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Socioeconomic Impact Analysis of Proposed Revisions to Regulation 2 Rule 1, Regulation 2 Rule 2, and Regulation 2 Rule 6

Prepared for:

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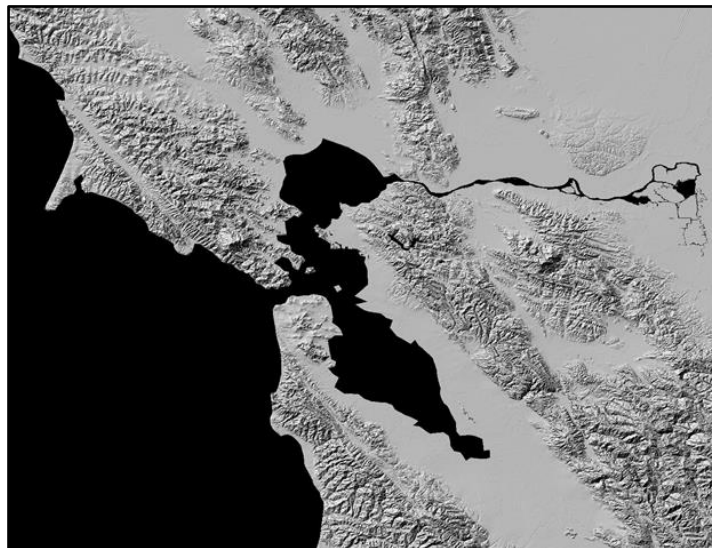
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1. INTRODUCTION

The Bay Area Air Quality Management District (“District”) seeks to amend the “New Source Review” pre-construction program and the Title V “Major Facility Review” operating permit program. Specifically, the District proposes to revise Regulation 2, Rule 1 (Permits – General Requirements), Regulation 2, Rule 2 (Permits – New Source Review), and Regulation 2, Rule 6 (Permits – Major Facility Review). This report analyzes the socioeconomic impacts associated with the proposed revisions.

After this introduction, this report discusses the proposed revisions in greater detail (Section Two). After that discussion, the report describes the socioeconomic impact analysis methodology and data sources (Section Three). The report describes population and economic trends in the nine-county San Francisco Bay Area (Section Four), which serves as a backdrop against which the Air District is contemplating its various rule changes. Finally, the socioeconomic impacts stemming from the proposed rule changes are discussed in Section Five. The report is prepared pursuant to Section 40728.5 of the California Health and Safety Code, which requires an assessment of socioeconomic impacts of proposed air quality rules. The findings in this report can assist Air District staff, members of the Board of Directors, regulated entities, and interested members of the public in understanding the socioeconomic impacts of the proposed requirements. Figure 1 is a map of the nine-county region that comprises the San Francisco Bay Area Air Basin.

Figure 1 – Map of San Francisco Bay Area Region



2. OVERVIEW OF PROPOSED REVISIONS TO REG. 2 RULE 1, REG. 2 RULE 2, AND REG. 2 RULE 6

The Air District's New Source Review (NSR) program is a comprehensive air permitting program that applies to stationary-source facilities within the District's jurisdiction. The NSR program is the Air District's principal substantive permitting program, applying to a wide variety of stationary-source facilities throughout the Bay Area. Whenever a facility wants to install a new source of air emissions or make a modification to an existing source, the NSR program requires the facility to obtain a permit and implement state-of-the-art air pollution control technology to limit the source's emissions. NSR is a pre-construction permitting requirement, meaning that the facility is required to obtain its NSR permit before it can begin work on the new source or modification.

The Air District's Title V Major Facility Review (Title V) program requires "major" facilities – those with emissions of over 10, 25, or 100 tons per year, depending on the pollutant – to obtain operating permits. The Title V operating permit does not impose any additional substantive requirements on these facilities to limit their emissions. Instead, the purpose of the Title V permit is to collect all of the substantive emissions control requirements applicable to the facility under District, state and federal permits and regulations into one comprehensive document, which improves the transparency and enforceability of the regulatory requirements for these complex "major" facilities.

Since the last time when the District updated its NSR and Title V regulations in 2012, the District has determined that a number of developments have given rise to a need to consider further revisions to enhance the effectiveness of these permit programs. BAAQMD staff indicate that while the proposed revisions are relatively minor, and are mostly technical and administrative in nature, the proposed changes are important to ensure that the Air District's NSR and Title V programs function properly from a legal standpoint. The developments that triggered the need for the proposed revisions are summarized below:

- In 2016, EPA approved the Air District's 2012 revisions as satisfying the requirements of the federal Clean Air Act, with the exception of 11 identified "deficiencies." The District needs to make certain revisions to address these deficiency items so that EPA can fully approve the District's NSR program.
- In addition, Air District Staff have gained further experience in working with the 2012 updates since they were adopted, and have identified certain areas where additional revisions and clarifications are needed to ensure that the NSR program functions as effectively as possible.

- Finally, in 2014 the U.S. Supreme Court issued a ruling in *Utility Air Regulatory Group v. EPA* (134 S.Ct. 2427 (2014)) that interpreted several relevant provisions of the federal Clean Air Act regarding the Act's NSR and Title V program requirements. The Air District needs to make certain revisions to align the District's regulations with the Supreme Court's ruling.

COST OF COMPLIANCE

The revisions the Air District is considering to address the deficiency items identified by EPA are mostly minor and administrative in nature. As such, these revisions are not expected to have any significant impact on emissions or on compliance costs. According to the District, changes aimed at improving the functioning of the NSR program are similarly minor and administrative in nature, and thus are not expected to have any significant compliance cost impacts.

The only substantive revision the Air District needs to make to address the *UARG v. EPA* decision is to revise Regulation 2, Rule 6 to provide that a facility does not become subject to the Title V Major Facility Review operating permit requirements solely because of GHG emissions. The revision affects a very limited number of facilities that exceed the now-vacated 100,000 tpy CO₂e Title V threshold for GHGs, but do not exceed the Title V threshold for any other pollutants. These facilities will no longer be subject to Title V permit requirements. For similar reasons, the District has determined that there will be little economic impact on any affected facilities because they will still face the exact same costs of compliance with respect to their substantive emissions requirements, which will remain unchanged.

3. METHODOLOGY

Applied Development Economics (ADE) typically begins its impact analysis by preparing a statistical description of the industries affected by proposed rules and amendments, analyzing data on the number of establishments, jobs, and payroll. We also estimated sales generated by impacted industries. To generate its estimates, ADE relies on the most current data available from a variety of sources, particularly the State of California's Employment Development Department (EDD) Labor Market Information Division, the US Census County Business Patterns, and the US Internal Revenue Service. When presented with a list of specific firms affected by proposed new regulations, ADE also analyzes firm-specific data from private data vendors, such as InfoUSA.

When compliance cost information is readily available, ADE then compares costs against net profits, in the case of private sector entities affected by proposed rules, with the results of socioeconomic analysis shows what proportion of profits the compliance costs represent. Based on assumed thresholds of significance, ADE discusses in the report whether the affected sources are likely to reduce jobs as a means of recouping the cost of rule compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the jobs losses are estimated using a regional IMPLAN input-output model. In the case of impacts borne by public sector entities, ADE analyzes whether affected sources can cover costs a combination of sources' annual revenues and fund balance reserves.

When analyzing the socioeconomic impacts of proposed new rules and amendments, ADE attempts to work closely within the parameters of accepted methodologies discussed in a 1995 California Air Resources Board (ARB) report called "Development of a Methodology to Assess the Economic Impact Required by SB513/AB969" (by Peter Berck, PhD, UC Berkeley Department of Agricultural and Resources Economics, Contract No. 93-314, August, 1995). The author of this report reviewed a methodology to assess the impact that California Environmental Protection Agency proposed regulations would have on the ability of California businesses to compete. The ARB has incorporated the methodologies described in this report in its own assessment of socioeconomic impacts of rules generated by the ARB. One methodology relates to determining a level above or below which a rule and its associated costs is deemed to have significant impacts. When analyzing the degree to which its rules are significant or insignificant, the ARB employs a threshold of significance that ADE follows. Berck reviewed the threshold in his analysis and wrote, "The Air Resources Board's (ARB) use of a 10 percent change in [Return on Equity] ROE (i.e. a change in ROE from 10 percent to a ROE of 9 percent) as a threshold for a finding of no significant, adverse impact on either competitiveness or jobs seems reasonable or even conservative."

4. ECONOMIC AND DEMOGRAPHIC TRENDS

This section of the report discusses the larger context within which the Air District is contemplating revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6. This section begins with a broad overview of demographic and economic trends, with discussion then narrowing to industries and sources affected by the proposed rule changes.

REGIONAL POPULATION TRENDS

Table 1 tracks population growth in the nine-county San Francisco Bay Area between 2006 and 2016, including data for the year 2011. Between 2006 and 2017, the region grew by approximately 0.9 percent a year. Between 2011 and 2016, the region grew annually at a somewhat faster rate of 1.2 percent per year. Overall, there are 7,649,565 people in the region. At 1,927,888 Santa Clara County has the most people, while Napa has the least, at 142,028. Santa Clara grew the fastest between 2011 and 2016, at 1.3 percent a year, while Marin grew by the slowest rate (0.6 percent a year) over the same period.

Table 1: Population Trends: Bay Area Counties, Region, and California

JURISDICTION	2006	2011	2016	06-11 CAGR	11-16 CAGR	06-16 CAGR
California	36,116,202	37,536,835	39,255,883	0.8%	0.9%	0.8%
SF Bay Area	6,915,872	7,220,443	7,649,565	0.9%	1.2%	1.0%
Alameda	1,462,371	1,525,695	1,627,865	0.9%	1.3%	1.1%
Contra Costa	1,007,169	1,059,495	1,123,429	1.0%	1.2%	1.1%
Marin	246,969	253,964	262,274	0.6%	0.6%	0.6%
Napa	131,330	136,913	142,028	0.8%	0.7%	0.8%
San Francisco	781,295	815,854	866,583	0.9%	1.2%	1.0%
San Mateo	699,347	726,305	766,041	0.8%	1.1%	0.9%
Santa Clara	1,706,676	1,803,362	1,927,888	1.1%	1.3%	1.2%
Solano	410,964	413,438	431,498	0.1%	0.9%	0.5%
Sonoma	469,751	485,417	501,959	0.7%	0.7%	0.7%

Source: ADE, Inc., based on California Dept. of Finance E-5 Reports (note: CAGR = compound annual growth rate)

REGIONAL ECONOMIC TRENDS

Data in Table 2 describe the larger economic context within which officials are contemplating the proposed revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6. Businesses in the region employ over three and a half million workers, or 3,611,076. Of the 3,611,076 workers, 157,408 or 4.4 percent, are civil servants in the public sector (109,269 are local government employees and 48,140 are state and federal workers). This figure does not include public sector education employees, who were combined with private sector education employees in an effort to present a picture as to the total number of persons in the education in the Bay Area. There are 145,498 employees in "Education:

elementary and secondary”, and another 77,514 in “Education: post-secondary”, for a total of 223,012 (or 6.2 percent). For the same reason, we combined public sector workers in health care with private sector workers in health.

Table 2 — San Francisco Bay Area Employment Trends By Sector: 2006 - 2016

INDUSTRY SECTOR		2006	2011	2016	2016	2016 CA	SFBA CAGR* 06-11	SFBA CAGR 11-16	CA CAGR 11-16
Total		3,150,735	3,040,409	3,611,076	100.00%	100%	-0.7%	3.5%	2.7%
62	Health and Social Assist.	345,833	384,305	469,975	13.01%	14.1%	2.1%	4.1%	3.8%
54	Prof., Scientific	312,042	339,865	436,816	12.10%	7.3%	1.7%	5.1%	2.8%
44-45	Retail	336,232	311,906	343,504	9.51%	10.0%	-1.5%	1.9%	1.7%
31-33	Manufacturing	352,040	311,361	335,243	9.28%	7.8%	-2.4%	1.5%	0.9%
72	Food Srv, Drnkng (NAICS 722)	222,418	236,326	300,218	8.31%	8.1%	1.2%	4.9%	4.6%
56	Admin. Support (NAICS 561)	175,238	158,050	200,162	5.54%	6.2%	-2.0%	4.8%	4.4%
23	Construction	192,897	130,376	184,119	5.10%	4.6%	-7.5%	7.1%	6.5%
51	Information	112,820	116,668	172,891	4.79%	3.1%	0.7%	8.2%	3.8%
61	Education: elem., sec.	123,430	120,714	145,498	4.03%	5.4%	-0.4%	3.8%	1.6%
52	Finance and Insurance	151,360	118,888	129,338	3.58%	3.2%	-4.7%	1.7%	0.9%
42	Wholesale	125,200	113,953	128,274	3.55%	4.3%	-1.9%	2.4%	1.8%
81	Other Services***	105,108	105,729	123,827	3.43%	3.1%	0.1%	3.2%	2.9%
92	Public: Local Govt**	116,196	105,061	109,269	3.03%	3.9%	-2.0%	0.8%	0.5%
48-49	Transportation\Warehousing	85,970	76,695	89,958	2.49%	3.0%	-2.3%	3.2%	4.7%
61	Education: post-secondary	68,644	69,239	77,514	2.15%	3.1%	0.2%	2.3%	1.0%
55	Mgt. of Companies	56,807	60,196	72,498	2.01%	1.3%	1.2%	3.8%	2.8%
71	Arts, Entertain., Recreation	50,976	52,549	61,090	1.69%	1.7%	0.6%	3.1%	3.7%
53	Real Estate	62,020	52,139	58,855	1.63%	1.6%	-3.4%	2.5%	2.2%
72	Accommodations (NAICS 721)	47,380	46,522	51,100	1.42%	1.3%	-0.4%	1.9%	2.2%
92	Public: State and Federal**	59,325	66,047	48,140	1.33%	2.5%	2.2%	-6.1%	-0.7%
11	Agriculture	20,450	19,231	20,317	0.56%	2.5%	-1.2%	1.1%	1.6%
99	Unclassified	131	12,567	19,630	0.54%	0.5%	149.1%	9.3%	7.4%
22	Utilities	15,689	18,940	18,705	0.52%	0.6%	3.8%	-0.2%	0.3%
56	Waste Mgmtnt. (NAICS 562)	10,482	11,105	12,499	0.35%	0.3%	1.2%	2.4%	3.0%
21	Mining	2,047	1,977	1,638	0.05%	0.1%	-0.7%	-3.7%	-2.8%

Source: Applied Development Economics, Inc. based on California EDD LMID QCEW (<http://www.labormarketinfo.edd.ca.gov/qcew/qcew-select.asp>).

*Note: CAGR = compound annual growth rate. **Note: EDD LMID public education (elementary, secondary, and post-secondary), public health, and public utilities employment data moved out of local, state and federal public administration categories and into their corresponding private categories above, in an effort to accurately profile employment trends by sector. ***Note: in 2013, the US BLS moved a large portion of NAICS 814110 (private households) to NAICS 624120 (Support to elderly persons and persons with disabilities): the totals above account for that adjustment for 2006 and 2011.

Economic sectors in the table above are sorted by the share of total employment. The top-five sectors in the Bay Area in terms of total number of workers are Health and Social Assistance (NAICS 62) (469,75 workers), Professional/Technical Services (NAICS 54) (436,816 workers), Retail (NAICS 44-45) (343,504), Manufacturing (NAICS 31-33) (335,243) and Food Services (300,218). Of the top-ten leading sectors in terms of employment, six exhibited high rates of annual growth from 2010 to 2015,

growing annually by more than four percent. These sectors are Health and Social Assistance (4.1 percent per year), Professional/Technical Services (5.1 percent), Food Services (4.9 percent), Administrative Support (NAICS 561) (4.8 percent), Construction (NAICS 23) (7.1 percent per year) and Information (NAICS 51), which grew at a phenomenal annual rate of 8.1 percent. Combined, these five sectors employ 49 percent of total employment, or 1,764,180 out of 3,611,076. The table also demonstrates the advanced nature of the regional economy, as 12.1 percent of all workers are in the Professional, Scientific and Technical (NAICS 54), whereas in the state as a whole, 7.3 percent of all workers are in this sector. Interestingly, at 1.5 percent per year, manufacturing employment growth in the Bay Area almost doubled statewide manufacturing growth rates (0.9 percent), underscoring the diversity of the regional economy.

5. SOCIOECONOMIC IMPACT ANALYSIS OF PROPOSED REVISIONS TO REGULATION 2

As indicated above, Regulation 2 and its various rules apply to firms across a wide set of industries, to the extent that firms (and the respective industries that firms are in) create a new or modify an existing stationary source facility that generates criteria pollutant emissions in amounts that exceed regional air quality and emissions standards. Currently, BAAQMD has approximately 8,000 sources subject to NSR permitting. The firms comprising the 8,000-plus permittees are of all sizes and are in a wide range of private and public sector industries. Oil refineries, hospitals, “big box” retailers, manufacturing plants, and even establishments such as some fast-food restaurants are a few examples of the types of industries subject to NSR. BAAQMD does not regulate transportation sources (cars, trucks, trains, etc.), so at this point the NSR applies only to stationary sources.

While almost all industries are potentially subject to NSR, most NSR-related revisions BAAQMD intends to make affect “major” facilities, which means facilities with total facility emissions over 100 or 250 tons per year (depending on the facility type). Further underscoring limits to the reach of the NSR, the bulk of the BAAQMD’s to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6 revisions are being required by EPA to address federal Clean Air Act (CAA) requirements applying mostly to “major” facilities. Whether a firm is a small or large establishment, or whether affected firms’ stationary source facilities are “major” facilities or not, the administrative and technical revisions to Reg. 2 Rule 1, Reg. 2 Rule 2, and Reg. 2 Rule 6 are minor and are not expected to have any significant impact on emissions or on compliance costs, resulting in less than significant impacts for purposes of the socioeconomic impact analysis.