National P2 Results Data System: Background
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Vision

The vision of the National P2 Results Data System (the System) is creation of an efficient and effective way for analyzing and presenting the results of pollution prevention (P2) for the regions and the entire country. This system is based on data that is collected, managed, and synthesized by individual state and local programs, non-profits, companies, and other P2 organizations. The Pollution Prevention Resource Exchange (P2Rx) Regional Centers will aggregate P2 data for their regions and share this with P2Rx and the National Pollution Prevention Roundtable (NPPR) for reporting to stakeholders. The aggregated data will also be exchanged through the National Environmental Information Exchange Network (NEIEN).

Purpose

The purpose of the National P2 Results Data System is to:
- Demonstrate that publicly-supported P2 programs are delivering value for their clients, the public, and taxpayers;
- Assist policy makers and others with assessing P2 and understanding which P2 efforts are effective as they set priorities, program goals and objectives;
- Help government agencies and others evaluate progress toward P2 goal achievements;
- Facilitate P2 programs to continually improve their activities; and
- Exhibit to potential P2 users the tangible environmental and economic benefits that are being achieved around the country.

History

1994 – present: Desktop Tracking and Aggregation

The New England Waste Management Officials' Association (NEWMOA) has been working on P2 measurement topics for more than a decade. In the mid-1990s, NEWMOA organized a workgroup of state P2 and compliance assistance (CA) program representatives in the Northeast to facilitate a regional project to develop and implement a set of metrics for states to use in tracking P2 and CA activities.

A NEWMOA report from 1996 showed that the P2 and CA programs had a significant impact on businesses in the region. However, the process also highlighted the lack of consistency in terminology and data collection among the programs.

Participants determined that standardized metrics and a common software program would help them more effectively measure their efforts, communicate about their accomplishments, and provide funders with useful information.

With funding and support from EPA and input from the P2 Metrics Workgroup, NEWMOA developed a "desktop tracking" database software application called "P2 and CA Measures Software." It contains five major sections for program activities:
- client project (such as on-site visits and research)
- grant award
- production of educational material
- workshop/training event

- respond to information request

The software also tracks outcomes including: environmental, behavioral and economic outcomes relating to many of these activities. Because each state's P2 and compliance assistance program is somewhat different in the scope of its activities and its structure, the metrics menu and software can be customized so the programs can use only those components and the level of detail that suit their needs. NEWMOA has developed a data dictionary and a user's manual and has been training state programs on the use of the database.

2001 – 2002: Region Aggregation of Outcome Data

EPA Region 10 and the Oregon Department of Environmental Quality provided funding to the Pacific Northwest Pollution Prevention Resource Center (PPRC) for a pilot measurement project. The project was developed with two main goals:

- Collect readily available P2 results data from publicly funded P2 programs in the Pacific Northwest in a simple, effective way to create an aggregated, quantifiable (not anecdotal) picture of P2 progress in the Pacific Northwest.
- Develop common methods to describe the meaning of P2 results in the context of big-picture issues (e.g., climate change, endangered species habitat, watershed health, toxics use reduction, and use of renewable/recyclable resources).

An online database was developed that allowed registered users to input data on P2 outcomes achieved by their programs. Using this information, the database provided reports on aggregated P2 results. It also used calculators to estimate the corresponding economic impacts.

2003 – 2005: Growing National Interest

Based on the success in the Northeast and the pilot project in the Northwest, as well as growing interest in the topic of measurement in general, other P2 agencies expressed interest in adapting these measurement tools for more widespread use.

Several P2Rx centers and many P2 programs examined the desktop tracking system produced by NEWMOA, to consider how they might be able to adapt the model. Several P2Rx centers also posted the Region 10 regional aggregation system on their web sites to share with P2 programs in their own regions and collect feedback.

With growing national interest in the subject of measurement, following the National OPPTS meeting in Boston in November 2003, a National Measurement Results Task Force (Task Force) formed. Members include representatives from State P2 programs, EPA Headquarters and Regions, P2Rx, and the National Pollution Prevention Roundtable (NPPR). Their task was to improve upon the foundation built in the Northeast and in Region 10 to develop a National P2 Results Data System, which could easily aggregate data at the Regional and National levels.

2005: National Project

Based on recommendations from the Task Force, P2Rx and NPPR explored the idea of using an enhanced measurement system as a means to aggregate data for publication of national P2 results. When federal funding from the National Environmental Information Exchange Network (NEIEN) became available, P2Rx, NPPR, Colorado Department of Public Health and the Environment and an array of partners applied for it and was awarded a grant. This grant will fund the refinement of data collection tools and the automated exchange of P2 data flows.
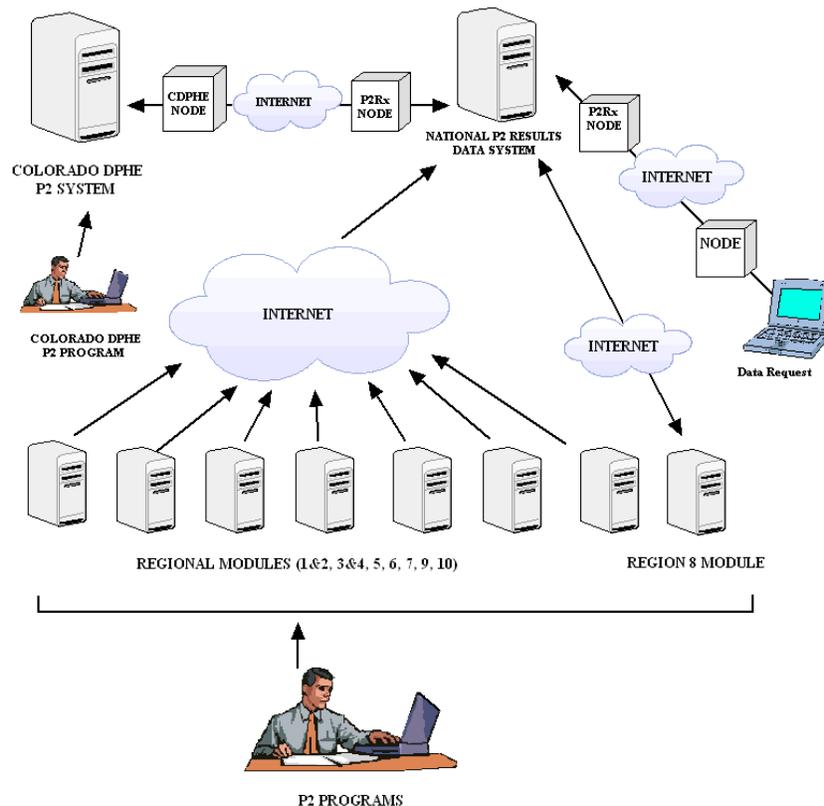
How it Works

The Framework
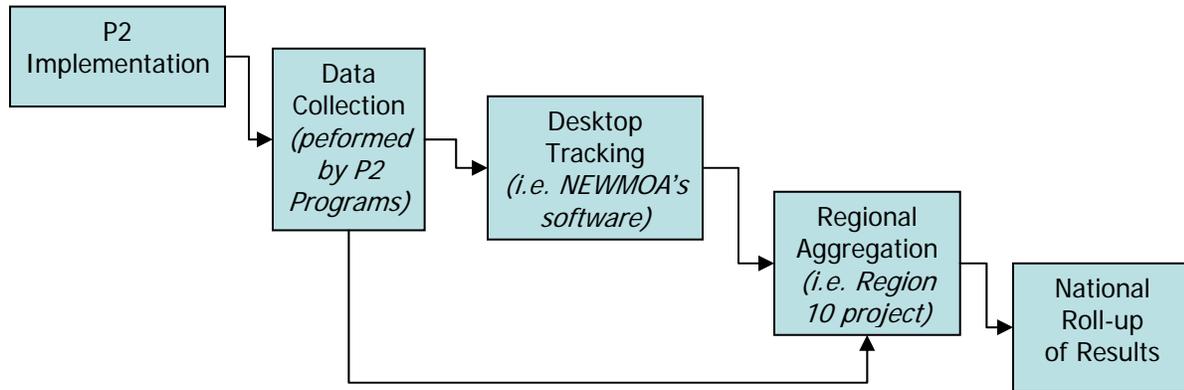
Data Flows through the National Environmental Information Exchange Network (NEIEN)

The following diagram is a model of how data will flow through the System.

Metrics

Building upon the groundwork of NEWMOA and PPRC, the Task Force developed a Data Dictionary that lists dozens of metrics of interest to P2 programs as well as regional and federal agencies. They are divided into three categories:

- Outcome Measures – Level 3 – are the most preferred, as they address the environmental or economic result of the P2 activity and thus the outcome of ultimate interest.
- Behavioral Changes – Level 2 – are useful, since they give an indication of actions taken (or awareness increased) by the recipient of the P2 activity, but are not as valuable as Level 3 measures, since they do not report the desired environmental or economic outcome.
- Activity Measures – Level 1 – are more traditional outputs describing actions taken and participation in those actions. While useful as a gauge of program efforts, and relatively easy to measure, they do not describe the results of the action in more meaningful terms.

(The complete Data Dictionary may be viewed at http://www.p2.org/workgroup/DataDictionary.cfm.)

Regional Customization

Each regional P2Rx center may include additional data elements in their aggregation tool beyond what is needed to report to the System. These data elements may contain data from activities such as materials reuse, recycling, or energy recovery. It may also include behavior change or activity measures. Reporting of data for these activities will be voluntary and aggregated at the regional level.

Each state program may include any data elements that are appropriate for their particular program. This may include solid waste and hazardous waste recycling as well as materials which are sent to an incinerator for energy recovery. All of these customized data elements will be determined by a regional measurement workgroup facilitated by each P2Rx center. (See page vii for more information.)

Stakeholders

The P2 Results Data System relies on the efforts of many entities and provides significant benefit for all.

P2 Programs

Benefits:
1) Data repository for their activities, behavioral change and outcomes level measurement data,
2) Customized program-level report that aggregates the data they have entered,
3) Customized calculators that provide value-added information, such as Reduced Operating Costs, resulting from their work,
4) Ability to provide feedback and influence the future enhancements and design improvements to the System.

Responsibilities: Enter quality data into the system, and provide feedback on metrics and user interface to help guide future improvements.

EPA Regions

Benefits: Aggregated regional reports will provide insights into regional P2 results.
Responsibilities: Where appropriate, promote the P2 Results Data System.

P2Rx Centers

Benefits: Aggregated regional reports will provide insights into regional P2 results.
Responsibilities:
1) Provide training to P2 programs on using the P2 Results Data System,
2) Collect feedback from users,
3) Share feedback with System administrator for planning upgrades and enhancements.

NPPR

Benefits: Aggregated data from the System will form the backbone of a report to EPA and the federal government on the impact of the P2 efforts happening across the nation. Before the system, this information has been time consuming and difficult to collect.
Responsibilities: NPPR will provide administrative support to the National Measurement Results Task Force. It will also promote the efforts of P2Rx, and other partners, as well as the P2 Results Data System where appropriate.

Federal Agencies

Benefits: To date, EPA and other federal agencies have had spotty data about the results the projects and programs they support and fund. The P2 Results Data System will provide aggregate-level data about the scope of pollution prevention activities and its impacts.
Responsibilities: Interested federal participants will participate in Task Force meetings. Where appropriate, promote the P2 Results Data System.

What's Happening Now

Memorandum of Agreement

As this project continues, state P2 program managers are signing a Memorandum of Agreement (MOA) to demonstrate their agreement to pursue collection of P2 results data.

The MOA demonstrates commitment to:
- P2 programs: will collect data for core measures, where appropriate.
- P2 programs: will send pertinent data from their data management systems to a tool that aggregates the results on a regional level, which will then be shared nationally.
- P2 Results Data Exchange Developer, in conjunction with P2Rx, NPPR, and P2 programs: continuously improve the system to the benefit of all the users.

As of early May 2006, there are 31 signatories of the MOA, including 25 states.

Collecting Data, Real Time

All eight P2Rx centers have installed the current version of the P2 Results Data System (version 2.0) on their web sites and are starting to work with P2 programs in their regions to provide training on using the System. Together these eight regional modules provide national coverage and are currently available to collect real data.

P2Rx centers will be forming workgroups in their regions to provide training to P2 programs and also to collect feedback and suggestions from users about possible improvements for the next version (see more in about this in the following section).

The measurement data that is collected will be aggregated as part of an upcoming national report on P2 results.

Test Site Available

For those interested in testing the System, a test site is available at http://www.p2rx.org/measurement. Some pages (such as the data input and program-specific reports pages) require a user name and password. To request a user name and password, contact Ken Grimm at kgrimm@pprc.org or 206-352-2050.

What's Happening Next

Regional Workgroups

During 2006, P2Rx centers will conduct training on using the System, and will help work with P2 programs in their regions to enter real measurement data into the System.

P2Rx centers will form regional measurement workgroups to discuss data collection, metrics, calculators, reports and user interface of each region's module of the System. Workgroup emphasis will be on developing the regional modules to ensure the transfer of regional P2 data through the national system.

Through the workgroups, P2Rx centers will:
- Identify current P2 data management systems that are used in P2 programs within their region;
- Develop regional, state, local, or agency jurisdictional cost calculators appropriate to reflect costs within each region;
- Identify additional regional metrics. The National P2 Results Task Force has recommended core metrics that should be collected for each P2 program, however, states and regions may have specific metrics they want to track, based on their regional environmental priorities. These additional regional metrics will be shared regionally but may not be reported nationally;
- Identify data collection barriers and needs from the regional P2 programs.

To learn more about the System in your region or to participate, please contact the appropriate P2Rx center for your region (contact names and information are available in the "Contacts" section.
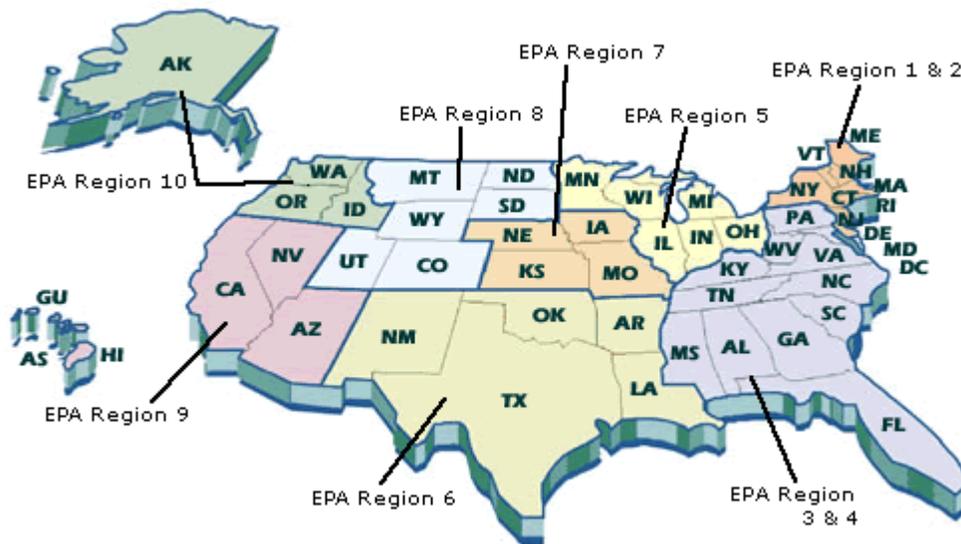
Feedback Mechanisms

The feedback from the P2 programs and regional workgroups will be collected by P2Rx centers. Working with the National Measurement Results Task Force, they will determine which enhancements will be added to the next version of the System, version 2.1.

Contacts

P2Rx Center Contacts

To participate in the workgroup for your region, or learn more about the module of the System specific to your region, please contact the appropriate P2Rx center.

EPA Region 1 & 2	http://www.newmoa.org/measurement/		
	Andy Bray	617-367-8558 #306	abray@newmoa.org
EPA Region 3 & 4	http://wrrc.p2pays.org/measurement/		
	Curt McCracken	919-715-6514	curt.mccracken@ncmail.net
EPA Region 5	http://glrppr.org/measurement/		
	Tyler Rubach	217-244-6553	trubach@wmrc.uiuc.edu
EPA Region 6	http://www.zerowastenetwork.org/measurement/		
	Thomas Vinson-Peng	512-232-7149	tvinson@mail.utexas.edu
EPA Region 7	http://www.p2ric.org/measurement/		
	James Choi	402-554-6263	yschoi@mail.unomaha.edu
EPA Region 8	http://www.peakstoprairies.org/measurement/		
	Kathy Boul	406-994-4463	boul@montana.edu
EPA Region 9	http://www.wrppn.org/measurement/		
	Pete Johnson	775-689-6674	pjohnsen@unr.edu
EPA Region 10	http://www.pprc.org/measurement/		
	Ken Grimm	206-352-2050	kgrimm@pprc.org

National Measurement Results Task Force Members

Co-Chairs:	
Terri Goldberg, NEWMOA, EPA Regions 1 & 2	Chris Wiley, PPRC, EPA Region 10
Members:	
Cindy McComas, MN TAP, NPPR Chair	Tom Armstrong, RI DEM, EPA Region 1
Rob Guillemin, NE EPA Region 1	Bill McGowan, MA OTA, EPA Region 1
Melinda Dower, NJ DEP, EPA Region 2	Dan DeMicco, NYS DEC, EPA Region 2
Mary Lynn Wilhere, CBP Office, EPA Region 3	George Walker, EPA Region 3
John Calcagni, WRRC, EPA Regions 3 and 4	Julie Abcarian, FL DEP, EPA Region 4
Gary Miller, IL WMRC/GLPPR, EPA Region 5	Thomas Vinson-Peng, TX CEQ, EPA Region 6
Gene Nickel, MO DNR, EPA Region 7	Jeff Fiagle, IA DNR, EPA Region 7
Jean Waters, P2RIC, EPA Region 7	Sonya Wallace, UT DEQ, EPA Region 8
Kathy Barwick, CA EPA, EPA Region 9	Raul Gonzalez, Univ. of Nevada EPA Region 9
Peter Johnsen, Univ. of Nevada EPA Region 9	Ken Grimm, PPRC, EPA Region 10
Ken Zarker, formerly TX CEQ	Terry Grogan, EPA PPD
Mike Burns, EPA HQ	Natalie Hummel, EPA HQ
Andy Bray, P2Rx Director	

Frequently Asked Questions

Why should a P2 program participate if it doesn't receive EPA funding?

1) A P2 program can use the P2 Results Data System to generate a customized program-specific report that aggregates the measures it inputs into the System. If a P2 program enters outcome level data, they will be able to access calculators that provide additional value-added information, such as reduced operating costs.
2) P2 programs may use the System for free.
3) P2 programs that participate in Roundtables, receive travel scholarships, or use EPA's online tools all benefit from EPA funding. Participation in this effort helps EPA demonstrate its effectiveness and helps encourage federal support of P2.
4) This effort helps educate taxpayers, businesses and others about the true benefits and achievements of P2.

Why is measurement important?

Pollution prevention or source reduction projects, investments, and programs that are not tracked lose out on some very important information and insight.

Four overarching benefits of measuring environmental performance are:
- Glean perspective on what's working and what's not working;
- Understand and prove progress toward sustainability, environmental goals and environmental quality;
- Create an essential feedback and learning mechanism to support management decisions and effectively apply future effort(s) and investments in environmental improvement; and
- Market effectiveness of programs and opportunities.

For examples and additional benefits of measuring, visit the Environmental Measurement Topic Hub at http://www.pprc.org/hubs/toc.cfm?hub=1000&subsec=7&nav=7.

Will this system allow companies to input their own results data directly?

Currently the System is not able to accept data directly from companies. This question has arisen, and will be considered for future versions of the system.

How is the quality of the data entered into the System ensured?

The System relies on the P2 programs to validate the quality of the data they enter. Each P2 program will follow its own protocols.

How is double counting of data prevented?

Double counting is a real, but manageable, issue. If there is more than one P2 program to which specific P2 data could be attributed, the P2 programs should confer. In most cases, this will be the exception rather than the norm. As future versions of the P2 Results Data System are developed, this question will continue to guide design considerations.