

Legislative Request for Information Report

Air Quality Control Division

2011-2012

Request for Information # 44: Department of Public Health and Environment, Air Pollution Control Division – The Department is requested to submit a report on the Air Pollution Control Division (APCD or the Division). This report is requested to include a summary of the Division's current and anticipated workload, including the impact of existing and proposed federal and state program requirements, as well as the associated funding and staffing needs. This report is requested to include information on the upcoming fiscal year and out-years. The Department is requested to submit this report to the Joint Budget Committee by November 1, 2011.

While it is difficult to predict the future program requirements and resource needs of the Division, this report provides the Department's best estimate at this point in time. This report includes a summary of the Division's current and anticipated workload, including the impact of existing and proposed federal and state program requirements, as well as the associated funding and staffing needs by program. Please note that this report is in response to a legislative request and is not a request for additional resources.

Executive Summary

Since its inception, the Air Pollution Control Division, working with our local, state, federal and private sector partners, has made great strides reducing air pollution and improving the quality of our air across Colorado. Through a combination of cost-effective regulations, shared participation and technological innovation, Colorado has reduced the number of areas that are in violation of federal clean air standards from a high of 12 during the 1980s, to a single area encompassing Denver and the North Front Range. Along Colorado's front-range, we have significantly reduced harmful air pollution, bringing the area into compliance with the health-based standards for five of the six pollutants that are monitored under the Clean Air Act.

While our efforts to improve air quality have been a tremendous success, we still have more work to do. Advancing medical research on the effects of air pollution demonstrates that air quality levels that were once thought to be safe pose serious health risks, particularly to children, the elderly and individuals with pre-existing respiratory and cardiovascular conditions. In response, federal health based air pollution standards continue to become more stringent, resulting in an increasingly complex set of air quality requirements for Colorado's air pollution sources. This, along with an expanding population, and more recently tremendous growth in Colorado's oil and gas industry, have placed significant new burdens on the Division.

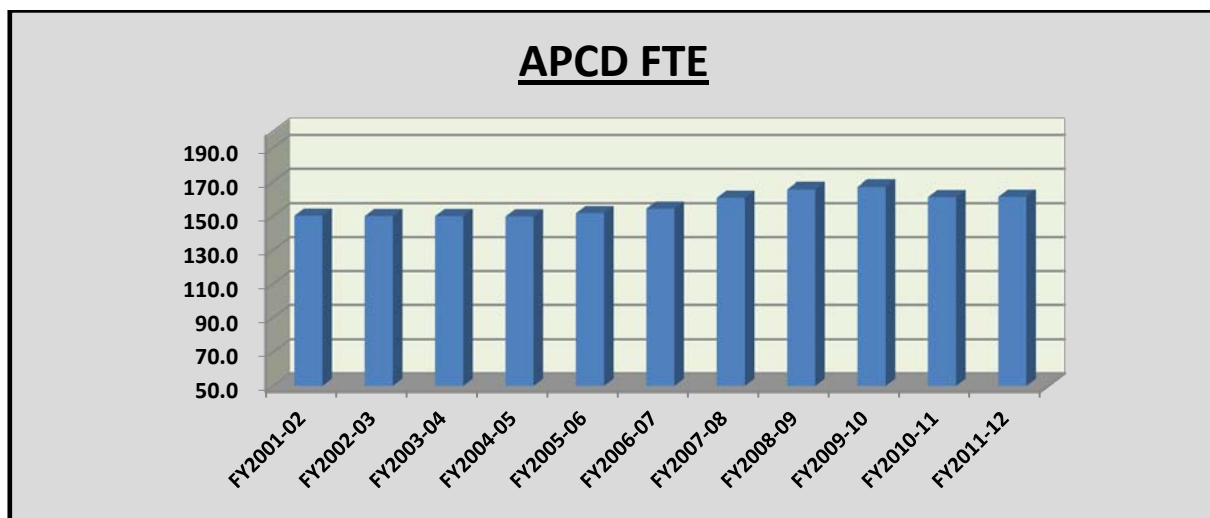
To meet these new and growing demands, and to continue effectively serving the people of Colorado, the Division projects that it will need an additional 20.0 FTE commencing in fiscal year 2012-13 and continuing into the future. Absent these new resources, the Division's ability to protect air quality and Colorado's citizens will be compromised. Additionally, the Division will fall further and further behind in processing permits, which will negatively impact Colorado's regulated community, particularly the rapidly expanding oil and gas industry. Finally, the Division will be

less able to take on the implementation of new federal air pollution requirements, potentially resulting in additional direct implementation by the United States Environmental Protection Agency (EPA), and a confusing patchwork of state and federal oversight of Colorado's air pollution sources.

Overview of APCD and Current Workload

The APCD is responsible for coordinating and developing Colorado's air quality plan consistent with state and federal law and for submitting that plan for approval by the Colorado Air Quality Control Commission (AQCC), the Colorado legislature, and EPA. The Division also implements and enforces all air quality regulations in the state. In discharging these duties, the Division is responsible for issuing required air quality permits, conducting inspections and bringing enforcement actions to ensure that air pollution sources meet all the applicable statutory, regulatory and permitting requirements that make up Colorado's overall air quality plan. To both ensure that ambient air quality standards are being met and that air quality requirements are based on the best available science, the Division conducts statewide air quality monitoring and modeling. In addition, the APCD provides technical information, media information, and educational materials to the public to encourage the further development of programs to address current and emerging air quality issues. The Division also coordinates the daily winter and summer high pollution day forecasting and notification system. The Division has the lead responsibility in the state for coordinating transportation planning with air quality activities. In addition, the Division is responsible for addressing new and emerging issues in environmental quality such as air toxics, pollution prevention, community-based environmental protection programs, environmental justice, and energy efficiency.

The Division currently consists of 161.3 permanent FTE. Despite a significantly increasing work load, Division FTE has grown only 7% since FY2001-02.



The APCD consists of three formal designated programs – the Stationary Sources Program (SSP), the Technical Services Program (TSP), and the Mobile Sources Program (MSP). The Division also includes administrative and planning personnel, which work closely with each of the three formal

programs to assist them in discharging their duties. A summary of the current responsibilities of each of these programs is provided below.

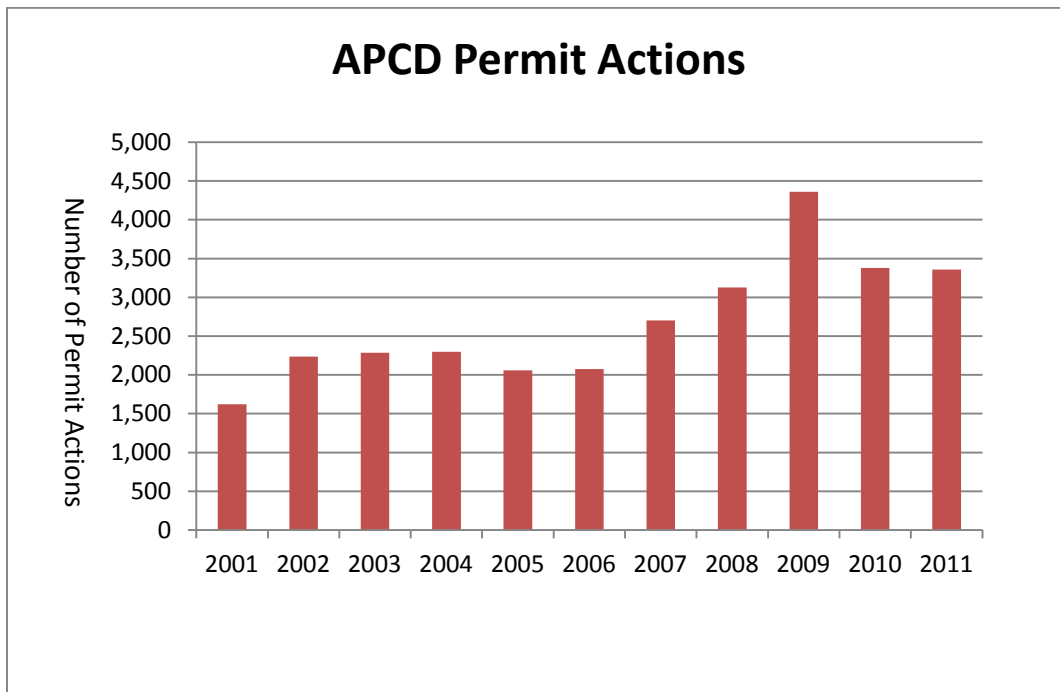
Stationary Sources Program

The Stationary Sources Program (SSP) implements, monitors, and maintains emissions control programs for stationary sources of air pollution such as manufacturing facilities, power plants and dry cleaners. Currently program staff oversees the following regulatory programs: (1) Major Source (Title V) permitting; (2) Minor Source permitting; (3) New Source Review; (4) New Source Performance Standards, and (5) Maximum Achievable Control Technology Standards for sources of hazardous air pollutants. Additionally, the Stationary Sources Program inspects stationary sources for compliance with the above programs and manages related enforcement. SSP also manages the emissions inventory for stationary sources, provides required small business support, investigates odor complaints, responds to Colorado Open Records Act requests, and adopts new state and federal regulations. The SSP staff works with rapidly growing source categories including the oil and gas industry to ensure that these sources comply with regulations, and that the emissions from these sources do not cause degradation of air quality. The program's mandate also includes implementing new programs for regulating stationary source emissions.

The Stationary Sources Program's work is driven primarily by the number of sources regulated and the complexity of air quality requirements, rather than by the amount or type of emissions from any single source. From 1992 through 2002 Colorado witnessed an overall 31 percent increase in the number of regulated sources (5,006 to 6,578). Since 2002, this growth has accelerated, with the state experiencing a 67 percent increase in regulated sources (6,578 to 11,000).

In conjunction with this growth, EPA has been promulgating an increasing number of very complex federal regulations that have made permitting, inspections and enforcement much more challenging and time consuming. The agency has also adopted increasingly stringent National Ambient Air Quality Standards (NAAQS), which have driven a significant increase in air pollution modeling projects and permitting wait times. For these reasons, the Division is experiencing increased volumes and regulatory complexity that outpace available resources, creating significant processing pressures and backlogs in permitting, inspections and enforcement.

The most significant effect of the growing number of air pollution sources in Colorado is on SSP's permitting group. From fiscal year 2001 to 2011, the number of permits issued by the Stationary Sources Program has increased by 108%, with continued growth expected in fiscal year 2012.



This significant increase in workload activity has severely strained SSP's ability to issue permits in a timely manner and maintain an effective inspection and enforcement program that ensures compliance with applicable air quality requirements.

Because the Division is funded in part by permit processing fees, the increase in permitting actions does generate additional revenue for the Stationary Sources fund. Absent additional spending authority, however, this additional revenue cannot be used to increase Division FTE in response to the increased workload. Moreover, because the primary source of revenue for the Stationary Sources fund is from annual emission fees, and because emissions statewide are expected to decline over the next several years due to successful pollution reduction strategies, revenue may begin to decline while permit volume and associated workload continue to increase.

In addition to regulating traditional Stationary Sources, the Division is also responsible for the operation and enforcement of three legislatively-mandated programs: (1) asbestos abatement; (2) lead-based paint abatement; and (3) the ozone depleting compounds (chlorofluorocarbon (CFC) program).¹

The asbestos program is responsible for ensuring that buildings in Colorado are inspected for the presence of asbestos-containing materials prior to renovation and demolition activities which could release asbestos fibers into the environment. Program staff ensures that proper engineering controls and work practices are employed during the abatement of asbestos-containing building materials. The program also ensures that persons and companies conducting building inspections and asbestos abatement are trained and certified to do such work and that the training provided to individuals seeking certification is of good quality. Staff assesses Colorado schools' asbestos programs to determine if all buildings have been inspected for the presence of asbestos and that any asbestos

¹ Funding for these activities are contained within the Stationary Sources Program line in the Long Bill, but actual oversight of these programs is conducted by the Indoor Environment Program within the Division.

found is properly managed in order to reduce the potential for exposure of children to asbestos fibers. Finally, staff responds to requests for information from the public regarding asbestos, and is available to respond to emergency asbestos spills resulting from both natural disasters (e.g., wildfires or tornadoes) as well as spills resulting from man-made causes.

The lead-based paint abatement program is responsible for ensuring that proper engineering controls and work practices are used during the removal of lead-based paint from target housing (pre-1978) and child-occupied facilities. The program also ensures that the persons and companies involved in lead-based paint identification and abatement are trained and certified, and that the training provided to individuals seeking certification is adequate.

The chlorofluorocarbon (CFC) program regulates the use of stratospheric ozone-depleting compounds in the state. Sources that use ozone-depleting compounds in stationary systems and product refrigeration systems, as well as sources that provide service to motor vehicle air conditioners and stationary appliances are regulated by this program.

Technical Services Program

The Technical Services Program (TSP) is responsible for statewide air quality monitoring, statewide modeling of current and future air pollutant levels, inventorying of emissions from existing and projected air pollution sources, modeling for air permitting purposes, high pollution day forecasting, smoke management and prescribed fire permitting. In addition to being required under various state and federal laws, these activities help ensure that ambient air quality standards will be met, and that regulatory program requirements are based on the best data available.

Revised federal standards for ozone, nitrogen dioxide, sulfur dioxide, lead and particulates, as well as work to support nitrogen deposition planning for Rocky Mountain National Park, has and will continue to require development of accurate and complete emission inventories. Without high quality emissions inventories it is not possible to accurately assess the impact of different air pollution reduction strategies, and identify the most cost effective strategies to reduce air pollution levels.

These new federal standards along with the rapid development of the oil and gas industry, particularly in areas that previously experienced little air pollution, have also increased the need to conduct air quality monitoring across the state. Since 2008, the Division has added nine new air quality monitors to its statewide network. These monitors are crucial to determining whether different areas of the state are meeting health-based air pollution standards. Additional monitoring, used in conjunction with modeling and inventory work, is invaluable in identifying the most effective air pollution control strategies.

Finally, TSP conducts air quality modeling. As required under applicable state and federal law, the Division conducts modeling both in support of air quality planning, and in connection with specific air permit actions to ensure that the emissions from new or modified sources will not cause or contribute to a violation of any NAAQS. Given the rapid increase in permit actions, particularly in the oil and gas sector, the Technical Services Program has experienced an increase in modeling workload, which has been further exacerbated by the increasingly strict ambient air quality standards issued by EPA during the past few years.

Mobile Sources Program

The Mobile Sources Program (MSP) implements, monitors and maintains emissions control programs for mobile sources of air pollution, such as cars, and investigates new reduction strategies for mobile source emissions. Mobile sources and related emissions contribute a significant portion of the overall air emissions in the Front Range Area, including ozone.

Program staff oversee the gasoline vehicle inspection and maintenance program (AIR Program), which operates in the nine county metro area. In support of its oversight role, MSP operates six centers that provide technical assistance to owners of vehicles that have failed their emissions test, conducts training and outreach activities for vehicle repair shops, and conducts investigatory studies to test the effectiveness of the current vehicle emission control strategies.

In addition to the AIR Program, the MSP oversees the following programs: 1) the diesel vehicle inspection/maintenance program; 2) the diesel fleet self-certification program; 3) the summertime Reid Vapor Pressure program (fuel sampling program); and 4) the Colorado Clean Diesel retrofit program. Finally, MSP conducts advanced vehicle testing research that helps to evaluate program effectiveness and investigate possible new reduction strategies.

APCD Efforts to Address Increasing Workload Demands

Over the past decade, APCD's workload has significantly grown while its resources have remained essentially static. In response to this increasing workload, particularly with respect to oil and gas permitting, inspections and enforcement, the Division has taken a number of steps to improve efficiency and prioritize resource deployment.

In the permitting area, the Stationary Sources Program underwent an intensive process improvement analysis in 2008 that resulted in the elimination of several unnecessary steps in the permit process. Additionally, the program has developed and issued several general permits for the oil and gas sector. These standardized general permits, which can apply to more straightforward permitting situations, allow covered air pollution sources to be permitted much more quickly than under the traditional permitting process. In addition to improving permitting efficiency, the Division has prioritized its resources to make sure that the most critical permitting needs are addressed. For example, for major sources, the Division has focused its efforts on drafting and issuing permits for new sources, rather than using its resources to renew the permits for existing sources under the five-year cycle established under the federal Clean Air Act. While far from ideal, this prioritization helps ensure that major sources in the state have some form of operating permit even if that permit may be several years out-of-date.

With respect to source inspections, the Division has decreased the inspection cycle for minor sources from once every five years to once every seven years. This allows the Division to keep up with the increasing number of sources. Unfortunately it also increases the likelihood that minor sources will remain out of compliance with air quality requirements for longer periods of time, thus harming air quality. Additionally, in recent years the Division has chosen not to adopt new federal hazardous air pollutant standards for very small sources, leaving enforcement of these requirements to EPA. While the split responsibility can create confusion among sources, the Division does not have the resources to take on the required inspections of these small sources.

In connection with its enforcement activities, the Division has implemented a number of process improvements that allow existing staff to handle more cases. Increasingly, the Division has prioritized enforcement and begun handling less serious violations outside the formal enforcement process either by addressing the violations on-site, or by issuing warning letters to violators.

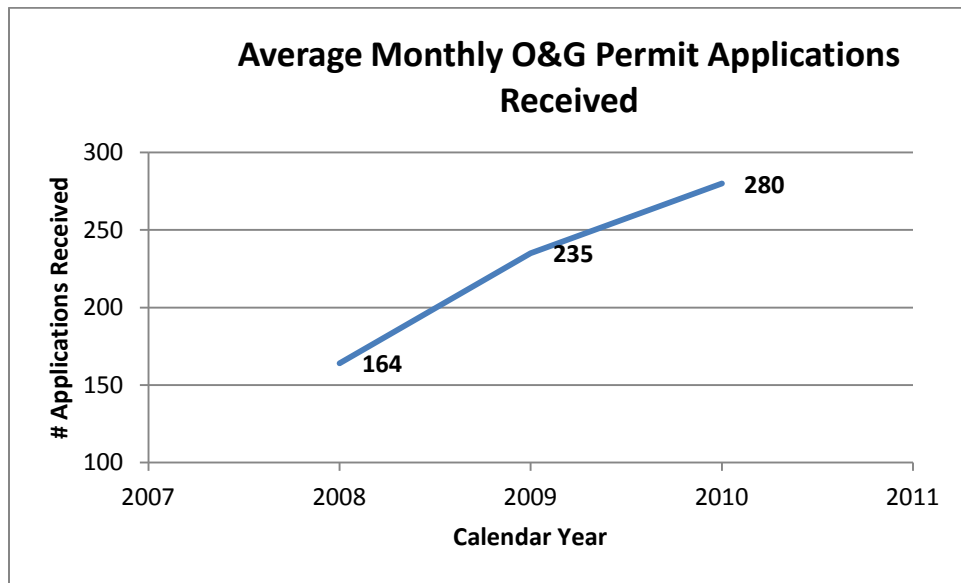
In an effort to adapt to its expanding workload the Technical Services Program has prioritized its activities. This includes focusing its resources on core monitoring activities and significantly reducing special studies that may provide long term benefits and efficiencies but are not immediately necessary. TSP also no longer conducts as rigorous quality assurance and calibration checks on its air quality monitors, restricting its activities to the minimum required under federal law.

The Mobile Sources Program has been able to successfully meet its increased workload through a combination of increased resources and better utilization of existing staff. In connection with SB09-003, as well as a Decision Item the following year, MSP received three new FTE to handle the expansion of the vehicle inspection and maintenance (IM) program into Larimer and Weld Counties. These new FTE allowed the program to staff two new emission technical centers in Greeley and Fort Collins, which provide assistance to failing motorists and the automotive repair community. MSP has also been able to find efficiencies and better utilize staff to cover additional duties associated with the expanded IM program. Through increased productivity, existing staff have taken on new duties in connection with the Division's diesel retrofit efforts, increased strategy effectiveness research and expanded outreach to the repair community.

Anticipated Future Workloads and Additional Resource Needs

Notwithstanding the Division's process improvement, increased utilization, and resource prioritization efforts over the past several years, there continues to be a gap between the currently available resources and the APCD's workload. With the continued growth of Colorado's population, the rapid development of the oil and gas industry in the state, and the promulgation of new and increasingly stringent federal air pollution requirements, the disparity between the amount of work that needs to be done and the resources available to the Division will continue to widen.

The largest driver of the Division's resource needs continues to be the dramatic expansion of the oil and gas industry in the state. The challenge that this expansion presents is perhaps best reflected in the increase in the average number of oil and gas sector permit applications. From 2008 through 2010, permit applications for this sector rose 71%. Based on discussions with industry representatives, annual increases of 20% or more for oil and gas activities in the state can be expected for the foreseeable future.



This dramatic rise in permit applications has led to a significant backlog in pending permits awaiting issuance. This backlog reached a high of approximately 2,000 in May of 2011, many of which were past the statutory deadlines for permit issuance. According to industry, these delays have adversely impacted oil and gas development and resulted in shifting exploration and production activities to other states. To ensure timely issuance of oil and gas permits given current workloads and anticipated growth, the Division estimates that eight new oil and gas permit engineers are needed commencing in FY12-13. While much of the costs of these new FTE would be offset by increased permitting fee revenue, to handle the increased billing associated with the new permit engineers the Division will also need one new fiscal staff member.

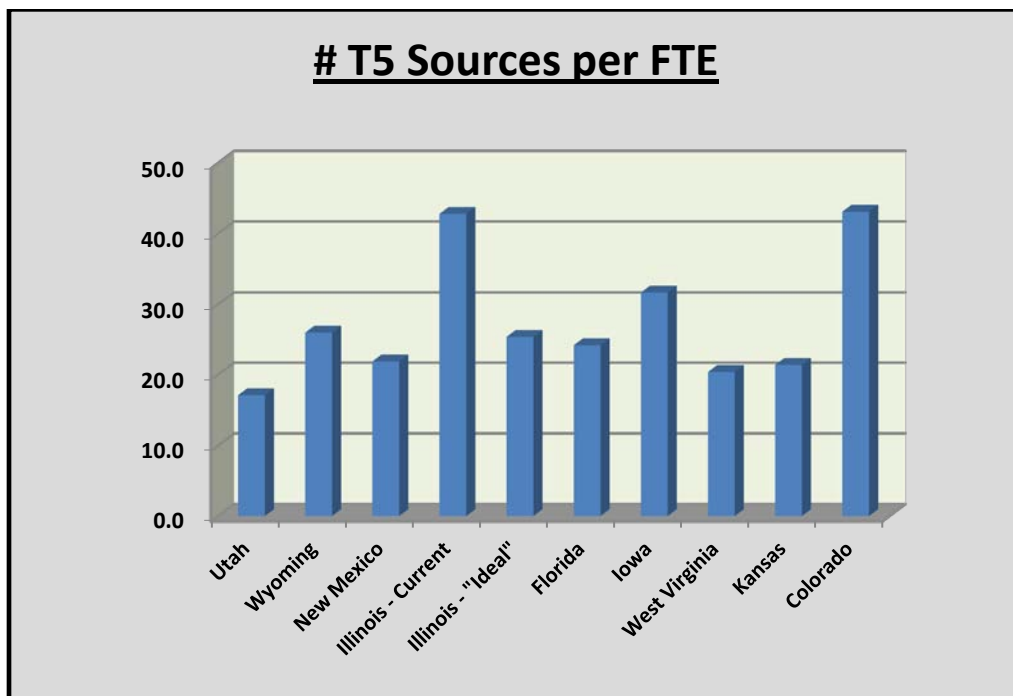
The increase in oil and gas permits along with the adoption of new health based ambient air quality standards for nitrogen oxides and sulfur dioxide has also created a need for additional permit modeling resources. Modeling is crucial to ensure that the construction or modification of sources will not result in a violation of ambient air quality standards. Such modeling is a highly complex and time-consuming process. Because of this and the Division's limited modeling resources, permit modeling can result in a processing bottleneck that delays the issuance of otherwise completed permits. To alleviate this bottleneck and ensure timely permit issuance in the future the Division estimates that it needs one new air quality modeler. This air quality modeler will also be needed to conduct modeling associated with air quality planning for the revised NAAQS.

While experienced most directly in increasing permitting workloads, the rapid growth of the oil and gas industry also adversely impacts the Division's ability to conduct meaningful enforcement to ensure compliance with applicable air quality requirements. As noted above, the increasing number of sources has already resulted in a decreased inspection cycle for minor air pollution sources. Continued growth at the predicted levels will further degrade the Division's ability to conduct air quality inspections of oil and gas sites in Colorado. To address this growth and maintain reasonably effective inspection cycles, the Division estimates that three new oil and gas inspectors are needed beginning in FY12-13.

Although growth is most pronounced in the oil and gas sector, the increasing number of non-oil and gas sources, along with the growing complexity of the air quality requirements governing these

sources, will place an increasing burden on the Division's inspection resources. The Division estimates that one new non-oil and gas inspector is necessary to help assure that the Division has an effective inspection program.

Separate from the permitting backlog for oil and gas sources, the Division is also struggling with a significant backlog for Title V Operating Permits. Under state and federal law Colorado's largest sources must have Title V Operating Permits. These tend to be complex permits requiring significant permit processing. While the number of Title V Permit applications has not substantially increased over the past several years, they have grown more complex with the advent of new state and federal air quality requirements. In addition, historically Colorado's Title V resources relative to permitting workload have been substantially less than other states.



This lack of resources has led to the APCD's current permitting backlog. To address this disparity and bring Colorado in line with other states, the Division calculates that three new Title V permitting engineers are required.

In addition to the resource needs discussed above, the Division anticipates that it will require additional FTE in order to handle the increased workload associated with the promulgation of new and increasingly stringent federal air pollution requirements. These new requirements include:

- Revised 8-hour Ozone National Ambient Air Quality Standard (NAAQS) (2008 Standard)
- Climate change-related requirements, including EPA regulations for permitting large carbon dioxide sources
- Revised Nitrogen Dioxide NAAQS
- Revised Sulfur Dioxide NAAQS
- Federal New Source Performance Standards
- Federal Hazardous Air Pollutant Standards

To adequately address the increased workload from these new requirements, the Division will need 3 new FTE as follows. First, implementing the new NAAQS requirements will necessitate the placement of five new air quality monitors. These additional monitors, along with the nine new monitors placed since 2008 will necessitate the addition of one new monitoring and data scientist FTE in the Technical Services Program. Second, the TSP will need one new inventory specialist to support new air quality planning efforts associated with the revised NAAQS. This will both ensure that new strategies are supported by the best air quality data available and that Colorado meets federal requirements for new air quality plans. Finally, because the air quality planning work will ultimately need to be embodied in new air quality regulations, the Division will need one additional regulatory development person.

The resource needs identified above are based on current workload trends and existing or soon to be implemented air quality requirements. They do not reflect increased growth beyond current trends. Accordingly additional resources may be required if, for example, oil and gas activity increases at a rate greater than the 20% per year that we currently project. Nor do the identified resources account for additional requirements that may be adopted in the future, but are not presently defined. Specifically, the identified needs do not account for revisions to either the ozone or particulate matter NAAQS. Depending on where these standards are set in the future there could be numerous new non-attainment areas throughout Colorado. This would require new air quality planning personnel, technical services personnel, regulatory development personnel and staff in the Stationary Sources and Mobile Sources Programs to implement selected new air emission reduction strategies for these areas.

The additional resources identified also do not account for any new requirements related to the regulation of greenhouse gases (GHG). If the federal government adopts new GHG requirements it could have significant resource implications for the Division; however, these are not presently quantifiable.

Finally, the identified needs do not reflect any resources required to implement the lead “Renovation, Repair and Painting Rule.” To date, Colorado has not requested delegation of this program from EPA, but may consider doing so at a later date. If and when Colorado opts to request delegation, the proposed program will require additional FTE to implement. However, until the decision on delegation and all program requirements can be defined, it is not feasible to estimate the resource needs associated with these requirements.

Consequences of Not Receiving Additional Resources

There are a number of adverse consequences if Division resources remain static while workload demands continue to grow:

- Growing delays in the issuance of oil and gas sector permits resulting in adverse consequences for the industry that could lead to negative consequences for the state’s economy such as shifting exploration and production resources to other states
- Continued inability to meet Title V permitting renewal deadlines resulting in outdated permits, potential adverse air quality impacts from obsolete permitting provisions and potential EPA takeover of Colorado’s Title V Program

- Deterioration of inspection and enforcement capabilities resulting in unaddressed violations, increased air pollution and the subsequent impacts to public health
- Inability to meet air pollution monitoring requirements leading to potential EPA action against Colorado, including disapproval of Colorado's State Implementation Plan
- Delays in adopting new air pollution regulations leading to increased air pollution, negative health consequences and additional EPA regulatory oversight of Colorado facilities
- General deterioration of Colorado's air quality program resulting in decreased federal funding

Summation

The following table provides additional detail for the resource needs identified above:

			New FTE	FY12-13 Estimate	FY13-14 Estimate	FY14-15 Estimate	FY15-16 Estimate	FY16-17 Estimate
PERSONNEL COSTS:			20.0	\$1,641,546	\$1,647,835	\$1,656,116	\$1,667,436	\$1,667,436
TOTAL OPERATING:				\$117,824	\$24,424	\$23,474	\$23,474	\$23,474
TOTAL INDIRECT:				\$285,018	\$270,906	\$272,094	\$273,927	\$273,927
TOTAL FISCAL YEAR COST:				\$2,044,388	\$1,943,165	\$1,951,684	\$1,964,838	\$1,964,838