# Development of Maricopa County's Emission Reduction Credit Program

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# Introduction

- Discuss the development of an emission reduction credit (ERC) program
- Traditional and non-traditional sources
- Benchmarking of other ERC programs
- New legislation
- Potential of non-traditional sources

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# Maricopa County

- Maricopa County is approximately 9,223 square miles of land area.

Rhode Island

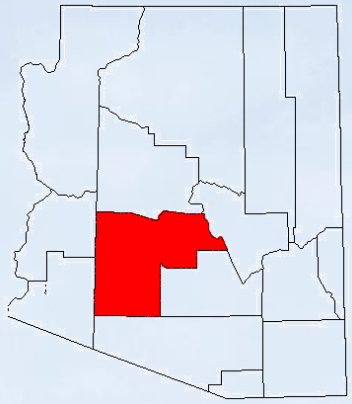
+

Delaware

+

Connecticut

=



Maricopa County

*Maricopa County is bigger than the land area of Rhode Island, Delaware, and Connecticut combined.*

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# Maricopa County

**4,328,435**
**Population**
Residents & Non-residents

- Maricopa County is designated as moderate nonattainment of the 2008 8-hr ozone standard
- The 8-hr ozone NAA is approximately 5,018 square miles or 54% of Maricopa County land area

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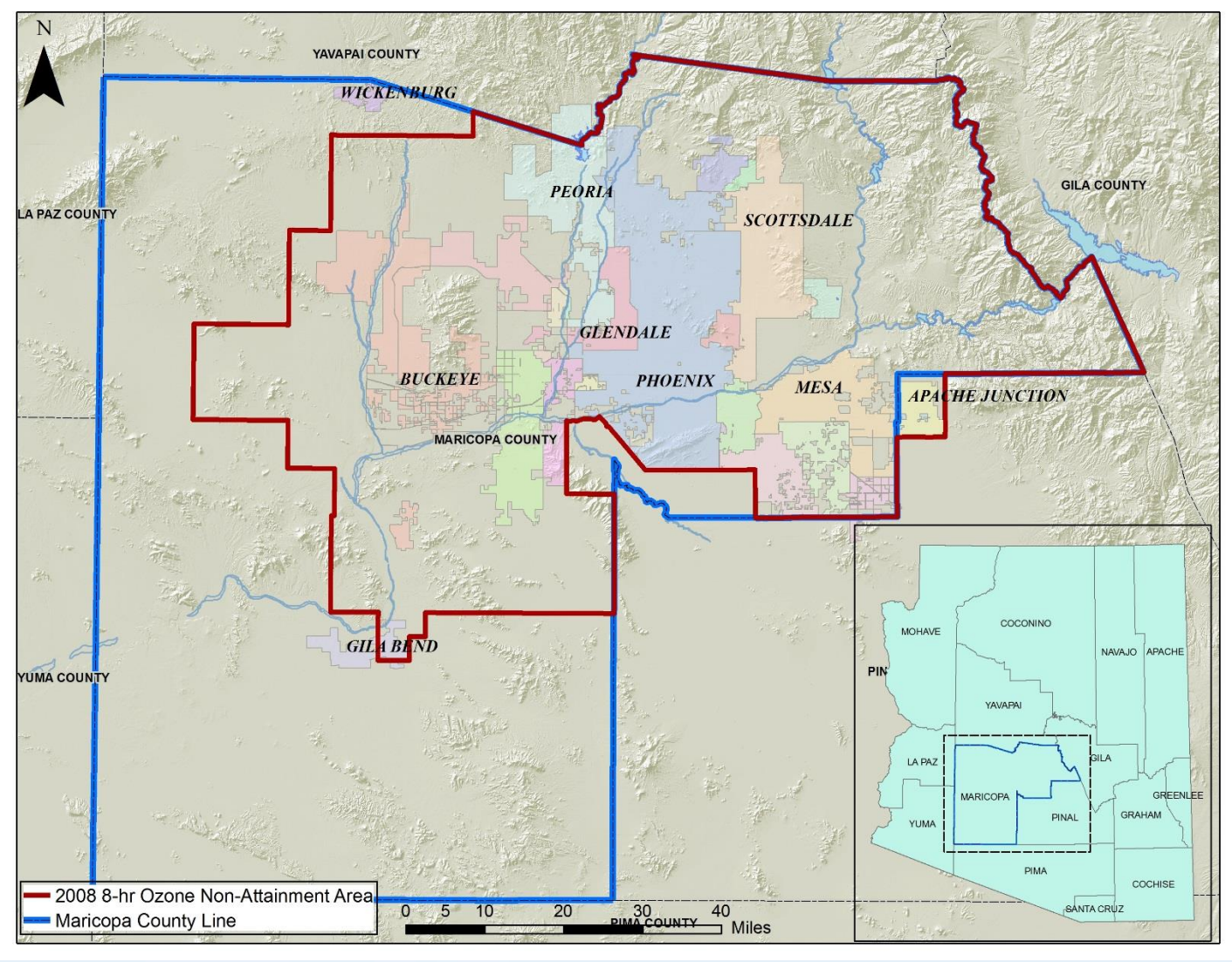
# Maricopa County Ozone NAA

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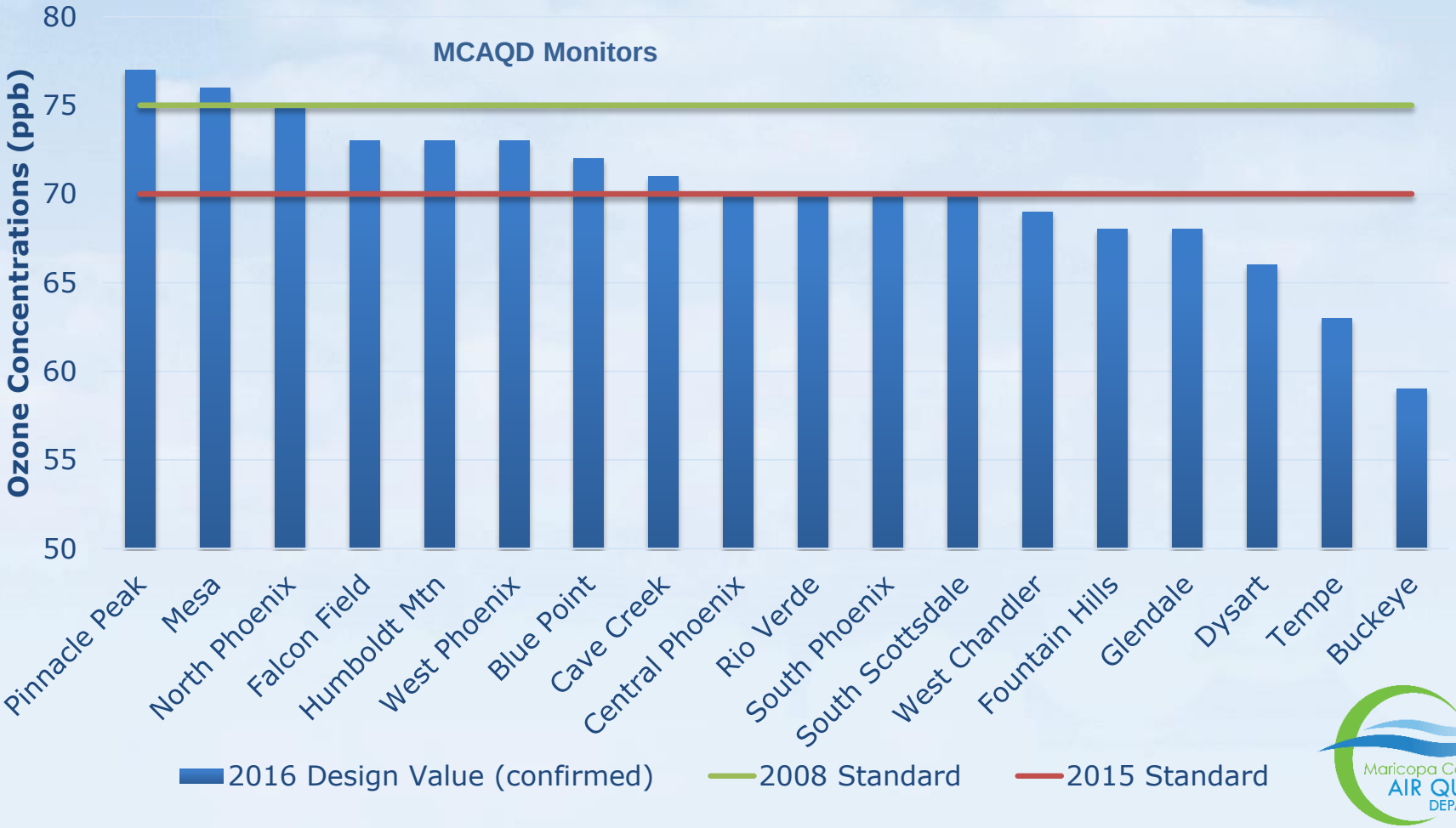
# 2016 Ozone Design Values

**Design value is based upon a 3-year average of the 4th highest 8-hour reading**

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# Nonattainment NSR Emission Offsets

- New source review (NSR) requires that emission offsets must be obtained in a NAA in order to:
  - Construct a new major source
  - Propose to construct a major modification of an existing source
- The purpose for requiring emission offsets is to allow an area to move towards attainment of the NAAQS while still allowing industrial growth

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# Emission Reduction Credit

- An Emission Reduction Credit (ERC) from traditional sources are generated when a company reduces air emissions beyond what is required by permits and rules.
- Traditional way to generate ERCs:
  - Adding emission controls
  - Replacing equipment
  - Changing fuels
  - Facility closure

# Maricopa County's Challenge

- Insufficient ERCs exist in the Arizona Emissions Bank to permit large new or expanded projects.
  - Major source threshold for ozone is 100 tons per year of VOC or NOx
  - In a moderate NAA, the emissions must be offset by a ratio of 1.15

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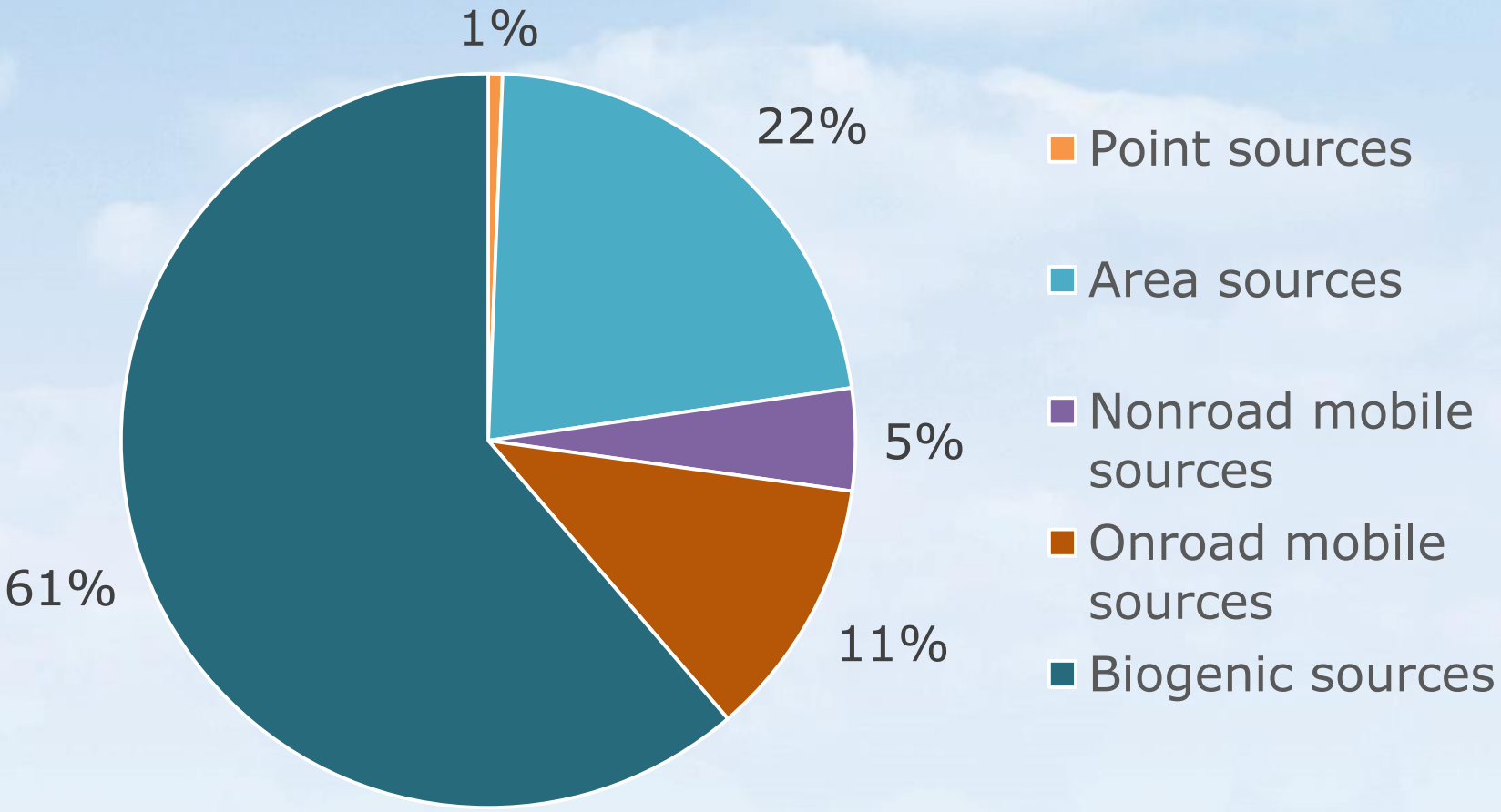
# 2014 VOC Emissions

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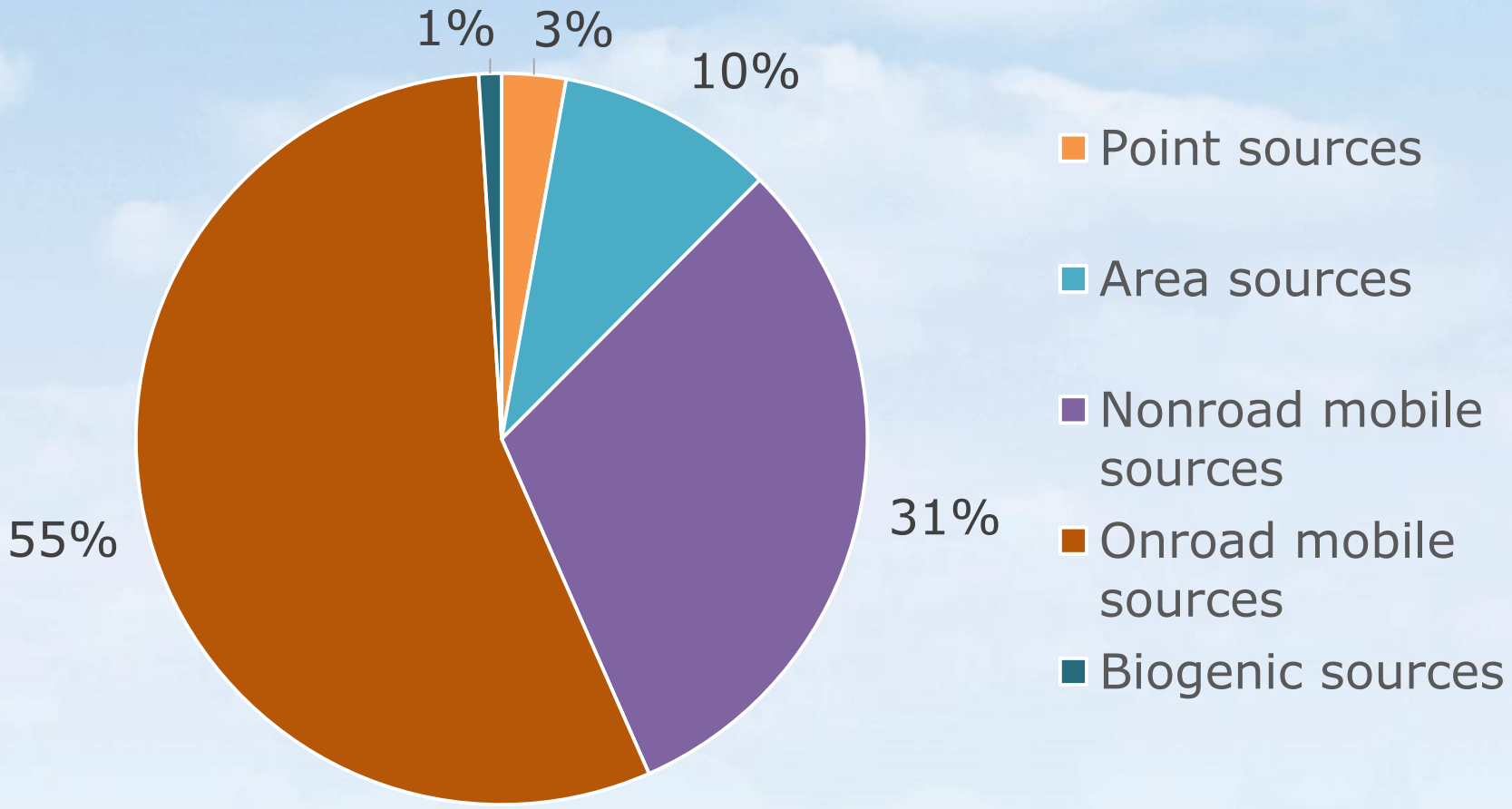
# 2014 NOx Emissions

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# How to get ERCs Today

- Review the Arizona Emissions Bank Registry which lists emission reduction credits
- “Go shopping” for emission reductions by offering to control pollution from other permitted stationary sources
- Buy emission credits from stationary sources that have shut down
- Buy out and close stationary sources, so the emission reductions achieved through closure can be credited to the new major source
- For PM-10 emission reductions, pave unpaved roads pursuant to MCAQD Rule 242

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# Available ERCs in the Arizona Emissions Bank Registry as of July 1, 2017

| Facility/ ERC Owner Name | ERC Date | Emission Reduction Credits (tons/yr) | |
|---|---|---|---|
| | | VOC | $NO_x$ |
| Freescale Semiconductor, Inc. | 3/1/2004 | 17.1 | 9.8 |
| Intel Corporation | 3/4/2005 | 195.93 | |
| Madison 51, LLC (Thornwood) | 10/8/2012 | 53.1 | |
| Penn Racquet Sports Inc. | 3/6/2009 | | 4.34 |
| **Totals:** | | **266.13** | **14.14** |

**Major source threshold for ozone is 100 tons per year of VOC or NOx**

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# Potential ERCs for VOC and NOx

| Facility Name | City, ZIP | Potential ERCs (tons/yr) | |
|---|---|---|---|
| | | VOC | $NO_x$ |
| Di-Matrix Precision Manufacturing | Phoenix, 85040 | 17.4 | |
| Saint Gobain Solar Glass Facility | Goodyear, 85338 | 9.9 | |
| Jabil | Tempe, 85281 | 8.5 | |
| All Pro Industrial Finishes | Tempe, 85281 | 8.4 | |
| Artisan Natural Stone Products LLP | Phoenix, 85034 | 7.8 | |
| Wells Cargo Inc./Haulmark Industries Inc. | Phoenix, 85043 | 6.0 | |
| Crown Custom Millwork LLC | Phoenix, 85085 | 5.0 | |
| Wickenburg Oil Company LLC | Wickenburg, 85390 | 4.2 | |
| American Case & Pedestal Mfg. Co. | Phoenix, 85009 | 4.0 | |
| Benchmark Electronics Phoenix, Inc. | Phoenix, 85023 | 2.1 | |
| Phoenix San-Man Inc. | Buckeye, 85326 | | 9.9 |
| Gro-Well Brands Inc. | Phoenix, 85009 | | 8.3 |
| Cemex – Central Ave. Plant | Phoenix, 85041 | | 7.5 |
| Phoenix Brick Yard | Phoenix, 85007 | | 3.1 |
| **Totals:** | | **73.3** | **28.8** |

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# Certified ERCs

- Credits that have been certified by Maricopa County (MCAQD Rule 204) must satisfy the following criteria:
  - Real
  - Permanent
  - Surplus
  - Quantifiable
  - Federally Enforceable

# ERC Benchmarking Research


- MCAQD contracted with Eastern Research Group
- The focus of their research:
  - Identify other agencies with ERC banking systems
  - Identify additional potential sources from non-traditional sources (unpermitted sources, mobile sources) of ERCs

# ERC Benchmarking Findings


24 agencies identified

– Priority given to EPA Region 9 agencies

6 agencies interviewed

- ✓ Ohio EPA
- ✓ New Jersey DEP
- ✓ Texas (TCEQ)
- ✓ San Diego APCD
- ✓ Butte Co. AQMD
- ✓ Massachusetts DEP

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# ERC Benchmarking Findings

- For the 8 agencies that have rules covering non-traditional ERCs most have not used the provisions due to:
  - Adequate traditional ERCs are available
  - Resistance to federal enforceability
  - High relative cost of non-traditional ERCs

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# Non-traditional ERC Example

- San Diego APCD
  - SIP approved rule
  - ERCs from refuse trucks and harbor vessels
  - Used to obtain power plant permit
- Reasons for success
  - Stakeholder support
  - Need for more ERCs
  - EPA participation

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# Non-traditional ERC Program

- Important issues to consider during the development of a non-traditional ERC program:
  - Establish method for determining the amount and lifetime of emissions reduced from mobile sources
  - Prevent the movement of the clean replacement vehicles outside the NAA
  - Disposal of replaced vehicles
  - Balance the cost of non-traditional ERCs with the environmental, health, and economic benefits

# Arizona ERC Legislation Changes

- In May 2017, A.R.S. §49-410 revisions (HB 2152) were signed into law
- Key components of the new legislation:
  - No additional authority to establish emission limits for stationary or mobile sources
  - Participation in the emissions bank is voluntary
  - Credits do not expire
  - Eliminated the 10% discount
  - Allows non-traditional credits

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# Potential Non-traditional Sources

- Electrification of truck stops
- Replace refuse trucks
- Replace school buses
- Replace freight switcher locomotives
- Replace diesel and gasoline airport ground support equipment (GSE) to all-electric
- Replace forklifts to all-electric

# Truck Stop Electrification

- Initial calculations for the installation of 220 electrified parking spots
  - Reduce up to 215.09 tons of NOx based on utilization rates
  - Cost $1395 per ton


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# Next Steps for Maricopa County

- Continue research for potential non-traditional ERC sources
- Revise MCAQD rules to address non-traditional ERCs
- Expand outreach of the ERC program
- Continue to hold stakeholder meetings

# Thank you

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