



ARAQMD

Protecting the Air

Akron Regional Air Quality Management District
Annual Report for 2019 and 2010-2019 Trends Analysis

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Introduction

This report is designed to give an overall picture of the Akron Regional Air Quality Management District's (ARAQMD) activities in the calendar year 2019. It describes how our agency is structured, the work performed by each section of our agency, and our agency's plans for the future.

The administrative section of this report contains information regarding staffing updates, a current version of our organizational chart, a breakdown of the fiscal status of this agency, and a description of the future plans for the agency.

The ambient air monitoring section has monitoring data summarized to explain where the region is with respect to attainment of the National Ambient Air Quality Standards (NAAQS) as well as updates on other monitoring projects and field activities undertaken by the staff.

Finally, the permitting section has a summary of the activities of the permitting staff and the facility inspections performed.

Administrative Section

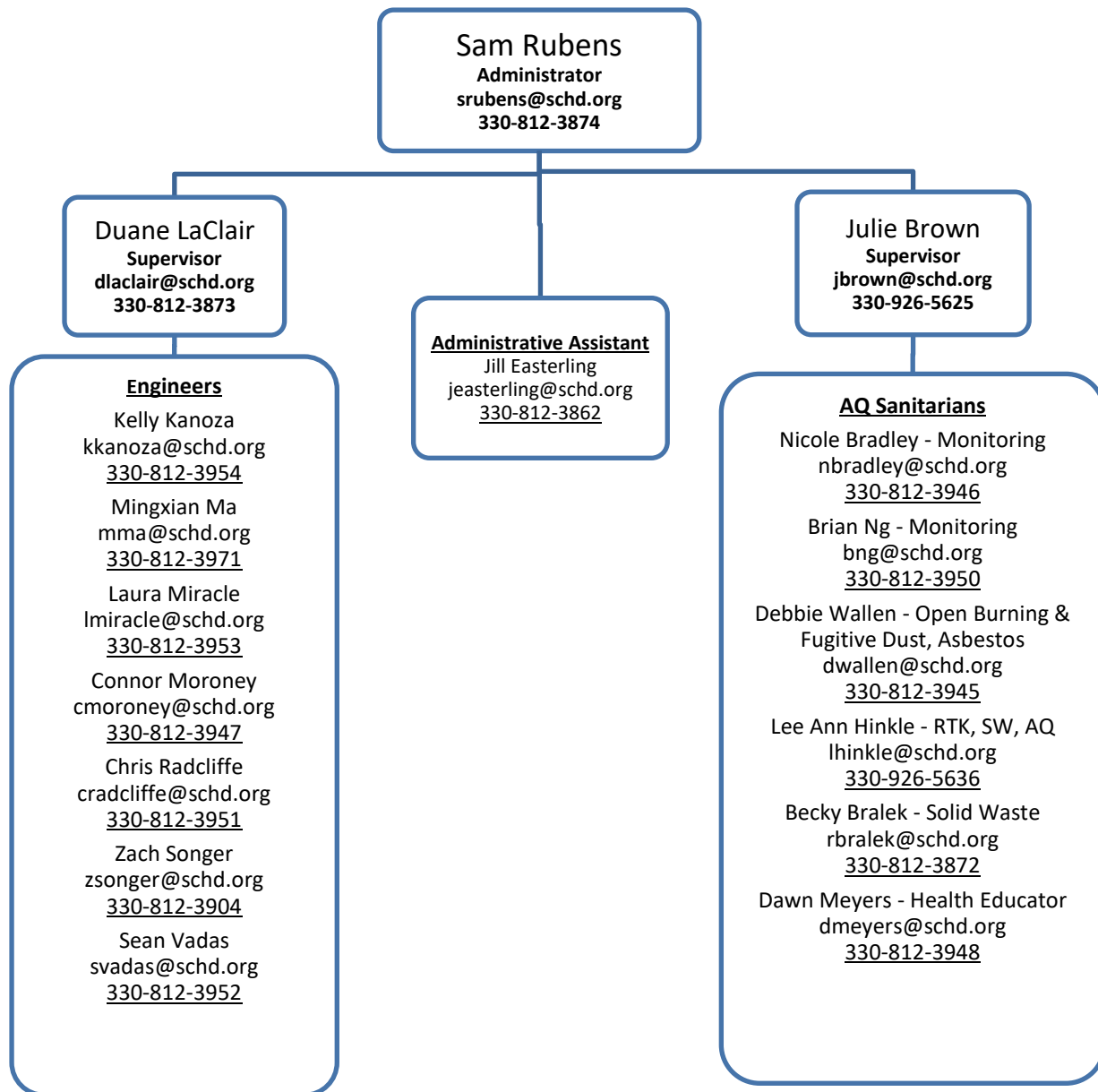
Staffing

The year 2019 saw several changes with respect to the organizational chart. Sai Sreedhar Varada left to pursue a career in the private sector. Two new engineers, Zachary Songer and Mingxian Ma, were hired. They will continue the work to expand the Non-High Priority Facility Inspection Program.



Back row: Brian Ng, Dawn Meyers, Sam Rubens, Connor Moroney, Brian Radcliffe;
Front row: Rebecca Bralek, Julie Brown, Laura Miracle, Sean Vadas, Duane LaClair.
Not Pictured; Zach Songer, Kelly Kanoza, Ming Ma, Lee Ann Hinkle, Debbie Wallen, Nicole Bradley

Figure 1: Organizational Chart (as of 1/1/20)



Budget

Local Fees

Since 1990 ARAQMD has charged permitted facilities an annual local fee. The fee is currently based on the facility-wide actual air emissions. These fees are invoiced in July for the previous calendar year. The revenue generated from the local fees is shown in Table 1. These funds are used to ensure that our operations and special projects better serve the companies and residents of the ARAQMD service area.

Some of the special projects that we engaged in during 2019 include: the Indoor Air Quality program, which has been in place since 1993, our Air Quality Awareness week celebration, in place since 2010, the Non-High Priority Facility Inspection Program, which was started in 2018, and the Managing Asthma Triggers at Home program, which also started in 2018. These last two programs will be explained further in the Strategic Plan update section of this report.

Table 1: Local fee revenue

	2018 (actual)	2019 (actual)	2020 (projected)
Facilities	1072	1275	1412
Revenue	\$270,050	\$246,900	\$214,425

Table 2: Revenue by source

	U.S. EPA Funds ¹	Ohio EPA Funds	Local Funds ²	Enforcement	Total
FY18 (actual)	\$315,970	\$936,873	\$242,650	\$700	\$1,496,193
FY19 (actual)	\$371,298	\$959,360	\$246,900	\$23,998	\$1,601,556
FY20 (projected)	\$370,976	\$957,523	\$214,425	\$2,100	\$1,545,024

¹U.S. EPA funds include PM_{2.5} funds

²Local funds include local facility fees and asbestos notification fees

Table 3: Overall budget

	FY18 (actual)	FY19 (actual)	FY20 (projected)
Total Revenue (Local, State/Fed, PM2.5)	\$1,496,193	\$1,601,556	\$1,545,024
Salaries	\$872,679	\$832,391	\$885,568
Benefits	\$322,824	\$396,560	\$321,618
Other Expenditures (Office costs, Equipment, etc)	\$308,628	\$379,989	\$285,077
Carried over funds (revenue minus expenses)	(\$7,938)	(\$7,384)	\$102,761

Due to expected cuts in funding, we increased our local fees in 2012 and curtailed spending. While we did experience some of those cuts in funding, the magnitude of those reductions were less than the increases in the amount of revenue received. Therefore, the agency has maintained a balance of state and local funds. In 2018, we identified a trend in permitting that, when combined with the current fund balances, allowed us an opportunity to restructure and modify the local fees charged to industry. As seen in Table 1, we have seen an increase in reported facilities, but also an overall reduction in local revenue. Rolled-over state funds will be used in 2020 to upgrade our monitoring network to reduce the likelihood of data loss due to downtime caused by old equipment.

Strategic Plan Update

In 2013, ARAQMD created a strategic plan to allow for more effective and efficient use of the public funds. The aim of the strategic plan is to guide the agency toward a three year, strategically reasoned, future. The 2014-2017 ARAQMD Strategic Plan was published in June 2014 on the ARAQMD website after gaining approval from the ARAQMD Advisory Board.

The plan was updated in 2019 for the 2020-2023 time frame. Input from staff and management were sought for this revision. Some things will not change, such as the mission, vision and goals. The strategies to achieve the goals have been modified as some of them were met or different directions to achieve the goals were identified.

The mission statement which will direct ARAQMD into the future is:

The mission of the Akron Regional Air Quality Management District (ARAQMD) is to protect the public from the adverse health impacts of air pollution and to educate the public about air quality issues.

Goal 1: Educate the public on air quality issues

In an effort to increase awareness of air quality issues, ARAQMD disseminates information through events, handouts, and print and digital media.

The ARAQMD staff performed many presentations for the regulated community, partner organizations, and the general public on topics such as open burning, fugitive dust, indoor air problems, and mold exposure. Training sessions with local fire departments, zoning inspectors, and construction companies have helped to foster better working relationships and awareness of air quality regulations. We have also staffed tables at public events such as Summit County Public Health events, KSU's College of Public Health Career Fairs, and Earth Day events.

We celebrated Air Quality Awareness week in 2019 with the theme of Energy Saving = Air Care. 1000 packets containing 2 LED light bulbs and energy saving information were distributed by our partner health departments throughout the ARAQMD service area. A review of the potential impacts of the program using US EPA's Co-Benefits Risk Assessment software showed a 20x to 40x return on our investment in reduced air pollution and associated health care costs when all 1,000 bulbs would be used.

The Air You Breathe, our quarterly newsletter, is distributed to approximately 1300 subscribers. One of our goals was to reduce paper copies/ mailing of the newsletter. To that end, we switched all our regulated facilities to electronic distribution of the newsletter. In 2019, the newsletter was mailed to 400 addresses down from a high of 1200, and emailed to approximately 900 people, an increase of 800. The newsletter is archived on the ARAQMD website as well, and the link to the newsletter is shared on our Facebook page

We continue to communicate the daily Air Quality Index (AQI) and pollen count through social media, our website, and ARAQMD hotline messages twice daily.

Direct messaging to the public also occurs via the agency's Facebook page where, in addition to our air quality index, we also post articles of interest, links and timely messages. We plan to expand the use of social media into the future to get air quality into the minds of the public.

Goal 2: Increase the capacity of the division

In 2018, we created a new project, the Non-High Priority Facility Inspection Program (NHPFIP), which is staffed by two new engineers funded through a mix of local, enforcement, and core budget dollars. The goal of this project is to ensure that all of the facilities in the ARAQMD region have current permits, are in compliance with the air quality regulations, and that the information we have for the facility, owner, and any equipment at the facility is correct. We are identifying facilities that have made changes to ownership or equipment and updating the Ohio EPA's database with the corrected information. In 2019, NHPFIP continued and the results showed that approximately 40% of the facilities inspected were in violation or in need of updated information.

Another project started in mid-2018 was the Managing Asthma Triggers at Home (MATH) project. This project is conducted in collaboration with Akron Children's Hospital. We are identifying 50 children per year, between the ages of 4 and 18, in the ARAQMD service area that have high risk asthma. High risk asthma is defined as having been intubated once, hospitalized twice or been to the Emergency Room three times in the past year for asthma. These children get their asthma under control at the hospital, but when they get back home, the asthma flares back up. The costs for this are high, both to the families affected and society overall. The 2018 group finished up their year of participation and results are showing that there is a significant decrease in hospitalization admittance as well as an increase in self-assessment of the client's asthma incidence.

Goal 3: Be a leader in the field of air quality

We will continue to conduct projects to increase awareness of our agency name so that the work we do can be recognized as models of best practices for other Local Air Agencies (LAAs) across Ohio and the nation.

The MATH project was presented to Ohio Department of Health's Asthma Network, NACAA's membership, and the Better Health Partnership during 2019 with much interest. The project is also being introduced to the multiple Medicaid payers so that the cost of the equipment may be borne by them and the home intervention piece can be performed by ARAQMD.

Another way that the ARAQMD staff are becoming leaders in the air quality field is by taking leadership roles in local, state and national organizations such as Ohio EPA workgroups, National Association of Clean Air Agencies (NACAA) and local community advisory panels. From 2016-2019, Sam Rubens was elected by the membership of NACAA to be a member of the Executive Board of directors. Of the seventeen ARAQMD staff members, several are active as leaders in, or have led, organizations at the local, state and national level. Sean Vadas is the chair of the Ohio EPA's Permitting and Enforcement workgroup, Nicole Bradley is the OEHA Northeast District and has been the chair of the Ohio EPA's Technical Service Officers workgroup, Dawn Meyers is on the Medina County Earth Day Festival committee, Julie Brown sits on two local industry Community Awareness Panels, Sam Rubens is on the Air Quality Advisory Committees of both of the metropolitan planning organizations, the Monitoring Committee co-chair for NACAA and sits on the Ohio EPA's Air Monitoring Managers workgroup.

Goal 4: Increase office efficiency

As of the end of 2019, the ARAQMD staff was quite striated in terms of experience. Our permitting staff has 40% with over 20 years of experience, 40% with less than five years of experience and 20% with between five and ten years of experience. The monitoring and field activities staff were grouped with 20% having more than 20 years of experience, and the rest between five and ten years. Due to the new staff presence and changes in technology in how we do our jobs, staff have been required to take training annually to ensure they are up to date. Additionally, we are cross-training staff to be able to ensure continuity of operations in the event of absence or increased workload in one area.

We have scanned all existing permit files into a digital format and are no longer keeping hard copies of any permit-related or enforcement documents sent to or from ARAQMD.

Ambient Air Monitoring Section

Air Quality Index

Twice every weekday, ARAQMD reports the Air Quality Index (AQI) to the public by means of the ARAQMD website at <http://araqmd.org/AQI.html>, the agency Facebook page and the Air Quality Information line at 330-375-2545. The AQI is intended to advise the public of the potential health effects of the ambient air pollution. The AQI has six categories which have AQI values assigned. The AQI categories and the values are; Good (0-50), Moderate (51-100), Unhealthy for Sensitive Groups (101-150), Unhealthy (151-200), Very Unhealthy (201-300), and Hazardous (301-500). In 2019, 75% of the time the air quality was in the good range, 24% was in the moderate range. We did experience three days (2/24/19, 7/10/19, and 7/13/19) where the AQI was in the unhealthy for sensitive groups range.

Figure 2: Daily maximum AQI for Summit County, 2019

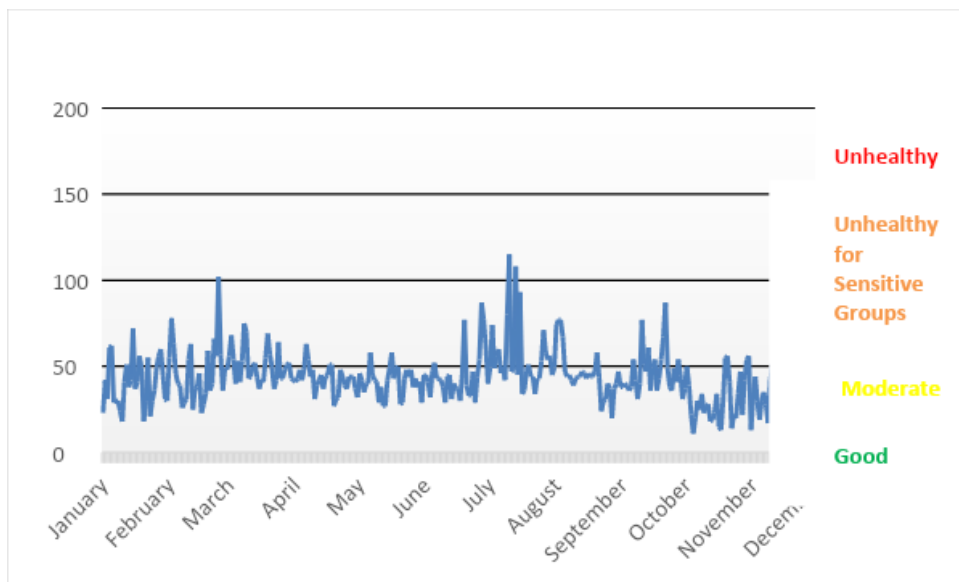
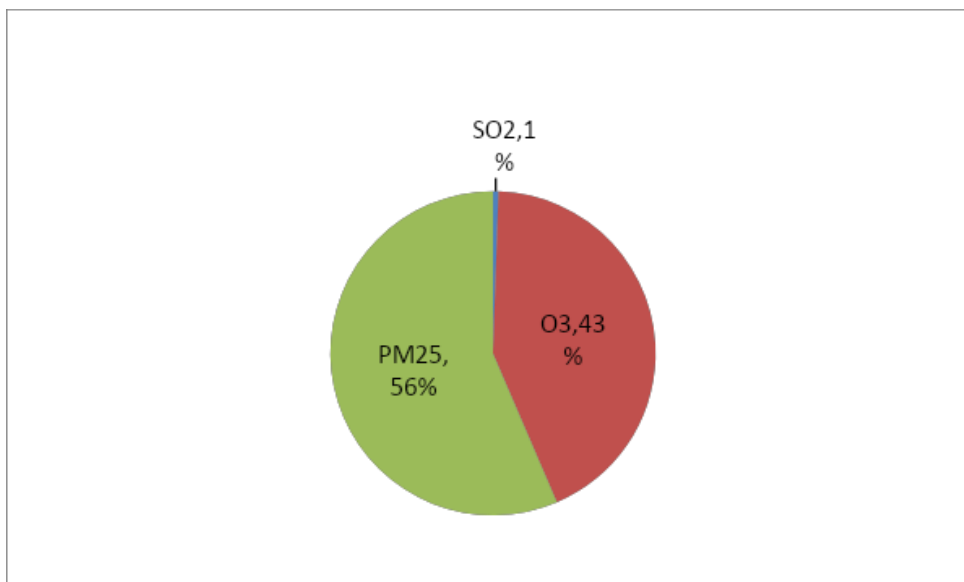


Figure 3: Air quality index by pollutant, 2019



Air Pollutant Monitoring

National Ambient Air Quality Standards

The National Ambient Air Quality Standards (NAAQS) were devised in the 1970 Clean Air Act, which was last amended in 1990. The NAAQS are reviewed periodically and may be revised by the EPA. The review of the NAAQS begins with a rigorous scientific study done by the Clean Air Scientific Advisory Committee (CASAC), an independent group that was created to advise the EPA in scientific matters. CASAC then makes recommendations to the EPA as to what the scientific research shows that the levels of certain pollutants should be to adequately protect human health.

Table 4: Current NAAQS

Pollutant	Level	Averaging Time
Carbon Monoxide (CO)	9 ppm	8 hour
	35 ppm	1 hour
Lead (Pb)	0.15 $\mu\text{g}/\text{m}^3$	Rolling three month average
	1.5 $\mu\text{g}/\text{m}^3$	Quarterly
Nitrogen Dioxide (NO _x)	53 ppb	Annual Mean
	100 ppb	1 hour
Fine Particulate Matter (PM _{2.5})	12.0 $\mu\text{g}/\text{m}^3$	Annual Mean
	35.4 $\mu\text{g}/\text{m}^3$	24 hour
Ozone (O ₃)	70 ppb	8 hour
Sulfur Dioxide (SO ₂)	30 ppb	Annual Mean
	140 ppb	24 hour
	75 ppb	1 hour

Particulate matter with a diameter of less than 2.5 microns (PM_{2.5})

In 1987, the U.S. EPA made a change from total suspended particulate (TSP) to coarse particulate matter. PM₁₀ is made of coarse particulates which can reach the thoracic region or upper lung area of humans. Upon review in 1997, the U.S. EPA changed focus from PM₁₀ (coarse particulate matter) to PM_{2.5} (fine particulate matter) in the ambient air. The PM_{2.5} can be inhaled into the lower lung region and is hard to exhale. Once in the moist and warm lower regions of the lungs, chemical reactions can occur and the chemicals in the particulate matter can become dissolved and be transported across the lung membrane into the bloodstream.

There are two NAAQS for PM_{2.5}. The first is a 12.0 $\mu\text{g}/\text{m}^3$ annual arithmetic mean, averaged over three consecutive years. The second is a 35 $\mu\text{g}/\text{m}^3$ 4th high 24 hour average. This standard is attained when the 4th highest 24 hour average, averaged over 3 consecutive years, is less than 35 $\mu\text{g}/\text{m}^3$.

ARAQMD's monitoring network for PM_{2.5} consists of two continuous Federal Equivalent Method (FEM) monitors located in Medina and Summit Counties, intermittent Federal Reference Method (FRM) monitors located in Summit, Portage and Medina Counties and speciation monitors located in Summit County. The intermittent monitors are used to determine if the region is in attainment with the NAAQS. The continuous monitors are used to determine the Air Quality Index (AQI) and for research projects which can help determine where particulate matter comes from, forecasting the AQI, and health effects. The speciation monitors are used for research projects, which determine the composition of the particulate matter and allow for controls to be put into place to minimize those sources.

It was proposed that the ARAQMD region be combined with the Canton/Massillon metropolitan statistical area (MSA) for PM_{2.5} attainment purposes. As this action was granted by the U.S. EPA, ARAQMD is now in

attainment for PM_{2.5} for the first time since monitoring started in 1997. This designation allows for more economic development in the region due to relaxed regulations on incoming industry. Table 6 below shows the values used to determine if the ARAQMD region is meeting the NAAQS.

Table 5: NAAQS comparison values for PM2.5

Fine Particulate Matter (PM_{2.5})						
Units: micrograms per cubic meter (µg/m ³)						
4 th Highest 24 Hour Average – limit 35 µg/m ³						
County	Site Name	2015	2016	2017	2018	2019
Summit	East High	26.6	21.6	18.2	20.0	21.3
Summit	5 Points	22.8	15.9	18.7	18.4	22.3
Portage	Ravenna	21.0	14.4	17.9	16.5	18.4
Medina	Chippewa	22.6	18.5	18.9	17.0	20.2
Annual Mean – limit 12 µg/m ³						
County	Site Name	2015	2016	2017	2018	2019
Summit	East High	12.5	9.7	8.4	8.8	8.7
Summit	5 Points	9.7	7.8	8.0	7.7	8.1
Portage	Ravenna	8.9	7.1	7.4	7.3	7.6
Medina	Chippewa	10.1	7.6	7.8	7.5	8.1

Sulfur dioxide (SO₂)

SO₂ is formed when sulfur-containing compounds are combusted. Most SO₂ in the air is caused by burning coal and smelting processes. Low-sulfur gasoline and coal are the goals for minimizing SO₂ production. SO₂ can be converted to sulfuric acid when it reacts with moisture in the air, on plants or in the lungs. Sulfuric acid is one of the most corrosive acids found in nature. If SO₂ is converted to sulfate (SO₄), it can be a lung irritant as well.

The monitoring network for SO₂ consists of two monitors located in Akron. The Downtown Akron site is in a downtown canyon, which means that the buildings form a channel for air pollution, and the East High site was started to monitor emissions from a major local manufacturing site.

ARAQMD's service area is in attainment for sulfur dioxide. The ARAQMD region has seen a 76% decrease in the annual mean of SO₂ since 1977.

Table 6: NAAQS comparison values for SO2

Sulfur Dioxide (SO₂)					
Units: Parts Per Billion (ppb)					
1 hour average – limit 75 ppb					
Site Name	2015	2016	2017	2018	2019
East High	14	8	3	6	3
Downtown Akron	25	10	4	5	3

Ozone (O₃)

O₃ is the only criteria pollutant that is not directly emitted into the atmosphere. It is created by chemical reactions in the ambient air. When volatile organic compounds and oxides of nitrogen are in the presence of ultraviolet light, ozone is formed. The health effects of ozone have been demonstrated in various ways.

Reduction in lung function in normal, healthy people during periods of moderate exercise have been shown, and irritation of the eyes, mucous membranes and respiratory system are also possible.

The NAAQS for ozone has changed radically in the past few years. Until 1997, the NAAQS was a fourth highest one hour maximum of 125 ppb each year. In 1997, the one hour standard was left in place and a new method of evaluating the pollution was put into place. The eight hour fourth highest average over three consecutive years must be less than 84 ppb to be in attainment. In 2006, the one hour standard was revoked. In 2009, a new standard was enacted and was upheld by the courts in 2012. The newest NAAQS, implemented in 2015, is a three year average of the fourth highest eight hour standard. This must be below 70 ppb for a three year period.

ARAQMD has three ozone monitoring sites, one each in Medina (Chippewa), Summit (Patterson Park) and Portage (Lake Rockwell) County.

ARAQMD’s service area was designated as being in non-attainment for the 2009 NAAQS of an 8 hour maximum of 75 ppb. Although we are measuring concentrations below the NAAQS, Medina, Portage, and Summit counties are included as part of the Cleveland-Akron-Lorain MSA for ozone and, as such, are designated as non-attainment for ozone. The ARAQMD region has seen a 44% decrease in the 1 hour maximum concentration of ozone since 1977.

Table 7: NAAQS Comparison Values for O3

Ozone (O₃)					
Units: Parts Per Billion (ppb)					
4 th Highest Maximum 8 Hour Average – limit 70 ppb					
Site Name	2015	2016	2017	2018	2019
Patterson Park	65	61	66	69	66
Lake Rockwell	64	59	65	66	58
Chippewa	63	66	64	66	54

Monitoring equipment upgrades

The ambient air monitoring section began the upgrade of the monitoring network in 2019 by purchasing new ambient monitors. The monitoring network consists of two carbon monoxide sites, two sulfur dioxide sites, three ozone sites and four PM_{2.5} sites. We have purchased new data loggers, replacement monitors (ozone, sulfur dioxide and particulate matter), and are investigating automated calibration systems for the existing sites.

In addition to updating the equipment at our existing monitoring stations, we are also working on complying with the USEPAs request that we relocate one of our ozone sites due to siting issues. This site should be up and running in 2020.

Pollen Sampling

The ARAQMD staff collects and analyzes pollen from April 1 of each year through the beginning of October or until the first killing frost. Figure 5 shows the weekly averages of the total pollen count for 2015 through 2019.

There are three seasons each year; tree pollen, which occurs in the beginning of the season, grass season, which follows the tree pollen, and finally the ragweed season in August and September. Definite spikes were

seen for pine, oak and maple tree pollen. In Figures 4 and 5, the pollen and ragweed counts can be examined in more detail.

Figure 4: Pollen counts by week, 2015-2019

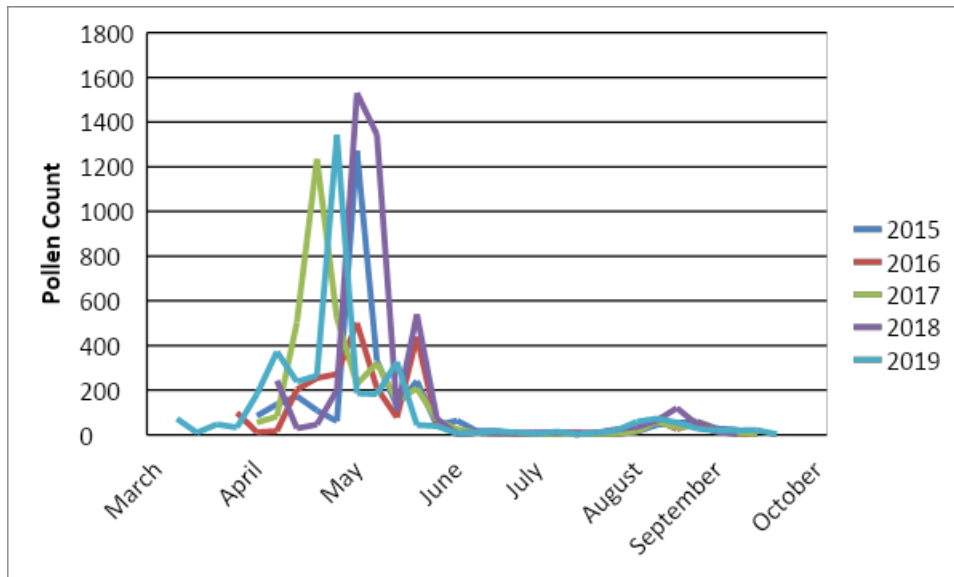
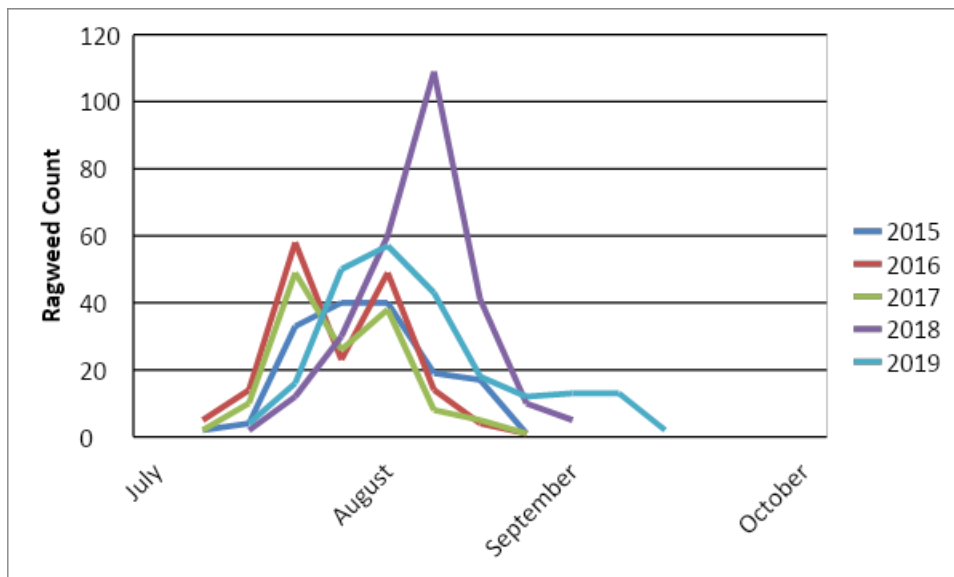


Figure 5: Ragweed counts by week, 2015-2019



In 2015, a sampling location change was required as the health department consolidated all services into a new building at 1867 W. Market Street. As the new sampling location is located in a tree-filled neighborhood, pre-2015 historical data from downtown Akron will not be useful for comparisons. Starting with the 2015 data, new ranges have been calculated each year. Table 8 lists the ranges for use in the 2020 pollen season.

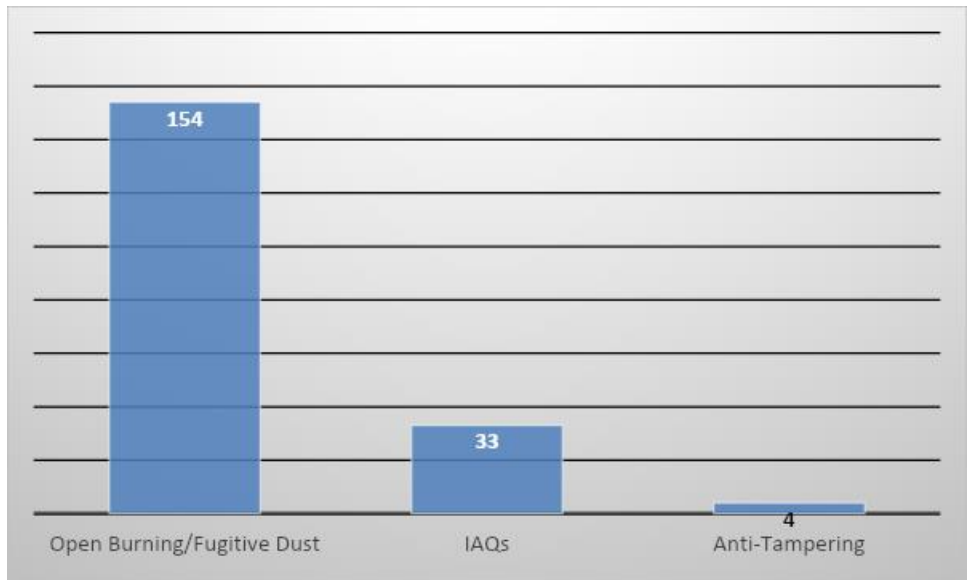
Table 8: Pollen and ragweed ranges for 2020 season

	Tree and Grass Pollen	Ragweed Pollen
Good (50 th percentile)	0-23	0-12
Moderate (25 th percentile)	24-90	13-30
High (10 th percentile)	91-329	31-68
Very High (5 th percentile)	330+	69+

Field Activities Section

This section performs several activities which impact air quality, both indoors and out. Figure 6 shows the number of each of these activities performed in 2019. The categories are further described below.

Figure 6: Site Inspections, 2019



Open burning

ARAQMD staff members are responsible for responding to incidents where open burning occurs. Open burning is defined by Ohio Administrative Code (OAC) 3745-19 as “the burning of any materials wherein air contaminants resulting from combustion are emitted directly into the air without passing through a stack or chimney.” There are regulations on the location where burning may occur, what may be burned and when the burning can happen and who may conduct the burning. In many cases, notification must be made to ARAQMD to obtain a permit at least 10 working days prior to the intended burning. ARAQMD inspectors investigated 139 complaints and 15 open burning permits were issued in 2019.

Fugitive dust

Fugitive dust is regulated under OAC 3745-17-08. Fugitive dust can be generated from many sources such as material storage piles, traffic on roadways or parking lots, tilling farmland or digging, and construction activities. The regulations for fugitive dust require reasonably available control measures to minimize dust release when transporting, storing, or handling dust emitting materials. Some control technologies are the use of water, asphalt or oil to suppress the dust, installation of hoods or fans to enclose, contain, capture,

vent and control the fugitive dust. The ARAQMD staff members will inspect fugitive dust problems on a complaint-driven basis. In 2019, inspectors investigated 15 complaints about fugitive dust.

Indoor air quality

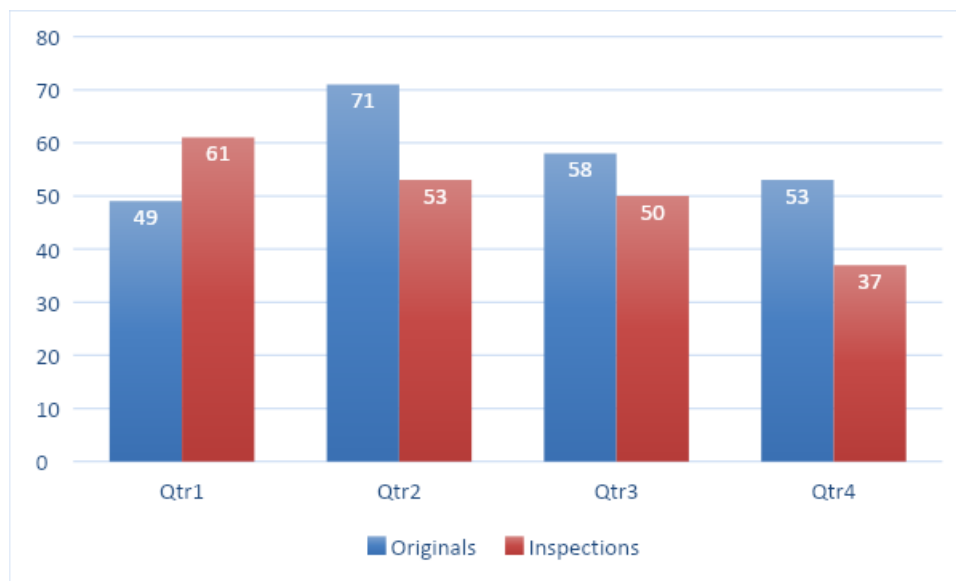
ARAQMD's Indoor Air Quality (IAQ) Program has been in place since 1993 and has responded to over 5000 indoor air quality complaints in residential, commercial and school settings. In 2019, the program handled 33 inquiries. Some of the most common topics are mold, carbon monoxide, and formaldehyde. The indoor air staff members are educated to provide the latest information about air quality issues and health effects and how best to help the public protect their health. The IAQ program is designed to be a neutral, third-party source of information. As such, the program does not perform remediation or maintain a list of companies who do remediation work. The ARAQMD IAQ Program is available for those who work or reside in Summit, Medina or Portage Counties.

Asbestos

Asbestos is a naturally occurring mineral which was used as an insulating compound on pipes and houses until the 1950s. When properly encapsulated, asbestos is very useful. When asbestos is disturbed or is at the surface of the material it is in, the asbestos fibers can fracture and become airborne. This process is termed "friable." Studies have shown that when friable asbestos is inhaled, it can have a lengthy residence time in the lungs and cancer risk is increased significantly.

The ARAQMD staff is responsible for inspecting the abatement work being done to ensure that the remediation work is done correctly to minimize exposure to workers and accidental release to the ambient air. In 2019, ARAQMD inspectors achieved an inspection rate of almost 93% of received original notifications, which is well above the 15% inspection rate as required in our contract with Ohio EPA.

Figure 7: Asbestos notifications received and inspections completed, 2019



Permitting Section

Permit Issuance

As a contractual agent of Ohio EPA, ARAQMD is responsible for administering the Division of Air Pollution Control's (DAPC) permitting program requirements for sources of air contaminants in Medina, Summit, and Portage counties. The permitting process starts with the receipt of a permit application. The application is reviewed for preliminary and technical completeness in accordance with Ohio EPA policies and environmental rules and laws. There are different permit options required depending on the type of source, existing air quality where the source is located, operational flexibility needed by the source, whether additional voluntary restrictions are requested in the permit, and the required permitting action.

Types of sources

Title V/Major Source – Facilities with potential emissions of 100 tons per year or more of any one regulated pollutant (PM₁₀, NO_x, SO₂, CO, VOC, and lead); 10 tons per year or more of any one hazardous air pollutant (HAP); or 25 tons per year or more of any two or more HAPs. These facilities usually have very complex permitting requirements (e.g., medium to large sized industrial operations, utilities, refineries, etc.).

Synthetic Minor Title V (SMTV) – Facilities with potential emissions above at least one major source permitting requirement and/or Title V threshold, which have agreed to voluntarily restrict operations and the quantity of air contaminants emitted in order to avoid major source/Title V status.

Non-Title V (NTV)/Minor – Smaller emitting facilities, with potential emissions naturally below major source/Title V thresholds. These facilities generally have less complicated permitting requirements (e.g., small industrial operations, dry cleaners, gas stations, etc.).

Permit Exempt – Sources that qualify for an exemption under OAC rule 3745-31-03(B).

Types of permits

Permit-to-Install (PTI) – A permit issued for any new or modified source that is located at a Title V facility. It is effective for the lifetime of the source, or until the next modification.

Title V Permit-to-Operate (Title V PTO) – A comprehensive, facility-wide permit that identifies all regulated operations at a Title V facility. It has a five-year effective period.

Permit-to-Install and Operate (PTIO) – This permit document is issued to NTV and SMTV facilities. It is a relatively recent permit document type. Effective June 30, 2008, Ohio EPA began issuing a single PTIO (rather than a PTI, followed by a separate PTO) in order to streamline the permitting process for air contaminant sources at non-major facilities. The PTIO has a ten-year effective period, when issued to a NTV facility. Since there is the ten year period, those permits that were issued in 2008 are beginning to come up for renewal. We are prepared for this workload increase.

Federally Enforceable Permit-to-Install and Operate (FEPTIO) – This is a specific type of PTIO issued with federally enforceable limitations that restrict the facility-wide potential to emit in order to avoid various regulations. It has a five-year effective period.

Model General Permit (GP) – A general permit is the same as any PTI or PTIO except all the terms and conditions of the permit have been developed in advance. Potential applicants must meet specific qualifying criteria.

Permit by Rule (PBR) – A permit-by-rule is a specific permit provision in OAC rule 3745-31-03(C) that applies to certain types of low-emitting air pollution sources. A facility submits a PBR notification form for a specific source and operates the source in accordance with the terms and conditions specified in the applicable rule, but no permit document is generated. A PBR is in effect for the lifetime of the source.

Permitting actions

Initial Installation – A PTI or PTIO must be obtained before any new, non-exempt, air pollution source is constructed in Ohio pursuant to OAC Chapter 3745-31.

Chapter 31 Modification – Any physical change in, or change in the method of operation of an air contaminant source as defined under OAC rule 3745-31-01(SSS).

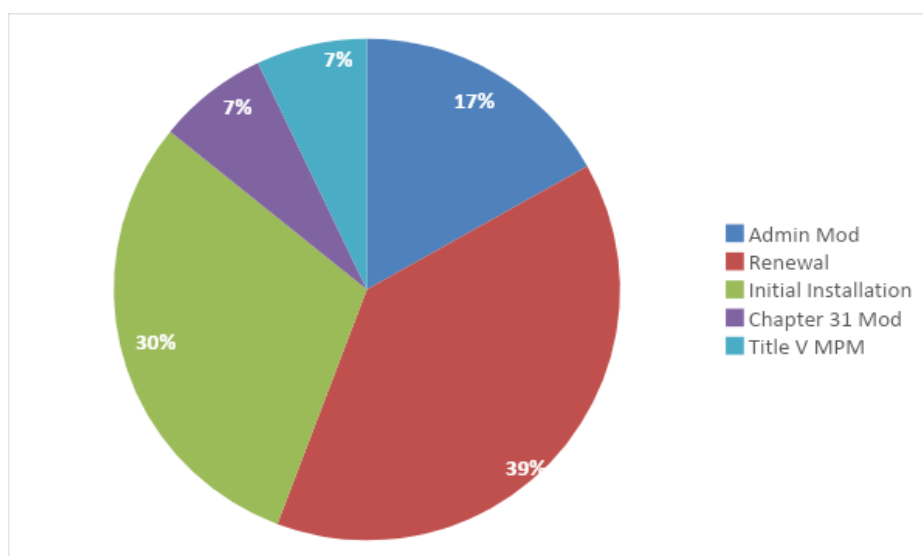
Administrative Modification – Any change to a PTI or PTIO that does not meet the definition of a Chapter 31 Modification.

Title V Minor Permit Modification – Changes that do not trigger Title I modifications or involve significant changes to monitoring, record keeping or reporting requirements in a Title V permit.

Renewal – The process by which a permit may be reissued at the end of its term.

Once the preliminary and technical review of the application is complete, ARAQMD’s engineering staff develops the facility-wide and emission-unit specific permit terms and conditions. The permit terms identify applicable rules, establish limits on the quantity of air contaminants emitted and set requirements for the operation of regulated air contaminant sources. Permit terms can also specify emission testing, monitoring, record keeping, and reporting requirements necessary to demonstrate compliance with the established emission limits. The working copy of the permit is then submitted to Ohio EPA for final review and issuance. During 2019, the ARAQMD staff processed 46 permit renewals and 34 initial installation permits.

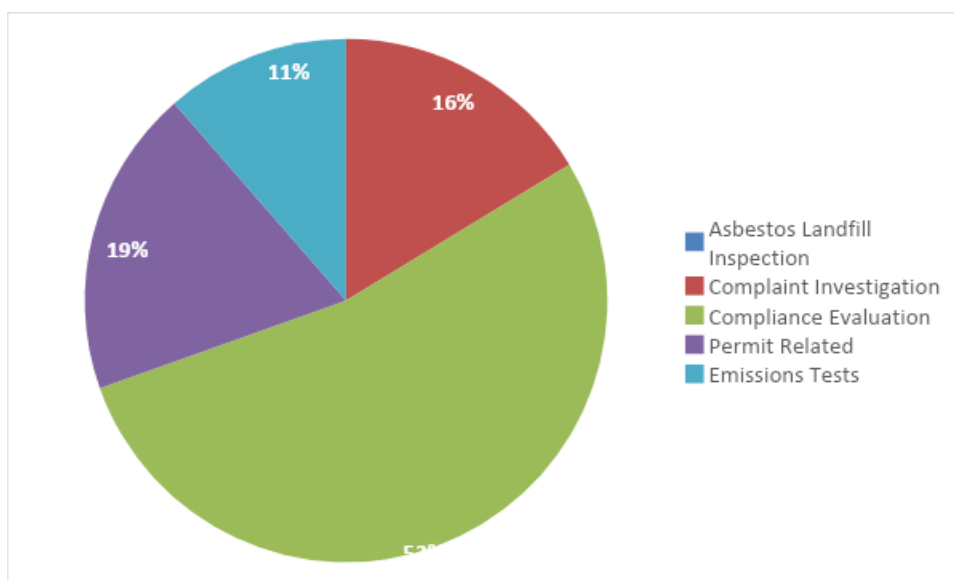
Figure 8: 2019 Permit issuances by permitting action



Permitted Facility Inspections

After permit issuance, ARAQMD's staff continues to monitor the compliance status of air contaminant sources by periodically reviewing required monitoring data, records and reports. This includes witnessing a minimum of 50% of all emissions tests conducted in ARAQMD's jurisdictional area, and reviewing test results to verify proper methodology and procedures were used to demonstrate compliance with permitted emission limitations. A total of 28 stack tests were performed and 75% of those were witnessed by ARAQMD staff. Scheduled and unannounced facility inspections are also conducted to ensure air contaminant sources are in compliance with applicable permit terms and state and federal regulations. Under contract with Ohio EPA, ARAQMD is required to conduct full compliance evaluations for at least 50% of all Title V sources and 20% of all SMTV facilities each year. As of 2019, there are a total of 18 Title V facilities, 65 SMTV facilities, and 352 NTV facilities located in ARAQMD's 3-county service area. A total of 29 visits were made to the TV facilities and a total of 31 visits were made to the SMTV facilities in 2019.

Figure 9: Reason for site visits



Conclusion

In 2019, ARAQMD saw changes and continued to progress towards meeting the goals outlined in the Strategic Plan. ARAQMD will continue its journey towards the goal of becoming a model of best practices. We expect that we will finalize the upgrade of our monitoring network in 2020, work more towards assisting small facilities in attaining compliance with the regulations and acknowledging facilities that have consistent compliance and sustainability projects. The staff of ARAQMD is looking forward to continuing the good work we have been doing and expanding the roles of the agency in protecting the public from the adverse effects from air pollution.

Appendix A: Decennial Trends Report 2010-2019 and Historical Data Graphs

This appendix provides data from the last ten years of ARAQMD activities and historical data graphs showing the great strides we have made in cleaning up the ARAQMD region's air. The sections follow the report's structure, Administration, Monitoring, Field Activities and Permitting.

Administration Section

Staffing

Over the past decade, we have had many staff changes. The following table shows the current staff, those who were on staff between 2010 and 2019 and either retired, resigned or were transferred to other duties at SCPH.

Table 9: Staff members, 2010-2019

Management	Administrative
Julie Brown	Jill Easterling
Duane LaClair	Dawn Meyers
Sam Rubens	Craig Thompson
Alan Richardson*	Pam Gardner*
Frank Markunas*	Lori Williams*
Wallace Chambers**	Andy Doyle*

Permitting	
Kelly Kanoza	Fred Kramer*
Duane LaClair	Russell Risley*
Mingxian Ma	Alexis Killinger**
Laura Miracle	Curtis Rinkes**
Connor Moroney	Megan Talcott**
Christopher Radcliffe	Sai Sreedhar Varada**
Zach Songer	Ben Villareal**
Sean Vadas	

Monitoring	
Nicole Bradley	Alan Richardson*
Dawn Meyers***	Jim Eckert**
Brian Ng	Wayne Kline**
Sam Rubens	Samantha Mellott**

Field Staff	
Lee Ann Hinkle	Jim Eckert**
Brian Ng	Bonetta Guyette**
Debbie Wallen	Kamalpreet Kawatra**
Susan Anderson*	Wayne Kline**
Brad Pringle*	Christopher Williams**
Steve Stakleff*	Paul Kohler***

* Retired ** Resigned *** Reassigned to other duties

Budget

The graph below highlights our revenue sources. In 2011, declines in certain revenue sources were identified and the revenue streams were rebalanced. At one point the revenue for operations was 90% state and federal funds and 10% local funds. Due to the projected declines, which materialized slowly over the 2014-2018 timeframe, we increased the local fees in 2012. The local fees were revised in 2019, to reduce the total amount generated, based on a need to modify the method that permitted emissions are calculated and an excess amount of funds.

Figure 10: Revenue, by source



Notable Projects/Work

While the contract deliverables are always our first priority, over the past decade, ARAQMD has undertaken many new or auxiliary projects to enhance our agency's effectiveness. Below are some of the highlights.

Administration
<ul style="list-style-type: none"> Merged from the City of Akron to the SCPH organization in 2011, moved our offices from CitiCenter to Fairway in 2014
<ul style="list-style-type: none"> Staff were the leaders of all three statewide committees (Permitting and Enforcement, Technical Systems Officers and Ohio Local Air Pollution Control Officers Association), the district chapter of the Ohio Environmental Health Association and the National Association of Clean Air Agencies
<ul style="list-style-type: none"> Established a social media presence in 2012
<ul style="list-style-type: none"> Between 2012 and 2018, ARAQMD scanned all existing permit and enforcement records. We cleared out over 200 boxes of paper to a digital format. All records from 2015 on were scanned into their respective systems.
<ul style="list-style-type: none"> Created a strategic plan for 2014-2017, revised it for 2018-2020
<ul style="list-style-type: none"> Began promoting Air Quality Awareness week in 2014
<ul style="list-style-type: none"> Celebrated our 50th anniversary in 2015

Monitoring
<ul style="list-style-type: none"> Finished collaboration with EPA at Chippewa for Cleveland Multiple Air Pollutant Study (CMAPS) in 2010
<ul style="list-style-type: none"> Moved Medina O₃/PM_{2.5} site to Chippewa in 2011
<ul style="list-style-type: none"> Set up new shelter at the National Inventor's Hall of Fame middle school (NIHF) in 2015
<ul style="list-style-type: none"> Measured attainment levels for all pollutants for the first time in 2016 <ul style="list-style-type: none"> Still designated 'non-attainment' for O₃, due to being in the Cleveland-Akron-Lorain MSA
<ul style="list-style-type: none"> Designated as 'in attainment' for PM_{2.5} in 2018
<ul style="list-style-type: none"> With EPA approval, ceased monitoring for CO in 2018
<ul style="list-style-type: none"> Moving ozone from Patterson Park to a new site (TBD), set up comparison monitor at East High site in 2018
<ul style="list-style-type: none"> Began replacement/upgrade of monitoring equipment with orders placed in late 2019.

Field Activities
<ul style="list-style-type: none"> 2012-2017 saw an increased amount of asbestos notifications due to the Moving Ohio Forward Fund grants allowing municipalities to demolish vacant, abandoned or blighted structures
<ul style="list-style-type: none"> Rescission of requirement for GDFs to have Stage II Vapor Recovery Systems as of January 1, 2017 <ul style="list-style-type: none"> Led to reassignment of two staff members (one resigned due to personal issues and one was moved out of ARAQMD into another role at SCPH)
<ul style="list-style-type: none"> Asbestos programs at Ohio Department of Health and Ohio EPA merged into OEPA in 2018 <ul style="list-style-type: none"> As a result of this merger, OAC 3745-22 was created

Permitting
<ul style="list-style-type: none"> Started a project in 2012 to clean up STARS2 billing/contact info for regulated facilities
<ul style="list-style-type: none"> Received the Excellence in Permit Writing award from Ohio EPA in 2015
<ul style="list-style-type: none"> Created a non-high priority facilities (NHPFIP) to ensure compliance in 2017
<ul style="list-style-type: none"> Tracking permits for timeliness of document processing
<ul style="list-style-type: none"> Assisted two other agencies with a permit backlog reduction program
<ul style="list-style-type: none"> Created training document for engineers (history/SOP/links)

Monitoring Section

The monitoring section has operated a network of equipment to test the air pollution in the ARAQMD region since the mid-1970s. The following portion of this appendix shows the data for the last decade and all historical data for the Air Quality Index and also by each criteria pollutant. As the NAAQS have changed over time, the existing NAAQS are shown by the black lines and the numbers are the values for those NAAQS. In 2018, the USEPA approved a request to cease monitoring for CO in the ARAQMD region. The concentrations of this pollutant were well below any concern and the resources used for monitoring were reinvested in PM_{2.5} efforts.

Figure 11: Air Quality Index – days in each category, 2010-2019

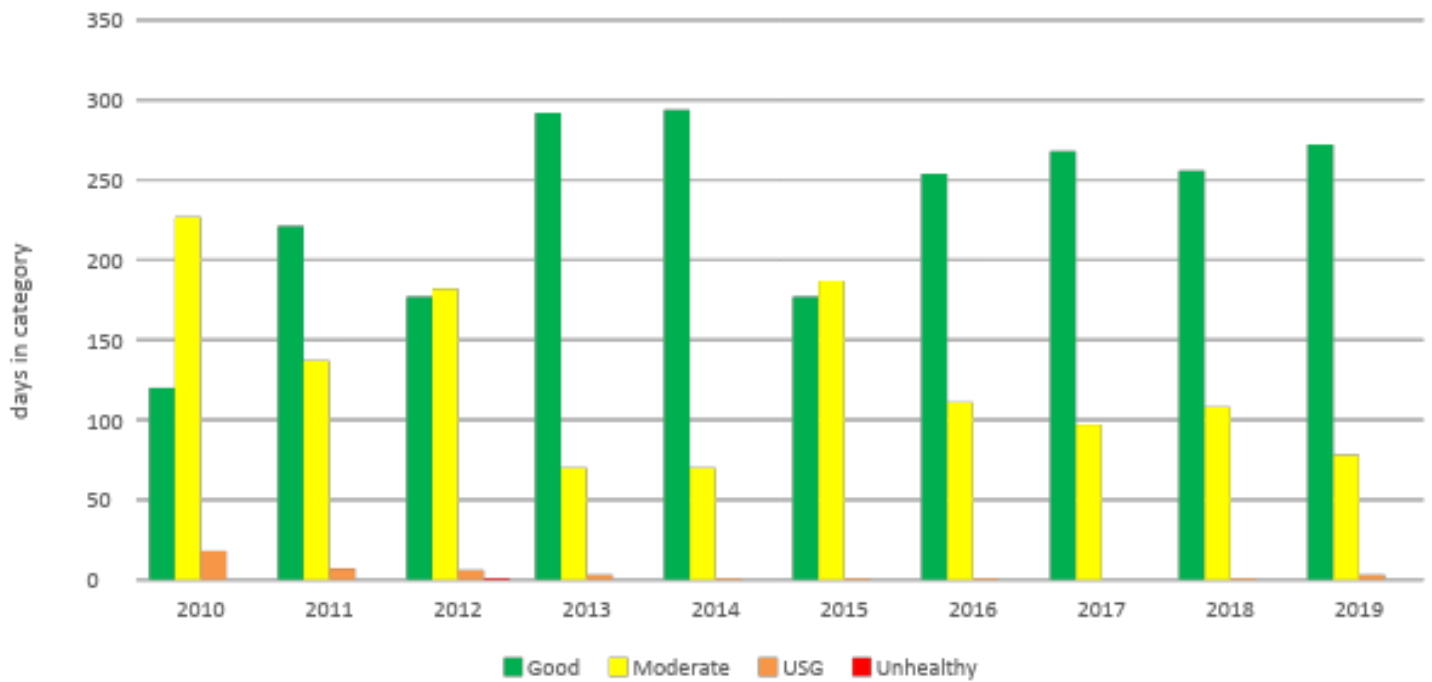


Figure 12: Air Quality Index – Days in category, 1980 - 2018

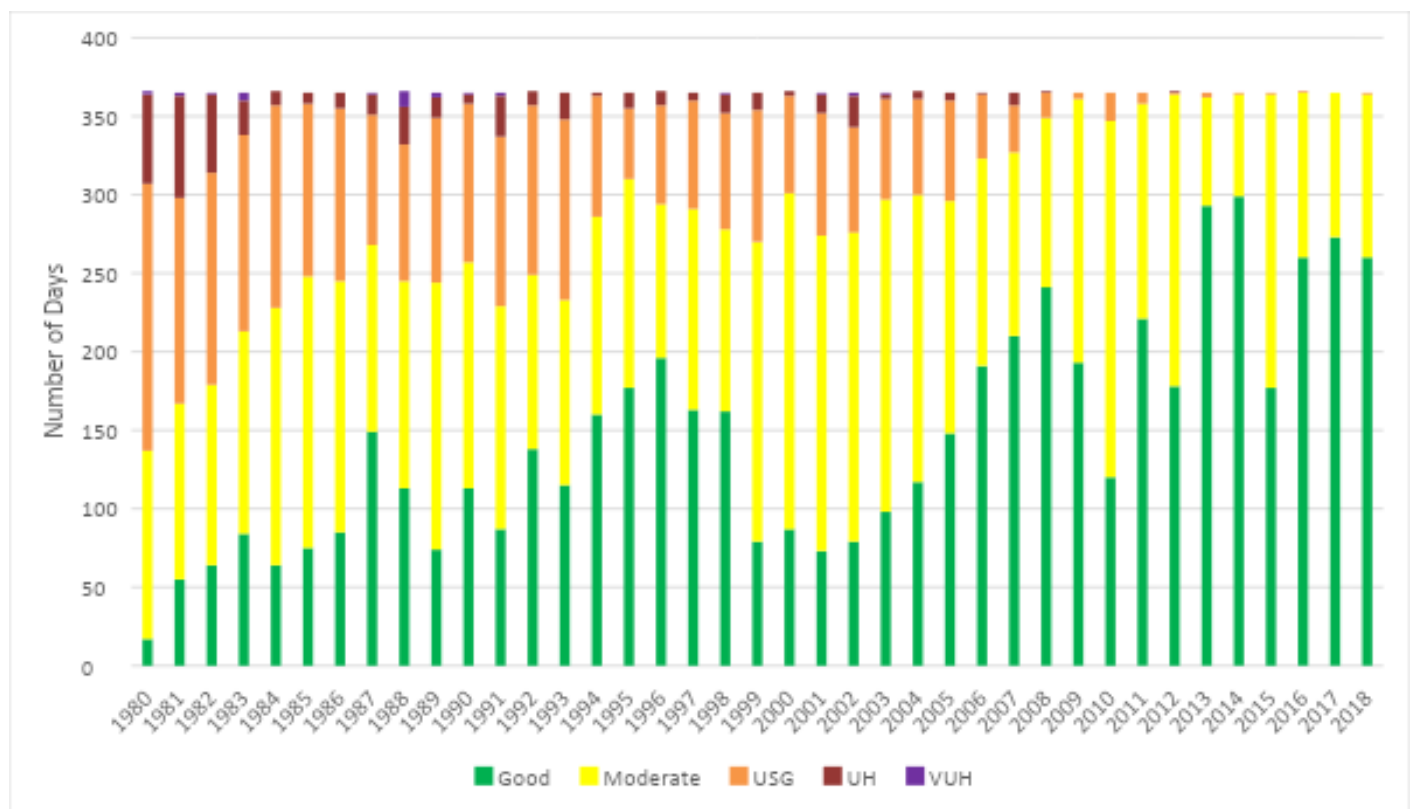


Figure 13: Monitoring Trends – PM2.5 Annual Mean, 2010-2019

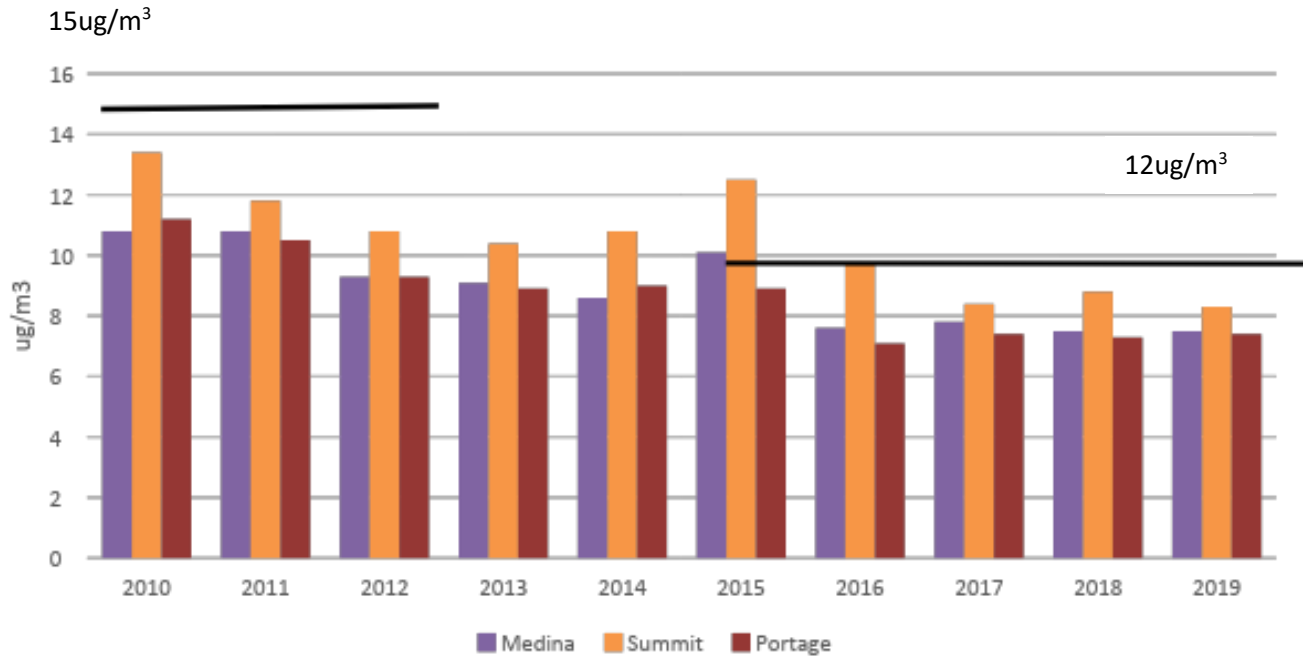


Figure 14: Monitoring Trends – PM2.5 Annual Mean, 2000-2019

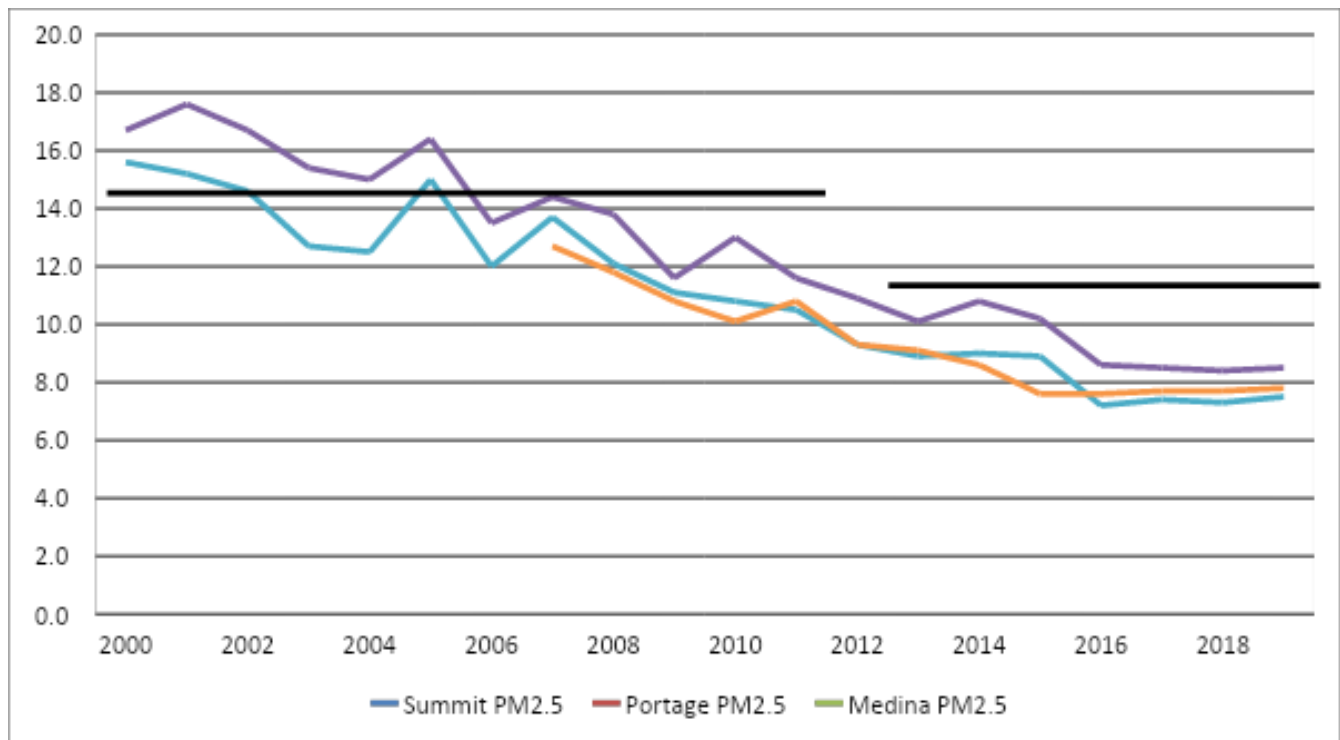


Figure 15: Monitoring Trends - PM2.5 Maximum 24 Hour Average, 2010-2019

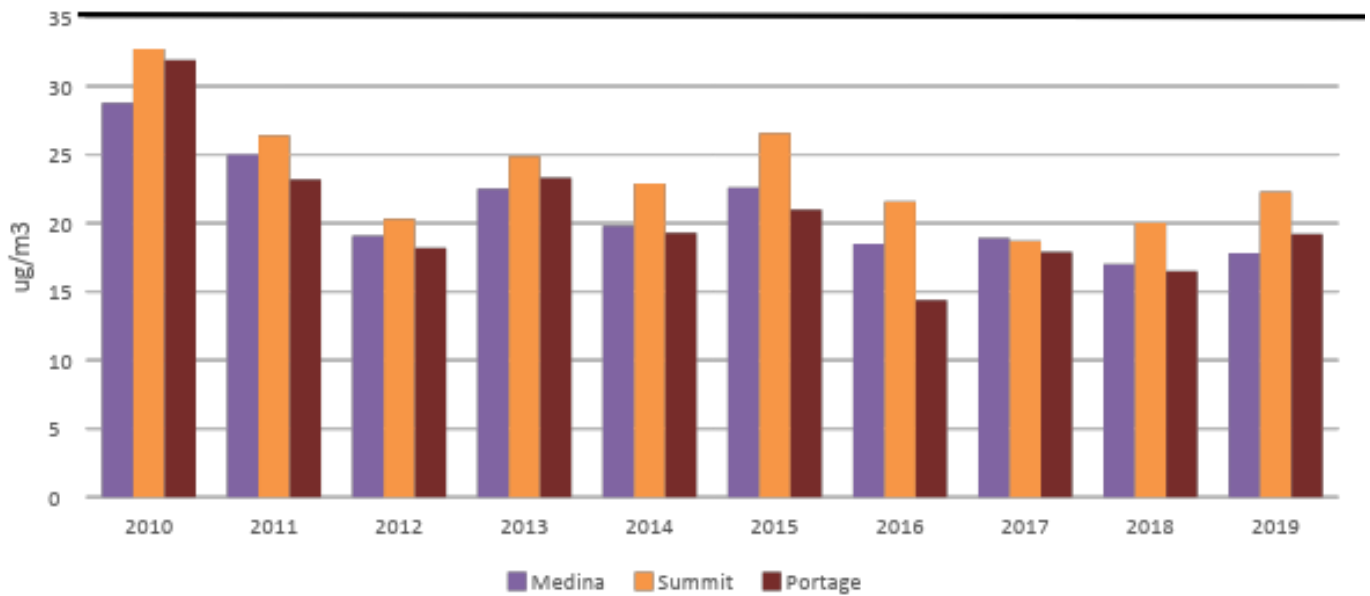


Figure 16: Monitoring Trends - SO2 99th Percentile Values, 2010-2019

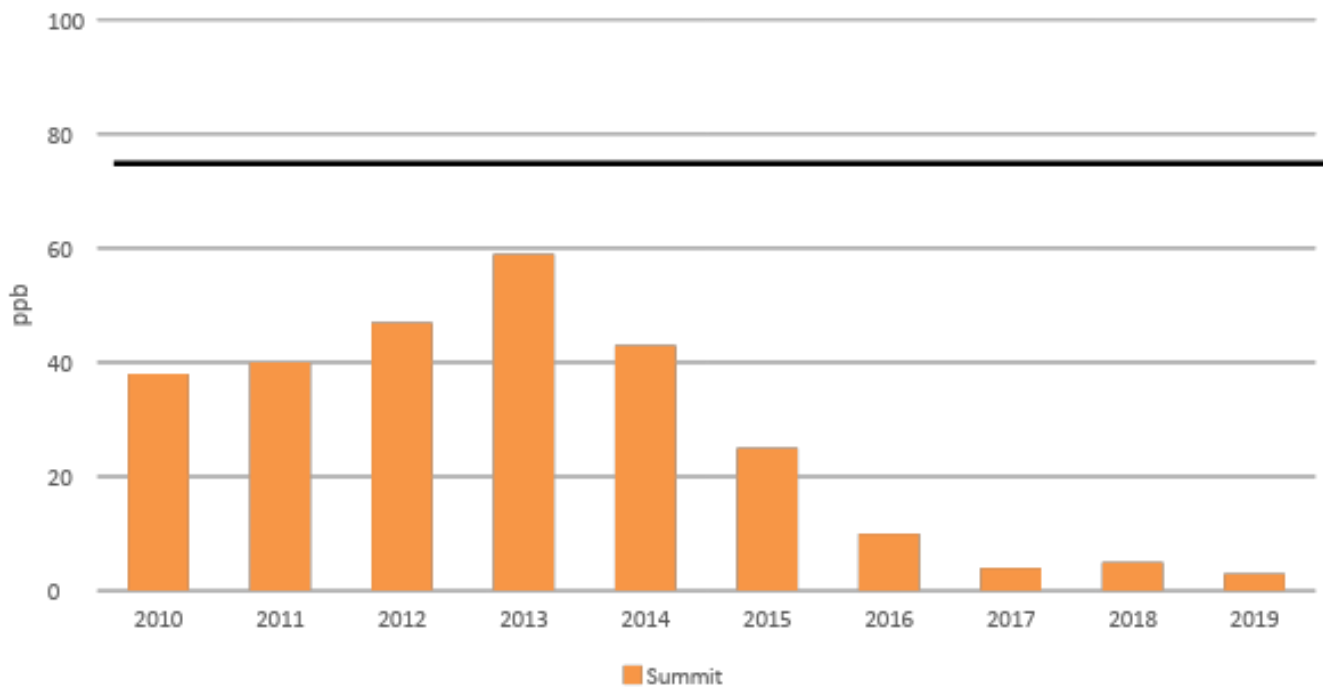


Figure 17: Monitoring Trends - SO2 99th Percentile Values, 1977 - 2019

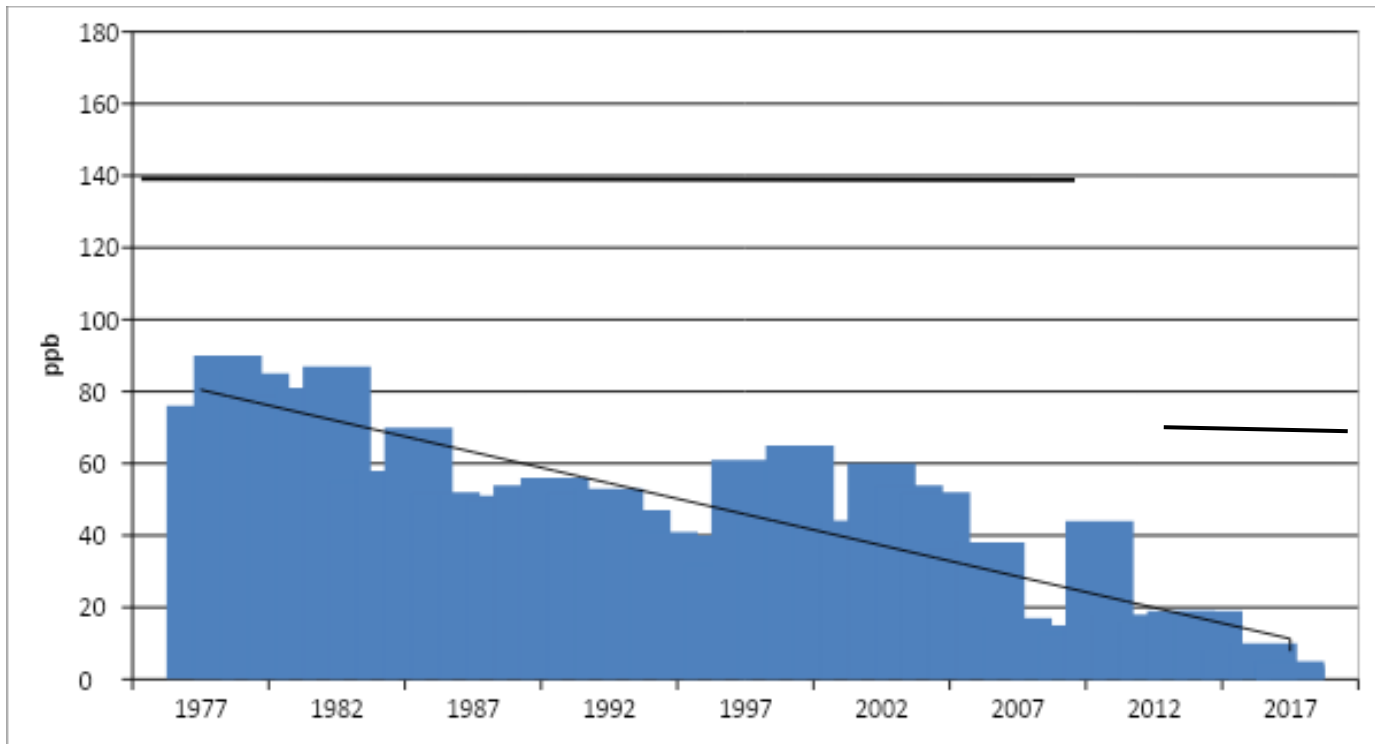


Figure 18: Monitoring Trends - Ozone – 98th Percentile Values, 2010-2019

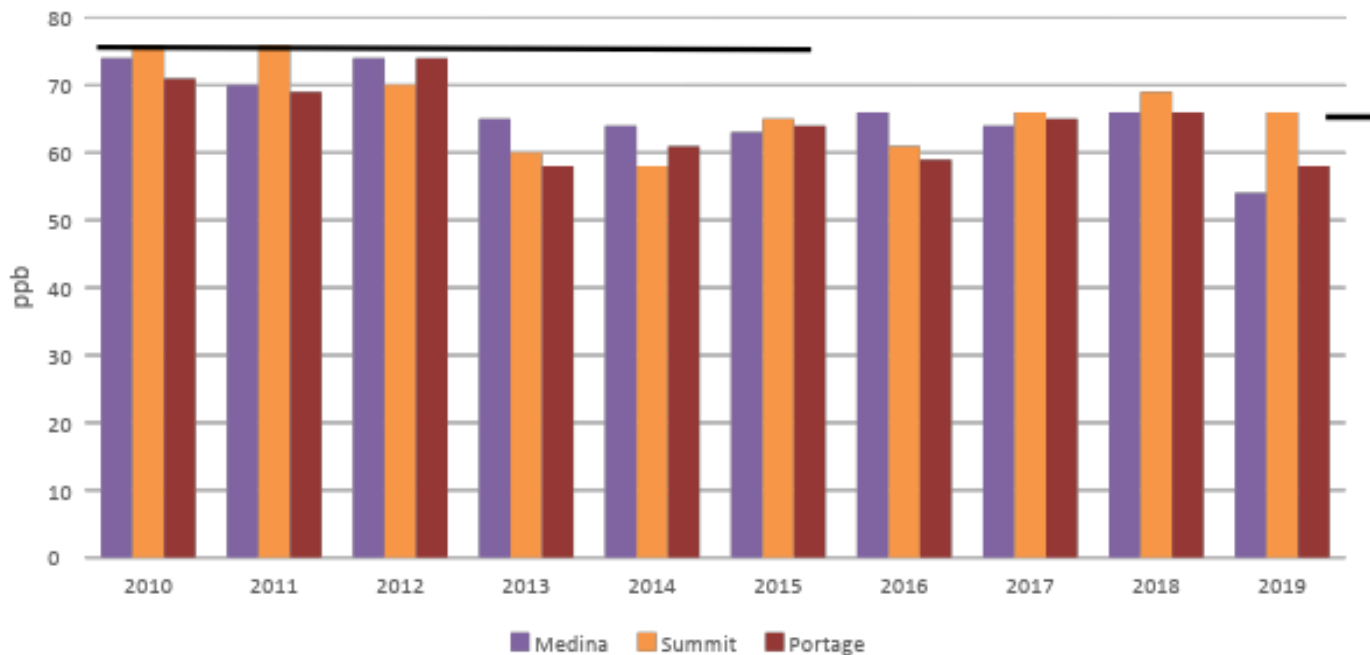


Figure 19: Monitoring Trends - Ozone – Maximum 8 hour Averages, 1999-2019

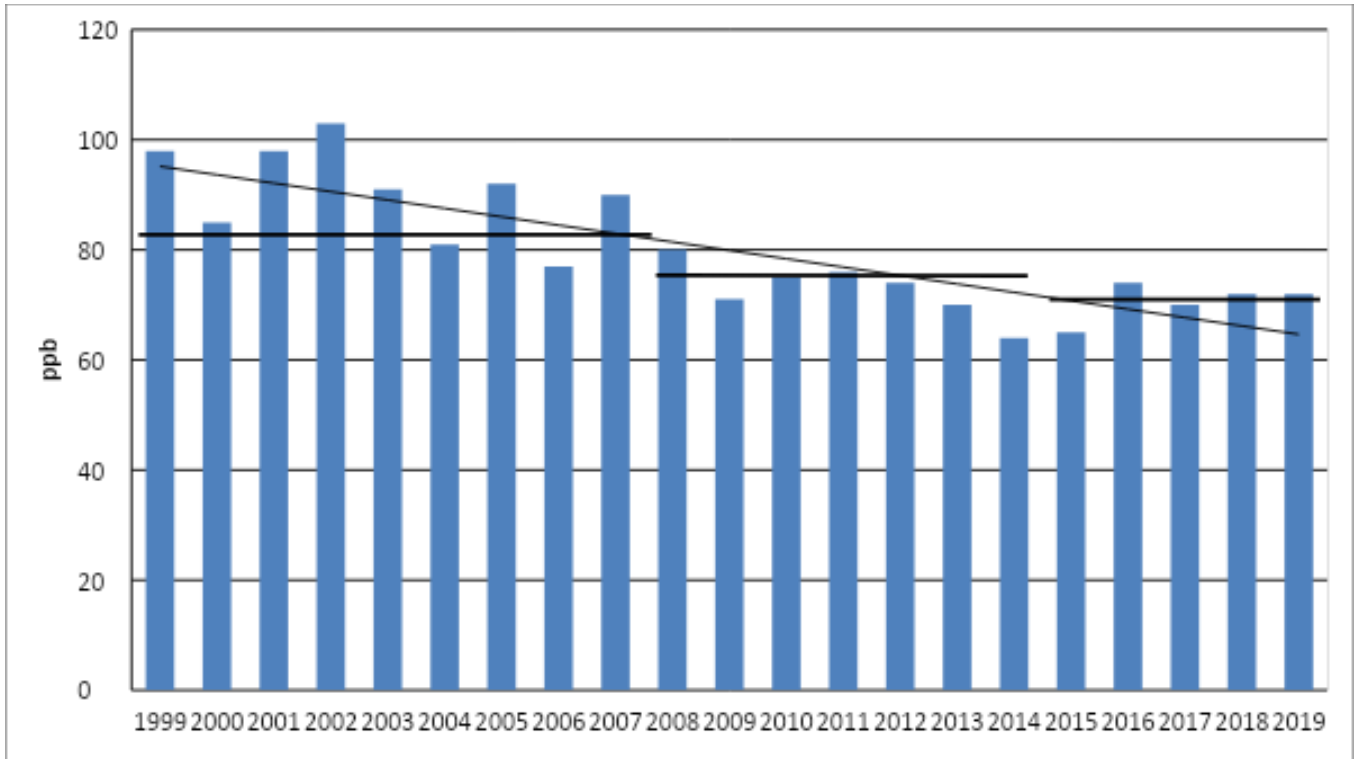


Figure 20: Monitoring Trends - Carbon Monoxide 1 hour maximum & 8 hour maximum, 2010-2018

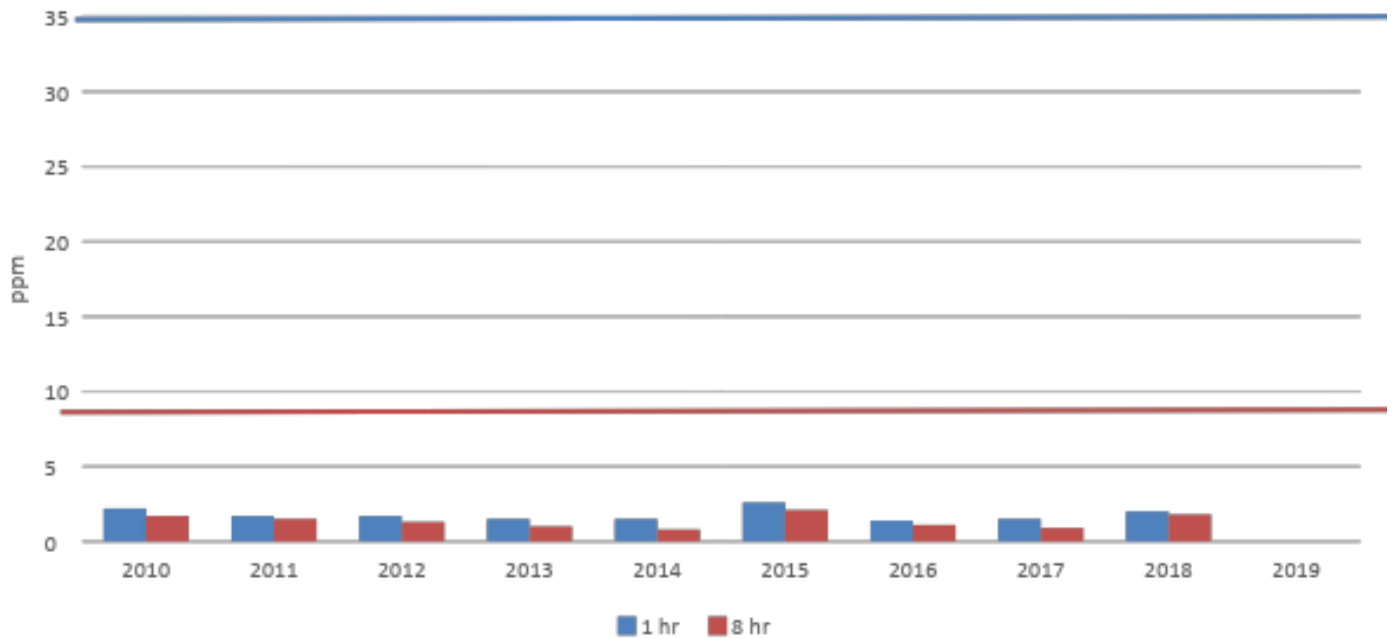
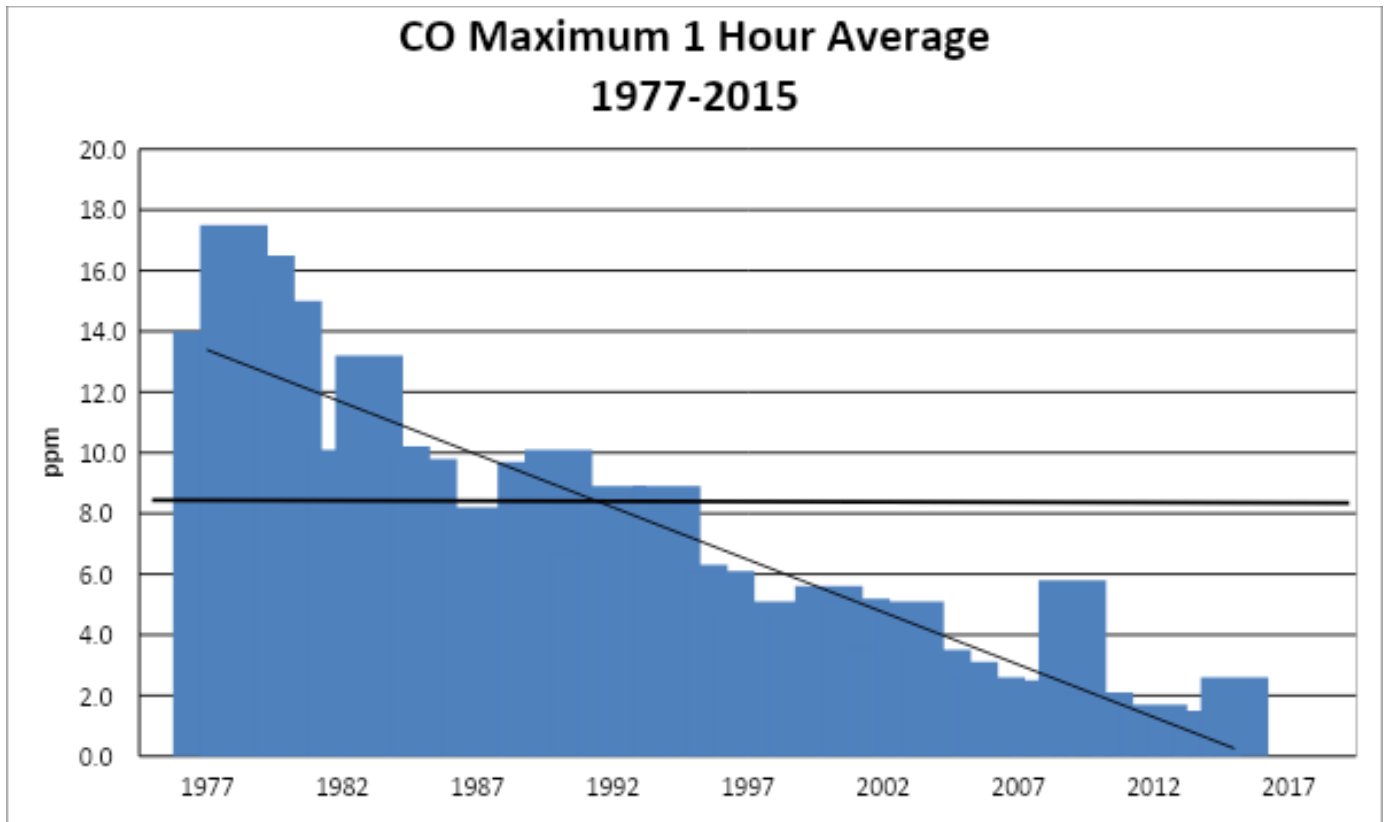


Figure 21: Monitoring Trends - Carbon Monoxide 1 hour maximum, 1977 - 2015



Field Activities

Field activities fluctuate annually based on the weather. In cold or wet months, not as many open burning, fugitive dust, or odor complaints are received as in the warm or dry months. The asbestos program saw a large uptick in notifications starting in 2012 with the appearance of Moving Ohio Forward funds from the state of Ohio. These funds were given to the municipalities for demolition of blighted, vacant or abandoned residential structures. Demolitions in the ARAQMD region tripled from 2010 to 2012.

Figure 22: Field Activities – Open Burning & Fugitive Dust, 2013-2019

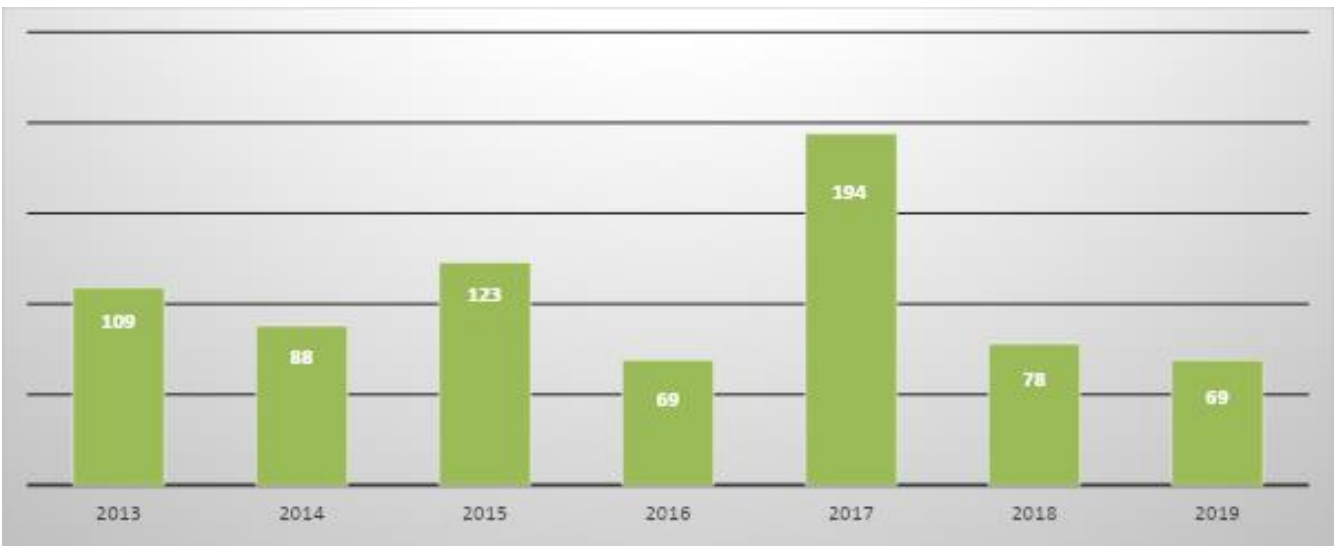
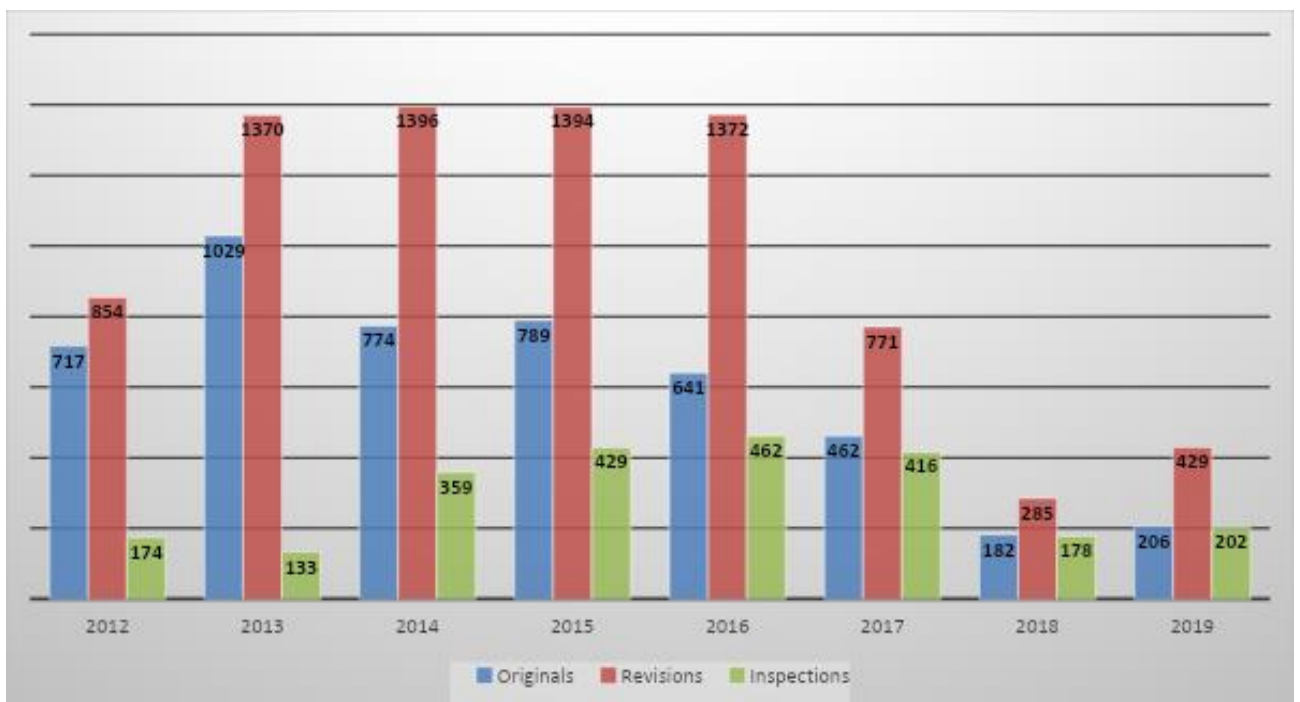


Figure 23: Field Activities – Asbestos Notifications, Revisions and Inspections, 2012-2019



Permitting Section

The permitting section underwent many changes over the past decade. Over half of the staff has changed, new programs have come and gone and we have assisted other agencies in processing permits while still providing the same great service to our facilities as always.

The Compliance & Technical Assistance Program operated in 2014 and 2015. It was designed to assist small businesses with compliance with the air quality rules and regulations. While it was well received and appreciated by those who utilized the service, it wasn't heavily utilized and when the staff member running it left the agency, the program was discontinued.

The Non-High Priority Facility Inspection Program (NHPFIP) was implemented in 2018 to allow ARAQMD to verify non-Title V facilities information, do site visits to ensure compliance, and to assist these smaller companies in coming into, or staying in, compliance.

Figure 24: Permit Issuance by Year and County, 2010-2019

