

US EPA ARCHIVE DOCUMENT

# **APPENDIX G**

## **ADMINISTRATIVE BURDEN AND COSTS SUPPORTING INFORMATION**

## APPENDIX G

### ADMINISTRATIVE BURDEN AND COSTS SUPPORTING INFORMATION

#### G.1 IDENTIFICATION OF MILITARY ESTABLISHMENTS AFFECTED BY THE SELECTED NAAQS

The Agency selected military establishments potentially affected by the selected ozone and PM NAAQS from a number of Department of Defense (DOD) web pages and other DOD publications [US DOD 1996, 1997(a), 1997(b), 1997(c), 1997(d)]. Table G.1 displays the results of that selection for United States Army, Air Force, Navy and Marine Corp installations in the 50 States and Washington D.C. Table G.1 does not display information for the US Coast Guard or any National Guard or Reserve installations. Coast Guard operations are divided into 10 Coast Guard Districts, but a complete list of their location was not available for this analysis. National Guard and Reserve installations typically share many of their assets with military bases nearby. Differentiation between bases which share assets and those which do not could not be determined for this analysis. To avoid double counting, the Agency decided to exclude all National Guard and Reserve establishments.

**Table G.1 MILITARY ESTABLISHMENTS IN THE UNITED STATES**

Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
A Anniston Army Depot	Alabama	Calhoun				
A Ft. Ruckerr	Alabama	Dale				
N NAVSTA Pascagoula	Alabama	Jackson				
A Redstone Arsenal	Alabama	Limestone				
AF Maxwell AFB	Alabama	Montgomery				
A Ft. McClellan	Alabama	Taladega			Y	
A Ft. Richardson	Alaska	Anchorage Borough				
AF Elmendorf AFB	Alaska	Anchorage Borough				
AF Eielson AFB	Alaska	Fbks North Star Borough				
A Ft. Wairwright	Alaska	Fbks North Star Borough				
A Ft. Greely	Alaska	Fbks North Star Borough				
A Ft. Huachuca	Arizona	Cochise				
A Camp Navajo	Arizona	Coconino				
AF Luke AFB	Arizona	Maricopa	Y	Y	Y	Y
AF Davis-Monthan AFB	Arizona	Pima				

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Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
MC MCAS Yuma	Arizona	Yuma				
A Yuma Proving Ground	Arizona	Yuma				
AF Little Rock AFB	Arkansas	Pulaski				
AF Little Rock AFB	Arkansas	Pulaski				
A Ft. Hunter Liggett	California	San Loius Obispo				
A Oakland Army Base	California	Alameda	Y	Y	Y	Y
N NAU Scotia	California	Humboldt				
AF Edwards AFB	California	Kern		Y	Y	Y
N NAS Lemoore	California	Kings		Y	Y	Y
A Sierra Army Depot	California	Lassen				
N NCBC Point Hueneme	California	Los Angeles	Y	Y	Y	Y
N Seal Beach Naval Reserve	California	Los Angeles	Y	Y	Y	Y
AF Los Angeles AFB	California	Los Angeles	Y	Y	Y	Y
N NAS North Island	California	Los Angeles	Y	Y	Y	Y
A Santa Anna Army Air Base	California	Orange	Y	Y	Y	Y
MC MCAS EI Toro	California	Orange	Y	Y	Y	Y
AF March AFB	California	Riverside	Y	Y	Y	Y
AF McClellan AFB	California	Sacramento	Y	Y	Y	Y
A Ft. Irwin	California	San Bernadino	Y	Y	Y	Y
N NAWC China Lake	California	San Bernadino	Y	Y	Y	Y
MC MCAGCC 29 Palms	California	San Bernadino	Y	Y	Y	Y
MC MCLB Barstow	California	San Bernadino	Y	Y	Y	Y
N SUBASE San Diego	California	San Diego	Y	Y	Y	Y
MC MCRD San Diego	California	San Diego	Y	Y	Y	Y
N NAS North Island	California	San Diego	Y	Y	Y	Y
N NAVSTA San Diego	California	San Diego	Y	Y	Y	Y
N NAS Miramar	California	San Diego	Y	Y	Y	Y
MC MCB Camp Pendelton	California	San Diego	Y	Y	Y	Y
AF Vandenberg AFB	California	Santa Barbara	Y		Y	
AF Onizuka AFB	California	Santa Clara	Y	Y	Y	Y
A Presidion of Monterey	California	Santa Cruz	Y	Y	Y	Y
N NAWC Point Mugu	California	Santa Cruz	Y	Y	Y	Y
N NPS Monterey	California	Santa Cruz	Y	Y	Y	Y
AF Travis AFB	California	Solano	Y	Y	Y	Y
AF Beale AFB	California	Yuba	Y	Y	Y	Y
A Ft. Carson	Colorada	El Paso				
AF Peterson AFB	Colorado	El Paso				
AF U.S. Air Force Academy	Colorado	El Paso				
AF Falcon AFB	Colorado	El Paso				
N SUBASE New London	Connecticut	New London				
AF Dover AFB	Deleware	Dover				
AF Tyndall AFB	Florida	Bay				
AF Patrick AFB	Florida	Brevard				
N NAVBASE Jacksonville	Florida	Duval				
N NAS Cecil Field	Florida	Duval				

**Table G.1 MILITARY ESTABLISHMENTS IN THE UNITED STATES**

Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
N NAS Mayport	Florida	Duval				
N NAS Jacksonville	Florida	Duval				
N NAS Whiting Field	Florida	Escambia			Y	
N NTTC Correy Station	Florida	Escambia			Y	
N NAS Pensacola	Florida	Escambia			Y	
N NAS Whiting Field	Florida	Escambia			Y	
N NAS Key West	Florida	Florida Bay				
AF MacDill AFB	Florida	Hillsborough				
AF Hurlburt Field	Florida	Okaloosa				
AF Eglin AFB	Florida	Okaloosa				
N NTC Orlando	Florida	Seminole				
N SUBASE Kings Bay	Georgia	Camden				
A Ft. Benning	Georgia	Chatahoochie				
A Fort Gillem	Georgia	Clayton	Y	Y	Y	Y
A Ft. McPherson	Georgia	Clayton	Y	Y	Y	Y
N NAS Atlanta	Georgia	Cobb	Y	Y	Y	Y
MC MCLB Albany	Georgia	Dougherty				
AF Warner-Robbins AFB	Georgia	Houston				
A Hunter Army Airfield	Georgia	Liberty				
A Ft. Steward	Georgia	Liberty				
AF Moody AFB	Georgia	Lowndes				
A Ft. Shafter / Schofield Barr.	Hawaii	Honolulu				
MC MCB Kaneohe Bay	Hawaii	Honolulu				
AF Hickam AFB	Hawaii	Honolulu				
N NCTAMS EASTPAC	Hawaii	Honolulu				
A Wheeler Army Airfield	Hawaii	Honolulu				
N NAVSTA Pearl Harbor	Hawaii	Honolulu				
AF Maui AFB	Hawaii	Maui				
AF Mountain Home AFB	Idaho	Elmore				
N NTC Glennview	Illinois	Lake		Y	Y	Y
A Rock Island Arsenal	Illinois	Rock Island				
AF Scott AFB	Illinois	St. Louis			Y	
AF Grissom ARB	Indiana	Miami				
MC MCSA Kansas City	Kansas	Wyandotte				
A Ft. Riley	Kansas	Geary				
A Ft. Leavenworth	Kansas	Leavenworth				
AF McConnell AFB	Kansas	Sedgwick				
AF Forbes AFB	Kansas	Shawnee				
A Ft. Knox	Kentucky	Bullitt				
A Ft. Campbell	Kentucky	Christian				
A Ft. Polk	Louisiana	Vernon				
AF Barksdale AFB	Louisiana	Bossier				
N SUBASE New Orleans	Louisiana	Lafourche			Y	
N NAS Brunswick	Maine	Cumberland				
A Ft. Meade	Maryland	Anne Arundel	Y	Y	Y	Y

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Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
A Ft. Deirtrick	Maryland	Frederick	Y	Y	Y	Y
A Aberdeen Proving Grounds	Maryland	Harford	Y	Y	Y	Y
N NSGA Fort Meade	Maryland	Howard	Y	Y	Y	Y
AF Andrews AFB	Maryland	Prince George's	Y	Y	Y	Y
N U.S. Naval Academy	Maryland	Queene Anne's	Y	Y	Y	Y
N NAWC Pawtuxet	Maryland	St. Mary's				
A Ft. Ritchie	Maryland	Washington	Y	Y	Y	Y
AF Westover AFB	Massachusetts	Hampden				
N NAS South Weymouth	Massachusetts	Plymouth			Y	
AF Hanscom AFB	Massachusetts	Suffolk			Y	
A Ft. Devins	Massachusetts	Worcester			Y	
AF Keesler AFB	Mississippi	Harrison				
N NAVSTA Pascagoula	Mississippi	Jackson				
N NAS Meridian	Mississippi	Lauderdale				
AF Columbus AFB	Mississippi	Lowndes				
AF Whiteman AFB	Missouri	Johnson				
A Ft. Leonard Wood	Missouri	Pulaski				
AF Malmstrom AFB	Montana	Cascade				
AF Offutt AFB	Nebraska	Sarpy				
N NAS Fallon	Nevada	Churchill				
AF Nellis AFB	Nevada	Clark				
A Ft. Monmouth	New Jersey	Atlantic	Y	Y	Y	Y
A Ft. Dix	New Jersey	Burlington	Y	Y	Y	Y
AF McGuire AFB	New Jersey	Burlington	Y	Y	Y	Y
A Ocean Terminal Bayonne	New Jersey	Hudson	Y	Y	Y	Y
A Picatinny Arsenal	New Jersey	Morris	Y	Y	Y	Y
N NAWC Lakehurst	New Jersey	Ocean	Y	Y	Y	Y
AF Kirtland AFB	New Mexico	Bernalillo				
AF Cannon AFB	New Mexico	Curry				
AF Holloman AFB	New Mexico	Otero				
AF Hancock Field	New York	Deleware				
A Ft. Drum	New York	Jefferson				
A Ft. Hamilton	New York	Kings	Y	Y	Y	Y
AF Griffiss AFB	New York	Oneida				
A U.S. Military Academy	New York	Orange	Y	Y	Y	Y
A White Sands Missile Range	New Mexico	Otero				
MC MCAS Cherry Point	North Carolina	Craven				
A Ft. Bragg	North Carolina	Cumberland				
AF Pope AFB	North Carolina	Cumberland				
MC MCAS New River	North Carolina	Onslow				
MC Camp Lejeune	North Carolina	Oslow				
AF Seymour Johnson AFB	North Carolina	Wayne				
AF Hector IAP	North Dakota	Cass				
AF Grand Forks AFB	North Dakota	Grand Forks				
AF Minot AFB	North Dakota	Ward				

**Table G.1 MILITARY ESTABLISHMENTS IN THE UNITED STATES**

Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
A Ft. Sill	Oklahoma	Comanche				
AF Vance AFB	Oklahoma	Garfield				
AF Altus AFB	Oklahoma	Jackson				
AF Tinker AFB	Oklahoma	Oklahoma				
A Carlisle Barracks	Pennsylvania	Cumberland				
AF Carlisle AFB	Pennsylvania	Cumberland				
A Tobyhanna Army Depot	Pennsylvania	Lackawanna				
N NAS Willow Grove	Pennsylvania	Montgomery	Y	Y	Y	Y
A Ft. Adams	Rhode Island	Newport				
N NETC Newport	Rhode Island	Newport				
MC MCRD Parris Island	South Carolina	Beaufort				
MC MCO Beaufort	South Carolina	Beaufort				
N NAVBASE Charleston	South Carolina	Charleston				
AF Charleston AFB	South Carolina	Charleston				
A Ft. Jackson	South Carolina	Richland				
AF Shaw AFB	South Carolina	Sumter				
AF Ellsworth AFB	South Dakota	Meade				
AF Arnold AFB	Tennessee	Coffee				
N NAS Memphis	Tennessee	Shelby		Y	Y	
AF Kelly AFB	Texas	Bexar				
AF Lackland AFB	Texas	Bexar				
A Ft. Sam Houston	Texas	Bexar				
AF Brooks AFB	Texas	Bexar				
A Ft. Bliss	Texas	Hudspeth				
N NAS Dallas	Texas	Dallas		Y	Y	Y
A Hensley Field	Texas	Dallas		Y	Y	Y
N Kingsville	Texas	Klebero				
AF Reese AFB	Texas	Lubbock				
A Ft. Hood	Texas	McLennan				
N NAS Corpus Christi	Texas	Nueces				
N NAVSTA Ingelside	Texas	San Patricio				
N NAS Fort Worth	Texas	Tarrant		Y	Y	Y
AF Dyess AFB	Texas	Taylor				
AF Goodfellow AFB	Texas	Tom Green				
AF Laughlin AFB	Texas	Val Verde				
AF Sheppard AFB	Texas	Wichita				
AF Hill AFB	Utah	Davis				
A Dugway Proving Ground	Utah	Tooele				
A Ft. Myer	Virginia	Arlington	Y	Y	Y	
A Ft. Lee	Virginia	Colonial Heights			Y	
A Ft. Belvoir	Virginia	Fairfax	Y	Y	Y	
A Ft. Monroe	Virginia	Gloucester			Y	
AF Langley AFB	Virginia	James City			Y	
A Ft. Eustis	Virginia	James City			Y	
MC Quantico	Virginia	Prince William	Y	Y	Y	

**Table G.1 MILITARY ESTABLISHMENTS IN THE UNITED STATES**

Installation	State	County	OZONE			PM <sub>2.5</sub>
			.08 5th	.08 4th	.08 3rd	15/65
A Ft. Gordon	Virginia	Richmond City			Y	
N NAS Oceana	Virginia	Suffolk			Y	
N NAS Norfolk	Virginia	Suffolk			Y	
N NAVPHIBASE Little Creek	Virginia	Suffolk			Y	
N NAVBASE Norfolk	Virginia	Suffolk			Y	
A Walter Reed	Washington	District of Columbia	Y	Y	Y	Y
AF Bolling AFB	Washington	District of Columbia	Y	Y	Y	Y
N NAVDIST Wash. D.C.	Washington	District of Columbia	Y	Y	Y	Y
N NAS Whidbey Island	Washington	Island				
N NAVBASE Seattle	Washington	King				
N SUBASE Bangor	Washington	Kitsap				
N Nav Shipyard Puget Sound	Washington	Kitsap				
N Trident Training Facility	Washington	Kitsap				
A Ft. Lewis	Washington	Pierce				
AF McChord AFB	Washington	Pierce				
AF Fort Lewis	Washington	Pierce				
N NAVSTA Everett	Washington	Snohomish				
AF Fairchild AFB	Washington	Spokane				
AF F E Warren AFB	Wyoming	Laramie				
<b>SUM OF COULUMNS</b>	<b>214</b>		<b>52</b>	<b>58</b>	<b>77</b>	<b>58</b>

**KEY**

A	United States Army
AF	United States Air Force
N	United States Navy
MC	United States Marine Corp

Source: United States Department of Defense, 1996, 1997



## G.2 OZONE STANDARD ANALYSIS

### G.2.1 Total Incremental Ozone Burden and Cost Calculations

Table G.2 displays the sum of the burden hours derived from Tables 10.3 and 10.4 for States with nonattainment areas, along with the point estimate employed in the administrative cost chapter discussion. All burden estimates are incremental to the current standard and the analytical baseline derived for this RIA. “Annualized hours refer to the annual equivalent hours associated with the annualized cost of the item, according to the following formula:

#### FIGURE G.1 CALCULATION OF “ANNUALIZED HOURS”

$$\frac{\sum_{j=1}^2 AV_{i,j}}{W_i} = \textit{Annualized Hours}$$

where  $AV_{i,j}$  represents the annualized value as displayed in Figure 10.2, for the  $i$ th respondent and its  $j$ th annualized category.  $W_i$  represents the wage associated with the  $i$ th respondent, as discussed in section 10.3.4. Table G.3 displays similar data for States without nonattainment areas. Costs are in real terms, in thousands of 1990 dollars.

**Table G.2 ANNUAL OZONE ADMINISTRATIVE BURDEN AND COST WORKSHEETS FOR ALTERNATIVE EIGHT HOUR STANDARDS IN NONATTAINMENT AREAS**

Costs are in thousands of \$1990

	Federal		State		Federal		Non-Federal	
	Low	High	Low	High	Low	High	Low	High
<b>.08 5th</b>								
5-Year Annualized Hours	10	39	180	702	0	0	0	0
12-Year Annualized Hours	3	5	45	86	6	124	626	12,513
Annual Task Total	86	200	6,714	20,160	156	3,120	15,687	313,740
TOTAL HOURS PER YEAR	99	244	6,939	20,949	162	3,244	16,313	326,253
TOTAL COST PER YEAR (in 1990 \$K)	\$3	\$8	\$278	\$838	\$6	\$110	\$979	\$19,575
<b>.08 4th</b>								
5-Year Annualized Hours	10	39	250	976	0	0	0	0
12-Year Annualized Hours	3	5	63	120	7	139	876	17,517
Annual Task Total	86	200	9,325	28,000	174	3,480	21,960	439,200
TOTAL HOURS PER YEAR	99	244	9,638	29,095	181	3,619	22,836	456,717
TOTAL COST PER YEAR (in 1990 \$K)	\$3	\$8	\$386	\$1,164	\$6	\$123	\$1,370	\$27,403
<b>.08 3rd</b>								
5-Year Annualized Hours	10	39	290	1,132	0	0	0	0
12-Year Annualized Hours	3	5	73	139	9	184	1,016	20,319
Annual Task Total	86	200	10,817	32,480	231	4,620	25,473	509,460
TOTAL HOURS PER YEAR	99	244	11,180	33,750	240	4,804	26,489	529,779
TOTAL COST PER YEAR (in 1990 \$K)	\$3	\$8	\$447	\$1,350	\$8	\$163	\$1,589	\$31,787

**Table G.3 ANNUAL OZONE ADMINISTRATIVE BURDEN AND COST WORKSHEETS FOR ALTERNATIVE EIGHT HOUR STANDARDS IN ATTAINMENT AREAS**

Costs are in thousands of \$1990

	Federal		State		Federal		Non-Federal	
	Low	High	Low	High	Low	High	Low	High
<b>.08 5th</b>								
5-Year Annualized Hours	0	0	0	0	0	0	0	0
12-Year Annualized Hours	0	2	4	79	19	388	3,481	69,625
Annual Task Total	25	120	924	5,940	0	0	0	0
TOTAL HOURS PER YEAR	25	122	928	6,019	19	388	3,481	69,625
TOTAL COST PER YEAR (in 1990 \$K)	\$1	\$4	\$37	\$241	\$1	\$13	\$209	\$4,177
<b>.08 4th</b>								
5-Year Annualized Hours	0	0	0	0	0	0	0	0
12-Year Annualized Hours	0	2	3	62	19	373	3,231	64,621
Annual Task Total	25	120	728	4,680	0	0	0	0
TOTAL HOURS PER YEAR	25	122	731	4,742	19	373	3,231	64,621
TOTAL COST PER YEAR (in 1990 \$K)	\$1	\$4	\$29	\$190	\$1	\$13	\$194	\$3,877
<b>.08 3rd</b>								
5-Year Annualized Hours	0	0	0	0	0	0	0	0
12-Year Annualized Hours	0	2	3	53	16	328	3,091	61,819
Annual Task Total	25	120	616	3,960	0	0	0	0
TOTAL HOURS PER YEAR	25	122	619	4,013	16	328	3,091	61,819
TOTAL COST PER YEAR (in 1990 \$K)	\$1	\$4	\$25	\$161	\$1	\$11	\$185	\$3,709