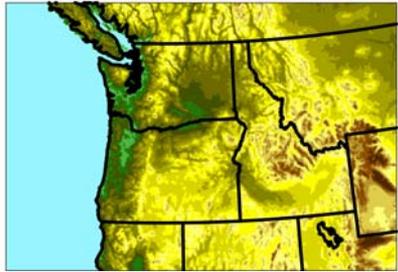# AIRPACT-4 Status Upate

NW-AIRQUEST Meeting
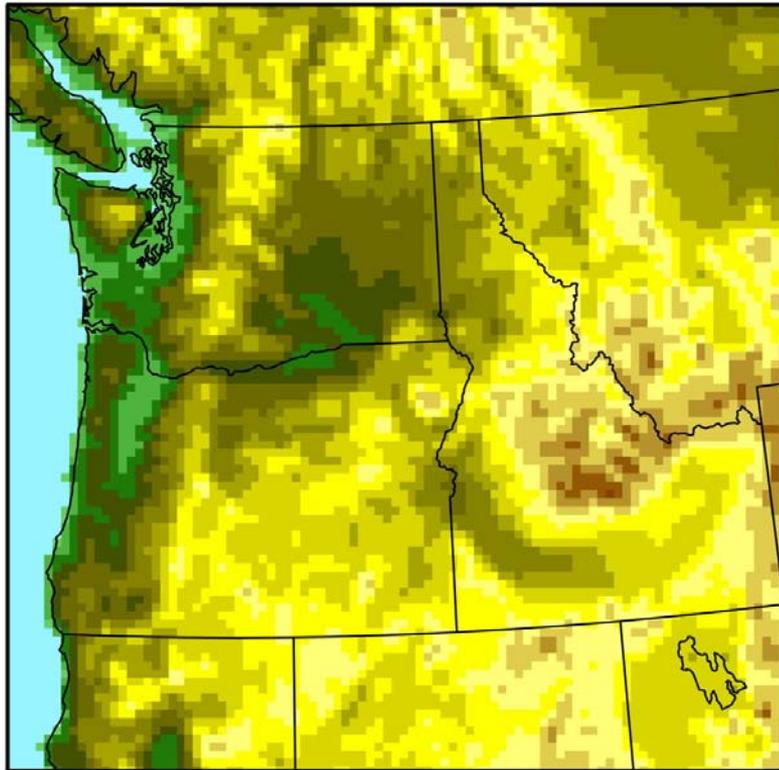
June 6, 2012

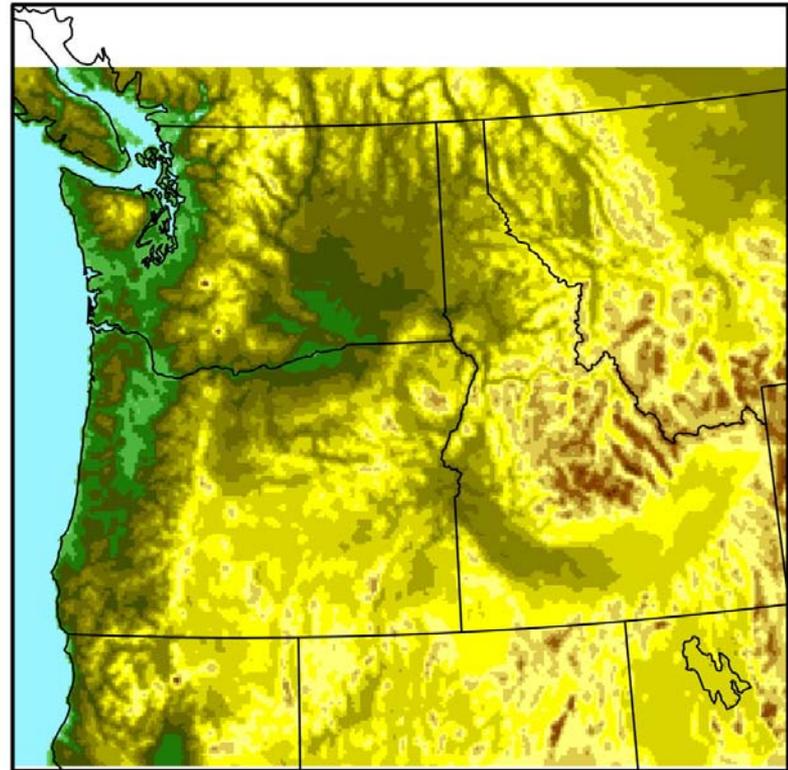# AIRPACT-4 vs AIRPACT-3 Grids

4-km WRF

AIRPACT-3 (12-km)

AIRPACT-4 (4-km)

Terrain Height (m)

3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
100
30
10
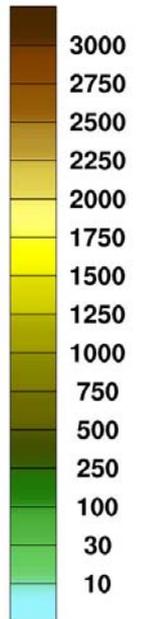
AIRPACT-4 vs AIRPACT-3

	AIRPACT-3	AIRPACT-4
Grid cells	95x95 12-km grid cells	285x258 4-km grid cells
Vertical Layers	21 layers	21 layers
MCIP	v3.3	v3.6
SMOKE	v2.1 (LAYPOINT v2.4)	v2.7
CMAQ	v4.6	v4.7.1 updated according to Carlton et al, ES&T 2010.
Mass adjustment (CMAQ)	denrate	yamo
Anthropogenic Emissions	2005 from Ecology, IDEQ, ODEQ	2007 from Ecology, IDEQ, ODEQ
Fire Emissions	None	None
Biogenic Emissions	BEIS-3	MEGAN v2.1
CMAQ run time	8 processors on breezy 3.5 hours for 64-hour forecast	48 processor on aeolus 2.5-3.5 hours for 24-hour forecast
Storage Requirement for 24-hour Run		
Emission (no fire)	1.1 GB	891 MB
MCIP	428 MB	3.6 GB
CMAQ	2 GB	33 GB

AIRPACT-4 Operation

- Semi-operational since Feb 10, 2012 (no graphics)

- CMAQ run and graphics operational since May 30, 2012

- Graphics available on the web from May 1, 2012 onward
  - http://lar.wsu.edu/airpact/gmap/ap4.html
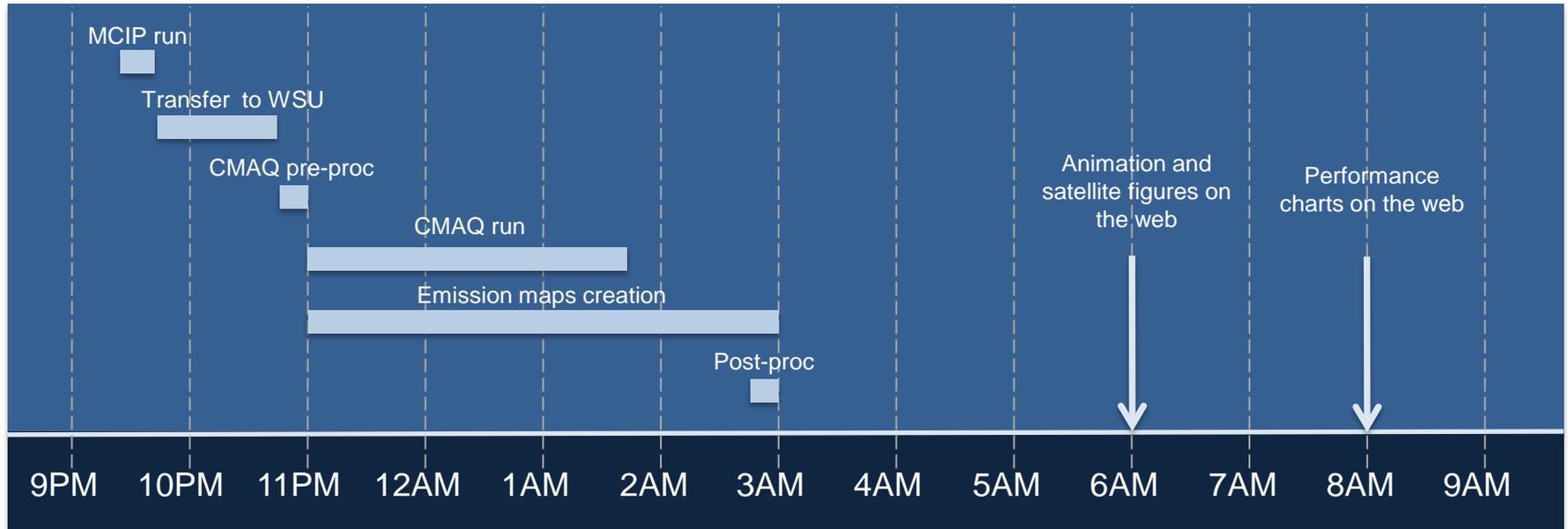
- If errors occur during the overnight run, AIRPACT-4 will be run manually in the morning/afternoon, aiming to have graphics on the web by ~4 PM.

Work Plan

- Incorporate SMARTFire/BlueSky for fire emissions
  - Current status: SMOKE-ready files are generated daily
  - Next step: set-up SMOKE processing
- Update from MOBILE to MOVES
  - Current status: creating monthly or seasonal static look-up table (IDEQ)
- $PM_{2.5}$ Evaluation and Improvement
- Improve woodstove emission
- Add tracers for ClearSky substitute
- Add boundary conditions tracers to detect long-range transport
- Potentially upgrade from CMAQ v4.7.1 to v5.x
  - More explicit treatment of PM_{other} (requires emission update)