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**Michigan Department Environmental Quality
Air Quality Division**

West Michigan –

**Air & Waste Management Association
Annual Technical Session & Golf Outing**

June 1, 2018

Clean Air Action! Forecasting



- Supporting our two pollutant forecasts
 - Ozone
 - Fine Particulates, more commonly known as PM2.5

Clean Air Action! Forecasting

- An emissions reduction strategy
- A public health awareness message



Forecasting Ozone

**VOC
&
NOx**



**Ozone
O₃**



- Dominant pollutant in the mid-late spring/summer
- Is the product of solar photochemical reactions influenced sunlight/heat
- Can be both a regional or local issue

Before forecasting ozone, we have to forecast the weather...

- Amount of sunshine
- Precipitation chances
- Timing of frontal passages
- Surface wind direction including lake breezes
- Upper level wind pattern and temperatures
 - Down wind concentrations - transport

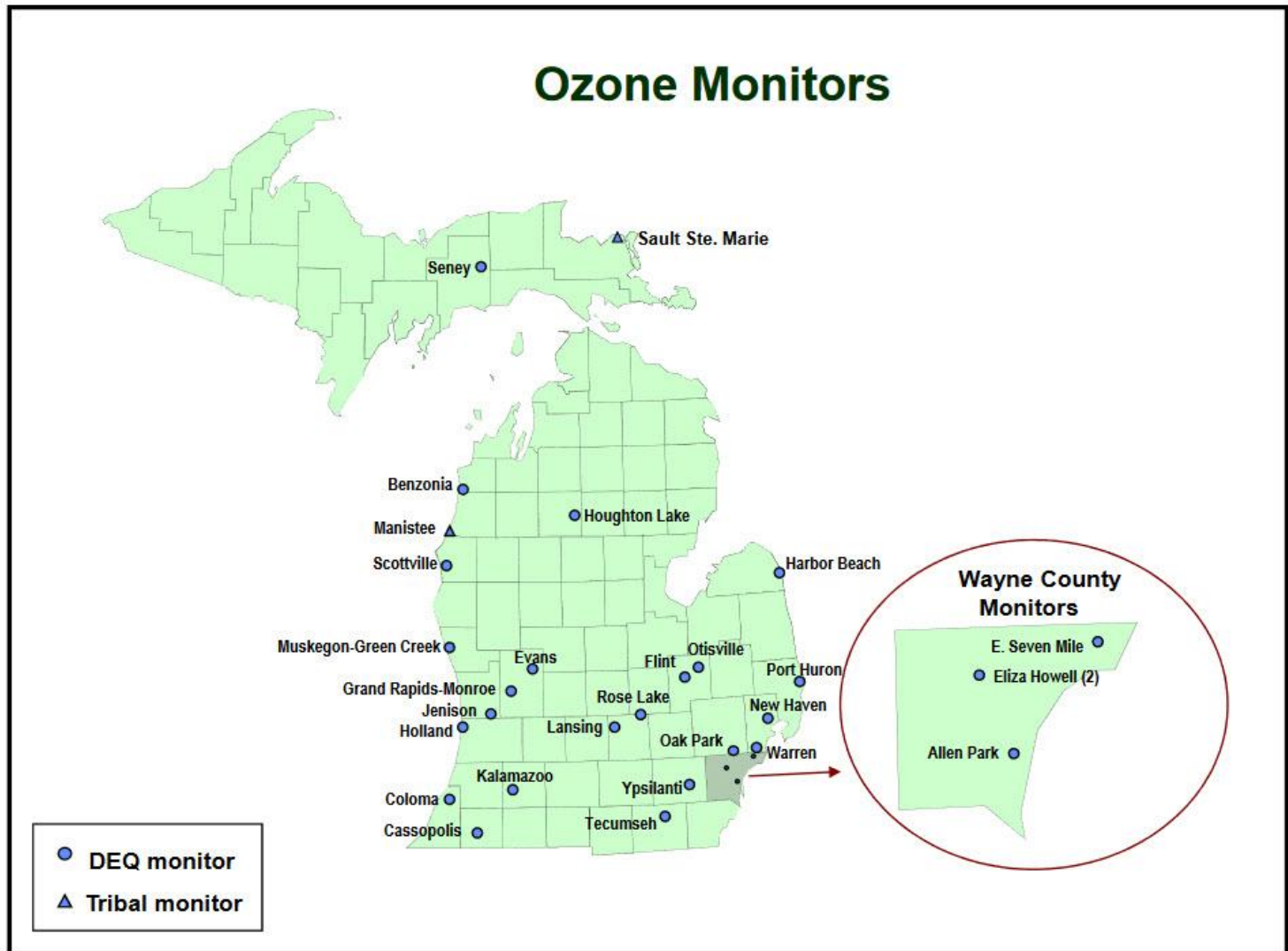
Forecasting Protocol...

- Review past and current O₃ monitor trends



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Forecasting Protocol...

- Evaluate computer forecast models
- Participate in forecast call with regional forecast group
- Determine expected air quality forecast levels; Good, Moderate, Unhealthy of Sensitive Groups (USG), Unhealthy

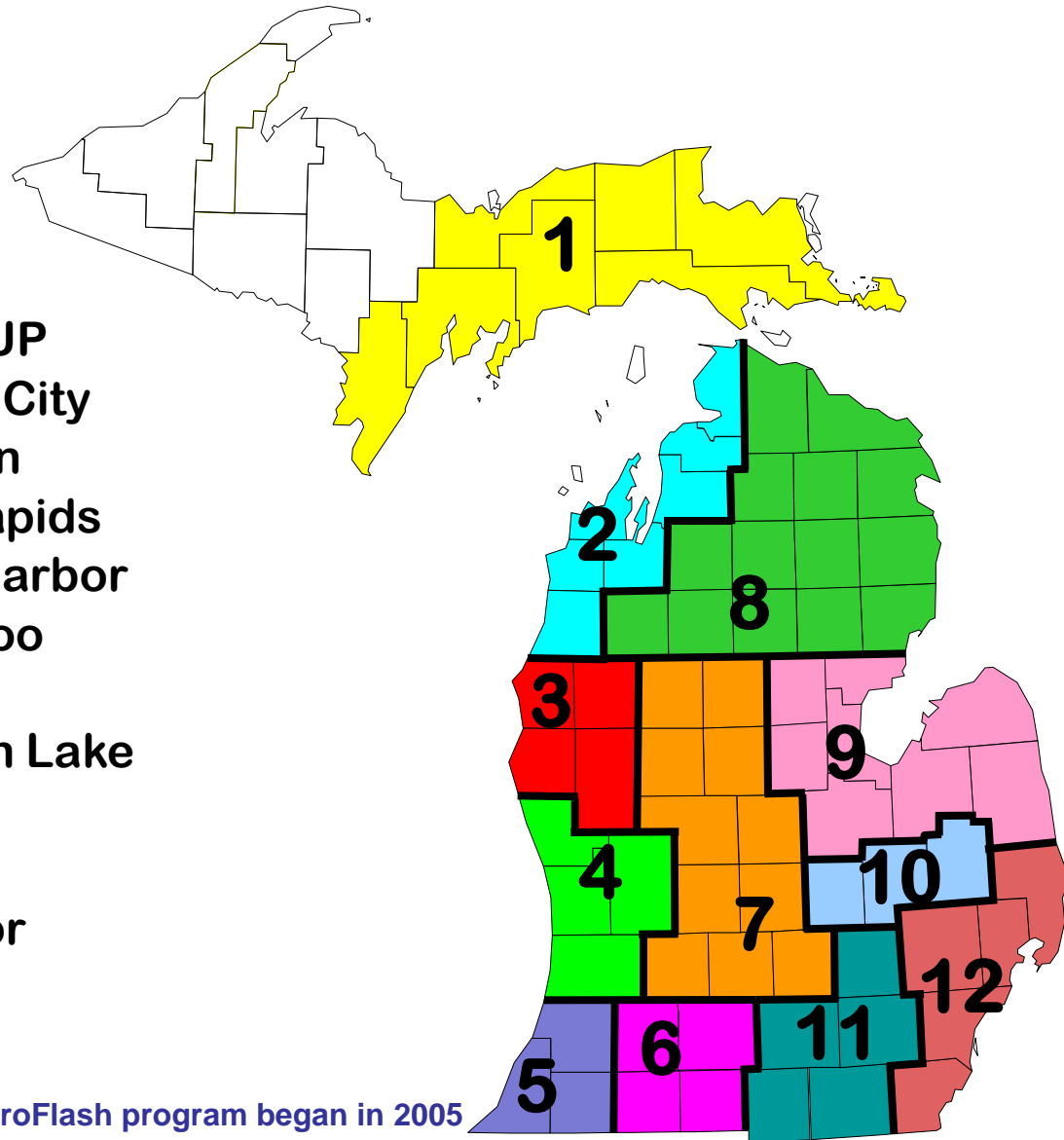
Air Pollution Thresholds

Clean Air Action! Day Threshold - **USG**

Category	8-Hour Ozone Concentration
Good	0 - 54 ppb
Moderate	55 - 70 ppb
Unhealthy for Sensitive Groups (USG)	71 - 85 ppb
Unhealthy	86 - 105 ppb
Very Unhealthy	106 - 200 ppb
Hazardous	201 - 600 ppb

Air Quality Forecast Locations

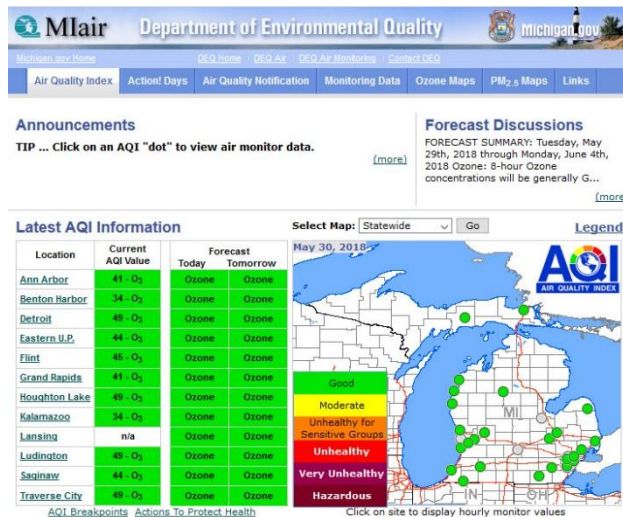
1. Eastern UP
2. Traverse City
3. Ludington
4. Grand Rapids
5. Benton Harbor
6. Kalamazoo
7. Lansing
8. Houghton Lake
9. Saginaw
10. Flint
11. Ann Arbor
12. Detroit



Where to Find Air Pollution Forecast Information:

- Forecast email to distribution list maintained by AQD forecasters
- Outreach groups like Grand Valley Metro Council and West Michigan Shoreline Regional Development Commission – TV and Radio

Mlair



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EnviroFlash



Michigan EnviroFlash Program

Receive AQI Forecasts & "Action! Day" messages



EnviroFlash is a FREE service that provides:

- Advanced notice about environmental issues via automated e-mail and text messages.
- Personalized messages when unhealthy Air Quality and/or UV radiation risk is high.
- Action! Day declarations so residents can take action to reduce pollution and protect health.
- Plus an option to notify residents about urgent local air pollution situations.

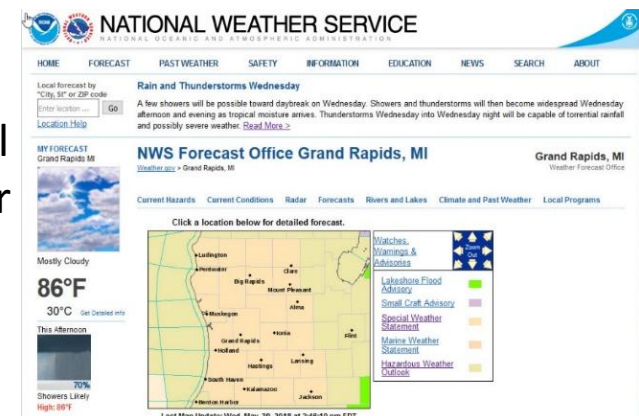
All you need to participate is an e-mail address or a cell phone with text message capability. Air Quality messages are sent at a level you select and when an 'Action! Day' is declared.

[Enroll in AQI EnviroFlash](#) [MI EnviroFlash Fact Sheet](#) [Enroll in UV EnviroFlash](#) [UV Forecast Info](#)

AirNow



National Weather Service



Message for high Ozone days...

Help reduce emissions:

- Carpool
- Refuel cars and trucks after dusk
- Delay using gasoline-powered lawn and garden equipment
- Delay using household, workshop, and garden chemicals

Health tips:

- Schedule outdoor activities for morning when ozone is typically lower
- Reduce prolonged or heavy outdoor exertion; take more breaks or avoid outdoor activities
- People with lung disease, children, elderly, adults who are active outdoors, and those with asthma are most affected

Ozone Levels Memorial Day Weekend 2018

Friday, May 25th
20 sites > 70 ppb



Saturday, May 26th
None > 70 ppb



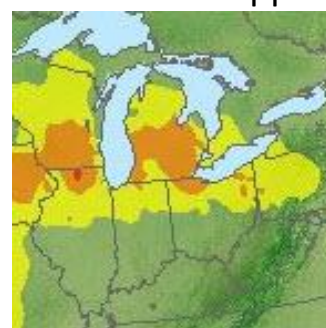
Sunday, May 27th
?? > 70 ppb



Monday, May 28th
10 sites > 70 ppb



Tuesday, May 29th
13 sites > 70 ppb



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Questions?

New Ozone Standard

Outline

- Background & History
- Designations – Nonattainment or Attainment/Unclassifiable
- State Implementation Plan (SIP) Requirements
- Attainment Strategy
- Next Steps

Background

October 2015	Ozone standard lowered to 70ppb
October 2016	Michigan submits designation recommendations to EPA
November 2017	EPA designated attainment areas
December 2017	EPA notifies Michigan of proposed nonattainment areas

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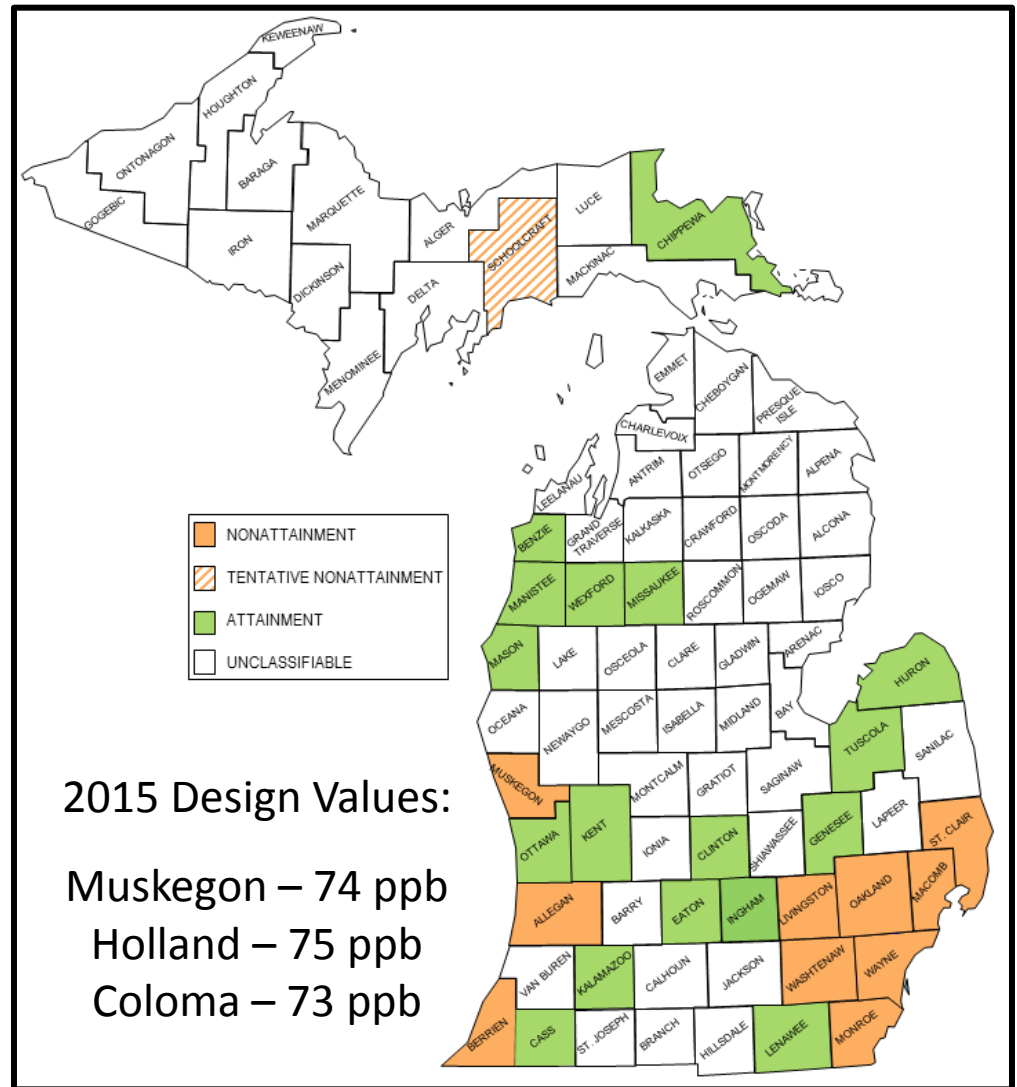
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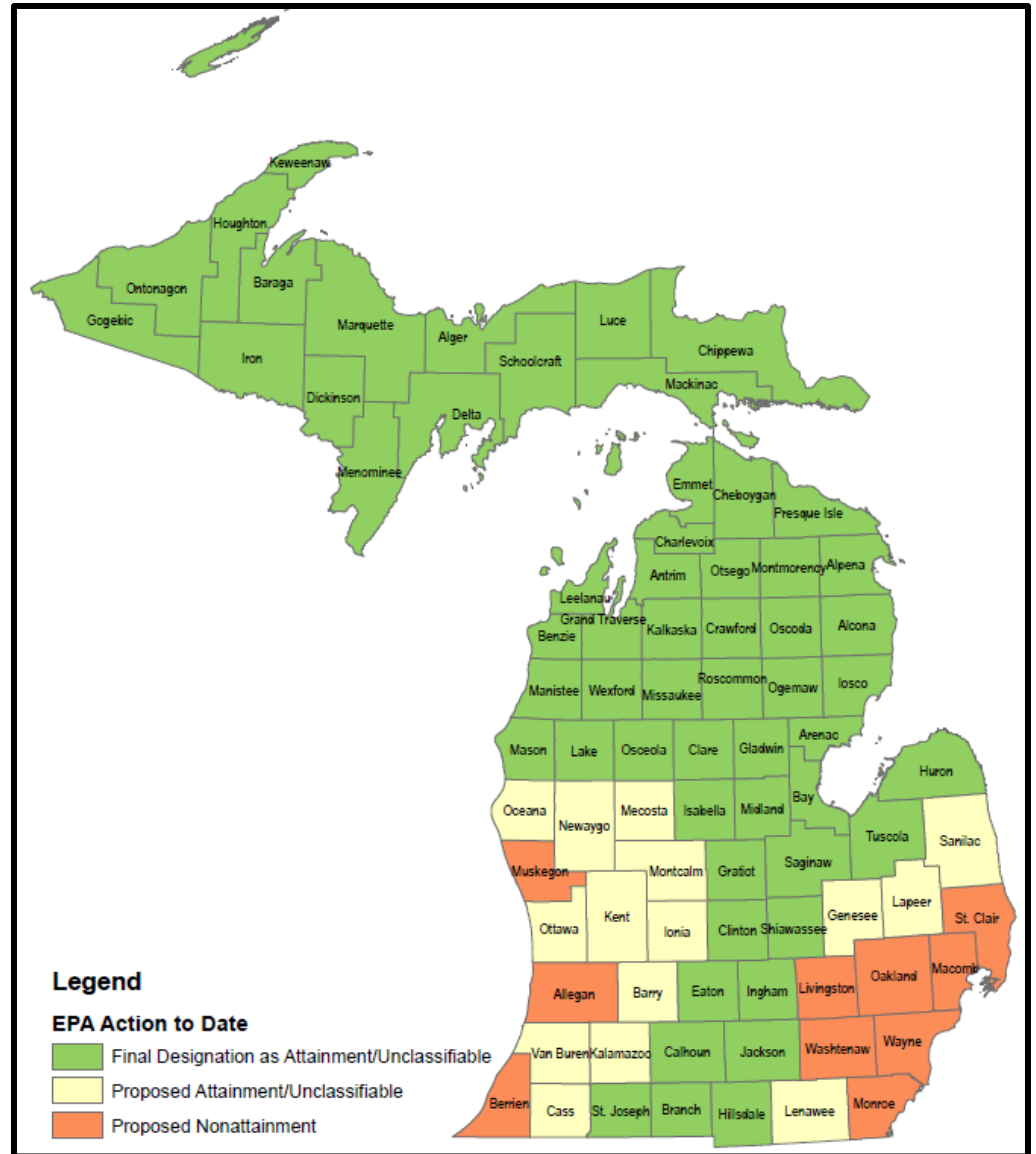
Background

October 2015

October 2016

November 2017

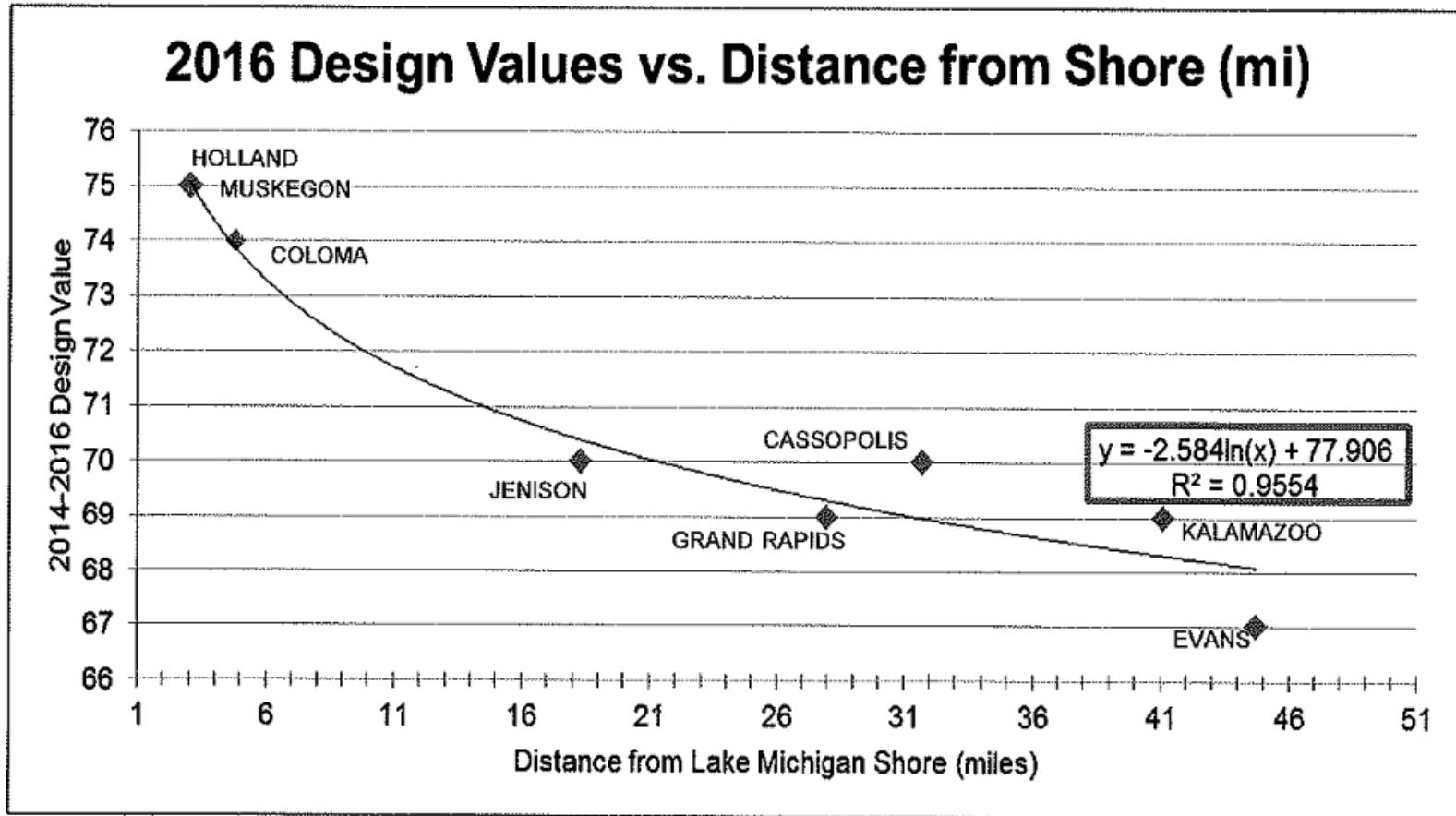
December 2017



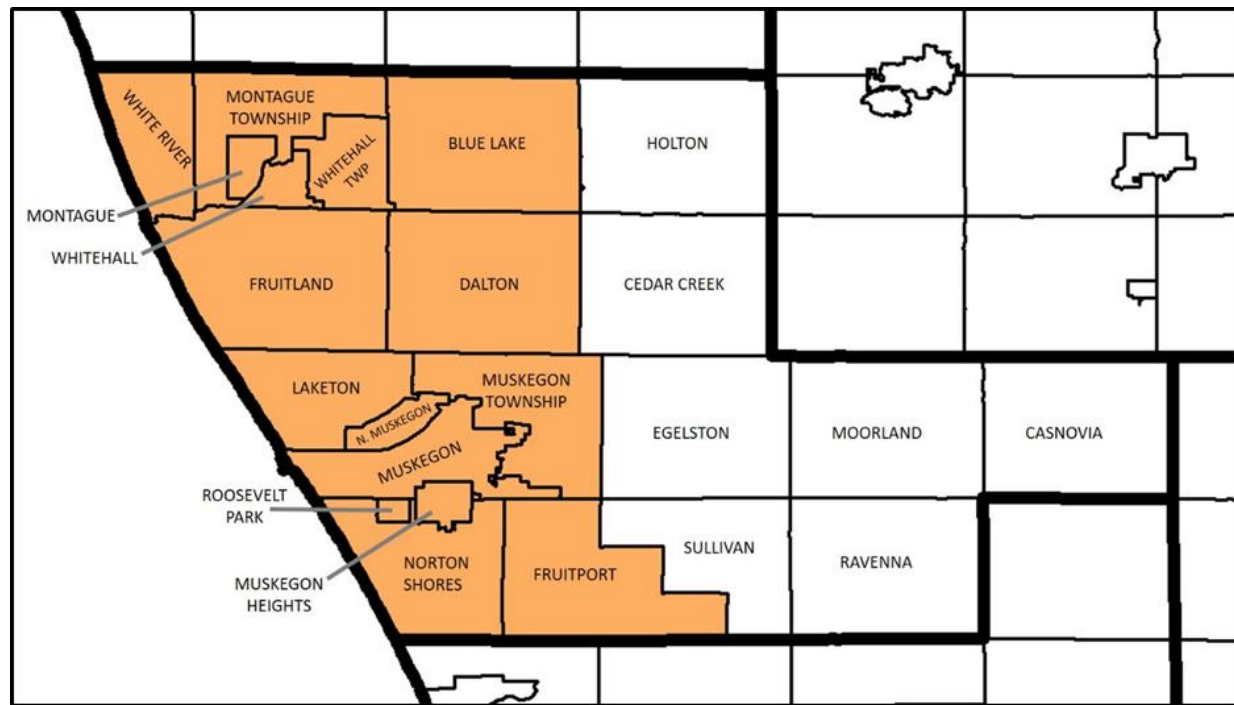
Revision to Designation Recommendations

- February 2018: MDEQ sent supplemental information to EPA revising our original designation recommendations
- Partial county borders for non attainment in Allegan and Muskegon counties
- Why partial county?
 - Ozone transport over Lake Michigan
 - EPA recommendation

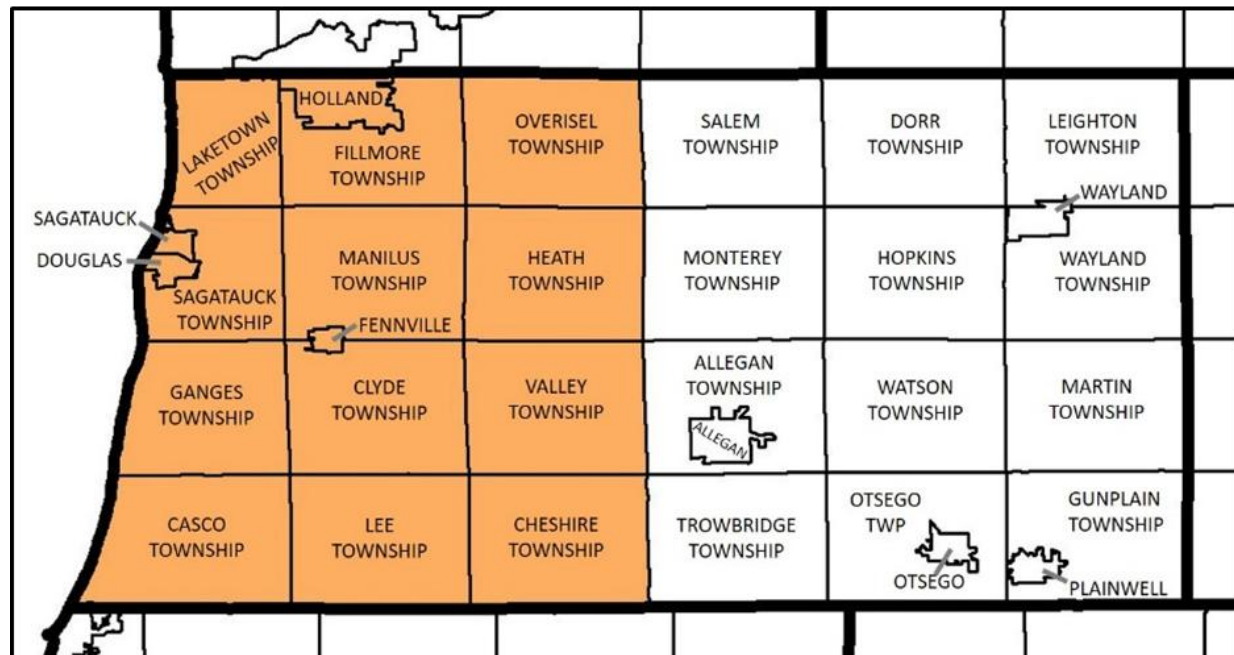
Figure 4. 2016 Design Values versus Monitor Distance from Shore



MUSKEGON COUNTY



ALLEGAN COUNTY



Final Design for the 2015 Standard

Designation

- Attainment/Unclassifiable
- Nonattainment

Attainment/Unclassifiable

State Implementation Plan (SIP)

- Living document
- Made up of rules, regulations, emissions inventories, permitting authority, monitoring authority, etc
- Makes state requirements federally enforceable

Ozone Implementation Timeline

Next Steps

Summer 2018

Final designations
effective

Nonattainment
permitting begins

Summer 2020

Emissions Inventory and
Emissions Statement due

October 2018

Infrastructure State
Implementation
Plan (SIP) due

Summer 2021

Attainment SIP due

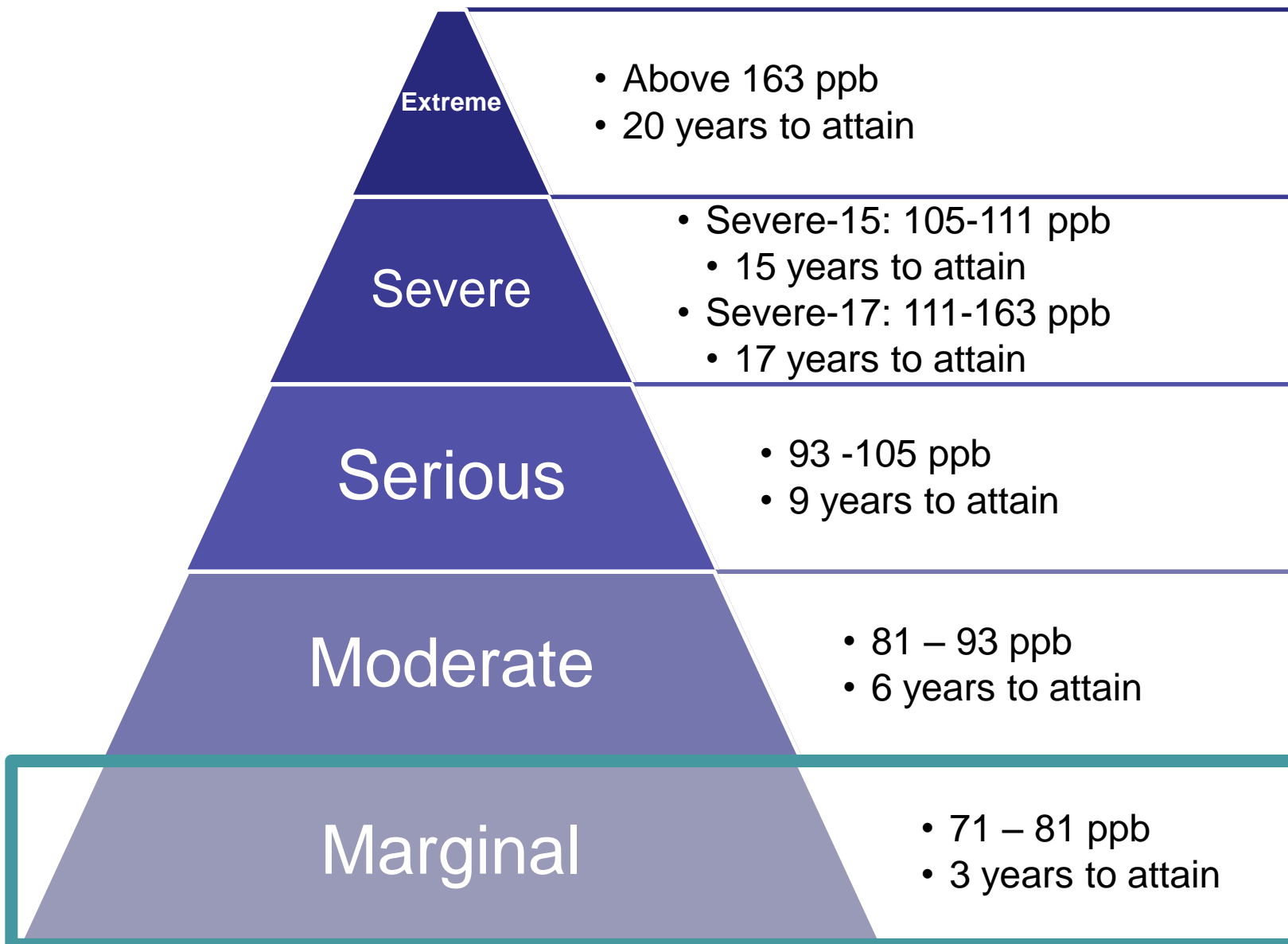
Nonattainment New
Source Review SIP due

Attainment date

Ozone SIP Development

- Working with stakeholders to develop attainment strategy
- Permanent and Enforceable
- Possible measures:
 - Source-specific emissions limits
 - Facility-specific rules or consent orders
 - Legislation
 - Voluntary measures
 - Future federal actions

Nonattainment Area Classifications in Clean Air Act



Marginal vs Moderate Clean Air Act Requirements

Requirement	Marginal	Moderate
NSR Offsets	1.1 to 1	1.15 to 1
Attainment Date	3 years	6 years
VOC and NOx RACT	No	Yes
15% VOC RFP Reductions	No	Yes
Basic I/M Program	No	Yes
Stage II Gasoline Vapor Recovery	No	Yes

Additional Requirements...

- Emission Inventory & updates
- Major Source Emission Statements

Baseline Year for Offsets

- Act 451 5505(2):

“The start date for the emissions offsets eligible to be applied to a permit to install shall be the date established by federal rule or, if a date is not established by federal rule, **January 1 of the year after the emissions baseline year used for the purpose of preparing the relevant state implementation plan.**”
- DC Circuit Court: baseline year must have a statutory basis

South Coast Air Quality Management District v. EPA, No. 15-1115 (D.C. Cir. 2018)

Attainment Strategy



Next Steps

- Determine Attainment Strategy
- Submit i-SIP
- Rulemaking, if needed
- Develop and submit Attainment Plan by Summer 2021

Questions?

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