

## **Chapter 1**

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### **Background**

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## **Chapter 1: BACKGROUND**

### **1.1 REASONS FOR THIS REPORT**

#### **1.1.1 State Law Requires Determinations by the District, with Concurrence by ARB**

In 2003, state law was amended to require the District to limit open burning for diseased crops, establish best management practices for other weeds and maintenance, and prohibit open burning for numerous crop categories. In addition to those requirements, the state law authorizes the District to postpone the burn prohibition dates for specific types of agricultural material if the District makes three specific determinations and the Air Resources Board (ARB) concurs. The determinations are: (1) there are no economically feasible alternatives to open-burning that type of material; (2) open-burning that type of material will not cause or substantially contribute to a violation of a National Ambient Air Quality Standard (NAAQS); and (3) there is no long-term federal or state funding commitment for the continued operation of biomass facilities in the Valley or the development of alternatives to burning.

The District has continued to work closely with the stakeholders to identify economically feasible alternatives to open burning of various agricultural materials and to meet its legal obligation under the CH&SC. To fulfill the state law requirements, the District has implemented the requirements for most crop categories identified in CH&SC Section 41855.5.

While the CH&SC is designed to achieve emissions reduction by implementing wide scale prohibitions and regulations on agricultural burning, it recognizes that technological and economic factors may limit the non-burning alternatives to agricultural material disposal, and it allows the District to determine the details and timing of the prohibitions. As a result, this report is intended to satisfy the requirements from CH&SC Section 41855.6 by presenting the District's recommended determinations for specified crops and materials, particularly those that do not have any technologically or economically feasible alternatives to open burning. As proposed in the amendments to Rule 4103, the District would revisit this report at least once every five years to review the determinations for any crops and materials that have been postponed. This process would protect public health without adverse impacts to the economic viability of these crops in the Valley.

### 1.1.2 Description of Affected Categories

For the purposes of this project, the following categories will not be addressed:

- Prohibited crop types from earlier deadlines: In 2005 and 2007, District staff evaluated several alternatives to open burning for the crop categories identified in the CH&SC and has prohibited open burning for most of those crops and materials.
- Diseased crops: The District incorporated the state law requirements for diseased crops into Section 5.9 of Rule 4103 in 2004. The requirements provide for the issuance of a conditional crop burning permit if certain criteria were met and the county agricultural commissioner makes specific determinations for the crop type. This category includes crop types that are identified as diseased per Section 5.9 of Rule 4103.
- Other weeds and maintenance: These materials have already been addressed in 2005 as part of the CH&SC requirements to establish best management practices for the control of other weeds and maintenance. The best management practices were developed in consultation with the University of California Cooperative Extension, stakeholders (growers), producers, and agricultural industry groups. See Rule 4103, Attachment 1, to view the Best Management Practices for the control of other weeds and maintenance.
- Attrition of various crops: According to the District's policy, attrition is vegetative materials not associated with pruning (as defined in Rule 4103) or orchard/vineyard removals. Attrition materials include the incidental cuttings of dead or broken branches, tree mortality, water sprouts or suckers, or other damage to tree crops. CH&SC does not prohibit these materials from being open burned.

This report describes the methodology and supporting data for determinations for affected categories. This report will address several crops and materials that had been postponed during earlier burn prohibition deadlines and the crop categories for the June 1, 2010 burn prohibitions of CH&SC Section 41855.5. The June 1, 2010 categories include Vineyard Removals, Prunings from Surface Harvested Crops, and Other Materials, listed below as items One, Two and Three. The crops and materials that were postponed until June 1, 2010 in earlier amendments to Rule 4103 are listed on the following page. This report does not address materials whose burn prohibitions were not postponed from earlier actions by the District.

1. "Surface harvested prunings" which includes, but is not limited to, any of the following:
  - a. Almond prunings.
  - b. Walnut prunings.
  - c. Pecan prunings.
  - d. Grape vines.
  - e. Vineyard materials, which includes grape canes and raisin trays<sup>1</sup>.
2. "Vineyard Removals" which includes vineyard removal materials from grape vineyards and kiwi vineyards<sup>2</sup>.
3. "Other materials" which includes, but is not limited to, any of the following:
  - a. Brooder paper.
  - b. Deceased goats.
  - c. Diseased bee hives.
4. Weed abatement activities affecting ponding and levee banks.
5. Prunings from apple crops, pear crops, fig crops, and quince crops.
6. Orchard removal matter from citrus crops, apple crops, pear crops, quince crops, and fig crops and orchard removal matter from a total of 20 acres or less of orchard removal at a single location, per calendar year.
7. Rice stubble, residual rice stubble, spot burning of rice stubble, burning of weeds and vegetative materials on rice field levees and banks.

The District minimizes the impacts from the burning of these crops through the burn permitting process and the Smoke Management System (SMS). In previous amendments to the rule, the District has determined that the continued issuance of burn permits for the postponed crop categories would not cause or substantially contribute to a violation of an applicable federal ambient air quality standard.

The agricultural materials categories affected by this project are described more fully in Chapter 3 of this report.

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<sup>1</sup> The definition in the CH&SC for "vineyard materials" includes grape canes and raisin trays. Based on District's staff's interpretation of CH&SC Section 41855.5, "grape canes should be in "Surface Harvested Prunings", not in "Vineyard Removals".

<sup>2</sup> Similarly, "vineyard removal materials" should be in "Vineyard Removals" category, not in "Surface Harvested Prunings" category.

## **1.2 OVERVIEW OF THE METHODOLOGY FOR ALTERNATIVES TO OPEN BURNING FOR MAKING THE DETERMINATIONS**

In order to more effectively address the requirements of CH&SC Section 41855.5 and Section 41855.6, District staff has developed a methodology for the purpose of evaluating the alternatives to open burning of crops/materials affected by this report. For the purposes of this report, District staff has gathered information on alternative methods to open burning of agricultural material and conducted analyses based on the consideration for the SJVAB. The review process will include, but not be limited to, the items listed below.

### **1.2.1 Is There a Technologically Feasible Non-Burning Alternative for Disposing of the Specific Crop Type?**

District staff has reviewed and considered available information in the evaluation of alternatives to open burning of crops affected by this project and has evaluated the most practical alternatives to determine whether the alternatives can be used for the affected crops in the SJVAB. District staff realizes that there can be substantial differences in the factors that need to be considered in evaluating technologically feasible alternatives to open burning of agricultural materials. Alternatives that may be technologically feasible for one crop may not be for another crop, such as burning for disease prevention. If a specific crop/material does not have a technologically feasible alternative to open burning, District staff recommends postponing the burn prohibition for that specific crop/material. For those crops/materials where a technologically feasible alternative exists, District staff has determined whether those options are viable alternatives to continue to conduct further analysis in the following section.

District staff will continue to review and analyze relevant information and work with affected operators, chippers, power plant operators and any other interested parties for future review of the technologically feasible alternatives. District staff anticipates that additional alternatives will be identified as technology progresses and will evaluate them accordingly.

### **1.2.2 Does the Cost Analysis Show an Economically Feasible Non-Burn Alternative?**

For those crop categories where a technologically feasible alternative exists, the District must perform an analysis that determines the cost and economic feasibility of implementing the preferred alternative in order to consider postponement of those categories. District staff began by estimating the per-acre costs for each alternative method, based on the appropriate technique for that specific crop and practice, and considering economies of scale. The cost estimates used to determine the economic feasibility of the selected alternatives could include capital costs, maintenance costs, and operational costs. For the

economic analysis, District staff analyzed economic impact stemming from the difference in cost between open burning and grind-and-haul approaches to orchard removal, and between open burn and shredding in place (land application) approaches for pruning. For the purposes of the pruning analysis, the costs for nuts producers cover a two-year period as, generally, almond, walnut and other nut orchards could be pruned every two years. For the purposes of the orchard/vineyard removal analysis, costs for orchard and vineyard removals cover a ten-year period. Some growers mentioned that they pull out orchards every few years to keep the farm productive. The 10-year value has been used in previous District analyses. These years constitute the bearing or harvested years, not the non-bearing years.

In accordance with state law, the District has conducted an economic analysis of the potential impacts of the burning prohibitions in Chapter Three of this report. The analysis compares the per-acre costs for the alternative to the per-acre net profit for each crop category. If the cost of implementing the alternative exceeds ten percent of the crop category's net profit, District staff will recommend a temporary postponement of the burn prohibition for that specific crop/material.

The 10 percent threshold utilized in this analysis represents the economic significance level generally utilized by the District in the development of District rules, and represents the level that a regulatory action would pose a significant economic impact to affected sources. More specifically, the criteria for determining the level of "significance" of economic impact for District rulemaking projects is a ten percent change in Return on Sales (ROS). The ten percent threshold was based on the parameters of accepted methodologies discussed in a 1995 California Air Resource Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB 513/AB 969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August, 1995). One methodology described in the report relates to determining a level below or above which a rule and its associated costs is deemed to have significant economic impacts. ARB has incorporated the methodologies described in the report in its own assessment of economic impacts for rules or regulations adopted by ARB, and uses a similar threshold, ten percent change in the Return on Equity (ROE), in its rulemaking projects. Both methods are expected to generate similar results with regard to economic impact.

### **1.2.3 Do Biomass Power Plants or Other Facilities in the Valley Have Capacity?**

A key consideration in the evaluation of an alternative to open burning is whether the operators, facilities and other resources that would be impacted by the alternative have the capability and capacity to receive large amounts of the agricultural material if the material cannot be soil incorporated. If additional agricultural material is prohibited from being open burned, District staff expects that such prohibition would generate a substantial amount of agricultural material. The alternatives to open burning would need to be able to accept and handle the additional diverted agricultural material.

Growers normally prefer to clear away the agricultural material from their farms as soon as possible in order to carry on with their farming operations; therefore, growers depend on operators such as chippers to provide timely service. The ability to provide such timely service could be impacted if chipping operators are not equipped to handle the additional agricultural material. Similarly, if biomass power plants are not prepared to handle the additional agricultural material, the plants may be forced to turn away agricultural material. Other affected operators could face similar issues in regards to their capability to handle additional agricultural material. District staff has evaluated the potential ability of the affected operators to handle, store and process the additional agricultural material. While biomass plants may represent a cleaner option to open burning, those reductions come at the price of increased diesel emissions from equipment used to chip the biomass and transport it to the plant. This report will calculate those diesel emissions and examine any public health impacts which they may pose compared to open burning.

### **1.2.4 Does ARB Concur With the Analysis?**

One of the four criteria that must be met in order to postpone the burn prohibition commencement dates set forth in the CH&SC is ARB's concurrence with the District's determinations. District staff has worked closely with ARB staff to better ensure that ARB's concurrence is provided in accordance with the requirements. ARB and District staff has conducted several biweekly meetings to address the crops and issues related to this project.

## **1.3 PROCESS AND SCHEDULE FOR 2010 DETERMINATIONS**

During research of the various areas involved in this project, District staff has contacted several affected stakeholders for the purpose of gathering data and other pertinent information. District staff has also participated in several stakeholder meetings to obtain further information about the crops, alternatives and other related issues. District staff has included relevant information obtained through this process in this report. District staff appreciates the contribution of



data and other information by the Valley growers, chipping and shredding operators, biomass operators, and vendors during this process.

The final phase of the CH&SC burn prohibitions is set for June 1, 2010, and District staff proposes to address the final deadline in a two-step process. The District's Governing Board adopted the amendments to Rule 4103 to incorporate the provisions from the CH&SC on April 15, 2010 as part of the first step. These provisions allow the District to periodically review changes in agricultural practices and consider non-burning alternatives and economic conditions as they develop without having to conduct a full rulemaking action.

This report constitutes the second part of the process. On April 14, 2010, District staff conducted a public workshop to present the findings and draft recommendations from the draft report and to seek public comments. District staff published a Proposed Report for further public comments prior to the Public Hearing. Additional comments were submitted to District staff and presented to the Governing Board on May 20, 2010.

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