Pollution Prevention Metrics Menu

Prepared by the Northeast Pollution Prevention Roundtable

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Introduction

This paper presents a menu of metrics that state pollution prevention (P2) programs in the Northeast plan to utilize in managing and evaluating their programs. The Northeast states P2 programs have joined together in a effort to create common multi-state metrics:

C   To communicate the activities and accomplishments of the programs to policy makers both inside and outside of the environmental agencies
C   To improve program management
C   To provide program funders with relevant activity and outcome information
C   To influence policy development
C   To measure progress toward goals

The purpose of this menu is to provide a baseline list of metrics that programs can agree to utilize to help facilitate multi-state studies of pollution prevention activities, such as the recently published *Pollution Prevention Progress in the Northeast*.

Individual state programs will choose to use only those metrics that they believe are useful. The use of this menu by state and local P2 programs is voluntary, and state programs may find some of the metrics to be inappropriate because they do not conduct the activities associated with them. By using the metrics menu states can combine data and obtain an improved regional perspective on the scope of some of the outcomes of their efforts.

All of the metrics on the proposed menu focus on P2 Program activities and some include outcome metrics. Pollution prevention activity metrics provide an important to link with environmental outcome data. Many state environmental programs do not have the authority to require that firms or communities submit data on P2 accomplishments. Those states that do require firms to submit data, do not collect the same data and do not have a common methodology for data analysis.

For many years the state and local P2 programs in the Northeast have been working together toward reaching agreement on P2 metrics. The state and local P2 programs in the Northeast have developed this menu by starting with some of the easier metrics to implement and agree upon. The programs view this effort as a major step toward reaching consensus on other metrics. They believe this is an appropriate beginning.

This menu is a living document that should be revised as state and local pollution prevention programs continue to grow and change. State and local programs plan to update the list as they learn about which metrics work best and which ones are the most useful. This menu is not intended to be an exhaustive list of all the possible metrics that a program could use. Rather, the state programs designed this menu to provide a few key metrics for each of the program activity categories identified below. The states selected a few metrics that everyone could use so that data from multiple programs could effectively be combined in the future. The following is a list of the

criteria used by the drafters of the menu for selecting the metrics:
C   Simplicity
C   Clarity
C   Relevance for the intended audiences – policy makers, funders, management, public
C   Feasibility
C   Credibility
C   Balance between time involved with collecting data and its utility

This menu categorizes the metrics into the following groupings of activities:

Assistance Activities
> a. On-site Assistance
> b. Workshops/Conferences
> c. Information Tools Developed and Information Disseminated
> d. Awards/Recognition Programs
> e. Partnership Programs
> f. Environmental Management Systems
> g. Interactions with Other Government Agencies
> h. Grants to Program Clients

Regulatory and Enforcement Activities
> a. Training
> b. Inspections
> c. Enforcement Actions

Environmental and Economic Outcomes

The menu includes a proposed metric, its definition and a survey question. Each metric is also identified as to whether it is an activity metric or an outcome metric.

Several important caveats should apply to any analysis of the data collected through this menu. In particular, analysts should avoid counting up activities across their categories to determine the number of program clients. A single program client might take advantage of one or more of the program's assistance or regulatory activities and would, therefore be counted in each of those activities. For example, the same person/company may call an assistance program, attend a conference, and have an onsite assessment concerning the same environmental issue. In such a case the program should count these as a single contact in each of the appropriate categories.

Another important caveat is that this menu does not cover all of the activities undertaken in a particular state, nor does it cover all of the data that an individual state may want to collect concerning its programs. This menu was designed to capture those activities that are underway in a majority of the states and some basic metrics that could capture the scope and impact of these efforts on a multi-state basis. The P2 Metrics Menu should not be used to compare the activities or effectiveness of state and local pollution prevention programs.

Finally, the Northeast P2 Roundtable debated whether to use the calendar year or fiscal year as the time frame for reporting information. The group decided to use the calendar year because there is no consistency among states in their fiscal years. In addition, many program activities span more than one calendar year and it can be confusing to determine in which year to report those activities. To resolve this dilemma, the authors of the Menu recommend that the program activities be counted in the year that they are initiated but the environmental and economic outcomes be counted in the year that the project is completed. After two years of collecting this information, the data should be inclusive of all relevant information.

This menu is a living document that the states plan to review and evaluate as they use it in the future. NEWMOA welcomes comments and suggestions for improvements. Write or call: Terri Goldberg, NEWMOA, 129 Portland Street 6th floor, Boston, MA 02114; (617) 367-8558 x302 (phone); (617) 367-0449 (fax); NEPPR@TIAC.NET.

Pollution Prevention Assistance Metrics - On-Site Assistance (5 metrics)

1. *Metric***:** **Number of clients that received on-site assistance in a year**
Question: How many clients received on-site assistance during calendar year _____?
Definition: On-site assistance is defined as one-on-one assistance with a client that involves at least one visit to their site. The assistance is specifically designed to help them solve an environmental problem, reduce their emissions and waste, and/or address a compliance issue.
Metric Type: Activity

2. *Metric:* **Number of program clients that received on-site assistance as a result of a referral or notice by the state/local enforcement/compliance program in a year** (related to the Regulatory and Enforcement metric numbers 22 and 23 below)
Question: How many program clients received on-site assistance as a result of a referral by a state/local enforcement/compliance program in calendar year _____?
Definition: A referral by a state/local enforcement/compliance program includes either verbal or written communications by the enforcement program suggesting that a program client contact an assistance program to request a site visit. This includes on-site assistance that is the result of the P2 assistance program contacting the client after they are notified of an enforcement action.
Metric Type: Activity

3. *Metric:* **Number of site visits to client locations in a year (this is a subset of metric number 1)**
Question: How many site visits to client locations/facilities did your program complete during calendar year _____?
Definition: A visit to a client is an actual trip to the facility or site where a client conducts business, manufacturers products, has an office, or conducts other activities related to its mission. For the purposes of this metric, a visit should be counted if it was conducted to help the client reduce their pollution and wastes.
Metric Type: Activity

4. *Metric:* **Number of program clients that implemented P2 suggestions offered as a result of on-site assistance in a year**
Question: How many program clients implemented at least one P2 suggestion as a result of on-site assistance during calendar year ____?
Definition: P2 suggestions and on-site assistance are defined above
Metric Type: Outcome

5. *Metric:* **Number of P2 suggestions implemented by companies and communities receiving on-site assistance in a year**
Question: How many pollution prevention suggestions were implemented by program clients receiving on-site assistance during calendar year ____?
Definition: A pollution prevention suggestion includes ideas, recommendations, and suggestions provided to companies, communities, institutions, or groups as a result of a site visit from a

P2 program staff person
Metric Type: Outcome

Pollution Prevention Assistance Metrics - Workshops/Conferences (4 metrics)

6. *Metric:* **Number of workshops, conferences or other training events organized or co-sponsored by the P2 program for each industry or other sectors**

Question: How many P2 workshops, conferences, or other training events were held by the program in calendar year _____? Categorize and quantify the workshops by specific business, sectors, or processes addressed

Definition: Industry or other sectors can include the following: two digit SIC codes for industry sectors, institutions, other types of business, municipalities and government entities, as well as environmental groups, community groups, and professional associations. Processes could cover manufacturing activities, such as cleaning operations, painting operations, surface preparation, and others.

Metric Type: Activity

7. *Metric:* **Number of people attending P2 workshops, conferences, or other training events that were held by the P2 program**

Question: How many people attended the P2 workshops, conferences, or other training events held by the P2 program in calendar year _____?

Definition: A P2 workshop, conference or other training event includes all of the educational programs organized during the year that involved teaching or disseminating information to program clients

Metric Type: Outcome

8. *Metric:* **Number of workshops, conferences or other training events, which were not sponsored by the P2 program, but included a presentation by a P2 program staff person**

Question: How many workshops, conferences or other training events, which were not sponsored by the P2 program, included at least one presentation by P2 program staff in calendar year _____?

Definition: A training event that was not organized by the P2 program can include those events that are primarily organized by groups other than the P2 program.

Metric Type: Activity

9. *Metric:* **Number of people reached at workshops, conferences or other training events, which were not sponsored/organized by the P2 program, but included a presentation by the P2 program staff person**

Question: How many people attended a training event, which was not sponsored/organized by the P2 program, but included a presentation by a P2 program staff person in calendar year _____?

Definition: A training event that was not organized by the P2 program can include those events that are primarily organized by groups other than the P2 Program.

Metric Type: Outcome

Pollution Prevention Assistance Metrics - Information Tools Developed & Information Disseminated (3 metrics)

10. *Metric:* **Number of information requests that were received by phone, mail, as a result of a workshop or conference, e-mail, web-site or direct contact to which the program responded**

Question: How many information requests did the program receive in calendar year _____? Categorize these requests by the source of the request (i.e., phone, mail, e-mail, website, workshop or conference, or direct contact with program staff).

Definition: An information request can come from any communications method, including phone, mail, e-mail, web site, or fax. Requests for assistance or information would also include any follow-up from a conference or workshop by the program client seeking additional help in the form of a phone call to the program asking a question or requesting additional information, a request for a site visit, and a visit to the program's offices or information clearinghouse. The response to an information request can include answering a question; sending a hard copy document; sending an electronic document; or referring clients to other people, groups, agencies, a website or a document.

Metric Type: Activity

11. *Metric:* **Number of publications published, audio visual products and electronic publications produced**

Question: How many publications or audio visual products did the program develop and produce in calendar year ____? Categorize and quantify by each category of outreach products (i.e., the number of case studies/success stories, fact sheets, pamphlets, manuals, etc).

Definition: A publication includes case studies or success stories, fact sheets, pamphlets, brochures, manuals, reports and issues of the newsletter that the pollution prevention program published to educate its clients about reducing or eliminating pollution and waste. Audio visual products are video tapes and slide shows. Electronic publications include CD ROMs, web pages, or computer programs that the pollution prevention program produced to educate its clients about reducing or eliminating pollution and waste.

Metric Type: Activity

12. *Metric:* **Number of publications that the program developed and sent out to clients that they did not request directly (this metric is related to number 11 above)**

Question: How many clients did the program send materials to that the clients did not request directly in calendar year _____?

Definition: The materials included in this metric could be hard copy materials, audio visual products, or electronic publications as described above in metric number 11.

Metric Type: Activity

Pollution Prevention Assistance Metrics - Awards (1 metric)

13. *Metric:* **Number of award/recognition program applications**

Question: How many applications for awards or other recognition programs did the P2 Program

receive in calendar year _____?

Definition: An award is an annual or semi-annual program that recognizes the accomplishments of businesses, communities groups or government programs in achieving environmental excellence and pollution prevention. Some states have established recognition programs to provide a certificate or other form of acknowledgment of a company or community's efforts to achieve or exceed environmental compliance.

Metric Type: Activity

Pollution Prevention Assistance Metrics -Partnership Activities (1 metric)

14. *Metric:* **Number of partnerships established between government and/or non-government organizations**

Question: How many partnerships did the program establish in calendar year _____? Designate how many of these partnerships were in the following categories: community groups, trade associations, professional associations, municipal government, state government and environmental group. Indicate how many of the partnerships were one-time or ongoing relationships.

Definition: A partnership is a mutually beneficial relationship between the environmental agency and another government agency or a private sector group that is based on some agreed upon goals, objectives or interests.

Metric Type: Activity

Pollution Prevention Assistance Metrics - Environmental Management Systems (1 metric)

15. *Metric:* **Number of clients that received environmental management system (EMS) training from the P2 program**

Question: How many program clients received EMS-specific training through workshops or on-site assistance?

Definition: An "Environmental Management System" (EMS) is a structured planning and monitoring system for continuously measuring and assessing an organization's impact on the environment. An EMS provides information and decision support mechanisms on an ongoing basis for preventing or reducing harmful impacts on the environment resulting from that organization's business activities. This goal is optimally accomplished by integrating the EMS with the organization's regular core business planning and management systems.

Metric Type: Activity

Pollution Prevention Assistance Metrics - Interactions with Other State and Local Government Agencies (3 metrics)

16. *Metric:* **Number of pollution prevention audits or plans that addressed environmental improvement opportunities and problems at public agencies**

Question: How many government agency pollution prevention audits or plans did the program initiate or support in calendar year _____?   List the projects.

Definition: Government agency pollution prevention audits or plans involve the recognition and development of P2 projects within a state or local government agency or program.
Metric Type: Activity

17. *Metric:*   **Number of environmental violations at state agencies/facilities that are remedied by pollution prevention**
Question: How many violations of environmental requirements were remedied in part or entirely through pollution prevention activities at state agencies/facilities in calendar year _____?
Definition: An environmental violation involves noncompliance with state and federal environmental requirements.
Metric Type: Outcome

18. *Metric:*   **List the environmentally preferable product types purchased by the state or local government**
Question: What types of environmentally preferable products were purchased by the state or local government in calendar year _____?
Definition: An environmentally preferable product is one that a state environmental agency has identified as having less environmental impact than other products that have the same function. The environmentally preferable product should also perform at a comparable or satisfactory level with the other products. Examples of environmentally preferable products could include non-toxic cleaners and low mercury flourescent lamps. Agencies have been conducting evaluations of products purchased by the state to identify those that have environmentally preferable characteristics.
Metric Type: Outcome

Pollution Prevention Assistance Metrics - Grants to Other Agencies/Organizations
(2 metrics)

19. *Metric:*   **Number of P2 grants awarded**
Question: How many pollution prevention grants did the state/local program award to community groups, companies, institutions, municipalities, or non-profit groups in calendar year _____?
Definition: A grant is an award of funding to a company, agency or program to support a specific project or activity.
Metric Type: Activity

20. *Metric:*   **Dollars awarded through grants**
Question: How much money was awarded through grants to community groups, companies, institutions, municipalities, or non-profit groups in calendar year _____?
Definition: A grant is an award of funding to a company, agency or program to support a specific pollution project or activity.
Metric Type: Activity

Enforcement and Regulatory Metrics

Enforcement and Regulatory Metrics - Staff Training (1 metric)

21. *Metric:* **Number of environmental agency staff receiving P2 training**
Question: How many environmental agency staff received training in pollution prevention concepts, techniques or programs in calendar year _____?
Definition: Pollution prevention training can cover a variety of source reduction topics, including engineering options for specific industries, techniques for community implementation of P2, methods for researching P2, financial analysis of P2 options, and integrating P2 into enforcement activities.
Metric Type: Activity

Enforcement and Regulatory Metrics - Inspections (1 metric)

22. *Metric:* **Number of inspections that included P2 information dissemination**
Question: How many inspections were conducted in calendar year _____ that involved the dissemination of P2 information or referrals to P2 assistance programs?
Definition: An inspection is a formal review of a facilities' compliance with state environmental requirements. P2 information dissemination can involve distributing brochures or pamphlets and verbal or written referrals of the firm to a P2 assistance program.
Metric Type: Activity

Enforcement and Regulatory Metrics - Enforcement Actions (4 metrics)

23. *Metric:* **Number of notices of violation or non-compliance that the state issued with P2 suggestions**
Question: How many notices of violation or non-compliance did the state issue that included P2-suggestions in calendar year _____?
Definition: A notice of violation or non-compliance is a formal written notification to a facility, institution or community that reports on the violations that an inspector or group of inspectors observed at the location. The notices also indicate what the firm is required to do to correct the violation. Some states routinely include pollution prevention information in these notices that either refer the alleged violator to a technical assistance program and/or provide some broad and general suggestions for P2 measures that the site could consider taking.

24. *Metric:* **Number of enforcement actions that included provisions related to P2 that were issued**
Question: How many enforcement actions did the state negotiate or finalize that included P2-related provisions in calendar year _____?
Definition: An enforcement action involves a legal action against a company or community for violating a state environmental requirement. The enforcement action can include a court case against the firm if they do not remedy the violation, or a negotiated settlement that

addresses the violation and additional provisions. The enforcement cases covered in this metrics should include Supplemental Environmental Projects (SEPs) as well as other routine actions.

Metric Type: Activity

25. *Metric:* **Number of companies, municipalities, state agencies or institutions that came, partially or entirely, into compliance, using pollution prevention**

Question: How many violators that were involved in an enforcement case came into compliance using pollution prevention methods in calendar year _____? Break out these violations into the following categories: companies, municipalities, state agencies or institutions.

Definition: See above

Metric Type: Outcome

26. Metric: **Number of companies, municipalities and institutions that went beyond compliance and conducted pollution prevention activities in their response to a Supplemental Environmental Project (SEP) as part of an enforcement action**

Question: How many violators that were involved in an enforcement case conducted activities beyond those required for compliance using pollution prevention methods in calendar year _____?

Definition: Many violators that negotiate Supplemental Environmental Projects (SEPs) agreements agree to undertake activities that are beyond their requirements to remedy the violation. This metric should capture the facilities that are included in the category.

Metric Type: Outcome

ENVIRONMENTAL & FINANCIAL OUTCOME METRICS (14 metrics)

The following group of metrics should be used in association with the activity metrics outlined above. It will not be possible to collect environmental and financial outcome information for all of the activity categories listed above. These metrics should be used to collect environmental and economic information that is currently accessible. For example, states can use the metrics to collect data on hazardous waste, air and water pollution reductions associated with onsite assistance and report this information as an outcome of those activities. The categories of activities that are considered to be the most likely to have environmental and financial outcome data are the following:

C   Onsite Assistance
C   Awards/Recognition Programs
C   Interactions with Other Government Agencies
C   Enforcement Actions

Nevertheless, the Northeast States Pollution Prevention Roundtable encourages states to experiment with ways to collect any available data related to environmental and financial outcomes associated with all of the activity categories outlined above. The format for this data collection is described below.

27. Metric: **Number of business, institutional or community clients that maintained purchasing and use records for their chemical input inventories**

Question: How many clients of the (fill in activity category) maintained purchasing and use records for their chemical inventories in calendar year _____?

Definition: Purchasing and use records for chemical inventories are required as part of an environmental management system under ISO 14000 requirements. These records provide a systematic way of analyzing how much an entity purchased of specific compounds in a year.

Metric Type: Outcome

28. *Metric:* **Number of business, institutional or community clients with environmental or pollution prevention policy statements**

Question: How many clients of the (fill in activity category) established environmental or pollution prevention policy statements in calendar year _____?

Definition: A pollution prevention or environmental statement presents the policies, mission, objectives and/or programs that the company intends to implement to reduce their environmental impact.

Metric Type: Outcome

29. *Metric:* **Number of business, institutional or community clients with pollution prevention teams**

Question: How many clients of the (fill in activity category) established internal pollution prevention teams in calendar year _____?

Definition: A pollution prevention team is a group of people employed by the firm, community, or institution to evaluate P2 options and make recommendations to management. The teams are usually composed of a cross section of people, including management, workers, supervisors, health and safety personnel, and/or environmental managers.

Metric Type: Outcome

30. *Metric:* **Number of business, institutional or community clients that have mapped their process**

Question: How many clients of the (fill in activity category) mapped their production or services process in calendar year _____?

Definition: A process map is a schematic of the steps involved in a process or provision of a service. The map should identify all of the sources of wastes and pollutants and their fate.

Metric Type: Outcome

31. *Metric:* **Number of employees of business, institutional or community clients trained in pollution prevention**

Question: How many employees of (fill in activity category) clients were trained in pollution prevention in calendar year _____?

Definition: Pollution prevention training can include workshops on environmental management systems, engineering techniques for reducing pollutants, housekeeping improvements to reduce waste generation, and other source reduction changes that a client can implement.

Metric Type: Outcome

32. *Metric:* **Total amount of hazardous waste reduced through pollution prevention by program clients**

Question: How much hazardous waste was reduced by <u>(fill in program activity)</u> in calendar year _____?

Definition: Hazardous waste reductions should be reported as pounds generated before and after implementing pollution prevention project

Metric Type: Outcome

33. *Metric:* **Number of hazardous waste generators (LQGs) and small quantity generator (SQG)**

Question: How many large quantity hazardous waste generators were operating during calendar year _____ and in the previous year _____? How many small quantity generator were operating during calendar year _____ and in the previous year _____?

Definition: Large quantity generator: facilities that generate more than 1,000 kilograms (2,200 pounds) of hazardous waste per month or that generate or accumulate more than 1 kilogram (2.2 pounds) of acute hazardous waste at one time.
Small quantity generator: facilities that generate between 100 kilograms (220 pounds) and 1,000 kilograms (2,200 pounds) of hazardous waste in any calendar month.

Metric Type: Outcome

34. *Metric:* **Total amount of solid waste reduced through pollution prevention by program clients**

Question: How much solid waste was reduced by <u>(fill in program activity)</u> in calendar year _____?

Definition: Solid waste reductions should be reported as pounds generated before and after implementing pollution prevention project

Metric Type: Outcome

35. *Metric:* **Total amount of air pollutants reduced through pollution prevention by program clients**

Question: How much air pollution was reduced by <u>(fill in program activity)</u> in calendar year _____? Indicate how much pollution for each of the following categories: hazardous air pollutants, volatile organic compounds, criteria pollutants

Definition: Air pollution reductions should be reported as pounds generated before and after P2 implementation

Metric Type: Outcome

36. *Metric:* **Total amount of water pollution reduced through pollution prevention by program clients**

Question: How much water pollution was reduced by <u>(fill in program activity)</u> in calendar year _____?

Definition: Water pollution reductions should be reported as pounds of pollutants, such as heavy metals and other inorganics, and organic materials, discharged before and after P2 implementation

Metric Type: Outcome

37. *Metric:* **Total amount of toxic/hazardous chemical use reduced through pollution prevention**
Question: How many fewer pounds/tons of toxic/hazardous chemical did the <u>(fill in program activity)</u> clients use in calendar year _____?
Definition: Reductions in toxic/hazardous chemical use should be reported in pounds or tons per year as compared to previous year
Metric Type: Outcome

38. *Metric:* **Total amount of water conserved by program clients**
Question: How much water was saved by <u>(fill in program activity)</u> in calendar year _____?
Definition: Water use reductions should be reported as gallons discharged before and after P2 implementation
Metric Type: Outcome

39. *Metric:* **Total amount of energy conserved by program clients**
Question: How much energy was saved by <u>(fill in program activity)</u> in calendar year _____?
Definition: Energy conservation should be reported as either BTUs, gallons of fuel, or pounds of fuel saved before and after P2 implementation. The units will depend on the type of energy that was conserved.
Metric Type: Outcome

40. *Metric:* **Amount of money saved by a program client that implemented pollution prevention**
Question: How much money did the program client save as a result of <u>(fill in program activity name)</u> during calendar year _____ ?
Definition: These savings can be expressed as gross annual savings to the company or community resulting from the investments that are made because of the P2 suggestions offered by the P2 program. In addition to estimates of the gross annual savings, the programs should request an estimate of the number of years that the investment is expected to provide value to the company.

An alternative definition could focus on "return on investment," which is often called net present value, as a more accurate reflection of the true project savings. Return on investment or net present value calculations are more complicated to derive than gross savings and require more data collection by the programs and the clients. In order to figure out the return on investment, the program or client would have to know all of the significant costs and savings of the project over its projected lifetime. The net savings is the difference between them. In order to accurately estimate the return on investment, the estimated net savings for future years should be adjusted to account for the time value of money, which will result in the net present value of the investment.
Metric Type: Outcome