



March 30, 2010

OSHA Docket Office
Docket No. OSHA-2009-0044
U.S. Department of Labor
Room N-2625
200 Constitution Avenue, N.W.
Washington, D.C. 20210

**Re: Occupational Injury and Illness Recording and Reporting Requirements — OSHA
Docket Number OSHA-2009-0044 (RIN: 1218-AC45)**

These comments are submitted for the record to the Occupational Safety and Health Administration (OSHA) on behalf of the National Federation of Independent Business (NFIB) and the NFIB Small Business Legal Center in response to the Notice of Proposed Rulemaking (NPRM) for Occupational Injury and Illness Recording and Reporting Requirements published in the Federal Register on January 29, 2010.

NFIB is the nation's leading small business advocacy association, representing members in Washington, D.C., and all 50 state capitals. Founded in 1943 as a nonprofit, nonpartisan organization, NFIB's mission is to promote and protect the right of its members to own, operate, and grow their businesses. NFIB represents about 350,000 independent business owners who are located throughout the United States, in varying industries that cover virtually all of the industries potentially affected by this rule. The NFIB Small Business Legal Center, a nonprofit, public-interest law firm established to be the voice for small business in the nation's courts and the legal resource for small business owners nationwide, is the legal arm of NFIB.

NFIB's national membership spans the spectrum of business operations, ranging from sole proprietor enterprises to firms with hundreds of employees. While there is no standard definition of a "small business," the typical NFIB member employs 10 people and reports gross sales of about \$500,000 a year. Roughly 15% of NFIB members employ 10-20 people and approximately 28% have ten or more employees.¹

¹ <http://www.nfib.com/about-nfib/what-is-nfib-/who-nfib-represents>

NFIB's Primary Concern with the Proposal – Small Business Impact Not Adequately Considered

OSHA's proposal to add a musculoskeletal disorder (MSD) column to the OSHA 300 log raises several red flags for small businesses. As discussed below, we are concerned that OSHA's proposal fails to follow the letter and spirit of the Small Business Regulatory Enforcement and Fairness Act, which generally requires agencies to assess and account for small business impact before promulgating a new rule.

We fear that OSHA's cost estimates for compliance are severely understated. In this proposal, OSHA estimates that compliance would require five minutes for management to read and sufficiently comprehend the standard. Then, it estimates that correctly identifying an MSD and marking the log would take one additional minute for each injury thereafter.

This estimate demonstrates OSHA's fundamental misunderstanding of how small businesses operate, and the likely actual cost for small businesses to comply with this rule. In the majority of our members' businesses, the task of understanding and complying with the changed rule would fall to the small business owner. Being a small business owner often means that you are responsible for everything from balancing the books, to ordering inventory, hiring employees, and serving as the chief safety officer for your business. For a small business owner, good faith efforts to comply with vague, overly technical, and hard-to-find regulations can require significant time away from the business -- time that could be better spent growing the enterprise and employing more people.

Here are just a few of the ways that small business owners may not be able to comply with this rule in the time OSHA estimates. At the outset, it could take much longer than five minutes to comprehend the requirements, since small business owners are not specialized in handling issues like this. Small businesses lack the resources to hire specialized regulatory compliance staff. Some small businesses, particularly in office settings where injuries are not commonplace, would be required to spend more time working with the OSHA 300 log.

Furthermore, identifying whether or not an MSD was sustained or would be aggravated in the workplace would be far more difficult. Small business owners are not medical practitioners. OSHA's assertion that the responsible person would only take an additional minute from the time they take now to mark the form fails to recognize that the time -- and consequent cost -- to make the injury determination would go up as well. The new definition of MSD would add layers of complexity for small business owners trying to determine the type of injury being assessed. Lastly, because they fear being found out-of-compliance by OSHA, it is likely that small businesses would over-report MSDs.

For example, consider the following hypothetical examples:

1. After several days on the job, a newly hired, middle-aged employee responsible for loading the delivery van complains to the employer of lower back pain. The employer is aware that the employee had previously done construction work, is a weekend athlete who plays in a softball league, and coaches his daughter's soccer team. Under the new regulation, the

employer would have to determine whether the reported pain is a recordable illness or injury, and whether the cause of the pain is related to his work at the employer's workplace.

Putting aside the difficulty presented by the ambiguous definition of MSD in the proposed rule, to assert that a small employer can make this determination in one minute is patently absurd. Simply hearing the employee's story and learning his medical history would take far more time than one minute, not to mention the potential need to send the employee for a medical evaluation, which is the employer's right under the existing recordkeeping regulations. This does not account for the time away from actually running the business that would be required for a small-business owner, or one of a handful of managers.

2. An employee who performs a lot of work on a computer complains of tingling and pain in her wrists, suggesting carpal tunnel syndrome. The employee also suffers from, and is being medically treated for arthritis. Her long-time avocation is playing the piano, including in a rock and roll band. Once again, the employer would be faced with determining if the condition is work-related. Plainly, this would be more than a one-minute exercise.

3. An older employee who has a sedentary desk job has degenerative disc disease in his back, and complains of what he calls "minor" but definite lower back pain. He also has had a full knee replacement, which has changed the way he walks. He asserts that the back pain is caused, or made worse, by what he perceives as a "non-ergonomic" desk chair. Consider how much time would be required for the employer to decide if this condition is recordable.

These are examples of the kinds of real-world considerations that are likely to have been brought to OSHA's attention if the draft rule had been reviewed by a Small Business Advocacy Review (SBAR) panel. What OSHA apparently does not appreciate is that while the same questions may be presented to large employers, dealing with them would have a disproportionately greater impact on a small employer whose scarce management resources would be diverted from the employer's business to address these potentially complex and time-consuming issues. That kind of pre-rule review is required for a rule that would have a significant economic impact on a substantial number of small entities.

We understand that, using its percentage-of-revenue and profit cost impact triggers, OSHA certified to the Small Business Administration's Office of Advocacy that the rule would not have a significant economic impact on a substantial number of small entities, and thereby avoided having a SBAR panel convened. It is clear, however, that contrary to applicable legal requirements under 5 U.S.C. Section 605(b), that certification did not have a "factual basis." To say that compliance would require five minutes initially, and one minute for each case thereafter, is patently inaccurate, to say the least.

Before this proposal goes forward, NFIB calls upon OSHA to go back and calculate a realistic estimate of the time likely to be required for compliance with the rule, and then submit another certification to SBA's Office of Advocacy based on a genuinely accurate factual basis for the estimate of cost to small businesses. We are hopeful that the process of doing this would reveal the real effect of the proposal on our members, and perhaps persuade OSHA to modify its approach to this rule for small business.

NFIB understands that OSHA is interested in quickly moving this proposal to conclusion. As a matter of fairness, not to mention the requirements of law, however, this is a misguided approach. NFIB believes that the law requires OSHA to take the time to learn and understand, as a practical matter, how these changes to the OSHA 300 log would impact a small business. A SBAR panel would bring people to the agency who could answer these questions, however, and it ought to be convened before this rule proceeds.

Moreover, OSHA should convene a SBAR panel as a matter of good policy and open government. Doing so demonstrates a good faith effort to fully understand the effect this change to the OSHA 300 log would have on small entities. In fact, OSHA has conducted panels for less-far-reaching rules, such as the rulemakings on diacetyl, confined spaces in construction, cranes and derricks in construction, and electric power generation, transmission and distribution. The precedent has been established. We strongly urge OSHA to take advantage of the benefits derived from such a panel.

Concern about Returning to 2001 Definition of MSD

NFIB is also concerned with the proposal to reinstate the 2001 definition of an MSD and with OSHA's declared intent to eliminate the "preventive transfer" provision in the OSHA Compliance Directive, which allows employers to conduct "work hardening" to prevent injury without experiencing an OSHA recordable case. The proposal states as follows in pertinent part:

OSHA also intends to remove language from the Recordkeeping Compliance Directive that says that "minor musculoskeletal discomfort" is not recordable under Sec. 1904.7(b)(4) as a restricted work case "if a health care professional determines that the employee is fully able to perform all of his or her routine job functions, and the employer assigns a work restriction for the purpose of preventing a more serious injury" (CPL 02-00-135, Chapter 2, Section I(F)).

Currently, employers may temporarily transfer an employee with minor musculoskeletal pain or discomfort to another job to prevent further (recordable) injury without having a recordable case, if: (1) at the time of the transfer there is a medical assessment that the employee is fully able to perform all of their routine job functions for a full work shift; and (2) none of the other recording criteria are met.

OSHA now plans to change its position because it fears under-reporting of MSDs in that:

1. There might be confusion between "minor musculoskeletal discomfort" and MSD pain that is recordable;
2. There might be confusion between a preventive transfer and restricted work activity or job transfer situations that have already become recordable; and
3. The provision might not be necessary if the employee has not experienced a "case."

NFIB objects to this proposal on several grounds. First, it would remove what has proven for many employers to be a useful and effective method of preventing minor conditions from becoming major injuries for employees. Second, it would further complicate and make more costly the already daunting prospective task of determining whether an injury or illness is recordable and work-related. We also are concerned that this change would invite excessive claims, and expose employers to citation for failure to record nearly every ache and pain an employee may report.

OSHA asserts in the proposal that it concluded in 2001 "that pain and other subjective symptoms, of and by themselves, may indicate an injury or illness." (This is the point of the third "hypothetical" above, which is hardly hypothetical in an aging workforce.) Even if OSHA's 2001 conclusion about minor pain is true when the condition is observed by a health professional, to expect a small business owner or manager to make such a diagnosis in one minute, without the time and expense of medical advice, makes no sense. This is but another reason why OSHA's certification that the proposed rule is not a major one under the Regulatory Flexibility Act is not a factually-based finding that justified avoiding the SBREFA process.

OSHA has suggested that under the existing recordkeeping regulation, employers should already be making decisions on whether employees' medical conditions are reportable, implying that the new rule would be a mere incremental increase in the cost to small business and not trigger a SBREFA review. OSHA is assuming it knows the impact of this rule on small entities. NFIB challenges that assumption and requests OSHA convene a SBAR panel to assess the proposal's true impact on small business.

The proposed change to require "minor" MSD discomfort to become a recordable condition would add a new, complicated cost of compliance that is more than an incremental increased burden for small employers. One cannot know how many such claims employees would tender to employers that they previously did not mention, especially once employees learn that employers may risk being cited if they make what OSHA perceives as the incorrect decision. Further, where labor relations or other workplace issues spill over into safety and health -- not an unknown phenomenon -- this additional recordkeeping burden could be used to inundate an employer with new questions about recordability.

Moreover, each time an employee presents issues like these, the business owner or manager would be required to refresh his or her knowledge on what the requirements provide, and then dig into the particular facts presented. Given this, even a slight change in the rule could have a significant cost effect on a small business.

In any event, this should not be left to speculation. A SBAR panel should be convened. To run roughshod over that process would be arbitrary and capricious in the most classic sense.

Concern over Where the Rule is Heading

As OSHA is aware, the MSD component of the OSHA 300 log was a part of the agency's larger effort a decade ago to promulgate a nearly \$5 billion-per-year rule on ergonomics. Therefore, the small business community is deeply concerned that OSHA is planning future action to replicate this highly-contentious rule. Also, after hearing the discussion at the recent "OSHA Listens" session, we are concerned that OSHA would use the data collected as a result of the proposed change in MSD recordkeeping to somehow inject ergonomics regulation into a safety and health programs standard that OSHA seems clearly to be contemplating.

OSHA has indicated that adding the MSD column to the log in no way means it is looking at reviving an ergonomics proposal. We hope this is true. If, however, OSHA pursues ergonomics regulations in some form, we hope that the agency would make a decidedly stronger effort to engage small businesses in the process of discussing any proposal *before* it is developed and issued. Let us work in conjunction to assure that workers are safe and businesses are not heavily burdened -- particularly in this economy.

Recommendations for the Current Proposal

As OSHA moves forward with the MSD proposal, it should make a concerted effort to help small business owners.

The definition of an MSD must be easily understandable by lay persons. The more complicated the definition, the more likely it is that MSDs would be misreported by small companies.

We believe that OSHA should clarify the term "work-related" in its definition of MSDs. It should indicate that the term means only MSDs that occur because of a situation at the workplace, not because the injury occurred elsewhere, which is aggravated at the workplace. This is especially important if the rule is going to define an MSD to include common symptoms such as tingling or lower back pain.

OSHA also should devise a detailed compliance assistance program for the rule that goes well beyond merely listing the definition of MSDs on its Web site. Ideas for compliance assistance materials include a training video explaining MSDs available on the Web site, assigning staff to field questions from small businesses trying to determine what type of injury they are confronted with, and a Web page with frequently asked questions from small businesses with easy-to-understand answers. Training assistance programs should vary by industry or workplace type (office, construction site, vehicle, etc.) since these workplace types would be impacted differently by this rule.

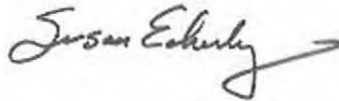
Lastly, OSHA should conduct a SBAR panel to fully understand the impact of this rule on small entities.

Conclusion

On behalf of NFIB and our members, I appreciate the opportunity to express our concerns with this proposal. We believe that OSHA needs to put itself in the shoes of small business owners as it moves forward with not only this, but all of its proposals. Small business owners greatly value the safety of their employees. To a small business, an employee is like a member of the family. Please take every step possible to ensure that this rule is not overly burdensome for small business owners.

Thank you for your time and consideration. Should you require further information, please contact Daniel Bosch at 202-314-2052.

Sincerely,

A handwritten signature in cursive script, reading "Susan Eckerly", followed by a long horizontal flourish line.

Susan Eckerly
Senior Vice President
Public Policy



National Small Business Poll

NEIB National

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Small Business Poll

Paperwork and Record-keeping

NFIB National Small Business Poll

The *National Small Business Poll* is a series of regularly published survey reports based on data collected from national samples of small-business employers. Eight reports are produced annually with the initial volume published in 2001. The *Poll* is designed to address small-business-oriented topics about which little is known but interest is high. Each survey report treats different subject matter.

The survey reports in this series generally contain three sections. The first section is a brief Executive Summary outlining a small number of themes or salient points from the survey. The second is a longer, generally descriptive, exposition of results. This section is not intended to be a thorough analysis of the data collected nor to explore a group of formal hypotheses. Rather, it is intended to textually describe that which appears subsequently in tabular form. The third section consists of a single series of tables. The tables display each question posed in the survey broken-out by employee size of firm.

Current individual reports are publicly accessible on the NFIB Web site (www.nfib.com/research) without charge. Published (printed) reports can be obtained at \$15 per copy or by subscription (\$100 annually) by writing the *National Small Business Poll*, NFIB Research Foundation, 1201 "F" Street, NW, Suite 200, Washington, DC 20004. The micro-data and supporting documentation are also available for those wishing to conduct further analysis. Academic researchers using these data for public informational purposes, e.g., published articles or public presentations, and NFIB members can obtain them for \$20 per set. The charge for others is \$1,000 per set. It must be emphasized that these data sets do NOT contain information that reveals the identity of any respondent. Custom cross-tabulations will be conducted at cost only for NFIB members on a time available basis. Individuals wishing to obtain a data set(s) should write the *Poll* at the above address identifying the prospective use of the set and the specific set desired.



Paperwork and Record-keeping

Special acknowledgment:

Many of the concepts used in this document were
derived directly from the work of Francis Chittenden at the
University of Manchester Business School in the U. K.



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National Small Business Poll



Paperwork and Record-keeping

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Executive Summary

- The individual(s) completing and maintaining paperwork and records in a small business is dependent on the subject matter of the paperwork and the size of the firm. Owners most frequently handle paperwork and record-keeping related to licenses and permits (55% of firms), purchases (46%), and clients/customers (46%). They least frequently deal with financial (27%) and tax (12%) records. Three of four have someone (another firm) outside handle their tax paperwork. Paid employees customarily do most of the paperwork and record-keeping in about 25 - 30 percent of firms. Employees are much more likely to do so in larger, small businesses than in the smallest ones regardless of subject matter (except tax). Unpaid family members do the paperwork in less than 10 percent of cases.
- The cost of paperwork also varies by subject matter and firm size. The more paperwork and record-keeping that must be sent outside, the more expensive the paperwork and record-keeping. Owners of larger, small firms pay higher average prices per hour because they are more likely to send their paperwork to outside professionals and because the value of their time on average is higher.
- The estimated average per hour cost of paperwork and record-keeping for small businesses is \$48.72. By subject matter the average per hour cost is: \$74.24 for tax-related, \$62.16 for financial, \$47.96 for licenses and permits, \$43.50 for government information requests, \$42.95 for customers/clients, \$40.75 for personnel, \$39.27 for purchases, and \$36.20 for maintenance (buildings, machines, or vehicles).
- The typical small business employs a blend of electronic and paper record-keeping. Less than 10 percent use paper exclusively and a handful use only electronic means. The type of record most frequently completed and maintained on paper is licenses and permits.
- Increased computerization helps small-business owners cope with their paperwork and record-keeping responsibilities. Ninety-two (92) percent of small-business owners use one or more computers in their business. Fifty-eight (58) percent of users employ the Internet regularly for business purposes, and 57 percent of regular users have a high-speed connection.
- About half hold all types of records seven years or more, but two-thirds to three-quarters hold financial and tax records that long.
- Applicable records are typically destroyed in a manner that protects the privacy of individuals. However, between 15 to 20 percent of owners trash paper records (in contrast to shredding or burning them) and about one in four simply delete electronic records. Owners treat personally sensitive records in virtually the same manner that they treat those sensitive to others.
- No single difficulty creates the government paperwork problem. The most frequently cited problem is unclear and/or confusing instructions (29%). The second most frequently cited difficulty is the volume of paperwork (24%). Duplicate information requests (11%) place third, followed by maintenance of records that ordinarily would not be kept (10%) and requests for inaccessible or non-existent information (9%). Twenty (20) percent could not decide.

Paperwork and Record-keeping

A complex world demands increasing amounts of documentation and record-keeping. But, to small-business owners paperwork remains at best a necessary evil. Properly organized and maintained records often do protect them from misunderstandings — even accusations. They also can help better manage the business by substituting for institutional memory. Yet when generated for no apparent reason, duplicating other information requests, or accompanied by foolish and unproductive complexity, the necessary evil becomes a costly irritant. In fact, little agitates small-business owners more reflexively than the mention of paperwork. Relief from many of the worst excesses has fortunately emerged. The computer has helped small-business owners cope, and will offer increasing assistance over time. However, small-business owners fervently pray that the technology is more than a temporary respite, more than a brief pause in the burden created by the relentless growth in demand for records and documentation. Only time will tell if their prayers have been answered. Meanwhile, this issue of the *National Small Business Poll* addresses paperwork and record-keeping with an emphasis on that demanded by government.

Background

The survey on which this report is based focused on eight types (subjects) of common paperwork and record-keeping: personnel records, financial records, maintenance (equipment, vehicles, and building) records, licenses and permits, records of purchases, government information requests, customer or client records, and tax records. Half of the survey sample addressed four topical areas and the second half addressed the other four.

Most small businesses handle each type of record queried. All prepare and keep tax (Q#9) and financial (Q#3) records. Less than one percent do not keep records of their purchases (Q#6). However, as many as 15 percent do not hold maintenance records of any kind (Q#4); 9 percent do not file or keep (copies of) government requests for information (Q#7), 7 percent, do the same with licenses and permits

(Q#5), 3 percent, have no personnel records (Q#2), and 2 percent, no customer/client records (Q#8).

The People Responsible

The person responsible for filling out paperwork and keeping records varies enormously by the subject matter of paperwork completed and the type of records kept. Owners are most likely to fill out the most routine paperwork needs themselves. For example, they handle the paperwork for licenses and permits 55 percent of the time (Q#5). They also frequently do the paperwork and record-keeping associated with purchases (46%) (Q#6) and customers/clients (46%)(Q#8). But small employers infrequently deal with “the books.” Just 12 percent do their own tax paperwork and record-keeping (Q#9), though 31 percent take care of the firm’s financial records (#Q3).

An employee or employees handle a major, but not dominant share of the paperwork and record-keeping responsibilities. They are most prominent in preparing and keeping maintenance records (56%)(Q#4). More typically, employees prepare and maintain personnel records in 27 percent of small businesses (Q#2) and fill government demands for information in 23 percent of firms (Q#7).

Employee size of firm has a significant association with the people responsible for paperwork. Many of the responsibilities assumed by employers in the smallest firms become the responsibility of employees in larger ones. For example, an employee or employees handle the maintenance paperwork and record-keeping in 17 percent of the businesses employing fewer than 10 people, but in 56 percent of the businesses employing 20 or more. The paperwork and record-keeping for licenses and permits show a similar pattern. In 15 percent of the smallest firms employees handle licenses and permits; in 50 percent of the largest they do.

Outside firms and/or individuals are employed from time to time to perform the paperwork and record-keeping function. But these outsiders dominate finance and taxes. Forty-three (43) percent have their financial record-keeping shipped outside the firm and 74 percent send their tax work out. Firm size differences that often characterize the individuals responsible for paperwork and record-keeping are non-existent in the former and modest in the latter. Outside contractors also do paperwork and record-keeping for government information requests in about one of four businesses (26%) and the personnel work in 18 percent of them.

The stereotypical unpaid family member does the paperwork and record-keeping in no more than 6 to 7 percent of firms, and much less often in the areas of finance and tax. They obviously contribute in individual firms. However, unpaid family members no longer are, if they ever were, involved in the firm's paperwork on a broad scale.

About 5 to 10 percent of small businesses use combinations of people and organizations, for example, owners and accounting firms, to handle their paperwork and record-keeping. This number varies little by subject matter.

The Personnel Cost

The cost of paperwork to the small firm is primarily a function of the number of hours spent times the dollar per hour cost of the personnel working on it. Other costs such as equipment or space for records storage are usually smaller. For small-business owners, the number of hours spent completing a particular type of paperwork and maintaining those records is very difficult to estimate. Cost per hour is easier, and so the survey had respondents focus on cost questions. Despite the fact that 20 - 30 percent usually believed that they could not provide a prudent estimate of hourly costs, the remainder provided reasonable and consistent estimates that are useful for several purposes.

The most transparent paperwork costs are the wages and benefits paid employees who complete and maintain records and the fees charged by outside firms that do the same thing. The two are not directly comparable, however, as the outsider fees include everything from equipment and space to supervision and management. Therefore, as expected, the per hour cost varies notably by the people who performed the services and the subject matter of the paperwork involved.

Small-business owners say that the most expensive help is for tax paperwork and records at an average of \$83.69 per hour (Q#9a). The cost rises to an average of more than \$100 per hour for those with firms employing 10 or more people. The second most expensive area is financial records at \$74.20 per hour (Q#3a). The hourly cost drops substantially in all other areas: \$52.43 for license and permits (Q#5a), \$46.18 for government information requests (Q#7a), \$42.75 for customer/client records (Q#8a), \$31.06 personnel (Q#2a), \$30.29 maintenance (Q#4a), and \$25.90 for purchases (Q#6a). Observe that the costs for government requirements tend to be much higher per hour than they are for commercial functions.

Owners and unpaid family members also spend time on paperwork and record-keeping. The survey asked those who use unpaid family help to estimate the cost if they had to purchase those services in the open market. In other words, how much would it cost

if small-business owners had to hire someone to replace the unpaid family help. Since relatively few use them, the number making the estimate is small ($n=57$) and the results should be used cautiously. Still, the estimate of \$24.87 per hour is reasonable, and is similar to the amount paid employees for doing similar work.

Estimating the hourly cost of the owner was addressed indirectly. The first step asked the policy question whether or not the government should reimburse small-business owners for dealing with the added paperwork and record-keeping it requires of a business. Respondents divided almost equally on the question (47% - 51%) with a few percentage points more in the negative (Q#1). A number of plausible interpretations could explain this rather surprising result. One explanation is that no one should be paid to do something that should not be done in the first place; a second is that record-keeping and information submission is a civic obligation that is just part of being a business owner. Whatever the reason, the question was used as a platform to have small-business owners estimate the cost of their time.

Those who responded that they should be paid to complete government paperwork were subsequently asked how much would be a fair per hour amount to claim for their time and effort. Owner responses were reasonable and consistent. The average per hour amount is \$43.30 (Q#1a). The amount rises as the size of firm owned rises. Owners of businesses employing fewer than 10 people say that they should be reimbursed at \$37.18 per hour, while owners of firms employing 20 people or more say their worth is \$68.36 per hour.

Those who opposed the idea of reimbursement were asked to make a similar estimate assuming the decision was made to provide reimbursement. This group did not play along as well as the first as evidenced by the 12 percent who apparently would refuse to apply for reimbursement (Q#1b). Still, with the exception of those employing 20 or more people, the hourly estimates among those for and against reimbursement are remarkably close. The latter group's estimate is \$40.72, just \$2.48 lower than the former's. If those who responded "nothing" are eliminated, the average

hourly estimate for those believing reimbursement inappropriate is \$48.89, \$5.59 higher than those who believe they should be reimbursed.

Hourly Cost of Paperwork

A weighted average of direct personnel paperwork costs by subject matter can be calculated by multiplying the percent completing a specific type of paperwork with the hourly cost of that person/firm, and totaling them. The problem with this approach is that the figure would include non-personnel costs when outsiders provide the services and only wages and benefits when provided by those associated with the business.

A review of the cost assigned outsiders compared to that assigned employees shows a ratio of about 2.3:1 for the four paperwork types that had enough cases of each to compare. Outsiders therefore cost a little over twice as much in direct outlays. A significant, but non-identifiable, part of that difference can be attributable to overhead costs in one and not the other; part likely can be attributed to outsider expertise; etc. Assuming (arguably) that about one-third of the differential or \$10 per hour can be attributed directly to overhead and the remainder to other factors, and ignoring the often small number of cases in certain cells, calculations were run separating employees from outsiders and adding overhead to employees (effectively increasing the hourly cost of employees by between one-third and one-half), unpaid family, and owners to produce a more representative cost.

The data outlined above yield the average hourly cost for all paperwork and the average hourly paperwork cost for each of the eight topical areas investigated. Small-business owners spend, directly or indirectly, an average of \$48.72 per hour on paperwork. The amount varies substantially by topic. Tax-related paperwork and record-keeping cost \$74.24 per hour; financial, \$62.16 per hour; licenses and permits, \$47.96 per hour; government requests for information, \$43.50 per hour; customer/client records, \$42.95 per hour; personnel, \$40.75 per hour; purchases, \$39.27 per hour; and \$36.20 per hour on maintenance paperwork and record-keeping.

Paper or Electronic

Pencil and paper has given way to keyboard and disk in many small businesses. Still, the old has hardly surrendered to the new. The typical small business today employs a blend of paper and electronic means to create, submit, and record documents and is likely to do so for a long time.

About two-thirds to three-quarters of small employers report that they use some combination of paper and electronic records in nearly every area of paperwork examined. Approximately, three times as many say that they use nothing but paper compared to those who are exclusively (or almost so) electronic. One notable exception to this general rule involves licenses and permits.

Licenses and permits are vastly more paper-oriented than the remainder of subject matter. Fifty-nine (59) percent of small-business owners say that they handle their licenses and permits and keep them exclusively in paper (Q#5b); 38 percent use a combination of paper and electronic and just 2 percent are totally electronic. Licenses and permits are issued by local and state government for the most part. Since this is the paperwork and record-keeping topic where electronic means has penetrated small business far less than any other, the inference is that these governments use computer technology less frequently in dealing with small-business entities than either the Federal government or the private sector.

The subject matter second most dependent on paper is maintenance, in all likelihood because so much of it is completed in the field and away from an office. Still, just 35 percent report that their maintenance paperwork is exclusively in paper (Q#4b); 56 percent is a combination, and 6 percent is electronic only.

The Internal Revenue Service (IRS) at the direction of the Congress is attempting to drive taxpayers, including small-business owners, to file electronically. Nineteen (19) percent of small-business owners report that their tax records are completed and maintained on paper (Q#9b); just 4 percent have them solely in electronic form; the remainder use a combination of paper and electronic. Still, tax records are the paperwork area where the second smallest percentage of small-business owners use paper exclu-

sively. Pressing them to do more therefore appears to be for the convenience of the IRS, not the owners.

The smallest percentage using paper only is found among financial records; just 14 percent complete and keep their financial records on paper exclusively (Q#3b). However, financial records are no more likely to be only in electronic form than are most other types. The record type most frequently all-electronic, though only in 12 percent of firms, is customer/client records (Q#8b).

The use of electronic means to handle paperwork implies the use of computers and the Internet. Over the years, both have increasingly penetrated common practice in smaller firms. Today, 92 percent have one or more computers in their business (Q#13), up from 83 percent in 1999. Another two plus percent who do not have a computer in their business have one in their personal residence that they use for business purposes (Q#13d). Forty-two (42) percent of those who have one or more computers have stand alone PCs, 19 percent have a local area network, and 36 percent have both (Q#13a). Inter-connected computers are more likely to be found in larger, small firms than in smaller, small firms though the difference is less than might have been expected.

Ninety (90) percent of small-business owners with one or more business computers, or more than four in five small employers, are connected to the Internet (Q#13b). More importantly, 58 percent claim to use the Internet regularly though not necessarily to transfer documents and records. The percentage rises to 72 percent in businesses employing 20 or more people. Service is increasingly high-speed. Of those who use the Internet regularly, 57 percent claim to have DSL or cable in contrast to 35 percent who report dial-up (Q#13c). At a minimum, therefore, 25 to 30 percent of all small businesses subscribe to high speed Internet service and the number is undoubtedly somewhat higher.

Maintaining Records

Two major issues in records maintenance are the length of time records are kept (needed) and their accessibility when not in immediate use. A third maintenance issue, destruction of records, will be discussed later.

a. Holding Records

Small-business owners keep their records for long periods on average. About half keep their records on any topic seven years or more. But there is a significant variation both from owner to owner and from subject matter to subject matter. Meaningful averages cannot be calculated because so many either keep their records indefinitely which can also mean a long time or forever, or they could not be specific such as it depends, no schedule for disposal, or they are pitched periodically.

An examination of the way owners treat personnel records is illustrative: just 2 percent dispose of personnel records upon an employee's termination (Q#2c). Another 11 percent get rid of them within two years. But half (49%) keep personnel records seven years or more. Maintenance records offer a similar perspective, though a larger proportion dispose of maintenance records sooner. Ten (10) percent hold them two years or less (Q#4c). Still, half (51%) keep them seven years or longer.

The records most quickly pitched are expired licenses and permits. Twenty-three (23) percent dispose of them within two years (Q#5c). Again, half (51%) keep them seven years or more. Small-business owners also keep customer and client records comparatively briefly.

Tax and financial records are held longest. No one gets rid of tax records in less than two years while 65 percent of small employers retain tax records seven years or more (Q#9c). It is widely believed that old tax records should be kept for a minimum of seven years. But that perception is not necessarily accurate. A shorter period is usually sufficient. Still, small-business owners appear to be playing it safe, consciously or not.

Owners appear to keep financial records even longer than tax records. Yet, the reasonably close relationship between financial and tax records is expected as the two are effectively tied. Seventy-four (74) percent hold their financial records seven or more years (Q#3c). Just two percent say that they dispose of them in two years or less.

b. Accessing Records

Government (or others) can request information and/or records that are faith-

fully retained, but access to those records can make compliance with seemingly simple requests very difficult. Access can be more or less easy depending on how well files are labeled and organized, and where they are stored. The survey probed storage since organization of files could not be assessed.

Records can be housed where they are readily accessible, such as in files or on shelves; they can be stored on-site, such as in a closet, attic, or basement; or they can be stored off-site. About 40 percent of small-business owners believe that their records are immediately accessible for most types of paperwork held - even two years after they are current. Forty-one (41) percent say that a two-year-old financial record is immediately accessible (Q#3d); 37 percent say the same about maintenance records (Q#4d); 40 percent believe licenses and permits are immediately accessible two years after they have expired (Q#5d); 40 percent believe the same about records of purchases (Q#6d); and, tax records are immediately accessible in 43 percent of cases (Q#9d).

Comparatively few small-business owners choose to store their records off-site, the place that seems to offer them least access. Two years after records are current, between 10 and 15 percent of small-business owners house records from all subject matters off-site. An exception is tax records. Twenty (20) percent store their tax records off-site, most likely under the control of the individual or organization preparing the tax filing. Twenty (20) percent also store records of government requests for information off-site, though the reason for such action on this particular type of record is not obvious (Q#7d).

The type of paperwork and record most closely held, at least in the two years after they are current, is customer/client information. Forty-eight (48) percent have old customer/client records immediately accessible while just 12 percent have them off-site (Q#8d). In contrast, personnel records are least accessible. Just 28 percent of small-business owners have them immediately accessible and 15 percent have them stored off-site (Q#2d). These choices reflect both priorities and personal interests.

Records Destruction and Privacy

Most records will be destroyed at some point even when small-business owners claim that they intend to keep them indefinitely or for a long time. Destruction of records would be of little interest except that if not disposed of properly, privacy issues could arise. The possibility of mishandling documents during their disposal, and hence revealing private information, may be remote, but the potential for suits and violation of laws remain. All types of records do not possess latent problems however, just those types of records that could reveal private information about employees and customers. Thus, the survey only asked questions about destruction of personnel records and customer/client information to be contrasted with the disposal procedures used for information sensitive only to owners.

The most common way to dispose of paper records is to shred them. Sixty (60) percent who have paper records say that they shred personnel records and 7 percent burn them (Q#2e) while 52 percent say that they shred customer/client records and 7 percent burn them (Q#8e). In contrast, 58 percent say that they shred financial records and 7 percent burn them (Q#3e) while 46 percent shred their tax records and 8 percent burn them (Q#9e). Though about 10 percent more are likely to claim that they never dispose of tax records than other types, small-business owners use the least problematic methods to dispose of records with their privacy interests in the same proportions and same manners as records with privacy interest for their employees and their customers.

The most problematic way to dispose of such records is to trash them. Sixteen (16) to 17 percent trash personnel, financial, and tax records. But 28 percent trash customer/client records. Customer/client records range from such sensitive material as medical and personal financial records to Christmas card lists. All customer/client information, therefore, may not have privacy implications. Regardless, a relatively small, but notable, number of small-business owners may employ questionable records disposal policies.

Increasingly, records are held electronically on disk. Respondents opted from among three choices to describe the way they dispose of electronic records. The most

satisfactory is either to destroy them or to reformat the disk. Twenty-one (21) percent with electronic records use that option with personnel records while 13 percent retain them (Q#2f). But only 13 percent destroy the disk or reformat it with customer/client records on it while 15 percent retain them (Q#8f). Deleting the files and emptying the recycle bin (in Microsoft) is another satisfactory method. This procedure is employed by 28 percent for the former and 25 percent for the latter. That leaves about one in four who merely delete both types of records. While generally sufficient, simply deleting records may be inadequate when pitted against a snooper with considerable computer skills. Thus, records disposed of by just deleting them leaves the small-business owner in potential jeopardy.

Somewhat less than one in ten claim to dispose of their electronic records in another manner, but the manner is unspecified.

Small-business owners appear to treat the records that are sensitive to them in much the same manner as records that are sensitive to employees and customers/clients. Twenty-two (22) percent simply delete their tax records (and don't empty the recycle bin) (Q#9f) while 18 percent do so with financial records (Q#3f). They are also more reluctant to discuss disposal of these records as evidenced by the greater non-response, particularly regarding tax records.

Finally, a question was posed regarding security and access for both personnel and customer/client records. Eighty-six (86) percent of small-business owners, and 98 percent of those employing 20 or more people, say that they secure personnel records and limit access to them (Q#2g). Eighty-nine (89) percent say that they secure and limit access to customer/client records, though no difference appears by size of firm (Q#8g).

The Problem with Government Paperwork

Small-business owners levy a constant barrage of complaints about government paperwork. An appropriate response to those complaints is a request for specifics. What is the problem?

The aspect of government paperwork more difficult for more owners than any other is not even paperwork per se. Rather,

it is the clarity of the instructions and understanding what the public official wants in response. Twenty-nine (29) percent say that the instructions are the most difficult part of the government paperwork problem (Q#12). Those owning the smallest firms are most likely to register this criticism.

The second most frequent complaint is the volume of paperwork to be completed and submitted. Twenty-four (24) percent identify the volume problem which increases to 36 percent for those employing 20 people or more. Eleven (11) percent point out duplicate requests for the same information as their prime concern. Another 10 percent report maintenance of records that they ordinarily would not keep as theirs. Fewest (7%) cite requests for information that they do not have or is not accessible. Almost 20 percent have another paperwork problem or cannot decide among them.

The broad distribution across various possible answers suggests that there is no single paperwork problem. There are many problems and that implies the need for many solutions.

Final Comments

Computerization has had a positive impact on the paperwork burden of small-business owners and will continue to do so. Unfortunately, the paperwork burden is not a burden that can be entirely alleviated by this technology. Paperwork and record-keeping involve considerably more than filing information request (demand) forms and storing copies. It involves understanding the information needed and the form in which it is required, acquiring the necessary information and organizing it in a useful way, determining what to keep and for how long, etc. And, then there is the cost. Even with the most efficient computer equipment, documentation is not cheap. It requires people to organize and input the necessary data, and people are expensive.

The result is that paperwork and record-keeping continue to represent a major aggravation for small-business owners. But it is also a place where they can use sweat equity to save cash. When asked how much they would be willing to pay to have someone take over all the paperwork they must complete, 17 percent said nothing and 5 percent indicated less than \$10

per hour (Q#11). Still, it is better to neither pay someone to handle paperwork nor to put in this type of sweat equity. That situation would occur if the demands for records were not made in the first place. Paperwork, therefore, becomes particularly burdensome for those who do not have the resources to hire someone to do the paperwork for them. Among that group are people just starting businesses, those who could use the greatest asset they have, themselves, for higher purposes than completing and maintaining forms.

Paperwork and Record-keeping

(Please review notes at the table's end.)

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
I. Do you think government should compensate you for dealing with the added paperwork and record-keeping it requires of your business?				
1. Yes	45.1%	53.5%	52.6%	46.7%
2. No	52.7	46.5	46.2	51.4
3. (DK/Refuse)	1.2	—	1.3	0.4
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757
Ia. What do you think would be a fair per hour amount to claim for your time and efforts? (If "Yes" in Q#1.)				
1. <\$10 per hour	7.1%	4.4%	4.9%	6.5%
2. \$10 - 19 per hour	21.9	17.8	22.0	21.4
3. \$20 - 29 per hour	23.0	24.4	19.5	22.8
4. \$30 - 49 per hour	11.3	4.4	7.3	10.0
5. \$50 - 99 per hour	11.3	15.6	19.5	12.7
6. \$100 per hour or more	7.8	15.6	14.6	9.5
7. (DK/Refuse)	17.7	17.8	12.2	17.1
Total	100.0%	100.0%	100.0%	100.0%
N	180	164	175	383
Ave.	\$37.18	\$57.71	\$68.36	\$43.30
Ib. If the decision were made to reimburse you, what do you think would be a fair per hour amount to claim for your time and effort? (If "No" in Q#1.)				
1. Nothing	12.6%	10.0%	13.2%	12.4%
2. <\$10 per hour	2.9	2.5	2.6	2.8
3. \$10 - 19 per hour	17.4	15.0	15.8	17.1
4. \$20 - 29 per hour	13.7	22.5	18.4	15.0
5. \$30 - 49 per hour	6.0	12.5	2.6	6.3
6. \$50 - 99 per hour	14.6	7.5	13.2	8.2
7. \$100 per hour or more	7.1	12.5	13.2	8.2
8. (DK/Refuse)	25.7	17.5	21.1	24.5
Total	100.0%	100.0%	100.0%	100.0%
N	163	105	105	373
Ave.	\$38.54	\$55.20	\$43.92	\$40.72

		Employee Size of Firm			
		1-9 emp	10-19 emp	20-249 emp	All Firms

2. Who does your business's personnel paperwork and record-keeping? Is it:					
1. You	42.9%	28.6%	21.4%	39.3%	
2. An unpaid family member	8.1	2.4	—	6.7	
3. An employee or employees	20.4	45.2	57.1	26.6	
4. An outside firm or individuals	18.9	11.9	11.9	17.5	
5. (Combinations of people/firms)	5.4	11.9	9.5	6.5	
6. (Do not keep that kind of record)	3.6	—	—	2.9	
7. (DK/Refuse)	0.6	—	—	0.5	
<hr/>					
Total	100.0%	100.0%	100.0%	100.0%	
N	186	101	107	394	

2a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#2.)					
1. <\$10 per hour	10.2%	5.3%	—%	8.2%	
2. \$10 - 19 per hour	30.7	31.6	32.0	31.0	
3. \$20 - 29 per hour	11.8	36.9	28.0	17.0	
4. \$30 - 49 per hour	7.9	10.5	12.0	8.8	
5. \$50 - 99 per hour	15.0	—	8.0	12.3	
6. \$100 or more per hour	1.6	5.3	4.0	2.3	
7. (DK/Refuse)	22.8	10.3	16.0	10.5	
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Total	100.0%	100.0%	100.0%	100.0%	
N	65	54	72	190	
Ave.	\$28.07	\$27.64	\$46.45	\$31.06	

2b. Are the business's personnel records kept on paper, electronically, or both? (If keep personnel records in Q#2.)					
1. Paper	25.5%	19.0%	16.3%	23.9%	
2. Electronically	9.7	7.1	4.7	8.9	
3. Both	64.2	73.8	79.1	66.7	
4. (DK/Refuse)	0.6	—	—	0.5	
<hr/>					
Total	100.0%	100.0%	100.0%	100.0%	
N	178	100	106	384	

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

2c. After an employee leaves, how long do you keep those records before getting rid of them?

1. Upon termination	2.8%	—%	—%	2.3%
2. 2 years or less	11.5	7.1	12.2	11.1
3. 3 - 6 years	23.2	24.7	31.2	24.3
4. 7 years or more	21.6	32.4	24.9	23.0
5. Indefinitely	25.5	31.0	26.8	26.2
6. (Other, depends, periodically toss, etc.)	2.2	2.4	—	2.0
7. (DK/Refuse)	13.1	2.4	4.9	11.1
Total	100.0%	100.0%	100.0%	100.0%
N	178	100	106	384

2d. Two years after an employee leaves, how accessible are their records? Are they? (If kept 2 years or more in Q#2c.)

1. Immediately accessible	27.9%	32.5%	20.5%	27.6%
2. Stored on-site	50.0	55.0	59.0	51.5
3. Stored off-site	15.3	12.5	17.9	15.3
4. (Gone, disposed off)	0.7	—	—	0.5
5. (DK/Refuse)	6.1	—	2.6	5.1
Total	100.0%	100.0%	100.0%	100.0%
N	163	98	97	358

2e. How do you dispose of personnel records that are on paper? Do you? (If "Paper" or "Both" in Q#2b.)

1. Trash them	14.9%	18.4%	17.5%	15.6%
2. Burn them	7.3	10.5	5.0	7.4
3. Shred them	61.1	50.0	62.5	60.1
4. (Other)	1.7	10.5	2.5	2.7
5. (Don't dispose of)	5.6	—	2.5	4.6
6. (DK/Refuse)	9.4	10.5	10.0	9.6
Total	100.0%	100.0%	100.0%	100.0%
N	161	93	102	356

		Employee Size of Firm			
		1-9 emp	10-19 emp	20-249 emp	All Firms
2f. How do you dispose of electronic personnel records? Do you? (If "Electronically" or "Both" in Q#2b.)					
1. Delete them	24.5%	18.8%	22.2%	23.6%	
2. Delete them and empty the recycle bin	28.3	28.1	25.0	27.9	
3. Destroy or reformat the disk	19.4	21.9	27.8	20.7	
4. (Other)	3.8	12.5	—	4.3	
5. (Don't Dispose of)	11.8	12.5	16.7	12.5	
6. (DK/Refuse)	12.2	6.3	8.3	11.1	
Total	100.0%	100.0%	100.0%	100.0%	
N	132	80	89	301	
2g. Do you secure and limit access to personnel records?					
1. Yes	83.8%	92.9%	97.6%	86.2%	
2. No	13.7	7.1	2.4	11.9	
3. (DK/Refuse)	2.5	—	—	1.9	
Total	100.0%	100.0%	100.0%	100.0%	
N	178	100	106	384	
3. Who does your business's financial paperwork and record-keeping? Is it:					
1. You	29.3%	21.4%	9.8%	26.6%	
2. An unpaid family member	3.6	—	—	2.9	
3. An employee or employees	12.0	19.0	34.1	14.9	
4. An outside firm or individuals	43.4	42.9	39.0	42.9	
5. (Combinations of people/firms)	11.7	16.7	17.1	12.7	
6. (Do not keep that kind of record)	—	—	—	—	
7. (DK/Refuse)	—	—	—	—	
Total	100.0%	100.0%	100.0%	100.0%	
N	186	101	107	394	
3a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#3.)					
1. <\$10 per hour	2.2%	—%	—%	1.7%	
2. \$10 - 19 per hour	9.7	8.3	6.7	9.2	
3. \$20 - 29 per hour	7.6	12.5	20.0	9.6	
4. \$30 - 49 per hour	14.6	8.3	13.3	13.8	
5. \$50 - 99 per hour	21.1	20.8	13.3	20.1	
6. \$100 or more per hour	13.5	20.8	23.3	15.5	
7. (DK/Refuse)	31.4	29.2	23.3	30.1	
Total	100.0%	100.0%	100.0%	100.0%	
N	96	59	76	231	
Ave.	\$75.28	\$68.52	\$72.83	\$74.20	

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

3b. Are the business's financial records kept on paper, electronically, or both?

1. Paper	14.2%	11.9%	9.5%	13.5%
2. Electronically	9.9	4.8	9.5	9.4
3. Both	75.0	83.3	81.0	76.4
4. (DK/Refuse)	0.9	—	—	0.7
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

3c. How long do you keep those records before getting rid of them?

1. 2 years or less	1.8%	—%	2.4%	1.7%
2. 3 - 6 years	18.7	12.8	22.0	18.4
3. 7 years or more	37.6	38.5	36.6	37.6
4. Indefinitely	35.8	43.6	31.7	36.2
5. (Other, depends, periodically toss, etc.)	3.3	2.6	—	2.9
6. (DK/Refuse)	2.7	2.6	7.3	3.2
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

3d. If you need a financial record that is two years old, how accessible is it? Is it:

1. Immediately accessible	39.3%	47.6%	50.0%	41.2%
2. Stored on-site	45.9	35.7	31.0	43.4
3. Stored off-site	12.9	16.7	13.7	13.7
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	1.8	—	2.4	1.6
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

**3e. How do you dispose of financial records that are on paper? Do you?:
(If "Paper" or "Both" in Q#3b.)**

1. Trash them	15.9%	25.0%	15.8%	16.8%
2. Burn them	7.1	10.0	5.3	7.2
3. Shred them	57.4	52.5	65.8	57.8
4. (Other)	4.4	2.5	—	3.7
5. (Don't dispose of)	10.8	7.5	10.5	10.4
6. (DK/Refuse)	4.4	2.5	2.6	4.0
Total	100.0%	100.0%	100.0%	100.0%
N	166	95	96	357

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
3f. How do you dispose of electronic financial records? Do you? (If "Electronically" or "Both" in Q#3b.)				
1. Delete them	17.8%	13.9%	24.3%	18.1%
2. Delete them and empty the recycle bin	28.1	30.6	24.3	28.0
3. Destroy or reformat the disk	18.1	16.7	24.3	18.6
4. (Other)	10.3	13.9	—	9.6
5. (Don't Dispose of)	13.2	8.3	10.8	12.4
6. (DK/Refuse)	12.5	16.7	16.2	13.3
Total	100.0%	100.0%	100.0%	100.0%
N	157	90	95	342

4. Who does your business's maintenance paperwork and record-keeping? Is it:

1. You	44.0%	31.0%	18.6%	40.1%
2. An unpaid family member	9.3	2.4	—	7.6
3. An employee or employees	17.1	45.2	55.8	23.8
4. An outside firm or individuals	6.9	7.1	4.7	6.7
5. (Combinations of people/firms)	3.9	7.1	4.7	4.3
6. (Do not keep that kind of record)	17.4	2.4	11.6	15.3
7. (DK/Refuse)	1.5	4.8	4.6	2.2
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

4a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#4.)

1. <\$10 per hour	—%	—%	—%	0.8%
2. \$10 - 19 per hour	—	40.9	30.8	41.7
3. \$20 - 29 per hour	—	31.8	30.8	22.0
4. \$30 - 49 per hour	—	9.1	15.4	13.4
5. \$50 - 99 per hour	—	9.1	7.7	5.5
6. \$100 or more per hour	—	—	3.8	5.5
7. (DK/Refuse)	—	9.1	11.5	11.0
Total	100.0%	100.0%	100.0%	100.0%
N	40	51	66	157
Ave.	\$33.05	\$22.92	\$28.11	\$30.29

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

4b. Are the business's maintenance records kept on paper, electronically, or both? (If keep maintenance records in Q#4.)

1. Paper	35.4%	30.0%	37.8%	35.0%
2. Electronically	6.6	2.5	2.7	5.7
3. Both	54.7	62.5	54.1	55.6
4. (DK/Refuse)	3.3	5.0	5.4	3.7
Total	100.0%	100.0%	100.0%	100.0%
N	152	97	96	345

4c. How long do you keep those records before getting rid of them?

1. 2 years or less	8.1%	12.5%	16.2%	9.5%
2. 3 - 6 years	28.5	24.6	32.0	28.4
3. 7 years or more	23.4	27.9	19.3	23.4
4. Indefinitely	28.7	27.5	21.6	27.8
5. (Other, depends, periodically toss, etc.)	5.9	—	2.7	4.9
6. (DK/Refuse)	5.5	7.5	8.1	6.0
Total	100.0%	100.0%	100.0%	100.0%
N	152	97	96	345

4d. If you need a maintenance record that is two years old, how accessible is it? Is it? (If 2 years or more in Q#4c.)

1. Immediately accessible	37.6%	32.5%	41.2%	37.4%
2. Stored on-site	48.9	52.5	44.1	48.8
3. Stored off-site	7.9	10.0	11.8	8.5
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	5.7	5.0	2.9	5.3
Total	100.0%	100.0%	100.0%	100.0%
N	147	96	88	331

5. Who does your business's license and permit paperwork and record-keeping? Is it:

1. You	59.6%	45.2%	28.6%	55.0%
2. An unpaid family member	5.4	2.4	—	4.6
3. An employee or employees	15.1	31.0	50.0	20.2
4. An outside firm or individuals	8.7	7.1	9.5	8.7
5. (Combinations of people/firms)	4.2	7.1	4.8	4.6
6. (Do not keep that kind of record)	6.6	7.1	7.1	6.7
7. (DK/Refuse)	0.3	—	—	0.2
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
5a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#5.)				
1. <\$10 per hour	—%	—%	—%	4.2%
2. \$10 - 19 per hour	—	—	25.0	33.6
3. \$20 - 29 per hour	—	—	29.2	10.9
4. \$30 - 49 per hour	—	—	8.3	11.8
5. \$50 - 99 per hour	—	—	8.3	13.4
6. \$100 or more per hour	—	—	12.5	13.4
7. (DK/Refuse)	—	—	16.7	12.6
Total	100.0%	100.0%	100.0%	100.0%
N	43	39	63	145
Ave.	\$49.31	\$71.41	\$49.38	\$52.43
5b. Are the business's license and permit records kept on paper, electronically, or both? (If keep license and permit records in Q#5.)				
1. Paper	58.4%	64.1%	56.4%	58.8%
2. Electronically	1.9	—	2.6	1.8
3. Both	38.4	35.9	41.0	38.4
4. (DK/Refuse)	1.3	—	—	1.1
Total	100.0%	100.0%	100.0%	100.0%
N	173	95	100	368
5c. After they expire, how long do you keep those records before getting rid of them?				
1. 2 years or less	22.1%	28.9%	20.5%	22.6%
2. 3 - 6 years	19.2	15.4	20.0	18.8
3. 7 years or more	20.6	18.8	18.5	20.3
4. Indefinitely	31.1	28.9	28.2	30.6
5. (Other, depends, periodically toss, etc.)	3.5	5.3	5.1	3.9
6. (DK/Refuse)	3.5	2.6	7.7	3.9
Total	100.0%	100.0%	100.0%	100.0%
N	173	95	100	368
5d. If you wanted to retrieve a license or permit that expired two years ago, how accessible is it? Is it?: (If kept 2 years or more in Q#5c.)				
1. Immediately accessible	40.5%	43.8%	36.4%	40.4%
2. Stored on-site	46.4	46.9	48.5	46.6
3. Stored off-site	6.9	6.3	12.1	7.4
4. (Gone, disposed off)	4.2	3.1	3.0	4.0
5. (DK/Refuse)	1.9	—	—	1.5
Total	100.0%	100.0%	100.0%	100.0%
N	146	79	84	309

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
6. Who does your business's purchase paperwork and record-keeping? Is it:				
1. You	50.7%	31.0%	25.7%	46.2%
2. An unpaid family member	7.6	2.4	—	6.3
3. An employee or employees	21.4	57.1	62.9	29.1
4. An outside firm or individuals	8.6	2.4	5.7	7.6
5. (Combinations of people/firms)	10.9	7.1	5.7	10.0
6. (Do not keep that kind of record)	0.9	—	—	0.8
7. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

6a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#6.)

1. <\$10 per hour	—%	—%	4.2%	2.2%
2. \$10 - 19 per hour	—	34.6	41.7	33.8
3. \$20 - 29 per hour	—	34.6	16.7	22.3
4. \$30 - 49 per hour	—	7.7	12.5	10.8
5. \$50 - 99 per hour	—	3.8	12.5	9.4
6. \$100 or more per hour	—	—	—	1.4
7. (DK/Refuse)	—	19.2	12.5	20.1
Total	100.0%	100.0%	100.0%	100.0%
N	48	55	63	166
Ave.	\$26.90	\$22.69	\$25.62	\$25.90

6b. Are records of your purchases kept on paper, electronically, or both? (If keep purchase records in Q#6.)

1. Paper	25.2%	16.3%	16.7%	23.4%
2. Electronically	10.3	7.0	5.6	9.5
3. Both	64.5	76.7	77.8	67.1
4. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	167	99	94	360

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

6c. How long do you keep those records before getting rid of them?

1. 2 years or less	4.3%	7.0%	8.6%	5.0%
2. 3 - 6 years	32.6	33.1	32.3	32.4
3. 7 years or more	37.7	41.3	42.0	38.7
4. Indefinitely	22.0	14.0	11.4	20.1
5. (Other, depends, periodically toss, etc.)	1.3	2.3	—	1.3
6. (DK/Refuse)	2.0	2.3	5.7	2.4
Total	100.0%	100.0%	100.0%	100.0%
N	167	99	94	360

6d. If you wanted to retrieve a purchase record that expired two years ago, how accessible is it? Is it?: (If 2 years or more in Q#6c.)

1. Immediately accessible	36.6%	27.8%	35.5%	35.4%
2. Stored on-site	48.9	55.6	48.4	49.7
3. Stored off-site	14.5	16.7	16.1	14.9
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	131	85	81	297

7. Who does your business's paperwork and record-keeping for government information requests? Is it:

1. You	34.1%	18.6%	19.4%	31.0%
2. An unpaid family member	3.9	—	—	3.1
3. An employee or employees	19.3	32.6	47.2	23.4
4. An outside firm or individuals	25.6	27.9	22.2	25.5
5. (Combinations of people/firms)	8.2	18.6	5.6	9.1
6. (Do not keep that kind of record)	8.9	2.3	5.6	7.8
7. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

7a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#7.)

1. <\$10 per hour	—%	—%	—%	—%
2. \$10 - 19 per hour	23.4	24.0	28.0	24.1
3. \$20 - 29 per hour	9.5	20.0	8.0	10.7
4. \$30 - 49 per hour	10.9	8.0	16.0	11.2
5. \$50 - 99 per hour	12.4	16.0	20.0	13.9
6. \$100 or more per hour	8.8	12.0	8.0	9.1
7. (DK/Refuse)	35.0	20.0	20.0	13.0
Total	100.0%	100.0%	100.0%	100.0%
N	74	56	64	194
Ave.	\$45.21	\$50.94	\$45.59	\$46.18

7b. Are copies of those information requests kept on paper, electronically, or both? (If keep government information requests in Q#7.)

1. Paper	30.9%	17.5%	20.0%	28.3%
2. Electronically	8.6	5.0	2.9	7.6
3. Both	59.7	77.5	77.1	63.5
4. (DK/Refuse)	0.7	—	—	0.6
Total	100.0%	100.0%	100.0%	100.0%
N	153	95	89	337

7c. How long do you keep those records before getting rid of them?

1. 2 years or more	4.0%	—%	3.0%	3.4%
2. 3 - 6 years	27.1	28.0	31.2	27.6
3. 7 years or more	39.9	47.0	47.6	41.4
4. Indefinitely	22.5	17.5	15.2	21.2
5. (Other, depends, periodically toss, etc.)	0.7	2.5	—	0.9
6. (DK/Refuse)	5.8	5.0	3.0	5.4
Total	100.0%	100.0%	100.0%	100.0%
N	153	95	89	337

7d. If you wanted to retrieve a government information request that was two years ago, how accessible is it? Is it?: (If 2 years or more in Q#7c.)

1. Immediately accessible	38.2%	30.0%	26.5%	36.1%
2. Stored on-site	41.8	45.0	50.0	43.0
3. Stored off-site	18.5	22.5	23.5	19.5
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	1.5	2.5	—	1.4
Total	100.0%	100.0%	100.0%	100.0%
N	152	95	88	335

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
3f. How do you dispose of electronic financial records? Do you? (If "Electronically" or "Both" in Q#3b.)				
1. Delete them	17.8%	13.9%	24.3%	18.1%
2. Delete them and empty the recycle bin	28.1	30.6	24.3	28.0
3. Destroy or reformat the disk	18.1	16.7	24.3	18.6
4. (Other)	10.3	13.9	—	9.6
5. (Don't Dispose of)	13.2	8.3	10.8	12.4
6. (DK/Refuse)	12.5	16.7	16.2	13.3
Total	100.0%	100.0%	100.0%	100.0%
N	157	90	95	342

4. Who does your business's maintenance paperwork and record-keeping? Is it:

1. You	44.0%	31.0%	18.6%	40.1%
2. An unpaid family member	9.3	2.4	—	7.6
3. An employee or employees	17.1	45.2	55.8	23.8
4. An outside firm or individuals	6.9	7.1	4.7	6.7
5. (Combinations of people/firms)	3.9	7.1	4.7	4.3
6. (Do not keep that kind of record)	17.4	2.4	11.6	15.3
7. (DK/Refuse)	1.5	4.8	4.6	2.2
Total	100.0%	100.0%	100.0%	100.0%
N	186	101	107	394

4a. What is the approximate hourly cost of such a person, including benefits, or of the firm hired? (If employee, individual or outside firm in Q#4.)

1. <\$10 per hour	—%	—%	—%	0.8%
2. \$10 - 19 per hour	—	40.9	30.8	41.7
3. \$20 - 29 per hour	—	31.8	30.8	22.0
4. \$30 - 49 per hour	—	9.1	15.4	13.4
5. \$50 - 99 per hour	—	9.1	7.7	5.5
6. \$100 or more per hour	—	—	3.8	5.5
7. (DK/Refuse)	—	9.1	11.5	11.0
Total	100.0%	100.0%	100.0%	100.0%
N	40	51	66	157
Ave.	\$33.05	\$22.92	\$28.11	\$30.29

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

8c. How long after someone stops being a customer or client do you keep those records before getting rid of them?

1. 2 years or less	11.8%	12.2%	17.6%	12.4%
2. 3 - 6 years	34.1	36.0	31.7	34.1
3. 7 years or more	23.7	25.0	33.0	24.6
4. Indefinitely	27.7	22.0	14.7	25.9
5. (Other, depends, periodically toss, etc.)	0.3	2.4	—	0.5
6. (DK/Refuse)	2.4	2.4	2.9	2.4
Total	100.0%	100.0%	100.0%	100.0%
N	164	96	92	352

8d. If you wanted to retrieve a customer or client record that was two years ago, how accessible is it? Is it? (If 2 years or more in Q#8c.)

1. Immediately accessible	48.6%	45.9%	43.8%	47.9%
2. Stored on-site	39.6	43.2	37.5	39.8
3. Stored off-site	10.7	10.8	18.8	11.5
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	1.1	—	—	0.9
Total	100.0%	100.0%	100.0%	100.0%
N	154	89	85	328

8e. How do you dispose of customer or client records that are on paper? Do you?: (If "Paper" or "Both" in Q#8b.)

1. Trash them	28.8%	27.8%	26.7%	28.5%
2. Burn them	7.2	5.6	10.0	7.3
3. Shred them	51.9	50.0	56.7	52.1
4. (Other)	4.5	8.3	—	4.5
5. (Don't dispose of)	5.7	5.6	6.7	5.8
6. (DK/Refuse)	1.9	2.8	—	1.8
Total	100.0%	100.0%	100.0%	100.0%
N	146	84	80	310

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

8f. How do you dispose of electronic customer or client records? Do you?:
(If "Electronically" or "Both" in Q#8b.)

1. Delete them	22.9%	35.3%	35.5%	25.7%
2. Delete them and empty the recycle bin	26.9	23.5	16.1	25.3
3. Destroy or reformat the disk	10.6	17.6	22.6	12.7
4. (Other)	9.3	5.9	3.2	8.2
5. (Don't Dispose of)	17.2	8.8	9.7	15.4
6. (DK/Refuse)	13.2	8.8	12.9	12.7
Total	100.0%	100.0%	100.0%	100.0%
N	124	80	78	282

8g. Do you secure and limit access to customer or client records?

1. Yes	89.3%	90.2%	82.9%	88.8%
2. No	10.1	9.8	14.3	10.4
3. (DK/Refuse)	0.7	—	2.9	0.8
Total	100.0%	100.0%	100.0%	100.0%
N	164	96	92	352

9. Who does your business's tax records? Is it:

1. You	13.9%	2.4%	2.8%	11.5%
2. An unpaid family member	2.3	—	—	1.8
3. An employee or employees	5.6	4.8	11.1	6.0
4. An outside firm or individuals	71.6	83.3	83.3	74.0
5. (Combinations of people/firms)	6.6	9.5	2.8	6.6
6. (Do not keep that kind of record)	—	—	—	—
7. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

**9a. What is the approximate hourly cost of such a person, including benefits,
or of the firm hired? (If employee, individual or outside firm in Q#9.)**

1. <\$10 per hour	—%	—%	—%	—%
2. \$10 - 19 per hour	6.8	5.3	6.1	6.6
3. \$20 - 29 per hour	9.0	5.3	—	7.5
4. \$30 - 49 per hour	11.5	5.3	9.1	10.5
5. \$50 - 99 per hour	14.1	15.8	24.2	15.4
6. \$100 or more per hour	18.4	34.2	33.3	22.0
7. (DK/Refuse)	40.2	34.2	27.3	38.0
Total	100.0%	100.0%	100.0%	100.0%
N	129	88	88	305
Ave.	\$76.71	\$103.02	\$104.40	\$83.69

Employee Size of Firm
1-9 emp 10-19 emp 20-249 emp All Firms

9b. Are your tax records kept on paper, electronically, or both?

1. Paper	19.7%	19.0%	13.5%	19.0%
2. Electronically	4.6	2.4	2.7	4.2
3. Both	72.5	78.6	81.1	74.0
4. (DK/Refuse)	3.3	—	2.7	2.9
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

9c. How long do you keep those records before getting rid of them?

1. 2 years or less	—%	—%	—%	—%
2. 3 - 6 years	23.2	21.3	10.4	19.4
3. 7 years or more	39.7	46.1	59.8	42.3
4. Indefinitely	34.5	27.9	24.3	32.8
5. (Other, depends, periodically toss, etc.)	—	2.3	—	0.3
6. (DK/Refuse)	5.6	2.3	5.4	5.2
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

9d. If you wanted to retrieve a tax record that is two years old, how accessible is it? Is it? (If kept 2 years or more in Q#9c.)

1. Immediately accessible	44.1%	42.9%	41.7%	43.7%
2. Stored on-site	35.5	33.3	25.0	34.3
3. Stored off-site	18.4	23.8	33.3	20.4
4. (Gone, disposed off)	—	—	—	—
5. (DK/Refuse)	1.9	—	—	1.6
Total	100.0%	100.0%	100.0%	100.0%
N	169	99	95	363

9e. How do you dispose of tax records that are on paper? Do you? (If "Paper" or "Both" in Q#9b.)

1. Trash them	16.0%	19.5%	14.7%	16.3%
2. Burn them	8.5	7.3	5.9	8.1
3. Shred them	44.9	48.8	52.9	46.1
4. (Other)	8.5	4.9	2.9	7.6
5. (Don't dispose of)	16.7	12.2	17.6	16.3
6. (DK/Refuse)	5.3	7.3	5.9	5.6
Total	100.0%	100.0%	100.0%	100.0%
N	156	96	89	341

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
9f. How do you dispose of electronic tax records? Do you? (If "Electronically" or "Both" in Q#9b.)				
1. Delete them	21.9%	28.1%	18.8%	22.2%
2. Delete them and empty the recycle bin	19.3	12.5	18.8	18.5
3. Destroy or reformat the disk	9.0	12.5	25.0	11.1
4. (Other)	7.7	6.3	6.3	7.4
5. (Don't Dispose of)	15.5	18.8	15.6	15.8
6. (DK/Refuse)	26.6	21.9	15.6	24.9
Total	100.0%	100.0%	100.0%	100.0%
N	128	79	80	287

- 10. You indicated that an unpaid family member kept some business records for you. If you had to purchase that service, about how much on a dollars per hour basis, including benefits, would you have to pay for someone else to do it?**

1. <\$10 per hour	—%	—%	—%	2.2%
2. \$10 - 19 per hour	—	—	—	41.2
3. \$20 - 29 per hour	—	—	—	14.4
4. \$30 - 49 per hour	—	—	—	15.5
5. \$50 - 99 per hour	—	—	—	6.7
6. \$100 or more per hour	—	—	—	1.1
7. (DK/Refuse)	—	—	—	18.9
Total	100.0%	100.0%	100.0%	100.0%
N	49	6	2	57
Ave.	\$24.93	\$15.99	\$38.50	\$24.87

- 11. If you could pay someone to take over all the paperwork you must complete, how much, on a dollars per hour basis, would you be willing to pay?**

1. Nothing	16.8%	18.8%	12.7%	16.6%
2. \$1 - 10 per hour	5.3	2.4	2.5	4.8
3. \$10 - 19 per hour	28.5	22.4	24.1	27.4
4. \$20 - 29 per hour	15.7	22.4	17.7	16.6
5. \$30 - 49 per hour	5.7	5.9	7.6	5.9
6. \$50 - 99 per hour	5.5	8.2	8.9	6.1
7. \$100 or more per hour	3.0	2.4	3.8	3.0
8. (DK/Refuse)	19.5	17.6	22.8	19.6
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757
Ave.	\$22.39	\$21.71	\$25.27	\$22.58

Employee Size of Firm			
1-9 emp	10-19 emp	20-249 emp	All Firms

12. What is the most difficult aspect of government paperwork for your business?

1. Volume of information completed and submitted	21.4%	28.2%	35.9%	23.5%
2. Maintenance of records you ordinarily wouldn't keep	9.1	14.1	15.4	10.3
3. Clarity of the instructions and understanding the requirements	30.3	22.4	20.5	28.5
4. Duplicate requests from various agencies or governments	11.5	10.6	10.3	11.3
5. Requests for information you don't have or is not accessible	7.4	8.2	5.1	7.2
6. (Other)	4.9	3.5	5.1	4.7
7. (DK/Refuse)	15.5	12.9	7.7	14.5
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

13. Do you have one or more computers in your business?

1. Yes	90.7%	96.5%	96.2%	91.9%
2. No	9.1	3.5	3.8	8.0
3. (DK/Refuse)	0.2	—	—	0.1
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	755

13a. Do you have stand alone PCs, a local area network, or both? (If "Yes" in Q#13.)

1. Stand alone PCs	47.8%	30.5%	18.4%	42.8%
2. Local area network	18.3	18.3	23.7	18.9
3. Both	31.5	47.6	56.6	35.9
4. (DK/Refuse)	2.4	3.7	1.3	2.4
Total	100.0%	100.0%	100.0%	100.0%
N	319	193	195	707

13b. Does your business use the Internet for business reasons regularly, periodically, or aren't you on the Internet?

1. Regularly	55.7%	61.0%	72.4%	58.0%
2. Periodically	33.4	29.3	23.7	31.9
3. No Internet access	10.4	8.5	2.6	9.4
4. (DK/Refuse)	0.5	1.2	1.3	0.7
Total	100.0%	100.0%	100.0%	100.0%
N	319	193	195	707

Employee Size of Firm			
1-9 emp	10-19 emp	20-249 emp	All Firms

13c. How do you reach the Internet? (If "Regularly" in Q#13b.)

1. Dial-up connection	8.9%	26.5%	21.8%	35.3%
2. DSL	38.3	53.1	36.4	39.8
3. Cable	16.5	16.3	21.8	17.2
4. (Other)	5.0	4.1	14.5	6.1
5. (DK/Refuse)	1.2	—	5.5	0.5
Total	100.0%	100.0%	100.0%	100.0%
N	177	118	139	434

13d. Do you have a computer in your residence that you use for business purposes? (If "No" in Q#13.)

1. Yes	—%	—%	—%	33.3%
2. No	—	—	—	67.7
3. (DK/Refuse)	—	—	—	—
Total	100.0%	100.0%	100.0%	100.0%
N	35	7	7	49

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms

Demographics

D1. Which best describes your position in the business?

1. Owner/manager	86.2%	82.4%	76.9%	84.9%
2. Owner but NOT manager	5.5	7.1	6.4	5.8
3. Manager but NOT owner	8.3	10.6	16.7	9.4
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

D2. Is your primary business activity: (NAICs code)

1. Agriculture, forestry, fishing	2.8%	1.2%	1.2%	2.5%
2. Construction	8.8	8.5	10.0	8.9
3. Manufacturing, mining	8.5	9.8	8.8	8.4
4. Wholesale trade	5.8	4.9	8.8	6.0
5. Retail trade	20.3	26.8	16.3	20.6
6. Transportation and warehousing	1.1	1.2	1.2	1.1
7. Information	0.5	—	1.2	0.5
8. Finance and insurance	4.6	1.2	2.5	4.0
9. Real estate and rental leasing	3.9	6.1	3.8	4.1
10. Professional/scientific/ technical services	12.3	13.4	10.0	12.2
11. Adm. support/waste management services	3.9	2.4	2.5	3.6
12. Educational services	1.6	1.2	—	1.4
13. Health care and social assistance	3.3	4.9	8.8	4.0
14. Arts, entertainment, or recreation	1.4	—	5.0	1.6
15. Accommodations or food service	2.5	9.8	15.0	4.5
16. Other service, incl. repair, personal care	14.8	7.3	3.8	12.9
17. (Other)	3.0	1.2	1.2	2.9
18. (DK/Refuse)	0.8	—	—	0.1
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms

D3. Over the last two years, have your real volume sales:?

1. Increased by 30 percent or more	10.3%	12.9%	11.5%	10.7%
2. Increased by 20 to 29 percent	8.8	11.8	10.3	9.2
3. Increased by 10 to 19 percent	22.7	20.0	30.8	23.2
4. Changed less than 10 percent one way or the other	26.0	30.6	26.9	26.6
5. Decreased by 10 percent or more	25.9	22.4	17.9	24.7
6. (DK/Refuse)	6.3	2.4	2.6	5.5
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

D4. Is this business operated primarily from the home, including any associated structures such as a garage or a barn?

1. Yes	33.3%	7.1%	5.1%	27.7%
2. No	65.6	91.8	94.9	71.3
3. (DK/Refuse)	1.1	1.2	—	1.0
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

D5. How long have you owned or operated this business?

1. < 6 years	25.4%	23.5%	15.2%	24.2%
2. 6-10 years	20.8	12.9	20.3	20.0
3. 11-20 years	27.3	24.7	30.4	27.3
4. 21-30 years	18.3	23.5	16.5	18.7
5. 31 years+	6.6	12.9	16.5	8.2
6. (DK/Refuse)	1.6	2.4	1.2	1.6
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
D6. What is your highest level of formal education?				
1. Did not complete high school	2.4%	2.4%	—%	2.1%
2. High school diploma/GED	19.5	17.9	14.1	18.8
3. Some college or an associates degree	26.1	19.0	23.1	25.1
4. Vocational or technical school degree	3.3	3.6	1.3	3.1
5. College diploma	30.3	33.3	42.3	31.8
6. Advanced or professional degree	17.3	22.6	19.2	18.0
7. (DK/Refuse)	1.1	1.2	—	1.0
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757
D7. Please tell me your age.				
1. <25	0.6%	—%	—%	0.4%
2. 25-34	8.0	6.0	7.5	7.8
3. 35-44	19.8	21.4	23.8	20.4
4. 45-54	34.1	31.0	32.5	33.6
5. 55-64	26.6	29.8	25.0	26.8
6. 65+	8.6	9.5	8.8	8.8
7. (DK/Refuse)	2.2	2.4	2.5	2.3
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757
D8. What is the zip code of your business?				
1. East (zips 010-219)	13.9%	16.3%	20.5%	14.8%
2. South (zips 220-427)	23.8	20.9	17.9	22.9
3. Mid-West (zips 430-567, 600-658)	22.1	18.6	20.5	21.6
4. Central (zips 570-599, 660-898)	22.7	26.7	26.9	23.6
5. West (zips 900-999)	15.5	16.3	12.8	15.3
6. (DK/Refuse)	1.9	1.2	1.3	1.7
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

	Employee Size of Firm			
	1-9 emp	10-19 emp	20-249 emp	All Firms
D9. Population Density				
1. Highly Urban	8.6%	15.5%	14.1%	9.9%
2. Urban	20.7	17.9	15.4	19.9
3. Fringe Urban	18.4	20.2	23.0	19.0
4. Small Cities and Towns	22.9	15.5	20.5	21.9
5. Rural	23.5	23.8	20.5	23.3
6. No Data	5.8	7.1	6.4	6.0
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757
D10. Sex				
Male	80.8%	83.5%	88.6%	81.9%
Female	19.2	16.5	11.4	18.1
Total	100.0%	100.0%	100.0%	100.0%
N	355	200	202	757

Table Notes

1. All percentages appearing are based on weighted data.
2. All "Ns" appearing are based on unweighted data.
3. Data are not presented where there are fewer than 50 unweighted cases.
4. ()s around an answer indicate a volunteered response.

WARNING – When reviewing the table, care should be taken to distinguish between the percentage of the population and the percentage of those asked a particular question. Not every respondent was asked every question. All percentages appearing on the table use the number asked the question as the denominator.

Data Collection Methods

The data for this survey report were collected for the NFIB Research Foundation by the executive interviewing group of The Gallup Organization. The interviews for this edition of the *Poll* were conducted between August 7 - September 6, 2003 from a sample of small employers. "Small employer" was defined for purposes of this survey as a business owner employing no fewer than one individual in addition to the owner(s) and no more than 249.

The sampling frame used for the survey was drawn at the Foundation's direction from the files of the Dun & Bradstreet Corporation, an imperfect file but the best currently available for public use. A random stratified sample design was employed to compensate

for the highly skewed distribution of small-business owners by employee size of firm (Table A1). Almost 60 percent of employers in the United States employ just one to four people meaning that a random sample would yield comparatively few larger small employers to interview. Since size within the small-business population is often an important differentiating variable, it is important that an adequate number of interviews be conducted among those employing more than 10 people. The interview quotas established to achieve these added interviews from larger, small-business owners were arbitrary but adequate to allow independent examination of the 10-19 and 20-249 employee size classes as well as the 1-9 employee size group.

Table A1

Sample Composition Under Varying Scenarios

Employee Size of Firm	Expected from Random Sample*		Obtained from Stratified Random Sample			
	Interviews Expected	Percent Distri- bution	Interview Quotas	Percent Distri- bution	Completed Interviews	Percent Distri- bution
1-9	593	79	350	47	355	47
10-19	82	11	200	27	200	27
20-249	75	10	200	27	202	27
All Firms	750	100	750	101	757	101

*Sample universe developed from special runs supplied to the NFIB Research Foundation by the Bureau of the Census (1997 data).

Previous Publications in This Series

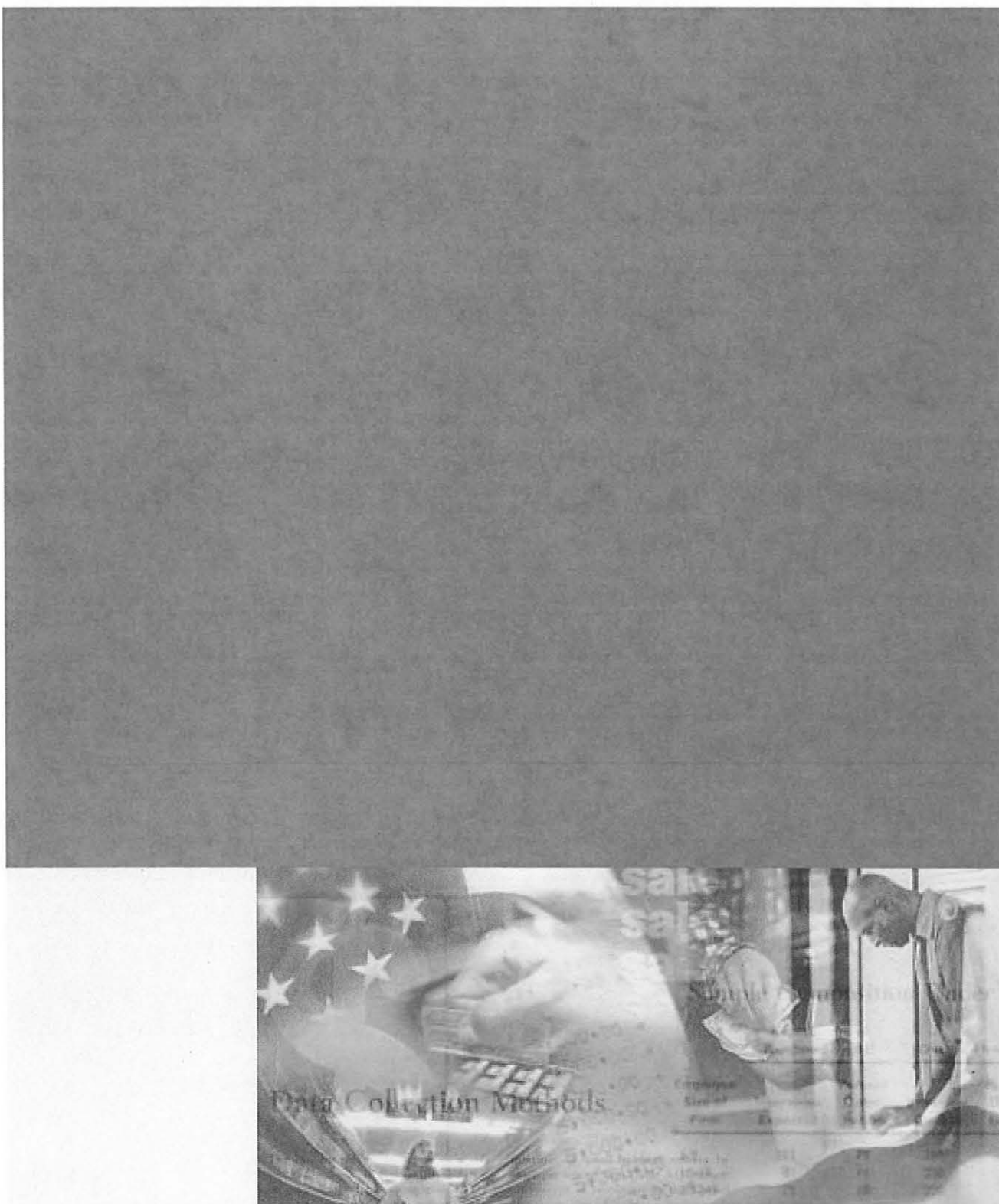
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The Sponsor

The **NFIB Research Foundation** is a small-business-oriented research and information organization affiliated with the National Federation of Independent Business, the nation's largest small and independent business advocacy organization. Located in Washington, DC, the Foundation's primary purpose is to explore the policy related problems small-business owners encounter. Its periodic reports include *Small Business Economic Trends*, *Small Business Problems and Priorities*, and now the *National Small Business Poll*. The Foundation also publishes ad hoc reports on issues of concern to small-business owners. Included are analyses of selected proposed regulations using its Regulatory Impact Model (RIM). The Foundation's functions were recently transferred from the NFIB Education Foundation.



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July 2, 2010

Document Control Office
Office of Pollution Prevention and Toxics (OPPT)
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

Re: Lead; Renovation, Repair, and Painting Program for Public and Commercial Buildings [Docket ID: EPA-HQ-OPPT-2010-0173]

These comments are submitted for the record to the Environmental Protection Agency (EPA) on behalf of the National Federation of Independent Business (NFIB) and the NFIB Small Business Legal Center in response to the Advanced Notice of Proposed Rulemaking (ANPRM) on Lead; Renovation, Repair, and Painting Program (RRP) for Public and Commercial Buildings published in the May 6, 2010 edition of the *Federal Register*.

NFIB is the nation's leading small business advocacy association, representing members in Washington, D.C. and all 50 state capitals. Founded in 1943 as a nonprofit, nonpartisan organization, NFIB's mission is to promote and protect the right of its members to own, operate, and grow their businesses. NFIB represents about 350,000 independent business owners who are located throughout the United States, including thousands of members in the construction and specialty trades affected by this notice. The NFIB Small Business Legal Center is a nonprofit, public interest law firm established to provide legal resources and be the voice for small businesses in the nation's courts through representation on issues of public interest affecting small businesses.

The EPA is beginning the process of regulating the renovation, repair, and painting activities of public and commercial buildings under the Toxic Substances Control Act. This process is aimed at developing lead-safe work practices and other requirements for renovations on the exteriors of public and commercial buildings and to determine whether lead-based paint hazards are created by interior renovation, repair, and painting projects in public and commercial buildings.

NFIB's chief concern is the economic impact of the rule on small business owners. We believe the EPA should take advantage of the considerable time it has between now and the final-rule stage to develop standards that achieve its desired goal of protecting people from exposure to lead while at the same time impacting small businesses as little as possible.

In the ANPRM, the EPA wrote: "In many respects, EPA's approach to determining whether and how to regulate...will be similar to the approach taken towards renovation activities in and on target housing and child-occupied housing." Because that approach, and the implementation of it, caused significant hardship on the regulated community, much of our discussion will stem from the feedback NFIB received from its members from that April 2008 final rule. We hope the EPA can utilize that feedback to improve the forthcoming rule.

Lack of Communication with the Regulated Community

The most troublesome problem we heard from our members regarding the 2008 rule was lack of communication from the EPA to the regulated community. Many of our members contacted us in the weeks before the compliance date of April 22, 2010, to let us know they had just heard about the rule and needed help to meet the requirements on time. In discussions, it seemed that many heard about the rule through word-of-mouth from vendors and other contractors. While the EPA has a fairly robust RRP website — that included a training finder and other valuable information — very few of our members knew about it until late in the process. The result was the following:

Classes: Many of our members were forced to scramble to get training classes for employees on time. We were told on several occasions that the only trainers within several-hours drive were fully booked through the compliance deadline. Had more businesses known about the rule earlier, they could have found classes in a reasonable timeframe. Furthermore, better communication would have helped the EPA appropriately gauge the number of trainers they needed, what areas needed additional trainers, and prevented the huge demand on trainers right before the deadline.

NFIB is deeply concerned that the EPA's lack of communication created a situation where contractors seeking training were price gouged. One member in particular — who found out about the rule from his neighbor in early April — told us that all of the low cost classes that he could possibly attend were full. The cost of those classes was \$99. One trainer, a few hours away, had available slots but the cost of the class was \$325.

For the EPA to create a situation where small businesses could be taken advantage of is disappointing. Research has shown that regulation already impacts small businesses at a proportionally greater rate than larger firms.¹ Small businesses cannot afford to pay upwards of \$200 more per class, per employee because they were not aware of a regulation affecting the very core of their business.

Certification: Many members suddenly found their livelihood jeopardized just weeks before the compliance date. They discovered that as of April 22, their firm would need to be certified by the EPA in lead-safe practices. However, the EPA's rule states that it has 90 days to complete its review of the application. Therefore, many firms were concerned that they would have to refuse or turn down work once the compliance date arrived if they had not received their certification.

¹ Crain, W. Mark, The Impact of Regulatory Costs on Small Firms, 2005, <http://www.sba.gov/advo/research/rs264.pdf>.

While we were pleased to see the EPA announce — after the compliance date — that it would not enforce penalties on firms that had filed their application and had their employees trained, this did nothing to alleviate the concerns of small businesses in the days leading up to deadline. It is very likely that many firms turned down work to avoid breaking the law. It is a shame and unacceptable that small businesses were forced into a position to cease work, particularly in an economic climate that has been particularly devastating to the construction and renovation industry.

One member that had applied for certification and was making every effort possible to get his employees trained within days after the deadline told us: “I’ve been in this business for 35 years and never broken the law or skirted any requirement. But I have no choice but to do so now because I’m not going to let my family and employees down. If we shut down, even for a few weeks, the business will have to close.”

EPA’s Inability to Enforce Creates a Double-Edged Sword for Small Businesses

Our member’s story about the possibility of performing illegal work highlights a particular problem with the rule; the EPA lacks the ability to adequately enforce it.

The EPA has too few inspectors and resources to ensure that jobs are being performed by certified firms and trained workers. Instead, the EPA has said that it will rely on the customers of construction and renovation services to “turn in” non-compliant contractors. The EPA has launched a public awareness campaign aimed at driving up demand for lead-safe services, with the notion that customers will not hire firms that are not certified.

Creating such a demand is unlikely, particularly when customers get bids that are hundreds of dollars, if not thousands, less from uncertified contractors. When someone offers to do the same job at a significant savings, the incentive for the customer to demand lead-safe work is removed.

Even worse, the small businesses that comply with the expensive rule will be priced out of the marketplace. So, under the current situation, not only is it more expensive for them to do the work, they are also less likely to get work. For a small business operating on a thin profit margin, if any, this rule is devastating.

Suggestions for the Public and Commercial Buildings Rule

Given the problems with the April 2008 rule and its large effect on small businesses, NFIB suggests the EPA consider the following as it moves forward with the Public and Commercial Buildings Rule:

The EPA should keep certification and training requirements the same as the April 2008 rule. NFIB proposes that the certification and training requirements for the previous rule be the same for this upcoming proposal. Therefore, if a firm is certified for one rule, it is certified for both — without the additional costs that would be required for a separate certification. The

same would also be true of training for workers. There may be some slight deviation from lead abatement procedures for housing as opposed to public and commercial buildings. However, we believe the EPA can achieve its purpose without adding to the already substantial costs imposed on small business owners.

The EPA should describe in the forthcoming NPRM its communication plan. As noted earlier, the great failure of the previous rule was its faulty communication plan. Many small businesses did not know about the rule until very close to the compliance deadline, and undoubtedly many may not know about it now. Small businesses do not have compliance staff like large businesses. The burden of compliance falls on the small business owner, who also has responsibilities ranging from ordering inventory and hiring employees, to taking out the trash at the end of the day. Asking a small business owner to thumb through the *Federal Register* everyday is not a fair expectation. The EPA simply must do more this time around.

Once the rule is promulgated, NFIB recommends that the EPA mail all firms that have completed certification a one-page fact sheet explaining how the rule will affect them, and provide information as to how they can find out more. In addition, the EPA should utilize the free advertising the EPA plans to use on television and radio to promote lead safety to consumers via the Ad Council. Dedicate some of this communications channel to specifically target the construction and renovation industry. Lastly, when issuing its Notice of Proposed Rulemaking (NPRM), the EPA should solicit input from the regulated community on what other communications channels will be effective.

The EPA should not rely solely, or even largely, on electronic means to communicate about the rule. Many rural areas still lack fast — or even reliable — Internet access.

The EPA should explore every possibility to enforce penalties on firms that are willingly non-compliant. Unfortunately, there is very little NFIB can offer the EPA regarding what the agency can do about its lack of ability to enforce the rule. The EPA entered into a legal agreement to promulgate these two rules knowing that it had no way to sufficiently enforce either one. The losers are the small businesses that, at great cost, have complied with the rule only to be outbid on projects by non-compliant companies. For these entrepreneurs, they can only hope that the agency can come up with a sufficient enforcement mechanism to prevent uncertified firms from performing construction and renovation projects.

Conclusion

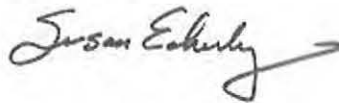
NFIB is concerned about the economic impact this rule will have on small businesses. The precursor to this rule, published in 2008, required small businesses to pay for expensive certification and training. Even worse, the EPA's inability to adequately enforce the rule has decreased the likelihood that a compliant small business can compete for work.

Beyond the economic impact, the EPA failed to adequately communicate the rule and its requirements to the regulated community, and small businesses in particular.

Moving forward, the EPA should help keep compliance costs down by allowing the certification and training for the housing rule to be sufficient for this rule. In addition, NFIB encourages the EPA to publish in the forthcoming NPRM a robust communications plan, and seek feedback from the regulated community.

Because of the great burden that the previous rule had on small businesses, we strongly encourage the EPA to make a concerted effort to help small businesses with this rule. Thank you for your time and consideration. Should you require further information, please contact Daniel Bosch at 202-314-2052.

Sincerely,

A handwritten signature in cursive script, reading "Susan Eckerly", followed by a long horizontal flourish line extending to the right.

Susan Eckerly
Senior Vice President
Public Policy



January 11, 2011

Chairman Darrell Issa
House Committee on Oversight and Government Reform
B350A Rayburn House Office Building
Washington, DC 20515
FAX: (202) 225-3974

Dear Chairman Issa:

Congratulations on your re-election and your chairmanship of the Oversight and Government Reform Committee and thank you for your leadership on identifying federal regulations that are inefficient, outdated, ineffective, or harmful to our economy.

Our association represents the small, rural communications providers across the country that provide broadband and other telecom services that Americans in sparsely populated, hard-to-reach areas need in order to have the same advantages as their urban neighbors. These rural providers serve areas that the biggest providers do not serve and they must use their resources very efficiently in order to grow and offer the most advanced service.

I have heard from a number of our members about the many challenges they face in obtaining rights-of-way (ROW) permits from a web of various local, state, tribal, and federal agencies in their efforts to deploy broadband. Communications providers of all sizes experience the same problems when trying to build the infrastructure to provide faster and better service to customers.

Gaining rights-of-way access can be a cumbersome, lengthy, and costly process that delays private sector investment in broadband infrastructure. The National Broadband Plan addressed some of these concerns and recommended that the FCC establish a joint task force made up of local, state, and tribal governments to establish guidelines for rates, terms, and conditions for access to public rights-of-way.

In many states federal agencies are responsible for the rights-of-way permits on federal lands and are often slow to respond to rights-of-way requests. Agencies such as the Forest Service, the Bureau of Reclamation, the Bureau of Land Management, the National Park Service, the Bureau of Indian Affairs, the Federal Aviation Administration are often involved in the process. Your committee's oversight of the FCC's efforts, with input from these agencies and small and large communications providers, could go a long way toward a more complete, efficient, and thorough solution to this widespread problem.

America will not achieve its goal of being a world leader in high-speed broadband and wireless availability to all citizens if federal agencies cannot work with providers toward building the necessary infrastructure.

NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
4121 Wilson Boulevard · Tenth Floor · Arlington, Virginia 22203
Phone/703.351.2000 · Fax/703.351.2001 · www.ntca.org



Thank you for your attention to this important matter. Please contact me if I can provide more insight into this or any other issue that your committee is working on.

Sincerely,

Tom Wacker
Vice President of Government Affairs
National Telecommunications Cooperative Association

Pebble Project and Section 404(c) of the Clean Water Act
January 2011

The Pebble Project located in Southwest Alaska, is investigating one of the largest deposits of copper, gold, molybdenum and silver in the world. The Pebble Partnership (Anglo American, PLC, and Northern Dynasty Mines) is exploring this mineral deposit on State of Alaska lands that are available for mining. (<http://www.pebblepartnership.com/home>)

The project is in the pre-permitting stage. Hundreds of extensive environmental studies are informing the configuration of possible mining activities and mining methods. To date, nearly \$500 million has been invested by the partners in activities that include research, studies and field work in order to best understand the fish, wildlife, geology and other resources in the area. The studies will facilitate configuring the mine so that the standards for 67 types of state and federal permits that are needed can be met or exceeded. The project may be ready for permitting in late 2011.

If permits are applied for and granted, capital costs to build out the mine will be several billion dollars. About 2000 jobs are projected for mine construction that will likely last three or more years. Another 1000 ongoing skilled mining jobs (averaging \$75,000 per year each) will be provided over the life of the mine. These jobs will be available for Native Alaskans and others living in rural areas where the traditional economic outlook is bleak and unemployment rates are very high.

However, in May 2010 some opponents of mining in the area of the Pebble Project requested that the EPA preemptively prohibit, under Section 404(c) of the Clean Water Act, deposit of fill material related to "metallic sulfide mining" for a "potential Pebble mine" into wetlands in two drainages totaling 20,000 square miles near the mine site area. (See attached petition, Geoffrey Y. Parker.)

This petition and consideration of it is without precedent and inconsistent with traditional use of Clean Water Act section 404 authority by the EPA. (See attached legal memo, Reeves Amodio.) The request for 404(c) action by EPA comes before mining permit submittal by Pebble and before NEPA review. It does not consider any of the results of relevant baseline environmental work that the company has compiled at considerable expense over roughly six years, work that has been done to plan a mine compatible with the surrounding fish, wildlife, and habitat.

Moreover, if EPA undertakes the review, it undercuts the ability of The Pebble Partnership to get full and fair consideration of the permits and mine plan that it believes will comply with all state and federal environmental laws. A prospective 404(c) review would not only be costly and time consuming for EPA, it could prejudice future Pebble permitting decisions by EPA and could stifle more investment in and attendant jobs related to this project

and other mining projects. In addition, preemptive use 404(c) would become the weapon of choice to stop large projects that are quite needed now for private sector job creation.

EPA's logical and justified course should be to reject the petition outright as it lacks any meaningful substantive basis on its face. Instead of doing this, within a few weeks of receiving the petition, Administrator Jackson and others at EPA traveled to the epicenter of Pebble opposition and held meetings about the project thereby receiving a somewhat skewed view of "community opposition." The Administrator did meet with the company officials briefly in Anchorage during that visit, but the pending petition was not known by the company at that time. There are many people in the rural part of Alaska where the mine would be located who want the permitting process for Pebble to proceed.

Alaska's governor, Sean Parnell, wrote in strong opposition to the preemptive 404(c) review by EPA, noting that the lands on which Pebble would be located are State of Alaska lands that were selected for mining development and have been designated for mineral activities under the borough land plans for years. (See attached letter from Governor Parnell). The governor directly asked for the Administrator to decline the petition.

Interestingly, the Pebble Partnership has made many unique commitments to protect the mine site while exploring and to not go forward if the mine cannot be constructed in a manner that meets environmental laws. The partnership took the unprecedented step of undertaking a significant stakeholder engagement program conducted by the Keystone Center. Their corporate philosophy is that the company will respect and coexist with healthy fish, wildlife and other natural resources in Southwest Alaska and rely on the best science to plan and operate the mine.

For the nation, the mine would be a reliable source of US-derived copper, a strategic mineral that is vital to the US economy and touches daily life of everyone. Indeed, the green economy including wind turbines, electric vehicles, hybrid vehicles, electrical transmission, solar power generation, and computer technologies depend on supplies of copper. Pebble will also produce molybdenum an important metal used to make steel for rifle barrels, bicycles, ski equipment, light bulbs, food handling equipment, chemical processing equipment, machines, gas turbines, automotive parts and even ski wax.

The partnership simply wishes to have "due process" and fair treatment in the permitting system as there is substantial time, energy, funding and effort that has gone into planning and designing this modern, world-class mine. Preemptive 404(c) review is extra-procedural and hence an unfair undertaking that would compromise full and fair review of the permit and plan that may be submitted by the partnership. It should be rejected by the EPA.

Contact: Duane Gibson, Mark Lindsay, Bernie Robinson, Dennis Hertel (202-289-9881) or Jack Victory (202-360-5464).

THE LAW OFFICE OF
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634 K Street
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May 7, 2010

Dennis J. McLerran, Regional Administrator
U.S. Environmental Protection Agency, Region 10
Regional Administrator's Office, RA-140
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: Secondary effects on subsistence and recreational use from a potential Pebble mine.

Dear Mr. McLerran:

I and my co-counsel represent several federally-recognized Tribes that, in accompanying correspondence, have requested EPA to initiate a public process, under Section 404(c) of the Clean Water Act, to identify and designate waters and wetlands in the Kvichak and Nushagak river drainages of Southwest Alaska where discharge of dredge and fill material associated with metallic sulfide mining, such as a potential Pebble mine, could be prohibited or restricted.

Much of the discussion of a potential Pebble mine focuses, understandably, on risks to commercial salmon fisheries. This letter focuses on risks to subsistence and recreation (chiefly sport fishing), in order to draw a distinction.

A distinction is this. With respect to commercial fishing, significant damage or loss may depend, for the most part, on events such as acid mine drainage, seepage from or failure of tailings facilities, other pollution, genetic loss, etc.; and at least some of these events are likely to occur if for no other reason than that containment must be forever. Such events would be secondary effects to discharges of dredge and fill into waters and wetlands. With respect to subsistence and sport fishing, significant damage or loss may occur not only by such means, but also by *other* secondary effects such as increased competition due to increased use, population, access, crowding, etc. Sport hunting is likely to suffer similarly. Thus, while discharges under Section 404 for a Pebble mine (or similar metallic sulfide mine) inevitably will have direct and cumulative effects where the discharges occur, this letter focuses on impacts that are *likely* to result, *secondarily and in combination* with other impacts (of increased use, access, etc.), in significant loss or damage to subsistence and recreational use of fish and wildlife.

I. Summary of the 404(c) Regulations and the 404(b)(1) Guidelines.

The 404(c) regulations define an "unacceptable adverse effect" as

impact on an aquatic or wetland ecosystem which is *likely* to result in . . .
significant loss of or damage to fisheries . . . , or wildlife habitat or recreation

areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 CFR part 230).¹

The purposes of the Guidelines are "to restore and *maintain* the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material,"² and to implement Congressional policies expressed in the Clean Water Act.³ Accordingly, the Guidelines establish a rebuttable presumption against allowing any discharge:

Fundamental to these Guidelines is the *precept* that dredged or fill material should *not be discharged* into the aquatic ecosystem, *unless* it can be demonstrated that such a discharge will not have an unacceptable adverse impact *either individually or in combination* with known and/or probable impacts of other activities affecting the ecosystems of concern.⁴

Thus, the Guidelines prohibit a discharge whenever it results, "either individually or in combination" with other known or probable impacts, in an unacceptable adverse impact. The Guidelines further declare:

From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in *wetlands*, is considered to be among the most *severe* environmental impacts covered by these Guidelines. The *guiding principle* should be that degradation or destruction of special sites [such as wetlands] may represent an irreversible loss of valuable aquatic resources.⁵

The 404(b)(1) Guidelines address direct, cumulative and secondary effects.⁶ Cumulative effects are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material.⁷ Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.⁸ Information about secondary effects must be considered prior to a final decision under Section 404.⁹ Secondary effects may present issues of greater

¹ 40 CFR 231.2(e) (italics added). The 404(b)(1) Guidelines (40 CFR Part 230) are promulgated by the EPA in conjunction with the Secretary of the Army acting through the Chief of Engineers under Section 404(b)(1) of the Clean Water Act. 40 CFR 230.2.

² 40 CFR 230.1(a) (italics added).

³ 40 CFR 230.1(b).

⁴ 40 CFR 230.1(c) (italics added).

⁵ 40 CFR 230.1(d) (italics added). Wetlands are a "special aquatic site." 40 CFR Part 230, subpart E.

⁶ 40 CFR 230.11.

⁷ 40 CFR 230.11(g)(1).

⁸ 40 CFR 230.11(h)(1).

⁹ *Id.*

significance than direct effects.¹⁰ The Guidelines address effects on human uses of resources.¹¹ In practice, this includes secondary effects on such uses.¹²

II. Overview of the Economic Uses of Fish and Wildlife in the Bristol Bay Area.

The most recent study of economic values associated with salmon of the Bristol Bay drainages is: John Duffield¹³ et al., *Economics of Wild Salmon Watersheds: Bristol Bay, Alaska* (2007) (see Appendix, Tribes' letter requesting a 404(c) process).¹⁴ According to Duffield, the economy of the Bristol Bay region depends on three main types of activities – publicly funded services (government plus non-profits), activities associated with the commercial exploitation of the natural resources of the region (commercial fishing and recreation), and subsistence.¹⁵

With respect to commercial salmon fishing, Duffield estimates that commercial salmon caught in Bristol Bay in 2005 had a wholesale value of \$226 million in the regional economy.¹⁶

With respect to subsistence, Duffield estimates that subsistence harvest of fish and game, by approximately 7600 people residing in the Bristol Bay drainages, accounts for 2.4 million pounds of subsistence harvest per year for an average of 315 pounds per person annually,¹⁷ and that this results in an estimated net economic value annually of between \$78 and \$143 million.¹⁸

With respect recreation, Duffield estimates that in 2005 the fish and wildlife in these drainages accounted for nearly 51,000 recreational trips,¹⁹ which generated \$91 million in expenditures within Alaska.²⁰ With respect to sport fishing trips, Alaska residents account for

¹⁰ 40 CFR 230.41(b) (“minor loss of wetland acreage may result in major losses through secondary impacts”).

¹¹ 40 CFR Part 230, Subpart F.

¹² An example of a previous EPA action under 404(c) that addresses secondary effects on human use of resources is the Recommended Determination of [EPA Region IV] Pursuant to Section 404(c) of the Clean Water Act Concerning the Yazoo Backwater Area Pumps Project (June 23, 2008).

¹³ Dr. Duffield, PhD, is a professor of natural resource economics at the University of Montana and is a co-author of the treatise: Ward, Kevin M. and John W. Duffield, 1992, *Natural Resource Damages: Law and Economics*, New York, John Wiley & Sons.

¹⁴ Page citations herein are to the full study listed in the Appendix to the Tribes' letter to EPA re 404(c). A shorter version of the study was published in USDA Forest Service Proceedings RMRS-P-49 (2007).

¹⁵ Duffield et al., at 93.

¹⁶ Duffield et al., at 16. The “economic value” of commercial salmon fishing in Bristol Bay can be estimated by various values, such as ex-vessel value, expenditure value, wholesale value, net profit, etc., in various geographical contexts, such as a local, regional, or national economy. See Duffield generally.

¹⁷ Duffield et al., at 84 – 85.

¹⁸ Duffield et al., at 107 – 108.

¹⁹ Duffield et al., at 16, 99.

²⁰ Id.

approximately 65 percent of the trips to the area, and nonresidents 35 percent.²¹ Total angler effort is on the order of 100,000 angler days per year.²² When sport fishing was the sole or primary purpose of these trips, the sport fishing accounted for \$61 million in expenditures within Alaska,²³ of which \$48 million were expenditures by the one-third of sport fishers who are non-residents of Alaska.²⁴ With respect to sport hunting and wildlife viewing/tourism, they accounted for \$13 million and \$17 million respectively, in expenditures within Alaska.²⁵

With respect to employment, the following table from Duffield, et al. reflects the distribution of full-time-equivalent jobs.

**Total Full Time Equivalent (FTE) Employment in Alaska
Dependent on Bristol Bay Wild Salmon Ecosystems, 2005²⁶**

Sector	Alaska Residents			Nonresidents	Total FTE jobs
	Local residents	Non-local residents	Total Alaska		
Commercial fishing	689	667	1,357	1,172	2,529
Commercial processing	465	449	914	796	1,710
Sport fishing	288	435	723	123	846
Sport hunting	60	105	165	2	167
Wildlife viewing / tourism	82	139	222	17	239
Subsistence	14	34	49	0	49
Total FTE jobs	1598	1829	3,430	2,110	5,540

III. Secondary Effects on Subsistence and Recreational Use of Fish and Wildlife.

A Pebble mine, and associated development and access, are likely to increase competition for subsistence and recreational use of fish and game in the Bristol Bay drainages. At various times, the Pebble Limited Partnership (PLP) has asserted that a Pebble mine will require several thousand workers to build it, and a thousand workers to operate it, though PLP's estimates of the number of workers fluctuate. This increased activity inevitably will bring additional residents to the area in other roles, also. Even if stipulations on mining-related permits, such as wetland permits under Section 404, could protect fish and wildlife habitat outside of the sites at which dredge and fill material would be discharged, significant increases in demand for fish and game resources, in access demands, and in secondary development are likely to increase competition for fish and game.

²¹ Duffield et al., at 15.

²² Duffield, et al., at 17.

²³ Duffield et al., at 15-16, 101.

²⁴ Id.

²⁵ Duffield et al., at 16.

²⁶ Duffield et al., at 17. Hunting is included because wild salmon returning from the sea perform an "ecosystem service" of nutrient recycling to support habitat functions. See id. at 24-26. In Alaska, marine nitrogen accounts for as much as 90 percent of the nitrogen in brown bears. See Robert J. Naiman et al., *Riparia: Ecology, Conservation, and Management of Streamside Communities*, 184-185 (2005).

For purposes of Section 404(c) and the 404(b)(1) Guidelines, EPA may consider the quality of subsistence and recreational use and socio-economic impacts resulting from changes in subsistence and recreational use patterns.²⁷

A. Subsistence and Environmental Justice.

In the Bristol Bay drainages, the share of the population that is Alaska Native is relatively high at 70 percent, compared to Alaska as a whole, with 16 percent.²⁸ Accordingly, subsistence is a major concern to the Tribes, and so, the Appendix to the Tribes's letter to EPA on 404(c) provides internet links to maps (used by the Bureau of Land Management) which identify subsistence use areas for the villages and communities in the area that use the Kvichak and Nushagak drainages for subsistence. The demographic aspects raise issues of environmental justice under Executive Order 12898. It requires that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on low-income and minority populations.

Most of the central provisions of State and federal subsistence laws were drafted nearly thirty years ago. Both provide two "tiers" of a subsistence preference (16 U.S.C. § 3114; AS 16.05.258), but they differ with respect to who can participate. Federal law limits subsistence on federal lands to *rural* Alaska residents. State law allows *all* Alaskans to qualify, preliminarily, for subsistence on non-federal lands.²⁹ Under both schemes, when the total harvest by subsistence and other users of a fish or game stock exceeds sustained yield, the Tier I preference restricts or eliminates non-subsistence users. When the subsistence harvest alone exceeds sustained yield, the Tier II preference is triggered and subsistence is restricted by statutory criteria that allocate subsistence opportunities. On federal lands, 16 U.S.C. § 3114 allocates subsistence opportunities by three criteria: (1) customary and direct dependence on the populations as the mainstay of livelihood; (2) local residency; and (3) availability of alternative resources. The State, however, must avoid local residency criteria as being unconstitutional under the Alaska Constitution. These distinctions in who can hunt and fish in particular situations have divided Alaskans and are known colloquially as the "subsistence dilemma."³⁰

²⁷ See e.g., USEPA, Recommended Determination pursuant to Section 404(c) Concerning the Yazoo Backwater Area Pumps Project, *supra* (portions address potential changes in quality of, and economic benefits derived from, fishing and hunting in the Yazoo Backwater Area).

²⁸ Duffield et al., at 11.

²⁹ *McDowell v. State*, 785 P.2d 1 (Ak. 1989) (Alaska constitution bars State from limiting subsistence to rural residents).

³⁰ A Pebble mine may increase pressure (which already exists) to revise federal subsistence law to be protect only Alaska Native people, and to apply it more broadly than only on federal land (*i. e.*, to Native corporation lands also). Congress probably could adopt a "Native only" subsistence provision under the Indian Powers clauses of the US Constitution, but the Alaska legislature cannot under the Alaska Constitution. Doing so would drive state and federal governments further apart on subsistence law, and would be very divisive among state residents. A proposed Pebble mine is likely to add to pressures to do so.

A potential Pebble mine is likely to be caught upon the horns of this dilemma, because the Bristol Bay drainages (unlike locations of other large mines in Alaska) are the source of world-class fish and game resources (e.g., salmon, trout, char, grayling, pike, lake trout, caribou, moose, and bears) that attract users locally, regionally, nationally, and internationally. No other large Alaskan mine is located in a region that does so. This distinction implies that Pebble and associated development are likely to result in increasing the numbers of new local rural residents, visitors from Alaska and perhaps elsewhere, and the amount of secondary development.³¹ Because of the land ownership pattern, new local residents are likely to settle in the vicinity of Iliamna, Newhalen and Nondalton. However, their uses of lands and resources will reach beyond, to state lands in the Kvichak and Nushagak drainages (and to private land, including Native land, with and without permission) where state subsistence law applies, and to federal land (Lake Clark and Katmai national parks and preserves, and BLM lands) where federal subsistence law applies. The Pebble Partnership may restrict fishing or hunting by employees while at the mine site, but it cannot limit development of private land, or the activities of new local residents who are either not its employees, or are visitors. Even well-intentioned restrictions on access to protect subsistence uses of resources tend to be transitory and ineffective (e.g., the Dalton Highway, formerly "the North Slope Haul Road" is now open to public use).

With respect to federal law, the *new* local residents will be *rural* residents for purposes of subsistence in federal parks and preserves and BLM lands. They will compete with both *current rural residents* engaged in subsistence and *sport hunters* who visit the area. As *total* subsistence demand increases due to new *rural* residents, Federal subsistence law, first, will restrict or eliminate sport hunting in the federal Lake Clark and Katmai Preserves (where sport hunting has been allowed). Second, when subsistence demand of all (new and current) rural residents surpasses sustained yield of a fish or game population (most likely a game population) on federal land, some rural residents will be disqualified under the criteria at 16 U.S.C. § 3114. However, the local-residency criterion will not be particularly effective, because new and current rural residents will *all* be local rural residents for purposes of federal subsistence law. The first and third criteria – i.e., (1) customary and direct dependence as the mainstay of livelihood; and (3) availability of alternative resources – will disqualify some subsistence users on federal lands, not unlike the disqualification that occurs under the State's divisive and controversial Tier II hunts. Hence, *current* rural residents would experience increased competition, diminished subsistence opportunity, and disqualification on federal lands, because of an influx of *new* rural residents.

With respect to state subsistence law, conflicts are likely to be more intense because all Alaska residents can qualify for subsistence on nonfederal lands. Some game populations, such as Mulchatna caribou and Nushagak moose, may have to be managed as Tier II state subsistence hunts, in which all sport hunters and many subsistence hunters would be excluded.

Thus, the discharge of dredge and fill material for a Pebble or similar mine is likely to result, in combination with other impacts, in a significant loss of subsistence by current subsistence users. Furthermore, because the population in the Bristol Bay drainages is substantially Native Alaskan, a Pebble mine (or similar metallic sulfide mine) is likely to have

³¹ For reasons addressed in Part B below, additional visitors may not result in less, not more recreational expenditures.

disproportionately high, adverse, *secondary* effects, in combination with other impacts, on subsistence use by Alaska Natives in the Kvichak and Nushagak drainages. This raises issues of environmental justice under Executive Order 12898. Again, the Yazoo Backwater Area Pumps Project (see fn. 12, *supra*) provides analogy. In that case, EPA concluded that the project would have disproportionate adverse effects on subsistence fishing and hunting activities of low-income and minority populations, and that a 404(c) decision to bar the project would not.³²

B. Sport Fishing.

As said above, in the Bristol Bay drainages, approximately two-thirds of the sport-fishing trips are by local residents,³³ and approximately two-thirds of the sport-fishing expenditures are by nonresidents. With respect to sport fishing expenditures, the Duffield study is consistent with others published in the 1980's. Generally speaking, the studies have found or implied that two factors drive expenditures for services of remote fishing lodges in the Bristol Bay drainages: (1) desire for large rainbow trout as a target species, ahead of king salmon, silver salmon and other species, and (2) concern about crowding.³⁴ Most of the commercial lodges and camps are located in the Kvichak and Nushagak drainages.³⁵

Duffield compared sport fishing in the Bristol Bay drainages to sport fishing on the Kenai Peninsula. Anglers fishing the road-accessible Kenai Peninsula generally were less concerned with crowding or desire to fishing remote roadless areas than were anglers in the Bristol Bay drainages,³⁶ and were more likely to pursue salmon.³⁷ According to Duffield, these findings are consistent with the general finding from Romberg (1999), that there are different market segments of Alaskan sport fishing, and that different types of waters attract different types of anglers.³⁸ Generally, in primarily road-accessible fisheries of Southcentral Alaska, Alaska residents account for about two-thirds of sport fishing effort (measured in angler-days).³⁹ In

³² USEPA, Recommended Determination pursuant to Section 404(c) Concerning the Yazoo Backwater Area Pumps Project, *supra*, at 65 – 67.

³³ Duffield, et al., at 51 (estimated 19,488 sport fishing trips by Bristol Bay area residents versus 12,966 sport fishing trips by non-residents of Alaska).

³⁴ Duffield, et al., at 46 – 48 (large rainbow trout viewed as over 26 inches in survey). See also Jon Issacs & Associates, "Commercial Recreation Service Providers Study" (1986) for Bristol Bay Coastal Resource Serv. Area (focuses on Nushagak/Mulchatna drainage); D. A. Ackley, "An Economic Evaluation of Recreational Fishing in Bristol Bay, Alaska," Masters Thesis, UAA/Juneau (1988) (focuses on Kvichak/Naknek drainages; includes Iliamna Lake area).

³⁵ The authors can provide a copy of the State's "Bristol Bay Area Plan Planning Regions, Recreation Lodges & Camps" (2005) prepared for the State's 2005 Bristol Bay Area Plan but not published in the Plan itself.

³⁶ Duffield, et al., at 43.

³⁷ Duffield, et al., at 45.

³⁸ Duffield, et al., at 43.

³⁹ ADF&G, Fishery Data Series, No. 09-47, "Estimates of Participation, Catch, and Harvest in Alaska Sport Fisheries in 2005, 37 (This Data Series defines "Southcentral Alaska" as including Kenai Peninsula, Matanuska-Susitna Valley, and Bristol Bay drainages, but the last account for a small percentage of all angling effort as this data series defines "Southcentral Alaska.")

contrast, in the Bristol Bay drainages, where residents account for two-thirds of the sport fishing trips and nonresidents account for two-thirds of the expenditures, the nonresidents who purchase multi-day "trip packages" (of lodge, guiding and air taxi services) in the Bristol Bay drainages, account for over half of the total sport fishing expenditures.⁴⁰

Duffield addresses potential development within the area that could result in road access (by ferry from Homer, Alaska) and thus would impact crowding and size and abundance of rainbow trout in the region.⁴¹ The survey indicates that 45.4% of non-residents and 30.5% of residents feel that the road access would cause them to either stop fishing in the Bristol Bay area (and fish other areas of Alaska) or stop fishing in Alaska entirely.⁴² Nearly 80 percent of non-resident lodge clients responded that they oppose developing road access in Bristol Bay area, and nearly 60 percent responded that they would not fish the Bristol Bay area if good road access were developed in the area.⁴³

For purposes of 404(c) and the 404(b)(1) Guidelines, the dredge and fill of wetlands to develop a Pebble mine and access to it, in combination with increased crowding, population and access, is likely to result in significant loss of sport fishing within the lodge, guiding and air taxi industries, as non-residents who seek trout at uncrowded, internationally famous destinations are displaced by residents who seek salmon and are more tolerant of crowding. That would simply shift expenditures of residents from road-accessible destinations in the Kenai Peninsula or Matanuska-Susitna Valley to the Kvichak and Nushagak drainages while displacing nonresidents who account for the majority of sport fishing expenditures in the Bristol Bay drainages.

IV. Existence Value.

Although the focus here is on subsistence and sport fishing, the values of renewable resource services in principle should be available in perpetuity. Hence, EPA might consider what has been said about existence value of the Bristol Bay watersheds. According to Duffield, et al., a major unknown is the total value for existence and bequest (also called passive use values).⁴⁴ Subject to qualifications, Duffield, et al., estimate that the existence value of the watersheds is in the range of \$6.0 billion to \$10.2 billion.⁴⁵

Sincerely yours,



Geoffrey T. Parker

cc: Lisa P. Jackson, EPA, Administrator, Washington, D.C.
Phil North, EPA, Kenai, Alaska

⁴⁰ Duffield, et al., at 55 - 56; see also *id.* at 50 (re distribution of expenditures).

⁴¹ Duffield, et al., at 58.

⁴² Duffield, et. al, at 58.

⁴³ Duffield, et. al, at 61.

⁴⁴ Duffield, et. al, at 110.

⁴⁵ Duffield, et. al, at 112.

**Alaska Independent Fishermen's
Marketing Association**

P.O. Box 60131
Seattle, WA 98160
Phone/Fax (206) 542-3930



May 13, 2010

Lisa P. Jackson, Administrator
U.S. Environmental Protection Agency, Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dennis J. McLerran, Regional Administrator
U.S. Environmental Protection Agency, Region 10
Regional Administrator's Office, RA-140
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: Endorsement of Tribes' request that EPA initiate a public process under Section 404(c) of the Clean Water Act, regarding discharges related to potential metallic sulfide mining in the Kvichak and Nushagak drainages of Southwest Alaska.

Dear Ms. Jackson and Mr. McLerran:

AIFMA Cooperative (Alaska Independent Fishermen's Marketing Association) is a member-based cooperative of commercial fishers, organized under the laws of the State of Alaska. AIFMA's members fish for salmon in Bristol Bay in Southwest Alaska. AIFMA has long opposed development of a potential Pebble Mine. If developed, it would mine a large metallic sulfide deposit located at the divide between Upper Talarik Creek in the Kvichak River drainage and the North and South Forks of the Koktuli River drainage. The Kvichak River drainage historically produces more sockeye salmon than any other river in the world, and the Nushagak River drainage produces the most salmon of the other species caught in the commercial fisheries of Bristol Bay. A Pebble Mine threatens these commercial fisheries.

AIFMA is working with several federally-recognized tribes in the Kvichak and Nushagak drainages on matters related to a potential Pebble Mine. AIFMA's board of directors received and endorsed draft correspondence by the Tribes that requests EPA to initiate a public process under Section 404(c) of the Clean Water Act, to protect waters, wetlands, fish, wildlife, and subsistence and recreational uses in the Kvichak and Nushagak drainages and the commercial fisheries in Bristol Bay from direct, cumulative and secondary effects of discharges associated with metallic sulfide mining, including a potential Pebble Mine. We understand that the Tribes' letter has now been sent to EPA.

This letter confirms AIFMA's endorsement of the Tribes' letter and request for a 404(c) public process. AIFMA will do all it can to assist such a process. Thank you.

Sincerely yours,

David Harsila
President

A JOINT LETTER

From Six Federally-recognized Tribes
in the Kvichak and Nushagak River Drainages of Southwest Alaska:
Nondalton Tribal Council, Koliganik Village Council, New Stuyahok Traditional Council,
Ekwook Village Council, Curyung Tribal Council, Levelock Village Council

May 2, 2010 (mailed May 21, 2010)

Lisa P. Jackson, Administrator
U.S. Environmental Protection Agency, Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dennis J. McLerran, Regional Administrator
U.S. Environmental Protection Agency, Region 10
Regional Administrator's Office, RA-140
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: Tribes request that EPA initiate a public process under Section 404(c) of the Clean Water Act, to protect waters, wetlands, fish, wildlife, fisheries, subsistence and public uses in the Kvichak and Nushagak drainages and Bristol Bay of Southwest Alaska from metallic sulfide mining, including a potential Pebble mine.

Dear Ms. Jackson and Mr. McLerran:

Our federally recognized tribes, from the Kvichak and Nushagak river drainages of southwest Alaska, have government-to-government relations with the United States, and are represented by the undersigned tribal councils. We are writing with assistance of counsel.

Section 404(c) of the Clean Water Act authorizes EPA to prohibit or restrict the discharge of dredge or fill material, including mine wastes, at defined sites in waters of the United States, including wetlands, whenever EPA determines, after notice and opportunity for hearing, that the use of such sites for disposal would have an "unacceptable adverse effect" on fisheries, wildlife, municipal water supplies or recreational areas. EPA may do so *prior* to applications for permits to discharge such material. 40 CFR 231.1(a). "Unacceptable adverse effect" is defined as:

impact on an aquatic or wetland ecosystem which is *likely* to result in significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 CFR Part 230).¹

¹ 40 CFR 231.2(e) (italics added). The purposes of the 404(b)(1) Guidelines are "to restore and *maintain* the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material," and to implement Congressional policies

We request that EPA initiate a 404(c) public process to identify wetlands and waters in the *Kvichak and Nushagak river drainages* of southwest Alaska, where discharges associated with potential *large scale metallic sulfide mining*, could be prohibited or restricted due to such effects. This initial scope would include the Pebble deposit (which straddles a divide between these drainages) and other metallic sulfide deposits in the area of that deposit. (We understand that Kemuk Mountain may be the site of another metallic sulfide deposit.) During such a public process, some members of the public may urge a broader or narrower scope. The "scope" of a 404(c) process is one of many issues that should be resolved through a public process. The deposits in the area of the Pebble claims, which precipitate this situation, should be included.

We are addressing this to both of you because: (1) 40 CFR 231.3(a) provides that a regional administrator makes the decision of whether to initiate a 404(c) public process; (2) in this instance, initiating a 404(c) process effectuates three of EPA's national priorities,² and three of EPA's regional priorities;³ (3) initiating a 404(c) process promotes EPA's goal that decisions be based on science, law, transparency, and stronger EPA oversight;⁴ and (4) doing so is consistent with EPA's national priorities of increased oversight of mineral processing⁵ and

expressed in the Clean Water Act. The Guidelines establish a rebuttable presumption against allowing any discharge unless it can be demonstrated that the discharge will not have an unacceptable adverse impact "*either individually or in combination* with known and/or probable impacts of other activities affecting the ecosystems of concern." The Guidelines declare:

From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in *wetlands*, is considered to be among the most *severe* environmental impacts covered by these Guidelines. The *guiding principle* should be that degradation or destruction of special sites [such as wetlands] may represent an irreversible loss of valuable aquatic resources.

40 CFR 230.1 (*italics added*). The Guidelines address direct, cumulative and secondary effects. 40 CFR 230.11. Secondary effects are those associated with a discharge, but do not result from actual placement of the material, and must be considered prior to agency action under §404. 40 CFR 230.11(h)(1). In this case, a 404(c) process should address potential secondary effects on commercial, subsistence, and recreational fishing and hunting, and public use of parks and preserves. See 40 CFR Part 230, subpart F. All are at issue as discussed herein and in attached letter from counsel, and in the briefing paper attached to enclosed letter to State Rep. Edgmon.

² These include: (1) protecting America's waters; (2) expanding the public conversation on environmentalism and working for environmental justice; and (3) forging strong partnerships between EPA, tribes and states. See EPA's seven national priorities at <http://blog.epa.gov/administrator/2010/01/12/seven-priorities-for-epas-future/#more-636>.

³ These include: (1) working with Tribal Governments to protect and restore the natural resources on which tribal communities rely for their physical, cultural and economic well-being; (2) protecting and restoring watersheds; and (3) promoting sustainable practices and strategic partnerships, including with tribal governments. See EPA's six regional priorities at <http://yosemite.epa.gov/R10/EXTAFF.NSF/Reports/2007-2011+Region+10+Strategy> (last visited Feb. 12, 2010), and EPA's Region 10 Strategy for Enhancing Tribal Environments at <http://yosemite.epa.gov/r10/EXTAFF.NSF/Reports/07-11+Tribal> (last visited Feb 12, 2010).

⁴ *Id.* Pebble mine also raises issues that may require the assistance of EPA staff in other offices.

⁵ EPA's national priorities for enforcement and compliance for FY 2008 – 2010 and FY 2011 – 2013 (proposed) are at <http://www.epa.gov/oecaerth/data/planning/priorities/index.html#new>.

increased attention to Environmental Justice. Furthermore, EPA's on-going 404(c) process with respect to the Spruce No. 1 mine in West Virginia indicates that EPA prefers to be proactive, *i.e.*, "to address environmental concerns effectively *prior* to permit issuance."⁶

We make this request for the following reasons.

1. **The cultural, ecological and economic importance of the Kvichak and Nushagak river drainages, and the magnitude of a potential Pebble mine, indicate that the scope of a 404(c) public process should be broad at the outset.**

Pursuant to 40 CFR 231.3(a), a Regional Administrator's *initial* decision of whether to commence a 404(c) process turns on whether there is "*reason to believe*" that "an 'unacceptable adverse effect' *could* result." (Italics added). This initial decision is based upon "evaluating the information available."⁷

The Kvichak River drainage historically produces more sockeye salmon than any other drainage in the world. Sockeye salmon drive the commercial salmon fisheries of Bristol Bay, which are the state's most valuable salmon fisheries. Within the Bristol Bay drainages, the Nushagak River drainage, also produces vast numbers of sockeye, and produces the largest runs of other species, including chinook, coho, chum and pink salmon. Both drainages are critical to the wild commercial salmon fisheries, subsistence fisheries, internationally famous sport fisheries, and abundant wildlife. The fish serve many onshore, near-shore and offshore uses and ecological functions, including in the North Pacific. The drainages provide water supplies to numerous villages and communities, many of which are substantially populated by Alaska Native people.⁸

The Pebble Limited Partnership (PLP), which seeks to develop the Pebble mining claims, divides them into "Pebble West" and "Pebble East." The former may be susceptible to an open pit mine. The latter (a more recent discovery) may be susceptible to an underground mine.⁹ In

⁶ See EPA, Spruce No. 1 Mine 404(c) Questions & Answers for Web Posting, Oct. 16, 2009 (italics added), http://www.epa.gov/owow/wetlands/pdf/spruce_1_Oct_16_2009_q_and_a.pdf (visited Jan. 26, 2010). EPA took this position when it invoked the 404(c) public process after years of working with the applicant and other agencies. Spruce No. 1 is the largest proposed mountaintop removal operation in Appalachia, would clear 2200 acres, and fill seven miles of streams. By contrast, just the open pit portion of a Pebble mine (per applications filed in 2006 and subsequently suspended) would be about two square miles (over 46,000 acres).

⁷ Because EPA staff has access to EPA's materials, our counsel have prepared an Appendix which lists other potentially relevant documents, from other agencies, the mining claimants, academic or professional publications, professional papers, and presidential documents applicable to environmental issues, tribal relations, and environmental justice. We assume that none would be overlooked and simply call these documents to your attention.

⁸ Nondalton is closer to a potential Pebble mine than any other community. Dillingham's Curyung Tribal Council represents the largest tribe in the Bristol Bay drainages of about 2400 members. Koliganek, New Stuyahok, Ekwok and Levelock are downstream of Pebble.

⁹ EPA routinely recognizes that mine voids, from open pit and underground mines, are sources of acid mine drainage. We call to your attention P. Younger, "*Don't forget the voids: aquatic*

2006, Northern Dynasty Mines, Inc. (NDM)¹⁰ filed, and then supplemented, nine applications with the Alaska Department of Natural Resources (ADNR), and then requested ADNR to suspend them. ADNR did so. Four applications sought to appropriate water. Five sought to construct tailings impoundment dams.¹¹ These nine applications were based *solely* on Pebble West. The surface area of the water of just two tailings impoundments, as then proposed, would have covered over ten square miles (6400 acres). "Beaches" of waste would have surrounded the impoundments created by five dams or embankments up to 740 feet high and several miles long.

The 2006 applications for Pebble West showed that NDM had considered about a dozen potential waste disposal sites. All or many appeared to involve vast wetlands under EPA's jurisdiction. The proposed open pit would have involved about 16.5 miles of 54-inch diameter pipelines to manage discharge tailings, and over two hundred miles of 15-inch diameter pipelines to transport a slurry concentrate for dewatering and ocean shipment from Cook Inlet, and to return used slurry water to the mine facilities. After suspending the applications, PLP has concentrated on exploring Pebble East. It has resulted in more than doubling the amount of potential mine waste, to about ten billion tons of waste. Hence, the questions of where, how and whether the vast volume of waste can be safely and permanently handled are major unresolved issues that involve a vast amount of discharge under Section 404 into a vast amount of wetlands.

Because a Pebble mine, associated facilities, and similar metallic sulfide mines could also have various direct, cumulative, secondary adverse effects in combination with other impacts over a vast area, our tribes recommend that EPA consider a wide geographic area of the Kvichak and Nushagak drainages for purposes of § 404(c), at least initially for a public process. Our reasons include: (1) the importance of the Kvichak and Nushagak drainages for fish, wildlife, and commercial, subsistence and recreational use of fish and wildlife; and the abundance of waters and wetlands that support fish, wildlife and public uses; (2) the location of the Pebble deposit at a divide between Upper Talarik Creek, which flows directly to Iliamna Lake (a significant rearing lake for sockeye salmon) in the Kvichak drainage, and the North and South Forks of the Koktuli River in the Nushagak drainage; (3) the large scale of the deposit and a Pebble mine;¹² (4) the acid generating potential of the host rock, voids, wastes, and dust; (5) the necessity of dewatering a vast area, likely to great depths; (6) the fact that no comparable mine apparently exists in terms of risk to commercial salmon fisheries, subsistence, recreation, and

pollution from abandoned mines in Europe," submitted at the Workshop on Mine and Quarry Waste – the Burden from the Past, held by the Dir. Gen. for the Envir. and Jt. Research Cen. for EU and EC nations, at Orta, Italy, 2002. The paper indicates that voids can vastly exceed waste depositories as sources of water pollution (see Table 1 therein, and discussion); see http://viso.jrc.ec.europa.eu/pecomines_ext/events/workshop/ProceedingsOrtaWorkshop.pdf.

¹⁰ We understand that NDM is the American subsidiary of Northern Dynasty Minerals Ltd., of which an affiliate is apparently a partner in PLP. See announcement of PLP partnership at http://www.northerndynastyminerals.com/ndm/NewsReleases.asp?ReportID=336841&_Type=News-Releases&_Title=Northern-Dynasty-Anglo-American-Establish-5050-Partnership-To-Advance-Pebbl...

¹¹ The applications comprise over 2000 pages. The attached appendix lists the website posting them. A law journal article (listed in the appendix) summarizes these applications.

¹² The financial commitment necessary to develop Pebble mine is huge, for various reasons such as the cost of power, and is inconceivable as a small mine.

abundance of wetlands and water proximate to ground level; (7) the apparent existence of other metallic sulfide deposits in the Pebble area and perhaps at Kemuk Mountain; (8) the likelihood that discharge of dredge and fill material, including mine wastes from a Pebble mine or similar mines, and dewatering, will adversely affect vast amounts of wetlands and waters; (9) the facts that the behavior of metallic sulfide mines is difficult to predict; that the record of preventing water pollution from them is not good; that acid mine drainage is a major risk; and that this risk is perhaps increased by abundance of surface and groundwater;¹³ (10) the facts that Pebble implies a huge quantity of potential mine waste (perhaps ten billion tons), uncertainty over how wastes might be handled, and that pipelines could move wastes to various discharge sites; (11) the immensity of the task of containing contaminants forever, including acid drainage; (12) the magnitude of potential direct, cumulative, and secondary effects on commercial fishing,¹⁴ subsistence and recreation, including in combination with increased population, access and competition for fish and game;¹⁵ (13) the ecological functions that salmon perform throughout their life cycle in marine and fresh waters; (14) the fact that juvenile salmon have been shown to be present in many waters within the Pebble claims where salmon had been undocumented previously for purposes of the state's Anadromous Fish Act; (15) the likelihood that a transportation route to Cook Inlet could implicate significant beach spawning of sockeye salmon in the north-eastern portion of Iliamna Lake; (16) the likelihood that a Pebble mine, its transportation corridor, and nearby settlement areas could adversely affect areas previously identified as by the State as (a) "essential" moose wintering areas, or "important" spring-, summer- and fall moose habitats, (b) "essential" caribou calving grounds, and (c) "essential" brown bear concentration streams; and (17) the vast amount of compensatory mitigation likely to be required and its questionable sufficiency.¹⁶ All these reasons justify a broad initial scope for a 404(c) process.

2. The magnitude of the issues and PLP's recent decision to terminate its Technical Working Groups justify an EPA decision to commence a 404(c) process at this time.

Moreover, the process should be commenced at this time. PLP recently terminated its Technical Working Groups (TWGs), approximately ten in number. They were composed of federal and state officials who, in an advisory capacity, had sought for several years to review and comment upon PLP's baseline study plans before PLP implemented them, and to review results, in order to advise PLP as it progressed toward an environmental impact statement (EIS) under the National Environmental Policy Act (NEPA). During the life of these working groups, information suggests that PLP was not as forthcoming as agency officials had hoped.

¹³ The State of Wisconsin has imposed a moratorium on permits for metallic sulfide mining, by requiring that before permits may issue, a proponent demonstrate one such mine in North America that has operated for ten years without polluting water, and one that has closed for ten years without polluting water. Thus, water pollution at Pebble appears likely.

¹⁴ A listing under the Endangered Species Act of a stock of salmon bound for the Kvichak or Nushagak drainages could affect the commercial fisheries in Bristol Bay.

¹⁵ See accompanying letter from counsel addressing likely effects on subsistence and recreational use from a potential Pebble mine.

¹⁶ For such reasons, much of this issue is characterized as short-term private interests in mining a nonrenewable resource versus long-term public/quasi-public interests in commercial, subsistence and recreational uses of fish, wildlife, waters and other renewable resources on public lands.

PLP's decision to end the TWGs strongly suggests that federal, state and tribal entities may be more likely to face greater informational deficits as they head into an EIS process, than might have been otherwise. Commencing a 404(c) process may help to remedy some of these information deficits before PLP finalizes its design, submits applications, and triggers an EIS.

Because of the magnitude of the issues, all parties (*e.g.*, PLP, federal, state, local and tribal entities, and the public) will benefit from EPA initiating a 404(c) process *before*, and not *after*, PLP submits its anticipated permit applications for a proposed Pebble mine, and *before* an EIS process commences.¹⁷ Moreover, because the potential to invoke a 404(c) process exists, postponing an initial decision to do so until applications are filed serves no affected party.¹⁸

3. EPA should commence a 404(c) public process in part because infirmities in the State's 2005 Bristol Bay Area Plan render waiting for the EIS process impractical.

Our request asks EPA to commence a 404(c) process before an EIS process has begun or run its course. Ordinarily, the analysis of alternatives required by NEPA should provide the information for the evaluation of alternatives under the 404(b)(1) Guidelines. 40 CFR 230.10(a)(4). However, in this instance, infirmities in the State's 2005 Bristol Bay Area Plan (2005 BBAP) render waiting for the NEPA/EIS process impractical.

We are enclosing copies of two other letters, which address the methods that ADNR employed in preparing its 2005 BBAP.¹⁹ It classifies state land, including at Pebble, its access corridor, and nearby settlement lands, into land classification categories and establishes guidelines and statements of intent. The methods used by the 2005 BBAP to do so include:

1. using primarily *marine* criteria, such as whether land is a walrus haulout, to determine whether *inland uplands*, such as those at Pebble, qualify for classification as fish and wildlife habitat (*see* 2005 BBAP, p. 2-9; a link to the 2005 BBAP is in the Appendix);
2. *omission of salmon in non-navigable waters* from the process of designating and classifying land as habitat (*see* 2005 BBAP, pp. 3-323 – 3-330);
3. *omission of moose and caribou* from that process (*see* 2005 BBAP, p. 2-9);
4. lack of a *land use classification category for subsistence hunting and fishing*, while ADNR has a public recreation land category that includes *sport hunting and fishing* (*see* ADNR's land planning regulations at 11 AAC 55.050 – .230 and 2005 BBAP); and then

¹⁷ PLP recently postponed its applications from 2010 until 2011, and may delay further.

¹⁸ Furthermore, a 404(c) process appears to be less costly than an EIS. Facing issues proactively could reduce all costs of agencies, PLP and the public prior to and during an EIS.

¹⁹ One letter, from our counsel to Col. Koenig, of the U. S. Army Corps of Engineers, Alaska District, and Mr. John Pavitt of EPA's Alaska Operations Office, seeks discussions of whether the tribes may be cooperating agencies on any EIS prepared for a proposed Pebble mine. The other, from our six tribes and the Alaska Independent Fishermen's Marketing Association (AIFMA), urges State Rep. Edgmon, while the Alaska legislature is out of session, to facilitate public discussions in the region of whether the legislature should consider legislation to establish a state fish and game refuge or critical habitat area that would include most state land in the Kvichak and Nushagak drainages, including land at the Pebble site.

5. defining recreation as *excluding* sport hunting and fishing for purposes of preparing the 2005 BBAP (see 2005 BBAP, p. A-11).²⁰

Based on these and other methods, the 2005 BBAP reclassifies land at Pebble as solely as mineral land, extinguishes habitat classifications of the prior 1984 BBAP on nearly all wetlands, including those that are hydrologically important to fish habitat (a concern in the 1984 BBAP), and almost totally omits references to wetlands in planning units for state land in the Nushagak and Kvichak drainages. As explained in the letter to the Corps of Engineers, Alaska District, and the EPA Alaska Operations Office, as long as the 2005 BBAP is in effect, every alternative in an EIS that would permit a Pebble mine will rest upon such mineral classifications and the methods ADNR used in adopting land use classifications, guidelines and statements of intent.

NEPA regulations provide that an EIS must analyze and address any applicable state land use plan.²¹ This requirement, in effect, is likely to put federal agencies in a difficult position of explaining, in public and on the record, why they would evaluate federal permit applications to develop state land, including wetlands, where the State's land classifications, guidelines and statements of intent rest upon (1) using primarily marine criteria to determine whether Pebble is habitat, (2) excluding salmon in non-navigable waters such as Upper Talarik Creek, (3) excluding moose and caribou, (4) having no land use classification category for subsistence hunting and fishing where there is one for sport hunting and fishing, and (5) then defining recreation as excluding sport hunting and fishing. Regardless of whether such methods are lawful or not (and we believe the present ones are *not*), to ignore them would be facially contrary to 40 CFR § 1506.2(d), and would beg the question of what the classifications, guidelines and statements of intent should be applicable, in the absence of the 2005 BBAP and its methods. No one can answer that question.

Because no one can do so, we doubt that federal agencies can engage in legally required, *reasoned* decision-making necessary to approve federal permits so long as the 2005 BBAP is in place.²² This leaves little room for any decision other than to commence a 404(c) *before*, and not *after*, PLP submits its permit applications, and *before* an EIS process commences. To do otherwise will compel EPA, the Corps and other agencies, in the context of NEPA and an EIS

²⁰ In *Nondalton Tribal Council, et al., v. ADNR*, 3AN-09-46 CI (3rd Jud. Dist., Ak.), these six tribes, AIFMA and Trout Unlimited, Inc. allege that ADNR's 2005 BBAP uses many unlawful methods to classify state land, and establish guidelines and management intent, including where Pebble and its facilities might be located. The litigation is undecided. See also, enclosed letter to Rep. Edgmon, and briefing paper (Pt. I) regarding 2005 BBAP. With respect to ADNR's lack of a subsistence category, ADNR claims that its habitat classifications accommodate subsistence, even though the 2005 BBAP reduces the upland acreage classified or co-classified as habitat by 90 percent, from 12 million acres to 768,000 acres, when compared to the former 1984 BBAP.

²¹ 40 CFR § 1506.2(d) provides that to integrate an EIS into state planning processes, an EIS shall discuss any inconsistency of a proposed action with any approved state land use plan; and where inconsistency exists, the EIS should describe the extent to which the federal agency would reconcile its proposed action with the plan. In other words, an EIS on any potential Pebble mine will have to consider and analyze the applicable state land use plan.

²² The 2005 BBAP appears fatal, from a legal standpoint, as a basis for an EIS that would support issuing permits for Pebble. See Briefing Paper, Pt. II, attached to letter to Rep. Edgmon.

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

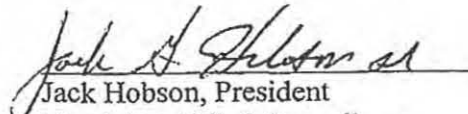
CONCLUSION

For three reasons, this situation seems straightforward. First, the importance of the Kvichak and Nushagak river drainages and the magnitude of the issues raised by a potential Pebble mine warrant an EPA decision now, to commence a 404(c) public process. Second, all of the concerns raised to date, coupled with the recent decision of the Pebble Limited Partnership to terminate its Technical Working Groups, justify commencing a 404(c) process at this time. Third, the infirmities of ADNR's 2005 Bristol Bay Area Plan provide additional reason to commence a 404(c) process at this time. These infirmities leave little room for any decision other than to do so *before*, and not *after*, PLP submits its permit applications, and *before* an EIS process commences, because during an EIS process no governmental agency could lawfully defend or ignore the 2005 Bristol Bay Area Plan.

Thank you for your attention to this matter. We look forward to hearing from you. We hope to work in a public process under Section 404(c) of the Clean Water Act with the U. S. Environmental Protection Agency.

Sincerely yours,

Date: 5/2/2010


Jack Hobson, President
Nondalton Tribal Council
P.O. Box 49
Nondalton, Alaska 99640

Enclosures (2)

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

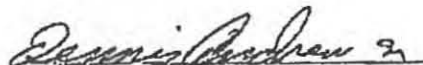
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Sincerely yours.

Date: 5/04/10



Dennis Andrew, President
New Stuyahok Traditional Council
P.O. Box 49
New Stuyahok, Alaska 99636

Enclosures (2)

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Sincerely yours,

Date: 5-10-10

for Angelina Chukwak
Sergie Chukwak, President
Levelock Village Council
P.O. Box 70
Levelock, Alaska 99625

Vice
President

Enclosures (2)

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

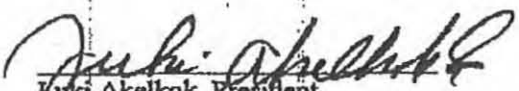
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Sincerely yours,

Date: 5/11/10


Luki Akelkok, President
Ekwok Village Council
P.O. Box 70
Ekwok, Alaska 99580

Enclosures (2)

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

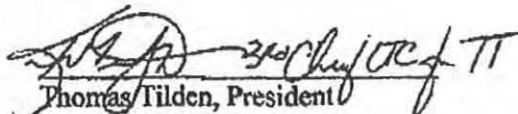
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Thank you for your attention to this matter. We look forward to hearing from you. We hope to work in a public process under Section 404(c) of the Clean Water Act with the U. S. Environmental Protection Agency.

Sincerely yours,

Date: 5/12/2010


Thomas Tilden, President
Curyung Tribal Council
P.O. Box 216
531 D Street
Dillingham, Alaska 99576

Enclosures (2)

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

CONCLUSION

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Thank you for your attention to this matter. We look forward to hearing from you. We hope to work in a public process under Section 404(c) of the Clean Water Act with the U. S. Environmental Protection Agency.

Sincerely yours,

Date: 5-13-2010

Herman F. Nelson, Sr.
Herman Nelson, Sr., President
Koliganek Village Council
P.O. Box 5057
Koliganek, Alaska 99576

Enclosures (2)

process, either to defend the State's methods used in the 2005 BBAP (which would be untenable), or to ignore them, which would be contrary to 40 CFR § 1506.2(d).

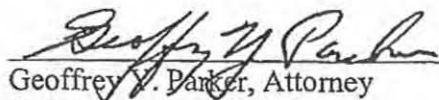
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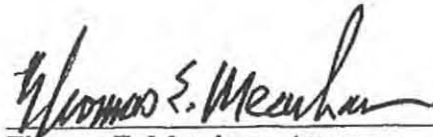
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Sincerely yours,

Dated: 5-20-10



Geoffrey V. Parker, Attorney
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Co-Counsel to Signatory Tribes



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tmeacham@gci.net
Co-Counsel to Signatory Tribes

Enclosures (2)

APPENDIX

An Abstracted List of Potentially Relevant Information

(This list assumes that EPA has access to its own agency documents, and therefore this list does not include such documents.)

Alaska Department of Fish and Game, *The Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated *Atlas*, available at <http://www.sf.adfg.state.ak.us/SARR/AWC/index.cfm/FA/main.overview> (last visited December 30, 2009).

The Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes ("Anadromous Waters Catalogue") and its associated *Atlas* of maps currently contain about 16,000 streams, rivers or lakes in Alaska which have been specified as being important for the spawning, rearing or migration of anadromous fish. Based upon thorough surveys of a few drainages, it is believed that this number represents less than 50% of the streams, rivers and lakes actually used by anadromous species. It is estimated that at least an additional 20,000 or more anadromous water bodies have not been identified or specified under AS 16.05.871(a), a state permitting statute.

In recent years, work for the Nature Conservancy has added about a hundred miles of previously undocumented anadromous waters in the vicinity of Pebble.

Alaska Department of Natural Resources, Alaska Department of Fish and Game, Alaska Department Environmental Conservation, *Bristol Bay Area Plan for State Lands* (1984), available at <http://www.dnr.alaska.gov/mlw/planning/areaplans/bristol/index.htm> (last visited December 30, 2009).

Area plans generally have an administrative life of about twenty years, are prepared by the Alaska Department of Natural Resources, and apply to state-owned and state-selected lands. By state statute, area plans must (1) be based on an inventory of uses and resources; (2) designate primary uses of units of state land; these designations convert to classifications of the land; and (3) adopt general and unit specific guidelines and statements of intent to guide management decisions. The Bristol Bay Area Plan of 1984, prepared and adopted by ADNDR, ADF&G, and ADEC, contains a set of five habitat maps, and three maps of subsistence use areas for 31 communities and villages in the Bristol Bay drainages. The 1984 Plan remains useful because the later-prepared 2005 Bristol Bay Area Plan lacks comparable maps and comparable cartographic identification of essential and important habitats. The maps from the 1984 Plan are not posted on ADNDR's web pages, but may be obtained separately either from ADNDR or from counsel to the tribes. BLM's Resource Management Plan has identical or similar maps of subsistence use areas.

Alaska Department of Natural Resources, *Bristol Bay Area Plan for State Lands* (2005), available at <http://www.dnr.alaska.gov/mlw/planning/areaplans/bristol/index.htm> (last visited December 30, 2009).

See above abstract of the 1984 Bristol Bay Area Plan. The Bristol Bay Area Plan of 2005, prepared and adopted by ADNDR, is currently the subject of litigation in *Nondalton Tribal Council, et al., v. State, Department of Natural Resources*, 3DI-09-046 CI, wherein these six Tribes, AIFMA Cooperative (a cooperative association of commercial fishers), and Trout Unlimited seek to have the 2005 Plan declared unlawful.

Directorate General for the Environment and the Joint Research Centre, Workshop on Mine and Quarry Waste – the Burden from the Past (http://viso.jrc.ec.europa.eu/pecomines_ext/events/workshop/ProceedingsOrtaWorkshop.pdf, last visited Jan. 25, 2010)

This is a collection of papers submitted at the conference organized by the for European Union and European Community nations, held at Orta, Italy, in 2002. Many seem useful. In particular, the paper by P. Younger, “*Don't forget the voids: aquatic pollution from abandoned mines in Europe*,” indicates that mine voids can vastly exceed mine waste depositories as sources of water pollution (see Table 1 therein, and discussion).

Duffield et al., *Economics of Wild Salmon Watersheds: Bristol Bay, Alaska* 15 at http://www.housemajority.org/coms/hfsh/trout_unlimited_report.pdf (Feb. 2007) (last visited Jan. 6, 2010).

This report provides estimates of the economic values associated with the sustainable use of wild salmon ecosystem resources, primarily fisheries and wildlife, of the major watersheds of the Bristol Bay, Alaska region. Both regional economic significance and social benefit-cost accounting frameworks are utilized. This study reviews and summarizes existing economic research on the key economic sectors (e.g., commercial fishery, subsistence fishery, recreation, and governmental expenditure and values) in this area. The study also reports recent findings based on original survey data on expenditures, net benefits, attitudes, and motivations of recreational anglers.

William J. Hauser, d/b/a “Fish Talk, Consulting,” *Potential Impacts of the Proposed Pebble Mine on Fish Habitat and Fishery Resources of Bristol Bay* (2007).

This paper appears to have useful information about salmon production proximate to the proposed road/access route to Pebble, including the hydrological characteristics of areas used by sockeye salmon for beach spawning in northwestern Iliamna Lake, which is immediately down-gradient from the proposed road/access route.

Northern Dynasty Mines, Inc. (NDM), Pebble Project: Applications for surface and ground water rights, and initial applications for certificates of approval to construct dams (2006), available at <http://www.dnr.alaska.gov/mlw/mining/largemine/pebble/waterapp.htm> (last visited December 30, 2009).

Shortly after NDM filed these applications, NDM requested DNR to suspend processing them, and DNR agreed to do so. They contain information on the Pebble West portion of the ore body, proposed routes for road access, pipelines and power, and information relevant to the types of facilities envisioned and the magnitude of the project.

Office of the President, Executive Order 12898 (Feb. 11, 1994) re: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, available at http://www.epa.gov/compliance/resources/policies/ej/exec_order_12898.pdf (last visited December 30, 2009).

Section 4-4 on subsistence consumption of fish and wildlife may bear upon EPA decision-making under Section 404(c).

Office of the President, Executive Order 13175 (Nov. 6, 2000) re: Consultation and Coordination with Indian Tribal Governments, available at <http://www.epa.gov/fedreg/eo/eo13175.htm> (last visited December 30, 2009). This executive order applies to federal-tribal relationships.

Office of the President, Memorandum for the Heads of Executive Departments and Agencies, re: Tribal Consultation (Nov. 5, 2009), available at <http://www.gpoaccess.gov/presdocs/2009/DCPD-200900887.pdf> (last visited December 30, 2009). This presidential memorandum supplements Executive Order 13175.

Parker, et al., "*Pebble Mine: Testing the Limits of Alaska's Large Mine Permitting Process*," Alaska Law Review, Vol. 25:1 (June 2008), available at www.law.duke.edu/shell/cite.pl?25+Alaska+L.+Rev.+1+pdf (last visited December 30, 2009).

This law journal article, by lawyers and biologists, examines the adequacy of the state's large mine permitting process and finds it insufficient to deal with large metallic sulfide mines such as a Pebble mine.²³ The article contains over 170 footnotes, many with links to sources. Many of the non-legal sources may be useful to the Regional Administrator of EPA in making the initial determination of whether there is "reason to believe" that metallic sulfide mining in the area of Pebble "could result" in "unacceptable adverse effect," and therefore whether to commence a 404(c) process. The citations cover: (1) academic and professional literature on impacts that dissolved copper may have on salmonids and other fish, including a discussion of additive and synergistic effects; (2) academic and professional literature on the role that genetic diversity plays in overall productivity of salmon stocks; (3) EPA documents on acid mine drainage; (4)

²³ The authors have represented or assisted clients or entities opposed to or concerned about a Pebble mine, and continue to do so.

documents from Pebble Limited Partnership or Northern Dynasty on the nature of the ore body, (5) documents from Northern Dynasty submitted as part of its 2006 applications for water rights and approval of dams, (6) a recent study by Dr. John Duffield (University of Montana) of the economic values and job production associated with wild salmon producing watersheds of the Bristol Bay drainages, and (7) other related materials. Some of the links to PLP and NDM materials are no longer active or have been replaced by more up-to-date sources on PLP's webpages (see below).

Pebble Limited Partnership, various websites at <http://www.pebblepartnership.com/>.

State of Alaska, Alaska Statutes, Title 38, Chap. 38.04 (land use planning and classification) at <http://www.legis.state.ak.us/basis/folio.asp>, and ADNR regulations (land use planning and classification), 11 AAC 55.010 -- .280 at [http://www.legis.state.ak.us/basis/folioproxy.asp?url=http://www.jnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=\[JUMP:'Title11Chap55'\]/doc/{@1}?firsthit](http://www.legis.state.ak.us/basis/folioproxy.asp?url=http://www.jnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=[JUMP:'Title11Chap55']/doc/{@1}?firsthit)

Trasky & Associates, Analysis of the Potential Impacts of Copper Sulfide Mining on the Salmon Resources of the Nushagak and Kvichak Watersheds (2007).

This two-volume report may, or may not, be public at the present time. It was prepared for the Nature Conservancy in Alaska. Mr. Trasky is a retired Regional Supervisor of the Alaska Department of Fish and Game, Habitat Division, Region III, which includes the Bristol Bay drainages.

US Department of the Interior, Bureau of Land Management, Subsistence Use Area Maps, Proposed Resource Management Plan (RMP) for BLM lands in the Bristol Bay drainages, and Final Environmental Impact Statement on the proposed RMP (December 2007), available at http://www.blm.gov/ak/st/en/prog/planning/bay_rmp_eis_home_page/bay_feis_documents.html (last visited Jan. 7, 2010).

The final EIS on BLM's proposed Resource Management Plan contains maps of subsistence use areas of many of the villages and communities in the Bristol Bay drainages. The internet links to the maps of subsistence use areas that appear to include significant amounts of the Kvichak and Nushagak drainages are:

Aleknagik:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.39744.File.dat/Map3-51_Aleknagik.pdf (last visited Jan. 7, 2010)

Dillingham:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.16048.File.dat/Map3-52_Dillingham.pdf (last visited Jan. 7, 2010)

Ekwok:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.76842.File.dat/Map3-53_Ekwok.pdf (last visited Jan. 7, 2010)

Igiugig

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.33049.File.dat/Map3-54_Igiugig.pdf (last visited Jan. 7, 2010)

Iliamna:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.78607.File.dat/Map3-55_Iliamna.pdf (last visited Jan. 7, 2010)

Kokhanok:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.64140.File.dat/Map3-57_Kokhanok.pdf (last visited Jan. 7, 2010)

Levelock:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.58501.File.dat/Map3-59_Levelock.pdf (last visited Jan. 7, 2010)

Koliganek:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.56441.File.dat/Map3-58_Koliganek.pdf (last visited Jan. 7, 2010)

Manokotak:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.65865.File.dat/Map3-60_Manokotak.pdf (last visited Jan. 7, 2010)

Nondalton:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.36771.File.dat/Map3-62_Nondalton.pdf (last visited Jan. 7, 2010)

Pedro Bay:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.89854.File.dat/Map3-63_PedroBay.pdf (last visited Jan. 7, 2010)

Platinum:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.4004.File.dat/Map3-64_Platinum.pdf (last visited Jan. 7, 2010)

Portage Creek:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.78039.File.dat/Map3-65_PortageCreek.pdf (last visited Jan. 7, 2010)

Port Alsworth:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.10100.File.dat/Map3-66_PortAlsworth.pdf (last visited Jan. 7, 2010)

New Stuyahok:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.90357.File.dat/Map3-68_NewStuyahok.pdf (last visited Jan. 7, 2010)

Togiak:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.42891.File.dat/Map3-69_Togiak.pdf (last visited Jan. 7, 2010)

Twin Hills:

http://www.blm.gov/pgdata/etc/medialib/blm/ak/afo/bay_rmp_eis_final.Par.66104.File.dat/Map3-70_TwinHills.pdf (last visited Jan. 7, 2010)

END

REEVES AMODIO LLC
ATTORNEYS AT LAW



August 31, 2010

VIA ELECTRONIC MAIL & FedEx

Dennis J. McLerran, Regional Administrator
EPA, Region X
Regional Administrator's Office, RA-140
1200 6th Avenue, Suite 900
Seattle, Washington 98101

RE: Timing and Role of 404(c) Review

Dear Mr. McLerran:

You have received two requests asking EPA to commence an evaluation under subsection 404(c) of the Clean Water Act. They pertain to the Kvichak and Nushagak River drainages of southwest Alaska. Requestors seek to prohibit or restrict discharge of dredge spoils or fill from any "metallic sulfide mining" into any wetland or waters of those drainages. The request from six tribes (May 2, 2010) calls for evaluation of a wide geographic area, not a specified locale. The request is directed to an entire industrial category, not a particular discharge of a particular material. The request from Bristol Bay Native Corporation (August 12, 2010) is equally unrefined, initially speaking of a "carefully tailored prohibition" but never offering any made-to-measure alterations which might achieve a fitting balance.

On behalf of Pebble Limited Partnership (PLP) this firm offers the view that pursuing such amorphous 404(c) evaluations, or commencing any 404(c) review at this time, would be inconsistent with the traditional use of this statutory authority; would unreasonably appropriate decision-making customarily vested in NEPA reviewers and permitting processors; and would not be conducive to the end-goal of a 404(c) process, which is for the Administrator to determine whether a proposed discharge of specified material into a defined area will have an unacceptable adverse effect on certain enumerated resources after taking into account proposed corrective actions. For these reasons, PLP respectfully suggests that the two requests be tabled until NEPA and permit processes have run their course. At that time EPA can better ascertain whether there exists any need for a truly "tailored" restriction on any specifically defined disposal site. This suggestion is supported by the following analysis.

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I. BRIEF RESTATEMENT OF THE AUTHORITY

Under Clean Water Act section 404(b), the Army Corps of Engineers may specify in dredge or fill permits those areas where dredge spoils or fill may be discharged. These disposal sites are selected through application of the Army's public interest test and EPA's 404(b)(1) guidelines. 33 U.S.C. §1344(b); 33 C.F.R. §323.6, §325.2(a)(6); 40 C.F.R. Part 230. The Administrator of EPA is authorized to deny, restrict or prohibit the specification of a disposal site if, after notice and opportunity for public hearing, he or she determines that the discharge of such materials into such area will have unacceptable adverse effects on municipal water supplies, shellfish beds, fishery areas, wildlife or recreation. 33 U.S.C. §1344(c). A process to be followed by the Administrator is set-out in federal regulations. 40 C.F.R. Part 231.

II. TRADITIONAL USE OF THIS AUTHORITY

In 1979, when promulgating regulations to implement 404(c), EPA opined that this authority might be exercised at any time. The process may be invoked before a permit is applied for, while an application is pending, or after a permit has been issued. 44 Fed.Reg. 58076 (Oct. 9, 1979).¹ However, as far back as 1979 EPA felt confident that most environmental problems would be prevented through the routine operation of the permit program. *Id.* at 58,079. And, indeed, 404(c) has never been used preemptively.

The first recorded exercise was a restriction on the placement of solid waste in certain areas of the North Miami Landfill. In that case a permit had issued five years earlier, substantial deposition of garbage had already taken place, and the impacts had been quantified in actual test results. EPA stated that it was, "in effect, ... vetoing a permit [already] issued by the Corps of Engineers." 46 Fed.Reg. 10,203 (Feb. 2, 1981).

Subsequently, EPA has tried to resolve specification problems before permit issuance. This policy is based on both a concern for the plight of the applicant and a desire to protect the site before any adverse impacts occur. Indeed, Army Corps regulations now allow the permit process to continue but demand that the final permit be withheld pending resolution of any 404(c) intervention. 33 C.F.R. §323.6(b). There is no risk in waiting. Consequently, EPA has never initiated the 404(c) process before an applicant submitted his or her permit application and substantial reviews had taken place under routine permit programs.

For instance, the most recent exercise of 404(c) involves Spruce No. 1 Mine in West Virginia, a case relied upon by the six tribes in their request that Region X be "proactive." Yet EPA did not commence that 404(c) process at Spruce Mine until after the agency had

¹ Preamble to 40 C.F.R. Part 231, the 404(c) procedural regulations.

commented repeatedly on a Draft Environmental Impact Statement; had offered its assistance to the Army Corps and the permittee following a Final Environmental Impact Statement; had presented localized and specified concerns during development of a Programmatic Environmental Impact Statement; and had exercised its other authorities through both the NPDES permit process and the Dredge and Fill Permit process. 75 *Fed.Reg.* 16,791 at "Project History" (April 2, 2010).

The "proactive" approach proposed by Bristol Bay Native Corporation and the six tribes is not consistent with precedent.

III. APPROPRIATE AND MEANINGFUL DECISIONMAKING

EPA's traditional approach is well founded on the words used by Congress in 404(c):

(c) The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any *defined area* as a disposal site, and he is authorized to *deny or restrict the use* of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of *such materials into such area* will have an unacceptable adverse effect on *municipal water supplies, shellfish beds and fishery areas* (including spawning and breeding areas), *wildlife, or recreational areas*. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection. (emphasis supplied)

To make any reasoned determination, there must be a "defined area" to evaluate. Most 404(c) determinations have been fairly modest in their areal extent, focused upon specific segments of waterways or particular units within a larger site. A typical example was Atlantic Richfield's (ARCO) proposal to place 112,000 cubic yards of gravel on 21.5 acres of tundra to construct a production well pad and an east-west access road near the Kuparuk River on Alaska's North Slope. Region X issued a proposed 404(c) determination for the purpose of staying activity under an already issued permit and solicited data on whether the specified discharge in the specified location would or would not cause unacceptable adverse effects on wildlife. 56 *Fed.Reg.* 22,161 (May 14, 1991). As a result of several meetings between Region 10 and ARCO, the company identified an alternative pad location and road alignment. ARCO applied for and received a modification of their Corps permit to authorize the new configuration. EPA then withdrew its proposed 404(c) determination because these modifications satisfied the Region that wildlife in the area would not be unacceptably affected. 56 *Fed.Reg.* 58,247 (Nov. 18, 1991). In contrast, the pending requests generally address two watersheds. The Kvichak River drains more than 8,000 square miles while the Nushagak River watershed encompasses

more than 12,000 additional square miles. This cannot fairly be considered a "defined area" as sought by Congress.

Before denying or restricting "the use", EPA has to know what that use will be. At a minimum the agency must have a project description on which to base "findings." So, for example, in the largest areal exercise of 404(c) to date -- a 630,000 acre Yazoo Backwater Civil Works Project -- EPA was able to focus upon particular subunits and provide particularized comments on various alternative activities because they had been identified in an Environmental Impact Statement. 73 *Fed.Reg.* 54,398 (Sept. 19, 2008). Here, the requests reference "a potential Pebble mine," which is a prospective undertaking not yet defined by any current project description.

EPA is to determine the effects of discharging "such materials into such area." The first step in this analysis is for a Regional Administrator to determine what "could result." 40 *C.F.R.* §231.1(a). The last step is to set forth written findings on the adverse effects those materials "will have." §404(c). Both steps require a particularized knowledge about the materials to be discharged and the methods of disposal into the specified site. Here, the requestors make a bald allegation that PLP's undertaking will be a "metallic sulfide mine" with "acid-generating waste rock." The term "metallic sulfide mine" is not a recognized term of art. While waste rock from a mine in the Kvichak and Nushagak River drainages may have acid-generating potential, whether it does generate will pivot on the methods and manner of discharging such material into such area. Any hypotheticals evaluated at this time would be naught but speculation.

Finally, Congress gave 404(c) a definite focus on particular types of resources. EPA looks for the effect on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. The broader inquiries called for under routine permit programs ought go first. As EPA noted when it first outlined this process:

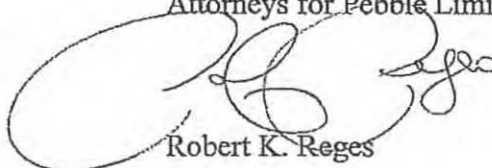
Section 404(c) authority should not be confused with the Administrator's obligation under section 309 of the Clean Air Act to comment on environmental impact statements (EIS) prepared for section 404 projects and to refer such projects to the Council on Environmental Quality when he finds them to be environmentally unsatisfactory. Comments, objections to Corps permits, and CEQ referrals may be based on any kind of environmental impact. On the other hand, 404(c) authority may be exercised only where there is an unacceptable adverse effect on municipal water supplies, shellfish, fisheries, wildlife or recreation. 44 *Fed.Reg.* at 58076.

In sum, subsections 404(b) and (c) involve "specification." The goal of 404(c) is to identify those impacts that are "unacceptable" because they are "likely to result in significant degradation." §231.2(e). EPA has the burden of proving, with written findings of fact, its "basis

for any determination of unacceptable adverse impacts." 44 Fed.Reg. at 58080. The level of certainty is that such materials "will have" these impacts when discharged into the "defined area." Such conclusions require a level of knowledge typically developed during NEPA review and routine permit processing. Accordingly, 404(c) has become known as EPA's "veto" authority, not EPA's preliminary authority. Reasoned exercise of this extraordinary, discretionary program² strongly suggests that it be held in abeyance unless and until a measure of last resort is required to correct particularized problems in specified areas.

Sincerely,

REEVES AMODIO LLC
Attorneys for Pebble Limited Partnership



Robert K. Reges



for

Susan E. Reeves

:ser
cc: Client

² "By statute, the Administrator is authorized rather than mandated to overrule the Corps. 33 U.S.C. §1344(c). Because this power is discretionary, the citizen suit provision of the Clean Water Act does not apply." *Preserve Endangered Area of Cobb's History, Inc. v. U.S. Army Corps of Engineers*, 87 F.3d 1242, 1249 (C.A. 11[Ga.] 1996).

But see, *South Carolina Coastal Conservation League v. U. S. Army Corps of Engineers*, 2008 WL 4280376, *5-*8 (D.S.C. 2008)(citing cases in accord with *Cobb's History* but ultimately concluding that it was bound by a 4th Circuit decision it deemed to have recognized a "duty" of "oversight imposed by Section 1344(c).").

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Governor Sean Parnell
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September 21, 2010

The Honorable Lisa P. Jackson
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Jackson,

I am writing regarding the petition your agency received from six federally recognized tribes to initiate the Clean Water Act Section 404(c) process to prohibit or restrict discharges of dredged or fill materials, including mine tailings, within the watersheds that would include the Pebble Mine. I ask that you decline to invoke Section 404(c) at this time for reasons I will explain.

Let me begin by assuring you that we share a goal of protecting the waters, wetlands, fish, wildlife, fisheries, subsistence, and public uses of the Bristol Bay watershed. This area is home to bountiful natural resources and beauty including vast runs of sockeye and other pacific salmon that support immensely valuable commercial, subsistence, and sport fisheries. As Governor, I will do everything in my power to see that any new development fully protects the resource values of the area, and does not come at the expense of what we have today.

While I understand and share the petitioners' desire to protect the resources in Bristol Bay, I disagree that invoking the 404(c) process at this time would contribute to that goal. At best, it would waste agency and public time and resources. At worst, it would work against our mutual aims. I offer the following thoughts for your consideration.

A premature 404(c) determination effectively prohibiting mining in the area would impinge on State land use planning authority. Much of the land in the Bristol Bay area belongs to the State of Alaska. We have completed several iterations of land planning for these lands including exhaustive public outreach and deliberations to find a balance between competing interests and potential land uses. While we recognize that initiating the 404(c) process does not necessarily lead to a particular outcome, even the possibility that the process would conclude with a prohibition against mining over vast expanses of State lands causes us great concern. Federal preemption of traditional State land use authority is an alarming prospect to say the least. To start with, it would undo years of planning effort, but the effects do not stop there. There has been tremendous investment in the area based on the potential for mineral development. We cannot fathom the liability and legal challenges that could accompany

an unprecedented, after-the-fact determination by the federal government that mineral development from these State lands is no longer viable.

Clean Water Act Section 404(c) offers no protections beyond those included in the Clean Water Act Section 404(b)(1) permit process. The regulations that implement the two parts of the Clean Water Act include virtually the same prohibitions, and call for virtually the same analyses and findings. Where Section 404(c) rules prohibit "unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas," the Section 404(b)(1) rules prohibit "significantly adverse effects . . . on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites" as well as "recreational" and "aesthetic" "values." The prohibitions and standards are very similar. The difference, of course, is that you are being asked to invoke Section 404(c) now ahead of any environmental planning and permitting processes, whereas the Section 404(b)(1) process would come later as part of the permit process for Pebble or another mine. The fact remains that Section 404(c) does not offer any more protection for area resources than does Section 404(b).

The record is currently insufficient to support the findings demanded by the 404(c) process, and could not begin to approach the record that will exist upon completion of the National Environmental Policy Act (NEPA) and permit processes that would be required for new mine development. As already mentioned, the 404(c) process hinges on the Environmental Protection Agency (EPA) deciding whether there will be "unacceptable adverse impacts" on "municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." The environmental planning and permitting process for the Pebble Mine alone will necessarily produce volumes of studies and information that would allow for fully informed decisions about potential impacts from mining in the area.

Not enough is known about mine plans in the area to gauge impacts as required by the 404(c) process. State and federal agencies have yet to receive designs or permit applications for the Pebble Project, or any other major mine in the Bristol Bay area. Without a specific proposal, EPA cannot evaluate the potential impacts or risks from the project. We do not know where facilities would be located, which wetlands might be impacted, or what the characteristics of the dredged or fill material would be.

A meaningful 404(c) process cannot be concluded in the time frame envisioned by the regulations. While the 404(c) process can be initiated before receipt of a permit application, the normal course would begin with a notice of a proposed determination by the Regional Administrator and conclude with a final determination by the Administrator approximately five months later. We recognize that time frames can be extended for good cause, but doubt that anyone envisioned extending the process over the multiple years it would take to collect information, complete the impact analyses, and develop a sound record on a par with what we could expect from the NEPA and permit processes for a new mine development proposal.

The 404(c) process would short change public participation. The public notice and opportunity for comment and hearing associated with the 404(c) process could not rival the outreach, education, consultation, and other public involvement that would occur should the Pebble Mine or another mine advance to the NEPA and permitting phase.

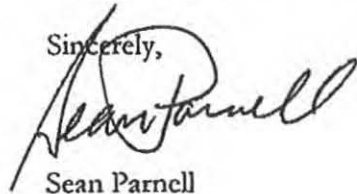
The Honorable Lisa P. Jackson
September 21, 2010
Page 3

A premature 404(c) determination effectively prohibiting mining in the area would disproportionately impact rural residents and Alaska Natives. Approximately 70 percent of area residents are Alaska Native (2009). Seventeen percent fall below the poverty level (2008). The area has seen an 18 percent population decline in the last ten years. Knowing of your keen interest in the effects of EPA decisions on disadvantaged populations, we hope you would take into account that a 404(c) decision to preclude mining in this economically depressed region would abruptly and conclusively deny area residents any opportunity to avail themselves of the benefits they might seek from responsible mining.

The intended purpose and true utility of the 404(c) process is in addressing actual or imminent adverse effects where the NEPA and permit processes have failed or where there is reason to believe that they will fail. In essence, the 404(c) process is best used as a backstop for the other applicable provisions of Section 404, including application of the 404(b)(1) guidelines and the interagency coordination and dispute resolution procedures developed pursuant to 404(q). There is no purpose or advantage to initiating the process now.

For these reasons, I firmly believe initiating a 404(c) process would be ill-advised and potentially contrary to our shared goal of protecting area resources. I would appreciate your taking our concerns into account. If there is anything else we can do to assist you, please contact my office at 907-465-3500.

Sincerely,



Sean Parnell
Governor

cc: The Honorable Lisa Murkowski, U.S. Senate
The Honorable Mark Begich, U.S. Senate
The Honorable Don Young, U.S. House of Representatives
Dennis McLerran, Regional Administrator, EPA Region 10
John Katz, Director State and Federal Relations, Office of the Governor



Portland Cement Association

February 1, 2011

The Hon. Darrell Issa
Chairman
House Committee on Government Reform and Oversight
Washington, DC 20515

Dear Mr. Chairman:

Thank you for your letter soliciting the Portland Cement Association's (PCA) perspectives on federal regulatory concerns and their impact on jobs. As you may be aware, domestic cement manufacturers are among the most highly regulated enterprises in the country. Although we have a decades-long history of cooperation with the Environmental Protection Agency (EPA), the industry is currently facing an avalanche of EPA rules ranging from tighter air quality standards and EPA-imposed limits on greenhouse gas (GHG) emissions to rules aimed specifically at our sector. The cumulative impact of these rules, detailed in the attached economic study, will cost Americans much needed jobs as the industry continues to struggle from the steepest economic downturn since the 1930s. By way of background, PCA is a trade association representing 25 cement companies, operating 97 manufacturing plants in 36 states, with distribution centers in all 50 states. PCA members account for 97.1% of domestic cement making capacity.

PCA has recently completed a cumulative economic analysis outlining these impacts and includes the following highlights:

- 4000 lost jobs by 2015, on top of 4000 lost jobs since 2007;
- Two EPA rules will impose \$5.4 billion in compliance costs by 2015;
- One EPA rule will close 18 plants nationwide by 2013;
- And increased imports totaling 56% of domestic consumption by 2025.

The U.S. cement industry provides more than 15,000 high-wage jobs with average compensation of \$75,000 per year, and along with allied industries, accounts for nearly \$27.5 billion of GDP. In recent years, our sector has shed over 4,000 jobs, a nearly 25% reduction of the sector's workforce. As the industry attempts to recover in this dire economic climate, in September 2010, EPA finalized the Portland Cement National Emission Standards for Hazardous Air Pollutants (NESHAP). Imposing a September 2013 compliance deadline, the rule puts at risk the closure 18 of the 97 cement plants nationwide and throws an additional 1800 Americans out of work. In addition to further downsizing domestic payrolls and domestic manufacturing capacity, the rule will cost \$3.4 billion over a three year period for an industry that currently generates just over \$6.5 billion in annual revenue. Industry revenues have dropped by approximately 35% from their historic norms and are not expected to recover for another five years. Therefore establishing a 2013 compliance deadline for a \$3.4 billion rule, which is approximately half the industry's current annual revenues, will needlessly weaken an industry attempting to recover from the worst market conditions since the 1930s.

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Page Two
Chairman Issa

Not only does the Portland Cement NESHAP distort economic realities, but it may also have adverse environmental impacts, especially with respect to mercury emissions. While the environmental benefits for reducing emissions of nominal amounts of domestic mercury are uncertain, it is clear that outsourcing domestic manufacturing capacity to developing countries will merely result in environmental leakage and therefore increase global mercury emissions, putting the nation in a position in which it imports more cement and more air pollution. Such an outcome will not only undermine the nation's economic security, but it threatens to degrade the environment and public health as well. Because the costly Portland Cement NESHAP is scheduled to hit the industry during a time of major financial vulnerability, cement manufacturers request that Congress explore legislative remedies that will give industry more time to recover and preserve domestic jobs before assuming unreasonable compliance burdens and undesirable environmental outcomes.

For more information related to this issue, please contact Bryan Brendle in PCA's Washington office at (202) 408-9494. Thank you very much for your consideration of this issue.

Regards,



Aris Papadopoulos
Chairman of the Board of Directors

Attachment: Report - Cumulative Economic Impacts of EPA Rules on Cement Manufacturers



Portland Cement Association

THE Monitor

Flash Report

Breaking Analysis of the Economy, Construction and Cement Industries

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Overview Impact of Existing and Proposed Regulatory Standards on Domestic Cement Capacity

Executive Summary

Already a heavily regulated industry, the U.S. cement industry is currently faced with seven different existing or proposed Environmental Protection Agency (EPA) regulatory standards:

- National Ambient Air Quality Standards (NAAQS)—Currently effective
- Greenhouse gas reporting—Currently effective
- New Source Performance Standards (NSPS)—Currently effective
- Clean Air Act's "Tailoring Rule"—Currently effective
- National Emission Standards for Hazardous Air Pollutants (NESHAP)—Currently effective, with compliance required in 2013
- New standards for Commercial and Industrial Solid Waste Incinerators (CISWI)—Proposed and compliance to be effective in 2015
- Fly Ash determination as a hazardous waste—Proposed and assumed to be effective in 2015

PCA examined the cumulative impact of these regulations on United States cement, concrete, and construction industries, especially potential impact on construction costs, employment, and the environment.

The EPA regulations will hinder the cement industry's ongoing modernization efforts to remain globally competitive. This is a subtle message to the industry to shut down plants and source cement from foreign sources – thereby exporting emissions along with the jobs associated with cement production.

Regulations will export jobs

EPA regulations could result in the direct loss of 3,000 to 4,000 jobs in the cement industry by 2015. Cement industry jobs are typically high-wage jobs. These industry job losses translate into \$200 million to \$260 million in lost wages annually. PCA estimates that 18 plants could be forced to close because of the inability to meet standards or because the compliance investment required may not be financially justifiable. The construction industry could lose another 12,000 to 19,000 jobs because of higher construction costs.

These direct job losses could be amplified if indirect impacts are considered. The indirect job and wage losses would be the result of less regional economic activity, mostly in areas concentrated near the plant shutdowns, and magnifying the potential distress in these communities. In total, more than 80,000 jobs could be lost due to EPA regulations targeting the cement industry. These job losses will stem from a combination of closed plants, reduced national construction due to increased costs, and amplified by downstream multiplier effects.

The combination of the industry's pre-existing financial commitment to provide a reliable and efficient supply of cement to the U.S. market, coupled with sustained harsh economic and financial realities may overwhelm the industry's financial capability to comply with the EPA standards. EPA's short three-year compliance period for NESHAP, which addresses mercury and three other pollutants, requires compliance investments to begin soon. PCA estimates 2009 cement industry *revenues* at approximately \$6.5 billion. For 2010-2012, total industry revenues are projected at \$19 billion. The \$3.4 billion in investment required to comply with NESHAP standards equates to more than 18 percent of industry *revenues* accumulated during the years preceding NESHAP compliance (2010-2012).

The study estimates that current and proposed EPA regulations could add \$2.4 to \$3.9 billion to annual construction costs. Increased cement /concrete construction costs would raise the concrete costs for a construction project 22 to 36 percent.

Moreover, as the country's largest consumer of cement/concrete, the public sector would be hardest hit. PCA calculates that EPA compliance costs could add as much as \$1.2 to \$2 billion annually to state and local governments' expenditures just to maintain existing roadways and bridges. The addition of **new** roads and bridges would increase the price tag even further.

The nation's current construction downturn has already caused low capacity utilization rates at cement plants and a slowdown in capital investment. An uncertain regulatory environment could reduce expected returns on investments in the United States and contribute to corporate decisions to wait-and-see before making further investments in the United States.

Regulations will export emissions

Lacking further investment in capacity expansion, the United States cement industry will become increasingly dependent on imports as a source of supply.

At the same time that many of these regulations require compliance, an anticipated increase in population will result in additional demand for housing, commercial buildings, public buildings and infrastructure – all boosting demand for cement consumption. Population in the United States is expected to grow by 35 million persons by 2020 and 48 million persons by 2025 compared to 2007 levels.

The cumulative impact of these regulations will force increased reliance on imports to meet expected future consumption. Assuming all of the EPA regulations are enacted, from approximate 2010 levels of 5.9 million metric tons, imports are expected to reach 82 million metric tons in 2025—or roughly 56 percent of the US consumption. Keep in mind, the industry currently operates roughly 125 import terminals with an estimated capacity of 45 million metric tons. Increased reliance on imports dramatically increases the probability of future material supply shortages in the U.S. construction industry.

Because a significant portion of the improvement in emissions due to EPA regulations comes from plant closures, the EPA standards effectively export our emissions and our jobs to other cement supplying countries, while at the same time, absent global cement plant emission standards, increasing overall global emissions.

For example, EPA's potential classification of fly ash as a hazardous waste, without an exemption for beneficial re-use, will virtually eliminate its use in concrete mixes, increasing net CO₂ and other emissions associated with cement manufacture, and reduce the performance characteristics of concrete in some cases.

If EPA designates fly ash as a hazardous waste under the proposed rule, it would reverse decades of progress in sustainability of building materials. Use of fly ash in concrete production is recognized worldwide as a practice that improves the performance and sustainability of concrete by adding decades to the life of construction projects, and greatly reducing carbon dioxide emissions and resource consumption in cement production.

Another regulation that will have a negative environmental impact is the new standards for Commercial and Industrial Solid Waste Incinerators (CISWI), which negates the incentive for cement plants to burn alternative fuels, like tire-derived fuel (TDF). The CISWI standard potentially reverses decades of environmental cleanup success and EPA support for using TDF as a fuel. A significant reduction in the use of TDF would materialize under potential CISWI standards and could lead to a seven-fold increase in scrapped tires that must be land filled by 2025 – creating a new environmental concern.

Overview

PCA's Market Intelligence Group is tasked to provide a rough estimate of the potential impact on domestic cement production resulting from seven different existing or proposed Environmental Protection Agency (EPA) regulatory standards. These standards are at different stages of potential enactment, ranging from in-place standards to the public comment stage. As a result, in some instances, PCA must make assumptions regarding the substance and timing of these potential regulations. The standards include:

- National Ambient Air Quality Standards (NAAQS) (Currently effective);
- Greenhouse gas reporting (Currently effective).
- New Source Performance Standards (NSPS) (Currently effective).
- Clean Air Act's "Tailoring Rule" (Currently effective).
- National Emission Standards for Hazardous Air Pollutants (NESHAP) (Compliance 2013).
- Potential new standards for Commercial and Industrial Solid Waste Incinerators (CISWI) (Proposed compliance to be effective 2015).
- Fly Ash determination as a hazardous waste (Assumed to be effective 2015).

PCA assesses the impacts of EPA regulatory standards by presenting a scenario representing an environment with no new EPA regulations (Baseline Scenario) and comparing those conclusions against a scenario that includes all EPA regulatory standards (Compliance Scenario). The difference between the two scenarios represents the aggregated impact of EPA regulations. While a myriad of impacts could also arise from the enforcement of more rigorous EPA standards, this report focuses on the impact on United States cement consumption, cement production, cement capacity, import volume and penetration, the cost to the cement industry attached to compliance, potential impacts on construction costs, and the potential impacts on employment.

EPA has been vague regarding the meshing of these standards into a coherent regulatory strategy directed at emitting industries, including those targeting cement producers. PCA, as a result, is forced to make assumptions regarding the coherency and consistency of EPA's regulatory policies targeting the cement industry. Actual form and substance of EPA regulations that characterize the compliance scenario may differ significantly from the regulations that eventually materialize. As a result, risk should be attached to PCA's impact estimates.

Key Findings

- The EPA's potential classification of fly ash as a hazardous waste, without an exemption for beneficial re-use, will virtually eliminate its use in concrete mixes leading to a 30 million metric ton increase in cement consumption by 2025, reduce domestic cement supply by roughly 2.0 million

metric tons, increase costs, net CO₂ and other emissions associated with cement manufacture, and reduce the performance characteristics of concrete in some cases.

- The NESHAP standards alone could force the closure of 18 cement plants representing 11 million metric tons of capacity. An additional 3 plants are at high risk of closure, representing an additional 2.5 million metric tons. These high risk plants are assumed to continue to operate.
- EPA's regulations that trigger "new source" designations under the NESHAP, CISWI or NSPS standards could hinder the cement industry's ongoing modernization efforts to remain world class competitive, and as a result, could eventually lead to an additional 4 plant closures representing another 3.4 million metric tons of capacity beyond NESHAP. Furthermore, this aspect of the EPA's standards is a subtle message to the industry to shut down plants and source cement from foreign sources – thereby exporting emissions along with jobs, associated with cement production.
- EPA regulations will result in a dependence on cement imports. Imports are expected to increase from roughly 5.9 million metric tons in 2010 to an estimated 36 million metric tons in 2015, 62 million metric tons by 2020, and 82 million metric tons by 2025. The industry currently operates roughly 125 import terminals with an estimated capacity of 45 million metric tons. Increased reliance on imports dramatically increases the probability of future material supply shortages in the U.S. construction industry.
- EPA regulations could potentially lead to higher overall concrete costs to the construction industry of at least \$2.5 to nearly \$4 billion annually.
- EPA regulations could result in the direct loss of 3,000 to 4,000 jobs in the cement industry and potentially another 12,000 to 19,000 direct jobs in the construction industry due to higher construction costs. These direct job losses could be amplified if up and downstream indirect impacts are considered. In total, more than 80,000 jobs could be lost due to EPA regulations.
- To meet NESHAP standards, PCA estimates that 90% of all cement plants will be forced to invest in bag houses to meet particulate matter standards. To comply with the combined Hg, THC, and HCl standards, PCA estimates that 9% of all plants will be required to invest in stand-alone wet scrubber systems, 75% of all plants will be required to invest in ACI systems, 20% of all plants will be required to invest in wet scrubber-ACI combination systems, and 65% of all plants will be required to invest in Regenerative Thermal Oxidizer (RTO) systems.
- To meet CISWI standards, PCA estimates that 87% of all alternative fuel burning cement plants, a subset of the total universe of plants, will be forced to invest in bag houses to meet particulate matter, lead and cadmium standards. This includes investments to existing bag houses and in some cases the construction of new bag houses. To comply with the combined Hg, SO_x and HCl standards, PCA estimates that 22% of all plants will be required to invest in a stand-alone wet scrubber system, and 62% of all plants will be required to invest in wet scrubber-ACI systems. To comply with NO_x, 22% of all plants will be required to invest in SNCR systems. To comply with carbon monoxide, 39% of plants will be required to invest in burner systems.
- To comply with NESHAP standards, the industry must invest at least \$3.4 billion. An additional \$2.0 billion must be invested to meet CISWI standards. This excludes potential spending by plants PCA estimates will close due to the inability to meet standards or due to the excessive financial burdens.
- The combination of the industry's pre-existing financial commitment to provide a reliable and efficient supply of cement to the U.S. market, coupled with sustained harsh economic and financial realities may overwhelm the industry's financial capability to comply with the NESHAP standards and proposed CISWI standards. NESHAP will be in force in three short years, which means that compliance investments must begin soon. PCA estimates total industry revenues during 2010-

2012 at \$19 billion. The \$3.4 billion in investment required to comply with NESHAP standards equates to more than 18% of industry revenues accumulated during the years preceding NESHAP compliance (2010-2012).

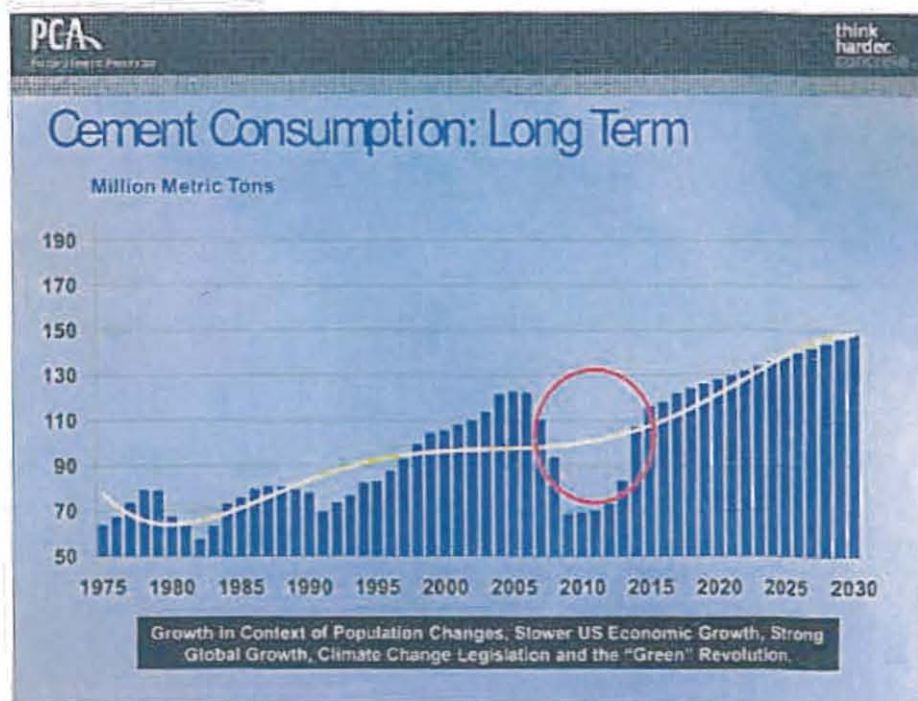
Baseline Scenario (No Emission Policy)

U.S. Cement Consumption Projections

Longer term cement consumption will be dictated by population gains, and this implies cement consumption will reach nearly 150 million metric tons by 2025.

U.S. cement consumption reached nearly 70 million metric tons in 2010, compared to near record levels of 128 million metric tons recorded in 2005. This decline reflects current economic adversities. With economic recovery, cement consumption is expected to reach 112 million metric tons in 2015, 131 million metric tons in 2020, and 147 million metric tons in 2025.

All market segments and regions recorded significant declines in cement consumption through 2009. This reflects a peak-to-trough decline in cement volumes of nearly 59 million metric tons – the worst in U.S. history. Tightened lending standards, weak labor markets and rising foreclosures continue to hamper an oversupplied residential construction market. Nonresidential construction is experiencing the brunt of the financial credit crisis as many projects have been delayed or canceled. This, coupled with rising vacancy rates and long project planning timelines, creates an expectation of a long recovery for commercial construction is expected. Public construction markets have demonstrated dramatic weakness as state governments struggle with soaring fiscal deficits from falling tax revenues. With public construction accounting for roughly 50% of cement consumption, this sector will play an important role in determining the industry's outlook. These underlying fundamentals suggest a recovery in cement consumption during 2010-2012 could be extremely modest.



Beyond 2012, volume gains in cement consumption are expected to become more robust. A new highway bill may materialize in 2013. In addition, substantive job gains during 2009-2012 will improve state fiscal conditions – leading to a revival in state construction spending. In the context of sustained economic growth, residential and nonresidential construction is also expected to record significant gains. By 2013, it is likely that all three construction sectors (public, residential and nonresidential) will record strong positive growth. Even with this, PCA believes the peak-to-peak recovery period (past peak 2005) will take eleven to twelve years.

Longer term, PCA expects the U.S. economic growth rate will underperform consensus projections of 3% annually. As the U.S. population ages, slower economic growth may materialize. The argument for slower, future long-term economic growth rates is anchored in future demographic changes and its likely impact on spending habits among age groups. The persistent and sustained aging of the population will slow consumer spending. This will be compounded by other issues. PCA calculates that the aging of America will result in a 50 basis point reduction in growth of consumer spending and overall economic activity by 2020. PCA's long-term cement consumption projections are based on 2.4% real GDP growth. Upside risks are contained in PCA projections.

PCA projects long-term cement consumption will reach 131 million metric tons by 2020 and 147 million metric tons by 2025 – reflecting growth of 32 million tons compared to 2007 levels and growing at a 1.0% compound annual rate. Roughly 78% of the growth in cement consumption is driven by growth in population. The remaining 19% is driven by gains in growth in per capita cement consumption¹. In comparison, during 1994-2007, cement consumption grew 29 million metric tons at a compound annual growth rate of 2.3%. During 1994-2007, 83% of the market growth was driven by population gains and 17% by gains in cement consumption per capita.

Long-term cement projections are calculated by combining Bureau of Census' (BOC) population projections with per capita cement consumption estimates to yield total cement consumption. Changes in per capita cement consumption are driven by projected economic activity at the state level and measured by real gross state product.

The anticipated increase in population will result in additional demand for housing, commercial buildings, public buildings and infrastructure – all boosting demand for cement consumption. Population in the United States is expected to grow by 35 million persons by 2020 and 48 million persons by 2025 compared to 2007 levels. According to the Bureau of Census (BOC) April 2005 forecast, U.S. 2007 population is estimated at almost 302 million persons and is expected to reach 344 million persons by 2020 and 348 million persons by 2025 – reflecting a 16% increase over 2007 levels.

PCA projections may be conservative. Nationally, per capita cement consumption is expected to reach 0.392 metric tons per capita by 2020, compared to 0.382 metric tons per capita recorded in 2007. This reflects an increase of slightly more than 3%. The projections fall well below those experienced during the previous 13 year period when per capita cement consumption grew by nearly 17.2%. Economic growth directly impacts growth in per capita cement consumption. Stronger economic activity leads to higher household formation, stronger fiscal conditions at the state level, and higher expected return on real investments, leading to higher levels of residential, public, and nonresidential construction activity. Stronger long-term economic growth will encourage greater construction activity and hence cement consumption per capita. According to PCA estimates, per capita cement consumption grows 0.5% for every one percent increase in real GDP growth.

¹ The projected per capita growth rate is exaggerated by the current depressed market, lowering the jump-off point.

Fly Ash Usage

Fly ash usage by the concrete/cement industry is expected to increase on a sustained basis – reducing CO₂ emissions as well as other emissions associated with the manufacture of cement and lowering costs to end users of concrete.

Since fly ash can be a substitute for cement in concrete mixes, its' usage could directly impact cement consumption projections. The baseline scenario assumes continued gains in the use of fly ash in concrete mixes – at the expense of cement consumption growth. The use of fly ash in concrete mixes has been increasing steadily – constituting roughly 15 million metric tons, or 10.5% of total cementitious material consumption (cement, slag cement and fly ash in 2010). By 2030, PCA expects fly ash will account for 14%-15% of total cementitious material consumption. Given this increase and fly ash use as raw feed in cement kilns, PCA expects fly ash consumption will reach nearly 33 million tons by 2030. Not only will the use of this fly ash reduce construction costs and improve concrete's durability characteristics for some applications, but for every ton used, it directly replaces cement in the concrete mix. Since fly ash requires no calcination, it reduces CO₂ emissions and other emissions associated with the manufacture of cement.

U.S. Cement Capacity Projections

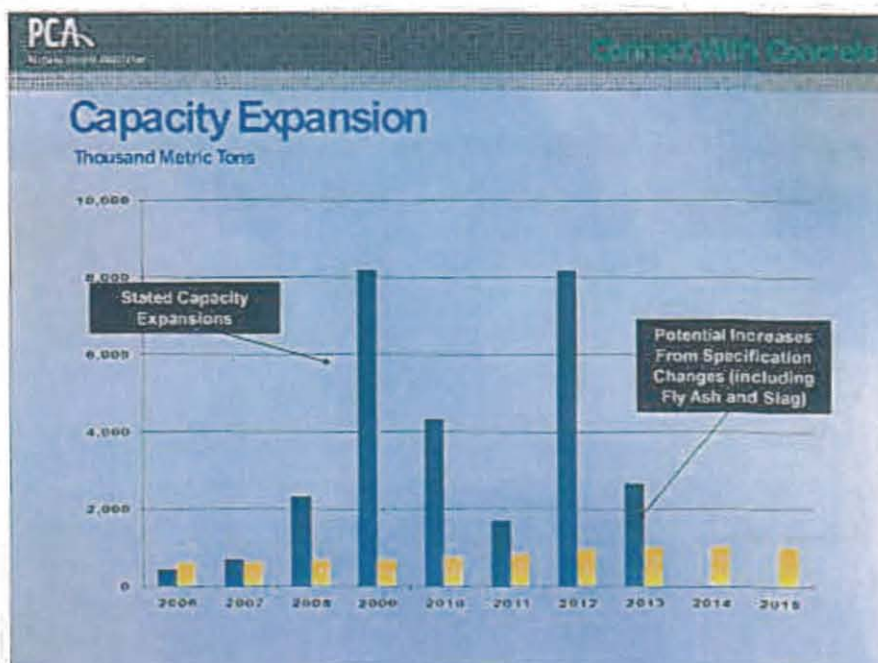
Increases in cement capacity and additives will likely be offset by the structural decline in wet kiln capacity.

The portland cement industry in the United States is currently comprised of more than 30 producers operating more than 167 kilns in 2008 with an estimated domestic **clinker** capacity of nearly 92 million metric tons. Gypsum is mixed with clinker to form portland cement. Gypsum/limestone currently accounts for 7.5% of the mix. Including gypsum and limestone additions, domestic **cement** capacity is currently estimated at 99 million metric tons.

Domestic cement capacity is expected to reach roughly 107 million metric tons in 2015 and beyond. These estimates reflect planned capacity expansions. Capacity estimates also include assumptions regarding the continued retirement of older wet kilns.

PCA assumes no new capacity is added beyond these announced plans. This assumption may have merit. Large multinational companies dominate ownership of the United States cement industry. Within a multinational company, each geographic region, such as the United States, competes against other global regions for scarce corporate investment dollars (keep in mind, expanding cement capacity is extremely expensive – a two million metric ton plant now costs upwards of \$575 million). The rate of return on new capacity investment in the United States is compared against returns in other countries. Current financial distress caused by low utilization rates and an uncertain regulatory environment could reduce expected returns on investments in the United States and contribute to corporate decisions to wait-and-see before making further investments in the United States. The bottom line is that investment in cement plants in the U.S. is now facing higher risk, because of difficulty to achieve environmental compliance, and lower returns due to increased environmental compliance cost. Higher risk and lower returns drives off investment.

In addition to clinker capacity expansions, changes in U.S. specifications allowing for increased use of limestone in portland cement could increase the potential domestic supply. Further changes in U.S. specifications occurred in 2010 allowing for increased use of inorganic cementitious materials such as fly ash and slag. How much these specification changes increase cement capacity depends on how plants



elect to exercise these options. Gypsum/limestone allowances currently add 7.5%. PCA expects that total additions will grow to 10% by 2025, adding more than 2.0 million metric tons to domestic cement supply.

Expansions in cement supply are expected to be largely offset by displacements of capacity. Economic stress and declining cement consumption have resulted in commissioning delays and slower planned ramp-ups for new plants. Two planned "greenfield" plants have been postponed indefinitely. Permanent or temporary shutdowns at 16 plants have been announced or are planned. Plant shutdowns since 2008 have reduced domestic clinker capacity by 9.7 million metric tons. Some, but not all, of these capacity displacements may be permanent. Of the closure announcements, seven plants are considered permanent, reflecting nearly 4 million metric tons. Of the remaining temporary closures, PCA assumes these plants will remain closed until stronger market conditions may dictate reopening. Plants that are idled for more than 2 years have an added risk of being considered as 'New Sources'. This designation would greatly reduce the probability of a kiln re-start and may result in downside risk to PCA capacity projections.

In addition to cyclical displacement of capacity, the cement industry has been gradually phasing out its wet kiln clinker capacity, reducing its clinker capacity by approximately one million metric tons annually during the past ten years. The wet kiln process is an older process and is typically less energy efficient². During the past two years, the phase-out of wet kilns has accelerated – reducing wet kiln clinker capacity by nearly 5.6 million metric tons. In the context of current economic distress, the potential for higher energy prices in the future, and impending federal GHG controls, the accelerated pace of wet kiln retirement is expected to continue. PCA assumes total wet kiln clinker capacity will decline to 2.7 million metric tons in 2020 and beyond compared to 12 million metric tons in 2007. This assumption suggests a 9.3 million ton reduction in existing wet-kiln clinker capacity by 2020-2025.

² Note: the last wet kiln was installed 35 years ago.

Combining estimates of capacity expansion, changes in specification standards, and the structural shut down of wet kilns, translates into domestic clinker capacity estimates at roughly 97 million metric tons in 2015 and 95 million metric tons in 2025. With gypsum and limestone additives, this translates into 107 million metric tons of cement capacity by 2015.

U.S. Baseline Imported Cement Projections

Lacking further investment in capacity expansion, the United States cement industry will become increasingly dependent on imports as a source of supply.

Aside from domestic supply, the cement industry operates roughly 125 import terminals with an estimated capacity of 45 million metric tons. The ability and willingness to import cement is determined by demand conditions, prevailing global shipping rates, and the availability of ships to carry cement. Imports are viewed as swing supply, with volume increasing and decreasing depending upon the shortfall between domestic capacity and total United States consumption.

Imports have declined since 2006 from 36 million metric tons to roughly 5.9 million metric tons in 2010. Weak demand is largely responsible for this decline. In the context of weak demand conditions and low domestic utilization rates, imports share declined to 9.3% market share in 2010, compared to a 28.2% market share in 2006. With a gradual economic recovery expected, higher domestic utilization rates will emerge slowly and import shares are expected to remain near 9% through 2012. In the context of sustained growth, a recovery in utilization rates is expected to materialize, prompting import market shares to increase. From expected 2010 levels of 5.9 million metric tons, imports are expected to reach 12 million metric tons by 2015 (11% market share), 32 million metric tons in 2020 (24%), and 48 million metric tons in 2025 (nearly 33%).

U.S. Baseline Clinker Production Projections

Longer term cement production will be capped by high utilization rates and a possible hiatus on further expansion initiatives.

Actual domestic clinker production declined from 90 million metric tons in 2006 to less than 60 million metric tons in 2010. With the economic recovery, cement production is expected to reach 90 million metric tons in 2015 and beyond. These projections reflect PCA's estimates regarding domestic capacity, cement consumption, import volume, exports, and probable inventory changes.

U.S. Kiln Fuel Composition Characteristics

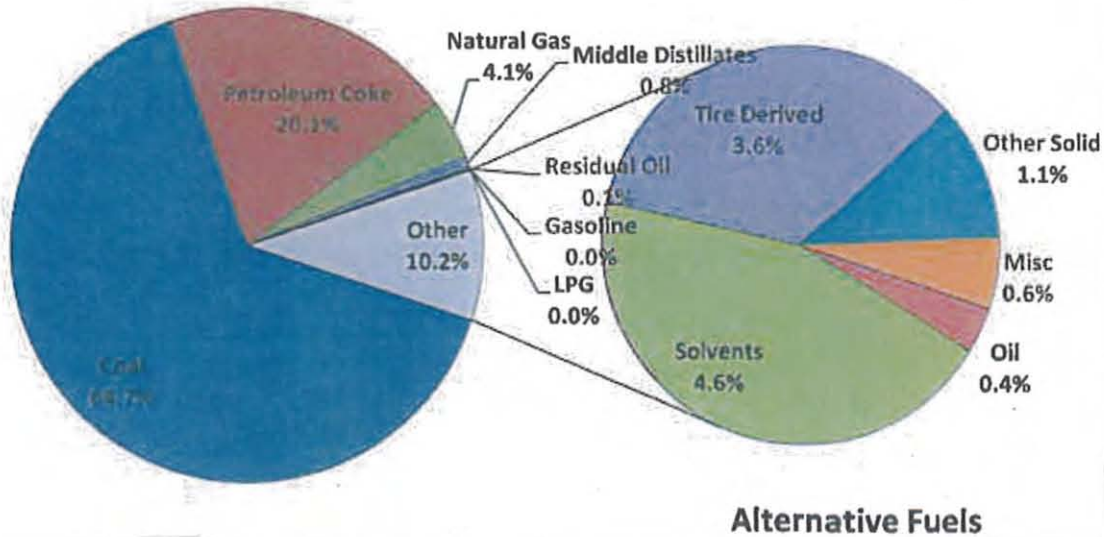
While coal will continue to be the main source of kiln fuel, the industry will increase its reliance on alternative fuels.

The cement industry has made large strides in improving fuel efficiency over the past two decades. On average, the industry currently requires 4.1 million British Thermal Units (BTUs) of fuel per equivalent metric ton. This compares to roughly 4.5 million BTUs per equivalent metric ton in 2000, indicating an improvement in fuel efficiency of roughly 9% over the past decade.

During 2007-2009, an average of 12 percent of total fuel consumption in BTUs was composed of alternative fuel sources. Of these alternative fuel sources, approximately one-third were tire-derived, almost 40% were from solvents, 3% were from oil, and one quarter were from other solid wastes and miscellaneous

Baseline: No Emission Policy					
	2005	2010	2015	2020	2025
US Cement Industry					
US Cement Consumption (000 tons)	128,035	68,879	111,831	131,388	147,112
US Clinker Capacity (000 tons)	94,693	96,877	107,467	106,403	105,824
US Production (000 tons)	89,981	58,286	90,480	90,359	90,148
Imports (000 tons)	27,305	5,900	12,000	32,000	48,000
Total Fuel Consumption (billion BTU, bbtu)	341,999	233,144	361,919	361,436	360,593
Primary Fuel Consumption (bbtu)	307,009	207,123	321,828	318,163	310,957
Alternative Fuel Consumption (bbtu)	34,989	26,021	40,091	43,273	49,636
Alternative Fuel Plants (AFP)					
Capacity at AFP (000 tons)	48,209	49,923	55,370	54,941	54,941
Production at AFP (000 tons)	44,496	30,036	46,618	46,656	46,803
Total Fuel Consumption (bbtu)	177,984	120,146	186,471	186,625	187,213
Primary Fuel Consumption (bbtu)	142,995	94,125	146,380	143,353	137,577
Plant Alternative Fuel Consumption (bbtu)	34,989	26,021	40,091	43,273	49,636
Plant Tire Derived Fuel (bbtu)	12,143	8,587	13,230	14,280	16,380
Scrapped Tires Consumed (millions)	58	39	63	68	78
Scrapped Tire Stockpile (millions)	188	222	392	311	126
Fly Ash					
Fly Ash Production Million Metric Tons	71,100	65,568	71,520	73,632	75,616
Beneficial Use Consumption	29,118	27,392	44,376	50,625	56,358
Concrete Consumption	14,504	8,898	15,565	19,842	23,721
Cement Kiln Consumption as raw material	2,834	3,017	4,404	4,458	4,458
Cement/Concrete Share of Beneficial Use	59.6%	43.5%	45.0%	48.0%	50.0%
Estimated Landfill	41,982	38,176	27,144	23,007	19,258
Sources: PCA, USGS, Various EPA emissions documents.					
Note: No credible Cadmium emissions data for cement kilns could be found and is omitted from analysis.					

U.S. Cement Plant Fuel Consumption 2005 (% Composition)



alternate fuel sources. Tire-derived fuel (TDF) is a significant energy source due to its relatively high BTU value. A decrease in its use would lead to higher fuel costs and higher emissions rates³. As for primary fuels during this period, coal and coke represented over 80% of total fuel consumption, whereas natural gas represented around 3.5%. These are supplemented by middle distillates, gasoline, residual oil, and liquefied propane gas (LPG).

Compliance With EPA Standards Scenario

The EPA emission compliance scenario includes all assessments regarding cement consumption and capacity changes contained in the baseline scenario. The compliance scenario assumes the EPA declares fly ash as a hazardous waste, but provides allowances for beneficial use of fly ash in cement production and concrete. This assumption changes the cement consumption outlook significantly. Potential impacts on cement capacity, domestic cement production, capacity utilization and imports are estimated in the context of assumed EPA imposed emission policies.

Seven different, existing or proposed, EPA regulatory standards are considered in the compliance scenario. These standards are at different stages of potential enactment, ranging from in-place standards to the public comment stage. The existing and proposed standards, with enforcement dates in parenthesis, include:

³ The EPA states on its website (epa.gov/epawaste/conserve/materials/tires/tdf.htm#cement) "based on over 15 years of experience with more than 80 individual facilities, EPA recognizes that the use of tire-derived fuels is a viable alternative to the use of fossil fuels. EPA testing shows that TDF has a higher BTU value than coal."

- National Ambient Air Quality Standards (NAAQS) (Currently effective);
- Greenhouse gas reporting (Currently effective).
- Clean Air Act's "Tailoring Rule" (Currently effective).
- New Source Performance Standards (Currently effective).
- National Emission Standards for Hazardous Airborne Pollutants (NESHAP) (Compliance 2013).
- Potential new standards for Commercial and Industrial Solid Waste Incineration (CISWI) (Proposed compliance 2015).
- Fly Ash determination as a hazardous waste (Assumed to be effective 2015).

The EPA has been vague regarding the meshing of these standards into a coherent regulatory strategy directed at emitting industries, including those targeting cement producers. Lacking definitive rulings on EPA standards, PCA is forced to make assumptions regarding the timing, coverage and scope of EPA policies that impact cement plant emissions.

Compliance Scenario: Fly Ash Ruling

PCA assumes the EPA will not classify fly ash used in concrete mixes and cement as a hazardous waste. While the EPA has yet to reach a final ruling on fly ash, this report assumes an enforcement date of 2015.

Most EPA standards impact the cement industry's supply side by mandating compliance cost investments and the annual operating costs associated with those investments. EPA's proposal on fly ash, however, has potentially large impacts on cement consumption, with smaller impacts on the supply side. Consumption levels play a role in determining plant operating rates, expected return on investments (ROI), and imports. As a result, the fly ash rule must be addressed first in the compliance scenario. Otherwise, all other assumptions and assessments made in the baseline scenario pertaining to consumption remain in place for the compliance scenario.

Fly ash is a by-product of coal combustion from electric utilities and independent power producers. A large portion of fly ash generated from electricity generation is recycled in cement and concrete. The benefits of using fly ash in concrete come from improved durability, increased ultimate compressive and flexural strengths, reduced permeability, and mitigation of alkali silica reactivity (ASR). Concrete made with fly ash often extends the life of construction projects by decades, minimizing environmental impacts of rebuilding. Since fly ash requires no calcination (converting limestone to cement) and therefore produces no carbon dioxide (CO₂) or other emissions excluding those associated with the initial coal combustion, it is environmentally attractive. Finally, fly ash is less expensive than cement, reducing the cost of construction projects.

Coal powered electric utilities account for roughly 22.5% of total United States electric power, or roughly 100 quadrillion BTUs. Total energy consumption will grow in the years ahead. Based on statistics from the American Coal Ash Association (ACAA), roughly 70 million tons of fly ash is produced as a by-product of this energy generation annually. According to the Energy Information Agency (EIA), coal powered electricity generation will account for slightly less than 22% of total electric power by 2030 – or roughly 110 quadrillion BTUs. This implies that the fly ash by-product of coal combustion from electric utilities will increase from current levels, despite efforts to pursue renewable energy power sources. PCA estimates that 78 million tons of fly ash will be produced in 2025.

Roughly 30 million tons of fly ash produced annually is re-used for beneficial purposes. This implies that roughly 40 million tons of fly ash is committed to landfills. The ACAA identifies 15 major users of fly ash ranging from construction to agricultural industries. Cement and concrete are the largest consumers of fly ash for beneficial purposes. Fly ash is normally contained in the concrete mix, accounting for roughly 12

million tons of consumption annually. Fly ash is also used in cement kilns as raw feed, accounting for roughly 3 million tons of consumption annually.

Coal combustion residuals, often referred to as coal ash, are currently considered exempt wastes under an amendment to the Resource Conservation and Recovery Act (RCRA). EPA is proposing to regulate, for the first time, coal ash, in order to address the risks posed by the disposal of the wastes generated by electric utilities and independent power producers. EPA is considering reclassifying fly ash as a hazardous waste under Subtitle C of the Resource Conservation and Recovery Act. EPA may exclude from the hazardous designation material used for beneficial purposes (as specified by EPA).

Should the EPA designate fly ash as a hazardous waste under the proposed rule, it would reverse decades of progress in sustainability of building materials. Use of fly ash in concrete production has become recognized worldwide as a practice that improves the performance and sustainability of concrete by adding decades to the life of construction projects, and greatly reducing carbon dioxide emissions and resource consumption in cement production. Moreover, the proposal would be inconsistent with the EPA's Comprehensive Procurement Guideline program mandating procuring agencies to purchase certain designated products containing recycled materials, including, in particular, cement and concrete containing fly ash. These standards are often amplified by state mandates for fly ash usage in public construction projects.

EPA concluded the public comment stage regarding fly ash's designation as a hazardous waste. EPA is currently considering two options; (1) designation of all fly ash as a hazardous waste when disposed or as a solid waste and (2) omitting the designation of fly ash as a hazardous waste if its use has beneficial purposes. For this report, PCA assumes EPA will omit the designation of fly ash as a hazardous waste for concrete mixes and cement kiln use. While EPA has yet to reach a final ruling on fly ash, this report assumes an enforcement date of 2015.

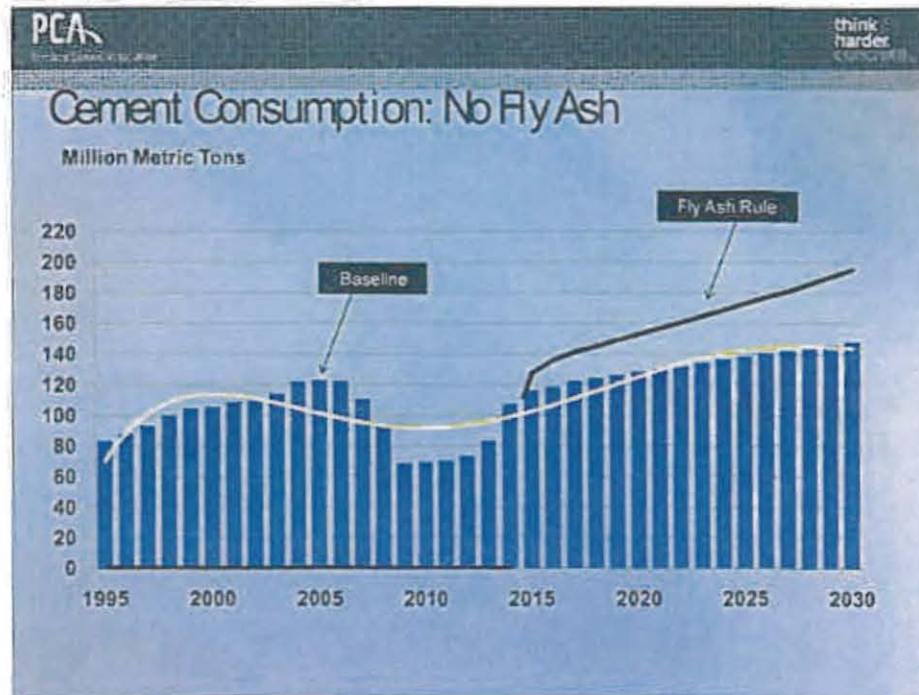
While this may seem a generous assumption, in all likelihood fly ash usage, even if beneficial, will be open to legal actions, with similar results as if it were declared a hazardous waste. Fly ash's designation as a hazardous waste, whether for beneficial use or not, would have several impacts including; stigmatization of its use as an ingredient in concrete or cement, raise the potential of law suits against producers and end-users of fly ash, including electric utilities, cement and concrete producers, and construction companies, and potentially raise insurance premiums for principals that continue to employ the use of fly ash.

The exposure to legal action will dramatically hinder, and possibly eliminate, the use of fly ash use in concrete mixes. Typically, parties with the largest financial resources are the most exposed to law suits – namely the electric utilities. PCA assumes that rather than sell fly ash for beneficial use and risk exposure to legal action, most electric utilities will landfill fly ash⁴. The additional costs associated with this decision are likely to be built into the rate base for the coal burning electric utility. In such a scenario, it makes little difference whether concrete producers and construction companies opt to accept legal risks associated with fly ash usage because coal burning electric utility companies will stop selling fly ash.

This scenario implies that the fly ash ruling could increase electricity costs to consumers. According to this scenario, coal burning utilities will forego revenues associated with fly ash sales and incur landfill costs (estimated at \$300 per ton). At 15 million tons of fly ash used by the cement/concrete industry annually, this implies a net incremental cost to coal burning utilities of roughly \$5.7 billion annually. Keep in mind,

⁴ "The stigma of being associated with hazardous waste is real and is already affecting the markets". Thomas A. Adams, Executive Director of the American Coal Ash Association. EPA public hearing, October 27, 2010, Knoxville, Tennessee.

cement/concrete usage of fly ash is expected to increase according to the baseline scenario, implying even larger potential net incremental costs to coal burning utilities. PCA estimates that this could translate into roughly a 4% increase in incremental costs to coal burning utilities which will likely be passed onto consumers in the form of higher electricity rates. As a significant consumer of electricity, cement production cost would significantly increase resulting in upward price pressure on cement.



Fly Ash Ruling Impact: Higher Cement Consumption

Without the use of fly ash in concrete mixes, cement consumption will increase dramatically.

The elimination of fly ash usage suggests a significant increase in cement consumption. While the ratio can vary depending upon the application, one ton of fly ash in the concrete mix is assumed to displace one ton of cement consumption. The baseline scenario assumes the use of fly ash in concrete mixes has been increasing steadily, constituting roughly 10.5% of total cementitious material consumption (cement, slag cement and fly ash). By 2025, PCA expects fly ash will account for 14%-15% of total cementitious material consumption. PCA expects fly ash consumption used in concrete mixes will reach nearly 30 million tons by 2025. This implies that cement consumption will increase by an equal amount.

Fly Ash Ruling Impact: Increases Construction Costs

Concrete construction costs will increase, adding nearly \$1 billion annually to total United States construction costs.

In most construction projects, fly ash accounts for 15% to 40% of the cementitious material mix. This will vary by project and region depending upon the availability of slag as well as user preferences. During 2001-

2010 the price of fly ash averaged \$65.55 per ton compared to \$90.52 per ton for cement. Using these averages implies that concrete mixes using:

- A 15% fly ash mix averaged \$86.77 per ton, or a savings of \$3.74 per ton - translating into a 4.1% reduction in concrete costs for a construction project;
- A 25% fly ash mix (most common) averaged \$84.27 per ton, or a savings of \$6.24 per ton, translating into a 6.9% reduction in concrete costs for a construction project.
- A 40% fly ash mix averaged \$80.53 per ton, or a savings of \$9.99 per ton, translating into an 11% reduction in concrete costs for a construction project.

Using a five year average of cementitious material intensities, out of every one million real 1996 dollars of construction activity, roughly \$14,500 is attributed to cementitious material costs. Prior to the recession's collapse of construction activity, the construction market was averaging roughly \$750 billion in real construction spending. This translates into roughly \$11 billion in cementitious material spending. A hazardous waste designation for fly ash would likely increase construction costs 4% to 11% per construction project.

Fly Ash Ruling Impact: Lowers Domestic Cement Supply

Use of supplementary cementitious material could be reduced by 25%, reducing domestic cement supply by more than 2.0 million metric tons.

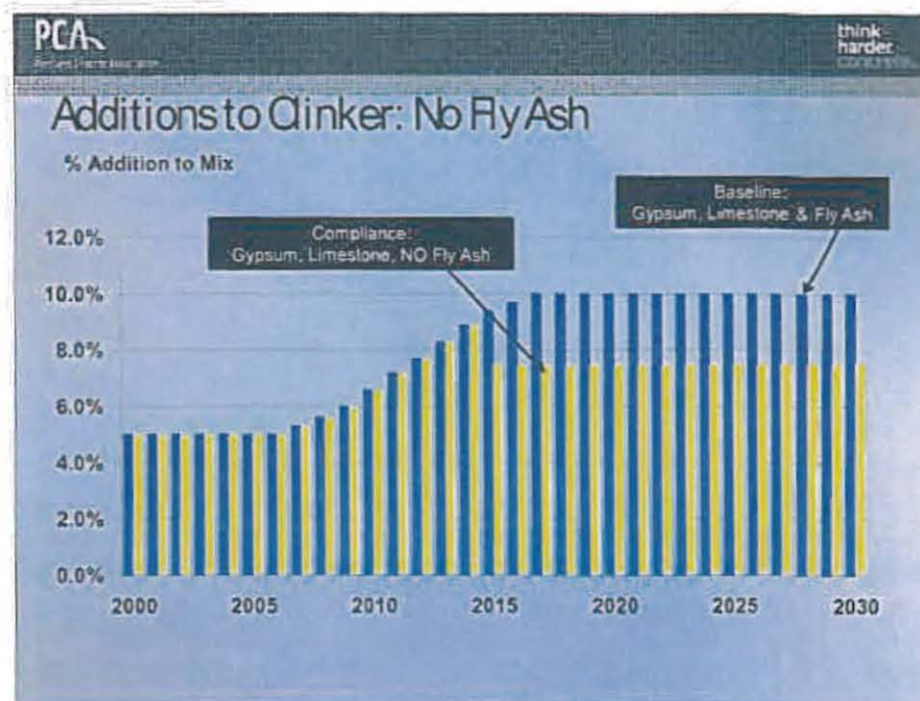
Specification changes have allowed for an increase in the amount of limestone and added to ground clinker to form cement. Recently, specification changes have permitted the use of inorganic materials, or fly ash, to be added to limestone, gypsum, and ground clinker to form cement. PCA's baseline scenario assumed that "inorganic" additions (fly ash and slag) would represent a 2.5% national average of the cement mix by 2015 and beyond. Under the proposed fly ash ruling, these additions cease. This implies that while domestic supply of clinker remains unchanged by the fly ash rule, domestic supply of cement is reduced by roughly 2.5 million metric tons annually by 2015.

The combination of increased demand of roughly 16 million metric tons in 2015, 20 million metric tons in 2020, and 24 million metric tons in 2025 and reduced domestic supply of roughly 2.5 to 3.0 million metric tons annually suggests that the fly ash rule will push domestic production to its limits and add significantly to either domestic manufacturers' incentive to invest or increase their volume of imports. Given the context of a harsh regulatory environment facing domestic producers, aside from the fly ash rule, it is unlikely additional investment will be forthcoming. The disparity between increased cement demand and reduced cement supply suggests a dramatic increase in imports beginning in 2015.

To compensate for the elimination of fly ash as an addition to the cement mix, PCA assumes that domestic cement production will increase to offset the shortfall. This implies a higher utilization rate among existing domestic plants beginning in 2015 (2.5% increase in production). Compared to cement production, this implies that the absence of fly ash additions to the cement mix increases:

- CO₂ emissions by more than 2.5 million tons annually.
- Mercury (Hg) emissions by 820 pounds lbs annually.
- Total hydrocarbons (THC) emissions by 1.5 million pounds annually.
- Particulate Matter (PM) emissions by 1.2 million pounds annually.

- Nitrogen oxide (NOx), sulfur dioxide (SO₂), dioxin/furans (D/F), carbon monoxide (CO), lead (Pb), cadmium (Cd) generated by alternative fuel burning plants will also increase.



These assessments dramatically underestimate the potential increase in emissions associated with the fly ash ruling due to PCA's assumption that it is unlikely additional investment in capacity expansion will be forthcoming given the context of a harsh regulatory environment facing domestic producers. By itself, the fly ash ruling would imply an increase in more than 25 million metric tons by 2025 of cement consumption in the United States due to fly ash's elimination in concrete mixes. Absent other existing and potential regulations this ruling would encourage increases in investment to expand domestic cement capacity to meet the increase in forced consumption. Assuming 25% of this new, forced demand would be met by imports, this implies capacity expansion equivalent to 11 new cement plants at an average capacity of 2 million tons operating at 90% utilization. This equates to an increase in domestic production eventually reaching 20 million metric tons annually, adding to economic activity (GDP) and employment.

If PCA's assumption regarding additional capacity investment is relaxed, cement production would increase significantly and the emissions associated with cement production would increase as well, even with optimal emission capture technologies in place. Accordingly, the absence of fly ash additions to the concrete mixes increases domestic production and hence emissions by the following:

- CO₂ emissions by 16-24 million tons annually during 2015-2025;
- Mercury (Hg) emissions by 3.3 to 4.5 thousand pounds annually during 2015-2025.
- Hydrochloric Acid (HCL) emissions by 1.2 to 1.7 million pounds annually during 2015-2025.

- Total hydrocarbons (THC) emissions by 6 to 8 million pounds annually during 2015-2025.
- Particulate Matter (PM) emissions by 4.8 to 6.7 million pounds annually during 2015-2025.

The ruling on its surface, seems to run counter to a coordinated EPA emission reduction strategy (fly ash all about "off coal"; EPA assumes no stigma). Or, it implies a coordinated EPA strategy that successfully reduces wastes by exporting the problem. PCA's assumption that is unlikely additional investment will be forthcoming given the context of a harsh regulatory environment facing domestic producers falls in-line with the latter. Keep in mind, removing fly ash from concrete mixes increases cement production – either domestically or in foreign source countries or both. The extent to which the corresponding emission increases are realized in the United States is dependent on further investment in United States cement capacity. World-wide emissions arising from increased cement production will result from the fly ash ruling. If the additional cement is not produced in the United States, it will be produced elsewhere and the emissions associated with additional cement production will be released, plus the emissions associated with its transportation back to the U.S.

Fly Ash Ruling Impact: Domestic Kiln Usage and Cost Impacts

Raw feed costs will increase – adding to the costs of cement and concrete.

The fly ash ruling not only impacts the volume of cement consumption and its supply, but would also have an impact on the cost of producing cement in the United States. Fly ash is used in cement kilns as raw feed, accounting for roughly 3 million tons of fly ash consumption annually. Fly ash is used mainly for its alumina in cement kilns but also contributes silica, iron and calcium to the raw material mix. It improves clinker quality, mainly due to its lower alkali content and fineness. The rate of substitution is generally 3–5% of the raw materials. Use of fly ash in cement kilns may also release unburned carbon – reducing energy requirements at the kiln. The fly ash ruling would end its use in the kiln. This ruling, therefore, seems to run contrary to the EPA's Tailoring Rule aimed at best practices to reduce CO2 emissions.

Other materials would be used to offset fly ash's displacement in the kilns. One benefit of fly ash usage is low cost. It is likely that the replacement materials would be more expensive than fly ash – potentially increasing the manufacturing cost per ton of cement. PCA estimates roughly a \$4 increase in material cost per ton for the replacement of fly ash in the kiln. At roughly 3 million metric tons of fly ash consumed annually this translates into a \$12 million increase in kiln material costs per year or roughly \$0.15 to \$0.20 per ton when dispersed across national production.

Fly Ash Ruling Impact: Demolition Costs

A hazardous waste designation could lead to substantive increase in demolition costs associated with the containment of fly ash.

The legal risk associated with fly ash's designation as a hazardous waste pertains to both continued use in construction and for the demolition of existing concrete structures. A hazardous waste designation could lead to substantive demolition costs associated with the containment of fly ash. Presumably these costs will be borne by the demolition company and passed onto the site developer. Even in this context, legal risks remain. PCA has not addressed this issue in the current study.

Compliance Scenario: NESHAP & CISWI Impact

EPA has recently ruled on National Emission Standards for Hazardous Air Pollutants (NESHAP). This regulation requires compliance in 2013, requiring cement producers to invest billions of dollars in compliance equipment targeting specific emissions prior to the compliance date. At the same time, EPA

recently proposed a broader set of emission standards, and at different levels of tolerance and measurement, than NESHAP, for emissions generated by alternative fuel burning plants under Commercial and Industrial Solid Waste Incineration (CISWI). CISWI is scheduled for enactment in 2015.

EPA has not issued guidance regarding compliance for alternative fuel burning plants during the time gap between NESHAP and CISWI implementation, or the 2013-2015 period. Conceivably, an alternative fuel burning plant (which has been encouraged by the EPA) could be faced with investing by 2013 in compliance equipment for NESHAP and a different set of compliance equipment for CISWI by 2015. Such a scenario suggests a lack of coordination between the two policies. At issue is the EPA's designation of specific cement plants as either a cement kiln or an incinerator – not both. Such a scenario amounts to double jeopardy.

As a result, PCA assumes alternative fuel burning plants, or potential CISWI plants, do not have to conform to NESHAP standards in 2013, but must commit to a CISWI designation at that time. These plants would then be forced to comply with CISWI standards in 2015.

In any case, the proposed CISWI standards must be analyzed in the context of NESHAP. The proposed CISWI standard presents cement plant executives with two options including; (1) continue to burn alternative fuels and invest in compliance technologies, or (2) discontinue the burning of alternative fuels, avoid CISWI compliance, and then become subject to NESHAP standards. Which option is chosen will be based on cement industry executives weighing the potential marginal change in CISWI compliance costs against NESHAP compliance costs and considering the potential fuel costs savings resulting from the continued burning of alternative fuels. PCA's assumption suggests these decisions must be made well in advance of 2013 so facilities can prepare for compliance.

PCA's NESHAP and CISWI analysis includes all assessments regarding cement consumption and capacity changes contained in the baseline scenario. Potential impacts on cement capacity, domestic cement production, imports, and total U.S. cement emissions are estimated in the context of the existing NESHAP standards and the EPA proposed CISWI standards.

Three layers of analysis were performed to determine emission control policy impacts on cement capacity. First, PCA must split the universe of cement plants into CISWI plants and NESHAP plants.

Second, emission control technologies are applied to each plant's expected emissions. Expected emissions by plant were calculated using the same method identified in the baseline scenario. Six emission control technologies were applied to bring plants into compliance including enhanced bag house/ESP controls, ACI systems, wet scrubber systems, RTO systems, selective non-catalytic reduction systems (SNCR), and kiln burner design enhancements. Bag house/ESP controls, ACI systems, and wet scrubber systems address emission compliance efforts for both the NESHAP and CISWI standards. RTO systems are targeted at reducing total hydrocarbons contained only in the NESHAP standard. SNCR enhancements are targeted at reducing nitrogen oxide (NO_x). Kiln burner designs are targeted at carbon monoxide emissions. Regulations aimed at reducing nitrogen oxide and carbon monoxide are only in the proposed CISWI standard. No other systems or technology measures are considered in the context of this analysis. Technology efficiencies were assumed in the capture of emissions by each system. Regardless of costs, if a plant failed to meet the standard, it was assumed to be a forced closure.

In the third layer of analysis, plants capable of meeting the NESHAP and CISWI standards were subjected to cost analysis. PCA assumes a 15 year horizon for the capitalization of fixed costs. For plants with less than an estimated 15 years left in quarry life, fixed emission compliance costs are capitalized over the

longest period possible. Annual operating costs for the compliance systems were also included in the analysis. Finally, these estimates are based on a 90% utilization rate.

Each these EPA standards also include provisions for "new source" emitters that imposed emission limits which are considerably more severe than "existing source emitters". New greenfield plants that are commissioned after 2013 are assumed to be subject to these tighter standards. Major modifications to existing plants could force a reclassification of a plant from an existing source to a new source.

Designation of NESHAP and CISWI Plants

According to PCA's Labor/Energy data, sixty one plants used alternative fuels in their kilns on a sustained basis during 2006-2008. Of these, 16 plants' alternative fuel usage accounted for less than one percent of their total fuel consumption. Those plants were excluded from the analysis in this report. This report includes only the remaining 45 plants that burn alternative fuels accounting for more than 1% of their total fuel usage. In the context of regulation uncertainty, PCA assumes no additional cement plants will begin burning alternative fuels. Alternative fuels include scrap tires, solvents, waste oil and other solids and liquids. Coal, petroleum coke, natural gas, middle distillates, residual oil, and liquids/gases are considered primary fuels and plants burning only these fuels are not considered subject to CISWI standards.

PCA compares the CISWI compliance costs against NESHAP compliance costs. This results in the incremental increase in investment to comply with CISWI over the existing NESHAP standards. Finally, these incremental changes in CISWI compliance costs were weighed against the potential fuel cost savings arising from alternative fuel usage. If the marginal increase in compliance costs for CISWI are more than offset by fuel savings, then plants are assumed to continue burning alternative fuels and comply with CISWI. Plants lacking this return are assumed to discontinue burning alternative fuels and would then fall under NESHAP rules. PCA assumes this compliance decision must be performed well before the onset of NESHAP compliance.

Emission Control Technology Assumptions

Technology assumptions were made regarding the effectiveness of various emission control systems. Sparse evidence exists regarding the actual effectiveness of emission control technologies applied to cement kilns. The emissions captured by the various technologies are often based on theoretical estimates of capture efficiencies and may not reflect actual operating efficiencies. Furthermore, it should be noted that emission capture efficiencies used in this report may differ from the estimates indicated elsewhere in the PCA comments. Due to uncertainties regarding emission control efficiencies, PCA has assigned its own estimates regarding emission capture efficiencies. Considerable effort was undertaken by PCA to yield fair and realistic emission capture efficiencies. PCA's emission capture assumptions are typically less optimistic than those assumed by EPA.

Mercury (Hg) Emission Control Assumptions (NESHAP and CISWI)

The bulk of mercury emission control is likely to occur through the use of ACI systems, wet scrubber systems, or a combination of both. According to some experts, ACI systems are preferred. PCA estimates that ACI systems can potentially capture 75% of Hg emissions. EPA estimates the capture efficiency at 90%. Wet scrubber systems alone are believed to be less effective than ACI systems as they do not capture the elemental form of mercury. PCA estimates that wet scrubber systems could potentially capture 50% of Hg emissions. The EPA estimates the capture efficiency at 80%. Use of an ACI system coupled

with a wet scrubber is expected to capture 85% of mercury emissions. EPA estimates the capture efficiency of this combination at 98%. Keep in mind, most research regarding Hg emission control and capture has targeted coal burning utilities. These form the basis of EPA's high emission capture

Technology Assumptions Regarding the Recapture of Emissions										
	THC	H	HCL	D/F	PM	NOx	SOx	CO	Pb	Cd
Bag house	--	--	--	--	99%	--	--	--	99%	99%
RTO	95%	--	--	--	--	--	--	--	--	--
RTO-Wet Scrubber	95%	--	--	--	--	--	--	--	--	--
SNCR	--	--	--	--	--	90%	--	--	--	--
Web Scrubber	--	50%	99%	--	--	--	80%	--	--	--
ACI	--	75%	--	80%	--	--	--	--	--	--
Wet Scrubber-ACI	--	85%	99%	--	--	--	--	--	--	--
Cooling & Burning Design	--	--	--	99%	--	--	--	90%	--	--
Source: PCA										

assumptions. The chemical dynamics inside a cement kiln, however, are far different than those of a utility boiler. The lower capture rate assumed by PCA suggests that fewer plants can meet the NESHAP standards and therefore would likely shut down.

Total Hydrocarbons (THC) Emission Control Assumptions (NESHAP Only)

The bulk of total hydrocarbon emission control is likely to occur through the use of an ACI system, RTO system, or a wet scrubber combined with an RTO system. PCA estimates an ACI system can capture 50% of total hydrocarbon emissions. The EPA estimates the emission capture at 75%. The addition of an RTO system, increases hydrocarbon capture to 95%, compared to 98% estimated by the EPA. An RTO's emission capture cannot be guaranteed at emission rates below 10 ppmv regardless of inlet THC concentration.

Particulate Matter (PM) Emission Control Assumptions (NESHAP and CISWI)

The bulk of particulate matter emission control is likely to occur through the use of bag houses and enhancements to existing bag houses. Bag house systems capture nearly all particulate matter emissions. PCA accepts EPA's estimate of 99.9% emission capture.

Hydrochloric Acid (HCL) Emission Control Assumptions (NESHAP and CISWI)

The bulk of hydrochloric acid emission control is likely to occur through the use of wet scrubber systems. PCA and EPA agree that wet scrubber systems will likely capture 99.9% of all hydrochloric acid emissions. PCA notes that EPA has not considered that the capture of mercury in a wet scrubber may result in the added concentration of mercury in the by-products generated by wet scrubbers. EPA has also not considered that many plants do not have availability of water to supply a wet scrubber system.

Sulfur Dioxide (SO₂) Emission Control Assumptions (CISWI Only)

Several strategies could be employed to address SO_x emissions including the use of wet scrubber systems, lime injection and hydration systems, as well as calcinatory slip steam systems. PCA assumes the bulk of sulfur dioxide control is likely to occur through the use of wet scrubber systems. PCA assumes that wet scrubber systems will likely capture 80% of all sulfur dioxide.

Nitrogen Oxide (NO_x) Emission Control Assumptions (CISWI Only)

The bulk of nitrogen oxide emission control is likely to occur through the use of selective non-catalytic reduction systems (SNCR). PCA assumes that SNCR systems will capture at most 50% of all nitrogen oxide emissions. It should be noted, the performance of an SNCR system is very variable, almost as variable as the pyroprocessing systems on which they are installed. NO_x reduction is dependent on how much NO_x emissions is generated. The more NO_x available, the more efficient is the NO_x reduction process. In a perverse way, a plant with relatively low NO_x may have less reduction than a plant with a higher NO_x.

Carbon Monoxide (CO) Emission Control Assumptions (CISWI Only)

The bulk of carbon monoxide emission control is likely to occur through enhancements to burner systems and strict adherence to good combustion practices. PCA assumes that these enhancements will likely capture 99% of all carbon monoxide emissions.

Dioxin/Furan (D/F) Emission Control Assumptions (CISWI Only)

The bulk of dioxin/furan emission control is likely to occur by achieving cooler exhaust temperatures to the kiln system air pollution control device (APCD), or bag house. Enhancements to APCD design including the use of ACI will likely capture 99% of all dioxin/furan emission.

Lead (Pb) Emission Control Assumptions (CISWI Only)

The bulk of lead emission control is likely to occur through the use of bag houses and enhancements to existing bag houses. Bag house systems capture nearly all lead emissions. PCA assumes 99% of all lead emissions are captured.

Cadmium (Cd) Emission Control Assumptions (CISWI Only)

PCA's search for cadmium emissions data for cement kilns was more than ten years old and covered only 13 plants. Analysis of cadmium emissions, therefore has been omitted from this report. It is likely that the bulk of cadmium emission (99%) will be captured through the use of bag houses and enhancements to existing bag houses. Since nearly all CISWI plants will require investment in bag house systems to capture

other emissions, omission of Cadmium in this analysis is unlikely to result in any significant skewing of the conclusions.

Industry Capital Costs to Comply with EPA Emission Standards

Total industry investments to comply with NESHAP standards are estimated at \$3.4 billion and an additional \$2.0 billion to comply with CISWI.

No cement plant in the United States can currently meet all NESHAP and/or CISWI standards simultaneously. As a result, all cement plants will require investment in emission capture systems. PCA employs EPA and PCA kiln and plant emission information to determine whether a plant must expend capital to reach compliance.

The emission standards differ between NESHAP and CISWI. The standards use different measures for compliance limits. All emission data by plant, used in this report were sourced from one of several sources including: (1) EPA's ISIS model used for NESHAP, (2) EPA's National Emission Inventory database, (3) PCA SN3048 - Air Emissions Data Summary for Portland Cement Pyroprocessing, (4) PCA SN3050 - Air Emissions Data Summary for Portland Cement Pyroprocessing Operations Firing Tire-Derived Fuels, (5) PCA's annual Labor/Energy Input Survey. Units of measurement for the toxic air pollutants available from these various sources often did not map directly to CISWI and/or NESHAP emission limit units, therefore conversions were required. For mercury (Hg) emissions, PCA used the EPA plant-by-plant study on Hg emissions from the cement industry, reflecting 2006 information. (EPA: The Toxics Release Inventory (TRI) 2006)⁵. A follow-up study was performed reflecting 2007 information for some 50 cement plants. Historical benchmarks on plant-by-plant Hg emissions reflect the most recently available data for each plant.

On a plant-by-plant basis, PCA employs a matrix solution that accounts for the plant's emissions of THC, Hg, HCl, PM, NO_x, SO_x, D/F, Pb and CO and employs PCA technology emission capture assumptions to determine which emission systems must be employed at the plant to comply with EPA standards. A plant with extremely high levels of Hg, HCl, and SO_x, for example, would likely be forced to invest in an ACI-wet scrubber system. Investment in the ACI-wet scrubber system to comply with mercury emissions, for example, would presumably also take care of their HCl emissions at the same time. This investment for mercury control would also reduce SO₂ emissions by 80%. Double counting of systems required for compliance is eliminated through this process. Each plant is carefully assessed using this methodology.

For the NESHAP plants, PCA estimates that 90% cement plants will be forced to invest in bag houses to meet particulate matter standards. This includes investments to existing bag houses and in some cases the construction of new bag houses. To comply with the combined Hg, THC, PM, and HCl standards, PCA estimates that 9% of all plants will be required to invest in a stand-alone wet scrubber system, 75% of all plants will be required to invest in ACI systems, 20% of all plants will be required to invest in wet scrubber-ACI systems, and 65% of all plants will be required to invest in RTO systems. The methodology used to arrive at these estimates may differ from estimates indicated elsewhere in other PCA comments.

For the CISWI plants, PCA estimates that 87% of all CISWI cement plants will be forced to invest in bag houses to meet particulate matter, lead and cadmium standards. This includes investments to existing bag houses and in some cases the construction of new bag houses. To comply with the combined Hg, SO_x and HCl standards, PCA estimates that 22% of all plants will be required to invest in a stand-alone wet scrubber system, 62% of all plants will be required to invest in wet scrubber-ACI systems. To meet NO_x standards

⁵ EPA: The Toxics Release Inventory (TRI) 2006

22% of all plants will be required to invest in SNCR systems. To meet carbon monoxide standards 39% will be required to invest in burner systems.

PCA capital cost estimates for each emission control system are based on survey information from cement companies as well as equipment manufacturers and based on an average 1.2 million ton dry kiln cement plant with a pre-calciner and a pre-heater. Adjustments to this information are made to account for differences in the type of plant, such as a long dry or wet kiln. PCA assumes a 29% emission equipment installation cost premium for long dry kilns and a 143% cost premium for a wet kiln. Adjustments to this information are also made to account for size differences among plants.

This survey information reflects current estimated investment costs on emission systems. This information contains significant upside risk in the context of likely market conditions facing emission equipment suppliers. The cement industry will be mandated to install a massive amount of emission control equipment to comply with both NESHAP and CISWI. This equipment must be in-place within three years for NESHAP compliance and five years for CISWI compliance. There are a limited number of emission control equipment suppliers. Keep in mind, while there are 30 or more emission equipment suppliers only 6-8 are cement kiln emission focused. Demand for their services from the cement industry will increase dramatically. A premium will likely be placed on the urgency to install the systems over a short period of time. This dynamic is likely to be amplified as the overall economy regains traction. The likely outcome is an escalation in the costs of these systems. A 10% to 20% premium over existing costs is possible. PCA assumes a 15% increase over the survey information. Please note that these adjusted equipment cost estimates differ from the current equipment cost estimates indicated elsewhere in the PCA comments. Based on these adjustments, PCA's estimates for a 1.2 million ton dry kiln with a pre-calciner and pre-heater are as follows:

- Bag house System = \$9.2 million
- Activated carbon injection (ACI) = \$17.5 million
- Wet Scrubber System = \$22.1 million
- ACI system combined with a wet scrubber system = \$39.6 million
- Regenerative thermal oxidizer system (RTO) = \$20.2 million
- RTO system combined with a wet scrubber system = \$42.3 million
- Selective catalytic reduction systems (SNCR) = \$ 8.5 million (wet kiln), \$3.5 million (dry kiln).
- Burner Enhancements = \$ 1 million

U.S. cement industry will be forced to spend billions of dollars to comply. Six plants would be forced to spend in excess of \$100 million to reach compliance. Total industry investments to comply with NESHAP standards are estimated at \$3.4 billion. Total industry investments to comply with CISWI standards are estimated at \$2.0 billion (\$5.4 billion for total NESHAP and CISWI compliance).

Industry's Financial Ability to Comply with NESHAP Emission Standards

Large compliance expenditures are magnified in the context of the short compliance time horizon of three to five years. Further, this expenditure comes at a time when the financial ability of the industry to meet these investment requirements has been greatly reduced by current economic conditions.

The cement industry is still in the midst of aggressive investment in domestic capacity to modernize and expand its kilns. The commitment to these investments were made in response to domestic shortage conditions that materialized during 2003-2006, an understanding that dependence on the free flow of foreign supply is dictated by uncertain international logistic conditions surrounding dry bulk carriers thereby impacting freight rates, and in recognition of the long-term demographic trends that suggest strong demand requirements in the United States. Furthermore, the \$6.7 billion commitment to expand and modernize in the domestic industry was undertaken before the current economic hardships were clearly understood. Capitalization and financial commitment to many of these projects are already in-place.

Furthermore, harsh demand conditions currently face the industry. Since 2005, cement consumption declined by 59 million metric tons – or roughly 46%. With the slower than expected economic recovery, these conditions are unlikely to abate soon. Utilization rates are likely to remain near 60% through 2012 and hence the industry's financial performance will remain depressed.

The EPA's short three year compliance period for NESHAP suggests that compliance investments must begin soon. PCA estimates total 2009 cement industry **revenues** at less than \$6.5 billion. For 2010-2012, total industry revenues are estimated at \$19 billion. The \$3.4 billion in investment required to comply with NESHAP standards equates to more than 18% of industry **revenues** accumulated during the years preceding NESHAP compliance (2010-2012).

Investments to comply with CISWI standards do not have to be in-place until 2015. The \$2.0 billion in investment required to comply with CISWI standards equates to more than 6% of industry **revenues** accumulated during the years preceding CISWI compliance (2010-2014). This assessment assumes a substantive recovery in cement consumption materializes in 2013 and beyond.

The combination of the industry's pre-existing financial commitment to provide reliable and efficient supply of cement to the U.S. market, coupled with sustained harsh economic and financial realities may overwhelm the industry's financial capability to comply with the NESHAP and proposed CISWI standards.

Forced Cement Capacity Closures Due to NESHAP and CISWI Emission Standards

NESHAP standards will force 18 cement plants to close, perhaps more.

NESHAP emission standards will force cement plants to close beginning in 2013. Closures are expected to come in two forms. First, some plant's emissions are sufficiently high that even with the installation of emission capture systems they will not be able to meet NESHAP standards. Second, even if a plant can technically meet the NESHAP standards, the compliance investment required may not be justified on a financial basis. In either case, PCA assumes closure of the plant.

PCA estimates that 18 plants could be forced to close due to the inability to meet NESHAP or CISWI standards or because the compliance investment required may not be justified on a financial basis. These

closures represent roughly 11 million metric tons of clinker capacity, or roughly 12% of current capacity. Of these plants, 7 burn alternative fuels and would be subject to CISWI standards. Each of these alternative fuel burning plants would require at least as much compliance investment to meet the more comprehensive and harsher CISWI compliance. These 7 alternative fuel burning plants are assumed to be shut down in 2015 when CISWI enforcement begins. An additional 3 plants, reflecting 2.5 million tons of clinker capacity, are at high risk of closure. These high risk plants are assumed to continue to operate.

Unfortunately, the process of plant closures confronting tight emission standards may have already begun. Since August 2008, seven plants, with an estimated annual capacity of nearly 4 million metric tons, have been announced for permanent closure. Undoubtedly, the harsh recession contributed to the decision to close these plants. Weak cyclical demand conditions, however, would likely dictate temporary – not permanent closures. It is likely that the prospect of tight emission standards, coupled with expectation for a slow recovery in demand, contributed to decisions to permanently close these plants. According to ISIS model runs, each of these plants would have been forced to close under the EPA's NESHAP standards. These plants are not included in PCA's estimate of NESHAP closures. If included, NESHAP expected closures would equate to 25 plants and 15 million metric tons. These plant closures include:

Recent Permanent Plant Closures	
Buzzi Unicem: Independence, Kansas <ul style="list-style-type: none"> Capacity: 324,000 metric tons annually Employment estimated at 108 workers 	Cemex: Davenport, California <ul style="list-style-type: none"> Capacity: 842,000 metric tons annually Employment estimated at 114 workers
Essroc: Frederick, Maryland <ul style="list-style-type: none"> Capacity: 308,000 metric tons annually Employment estimated at 82 workers 	Essroc: Bessemer, Pennsylvania <ul style="list-style-type: none"> Capacity: 605,000 metric tons annually Employment estimated at 111 workers
Holcim: Clarksville, Missouri <ul style="list-style-type: none"> Capacity: 948,000 metric tons annually Employment estimated at 164 workers 	Holcim: Dundee, Michigan <ul style="list-style-type: none"> Capacity: 830,000 metric tons annually Employment estimated at 155 workers
Texas Industries: Riverside, California <ul style="list-style-type: none"> Capacity: 86,000 metric tons annually Employment estimated at 88 workers 	

Compliance Scenario: Impact on Alternative Fuel Practices by the Cement Industry

CISWI standards will force two thirds of all cement plants to eventually discontinue the use of alternative fuels.

CISWI emission standards will force cement plants to opt between compliance or discontinue alternative fuel usage. The decision to discontinue the use of alternative fuels is expected to be based on two factors. First, some plant's emissions are sufficiently high that even with the installation of emission control systems they will not be able to meet CISWI standards. Second, even if a plant can technically meet the CISWI standards, the compliance investment required may not be justified on a financial basis. In either case, PCA assumes the discontinued use of alternative fuels.

According to PCA's Labor/Energy data, sixty one plants used alternative fuels in their kilns on a sustained basis during 2006-2008. Of these, 16 plants' alternative fuel usage accounted for less than one percent of

their total fuel consumption. Since the alternative fuel reliance of these plants are relatively small, each of these plants are assumed to discontinue burning alternative fuels rather than incur CISWI compliance costs.

Among the remaining 45 plants that burn alternative fuels, PCA estimates that 18 plants could be forced to discontinue the use of alternative fuels due to the inability to meet "existing facilities" CISWI standards or because the compliance investment required may not be justified on a financial basis. Fifteen of these plants discontinue the use of alternative fuels due to financial criteria. An additional three of these plants cannot meet "existing facilities" CISWI emission standards based on assumptions regarding existing technology and the ability to capture emissions.

Keep in mind, 24 of the 45 cement kilns covered by CISWI are at least 35 years old and may require substantial investment and modification to insure efficiency and remain "world-class" competitive. Such investments could result in existing plants being reclassified as new sources and subject to more severe emission standards. Given this, the technical ability to meet the CISWI standards as well as industry compliance costs could be underestimated if this impact is not taken into consideration. PCA assumes that all plants require a major upgrading or maintenance investment within 35 years of initial plant launch. This suggests that all plants commissioned before 1985 could be subject to a major reinvestment – and could result in an EPA reclassification of the plant as a "new source" within five years after the CISWI standard has been imposed. These 24 plants represent nearly 25 million metric tons of capacity.

Cement Plants Burning Alternative Fuels		
	2015	2025
Total Cement Plants Burning Alternative Fuels in 2010	61	61
- Less: Marginal Burners	16	
- Less: Failure to Meet CISWI "Existing Facilities"	3	
- Less: Failure to Meet ROI under CISWI "Existing Facilities"	15	
- Less: Failure to Meet CISWI "New Facilities"		7
Total Cement Plants Burning Alternative Fuels	27	20
- Percent Reduction	55.7%	67.2%
Source: PCA		

Plants originally commissioned during this time period, but which have had significant capacity changes have been excluded from this analysis. ***Even with no new greenfield plants, our analysis suggests the emission standards facing the industry will be essentially tightened as the industry pursues normal investment to maintain efficiency and competitiveness.*** For nitrogen oxide (NO_x), as an example, the effective CISWI emission standard is lowered from 1,100 ppmv to 140 ppmv by 2020 – representing a dramatic tightening of the standard facing the industry. Among those commissioned before 1985, PCA estimates an additional 7 plants will discontinue burning alternative fuels.

Compliance Scenario: CISWI Impact on Scrap Tire Stockpiles

CISWI will dramatically increase the number of tires in landfills.

Three hundred and eleven million scrap tires were generated in 2009 according to the Rubber Manufacturers Association (RMA). The amount of tires scrapped annually is determined by the number of vehicles on the road and vehicle miles travelled. Historically, 1.24 tires annually are scrapped per vehicle on the road. Based on United States Census projections of population growth, licensed drivers and the number of vehicles per driver, PCA estimates the number of scrap tires produced annually will increase by an average of roughly 2.8 million each year - reaching over 356 million scrapped tires per year by 2025.

Scrapped tires are used as alternative fuel, used in products, or placed in landfills. Since 2005, roughly 55% of scrapped tires were used as alternative fuels, 33% used in other products and 24% placed in landfills. Totalling these uses equates to 112% and is explained by a reduction in stockpiled tires. In 2005, stockpiled tires were estimated at 188 million by the RMA. PCA estimates 2009 stockpiles at 125 million tires.

The cement industry is the largest consumer of tire derived fuel (TDF), utilizing nearly 60 million tires annually and accounting for nearly 40% of all scrapped tires used as fuel. Recent adverse economic conditions has forced a decline in domestic cement production, and as a result, prompted a temporary cyclical decline in TDF consumption by the cement industry. As the economy recovers, cement production and its consumption of TDF will recover.

The recovery in consumption of TDF, attributed to stronger production levels, is expected to be supplemented by changes in cement kiln fuel characteristics in the years ahead – favoring alternative fuels. A gradual and sustained recovery in world economic conditions leading to synchronized world growth is expected to emerge in 2013 and beyond. Much of this growth will be fueled by conditions among lesser developed economies. Indeed, the Energy Information Agency (EIA) expects world economic growth will average 3.2% during 2010-2030. In the context of these world growth conditions, it is likely that oil prices will record sustained gains. Indeed, the Energy Information Agency (EIA) expects oil prices will reach \$105 per barrel in 2015, \$132 per barrel in 2020, and \$156 in 2025. Given these increases and potential substitution effects, all fossil fuel prices, including coal, are expected to increase. PCA uses EIA fuel price projections. Lacking EIA guidance, PCA employs rough cross-elasticity of demand estimates to project other fossil fuel prices.

Alternative fuel prices beat to a different drummer. While these fuels are influenced by overall fuel prices, supply of these fuels are dictated by producer and consumer activity of end-products, such as tires. The disparity in price drivers between fossil fuels and alternative fuels suggests a change in the relative fuel costs – favoring alternative fuels. Such a potential implies an incentive for change in kiln fuel characteristics in favor of alternative fuels at the expense of coal.

PCA estimates the current average fuel cost differential between primary and alternative kiln fuels at roughly \$15 per ton. As fossil fuel prices increase, the cost differential margin will increase to an estimated \$16 per ton in 2015, \$18 per ton in 2020, and \$20 per ton in 2025. The potential widening in price differentials between primary and alternative kiln fuels suggests cement companies will increasingly rely upon alternative fuels. This point has been borne out by long term trends in cement kiln alternative fuel usage. Keep in mind, use of alternative fuels also reduces greenhouse gas emissions.

Based on the likelihood of the eventual widening in the differential between primary and alternative cement kiln fuels, PCA expects alternative fuel usage will increase in proportion to primary fuels. In 2008, alternative fuels accounted for nearly 11% of total cement kiln fuel consumed. This share is expected to reach 12% in 2015, nearly 15% in 2020, and nearly 17% in 2025. These gains are expected to come at the expense of coal.

With the economic slowdown resulting in production declines, TDF usage for all industries is expected to decline. This suggests the proportion of tires going into landfills will increase and the stockpile of scrapped tires will increase as well. PCA estimates the stockpile of tires will increase from 188 million tires in 2005 to 246 million tires in 2010, with further increases in tire stockpiles materializing as long as industrial production remains depressed – reaching a cyclical peak of 392 million tires in 2015. Sustained declines in tire stockpiles are expected to materialize during 2015-2025, reducing stockpiles to 311 million tires in 2020, and 126 million in 2025. The cement industry's consumption of scrapped tires plays an important role in reducing the scrapped tire stockpile. According to this scenario, existing cement kilns using TDF continue - allowing 63 million scrapped tires to be consumed by the cement industry in 2015, 68 million in 2020, and nearly 78 million in 2025.

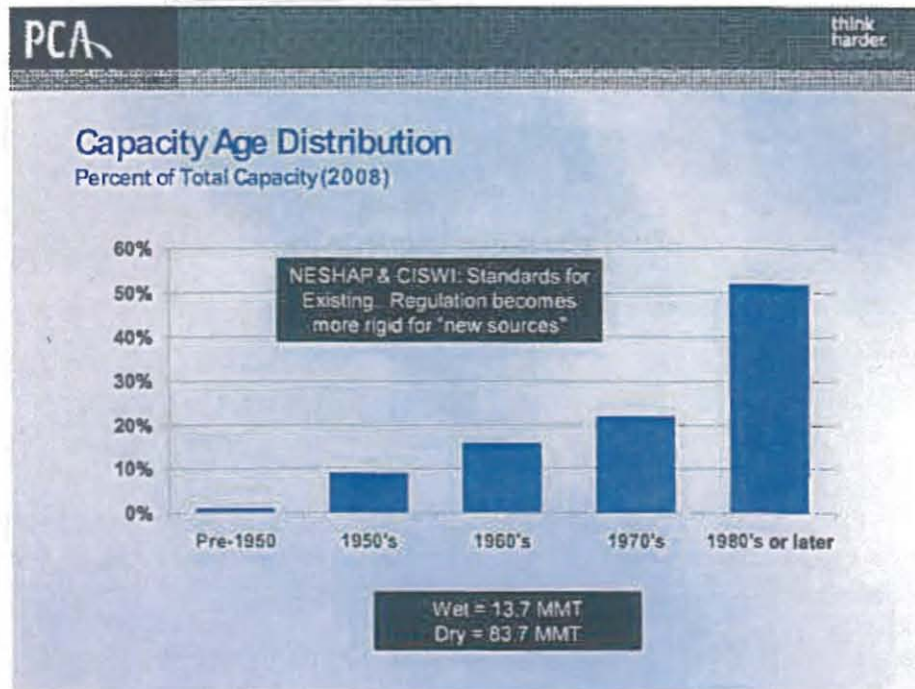


CISWI rules would significantly reduce the amount of scrapped tires consumed by the cement industry. Under CISWI, PCA estimates cement industry scrapped tire consumption would decline to 27 million tires in 2015 and roughly 20 million tires annually during 2020-2025. Holding all other assessments included in our baseline analysis constant, scrapped tire stockpiles would reach 358 million tires in 2015 nearly 534 million tires in 2020, and more than 600 million tires in 2025. The CISWI standard potentially reverses decades of environmental cleanup success and EPA support for using TDF as a fuel.

Compliance Scenario: "New Source" Emitters

EPA's regulatory standards are not static – they are dynamic and are designed to become ever more difficult to meet as time passes.

EPA's regulatory standards are not static – they are dynamic and are designed to become ever more difficult to meet as time passes. This is accomplished by a set of standards for existing sources and much more rigorous standards for new sources. EPA's NESHAP and CISWI standards emission limits, for example, are considerably more severe for new sources than existing sources. New greenfield plants commissioned after 2013 are subject to the new source emission standards. Major modifications to



existing plants could force, or "trigger", a reclassification of the plant from an existing source to a new source – potentially requiring further compliance investment for cement plants. Similarly, the New Source Performance Standards (NSPS) and the Clean Air Act's Tailoring Rule contain an investment "trigger" prompting compliance investment.

Keep in mind, 63% of all cement kilns are at least 30 years old and may require substantial investment and modification to insure efficiency and to remain "world-class" competitive. Such investments could result in existing plants being reclassified as new sources and then subject to more severe emission standards. Consequently, the technical ability to meet EPA standards, as well as industry compliance costs, could be underestimated if this impact is not taken into consideration. PCA assumes that all plants require a major kiln investment within 35 years of initial plant launch. This suggests that all plants commissioned on or before 1990 could be subject to a major reinvestment during the forecast horizon – and result in an EPA reclassification of the plant as a new source. This represents 33 plants. According to this methodology, 15 plants would have to engage in major investment by 2015, representing nearly 14.5 million metric tons, 14 plants by 2020 representing 14 million metric tons, and 4 plants by 2025 representing 3.3 million metric tons

of capacity. Plants originally commissioned during this time period, but which have already had significant capacity changes have been excluded from this analysis. ***Even with no new greenfield plants, our analysis suggests the effective emission standards facing the industry will be tightened as the industry pursues normal investment to maintain efficiency and competitiveness.***

New source triggers are particularly alarming and could lead to decisions to abstain from necessary competitive investments that have always been on-going and, most recently done at an aggressive pace. In some ways the "new source" trigger provisions send a clear signal to cement producers not to invest to remain world-class competitive. Keep in mind, large multinational companies dominate ownership of the United States cement industry. Within a multinational company, each geographic region, such as the North America, competes for scarce corporate investment dollars (expanding cement capacity is extremely expensive – a two million metric ton plant now costs upwards of \$600 million). The rate of return on investment for new capacity in the United States is compared against returns in other countries. The new source provisions could reduce expected returns on investments in the United States and contribute to corporate decisions to pursue other options to source the United States cement market.

Compliance Scenario: New Source Performance Standards (NSPS)

New source designations will likely deter investment to remain world-class competitive or force additional plant closures.

The EPA's New Source Performance Standards (NSPS) are aimed at "progressively tightening emission standards over time to achieve steady improvement in air quality without unreasonable economic disruption. This is accomplished by mandating significant improvement in source emitters when they make a substantive investment in plants to modernize to remain competitive. ***In other words, re-investment in domestic production facilities will trigger NSPS compliance.*** For the cement industry, the NSPS targets three key emissions including nitrogen dioxide (NO_x), sulfur dioxide (SO_x) and particulate matter (PM). The EPA's NSPS requires "new source" cement emitters to comply to:

- NO_x emissions at 1.5 pounds per ton of clinker.
- SO₂ emissions at 0.4 pounds per ton of clinker.
- PM emissions at 0.01 pounds per ton of clinker.

These standards require cement plants to comply with these standards when modernization/investment results in an hourly increase in NO_x, SO₂ or PM emissions. If there is no increase in hourly emissions from the modernization/investment, then the NSPS standards have no impact on cement producers' overall emission compliance strategy.

Unfortunately, many of the older plants that will require modernization investment during the forecast horizon are characterized by smaller sized kilns. According to PCA's Plant Information Survey report, the average kiln size requiring modernization investments during the forecast horizon is 760,000. This compares against an average of 1.8 million metric tons for kilns built between 2000-2010 (950,000 metric tons if one massive new plant is excluded from the calculation). Larger kiln sizes, due to the economies of scale, lowers per ton fixed costs under "normal" operating conditions (greater than 80% utilization rate). These lower costs can improve a plant/company is regional competitiveness, with some of the potential cost savings passed onto users of concrete for the construction of residential, nonresidential and public structures. Given the existing trends to lower fixed costs via larger kiln sizes, it is likely that any major

modernization investment at a cement plant will result in an increase in hourly emission rates of NO_x, SO₂ and PM.

Assuming the typical modernization investment patterns are extended into the future, PCA believes that all 34 plants requiring modernization investment during the forecast horizon will be forced to comply with NSPS standards. Compliance with NSPS standards will require investment in bag houses to meet particulate matter emissions standards, SCNR systems to meet NO_x emissions standards, and wet scrubber systems to meet SO₂ emission standards. In most instances, these systems may already be in place due to NESHAP (PM) and/or CISWI standards (PM, NO_x, SO_x).

New Source Performance Standards (NSPS)

	(lbs/ton)				
	NESHAP Existing	CISWI Existing	NESHAP New Source	CISWI New Source	NSPS New Source
NO _x	-	7.23	-	0.9	1.5
SO _x	-	3.83	-	0.03	0.4
PM	0.04	0.24	0.01	0.01	0.01

Sources: Federal Register: V75#174, V75#107

Note: CISWI standards are estimated conversions based on general volumetric emissions, stack moisture, and oxygen levels

PCA assumes that plants with specific emission control equipment already in place to meet "existing source" NESHAP and CISWI standards, but that cannot meet the more rigorous new source standards, will delay modernization investments and let the plants run as long as they remain viable. As long as strong demand conditions prevail, these plants could remain open throughout the forecast horizon. This possibility is heightened in the context of PCA assessments regarding the fly ash ruling. A moderate recession prompting sub-80% utilization rates, however, could necessitate a closing of these plants – some permanently.

The key result of the NSPS and new source initiatives is to thwart modernization investments in the cement industry. Such investments during the past ten years have been responsible for sustained improvement in energy use, emissions and production costs – resulting in a 20% reduction in high carbon fuel consumption, roughly a 6% reduction in emissions per ton of clinker, and cement prices that have remained remarkably stable (absent the cement shortage era that was promulgated by easy lending standards and the industry's dependence on imports). NSPS could increasingly hinder modernization investments diminishing these future beneficial trends.

NESHAP's, CISWI's and NSPS's tighter "new source" emission standards can be triggered by major investments/modernization to existing facilities. If normal modernization/investment strategies were pursued, however, additional cement plants would face closure. The "new source" standards are significantly tighter than "existing source" standards. This could force the 33 older plants, which would

normally be subject to investment during the forecast horizon to consider investing or close. *If normal modernization/investment strategies are not pursued to remain world class competitive it could eventually lead to an additional 4 plant closures representing another 3.4 million metric tons of capacity.* This estimate is *not* included in PCA's compliance scenario estimates.

Compliance Scenario: Clean Air Act Tailoring Rule

The EPA's exercise of the Clean Air Act (CAA) with regard to CO₂ emissions targeted at the cement industry could be interpreted as a tacit first step in climate change regulation. Effective in 2011 for all plants that emit at least 100,000 tons of greenhouse gases (GHG) per year, any major investments resulting in a 75,000 ton increase in GHG emissions will be required to invest in "best available control technology" (BACT) to limit CO₂ emissions.

The production of cement results in CO₂ emissions. For every ton of cement produced, roughly 0.9 tons of CO₂ is emitted. The emission of CO₂ arises from two sources, namely process emissions and combustion emissions. Process related emissions from cement production are created through a chemical reaction that converts limestone to calcium oxide and CO₂. The quantity of process-related emissions from cement production is proportional to the lime content of the clinker. These emissions generated during the calcination process are naturally occurring and as a result BACT compliance has no impact. These emissions account for 55% of CO₂ emissions released in the manufacture of one ton of clinker.⁶ The remaining CO₂ emissions are generated by fuel combustion.

Given the existing trends to lower fixed costs via larger kiln sizes, it is likely that any major modernization investment at a cement plant will result in an increase in production and hence an increase in CO₂ emissions in excess of the Tailoring rule thresholds. This implies that all 33 plants requiring a major investment/modernization during the forecast horizon will be subject to the Tailoring Rule. There are a multitude of processes and equipment that can be combined to reduce CO₂ emissions. These key "best available control technology" (BACT) to limit CO₂ combustion emissions generated during the manufacture of cement focused on in this report include;

- Conversion from the wet process to the dry process, which is significantly less energy intensive
- Installation of pre-heaters and pre-calciners, thereby improving energy efficiency and reducing emissions.
- Substitution of lower carbon content fuels (natural gas) for coal, coke and petroleum coke, an alternative fuels..
- Greater use of limestone in the grinding of cement, thereby reducing the CO₂ content per ton of **cement**.

Major investments trigger compliance with the Tailoring Rule. The industry is already aggressively pursuing the conversion of its capacity from the wet process to the dry process. It is unlikely that any major investment in a wet kiln will materialize, hence there will be no trigger for the Tailoring Rule. The wet kiln process is an older process and is typically less energy efficient.⁷ During the past two years, the phase-out

⁶ CO₂ Emissions Profile of the U.S. Cement Industry, Lisa J. Hanle, U.S. Environmental Protection Agency

⁷ Note: the last wet kiln was installed 35 years ago.

of wet kilns has accelerated – reducing wet kiln clinker capacity by nearly 5.6 million metric tons. In the context of current economic distress, the potential for higher energy prices in the future, the accelerated pace of wet kiln retirement is expected to continue. ***This suggests that cement producers will maintain the operation of wet kilns and let the plants run as long as they remain viable, but will not invest in these plants.***

More than 80% of all dry cement kilns use pre-heaters and pre-calcinators to save on energy consumption. It is likely that older dry kiln plants among the 33 likely to require investment during the forecast horizon are characterized by a smaller presence of these devices. In the context of rising energy prices it is likely that all kilns will install pre-heaters and pre-calcinators at a time of major investment – with or without the Tailoring Rule.

Perhaps the most significant impact the Tailoring Rule could exert on costs comes in the form of the possible substitution of lower carbon content fuels (natural gas) for coal, coke and petroleum coke. In order to determine the change in production costs resulting from a change in fuel types, fuel input cost data from the Energy Information Agency was used to determine that natural gas cost almost 140% more than coal on a equivalent BTU basis. As a result, PCA has assessed that the cost per ton of clinker production would increase nearly 12% if the industry were to switch from coal as a kiln fuel source to natural gas⁸.

Other EPA Regulations Impacting the Cement Industry

The EPA has also initiated new standards regarding greenhouse gas reporting and the National Ambient Air Quality Standards (NAAQS). While each initiative could impact cement production costs. In the context of NESHAP, CISWI, NSPS and the Tailoring Rule, these initiatives are believed to represent less of an immediate threat to the industry and are not addressed in this report.

EPA Regulations' Impact on U.S. Imported Cement Projections

The increase in cement consumption resulting from the fly ash ruling, combined with the reduction in cement capacity due to NESHAP/CISWI will force increased reliance on imports to meet expected future consumption. Import share is expected to reach 32% in 2015, 47% in 2020 and nearly 56% in 2025, compared to roughly 9% estimated in 2010.

Compared to the baseline scenario, cement consumption estimates increase under the compliance scenario due to the fly ash ruling, adding 16 million metric tons to cement consumption in 2015, 20 million metric tons in 2020, and 23 million metric tons in 2025. With the forced closure of domestic plants due to NESHAP emission standards, an increased reliance on cement imports is expected to materialize. PCA estimates import share is expected to reach 32% in 2015, 47% in 2020 and nearly 56% in 2025, compared to roughly 9% estimated for 2009. These share estimates reflect volume estimates of 36 million metric tons in 2015, nearly 62 million metric tons in 2020, and 82 million metric tons in 2025. The current U.S. import terminal capacity is estimated at 45 million metric tons.

⁸ This calculation is based on the conversion rate of relative fuel BTU costs and its impact on clinker costs implied in the study "Fuel Switching from Coal to Natural Gas – California Portland Cement Industry", Environ International Corporation, August 22, 2008.

Compliance Scenario					
	2005	2010	2015	2020	2025
US Cement Industry					
US Cement Consumption (000 tons)	128,035	68,879	127,397	151,229	170,833
US Clinker Capacity (000 tons)	94,693	96,877	97,874	95,604	95,604
US Production (000 tons)	89,981	58,286	85,976	83,508	83,186
Imports (000 tons)	27,305	5,900	36,000	62,000	82,000
Total Fuel Consumption (billion BTU, bbtu)	341,999	237,896	343,904	334,033	332,746
Primary Fuel Consumption (bbtu)	307,009	211,345	315,750	318,091	314,113
Alternative Fuel Consumption (bbtu)	34,989	26,551	18,359	15,942	18,633
Alternative Fuel Plants (AFP)					
Capacity at AFP (000 tons)	48,209	49,923	22,465	22,465	20,219
Production at AFP (000 tons)	48,209	49,923	22,003	21,959	19,737
Total Fuel Consumption (bbtu)	177,984	120,146	194,555	191,958	191,220
Primary Fuel Consumption (bbtu)	142,995	94,125	176,196	176,016	172,587
Plant Alternative Fuel Consumption (bbtu)	34,989	26,021	18,359	15,942	18,633
Plant Tire Derived Fuel (bbtu)	12,143	8,587	5,759	4,532	4,796
Scrapped Tires Consumed (millions)	58	39	27	21	20
Scrapped Tire Stockpile (millions)	188	246	358	534	604
Fly Ash					
Fly Ash Production	71,100	65,568	71,520	73,632	75,616
Beneficial Use Consumption	29,118	27,392	0	0	0
Concrete Consumption	14,504	8,898	0	0	0
Cement Kiln Consumption	2,834	3,017	0	0	0
Cement/Concrete Share of Beneficial Use	59.6%	43.5%	-----	-----	-----
Estimated Landfill	41,982	38,176	71,520	73,632	75,616
Sources: PCA, USGS, Various EPA emissions documents.					
Note: No credible Cadmium emissions data for cement kilns could be found and is omitted from analysis.					

Impact on Global Emissions

A significant portion of the improvement in emissions due to EPA regulations comes from plant closures. Displaced domestic production implies an increase in foreign production and higher emissions in those countries. The EPA standards effectively export our emissions to cement supplying countries.

Absent global cement plant emission standards, the improvement in global emissions arising from EPA policy is limited to the improvements attributed to the implementation of emission controls at U.S. cement plants and plant closures. Since U.S. cement plant closures necessitate an increase in imports, the

potential policy impact of NESHAP emission standards is to export the emission to foreign cement producing countries which have more relaxed emission standards than those proposed under NESHAP.

Indeed, global emissions associated with cement manufacture are likely to increase due to EPA regulations. Removing fly ash from concrete mixes, for example, increases cement production, either domestically or in foreign source countries or both. The extent to which the corresponding emission increases are realized in the United States depends on further investment in United States cement capacity. World-wide emissions arising from increased cement production will be a result of the fly ash ruling. If the additional cement is not produced in the United States, it will be produced elsewhere and the emissions associated with additional cement production will be released.

EPA Regulations Impact on U.S. Construction Costs

EPA regulations could add \$2.4 billion to nearly \$4 billion in annual construction costs.

The average costs associated with the cement industry's compliance to EPA regulations could increase domestic production costs by \$22 to \$36 per ton. Keep in mind, the increase in costs by a particular cement plant will depend on its designation as a CISWI or NESHAP plant, the composition of current emissions and the need for compliance equipment, its use of fly ash in its kiln, and dependence on coal fired utilities for electricity. Wide variations in cost increases from EPA regulations among cement producers could exist. This assessment includes;

- Capital costs associated with compliance investments dispersed over a 15 year time horizon,
- Annual operating associated with compliance systems,
- The increase in fuel costs for plants forced to stop burning cheaper alternative fuels,
- The increase in kiln costs associated with the replacement of fly ash by limestone,
- The increase in costs associated with the replacement of fly ash in concrete by cement,
- The increase in electricity costs associated with fly ash's hazardous waste designation,
- The possible substitution of lower carbon content fuels (natural gas) for coal, coke and petroleum coke due to the Tailoring Rule.

Using a five year average of cementitious material intensities, out of every one million real 1996 dollars of construction activity, roughly \$14,500 is attributed to cementitious material costs. Prior to the recession's collapse of construction activity, the construction market was averaging roughly \$750 billion in real construction spending. This translates into roughly \$11 billion in cementitious material spending. Cost increases resulting from EPA regulation could increase cement/concrete construction costs between 22% to 36% per construction project. This translates to an estimated \$2.4 billion to \$3.9 billion (real 1996 \$) in a "typical" \$750 billion construction market.

The largest consumer of cement/concrete is the public sector, accounting for 50% of cement consumption. High cement consuming public construction efforts include new highways, bridges, schools, public buildings as well as water, sewer and conservation projects. Of public construction activity, more than 90% is undertaken by state and local governments. PCA estimates that EPA compliance costs could add as much as \$1.2 to \$2 billion annually to state and local governments' expenditures just to maintain existing roadways and bridges.

EPA Regulations Impact on U.S. Employment

EPA regulations could result in the direct loss of 3,000 to 4,000 jobs in the cement industry and potentially another 12,000 to 19,000 direct jobs in the construction industry due to higher construction costs. These direct job losses could be amplified if up and downstream indirect impacts are considered.

The potential closure of plants in the industry due to EPA regulations could result in a direct job loss of 3,000 to 4,000 jobs. These jobs are typically high paying jobs and translate into \$200 million to \$260 million in lost wages. Loss of these jobs and wages results in less economic activity and leads to further job losses, often referred to as the "employment multiplier effect". PCA calculates these additional job losses at 6,500 to 10,000 jobs⁹. Most of these job losses would be concentrated in areas near the plant shutdowns, magnifying the potential distress in these communities.

Cost increases in the manufacture of cement and concrete due to EPA compliance will displace some construction activity. In doing so, some jobs that may have been created, might not materialize due to the EPA regulations. PCA roughly estimates these potential direct job losses in the construction sector at 12,000 to 19,000. Employment multiplier effects could add another 30,000 to 50,000 job losses.

NSPS and new source initiatives could thwart modernization and expansion of investments in the cement industry. Based on the age composition of kilns operating in the United States, dozens of large-scale investments could be foregone and the jobs these investments would provide. PCA makes no estimate regarding the magnitude of these potential job losses.

⁹ Employment multiplier used is based on a working paper by Josh Bivens, Economic Policy Institute, August 2003.



The Voice of Rural & Regional Carriers

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January 14, 2011

The Honorable Darrell Issa
Chairman
Committee on Oversight & Government Reform
United States House of Representatives
2157 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Issa:

RCA appreciates the opportunity to comment on how existing and proposed Federal regulations impact job and economic growth in the wireless industry. As powerful drivers of the economy on the path towards recovery, rural and regional carriers depend on regulations that promote competition. Regulatory certainty is particularly crucial at a time when the most recent Federal Communications Commission (FCC) Wireless Competition Report failed to find, for the first time, that the industry was sufficiently competitive.¹

The Rural Cellular Association (RCA) is a trade association representing the interests of nearly 100 regional and rural wireless carriers that provide services throughout the Nation and are licensed to serve more than 80 percent of the country. Most of RCA's members serve fewer than 500,000 customers. As the wireless industry continues to grow, so does wireless market consolidation. The largest two wireless carriers now serve two-thirds of all subscribers. Absent regulatory reform in several areas, this pattern of consolidation will continue at the expense of rural and regional carriers and will threaten economic growth, local jobs, and consumer choice. Specifically, current and proposed Universal Service Fund (USF) and spectrum interoperability regulations need immediate attention to support economic and job growth.

Universal Service Fund

As evidenced by the planned deployments of 4th Generation (4G) mobile broadband services, most mobile wireless carriers plan to provide services to urban and densely populated areas first. At the same time, all Americans depend on robust and reliable wireless networks for communications, educational and employment opportunities, safety, and overall connectivity. To expand communications services to areas that otherwise lack an immediate business case, the FCC created the USF High-Cost program "to ensure that consumers in rural, insular, and high-cost areas have access to telecommunications services at rates that are affordable and reasonably comparable to those in urban areas."² As rural and regional wireless carriers began to receive USF support, high-quality services to consumers living in remote and hard to reach areas that otherwise would have been left behind have vastly expanded.

In 2008, the FCC instituted an "interim" cap on competitive eligible telecommunications carriers (CETCs) (CETCs are mostly wireless service providers) in an attempt to control growth of the high cost

¹ FCC, *14th Mobile Wireless Competition Report*, FCC 10-81 (May 20, 2010).

² FCC, http://www.fcc.gov/wcb/tapd/universal_service/highcost.html

fund, which is subsidized by an assessment on interstate telecommunications services utilized by consumers. Despite this cap, the high cost fund has continued to grow.³ Yet the cap has impeded the growth of mobile wireless networks. Since 2008, competitive options for consumers in rural and regional areas have decreased, and the overall size of the fund is unsustainable. Furthermore, the cap has limited economic and job growth that corresponds with increased reach of wireless networks.

The negative impacts of the “interim” cap have been exacerbated by the FCC’s recent decision⁴ in the *Corr Wireless* proceeding. Under the current rules, when a CETC relinquishes ETC status in a state, relinquished funds go back into the state’s USF monies and are made available for other CETCs to access. In this Order, the FCC adopts a rule that relinquished support will now go back to the FCC, to be repurposed on other universal service initiatives, including the mobility fund, rural health care, schools and libraries, and the lifeline program. Beyond the questionable legal basis based on administrative procedures, this regulatory action denies rural and regional carriers the opportunity to access those funds to help bring advanced wireless services and associated jobs to hard to reach areas throughout the state. An immediate reversal of both the “interim” cap and following *Corr* decision would promote increased service in high cost areas, and economic and job growth that follows.

The FCC’s current proposals for both the Mobility Fund and the Connect America Fund (CAF) increase uncertainty and potentially further limit the ability of rural and regional carriers to compete with the larger carriers. With increased uncertainty, capital that would otherwise fuel economic growth remains on the sidelines. Continued wireless growth in high cost areas will stagnate and could force several carriers to close their businesses.

As proposed, the Mobility Fund will provide a very limited amount of support to wireless carriers to deploy 3rd Generation networks (or better) at the expense of currently viable service providers. The FCC proposes to disburse funds to winners through reverse auctions, a mechanism that is inherently anti-competitive. Reverse auctions perpetuates a “race-to-the-bottom” that allows auction participants to game the system through their own market dominant positions, and provide minimum quality service while eliminating their competition. Even worse, single winner reverse auctions would essentially create government-funded monopolies, resulting in higher prices and/or reduced services. We anticipate that the FCC will utilize same reverse auction mechanism in the proposed CAF. While reverse auctions might bring competition within an electronic auction room, it would not have a competitively neutral effect in the marketplace.

Despite claims that USF reform will be competitively and technologically neutral, the National Broadband Plan proposes an unequal phase-down period – ten years for supported wireline providers, but five years for wireless providers. This unequal phase down is not competitively nor technologically neutral and supports outdated technology, despite the fact that wireless is the most efficient, cost-effective means of bringing broadband to rural America.⁵ RCA supports the Commission’s goal to extend Universal Service support to broadband services; however, the proposed CAF runs contrary to this goal and will harm rural and regional carriers in the process.

³ “The universal service contribution factor for the first quarter of 2011 will be 0.155 or 15.5 percent.” *Proposed First Quarter 2011 Universal Service Contribution Factor*, Public Notice, DA 10-2344 (December 13, 2010).

⁴ See *FCC Order in the matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*, FCC 10-205 (December 30, 2010).

⁵ OBI Technical Report No. 1

While there is broad consensus for USF reform, RCA continues to push for reform that is truly competitively and technologically neutral and success-based. A policy that allows any carrier that can enter the market and secure enough customers with the corresponding support, will limit growth of the fund and will also allow consumers to determine the technology and carrier that best meets their needs. USF reform must offer redress from the current and proposed regulatory oversteps of the Commission and promote the continued growth of rural and regional carriers as consumers continue to choose mobile solutions to meet their needs.

RCA recommends the Committee immediately require the FCC to lift the “interim” cap on USF support for CETCs and to distribute all USF support funds for wireless carriers to these CETCs as statutorily required. Additionally, RCA asks the Committee to revisit proposed USF reform programs to ensure they are competitively and technologically neutral. Certainty is needed for continued investment in the deployment of wireless networks. An immediate assurance to wireless carriers that they will receive support for capital and operating expenses will expedite current deployment plans and foster additional growth of mobile wireless networks.

Interoperability

Since the beginning of mobile wireless service’s success, interoperability has played a key role in promoting a healthy, competitive environment. Carriers have been able to enter the marketplace, bringing with them additional capital investments and the jobs needed to build and maintain the network. The FCC established an analog compatibility standard when originally licensing cellular spectrum.⁶ As a result, interoperability continued as the standard in subsequent PCS and AWS spectrum bands made available for mobile wireless use. With this precedent, 700 MHz auction participants expected the spectrum to be interoperable. This expectation of interoperability led to greater auction competition and, as a result, almost \$19 billion in revenue for the U.S. Treasury.⁷

Current FCC regulations do not require interoperability in the 700 MHz band, and, after the auction’s completion, the two largest carriers developed their own privatized band plans that prevent competition from the Lower A Block winners and jeopardizes the Lower A Block licensees’ investment. With standards set by the international, non-governmental 3rd Generation Partnership Project, four separate band classes have been created, eliminating the economies of scale and competition in the equipment market for 4G LTE networks in the 700 MHz band.

Many rural and regional wireless carriers invested heavily and secured licenses in the 2008 700 MHz auction. Yet, as a result of the FCC’s failure to impose an interoperability standard in the 700 MHz spectrum, they are unable to obtain equipment to deploy next generation networks at an economically competitive cost. The deployment of 4G LTE networks in rural and regional areas has been delayed, keeping investment capital and corresponding jobs on the sideline at a time when this investment can play a key role in the nation’s recovery. Further, the separate band classes present a technical barrier to roaming. A return to the Reagan-era requirement of interoperability will help to restore competition to

⁶ 47 C.F.R. § 22.901(b). The analog compatibility standard sunset in 2008. See also 17 FCC Rcd 22140 (2002).

⁷ See *Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73*, Report No. AUC-08-73-I (Auction 73), Public Notice, DA 08-595 (March 20, 2008) (*Auction 73 Closing PN*); see also *Erratum, Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73*, Report No. AUC-08-73-I (Auction 73), Public Notice (March 26, 2008).

the market and provide a boost to local jobs and economic health of the communities in which rural and regional carriers are intertwined.

The lack of an interoperability requirement also poses significant problems for public safety officials, who are working to create the long-needed nationwide interoperable broadband public safety network. Public safety must be able to communicate in the event of a disaster, and therefore must have access to equipment that is capable of roaming on all networks, public safety and commercial. As reported by the Congressional Research Service, interoperability could reduce the cost of public safety devices by \$2500 *per device*, while providing seamless roaming and network redundancy to ensure service in areas where the public safety network is not yet deployed or if the public safety network goes down or reaches capacity.⁸

Interoperability affects more than just roaming capabilities and equipment costs. As noted above, the success of the 2008 700 MHz auction was dependent on participation of numerous rural and regional carriers, bidding mostly on Lower A Block spectrum. In fact, the Lower A Block 700 MHz licenses commanded a higher price (\$1.16) than the Upper C Block (\$0.76).⁹ Based on FCC precedent, auction participations assumed that the spectrum would be interoperable and equipment and roaming would be present to allow for network deployment. Lack of interoperability creates uncertainty for current and future 700 MHz spectrum holders. Smaller carriers will be unwilling to commit the substantial capital needed to participate without the certainty that interoperability provides. Without competition from the smaller carriers, auction revenues will be lower than expected. As University of Maryland Economist Peter Cramton has found,¹⁰ a lack of interoperability will severely limit revenue raised in future auctions due to decreased participation and competition.

Future spectrum license auctions are widely seen as a significant source of revenue for the Treasury for the near future. This summer the FCC intends to auction an additional 16 licenses in the 700 MHz Lower A and Lower B blocks that were not sold during the previous 700 MHz auction or returned to the Commission following bidder default.¹¹ Potential new bidders run the risk that the dominant carriers will again block their participation and competition, and they will be discouraged from bidding.¹²

RCA strongly encourages the Committee to urge the Commission to grant the existing Fair Purchasers Alliance Petition for Rulemaking¹³ on interoperable equipment in the 700 MHz spectrum to return to the Reagan-era FCC requirement of interoperability within spectrum bands.

⁸ Linda K. Moore, *Public Safety Communications and Spectrum Resources: Policy Issues for Congress*, Congressional Research Service, Sept. 1, 2010, at 8.

⁹ See *Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73*, Report No. AUC-08-73-I (Auction 73), Public Notice, DA 08-595 (March 20, 2008) (*Auction 73 Closing PN*); see also *Erratum, Auction of 700 MHz Band Licenses Closes, Winning Bidders Announced for Auction 73*, Report No. AUC-08-73-I (Auction 73), Public Notice (March 26, 2008).

¹⁰ See Peter Cramton, *700 MHz Device Flexibility Promotes Competition* (August 9, 2010), available in *Ex Parte* Letter from Rebecca Murphy Thompson, General Counsel for Rural Cellular Association, to Marlene H. Dortch, Secretary, FCC, filed in RM-11592 (filed Aug. 10, 2010).

¹¹ *Auction of 700 MHz Band Licenses Scheduled for January 24, 2008; Notice and Filing Requirements, Minimum Opening Bids, Reserve Prices, Upfront Payments, and Other Procedures for Auctions 73 and 76*, Public Notice, DA 07-4171, 22 FCC Rcd 18,141 (WTB 2007).

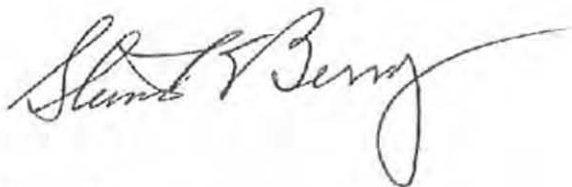
¹² RCA Comments, *Auction of 700 MHz Band Licenses Scheduled for July 19, 2011; Comment Sought on Competitive Bidding Procedures for Auction 92*, AU Docket No. 10-248 (January 12, 2011).

¹³ See 700 MHz Block A Good Faith Purchasers Alliance Petition for Rulemaking, filed in RM-11592 (Sept. 29, 2009); see also RCA Comments at 19-20, filed in RM-11592 (March 31, 2010).

While the above current and proposed FCC regulations have negatively impacted the ability of rural and regional wireless carriers to support job growth and economic gains, there are several additional steps the Commission could take to promote competition and growth in the industry. Supporting automatic data roaming will promote competition and give rural and regional carriers the chance to continue to innovate and grow. Every consumer in America wants their device's data and voice services to work wherever they find themselves where a compatible network is present. There is no technical reason why roaming on compatible networks should not be the norm, and roaming promotes competition in every market. Congress and the FCC should take policy steps to ensure consumers' wireless devices will work to receive voice or data information.

Please do not hesitate to contact me with any questions, and please let me know if RCA can be of any assistance.

Best Regards,

A handwritten signature in black ink, appearing to read "Steven K. Berry". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Steven K. Berry
President & CEO

cc: The Honorable Elijah Cummings, Ranking Member



January 12, 2011

The Honorable Darrell E. Issa
Chairman
Committee on Oversight and Government Reform
U.S. House of Representatives
2157 Rayburn House Office Building
Washington, DC 20515

Re: Regulations and Proposed Regulatory Initiatives that Negatively Impact Jobs, the Economy and Small Business Growth

Dear Chairman Issa:

The Small Business & Entrepreneurship Council (SBE Council) is pleased to provide the Committee on Oversight and Government Reform with ideas that will lead to an improved environment for job creation, investment and risk taking by our nation's entrepreneurs. SBE Council has identified a variety of government regulations and proposed initiatives that hinder job creation and economic recovery, and we look forward to working with you and the Committee on the priorities outlined in this letter.

SBE Council is a nonpartisan, nonprofit advocacy and research organization dedicated to protecting small business and promoting entrepreneurship. With nearly 100,000 members and 250,000 small business activists nationwide, SBE Council is viewed as one of the most powerful voices for entrepreneurs. In addition to our work on federal policies, SBE Council is highly engaged at the local, state, and international levels, collaborating with elected officials, policy experts and business leaders on initiatives and policies that enhance competitiveness and improve the environment for business start-up and growth.

SBE Council is pleased that you are tackling the serious issue of burdensome and counterproductive overregulation. Unfortunately, business owners remain on edge regarding the tidal wave of federal government regulation that has been advanced or proposed over the past two years -- all of which will impose new costs or lead to unintended consequences for small firms. The pain of the harsh recession was intensified and lengthened by this hyper-regulatory environment. Uncertainty continues to linger as entrepreneurs are bracing for new costs or consequences that they expect will arrive (and, in fact, already have) with the implementation of major pieces of legislation or policies like the Patient Protection and Affordable Care Act

(PPACA), the Dodd-Frank financial overhaul bill, as well as restraints and intrusions imposed on the energy sector which are now leading to price instability and higher gas prices. Of course, higher costs on small business owners mean fewer resources for job creation and investment.

SBE Council supports a comprehensive review of the vast array of major rules that have been promulgated in 2010, as well as those in the pipeline. The U.S. business sector simply cannot compete internationally given this costly regulatory trend. America's businesses are being regulated into the ground, and unless Washington breaks from this destructive trend, the economy will vastly underperform if not stagnate.

SBE Council strongly encourages the Committee to ask key federal department and agency heads to come before the Committee to detail their philosophies and specific initiatives, with a focus on how they believe their plans or programs will lead to job creation, economic growth and efficient government. SBE Council urges the strategic use of the Congressional Review Act (CRA) to overturn regulations that pose an immediate and burdensome cost threat to small businesses. We support a full audit of key federal agencies and departments to determine if they are properly complying with the Small Business Regulatory Enforcement Fairness Act, or requirements that they conduct specific cost analysis. Mounting regulatory costs are taking their toll on business. With access to capital and credit still tight, compounded by economic instability and higher energy and health coverage costs, small business owners lack the resources and confidence they need to hire. The prospect of additional regulatory burdens and costs drives greater uncertainty. Job creation does not flourish in such an environment.

As you know, America's small business owners are disproportionately impacted by regulation. The U.S. Small Business Administration's Office of Advocacy has reported that the per-employee cost of federal regulation has reached staggering levels. Their most recent regulatory impact study found that in 2008, the per-employee regulatory cost for small businesses with fewer than 20 employees was \$10,585 – compared to \$7,755 for firms with more than 500 employees. With regard to environmental regulation, the disparity between small and large firms is stunning -- \$4,101 per employee for small firms versus \$883 per employee for larger ones. Small manufacturers take the biggest cost hit, according to the Office of Advocacy report. They pay a staggering \$28,316 per employee in total regulatory costs.

Regulation of big business deeply impacts small firms as well. The threat of new regulation spawns uncertainty for larger enterprises too, leading to a pull back in investment, which not only hurts innovation and job growth but the amount of business that is conducted with entrepreneurs. The findings of a Business Roundtable report "'Mutual Benefits, Shared Growth: Small and Large Companies Working Together," demonstrate the close economic ties between small and large businesses. U.S.-parent operations of the typical U.S. multinational buys goods and services from more than 6,000 American small businesses; buys a total of more than \$3 billion in inputs from these small-business suppliers; and relies on these small-business suppliers for more than 24 percent of its total input purchases, according to the report. In sum, small