State Innovation Grant Pre-proposal Workshop -- Introduction to Performance Measurement

Presented by:

Evaluation Support Division
U.S. EPA's National Center for Environmental Innovation
Office of Policy, Economics, and Innovation

Presentation Goals

- Enable participants to:
  - Develop a common understanding of performance measurement terminology.
  - Develop performance measures for their state innovation grant project using a logic model approach.

Module 1:

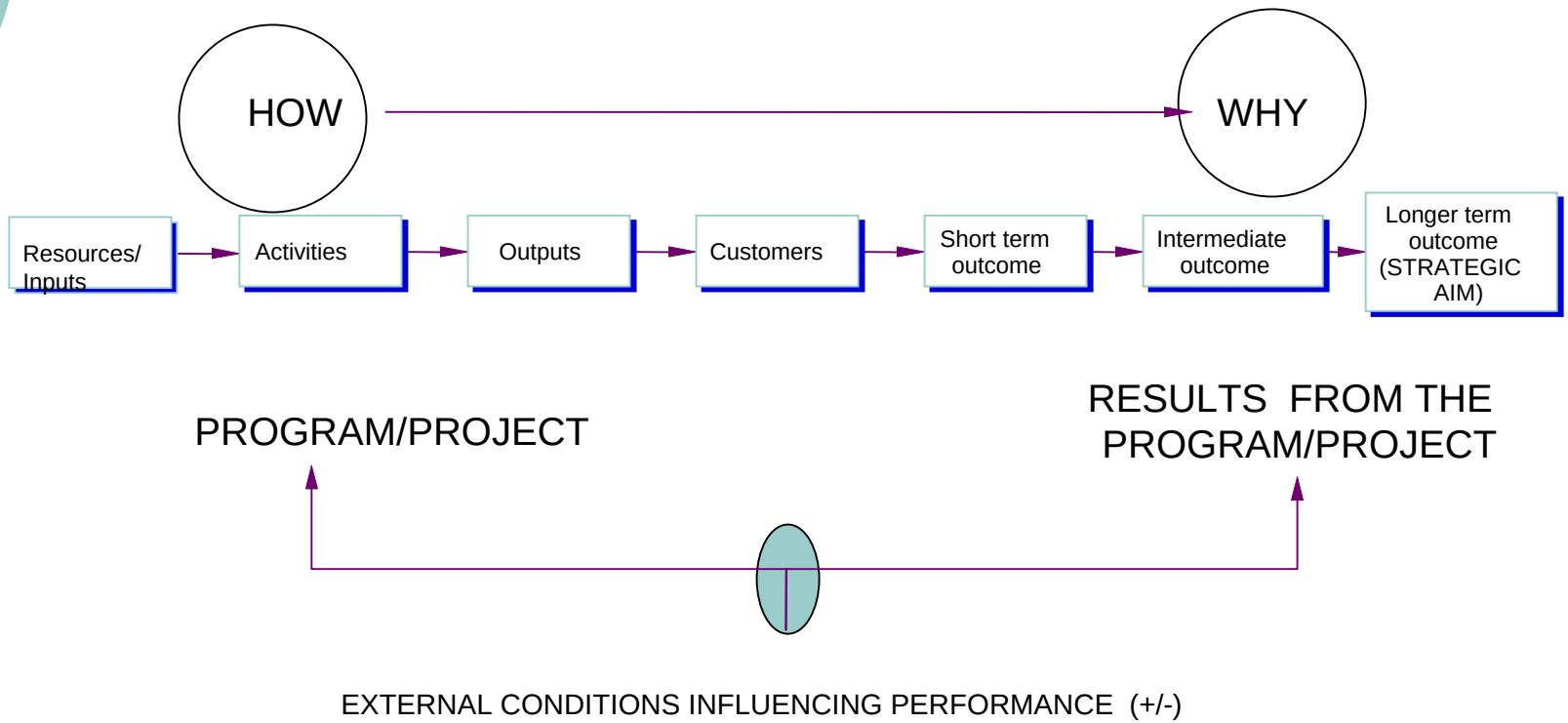
Planning for Performance Measurement: Describing the Program/Project

Something to Consider

- Successful programs/projects –
  - Have a well articulated, research-based, experience-based theory or road map.
  - Follow the road map during the trip!

LOGIC MODEL

A logic model is a diagram and text that describes/ illustrates the logical (causal) relationships among program elements and the problem to be solved, thus defining measurements of success.



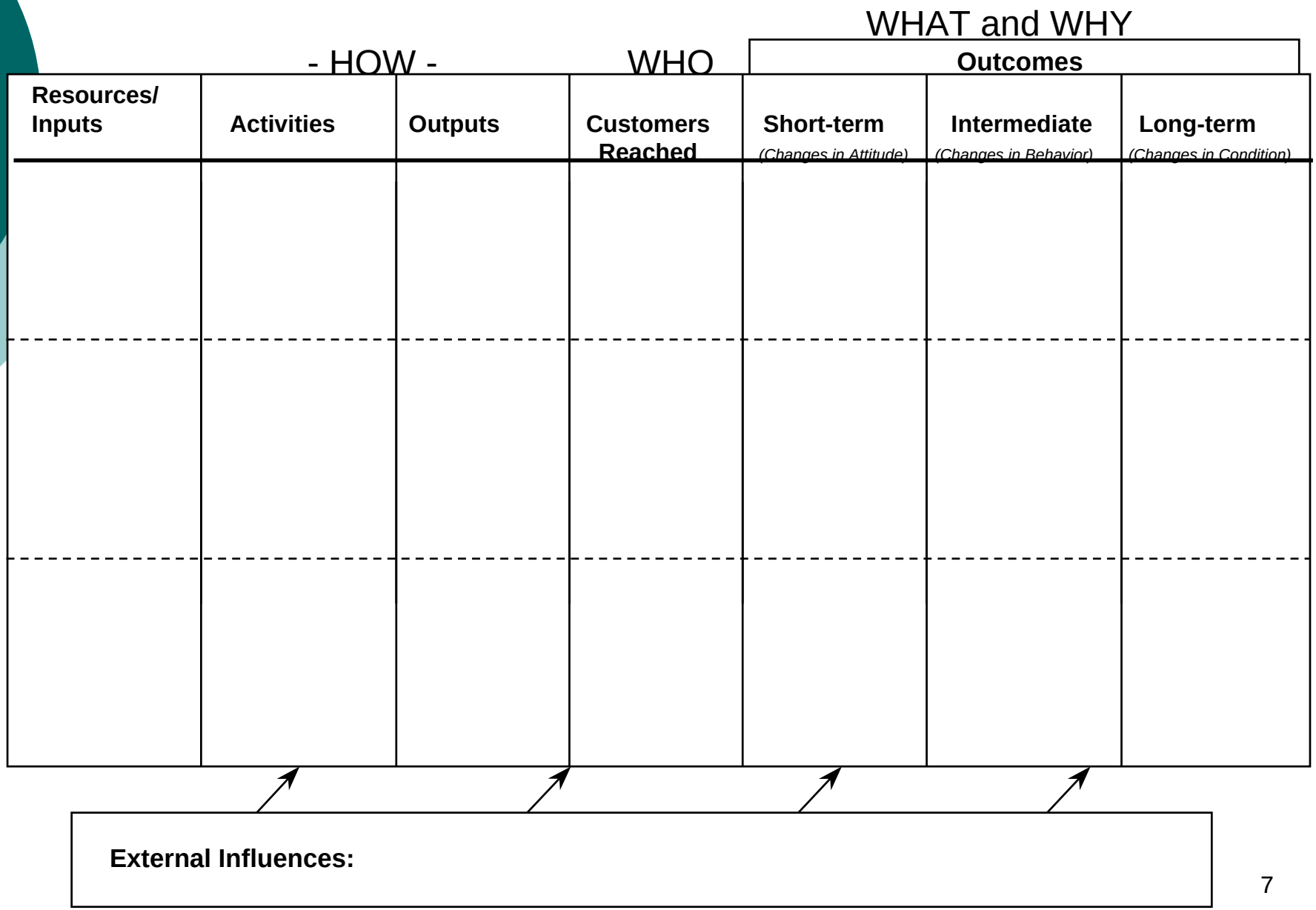
Elements of the Logic Model

1. **Resources/Inputs:** Programmatic investments available to support the program/project.
2. **Activities:** Things you do– activities you plan to conduct in your program/project.
3. **Outputs:** Product or service delivery/implementation targets you aim to produce.
4. **Customer:** User of the products/services. Target audience the program is designed to reach.
5. **Outcomes:** Changes or benefits resulting from activities and outputs.

   Outcome Structure

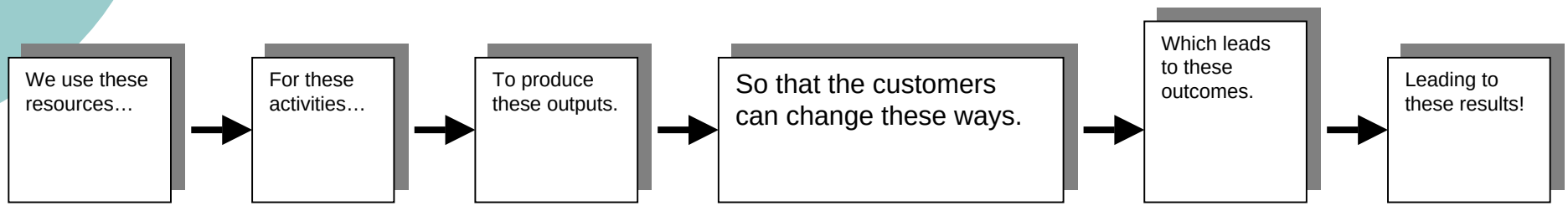
   - Short-term – Changes in learning, knowledge, attitude, skills
   - Intermediate – Changes in behavior, practice, or decisions
   - Long-term – Changes in condition
6. **External Influences:** Factors that will influence change in the affected community.

Define the elements of the program or project in a table



Develop a diagram and text describing logical relationships

- Draw arrows to indicate/link the causal relationships between the logic model elements.

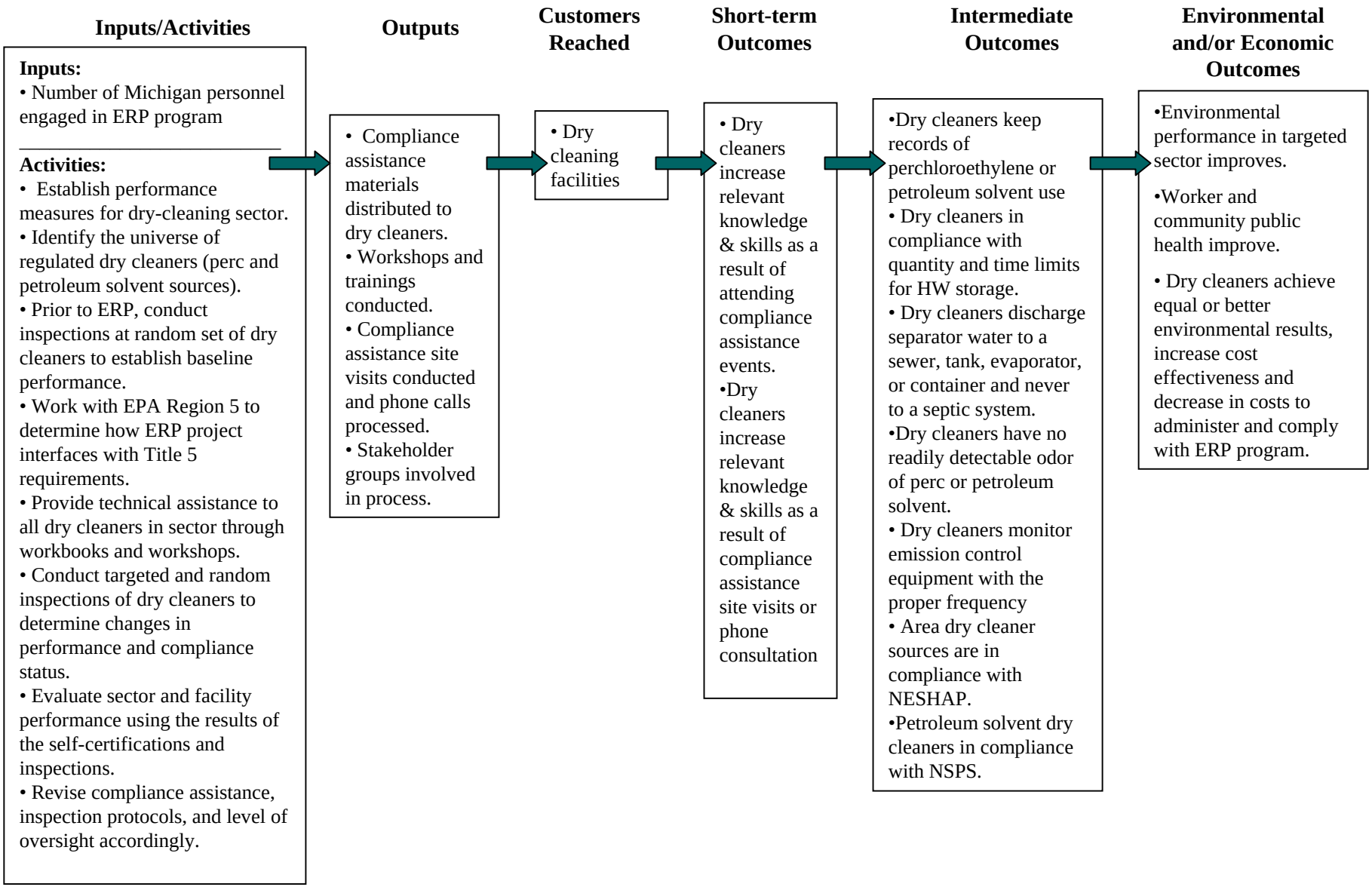


  - Limit the number of arrows. Show only the most critical feedback loops.
  - Work from both directions (right-to-left and left-to-right).
  - There are many different forms of logic model diagrams.

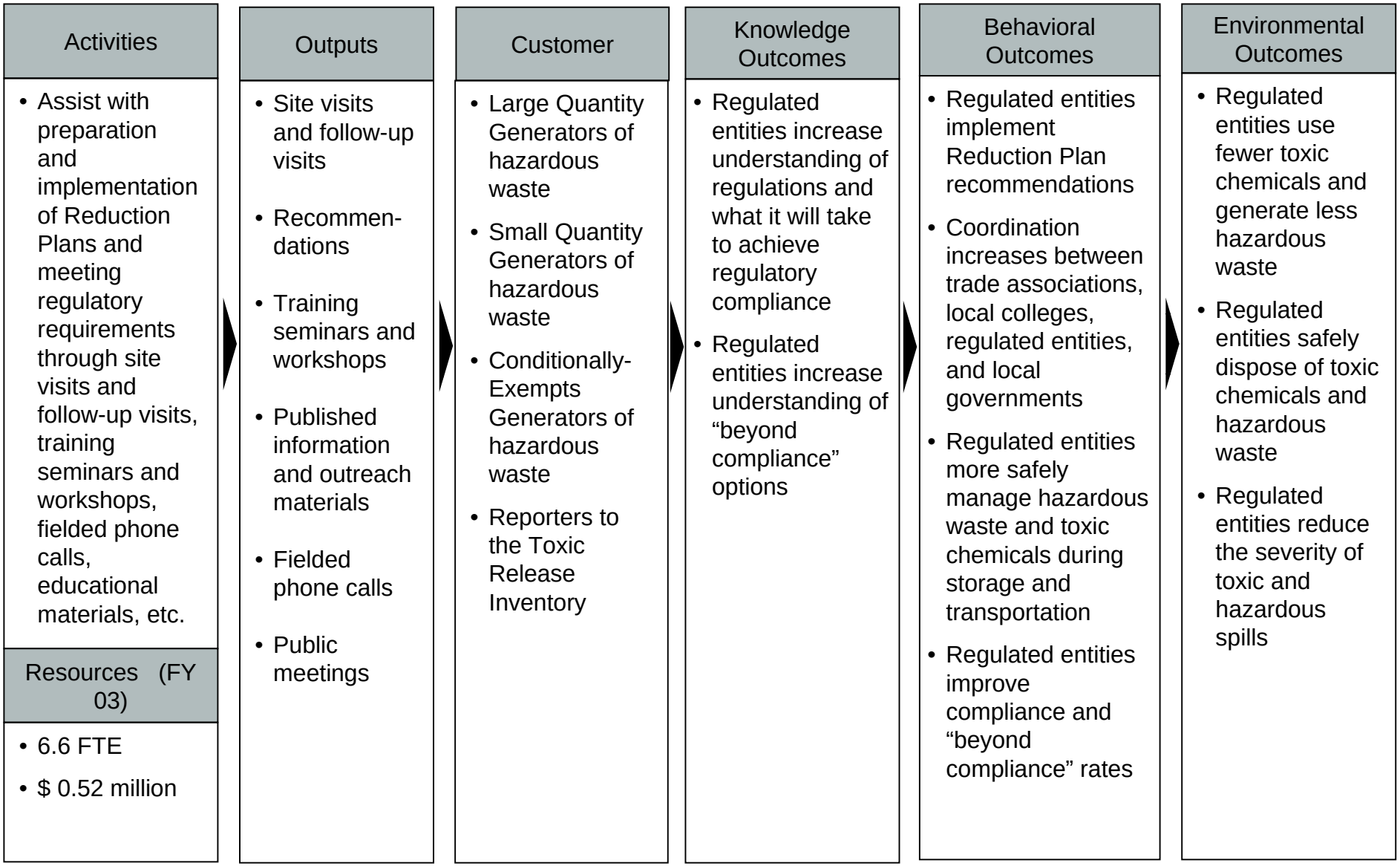
Questions to Guide Modeling

- What are the essential resources we need to implement the program?
- What programs/activities do we have to implement with these people to achieve our results?
- What are the outputs of our programs/projects?
- Who/what do we need to reach to achieve these results?
- What are the short-term and intermediate changes that will enable us to realize our strategic results?
- What are the strategic results/long-term environmental outcomes we are aiming for?
- What external influences to the program context do we have to be aware of?

MICHIGAN ENVIRONMENTAL RESULTS PROPOSAL FOR DRY CLEANERS
STATE INNOVATION GRANT – LOGIC MODEL



Goals: Protect public health, safety, and the environment from the risks associated with using toxic chemicals and generating hazardous waste; improve regulatory compliance; and reduce management and disposal costs.



Module 2:

Developing Performance Measures

Definitions

- Performance measure – a metric used to gauge program or project performance.
- Performance measurement – the ongoing monitoring and reporting of program progress and accomplishments, using pre-selected performance measures.
- Indicators – measures, usually quantitative, that provide information on program performance and evidence of a change in the “state or condition” in the system.
- Indicators measure the “state of” something, typically in the natural environment. Performance measures help us assess the effect of our programs. As defined by King County DNRP.

What is the difference between an Indicator and a Performance Measure?

"Indicators and performance measures are both terms used to describe data associated with desired results or outcomes. However, the main difference between these two terms is the degree of control we have over them. Indicators measure the "state of" something, typically in the natural environment. Performance measures help us assess the effect of our programs." Key differences between indicators and performance measures include:

ISSUE	INDICATOR	PERFORMANCE MEASURE
Degree of control	DNRP has less control or can only influence the indicator	DNRP has higher degree of control
Outside influences	More outside influences	Fewer outside influences
Achievement	Due to number of influences and nature of interjurisdictional response, may take longer to achieve	Due to degree of control and fewer influences, may be achieved in a relatively shorter timeframe
Reporting	Reported countywide in county Benchmark Report Reported by urban-rural or incorporated-unincorporated in DNRP report due to limited programmatic reach or impact	Reported only in DNRP report
Use	Ambient sites are used as indicators of the condition of the environment	Outfall sites are used as agency performance measures
Strategy	Requires other jurisdictions and organizations	DNRP may be able to attain by itself, or with limited additional assistance

From: Measuring for Results 2003 – King County DNRP

Uses of Performance Information

- Provide an unbiased way to assess performance.
- Assess allocation of resources to support activities.
- Set program priorities (difficult to do without evaluation).
- Assess whether program/project goals are being met.
- Provide information for policy/project decision-making.
- Demonstrate value to stakeholders and public.
  - Good management practices
  - Return on investment

Uses of Performance Information (Cont'd)

- Adopt new program or project approaches or changing work processes.
- Coordinate program or project efforts with other internal or external programs/organizations.
- Set new or revise existing performance goals/objectives.
- Provide information needed to conduct an evaluation.

Limitations and Pitfalls in Performance Measures

- Provide descriptive data, not rigorously evaluative.
- Can encourage undesirable behavior such as goal displacement.
- Can be abused.
- May require too much time and effort.
- Can be ignored, not automatically utilized.

Types of Performance Measures

Category	Definition	Examples
Resources/ Inputs	Resources consumed by the organization.	Funds, FTE, materials, equipment, supplies (etc.).
Activities	The work performed that directly produces the core products and services.	Number of training classes designed; Hours of technical assistance training for staff; Number of compliance workbooks developed.
Outputs	Products and services provided as a direct result of program activities.	Number of training classes conducted; Number of technical assistance requests responded to;Number of compliance workbooks delivered.
Customer Reached	Measure of target population receiving outputs.	Percent of target population trained; Number of target population receiving technical assistance.
Customer Satisfaction	Measure of satisfaction with outputs.	Percent of customers dissatisfied with training; Percent of customers “very satisfied” with assistance received.
Outcomes	Accomplishment of program objectives; attributable to program outputs.	Pounds of pollutants reduced;Miles of beaches cleaned.
The measures below can be derived using the six measures identified above.		
Efficiency	The ratio of the amount of input to the amount of output. Focus is on operating efficiency. Relating output to some specific resource in terms of cost or time.	Cost per workbook produced; Cost per inspection conducted.
Productivity	Measure of the rate of production per some specific unit of resource (e.g. staff or employee). The focus is on labor productivity.	Number of enforcement cases investigated per inspector.
Cost-Effectiveness	Measure that relates outcomes to costs.	Cost per pounds of pollutants reduced; Cost per mile of beach cleaned.
Service Quality	Measure of the quality of products and services produced.	Percent of technical assistance requests responded to within one week.

Steps for Developing Measures

- Step 1: Identify and Define the Measures
- Step 2: Evaluate/Assess the Measures
- Step 3: Choose the Most Important Measures

Step 1: Identify and Define the Measure

A. Review existing requirements specified in:
   - Legislation
   - Strategic plan

Step 1: Identify and Define the Measure

B. Consider/ask what information is needed to assess whether your program/project is meeting its goals and objectives. Examine your program/project's existing:

- Mission
- Goals
- Objectives
- Service Standards

Step 1: Identify and Define the Measure

C. Review the logic model (activities, outputs, and outcomes from across the performance spectrum) and identify the types of measures you would like to track (e.g., resource, output, outcome, customer satisfaction).

Performance Questions Across the Performance Spectrum

PROGRAM ELEMENTS:	Resources (We use These)	Activities/ Outputs (To do these things)	Target Customer (For these people)	Short term Outcome (To change them in these ways)	Intermediate Outcome (So they can do these things)	Long-Term Outcome (So they can do these things)
PERFORMANCE QUESTIONS:	○Do we have enough, ○The right, ○The necessary level, ○The consistency?	○Are we doing things the way we say we should? ○Are we producing products and services at the levels anticipated? ○According to anticipated quality indicators measures?	○Are we reaching the customers targeted? ○Are we reaching the anticipated numbers? ○Are they satisfied?	○Did the customer's understanding, knowledge, skills or attitude change?	○Are customers using the information, knowledge, skill and/or attitude change as expected? ○With what results? ○Are customers served changing in the expected direction/level? ○If so, what did we (others) do to cause the change?	○What changes in condition have occurred? ○Did the program achieve its goals and objectives?
EXTERNAL CONDITIONS:	What factors might influence my program's success?					

Step 1: Identify and Define the Measure

D. Generate a list of potential measures seeking out those that are the best gauges for tracking progress for your program/project.

- Resources: research and evaluation information from this and related programs/projects.

Examples of Performance Measures Across the Performance Spectrum

PROGRAM ELEMENTS:	Resources (We use These)	Activities/ Outputs (To do these things)	Target Customer (For these people)	Short term Outcome (To change them in these ways)	Intermediate Outcome (So they can do these things)	Long-Term Outcome (So they can do these things)
PERFORMANCE MEASURES:	○ Cost per product ○ Program cost per year	○ # of products produced ○ # of training classes conducted	○ % of target customer reached ○ # of clients participating in the program ○ % of customers reporting satisfaction with program	○ # of customers more knowledgeable about the issue ○ # of customers with new skills	○ # of customers using the information ○ # of customers adopting new practices	○environmental improvements as a result of behavior changes ○ reductions in health risks as a result of behavior changes
EXTERNAL CONDITIONS:	What factors might influence my program's success? ○ Changes in rules ○ Changes in economy					

Step 1: Identify and Define the Measure

- Type of Data
  - Raw Numbers (tons VOCs reduced)
  - Averages (mean tons of VOCs reduced)
  - Percentages (% of dry cleaners reporting VOC reduction)
  - Ratios (Cost per ton of VOCs reduced)
  - Rates (tons of VOCs reduced per 100 dry cleaners)
- Unit of Measure
  - Is it appropriate to the measure? Are supporting data available in this specific unit of measure?

MICHIGAN ENVIRONMENTAL RESULTS PROPOSAL FOR DRY CLEANERS
STATE INNOVATION GRANT - PERFORMANCE MEASURES

Inputs/Activities

Inputs:
• Number of Michigan personnel engaged in ERP program
Activities:
• Establish performance measures for dry-cleaning sector.
• Identify the universe of regulated dry cleaners (perc and petroleum solvent sources).
• Prior to ERP, conduct inspections at random set of dry cleaners to establish baseline performance.
• Work with EPA Region 5 to determine how ERP project interfaces with Title 5 requirements.
• Provide technical assistance to all dry cleaners in sector through workbooks and workshops.
• Conduct targeted and random inspections of dry cleaners to determine changes in performance and compliance status.
• Evaluate sector and facility performance using the results of the self-certifications and inspections.
• Revise compliance assistance, inspection protocols, and level of oversight accordingly.

Outputs

• Number of compliance assistance materials distributed to dry cleaners.
• Number of workshops and trainings conducted.
• Number of compliance assistance site visits conducted and phone calls processed.
• Number of stakeholder groups involved in process.
• Number of individual stakeholders identified by affiliation (group or independent).
•Extent of stakeholder involvement (qualitative measure).

Customers Reached

• Number (%) of dry cleaners participating in program.

•Number (%) of dry cleaners attending events or requesting compliance assistance site visit or phone consultation .

Short-term Outcomes

• Number (%) of dry cleaners with increased relevant knowledge and skills as a result of site visits, consultation , or attending compliance assistance events.

Intermediate Outcomes

•Increase in the number (%) of dry cleaners keeping records of perchloroethylene or petroleum solvent use
• Increase in the number (%) of dry cleaners in compliance with quantity and time limits for HW storage.
• Increase in the number (%) of dry cleaners that discharge separator water to a sewer, tank, evaporator, or container and never to a septic system.
• Increase in the number (%) of dry cleaners with no readily detectable odor of perc or petroleum solvent.
• Increase in the number (%) of dry cleaners that monitor emission control equipment with the proper frequency
• Increase in the number (%) of area dry cleaner sources in compliance with NESHAP.
• Increase in the number (%) of petroleum solvent dry cleaners in compliance with NSPS.

Environmental and/or Economic Outcomes

• Measured improvements in targeted sector-specific environmental performance measures.

• Measured improvements in worker and community public health.

• While achieving equal or better environmental results, increase in cost effectiveness measured by decrease in hours required by State to administer and facility to comply with ERP program compared to conventional regulatory or permitting program.

EPA Strategic Plan 2003-2008

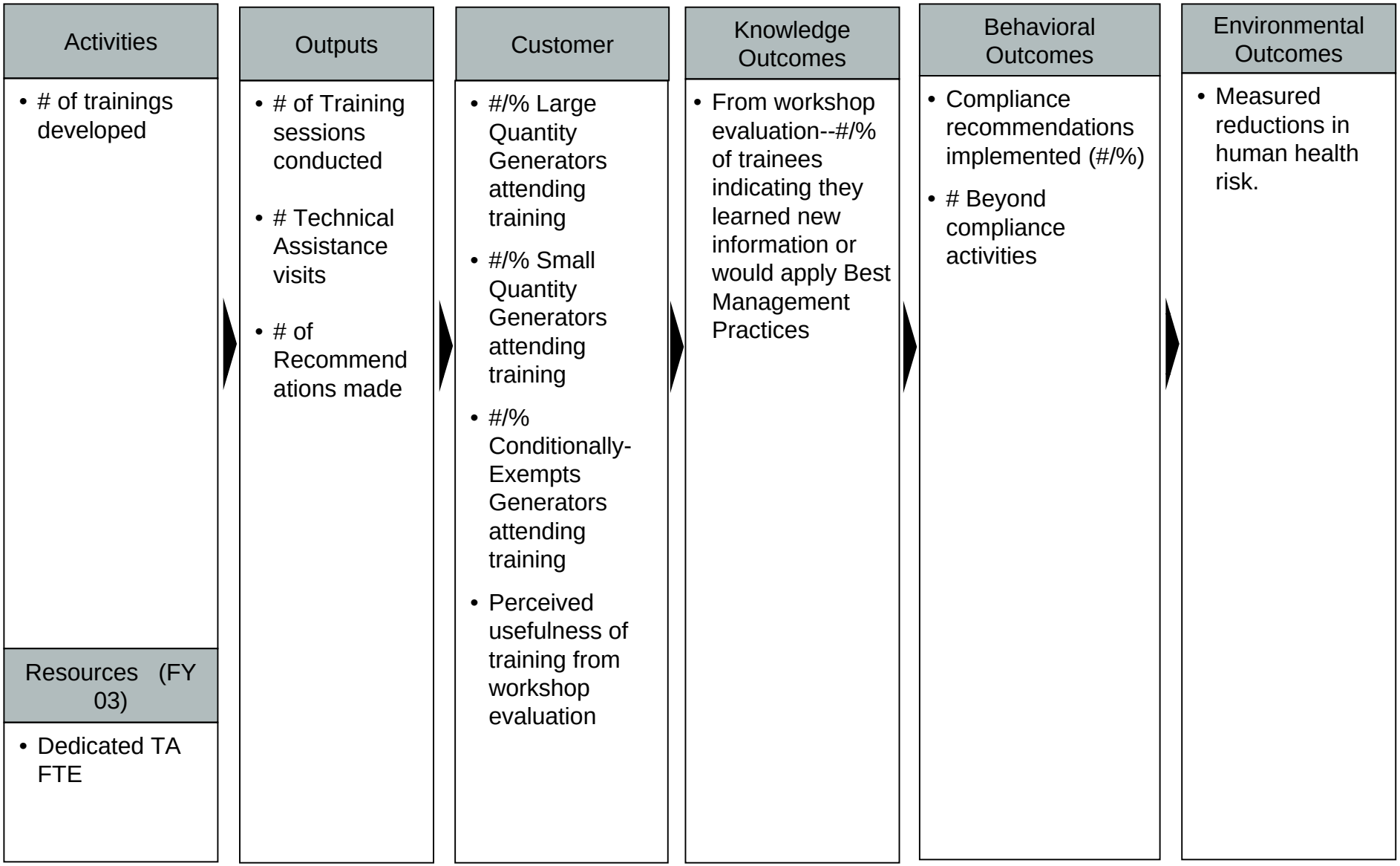
Goal 1: Clean Air and Global Climate Change
Objective 1.1 Healthier Outdoor Air by attaining and maintaining air quality standards and reducing risk from toxic air pollutants with target of:
• Reduce VOCs by 1.7 million tons (Sub-objective 1.1.1: More people breathing cleaner air).

Goal 2: Clean and Safe Water
Objective 2.2: Protect water quality with target of:
• Attain water quality standards in over 25% of water bodies (Sub-objective 2.2.1: Improve water quality on a watershed basis)

Goal 3: Land Preservation and Restoration
Objective 3.1: Preserve Land
• Manage hazardous waste properly (Sub-objective 3.1.2)

Goal 4: Healthy Communities and Ecosystems
Objective 4.1: Prevent and reduce chemical risks to humans, community, and ecosystems.

Goals: Protect public health, safety, and the environment from the risks associated with using toxic chemicals and generating hazardous waste; improve regulatory compliance; and reduce management and disposal costs.



Step 2: Evaluate the Measure

Evaluate/assess the feasibility of the measures in terms of:

- Data collection
- Analysis
- Reporting

Step 2: Evaluate the Measure for Data Collection

As you develop the potential list of measures, consider the following for each:

- Data availability
  - Are supporting data for the measure readily available from existing sources or easily generated?
- Frequency of data collection
  - Are data reported frequently enough (e.g., quarterly, annually)?
- Data available for use
  - Are data collected at the appropriate geographic areas/spatial scales (e.g., city, county, region)?

Step 2: Evaluate the Measure for Data Collection

- Continued data collection
  - Will supporting data continue to be collected into the future at adequate frequency?
- Supports an acceptable baseline
  - Does this dataset support establishment of an acceptable baseline?
- Overall implementation cost
  - What is the estimated cost of collecting and synthesizing the data, and measuring and reporting? Can you do a quick cost/benefit summary?

Step 2: Evaluate the Measure for Analysis

- Will the measure change over time and in response to implementation of the program/organization to pick up the measures of the program?

- Do you have direct or near direct control over this measure, or is it significantly affected by external factors? If so, list the major factors.
  - Can the impact of these external factors on the measure be taken into account?

Step 2: Evaluate the Measure for Reporting

Identify and analyze the prospective reporting format for each measure:

- Identify how frequently each measure should be reported.
- Identify how the measure will be measured and reported, that is, identify the display format (e.g., charts, tables, diagrams, text).
- Verify that this reporting format is meaningful to the intended audience.

Step 3: Choose the Most Important Measure

- Assess the value of the measures in relation to the goals and objectives of the program.
  - Required
  - Important
  - Interesting

- Select final list of measures – you won't be able to collect data for all measures.

Tips for Developing Measures

For each measure ask...

- Does the measure clearly relate to the project goal and objective?
- Is the measure important to management/stakeholders?
- Is it possible to collect accurate and reliable data for the measure?
- Taken together, do the measures accurately reflect the key results of the program, activity, or service?
- Is there more than one measure for each goal and/or objective?
- Are your measures primarily outcome, efficiency, or quality measures?

Criteria for *Useful* Performance Measures

Is each measure:	If so, then it will be:
Objective-linked	Directly related to clearly stated objectives for your program.
Responsibility-linked	Matched to specific organizational units and people that are responsible for AND capable of taking action to improve performance.
Organizationally acceptable	Valued by all levels in the organization, used as a management tool, and viewed as being "owned" by those accountable for performance.
Comprehensive	Inclusive of all relevant aspects of the program performance; e.g., measuring quality and quantity.
Credible	Based on accurate and reliable data sources and methods, and to the extent possible, not open to manipulation or distortion.
Cost-effective	Acceptable in terms of data collection, processing, and reporting.
Compatible	Integrated with existing information systems.
Comparable with other data	Useful in making comparisons; e.g., performance can be compared from period to period, with peers, to other programs.
Easy to interpret and report	Presented graphically and accompanied by commentary!

[1] Adapted from Price Waterhouse – Center for Performance Measurement

Performance Measurement Hierarchy