AMADOR AIR DISTRICT

Ozone Emergency Episode Plan

PREPARED IN COMPLIANCE WITH THE FEDERAL CLEAN AIR ACT

August 20, 2019

Purpose

This Ozone Emergency Episode Plan provides the basis for taking action to prevent ambient ozone concentrations from reaching levels which could endanger public health, or to abate such concentrations should they occur. It identifies criteria for the four levels of emergency episodes, components for public announcements whenever an episode has been identified, and specifies emission control strategies to be taken with each episode.

Legal Authority

The Federal Clean Air Act (CAA)[1] gives the U.S. Environmental Protection Agency (U.S. EPA) the legal authority to halt the emission of air pollutants causing or contributing to the injury of the public or their welfare. The U.S. EPA is further authorized to either bring a lawsuit in federal court or, if such civil action cannot assure prompt protection of public health or welfare, to issue such orders as may be necessary to protect public health, welfare, or the environment. The authority granted to the U.S. EPA Administrator is vested in the California Air Resources Board (ARB) and the air districts under the California Health & Safety Code (H&SC)[2]. This section of California law applies to a range of emissions violations and imposes penalties that are equivalent to or exceed federal penalties for violations.

Under the authority of the H&SC, the ARB is responsible for controlling emissions from mobile sources, while districts are responsible for controlling emissions from non-mobile sources. H&SC Section 41700 states that sources are prohibited from emitting any pollutant(s) that can cause injury, detriment, nuisance, or annoyance to the public, or that endanger the comfort, repose, health, or safety of the public. Furthermore, H&SC Section 42450, et seq., gives districts specific authority to abate emissions from any source violating H&SC Section 41700 or any other order, rule, or regulation that prohibits or limits the discharge of pollutants, consistent with applicable notice and hearing requirements. Under H&SC Section 41509, the ARB or other local agency rules cannot infringe upon a district's authority to declare, prohibit, or abate a nuisance, and California's Attorney General is authorized to enjoin any pollution or nuisance, either on his or her own, or by request.

In addition to the authority under H&SC, the local air districts can work with the local governing body of a city, county, or city and county, pursuant to the California Emergency Services Act[3], to proclaim a local emergency when there are conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a city, county, or both a city and county, caused by such conditions as air pollution[4]. When a local emergency is declared, cities and counties shall implement their emergency plans and take actions to mitigate or reduce the emergency threat.

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[1] Federal Clean Air Act Section 110(a)(2)(G)
[2] California Health and Safety Code Section 42400 et seq.
[3] California Emergency Services Act, California Government Code Section 8550-8668
[4] California Government Code Section 8558 (c)

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Actions may include deploying field-level emergency response personnel such as law enforcement, activating emergency operation centers, and issuing orders to protect the public. Through a local emergency declaration, the air districts can obtain law enforcement aids from local governing bodies to accomplish necessary actions for preventing ambient ozone concentration from reaching the harmful level.

Commented [O1]: This means that AAD can call on other agencies to minimize emissions. For example, the District could ask Dept. of Solid Waste to delay garbage pick-up and thus reduce emissions from trucks.

Requirement of a Plan for the Prevention of Air Pollution Emergency Episodes

Under the Code of Federal Regulations (CFR)[5], areas that (1) do not attain the federal standards for ozone, and (2) have hourly ozone concentrations above 0.10 parts per million (ppm), are required to develop a contingency plan which must, at a minimum, provide for taking action necessary to prevent ambient ozone concentrations at any location in such region from reaching the significant harm level of 0.6 ppm, averaged over two hours. As set forth in CFR, three trigger levels (stages) are established for the ozone pollution episodes: Alert level (0.2 ppm), Warning level (0.35 ppm), and Emergency level (0.5 ppm)[6]. Corresponding actions for each specified trigger level would be identified and will be implemented when the ambient ozone hourly concentration measurements reach the specified trigger levels. These elements and actions should provide for rapid short-term emission reductions at each trigger level, to avoid high ozone concentrations from reaching significant harm levels during an episode.

Commented [SN2]: Areas that attain the federal standards are still be required to submit an emergency episode plan if ozone concentrations are above 0.10 ppm.

Development of the Ozone Emergency Episode Plan for Amador County

Amador County is classified as non-attainment for the 2008 federal ozone eight-hour average standard[7]. Since Amador County has had more than one day with the maximum one-hour concentration greater than 0.10 ppm between 2014 and 2017, the Amador Air District (AAD) is required to prepare an ozone emergency episode plan (Plan).

Commented [O3]: This refers to the 2008 ozone standard. Not the status of ozone attainment..

Commented [SP4]: I thought Amador was nonattainment for the 2015 standard? These plans are part of the I-SIP for the 2015 ozone standard.

Table 1 shows the number of days exceeding the 0.10 ppm threshold at the Amador County ozone monitoring site from 2014 through 2017. During this time, the maximum ozone one-hour concentration was 0.104 ppm, with no site having more than one day in a year that exceeded 0.10 ppm after 2015.

Table 1
Amador County Ozone Monitoring Sites
Number of Days with Maximum one-hour Concentration Greater than 0.10 ppm*

		2014	2015	2016	2017
Jackson-Clinton Road	# of Days	0	1	1	0
	Max Conc.	0.094	0.103	0.104	0.094

*Values were rounded to 2 decimal places before comparing with 0.10 ppm to determine the number of exceedance days
Data downloaded from ARB's Aerometric Data and Management (ADAM) system on 12/22/18

Commented [O5]: One could use 0.070 ppm instead of 0.10 ppm to determine the number of violations. The use of 0.10 ppm is arbitrary. There is no guidance from ARB on this issue.

For Amador use of 0.07 instead of 0.10 ppm would not change the number of days the 0.07 standard is exceeded.

[5] 40 CFR 51.150 and 51.151
[6] 40 CFR 51 Appendix L
[7] Portions of Mountain Counties are classified as Ozone Non Attainment area.

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The industrial abatement plan is a pre-planned document prepared by a permitted industrial source (facility) which contains the necessary actions to rapidly reduce that facility's emitted ozone precursor emissions when an episode level is triggered. In order to require such a plan, an emission threshold should be established for the industrial abatement plan requirement. Depending on the ozone emergency plans approved by the other air districts in California, the emission thresholds to require the industrial abatement plans are as low as 50 tons per year for both reactive organic gases (ROG) and oxides of nitrogen (NOx) emissions. Table 2 shows the five highest facilities with emissions of ROG and NOx within Amador County[8]. The table indicates that there is one facility in Amador County that emit more than 50 tons per year of NOx, and one facility emitting more than 50 tons per year of ROG.

Table 2

Five Highest ROG and NOx Emissions Facilities

Commented [SP6]: What types of air pollution sources are these?
Note: Ampine is a Title V permitted particle board facility for PM and HAP. It looks like these numbers will put it above the major source threshold for ROG, too.

Note: Mineral Processing Industries is one type of air pollution source addressed in Appendix L.

Are these the highest-emitting permitted sources, or just the highest-emitting sources?

Five Highest ROG Emissions Facilities					
Air Basin	Facility ID	Facility Name	City	Facility SIC	ROG (tons/yr)
Mountain Counties Air Basin	1	Ampine	Martell	2493	155.5
Mountain Counties Air Basin	31	Specialty Granules	Ione	1429	3.00
Mountain Counties Air Basin	7	George Reed	Ione	1411	1.64
Mountain Counties Air Basin	8	Mule Creek State Prison	Ione	9223	1.00
Mountain Counties Air Basin	10	US Mine Corp	Ione	1446	0.43
Five Highest NOx Emissions Facilities					
Air Basin	Facility ID	Facility Name	City	Facility SIC	NOx (tons/yr)
Mountain Counties Air Basin	1	Ampine	Martell	2493	62.6
Mountain Counties Air Basin	31	Specialty Granules	Ione	1429	24.23
Mountain Counties Air Basin	7	George Reed	Ione	1411	19.65
Mountain Counties Air Basin	8	Mule Creek State Prison	Ione	9223	16.03
Mountain Counties Air Basin	13	Horseshoe "A" Mining	Drytown	2892	7.28

Although Amador County has one facility that exceeds the 50 tons per year threshold for NOx, permitted facilities comprise a very small portion of ROG and NOx countywide emission inventories. Figures 1 and 2 presents the reactive organic gases (ROG) and nitrogen oxides (NOx) emission inventories in Amador County in 2015[9].

[8] ARB CEIDARS database system. Data shown for calendar year 2017.
[9] iAdam Summaries available from: https://arb.ca.gov/adam

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Figure 1
Amador County 2015 Emission Inventory for ROG Emissions
Countywide Total 4.9 Tons per Day

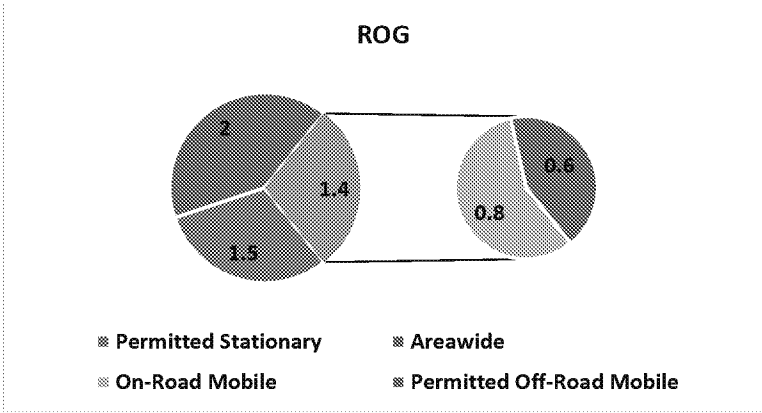
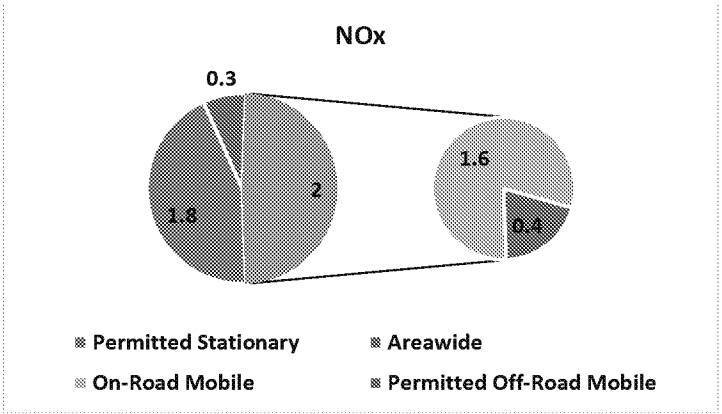


Figure 2
Amador County 2015 Emission Inventory for NOx Emissions
Countywide Total 4.1 Tons per Day



According to Figures 1 and 2, 1.5 tons/day (31%) of ROG emissions and 1.8 tons/day (44%) of NOx emissions are from stationary sources in Amador County. The permitted stationary sources account for 8.9% of countywide ROG emissions and 13.9% of NOx emissions. The major sources of ROG and NOx emissions in Amador County are from unpermitted mobile, areawide and unpermitted stationary sources. These sources plus transport of ozone from adjacent air basins are responsible for ozone formation rather than permitted industrial sources in Amador County.

Commented [SP7]: The numbers in this sentence are different from the figures- the small pie breaks out the mobile sources. The dark blue says it is permitted stationary. Is something missing- total stationary?

Commented [SP8]: Could this be elaborated? Is this saying that the targeted facilities will be the mobile, areawide and unpermitted stationary sources?

There might be more detailed transport information available in nonattainment SIPs that would be helpful to include.

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Health Advisory Level

The AAD proposes 0.15 ppm as a Health Advisory level to initiate emergency actions. The Health Advisory level (0.15 ppm) is lower than the Alert level (0.2 ppm), which is the lowest of three trigger levels required by the federal requirements. Figure 3 represents the annual maximum one-hour ozone concentration measured in Amador County since 1992 when monitoring first began in the County. It also shows a broken line indicating the health advisory of 0.15 ppm ozone.

Figure 3

Historic Variation in 1-hour Ozone Concentration in Parts per Million

The Health Advisory of 0.15 PPM is Shown in Color (Red)

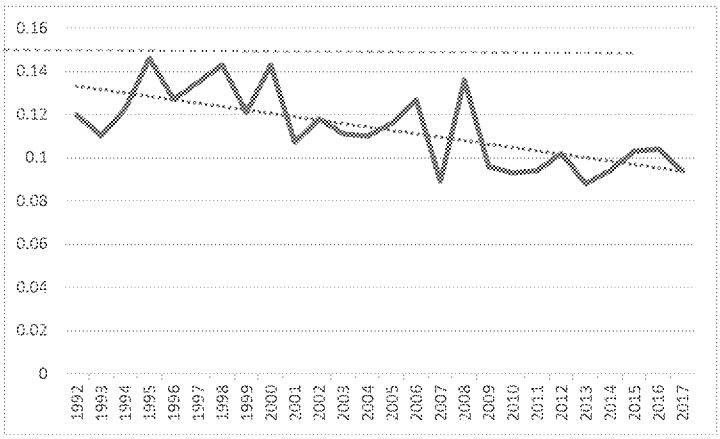

Figure 3 shows that the highest ozone concentration (0.143 ppm) was recorded in 1998. The 0.2 ppm (Stage 1) trigger level has never been recorded in the County since monitoring began in 1992. The ozone concentration trend shows a generally consistent decrease over time. As a result, it is unlikely the 0.2 ppm trigger level would be reached in Amador County.

Ozone concentrations in Amador County have been substantially reduced through the implementation of existing control regulations and programs and a state implementation plan (SIP). The SIP has been developed to identify emission control strategies for mobile and non-mobile sources within the MCAB. Based on the SIP commitments, the AAD adopted or amended rules and developed programs to facilitate the MCAB's progress towards attaining the federal ozone standards. The air districts within the Mountain Counties continue to work on the development of control strategies to fulfill the attainment requirement by CAA. Since the current federal ozone eight-hour average standard (0.075 ppm) is more stringent than the previous one-hour standard, the AAD

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believes that the development and implementation of control regulations and programs identified by the ozone SIPs will ensure that the ozone one-hour maximum concentrations in Amador County will continue decreasing, and would not reach the proposed Health Advisory level of 0.15ppm.

In addition, the AAD also regulates various types of open burning, including residential, land development, fire hazard reduction, vegetation management, prescribed fire, and agriculture. For the Mountain Counties Air Basin, the AAD works cooperatively with the ARB year round, and in the fall, with the Mountain County Air Basin Agricultural Burn Coordinator, to provide daily burn day allocations and notifications based on meteorological conditions and air quality forecasts.

Commented [SP9]: This is helpful information.

The District works cooperatively with the ARB on the daily burn day information. The burn day information is broken down into burn day types to help indicate the quality of a burn day. Through the existing burn programs, the AAD works carefully to balance the public health impacts from air pollution, along with the open burning activities which exist in the county, especially since much of the county is considered a high fire hazard area.

Furthermore, the AAD, along with the other air districts within the region, support the regional "Spare the Air" program. This is an air pollution forecasting program which provides notifications to the public on the daily ozone concentration forecasts, along with advisories with an episodic ozone reduction element, during the summer ozone season. It is designed to protect public health by informing people when air quality is unhealthy, and by encouraging the public to reduce vehicle trips to achieve emission reductions. The program's notification includes current ozone concentration measurements from all monitoring stations within the MCAB, including Amador County, and forecasts, based on the meteorological conditions from the national weather service advisories and local agencies. When atmospheric stagnation conditions are forecasted, the public will be notified through the media, that a "Spare the Air Day" is issued. The participation of the Sacramento and Central Valley regional "Spare the Air" program will promote the acquisition of forecasts of the atmospheric stagnation conditions, pursuant to the CFR requirements[10].

In conclusion, the AAD believes that the proposed Health Advisory level at 0.15 ppm will be an appropriate and logical condition, in addition to the required ozone emergency episode levels set forth in the CAA, to initiate and fulfill the air pollution emergency episode actions proposed by the Plan.

Emergency Episode Criteria

Table 3 summarizes the four emergency episode trigger levels proposed by the AAD for the one-hour ozone concentration measurement in Amador County. The following section identifies the corresponding actions for each trigger level, when that one-hour ozone concentration is reached.

[10] 40 CFR 51.152 "Contingency Plans"

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Table 3
Trigger Levels of Ozone Emergency Episodes in Amador County

	Health Advisory	Alert (Stage 1)	Warning (Stage 2)	Emergency (Stage 3)
Ozone (one-hour average)	0.15 ppm	0.20 ppm	0.35 ppm	0.50 ppm

Proposed Actions for Ozone Emergency Episodes:
The actions identified for each trigger level of the ozone emergency episodes include public notification and emissions mitigation for industrial and mobile sources. The purposes of these actions are 1) to provide notification to the public when atmospheric stagnation conditions would result in substantially high ozone concentration measurements, and 2) to reduce the ozone precursor emissions rapidly in order to lower the ozone concentration below the triggered emergency episode level.

Air Pollution Forecast
The AAD is a subscriber to the Sacramento regional "Spare the Air" program[11] to provide public notification for air quality forecasts when atmospheric stagnation conditions would result in substantially high ozone concentration measurements. The notification with episodic ozone reduction strategies is to encourage the public to take voluntary actions to reduce ozone precursor emissions.

Commented [O10]: AAD needs to signup t the Spare the Air Program. Then, the District will receive notifications of current and pending poor air quality. Sign up at: [HYPERLINK "http://www.sparetheair.com/airalert.cfm"]

Commented [SP11]: I'm not following this comment or how the regional program connects with AAD's residents?

Emergency Episode Declaration
Whenever the ozone one-hour concentration, measured at the permanent location within Amador County, reaches or is predicted to reach any of the episode trigger levels as shown in Table 3, the AAD shall declare that an emergency episode is in effect in Amador County.

In addition, should the Air Pollution Control Officer (APCO) of a district adjacent to the AAD declare a stage 1, 2, or 3 episode within that district and request assistance, the APCO of AAD may implement measures as described in this Plan if such episode level has been measured within the District.

Notification of an Emergency Episode
The AAD shall establish and periodically update and review an emergency episode notification list (List). When any emergency episode is declared, the APCO shall notify the officials on the List. The List shall include, and is not limited to, the following public agencies and organizations:

1. California Air Resources Board, the Amador County Executive Officer, chief executive officers

[11] Information available at: [HYPERLINK "http://www.sparetheair.com/airalert.cfm"]

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of the incorporated municipalities within Amador County, police chiefs, fire chiefs, and any other public safety officers as deemed appropriate by the APCO,

2. The Amador County Health Officer,
3. The Amador County Office of Emergency Services,
4. The Amador County Office of Education Superintendent, school districts' superintendents, and private schools' principals,
5. All air pollution control districts within the Sacramento Valley, Mountain Counties as well as all upwind districts.
6. Major newspapers in daily circulation and major television and radio stations (including those who are part of the emergency broadcast system) broadcasting within Amador County for appropriate warning, notices, and advisories,
7. Regional Spare the Air Programs,
8. AAD permitted facilities, and
9. AAD Staff who are responsible for public outreach.

Content of Notification

Notification of an emergency episode shall include information on the predicted or current episode level, the expected duration of the episode, the expected geographic boundaries of the affected area, a statement for the public on the health significance of the air quality during the episode, and the appropriate voluntary or mandatory control actions proposed for each episode level. See attached sample notification.

Termination of an Emergency Episode

The AAD shall declare an episode as terminated when the one-hour ozone concentration measurements from the permanent monitoring sites within Amador County fall below the level of the Alert episode and the meteorological data indicates the ozone concentration is expected to continue decreasing.

Notification of the Termination of an Episode

Upon the declaration of the termination of an episode, the AAD shall notify those agencies and organizations specified in the List.

Actions for Each Emergency Episode

When an emergency episode is declared, the AAD shall implement the following control actions:

1. Health Advisory Episode:
   a) Prepare the emergency episode notification;
   b) Notify those public agencies and organizations identified in the List that a health advisory episode has been declared;

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c) Advise the Amador County Office of Education Superintendent that sustained strenuous activities by students (for both public and private schools) lasting longer than one hour should be discontinued;
d) Through the Amador County Office of Emergency Services, notify the news media to broadcast the appropriate warning to the public, which will include a recommendation that the public curtail unnecessary motor vehicle operation;
e) Work with the industry to identify targeted facilities with possible emission control actions to reduce the relative emissions; and
f) Coordinate with the Amador County Office of Emergency Services to identify possible actions which shall be taken when Amador County declares a local emergency for an air pollution emergency, which might include, for example, ceasing painting, construction, lawn mowing, pesticide application, and charcoal grilling.

2. Alert (Stage 1) Episode:
   a) Prepare the emergency episode notification;
   b) Notify those public agencies and organizations identified in the List that an Alert episode has been declared;
   c) Request the Amador County Office of Education Superintendent contact the School Superintendents and coordinate with private schools, to suspend students' strenuous activities;
   d) Through the Amador County Office of Emergency Services, notify the news media to broadcast the appropriate warning to the public, which will include a request that the public to curtail any unnecessary motor vehicle operation;
   e) Request targeted facilities to initiate specified emission control actions to reduce relative emissions and to recommend employees at government and private industries refrain from using their vehicles until the episode is terminated;
   f) Conduct on-site inspection of targeted facilities to ascertain accomplishment of applicable emission control actions; and
   g) Prohibit all open burning, including agricultural burning, and incineration throughout the affected area, except in an emergency situation as provided for in Section 41862 of the California Health & Safety Code.

Commented [SP12]: Are the targeted facilities the ones listed in Table 2?
What are the specified emission control actions?

Note that the control actions can be listed by facility category, as Appendix L does.

3. Warning (Stage 2) Episode: In addition to the actions associated with the Stage 1 Alert episode, the following actions should be implemented in a Warning episode.
   a) Request that those agencies and organizations in the List, within the scope of their authority:
      i. Prohibit all types of open burning, including agricultural waste;
      ii. Close all non-essential public agency facilities, except emergency facilities and those facilities necessary in emergencies to protect national security or national defense; and

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iii. Request that employees of closed non-essential public agency facilities refrain from using vehicles until the episode is terminated.

b) Request closure of all public and private schools, colleges, and universities within Amador County;

c) Request targeted facilities to shut down;

d) Request that employees of facilities which close refrain from using vehicles until the episode is terminated;

e) Conduct on-site inspection of facilities to ascertain the accomplishment of applicable emission control actions;

f) Request the suspension of all indoor and outdoor events at parks or recreational facilities open to the public;

g) Request the suspension of all scheduled athletic events; and

h) Request that the Amador County Executive Officer and Health Officer consider declaring a local emergency for air pollution, pursuant to the Amador County Code[12], and implement emergency control measures, pursuant to the California Emergency Services Act, when the ambient ozone concentration continues rising and reaches the level at 0.45 ppm.

Commented [SP13]: Are these the facilities in Table 2?

Commented [SN14R13]: I have the same question. Are there other facilities that fall under table 2 in Appendix L that are NOT required to shut down or curtail emissions?

4. Emergency (Stage 3) Episode: In addition to the actions associated with the Stage 2 Warning episode, the following actions should be implemented in the Emergency episode.

a) Request that the Amador County Executive Officer declare a local emergency for air pollution and initiate its emergency operations plan;

b) Request the media to broadcast to the public that a local emergency exists for air pollution, due to high ozone concentrations;

c) Through the Amador County Office of Emergency Service operations, the following actions shall be conducted, but are not limited to:

i. Close all government facilities which are not immediately necessary for public health and safety, national security or national defense;

ii. Close all recreational facilities, including but not limited to those servicing boating and off-road vehicles;

iii. Close all non-emergency commercial and industrial facilities;

iv. Request implementation of emergency carpooling, or the use of mass transportation;

v. Request that the public use only mass transit; and

vi. Hospitals within the affected area shall be notified of the alert level to prepare for the possible increase in the number of patients seeking treatment.

d) Close principal streets, as deemed necessary by the Amador County Executive Officer, Health Officer, APCO, and local law enforcement agencies, in order to protect the health and welfare of the general public;

e) Request that the Amador County Office of Emergency Services engage with the State agency for necessary actions pursuant to the California Emergency Services Act, which

Commented [SN15]: Is there some sort of standby plan that the Office of Emergency Service Operations has ready for this type of event?

(This comment applies to Alert-Emergency stages.)

[12] Amador County Code Article 2.64 provides for the preparation and execution of emergency plans.

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includes prohibiting the use of all motor vehicles except for emergencies, or any other action deemed warranted;

f) Restrict all non-essential construction and painting; and
g) Restrict all lawn care and mowing activities and stop the use of lawn and garden chemicals.

The AAD commits to implementing the proposed actions associated with each episode identified in this Plan. The implementation of the Plan shall prevent the ambient ozone concentration from reaching the harmful level at 0.60 ppm.

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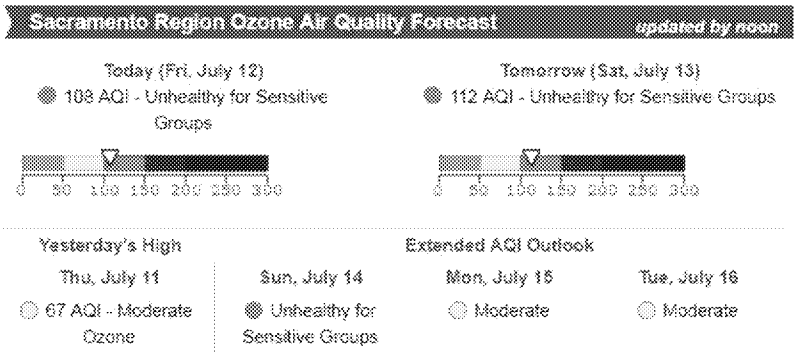
SAMPLE PUBLIC NOTIFICATION

Amador County Air Pollution Alert

Poor air quality is being forecasted for the Sacramento region, including Amador County for the next 24 to 48 hours.



Please do you part to minimize smog-forming emissions by:

- Carpooling or vanpooling
- Use alternative transportation including use of public transit, bicycling and walking
- Eliminate vehicle idling
- Telecommuting

For more information, please visit AAD.gov or [HYPERLINK "http://www.sparetheair.com/airalert.cfm"]

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