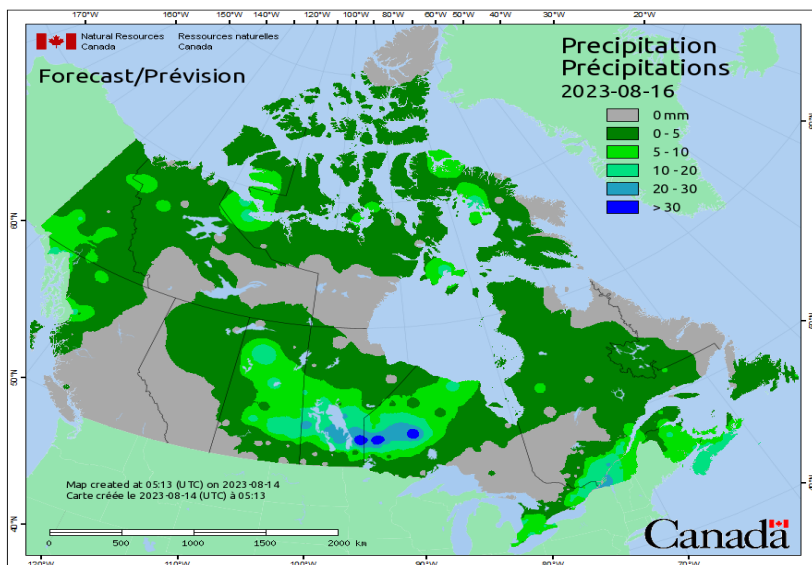
Environment Canada Forecast



Outlook: Short Range (1–3 days)

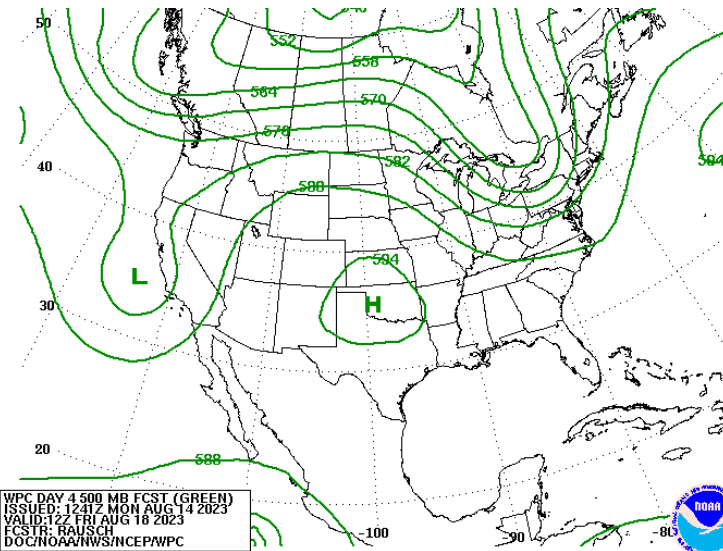
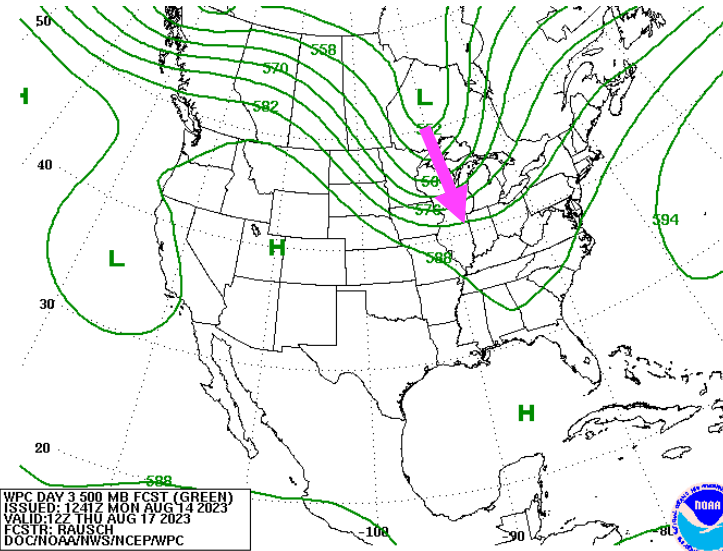
Surface Forecast

(Wednesday 8/16)

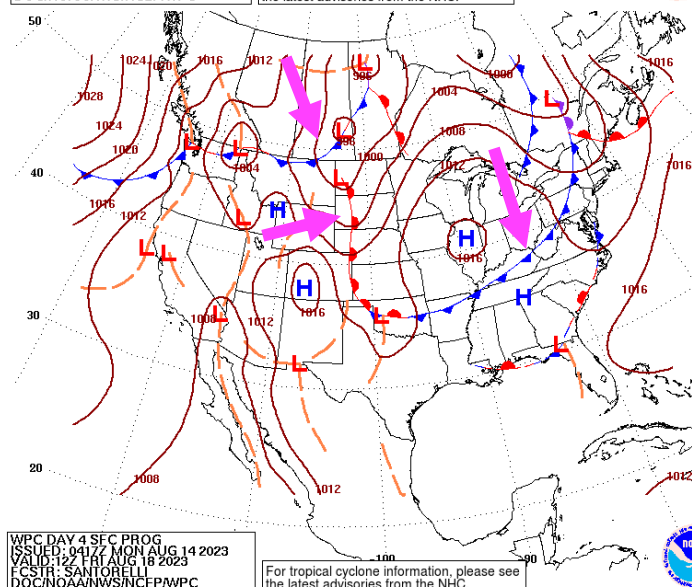
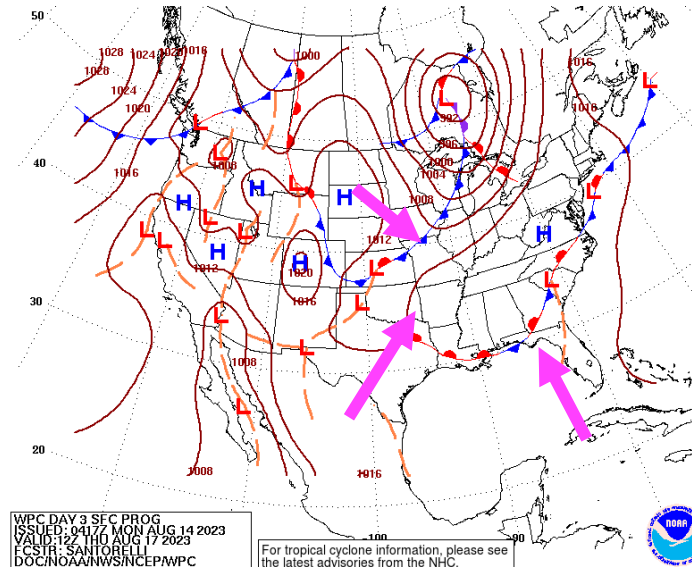


Outlook: Medium Range

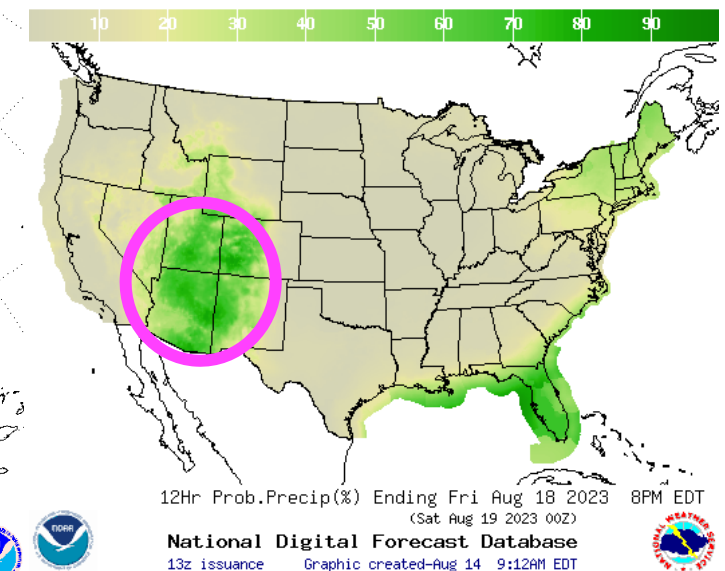
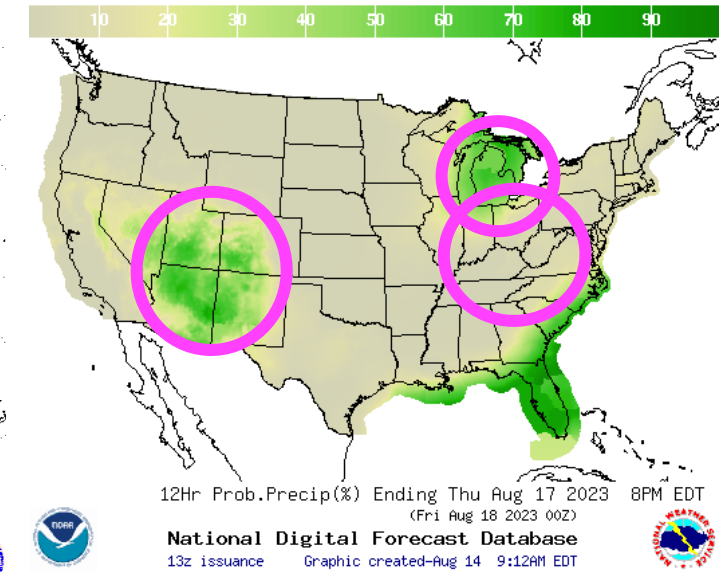
500 hPa Contours



Sea Level



Precip Prob.



Thursday
8/17

Friday
8/18

Summary

Monday : Active fires in southern Ontario Canada could impact the northeast US should wind direction shift.

M → W : Smoke transport from northern Canada not likely to reach the US. Smoke transport from Oregon fires is predicted to impact northern California air quality at least through Wednesday.

Th → F : Low pressure system sets up over southern Canada Thursday. If smoldering fires pop up in the region, smoke could be transported into the northern US. If the Oregon fires persist, smoke could be transported further to the west.

AirNow AQI

