# **BAY AREA AIR POLLUTION SUMMARY – 2016**

Napa       80       0       67       0       0       62       2.2       1.5       0       39       7       0       0       -       23.0       0	DATANEA AIN FUEUTION JUMMANT - 2010																										
North Counties       Her				ozo	ONE															PN	1 <sub>10</sub>			I	PM <sub>2.5</sub>		
Noth Counties         (ppb)			1-Hr		8-Hr	8-Hr							1-Hr	1-Hr			1-Hr	24-Hr			24-Hr	24-Hr		24-Hr			-
Napa         80         0         0         0         0         2         2         1         0 <td>North Counties</td> <td>(ppb)</td> <td></td> <td>(ppb)</td> <td>,</td> <td>,</td> <td></td> <td>(pp</td> <td>m)</td> <td></td> <td>(pp</td> <td>b)</td> <td>,</td> <td>,</td> <td>(pr</td> <td>ob)</td> <td>,</td> <td>,</td> <td>(μg/</td> <td>m<sup>3</sup>)</td> <td>,</td> <td></td> <td>(µg/m<sup>3</sup></td> <td></td> <td></td> <td>(µg/</td> <td>m<sup>3</sup>)</td>	North Counties	(ppb)		(ppb)	,	,		(pp	m)		(pp	b)	,	,	(pr	ob)	,	,	(μg/	m <sup>3</sup> )	,		(µg/m <sup>3</sup>			(µg/	m <sup>3</sup> )
Sessopol         73         0         64         0         0         52         1         1         0         0         1         1         0         0         0         1         1         0         0         0         0         0         0         0         0         1         1         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         1         0         0         0         1         1         0         0         0         0         1         1         0 <th< td=""><td>Napa</td><td>80</td><td>0</td><td>67</td><td>0</td><td>0</td><td>62</td><td>2.2</td><td>1.5</td><td>0</td><td>39</td><td>7</td><td>0</td><td>0</td><td>-</td><td>-</td><td>-</td><td>-</td><td></td><td></td><td>0</td><td></td><td></td><td></td><td>25</td><td></td><td></td></th<>	Napa	80	0	67	0	0	62	2.2	1.5	0	39	7	0	0	-	-	-	-			0				25		
Vallejo       97       1       72       1       1       63       2.1       1.8       0       43       7       0       0       0       1       0	San Rafael	88	0	67	0	0	61	1.4	1.0	0	46	9	0	0	-	-	-	-	13.8	27	0	0	15.6	0	22	6.4	8.6
Coast & Central Bay Berkeley Aquatic Park* Laney College Freeway       Fre	Sebastopol	73	0	64	0	0	52	1.6	1.0	0	32	4	0	0	-	-	-	-	-	-	-	-	18.7	0	18	4.6	6.4
Berkeley Aquatic Park*         52         0         41         0         0         *         16         14         0         50         *         0         0         -         -         -         1         1         0         50         0	Vallejo	97	1	72	1	1	63	2.1	1.8	0	43	7	0	0	10.1	1.9	0	0	-	-	-	-	23.0	0	25	7.4	9.0
Bettere Adjusite Price         32         0         4         0         0         5         5         0         1         0         5         1         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0         5         1         0	Coast & Central Bay																										
Oakland       82       0       67       0       0       5       2       1       0	Berkeley Aquatic Park*	52	0	41	0	0	*	1.6	1.4	0	50	*	0	0	-	-	-	-	-	-	-	-	17.3	0	*	*	*
Oakland-West       65       0       52       0       49       2       0       49       12       0 <th0< th="">       0       0</th0<>	Laney College Freeway	-	-	-	-	-	-	1.6	1.1	0	54	17	0	0	-	-	-	-	-	-	-	-	20.2	0	22	8.7	9.1
Richmond       I <thi< th="">       I       <thi< th="">       I       <thi< th=""> <thi< th=""></thi<></thi<></thi<></thi<>	Oakland	82	0	57	0	0	55	2.6	1.0	0	59	10	0	0	-	-	-	-	-	-	-	-	15.5	0	21	6.1	7.6
San Francisco         70         0         57         0         0         57         1         1         0         58         1         0         0         1         1         0         58         1         0         0         1         1         0         39         8         0         0         1         2         3         1         1         0         39         8         0         0         1         1         0         1         1         0         0         1         1         0         1         0         1         1         0         1         0         1         1         0         1         0         0         1         1         0         0         0         1         1         0         0         0         1         1         0         0         0         1         1         0         0         0         1         1         0         0         0         1         0         0         0         1         0         0         0         1         0         0         0         1         1         0         0         0         1         1 <th< td=""><td>Oakland-West</td><td>65</td><td>0</td><td>52</td><td>0</td><td>0</td><td>49</td><td>2.5</td><td>2.2</td><td>0</td><td>49</td><td>12</td><td>0</td><td>0</td><td>26.4</td><td>3.1</td><td>0</td><td>0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>23.9</td><td>0</td><td>25</td><td>8.7</td><td>9.5</td></th<>	Oakland-West	65	0	52	0	0	49	2.5	2.2	0	49	12	0	0	26.4	3.1	0	0	-	-	-	-	23.9	0	25	8.7	9.5
San Pablo       94       0       61       0       0       54       1.7       1.0       0       39       8       0       0       152       2.9       0       0       152       34       0       0       155       0       0       152       34       0       0       155       0       0       152       34       0       0       155       0       0       152       34       0       0       155       0       0       152       34       0       0       153       19       0       0       0       20       7.0	Richmond	-	-	-	-	-	-	-	-	-	-	-	-	-	29.9	4.4	0	0	-	-	-	-	-	-	-	-	-
Eastern District       Normal Strict       Normal Stri	San Francisco	70	0	57	0	0	49	1.7	1.1	0	58	11	0	0	-	-	-	-	17.0	29	0	0	19.6	0	22	7.5	7.6
Bethel Island       89       0       80       2       2       68       2.0       1.0       0       32       5       0       0       4.7       3.0       0       0       14.4       26       0       0       1.1       2       0       0       1.1       2       0       0       1.1.5       19       0       0       0       2.0       7.1      <	San Pablo	94	0	61	0	0	54	1.7	1.0	0	39	8	0	0	12.2	2.9	0	0	15.2	34	0	0	19.5	0	23	8.1	9.2
Concord         95         1         74         2         2         67         1.2         1.0         0         34         6         0         0         11.1         2.4         0         0         11.5         19         0         0         20.7         0         22         5.9         7.1           Crockett         81         0         67         0         0         64         -         -         4         0         0         0         -        <	Eastern District																										
Crockett	Bethel Island	89	0	80	2	2	68	2.0	1.0	0	32	5	0	0	4.7	3.0	0	0	14.4	26	0	0	-	-	-	-	-
Fairfield         81         0         67         0         0         64         -	Concord	95	1	74	2	2	67	1.2	1.0	0	34	6	0	0	11.1	2.4	0	0	11.5	19	0	0	20.7	0	22	5.9	7.1
Livermore 102 2 85 4 6 74 41 9 0 0 0 223 0 23 7.5 7.9 Martinez 109 5 87 15 15 * 24 3 0 0 0 2 10 1 1 0 5 87 15 15 *	Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	14.1	4.8	0	0	-	-	-	-	-	-	-	-	-
Martinez	Fairfield	81	0	67	0	0	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Patterson Pass*         109         5         87         15         15         *         -         -         2         2         3         0         0         - <th< td=""><td>Livermore</td><td>102</td><td>2</td><td>85</td><td>4</td><td>6</td><td>74</td><td>-</td><td>-</td><td>-</td><td>41</td><td>9</td><td>0</td><td>0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>22.3</td><td>0</td><td>23</td><td>7.5</td><td>7.9</td></th<>	Livermore	102	2	85	4	6	74	-	-	-	41	9	0	0	-	-	-	-	-	-	-	-	22.3	0	23	7.5	7.9
San Ramon       101       1       83       1       2       69       -       -       27       5       0       0       -	Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0	4.7	0	0	-	-	-	-	-	-	-	-	-
South Central Bay Hayward Redwood City       83       0       64       0       0       66       - </td <td>Patterson Pass*</td> <td>109</td> <td>5</td> <td>87</td> <td>15</td> <td>15</td> <td>*</td> <td>-</td> <td>-</td> <td>-</td> <td>24</td> <td>3</td> <td>0</td> <td>0</td> <td>-</td>	Patterson Pass*	109	5	87	15	15	*	-	-	-	24	3	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
Hayward       83       0       64       0       0       66       -	San Ramon	101	1	83	1	2	69	-	-	-	27	5	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City       75       0       60       0       59       2.2       1.1       0       46       9       0       0       -       -       -       -       -       -       19.5       0       20       8.3       7.0         Santa Clara Valley       79       0       70       0       0       66       -	South Central Bay																										
Santa Clara Valley       79       0       70       0       0       66       -       -       -       -       -       -       -       -       -       16.0       0       16.0       0       16.0       5.6       6.5       6.5         Los Gatos       91       0       665       0       0       63       2.0       1.4       0       51       11       0       0       18.5       41       0       0       22.6       0       24       8.4       8.9         San Jose       Freeway*       -	Hayward	83	0	64	0	0	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gilroy       79       0       70       0       0       66       -	Redwood City	75	0	60	0	0	59	2.2	1.1	0	46	9	0	0	-	-	-	-	-	-	-	-	19.5	0	20	8.3	7.0
Los Gatos       91       0       65       0       0       67       - <t< td=""><td>Santa Clara Valley</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Santa Clara Valley																										
San Jose       87       0       66       0       0       63       2.0       1.4       0       51       11       0       0       18.5       41       0       0       22.6       0       24       8.4       8.9         San Jose Freeway*       96       1       71       1       7       2.5       1.6       0       52       16       0       0       1.8       0.8       0       0       18.5       41       0       0       22.6       0       24       8.4       8.9         San Jose Freeway*       96       1       71       1       70       2.5       1.6       0       52       16       0       0       1.8       0.8       0       0       18.5       41       0       0       22.6       0       24       8.4       8.9         San Martin       96       1       71       1       70       2.5       7.6       2       <	Gilroy	79	0	70	0	0	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0	0	16	5.6	6.5
San Jose Freeway*       -	Los Gatos	91	0	65	0	0	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose Fleeway       96       1       71       1       1       70       -	San Jose	87	0	66	0	0	63	2.0	1.4	0	51	11	0	0	1.8	0.8	0	0	18.5	41	0	0	22.6	0	24	8.4	8.9
Total Bay Area     6     15     15     0     0     0     0     0     0     0       Days over Standard	San Jose Freeway*	-	-	-	-	-	-	2.5	1.6	0	52	16	0	0	-	-	-	-	-	-	-	-	26.5	0	*	9.1	*
Days over Standard *See NOTES on second page.	San Martin	96	1	71	1	1	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Days over Standard *See NOTES on second page.	Total Bay Area		6		15	15				0			0	0			0	0			0	0		0			
Dash (-) indicates pollutant is not monitored at the site.												*Se	ee NC	DTES	on se	cond	bage.										
		Dash (-) indicates pollutant is not monitored at the site.																									

## **2016 NOTES**

The annual Bay Area Air Pollution Summary summarizes pollutant concentrations for comparison to the national and California air pollution standards.

#### \*Station Information (see asterisks on front page)

Near-road air monitoring at Berkeley Aquatic Park began on July 1, 2016. Therefore, annual averages for NO<sub>2</sub> and PM<sub>25</sub>, and 3-year averages for ozone and PM<sub>25</sub> statistics are not available.

Ozone monitoring using the federally accepted method began at Patterson Pass on April 1, 2015. Therefore, 3-year average ozone statistics are not available.

Near-road air monitoring at San Jose Freeway began in September 2014. Therefore, 3-year average PM<sub>25</sub> statistics are not available.

## **Explanation of Terms**

State and national exceedances occur when pollutant concentrations exceed the indicated standards. For comparison, values in ppb must be converted to ppm and rounded to the same number of decimal places as the original standard.

#### MAX HR / MAX 8-HR / MAX 24-HR

The highest average pollutant concentration over a one-hour period, an eight-hour period (on any given day), or a 24-hour period (from midnight to midnight).

#### ANN AVG

The yearly average (arithmetic mean) of the readings taken at a given monitoring station.

#### NAT DAYS

The number of days during the year for which the monitoring station recorded pollutant concentrations exceeding the national standard.

#### CAL DAYS

The number of days during the year for which the station recorded pollutant concentrations exceeding the California standard.

#### TOTAL BAY AREA DAYS OVER STANDARD

is not a sum of exceedances at individual stations, but rather the number of days where at least one site recorded an exceedance.

#### **3-YR AVG (Nat. 8-hr ozone standard)**

The 3-year average of the fourth highest 8-hour average ozone concentrations for each monitoring station. A 3-year average greater than 70 ppb at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

### $PM_{10}$

Particulate matter ten microns or smaller in size. PM<sub>10</sub> is sampled every third day at San Jose and every sixth or twelfth day at all other sites.

#### PM<sub>2.5</sub>

Particulate matter 2.5 microns or smaller in size.  $PM_{2.5}$  is a sub-category of  $PM_{10}$ .

#### PM<sub>10</sub> ANN AVG and MAX 24-HR

This table shows PM<sub>10</sub> data reported at local temperature and pressure conditions, according to the California standards. National PM<sub>10</sub> data are converted to standard temperature and pressure conditions, which generally results in slightly lower readings.

#### 3-YR AVG (PM<sub>2.5</sub> 24-hour standard)

The 3-year average of the annual 98<sup>th</sup> percentiles of the individual 24-hour concentrations of PM<sub>25</sub>. A 3-year average greater than 35  $\mu$ g/m<sup>3</sup> at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

### 3-YR AVG (PM<sub>2.5</sub> annual standard)

The 3-year average of the quarterly averages of  $PM_{25}$ . A 3-year average greater than 12.0  $\mu$ g/m<sup>3</sup> at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

HEALTH-BASED AMBIENT AIR QUALITY STANDARDS												
Pollutant	Averaging Time	California Std	National Std									
Ozone*	1 Hour	0.09 ppm	-									
	8 Hour	0.070 ppm	0.070 ppm									
Carbon Monoxide	1 Hour	20 ppm	35 ppm									
	8 Hour	9.0 ppm	9 ppm									
Nitrogen Dioxide	1 Hour	0.18 ppm	0.100 ppm									
	Annual	0.030 ppm	0.053 ppm									
Sulfur Dioxide	1 Hour	_	0.075 ppm									
	24 Hour	0.04 ppm	-									
Particulates ≤ 10 microns	24 Hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>									
	Annual	20 µg/m <sup>3</sup>	_									
Particulates ≤ 2.5 microns	24 Hour	_	35 µg/m <sup>3</sup>									
	Annual	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>									
* In October 2015, the U.S. EPA implemented a new 8-hour ozone standard of 70 ppb. Exceedances are based on this standard (note that national and state numbers can differ due to data-handling conventions).												

ppm

Concentrations

ppb parts per million

٦	TEN-YEAR BAY AREA AIR QUALITY SUMMARY DAYS OVER CURRENT STANDARDS														
	(	DZONE		1		.BON DXIDE		NITRC DIOX			.FUR XIDE	PM	10	PM <sub>2.5</sub>	
YEAR	8-Hr	1-Hr 8-Hr		1-Hr		8-Hr		1-Hr		1-Hr 24-Hr		24-Hr		24-Hr	
	Nat Cal		al	Nat	Cal	Nat	Cal	Nat	Cal	Nat Cal		Nat Cal		Nat	
2007	8	4	9	0	0	0	0	0	0	0	0	0	4	14	
2008	19	9	20	0	0	0	0	0	0	2	0	0	5	12	
2009	11	11	13	0	0	0	0	0	0	0	0	0	1	11	
2010	11	8	11	0	0	0	0	0	0	0	0	0	2	6	
2011	9	5	10	0	0	0	0	0	0	0	0	0	3	8	
2012	8	3	8	0	0	0	0	1	0	0	0	0	2	3	
2013	3	3	3	0	0	0	0	0	0	0	0	0	6	13	
2014	9	3	10	0	0	0	0	0	0	0	0	0	2	3	
2015	12	7	12	0	0	0	0	1	0	0	0	0	1	9	
2016	15	6	15	0	0	0	0	0	0	0	0	0	0	0	

### µg/m3

parts per billion micrograms per cubic meter