

# ClearSky Reruns for Accomplished Agricultural Burning by Automated FETS Access

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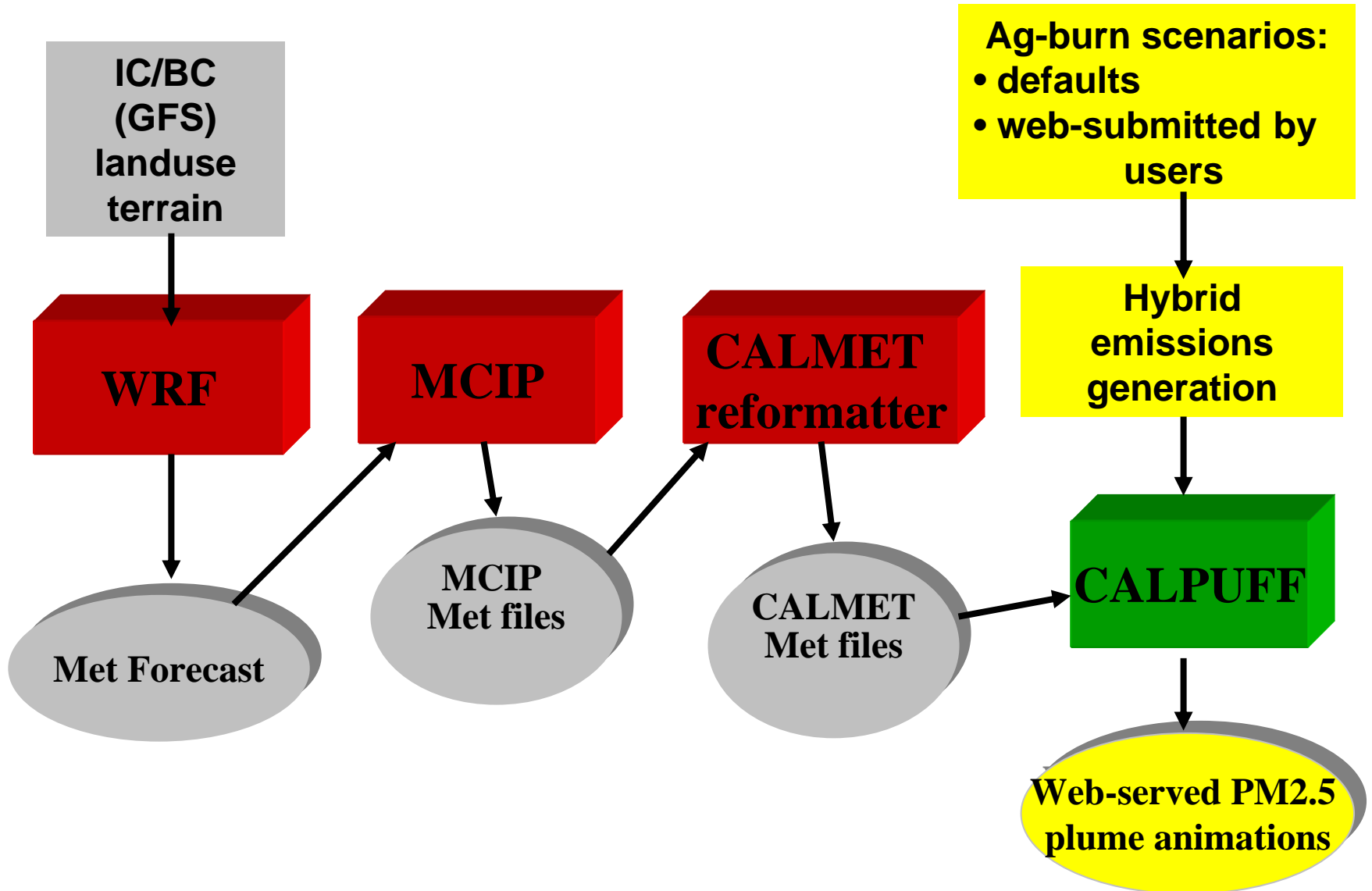
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*2009 FETS Project Meeting  
Boise, ID, August 31--Sept 1, 2009*

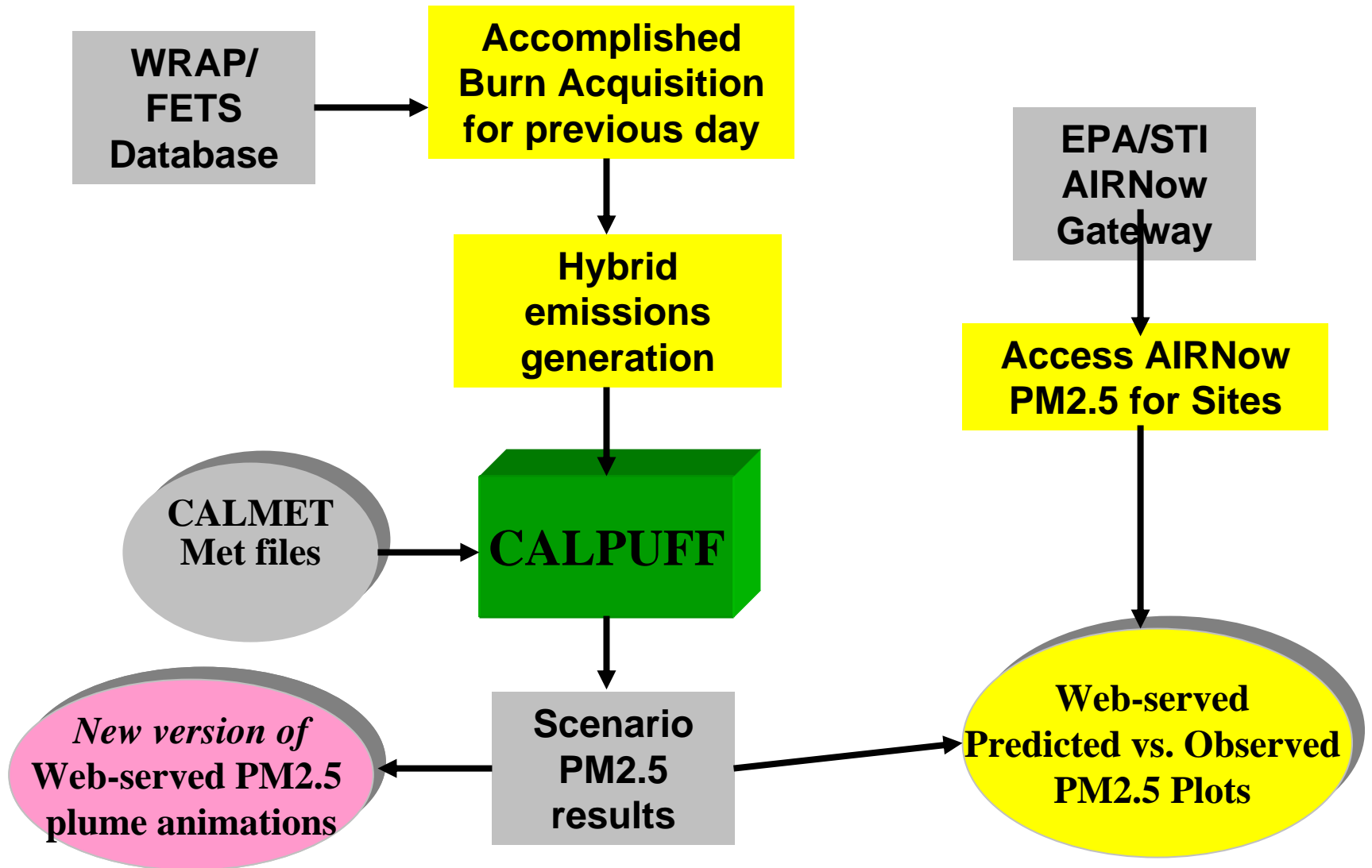
# Standard Overnight Run of the ClearSky Ag-Burn Smoke Dispersion Modeling Decision Support System



# ClearSky Use & Evaluation

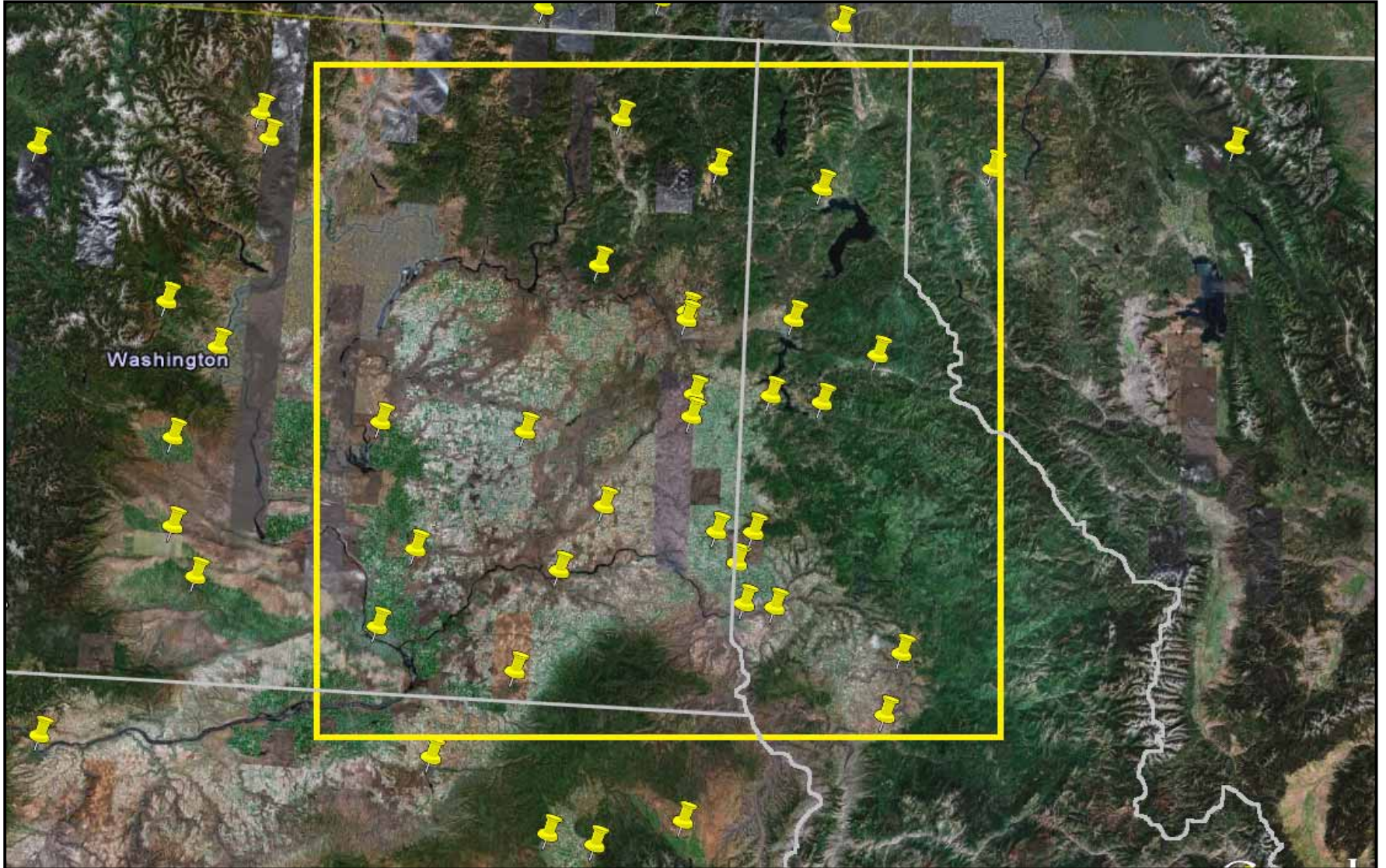
- ClearSky runs nightly with default emission scenarios and/or with user submitted scenarios
  - Emission scenarios are potential burns (may have little to do with the next day's reality)
- Previous evaluations have been post-burn season
  - Compilation of accomplished burns
  - Compilation of available PM2.5 ambient observations
  - Rerun of ClearSky for each burn day for the season
  - Analysis of model results and observations
  - A very labor intensive process, hampered by inconsistent methods for identifying accomplished burns
- FETS offers a new way to approach ClearSky Evaluation
  - Rapid (Automated) access to accomplished burns
  - Automated access to AIRNOW PM2.5 observations
  - Automated processing each day to develop performance statistics

# Accomplished Burn Rerun of ClearSky using FETS

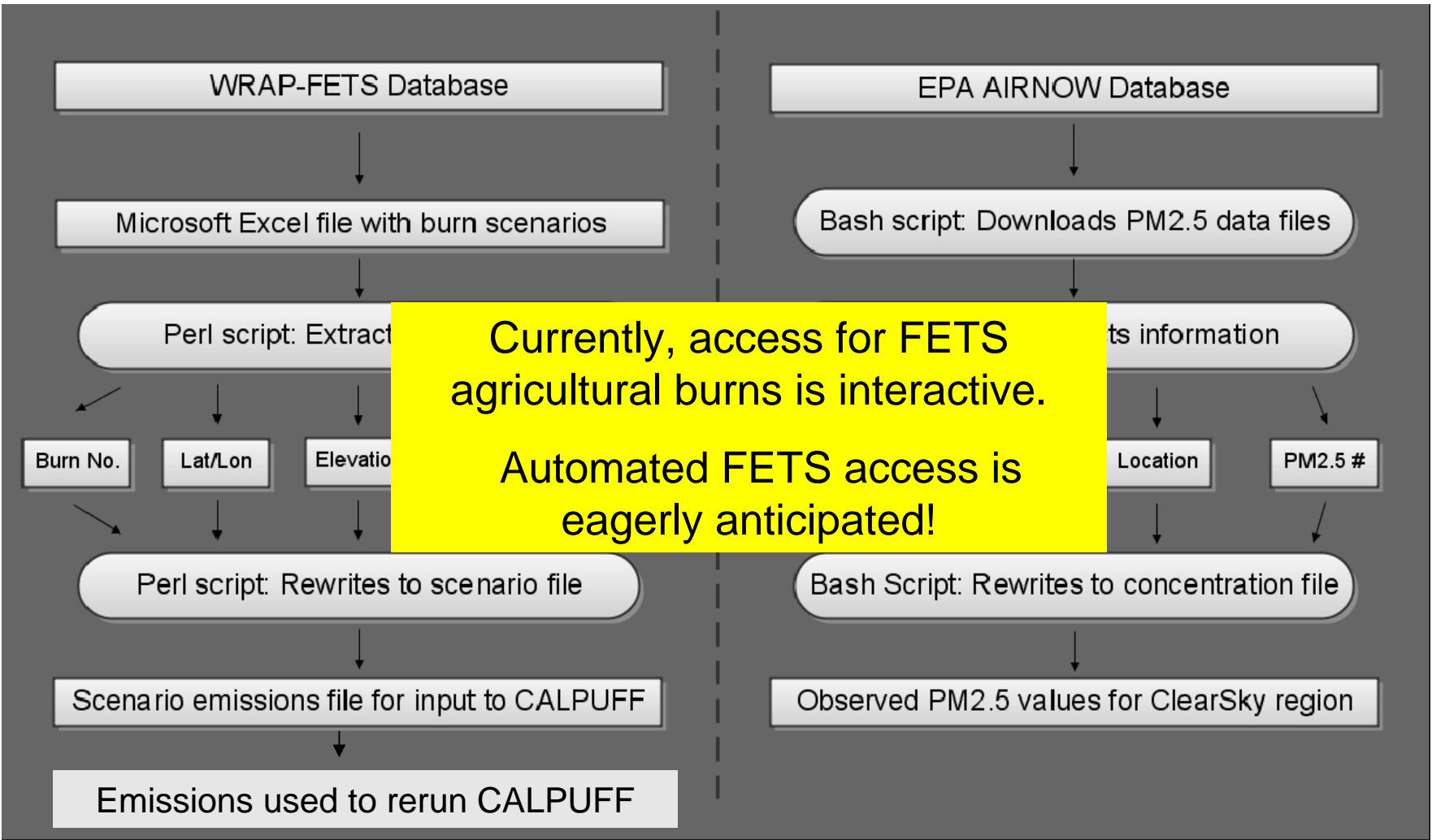




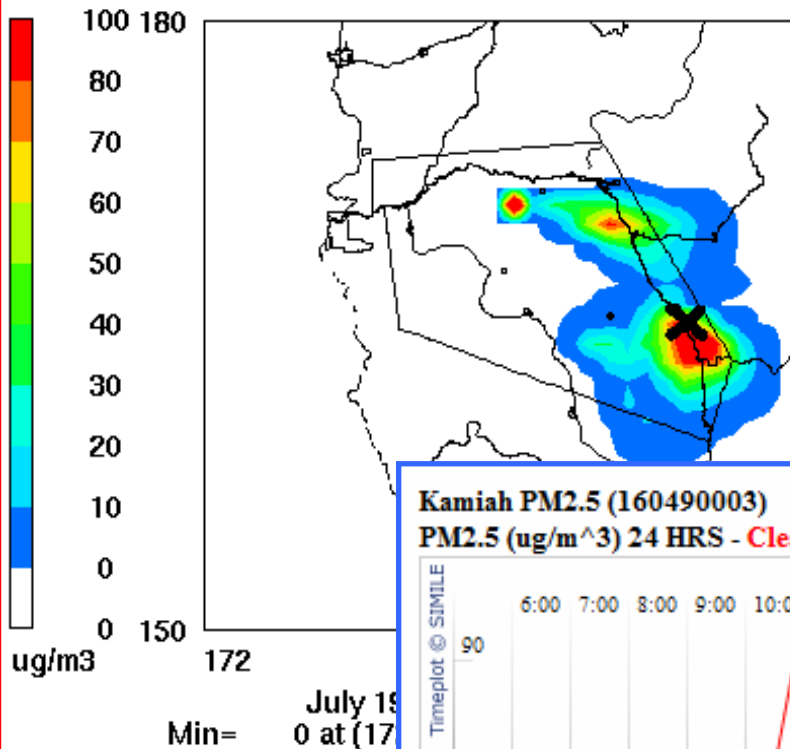
Monitoring data for PM<sub>2.5</sub> for comparison to ClearSky CALPUFF PM<sub>2.5</sub> results is obtained via the AIRNow gateway



Currently, access for FETS agricultural burns is interactive.  
Automated FETS access is eagerly anticipated!



## CALPUFF PM2.5 simulation for Nez Perce Indian Reservation

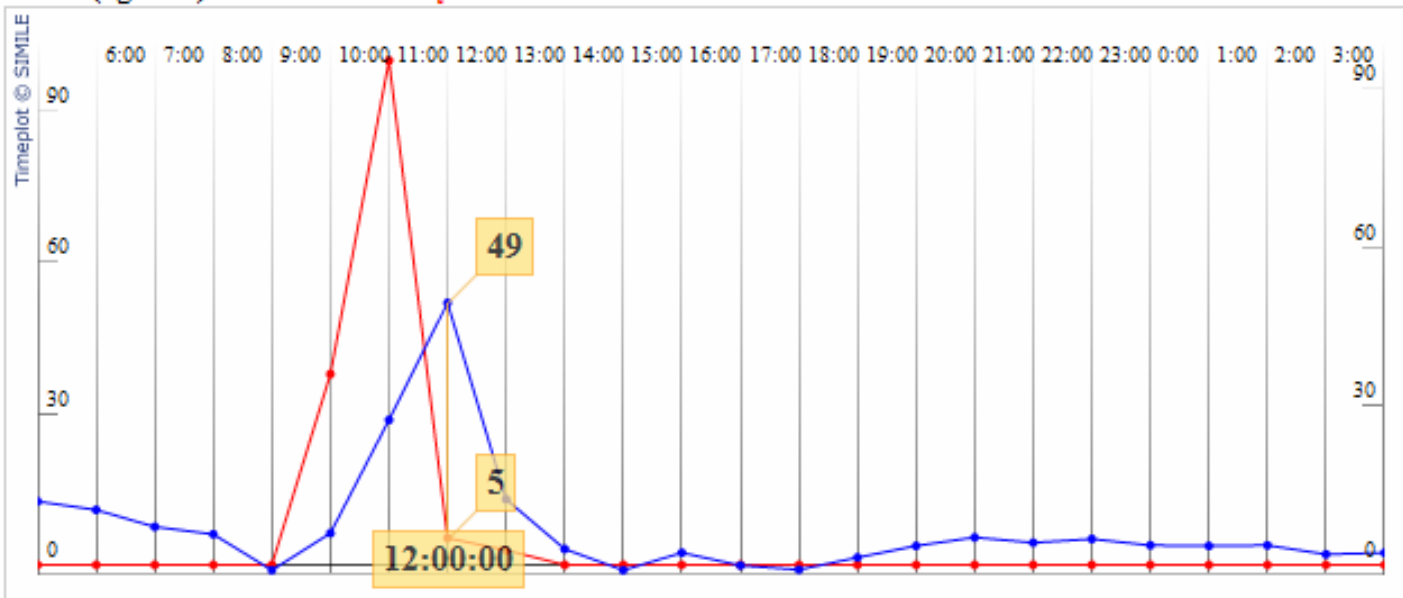


## Example

*Left:* ClearSky image for a model re-run for July 19, 2009. The Kamiah, ID PM2.5 station is marked “x”.  
*Below:* line plot of modeled and observed PM2.5

### Kamiah PM2.5 (160490003)

PM2.5 (ug/m<sup>3</sup>) 24 HRS - ClearSky Predicted vs. AIRNOW Observed





# Summary

- In this project, we attempt to provide burn coordinators with a way to retrospectively compare ClearSky PM2.5 results for accomplished agricultural burns against PM2.5 observations retrieved from EPA's AIRNow database.
- This prototype system accesses accomplished burns, submitted by the Nez Perce Tribe, from the WRAP Fire Emissions Tracking System (FETS) and uses these to generate ClearSky scenarios to model.
- Our goal is to improve how well ClearSky can support agricultural-burning decisions. Automated re-simulation of accomplished ag burns will build a database of well-matched simulated and observed results for use in improving ClearSky and in improving user confidence.





Thanks for your attention!

**Acknowledgments:**

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