



**AGENDA ITEM  
CITY COUNCIL MEETING DATE – JANUARY 5, 2021  
BUSINESS ITEMS**

**TO** : Interim City Manager

**FROM** : Fire Chief

**SUBJECT** : **STATUS REPORT - BENICIA AIR MONITORING AND IMPROVEMENTS TO THE CITY'S COMMUNITY EMERGENCY NOTIFICATIONS**

**EXECUTIVE SUMMARY:**

This report provides an update on the status of various air monitors in Benicia and an update on improvements to the City of Benicia's community emergency notifications.

**RECOMMENDATION:**

Receive the informational update provided in the report. No action is required.

**BUDGET INFORMATION:**

There are no fiscal impacts associated with receiving this report.

**BACKGROUND – AIR MONITORING:**

Access to air monitoring data for Benicia residents has vastly improved over the last few years. This is due in part to state and regional regulations, as well as successful agreements, including the Second Amendment of the Valero/Good Neighbor Steering Committee Agreement (Attachment 1) and the City of Benicia – Valero Cooperation Agreement (Attachment 2). Over the next twelve to twenty-four months, even more air monitoring data will become available as a result of four major additions and improvements to the current network of monitors.

**Benicia Air Monitoring – Prior to 2018**

As recently as 2018, the citizens of Benicia had limited access to high quality, real time air monitoring data. Although there were numerous air monitors throughout the Valero Benicia Refinery, the citizens of Benicia had no real-time access to these measurements. The data from these monitors was used by Valero and various regulatory agencies, such as the Bay Area Air Quality Management District (BAAQMD) and the Environmental Protection Agency (EPA) to monitor emissions and releases. Following submission to these agencies, some of the data would become publicly available in historical emissions reports. These historical reports did not provide real time data to the community. Many community members requested real time measurements of refinery-specific compounds that would be available on a public website.

### **Benicia Air Monitoring – 2018 to Present**

One of the improvements to the network of air monitors started with BAAQMD's Regulation 12, Rule 15. Among other components, Regulation 12, Rule 15 required Bay Area refineries to implement fenceline air monitoring programs. While there have been some setbacks in the implementation of Regulation 12, Rule 15, Valero, as a result of separate agreements with the City, moved forward and implemented their fenceline monitoring program ahead of regulatory requirements. Valero installed BAAQMD-approved fenceline air monitors by the end of 2018. Valero also incorporated data from three pre-existing ground level monitors and developed a public website with live data from the fenceline and ground level monitors. For the last two years, Benicia residents have had real-time access to this high quality, informative, and pertinent data.

In addition to the newly accessible fenceline and ground level monitors, the Benicia Fire Department now deploys multiple highly sensitive portable gas and vapor detection monitors. These were provided to the fire department as a component of the City of Benicia – Valero Cooperation Agreement. Fire Department staff have been trained to evaluate readings in order to make science-based determinations of potential threats to the community.

### **Benicia Air Monitoring – Improvements Planned Over the Next 12 to 24 Months**

Benicia's current access to quality air monitoring data is better than most cities' access. Still, over the next twelve to twenty-four months, even more air monitoring data will be available as a result of the following major additions to the current network:

1. BCAMP Community Air Monitor
2. BAAQMD Community Air Monitor
3. Addition of H2S Open Path Technology
4. Addition of Path-4 to Valero's Open Path Fenceline Air Monitors

#### **1. BCAMP Community Air Monitor**

In March of 2019, as part of the Second Amendment of the Valero/Good Neighbor Steering Committee Agreement, Valero agreed to provide \$460,000 for the operation and management of the Benicia Community Air Monitoring Program (BCAMP). Per the agreement, BCAMP is to secure an independently contracted air monitoring company to manage raw data collection, analyze data, maintain air monitoring equipment, and provide related services, including operation of an educational public website that presents data collected and provides related information about public health guidelines as related to ambient air quality. Additionally, to resolve a dispute over the custody, ownership, and operation of an existing air monitoring system and equipment, including a trailer and instrumentation, Valero agreed to give said equipment to BCAMP.

Since the approval of the agreement, BCAMP has become incorporated, formed a board of directors (Board), and developed bylaws. In Spring 2020, BCAMP received its nonprofit 501(c)(3) designation. Following the designation, the Board initiated the hiring process for an air-monitoring contractor and selected Argos Scientific. The Board also found a permanent location for the station on Bayshore Road. The air monitoring equipment and trailer purchased by Valero under prior agreements were transferred to the new site. Older air monitors and meteorological equipment were upgraded. Solar panels

and batteries were purchased, and a new meter is being installed at the site to provide backup power. A website that will show live monitoring data is under development and will go public once the system is up and running.

The array of monitors that comprise the BCAMP system will measure the concentration of gases typically found in urban air and will be available for public review in real time. Major sources of pollutants include traffic caused by automobiles, ships, and trains, the Port of Benicia, Valero and other Contra Costa County refineries, other industrial sites, and finally, brackish wetlands. Gases that will be detected include Volatile Organic Compounds (VOCs), Benzene, Toluene, Ethylbenzene, Xylene, Sulfur Dioxide, Black Carbon, Ozone, and Particulate Matter (PM<sub>2.5</sub>).

BCAMP is unable to provide a specific date for when the station will be operational or when the website will be functional for public use. They stated that they expect operations to commence and the website to be live sometime in 2021.

## **2. BAAQMD Community Air Monitor**

BAAQMD has committed to a dedicated “real time” air monitoring system located within the Benicia community. City staff attended a meeting involving BAAQMD and the Benicia Unified School District on April 27, 2020. BAAQMD presented its findings that Robert Semple Elementary School was the preferred location for the air monitoring system. The school district expressed significant concerns about the site. A second meeting was scheduled for July 28, 2020, to discuss the Robert Semple location. At the July 28, 2020 meeting, the school district discussed possible issues, including student safety, site access issues, and pre-existing plans for the location. In response, the City Fire Chief suggested BAAQMD consider City-owned properties, as they could involve less obstacles.

On August 20, 2020, the City Fire Chief met with BAAQMD staff to discuss their needs for a site and the types of City property that could be feasible. Fire Department staff obtained a list of 29 City-owned properties with the potential to meet BAAQMD’s requirements. The list, maps, and details such as security, access to power, surrounding obstructions, and elevation were provided to BAAQMD on September 1, 2020. On November 2<sup>nd</sup> and 3<sup>rd</sup>, Fire Department staff provided site visits of all 29 properties to BAAQMD staff.

BAAQMD is currently analyzing the sites based on information gleaned from the site visits. Upon completion, they will present the City with a refined list of sites and host a public meeting to present their recommendation. Once the location is selected, BAAQMD will begin installing the air monitoring system.

## **3. Addition of H<sub>2</sub>S Open Path Technology**

BAAQMD’s Regulation 12, Rule 15 included a requirement for fenceline air monitoring at all Bay Area refineries. Valero submitted their Air Monitoring Plan (AMP) to BAAQMD and it was approved. The requirement for fenceline air monitoring included a Hydrogen Sulfide (H<sub>2</sub>S) monitoring component. However, the technology had not yet

been fully developed. Valero and the City agreed to move forward with Valero's fenceline monitoring program ahead of BAAQMD's regulatory requirements. Due to moving forward earlier than mandated by BAAQMD, the production of the instrumentation for open path H<sub>2</sub>S (Hydrogen Sulfide) monitoring that Valero purchased as a component of their fenceline monitoring program was not yet fully tested by the manufacturer. As a result, it monitored imperfectly in some situations.

BAAQMD originally gave Valero until December 8, 2018 to select an approach to monitoring H<sub>2</sub>S and until June 8, 2020 to begin operation. Since then, BAAQMD has acknowledged the complex challenges of open path H<sub>2</sub>S air monitoring. The H<sub>2</sub>S open path system is a new technology and involves challenges with data accuracy and ambient atmosphere interferences. Because of these difficulties, BAAQMD has extended the implementation date for this system on eight occasions, starting with the original approval on June 8, 2018. In all eight extension letters, BAAQMD writes, "The District anticipates that a method for open path monitoring of H<sub>2</sub>S will be validated in the next few months." The most recent letter extends the required operation date to December 21, 2021. The following is a list of these eight extension letters:

- June 8, 2018 "Approval of Regulation 12, Rule 15 Air Monitoring Plan" (Attachment 3). This letter approved Valero's AMP and allowed until two years from the date of the letter, June 8, 2020, to begin operation.
- December 6, 2018 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 4). This letter extended the deadline to begin operation to December 6, 2020.
- March 6, 2019 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 5). This letter extended the deadline to begin operation to March 6, 2021.
- September 17, 2019 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 6). This letter extended the deadline to begin operation to March 17, 2021.
- December 19, 2019 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 7). This letter extended the deadline to begin operation to March 19, 2021.
- March 20, 2020 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 8). This letter extended the deadline to begin operation to June 20, 2021.
- June 19, 2020 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 9). This letter extended the deadline to begin operation to September 19, 2021.
- September 21, 2020 "Air Monitoring Plan – Notification of Extension for H<sub>2</sub>S Monitoring Selection Submittal" (Attachment 10). This letter extended the deadline to begin operation to December 21, 2021.

All of this information is available on the Air Monitoring page of the City's Public Information Bank website: <https://www.ci.benicia.ca.us/publicinfobank>.

On September 23, 2020, BAAQMD informed the City Fire Chief that the H2S open path system technology is in the trial stage by a manufacturer. If successful, the technology will be available to Bay Area refineries in the beginning of 2021.

Benicia's position at the forefront of air monitoring technology provides residents with a uniquely detailed understanding of air quality within the City. This position also presents unique frustrations as technology lags behind impressive goals to keep the public informed about all aspects of air quality. While open path fenceline H2S technology is catching up, the community currently has access to Ground level H2S monitors. Experts in the field expect open path fenceline H2S technology to be available in 2021.

#### **4. Addition of Path-4 to Valero's Open Path Fenceline Air Monitors**

Valero completed installation of BAAQMD-approved fenceline air monitors in November 2018. This gave the residents of Benicia greater access to additional air monitoring data. However, some in the community expressed concern that, due to a wind analysis, the BAAQMD-approved plan left an area along the northwest border of Valero unmonitored.

In March 2019, the Second Amendment to the Valero/Good Neighbor Steering Committee Agreement was signed. One of the components of the amendment stated that Valero, at its own expense, would construct, install, and maintain the equipment required to expand the BAAQMD-approved fenceline monitoring program in order to address the northwest boundary of Valero. This section has been dubbed, "Path-4." Valero estimated the expenditure for this expansion to be approximately \$1.5 million. Valero also agreed to make the Path-4 data available to the public via Valero's air monitoring website.

The construction of Path-4 is delayed while Valero awaits the manufacturer's completion of open path H2S technology. BAAQMD expects a method for open path monitoring of H2S to be available in early 2021. Once approved, Valero anticipates beginning construction of Path-4.

#### **BACKGROUND – COMMUNITY NOTIFICATIONS:**

Access to quality, detailed air monitoring data is informative but does not directly improve the safety of our community. For this, timely notifications are needed to communicate potential acute hazards in our air. Benicia's system of emergency notifications has also improved in recent years. The Benicia Fire Department has implemented numerous platforms to keep the public informed and plans to expand the program even further.

#### **Community Notifications - History of Alerts in Benicia**

Much like the City's strides in air monitoring capability, critical emergency notifications have also advanced in recent years. Originally, Benicia emergency officials had few options to provide emergency notifications to the community. In 2001, the Benicia Fire Department installed seven large sirens strategically placed throughout the community. When emergency officials needed to communicate critical information, the sirens were activated, and residents would tune in to an AM radio station or local TV broadcast for instructions. The system was not without its challenges. Siren technology was designed around the time of World War II, before

houses became as insulated and thus more soundproof. As a result, not all residents were able to hear the sirens from inside their homes. There were also complications with updating the radio and TV broadcasts. In addition, the system experienced ongoing power failure issues. Finally, the sirens provided no information to residents out in the community away from TVs or radios.

In 2016, the Benicia Fire Department partnered with Everbridge, a mass notification and incident communications software, to create AlertBenicia. AlertBenicia allowed anyone living or working in Benicia to register for emergency alerts via mobile phone, land line phone, SMS text, email, the Everbridge app, or TTY / TTD devices. The system was also capable of sending Wireless Emergency Alerts (WEA) during significant events. WEA messages are sent to all mobile devices in a geographical area regardless of whether the device has been registered with AlertBenicia. Unlike the siren system, AlertBenicia enabled emergency officials to send detailed messages and instructions to targeted areas.

While Benicia Fire Department staff originally attempted to make the Everbridge alerts a countywide program, Solano County and other cities in the county chose not to participate. Instead, a Benicia-only AlertBenicia system launched in September 2016 with a robust public outreach campaign and has since been utilized for multiple incidents. Then, in 2018, after a relatively destructive fire season, Solano County adopted Benicia's Everbridge system. In June 2018, AlertBenicia transitioned to AlertSolano and began serving all of Solano County. As of December 2020, there are 19,991 contacts in Benicia who receive AlertSolano notifications.

In recent years, social media has become a prevalent tool for sharing information. As a result, the City has developed social media accounts to disseminate emergency and non-emergency information to the residents of Benicia.

### **Community Notification - Challenges**

City officials strive to keep the public informed without overwhelming them with too many notifications. Most citizens want to know if there is a situation that could impact their safety. Others want to be informed about every incident, regardless of whether it constitutes a threat to public safety. This approach is risky as it can obscure important notifications within a mass of less-relevant messaging.

Historically, the Benicia Fire Department has performed a risk analysis of each situation and issued community alerts only for situations that pose a threat to public safety. Recently, some members of the community have requested alerts for all situations, regardless of Fire Department staff's risk analysis of the situation. Thus, the Fire Department has established an additional notification system for non-emergency incidents. The public can sign up for these notifications by visiting the City's Public Information Bank website, <https://www.ci.benicia.ca.us/publicinfobank>. They can sign up to receive email or text updates via the Non-Emergency Notifications online form. The Fire Department will post on social media about both emergency and non-emergency notifications.

### **Community Notifications - Moving Forward into 2021**

To standardize the Fire Department's system of issuing community alerts, a formal plan is being developed and will be incorporated into the Public Information Annex of the City's Emergency

Operation Plan (EOP). Benicia experienced significant impacts from wildfire smoke during Summer 2020. In an effort to standardize notifications and recommended actions, Benicia Fire Department staff developed a Wildfire Smoke – Air Quality Annex (Attachment 11). In the first quarter of 2021, the Fire Department will develop a similar guidance document for situations of poor air quality caused by situations other than wildfire smoke. The document will establish trigger points for common compounds based on established scientific recommendations. Community alerts will be based on established parameters of the readings for each chemical and associated recommended actions.

**NEXT STEPS:**

Fire Department staff will continue to monitor progress made by BCAMP, BAAQMD, and Valero to improve air monitoring. They will also improve the quality of community notifications and incorporate Air Quality Annexes into the EOP.

**ALTERNATIVE ACTIONS:**

The Council is not being asked to take action at this time.

<b>General Plan</b>	Goal 4.1 Make community health and safety a high priority for Benicia
	Goal 4.9 Ensure clean air for Benicia residents
	Goal 4.22 Update and maintain the City’s Emergency Response Plan

<b>Priority Based Budgeting</b>	<b>Strategic City Result Impacted by this Agenda Item</b>
	The City Council and community identified six (6) key “Results” that establish the key goals for which the City of Benicia aspires to achieve with our programs and services. Agenda Items often influence multiple Results, the primary Result impacted by this Agenda Item is (please check one):
	<input checked="" type="checkbox"/> Protect Community Health & Safety <input type="checkbox"/> Maintain & Enhance A High Quality of Life <input type="checkbox"/> Preserve & Enhance Infrastructure <input type="checkbox"/> Strengthen Economic & Fiscal Conditions <input type="checkbox"/> Protect & Enhance the Environment <input type="checkbox"/> High Performing Government
	<b>City Programs Impacted by This Agenda Item (Top 3):</b>
	<ol style="list-style-type: none"> <li>1. Emergency Response – Hazardous Materials Incidents and Containment</li> <li>2. Valero Emergency Response and Monitoring</li> <li>3. Community Emergency Notification</li> </ol>
	<b>Priority Based Budgeting (PBB) Website:</b>
	Coming soon will be a link to the City of Benicia’s PBB website to learn more about these programs and their costs.

<b>CEQA Analysis</b>	CEQA analysis is not applicable because no action is being taken.
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**ATTACHMENTS:**

1. Second Amendment of the Valero Good Neighbor Steering Committee Agreement
2. City of Benicia – Valero Cooperation Agreement
3. Approval of Regulation 12, Rule 15 Air Monitoring Plan – June 8, 2018
4. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – December 6, 2018
5. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – March 6, 2019
6. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – September 17, 2019
7. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – December 19, 2019
8. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – March 20, 2020
9. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – June 19, 2020
10. Air Monitoring Plan – Notification of Extension for H2S Monitoring Selection Submittal – September 21, 2020
11. Wildfire Smoke – Air Quality Annex

*For more information contact: Josh Chadwick, Fire Chief*

*Phone: 707.746.4275*

*E-mail: [jchadwick@ci.benicia.ca.us](mailto:jchadwick@ci.benicia.ca.us)*