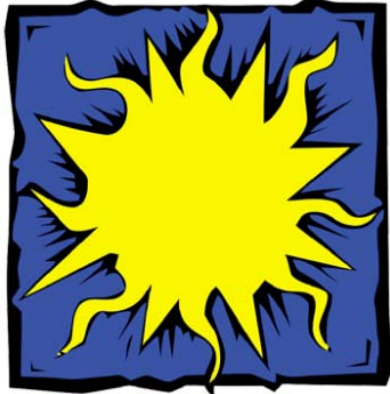


North Central Indiana Air Quality Update

PARTNERS FOR



CLEAN AIR

Shawn Seals
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Office of Air Quality

Indiana Department of Environmental Management (IDEM)
April 26, 2016

Presentation Summary:

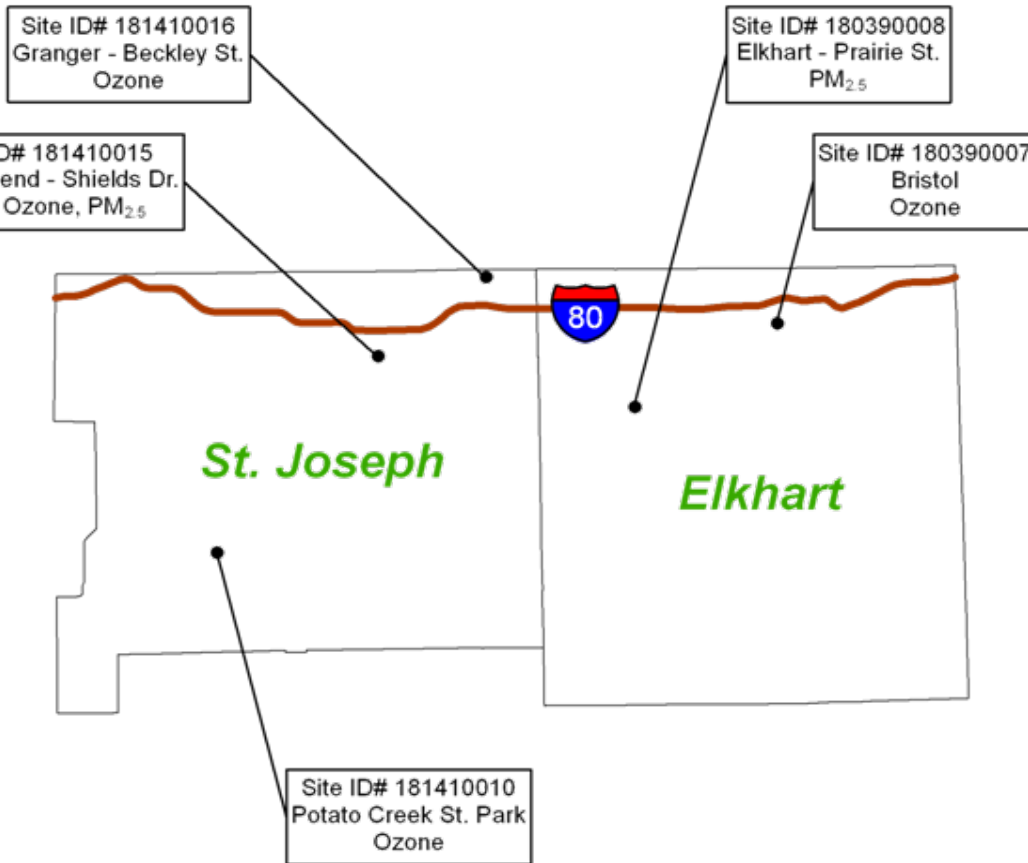
- Geographic area
- Long-term PM2.5 air quality and emission trends
- Long-term ozone air quality and emission trends
- Current schedule for ongoing National Ambient Air Quality Standards (NAAQS) review
- 8-hour ozone area designations
- Effects of designations
- Conclusions



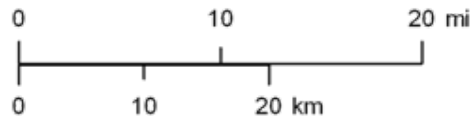
Geographic area

Legend

- Criteria Pollutant Monitor
- Interstate
- County Boundary



Criteria Pollutant Monitors for *Elkhart* and *St. Joseph* Counties

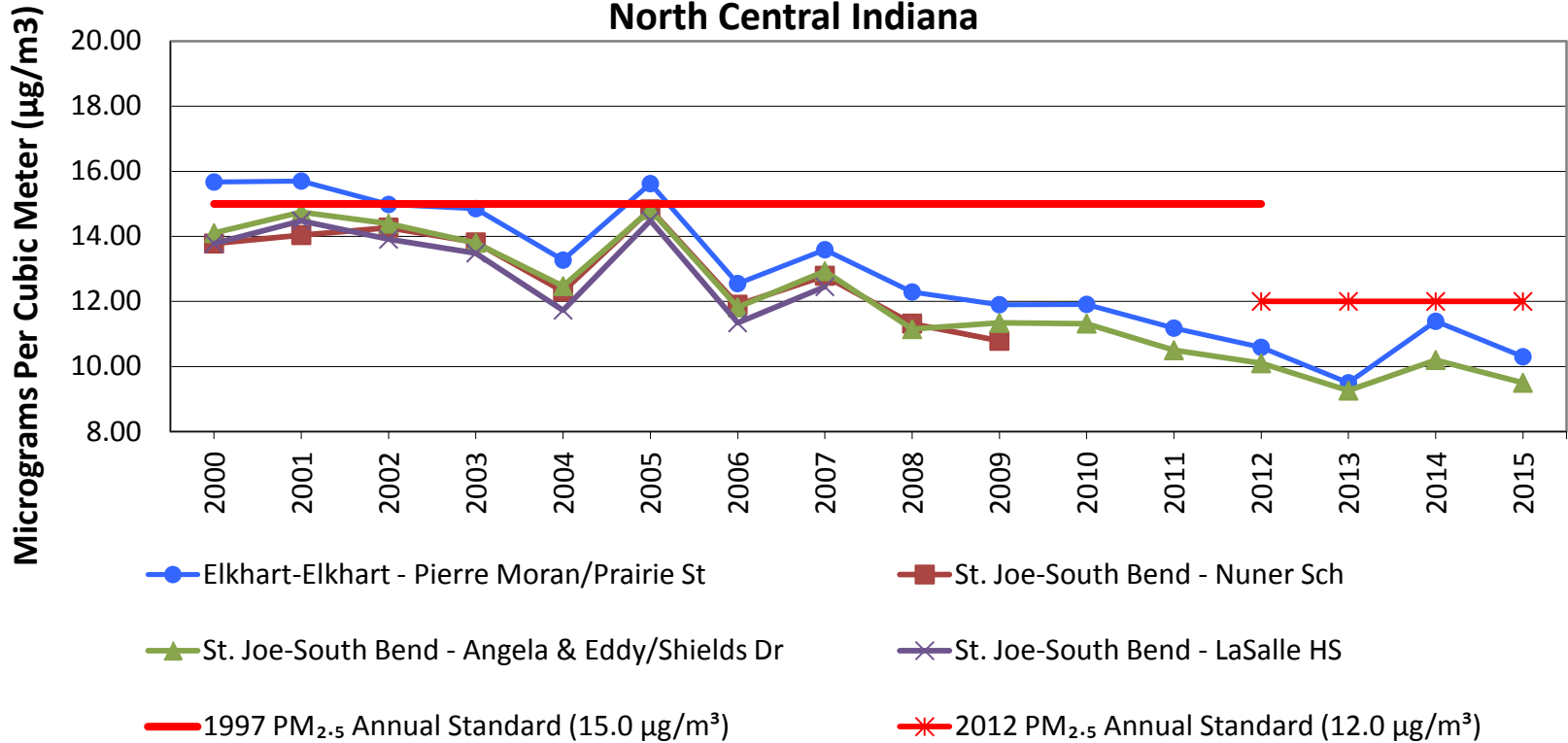




Long-term air quality trends

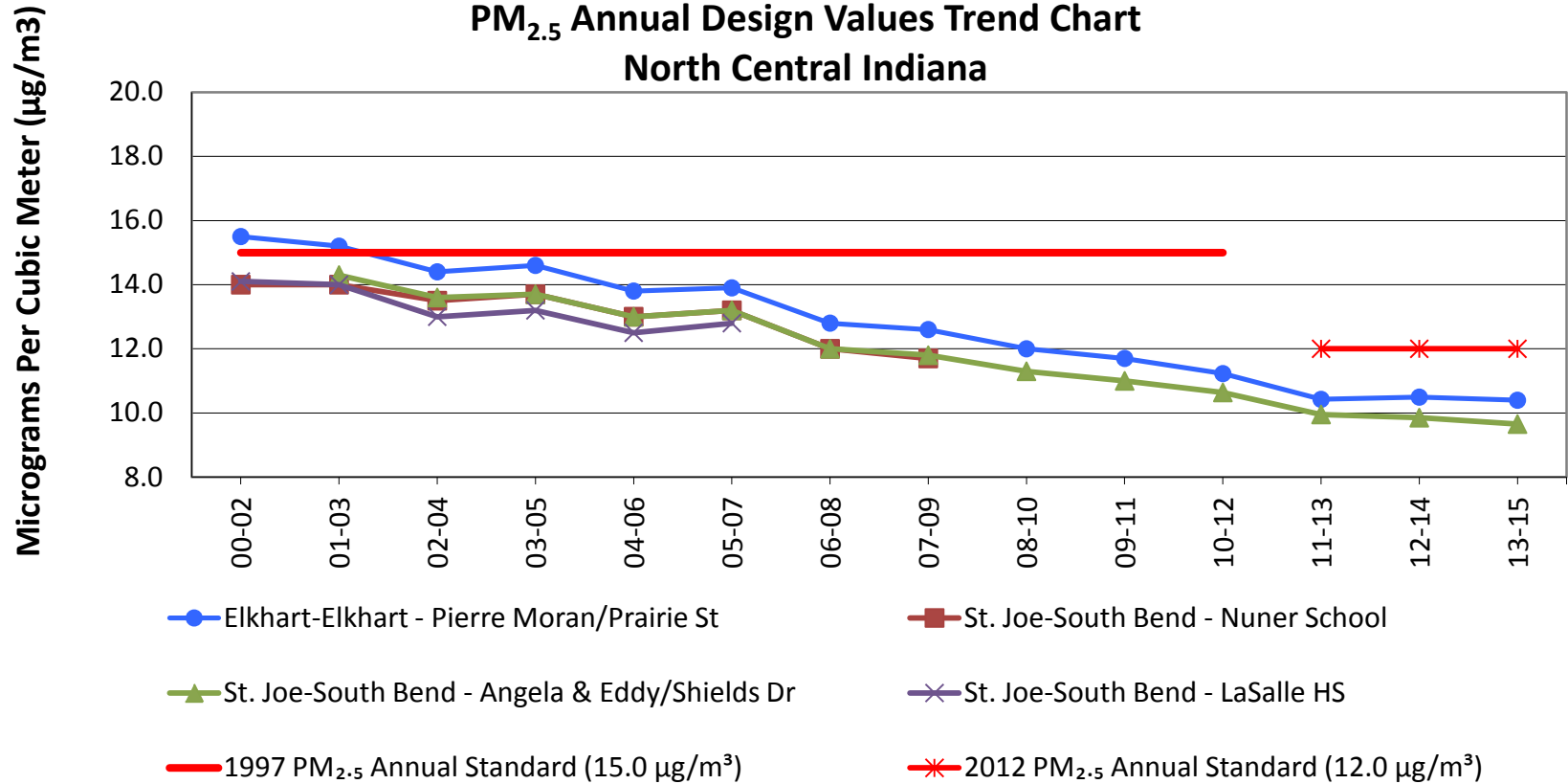
PM_{2.5}

PM_{2.5} Annual Mean Summary Trend Chart
North Central Indiana



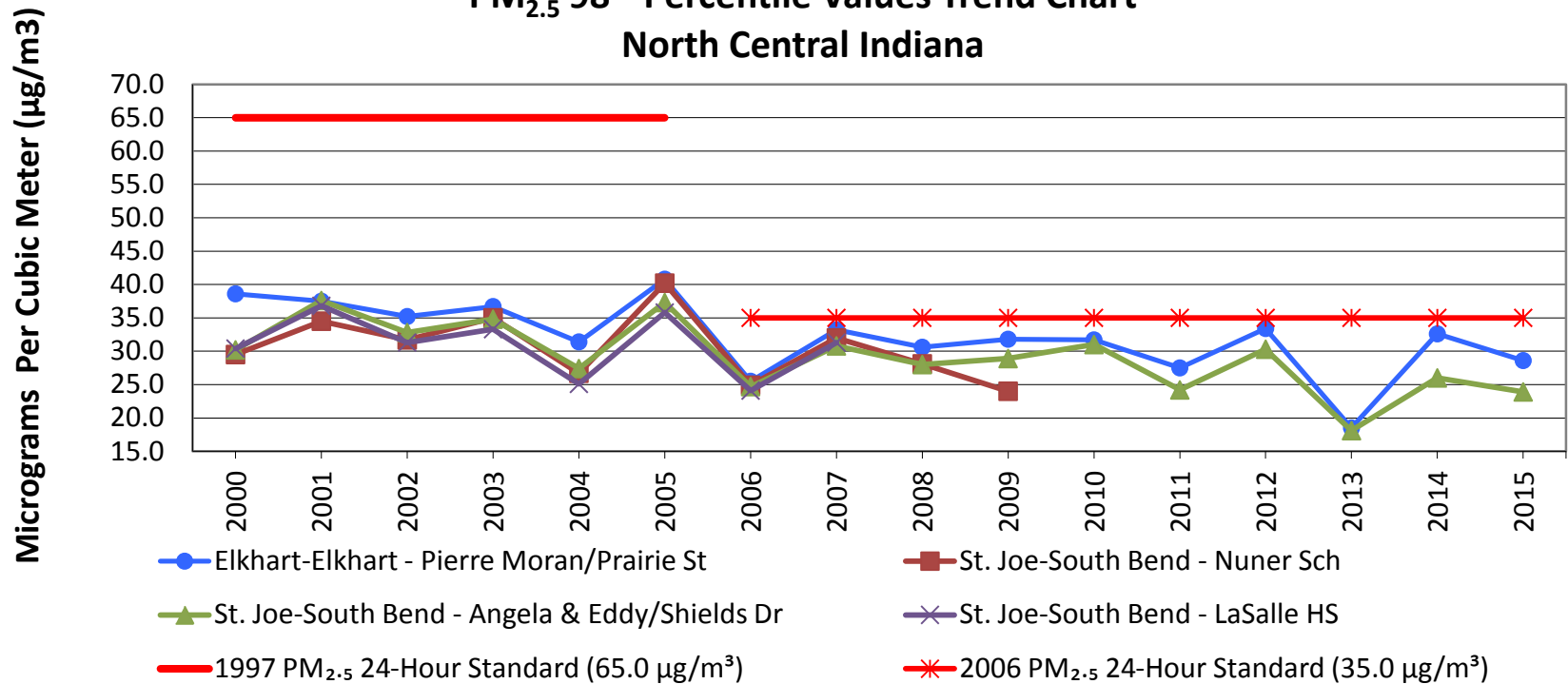
PM_{2.5}

PM_{2.5} Annual Design Values Trend Chart
North Central Indiana



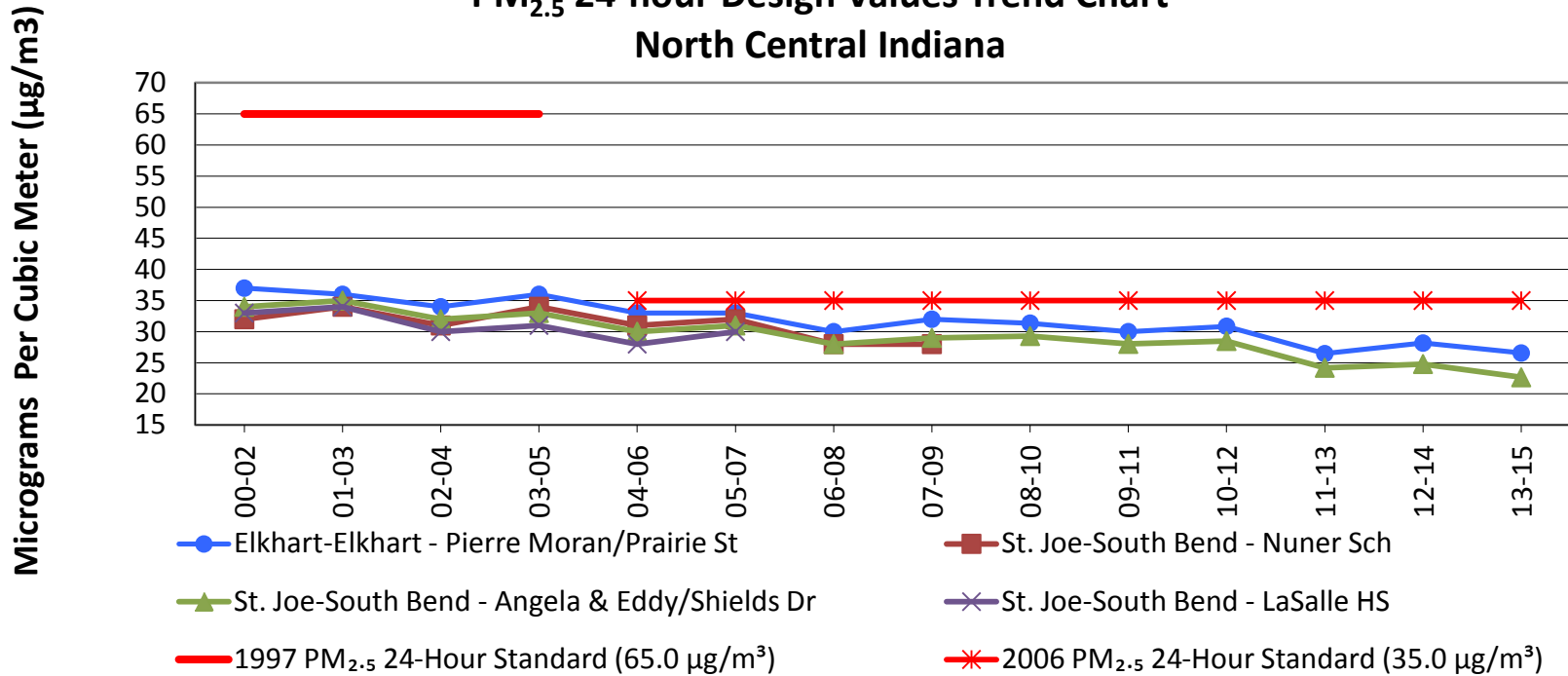
PM_{2.5}

PM_{2.5} 98th Percentile Values Trend Chart North Central Indiana



PM_{2.5}

PM_{2.5} 24-hour Design Values Trend Chart
North Central Indiana



PM_{2.5} Annual Design Values 2013 - 2015

Standard set at 12.0 µg/m³

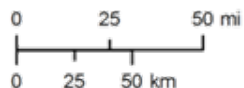
1997:
U.S. EPA
Established This
Standard at
15.0 µg/m³

2006:
U.S. EPA
Retained This
Standard at
15.0 µg/m³

2012:
U.S. EPA
Revised This
Standard to
12.0 µg/m³

Legend

- PM_{2.5} Design Value Less Than or Equal to 12.0 µg/m³
- Indiana County Borders



Notes:
Posted Data Are in Units of Micrograms Per Cubic Meter (µg/m³)

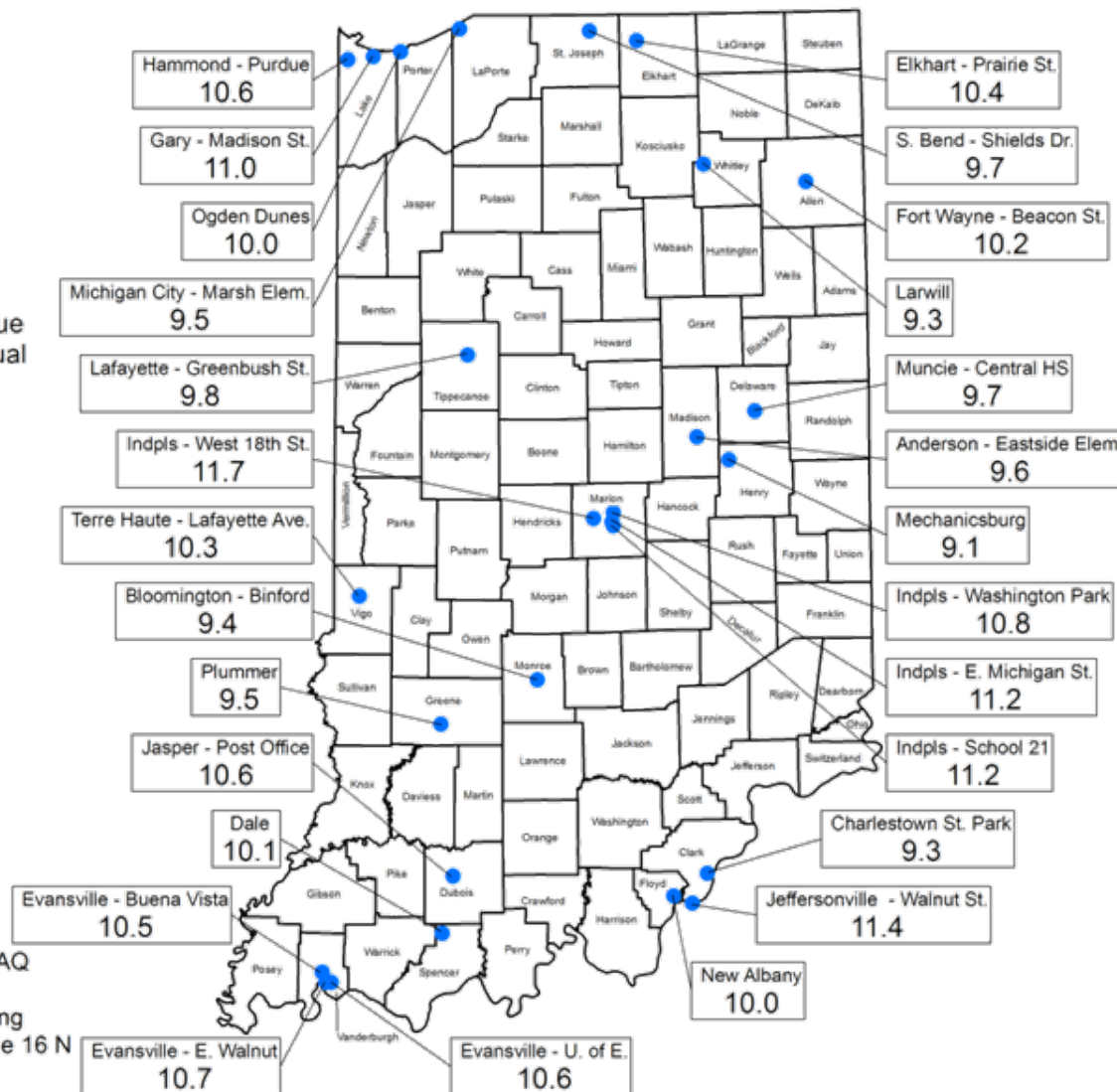
Mapped By: C. Mitchell, OAQ

Date: 03/04/2016

Source: IDEM, Air Monitoring

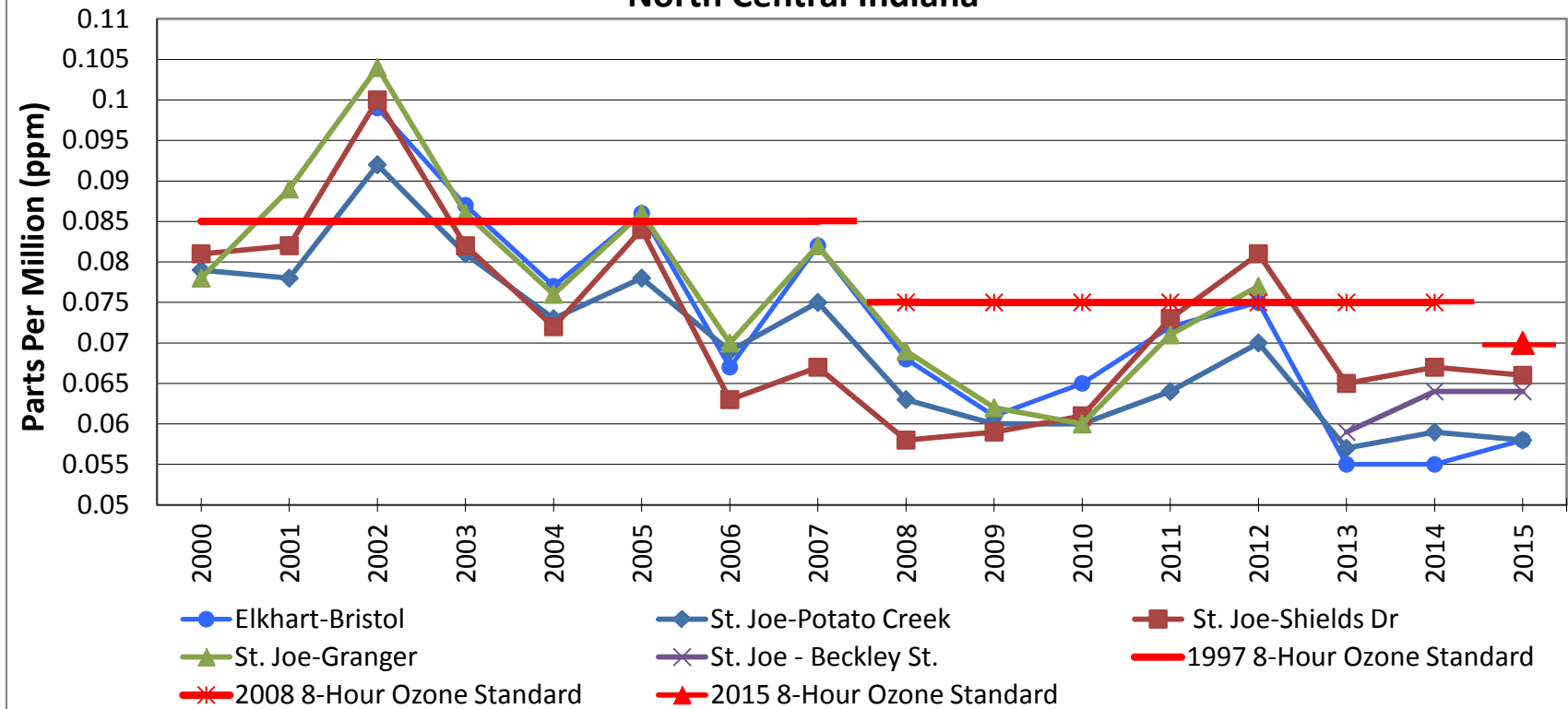
Map Projection: UTM Zone 16 N

Map Datum: NAD83



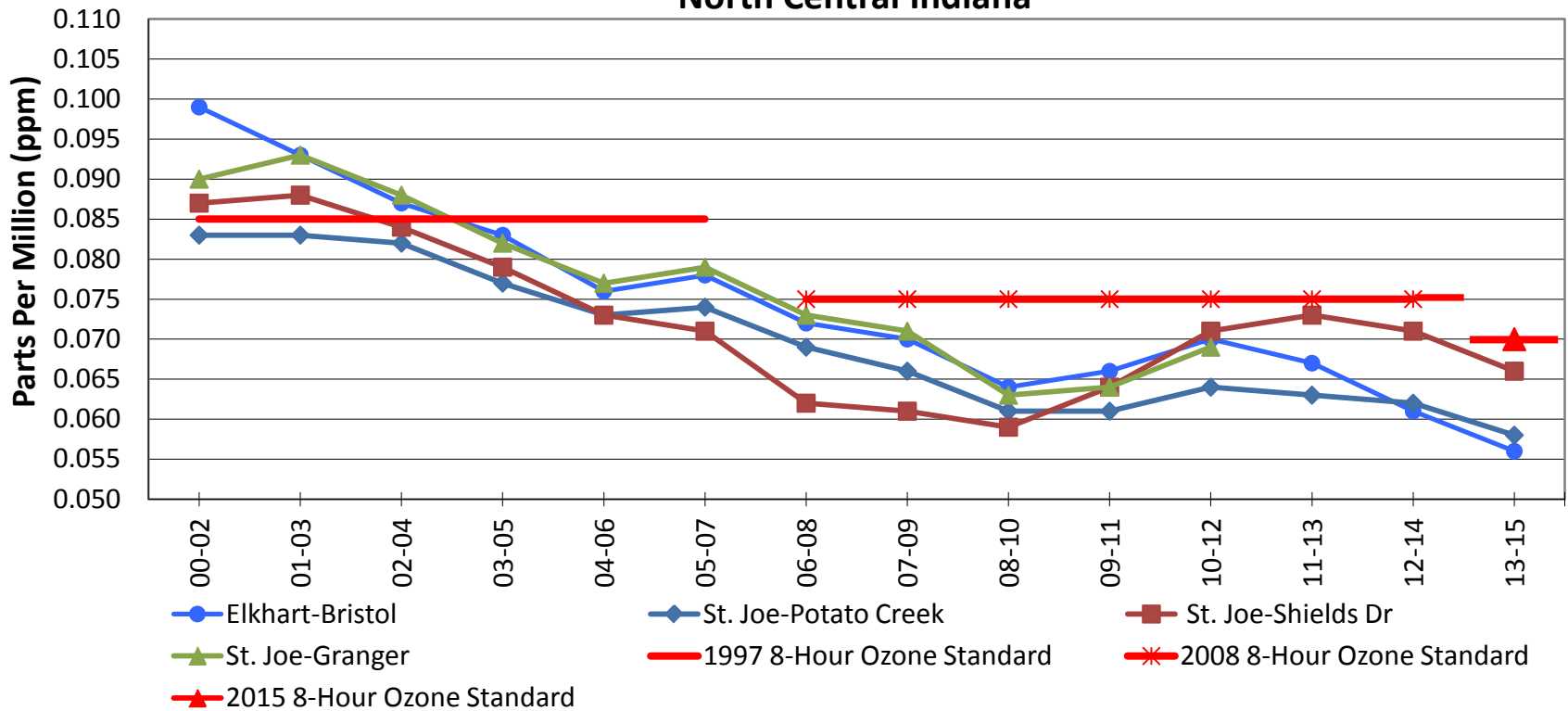
Ozone

Ozone 4th - High Values Trend Chart
North Central Indiana



Ozone

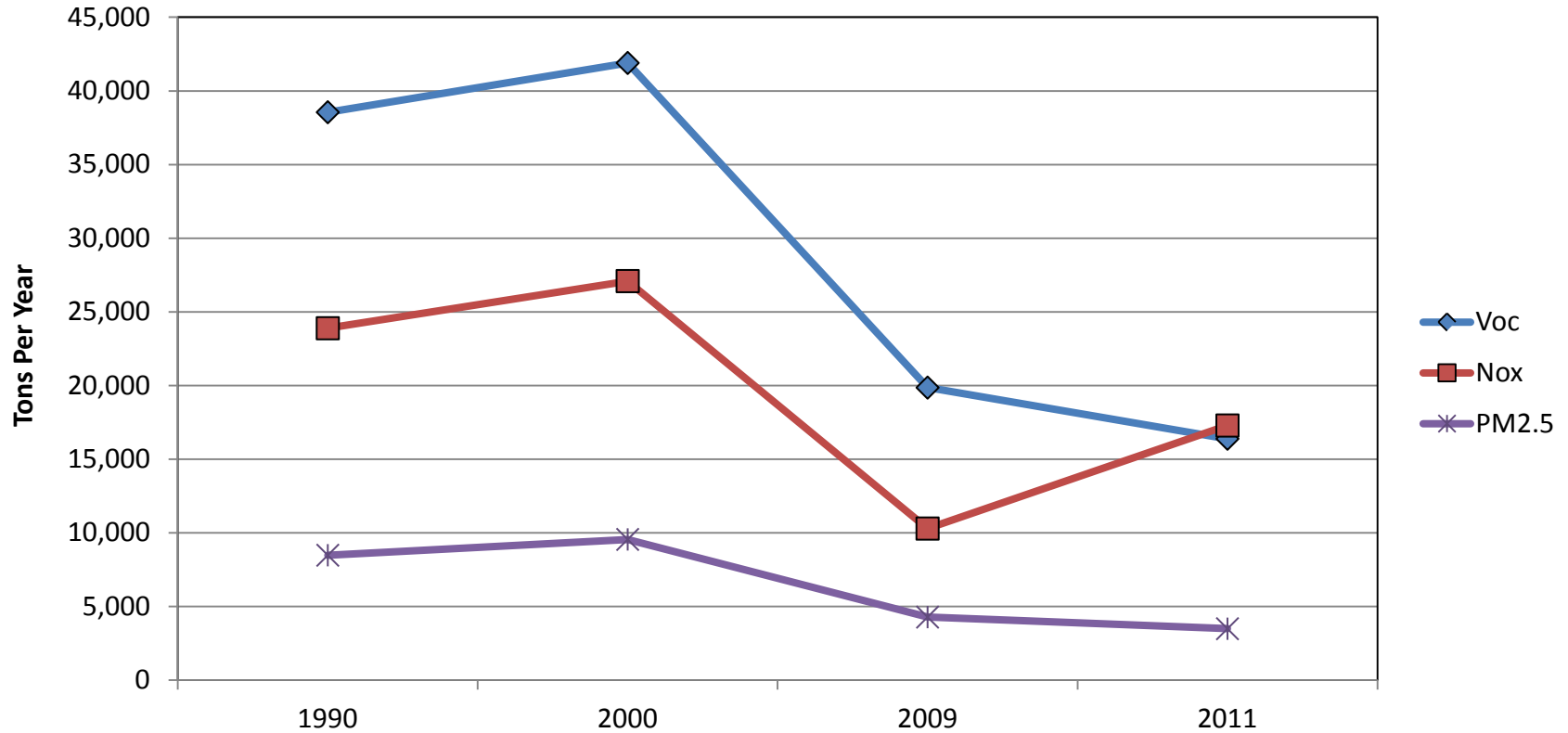
8-hour Ozone Design Values Trend Chart North Central Indiana





Long-term emission trends

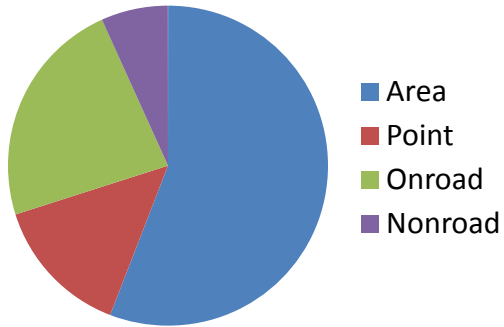
Emission Trends – Elkhart and St. Joseph Counties



Emissions based on U.S. EPA's Air Pollutant Emissions Trends Data.

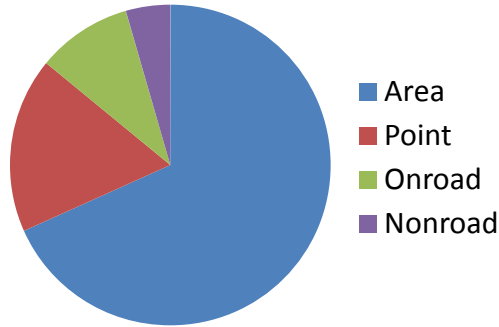
VOC Emission Trends – Elkhart and St. Joseph Counties

2000 VOC



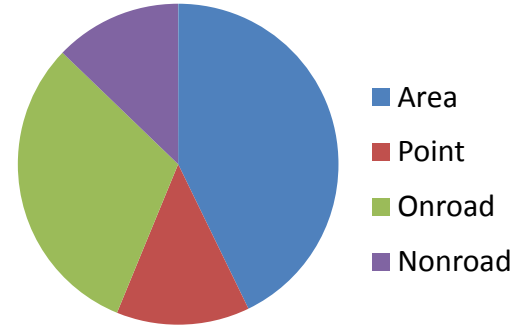
Total VOC
41,896

2009 VOC



Total VOC
19,861

2011 VOC

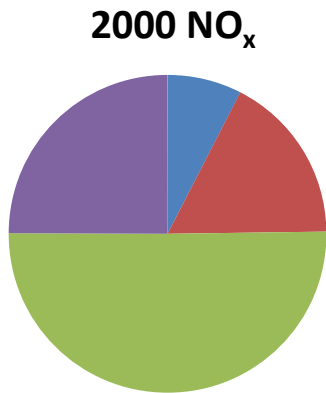


Total VOC
16,390

Values are in Tons Per Year.

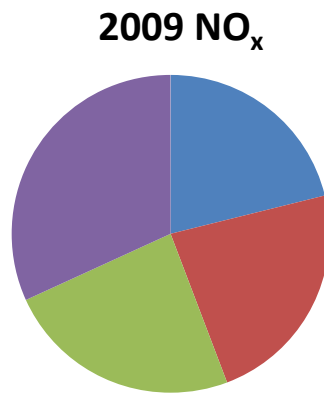
Emissions based on U.S. EPA's Air Pollutant Emissions Trends Data.

NO_x Emission Trends – Elkhart and St. Joseph Counties



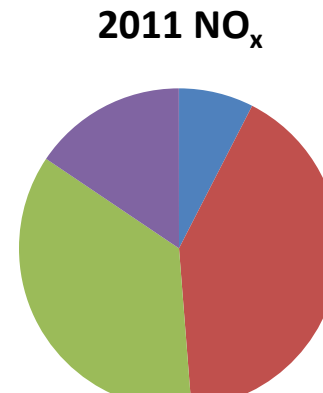
**Total NO_x
27,090**

■ Area
■ Point
■ Onroad
■ Nonroad



**Total NO_x
10,294**

■ Area
■ Point
■ Onroad
■ Nonroad



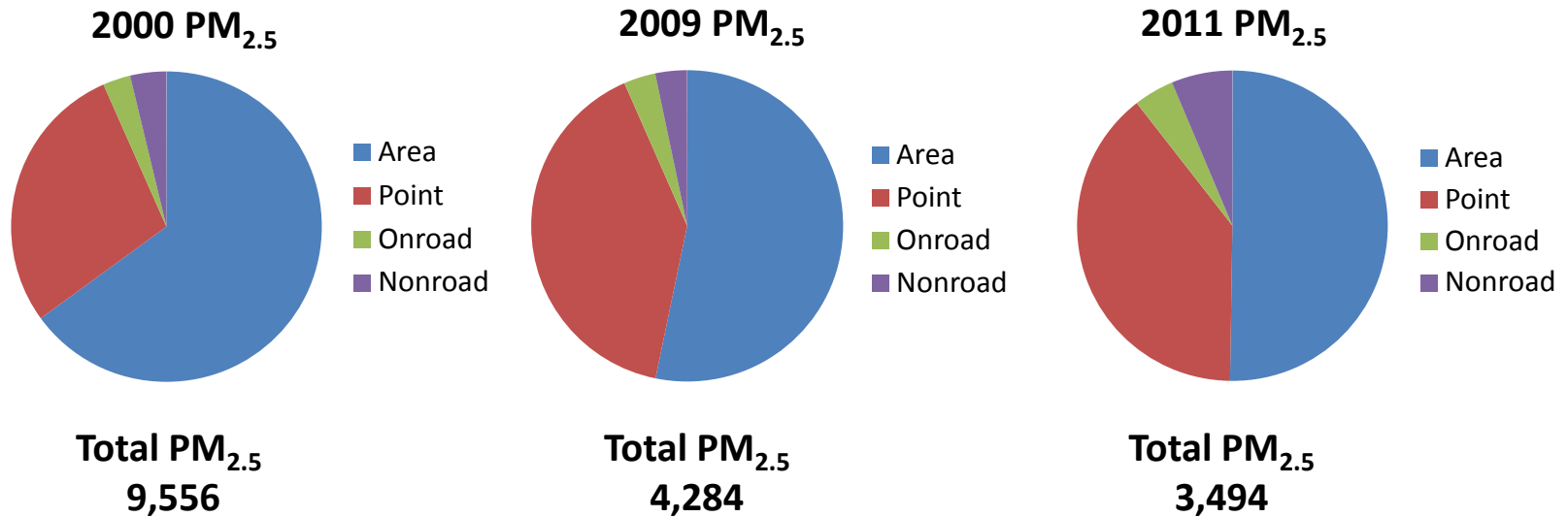
**Total NO_x
17,288**

■ Area
■ Point
■ Onroad
■ Nonroad

Values are in Tons Per Year.

Emissions based on U.S. EPA's Air Pollutant Emissions Trends Data.

PM_{2.5} Emission Trends – Elkhart and St. Joseph Counties



Values are in Tons Per Year.

Emissions based on U.S. EPA's Air Pollutant Emissions Trends Data.

Current Schedule for Ongoing NAAQS Reviews

MILESTONE	POLLUTANT						
	NO ₂ /SO ₂ Secondary	PM _{2.5}	Ozone	Lead	NO ₂ Primary	SO ₂ Primary	CO
Notice of Proposed Rulemaking	May 2017	June 29, 2012	Dec. 1, 2014	Dec. 19, 2014	Nov. 2016	Oct. 2018	2016
Notice of Final Rulemaking	Feb. 2018	Dec. 14, 2012	Oct. 1, 2015	2016?	Aug. 2017	July 2019	2016

U.S. EPA strengthened the annual primary NAAQS to a level of 12 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and retained the existing secondary annual standard at a level of 15 $\mu\text{g}/\text{m}^3$ and primary and secondary 24-hour standards at a level of 35 $\mu\text{g}/\text{m}^3$. The standards were finalized on January 15, 2013, and became effective on March 18, 2013.

U.S. EPA strengthened the 8-hour ozone health standard to a level of 0.070 parts per million (ppm). All Indiana counties are monitoring design value numbers in attainment of the new standard.

8-hour Ozone Area Designations

- On October 1, 2015, U.S. EPA promulgated a rule to revise and strengthen the 8-hour ozone standard to 0.070 parts per million (ppm). The final rule was published in the Federal Register on October 26, 2015.
- 8-hour design values for all Indiana counties are presently below 0.070 ppm.
- 10/1/2016: States submit designation recommendations.
 - Based on monitored data within Indiana, all counties will be recommended as attainment.
 - 2016 monitor data within the Chicago area and Cincinnati area will need to be closely observed.
- 10/1/2017: U.S. EPA finalizes area designations.

Effects of Designation

- In an area designated “attainment,” Prevention of Significant Deterioration (PSD) permitting program requirements apply to new or modified sources.
- Under the PSD program, sources must perform an air quality analysis and install “Best Available Control Technology,” or BACT.
- In an area designated “nonattainment,” nonattainment New Source Review (NSR) permitting program requirements apply to new or modified sources.
- Under the nonattainment NSR program, sources must also perform an air quality analysis and utilize the “Lowest Achievable Emission Rate,” or LAER, which is equal to or more stringent than BACT. In addition, sources must obtain “emission offsets,” that increase depending on the severity of the nonattainment area (i.e., for every ton emitted, there must be a minimum of 1.1 tons reduced from permitted sources within a marginal nonattainment area).
- Nonattainment areas are also subject to additional state requirements, which could include: vehicle emissions testing, a demonstration of transportation conformity, and/or a reasonable further progress demonstration.

Conclusions:

- Monitored air quality values have been trending downward and will continue to improve into the future.
- The overall decrease in emissions in Elkhart and St. Joseph counties can be attributed to a variety of national, regional, statewide, and local controls and initiatives.

Questions and Contact Information



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