Industrial Footprint Project Narrative

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Project Title: Industrial Footprint

Requested Federal Funding: $182,105.00

Project Period: 36 months from the date of award

1.0 Project Goals and Objectives

1.1 Background

The EPA *Innovation Strategy* states that "environmental programs should address a broader range of issues than they typically do today. The goal should be greater environmental responsibility and natural resource stewardship across all of society, along with successful integration of environmental, economic, and social objectives." It also states that new approaches need to "emphasize results more than the means to achieve them, using regulatory and non-regulatory tools and working in partnership with others. In such instances, public accountability should be provided through use of meaningful performance tools".

However, current state and federal laws and regulations use a one-size-fits-all process to establish environmental priorities and efforts to address a broader range of issues (beyond compliance) have been limited to voluntary actions by progressive companies. This proposal will develop a performance measurement tool for assessing environmental, economic and social impacts for a manufacturing sector in Washington State. It will explore the utility of the tool to develop regulatory priorities and to measure the effectiveness of innovative and traditional approaches to permitting and regulation of high-profile, major point source industries with multi-media, multi-program regulatory interactions.

The state of Washington currently has 6.0 FTE dedicated to regulation of the pulp and paper industry within the state. Within the Industrial Section at the Department of Ecology, each staff engineer is assigned two major facilities and has responsibility for ensuring that those facilities are in compliance with all applicable air, water and hazardous waste laws (state and federal). This means that each engineer writes all the

permits, inspects the facilities and prepares enforcement actions, as needed. As a result, the group is very knowledgeable about both the industry and the major environmental regulations and is therefore uniquely positioned to participate in this multi-media project.

However, despite the section's unique, "one-stop shopping" approach, we only have time for compliance and compliance type activities. The regulated facilities are in a similar situation, where the focus is solely on compliance. We spend hundreds of hours on re-issuing permits, but the outcome of this work is compliance only, which in most cases has already been achieved and which the companies value highly. Usually, the environment sees exactly the same amount of pollution before and after the permit is issued. Also, the state is being asked to streamline its permitting processes and to simultaneously find ways to persuade companies into conducting "beyond compliance" projects in order to address problems we currently do not have authority to regulate. But beyond compliance activities are seen as nice to have rather than essential, making it difficult to persuade facilities to invest in these types of projects. Finally, as sustainability becomes increasingly important, we need to evaluate how economic and social issues should figure into our decision making.

1.2 Goals

There are significant pressures on both the regulators and the regulated, to improve environmental performance beyond compliance alone, yet there are few new resources to do so as well as some built in disincentives in the existing regulations. There are a variety of anecdotal accounts of missed opportunities to substantially improve the environmental outcome because of "media myopia" (i.e. inability to balance the relative importance of requirements for various media) or because the regulatory agencies did not have time or money to evaluate other opportunities to improve the environmental outcome.

The goal of the industrial footprint project is to explore the use of a holistic facility performance measure as a tool to for finding a better, more comprehensive way to regulate facilities with multi-media impacts. We are defining an industrial footprint as the impact of a major manufacturing facility on the environment and the community in which it's located. Ideally it is measured in sustainability terms (environmental, economic and social impacts) and includes many environmental aspects that Ecology and EPA do not directly regulate, such as greenhouse gasses and resource use.

The outcome of this project is not a specific regulatory improvement such as a single integrated permit, although that may be a recommendation we make, based on this work. The outcome of this project is an assessment of the utility of a holistic measurement system in improving regulatory and facility decisions. In other words, does an investment in selecting sustainability measures, collecting the necessary data, and developing stakeholder relationships, result in an improved environmental condition? If so, then we can recommend specific regulatory tools such as integrated permits.

An improved regulatory system would deliver an improved environmental outcome for the same or less cost.

1.3 Objectives

Specific objectives of this project are:

- A sector footprint that includes some traditional compliance measures (such as BOD and particulate) as well as greenhouse gas production, use of toxics in production, energy use and water consumption. Sector indicators will consist of a set of indicators that all the mills have in common.
- A benchmark or baseline footprint for each facility evaluated. The indicators for each baseline footprint will be selected with input from the stakeholders. All sector indicators will be included in each individual footprint.
- A sector energy challenge. The mills will be challenged to reduce their energy footprint by 25% over the next 5 years. Selected energy indicators will be used to evaluate the success of the challenge in reducing the mills' energy footprint.
- A set of environmental priorities which include a set of action items. Priorities will be developed with input from all the stakeholders.
- A comparison of the performance of the facilities and an assessment of the utility of the footprint tool in evaluating agency priorities action items.
- A comparison of the performance of facilities with an EMS in place to those without an EMS.

2.0 Project Overview

This project is part of several ongoing Department of Ecology efforts to improve the quality of state permitting efforts (see 2005-2007 Performance Partnership Agreement). The core of this project is to test the effectiveness of the Coalition for Environmental Responsible Economies (CERES) sustainability measurement tool (described below) as a way to connect our work (or the work of the company) more directly to environmental results.

Focusing on the measurement of the environmental footprint allows a more direct measure of the effectiveness of any strategy, project or activity designed to reduce the footprint. Once the footprint has been vetted by the stakeholders, it can be used to identify opportunities, projects, or activities to reduce the footprint. Footprint measurement will put a spotlight on the need for companies to pursue opportunities for saving energy, water, materials and money, i.e. those areas where compliance alone is not enough. It will add rigor to the use of environmental management systems already in place. Permitting, other regulatory work, and beyond compliance activities, can then be tied more directly to real environmental improvement.

The project will focus on 8 pulp and paper mills in Washington. The pulp and paper sector was selected because the Industrial Section has significant, multi-media

experience in regulation of this sector, the industry is still investing in Washington mills, a large amount of environmental data is available for these mills and because each mill has a large impact on the community in which it is located.

2.1 Footprint Measurement Tool

The footprint measurement tool being tested is the draft Facility Reporting Project Pilot Test Sustainability Reporting Guidance, released March, 2005.[1] The FRP Guidance is a tool created by CERES and the Tellus Institute. The Facility Reporting Project (FRP) is a multi-stakeholder initiative to develop a generally-accepted facility-level economic, environmental and social sustainability reporting framework. It was developed as a tool for companies, rather than governments to use, but after considerable time spent researching the available sustainability reporting tools, the FRP was found to be the most appropriate tool for this project. The Department of Ecology is participating in the pilot test of the FRP that is currently underway. As part of our participation agreement, Ecology can access the resources of CERES to help in development of facility indicators and the public involvement plan. We will not, however, be asking our project participants to become pilot testers or to become CERES members.

The FRP includes a number of environmental, economic and social indicators designed primarily for U.S. companies to use in voluntary sustainability reporting. CERES has guidance available for the pilot participants to use in:

- Determining the most pertinent performance indicators
- Engaging stakeholders and identifying their priorities
- Determining the feasibility and challenges of data collection

2.2 Stakeholder Involvement

The stakeholder involvement plan will have two components; a plan to secure the participation of eight pulp mills and a community involvement plan. All the mills within Washington are aware of this project, with varying degrees of enthusiasm and skepticism. Enthusiasm seems to stem from the perceived opportunity to focus the project to accommodate individual interests of the mills. Skepticism seems to arise when regulatory reform is mentioned. Many are wary of the costs of large scale reporting and all are concerned about how community involvement will be handled. Nevertheless, there has been increasing interest in the footprint idea over the last year, and we believe that participation will be forthcoming for two reasons. First, this grant will offset some of the costs of reporting and data analysis and secondly, the industry in the northwest has recently been focusing on sustainability and what it means. The first component of the plan will have to address these issues and find out what mill managers will need to agree to participate. This plan will be developed and implemented, with help from CERES, prior to selection of the contractor.

Assessing the needs of the community could be done in a variety of ways. This phase of the stakeholder involvement plan will be developed by the contractor. Though only

[1] Available at http://facilityreporting.org/FRPPilotDraft.htm

one plan will be developed, it is likely that each community will have separate and distinct needs and may, therefore, have some custom fit components. Possible approaches include public workshops, focus groups, establishment of a local advisory group or use of the internet and newsletters. While all of the Washington mills have been in their respective communities for decades, there has been increasing distrust between the mill and the citizens. Thus the plan will include elements to educate the community about the mill and educate the mill about the community.

2.3 Energy Challenge

A pulp and paper sector energy challenge is envisioned as a way to jump start the footprint project. The idea comes from the industry, which is faced with significant increases in energy prices even though they produce energy themselves. In addition, creating the challenge provides the industry and the agency with an opportunity to practice collaboration in the selection of the energy indicators, which will come from the FRP, and may provide the beginnings of a discussion of incentives for beyond compliance work by the industry. The specific challenge will be to reduce each mill's energy footprint by 25% within five years. It will be kicked off early in the project so that improvements initiated by the industry can be measured by the footprint towards the end of the project.

2.4 Footprint Measurement

The sector footprint will consist of a series of measures common to all the pulp mills. At a minimum, the sector footprint will include energy measures, greenhouse gas production, water use, effluent toxicity, toxic air emissions, waste (solid and hazardous) production, use of hazardous materials, BOD and TSS, particulate emissions, NO_x and SO_2. Additional measures are likely to be added as a result of the collaboration between the agency and the industry. Economic and social indicators for the sector will be included if agreement can be reached among the participants. A major part of the RFP for contractor services will focus on the ability of the contractor to collect, analyze and display what promises to be a large amount of data.

The individual footprints will include all the sector indicators plus those specific to the facility and the local community.

2.5 Priority Assessment

Both the sector and individual baseline footprints will provide opportunity for the regulatory agency to develop priorities. The sector baseline will help reveal anomalies between facilities and if specific processes or pollutants present opportunity for improvement. The individual baseline footprints will help reveal whether there are specific concerns within a particular facility. In both cases, Ecology will work with the partners to develop priorities for action. If time allows, the top sector priority and the top priorities at two facilities will be initiated.

2.6 EMS Evaluation

Half of the eight major pulp mills in Washington have an EMS or are developing one. One mill is currently a member of EPAs Performance Track program. In addition, there

are a number of programs being developed by the states to incorporate EMSs into a regulatory framework. Both programs assume that a company with an EMS is place is more likely to be a company that not only achieves compliance, but also one which will be willing to pursue beyond compliance activities. We will use the sector and individual baseline footprints to assess the validity of this assumption.

2.7 Final Report

Project conclusions will focus on a discussion of the data needs, costs of footprint measurement, utility of footprint measurement as a basis for environmental and regulatory decision making, how best to modify the process for use in other sectors or with other multi-media facilities, and next steps. It will include an assessment of potential benefits of using the footprint measure as the basis of a multi-media or integrated single permit along with potential cost savings for the agency and the industry.

2.7 Summary of Project Steps and the Project Logic Model

The project will generally follow the following steps:

1. Select indicators for the sector and for each facility. This will be done in partnership with the facilities and with input from community members and requires the development of a stakeholder involvement plan.
2. Measure the baseline footprint for the sector and the facilities using the selected indicators. This step will require evaluation and analysis of a significant amount of data.
3. Issue an energy challenge to the sector facilities, using the footprint indicators to measure progress against the established baseline.
4. Develop a set of environmental priorities for the sector and each facility, working in partnership with the stakeholders.
5. Implement priority actions and measure results.
6. Assess the utility of this approach to improving environmental results, including identifying barriers to implementation, recommended improvements and follow-up actions. This assessment will include a comparison of mills within the sector and a comparison of the holistic performance of those mills with an EMS in place to those without one.

Logic Model

Program/Project Mission or Goal: Develop a holistic performance measurement tool for major manufacturing using sustainability indicators

Program/Project Description Worksheet I

				Outcomes		
Resources & Partners	**Activities**	**Outputs**	**Customer Reached**	**Short Term [changes in knowledge/skills]**	**Intermediate Term [change in behavior]**	**Long-Term [change in conditions]**
0.3 FTE from Industrial Section	Procure project support Develop Energy Challenge	Project Coordinator hired Project consultant selected Energy challenge developed and deployed	Industrial Section (Sufficient resources procured to allow the project to go forward) Pulp and Paper manufacturers in Washington	Mill operators, environmental managers and regulatory staff see the value in initiating energy reducing projects.	Mill staff measure the energy footprint and use it to make decisions regarding purchase and production of energy.	Mill energy footprint is reduced; lower GHG emissions from the mill, reductions in particulate, NOx and SO_2.
1.1 FTE from Industrial Section $80,000 in contractor support	Select sector indicators Collect and analyze data for selected indicators --- Develop public involvement plan. Select indicators for 8 mills Collect and analyze data for selected indicators	Sector indicators finalized Sector baseline established --- Public involvement plan implemented Individual baselines for 8 mills established	Industrial Section, EPA, Environmental groups --- Northwest Pulp and Paper Association8 individual pulp and paper mills Communities/citizens surrounding 8 pulp and paper mills Regulatory agencies (Industrial Section, EPA)	Ecology has the ability to compare facilities: evaluate how EMS or ISO 14001 certification relates to footprint, evaluation of baseline and reduction opportunities, evaluation of sector priorities. --- Increased understanding by the affected communities, Industrial Section staff , EPA and the facilities, of the interrelationships between media at pulp mills. Facility staff and management understand the needs of the community, the community understands the needs of the facility	Regulatory agencies use the sector baseline to build staff work plans, budgets and allocate other resources. Agencies may try to influence EMS development by mills. Improved priority setting by facilities and agencies. New projects are designed to reduce the footprint --- Footprint measurement is used to evaluate new projects at mills,	Sector footprint is reduced as determined by the priorities. Mill footprints are reduced. --- Community members have a voice in priority setting Trust is built between the community and the facility

Resources & Partners	Activities	Outputs	Customer Reached	Short Term [changes in knowledge/skills]	Intermediate Term [change in behavior]	Long-Term [change in conditions]
0.3 FTE from Industrial Section $20,000 in contractor support	Assess whether the footprint tool supports integrated permitting, Explore incentives for footprint reporting by facilities	Final report, including a regulatory assessment Preliminary list of incentives/opportunities	EPA Ecology 8 Pulp Mills Communities/citizens surrounding 8 mills	Increased knowledge about how to use sustainability measures to make decisions about regulatory priorities	Use of the footprint measurement tool by other states and by EPA to improve environmental permitting. Facilities and agencies use sustainability tools, such as footprint measurement to make resource decisions	Footprints of other facilities are reduced.

3.0 Project Workplan

The project will be conducted over a three year period beginning from the date of the official grant award (~April, 2006) through April, 2009. A project steering committee will be formed, comprised of two experienced pulp and paper engineers from within the Industrial Section, the Industrial Section pulp and paper Unit Supervisor and the Industrial Section Manager. A project coordinator will be hired. The steering committee will serve in an advisory capacity as the technical experts on permitting, data collection/analysis and related issues. The Industrial Section Manager will be the project manager and will supervise the project work, ensuring that project activities are completed, milestones are met, and other grant requirements are fulfilled. The project coordinator will be responsible for the day-to-day project activities. Services of an expert on data analysis and management as well as public involvement, will be contracted to support project activities.

If participation by the 8 major chemical pulp mills cannot be secured, the project manager will seek recommendations from the other Ecology programs, and facilities will be contacted based on these recommendations.

Quarterly reports will be prepared for EPA detailing completion of project milestones, expenditures of funds, important outcomes, and unexpected problems or issues. A final project report will be provided both to EPA Region 10, EPA and to NCEI. The final report will include an assessment of the overall success of the project and address issues and lessons learned. Project reports and other information will be maintained on a project web page on the WDOE web site. Abstracts and papers, power point presentations and other materials will be prepared for presentation at appropriate forums.

3.1 Project Schedule

Task	Task Description	Assign-ment	Milestone	Start* Date	End*Date
1. Secure agency resources	Hire project coordinator, include project work in IS staff workplans	PM	ES- 1 hired, work-plans revised	4/06	6/06
2. Secure contractor support	Draft and issue RFP to procure contractor support for data analysis and public	PC, PM, SC	Contract in place	6/06	9/06

Task	Task Description	Assign-ment	Milestone	Start* Date	End*Date
	involvement. Award contract.				
3. Secure mill participation	Partner with 8 pulp and paper mills and secure participation	Ceres, PM, EE, SC, PC	8 participation agreements in place	6/06	12/06
4. Amend QAPP	Develop data quality objectives for energy footprint indicators	C, PM	QAPP amendment approved	10/06	11/06
5. Initiate energy challenge	Partner with pulp mills to develop and initiate a sector energy challenge	PM, EE, SC	Energy challenge initiated; sector baseline energy footprint developed	12/06	1/07
6.. Develop stakeholder involvement plan	Develop a community stakeholder involvement plan.	C, PM, SC, Ceres	Stakeholder involvement plan complete	10/06	12/06
7. Select sector indicators	Develop draft sector indicators. Work with 8 mills and Northwest Pulp and Paper Association to finalize sector indicators	C, PC, EE, SC	Sector indicators agreed upon	10/06	2/07
8. Amend QAPP	Develop data quality objectives for sector footprint	C, PM	QAPP amendment approved	10/06	2/07
9. Conduct community outreach	Establish community contacts, implement community involvement plan	C, PC, EE	Community needs assessment report complete for 8 communities	12/06	3/07
10. Select indicators for 8 mills	Partner with 8 mills and 8 communities to develop mill specific indicators	C, PC, EE, PM, SC	Indicators selected for 8 mills	2/07	7/07
11. Amend QAPP	Develop data quality objectives for 8 individual footprints	C, PM	QAPP amendment approved	2/07	7/07
12. Develop sector baseline	Collect and analyze data to complete	C, SC	Baseline sector	3/07	7/07

Task	Task Description	Assign-ment	Milestone	Start* Date	End*Date
footprint	sector baseline footprint		footprint completed		
13. Develop baseline footprints for 8 mills	Collect and analyze data to complete 8 baseline footprints	C, SC, EE, PM	8 baseline footprints completed	7/07	12/07
14. Develop sector priorities	Evaluate sector foot-print for improvement opportunities, establish priorities	PC, SC, EE, PM, C	Regulatory agency priorities for the sector established	7/07	10/07
15. Initiate sector priority	If appropriate, initiate the top sector priority	PC, SC	Top sector priority initiated	11/07	3/09
16. Develop priorities for 4 mills	Evaluate the baseline footprint for 4 mills for improvement opportunities, establish priorities	PC, SC, EE	Regulatory agency priorities established for 4 mills	1/08	4/08
17. Initiate 2 of the top individual priorities	If appropriate, initiate the top priorities for 2 mills	PC, SC, EE	Top 2 mill priorities initiated	4/08	3/09
18. Assess results of energy challenge	Use the footprint tool to assess the results of the energy challenge	C, PC, EE	Energy footprint reduced	2/09	4/09
19. Final Report	Compare mills, assess the utility of footprint measurement as a regulatory tool, share results with stakeholders	C, PC, SC, EE, PM	Report complete, future work identified	2/09	4/09

*assumes an April 1, 2006 award date- dates will be amended based on actual award dates

PM = project manager
PC = project coordinator
C = contractor
EE = Industrial Section engineer
SC = Steering Committee

3.2 Performance Measures

A common set of environmental performance indicators for the pulp and paper sector will improve and streamline reporting and can be used to establish regulatory priorities among the various mills. Individual footprints will allow the direct evaluation of agency actions and facility projects. The FRP was developed specifically to help facilities report on sustainability endpoints, so it is ideally suited to this project, which aims to use sustainability endpoints to inform environmental decision-making. The FRP was also designed to foster greater environmental responsibility and transparency by facilities. Therefore, buy in to the concepts put forward by the footprint measurement by mill staff will be essential to the success of this project. Indicator selection will be done as a collaborative effort between the community, the facility and the regulators which will result in better understanding between the stakeholders and provide a solid basis for exploring other regulatory innovations such as integrated permits.

3.2.1 Process performance measures

The major deliverable of this project is a performance measure tool. For it to be useful it must have the following characteristics:

- credible- to the community, the state, the facilities and EPA
- broad - includes all major environmental impacts and can be adapted to measure economic and social impacts as well
- robust- can be used as a sector or facility measure and can be used to compare similar facilities
- cost effective- data gathering and analysis costs are reasonable
- transparent- the need for proprietary data is minimized
- transferable- the tool is useful for other facilities
- informative- changes the way environmental performance of facilities is evaluated

These characteristics are important to the overall acceptance of the footprint tool as the basis for regulatory work. If one of these attributes is not present, using a footprint to help set priorities will be difficult, and more importantly, using it to assess the success of projects intended to reduce the footprint will not be possible. Because these performance measures are subjective in nature, assessment will be done through a series of targeted “exit interviews” with key stakeholders. In addition, the public will be invited to comment on the draft report.

3.2.2 Environmental performance measures

There are a number of more objective performance measures that will be employed to assess the utility of the footprint as a regulatory tool. These include:

- Energy challenge
  - The number of mills that independently use and continue to refine their energy footprint
  - The percent reduction of the sector energy footprint two years after the initiation of the energy challenge

- Sector footprint
  - The number of potential footprint reducing projects identified by the stakeholders
  - The number of sector projects that the stakeholders agree are priorities
  - The number of priority projects initiated
- Individual footprints
  - The percent reduction of the individual footprints five years after the baseline
  - The number of priority projects identified by the stakeholders
  - The number of priority projects initiated

3.3 Project staffing

The Project Manager will be responsible for the following activities:

- Overall project management including supervision of the project coordinator and the Project Consultant
- Coordinate major tasks including organizing Industrial Section Project Advisory Team, recruiting and selecting the Project Coordinator and the Project Consultant, recruiting and selecting participating facilities and working with major stakeholders
- Ensure project milestones are met including quarterly progress reports and final report to EPA
- Maintain and, as appropriate, update QAPP

As the Industrial Section Manager, Carol Kraege will serve as the project manager for this project. In addition to the roles described above, a significant portion of her time will be devoted to developing industrial and community partnerships.

The Project Coordinator will be responsible for the following activities:

- Day-to-day project coordination
- Development of the RFP and coordination of the process to select the consultant
- Data collection, information gathering with participating facilities
- Coordination of staff engineers, the project consultant and participating facilities
- Communication with EPA and other project partners on project progress and findings
- Project administration including budget, contractual services, reporting, and other related activities
- Keep the project web-page updated

This position will be filled once the award is received. We anticipate that this position will be a part time Environmental Specialist 1.

The project consultant will provide expertise in public involvement and data collection, analysis and management to the project. Responsibilities will include:

- Development and implementation of public involvement plans for each participating facility
- Expertise in development and analysis of sustainability indicators specified in the Facility Reporting Project Pilot Draft document
- Preparing reports, analyses, and other information as requested by the project team
- Serving as an expert advisor to the project on footprint issues

Other support

Engineering: The Industrial Section has a 6 person unit dedicated to regulation of the pulp and paper sector within Washington. The five engineers in the unit have greater than 100 years of combined experience in environmental work and over 60 years with the pulp and paper sector. Each engineer is responsible for air, water and waste regulation at two major mills and several minor pulp and paper facilities. Their role will be to: assist in development of the sector and individual facility footprints, review reports, provide advice to the project manager and the contractor, and help with data collection and analysis.

Regulatory Expertise: Mr. Merley McCall is a chemist and has supervised the pulp and paper unit since 1989. He has 42 years of experience in the environmental field, a good portion of which was spent managing Ecology's lab. He has considerable expertise in the application of the federal cluster rule (the basis of regulation at pulp and paper facilities) and is widely regarded as an expert in this area. His role will be to provide advice to the contractor, help scope the development of footprints, review documents and assist the project manager and the project coordinator.

A salary schedule for each position and approximate time to be dedicated to this project is included in the budget attachment.