

Weather and Air Quality: Reflection and Outlook During Smoke Conditions

Presenter: Megan Christiansen
Date: September 8, 2025

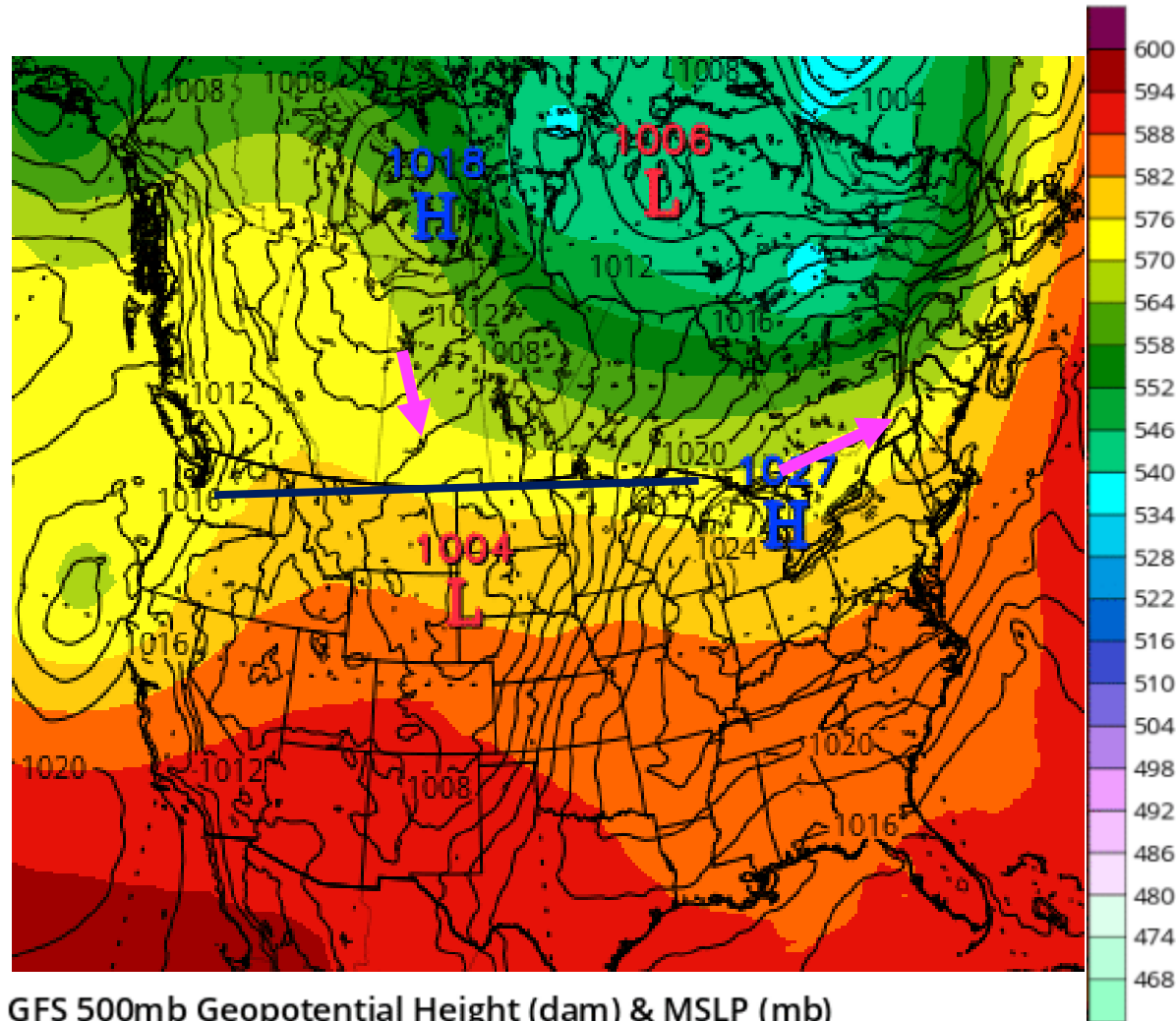


FireAQ is funded by NASA HAQ. We thank NASA GMAO and ECMWF for the model data products.

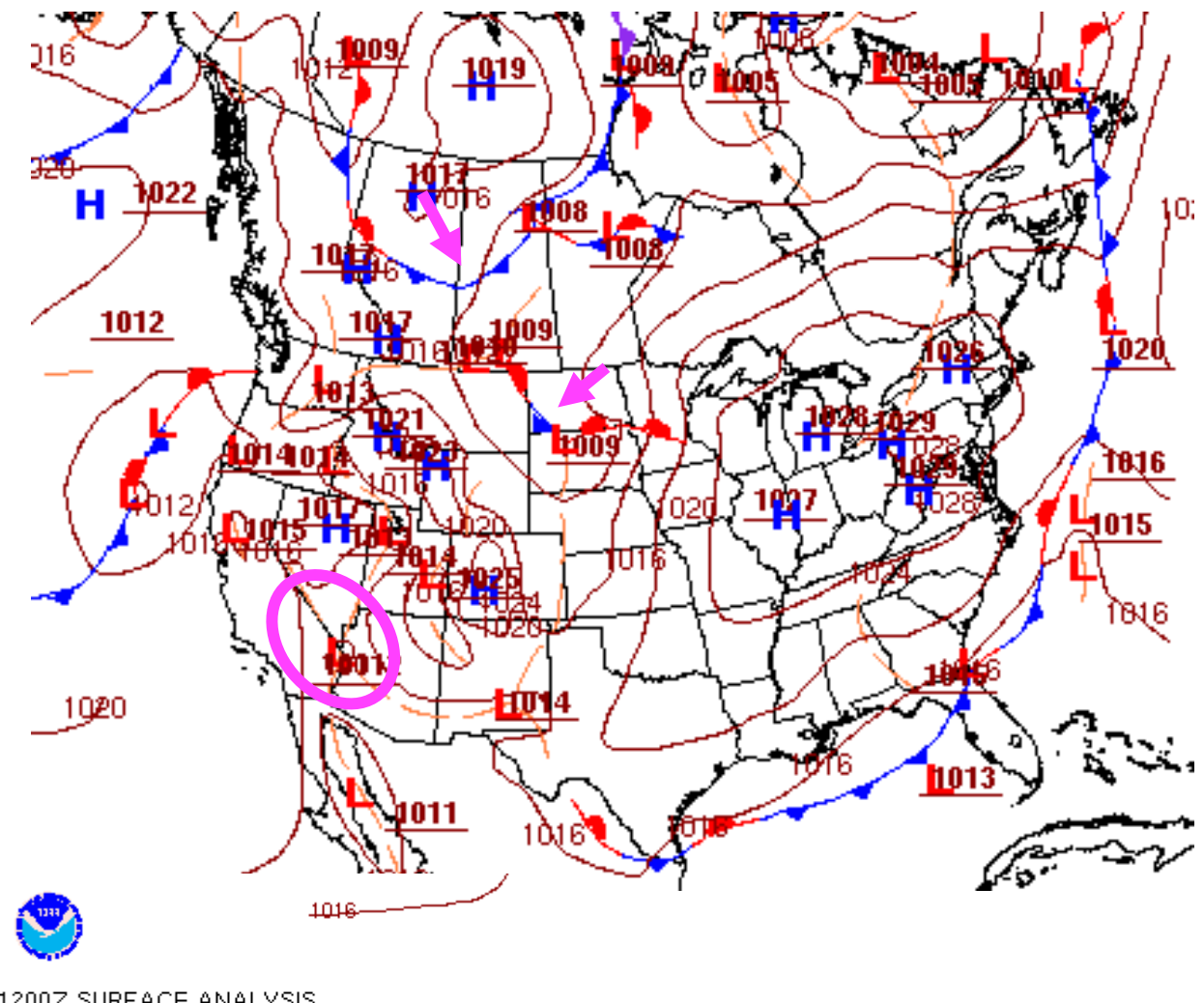
**EARTH SCIENCE
APPLIED SCIENCES**

Current Status: Sept 8, 2025

500 mb Contours



Surface Analysis

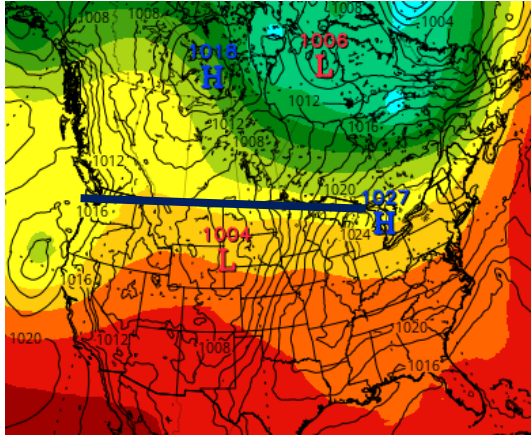


1200Z SURFACE ANALYSIS
DATE: MON SEP 08 2025
ISSUED: 1333Z MON SEP 08 2025
BY WPC ANALYST WILDER
COLLABORATING CENTERS: WPC, NHC, OPC

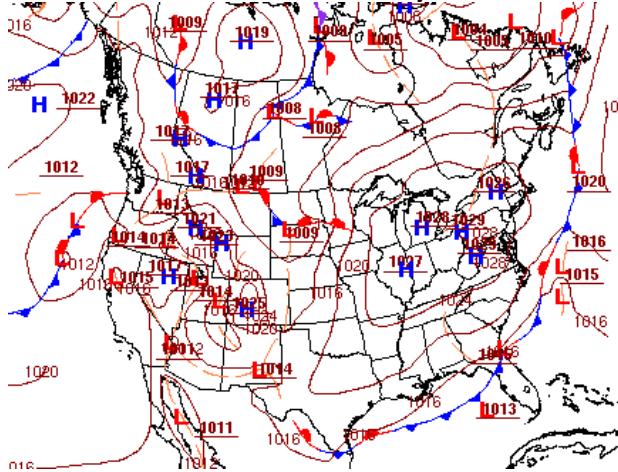
GFS 500mb Geopotential Height (dam) & MSLP (mb)
Init: 06z Sep 08 2025 Forecast Hour: [12] valid at 18z Mon, Sep 08 2025

Current Status: Sept 8, 2025

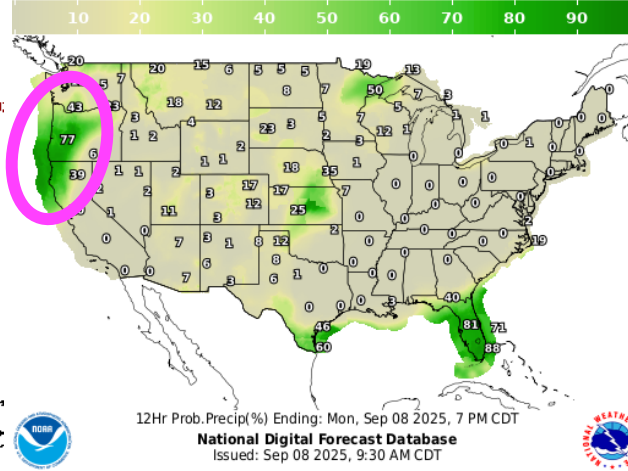
500 mb Contours



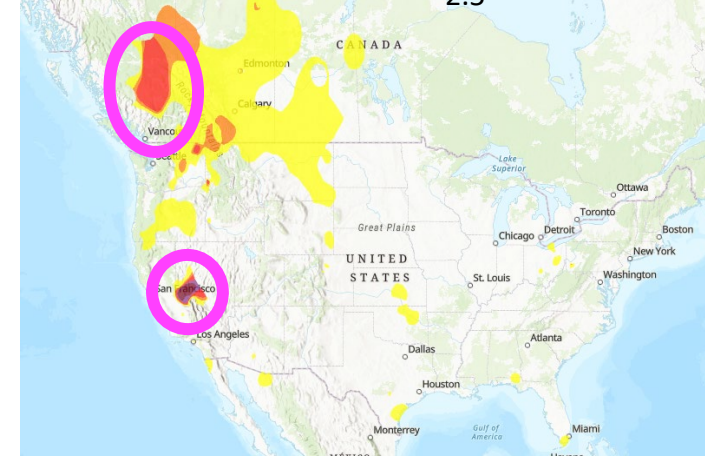
Surface Analysis



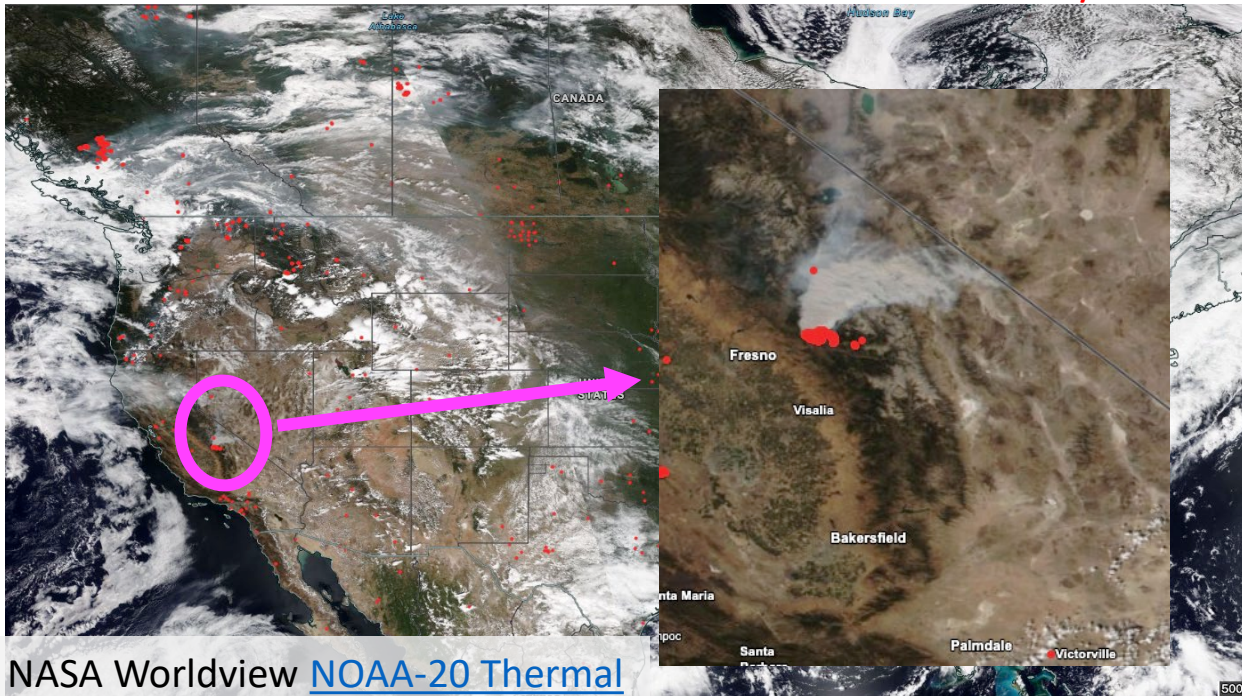
Precip. Prob.



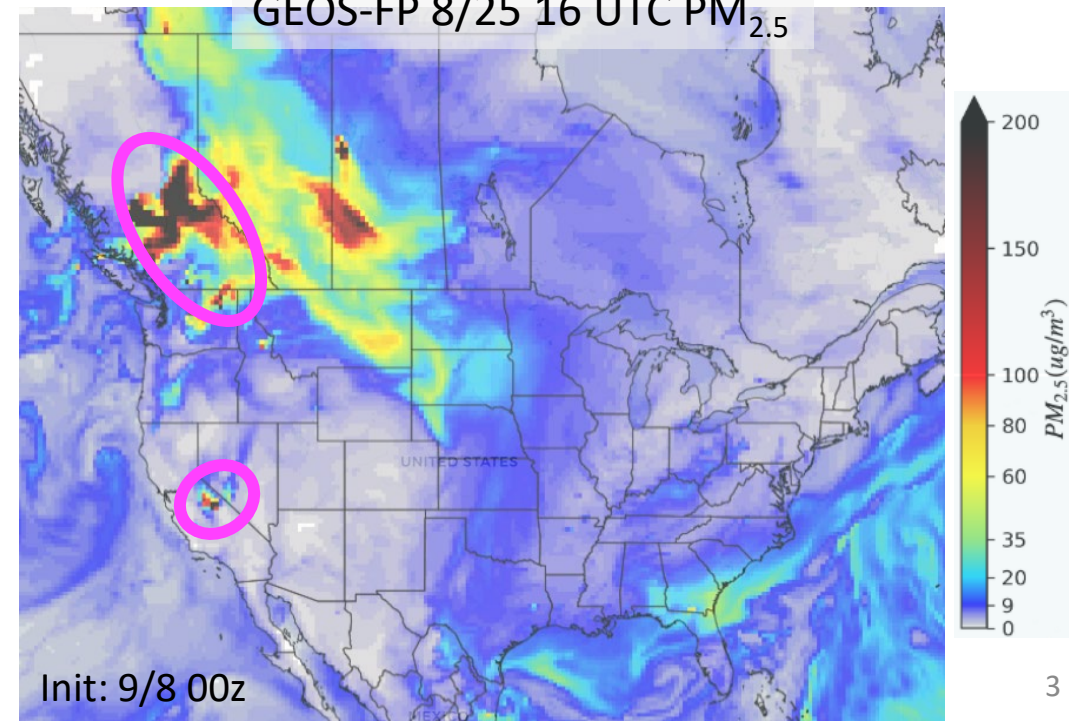
AirNow PM_{2.5} AQI



Sun 9/7



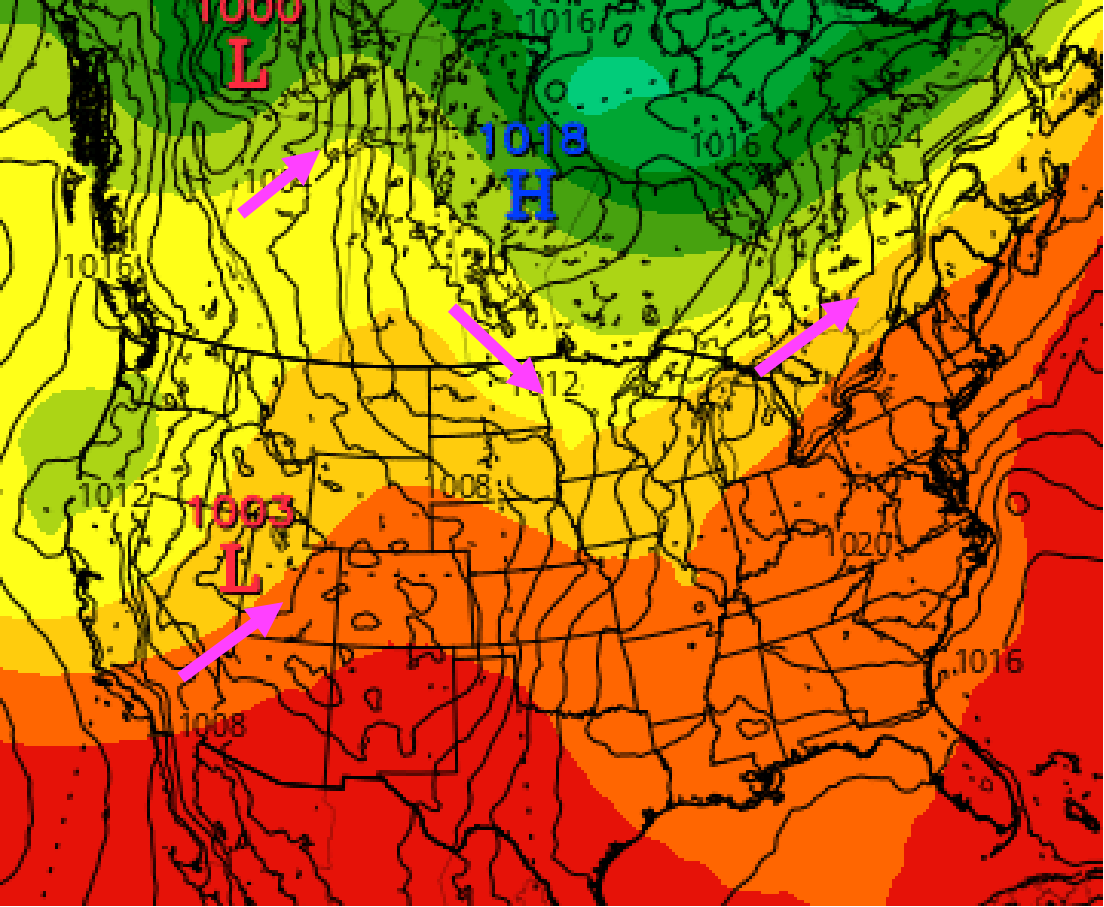
GEOS-FP 8/25 16 UTC PM_{2.5}



Outlook: Short Range (1-3 days)

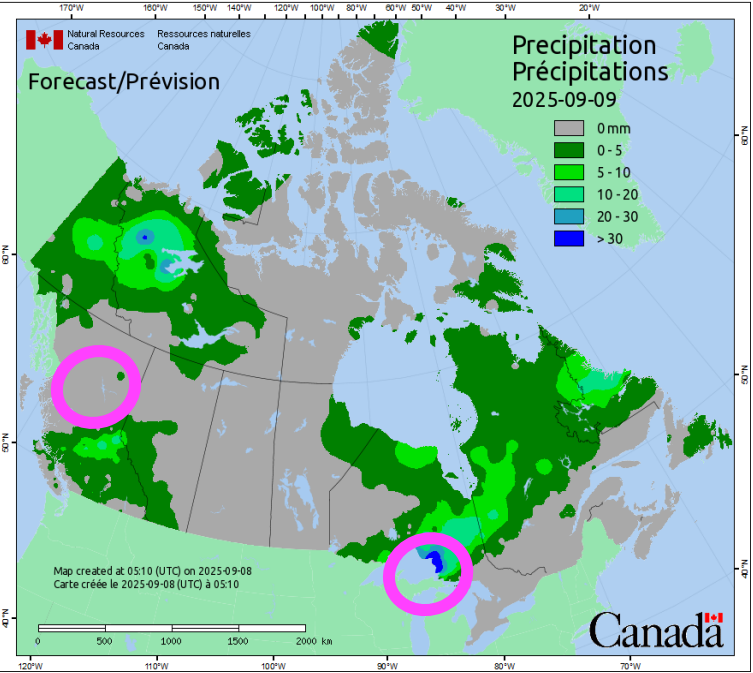
(Forecast **Tuesday 9/9**)

GFS 500 mb

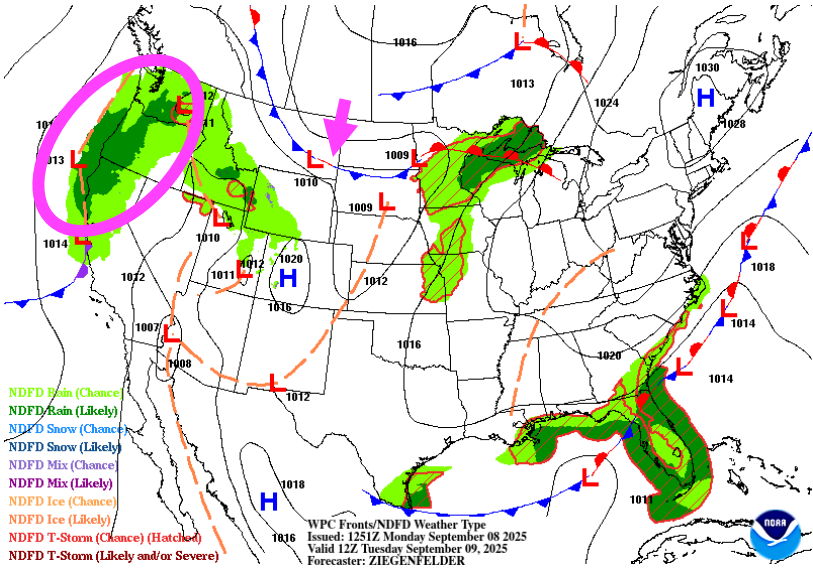


GFS 500mb Geopotential Height (dam) & MSLP (mb)
Init: 06z Sep 08 2025 Forecast Hour: [36] valid at 18z Tue, Sep 09 2025

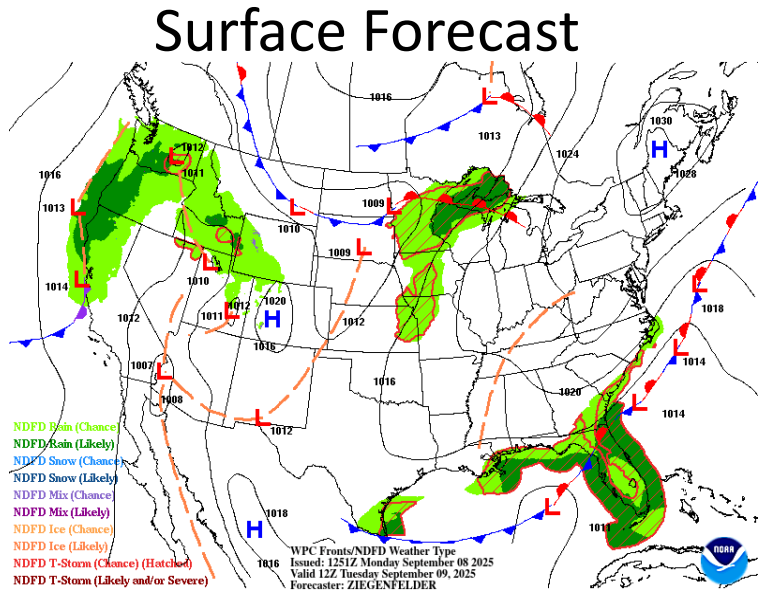
Environment
Canada
Forecast



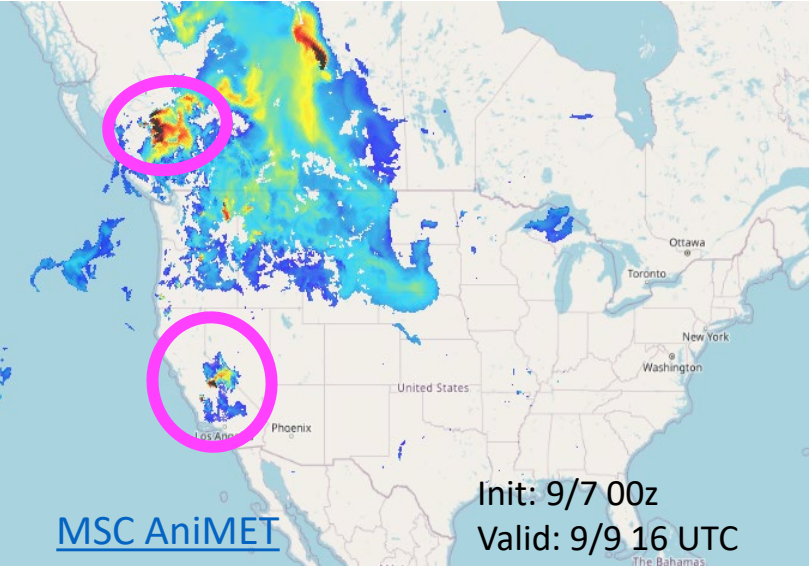
US NWS
Forecast



Outlook: Short Range (1–3 days)

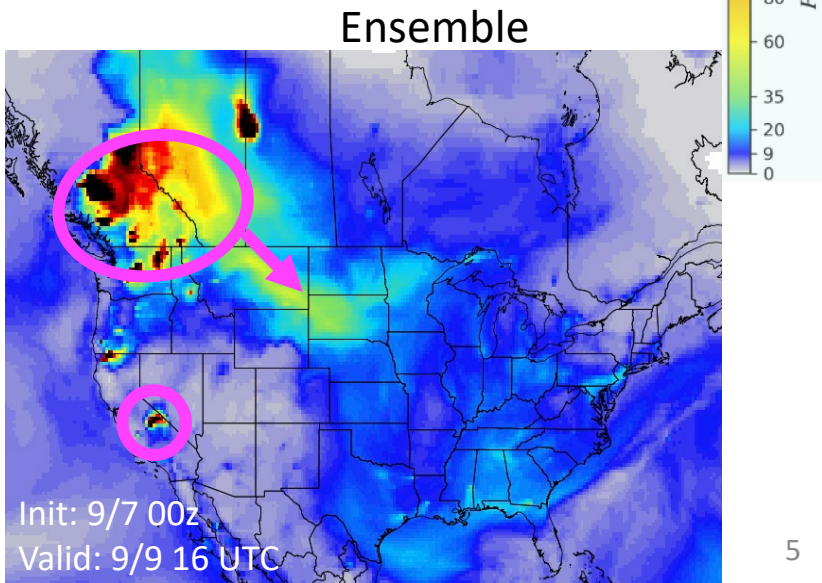
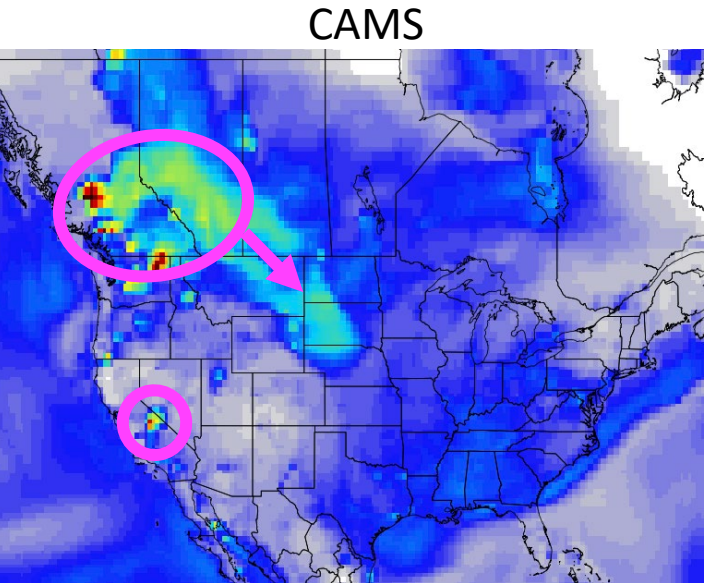
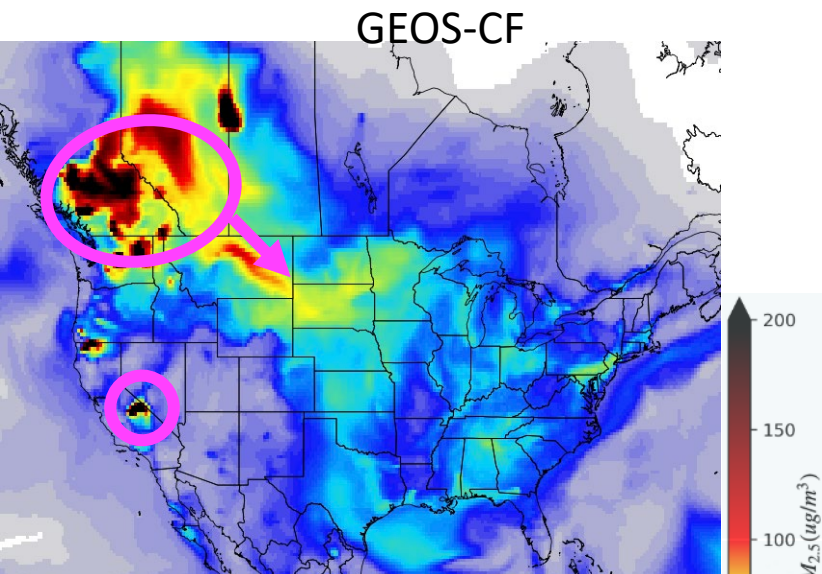
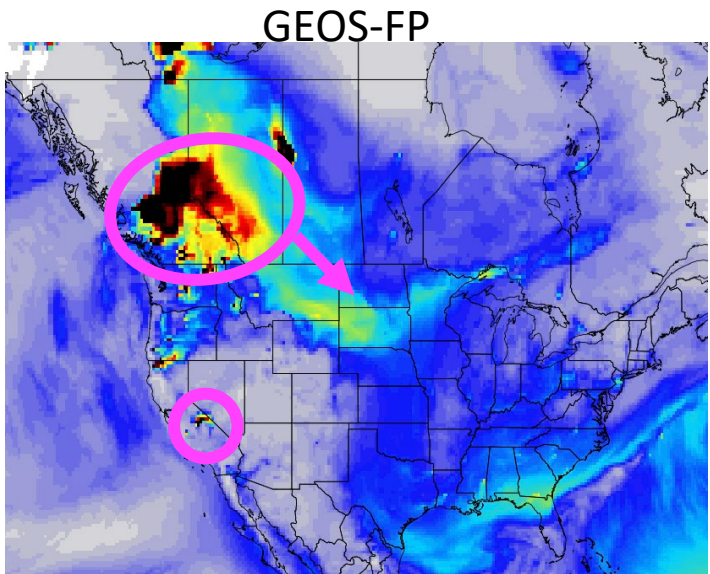


Canada MSC AniMET



(Tuesday 9/9)

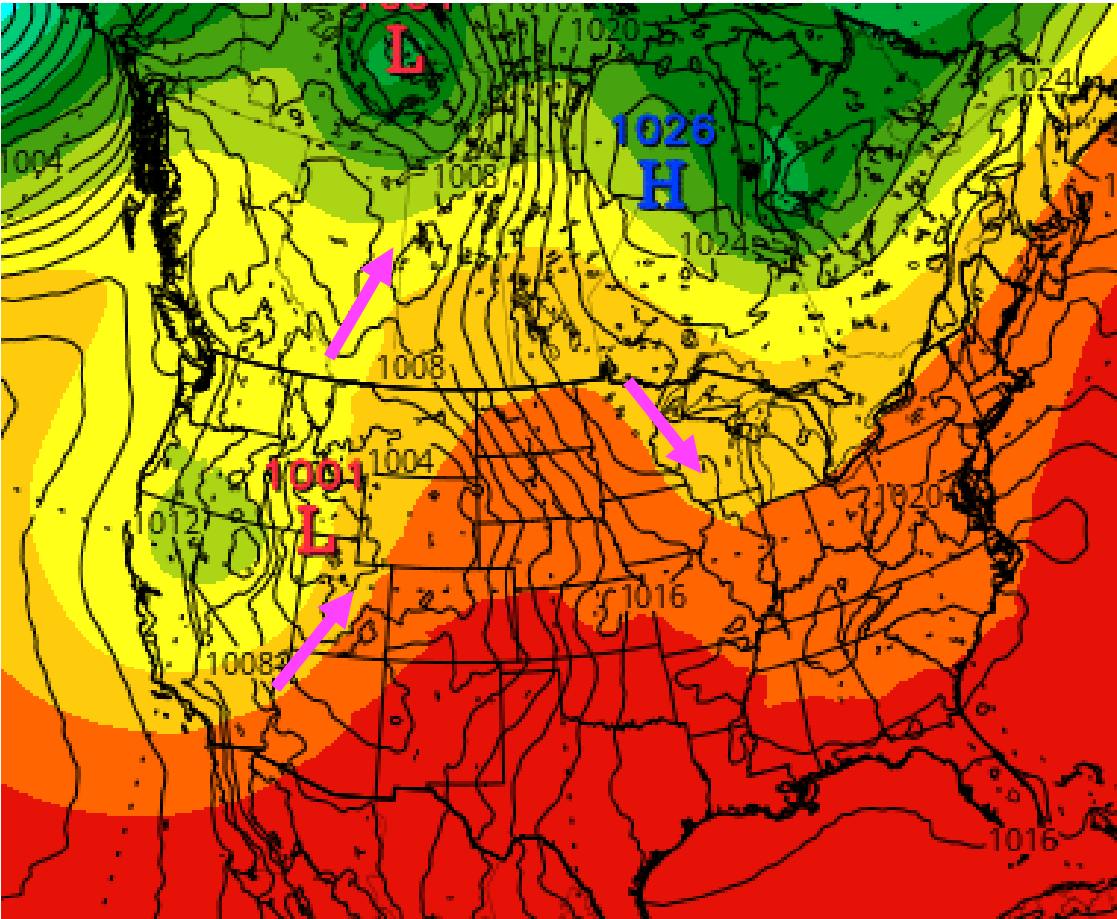
Model Means PM_{2.5}



Outlook: Short Range (1–3 days)

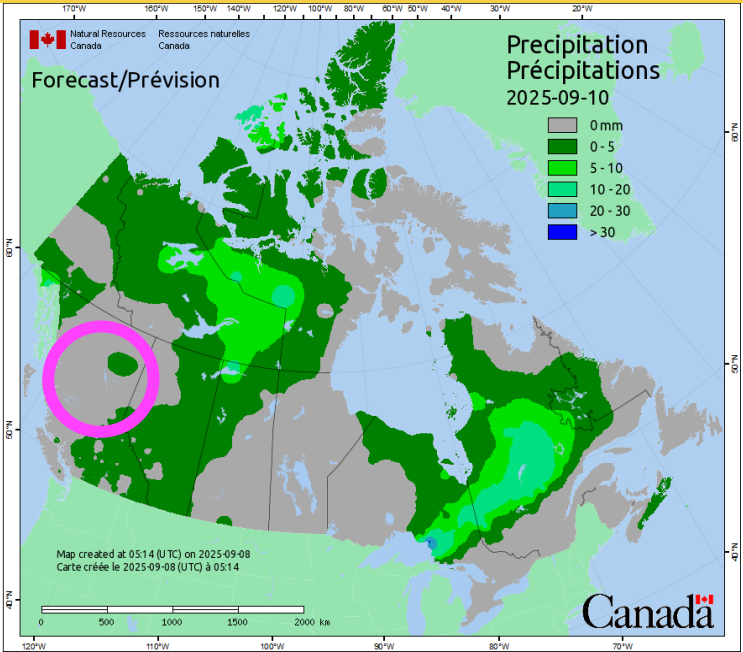
(Forecast **Wednesday 9/10**)

GFS 500 mb

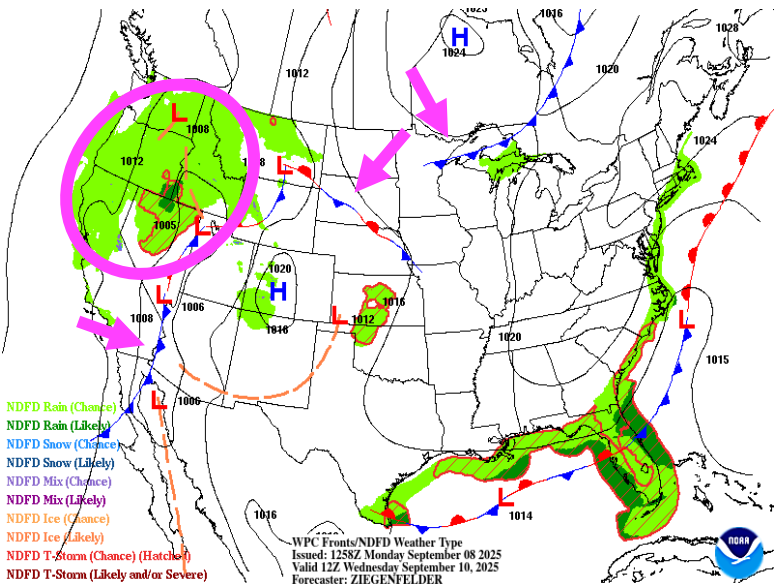


GFS 500mb Geopotential Height (dam) & MSLP (mb)
Init: 06z Sep 08 2025 Forecast Hour: [60] valid at 18z Wed, Sep 10 2025

Environment
Canada
Forecast



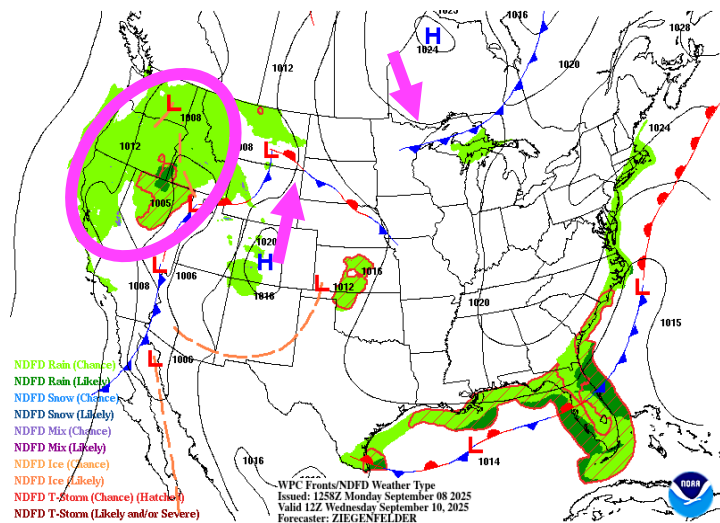
US NWS
Forecast



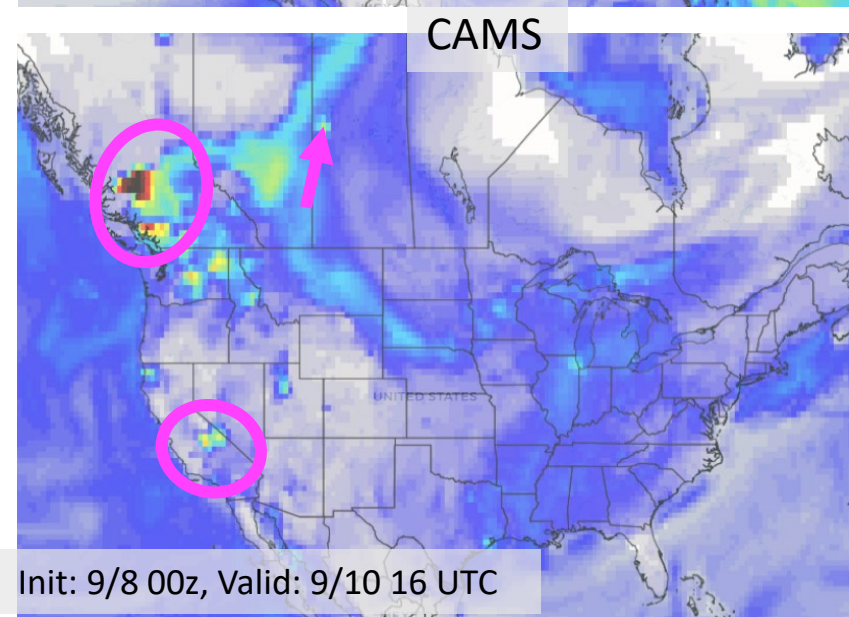
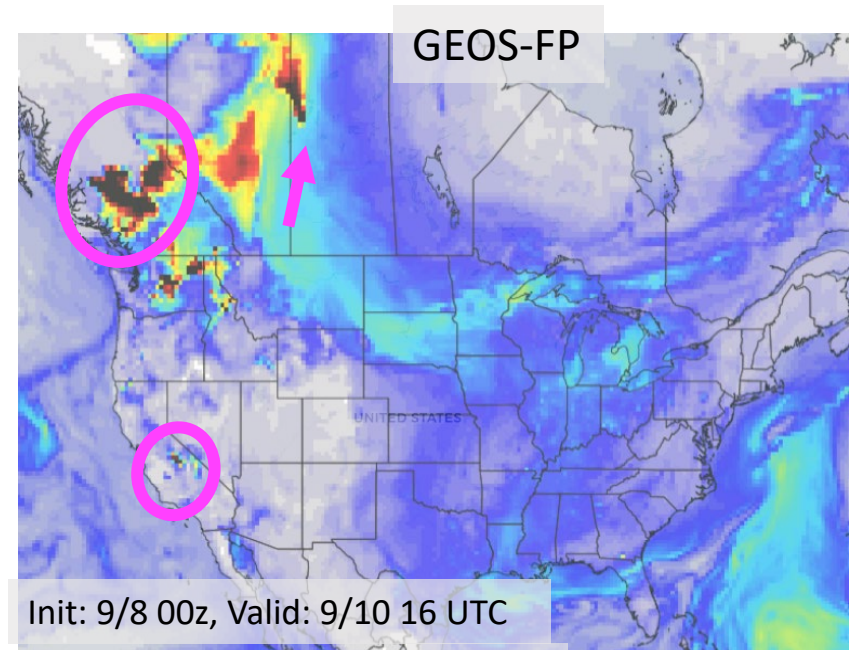
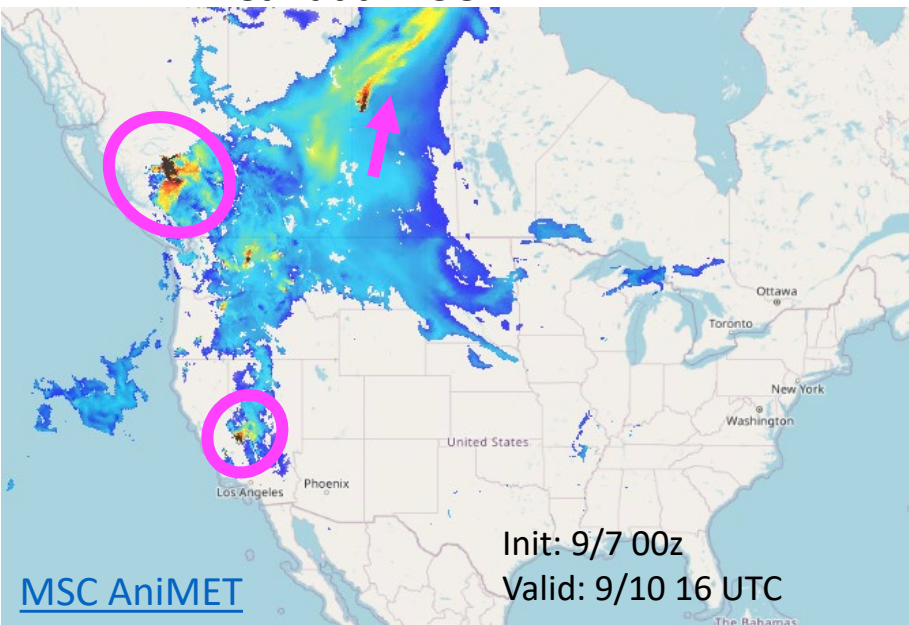
Outlook: Short Range (1–3 days)

Surface Forecast

(Wednesday 9/10)

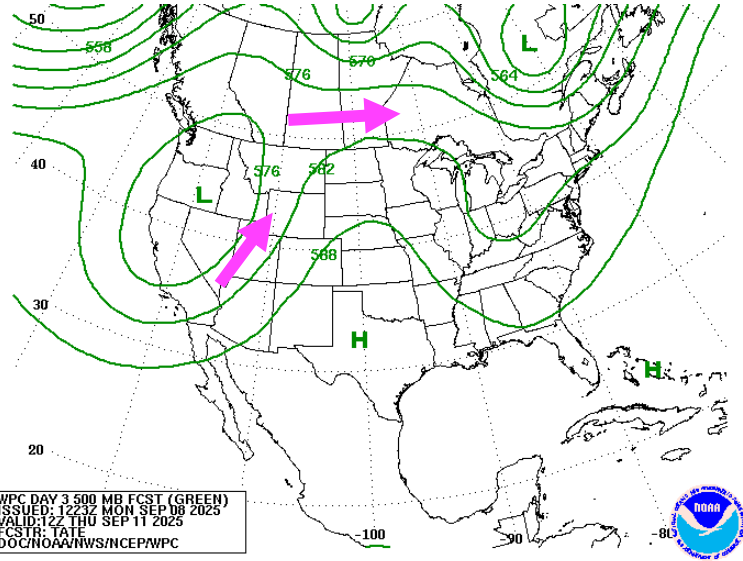


Canada MSC AniMET

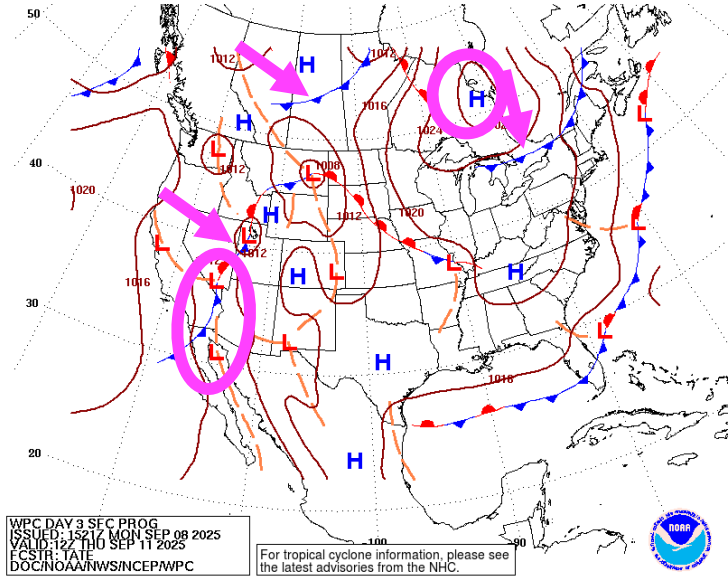


Outlook: Medium Range

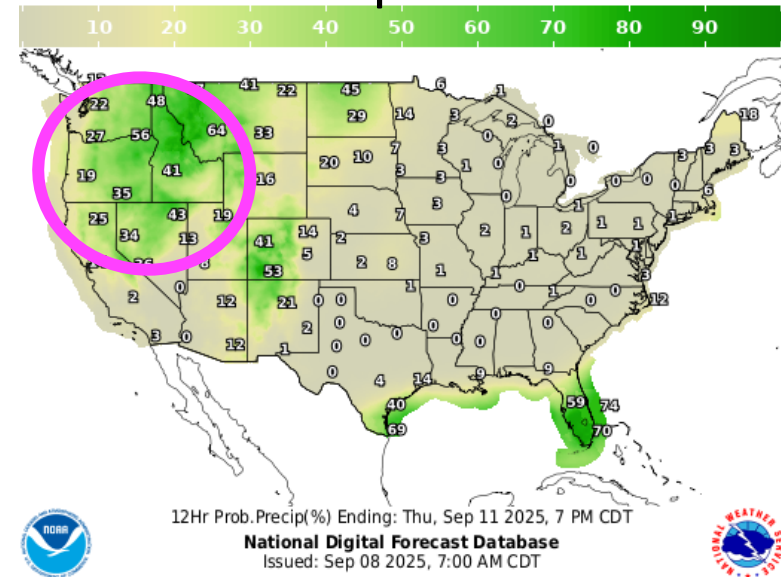
500 mb Contours



Sea Level

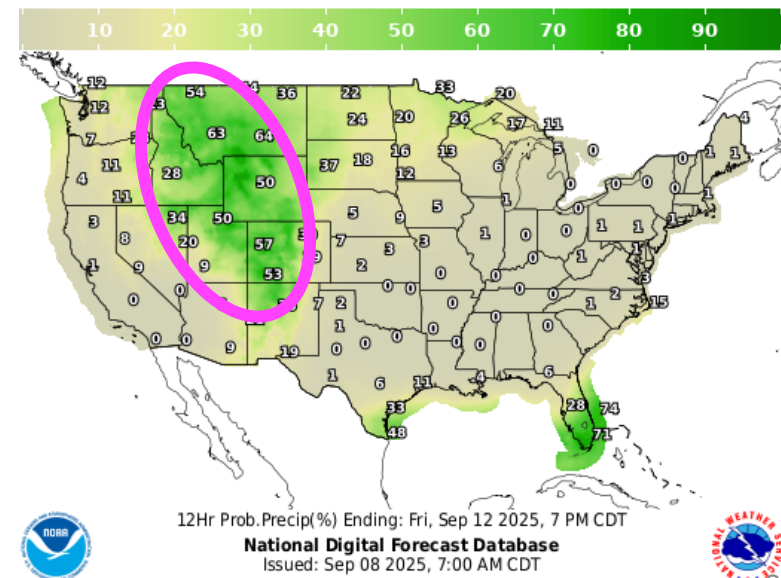
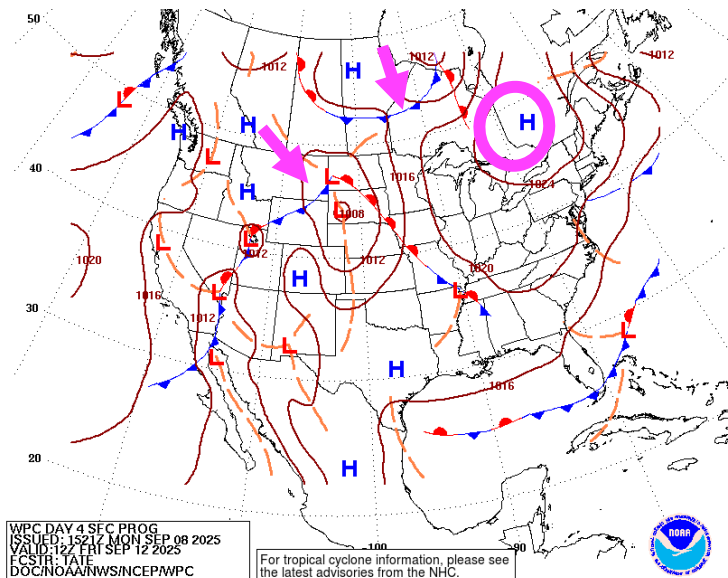
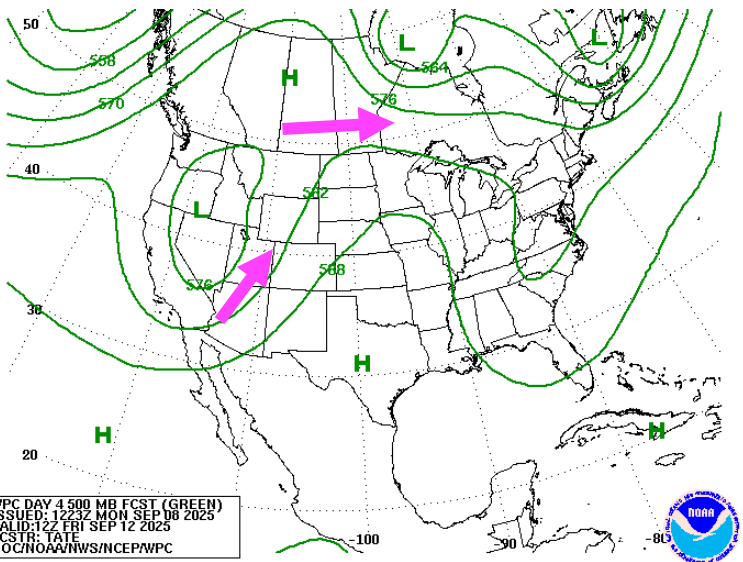


Precip Prob.



Thurs
9/11

Friday
9/12



Summary

Monday : Active wildfires in CA are heavily impacting the local AQI (hazardous to unhealthy) Wildfires in B.C. are impacting regional AQI, including the PNW and northern Midwest US

T → W : CA wildfire smoke will likely transport northeast. Aged smoke from B.C. wildfires will continue moving into the PNW and Midwest U.S., while fresh smoke is forecast to transport north.

Th → F: A deep trough aloft (500 mb) would support CA aged smoke transport northeast. B.C. wildfire smoke likely to continue impacting the US where weather fronts will limit the extent.