

# Proposed Portola PM2.5 Plan Contingency Measure SIP Submittal

October 16, 2020



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## I. BACKGROUND ON THE PORTOLA PLAN

Under the federal Clean Air Act (CAA), the United States Environmental Protection Agency (U.S. EPA) has found that fine particulate matter, having a size less than 2.5 microns in diameter, endangers public health.<sup>1</sup> In 2012, U.S. EPA established a National Ambient Air Quality Standard (NAAQS or standard) for fine particulate matter, or PM<sub>2.5</sub>, of 12 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) on an annual basis to protect public health.<sup>2</sup>

The Plumas County PM<sub>2.5</sub> nonattainment area<sup>3</sup> has been designated a moderate nonattainment area for the 12  $\mu\text{g}/\text{m}^3$  annual standard. To address the nonattainment status, the California Air Resources Board (CARB) submitted the *Portola Fine Particulate Matter (PM<sub>2.5</sub>) Attainment Plan* (Portola Plan or Plan) to the U.S. EPA on February 28, 2017. The Portola Plan was developed by the Northern Sierra Air Quality Management District (District) and is a revision to the State Implementation Plan (SIP) required under the federal Clean Air Act (CAA). The Plan demonstrates that the Plumas County PM<sub>2.5</sub> nonattainment area attains the 2012 annual PM<sub>2.5</sub> NAAQS by the moderate area attainment date of December 31, 2021. U.S. EPA approved all elements of the Portola Plan but did not take action on the contingency measures in the Plan.<sup>4</sup>

Under U.S. EPA's Final Rule for the Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements,<sup>5</sup> contingency measures adopted as part of a PM<sub>2.5</sub> attainment plan must meet these requirements:

1. The contingency measures shall consist of control measures not otherwise included in the control strategy or that achieve emissions reductions not otherwise relied upon in the control strategy for the area;
2. Each contingency measure shall specify the timeframe within which its requirements become effective following a trigger; and
3. The SIP submission shall contain a description of the specific trigger mechanisms for the contingency measures and specify a schedule for implementation.

In the Plumas County PM<sub>2.5</sub> nonattainment area, elevated ambient PM<sub>2.5</sub> concentrations are driven by emissions from residential wood heaters, which contribute about 80 and 90 percent of PM<sub>2.5</sub> annually and on a 24-hour basis,

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<sup>1</sup> See Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements; Final Rule, 81 Fed. Reg. 58,010, 58,011, Aug. 24, 2016.

<sup>2</sup> 2012 annual National Ambient Air Quality Standard (NAAQS) for fine particulate matter (PM<sub>2.5</sub>), 78 Fed. Reg. 3,086, January 15, 2013 (the 2012 PM<sub>2.5</sub> annual NAAQS).

<sup>3</sup> Defined in 80 Fed. Reg. 2206, January 15, 2015.

<sup>4</sup> 84 Fed. Reg., 11,208 (March 25, 2019).

<sup>5</sup> 81 Fed. Reg., 58,101, 58,161 (August 24, 2016).

respectively.<sup>6</sup> Due to the high cost or outright unavailability of natural gas and heating oil, and easy access to inexpensive or free wood, Portola residents rely primarily on wood to heat their homes. Given this situation, reducing PM<sub>2.5</sub> levels in Portola is challenging.

CAA section 189(c)(1) requires states to submit quantitative milestones for moderate nonattainment areas.<sup>7</sup> Milestones are to be achieved every three years until the area is designated as attainment; milestones must demonstrate reasonable further progress toward attainment by the applicable date. According to the PM<sub>2.5</sub> Implementation Rule, moderate area state implementation plans (SIP) should include quantitative milestones to be achieved at 4.5 and 7.5 years, respectively, from the date of designation as nonattainment. For the 2012 12 µg/m<sup>3</sup> annual PM<sub>2.5</sub> NAAQS with a moderate status, the first quantitative milestone year is 2019, 4.5 years after the designation date of April 2015, and the second quantitative milestone is in 2022, three years after the first quantitative milestone.

Since 2016, the District has been implementing the Greater Portola Woodstove Change-out Program (Program). From 2016 through 2019, 364 uncertified woodstoves or fireplaces used as a primary source of heat in the nonattainment area were replaced with cleaner-burning and more efficient home heating devices. On May 15, 2019, CARB submitted a Quantitative Milestone Report (2019 QM Report) to U.S. EPA documenting implementation of District measures and the 2019 quantitative milestone requirement. The PM<sub>2.5</sub> emission reductions achieved from implementing the Program through 2018 would satisfy the 2019 reasonable further progress milestone. Although U.S. EPA has not yet officially assessed the 2019 QM Report, if the 2019 QM Report is found adequate, the contingency measure requirement for the 2019 quantitative milestone is no longer applicable.

This update addresses the remaining contingency requirements in the CAA. The measure specifies new actions the City of Portola and District must take within 60 days of a finding by the U.S. EPA that (1) the nonattainment area has failed to attain the 2012 12 µg/m<sup>3</sup> annual PM<sub>2.5</sub> NAAQS by the moderate area attainment date, (2) the nonattainment area has failed to meet reasonable further progress (RFP) towards attainment or a quantitative milestone in the Portola Plan, or (3) CARB has failed to submit a quantitative milestone report for the 2012 12 µg/m<sup>3</sup> annual PM<sub>2.5</sub> NAAQS. Any of these findings will trigger the contingency measure.

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<sup>6</sup> [Portola Fine Particulate Matter \(PM<sub>2.5</sub>\) Attainment Plan](http://myairdistrict.com/wp-content/uploads/2016/12/2017_sip.pdf), Figures 9 and 10: [http://myairdistrict.com/wp-content/uploads/2016/12/2017\\_sip.pdf](http://myairdistrict.com/wp-content/uploads/2016/12/2017_sip.pdf).

<sup>7</sup> Clean Air Act, § 189(c)(1), 42 U.S.C. § 7513a(c)(1).

## II. DESCRIPTION OF CONTINGENCY MEASURE

On September 9, 2020, the Portola City Council adopted the Wood Stove and Fireplace Ordinance and the Prohibition of the Open Burning of Yard Waste (Ordinance 359).

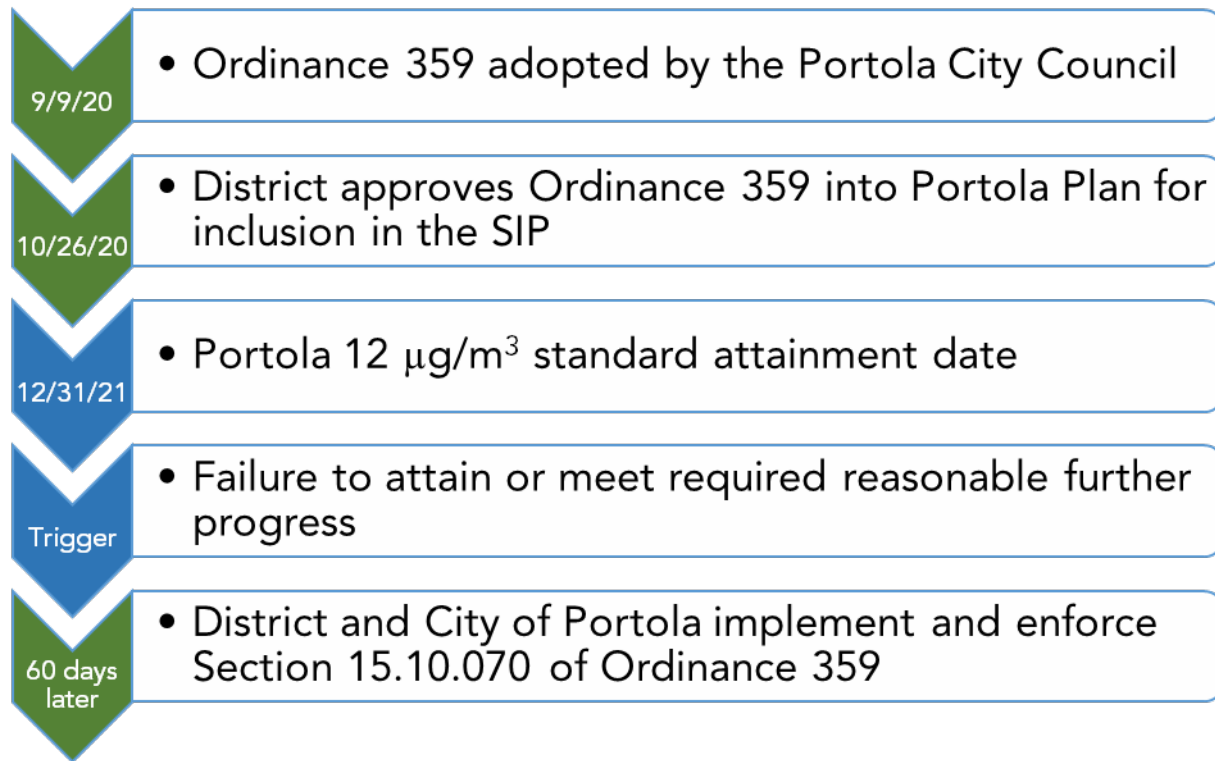
Ordinance 359 includes updates to a contingency measure provision the City previously adopted.<sup>8</sup> Within 60 days of any of the listed triggers, the District and City of Portola will implement and enforce Section 15.10.070 of Ordinance 359 which calls for a lower wood-burning curtailment threshold and a longer curtailment season (Figure 1). The District will use funding from a U.S. EPA Targeted Airshed Grant (Grant) to support the City's enforcement of Ordinance 359.

In a public hearing, scheduled for October 26, 2020, following a 30-day comment period, the District Board will consider a proposed resolution directing the District to fulfill its obligations under Ordinance 359, approve the ordinance into the attainment plan, and submit the provisions of Ordinance 359 that address the contingency measure requirements to CARB for inclusion in the California SIP. In the event the District Board does not submit Ordinance 359 to CARB for inclusion in the SIP, this item, the Proposed Portola PM2.5 Plan Contingency Measure SIP Submittal, will be removed from the Board agenda.

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<sup>8</sup> See [City of Portola Ordinance 354](https://library.municode.com/ca/portola/ordinances/code_of_ordinances?nodeId=972865), adopted July 24, 2019, available at: [https://library.municode.com/ca/portola/ordinances/code\\_of\\_ordinances?nodeId=972865](https://library.municode.com/ca/portola/ordinances/code_of_ordinances?nodeId=972865).

Figure 1. Proposed timeline for implementation of contingency measure.

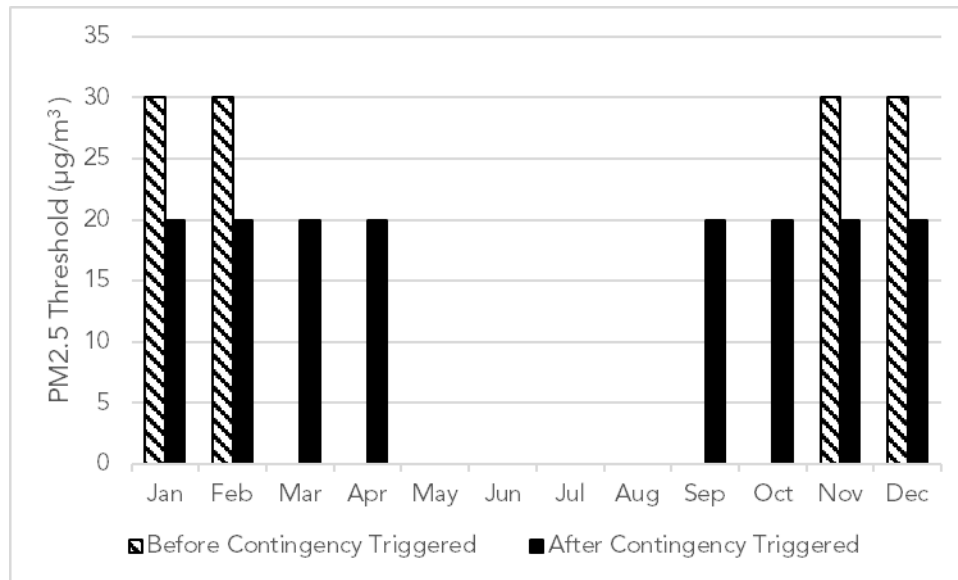


Effective 60 days after a trigger, Ordinance 359 would impose lower residential wood-burning curtailment levels from 30 to 20 µg/m and extend the wood-burning season to be in effect from September through April (Figure 2):

1. The District will issue a mandatory burning curtailment whenever District staff determine that the 24-hr average PM<sub>2.5</sub> concentrations may exceed 20 µg/m<sup>3</sup>;<sup>9</sup>
2. Mandatory wood-burning curtailment will be in effect during the months of January, February, March, April, September, October, November, and December; and
3. Enforcement of the mandatory curtailment will be through the City of Portola, under its authority in Portola Municipal Code, Section 18.01.010.

<sup>9</sup> This will lower the threshold 10 µg/m<sup>3</sup> beyond the 30 µg/m<sup>3</sup> level of the mandatory woodburning curtailment scheduled to commence on January 1, 2021.

Figure 2. Comparison of threshold levels and duration of the mandatory wood-burning curtailment before and after contingency is triggered.



To determine whether 24-hr average PM2.5 concentrations may exceed 20 µg/m<sup>3</sup>, the District will obtain a daily Portola-specific weather forecast from the National Weather Service. This forecast will be used with air quality data to predict concentrations for each day during the wood-burning season. If the District determines that concentrations may exceed 20 µg/m<sup>3</sup>, the District will issue a mandatory wood-burning curtailment and notify the public.

Population density varies significantly throughout the nonattainment area. The City of Portola is the most densely populated part of the nonattainment area with about 388 people per square mile while the remainder of the nonattainment area has about 33 people per square mile, on average. Ordinance 359 applies only to the portion of the nonattainment area within the City of Portola boundaries. The District determined a city ordinance would be the most effective approach to reduce ambient PM2.5 pollution, personal exposures, and health risks by limiting burning in the most densely populated portion of the nonattainment area. The reductions achieved from this contingency measure, combined with additional reductions achieved by full phase-in of the Program with other ongoing reductions, are expected to sufficiently address the contingency measure requirements.



### III. ESTIMATED EMISSION REDUCTIONS

The first step in estimating potential emission reductions achieved by the contingency measure is estimating the number of devices subject to Ordinance 359. As part of developing the SIP emission inventories, CARB staff, in collaboration with the District, estimated that before the start of the Program, 711 uncertified wood stoves or wood inserts and 139 fireplaces were primary sources of heat in homes in the nonattainment area. The Program tries to reduce PM2.5 emissions by replacing these devices with cleaner burning and more efficient home heaters. The Program has been phased in over five years since 2016. When it reaches full maturity, at the end of 2020, it is expected to reduce PM2.5 emissions by 0.077 tons per day (tpd).

The Program has been effective to date. By December 31, 2019, 364 devices (340 stoves and 24 fireplaces) were replaced in the nonattainment area. These change-outs are expected to reduce PM2.5 emissions by 0.0618 tpd. Additional change-outs must be completed before PM2.5 emissions are reduced sufficiently for the area to reach attainment. These change-outs must reduce PM2.5 emissions by an additional 0.0152 tpd (for a total of 0.0770 tpd). CARB staff estimates this level of reduction could be achieved by replacing 90 additional home heating devices.<sup>10</sup> Table 1 lists factors considered in estimating PM2.5 emission reductions associated with changing out additional 90 devices.

Table 1. Estimating benefits associated with additional change-outs needed for attainment.

#### a) Constants and conversions

Constants & Conversions	Value	Unit	Source
Old Device Emission Factor	30.60	Pounds (lb)/ton	AP-42, <sup>11</sup> Table 1.10-1
Old Device Efficiency	54	%	AP-42, <sup>12</sup> Table 1.10-5
New Device Efficiency	68	%	AP-42, <sup>13</sup> Table 1.10-5
Wood Use	4.3	cord	District Survey
Wood Density	1.04	ton/cord	U.S. EPA Emission Calculator <sup>14</sup>
Average Burn Rate <sup>15</sup>	1.5	kilogram (kg)/hour	
Emission Rate Scaling Factor <sup>16</sup>	1.5		
Conversion from lb to ton	2000		
Conversion from gram(g)/kg to lb/ton	2		

<sup>10</sup> Staff assumed the following replacement devices: 85 wood stoves with emission rate of 2.0 g/hr and 5 non-wood devices with negligible PM2.5 emissions.

<sup>11</sup> AP-42, U.S. EPA, [Compilation of Air Pollutant Emissions Factors](https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s10.pdf), <https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s10.pdf>; AP-42 has been published since 1972 as the primary compilation of U.S. EPA's emissions factor information.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> <https://www.epa.gov/burnwise/wood-burning-air-quality-tools-guidance-documents-and-resources>.

<sup>15</sup> U.S. EPA Gary Blais, personal communications.

<sup>16</sup> Assumes real world emissions are 50 percent higher than test emissions.

b) Calculations

Old Device Type	New Device Type	Emission Rate (g/hr)	Emission Factor (lb/ton)	Number of Devices	Emissions (ton/year)			Emission Reductions (tpd)
					Before	After	Difference	
Uncertified Stove	Wood	2.0	4	85	5.8158	0.6037	5.2121	0.0143
Uncertified Stove	Non-wood	0.0	0	5	0.3421	0.0000	0.3421	0.0009
Total				90	6.1579	0.6037	5.5542	0.0152

Between the 364 stoves and fireplaces replaced by the end of 2019 in the nonattainment area and the 90 additional replacements needed for attainment, these 454 changed-out devices will provide the emission reductions needed to attain the annual standard of 12 µg/m<sup>3</sup> by December 31, 2021. With these 454 devices replaced in the nonattainment area, only 281 uncertified stoves and 115 fireplaces will continue to be a primary source of heat in homes in the Plumas County nonattainment area. Based on the 2012 American Community Survey, about 43 percent of nonattainment area households are located in the City of Portola (Table 2).<sup>17</sup>

Table 2. Estimating percent of Nonattainment Area households residing in the City of Portola.

Category	Nonattainment Area	City of Portola	Percentage (Portola/Nonattainment Area)
Households	2458	1055	43%

CARB staff used this percentage to estimate the initial number of uncertified devices in Zone 1, which encompasses the City of Portola, and in Zone 2, which includes the rest of the Plumas County nonattainment area, outside of the City of Portola. CARB staff then tracked the devices changed-out in each Zone to determine the number of devices subject to Ordinance 359 (Table 3).

The District will continue replacing the uncertified devices even after the number of devices required to meet the NAAQS is achieved. As the population of uncertified devices remaining in the nonattainment area diminishes, so will the estimated number of potential change-outs completed annually. To be conservative, CARB staff assumed that the rate of replacement will continue at 25 and 50 percent of the average rate achieved between 2017 and 2019 in Zones 1 and 2, respectively. The higher rate in Zone 2 was assumed due to the higher number of remaining uncertified devices. The difference between the remaining uncertified devices and the number of devices changed-out during the year represents the numbers of devices subject to

<sup>17</sup> [2008-2012 American Community Survey 5-Year Estimate](https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2012/): <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2012/>. Consistent with SIP, a factor of 27% was used to scale households in Plumas County to the Nonattainment Area.

wood-burning curtailment in each calendar year (Table 3). For example, in 2021, 46 woodstoves and 49 fireplaces will be subject to wood-burning curtailment.

Table 3. Estimated number of uncertified devices remaining in each zone between 2021 and 2023.

Status	Nonattainment Area		Zone 1		Zone 2	
	Uncertified Stoves	Fire-places	Uncertified Stoves	Fire-places	Uncertified Stoves	Fire-places
Operating before Change-out Program	711	139	305	60	406	79
Replaced in 2016	111	0	80	0	31	0
Replaced in 2017	85	0	44	0	41	0
Replaced in 2018	73	12	43	6	30	6
Replaced in 2019	71	12	34	4	37	8
Average replaced in 2017-2019	76	12	40	5	36	6
Replaced through 12/31/2019	340	24	201	10	139	14
Additional needed for attainment	90	0	48	0	42	0
Total needed for attainment	430	24	249	10	181	14
Uncertified devices remaining in 2021	281	115	56	50	225	65
Devices to be changed out in 2021	28	4	10	1	18	3
Subject to curtailment in 2021	253	111	<b>46</b>	<b>49</b>	207	62
Uncertified devices remaining in 2022	253	111	46	49	207	62
Devices to be changed out in 2022	28	4	10	1	18	3
Subject to curtailment in 2022	225	107	<b>36</b>	<b>48</b>	189	59
Uncertified devices remaining in 2023	225	107	36	48	189	59
Devices to be changed out in 2023	28	4	10	1	18	3
Subject to curtailment in 2023	197	103	<b>26</b>	<b>47</b>	171	56

The emission reductions due to implementing the contingency measure were estimated as a difference between emission reductions achieved from implementing mandatory wood-burning curtailment in 2021 and 2022. The number of days subject to curtailment was estimated using daily PM2.5 data collected between 2016 and 2018 at the Portola air monitoring site. During the first year, 2021, only 14 percent of days are forecast to be subject to curtailment due to the shorter curtailment season and higher threshold, based on previous air quality. During the second year, 2022, if the contingency measure is triggered from similar air quality as in the past, the percent of days subject to curtailment is forecast to increase to 31 percent due to a longer burn season and a lower curtailment threshold. The compliance rate is forecast to reach 25 percent and 50 percent in 2021 and 2022, respectively. The difference in compliance is due to an anticipated increase in public awareness of Ordinance 359 along with expectations that, with time, the District and City of Portola will improve implementation and enforcement of Ordinance 359. Tables 4 and 5 list factors considered in estimating benefits of Ordinance 359 in 2021 and 2022, respectively. Table 6 presents emission reductions expected from implementing Ordinance 359,

estimated as the difference between emission reductions due to 25 percent compliance on 14 percent of days and 50 percent compliance on 31 percent of days.

Table 4. Estimating benefits of Ordinance 359 in 2021 (25 percent compliance on 14 percent of days).

Category	Stove	Fireplace	Total
Emission factor (lb PM2.5/ton of wood)	30.6	34.6	
Wood use annual (cords)	4.3	6	
Wood density (ton/cord)	1.04	1.04	
Conversion from lb to ton	2000	2000	
Number of devices	<u>46</u>	<u>49</u>	<u>95</u>
Emissions (tpy)	3.1474	5.2896	8.4370
Emissions (tpd)	0.0086	0.0145	0.0231
<b>25% compliance on 14% of days (tpd)</b>	<b>0.0003</b>	<b>0.0005</b>	<b>0.0008</b>

Table 5. Estimating benefits of Ordinance 359 in 2022 (50 percent compliance on 31 percent of days).

Category	Stove	Fireplace	Total
Emission factor (lb PM2.5/ton of wood)	30.6	34.6	
Wood use annual (cords)	4.3	6	
Wood density (ton/cord)	1.04	1.04	
Conversion from lb to ton	2000	2000	
Number of devices	<u>36</u>	<u>48</u>	<u>84</u>
Emissions (tpy)	2.4632	5.1817	7.6449
Emissions (tpd)	0.0067	0.0142	0.0209
<b>50% compliance on 31% of days (tpd)</b>	<b>0.0010</b>	<b>0.0022</b>	<b>0.0032</b>

Table 6. Estimating benefits of Ordinance 359 in 2022 as a difference between Table 5 and Table 4.

Category	Stove	Fireplace	Total
25% compliance on 14% of days (tpd)	0.0003	0.0005	0.0008
50% compliance on 31% of days (tpd)	0.0010	0.0022	0.0032
<b>Contingency benefits (tpd)</b>	<b>0.0007</b>	<b>0.0017</b>	<b>0.0024</b>

## IV. EMISSION REDUCTIONS AFTER THE ATTAINMENT YEAR

In considering the general purpose of contingency measures and the absence of specific requirements for the level of emission reductions required, U.S. EPA has generally recommended identifying contingency measures approximately equivalent to one year's worth of emission reductions necessary to achieve RFP for the area.<sup>18</sup> However, sometimes smaller emission reductions have been recognized as satisfactory for contingency. This follows U.S. EPA's earlier recommendation that states should consider "the potential nature and extent of any attainment shortfall for the area" and that contingency measures "should represent a portion of the actual emissions reductions necessary to bring about attainment in the area."<sup>19</sup> This section identifies additional emission reductions that, when used in conjunction with the contingency measure emission reductions, will provide sufficient reductions to meet the contingency measure requirements.

### A. Emission reductions from ongoing implementation of the Greater Portola Woodstove Change-out Program

The District will continue implementing the Greater Portola Woodstove Change-out Program past December 31, 2020, but only the devices replaced up to that point will be eligible for emission reduction credit towards attainment. To provide a conservative estimate of the reductions achieved by replacing uncertified wood stoves with cleaner home heating alternatives in 2021 and beyond, CARB staff assumed that the rate of change-outs will be only 25 percent and 50 percent of the average 2017-2019 rate in Zone 1 and Zone 2, respectively. This assumption was based on the declining population of uncertified stoves in the nonattainment area. A higher percentage was assumed in Zone 2 due to the higher number of uncertified devices remaining in operation. Table 7 lists the factors considered in estimating emission reductions achieved by implementing the Program past 2020.

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<sup>18</sup> 72 Fed. Reg. 20,586, 20,643 (Apr. 25, 2007).

<sup>19</sup> 78 Fed. Reg. 37,741, 37,744 (Jun. 24, 2013).

Table 7. Estimating emission reduction from continuation of the Program past 2020.

Old Device Type	New Device Type	Emission Rate (g/hr)	New Device EF (lb/ton)	Number of Devices	Emissions (ton/year)			Emission Reductions (tpd)
					Before	After	Difference	
<b>Zone 1 at the rate of 25% of 2017-2019 average rate</b>								
Uncertified Stove	wood	2	4	10	0.6842	0.0710	0.6132	0.0017
Fireplace	wood	2	4	1	0.1080	0.0071	0.1008	0.0003
Total					0.7922	0.0781	0.7140	0.0020
<b>Zone 2 at the rate of 50% of 2017-2019 average rate</b>								
Uncertified Stove	wood	2	4	18	1.2316	0.1278	1.1037	0.0030
Fireplace	wood	2	4	3	0.3239	0.0213	0.3025	0.0008
Total					1.5554	0.1492	1.4063	0.0039
<b>Grand Total Zone 1 and Zone 2</b>								<b>0.0058</b>

## B. Emission reductions from voluntary wood-burning curtailment in Zone 2

The District is implementing a voluntary wood-burning curtailment in Zone 2. Based on 2016-2018 daily PM2.5 air quality data collected at the Portola site, District staff estimated that 14 and 31 percent of potential burn days will be subject to voluntary curtailment, in 2021 and 2022, respectively. Because of the voluntary nature of the curtailment, District staff further assumed a modest compliance rate of 3 percent and 6 percent in 2021 and 2022, respectively. Similar to Zone 1, the difference in compliance is due to anticipated increases in public awareness of the program along with the expectation that, with time, the District and City of Portola will improve awareness of the curtailment program. Tables 8 and 9 list the factors considered in estimating emission reductions achieved from implementing a voluntary wood-burning curtailment in Zone 2 in 2021 and 2022, respectively. The last row in Table 9 estimates additional reductions achieved in 2022.

Table 8. Estimating emission reduction from 3% voluntary compliance with wood-burning curtailment in Zone 2 in 2021.

Category	Stove	Fireplace	Total
Emission factor (lb PM2.5/ton of wood)	30.6	34.6	
Wood use annual (cords)	4.3	6	
Wood density (ton/cord)	1.04	1.04	
Conversion from lb to ton	2000	2000	
Number of devices	207	62	269
Emissions (tpy)	14.1633	6.6930	20.8563
Emissions (tpd)	0.0388	0.0183	0.0571
<b>3% compliance on 14% of days (tpd)</b>	<b>0.0002</b>	<b>0.0001</b>	<b>0.0002</b>

Table 9. Estimating emission reduction from 6% voluntary compliance with wood-burning curtailment in Zone 2 in 2022.

Category	Stove	Fireplace	Total
Emission factor (lb PM2.5/ton of wood)	30.6	34.6	
Wood use annual (cords)	4.3	6	
Wood density (ton/cord)	1.04	1.04	
Conversion from lb to ton	2000	2000	
Number of devices	189	59	248
Emissions (tpy)	12.9317	6.3692	19.3009
Emissions (tpd)	0.0354	0.0174	0.0529
<b>6% compliance on 31% of days (tpd)</b>	<b>0.0007</b>	<b>0.0003</b>	<b>0.0010</b>
<b>Additional emission reduction in 2022 (tpd)</b>	<b>0.0005</b>	<b>0.0002</b>	<b>0.0007</b>

### C. Emission reductions from weatherization

As part of the 2019 Targeted Airshed Grant, the District is planning to fund weatherization of 30 homes in Zone 1. Many homes in Portola, originally built as summer cabins for the logging industry, are now being used year-round as permanent residences. Weatherizing these homes could reduce the amount of wood needed for heat by 30 percent.<sup>20</sup> The emission reductions that could be potentially achieved by weatherizing 30 homes are presented in Table 10.

Table 10. Emission reductions achieved by weatherizing 30 homes.

Category	Factors
Emission Factor (lb PM2.5/ton of wood)	3.89
Wood use annual (cords)	4.3
Wood density (ton/cord)	1.04
Conversion from lb to ton	2000
Number of Homes	30
Emissions (tpy)	0.2609
Emissions before weatherization (tpd)	0.0007
Emissions after weatherization (tpd)	0.0005
<b>Emission reductions from weatherization (tpd)</b>	<b>0.0002</b>

Table 11 below presents estimated PM2.5 emissions in the Plumas County nonattainment area in 2021 and 2022 after the commitments in the Plan have been met.

<sup>20</sup> [https://www.energy.gov/sites/prod/files/2017/03/f34/WAP\\_ProgramOverviewFactSheet\\_3.16.17.pdf](https://www.energy.gov/sites/prod/files/2017/03/f34/WAP_ProgramOverviewFactSheet_3.16.17.pdf).

Table 11. Estimated reductions in PM2.5 emissions in 2021 and 2022 (tpd).

Category	2021	2022
Inventory in Portola Plan	0.4863	0.4866
Reductions from change-outs (2019-2021 Average)	-0.062	-0.062
Mobile source reductions	-0.0003	-0.0001
Open burning reductions	-4.292E-05	-4.2921E-05
Curtailment in Zone 1 (25% compliance on 14% of days)	-0.0008	-0.0008
Curtailment in Zone 2 (3% compliance on 14% of days)	-0.0002	-0.0002
<b>Updated inventory after controls</b>	<b>0.4231</b>	<b>0.4236</b>

Table 12 below presents benefits of contingency measure and additional reductions, not included in the Plan, and their impact on emissions.

Table 12. Impact of contingency measure and additional reductions on PM2.5 inventory (tpd).

Category	Emissions (tpd)
<b>Reductions from Contingency Measure</b>	
Curtailment in Zone 1 (Difference between 50% compliance on 31% of days and 25% compliance on 14% of days)	-0.0024
<b>Ongoing Implementation of Change-out Program</b>	
Change-outs Zone 1	-0.0020
Change-outs Zone 2	-0.0039
<b>Other Reductions</b>	
Voluntary curtailment in Zone 2 (Difference between 6% compliance on 31% of days and 3% compliance on 14% of days)	-0.0007
Weatherization (30 homes)	-0.0002
<b>Total Reductions</b>	<b>-0.0092</b>
<b>Inventory Impact</b>	
2021 Updated inventory after controls but before CM and additional reductions	0.4231
2022 Inventory after CM and additional reductions	0.4144
<b>Change in inventory</b>	<b>0.0087</b>

U.S. EPA has generally recommended that the contingency measures for attainment demonstration should provide PM2.5 emission reductions approximately equivalent to one year's progress.<sup>21</sup> The Portola Plan estimated this amount to be 0.0085 tpd. As demonstrated in Table 12, the emission reductions from Ordinance 359, combined with reductions from the ongoing implementation of the Program, voluntary wood-burning curtailment in Zone 2, and weatherization efforts, will reduce PM2.5 emissions by 0.0087 tpd, more than one year's worth of reductions.

<sup>21</sup> 72 Fed. Reg. 20,586, 20,643 (Apr. 25, 2007).



## D. Contingency Measure for the 2022 Milestone

U.S. EPA requires a contingency measure to ensure reasonable further progress (RFP) past the initial moderate attainment date. If an area fails to attain by the deadline, the RFP and quantitative milestone requirement remains in place ensuring continued progress towards attainment while a new attainment plan is being developed.<sup>22</sup>

The 2022 contingency measure should provide about one year's worth of reductions needed for attainment to ensure reasonable further progress towards attainment. A quantitative milestone report showing that the area has met its quantitative milestone for RFP for 2019 was submitted to U.S. EPA separately. CARB staff has conducted this analysis to address the contingency measure requirement for RFP for 2022, the second milestone year for the moderate nonattainment area.

To meet the 2022 milestone, PM<sub>2.5</sub> emissions in the Plumas County nonattainment area must be reduced by 0.077 tpd. By the end of 2019, the Plumas County nonattainment area reduced PM<sub>2.5</sub> emissions by 0.0618 tpd, meeting 80 percent of the 2022 target. If the Plumas County nonattainment area cannot demonstrate RFP in 2022, the second milestone year toward attainment of the 2012 annual PM<sub>2.5</sub> standard, continuing implementation of existing programs, combined with additional programs the District has planned, will provide additional emission reductions in 2022 and 2023.

The District was awarded grant funding from the 2018 and 2019/2020 U.S. EPA's Targeted Airshed Grants. These funds will ensure continuous education, outreach, and enforcement and implementation of other programs designed to further reduce PM<sub>2.5</sub> emissions and ensure cleaner wood-burning. These programs include a wood stove change-out program, chimney cleaning, additional weatherization, wood sheds for households in the nonattainment area to keep firewood dry, and a reliable and affordable supply of seasoned wood. Continued replacement of uncertified and older home heating devices in 2023 alone is estimated to reduce PM<sub>2.5</sub> emission by 0.0058 tpd. Annual chimney sweeping prevents creosote build-up, which improves combustion thereby reducing PM<sub>2.5</sub> emissions as well as the risk of chimney fires. Between 2023 and 2025, the District is planning to provide 200 chimney sweep vouchers annually, which is estimated to reduce PM<sub>2.5</sub> emissions approximately 0.0017 tpd. The wood shed program is estimated to reduce PM<sub>2.5</sub> emissions 0.013 tpd by providing dry wood storage to one hundred low-income residents in the area. In order to ensure that residents have access to properly seasoned, locally-sourced wood at a reasonable price, the District is also planning to implement a seasoned wood voucher program, which is expected to further reduce PM<sub>2.5</sub> emissions. Weatherization is also expected to contribute to reduced emissions. Taken

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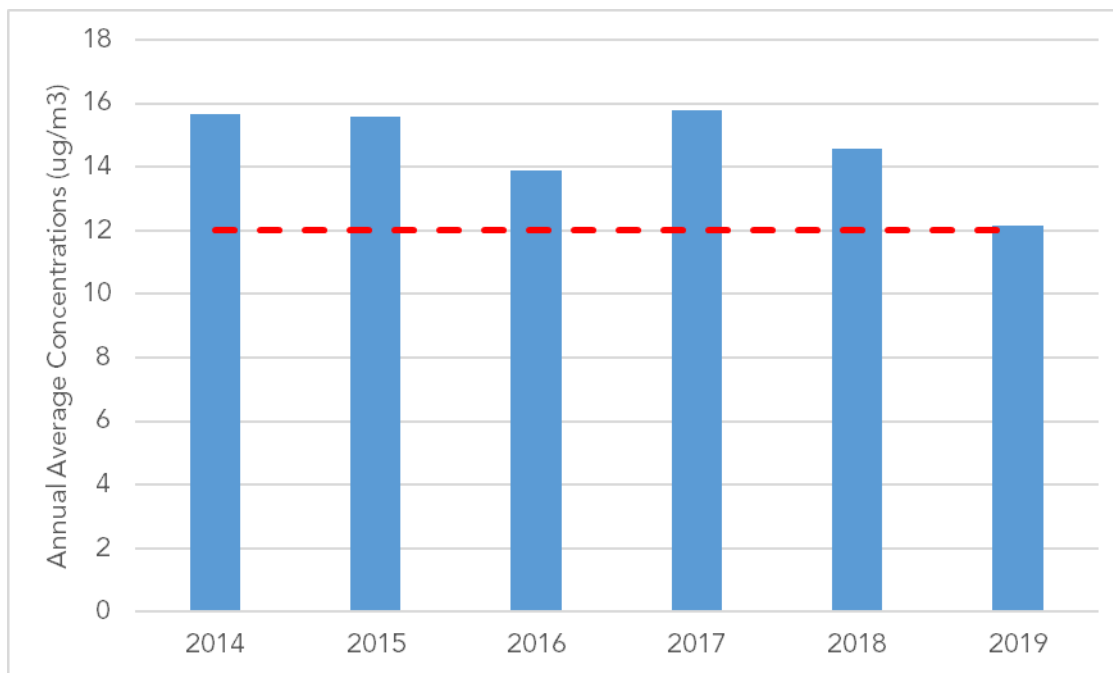
<sup>22</sup> 81 Fed. Reg. at 58,063 – 58,067.

together, these efforts will provide sufficient emission reductions to satisfy the 2022 milestone contingency.

### E. PM2.5 Air Quality Trends

PM2.5 annual average concentrations in Portola improved significantly since the inception of the Program. Annual average concentrations decreased 22 percent or 3.4  $\mu\text{g}/\text{m}^3$  between 2015 and 2019. Figure 3 illustrates trends in annual average concentrations at Portola.

Figure 3. Trends in annual average PM2.5 concentrations



With a 2019 annual average at 12.2  $\mu\text{g}/\text{m}^3$ , the Plumas County nonattainment area is on track to attain the annual standard by the Moderate attainment date of December 31, 2021.

## V. ENVIRONMENTAL IMPACTS

### A. CARB's CEQA Program and Determination

The California Environmental Quality Act (CEQA, Pub. Resources Code, § 21000, et seq.) requires public agencies to consider the potential environmental impacts of their actions. CARB's regulatory program, which involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality, has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of CEQA and its implementing regulations (Cal. Code Regs., tit.14, § 15251(d)). Public agencies with certified regulatory programs are exempt from certain CEQA

requirements, including, but not limited to, preparing environmental impact reports, negative declarations, and initial studies. CARB, as a lead agency, prepares a substitute environmental document (called an “Environmental Analysis” or “EA”) as part of the Staff Report prepared for a proposed action to comply with CEQA (Cal. Code Regs., tit. 17, § 60000-60008).

For the reasons below, CARB determined the Proposed Portola PM2.5 Plan Contingency Measure SIP Submittal consisting of Ordinance 359 and the emission reduction calculations is exempt from CEQA. If this SIP submittal is finalized, CARB will file a Notice of Exemption with the Office of the Secretary for the Natural Resources Agency and the State Clearinghouse for public inspection.

## B. Analysis

Just as the City of Portola found, and the District has proposed to find, when Ordinance 359 was adopted and the District attainment plan was proposed to be updated,<sup>23</sup> CARB has determined that the Proposed Portola PM2.5 Plan Contingency Measure SIP Submittal is exempt from CEQA under the general rule or “common sense” exemption.<sup>24</sup> These CEQA guidelines state the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty there is no possibility that the activity may have a significant effect on the environment, it is not subject to CEQA.

The Portola PM2.5 Plan Contingency Measure SIP Submittal is also categorically exempt from CEQA under the “Class 8” exemption because it is an action taken by a regulatory agency for protecting the environment.<sup>25</sup>

The Portola PM2.5 Plan Contingency Measure SIP Submittal describes an attainment contingency measure that will be triggered if U.S. EPA determines the nonattainment area failed to attain the annual PM2.5 standard of 12 µg/m<sup>3</sup> by the attainment date. Under Ordinance 359, if the contingency is triggered, the District and City of Portola will implement a more stringent wood-burning curtailment program within 60 days. Burning wood for heat creates more air pollution than other types of heating fuels. On curtailment days, burning wood will be allowed only in U.S. EPA-certified stoves. This is expected to prompt residents to install U.S. EPA-certified stoves, for which the District provides financial incentives,<sup>26</sup> or otherwise transition to cleaner

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<sup>23</sup> Ord. 359, § 3; Proposed District Reso. 2020-08, p. 3.

<sup>24</sup> Cal. Code Regs., tit. 14, § 15061(b)(3).

<sup>25</sup> Cal. Code Regs., tit. 14, § 15308.

<sup>26</sup> The District offers financial assistance to qualified homeowners within the Greater Portola PM2.5 Nonattainment Area for replacing non-U.S. EPA certified wood stoves with new, efficient, cleaner burning U.S. EPA-certified devices. For example, for homeowners within the City of Portola Sphere of Influence, there are incentives up to \$3,500 to replace a qualified wood heating device with a U.S. EPA certified wood-burning device, and up to \$4,500 to replace a qualified wood heating device with a U.S. EPA certified pellet, propane, or kerosene heating device. Complete information is available at

fuels. Either option will help protect public health and the environment by reducing concentrations of PM<sub>2.5</sub> and hazardous air pollutants in the Nonattainment Area.

Based on CARB staff review, it can be seen with certainty there is no possibility that the Proposed Portola PM<sub>2.5</sub> Plan Contingency Measure SIP Submittal may cause a significant adverse impact on the environment. Further, the proposed action protects the environment, and CARB found no substantial evidence indicating the proposal could hurt air quality or any other environmental resource area, or that the exceptions to the exemption applies.<sup>27</sup> Therefore, this activity is exempt from CEQA.

## VI. STAFF RECOMMENDATION

CARB staff recommends the Board adopt the Portola PM<sub>2.5</sub> Plan Contingency Measure SIP Submittal SIP addressing the contingency measure requirements for the Plumas County nonattainment area for the 2012 12 µg/m<sup>3</sup> annual PM<sub>2.5</sub> NAAQS for submittal to U.S. EPA. This SIP revision includes an enforceable measure in Ordinance 359 that, within 60 days of a trigger, the District and City of Portola will lower the wood-burning curtailment threshold from 30 µg/m<sup>3</sup> to 20 µg/m<sup>3</sup> of PM<sub>2.5</sub> in the ambient air and extend the curtailment season from 4 months to 8 months. Once triggered, the lower curtailment threshold and longer curtailment season will continue until U.S. EPA either approves an attainment plan for the nonattainment area, that would be developed by the District to satisfy the serious area requirements for the 2012 12 µg/m<sup>3</sup> annual PM<sub>2.5</sub> NAAQS, or determines in writing that the RFP or quantitative milestone failure that triggered the contingency measure has been corrected. Staff determined that an enforceable measure in Ordinance 359 along with technical clarification regarding estimates of emission reductions associated with contingency measures presented in this report satisfies the CAA contingency measure requirements.

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<http://myairdistrict.com/index.php/grants-incentives/portola-woodstove-change-out-program/#greater-portola-woodsmoke>.

<sup>27</sup> Cal. Code Regs., tit. 14, § 15300.2.