

**San Joaquin Valley Air Pollution Control District
AB 617 Community Emission Reduction Program**

Alternative to Agricultural Open Burning Emission Reduction Program Plan

***South Central Fresno Community
Shafter Community***

Project Identification

SOUTH CENTRAL FRESNO CERP AG.1: INCENTIVE PROGRAM FOR DEPLOYING ON-FIELD ALTERNATIVES TO THE OPEN BURNING OF AGRICULTURAL MATERIALS

SHAFTER CERP A.3: INCENTIVE PROGRAM FOR DEPLOYING ON-FIELD ALTERNATIVES TO THE OPEN BURNING OF AGRICULTURAL MATERIALS

This is a Community Identified Project included and prioritized in the California Air Resources Board (CARB) and District adopted South Central Fresno and Shafter Community Emission Reduction Programs (CERP).

This measure will reduce Particulate Matter (PM), Oxides of Nitrogen (NO_x), and Reactive Organic Gases (ROG) emissions from agricultural open burning of orchard and vineyard removals by incentivizing chipping and soil reincorporation or land application as an alternative.

Community Support

This measure received support from both the South Central Fresno and Shafter Community Steering Committees and was included in each of the respective adopted Community Emission Reduction Programs. Information about the Steering Committees is included below:

- (1) Name(s) of the community group(s):**
 - a. South Central Fresno Steering Committee [Map](#)
 - b. Shafter Steering Committee [Map](#)
- (2) Purpose of community group(s)**
 - a. AB617 Community Engagement and Public Input
- (3) Total number of members in the community group(s)**
 - a. South Central Fresno – 34 members
 - b. Shafter – 27 members
- (4) Date(s) of formation/establishment**
 - a. South Central Fresno – December 2018
 - b. Shafter – December 2018
- (5) A description of the decision-making process must be included.**
 - a. South Central Fresno Steering Committee [Charter](#)
 - b. Shafter Steering Committee [Charter](#)

(6) Community Support Demonstration

- a. South Central Fresno [CERP](#)
- b. Shafter [CERP](#)

Mechanism for Informing Community

This measure has been discussed at Community Steering Committee meetings in addition to the outreach activities conducted to inform residents of the program and requirements for participation. The outreach conducted has and will continue to be the following:

- Social media
- Mailers
- Print ads
- Press releases and press events
- Bus ads
- Events, town halls, webinars, etc.
- Other ideas as brought up by committee

Participant Requirements

(A) Alternative to Agricultural Open Burning Incentive Pilot Program Eligibility

The Alternative to Agricultural Open Burning Incentive Pilot Program (Program) guidelines are attached to this program plan as Exhibit A. In implementing this CERP measure, the District will follow existing Program guidelines and eligibility criteria. Only commercial agricultural operations are eligible to apply. The participant must submit an application and obtain an executed voucher from the District prior to chipping any of the vineyard or orchard acres to be removed at the location referenced in their application. Applications are processed on a first-come-first-served basis. Land conversions intended for non-agricultural purposes are not eligible for this Program. The final disposition of agricultural material must be used on-site or at another agricultural location and cannot be sold or used for other non-agricultural off-site uses including, but not limited to, biomass power generation or composting.

(B) Participant Requirements

The Program application is attached to this program plan as Exhibit B. A certification section is included in the application and details participant requirements. Participation in the Program occurs in five phases: Voucher Application, District Pre-Inspection, Voucher Execution, Voucher Redemption, and District Post-Inspection.

- (1) Voucher Application: A participant must submit a completed voucher application along with the Certifications Form signed by the applicant, a completed IRS Form W-9, a site map confirming the acreage to be removed, and a detailed and itemized quote from any service providers for the planned activities.

- (2) District Pre-Inspection: If the Voucher Application is determined by a District Program Specialist to be complete and eligible, a pre-inspection of the orchard or vineyard will be scheduled and conducted by a District Air Quality Field Assistant.
- (3) Voucher Execution: Upon completion of the pre-inspection, the District Program Specialist will review the pre-monitoring inspection report, execute a voucher if the application is deemed eligible, and mail or email the voucher to the applicant. Participants may then commence chipping of the removed vineyard or orchard, and the subsequent soil incorporation or land application as indicated on their executed voucher.
- (4) Voucher Redemption: The applicant has 180 days from the voucher execution date to complete the project. Once a participant has completed the chipping and soil incorporation or land application, they may submit a Claim for Payment packet to begin the voucher redemption process. A complete Claim for Payment packet is required as part of the voucher redemption process and must include a completed and signed voucher, a breakdown of services conducted, and copies of any invoices and receipts for the services performed. A District Program Specialist will review the submitted Claim for Payment packet for completeness, and begin coordination for the post-inspection.
- (5) District Post-Inspection: After receiving a completed Claim for Payment packet, a District Air Quality Field Assistant conduct the post-inspection site visit. Photographs will be taken during the site visit and a post-inspection report will be completed, indicating the final disposition of agricultural material. District Staff will review the post-monitoring report, and issue reimbursement to the participant for eligible costs, up to the approved voucher amount.

Funding Amounts

The approved CERPs include \$1,000,000 for the Shafter community and \$375,000 for the South Central Fresno community for the implementation of this measure. This funding will eliminate agricultural burning of up to 2,000 acres in Shafter, and up to 700 acres in South Central Fresno, helping to achieve the ongoing emissions reductions associated with the phase-out of agricultural open burning.

Table 1 summarizes the eligible alternative practices and incentive amounts available to South Central Fresno and Shafter community farmers through the Program. These funding levels represent the maximum incentive amounts based on the number of acres removed and the final disposition of the agricultural material. If the total project cost of the orchard or vineyard removal, and the cost of chipping and disking or spreading, as applicable, are less than the incentive amount, the final amount reimbursed to the participant will be reduced. There are no minimum match requirements for participation in the program; however, participants must pay for any costs that exceed the incentive amount.

Cost-Effectiveness of each project’s emissions reductions is calculated according to the following formula

$$\text{Formula A-1: Cost-Effectiveness (\$/ton)} = \frac{\text{Grant Amount (\$)}}{\text{Total Emission Reductions (tons/acre)}}$$

Table 1: Eligible Incentive Amounts for South Central Fresno and Shafter Communities

Project Type	Maximum Incentive per Acre*	Maximum Incentive (per applicant per year)
Chipping with soil incorporation (soil incorporation/whole orchard recycling)	\$600 per acre	\$60,000
Chipping without soil incorporation (land application of mulch or other on-site practices)	\$300 per acre	\$30,000

* The final funding amount reimbursed may be less than the maximum incentive amount if the final invoice amount for the project is less than the maximum incentive amount or if the final project is different from the proposed project. For example, the project proposed and funded was 100% soil incorporation but the final project was 50% soil incorporation and 50% land application.

[Project Selection and Reporting](#)

Projects will be approved on a first come, first served basis determined by the submittal of a complete program application.

The District will report program information in accordance with Community Air Protection program guidelines found at:

https://ww3.arb.ca.gov/msprog/cap/docs/cap_incentives_2019_guidelines.pdf.

[Emission Reduction Targets](#)

The goal of this measure is to abate the agricultural open burning of up to 2,000 acres in the Shafter Community with an expected emission reduction of up to 500.5 tons per year, and up to 700 acres in South Central Fresno with an expected emission reduction of up to 175.2 tons per year.

The District will utilize an established Program emission reduction calculation methodology to calculate the emission reductions achieved from each completed project. The Program’s emissions reduction calculations are based on the following references for tier ratings, emission factors, and process rates:

- CARB’s Managed Burn Emission Factor Table for Orchard Removals
- The District’s 2010 Ag Burning Staff Report
- The Carl Moyer Program
- EMFAC2017 for MHDT

Tables 2 and 3 on the following pages summarize the emissions data needed to calculate typical per-acre emission reductions for the Program’s projects.

Table 2: Per Acre Emissions for Open Field Burning

Emission Source	BHP	Tier	Pollutant	Emission Factor (g/bhp-hr)	Emissions lb/hr	Processing Rate (hr/acre)	Emissions (lb/acre)
Dozer #1	300	2	NOx	3.79	2.5	2	5.01
			PM2.5	0.09	0.1		0.12
			ROG	0.09	0.1		0.12
Wheel Loader	250	2	NOx	4.15	2.3	1	2.29
			PM2.5	0.09	0.0		0.05
			ROG	0.11	0.1		0.06
Dozer #2 (Ripping one time)	600	2	NOx	3.79	5.0	1.5	7.52
			PM2.5	0.09	0.1		0.17
			ROG	0.09	0.1		0.18
Tractor	115	2	NOx	4.15	1.1	1	1.05
			PM2.5	0.13	0.0		0.03
			ROG	0.15	0.0		0.04
Emission Source			Pollutant	g/mile	Round Trip Miles	# of Round Trips	lb/day
Heavy Haul Truck			NOx	3.66	100	4	3.23
			PM2.5	0.11			0.10
			ROG	0.34			0.30
Emission Source			Pollutant	lb/ton	tons/acre	lb/acre (orchard)	lb/acre (vineyard)
Ag Burn			NOx	5.20	30 for orchards 15 for vineyards	156.00	78.00
			PM2.5	7.30		219.00	109.50
			ROG	5.20		156.00	94.50
Total Pounds of Emissions per Acre							
Orchard Burning			NOx		175.1		
			PM2.5		219.47		
			ROG		156.7		
Vineyard Burning			NOx		97.1		
			PM2.5		109.97		
			ROG		95.2		

Table 3: Per-Acre Emissions for Alternatives to Agricultural Open Burning

Emission Source	BHP	Tier	Pollutant	Tier Standard (g/bhp-hr)	Emissions (lb/hr)	Processing Rate (hr/acre)	Emissions (lb/acre)
Dozer #1	300	2	NOx	3.79	2.5	2	5.01
			PM2.5	0.09	0.1		0.12
			ROG	0.09	0.1		0.12
Wheel loader	250	2	NOx	4.15	2.3	1	2.29
			PM2.5	0.09	0.0		0.05
			ROG	0.11	0.1		0.06
Excavator	240	1	NOx	5.93	3.1	1	3.14
			PM2.5	0.12	0.1		0.06
			ROG	0.29	0.2		0.15
Grinder	1,000	2	NOx	3.79	8.4	1	8.36
			PM2.5	0.09	0.2		0.20
			ROG	0.09	0.2		0.20
Tractor (Spreading)	115	2	NOx	4.15	1.1	1	1.05
			PM2.5	0.13	0.0		0.03
			ROG	0.15	0.0		0.04
Dozer #2 (Ripping 3 times)	600	2	NOx	3.79	5.0	1.5	22.56
			PM2.5	0.09	0.1		0.52
			ROG	0.09	0.1		0.54
Tractor (Disking)	115	2	NOx	4.15	1.1	1	1.05
			PM2.5	0.13	0.0		0.03
			ROG	0.15	0.0		0.04
Emission Source			Pollutant	g/mile	Round Trip Miles	# of Round Trips	Lbs
Heavy Haul Truck			NOx	3.66	100	6	4.84
			PM2.5	0.11			0.15
			ROG	0.34			0.45
Emission Source			Pollutant	lb/ton	tons/acre	lb/acre (orchard)	lb/acre (vineyard)
Chipping and Grinding			PM2.5	0.05	30 for orchards 15 for vineyards	1.5	0.75
Total Pounds of Emissions per Acre							
Orchard Alternative			NOx			48.3	
			PM2.5			2.66	
			ROG			1.6	
Vineyard Alternative			NOx			48.3	
			PM2.5			1.91	
			ROG			1.6	