

Learn how Butte County Air Quality Management District, along with residents and businesses, is improving air quality for you and your community.

Every Breath We Take



Table Mountain, Oroville, California
Photo by Michael Iredale

A Quick Look at Air Quality

About Us



The Butte County Air Quality Management District staff is made up of dedicated professionals working together to improve air quality. We are clean air advocates with diverse talents sharing a common trait: **concern for the quality of air that we all breathe.**

Our mission is to protect the people and the environment of Butte County from the harmful effects of air pollution. We work with our community to promote a better understanding of air pollution issues through a comprehensive program of planning, regulation, enforcement, technical innovation and public education.



Major Types of Pollutants

Ozone (summertime smog)

Ozone is a colorless gas that can be good or bad, depending on where it is. Ozone in the stratosphere is good because it shields the earth from the sun's ultraviolet rays. Ozone at ground level, where we breathe, is bad because it can harm human health. Ozone forms when oxides of nitrogen and reactive organic gases react in sunlight. In Butte County, ozone is more of a concern in the foothill communities as pollutants tend to rise to the inversion layer as they are transported by winds.

Particle Pollution (PM2.5 and PM10)

Particle pollution comes from many different sources. Fine particulates (2.5 micrometers in diameter and smaller) generally come from combustion, either by an engine or through the combustion of vegetation and wood. Coarse particles (between 2.5 and 10 micrometers) generally come from dust-generating activities.

Toxic Air Contaminants

Some air pollutants are harmful no matter how concentrated they are. One example of a toxic air contaminant is benzene, which is found in gasoline. Did you know that the nozzle at the gas station helps capture vapors, reducing your exposure to benzene?

Top 10 Pollutants



Butte County has specific sources of air pollution.

Top 5 for Oxides of Nitrogen (help form Ozone/Smog):

1. Off-Road Vehicles and Engines
2. Heavy Duty Trucks & Buses
3. Natural Gas Combustion (Commercial, Industrial, Agricultural, Residential)
4. Cars / Passenger Trucks / Motorcycles
5. Trains

Top 5 for Fine Particulates (PM2.5):

1. Wildfires
2. Residential Woodstoves and Fireplaces
3. Managed Open Burning
4. Farm Operations
5. Food & Agriculture Processing



Effects of Air Pollution

Ozone

Breathing elevated concentrations of ozone can trigger a variety of responses, such as chest pain, coughing, throat irritation, and airway inflammation. It also can reduce lung function and harm lung tissue. Ozone can worsen bronchitis, emphysema and asthma.

Particle Pollution

Elevated concentrations of particle pollution can lead to a number of health problems, including coughing, wheezing, reduced lung function, asthma attacks, heart attacks and strokes. People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure.

Some of Our Programs



Open Burning

In collaboration with the state and neighboring air districts, we manage agricultural, residential and prescribed burning. Is it a burn day? See **Page 4/5** and learn how to find out!

Air Quality Forecasting

Daily Air Quality Index or AQI forecasts are made for today and tomorrow. We also maintain a particulate sensor network to improve real-time data availability. Find more information on **Page 7**.

Stationary Source Permits

We issue permits to operate equipment that emit, or have the potential to emit, pollutants into the air. Examples include gas stations, large engines and boilers, automotive spray booths and agricultural processing facilities.

Emissions Inventory

We calculate and track the emissions of stationary sources annually to meet state and federal reporting requirements.

Rulemaking

Rules are developed through a public process to help Butte County meet federal and state emission standards and to comply with federal and state air toxic control measures. We don't regulate vehicles, locomotives or aircraft (state and federal regulations apply).

Enforcement and Complaint Response

Our staff performs routine inspections and responds to complaints to ensure that air quality rules and regulations are being met.

Grants and Incentives

We work with Butte County business owners, farmers, residents, schools and other organizations to fund voluntary projects that help reduce air pollution and improve regional air quality.

Public Outreach

We connect with the public for a variety of reasons: to promote grant opportunities, to issue Check Before You Light Advisories, or to let people know about poor air quality conditions from wildfires.

Leaders in Our Midst

Read about Sierra Nevada Brewing Co.'s sustainability effort—and how a partnership with BCAQMD is an integral piece

BY THEA MARIE ROOD

When founder Ken Grossman opened his Chico brewery in 1980, he was ahead of his time—and his craft beer started a revolution. But so did his attention to the company's carbon footprint.

"Really, I came on to continue and formalize what Ken had already been doing for 30 years," says Mandi McKay, Director of Social Responsibility at Sierra Nevada Brewing Co. These early actions led to earning the first Platinum Zero Waste Certification in the country (meaning the brewery diverts 95% of its waste) and creating the biggest solar array of any craft brewery (10,751 panels that would span 3.5 football fields).

Special attention has also been paid to air quality. It includes things like electrified refrigerated trucks to keep the beer cold (most trucks use diesel generators) and enforcing a no-idle policy for delivery vehicles. Perhaps the biggest impact comes from having a rail facility so bulk malt can be delivered via train and not by truck. "We have our own Sierra Nevada stop," McKay says. "And four trucks (equal) one rail car, so that is

a massive reduction—by hundreds of trucks a year, which are a huge portion of greenhouse gases. **These things are not sexy, but really go a long way.**"

Grossman also put in EV charging stations in 2008-09, before electric vehicles were really on the market, because he believed the infrastructure had to be there. "You're not going to encourage sales if you don't see where you can charge your vehicle for free," McKay explains.

Lastly, the brewery has a state-of-the-art recovery system for heat and steam, lowering the amount of gas needed to heat boilers, and recaptures CO₂ at the fermentation tanks, reducing the amount of trucks needed to deliver this beer-making necessity. "As we move forward now, on any project, we ask, 'Does it have a significant greenhouse gas reduction?'" McKay says, and this often means a discussion with the Butte County Air Quality Management District first. "We've always

Sierra Nevada Brewing Co. Building



“There needs to be a recognition (BCAQMD) exists to ensure we have clean air as a community. We all should be working together.”

Mandi McKay
Director of Social Responsibility,
Sierra Nevada Brewing Co.

had a good relationship with the District. We've worked with them as partners because we wanted to exceed California standards."

What are the overall advantages? "You get a decent amount of advice and consulting at no charge—they help you get it right," she says. "There needs to be a recognition the agency exists to ensure we have clean air as a community. We all should be working together."

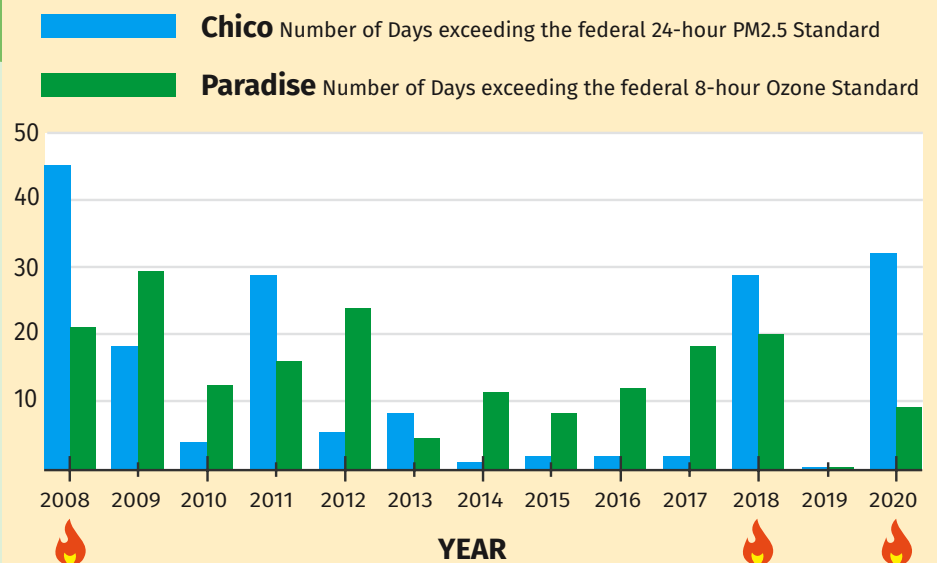
HOW ARE WE DOING?

Butte County continues to make real progress lowering the levels of ozone and PM_{2.5} (fine particulate matter). In fact, the U.S. EPA reports the county is now attaining the National Ambient Air Quality Standard for PM_{2.5} as of 2018.

The Chico area has historically been the biggest challenge with PM_{2.5}. But the improving PM_{2.5} levels are likely due to three large contributors: woodstove change-outs (many with BCAQMD Vouchers funded by federal and state programs), public participation in the Check Before You Light Program and updated open burning regulations/burn hours. It's a goal of the District to avoid exceeding the daily PM_{2.5} standard in the future (a 24-hour average of 35 ug/m³).

Ozone remains an issue in Butte County as the Paradise area remains above the NAAQS (8-hour average of 70 parts per billion). A reduction in engine emissions, especially in urban areas to our south, has helped lead to gradual improvement. In fact, 2019 was the cleanest year since 1984, with no days when the ozone standard was exceeded.

Take a look at 2008, 2018 and 2020 on the chart here, however, and you'll see that wildfires remain one of the biggest air quality challenges for both PM_{2.5} and ozone.



Moving Forward

Learn how an area farmer partnered with Butte County AQMD to upgrade his agricultural equipment

BY THEA MARIE ROOD

Buljit (Billy) Dhama is a third-generation farmer and has been farming all his life.

"I graduated from Sac State with a finance degree, thinking I would be in the banking industry," Dhama says, but ended up coming back to run Dhama Farms when his father got sick. "That was 25 years ago. I farm walnuts, prunes and almonds. The farming operation consists of 75 acres and the custom harvesting side is approximately 1,000 acres. In addition, for the last 10 years, I have worked for Global Ag Insurance as a senior crop adjuster."

His agricultural expertise led him to find a partner for navigating the ever-changing regulations governing his farm's air emissions: the Butte County Air Quality Management District. "It has been very helpful to have BCAQMD," he says. "They have made it possible for us to meet these regulations."

Specifically, the District provided Dhama with assistance through two grant programs: Carl Moyer (named for a California doctor who dedicated his career to linking government and business to improve the state's air quality) and FARMER (which stands

for Funding Agricultural Replacement Measures for Emission Reductions). The first—Carl Moyer—can be used to replace, re-power, or retrofit heavy-duty engines with cleaner-than-required technology. The second—FARMER—provides funding for agricultural harvesting equipment, heavy-duty trucks, pump engines and tractors.

"I have participated in (both) programs for several years and I have been very pleased with them," says Dhama. "I have been able to replace old, high-emission tractors and harvesters with low-emission and more efficient equipment. I am able to farm in a more efficient manner as the equipment has new technology to complete the jobs in a reasonable time frame."

What advice does he have for other farmers in our region? "Reach out (to BCAQMD) and see what resources are available to you," he says, adding the District will also keep you up-to-date. "With the changes that are coming in the future, I hope BCAQMD will continue with the same commitment for all of us in the ag industry."

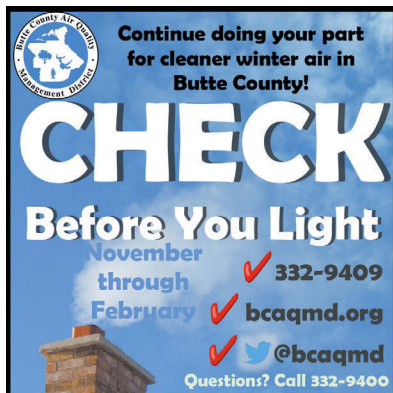


Burn Days

Burning at the wrong time and in the wrong place can smoke out your neighbors or even impact regional air quality. Agricultural, residential and fire hazard reduction burning is managed in Butte County to reduce smoke to communities. Here is what you need to know before you burn:

- ♦ **Do I need a permit?** All agricultural and prescribed burning requires a District burn permit. Residential burning (less than 1 acre) and fire reduction burning (more than 1 acre) does not need a District permit, but CAL FIRE often requires permits during drier conditions. The Town of Paradise and cities of Biggs, Gridley and Oroville also require burn permits.
- ♦ **Is it a burn day?** The Residential & Fire Hazard Reduction Burn Line (530-332-9407) is updated for today's and tomorrow's burn day status by 8:45 a.m. each day. Burn day status is also updated daily at butteairquality.com. (You can also find out if burning is currently permissible in your area.)
- ♦ **What time can I burn?** Burn hours are 8:45 a.m. to one hour before sunset, unless your local or CAL FIRE burn permit indicates another time range.
- ♦ **How can I minimize smoke?** Only burn clean and dry natural vegetation that is free of prohibited materials (such as plastics, garbage and other household items).

Please burn safely! Fire agencies may call no-burn days if fire safety concerns exist.
For more info:
<https://butteairquality.com/burning/>



CHECK BEFORE YOU LIGHT

We all love to cozy up by a roaring fire when cold winter weather sets in. But Check Before You Light Advisories are issued for days where burning could create widespread poor air quality (usually cold days with strong inversions and calm winds). There are several ways to CHECK before lighting up that woodstove or fireplace:

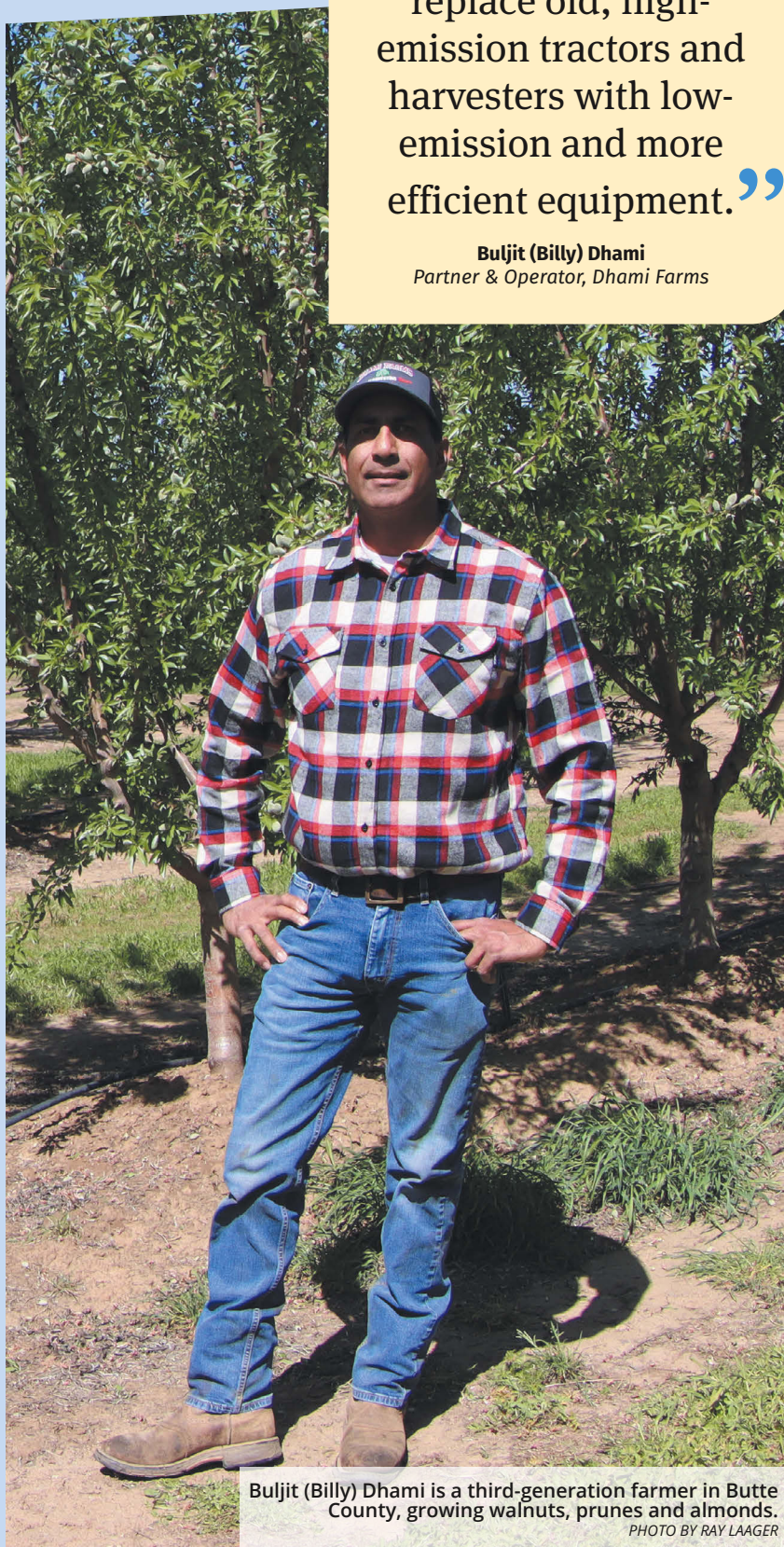
Call 530-332-9409, visit www.butteairquality.com or check @bcaqmd on Twitter.

Emission-Reduction Programs

The Butte County Air Quality Management District may be able to help you find funding for cleaner vehicles. Here are some options:

- ♦ **The Carl Moyer Program—**
Established in 1998 by the California Air Resources Board, these grants pay for cleaner-than-required heavy-duty engines that emit less oxides of nitrogen, particulate matter and reactive organic gas emissions. BCAQMD has historically funded agricultural equipment, off-road construction equipment, log truck and school bus projects through this program.
- ♦ **The Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program—**
Beginning in 2018, FARMER can help upgrade and replace agricultural harvesting equipment, heavy-duty trucks, agricultural pump engines, tractors and other equipment used in agricultural operations. BCAQMD implements this program in collaboration with the California Air Resources Board.
- ♦ **Clean Vehicle Rebate Project—**
California residents may be eligible for rebates for zero-emission or plug-in hybrids through the state. More info at www.cleanvehiclerebate.org.

For questions, more information or to be notified of future funding opportunities, call Jason Mandly at (530) 332-9400, extension 108, or email jmandly@bcaqmd.org.



Buljit (Billy) Dhami is a third-generation farmer in Butte County, growing walnuts, prunes and almonds.
PHOTO BY RAY LAAGER

“I have been able to replace old, high-emission tractors and harvesters with low-emission and more efficient equipment.”

Buljit (Billy) Dhami
Partner & Operator, Dhami Farms

Over the past **10 years**, the Butte County Air Quality Management District has managed **\$8,750,000** in grants and incentives to help local farmers, businesses, schools, and residents with clean air projects:

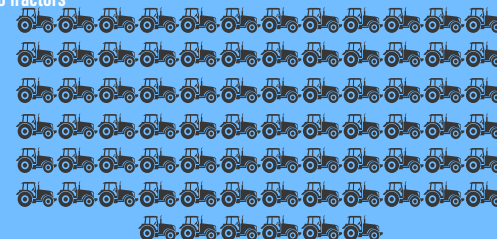
36 Ag Pump Engines



3 Ag Pump Electrifications



78 Tractors



1 Combine



29 Specialty Orchard Equipment Projects



9 Off-Road Forestry Equipment Projects



4 Off-Road Construction Equipment Projects



15 On-Road Trucks



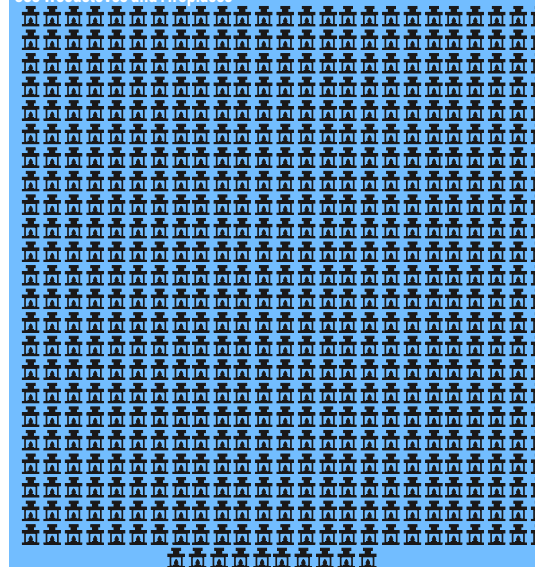
12 School Buses



4 Classroom Projects



585 Woodstoves and Fireplaces



These projects have resulted in an estimated reduction of:

97

Tons Per Year
NOx (a smog ingredient)

5.7

Tons Per Year
Diesel Particulates (a carcinogen)

32

Tons Per Year
Fine Particulates (PM2.5)

PROTECTING OUR MOST VULNERABLE

Since 2018, our District has participated in the statewide Community Air Protection Program, which aims to improve air quality and reduce exposure to pollutants and toxic air contaminants.

Incentive funding is prioritized in disadvantaged communities in Butte County, while supporting zero-emission technologies and reducing exposure for sensitive populations. Community Air Protection Incentives are funded by California Climate Investments, which put billions of Cap-and-Trade dollars to work lowering greenhouse gas emissions, strengthening the economy and improving public health and the environment.

For more information, visit
<https://butteairquality.com/cap/>



This is particularly relevant during wildfires. Here are some ways to Be Smoke Ready!

Before fire season:

- ◊ Check with your doctor about what you should do during smoke events if any family member has respiratory illnesses, including asthma, or heart or lung disease.
- ◊ Be prepared with adequate air filtration—either with a MERV-13 or higher rated filter for your HVAC system or a portable air filter that can filter out smoke particles (HEPA).
- ◊ Know where to find air quality information (see **Page 7**) and understand the AQI chart.

During wildfire smoke impacts:

- ◊ Limit your time outdoors and reduce physical exertion outdoors.
- ◊ When indoors, keep doors and windows shut as much as possible and keep central air settings on “recirculate” if possible. Limit sources of indoor air pollution (smoking, using candles, etc.).
- ◊ If you need to wear an N-95 respirator, be sure that it is properly fitted. Bandanas, dust masks, and medical masks **do not** provide adequate protection from wildfire smoke.

Commitment to Excellence

Discover how a local school district is working with BCAQMD to improve air quality for its students—both inside and outside the classroom

BY THEA MARIE ROOD

The wildfires—and the COVID-19 pandemic—put a sharp focus on what our children are breathing. These factors also spurred school districts to prioritize well-ventilated classrooms and clean transportation to and from school.

For many schools, however, budgets are tight and they need help identifying funding, as well as advice about where to invest those precious dollars. That's where a relationship with Butte County Air Quality Management District can be invaluable, says Andrew Koster, the Director of Maintenance, Operations and Transportation for the Thermalito Union Elementary School District.

Koster is participating in the BCAQMD's Community Air Protection Program, which has funded a variety of infrastructure and filtration systems that will drastically improve indoor air quality, especially during heavy smoke days and as we continue to fight the virus. But the most exciting project, in Koster's opinion, is the BEAST, a zero-emission, all-electric school bus built by GreenPower Motor Company in Porterville, California.

“It's a beautiful bus and we are super-excited to be involved in this process,” says Koster. “The Butte air quality district grant gave us \$468,750, which includes \$393,000 for the bus and \$75,000 for the electric charging station.”

The California Energy Commission is similarly funding five other e-school buses, bringing the total to six, which effectively changes out all Thermalito's daily drivers. “We'll still have three diesels to go on field trips with,” Koster explains.

Other projects with the Butte County AQMD include new and improved air filtration and HVAC

systems, which are already on-site and in the process of being installed. “The old (systems) are mainly just a screen that don't filter out anything,” says Koster. “With the new ones, smoke particulates go through MERV 14 filters (the air filter equivalent of an N95 mask).”

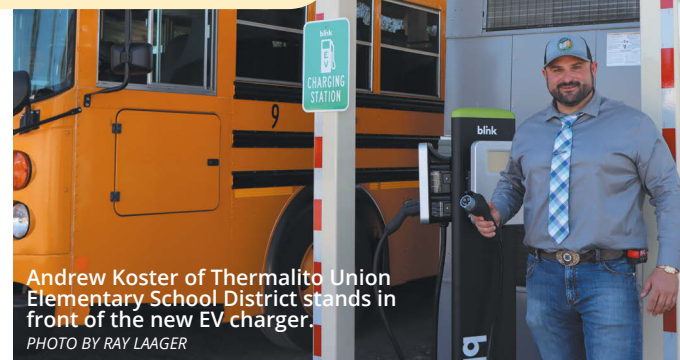
The BCAQMD grant supports the labor to install these systems as well. This funding has allowed Thermalito Union to hire a full-time HVAC contractor and turn the maintenance shop into a sheet metal shop to produce the ducts that will be needed.

Finally, Thermalito is working with BCAQMD on several future projects, Koster says, which include a diesel replacement bus, plus a more energy-efficient backhoe and lawnmower.

“My advice (for other school districts) is to contact AQMD and start a relationship—they are very personable and know the programs well,” he says. “It's important to me to provide my students with better learning systems and better air quality.”

“The Butte air quality district grant gave us \$468,750, which includes \$393,000 for the bus and \$75,000 for the electric charging station.”

Andrew Koster
Director of Maintenance,
Operations and Transportation,
Thermalito Union Elementary School District



Q&A with Stephen Ertle

We caught up with the BCAQMD's Air Pollution Control Officer to find out what the District does and why it's important

BY THEA MARIE ROOD

Tell me a little about yourself.

Growing up in Southern California through the '70s and '80s, I experienced the effects of poor air quality firsthand. I have an early memory of seeing inland mountains and wondering where those came from. In hindsight, it was likely a rare clean air day, for the era, that brought them into view. This was my first experience seeing the benefits of clean air.

After high school I transferred to Chico State (where) I worked as a student assistant in the Environmental Management, Health & Safety office. Through that work I learned about the District-issued Permits to Operate required of certain equipment on Chico State's campus to assure they were maintained and operated to minimize air pollution.

When I saw the District was hiring an inspector, I knew it was the place for me. I spent 17 years in that role. I got to know the makeup and needs of our community and the relationships I developed helped provide a clear understanding that business, agriculture and the people of Butte County want the same things for their loved ones. They want a clean environment, including clean air and economic opportunities.

What would you most like residents to know about the District's work?

The District is here to protect our community from the harmful effects of air pollution. This is not just a mission statement but a deeply held calling by all District staff. I believe we all want clean air and a prosperous economy.

What would you most like businesses, farmers and school districts to know?

We understand that California has many complex and overlapping regulations that can be challenging. Our staff is here to help navigate these requirements and provide the tools necessary for success. We will go the extra mile to support these stakeholders in their efforts to meet requirements.

How can everyone help improve the air quality in Butte County?

Be aware that your actions can contribute to a clean air future. You can have a big impact on air quality by not topping off your gas tank when refueling your car. You can reduce air pollution from transportation by combining trips, riding a bike and carpooling. By only burning natural vegetation or seasoned firewood when using a woodstove or burning outdoors and always making sure you know the burn day status (see **Page 4**).

We all appreciate clean air, and a lot of work has been done to get where we are today. Together we can solve our problems and continue to realize clean air for the next generation while we maintain the lifestyle so important to our community.

“ Together we can solve our problems and continue to realize clean air for the next generation while we maintain the lifestyle so important to our community. ”

Stephen Ertle
Air pollution control officer, BCAQMD

Air Quality Guide

Real-time air quality information is getting easier to find for Butte County residents. In addition to official state monitoring stations, the District has deployed a network of low-cost particulate sensors. Use the following links to check the AQI where you are: **www.airnow.gov** (EPA's official site—best to use for ozone in summer), **fire.airnow.gov** (includes official and portable monitors and Purple Air sensors), **butteairquality.com** (links to real-time data).

Air Quality Index	Who Needs to be Concerned	What Should I Do?
Good (0-50)		It's a great day to be active outside.
Moderate (51-100)	Some people who may be unusually sensitive to air pollution.	Unusually sensitive people: Consider reducing prolonged or heavy exertion.
Unhealthy for sensitive groups (101-150)	Sensitive groups include people with heart or lung disease, older adults, children and teenagers.	Sensitive groups: Reduce prolonged or heavy exertion. When outside, take more breaks and do less intense activities.
Unhealthy (151-200)	Everyone	Sensitive groups: Avoid prolonged or heavy exertion. Everyone else: Reduce prolonged or heavy exertion.
Very Unhealthy (201-300)	Everyone	Sensitive groups: Avoid all physical activity outdoors. Everyone else: Avoid prolonged or heavy exertion.
Hazardous (301-500)	Everyone	Sensitive groups: Remain indoors and keep activity levels low. Everyone else: Avoid all physical activity outdoors.

Join us and your neighbors to **improve air quality** and **increase public awareness.**

The Butte County Air Quality Management District is proud to be part of the community—and values input from residents. The District office welcomes you to reach out to staff and/or pick up information on various air quality programs.

Here is How You Can Make a Difference:

When burning outside:

- See **Page 4** of this guide for ways to reduce smoke during open burns
- Consider alternatives to burning, such as composting or chipping
- Burn safely and take action to reduce the risk of wildfires

When burning in your woodstove or fireplace:

- Burn only clean, dry and well-seasoned wood
- Maintain a hot flame and avoid smoldering
- Check Before You Light (see **Page 4**) to make sure there's not an Advisory in place
- Consider installing a cleaner-burning device if your woodstove is older than 1988

When out and about:

- Consider active transportation (walking, biking) or public transportation for some trips to reduce emissions
- Reduce fuel consumption—keep tires properly inflated and avoid idling

How to File a Complaint:

You may contact the District to file a complaint if you are being impacted by air pollution or see a violation of air quality rules or regulations.

During regular business hours: Please contact the District at **530-332-9400** or toll free at **855-332-9400**, press “0” to speak with the receptionist, and request to speak to the on-duty inspector.

After regular business hours: Call the District office at 530-332-9400 or toll free 855-332-9400 and listen to the recorded message for instructions on how to report a complaint after hours.

Submit electronically: Complaints may be submitted electronically using the form on the website (butteairquality.com). (Note: e-submittals aren't viewed until the next day if they are filed outside regular business hours.)



On-duty staff is available to assist the public with any air quality questions or concerns.

Butte County Air Quality Management District

629 Entler Ave., Suite 15, Chico, CA 95928

530-332-9400, butteairquality.com

Staff Hours: Monday-Friday 7:30 a.m.-4:30 p.m.

Office Hours: Tuesday-Friday, 7:30 a.m.-4:30 p.m.
(closed noon-1 p.m. for lunch and Tuesday from 8-8:30 a.m.)



PHOTO COURTESY OF BUTTE COUNTY AQMD