



States Common Measures Project

**Steven DeGabriele
Director, Business Compliance Division
Massachusetts DEP**

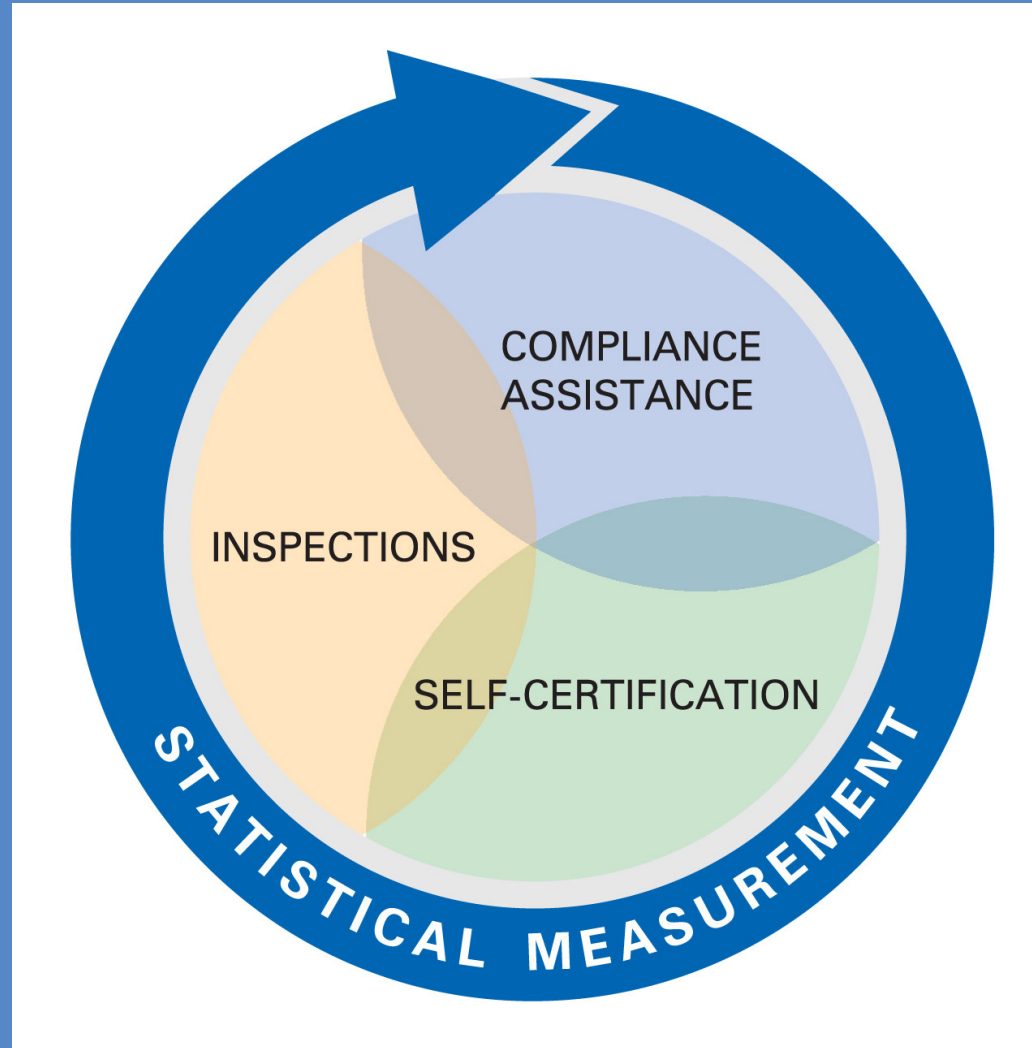
NE Assistance and P2 Roundtable Webinar

July 21, 2009

Roots of the Common Measures Project

- **MassDEP'S Environmental Results Program (ERP)**
- **ERP combines a set of tools for:**
 - effectively and efficiently regulating large groups of facilities or activities with limited resources
 - measuring the effectiveness of compliance assurance efforts (inspections, compliance assistance, enforcement, permits etc.)

ERP: Interlocking Tools, Integrated System



ERP Measurement

- Using statistical approaches to efficiently and effectively measure the performance of a group
- Identifying and understanding the “universe” to be measured
- Creating a set of “Environmental Business Practice Indicators” (EBPIs) for the group – single or multi-media, compliance or beyond compliance
- Inspecting a relatively small randomly selected subset of the universe
- Using statistical analysis to generalize the findings to the entire universe with a selected confidence level and with confidence intervals
- **Choosing what to measure:**
 - Performance of group at a point in time
 - Performance of group by each indicator or groups of indicators
 - Comparison of group performance at two (or more) points in time
 - Comparison of group performance across two (or more) states

Common Measures Project Overview

- **EPA State innovation Grant – May 2006 – May 2009**
- **Project states: CA, CO, CT, ME, MA, NH, NY, RI, VT, WA**
- **Improve the ability of state environmental agencies to evaluate the performance of targeted business sectors by using ERP measurement**
- **Improve the ability of state environmental agencies to identify and adopt effective and efficient environmental performance improvement strategies**

Overall Project Outcomes

- States selected two groups to measure: Small Quantity Generators of hazardous waste (SQGs) and Auto Body shops
- States agreed on a set of common environmental performance indicators for both groups
- States collected and reported data on SQGs performance indicators
- Mean SQG facility scores were calculated for each state (the facility score is the percentage of all applicable indicators the facility successfully achieved)
- The state's SQG achievement rate on each indicator was calculated (the achievement rate is the percentage of facilities achieving each performance indicator)
- The compliance assurance and performance enhancement strategies reported by project states were compared to the SQG mean facility scores and SQG achievement rates

Project Phases

- **Phase 1 - Group Orientation and Capacity Building**
- **Phase 2 - Making Decisions and Groups and Indicators**
- **Phase 3 – Data Collection, Field Observer Training and Statistical Methods**
- **Phase 4 – Data Analysis, Exploration of State Activities Influence and Presentation of Results**

The minimum project requirement was to complete all four phases for at least one group. The project actually completed work on all four phases for the small quantity hazardous waste generator sector and three phases for the auto body sector.

Examples of Common Measures

SQG Indicators

Regulatory Indicators

- Are all hazardous waste containers properly labeled with the words “hazardous waste” and clearly marked with the date on which accumulation began?
- Are all hazardous waste containers in good condition, (i.e., free of severe rusting or apparent structural defects, and not leaking)
- At the time of the inspection, does the facility have any RCRA hazardous waste onsite that has been accumulated onsite for more than _____ days?
- Has the facility identified all of its hazardous waste streams?

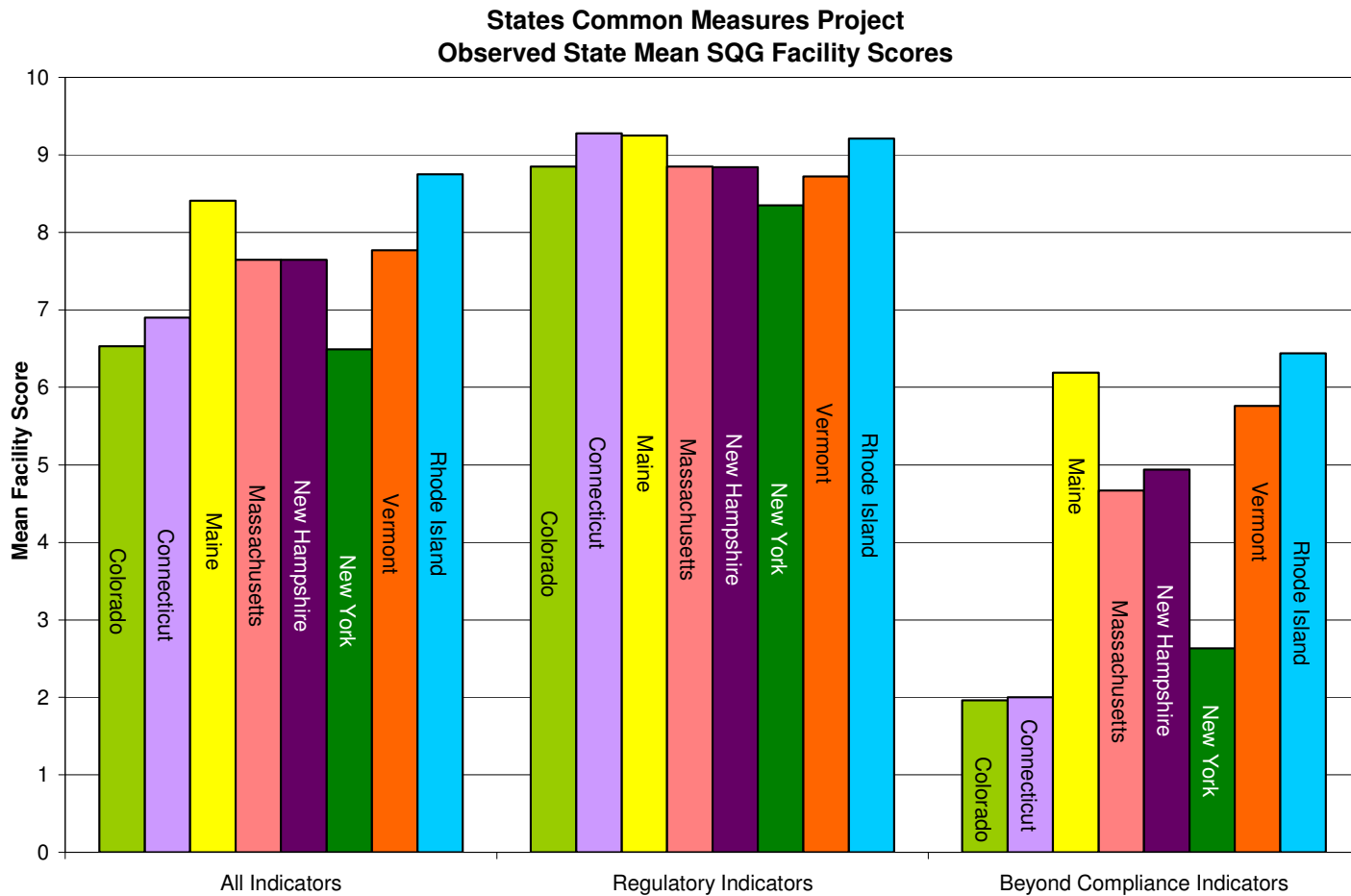
Beyond Compliance Indicators

- Has the facility implemented toxic use reduction over the past 3 years?
- Has the facility undertaken recycling projects over the past three years?
- Has the facility implemented water conservation projects over the past three years?
- Has the facility implemented energy conservation/alternative energy projects over the past three years?

Project Data Quality Standards for SQGs

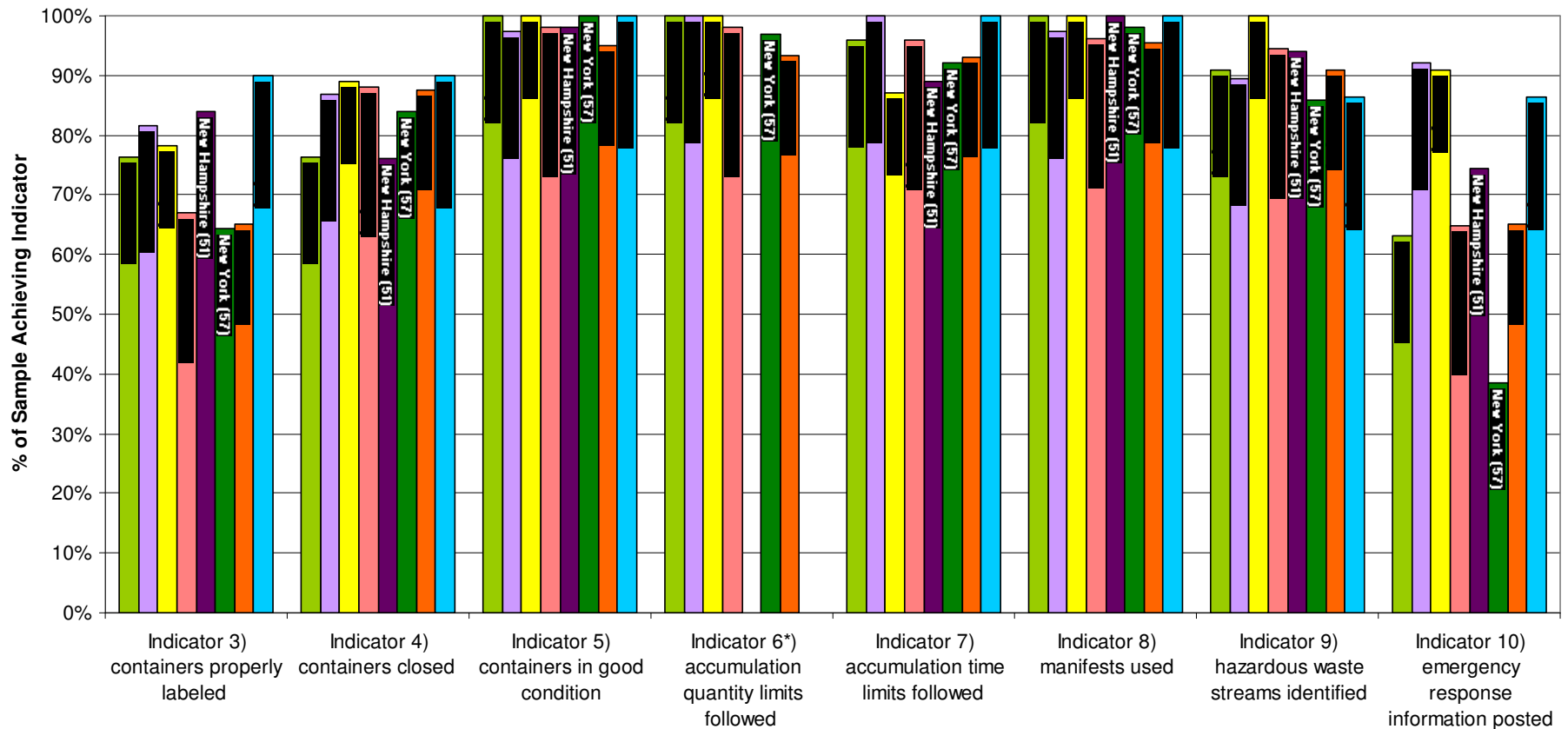
- Deciding acceptable confidence level, confidence interval and sample size
- Developing common random sample selection procedures
- Developing a common performance checklist and training field observers to verify compliance/performance consistently
- Requiring individual state sign-off on meeting data quality standards
- Implementing data quality control procedures for data entry and analysis

Baseline Performance Results By Aggregated Group (SQG Sector)



Baseline Performance Results by Individual Regulatory Indicator (SQG Sector)

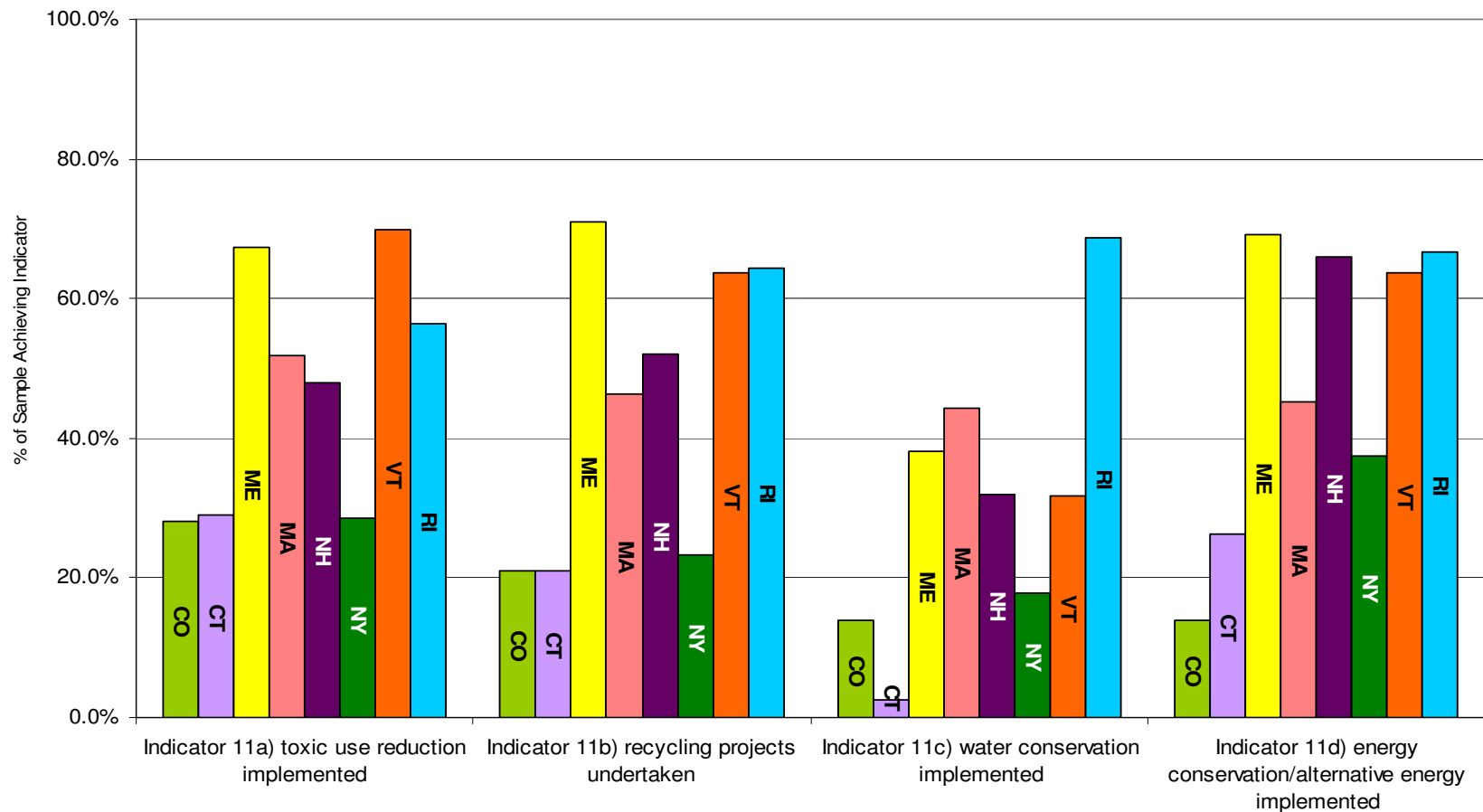
States Common Measures Project:
Observed State SQG Achievement Rates on Regulatory Indicators



* Indicator 6 does not apply to RI or NH
#s in parentheses indicate # of facilities included in the state's sample

Baseline Performance Results by Individual Beyond Compliance Indicator (SQG Sector)

STATES COMMON MEASURES PROJECT
Observed State SQG Achievement Rates on Beyond Compliance Indicators



Exploration of State Activities Influence (June 2004 – June 2007) on Measured SQG Performance

- Did the nature and extent of **regulatory compliance assistance** provided (between June 2004 and June 2007) influence SQG performance?
- Did the nature and extent of **beyond compliance assistance** provided influence performance? (toxics use reduction, recycling, water conservation, energy conservation)
- Did the **frequency of inspections** influence performance?
- Did the **most common inspection triggers** influence performance?
- Did **who conducted SQG compliance inspections** influence performance?
- Did the **type of SQG enforcement actions** influence performance?
- Did the nature and amount of **SQG reporting requirements** influence performance?

What States Learned Under the Project

- **How to make choices about groups**
 - e.g., single medium vs. multi-media, existing vs. new sector, known universe, common definitions, problem sector
- **How to identify data quality issues**
 - e.g., bias, precision, sensitivity, representativeness, new data versus old data
- **How to select indicators**
 - e.g., regulatory, beyond compliance (P2), outcome based
- **How to select an effective sample size,**
 - e.g., minimum number of inspections per universe size within an agreed upon confidence level
- **How to collect data**
 - e.g., inspectors asking and answering questions the same way
- **How to use statistics to interpret and report data results**

Project Conclusions

- The project states successfully developed and used common measures to evaluate the environmental performance of a common group of facilities
- The ten states built capacity within their agencies to do ERP-type measurement
- The project created a replicable template that can be used by other agencies to build capacity to measure environmental performance and to identify the most effective and efficient strategies for promoting better performance
- The project further enhanced automated tools (the ERP Performance Analyzer) to streamline data management, statistical analyses and presentation of results

Project States Recommendations for EPA

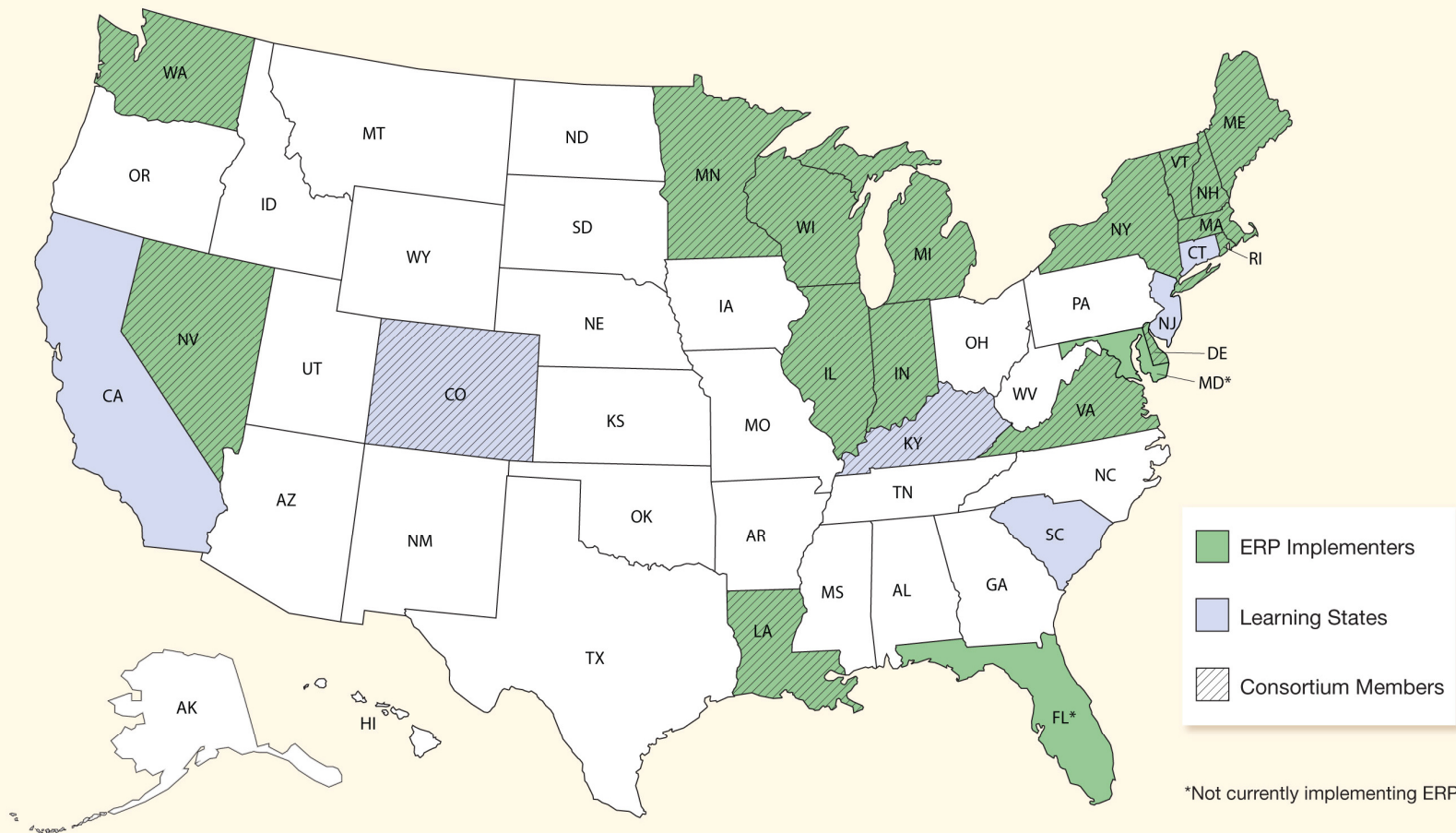
Provide the key leadership and funding support to:

- 1. Promote and expand the use of ERP-type measurement in both in EPA and States “core” and other work to:**
 - Look within and beyond individual states to identify and adopt the most effective and efficient environmental performance improvement strategies
 - Allow states the flexibility to deploy resources based on measure performance levels and the best strategies
 - Promote the use of ERP-type measurement to routinely make environmental priority and resource allocation decisions.
- 2. Support the creation of an ERP Training institute to codify this work into a formal ERP measurement curriculum.**

What next?

- A six-state initiative in EPA Region V to develop and implement an ERP for auto body shops that will include the use of the auto body indicators developed under this project. (EPA 2009 SIG project)
- The CT DEP 2009 SIG proposal (not funded) to build on this project by: (1) doing more in depth analysis of the relationship between program design and high SGG performance and (2) creating more robust energy efficiency, P2, solid waste recycling and water conservation beyond compliance performance indicators
- The EPA Region 1 and OECA project to measure auto body shop performance in Massachusetts using the CM project indicators
- Do the project states want to select another important group of regional or national interest to measure?

Growing ERP Community



May 2007



For More Information on the Common Measures Project Contact:

**Steve DeGabriele, MassDEP (617) 556-1120 or
steven.degabriele@state.ma.us,**

Suzi Peck, MassDEP (617) 292-5780 or susan.peck@state.ma.us,

Tara Acker, NEWMOA (413) 549-5309 or taraacker@gmail.com,

Or Visit the Common Measures Website:

<http://www.newmoa.org/hazardouswaste/measures/>