

TABLE OF CONTENTS

Cover	1
Table of Contents	2
Mission Statement	3
Letter from the Director	4-5
Board of Directors and Citizen Advisory Committee	6
Organizational Chart	7
Lane Regional Air Protection Agency	8-9
Funding	10-11
Permitting	12
Enforcement	13
Asbestos Abatement	14
Complaint Response	15
Public Affairs	16-17
Social Media Growth	18
Public Engagement	19
Air Quality Index	20
Technical Services	21
Citizen Science	22
Wildfires	23
Long Term Trends	24-25
PM 10 Data	26-27
PM 2.5 Data	28-29
Ozone Data	30
Carbon Monoxide Data	31
Back Cover	32

OUR VISION

COMMUNITY PARTNERS WORKING TOGETHER
TO ENSURE CLEAN AIR FOR EVERYONE

OUR MISSION

TO PROTECT PUBLIC HEALTH, QUALITY OF LIFE AND THE ENVIRONMENT AS A LEADER AND ADVOCATE FOR THE CONTINUOUS IMPROVEMENT OF AIR QUALITY IN LANE COUNTY

OUR GOALS

AIR QUALITY: ENSURE HEALTHY AIR QUALITY FOR ALL CURRENT AND FUTURE LANE COUNTY CITIZENS

INVOLVEMENT: INFORM AND INVOLVE ALL CITIZENS AND BUSINESSES IN IMPROVING AIR QUALITY

SERVICE: SERVE CITIZENS AND STAKEHOLDERS FAIRLY, COURTEOUSLY, AND IN A TIMELY MANNER

PARTNERSHIP: WORK WITH OUR PARTNERS TO LEVERAGE RESOURCES TO MAKE A DIFFERENCE IN LOCAL AIR QUALITY

LETTER FROM THE DIRECTOR MERLYN HOUGH

This has been an exciting year for new air quality developments as the Lane Regional Air Protection Agency (LRAPA) celebrates its 50th birthday!

During the 2018 Oregon Legislature, two major air quality issues were heavily debated: Cleaner Air Oregon and Cap and Invest. To help clarify the discussion locally, LRAPA was asked to put the Cleaner Air Oregon and other air quality legislation in perspective. We described the three broad areas of air pollution control within which the various proposed bills belonged:

The first category is criteria pollutants, the six pollutants (especially particulate matter, ozone and carbon monoxide) which were the primary focus of the 1970 and 1977 federal Clean Air Acts. The expectation was that, if we were successful in reducing these six air pollutants, overall air quality (including many pollutants not measured) would significantly improve into the future. Locally, we and our partners have made tremendous progress to improve air quality in these criteria categories over the entire 50 years that LRAPA has been in place.

The second category is air toxics or hazardous air pollutants. A major section of the 1990 Clean Air Act addressed 187 air toxics. Cleaner Air Oregon would complement the EPA technology-based air toxics program by adding an overlay of risk assessment in the communities around major industrial sources of air toxics. New industries and the largest existing industries would be required to demonstrate

that the air toxics risks in the nearby neighborhoods would be within specified limits.

The third category, regarding greenhouse gases, global warming and climate change, is the most recent of the categories. In April 2007, the U.S. Supreme Court issued its Massachusetts v. EPA decision and ordered the EPA to determine whether greenhouse gases constituted a threat to the public. EPA completed the endangerment finding in December 2009. The Carbon Cap and Invest Bill, as well as other issues such as the Clean Power Plan and fuel economy standards for new motor vehicles, are all part of this third category.

LRAPA always strives to combine the benefits of these categories in its air quality strategies. For example:

- 1. Our work with the City of Oakridge and other community partners is designed to not only meet the air quality health standards for particulate matter (which was successfully done to meet the 3-year PM standard in 2014-2016 and again in 2015-2017) but also significantly reduce the air toxics from woodstove smoke.
- 2. Our promotion of electric and other zero-emission vehicles is designed to reduce all three categories: criteria pollutants such as carbon monoxide and ozone-precursors; air toxics such as benzene and diesel particulate matter; and carbon dioxide, a greenhouse gas.

At the time of this writing, it appears that the Cap and Invest Bill will need further work in the 2019 Legislative Assembly, but steps to advance Cleaner Air Oregon have started to take place.

The proposed Cleaner Air Oregon rules would set health risk limits on pollutants

that industrial facilities emit so that neighbors are protected from potentially harmful levels of exposure. Currently, Oregon regulates facilities primarily based on federal law, with the focus on what are called technology (rather than health) based rules.

While this approach has succeeded in lowering area-wide air pollution, Oregon generally has not focused attention on localized health effects from individual facilities, particularly air toxics.

Some of the ways LRAPA can implement Cleaner Air Oregon to close the gaps in current air toxics rules include:

- Report air toxics: Cleaner Air Oregon requires companies to report use of 600 heavy metals, chemicals and other pollutants to state regulators.
- Risk assessments: The proposed rules would set risk limits for 260 industrial air toxics. New and existing industrial facilities would be required to calculate the risks their emissions pose to people who live nearby and report their results to state regulators.
- •Reduce risk: The new rules tie air quality permits and enforcement to the levels of potentially harmful air toxics a facility puts into the air and the impact they could have on the health of neighbors. Companies would be required to act if the

levels of air toxics they emit exceed health safety limits.

This is a valuable addition to the air toxics program, but it is important to recognize that the major air toxics risks in Lane County are from residential woodburning and motor vehicles. The air toxics risks from industrial facilities have been reduced significantly since 1990 and are much lower than toxics from woodstoves, cars and trucks.

To implement Cleaner Air Oregon, DEQ required authority from the Oregon Legislature for funding and staff. SB 1541 passed by wide bipartisan margins in both the Senate and House after significant compromise to provide more certainty and clarity on a few concerns. Most importantly, SB 1541 provides the resources for DEQ and LRAPA to implement the Cleaner Air Oregon program and fill the three gaps now (air toxics reporting, risk assessments, and risk reduction) on which to base future improvements in air toxics control programs.

LRAPA is very proud of our 50-year record to protect air quality in the southern Willamette Valley. Cleaner Air Oregon represents a new era of air toxics protection as we enter our next 50 years!

Merlyn Hough, Director

MILLAS



BOARD OF DIRECTORS

THE ADVISORS AND SUPPORT NETWORK

The LRAPA Board of Directors appoint the director of the agency, who has overall authority to appoint and direct the LRAPA staff. The director makes policy recommendations to the board and is responsible for implementing board decisions. JEANNINE PARISI Chair, Eugene

JAY BOZLIEVICH Vice Chair, Lane County

JIM COEY Oakridge

BILL CARPENTER Springfield

BETTY TAYLOR Eugene

JOSEPH GONZALES Eugene

MIKE FLECK Cottage Grove

SCOTT LUCAS Eugene

CHARLIE HANNA Eugene

CITIZENS ADVISORY COMMITTEE

THE VOICE OF THE COMMUNITY

The LRAPA Citizens Advisory
Committee is made up of local
citizens representing specific areas
of interest, including agriculture,
fire suppression, industry, public
health, and community planning.
The committee is called upon
to advise the board and staff on
variety of air quality issues, rules,
and policies

MAURIE DENNER Chair, General Public

CHUCK GOTTFRIED Vice Chair, Agriculture

LARRY DUNLAP Public Health

GERY VANDER MEER General Public

JIM DANIELS Large Industry

JOHN TAMULONIS Planning

LAURA SEYLER Large Industry

LINK SMITH Fire Supression

PAUL ENGELKING General Public

RANDY HLEDIK Industry

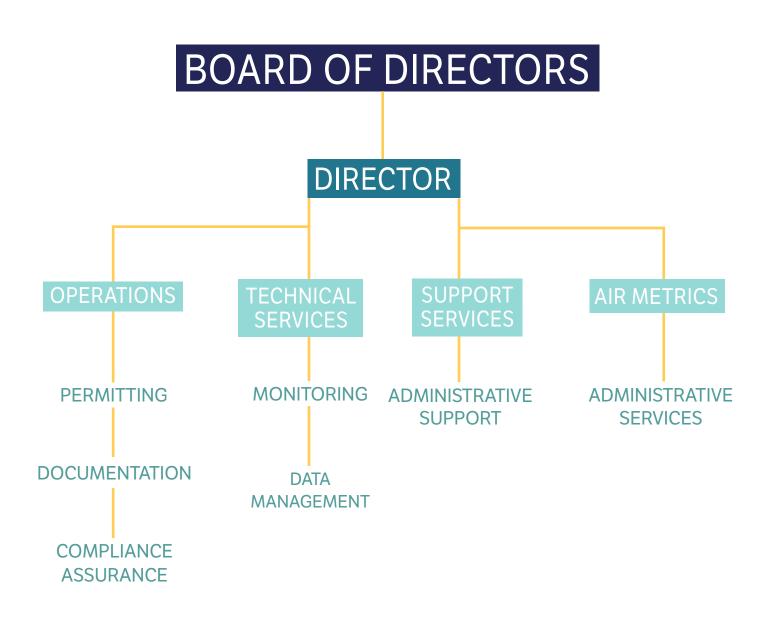
TERRY RICHARDSON General Public

KATHLEEN LAMBERG General Public

LEONARD EPSTEIN General Public

PHEBE HOWE Public Health

ORGANIZATIONAL CHART



LANE REGIONAL AIR PROTECTION AGENCY

The Lane Regional Air Protection Agency (LRAPA) is committed as a community partner working toward ensuring clean air for Lane County residents. Through our mission, we act upon our commitment to our stakeholders and partners.

LRAPA's Board of Directors guarantees local regulatory involvement through Board direction and guidance, and a local decision-making process similar to city and county governance over their jurisdictions. Thirteen local citizens comprise our Citizens Advisory Committee, providing input and recommendations to the LRAPA Board and agency staff

AIR QUALITY

Since our inception in 1968, LRAPA has consistently strived to improve air quality in Lane County. Even with increased traffic and population, air quality levels in Lane County's metro areas have continued to improve. The Eugene/Springfield metro area meets all federal clean air health standards (National Ambient Air Quality Standards) with help from LRAPA to administer state regulation and local mandatory and voluntary programs.

The improvements are evidenced by data collected by LRAPA. LRAPA's air quality monitoring network consists of 7 monitoring sites that include a total of 51 parameters. At an estimated operational cost of over \$400,000 per year, LRAPA's network provides Lane County with comprehensive data on local air quality. The network includes three locations in Eugene and one each in Springfield, Oakridge, Cottage Grove, and Saginaw.



A Lane County resident goes emission free.

PARTNERSHIP

Partnerships are a mainstay for LRAPA. Through partnerships, the agency has made enormous strides toward education and emissions reductions. LRAPA's partnerships are instrumental in educating the community not only about air quality, but about water quality, energy use and overall sustainability as well. Through recent partnerships, LRAPA has helped bring more than \$5 million in funding for cleaner fuels, safer school buses, and woodstove change-outs, to reach beyond our core work in helping the local airshed, community well-being and environment.

INVOLVEMENT



LRAPA staff on a tour of a permitted facility.

LRAPA places strong emphasis on community involvement, outreach, and public education. To us, involvement means participating in projects to improve our community. In addition, we strive to fulfill our regulatory responsibilities to our partners and inform the public with accurate and timely information.

Our commitment to the local community is demonstrated by our development of community projects, public event booths, outdoor school programs, and outreach events. Community-building results when an agency such as LRAPA gets involved with its constituents. Local government contributions help secure the funding that is necessary to establish true involvement - an agency with open doors to its public, where staff strive for solutions with citizens, and where the executive director is just a phone call or an office visit away.



From the top of Spencer's Butte on a hazy summer day.

SERVICE

A service organization serves its community, and a government agency should serve its constituents. Whether it be the general public looking for help to solve an odor problem, a permitted facility needing regulatory support, or an "out-of-towner" looking to relocate to our community, LRAPA believes personalized attention is prudent for success.

Over the last few years, LRAPA responded to an average of 800 backyard burning, home

wood heating, dust, agricultural burning and industrial complaints throughout Lane County. LRAPA services the community at-large by giving personal attention whenever possible to city and county staff, local schools, area businesses, the regulated community and the general public. The agency strives to give all members of the community equal time and access.

FINANCES: FUNDING AND BUDGETING

LRAPA's budget process is reviewed and determined by the LRAPA Budget Committee. This process begins in February each year with a new budget prepared by LRAPA's chief financial officer and budget committee meetings are held during March and April. These meetings are open to the public, and serve as a transparent process for the agency's fiscal policies and responsibilities.

Once the committee makes final revisions to the proposed budget, a vote is taken to approve the budget. If approved, the budget is published and a public hearing is scheduled. The public may give testimony at the public hearing. Comments from the public are taken into consideration by

the LRAPA Board of Directors before a resolution is enacted to formally adopt the budget. In the past several years, LRAPA experienced reduced revenues as the result of decreased funding at the local, state, and federal levels. The agency responded by reducing staff and cutting certain programs to focus on core responsibilities.

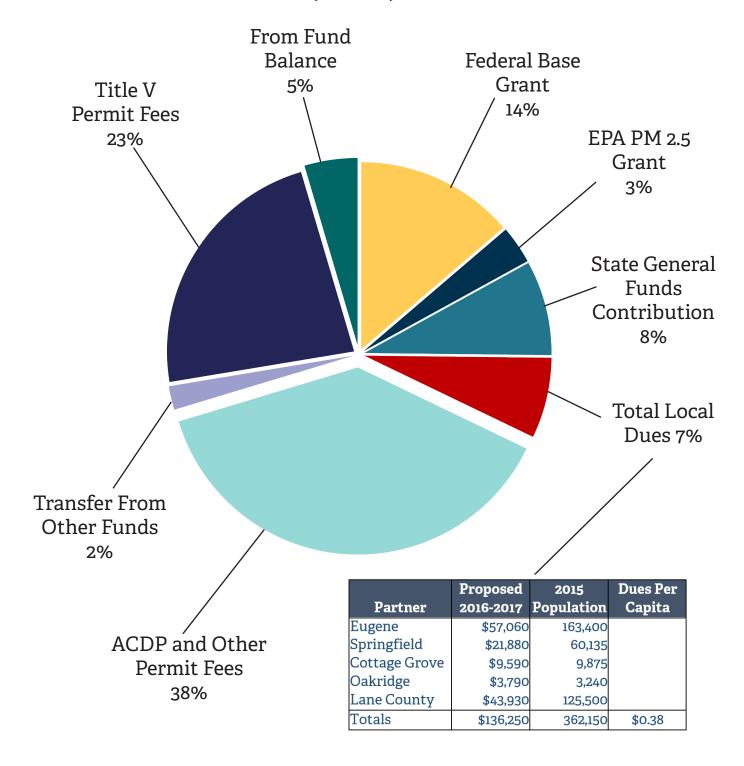
Even through funding challenges, LRAPA has been successful in its mission to advocate for the continuous improvement of air quality in Lane County. Our airshed has improved significantly and this trend is expected to continue because of LRAPA's commitment and efforts to deliver on its mission.



LRAPA Budget Committee meeting

LRAPA CORE OPERATING BUDGET RESOURCES: FY'17

\$1,957,290



PERMITTING



LRAPA staff on a tour of a permit site.

LRAPA-issued operating permits are required for many industries and businesses in Lane County. Of the 305 permitted sources in Lane County, 284 have Air Contaminant Discharge Permits (ACDP), 18 hold Title V Federal Operating Permits, and 3 are Registered Sources. Gasoline dispensing facilities (GDFs) account for 37% of the ACDPs (i.e., 104 GDFs out of 284 ACDPs). ACDPs are issued to all industries required by LRAPA rules to obtain permits. Major sources subject to federal operating permit requirements are issued Title V permits. Industrial sources are classified as "major" sources if they have the potential to emit more than 100 tons of any criteria pollutant, or 10 tons or more of any single hazardous air pollutant (HAP) or 25 tons or more of any combination of HAPs on an

annual basis.

Source activities in Lane County which require operating permits include: wood products manufacturing, chemical products manufacturing, mineral products manufacturing, metal products manufacturing, waste treatment, fuel burning, fuel transfer operations, coating operations, and sources of toxic air pollutants.

In 2016, the Oregon Department of Environmental Quality (DEQ) and the Oregon Health Authority launched an initiative to revamp air quality regulations in Oregon through a health based standard. This project, called "Cleaner Air Oregon" reviews risk levels for over 200 air toxics and is scheduled for adoption by DEQ in 2018. LRAPA permitters have played a key role in managing the initiative for industries in Lane County, providing support, expertise, and input throughout the process.

2017 PERMITTING SUMMARY

PERMITS ISSUED AND RENEWED

32

PERMITS MODIFIED

29

INDUSTRIES INSPECTED

145

ENFORCEMENT

LRAPA initiates enforcement actions in instances of excessive industrial air pollution, illegal open burning activities, improper handling or transport of asbestos-containing materials, failure to obtain necessary air pollution permits prior to construction or operation, and exceeding opacity limits from woodstoves and chimneys.

Typically, the dollar amount of penalties collected annually does not strictly reflect the penalties assessed or settled during the year,

due to pending cases and collections received on previous years' penalties. Penalty money collected by LRAPA is transferred to the Lane County general fund.

LRAPA collected \$31,287 in penalties during 2017. All penalties collected are forwarded to the Lane County general fund; however, attorney fees associated with contested cases are deducted first. In 2017, LRAPA issued 39 administrative Notices of Non-Compliance and 28 notices of violations with civil penalties

SUMMARY ENFORCEMENT ACTION 2006-2017

YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
NOTICES OF NON-COMPLIANCE AND WARNING	48	57	37	57	64	41	51	36	38	41	39
NOTICES OF VIOLATIONS WITH CIVIL PENALTIES	47	36	28	39	42	29	23	28	37	36	28

TOTAL CIVIL PENALITIES 2006-2017

YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL CIVIL PENALITIES COLLECTED	46,050	46,526	53,786	27,941	28,187	29,727	21,102	14,511	30,790	41,508	31,287

ASBESTOS ABATEMENT

LRAPA's Asbestos Permit and Inspection Program handles hundreds of abatement notices per year. In order to legally remove asbestos, an asbestos survey must be conducted by an accredited inspector prior to commencing a building demolition or renovations. Proper asbestos notice needs to be filed with LRAPA and abatement accomplished following criteria outlined in the regulations.

The LRAPA asbestos regulations (Title 43) specify work practices regarding asbestos to be followed during demolitions and renovations of all structures, installations, buildings, and residential properties with certain exemptions as outlined in 43-015-8. The regulations require the owner or the operator of the building to have all materials abated by a licensed abatement contractor prior to any demolition or renovation of buildings constructed with asbestoscontaining materials.

In addition, manufacturing and fabricating operations cannot emit visible emissions into the outside air and must follow air cleaning procedures, and follow certain requirements when removing asbestos containing waste.

On June 8, 2017, the LRAPA Board adopted changed proposed to Title 43: Asbestos Requirements. The rulemaking followed Senate Bill 705 legislation and the Oregon Department of Environmental Quality's (DEQ's) recent rulemaking setting more stringent survey requirements on residential abatements. The LRAPA rules updated the residential construction date for asbestos survey exemption from the previous 1987 date to January 1, 2004 (OAR 340-248-0250(2)(d)).

2017 ASBEST	OS NOTICES
SCHOOL	28
RESIDENCE	323
COLLEGE	40
INDUSTRY	12
COMMERCIAL	134
OTHER	6
TOTAL	543

2017 ASBESTOS INSPECTIONS

120

2017 ASBESTOS FEES RECIEVED

\$207,963.50



Abestos containing material properly bagged.

COMPLAINT RESPONSE

LRAPA investigates citizen complaints whenever one is registered with the agency. Field officers also include potential complaints they observe and respond to in the field. People are able to submit complaints online on our website, over the phone, or through email. Each year, our office receives hundreds of complaints ranging from agriculture to residential to industry. Aside from the formal complaints, LRAPA also receives community inquiries, informal notifications, and agency requests. In 2017, we saw a slight increase in the number of home wood heating complaints and outdoor burning complaints.

LRAPA takes great pride in complaint response and all our staff work hard to respond to almost every complaint received and aim to provide solutions and resolve any issues. The success of our complaint program is reflected in the steady decrease of complaints throughout the years.

PERCENTAGE C FROM 2016 TO	
DUST	- 21.9 %
AG/FIELD BURNING	- 88.9 %
GENERAL AIR QUALITY	- 30 %
HOME WOOD HEATING	+ 51.5 %
INDUSTRY	+ 27.6 %
MISCELLANEOUS	- 15.9 %
OUTDOOR BURNING	+ 5.6 %
SLASH BURNING	- 50 %
UNKNOWN	+ 12.5 %
TOTAL	+ 5.9 %

L	.RAP	A C	OMP	LAIN	NTS 2	2008	3-201	17		
YEAR	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DUST	21	21	34	33	44	30	14	25	32	25
AG/FIELD BURNING	101	24	9	13	1	17	4	12	9	1
GENERAL AIR QUALITY	14	21	2	6	6	26	30	15	20	14
HOME WOOD HEATING	130	113	62	135	95	219	121	342	130	197
INDUSTRY	231	270	266	169	128	122	127	52	58	74
MISCELLANEOUS	137	61	77	101	79	52	57	85	164	138
OUTDOOR BURNING	293	277	268	341	268	321	279	251	266	281
SLASH BURNING	25	3	6	16	7	5	7	11	26	13
UNKNOWN	59	25	12	25	17	14	35	46	56	63
TOTAL	1011	815	734	839	645	806	674	839	761	806

PUBLIC AFFAIRS: OUTREACH AND EDUCATION

The Public Affairs department at Lane Regional Air Protection Agency provides a number of services to the agency including media relations, communications, public education, and outreach. The department's priorities are determined by need, urgency, and value.

Public Affairs staff believe its main focus is two-fold: to educate the community about air quality issues affecting the local jurisdiction; and to provide information to the community, be it through press releases and media relations, neighborhood groups, digital outreach, advertising campaigns, or other information avenues.

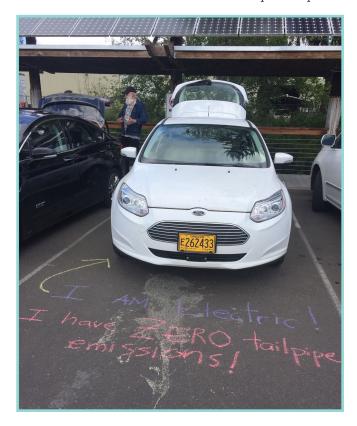
Over the past couple years, the program has evolved from one focused on media relations, mandatory program outreach to the community, and direct mailings, to the more dynamic program it is today.

Twenty years ago, the program largely centered around two LRAPA programs: outdoor burning and home wood heating. It was encompassed of a monthly print newsletter, fire department newsletter, print ad campaigns, and educational materials.





Above and Below: Photos from LRAPA's Earth Day Birthday Event



NEW PROGRAMS

In the last decade, the LRAPA Public Affairs office has evolved to increase scope and depth of its programs to include: digital advertising; website design and management; anti-idling campaigns directed towards schools; summertime air quality campaigns; school outreach; diesel education; community events-planning (community hazardous waste, Earth Day, and similar events); special project development (such as the supplemental environmental projects); interagency partnerships (such as Warm Homes); print and electronic design; and multi-media.

The Public Affairs department conducted 48 media interviews in 2017. Their audience also expanded to people at outreach and education events including: Lane County Home and Garden Show, Earth Day, National Drive Electric Week, Town Halls, Neighborhood Association Meetings,

and more. LRAPA public education also expands to outdoor school, K-12 science classrooms, and college courses.

As the public's sources for news become more digital, LRAPA is following the same trends to provide people with the most accurate information as quickly as possible.



Merlyn Hough, LRAPA's Director, speaking to the Oakridge community.

Young community members learning about air pollution



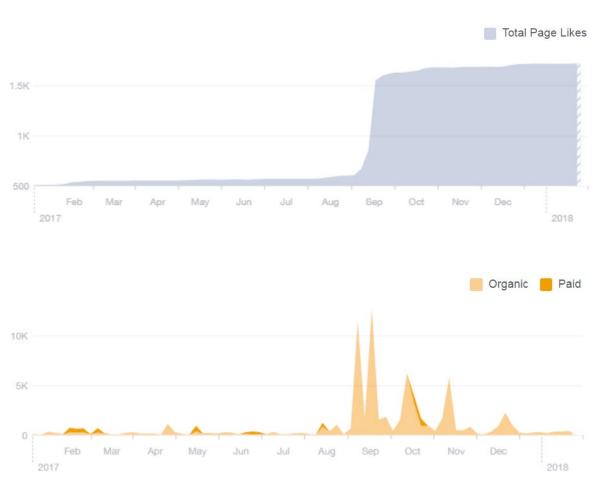
SOCIAL MEDIA GROWTH

LRAPA's online following experienced a dramatic increase during the summer months. The poor air quality from the various wildfires across Oregon, California, and Washington caused residents of Lane County to search for information regarding local air quality and in doing so, drew them to the LRAPA social media accounts. During this time, LRAPA constantly updated the social media, posting multiple times a day to ensure residents has accurate, timely information. LRAPA has maintained the vast majority of these followers, even after the air quality improved.

PERCENTAGE INCREASE FROM JAN. 2017 TO JAN. 2018

TWITTER FOLLOWERS	FACEBOOK LIKES	TWITTER AND FB FOLLOWERS
115%	221%	184%
331 TO 713	524 TO 1,716	855 TO 2,429

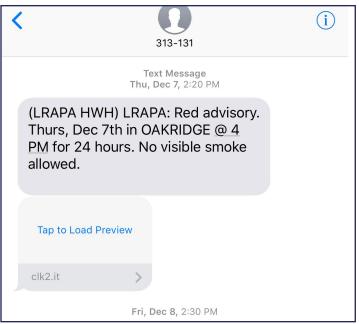
TOTAL GROWTH OF FACEBOOK ACCOUNT

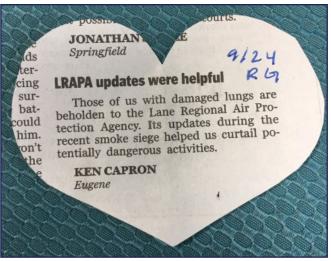


PUBLIC ENGAGEMENT

Throughout 2017, LRAPA made notable improvements with its public engagement efforts, spanning from informative social media content to innovative ways to reach key audiences to relavent outreach events. Here are some highlights from LRAPA's exciting year!







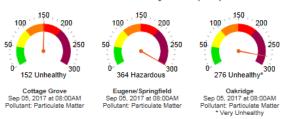
Above: Opinion in the Register-Guard Middle Left: Reviews left on the LRAPA Facebook page Middle Right: Tweet by a Lane County resident Bottom Left: Example of a LRAPA text alert for Oakridge residents Bottom Right: LRAPA staff at their first Spanish speaking event





AIR QUALITY INDEX

24 Hour Air Quality Index (AQI)



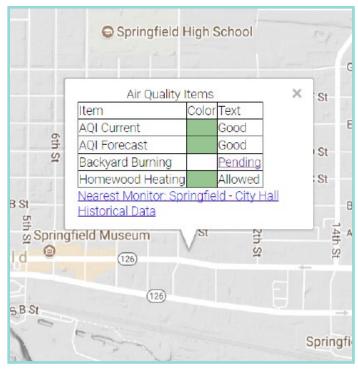
The 24 hour AQI is a prediction of what the 24 hour AQI average will be for the current day.

The prediction is based on a weighted average of the last 12 hours of data, with the most recent hours being weighted more heavily

The United States Environmental Protection Agency (EPA) developed the Air Quality Index (AQI) to provide the public with simple information about local air quality. Using data from local monitoring stations, the AQI provides a daily report about air quality and the possible health impacts on days with bad air quality.

Each AQI category is assigned a specific color and a brief explanation to make it easier for the public to understand quickly whether air pollution is reaching unhealthy levels in their community.

The LRAPA website displays the current AQI information for Eugene/Springfield, Oakridge, and Cottage Grove on its home page. The AQI is updated on an hourly basis to provide current information to the public. More detailed technical information from all LRAPA monitoring sites can be accessed on our website including: data summary, AQI for the last 45 days, monitoring site map, and data graphing.



Top: AQI gauges from LRAPA website during wildfire smoke episode. Middle: The LRAPA AQI map on LRAPA website. Bottom: AQI ranges explained

GOOD 0-50

Air quality is considered satisfactory, and air pollution poses little or no risk.

MODERATE 51-100

Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.

UNHEALTHY FOR SENSITIVE GROUPS 101-150

Members of sensitive groups may experience health effects. The general public is not likely to be affected.

UNHEALTHY 151-200

Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.

VERY UNHEALTHY 201-300

Health warnings of emergency conditions. The entire population is more likely to be affected.

HAZARDOUS 301-500

Health alert: ever yone may experience more serious health effects.

TECHNICAL SERVICES

LRAPA's air quality monitoring network consists of seven monitoring sites that measure a total of 51 parameters. The agency collects over 300,000 hours of pollutant-related data per year.

At an estimated operational cost of \$400,000 per year, LRAPA's network provides Lane County with comprehensive data on local air quality. Without the local program, the Lane County network could have as few as four sites with fewer hours of data collection.

LRAPA's network includes three locations in Eugene, and one each in Springfield, Oakridge, Cottage Grove, and Saginaw. Monitoring stations have special instruments to measure the amount of specific pollutants in the air. Using information from the monitors, it can be determined whether the air is healthy or unhealthy for people.

LRAPA measures particulate matter at five sites in Lane County: west Eugene, south Eugene, downtown Springfield, Cottage Grove and Oakridge. Particulate matter is measured using two methods. The first method uses a filter that captures particles. The filters are weighed to determine how much pollution is contained in each cubic meter of air that has been drawn into the sampler. The second method measures particles with a nephelometer, which uses a light beam and light detector. Light reflected from the particles determines the concentration of particles in the air.

LRAPA measures ozone concentrations at Amazon park in South Eugene and in Saginaw, near Cottage Grove. To determine ozone levels, a pump brings an air sample into equipment that uses ultra-violet light and a two-step process that calculates the amount of ozone in the sample.



Right: The Amazon Park air monitoring station Above: LRAPA and EPA employees taking a tour of the LRAPA air monitoring station in Oakridge



CITIZEN SCIENCE

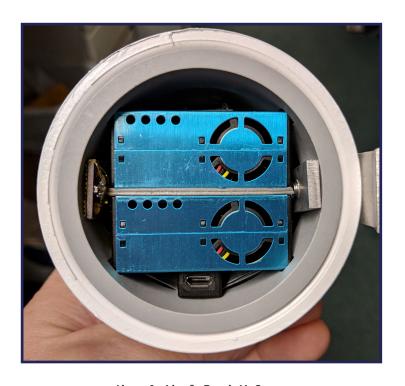
AIR MONITORING IN YOUR BACKYARD

One of LRAPA's most exciting initiatives of 2017 was the implementation of more PurpleAir Sensors throughout Lane County.

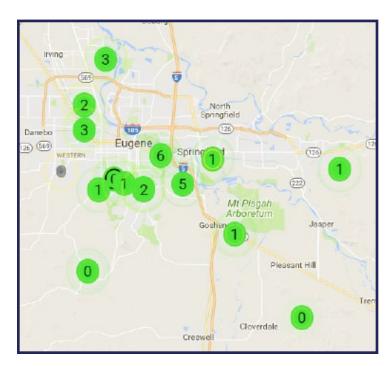
PurpleAir sensors are a new line of small air sensors that cost around \$250 each. These monitors are some of the most accurate at-home sensors on the market and cost just a fraction of other professional air monitoring equipment, which can range from \$14,000 to \$20,000. PurpleAir sensors have a simple installation process, requiring only WiFi and a power outlet.

The PurpleAir sensors provide a local Air Quality Index (AQI) that is averaged every 20 seconds. The AQI is then instantly uploaded to a map that can be found online. There are currently around 20 active PurpleAir sensors in Lane County.

LRAPA plans to further expand this network throughout 2018 by purchasing more sensors to provide to the community. By doing this, LRAPA hopes to integrate an interactive learning program about air quality into local schools' cirriculum. Furthermore, the PurpleAir Sensor would allow teacher and other faculty to be able to determine if the air quality is too poor for outdoor activities.



Above: Inside of a PurpleAir Sensor Below: The PurpleAir Sensor map of the Eugene- Springfield area



WILDFIRES

THE SMOKIEST SUMMER

Dozens of wildfires all across the West Coast led to one of Lane County's smokiest summers to date. Local wildfires like the Jones Fire, Chetco Bar Fire, Whitewater Fire, and Horse Creek Fire pushed thick plumes of smoke into the Willamette Valley - causing the worst air quality that Lane County has seen in decades.

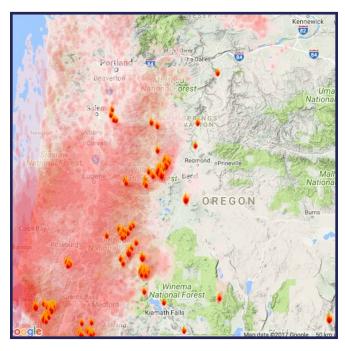
The air quality, which entered very unhealthy levels numerous times throughout the summer, heavily impacted Lane County residents. LRAPA advised everyone to limit outdoor exposure as much as possible, resulting in the cancellation of games, school activities, and outdoor events, including Cycle Oregon.

The air quality impacted Lane County residents' health. People reported discomfort, difficulty breathing, itchy eyes and throats. LRAPA worked closely with Lane County Public Health and Oregon Health Authority to educate citizens on the proper usage of N95 ventilation masks to prevent inhaling dangerous particulate matter. Additionally, LRAPA frequently updated our social media to inform people, as well as summer camps and schools, of where and when the smoke was the least intrusive so they could find some relief.

Across the state, stakeholders and partners worked together to provide the public with accurate and updated information. The Oregon Smoke Blog served as a one-stop-shop for statewide resources, links, and data. LRAPA worked weekends, holidays, and after hours to be available for instant updates and forecasts.

To illustrate the importance of accurate and current website information, the number of website hits increased 150-fold on the most critical days in September, and increased over 300-fold on the peak day (September 5, 2017). Normally the LRAPA website receives an average of 1,306 visits per day; during the first nine days of September, we averaged 36,675 visits per day, and on September 5th we had 73,546 website visits.

Furthermore, people spent more time on our website: 5,810 hours on the peak day compared to the normal average of just under 10 hours



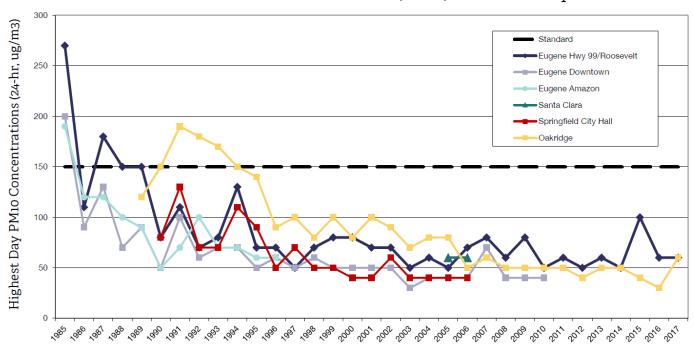
Top: BlueSky model of wildfire smoke in September 2017 Bottom: Eugene area on a clear day and on a peak smoky day, Photo by David Geitgey Sierralupe



LONG TERM TRENDS:

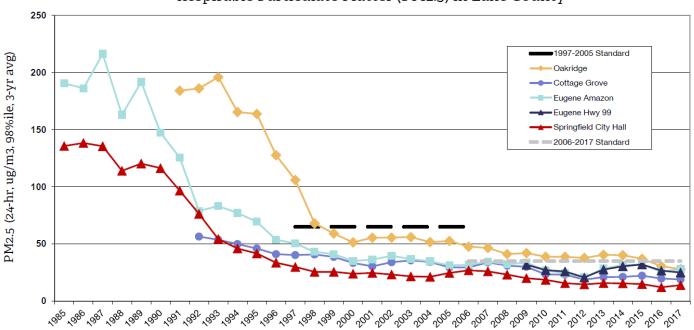
PARTICULATE MATTER - PM 10

Inhalable Particulate Matter (PM10) in Lane County



PARTICULATE MATTER - PM 2.5

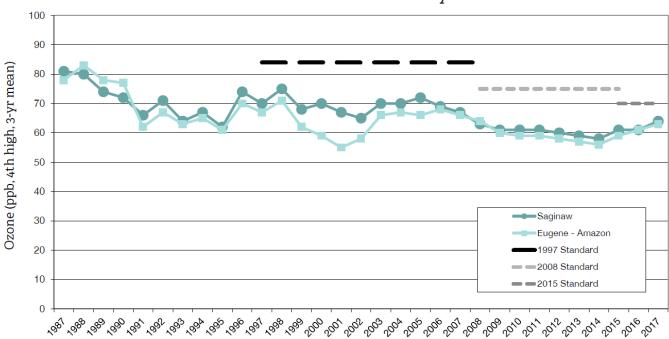
Respirable Particulate Matter (PM2.5) in Lane County



LONG TERM TRENDS:

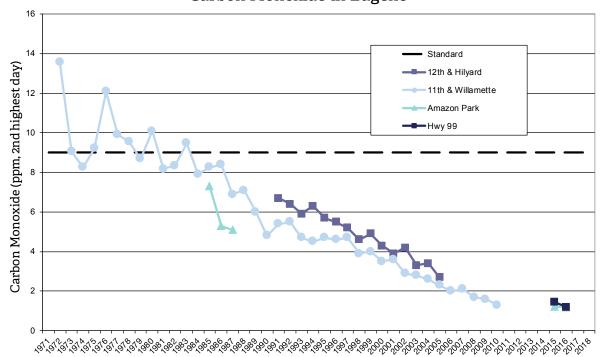
SUMMERTIME OZONE





CARBON MONOXIDE EMISSIONS

Carbon Monoxide in Eugene



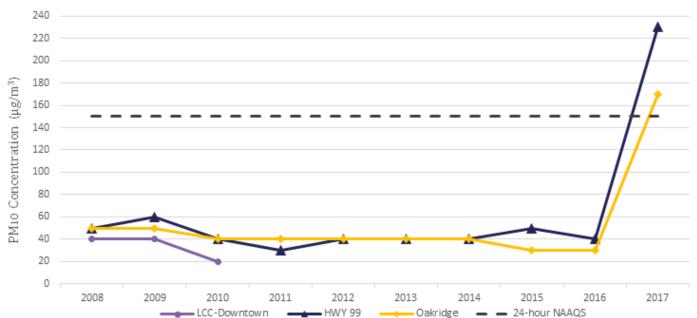
PM 10 DATA: INCLUDES WILDFIRE DATA*

EPA has designated the following National Ambient Air Quality Standards (NAAQS) for PM10:

Level	Averaging Time	Description
150 μg/m ³	24-hour	Not to be exceeded more than once per year on average over 3 years.

	PM ₁₀ Levels 2008- 2017 (μg/m³)										
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Highest 24-hour	40	40	40							
LCC:	2 nd Highest 24-hour	40	40	20							
Downtown	Exceedances	0	0	0							
	3 Year Avg. of Exceedances	0.0	0.0	0.0							
	Highest 24-hour	60	80	50	60	50	60	40	100	60	240
	2 nd Highest 24-hour	50	60	40	30	40	40	40	50	40	230
Hwy 99	Exceedances	0	0	0	0	0	0	0	0	0	3
	3 Year Avg. of Exceedances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
	Highest 24-hour	50	50	50	50	40	60	60	40	30	210
	2 nd Highest 24-hour	50	50	40	40	40	40	40	30	30	170
Oakridge	Exceedances	0	0	0	0	0	0	0	0	0	4
	3 Year Avg. of Exceedances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3

PM10 2nd Highest Daily 24-hour Concentrations



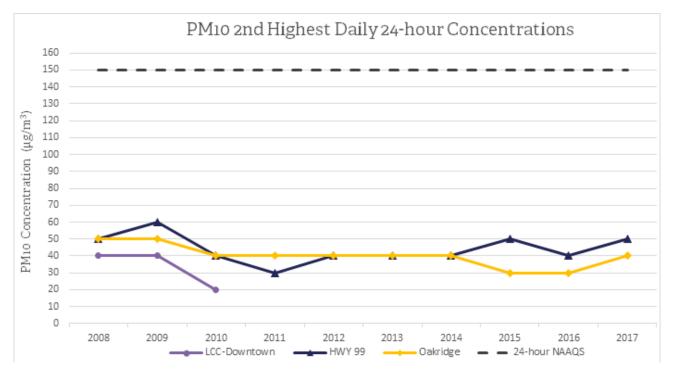
^{*}Smoke from wildfires in 2017 caused elevated levels of PM during summer months. LRAPA is requesting the EPA exclude the wildfire data as an Exceptional Event. The data on this page includes the wildfire smoke data.

PM 10 DATA: EXCLUDES WILDFIRE DATA*

EPA has designated the following National Ambient Air Quality Standards (NAAQS) for PM10:

Level	Averaging Time	Description
150 μg/m ³	24-hour	Not to be exceeded more than once per year on average over 3 years.

	PM ₁₀ Levels 2008-2017 (μg/m³)										
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Highest 24-hour	40	40	20							
LCC:	2 nd Highest 24-hour	40	40	20							
Downtown	Exceedances	0	0	0							
	3 Year Avg. of Exceedances	0.0	0.0	0.0							
	Highest 24-hour	60	80	50	60	50	60	40	100	60	60
	2 nd Highest 24-hour	50	60	40	30	40	40	40	50	40	50
Hwy 99	Exceedances	0	0	0	0	0	0	0	0	0	0
	3 Year Avg. of Exceedances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Highest 24-hour	50	50	50	50	40	60	60	40	30	60
	2 nd Highest 24-hour	50	50	40	40	40	40	40	30	30	40
Oakridge	Exceedances	0	0	0	0	0	0	0	0	0	0
	3 Year Avg. of Exceedances	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



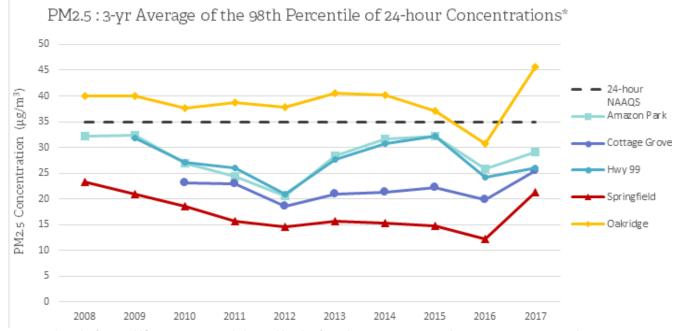
^{*}Smoke from wildfires in 2017 caused elevated levels of PM during summer months. LRAPA is requesting the EPA exclude the wildfire data as an Exceptional Event. The data on this page excludes the wildfire smoke data.

PM 2.5 DATA: INCLUDES WILDFIRE DATA*

EPA has designated the following National Ambient Air Quality Standards (NAAQS) for PM2.5:

Level	Averaging Time	Description
12.0 μg/m³	Annual (Arithmetic Average)	To attain this standard, the 3-year average of the annual mean PM2.5 concentrations from monitors must not exceed 12.0 μg/m³ (effective December 14, 2012).
35 μg/m³	24-hour	To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations must not exceed 35 μ g/m³ (effective December 17, 2006).

24-hour Average PM _{2.5} Levels 2008 - 2017 (μ g/m 3)											
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Annual mean	7.8	8.5	5.7	6.5	6.4	7.8	7.2	7.4	5.4	7.9
Amazon Park	Highest 24-hour	40.0	59.9	21.0	24.6	31.6	51.9	35.5	55.3	38.2	43.0
Amazon Park	Annual 98 th %-ile	29	36	16	21	25	39	31	27	20	40
	3 year 98th %-ile	32	34	27	24	21	28	32	32	26	29
0-44	Annual mean	8.1	8.5	6.9	7.1	6.7	7.5	6.9	7.3	5.8	8.8
Cottage	Highest 24-hour	31.8	33.6	21.1	32.1	24.7	38.1	34.0	39.6	26.2	116.0
Grove City Shops	Annual 98 th %-ile	21	30	18	21	17	25	21	20	18	38
Shops	3 year 98th %-ile	-	-	23	23	19	21	21	22	20	25
	Annual mean	8.3	8.2	6.3	6.8	6.5	8.3	7.2	8.0	5.7	8.3
Hwy 99 -	Highest 24-hour	32.4	47.9	22.9	26.7	30.0	54.6	43.6	56.4	18.0	46.8
Four Corners	Annual 98 th %-ile	25	36	20	22	21	40	31	26	16	36
	3 year 98th %-ile		32	27	26	21	28	30	32	24	26
	Annual mean	6.9	6.8	5.8	5.6	5.5	6.3	6.4	6.3	4.7	7.5
Springfield	Highest 24-hour	32.3	21.9	17.9	18.8	18.3	18.8	35.6	54.0	10.4	41.9
City Hall	Annual 98 th %-ile	24	18	14	15	15	17	14	13	9	41
	3 year 98th %-ile	23	20	19	16	15	16	15	15	12	21
	Annual mean	11.5	11.0	8.9	10.0	7.6	9.8	10.0	8.9	6.7	13.0
Oakridge	Highest 24-hour	43.5	44.1	43.1	47.9	49.9	54.9	46.1	39.3	30.7	200.0
Jaki iuge	Annual 98 th %-ile	39	41	33	42	38	41	41	29	22	86
	3 year 98th %-ile	40	41	38	39	38	40	40	37	31	46



^{*}Smoke from wildfires in 2017 caused elevated levels of PM during summer months. LRAPA is requesting the EPA exclude the wildfire data as an Exceptional Event. The data on this page includes the wildfire smoke data.

PM 2.5 DATA:

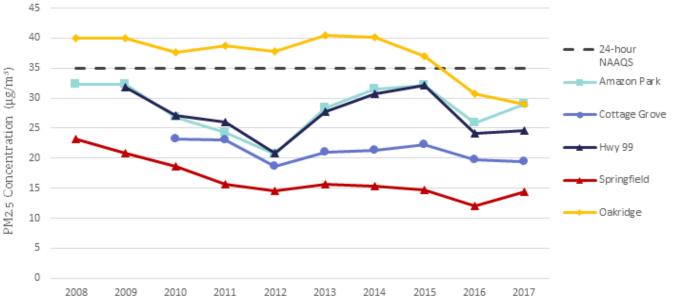
EXCLUDES WILDFIRE DATA*

EPA has designated the following National Ambient Air Quality Standards (NAAQS) for PM2.5:

Level	Averaging Time	Description
12.0 μg/m³	Annual (Arithmetic Average)	To attain this standard, the 3-year average of the annual mean PM2.5 concentrations from monitors must not exceed 12.0 µg/m³ (effective December 14, 2012).
35 μg/m³	24-hour	To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations must not exceed 35 µg/m³ (effective December 17, 2006).

	24-HOUR AVERAGE PM _{2.5} LEVELS 2007 - 2017 (μg/m³)										
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Annual mean	7.8	8.5	5.7	6.5	6.4	7.8	7.2	7-4	5.4	7.0
Amazon	Highest 24-hour	40.0	59.9	21.0	24.6	31.6	51.9	35.5	55-3	38.2	41.6
Park	Annual 98th %-ile	29	36	16	21	25	39	31	27	20	37
	3 year 98th %-ile	32	34	27	24	21	28	32	32	26	28
Cottage	Annual mean	8.1	8.5	6.9	7.1	6.7	7.5	6.9	7-3	5.8	6.8
Grove City	Highest 24-hour	31.8	33.6	21.1	32.1	24.7	38.1	34.0	39.6	26.2	27.7
Shops	Annual 98th %-ile	21	30	18	21	17	25	21	20	18	20
энора	3 year 98th %-ile			23	23	19	21	21	22	20	19
Hwy 99 -	Annual mean	8.3	8.2	6.3	6.8	6.5	8.3	7.2	8.0	5.7	7.2
Four	Highest 24-hour	32.4	47.9	22.9	26.7	30.0	54.6	43.6	56.4	18.0	46.8
Corners	Annual 98th %-ile	25	36	20	22	21	40	31	26	16	32
Corners	3 year 98th %-ile		32	27	26	21	28	30	32	24	25
	Annual mean	6.9	6.8	5.8	5.6	5.5	6.3	6.4	6.3	4.7	6.2
Springfield	Highest 24-hour	32.3	21.9	17.9	18.8	18.3	18.8	35.6	54.0	10.4	27.9
City Hall	Annual 98th %-ile	24	18	14	15	15	17	14	13	9	21
	3 year 98th %-ile	23	20	19	16	15	16	15	15	12	14
	Annual mean	11.5	11.0	8.9	10.0	7.6	9.8	10.0	8.9	6.7	9.5
Oakridge	Highest 24-hour	43.5	44.1	43.1	47.9	49.9	54.9	46.1	39.3	30.7	38.6
Cakridge	Annual 98th %-ile	39	41	33	42	38	41	41	29	22	36
	3 ye ar 98 th %-ile	40	41	38	39	38	40	40	37	31	29

PM2.5:3-yr Average of the 98th Percentile of 24-hour Concentrations



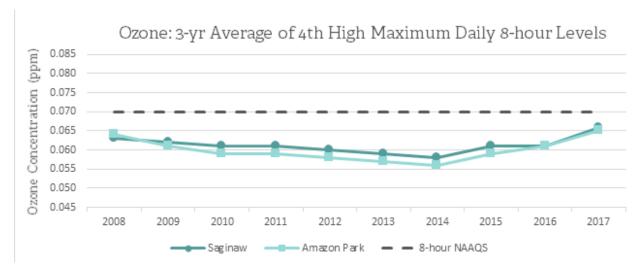
*Smoke from wildfires in 2017 caused elevated levels of PM during summer months. LRAPA is requesting the EPA exclude the wildfire data as an Exceptional Event. The data on this page excludes the wildfire smoke data.

OZONE DATA:

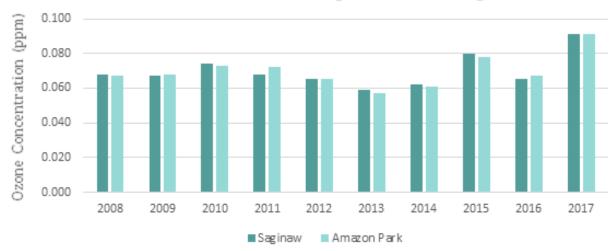
EPA has designated the following National Ambient Air Quality Standards (NAAQS) for Ozone:

Level	Averaging Time	Description
0.070 ppm	8-hour	To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.070 ppm. (effective October 1, 2015)

	8-HOUR AVERAGE OZONE LEVELS 2008 – 2017 (ppm)											
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Saginaw	Maximum	0.068	0.067	0.074	0.068	0.065	0.059	0.062	0.080	0.065	0.091	
	4th highest	0.059	0.066	0.060	0.059	0.062	0.056	0.058	0.071	0.056	0.073	
	3-year 4 th high	0.063	0.061	0.061	0.061	0.060	0.059	0.058	0.061	0.061	0.066	
	# Exceedances	0	0	1	0	0	0	0	4	0	4	
	Maximum	0.067	0.068	0.073	0.072	0.065	0.057	0.061	0.078	0.066	0.091	
Amazon	4th highest	0.059	0.063	0.056	0.059	0.059	0.053	0.058	0.068	0.058	0.070	
Park	3-year 4 th high	0.064	0.060	0.059	0.059	0.058	0.057	0.056	0.059	0.061	0.065	
	# Exceedances	0	0	1	1	0	0	0	3	0	3	



Ozone: Maximum Daily 8-hour Average Levels



CARBON MONOXIDE DATA:

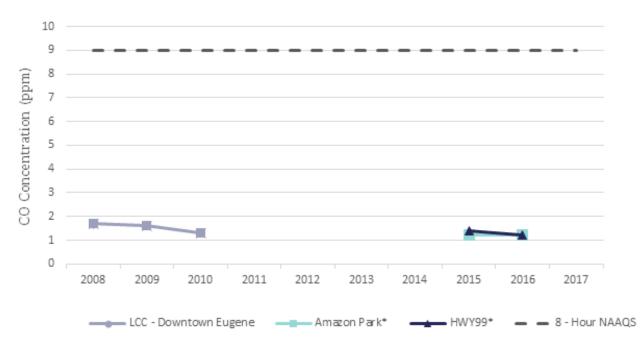
EPA has designated the following National Ambient Air Quality Standards (NAAQS) for CO:

Level	Averaging Time	Description
9 ppm	8-Hour	Not to be exceeded more than once per year.
35 ppm	1-Hour	Not to be exceeded more than once per year.

Carbon Monoxide (CO) Levels 2008-2017 (ppm)											
Site Name		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
LCC:	Highest 8-hour	1.7	1.6	1.5	1.5						
Downtown	2 nd high 8-hour	1.7	1.6	1.3	1.3						
Eugene	# Exceedances	0	0	0	0						
	Highest 8-hour								1.3	1.3	
Amazon Park*	2 nd high 8-hour								1.2	1.2	
lark	# Exceedances								0	0	
	Highest 8-hour								1.6	1.4	
HWY99*	2 nd high 8-hour								1.4	1.2	
	# Exceedances								0	0	

The CO levels, relating to the 1-hour standard in Lane County, are less than 10% of the standard.





^{*}These are special purpose monitoring sites and do not conform to NAAQS siting criteria. The data from these sites is used for comparison purposes only and is not used to determine NAAQS compliance.

