



# **Arizona State Implementation Plans**

**Arizona-Mexico Commission  
2011 Summary Plenary Session  
Arizona & Sonora: Gateway for Innovations**

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- Science
  - Collect (monitor) air pollution information
  - Identify origins
  - Forecast future conditions
- Laws and Rules
  - Plans to fix unhealthy air, protect clean air
- Permits
- Enforcement

# National Air Quality Standards

- What:

Carbon Monoxide (CO)	Sulfur Dioxide (SO <sub>2</sub> )
Particulate Matter (PM <sub>10</sub> & PM <sub>2.5</sub> )	Ozone (O <sub>3</sub> )
Oxides of Nitrogen (NO <sub>x</sub> )	Lead (Pb)

- Why:

- Primary standards protect human health;
- Secondary protect ecosystems.

- Who:

- Clean Air Science Advisory Committee;
- Environmental Protection Agency

- EPA makes a new, revises existing standard
- Governor recommends designations and boundaries of areas based on known air quality information
  - Non-attainment (unhealthy air)
  - Unclassifiable; Unclassifiable-Attainment
  - Attainment
- EPA promulgates boundaries and designations

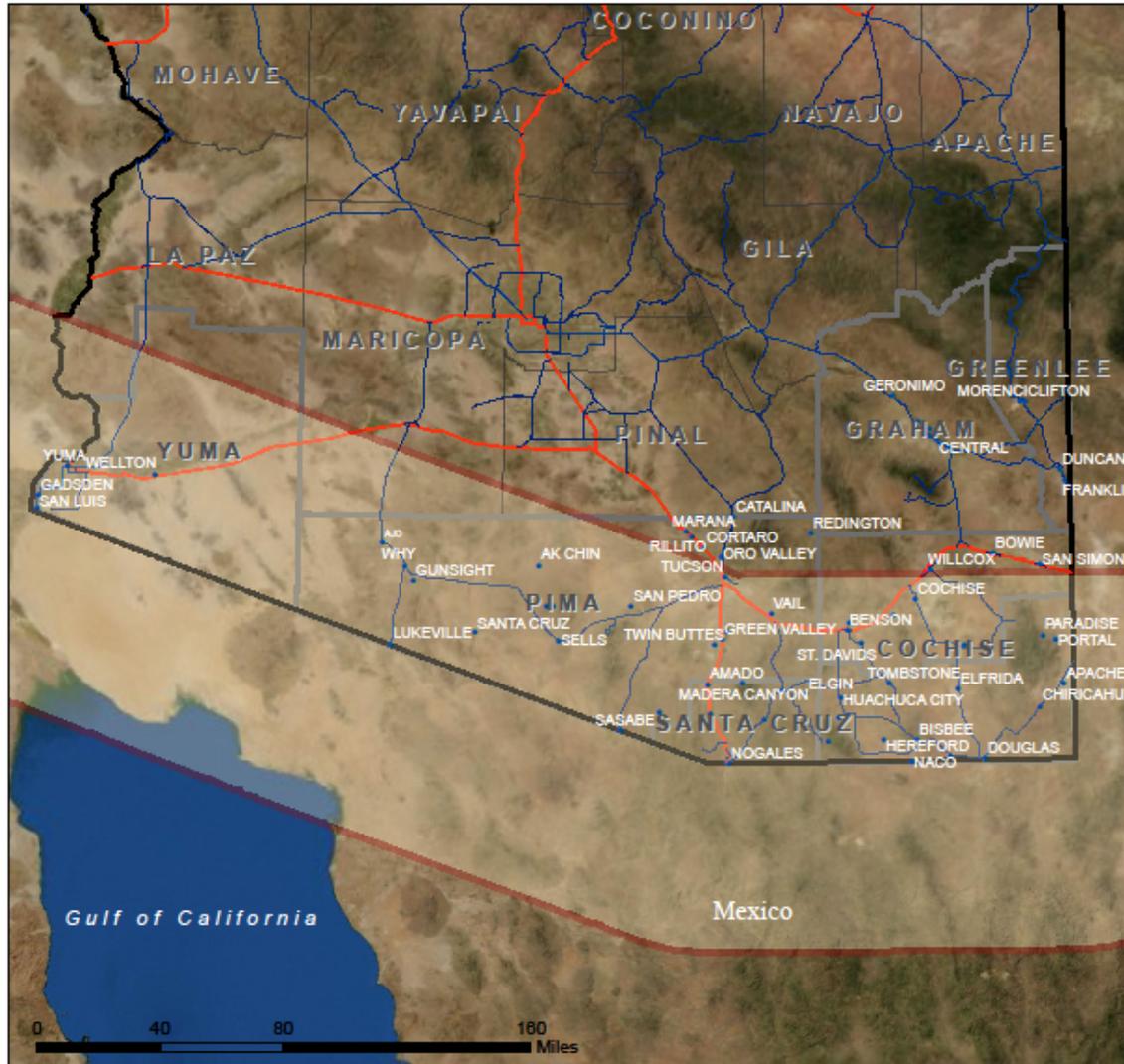
# Monitoring Air Quality





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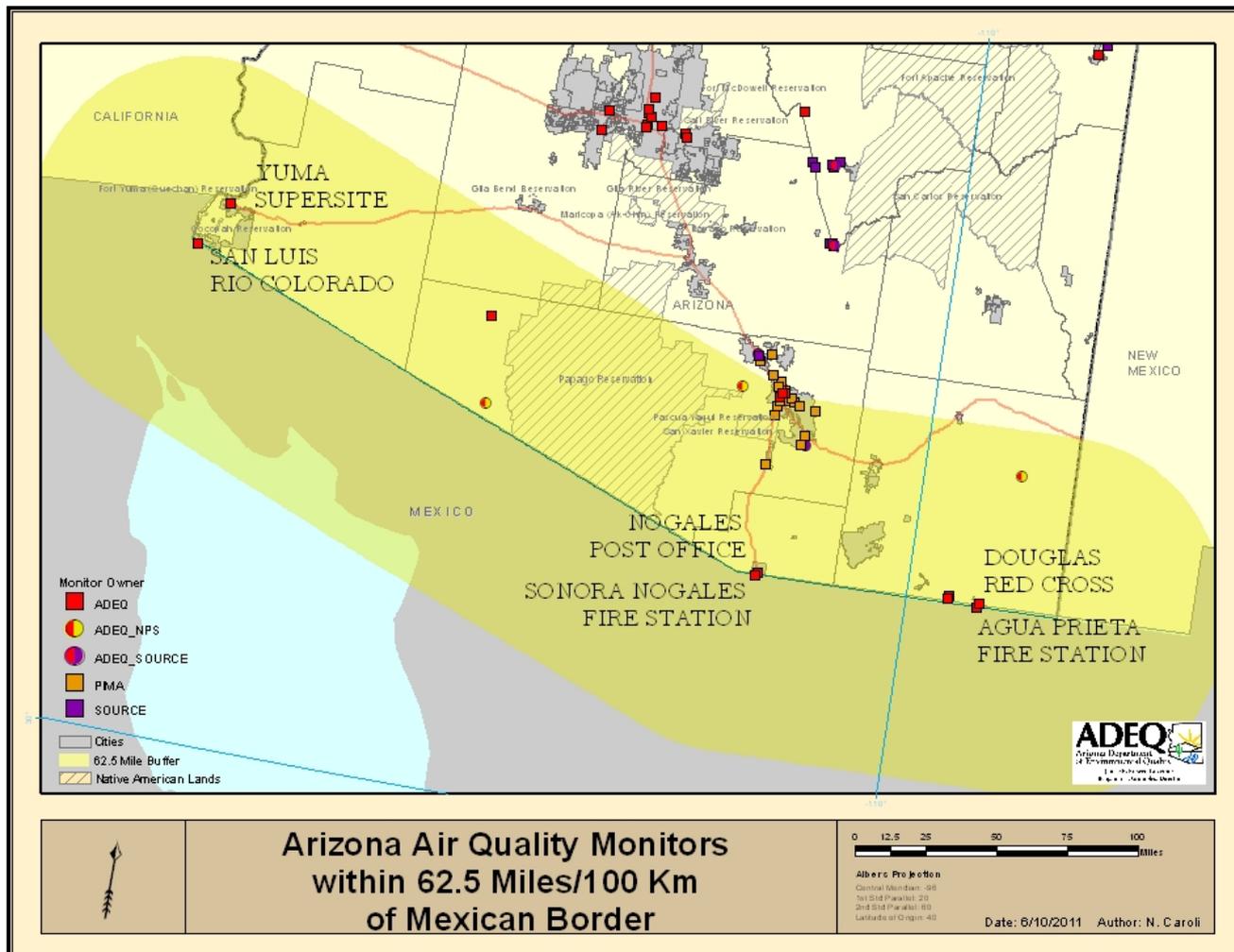


## Arizona Border Region

### Legend

-  100-km/62.5 mile Border Area
-  SRO Counties

# Air Quality Monitors in Border Area



- **Federal Regulations**
  - Industrial sources
  - Mobile sources
  - Fuel efficiency standards
- **State Implementation Plans (SIPs)**
  - Infrastructure
  - Non-attainment
  - Maintenance

- Clean Air Act requires plans to fix areas with unhealthy air; maintain corrections
- Science tells the story
  - Identifies the boundaries of an area
  - Identifies all of the contributing factors, both natural and anthropogenic (man-made)
- Plan identifies methods to reduce pollution
  - Results in new laws and rules for controls

# Important SIP Components

- Characterization of the area, pollutant
- Inventory of emissions and sources
- Projected growth and future emissions
- Identification of control measures that will reduce emissions
- New laws, rules and ordinances to implement controls
- Demonstration that the controls will return the area to healthy air by the specific date



# Other Critical Components

- Contingency measures to be implemented if the plan doesn't work as expected
- Demonstration of authority to enforce plan's provisions
- Commitment to track implementation and monitor air quality
- Public involvement process

# Return to Clean

- Monitors record healthy air
- EPA makes a finding of clean air quality data
- State makes a long-term commitment to maintain efforts to keep air clean
- EPA re-designates the area as attainment

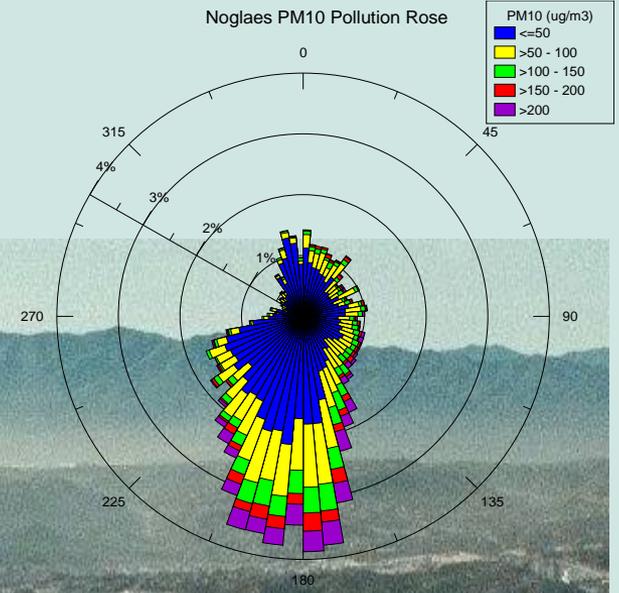
- Cities and communities encompass both sides of the border
  - Yuma & San Luis
  - Nogales, Arizona & Nogales, Sonora
  - Douglas & Agua Prieta
- Air pollution influenced by natural conditions not political boundaries
  - Topography
  - Meteorology

- Air quality studies:
  - Nogales  $PM_{10}$  and  $PM_{2.5}$
  - Douglas-Paul Spur  $PM_{10}$
  - Yuma  $PM_{10}$
- Information included:
  - Air pollution and meteorology monitoring
  - Inventory of emissions and sources
  - Air dispersion modeling and risk assessment

# Case Example: Nogales / Ambos Nogales

- Pollutant of concern:
  - $PM_{10}$  identified as the primary health risk
- Emissions inventory:
  - Unpaved roads primary source of  $PM_{10}$
  - 85% of  $PM_{10}$  in Nogales, Arizona originated in Nogales, Sonora
- Pollution outside State control
  - Non-attainment designation, but does not require air pollution controls within the State

# Meteorology/Topography Nogales – Ambos Nogales





# Nogales Case: Plan of Action Developed

- Increase Road Paving and Stabilization
  - Increase Soil Erosion Engineering Solutions
- Reduce Vehicle Emissions
  - Create or Improve Public Transit
  - Improve Local Traffic Flow
  - Construct Major Transportation Corridors
  - Faster Border Crossings
  - Reduce Train Route Impacts
- Promote Revegetation
- Reduce Wood Burning
- Eliminate Garbage Burning
- Establish Recycling Programs



# Nogales Coordination: Accomplishments

- Road Paving and Stabilization
  - Roads in Nogales, Sonora prioritized and paved
- Reduce Vehicle Emissions
  - Feasibility study of public transit in Nogales, AZ
  - FAST Lane program for expedite crossing for commercial vehicles
  - Opened SENTRI Lane for pre-screened commuters
  - Retrofit diesel school buses in Nogales
  - Retrofit heavy duty diesel haul trucks
  - Construction of railroad overpasses in Nogales, Sonora
- Upgraded or installed particulate monitors on both sides of the border

# On-going Challenges

- Despite improvements, more work needs to be done to improve air quality
  - Natural conditions exacerbate air pollution issues
  - Science must continue to improve
    - Higher quality data needed on both sides
    - Continued identification of sources of emissions
  - Implementation of controls for known sources
    - Unpaved roads still largest contributors
    - Transportation planning and road maintenance

- Planning will continue to play significant role
  - Better understanding of development patterns
  - Population and employment growth
- Continued outreach and coordination critical
  - PM<sub>10</sub> reductions across border
  - 2011 Ozone standard
- Litigation forcing Arizona to rework old plans

- Short-term
  - Finalize border studies, reports; share
  - Compile over 100 completed studies
  - Develop a model ready emissions inventory
  - Complete coordinated modeling and risk assessment
    - Western Arizona Sonora Border Air Quality Study
  - Forecasting air pollution concentration/health risk
  - Funding challenge
- Long-term
  - Meetings to discuss air pollution monitoring network
  - Co-location of monitors



# Contact Information

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