Bay Area Air District

APPENDIX C

Final Socioeconomic Impacts Analysis of Proposed Amendments to Rule 11-18

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bae urban economics

Socioeconomic Impact Analysis of Proposed Amendments to Rule 11-18: Reduction of Risk from Air Toxic Emissions at Existing Facilities

Submitted to: Bay Area Air District
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INTRODUCTION

The Bay Area Air District ("Air District") is proposing to amend Regulation 11: Hazardous Pollutants, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities (Rule 11-18) to address toxic air contaminant emissions from existing facilities. The purpose of Rule 11-18 is to prioritize the existing facilities with the highest health impacts and require them to reduce those impacts. Rule 11-18 requires existing facilities with health risks above specified risk action level (RAL) thresholds to either reduce those health risks below the thresholds or implement Best Available Retrofit Control Technology for Toxics (TBARCT) on significant sources of health risks. The amendments to Rule 11-18 are intended to improve program efficiency and accelerate the overall implementation of the Rule. As provided in the Staff Report describing the proposed amendments to Rule 11-18[1], the key components of the proposed amendments to Rule 11-18 include:

- Requiring facilities to prepare preliminary Health Risk Assessments (HRAs) using Air District-approved modeling protocols. The protocols would apply standardized methods customized with site-specific information, allowing for greater efficiency by leveraging facility-specific knowledge and resources and enabling more preliminary HRAs to move forward simultaneously;
- Give the Air District authority to review, correct, and approve HRA inputs and results;
- Establishing specific deadlines for facilities to respond to Air District comments and corrections;
- Formalizing the current practice of holding a public comment period on the preliminary HRA concurrent with the existing 90-day comment period for the facility;
- Outlining what happens when additional testing or emissions data may affect the facility's HRA results and risk action level (RAL) status;
- Revising the terminology and timeline associated with the Air District's review of draft Risk Reduction Plans (RRPs) prior to public comment; and
- Clarifying the circumstances under which extensions to the implementation of an RRP or risk reduction measure may be granted.

The proposed rule amendments would apply to commercial, industrial, and municipal facilities operating a wide variety of sources, including petroleum refineries, chemical plants, wastewater treatment facilities, foundries, landfills, data centers, hospitals, crematoriums, power plants, manufacturing facilities, and military facilities. As summarized in Table 1, based on the Air District's re-evaluation of facility prioritization scores in 2024, approximately 342 existing facilities would be affected by the proposed rule amendments, including 231 private-sector establishments.

[1] Bay Area Air District, March 2026. Staff Report: Proposed Amendments to Regulation 11: Hazardous Pollutants, Rule 18: Reduction of Risk from Toxic Air Emissions at Existing Facilities.

Table 1: Summary of Facilities Affected by Proposed Amendments to Rule 11-18

Facility Type	Privately-Owned Facilities	Publicly-Owned Facilities	Total Affected Facilities
Sewage Treatment Facility	0	37	37
Landfill	17	7	24
Refinery	5	0	5
Chemical Plant	7	0	7
Metal Melting & Recycling	4	0	4
Cement Manufacturing	4	0	4
Coating	2	0	2
Loading/Tanks	4	0	4
Crematoria	25	0	25
Power Plant	19	3	22
Chrome Plating	1	0	1
Hospital / Medical	27	12	39
Misc. Manufacturing	11	0	11
Other Facilities	105	52	157
All Affected Facilities	231	111	342

Sources: Bay Area Air District; BAE, 2026.

Socioeconomic Impact Analysis Methodology

This report was prepared to meet the provisions of Section 40728.5 of the California Health and Safety Code, which requires an assessment of the socioeconomic impacts of proposed air quality rules. The analysis begins with an overview of demographic and economic conditions in the Air District region to provide context for the socioeconomic impact analysis that follows. Following that overview, the analysis turns to the specific facilities and industries affected by the proposed amendments to Rule 11-18, including data on average employment, revenues, and annual profits. The analysis relies on data from a number of sources, including the 2022 Economic Census, the Internal Revenue Service, Data Axle, the State of California's Employment Development Department and Department of Finance, and the Air District. BAE used this information to estimate the annual revenues and net profits for each potentially affected facility. The net profit figures were compared to the compliance costs associated with the proposed Rule 11-18 amendments to determine whether the compliance costs represent a significant portion of estimated profits (using a 10 percent impact threshold). The analysis also evaluates the potential for impacts on small businesses.

REGIONAL TRENDS

This section provides an overview of recent demographic and economic trends in the nine-county San Francisco Bay Area region and the State to provide context for the socioeconomic impact analysis that follows.

Demographic Trends

Table 2 shows population and household trends for the Bay Area and California between 2010 and 2025. During this period, the population in the Bay Area increased by approximately 7.1 percent, compared to 6.1 percent in California statewide. Meanwhile, the number of households in the Bay Area grew by 11.0 percent, compared to a 11.3 percent increase in households statewide.

Table 2: Regional and Statewide Population and Household Trends, 2010-2025

			Change, 2010-2025	
9-County Bay Area	**2010**	**2025**	**Number**	**Percent**
Population	7,150,739	7,656,691	505,952	7.1%
Households	2,606,288	2,892,482	286,194	11.0%
Avg. Household Size	2.69	2.59		
California				
Population	37,253,956	39,529,101	2,275,145	6.1%
Households	12,568,167	13,993,318	1,425,151	11.3%
Avg. Household Size	2.90	2.76		

Sources: State of California Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2010-2020 (May 2025) and E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2025 (May 2025); BAE, 2026.

Economic Trends

Table 3 shows jobs by major industry sector in 2010 and 2024 in the Bay Area and state of California. In the period between 2010 and 2024, the Bay Area's employment base grew by 27.4 percent, increasing from 3.2 million jobs to 4.0 million jobs. Statewide, the employment base grew at a slightly lower rate, increasing 25.2 percent from 14.7 million jobs in 2010 to 18.4 million jobs in 2024. All of the major industry sectors in the state experienced job growth between 2010 and 2024. In the Bay Area, the Wholesale Trade and Retail Trade sectors contracted between 2010 and 2024, while most other sectors grew by at least five percent.

Overall, the Bay Area's economic base largely reflects the state's base, sharing a similar distribution of employment across sectors. In terms of total number of jobs, the largest non-government industry sectors in the Bay Area include Professional & Business Services (819,600 jobs), Educational and Health Services (697,600 jobs), Leisure & Hospitality (405,900 jobs), and Manufacturing (310,000 jobs). These four industry sectors together account for approximately 56 percent of the Bay Area's total employment. Statewide, the four sectors account for 51 percent of total employment.

Table 3: Bay Area Employment by Sector, 2010-2024 (a)

Industry Sector	2010 Number	2010 % Total	2024 Number	2024 % Total	Change, 2010-2024 Number	Change, 2010-2024 Percent
San Francisco Bay Area						
Agriculture	19,200	0.6%	20,300	0.5%	1,100	5.7%
Mining, Logging, and Construction	131,500	4.2%	205,600	5.1%	74,100	56.3%
Manufacturing	304,200	9.6%	310,000	7.7%	5,800	1.9%
Wholesale Trade	112,200	3.6%	106,600	2.7%	-5,600	-5.0%
Retail Trade	308,200	9.8%	296,000	7.4%	-12,200	-4.0%
Transportation, Warehousing, and Utilities	88,300	2.8%	128,100	3.2%	39,800	45.1%
Information	113,900	3.6%	234,100	5.8%	120,200	105.5%
Financial Activities	168,000	5.3%	182,200	4.5%	14,200	8.5%
Professional & Business Services	545,800	17.3%	819,600	20.4%	273,800	50.2%
Educational & Health Services	474,200	15.0%	697,600	17.4%	223,400	47.1%
Leisure & Hospitality	324,800	10.3%	405,900	10.1%	81,100	25.0%
Other Services, except Public Admin.	108,100	3.4%	128,900	3.2%	20,800	19.2%
Government (b)	455,200	14.4%	481,100	12.0%	25,900	5.7%
Total, All Employment (c)	**3,153,200**	**100.0%**	**4,016,100**	**100.0%**	**862,900**	**27.4%**

Industry Sector	2010 Number	2010 % Total	2024 Number	2024 % Total	Change, 2010-2024 Number	Change, 2010-2024 Percent
California						
Agriculture	383,200	2.6%	412,700	2.2%	29,500	7.7%
Mining, Logging, and Construction	584,800	4.0%	931,000	5.1%	346,200	59.2%
Manufacturing	1,240,300	8.5%	1,249,100	6.8%	8,800	0.7%
Wholesale Trade	630,700	4.3%	658,400	3.6%	27,700	4.4%
Retail Trade	1,509,200	10.3%	1,587,200	8.6%	78,000	5.2%
Transportation, Warehousing, and Utilities	468,000	3.2%	836,700	4.6%	368,700	78.8%
Information	431,900	2.9%	538,100	2.9%	106,200	24.6%
Financial Activities	761,200	5.2%	802,500	4.4%	41,300	5.4%
Professional & Business Services	2,092,000	14.3%	2,786,800	15.2%	694,800	33.2%
Educational & Health Services	2,132,100	14.5%	3,285,500	17.9%	1,153,400	54.1%
Leisure & Hospitality	1,501,000	10.2%	2,015,800	11.0%	514,800	34.3%
Other Services, except Public Admin.	483,700	3.3%	594,700	3.2%	111,000	22.9%
Government (b)	2,448,400	16.7%	2,662,900	14.5%	214,500	8.8%
Total, All Employment (c)	**14,666,600**	**100.0%**	**18,361,400**	**100.0%**	**3,694,800**	**25.2%**

Notes:
(a) Includes all wage and salary employment.
(b) Government employment includes workers in all local, state and Federal workers, not just those in public administration. For example, all public school staff are in the Government category.
(c) Totals may not sum due to independent rounding.
Sources: California Employment Development Department Labor Market Information Division, Industry Employment – Official Estimates – by Annual Average (March 2024 Benchmark); BAE, 2026.

Affected Industries

Table 4 shows the industry or industries associated with each type of facility and presents information on the average number of employees, average revenues, and average annual profits for establishments in each industry based on statewide data from the 2022 Economic Census. As shown, the affected facilities encompass most major sectors of the economy. Businesses in affected industries vary significantly in terms of size, annual revenues, and profits.

Table 4: Profile of Affected Industries by Facility Type

Facility Type	Industry or Industries Associated w/ Facility Type (a)	Average per Establishment			
		Employees (b)	Annual Revenue (b)	Profit Margin (2013-2022) (c)	Annual Profit
Landfill	Waste Mgmt & Remediation Svcs (NAICS 562)	24	$7,804,744	7.2%	$561,049
Refinery	Petroleum Refineries (NAICS 324110)	455	$5,935,214,219	4.7%	$277,655,291
Chemical Plant	Basic Chemical Manufacturing (NAICS 3251)	40	$53,186,936	8.5%	$4,498,255
Metal Melting & Recycling	Primary Metal Manufacturing (NAICS 331)	53	$45,197,559	5.0%	$2,239,207
	Recyclable Material Merchant Wholesalers (NAICS 423930)	13	$14,389,025	3.9%	$562,904
Cement Mfg	Cement & Concrete Product Mfg (NAICS 3273)	30	$13,531,859	7.1%	$957,478
Coating	Transportation Equipment Mfg (NAICS 336)	85	$63,166,474	5.7%	$3,616,597
Loading/Tanks	Petroleum Bulk Stations & Terminals (NAICS 424710)	19	$271,612,917	1.4%	$3,786,899
	Other Warehousing & Storage (NAICS 493190)	18	$3,129,523	5.5%	$172,347
Crematoria	Cemeteries & Crematories (NAICS 812220)	17	$4,017,674	8.8%	$354,643
	Funeral Homes & Funeral Services (NAICS 812210)	9	$2,110,180	8.8%	$186,267
Power Plant	Electric Power Generation, Transmission and Distribution (NAICS 2211)	76	$62,158,257	4.4%	$2,721,985
	Port and Harbor Operations (NAICS 488310)	28	$36,820,214	5.4%	$1,969,996
Hospital	General Medical & Surgical Hospitals (NAICS 622110)	1,566	$453,596,323	5.6%	$25,353,334
Chrome Plating	Electroplating/Anodizing/Coloring Metal (NAICS 332813)	24	$3,792,402	7.1%	$270,819
Misc. Mfg	Asphalt Paving, Roofing & Saturated Materials Mfg (NAICS 32412)	19	$27,698,428	8.2%	$2,273,058
	Pharmaceutical & Medicine Mfg (NAICS 3254)	118	$163,796,756	22.9%	$37,503,063
	Fabricated Metal Product Mfg (NAICS 332)	21	$6,170,263	8.1%	$501,741
	Computer & Electronic Product Mfg (NAICS 334)	68	$38,084,841	18.7%	$7,121,183
Other Facilities	Electric Power Generation, Transmission & Distribution (NAICS 2211)	76	$62,158,257	4.4%	$2,721,985
	Water, Sewage & Other Systems (NAICS 2213)	11	$6,023,283	8.2%	$492,578
	Food Manufacturing (NAICS 311)	44	$27,241,804	7.2%	$1,954,076
	Wineries (NAICS 312130)	21	$12,327,173	11.6%	$1,431,777
	Asphalt Paving, Roofing & Saturated Materials Manufacturing (NAICS 32412)	19	$27,698,428	8.2%	$2,273,058
	Chemical Manufacturing (NAICS 325)	52	$58,901,286	19.7%	$11,589,573
	Nonmetallic Mineral Product Mfg (NAICS 327)	29	$12,276,189	7.2%	$882,607
	Fabricated Metal Product Manufacturing (NAICS 332)	21	$6,170,263	8.1%	$501,741
	Computer & Electronic Product Mfg (NAICS 334)	68	$38,084,841	18.7%	$7,121,183
	Transportation Equipment Mfg (NAICS 336)	85	$63,166,474	5.7%	$3,616,597
	Air Transportation (NAICS 481)	130	$82,195,088	3.3%	$2,681,109
	Pipeline Transportation (NAICS 486)	14	$34,324,543	14.4%	$4,943,877
	Support Activities for Transportation (NAICS 488)	15	$5,476,031	5.4%	$292,985
	Media Streaming Distribution Svcs, Social Networks & Other Media and Content Providers (NAICS 5162)	86	$93,064,453	12.2%	$11,384,289

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Table 4: Profile of Affected Industries by Facility Type (continued)

Facility Type	Industry or Industries Associated w/ Facility Type (a)	Average per Establishment			
		Employees (b)	Annual Revenue (b)	Profit Margin (2013-2022) (c)	Annual Profit
Other Facilities	Computing Infrastructure Providers, Data Processing, Web Hosting & Related Services (NAICS 5182)	53	$50,940,282	14.7%	$7,495,087
	Lessors of Real Estate (NAICS 5311)	5	$3,484,151	34.6%	$1,206,024
	Scientific Research & Dev Svcs (NAICS 5417)	57	$19,332,730	14.4%	$2,791,444
	Waste Mgmt & Remediation Svcs (NAICS 562)	24	$7,804,744	7.2%	$561,049
	Nursing Care Facilities (NAICS 6231)	73	$8,390,976	5.6%	$469,006
	Hotels (excl Casino Hotels) & Motels (NAICS 721110)	32	$5,877,757	10.9%	$643,576
	Drycleaning and Laundry Services (NAICS 8123)	9	$1,436,346	8.8%	$126,787

Notes:
(a) All publicly-owned facilities are excluded, regardless of sector.
(b) Average employment per establishment and annual revenues per establishment are based on 2022 Economic Census data for establishments in California.
(c) Average profit margins for each industry are based on corporation income tax return data published by the Internal Revenue Service. Values reflect the average across ten years of data. For additional information see: https://www.irs.gov/statistics/soi-tax-stats-corporation-income-tax-returns-complete-report-publication-16

Sources: Bay Area Air District; U.S. Census Bureau Economic Census, 2022; Internal Revenue Service Statistics of Income Division, Corporation Income Tax Returns Complete Report (Publication 16), Table 1 - Selected Income Statement, Balance Sheet and Tax Items and Coefficients of Variation by Minor Industry, 2013-2022; BAE, 2026.

SOCIOECONOMIC IMPACTS

This section summarizes the annualized compliance costs associated with the proposed Rule 11-18 amendments and assesses whether the annualized compliance costs would significantly burden the affected facilities based on a 10 percent of profits threshold. The analysis is based on publicly available information from a variety of sources, including Data Axle, IMPLAN, the Internal Revenue Service, the U.S. Census Bureau, and the Air District.

Compliance Costs Impacts on Affected Facilities

Facilities affected by the proposed Rule 11-18 amendments are expected to incur additional one-time costs associated with preparing and submitting a facility-wide Health Risk Assessment (HRA). Currently, the Air District performs HRAs for facilities undergoing compliance assessments under Rule 11-18, and the maximum cost to a facility for the Air District to conduct a Rule 11-18 HRA is approximately $200,000. With the proposed rule amendments, the Air District estimates that it would cost a facility up to $200,000 more to conduct a Rule 11-18 HRA, assuming the facility or contractor would be preparing the HRA instead of the Air District. Additionally, the Air District charges facilities review fees for reviewing Rule 11-18 HRAs. These review fees vary by HRA complexity and typically range from $3,000 to $20,000. Overall, the Air District estimates that total compliance costs would increase by a maximum of $220,000 under the proposed Rule 11-18 amendments. Assuming an interest rate of 6 percent and a five-year useful life period of the HRA, this results in a maximum annualized compliance cost of approximately $52,000.

Annual compliance costs for the facilities affected by the proposed Rule 11-18 amendments are expected to vary by facility based on number of Air District-permitted sources and HRA complexity. Air District staff has estimated annualized compliance costs for each facility affected by the proposed Rule 11-18 amendments based on the total number of Air District-permitted sources. The projected annual compliance costs range from $10,500 to $52,200 and are summarized by type of facility below in Table 5. As shown, annual compliance costs would average approximately $11,600. On average, private-sector facilities would incur compliance costs equal to approximately 1.6 percent of their estimated profits. Eight private-sector facilities would incur costs that are greater than 10 percent of estimated profits, including six crematoria, one metal coating and finishing facility, and one fix-based operator (FBO). However, it is important to note that the proposed rule amendments include provisions to allow the Air District to use an HRA prepared by the Air District when it is more expedient to do so or when a facility owner/operator lacks the resources to conduct the HRA. Facilities with Air-District prepared HRAs are not expected to incur any additional costs from the proposed rule amendments. Thus, the actual number of impacted facilities may be lower than shown here.

Table 5: Summary of Annualized Compliance Costs and Projected Cost Impacts on Facilities Affected by Proposed Rule 11-18 Amendments

Facility Type	Total Projected Compliance Costs (Annualized) (a)	Avg. Projected Annual Cost per Facility (a)	Projected Facility Costs as a % of Profit (b)			Total Number of Impacted Facilities (b)
			Average	Minimum	Maximum	
Sewage Treatment Facility	$415,800	$11,238	-	-	-	-
Landfill	$261,600	$10,900	2.0%	0.3%	7.9%	0
Refinery	$172,700	$34,540	0.0%	0.0%	0.1%	0
Chemical Plant	$86,700	$12,386	0.4%	0.0%	0.9%	0
Metal Melting & Recycling	$49,200	$12,300	0.3%	0.0%	1.0%	0
Cement Manufacturing	$44,300	$11,075	3.7%	0.5%	5.1%	0
Coating	$32,000	$16,000	0.1%	0.0%	0.2%	0
Loading/Tanks	$47,000	$11,750	0.3%	0.3%	0.3%	0
Crematoria	$265,700	$10,628	5.3%	0.4%	12.8%	6
Power Plant	$244,000	$11,091	1.6%	0.4%	9.3%	0
Chrome Plating	$10,500	$10,500	18.4%	18.4%	18.4%	1
Hospital / Medical	$429,800	$11,021	0.0%	0.0%	0.2%	0
Misc. Manufacturing	$145,900	$13,264	0.3%	0.0%	2.4%	0
Other Facilities	$1,771,100	$11,281	1.1%	0.0%	14.1%	1
All Affected Facilities	$3,976,300	$11,627	1.6%	0.0%	18.4%	8

Notes:
(a) Projected annual compliance costs for all affected facilities, including publicly-owned facilities.
(b) Estimates for projected impacts on percent of profit exclude publicly-owned facilities, as these facilities do not generate profits. A facility is considered impacted if annual compliance costs are greater than 10 percent of estimated profit. The proposed rule amendments include provisions to allow the Air District to use an HRA prepared by the Air District when it is more expedient to do so or when a facility owner/operator lacks the resources to conduct the HRA. Facilities with Air District prepared HRAs are not expected to incur any increased costs from the proposed rule amendments. Thus, the number of impacted facilities may be less than indicated here.

Sources: Bay Area Air District; BAE, 2026.

Although compliance costs for the facilities affected by the proposed rule amendments are expected to be primarily dependent on the number of Air District-permitted sources, as estimated above, costs are also expected to vary based on HRA complexity. Generally, for this analysis, a low-complexity HRA would assess only point sources, and a high-complexity HRA would assess area sources with many pollutants and/or the facility is a process-heavy industrial facility. The Air District has estimated that annual compliance costs associated with the proposed rule amendments are $10,000 for a low-complexity HRA and a maximum of $52,000 for a high-complexity HRA. Additionally, the proposed rule amendments include provisions to allow the Air District to use an HRA prepared by the Air District when a facility owner/operator lacks the resources to conduct the HRA.

Regional Impacts

For this analysis, it is assumed that the costs of complying with the proposed Rule 11-18 amendments would result in equivalent lower total revenues for affected facilities and that the additional expenditures associated with purchasing needed HRA services would not circulate through the local economy. It is likely that actual impacts will be lower than shown here, since

some of the needed services will likely be purchased locally, which would generate benefits for the businesses providing these services in the region.

The costs shown in Table 5 above are assumed to occur somewhere in the local economy and thus have a direct effect on jobs and the impact equivalent to a decline in output (total revenues). In addition to these direct impacts, there would be indirect and induced impacts on the regional economy. Indirect and induced impacts refer to regional multiplier effects of increasing or decreasing regional economic activity. If the proposed rule amendments were to significantly impact local businesses, any closures would result in direct regional economic losses. Firms would no longer buy goods from local suppliers, thereby resulting in reduced indirect impacts, or business-to-business expenditures. In addition, firms would no longer employ regional residents, resulting in induced impacts due to decreases in household spending. Because there is potential for the proposed rule amendments to result in significant direct impacts for some facilities, the analysis uses the IMPLAN input-output model to estimate the indirect or induced impacts.

IMPLAN Input-Output Model

Regional and national input-output models have been used for years by economists as a tool to understand the extremely complex interactions among the various parts of an economy. The economic model used in this analysis, IMPLAN ("IMpact analysis for PLANning"), is a PC-based computer software package that automates the process of developing input-output models for regions within the United States. At the heart of the model is an input-output dollar flow table. For the specified region, the input-output table accounts for all of the dollar flows between the different sectors within the economy. Using this information, the IMPLAN software models the way income injected into one sector is then spent, and re-spent in other sectors of the economy, generating waves of economic activity, or so-called "economic multiplier" effects.

Regions studied using the IMPLAN model can be defined at various geographic levels to fit the particular analysis. The developers of the IMPLAN model maintain large databases of economic and trade data that are collected and published by the federal government, which they compile and format for use in the computer model. The data regarding input-output relationships between sectors used in the model for this analysis are from 2024 (latest currently available), and have been adjusted to provide results expressed in 2025 dollar figures. The data that IMPLAN uses are customized to reflect the specific, detailed economic characteristics of each individual county that is included within the specified regional study area. The IMPLAN model in turn is able to summarize the economic effects of a given economic "event" that is input into the model, expressing the impacts in terms of direct, indirect, and induced jobs and output by industry sector.

- Direct Impacts. Direct impacts refer to the dollar value of economic activity available to circulate through the economy.

- **Indirect Impacts**. The indirect impacts refer to the inter-industry impacts of the input-output analysis, which would include any payments that the directly impacted industries make to other businesses in the region for goods and services.

- **Induced Impacts**. The induced impacts refer to the impacts of household expenditures in the model. When households earn income, they spend part of that income on goods and services. The model treats households as an "industry" in determining their local expenditure patterns in the model, based on the availability of goods and services within the geography.

Economic Impacts of Compliance Costs

Table 6 shows the direct, indirect, and induced regional impacts due to the decline in operating revenues flowing through the Air District economy. The total impacts on annual economic output are estimated to equal approximately $6.3 million with a related annual loss of 21.7 jobs. As noted previously, it is assumed that the costs of complying with the proposed Rule 11-18 amendments would result in equivalent lower total revenues for all affected facilities, and that the additional expenditures would not circulate through the local economy.

As context, the IMPLAN model estimates the gross annual regional product for the nine-county Bay Area at approximately $1.4 trillion; the reduction in output shown below is equivalent to less than 0.001 percent of this total.

Table 6: Regional Economic Impacts

Economic Impact	Employment	Output
Direct (a)	-13.7	-$3,926,746
Indirect (b)	-3.3	-$1,116,994
Induced (c)	-4.7	-$1,214,669
Total	**-21.7**	**-$6,258,410**

Notes:
(a) Based on the initial decline in output (revenues) at affected facilities. Direct impacts measure the reduction of dollars available to flow through the local economy. Figures assume that the additional expenditures associated with purchasing needed HRA services would not circulate through the local economy.
(b) Indirect impacts refer to business-to-business impacts.
(c) Induced impacts occur when workers spend their household incomes throughout the local economy.

Sources: IMPLAN, 2025; BAE, 2026.

Impacts on Small Businesses

According to California Government Code 14835, a small business is any business that meets the following criteria:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California;

- Must have its owners (or officers in the case of a corporation) domiciled in California; and
- Together with its affiliates, be either:
    - A business with 100 or fewer employees, and average annual gross receipts of $15 million or less over the previous three tax years, or
    - A manufacturer with 100 or fewer employees

Based on the available data, there are 24 small businesses in the following industries that would be affected by the proposed Rule 11-18 amendments:

- Wineries (NAICS 312130)
- Ready-Mix Concrete Manufacturing (NAICS 327320)
- Concrete Block and Brick Manufacturing (NAICS 327331)
- Electroplating, Plating, Polishing, Anodizing, and Coloring (NAICS 332813)
- Fabricated Pipe and Pipe Fitting Manufacturing (NAICS 332996)
- All Other Miscellaneous Fabricated Metal Product Manufacturing (NAICS 332999)
- Other Airport Operations (NAICS 488119)
- Lessors of Nonresidential Buildings (NAICS 531120)
- Solid Waste Collection (NAICS 562111)
- Materials Recovery Facilities (NAICS 562920)
- Funeral Homes and Funeral Services (NAICS 812210)
- Cemeteries and Crematories (NAICS 812220)

Annual compliance costs for small businesses affected by the proposed Rule 11-18 amendments are expected to average approximately $10,600. Based on the projected facility compliance costs summarized below, eight of the 24 affected small businesses would be significantly impacted as measured by a 10 percent or greater impact on net income. The impacted small businesses include six crematoria, one metal coating and finishing facility, and a fix-based operator (FBO). As mentioned previously, the proposed rule amendments include provisions to allow the Air District to use an HRA prepared by the Air District when a facility owner/operator lacks the resources to conduct the HRA. Thus, the actual number of impacted small businesses may be lower.

Table 7: Summary of Impacted Small Businesses

Facility Type	Total Small Businesses	Total Projected Facility Compliance Costs (Annualized)	Avg. Projected Annual Cost per Facility	Projected Facility Costs as a % of Profit (a)			Total Number of Impacted Small Businesses (a)
				Average	Minimum	Maximum	
Sewage Treatment Facility	0	$0	-	-	-	-	0
Landfill	1	$10,800	$10,800	2.6%	2.6%	2.6%	0
Refinery	0	$0	-	-	-	-	0
Chemical Plant	0	$0	-	-	-	-	0
Metal Melting & Recycling	0	$0	-	-	-	-	0
Cement Manufacturing	2	$21,600	$10,800	2.8%	0.5%	5.1%	0
Coating	0	$0	-	-	-	-	0
Loading/Tanks	0	$0	-	-	-	-	0
Crematoria	13	$137,800	$10,600	7.9%	2.5%	12.8%	6
Power Plant	0	$0	-	-	-	-	0
Chrome Plating	1	$10,500	$10,500	18.4%	18.4%	18.4%	1
Hospital / Medical	0	$0	-	-	-	-	0
Misc. Manufacturing	0	$0	-	-	-	-	0
Other Facilities	7	$74,600	$10,657	4.5%	0.0%	14.1%	1
All Affected Facilities	24	$255,300	$10,638	6.7%	0.0%	18.4%	8

Note:

(a) Estimates for projected impacts on percent of profit exclude publicly-owned facilities, as these facilities do not generate profits. facility is considered impacted if annual compliance costs are greater than 10 percent of estimated profit. The proposed rule amendments includes provisions to allow the Air District to use an HRA prepared by the Air District when it is more expedient to do so or when a facility owner/operator lacks the resources to conduct the HRA. Facilities with Air-District prepared HRAs are not expected to incur any additional costs from the proposed rule amendments. Thus, the number of impacted facilities may be less than indicated here.

Sources: Bay Area Air District; BAE, 2026