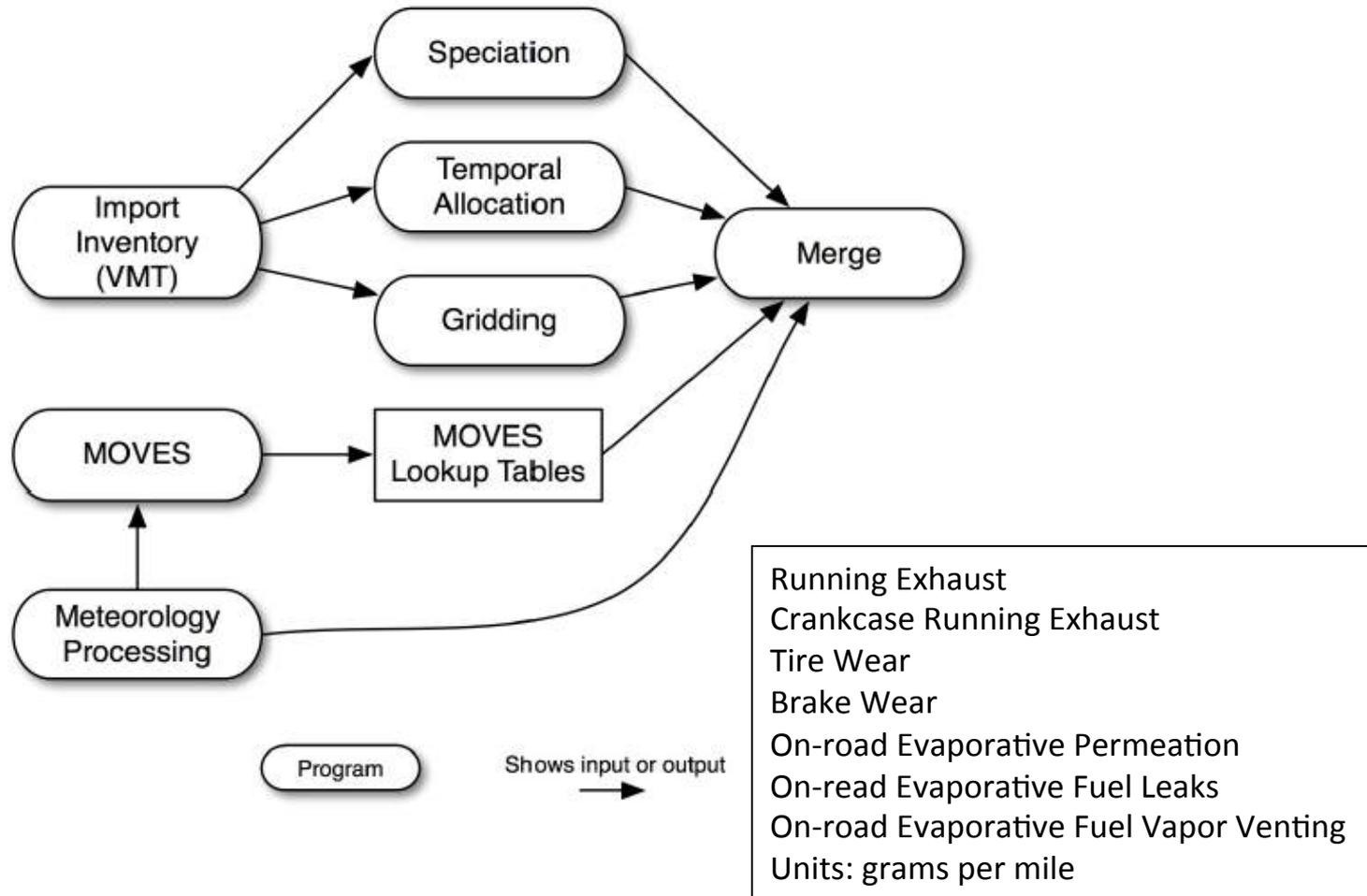


Approach for using MOVES in AIRPACT-4

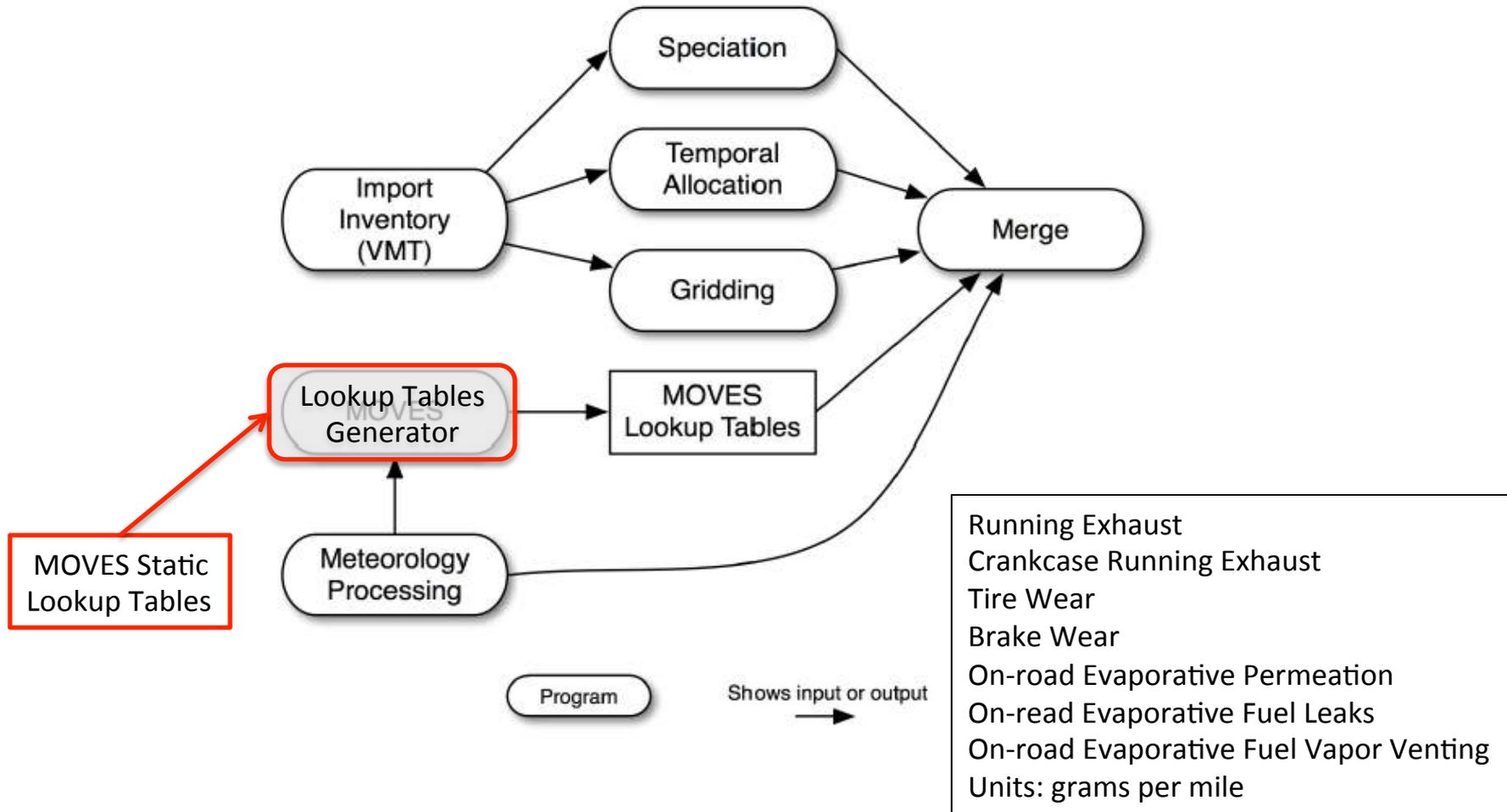
- Standard approach
 - Run MOVES on fly
 - No program changes for SMOKE process
 - Takes too long to run
- AIRPACT-4 uses a static lookup table approach
 - Static lookup table generated by IDEQ
 - Modified SMOKE program and scripts by IDEQ
 - Shorten day to day process time (20-30 minutes)
- MOBILE6 is still applied in Canada (with 12-km resolution)

Standard RatePerDistance Process

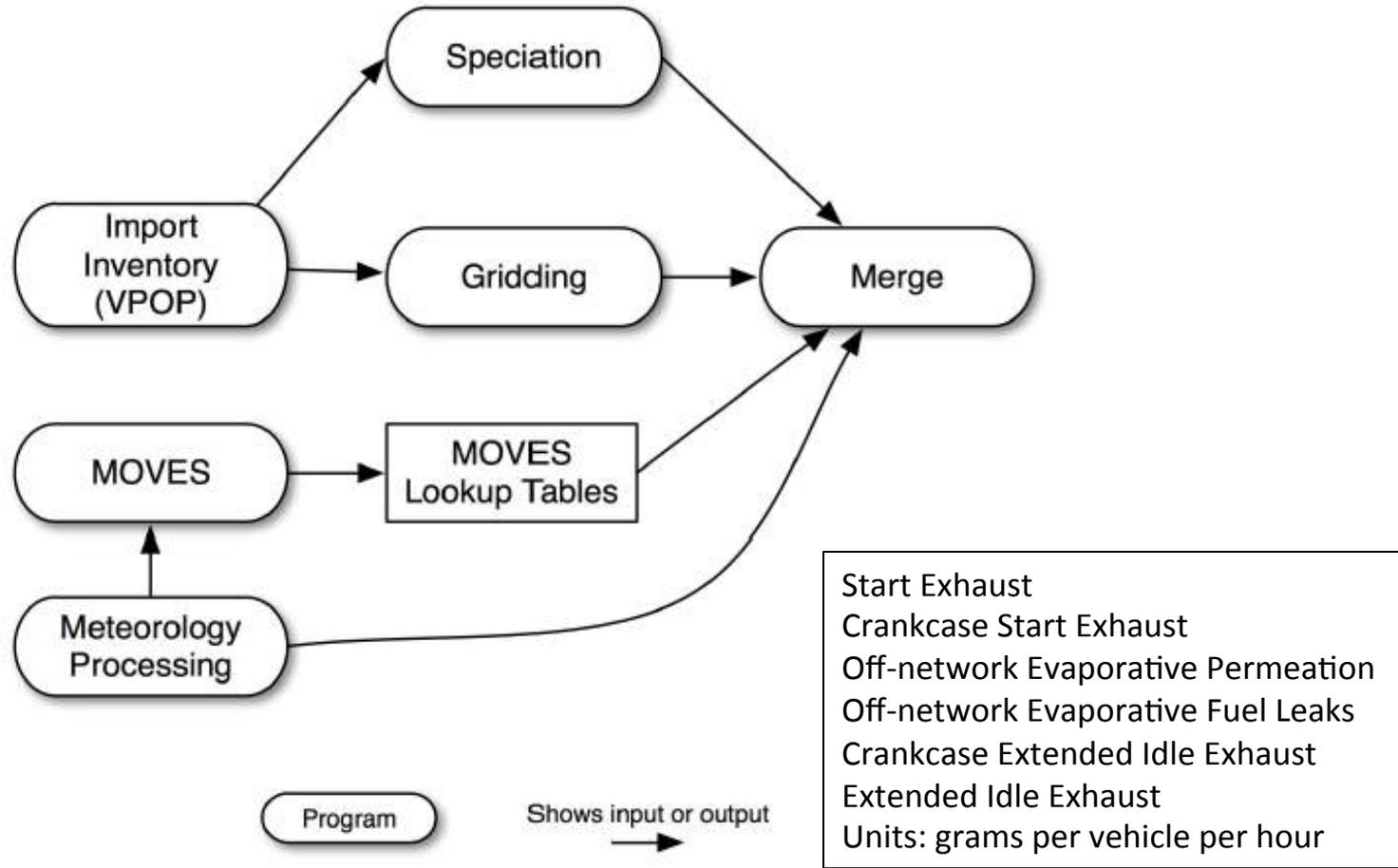


Static Lookup Table Approach

RatePerDistance Process

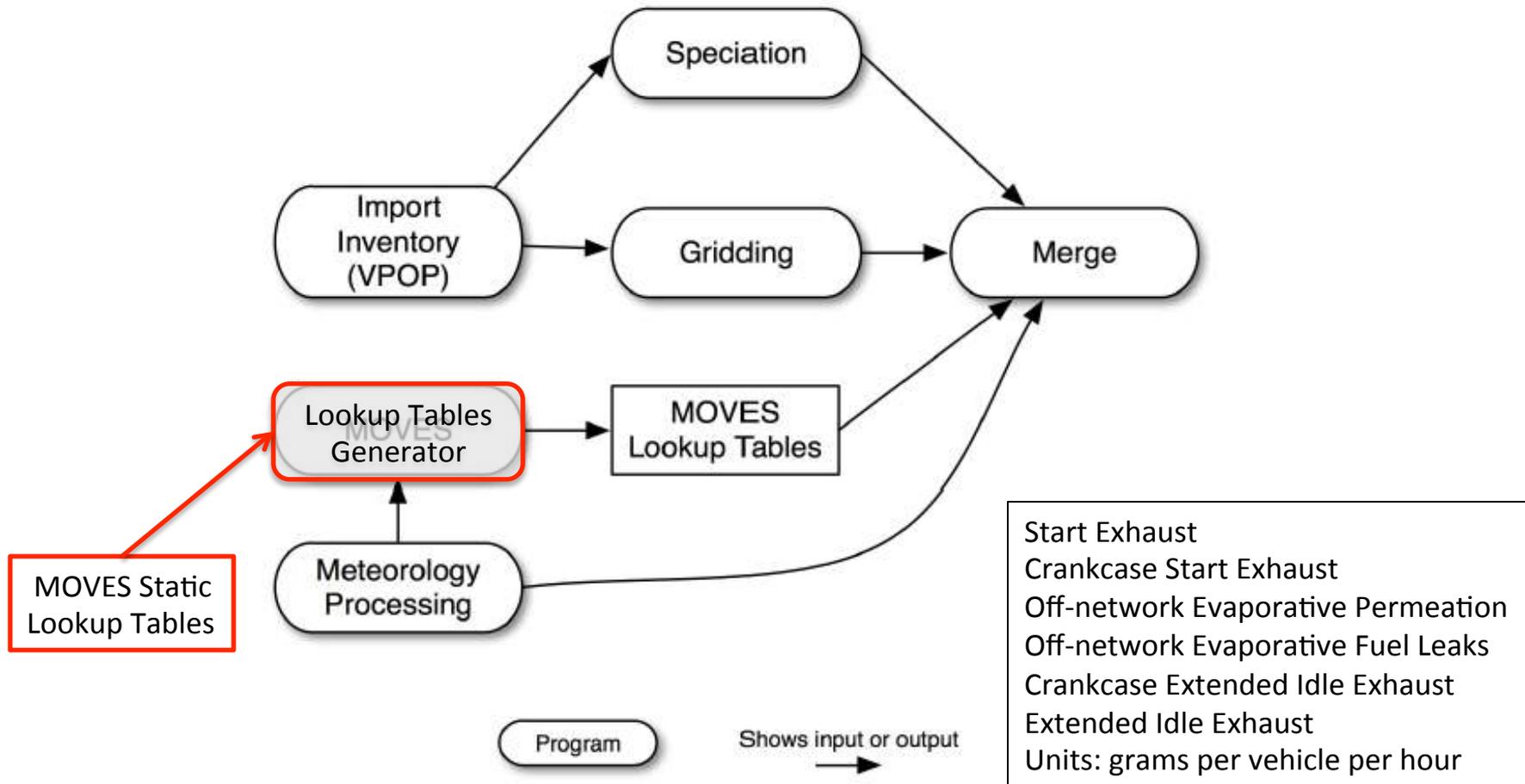


Standard RatePerVehicle Process

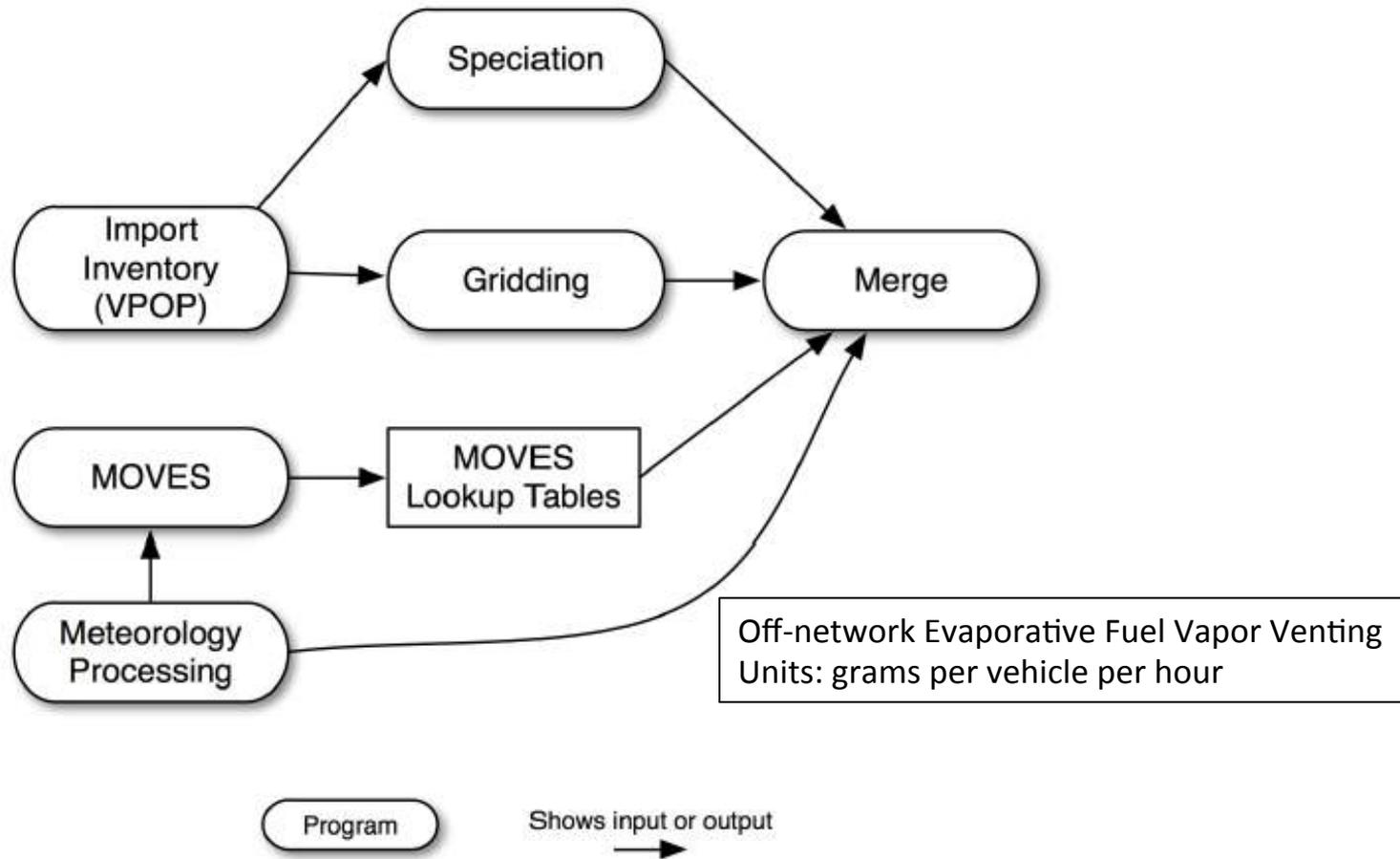


Static Lookup Table Approach

RatePerVehicle Process



Standard RatePerProfile Process



AIRPACT-4's MOVES vs MOBILE6 Comparison

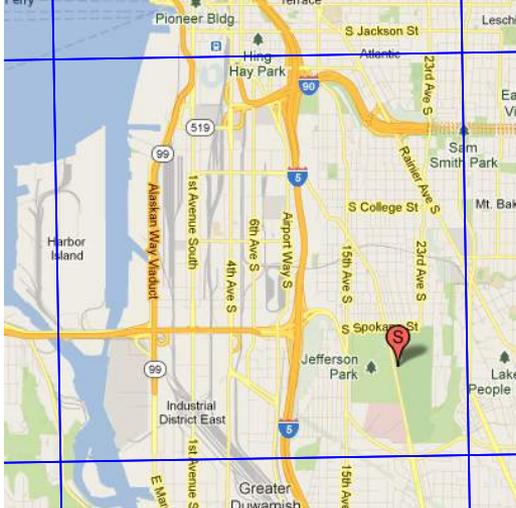
Simulation Period:

01/14/2009 to 01/23/2009

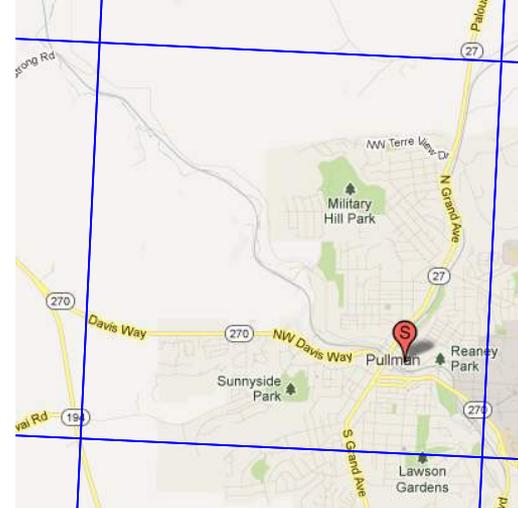
This period includes the “cloudy stagnation”
event observed during the Treasure Valley Study near Boise

Cells for MOVES vs MOBILE6 Comparison

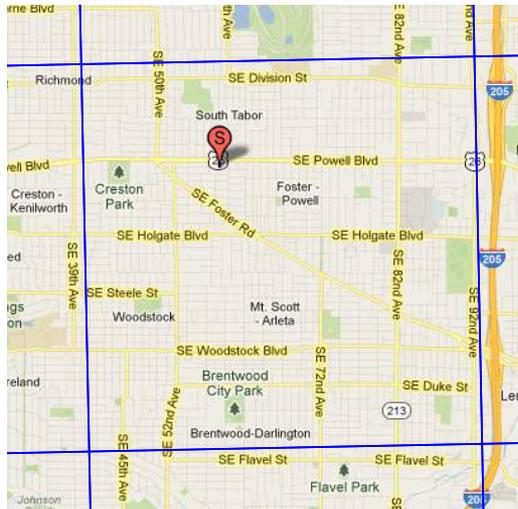
Seattle - Beacon Hill



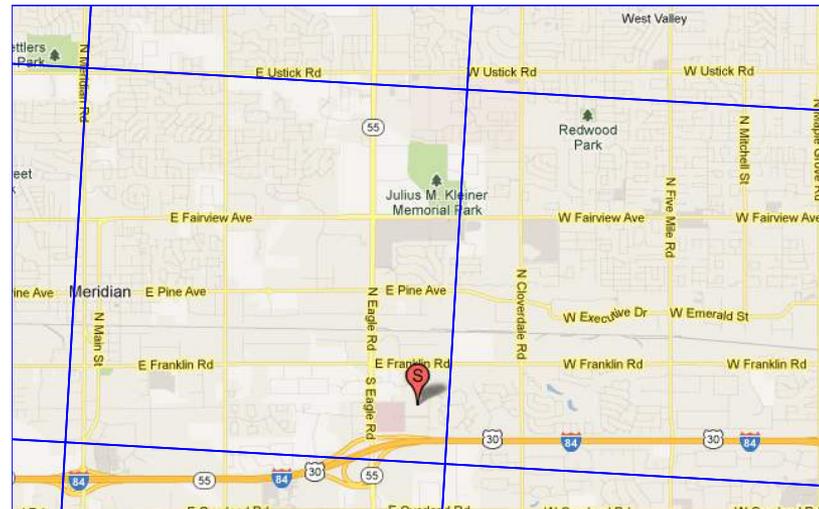
Portland



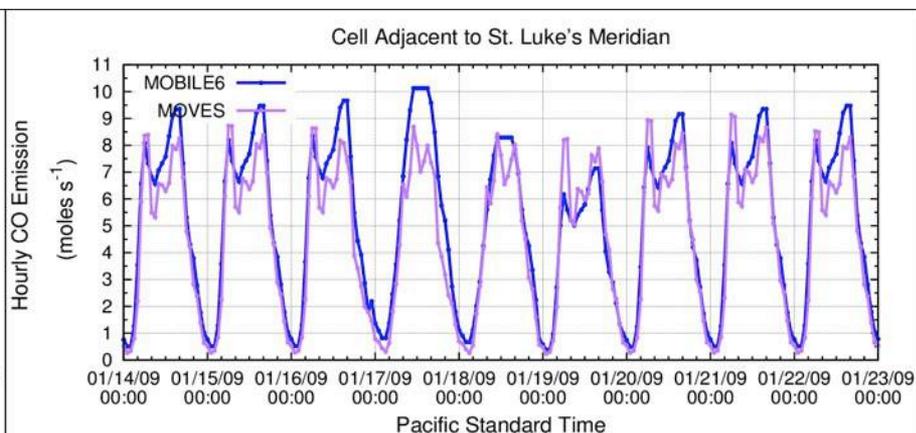
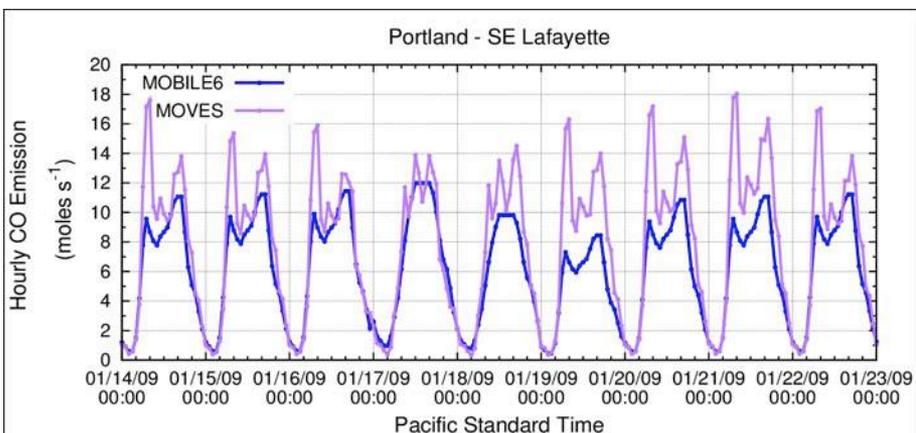
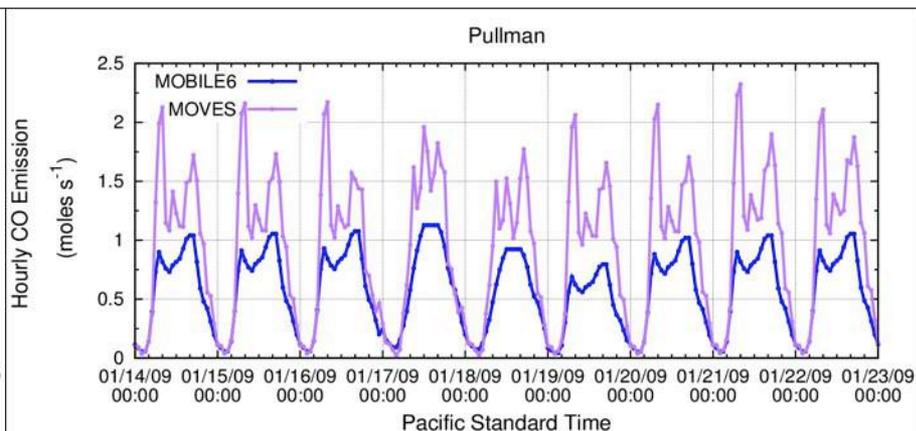
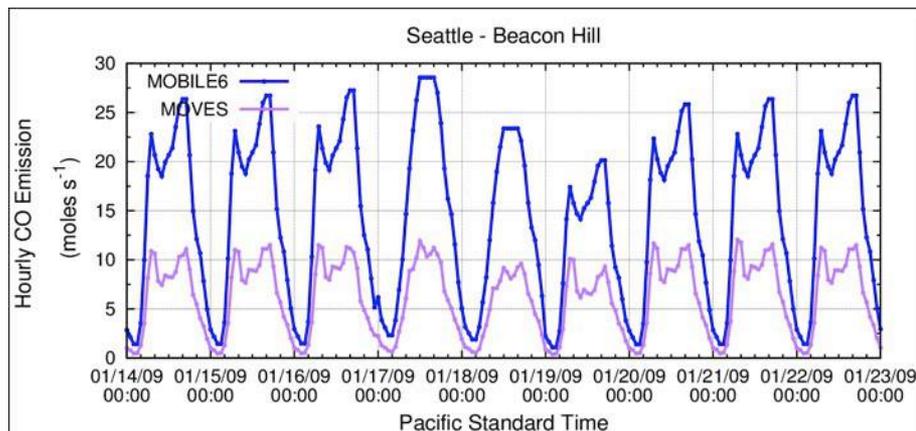
Portland - SE Lafayette



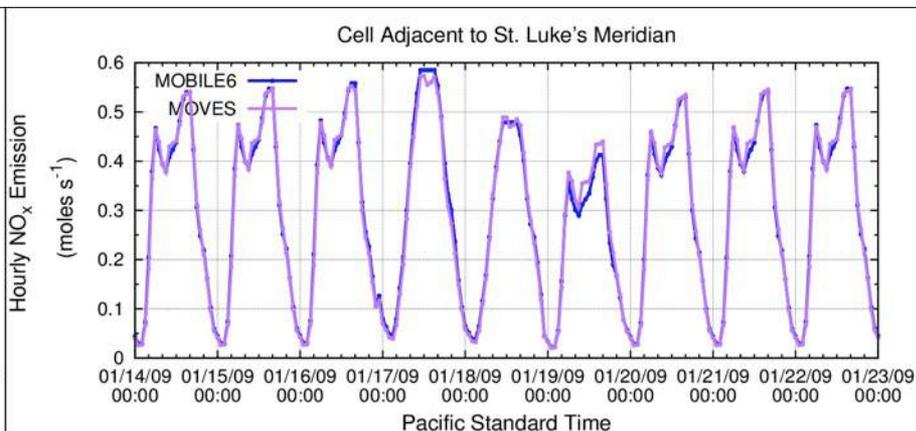
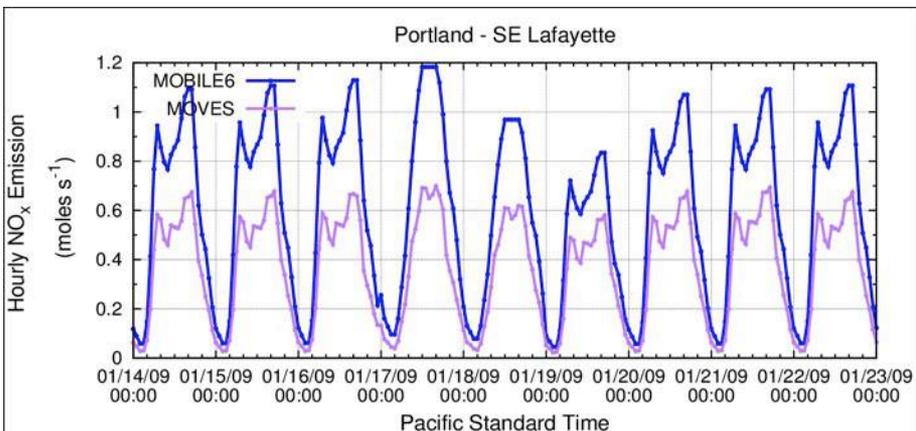
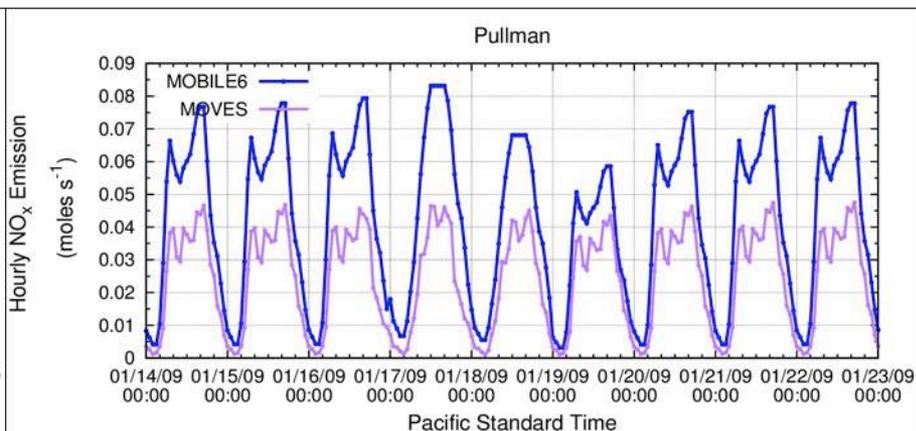
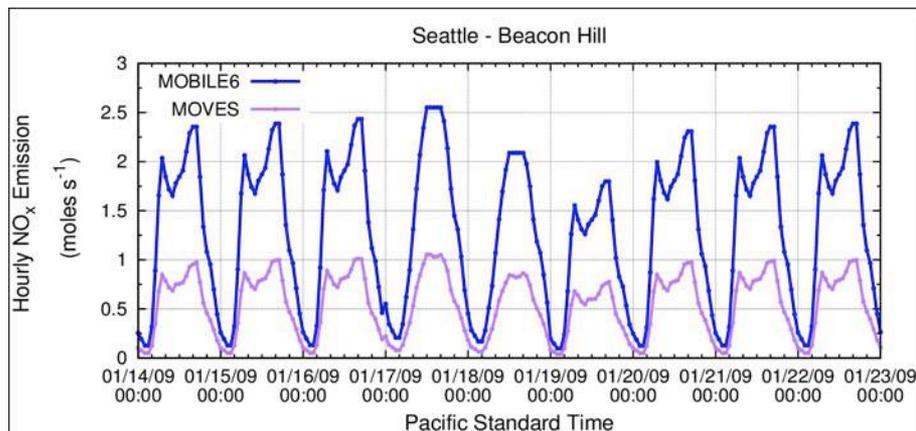
Meridian - St Luke's



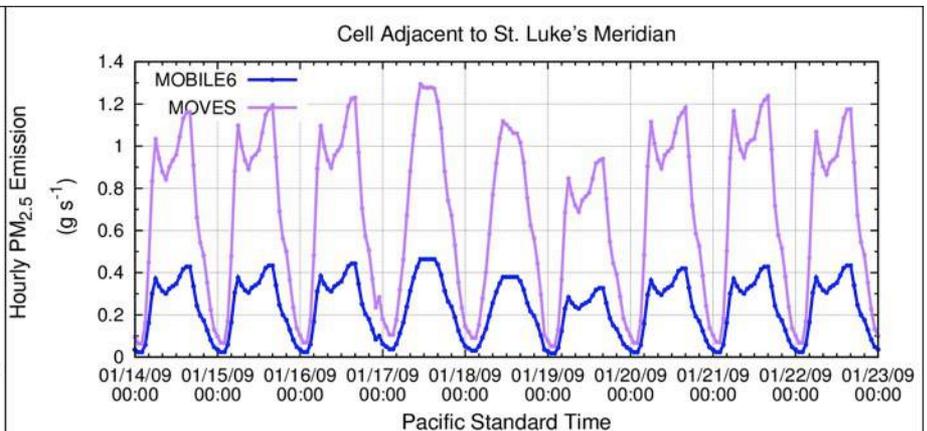
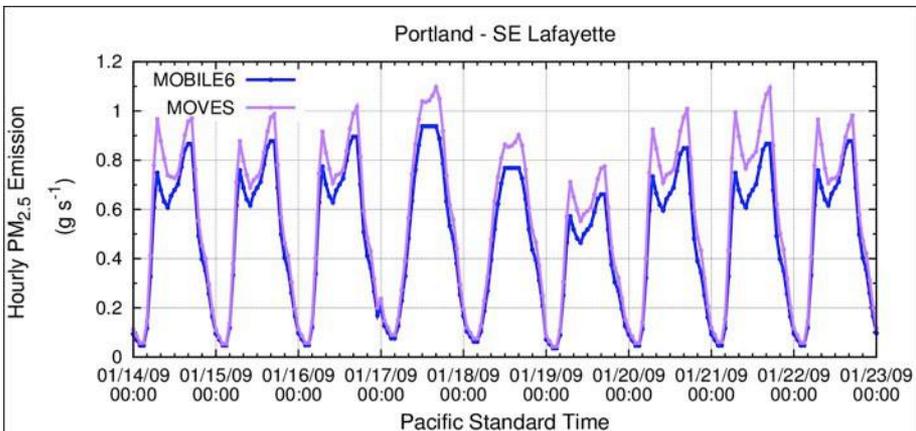
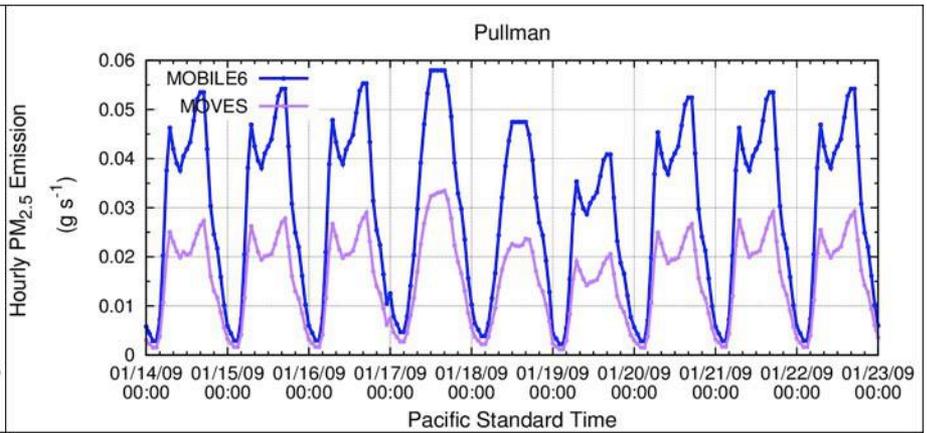
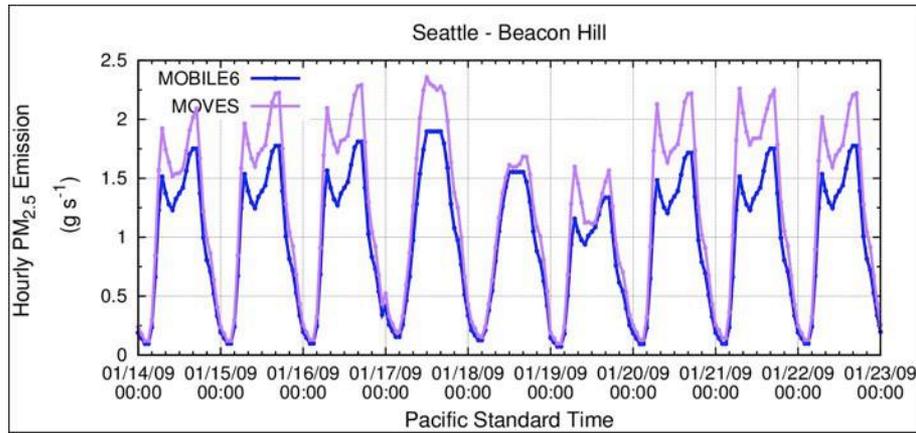
MOVES vs MOBILE6 Emissions: CO



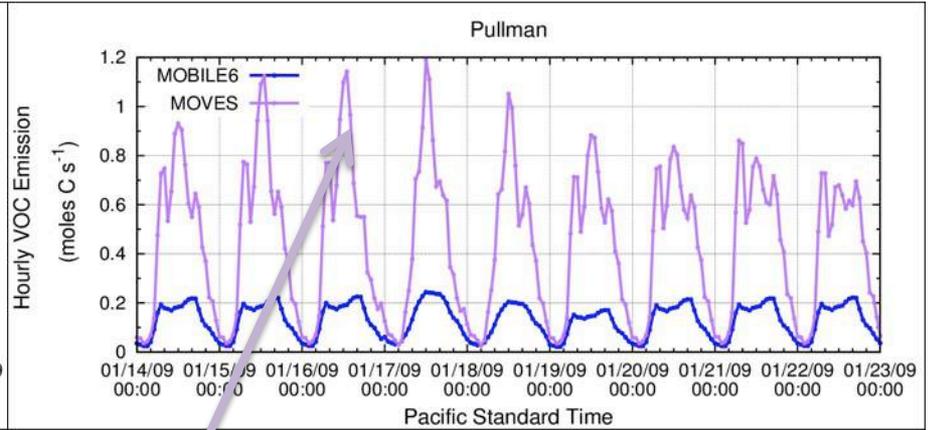
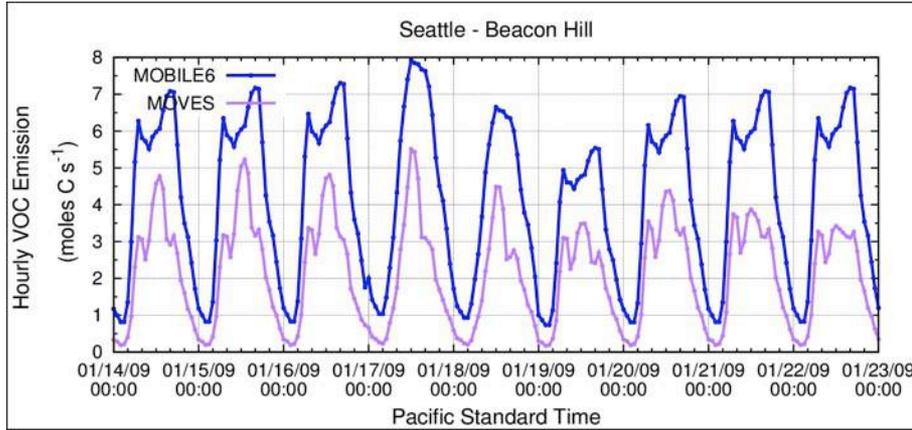
MOVES vs MOBILE6 Emissions: NO_x



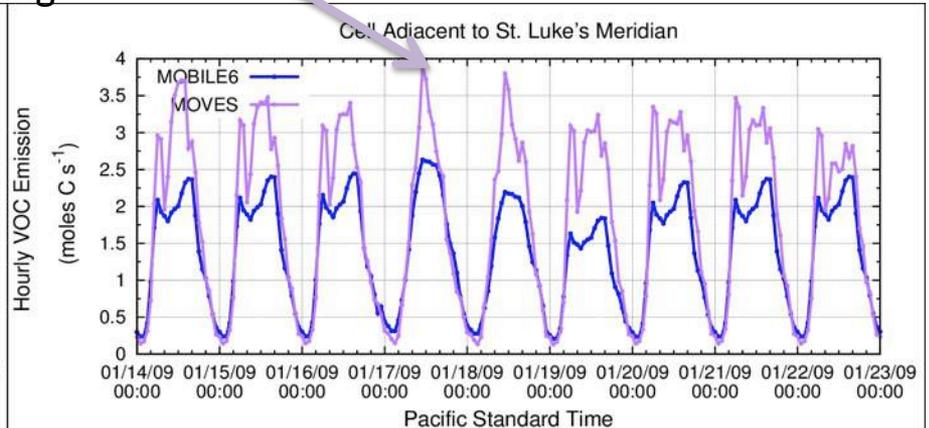
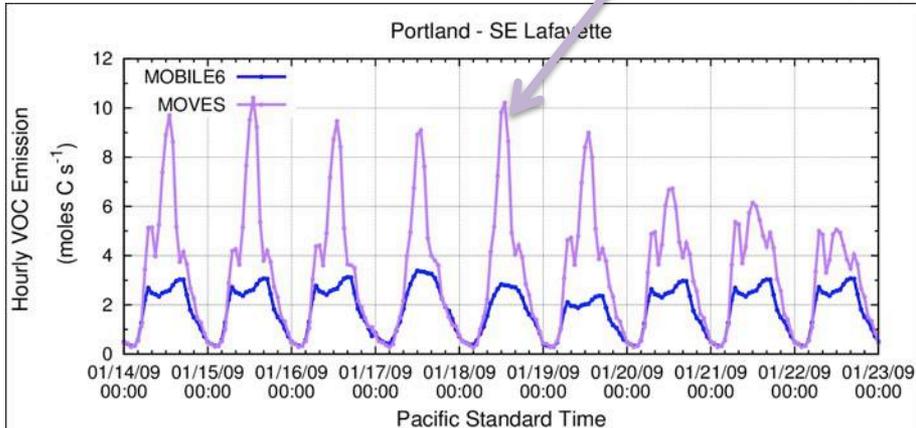
MOVES vs MOBILE6 Emissions: PM_{2.5}



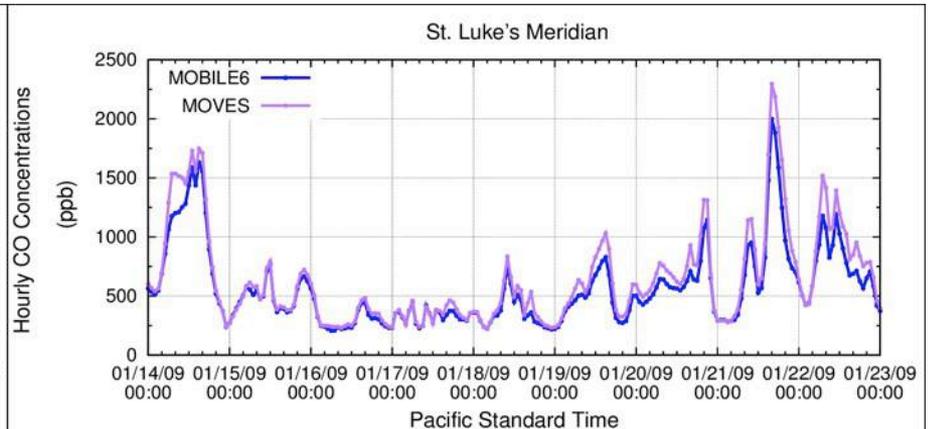
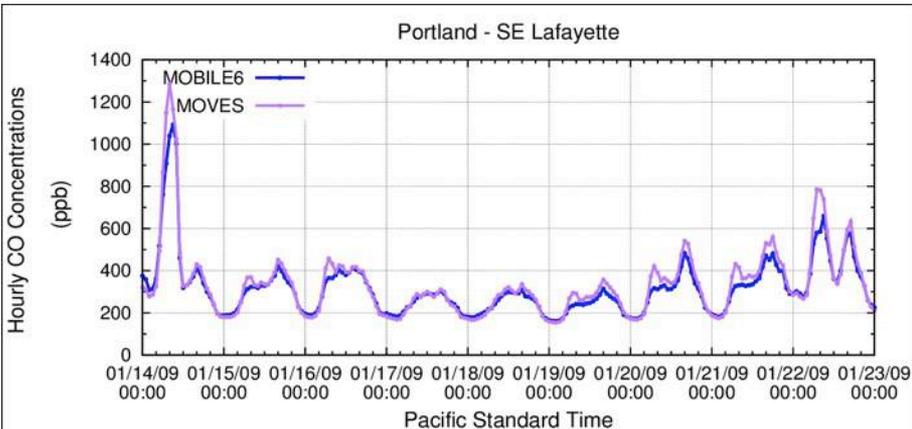
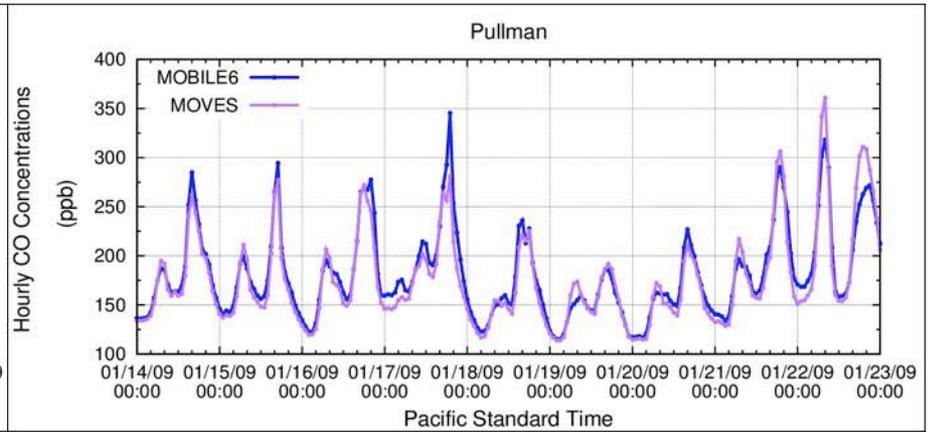
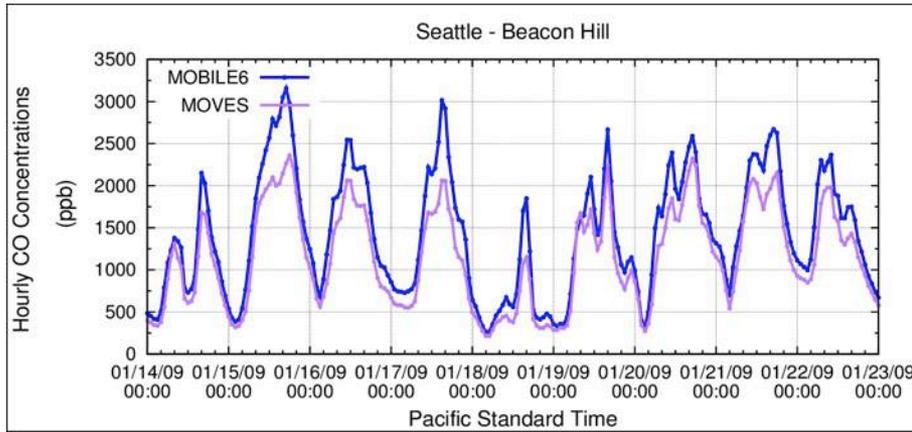
MOVES vs MOBILE6 Emissions: VOC



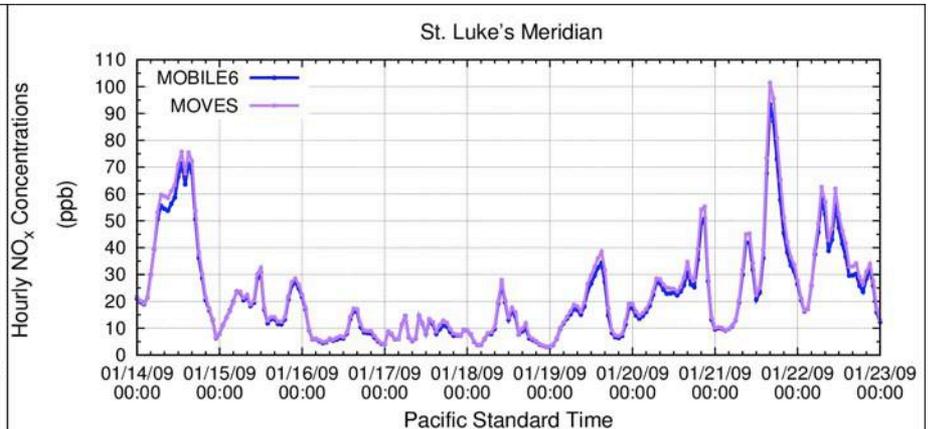
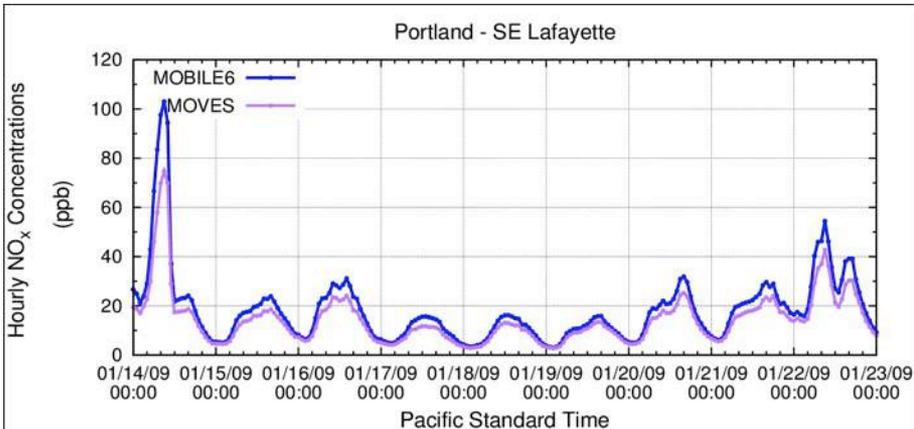
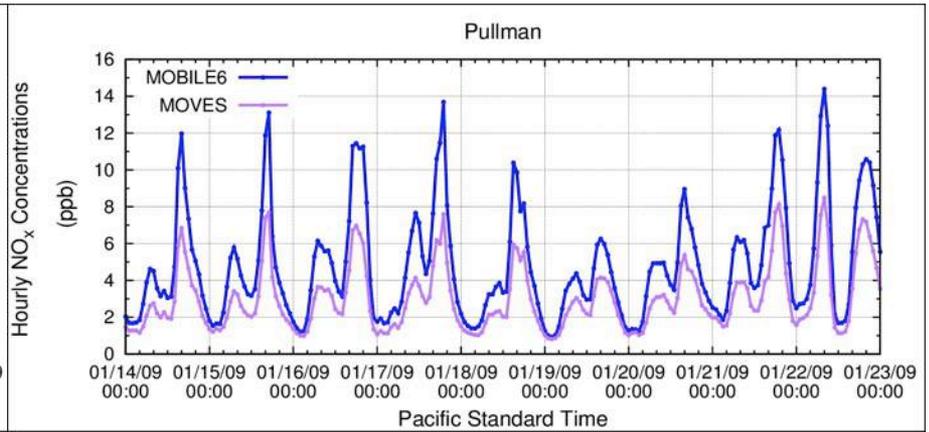
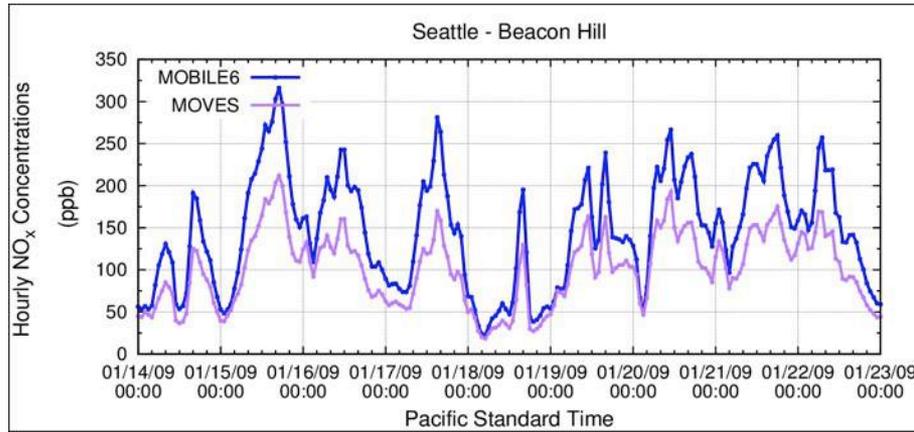
Due to Off-network
Evaporative Fuel Vapor
Venting



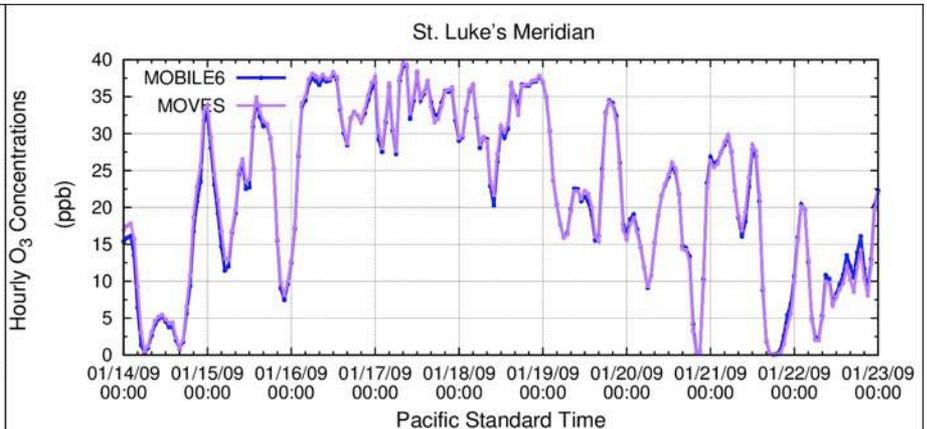
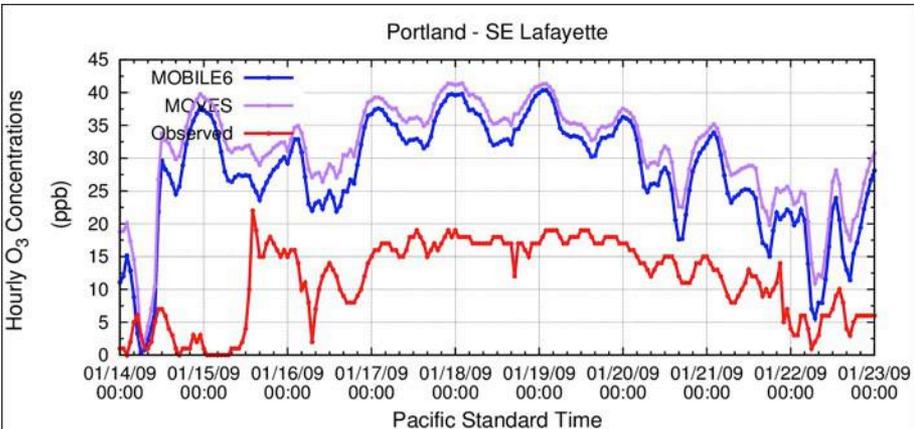
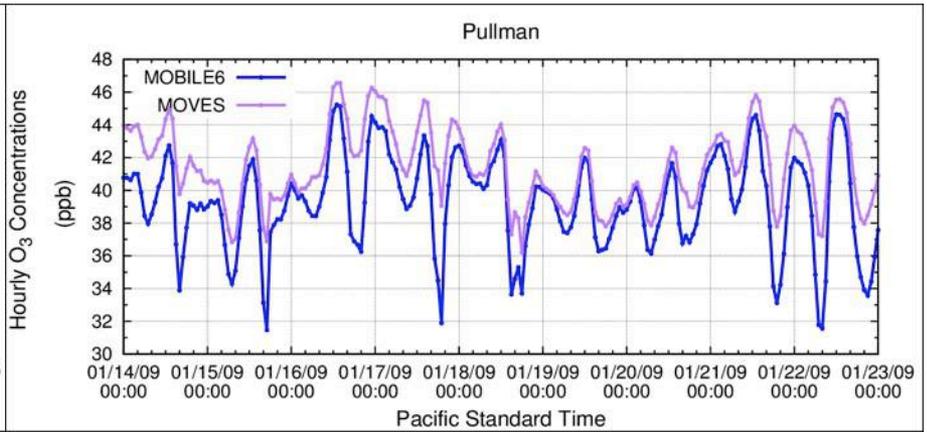
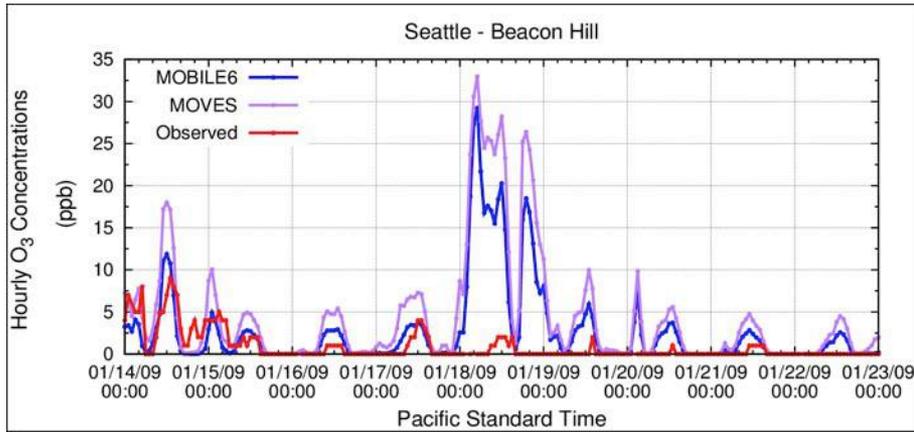
MOVES vs MOBILE6: Impact on CO Concentrations



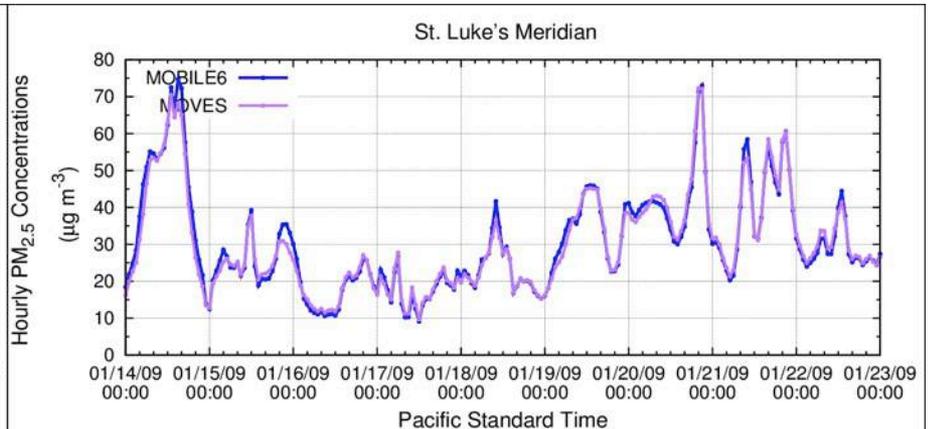
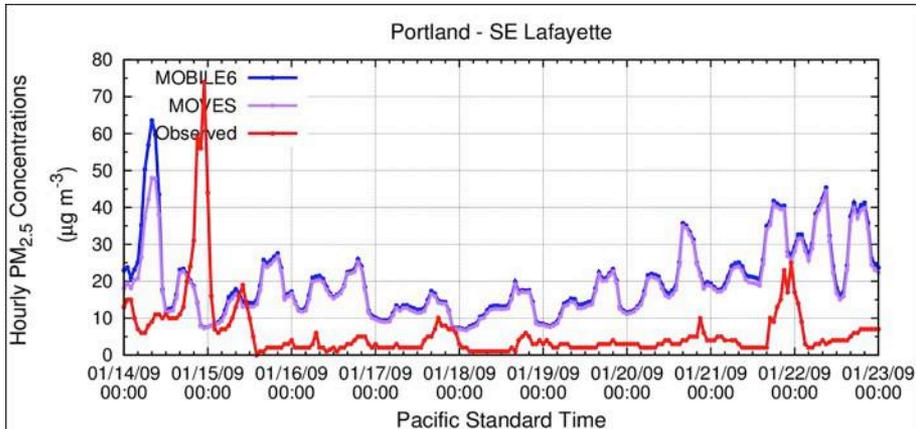
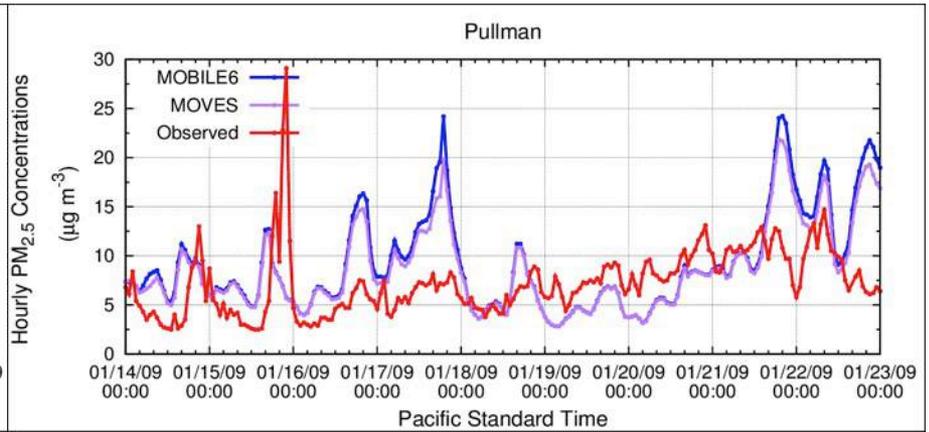
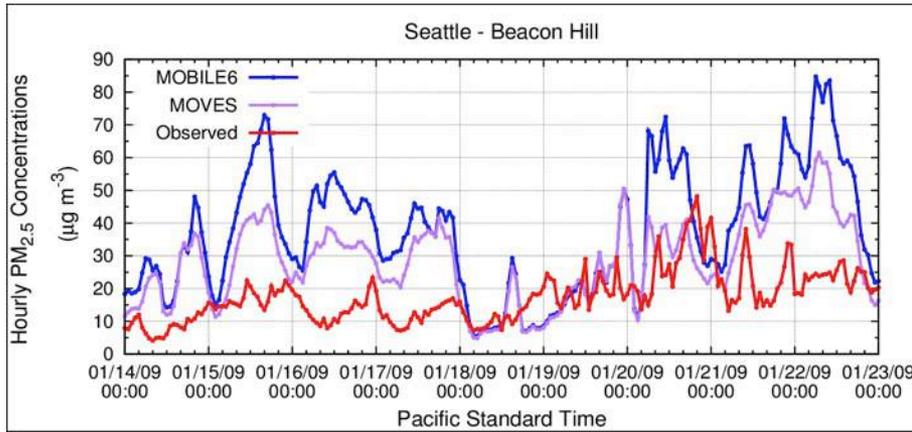
MOVES vs MOBILE6: Impact on NO_x Concentrations



MOVES vs MOBILE6: Impact on O₃ Concentrations



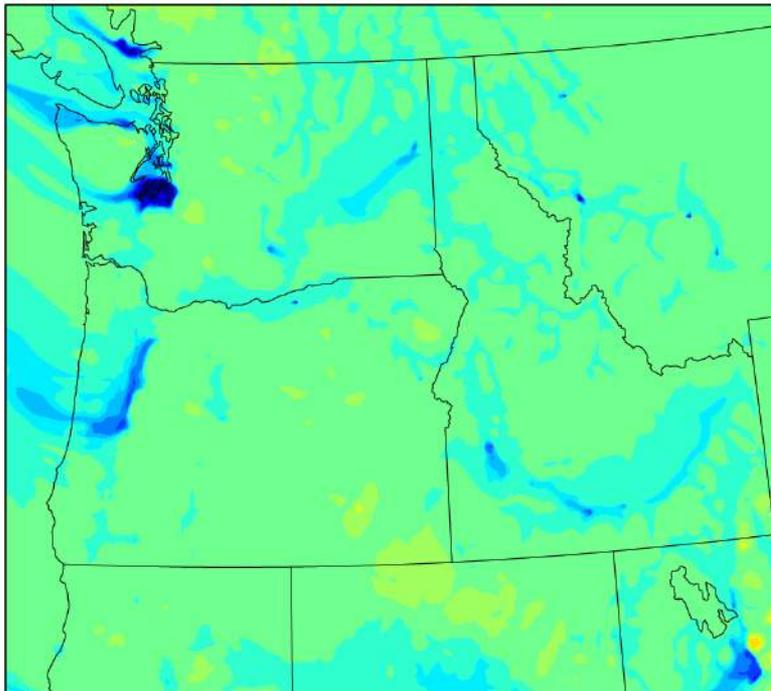
MOVES vs MOBILE6: Impact on PM_{2.5} Concentrations



Hourly O₃ Concentrations MOVES vs. MOBILE6

Using MOBILE6

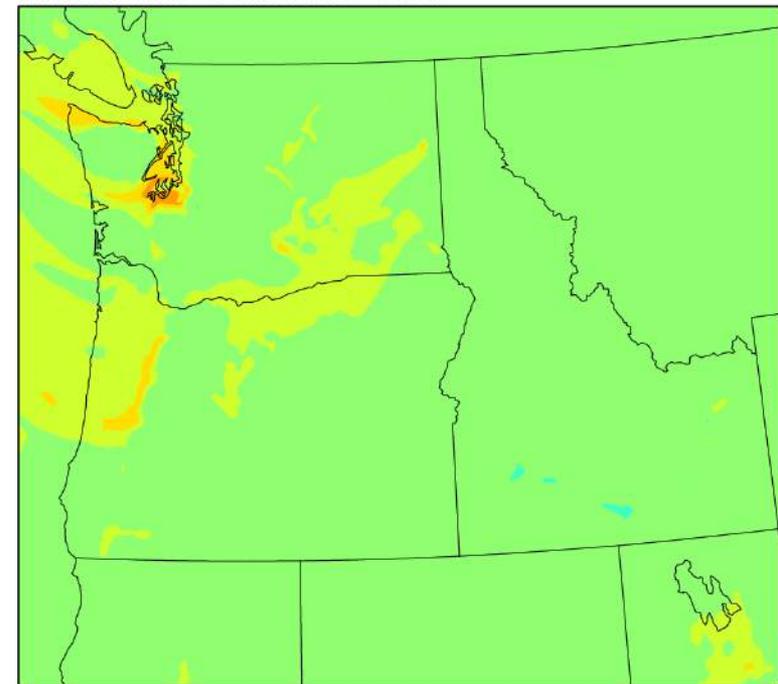
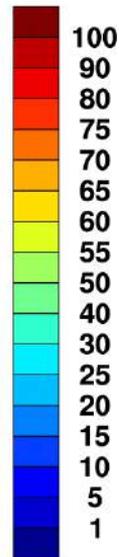
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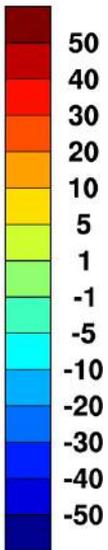
MOVES minus MOBILE6

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ppb



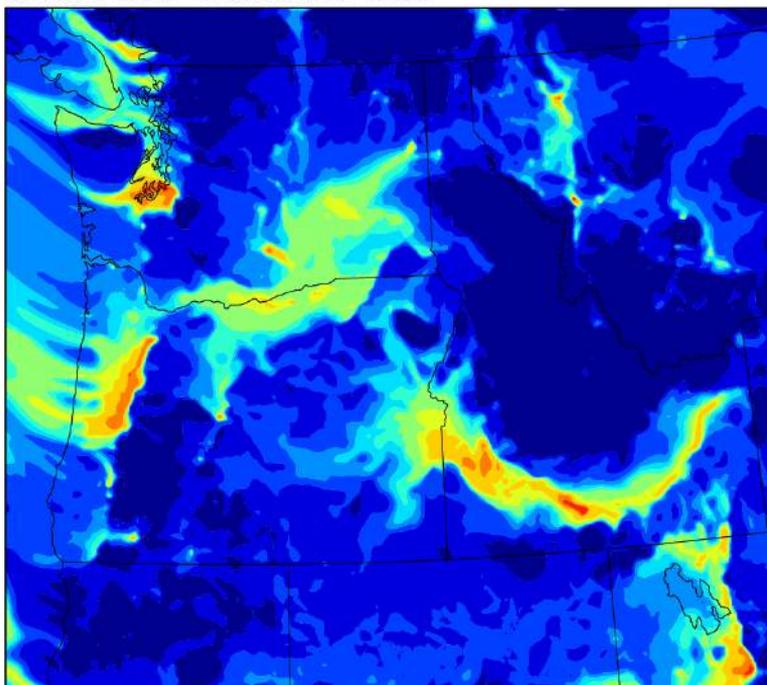
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Hourly PM_{2.5} Concentrations MOVES vs. MOBILE6

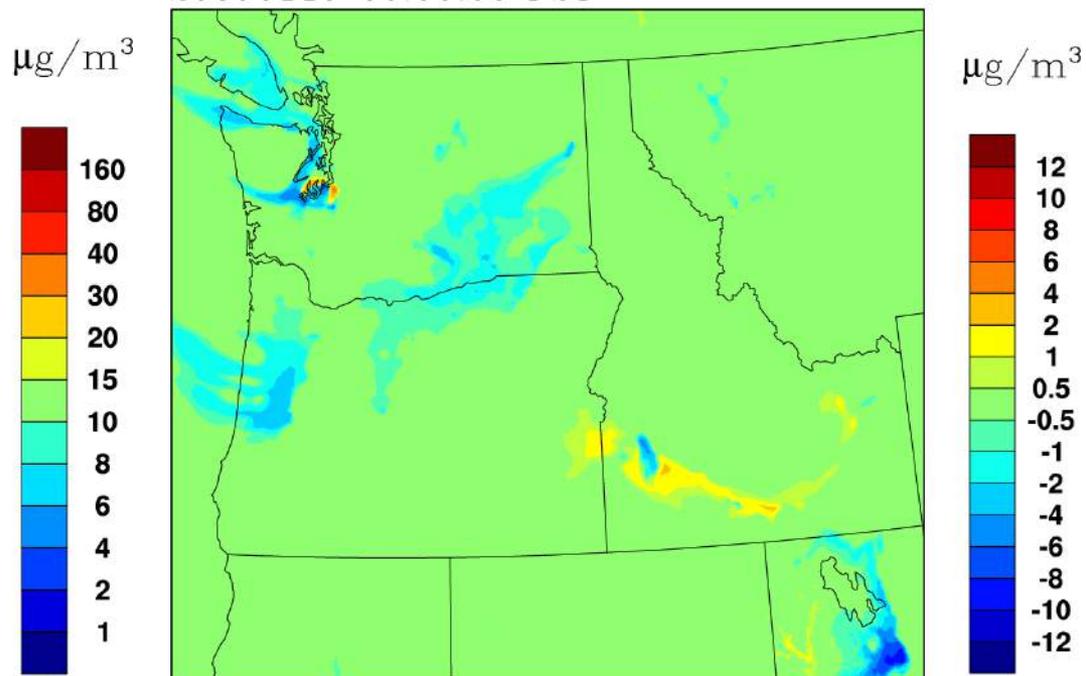
Using MOBILE6

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MOVES minus MOBILE6

20090119 00:00:00 PST



Summary

- Compared to MOBILE6, MOVES predicts lower NO_x emissions (~ 50%)
- For urban areas, MOVES tend to predict lower CO emissions
- VOC emissions from off-network evaporative fuel vapor venting (RatePerProvile) contribute to higher emissions in MOVES vs MOBILE6.
- Using MOVES over MOBILE6 does not improve O₃ and PM_{2.5} predictions