

Western Fire Tools for Air Quality Planning and Analysis

WRAP Tools:

WRAP FETS

Explore current fire activity in the WRAP region.

DEASCO₃

Learn about fires' contribution to Ozone (O₃).

PMDetail

Learn about fires' contribution to Particulate Matter (PM).

Matt Mavko

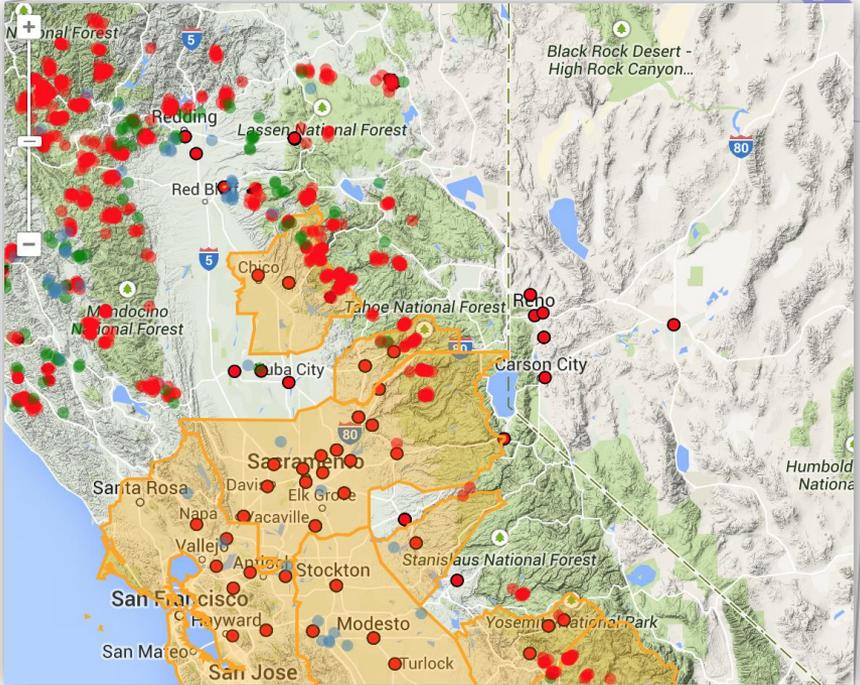
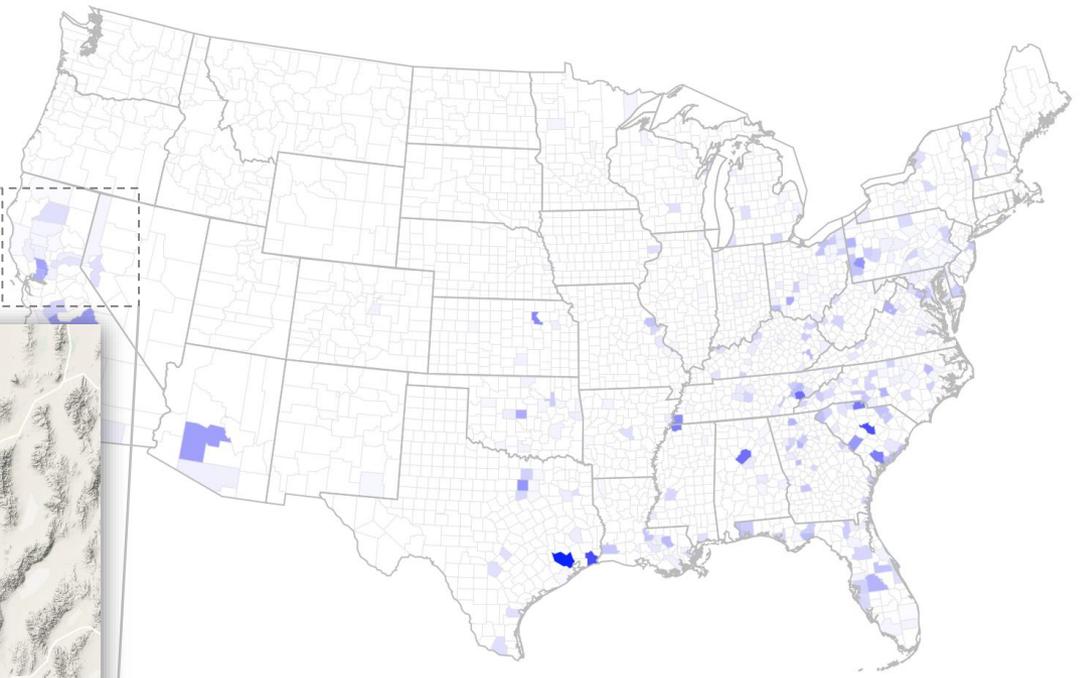
Air Sciences Inc.

April 9, 2015

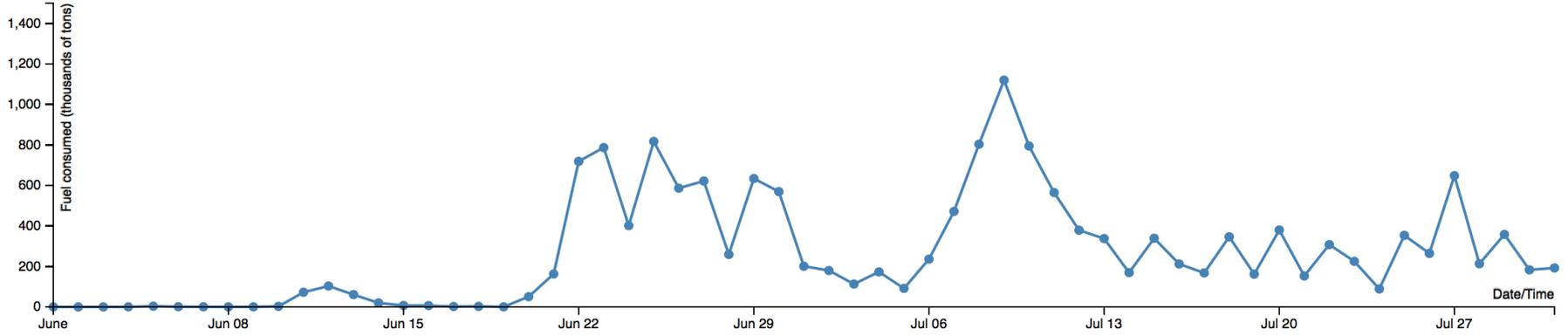
San Francisco, CA



- Rank counties vulnerable to a lower O₃ standard
- Review fire-influenced O₃ events
- Evaluate burning patterns by fire type through time



	Tons Consumed	Acres Burned
Wildfire (Flaming)	8,823,928	390,034
Wildfire (Smoldering)	3,834,042	0
Prescribed Fire (Flaming)	35,582	1,368
Prescribed Fire (Smoldering)	14,364	0
Agricultural Fire	1,877	1,451



WRAPTools Analysis Themes

Exceptional Events Support

Assist with determining if fire contributed to a NAAQS violation. Examine monitored air quality, modeling results, and fire emissions and activity.

Fire Planning for FLMs

Assist with various aspects of air quality analysis required for fire management plans. Review historical ozone data, nearby nonattainment areas, and modeling.

SIP Support

Assist with determining if and how planned and unplanned fire should be considered for ozone SIP planning and other air quality management program issues.

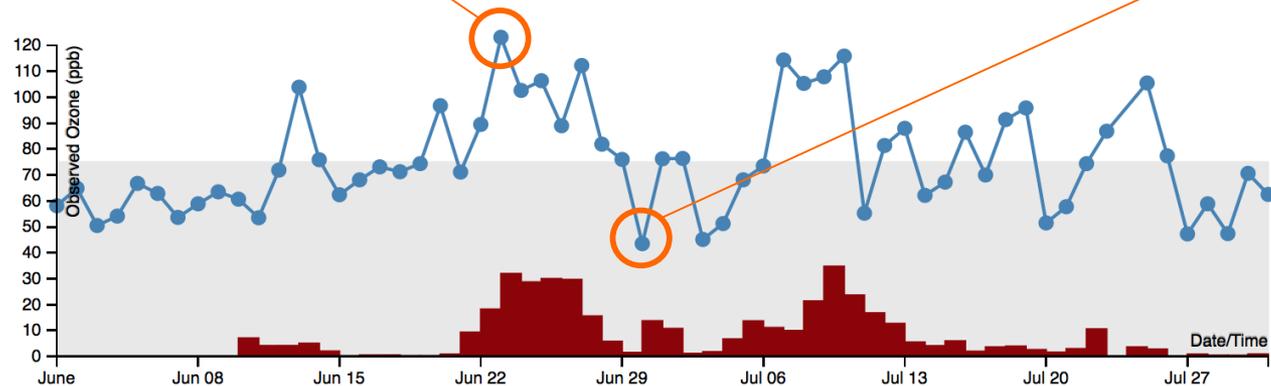
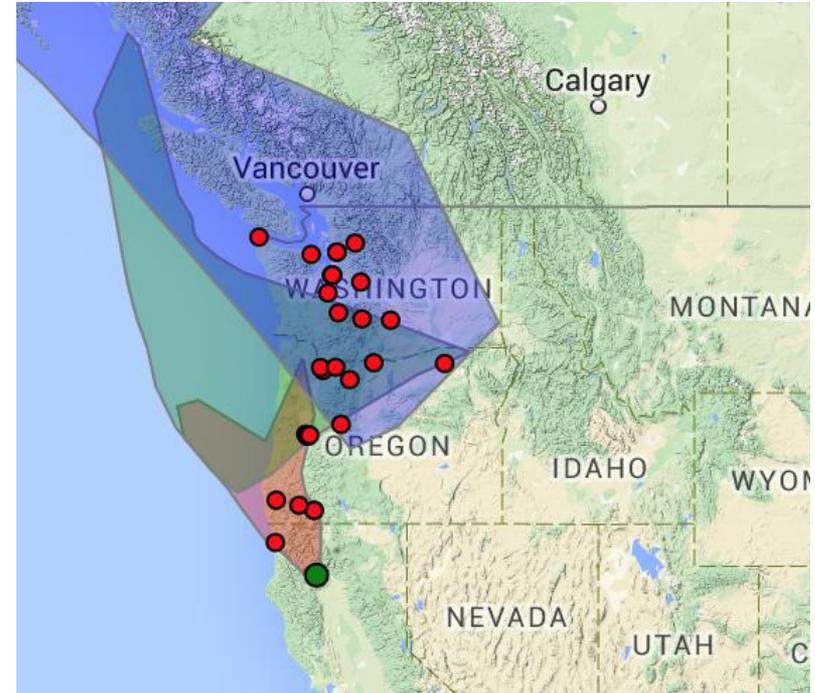
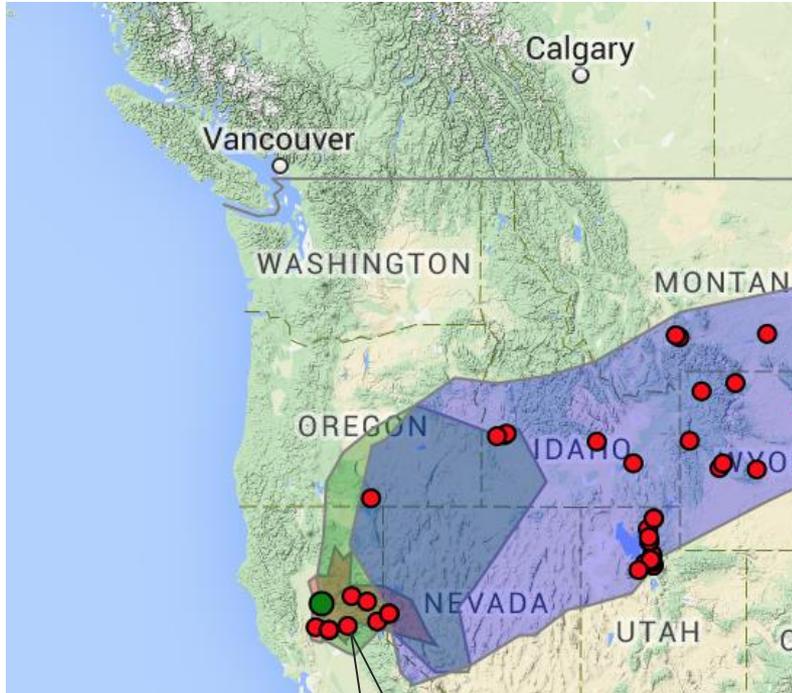
WRAPTools is a toolbox to explore these themes

EE

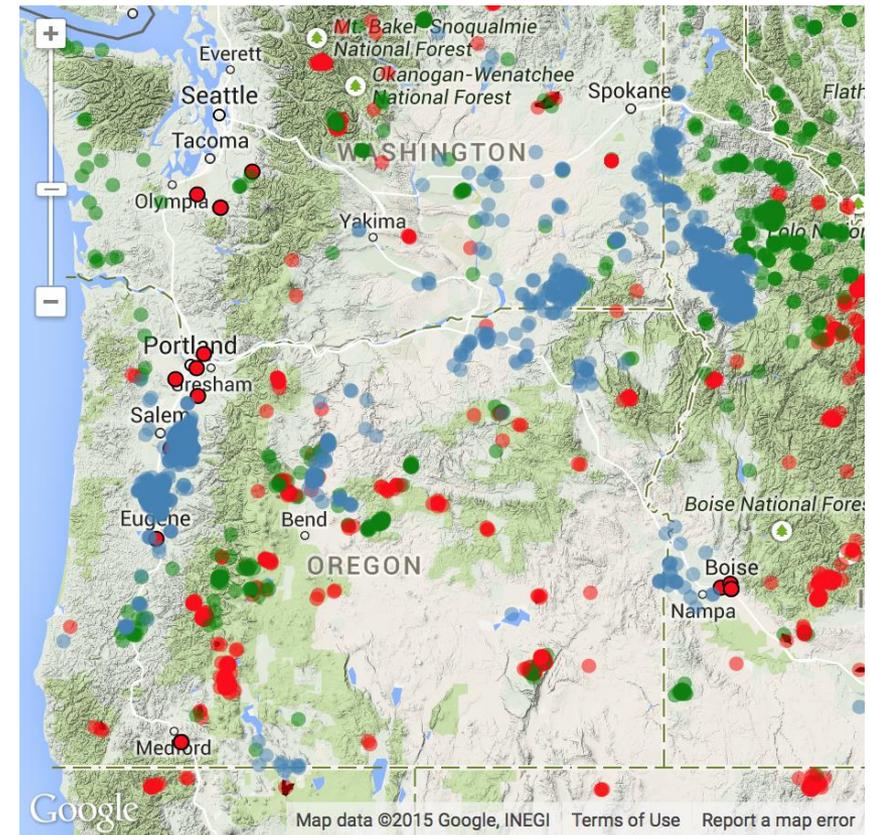
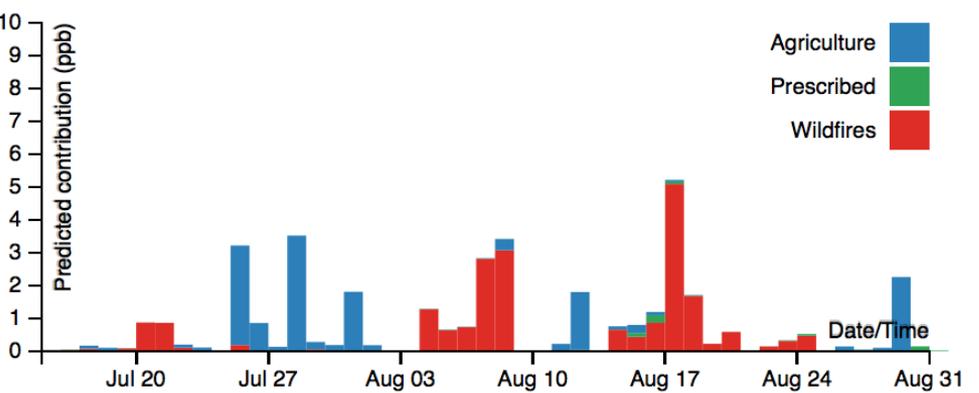
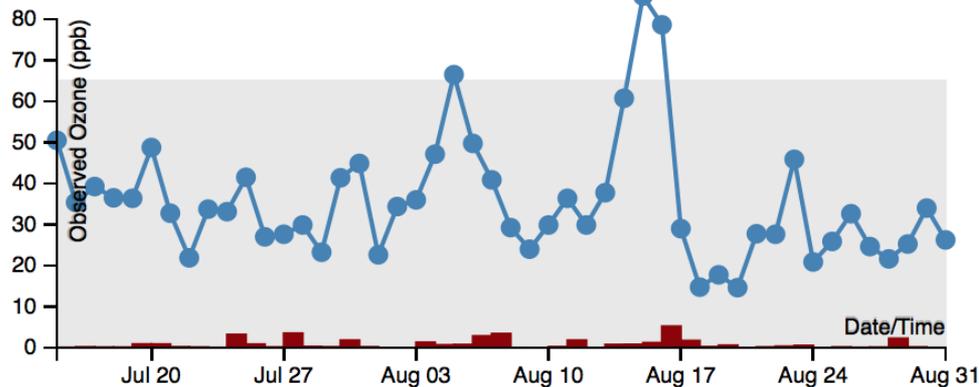
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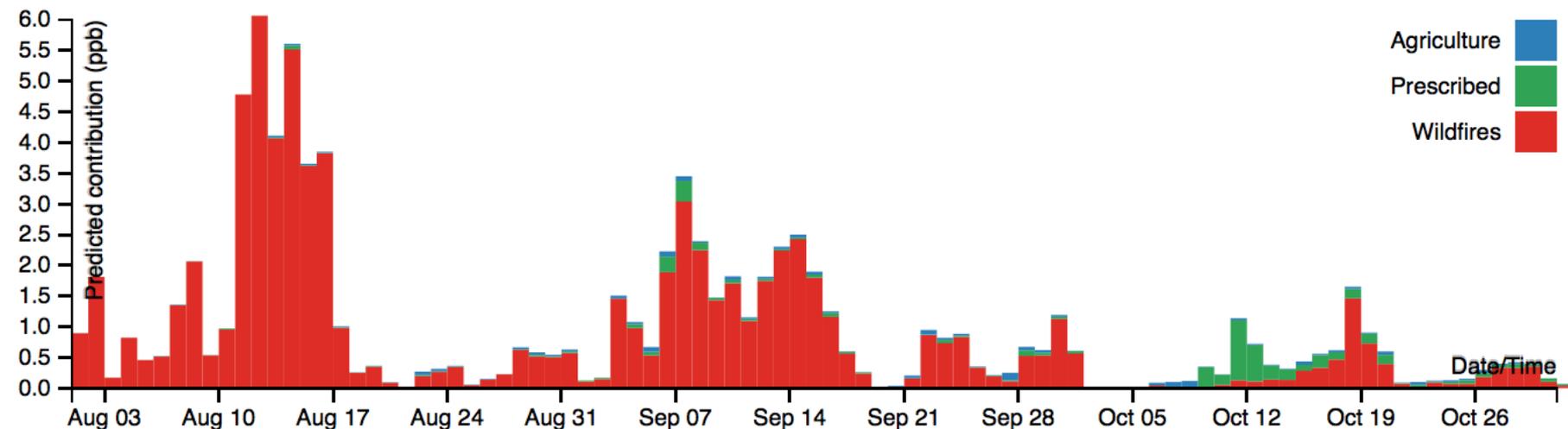
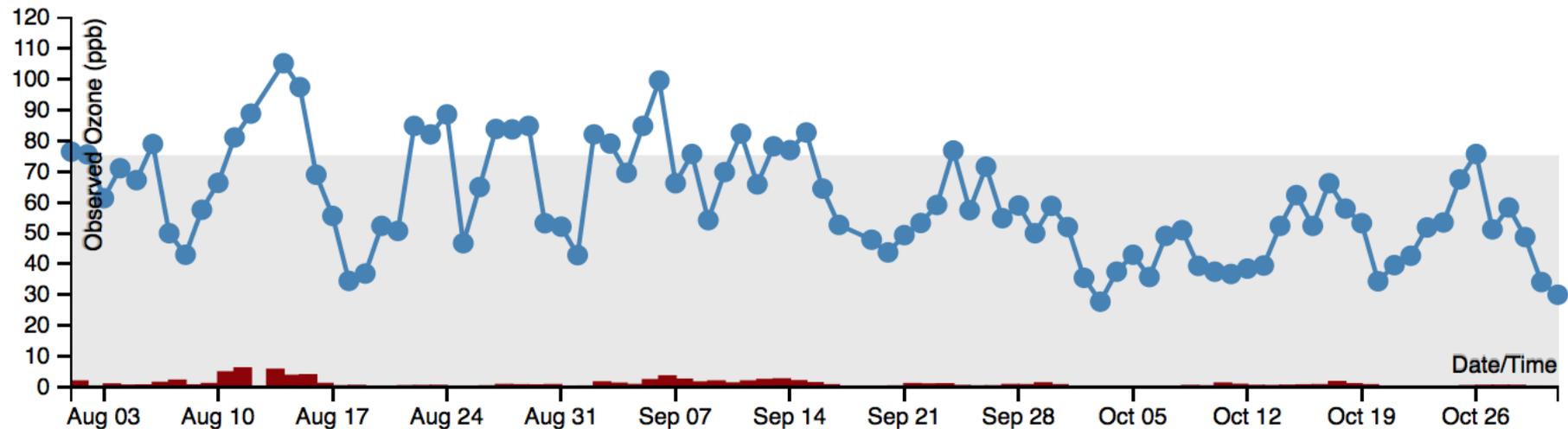
- Many monitored exceedances across the state in June and July
- Significant emissions from Northern California fires in 2008
- Modeled wildfire contributions to O₃ up to 40 ppb
- Meteorology a large factor



- Ag burning contributing to ozone formation throughout the summer (Marion County, OR)
- Contributions up to 4 ppb
- Contributions generally from one fire type (not “mixed”)



- Design day selection
- How often is planned fire a contributor during ozone season? Does it need to be a part of my SIP?



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WRAPTools Data Inventory

Data set	Current Availability	Update Cycle
Reported fire activity data for WRAP states	2008–Present	Continued participation by Smoke Mgt. Programs
Satellite-detected fire activity data	2004–Present	Daily feed from NOAA
Fire perimeter data (MTBS)	1984–2012	Annual from RSAC (USFS)
Air quality planning-grade fire EIs	2008, 2011	REFERS-DMS project adds 2014
Fire climatology data	2004–2012	REFERS-DMS, through 2015
CAMx Modeling results	2008, 2011	REFERS-DMS adds 2014
Research-grade secondary PM modeling results	2011	
Air quality monitoring data	Period of Record in AQS	Accessed via FED

WRAP fets



WRAPTools Capabilities

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- El resource, automated data collection, quality control, provide data (EIs and model)

EE

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- Provide modeling data for national and regional studies

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- Next-generation modeling impacts and emission factors (VBS)

EE

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- Potential Near-Term Applications
 - Briefed and received feedback from EPA: WRAPTools a resource for EE demonstrations
 - Implementation of revised ozone standard