

# Air Quality Update

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Director

Pinal County Air Quality Control

April 15, 2015

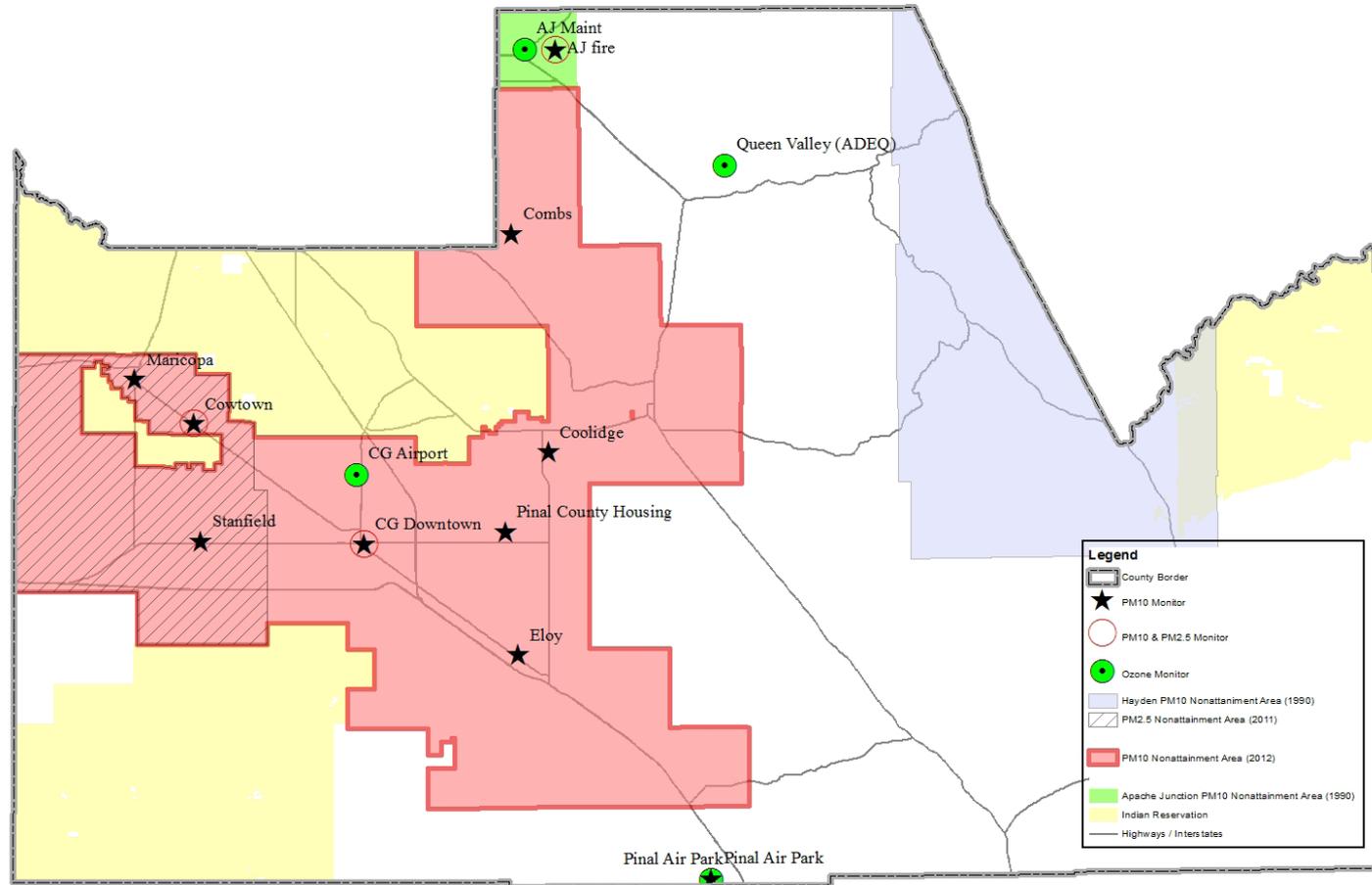
# Air Quality Issues

- Pinal PM10 Non-attainment
- Cowtown Monitor Relocation
- I-10 Corridor Pilot Project

# Pinal PM10 Non-Attainment

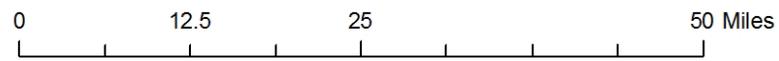
- PM-10 nonattainment
  - NAA Designation - July, 2012
  - SIP development ongoing
    - ADEQ is the lead agency in SIP development (statutory)
    - Components include:
      - Inventory(2008 &2018)
      - Modeling (Source Apportionment)
      - RACM Analysis (Review of possible controls)
      - Control Evaluation (what is needed to show attainment)
      - Control measures (RACM)

# Pinal County Air Quality Control District Monitoring Network



**Legend**

- County Border
- PM10 Monitor
- PM10 & PM2.5 Monitor
- Ozone Monitor
- Hayden PM10 Nonattainment Area (1990)
- PM2.5 Nonattainment Area (2011)
- PM10 Nonattainment Area (2012)
- Apache Junction PM10 Nonattainment Area (1990)
- Indian Reservation
- Highways / Interstates



# Preliminary Emissions Inventory

2008 base year

- Design Days for 2 scenarios:
  - Stagnation / Low Wind – Activity driven emissions
  - High Wind (over 12 mph) – Surface condition driven emissions
- Separate modeling domains were defined and emissions inventories were developed for each

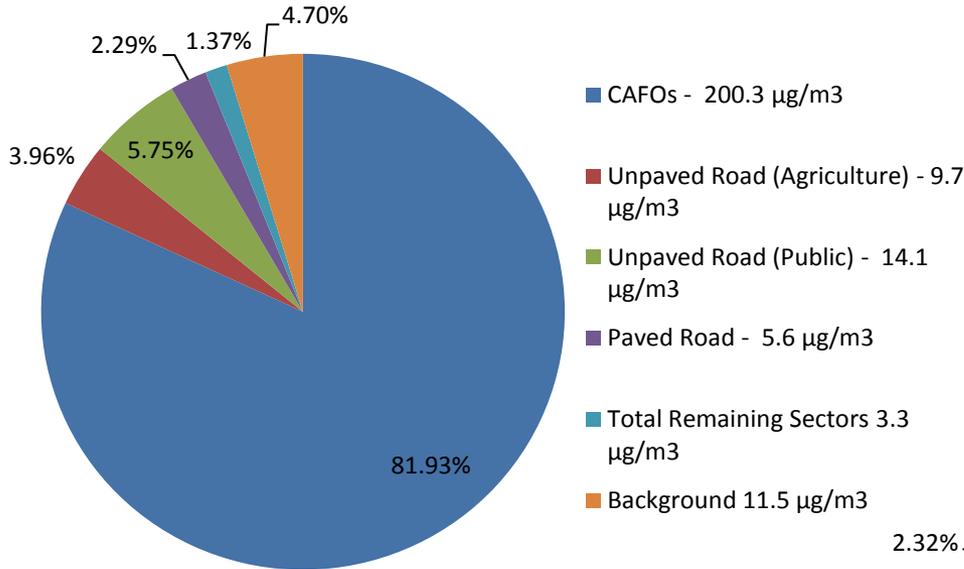
## Summary of Preliminary 2008 Annual High Wind Emissions in West Pinal Nonattainment Area

Land Use Category	Emissions (Tons/Year)	Percentage
Developed Urban Lands	201	0.27%
Developed Rural Lands (low density residential)	1,960	2.59%
Unpaved Roads	4,689	6.20%
Cleared Areas	399	0.53%
Residential Construction	1,335	1.76%
CAFOs and Dairies	723	0.96%
Desert Shrubland	38,277	50.58%
Agricultural Croplands	22,397	29.59%
Commercial Construction	624	0.82%
Other	4,244	5.61%
Site Development	835	1.10%
<b>Total Emissions</b>	<b>75,682</b>	<b>100%</b>

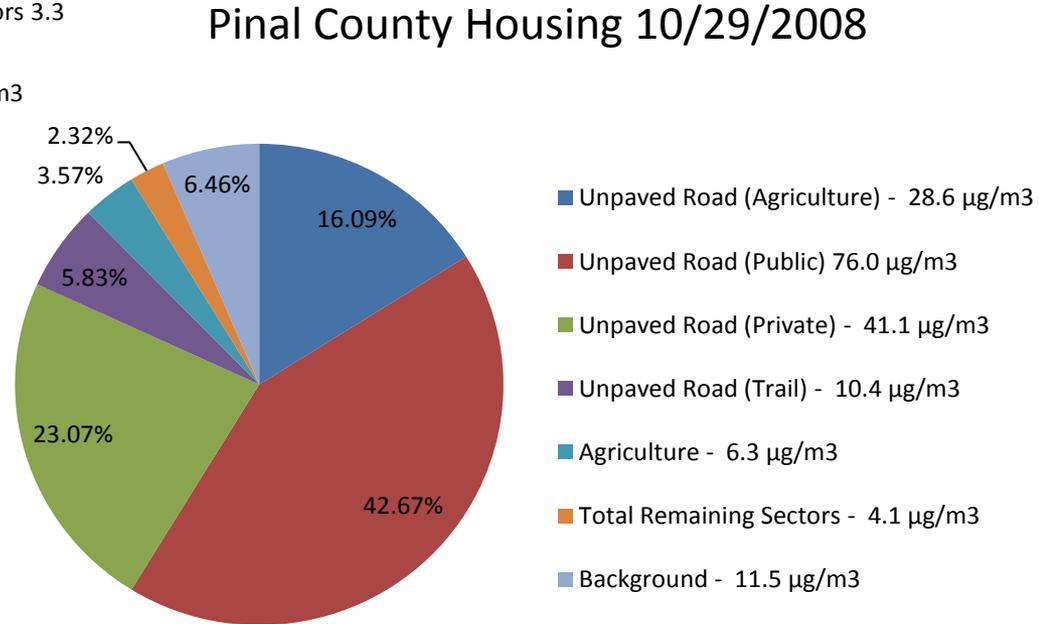
# Summary of Preliminary 2008 Annual PM<sub>10</sub> Emissions in the West Pinal County Nonattainment Area

Source Category		PM <sub>10</sub> Emissions	
		(Tons/Year)	% of Total
Agriculture	Harvesting	313	0.23%
	Tilling	2,540	1.88%
CAFOs		2,614	1.94%
Paved Road		905	0.67%
Unpaved Road		46,297	34.33%
Fuel Combustion		28	0.02%
Fires		20	0.01%
Open Burning		14	0.01%
Nonroad		121	0.09%
Railroad		86	0.06%
Construction		5,553	4.12%
Dairy		184	0.14%
Permitted Sources		516	0.38%
Sub-Total: Low Wind Emissions		59,192	43.89%
Windblown Emissions		75,682	56.11%
Total Emissions		134,873	100%

# Stagnation Day Modeled Contributions

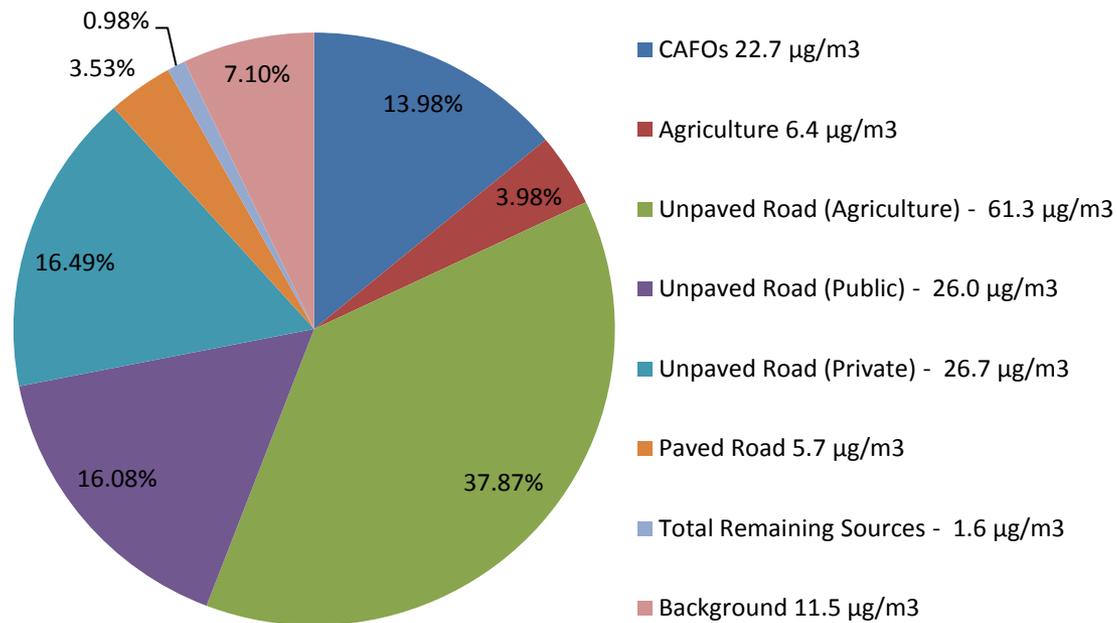


Cowtown 10/30/2008



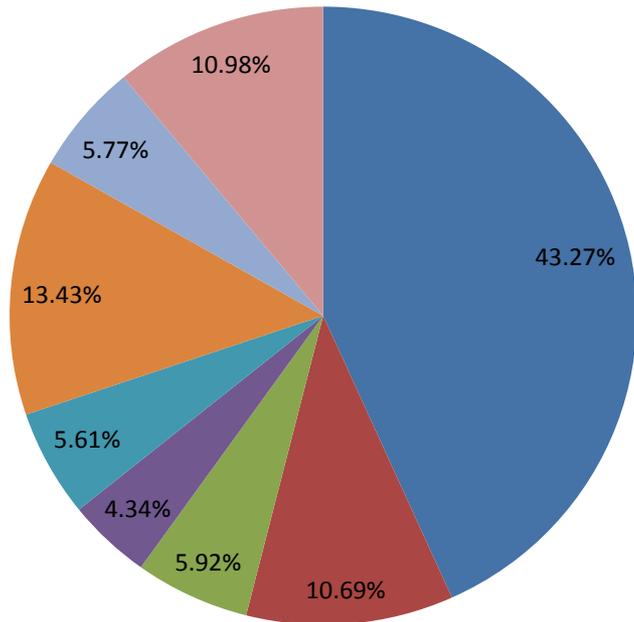
Pinal County Housing 10/29/2008

# Stagnation Day Modeled Contributions



Stanfield 10/29/2008

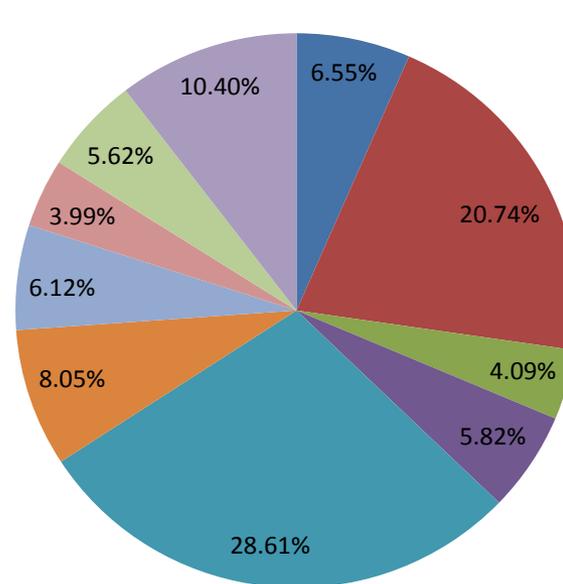
# High Wind Day Modeled Contributions



Maricopa 10/27/2008

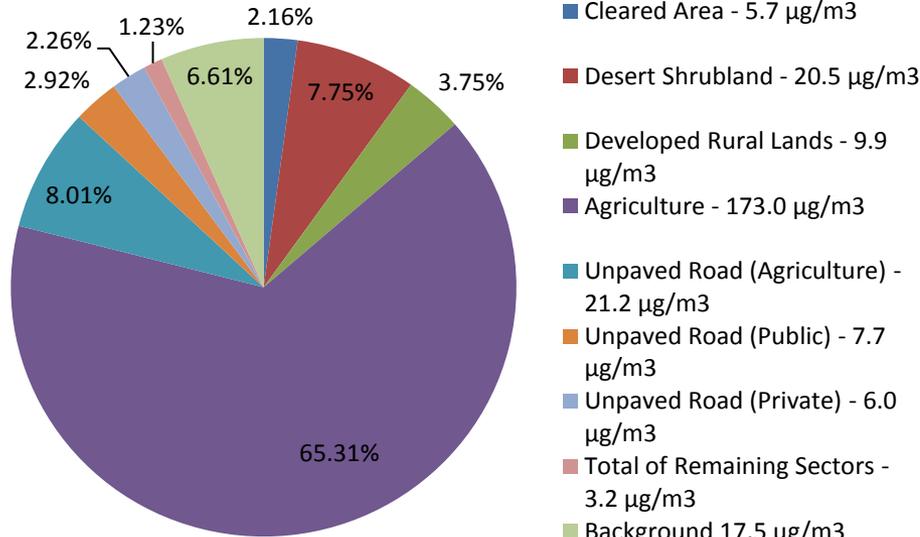
- Construction - 69.0 µg/m³
- Cleared Area - 17.0 µg/m³
- Desert Shrubland - 9.4 µg/m³
- Developed Rural Lands - 6.9 µg/m³
- Developed Urban Lands - 8.9 µg/m³
- Agriculture (County) - 21.4 µg/m³
- Total of Remaining Sectors - 9.2 µg/m³
- Background 17.5 µg/m³

Cowtown 4/27/2008



- Construction - 11.0 µg/m³
- Desert Shrubland (County) - 34.9 µg/m³
- Desert Shrubland (Tribal) - 6.9 µg/m³
- CAFOs - 9.8 µg/m³
- Agriculture (County) - 48.1 µg/m³
- Unpaved Road (Agriculture) - 13.5 µg/m³
- Unpaved Road (Public) - 10.3 µg/m³
- Unpaved Road (Private) - 6.7 µg/m³
- Total of Remaining Sectors - 9.5 µg/m³
- Background 17.5 µg/m³

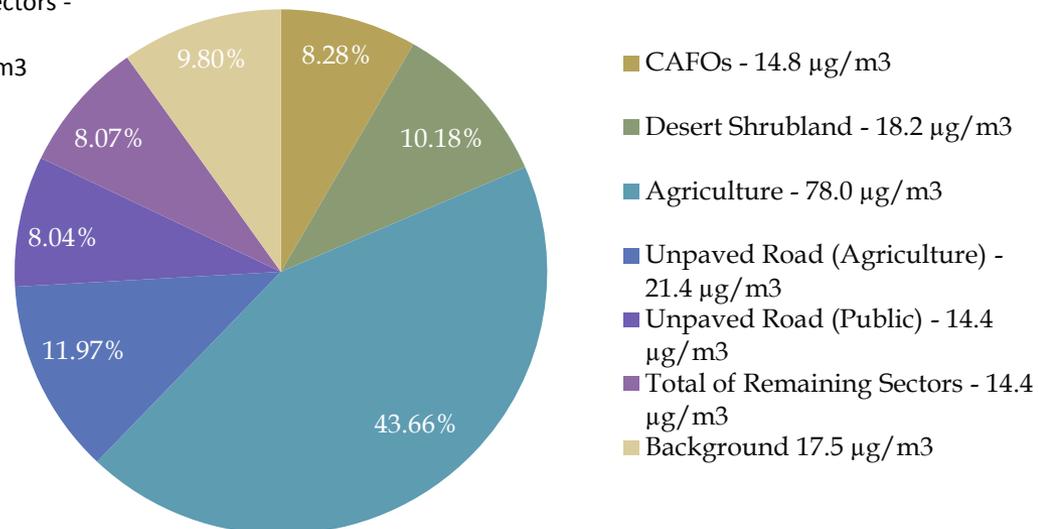
# High Wind Day Modeled Contributions



Pinal Co Housing 1/1/2008

- Cleared Area - 5.7  $\mu\text{g}/\text{m}^3$
- Desert Shrubland - 20.5  $\mu\text{g}/\text{m}^3$
- Developed Rural Lands - 9.9  $\mu\text{g}/\text{m}^3$
- Agriculture - 173.0  $\mu\text{g}/\text{m}^3$
- Unpaved Road (Agriculture) - 21.2  $\mu\text{g}/\text{m}^3$
- Unpaved Road (Public) - 7.7  $\mu\text{g}/\text{m}^3$
- Unpaved Road (Private) - 6.0  $\mu\text{g}/\text{m}^3$
- Total of Remaining Sectors - 3.2  $\mu\text{g}/\text{m}^3$
- Background 17.5  $\mu\text{g}/\text{m}^3$

Stanfield 11/1/2008



- CAFOs - 14.8  $\mu\text{g}/\text{m}^3$
- Desert Shrubland - 18.2  $\mu\text{g}/\text{m}^3$
- Agriculture - 78.0  $\mu\text{g}/\text{m}^3$
- Unpaved Road (Agriculture) - 21.4  $\mu\text{g}/\text{m}^3$
- Unpaved Road (Public) - 14.4  $\mu\text{g}/\text{m}^3$
- Total of Remaining Sectors - 14.4  $\mu\text{g}/\text{m}^3$
- Background 17.5  $\mu\text{g}/\text{m}^3$

# RACM Analysis & Control Evaluation

- Work is Pending
  - Review approved controls from other areas
  - Determine level of control required to demonstrate compliance with the PM10 NAAQS

# Potential Control Measures

- Fugitive Dust
  - Open areas, vacant lots, unpaved roads, paved roads (Pinal County)
- Construction Activity
  - Enhanced Local Rule (Pinal County)
- Agricultural Operations
  - Open Field Ag, Feed operations, Dairy operations, Irrigation Districts (AgBMP's – ADEQ)

# Cowtown Site Relocation

- Pinal County notified of lease termination Fall 2013
- PM10 and PM2.5 sites must be relocated
- EPA approval is required for new PM10 & PM2.5 sites
- EPA provided guidelines for relocation process
- Lease extended through January 2016
- Relocation field study underway

# Cowtown Monitor Relocation

- Data collection began June 13, 2014
- Sites include:
  - White & Parker (PM10 and PM2.5)
  - Hidden Valley (PM10 and PM2.5)
  - Matching equipment at Cowtown

# Recent Activity

- Regular instrument checks and maintenance
- Periodic data review
- Monthly conference call with EPA
- Developing an evaluation procedure
- Finalize the measurement process - June 2015
- EPA Tour of Sites in January

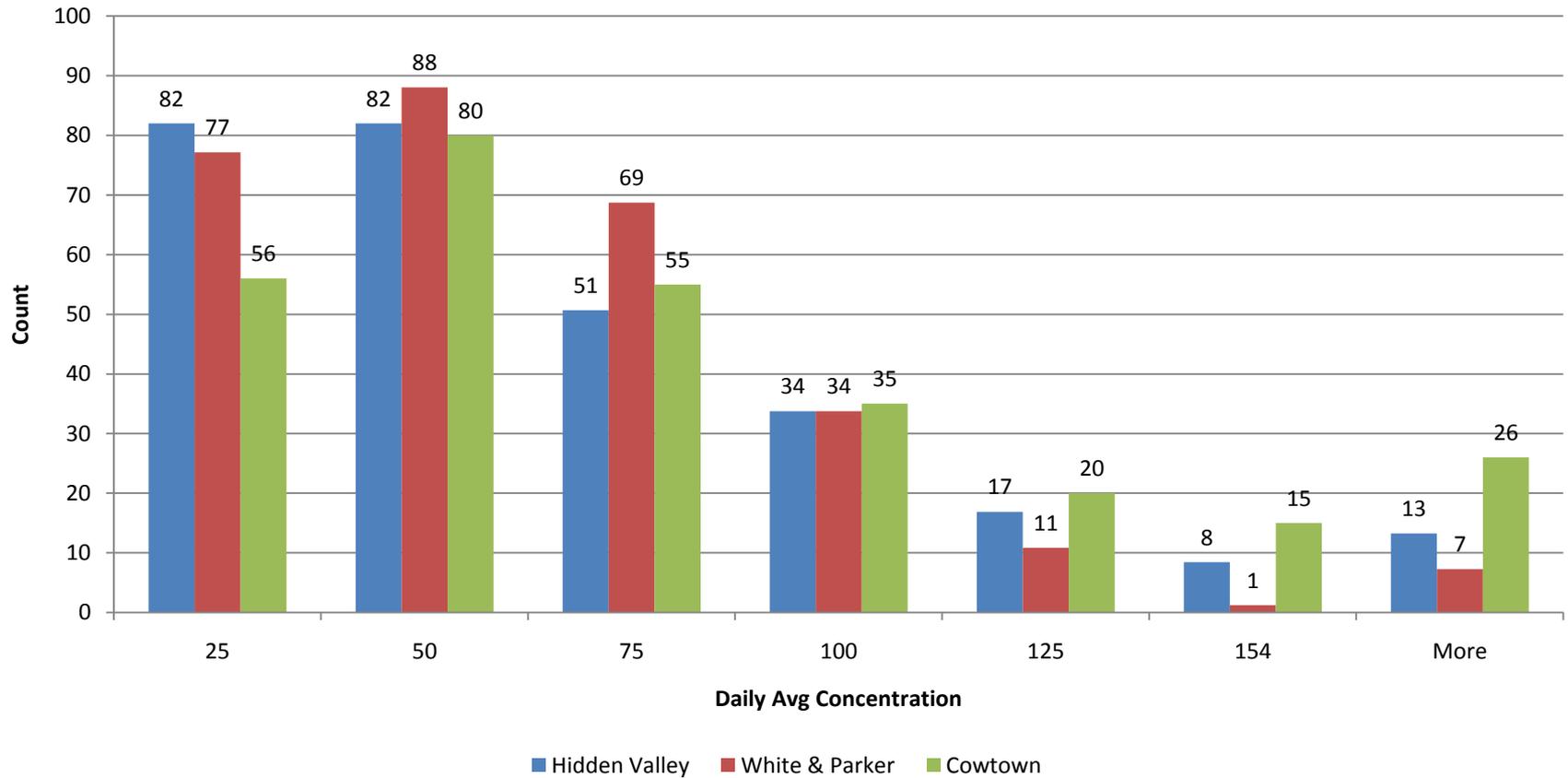
# Next Steps

- EPA guidance suggested “Similar Site”
- Data evaluation process will determine best site based upon:
  - Similarity of concentrations
  - Source representation
  - Population represented
  - Future planned use of area
  - Availability of monitor site

# Data Summary

## 3 Site PM10 Comparison (Normalized Histogram)

6/13/2014 thru 3/31/2015



# City of Maricopa Site

- PM10 Monitor at Maricopa Since 2004
- Located at the Old Sheriff's substation
- Highway 347 Grade Separation may require us to move the monitoring site
- Timing depends on build schedule
- Investigating replacement sites within 0.5Km

# I-10 Corridor Dust

- Past observations of hot spots along I-10
- Generally MP 210-220
- Annual ADOT/NWS Dust Workshop
  - Focus on identification, response, and education
  - Mitigation options

# I-10 Corridor Dust

- Proposed Pilot Project
  - EPA, NRCS, Pinal County Cooperating agencies
  - Approach:
    - Voluntary program
    - Federal NRCS work through local districts
    - Identify target area for mitigation
    - Study potential mitigation strategies
    - Potential federal funding
    - Identify potential for future application

# Contact Information

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