10.0 ADMINISTRATIVE BURDEN AND COSTS ASSOCIATED WITH THE SELECTED OZONE AND PARTICULATE MATTER (PM) NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS), AND PROPOSED REGIONAL HAZE (RH) RULE

10.1 INTRODUCTION

10.1.1 Results in Brief

This chapter provides an estimate for the additional administrative cost of the joint ozone and PM NAAQS and RH rules to the Federal government, States, and sources of pollution (Federal and non-Federal). These additional costs are estimated relative to the analytical baseline of this regulatory impact analysis (RIA). In the prior ozone RIA, the Environmental Protection Agency (EPA) assumed the marginal administrative burden of the alternative ozone standards was not of sufficient magnitude to affect the discussion of total costs [US EPA 1996(b)]. This analysis supports that assumption. Given the national scope of the NAAQS and the degree of change in nonattainment areas (NA's), this section of the RIA estimates marginal costs of about $17 million for the selected ozone NAAQS, well within the range discussed in the previous RIA. While cost savings may occur between ozone and PM under a combined analysis, the administrative cost estimate for ozone is a reasonable approximation of the administrative cost for PM under a joint NAAQS scenario. Consequently, the 15/65 $PM_{2.5}$ marginal administrative cost estimates are of the same magnitude as those for ozone, or about $17 million. The $PM_{2.5}$ monitoring costs, for which EPA has agreed to pay, adds $20 million for a total $PM_{2.5}$ cost of about $37 million. The administrative strategy associated with the proposed RH target relies on PM efforts as much as possible. The expected additional administrative cost for RH is about $1 million.

10.1.2 Overview of Analysis

In addition to control costs, administrative burdens comprise one of the primary considerations when the EPA estimates the impact of a rulemaking. For industry-specific rulemakings, the Agency performs its burden analysis under the guidance of the Paperwork Reduction Act (PRA), in a document entitled an Information Collection Request (ICR). An ICR provides policy makers with a tool for minimizing the administrative burden imposed by a rulemaking upon Federal Agencies, States, local governments, and sources of pollution.

In the case of NAAQS, States assume primary responsibility for designing the set of air quality management plans which will bring the State into attainment and/or keep it there. Once the Agency has set the standards, it must define the processes by which it will identify and oversee nonattainment areas. To aid in this process and make recommendations on implementation, the Agency has established a subcommittee on ozone, PM, and RH under the Federal Advisory Committee Act (FACA). Since this subcommittee has not completed its work, it has not provided final recommendations as to how the joint NAAQS should be implemented. Therefore, it is not possible to prepare an ICR at this time. Nevertheless, the Agency has estimated administrative costs to give the public some understanding of the possible implementation costs of these standards.

This RIA is not intended to fulfill the requirements of the PRA, nor should conclusions be drawn from it about the actual administrative burden and costs areas may incur as they develop attainment strategies that reflect different NA's economic, social, infrastructural, and political characteristics. This section presents an approximation of the additional administrative effects one might expect from the selected NAAQS and RH rule, based upon a hypothetical determination of NA's and control measures which may be selected by States when revising their State Implementation Plans (SIP's).

The remainder of this chapter contains sections which deal separately with each pollutant. Several sections at the end of this chapter have been reserved for combining all of the analyses and discussing limitations. Because monitoring is an integral part of the planning

process, it is included in the following administrative burden analyses. The next section discusses the format and underlying assumptions applied to the NAAQS. Section 10.3 discusses the marginal administrative burden and costs for ozone. No change in the burden or cost of monitoring for ozone is anticipated.[1] Section 10.4 discusses the marginal administrative burden and costs associated with $PM_{2.5}$. Monitoring for PM has been estimated under a separate ICR [US EPA 1996(a)] and appears toward the end of the PM section. Section 10.5 discusses changes to the NAAQS format to accommodate differences in the RH rule, along with the incremental administrative burden and costs of the RH program. Since the Agency is proposing a separate rulemaking for RH, it will require a formal ICR. The results of that analysis are included in the RH section.

The concluding sections of this chapter discuss possible overstatements due to synergies between pollutants, potential over- and under-statements of administrative costs due to permitting considerations, and "bottom line" burden and cost estimates for the selected ozone and PM NAAQS and RH rule.

10.2 FORMAT

10.2.1 Respondent Types

For purposes of clarity in presentation this analysis follows the format generally used for ICR's, with several modifications. A typical ICR assesses burden and costs for three types of respondents - Federal, State, and Source. This analysis assesses burden and costs for four respondent groups:

- Administration and Oversight

1 Personal conversations with OAQPS / EMAD, June 4, 1997 to June 5, 1997; documented in EPA memos (1 - 5) for the same days.

- **Federal Oversight** typically means the EPA, but for this analysis, it also includes the Department of Energy (DOE), the Department of Transportation (DOT), and other Federal organizations which oversee key pollutant source categories. For RH, Federal oversight also includes Federal Land Managers (FLM's), who are responsible for maintaining air quality in Class I areas.

- **States**, NA's, and other levels of air quality management have been combined into one respondent category for this analysis, for reasons discussed in detail, below.

- Sources of Pollution

  - **Federally-owned sources of pollution**, (e.g., power plants on military bases), have special considerations which require separate analysis.

  - **Non-Federal respondents** include State and local government sources of pollution (e.g., unpaved county and local roads for PM and municipally-owned treatment works for ozone); non-profit sources of pollution, such as hospitals and clinics; and typical industrial and agricultural sources. Power generating utilities are not included in the ozone "Sources of Pollution" count because they have been included in the baseline and their administrative burden has been associated with other rules and guidances. However, $PM_{2.5}$ non-Federal sources include power generating utilities.

A third oversight respondent category was considered which would have assessed the burden imposed on NA's. However, upon further investigation, it was determined that while there are a number of examples where NA's have established their own management structure, there are probably just as many examples where they do not. Many counties in NA's perform their own analyses, most commonly with the help of State air quality analysts. Furthermore,

while States do their own modeling and planning, many NA's do not, and those which model generally coordinate efforts with the States.[2] Consequently, good coordination of effort between States and their NA's is assured and the analysis does not expand to include a separate respondent category for NA's. The burden associated with NA's and other local air quality management groups are included at the State respondent level without any loss of information.

Any area modeled as nonattainment in 2010 for PM or ozone, if it had been an NA at any time in the past for any criteria pollutant, is assumed to have a more developed air management infrastructure. Therefore, these areas should have burden levels consistent with existing NA's. All of the NA's identified for the three alternative ozone NAAQS had, at one time or another, been an NA for at least one of the criteria pollutants.[3] Therefore, it is not necessary to differentiate between new and existing ozone NA's for purposes of burden estimation.

Finally, while NA's work to reduce air pollution and meet Federally-determined minimum standards, areas in attainment may also monitor and evaluate air quality to avoid potential future costs associated with air quality degradation. Therefore, this analysis created an additional organizational subdivision to reflect these administrative differences, with each of the four respondent types represented within it. For sources in attainment areas, little additional burden is assumed. While States manage air quality in attainment areas, little additional responsibility will fall to sources as a result of changes in the NAAQS.

Most of the air quality related activities which may apply in attainment areas are already in place because of other parts of the Clean Air Act (CAA). Although there may be some unanticipated source burdens imposed by the new NAAQS in areas of attainment, this burden is

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2 Personal conversation with OAQPS / OPSG 5/27, 1997; documented in EPA memos (6 and 7) 5/27/1997 and 5/28/1997.

3 Personal conversations with OAQPS / OPSG and Region IV, May 15, 1997; documented in EPA memos (#8, 9, and 10).

assumed to be insignificant and this analysis does not assign burden hours to them.[4] For this chapter, two categories which could have an impact on attainment area sources are identified, both of which are subject to annualization.

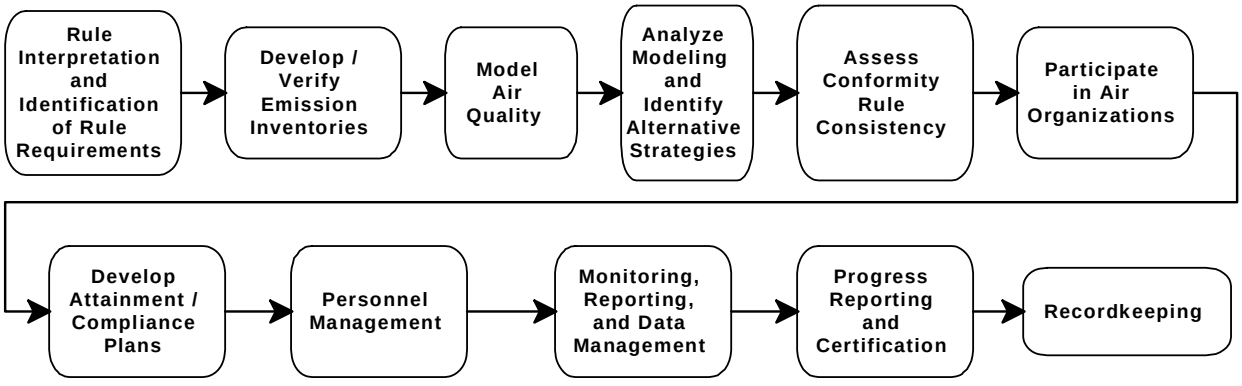
10.2.2. Definition of Burden Categories

To predict the steps necessary to fully implement the new PM and ozone NAAQS, the flow chart in Figure 10.1 is constructed. Each of the 11 blocks in the flow chart represents one or more of the burden categories attached to administration of the alternative ozone and PM standards listed in Tables 10.3 and 10.4. The flow chart and its associated burden categories present a reasonable approximation of what respondents are likely to do under the hypothetical scenario set up for this analysis.

10.2.2.1 One-Time Administrative Costs

Administrative costs are classified as either one-time or continuous or reoccurring costs. One-time costs relate to start-up activities which do not need to be repeated on a periodic basis.

Figure 10.1 Flow Chart of Administrative Tasks



4 Personal conversation with OAQPS / OPSG 5/27, 1997; documented in EPA memos, (6 and 7), 5/27/1997 and 5/28/1997.

To create an annual cost of administration, reoccurring costs do not need to be adjusted to account for temporal differences. However, one-time costs reap benefits over the life of the program and should be spread out over that time frame. Therefore, the discounted net present value (NPV) of the cost is annualized into equal "payments" over the life of the program, using the following formulas: where NPV is the cost associated with the one-time burden category, C_i is the cost incurred in year I, N is the life of the program, and AV is the annualized value. Costs within this analysis are in real $1990 dollars, subject to a 7 percent discount rate, in accordance with Federal requirements.

Figure 10.2 Annualization Formulas

$$\textit{Net Present Value}: \qquad NPV = \sum_{i=0}^{N} \left(\frac{C_i}{1.07^i} \right)$$

$$\textit{Annualized Value}: \qquad AV = NPV \left(\frac{.07\,(1.07^N)}{(1.07)^N - 1} \right)$$

Two burden categories were identified as one-time activities:

Interpret Rule / Identify New Requirements: This category includes research, acquisition, and assimilation of the rules and regulations necessary to understand the State's responsibilities with respect to meeting the alternative standards. Given promulgation of the PM and ozone NAAQS in 1997 and the projection of costs to the year 2010, this analysis applies a program life (N) of 13 years to this category.

Revise SIP's: Each State with an NA will have to revise its SIP. This burden category contains the data gathering, evaluation, and reporting necessary to develop new SIP's. Monitoring data necessary for determining areas of attainment and nonattainment for the new NAAQS will probably not allow SIP's to be revised until 2005. Therefore, this analysis amortized SIP revisions over a five year program life. No additional burden for States without

ozone or PM NA's is assumed. Currently, 36 States have SIP's for visibility protection of mandatory Class I Federal areas. The RH provision will expand that requirement to all 50 States.

10.2.2.2. Reoccurring Administrative Costs

The Agency identified 14 burden categories which occur on an annual basis:

Evaluate / Improve Inventories: States create and manage inventories for SIP purposes, so the source burden for this category has been set at zero. As the requirement for new control measures increases with the selected NAAQS, States may need to develop new inventories, especially to mitigate air quality degradation in attainment areas. This category includes the additional hours necessary to develop and improve relevant inventories.

Data Gathering and Assembly: Other data need to be selected and formatted, along with the inventory data. These data include meteorology, often by the hour, including temperature, humidity, cloud cover, wind direction and speed, and the chemical composition of the air column. This category includes the burden of collecting and preparing such data.

Run Model: Running models includes set-up, dry runs, running the model, and troubleshooting activities for the output data derived from it. The PM and ozone require different models. The RH can utilize PM modeling and monitoring, as long as the data are speciated to a degree which allows for RH post processing to determine visibility changes. This category attempts to capture the economies of scale which occur between $PM_{2.5}$ modeling and monitoring and that of RH.

Evaluate / Interpret Modeling Results: This category includes the marginal change in quality assurance and reporting necessary for cross-pollutant purposes. This category also includes the development of technical documents and the evaluation and correction of reports made by others which reference model methodology and output. The same considerations discussed for economies of scale under the category "Run Model" apply here, as well.

Identify Alternative Control Strategies: Typically, NA's can achieve a given target by a number of alternative strategies. This category includes the identification, evaluation, and selection of alternative strategies.

Evaluate Strategies for Conformity: Federal and State management agencies must evaluate each alternative for its potential impact on regulations from other governmental bodies. This category includes the burden of identifying and resolving Conformity Rule conflicts.

Ozone/PM/RH Regional Groups: States and the EPA coordinate air quality efforts through a number of regional management groups [e.g., the Lake Michigan Ozone Study Group (LMOS), the Ozone Transport Assessment Group (OTAG), and the Grand Canyon Visibility Transport Commission (GCVTC)]. Although the FACA subcommittee has not made final recommendations, the additional burden associated with participating in regional management groups is expected to be low. This category includes the additional burden on State and local government members of new and existing regional ozone/PM groups for managing the new joint NAAQS. For the most part, RH managers do not participate in regional air quality management groups and any new activity in this category will probably be focused on the West. Sources of pollution participate in regional groups through trade associations or on a voluntary basis and their burden has not been included in this analysis. This burden category includes, but is not limited to: meeting attendance, air quality modeling for group purposes, and the production of reports and analyses for the regional group.

Public Hearings: This category includes the additional State burden required to organize, advertise, conduct, and transcribe public hearing information related to the new NAAQS in NA's.

Develop Regional Implementation Plans: Based upon the input of public hearings and regional management groups, States and local ozone, PM, and RH management areas will have to construct air quality management plans which address the broader geographical concerns of these groups. This category includes this burden.

Review / Revise Compliance Plans: Sources in NA's are required to develop plans which describe the steps they will undertake to bring themselves into compliance within required time limits. The change from the current to the selected PM and ozone NAAQS will necessarily change the status of many sources. This category measures the expected additional burden to sources in ozone and PM NA's for creating and revising compliance plans for submission to their State authority, as well as the review and approval of the State for those plans. Because areas in attainment do not create compliance plans, it is assumed the burden of compliance plans for sources in attainment areas is zero.

Development of Source Guidance Documents: This category includes the expected additional burden to States for creating source guidance documents to assist sources of pollution in their efforts to attain the alternative standards.

Monitoring and Reporting: This RIA assumes there will be only a slight change in the ozone monitor network by 2010, and some slight overall increase in monitor related tasks may occur for some States. For PM, the administrative burden and cost of monitors has been discussed under a separate ICR. This category includes the additional administrative burden associated with calibrating and certifying the monitor, and reporting data to Federal, State, and local respondents.

Prepare and Review Progress Reports: Each State must make periodic reports to the Agency on its progress toward reaching attainment of the standard, as well as describe any and all plans in each NA to improve and/or maintain their rate of progress. The States will also need to assess reasonable progress for RH. For their part, States must review and pass on these progress reports as part of their SIP requirements. This category includes the additional burden from these tasks which are expected to occur for NA's and State and local ozone and PM management groups.

Recordkeeping: This category includes changes in record keeping for States and sources of pollution that affect NA's and mandatory Class I Federal areas.

10.2.2.3 Estimating the Burden of Alternative NAAQS

Ranges of burden hours are established for each administrative category which serve as upper and lower bounds to the anticipated additional burden of that task, relative to the current ozone or PM standard. Because the analysis of burden per respondent weights the hours applied for the type of respondents in that category, the average of the upper and lower bounds is used for point estimate discussions. It is assumed that, for each respondent type, the effort required for areas in attainment should be less than that for areas of nonattainment. For example, States will have to re-evaluate their SIP plans to accommodate changes. For areas of nonattainment, these changes could account for some planning and coordination beyond that already required to meet the current NAAQS or a baseline activity. For attainment areas, however, a more cursory review of maintenance plans would probably be sufficient. Tables 10-3 and 10-4 display the set of burden categories expected under each NAAQS.

10.3 OZONE ADMINISTRATIVE BURDEN AND COST

10.3.1 Estimating the Number of Respondents for the Ozone NAAQS

Federal oversight generally refers to only the EPA, and most of the burden categories listed in Tables 10.3 and 10.4 refer to only one respondent. However, several categories may involve oversight by other agencies (e.g., DOT, DOE, Department of Defense). To accommodate multiple Federal agencies, if the description of the appropriate category has a number in parentheses at the end, that number indicates how many Agencies are included in the Federal estimation. For example, the Federal oversight component for "Evaluate Strategies for Conformity" was assigned a burden range of "M", which corresponds to a range of 21 to 40 hours. However, as many as eight Federal agencies could be involved in this process. Consequently, rather than a range of 21 to 40 hours, the Federal burden range for "Evaluate Strategies for Conformity" has an estimated range of 168 to 320 hours. Because this adjustment simplifies the calculations which go into translating per-respondent hours into total burden hours, for analytical purposes, Table 10-1 lists only one Federal respondent.

State oversight includes the 50 States, plus the District of Columbia. This analysis divided States into two subcategories for whether or not it contained an NA. States with both attainment and NA's are counted among those with NA's. As the stringency of the ozone standard increases, more areas become NA's, causing more Federal and non-Federal sources of pollution to fall within them. Likewise, the number of States which provide oversight to NA's must also increase. Table 10.1 displays the expected number of States with and without NA's for each 8- hour alternative ozone standard.

Table 10.1 The Projected Number of Respondents and the Distribution of States for Each Alternative Standard

		0.08 5th Max	0.08 4th Max	0.08 3rd Max
Oversight	Federal Oversight	1	1	1
	State Oversight (NAs)	18	25	29
	State Oversight (Attainment)	33	26	22
Sources of Pollution	Federal Sources (NA's)	52	58	77
	Federal Sources (Attainment)	160	160	140
	Non-Federal Sources (NAs)	5,200	7,300	8,500
	Non-Federal Sources	29,000	27,000	26,000

Federal sources include military installations, sources in Federally-managed permit programs on tribal lands and on the Outer Continental Shelf (OCS), Federal prisons, regional electric power organizations (e.g., the Tennessee Valley Authority), and other Federally-owned or leased buildings and compounds. Federal buildings and compounds generally do not have the type of emissions which would fall under the scope of the selected PM and ozone NAAQS and have been excluded from this analysis. As stated earlier, electrical power sources have been included in the baseline for ozone, but for PM, power generating utilities have been included in the inventory. Few Federal prisons fall under the scope of this NAAQS and have been excluded as well [US EPA 1996(b)]. The tribal and OCS sources also are not included in this analysis, but are expected to be small [US EPA 1997(b)]. Therefore, this Federal source discussion focuses on military installations. Not only do military establishments comprise a large percentage of the Federal sources identified, but they also have unique managerial considerations with respect to conformity and national defense. Table 10.2 displays the distribution of military installations across alternative ozone standards.

Table 10.2 The Distribution of Military Installations for Ozone Standards

	ARMY		NAVY		AIR FORCE		MARINES		TOTAL	
	NA's	Attain	NA's	Attain	NA's	Attain	NA's	Attain	NA's	Attain
0.08 5th	19	44	16	43	11	66	6	9	52	160
0.08 4th	19	44	21	38	12	65	6	9	58	150
0.08 3rd	26	37	31	28	14	63	6	9	77	130

Source: United States Department of Defense, 1996, 1997(a), 1997(b), 1997(c), 1997(d)

Non-Federal sources include industrial point source, mobile source, and area source emissions. A number of State-owned sources of pollution are identified in this analysis. These sources are incorporated into the non-Federal source category under the assumption they would require similar technical services from contractors as would a privately-owned source of pollution. Table 10.1 lists the number of sources which may be affected by each alternative discussed in the RIA. The national estimate for point, area, and mobile sources used to determine the number of sources in attainment areas came from the Agency's part 70 and 71 operating permits analyses [US EPA 1995, 1996(b)] .

10.3.2 Estimating the Per Respondent Burden for the Ozone NAAQS

The burden range assigned to each respondent type for each category represents the expected additional burden beyond what that respondent would have been expending to fully comply with the current standard. For example, the category for "Data Gathering and Assembly" generally refers to States. Federal efforts for the category refer to the maintenance and upkeep of the databases and additional inventories necessary for modeling purposes. These efforts are most likely independent of the actual standards in place, and therefore the Federal oversight burden has been set at zero. However, if new areas are designated nonattainment and additional controls are required for sources within those areas, each State will have to expand its set of model inputs to accommodate these additions. Given the nature of data management and

modeling, the average State with NA's will most likely expend between 1 and 4 person-months in fulfilling these needs. In attainment areas, some States will likely gather additional data, and others will likely decide further effort in this area would not be useful. Therefore, on average, attainment area States will most likely expend between 1 and 20 hours in data gathering. Since sources of pollution do not have to model air quality, their burden is set at zero for all areas.

Table 10.3 Per Respondent Ozone Administrative Burden Estimations For One-time Burden Categories

	NA's				ATTAINMENT AREAS			
	Governments		Sources		Governments		Sources	
	Fed *	State	Fed	Non-Fed	Fed *	State	Federal	Non-Fed
Interpret Rule / Identify New Requirements	M	M	L	L	L	L	L	L
Revise SIPS	H	H	Ø	Ø	Ø	Ø	Ø	Ø

Ø Not Applicable (No Burden Hours)
M Moderate Burden (21 to 40 hours)
L Low Burden (1 to 20 hours)
H High Burden (41 to 160 hours)

Table 10.4 Per Respondent Ozone Administrative Burden Estimations for Reoccurring Burden Categories

	NA's				ATTAINMENT AREAS			
	Governments		Sources		Governments		Sources	
	Fed *	State	Fed	Non-Fed	Fed *	State	Federal	Non-Fed
Evaluate / Improve Inventories (2)	L**	M	Ø	Ø	L**	L	Ø	Ø
Data Gathering and Assembly	Ø	H	Ø	Ø	Ø	L	Ø	Ø
Run Model	L**	M	Ø	Ø	M**	L	Ø	Ø
Evaluate and Interpret Modeling Results	M*	M	Ø	Ø	L*	L	Ø	Ø
Identify Alternative Control Strategies	M*	H	Ø	Ø	Ø	Ø	Ø	Ø
Evaluate Strategies for Conformity (8)	M**	M	Ø	Ø	L**	L	Ø	Ø
Participate in Ozone / PM Regional Groups	M*	H	Ø	Ø	L	M	Ø	Ø
Public Hearings	Ø	H	Ø	Ø	Ø	Ø	Ø	Ø
Develop of Management Plans	Ø	M	Ø	Ø	Ø	Ø	Ø	Ø
Review / Revise Compliance Plans	Ø	H	L	L	Ø	Ø	Ø	Ø
Develop Source Guidance Documents	Ø	M	Ø	Ø	Ø	Ø	Ø	Ø
Prepare and Review Progress Reports	Ø	M	L	L	Ø	L	Ø	Ø
Record keeping	Ø	M	L	L	Ø	L	Ø	Ø

KEY:

Ø	Not Applicable (No Burden Hours)	*	Generally, the EPA, but includes other Agencies as well
L	Low Burden (1 to 20 hours) per year	**	Indicates advisory capacity
M	Moderate Burden (21 to 40 hours) per year		
H	High Burden (41 to 160 hours) per year		

There are 34,324 estimated pollution sources in the United States subject to monitoring [US EPA 1995]. These sources form the basis for the non-Federal source discussion of this analysis. Table 10-1 displays the distribution of sources between nonattainment and attainment areas for each alternative ozone standard.

Tables 10.3 and 10.4 display the range of estimated additonal burden expected for all respondents, relative to the NAAQS analytical baseline.

10.3.3 Determining the Marginal Administrative Burden to Respondents

The marginal administrative burden associated with each of the four respondent categories of this analysis is estimated by multiplying the range endpoints for each burden category by the appropriate number of respondents. For example, Table 10-4 estimates the State oversight burden for "Review / Revise Compliance Plans" in NA's to be between 41 and 160 hours. Table 10.1 shows the .08 5th ozone standard has 18 States with predicted NA's. Consequently, the estimated burden for this category ranges between 738 and 2,880 hours, with a point estimate (average) of 1,809 hours. The sum of all burden category estimations for States under the .08 5th standard results in a point estimate burden of about 17,000 hours. This estimate is a part of the State burden in Table 10.5, below.

Table 10.5 The Total Marginal Burden for the .08 5th Ozone Standard to All Respondents - Point Estimate

(in hours)

	Governments		Sources		TOTALS
	Federal	State	Federal	Non-Fed	
One-Time Categories	30	550	270	43,000	**44,000**
Annual Categories	220	16,000	1,600	160,000	**180,000**
TOTALS	**250**	**17,000**	**1,900**	**200,000**	**220,000**

*Numbers may not add to totals due to rounding

Table 10.6 The Total Marginal Burden for the .08 4th Ozone Standard to All Respondents - Point Estimate

(in hours)

	Governments		Sources		TOTALS
	Federal	State	Federal	Non-Fed	
One-Time Categories	30	740	270	43,000	**44,000**
Annual Categoreis	220	24,000	1,800	230,000	**250,000**
TOTALS	**250**	**22,000**	**2,000**	**270,000**	**290,000**

*Numbers may not add to totals due to rounding

Table 10.7 The Total Marginal Burden for the .08 3rd Ozone Standard to All Respondents - Point Estimate

(in hours)

	Governments		Sources		TOTALS
	Federal	State	Federal	Non-Fed	
One-Time Categories	30	800	270	43,000	**44,000**
Annual Categoreis	200	24,000	2,400	270,000	**290,000**
TOTALS	**230**	**25,000**	**2,700**	**310,000**	**330,000**

*Numbers may not add to totals due to rounding

The marginal administrative burden for the three alternative 8-hour ozone standards, relative to the burden imposed by the current standard, ranges between 28,000 hours for the lower bound estimate of the .08 4th standard and 634,000 hours for the upper bound estimate for the .08 3rd standard. Most of the burden falls to non-Federal sources. The Agency calculated point estimates of 226,000 and 337,000 hours for the .08 5th, and .08 3rd ozone standards, respectively. The estimated marginal administrative burden for the selected ozone standard ranges between 37,000 and 560,000 hours, with a point estimate of 298,000 hours.

An artifact of construction is that Federal governmental burdens and the annualized burdens for sources are the same for all three ozone standards. Federal governmental burdens are based upon only one respondent, as described above in 10.3.1, above. Therefore, the burden in each Federal category remains independent of the standard. For annualized burdens in sources of pollution, no additional burden is estimated to occur for attainment areas with regard to 5 year annualization category, “Revise SIP’s.” Therefore, the aggregation equation for “annualized” burden hours applied to each source type simplifies to the same equation: the number of sources times the 13-year annualization factor.

Table 10.8 shows the average burden for each respondent type under each alternative ozone standard. As with the total estimated burden to Federal oversight, the average Federal burden for oversight does not change across standards because there is only one respondent.

State average burdens range from 342 to 486 hours, with the average burden steadily increasing as the number of NA's increases across standards. Sources of pollution have much lower average burdens, primarily because sources do not have many categories of responsibility.

Table 10.8 Respondent Average Burden for Alternative Ozone Standards
(in hours)

Respondent Type (Number)	Administration		Sources of Pollution	
	Federal (1)	State (51)	Federal (214)	Non-Federal (34,324)
TOTAL: .08 5th	250	340	9	6
TOTAL: .08 4th	250	430	10	8
TOTAL: .08 3rd	250	490	13	9

10.3.4 Estimating the Cost per Hour for Respondents

Historically, the Agency has considered State and Federal burden costs to be roughly the same, at $34 per hour. However, since 1993, the EPA has undertaken a number of new analyses which indicate a divergence between Federal and State wages. In the Compliance Assurance Monitoring (CAM) Rule [US EPA 1997(a)], EPA calculated State burden costs to be $40 per hour. The State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officers recently analyzed the cost of State Air Grant activities and used a per hour rate of $50. For consistency within its own analyses, $40 per hour is selected as the fully loaded State employee labor rate for this analysis.

Two compensation rates for non-Federal sources of pollution are applied , one for in-house management, the other for contracted experts. Recent analyses in support of the CAM Rule indicates that for many sources, the cost of contracted labor far exceeds these rates. Consequently, source burden costs in this analysis are determined for non-Federal sources as the cost of industrial administration, estimated at $60 per hour (fully loaded) in the CAM Rule RIA

[US EPA 1997(a)].

The hourly cost of Federal oversight and Federal sources of pollution is estimated at its historically applied rate of $34 per hour. This is based upon the fully loaded wage of a full time equivalent at a GS-11 step 3, representing the pay rate for a fully qualified analyst operating in the Regions [US EPA 1992, 1995, 1997].

For purposes of this analysis, "fully loaded" means the wage reported includes the pay seen on the employee's pay check, the additional benefits and contributions of the employer, overhead (including office space and equipment, heating, etc.), and an approximation of secretarial and supervisory time applied to the employee. As stated above, the costs in this chapter are in real 1990 dollars to remain consistent with the costs in the remainder of the RIA.

10.3.5 Estimating the Marginal Administrative Cost of the New Ozone NAAQS

To determine the expected additional administrative cost which may occur as the result of a change from the current to a new ozone standard, each of the burden estimates in Tables 10.5, 10.6, and 10.7 are multiplied by the appropriate cost per hour, as discussed in section 10.3.4. Table 10.9 displays the point estimated marginal administrative costs associated with the additional burden which could be imposed by an alternative eight hour ozone NAAQS. As stated above, these estimates are hypothetical, based upon a series of predicted actions and limiting assumptions about what the actual implementation strategy for the new ozone NAAQS may look like. A more accurate approximation of the potential burden and costs of the new joint NAAQS must wait until the Agency's FACA subcommittee has made its recommendations and the part 51 implementation process has been completed.

The marginal administrative cost of the 8-hour ozone standards range between $1.5 million per year for the lower bound estimate for the .08 5th standard and $37.2 million per year for the upper bound estimate for the .08 3rd standard. As with burden estimates, over 98 percent of the costs are incurred by non-Federal sources. The Agency calculated point estimates of

$13.2 million and $19.7 million for the .08 5th and .08 3rd ozone standards, respectively. The expected marginal administrative cost to respondents for the selected ozone standard ranges between $2 million and $32.8 million, with a point estimate of $17.4 million. The large number of non-Federal sources, combined with the high cost per hour for non-Federal compensation, overwhelmed the total cost estimates for all forms of the standard.

Table 10.9 Total Marginal Costs for Alternative Ozone Standards to All Respondents - Point Estimate
(in thousands of $1990)

	Administration		Sources		TOTALS
	Federal	State	Federal	Non-Federal	
.08 5th	$8	$700	$65	$12,000	**$13,000**
.08 4th	$8	$900	$71	$16,000	**$17,000**
.08 3rd	$8	$1,000	$92	$18,000	**$19,000**

Note: Numbers may not add to totals due to rounding

10.4 PARTICULATE MATTER ADMINISTRATIVE BURDEN AND COSTS

10.4.1 Estimating the Administrative Burden and Costs for the $PM_{2.5}$ NAAQS

Table 10.10, below, displays the expected additional administrative burden and costs for the selected $PM_{2.5}$ standard. While $PM_{2.5}$ 15/65 requires a new monitoring system and planning process, its promulgation permits a dis-investment in PM_{10} monitoring [US EPA 1996(a)]. Furthermore, the cost categories listed for the ozone administrative burden, above, also apply to PM; but because $PM_{2.5}$ is a new pollutant, many PM categories must be analyzed separately from their ozone counterparts. For example, there is no model available at this time which simultaneously predicts PM and ozone air quality. To answer questions about PM and ozone interaction requires at least two separate modeling runs. Therefore, given the characteristics

listed here, along with the relative size of the administrative costs of the NAAQS in comparison to its control costs, it is assumed the PM NAAQS-associated administrative costs are roughly the same as those associated with the ozone NAAQS. While the burden and cost for each rule may be the same when taken separately, clearly, there are opportunities for synergy to provide cost savings. . These cost savings can best be discussed in the context of a joint NAAQS implementation program. Tables 10.1, 10.2, 10.3, and 10.4 define the expected scope of the $PM_{2.5}$ analysis and the burden associated with each administrative category. The estimated $PM_{2.5}$ additional costs are listed in Table 10.10.

Table 10.10 The Marginal Non-Monitor Related Administrative Burden* and Cost of $PM_{2.5}$ 15/65 To All Respondents - Point Estimate**

*** (in hours per year)**
**** (in thousands of $1990)**

	Administration		Sources		TOTALS
	Federal	State	Federal	Non-Federal	
Administrative Burden	250	22,000	2,000	270,000	**290,000**
Administrative Cost	$8	$880	$71	$16,000	**$17,000**

Note: Numbers may not add to totals due to rounding

10.4.2 $PM_{2.5}$ Monitoring Costs

The Agency assessed the administrative, operations, and maintenance costs for $PM_{2.5}$ monitoring under a separate ICR [US EPA 1996(a)]. The costs in that ICR are included below in Table 10.11, with operations and maintenance costs determined by applying the cost-per-hour estimates described in 10.3.4. While the Agency's $PM_{2.5}$ monitoring ICR does not address a specific form of the standard, the analysis is representative of the expected levels one would expect to find under any of the alternatives described in this RIA.

Table 10.11 The Marginal Monitor Related Administrative Burden* and Cost for $PM_{2.5}$ 15/65 to All Respondents - Point Estimate**

*** (in hours per year)**
**** (in thousands of $1990)**

	Administration		TOTALS
	Federal	State	
Administrative Burden	24,000	490,000	**514,000**
Administrative Cost	$900	$19,000	**$20,000**

Source: US EPA 1996(a)
Note: Numbers may not add to totals due to rounding

10.4.3 Estimating the Total Burden and Costs for $PM_{2.5}$

Table 10.12 displays the total marginal administrative costs associated with the $PM_{2.5}$ 15/65 standard. As incremental to the PM_{10} analytical baseline, net of any dis-investment in PM_{10} which may occur because of the n

Table 10.12 The Total Marginal Burden and Cost for $PM_{2.5}$ 15/65 to All Respondents - Point Estimate

*** (in hours per year)**
**** (in thousands of $1990)**

	Administration		Sources		TOTALS
	Federal	State	Federal	Non-Federal	
Total Burden	24,000	510,000	2,100	270,000	**800,000**
Total Cost	$890	$20,000	$71	$16,000	**$37,000**

Note: Numbers may not add to totals due to rounding

10.5 RH ADMINISTRATIVE BURDEN AND COSTS

10.5.1 Estimating the Number of Respondents for the RH Proposal

The Agency is proposing a separate RH rule, with its regulatory impact estimated as a part of this RIA. This section addresses the burden and costs of that rule, taking into consideration the following RH characteristics and making the following assumptions:

- To avoid duplication and costs, a high degree of State coordination between PM and RH is assumed. Therefore, this analysis treats RH as incremental to PM.

- PM emission inventories will be needed for RH implementation activities as well. To account for the effects of pollutant transport, PM inventories will be needed Statewide, and will need to include principal PM constituents (sulfate, nitrate, organic carbon, elemental carbon, and soil dust.) Therefore, part of the PM monitoring network may serve as an RH monitoring network as well. This analysis assumes monitors installed for $PM_{2.5}$ will be able to differentiate between particles for RH strategy planning purposes. RH targets apply for mandatory Class I Federal areas and areas identified through monitoring.

- Presently, visibility monitoring occurs in about 70 Class I areas, funded cooperatively by the EPA and Federal land management agencies. New $PM_{2.5}$ monitors can be sited at Class I areas which do not currently have monitoring to serve as "background" or "transport" monitors. In this way, cost savings can be realized through coordination of the visibility and $PM_{2.5}$ networks.

- REMSAD can model changes in PM concentrations and visibility at the same time through application of a post processor to calculate visibility changes in terms of deciviews. Therefore, it is assumed that PM modeling will provide most of the information needed for RH modeling purposes. The marginal burden for RH modeling

relative to the burden expected for PM applies to just the application of the post processor.

- There are 156 mandatory Class I Federal areas in 35 States identified for the proposed RH target. The RH rule assumes all States either have a Class I area or contribute to the RH problem in some Class I areas [US EPA 1997(c)]. The scope of this RH analysis includes all 48 contiguous United States and the District of Columbia. Other American lands have been excluded from this analysis for consistency with the remainder of the chapter.[5]

10.5.2 Estimating the Per Respondent Burden for the Proposed Regional Haze Targets

Using the ozone and $PM_{2.5}$ burden assessment methodology in Tables 10.3 and 10.4 as a template, several adjustments are made to accommodate the differences between RH and the two NAAQS pollutants. First, the RH rule requires States to coordinate their planning with FLM's in charge of affected Class I areas. Therefore, a separate burden category is included for "Consultation and Coordination with Federal Land Managers." Next, the RH burden estimates apply primarily to the Federal and State oversight activities. Estimates of additional administrative burden to sources beyond those associated with implementation of the ozone and PM NAAQS are not included for RH in this analysis, because: (1) RH strategies will ultimately be implemented through State SIPs; and (2) there is significant uncertainty associated with estimating the number of sources which may be subject to RH specific strategies and requirements. The assessment in Tables 10.13, 10.14, and 10.15 applies to States and Federal oversight, not to sources of pollution.

5 c.f. Code of Federal Regulations Title 40 part 81 section 400.

Table 10.13 Per Respondent Regional Haze Administrative Burden Estimations For One-time Burden Categories

	Federal	State
Interpret / Identify Requirements	M*	M
Add New Monitors	H	D
Adopt New Rules	N	R

N No Burden * Advisory Capacity
M Moderate Burden (21 to 40
R Ratio Burden (27 to 78 hours)
D Data Collection Burden (1,000 to 1,500 hours)

Table 10-14 Per Respondent Regional Haze Administrative Burden Estimations For Three-Year Burden Categories

	Federal	State
Develop / Revise Monitoring Plan	N	H
Review / Revise SIPs	H	H
Revise Monitoring Plan / Strategies	M	M
Add New Monitors	M	M
FLM Consultation	M	M
Public Hearings	L*	H
Progress Reports	N	M
Review / Revise Compliance Plans	N	H

N No Burden * Advisory Capacity
M Moderate Burden (21 to 40
R Ratio Burden (27 to 78 hours)
D Data Collection Burden (1,000 to 1,500 hours)

Table 10-15 Per Respondent Regional Haze Administrative Burden Estimations For Reoccurring Burden Categories

	Federal	States
Evaluate / Improve Inventories	PM	PM
Data Gathering and Assembly	PM	PM
Run Model **	L*	L
Evaluate / Interpret Model Results	M*	M
Identify Control Strategies ***	M*	H
O3 / PM / RH Regional Groups	M	M
Develop Source Guidance Documents	N	M
Monitoring / Reporting	L	M
Recordkeeping	L	M

N No Burden
L Low Burden (1 to 20 hours)
M Moderate Burden (21 to 40 hours)
H High Burden (41 to 160 hours)
PM PM Effort Used for Regional Haze Purposes

*
** REMSAD Post Processor
*** Primarily in t he West

The estimated range for the "R" burden level is 27 and 78 hours per year. A moderate burden range for RH participation in regional air quality organizations is established, primarily because States currently have a relatively low level of participation in regional groups, except in the West (e.g., the Grand Canyon Commission).

Figure 10.3 Weighted Average Burden Calculation for States for Regional Haze Rule Adoption

$$R_{Low} = \frac{(35 \times 21) + (17 \times 41)}{51}$$

$$R_{High} = \frac{(35 \times 40) + (17 \times 160)}{51}$$

10.5.3 RH Monitoring

The RH rule requires development of monitoring which is "representative" of RH conditions at every mandatory Class I Federal area subject to the rule. Visibility monitoring already occurs in approximately 70 of these areas through a cooperative inter-governmental program, at a cost of approximately $3 million per year. Monitoring in every mandatory Class I Federal area based on current technology would cost roughly $8 million per year for data collection and reporting. The RH proposal requires an assessment of "representative" modeling which is expected to be some level less than full monitoring at every mandatory Class I Federal area. The incremental monitoring cost for the RH program representative network ranges from $2 to $3 million per year, relative to current RH monitoring costs. For the 86 mandatory Class I Federal areas without monitoring, the average burden hours per State range between 1,000 and 1,500 in the first year of monitor installation. These values are included in Table 10.13 as burden range "D." When States re-evaluate their RH plans, the monitoring network in some mandatory Class I Federal areas may need to be adjusted. The expected average State burden for such adjustments would be much less than the original monitoring network installation. The Agency established the 3-year burden range for these adjustments as moderate.

10.5.4 Determining the Marginal Administrative Burden to Respondents

The RH rule's expected annual burden to respondents was calculated by the same means as that for ozone. In other words, the range of hours for each category is summed, annualizing where appropriate, and the total multiplied by 1 (for the total number of Federal respondents) or 51 (for the total number of State respondents). Table 10.16 displays the average burden per respondent and the total burden of the RH rule.

Table 10.16 Respondent Administrative Burden Estimations for Regional Haze - Point Estimate
(in hours per year)

	Burden - Point Estimate	
	Federal	**State**
Burden per Respondent	220	620
Total Burden	220	32,000

10.5.5 Estimating the Marginal Administrative Cost of the Proposed RH Targets

Table 10.17 displays the average administrative cost per respondent and the total administrative cost of the RH rule in real 1990 thousands of dollars.

Table 10.17 Respondent Administrative Cost Estimates for Regional Haze - Point Estimate
(in thousands of $1990 per year)

	Cost - Point Estimate	
	Federal	**State**
Cost per Respondent	$7	$25
Total Cost	$7	$1,100

10.6 UNCERTAINTY

10.6.1 Permitting Considerations

The Operating Permits Rule, codified in 40 CFR part 70, requires all States to develop permit fees at a level sufficient to fully reimburse the State for its administrative outlay for managing its permits program [US EPA 1992, 1995]. Given that much of the burden to States relates to administration of permit related activities (e.g., recordkeeping, monitoring, and modeling), these costs may be passed on to sources in the form of increased permit fees. While this does not change total costs, it redistributes them between respondent types.

10.6.2 Potential Over- and Understatements

Many sources have taken advantage of an EPA voluntary program which allows them to avoid permit requirements if they limit emissions to below major source levels.[6] Synthetic minors and other exempted sources would have no emissions reduction requirements under title V of the Clean Air Act Amendments of 1990. Consequently, the number of affected non-Federal sources may be less than the number of non-Federal sources identified in this chapter.

Conversely, the burden to non-Federal sources may be over- or underestimated because source counts and emissions projections to 2010 may differ from actual sources in many Standard Industrial Code classifications. This RIA's industrial point source and area source components contain information based on the 1985 National Acid Precipitation Assessment Program emission inventory, projected to 1990 based on historical Bureau of Economic Analysis

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6 A source's classification as major or minor depends on their potential to emit, not actual emissions. Consequently, a source may be emitting at a minor source level (generally less than 100 tons per year (tpy), but varies with the severity of the nonattainment problem of the source's location) but have the potential to emit at a major source level if the source were to operate at an increased capacity. Such sources can seek exclusion from regulatory requirements by applying for status as a "synthetic minor" - a voluntarily limit on its emissions (generally by limiting productive capacity) to a level below the major source cut-off [US EPA 1995].

(BEA) earnings and fuel use data. This does not take into account plant shut-down or start-ups, changes in operating parctices and efficiency, or the installation of controls between 1985 and 1990 [E.H. Pechan 1997]. Furthermore, intrastate economic differences are not captured. Growth in PM_{10} emissions is estimated by applying particle size multipliers to total suspended particles (TSP) emission estimates. Given the dynamic nature of current technology, estimations of future growth based upon past trends may not be entirely appropriate. A common example of the potential for error is the growth rate in the computer industry over the past 20 years.

The PM regional group participation may be understated. Most regional groups focus on Eastern problems, where PM currently has little infrastructure. Assuming only marginal changes from the current levels of activity for PM with respect to the East presumes no relative change in importance for PM, which cannot be supported by the analyses in this RIA.

The category for "Public Hearings" may be underestimated as well, since public hearings can occur for section 105 and 110 grants as well as for SIP purposes.

10.7 TOTAL BURDEN AND COSTS FOR THE JOINT OZONE / PM NAAQS AND RH TARGET

The total burden and cost to all respondents can be found in Table 10-19. The expected marginal administrative costs associated with promulgation of the new ozone and PM NAAQS and the RH rule are about $55 million per year, requiring slightly more than a million additional burden hours from respondents.

Table 10.19 The Total Marginal Burden* and Cost ** [7]
for the Selected Ozone and $PM_{2.5}$ NAAQS
and Regional Haze Target to All Respondents - Point Estimate

*** (In thousands of hours)**
**** (Costs are in millions of $1990)**

7 Marginal costs are additional costs beyond those required to meet the current PM_{10} standard.

	BURDEN	TOTAL COST
Ozone	300	**$17**
$PM_{2.5}$ Monitoring	520	**$20**
$PM_{2.5}$ Other	300	**$17**
RH	32	**$1**
TOTAL	1,200	**$55**

10.8 REFERENCES

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