

# NW-AIRQUEST PROJECT STATUS REPORT

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FEBRUARY 1, 2018

# TASKS FROM CONTRACT & WORK PLAN

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1. Daily Forecasts (timing issue for day2 runs)
2. Verification Statistics
3. Track and Improve Model Performance
4. Maintain streams of AIRNow observations and satellite image retrievals.
5. Continue Improvements and Requested Additions to Graphics.

# TASKS FROM CONTRACT & WORK PLAN (CONT.)

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6. Maintain the Change Log
7. Archive Daily Output.
8. Modify AIRPACT as Fire Emissions change
9. Ensure R web server for background concentrations runs.

# SFY 2017 TASKS CARRIED FORWARD

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- AFDUST - SMOKE emissions process turned off in winter.
  - What about using Dust Module in CMAQ, once we update to v5.2?
- BCON plots for O<sub>3</sub>, CO and PM<sub>2.5</sub> - completed and running.
- Apply CMAQ Direct Decoupled Method for T-COPS case – reporting today
- Hosting *PM from wood smoke* forecast models (formula) results from S/L/T agencies?

# SFY 2018 -- NEW TASKS

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- Evaluate AIRPACT for O<sub>3</sub> and PM<sub>2.5</sub> (including speciation) for one year, in consultation with members. Volunteers?
- Convert BCON from MOZART4 to CAM-Chem input. Pending effort by JKV.
- Begin inclusion of New SMOKE-MOVES (2014a,) rates & etc. IDEQ status?
- Begin inclusion of 2014 NEI v.2 (Spring 2018)
- Explore using bidirectional Ammonia flux in CMAQ. Awaits EPA data on fertilization.

# SFY 2018 -- NEW TASKS

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- Develop PM10 and SO2 performance charts. Pending effort, for ?? sites. JKV & JH.

(List from Jen Hinds or AIRNow catch)

000101005|PM10|Abbotsford Airport

000101005|SO2|Abbotsford Airport

000105301|SO2|Langdale Elementary

160010010|SO2|St. Lukes Meridian

160050015|PM10|Pocatello Garrett-Gould

160050020|PM10|Shoshone Bannock Tribes

160170003|PM10|Sandpoint U of I

160270002|PM10|Nampa Fire Station

160790017|PM10|Pinehurst

300290049|PM10|Columbia Falls

300530018|PM10|Libby Courthouse

300630024|PM10|Missoula Boyd Park

300930005|PM10|Butte Greely School

410510080|SO2|Portland - SE Lafayette

490050007|PM10|Smithfield

490353006|SO2|Hawthorne

490353010|SO2|Rose Park

530050002|PM10|Kennewick-Metaline

530090013|SO2|Cheeka Peak

530330080|SO2|Seattle-Beacon Hill

530570011|SO2|Anacortes-202 Ave

530630021|PM10|Spokane-Augusta Ave

530650005|PM10|Colville-E 1st St

530770009|PM10|Yakima-4th Ave

# ECOLOGY

## “ALCOA” SO2 ?

Site	Date And Time	SO2
		ppb
<u>Ferndale-Kickerville Road</u>	1/31/2018 1:00 PM	
<u>Ferndale-Mountain View Rd</u>	1/31/2018 1:00 PM	0.685
<u>Malaga-Malaga Hwy</u>	1/31/2018 1:00 PM	-0.071

PM10 Site	Date And Time	TPM10
		ug/m <sup>3</sup> (s)
<u>Kennewick-Metaline</u>	1/31/2018 1:00 PM	6
<u>Colville-E 1st St</u>	1/31/2018 1:00 PM	48.3
<u>Burbank-Maple St</u>	1/31/2018 1:00 PM	2
<u>Spokane-Augusta Ave</u>	1/31/2018 1:00 PM	19
<u>Yakima-4th Ave</u>	1/31/2018 1:00 PM	40

# IDAHO

SO2

- St Lukes
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PM10

- Boise Fire Station #5
- Nampa Particulate
- **Pine PM Map**
- Pocatello PM
- Sandpoint PM

OREGON  
SO<sub>2</sub>

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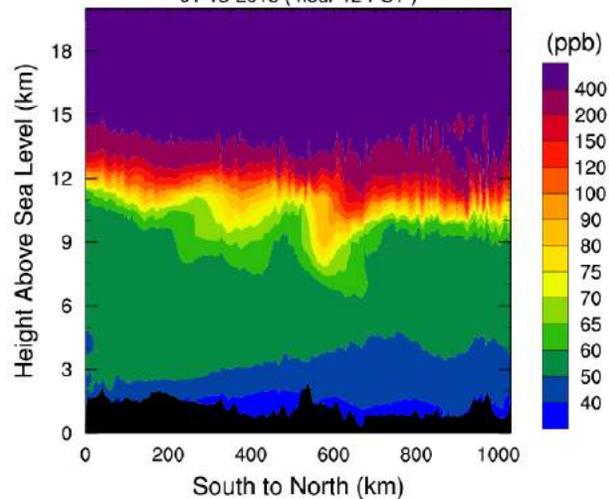
PM<sub>10</sub>

# CURTAIN PLOTS, O3, CO & PM2.5 -- ONLINE SOON



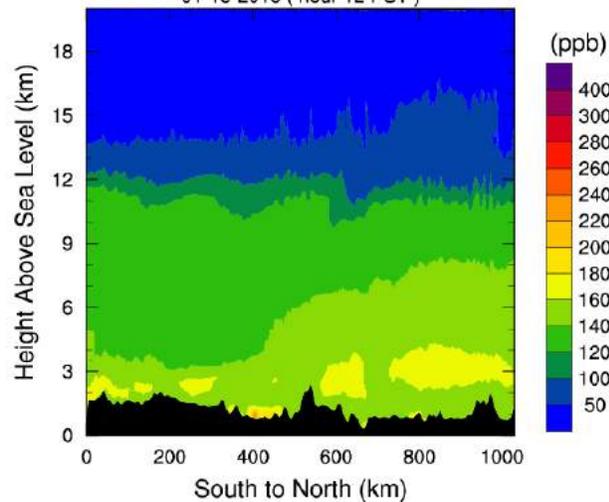
Ozone South-to-North Curtain Plot for Col 159

01-15-2018 ( hour 12 PST )



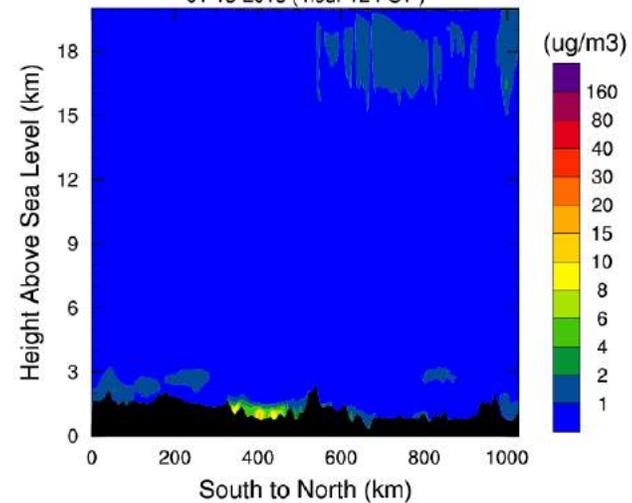
CO South-to-North Curtain Plot for Col 159

01-15-2018 ( hour 12 PST )



PM2.5 South-to-North Curtain Plot for Col 159

01-15-2018 ( hour 12 PST )



## SFY 2018 -- NEW TASKS (CONT.)

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- Begin inclusion of new Canadian Inventory.
- Develop 1.3-km Spokane domain -- Urbanova Smart City report today
- Develop PM2.5 bias correction products (June 2018)
  - Bias correction for AIRPACT5 PM2.5 & O3 is needed for health effects use.
  - With WRF-Chem, Yunha may have access to a bias correction capability.

# REQUESTED TASKS NOT IN SCOPE OF WORK

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- AFDUST? (SMOKE emissions process turned off in winter)
  - What about Dust Module in CMAQ, once we update to v5.2?
- Extend forecast for Holiday Weekends. (WRF hrs are available...)
- AIRPACT-Fire NowCast for wildfire PM2.5 tracer, several per day.
  - Progress with Vikram's build and testing of WRF-CMAQ for AIRPACT-Fire.
- AIRPACT Vertical Soundings Plot With MCIP PBL indicated, w/ Ceilometer observations, animations. Pending effort by JKV.
- Dynamic capture of maximum site list for AIRNow obs & model extractions.

# REQUESTED TASKS NOT DETAILED IN SCOPE OF WORK (CONT.)

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- Coupled Met-AQ system;: WRF-Chem being built by Dr Yunha Lee
  - Bias correction option to explore...
- Enhance forecast evaluation metrics (what metrics?)
- AIRPACT5 tutorial for orientation & training
  - Examples?
  - Webinar or canned ppt? Other format?
- Lat/Long indicator for cursor position on Google Maps displays?

# REQUESTED TASKS NOT DETAILED IN SCOPE OF WORK (CONT.)

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- Website for comparison of near-real time smoke forecast results (partners?)
- Clearer controls on AIRPACT5 webpages such as Layers.
- Overlays of Obs on website animations in matching scale colors.
  - Could be just for AQI colored plots?
  - Contrast shows magnitude of error.
- Export of AIRPACT5 results to NW-AIRQUEST members websites via Google Earth.
- Add CO, NO<sub>2</sub>, PM<sub>10</sub> and SO<sub>2</sub> into performance pages *monthly statistics*.
- Evaluation for PM<sub>10</sub>