Introduction to Logic Modeling and Performance Measurement Workshop

State Innovation Grants Workshop

May 16, 2007

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National Center for Environmental Innovation

Evaluation Support Division

Presentation Goals

- For participants to leave with:
  - An understanding of performance measurement and program evaluation terminology
  - A draft logic model of their program or project
  - A framework for developing performance measures for their program/project

Session Agenda

- **Module 1:** Planning for Performance Measurement

- **Module 2:** Identifying and Developing Performance Measures

Performance Management Tools

PERFORMANCE MANAGEMENT

Performance management includes activities to ensure that goals are consistently being met in an effective and efficient manner. **Performance management tools include logic models, performance measurement and program evaluation.**

Logic Model

Tool/framework that helps identify the program/project resources, activities, outputs customers, and outcomes.

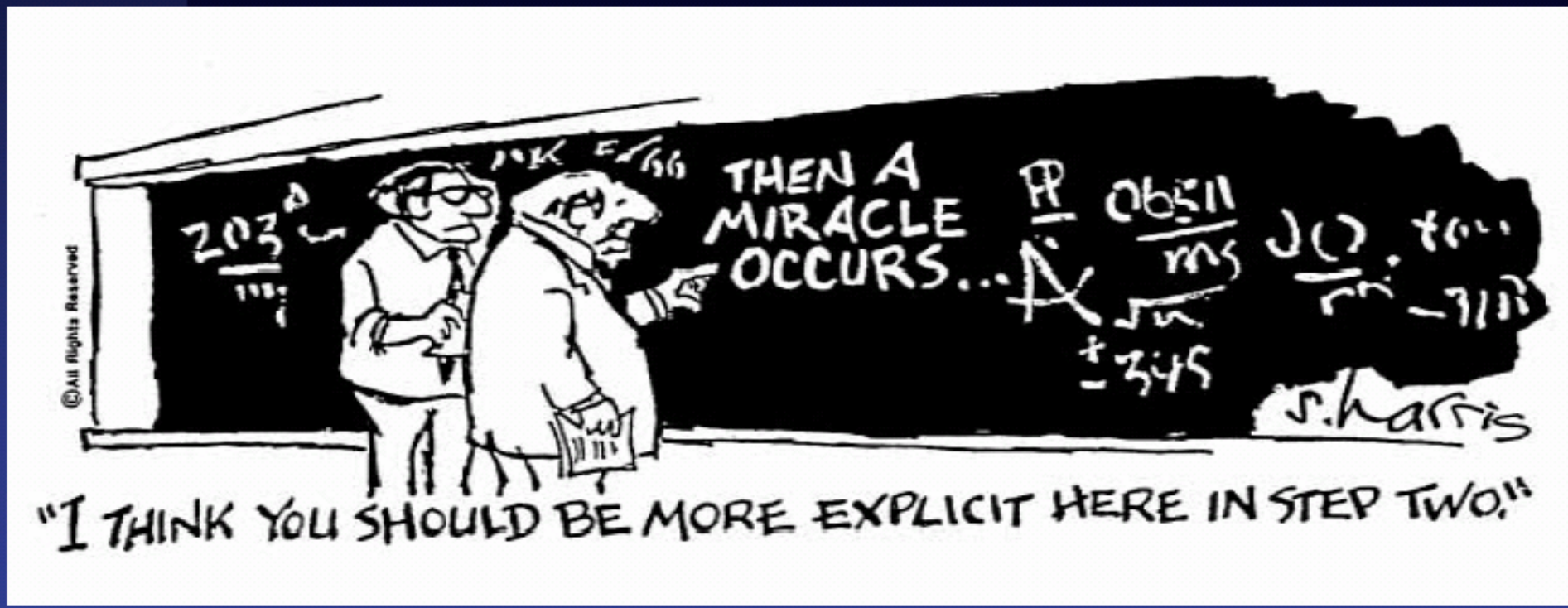
Performance Measurement

Helps you understand ***what*** level of performance is achieved by the program/project.

Program Evaluation

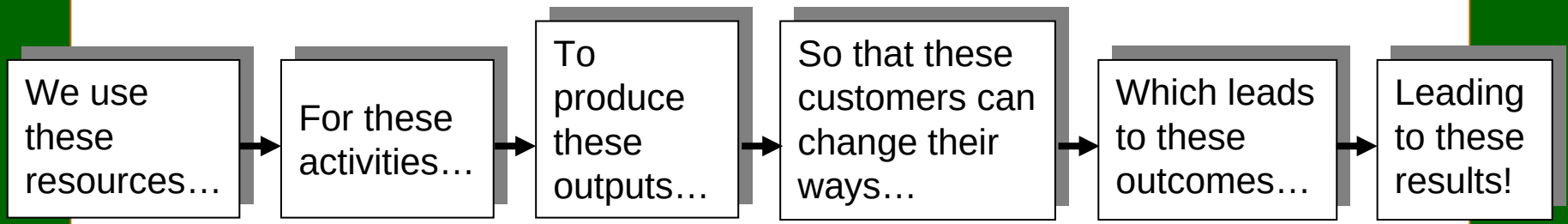
Helps you understand and explain ***why*** you're seeing the program/project results.

The Logic Model

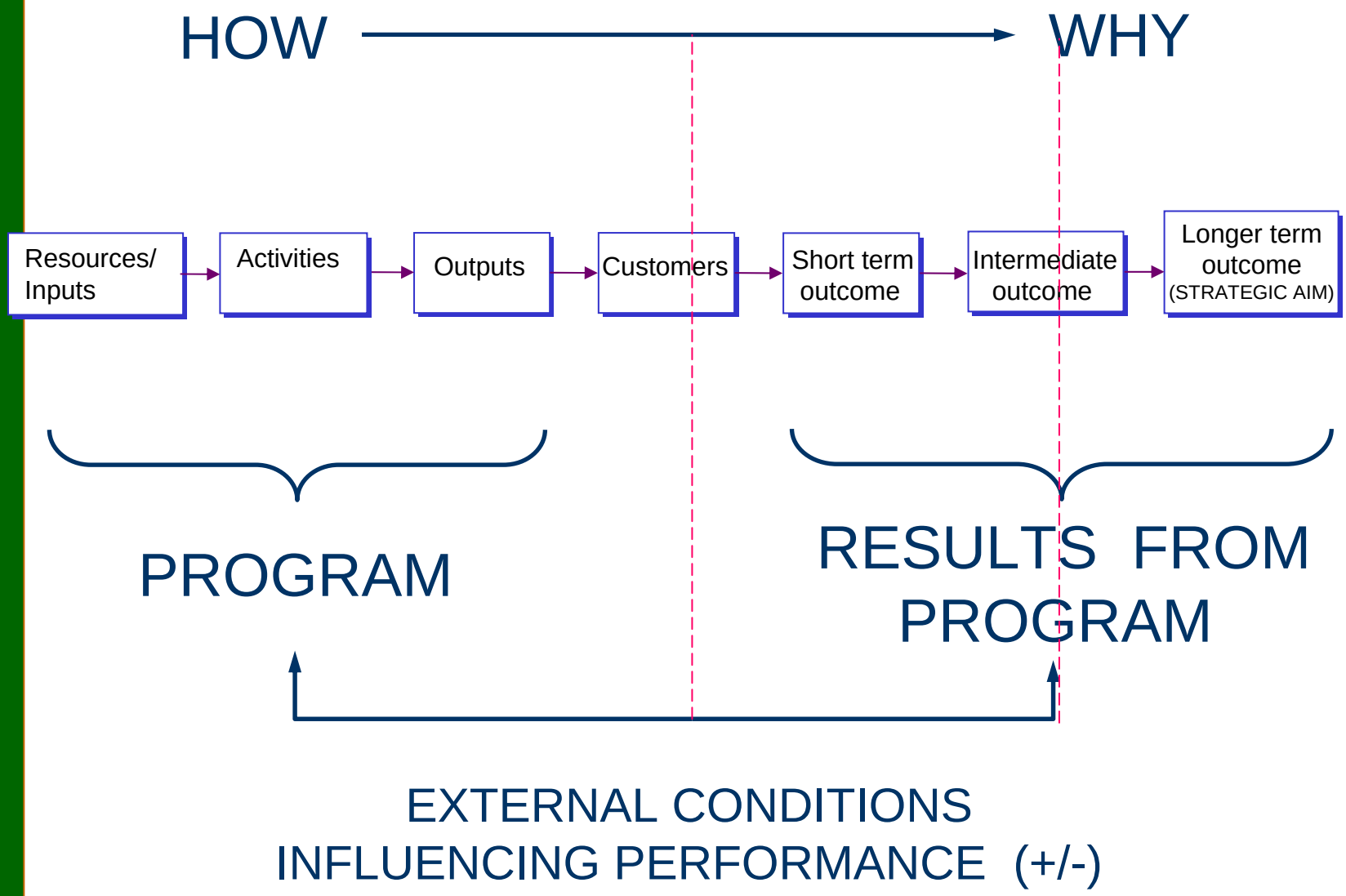


What is a Logic Model?

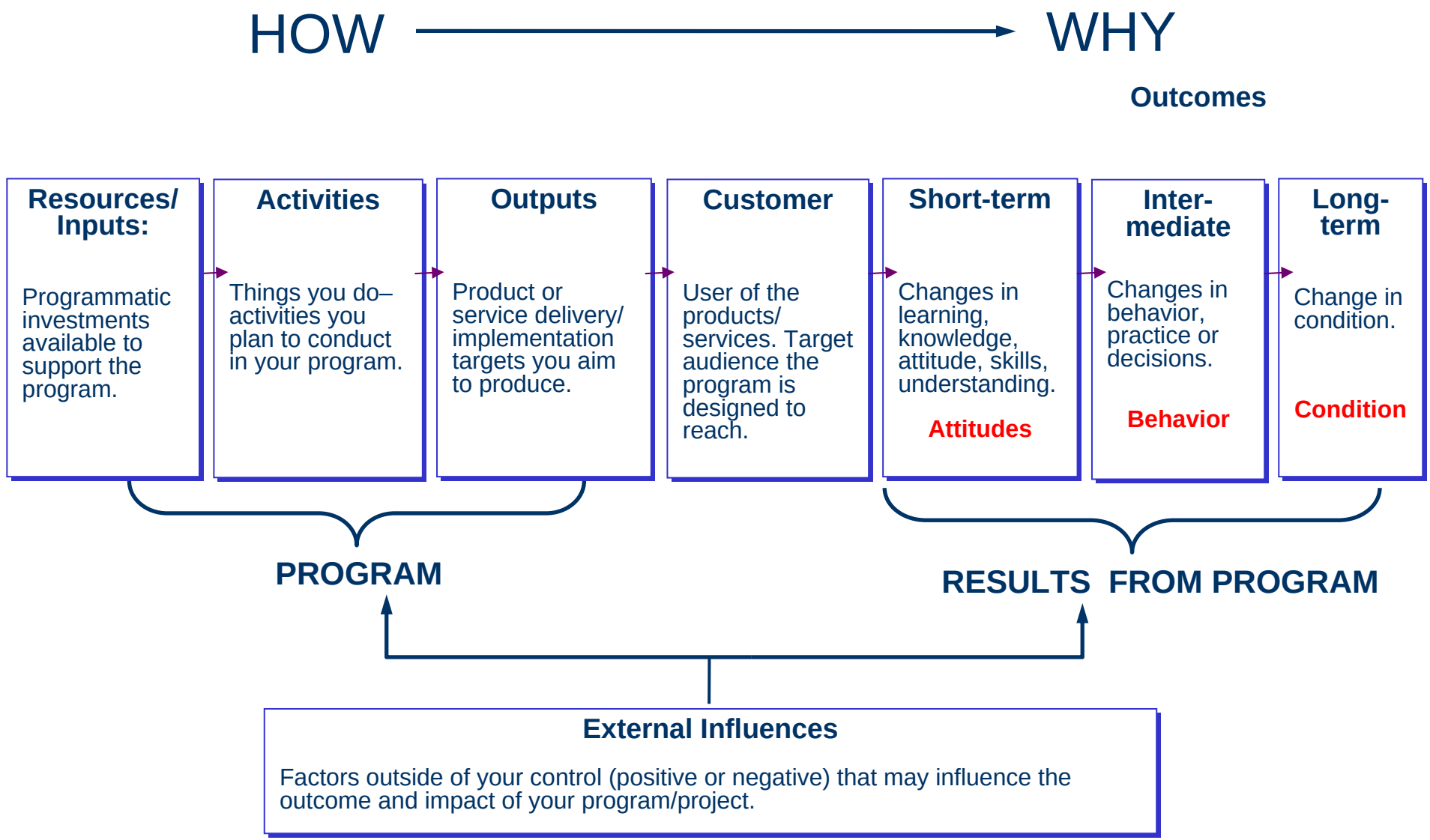
A logic model is a diagram and text that describes/ illustrates the logical (causal) relationships among program elements and the problem to be solved, thus defining measurements of success.



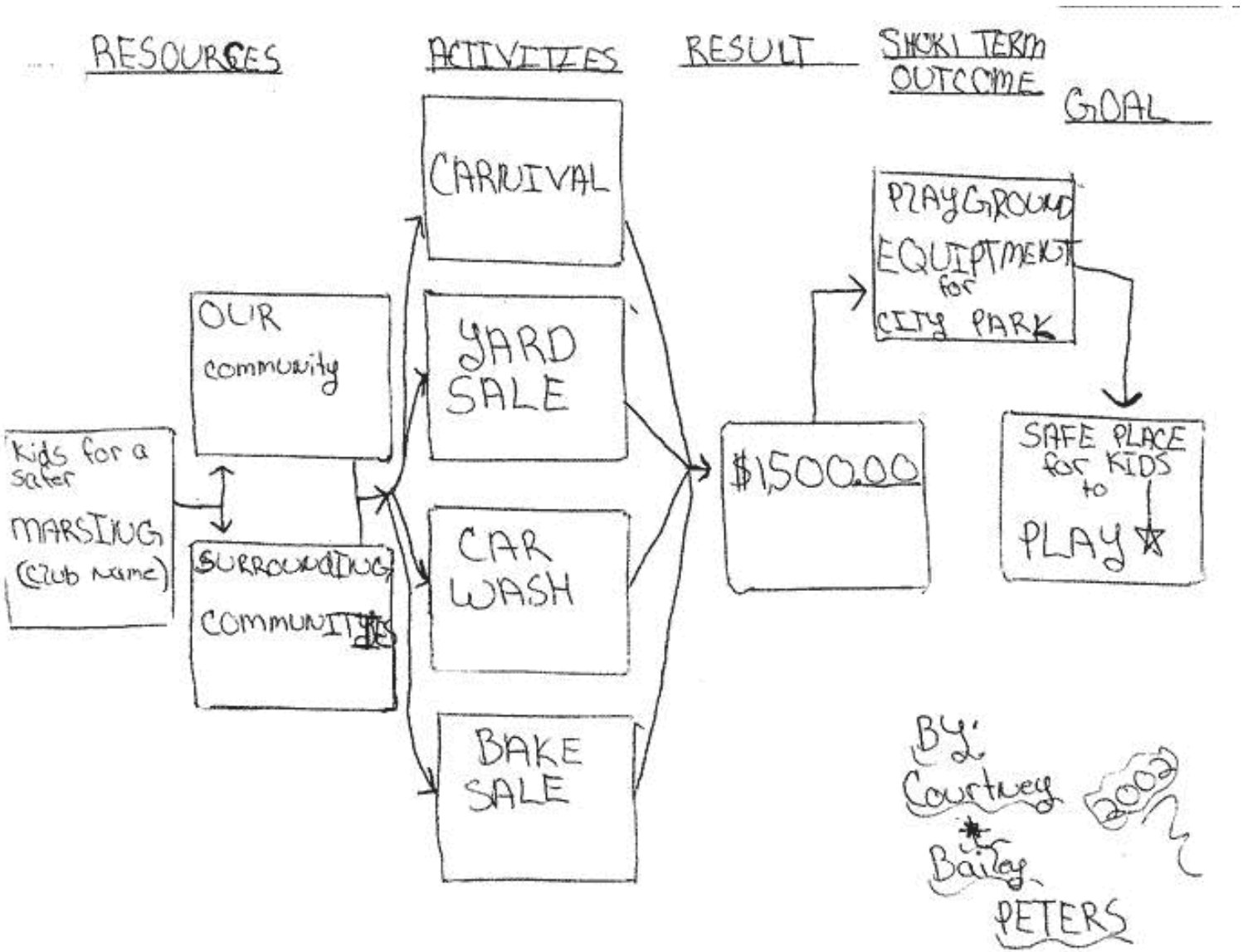
Logic Model


HOW
WHY
Resources/ Inputs
Activities
Outputs
Customers
Short term outcome
Intermediate outcome
Longer term outcome (STRATEGIC AIM)
PROGRAM
RESULTS FROM PROGRAM
EXTERNAL CONDITIONS INFLUENCING PERFORMANCE (+/-)

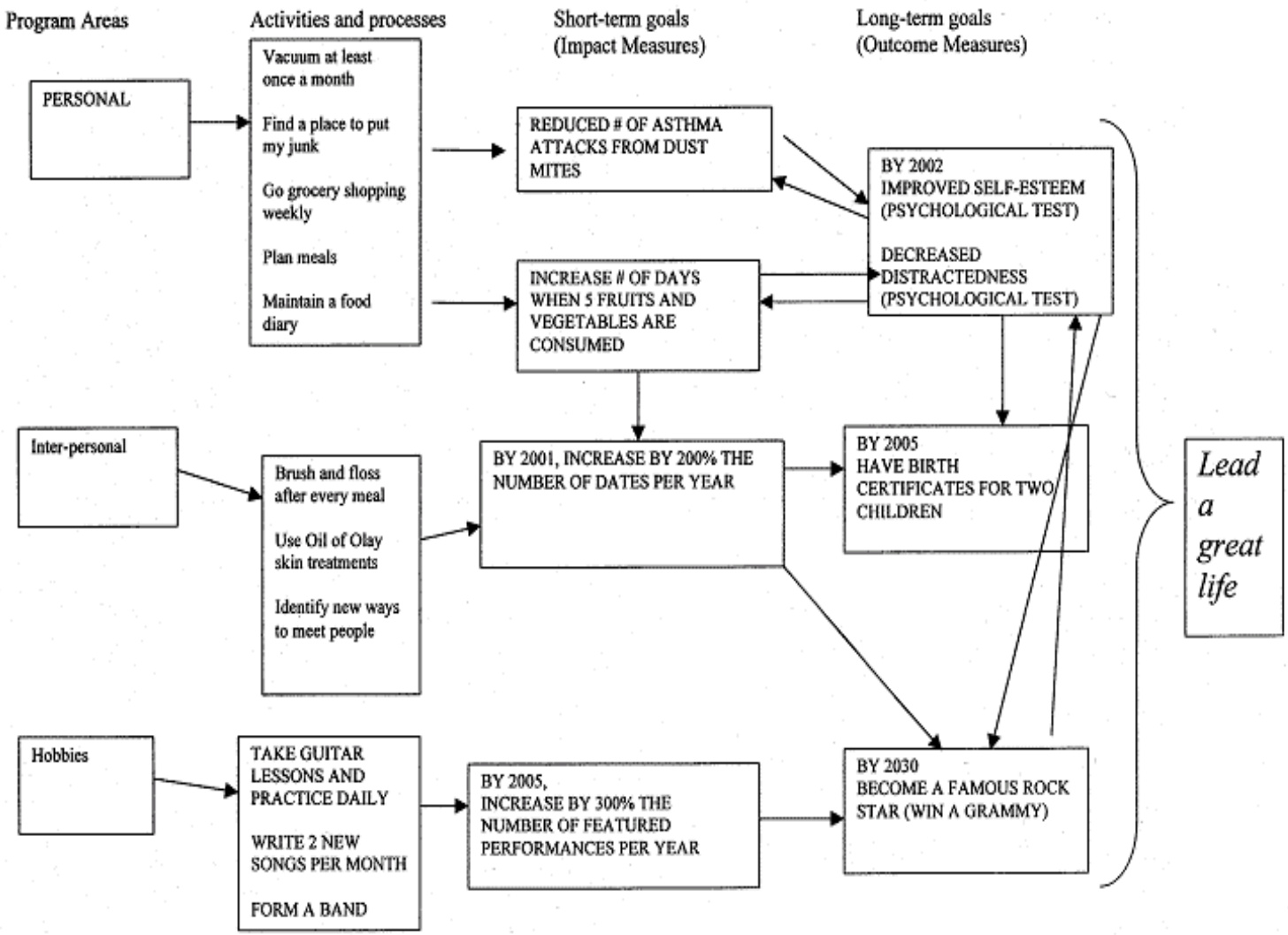
Elements of the Logic Model



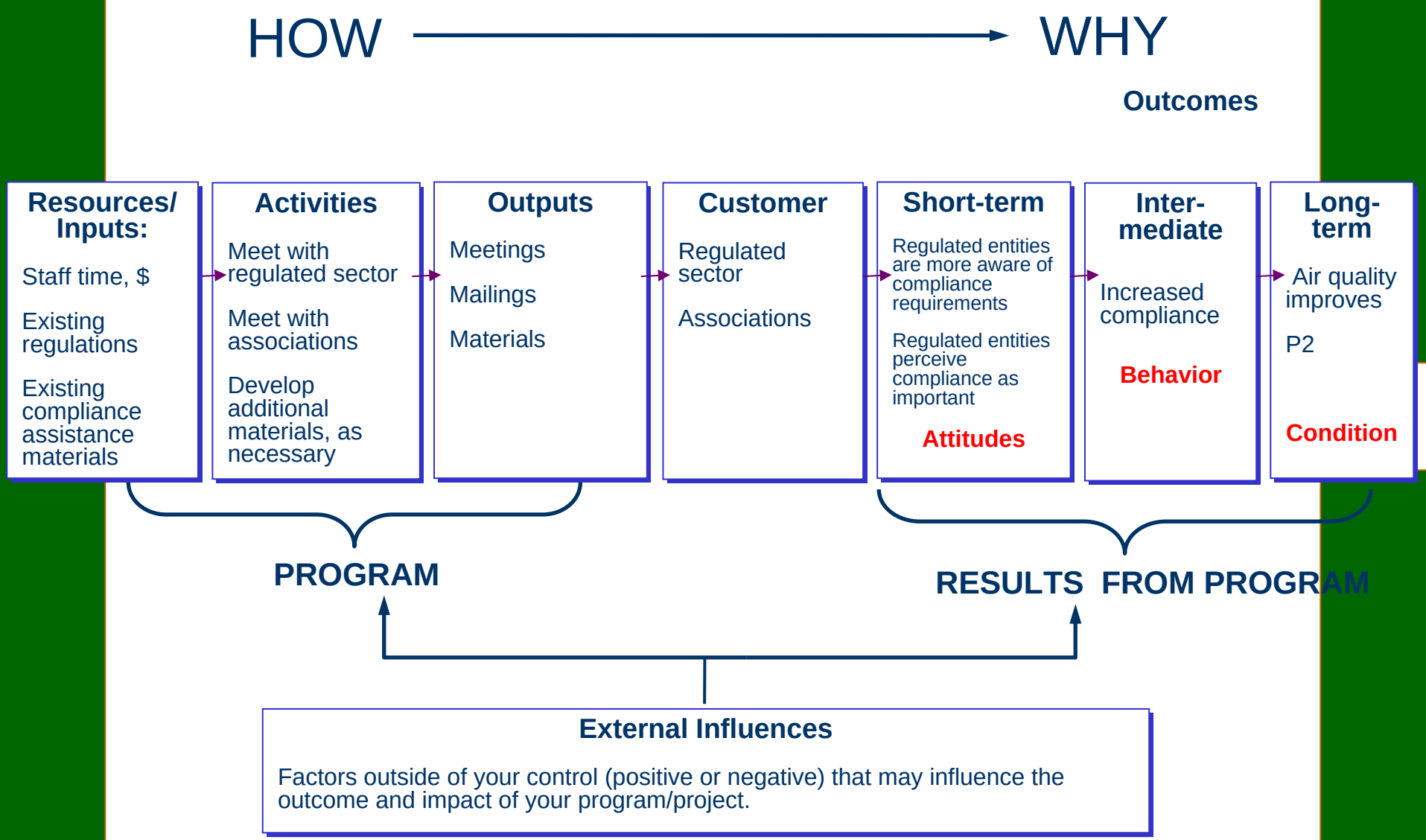
Courtney and Bailey Peter's Model:
A Safe Place to Play



Lead a Great Life



Elements of the Logic Model: Generic Compliance Assistance Program Example



Types of Program Elements

Example	Type of Program Element
1. Regulated entities perceive compliance as important	1. _____
2. Develop additional compliance assistance materials	2. _____
3. Increased compliance	3. _____
4. Three full-time staff members providing compliance assistance to regulated entities	4. _____
5. Improved air quality, pollution prevention	5. _____

What are Logic Models Used For?

- Staff and managers can use logic models to…
  - Develop program/project design
  - Identify and develop performance measures for their program/project
  - Support strategic planning
  - Communicate the priorities of the program/project
  - Focus on key evaluation questions

What are the Benefits of Logic Models?

- Illustrates the logic or theory of the program or project.
- Focuses attention on the most important connections between actions and results.
- Builds a common understanding among staff and with stakeholders.
- Helps staff “manage for results” and informs program design.
- Finds “gaps” in the logic of a program and work to resolve them.

When Can You Use Logic Models?

- For new program's to make transparent the underlying assumptions about how the new program is to work to solve its problems and develop useful PM/PE systems

- For existing programs to understand and check assumptions about how the program is supposed to work

How Do You Develop a Logic Model?

1. Establish a team or work group and collect documents.
2. Define the problem and context for the program or project and determine what aspect of your program/project you will logic model.
3. Define the elements of the program in a table.
4. Verify the logic table with stakeholders.
5. Develop a diagram and text describing logical relationships.
6. Verify the Logic Model with stakeholders.

Then use the Logic Model to identify and confirm performance measures and in planning and evaluation.

Step 3. Define the elements of the program or project in a table

WHAT and WHY

- HOW -			WHO	Outcomes		
Resources/ Inputs	Activities	Outputs	Customers reached	Short-term (change in attitude)	Intermediate (Change in behavior)	Long-term (change in condition)

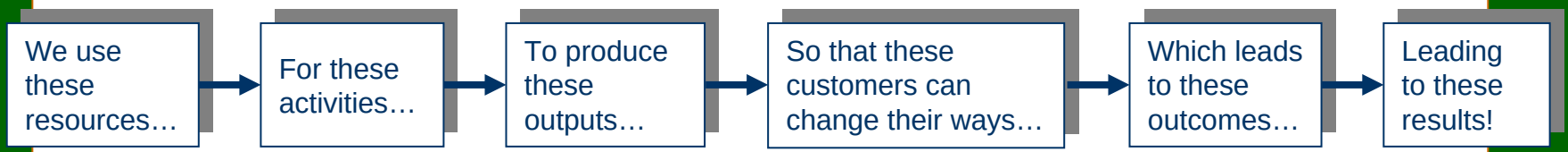
External Influences:

Step 4. Verify the logic with stakeholders

- Seek review from stakeholders.
- Check the logic
  - How-Why Questions. Start with Outcomes and ask "How?" Start at Activities, ask "Why?"
  - If-Then Questions. Start at Activities and move along to Outcomes asking "If this, then that?"
- Compare to what units in the organization do and define their contributions to the outcomes.
- Check the logic by checking it against reality.

Step 5. Develop a diagram and text describing logical relationships

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



Something to Consider…

- There are many different forms of logic models….

Wisconsin
Performance-Based Title V Permit for the Printing Sector

INPUTS	OUTPUTS		OUTCOMES		
	Activities	Customers Reached	Short-term (Learning)	Medium-term (Actions)	Long-term (Conditions)
DNR air staff and grant$ Partners staff, volunteers, and $ ▪Other DNR staff – CEA, waste water, storm water, haz waste; Jeff Smoller ▪Department of Commerce ▪Printing Cluster Initiative ▪UWEX Agents & Specialists? ▪Printing Permit Streamlining Group – PIW, GATF, SGIA ▪PNEAC ▪EPA ▪Environmental Orgs ▪Multi-State Working Group (MSWG) on Environmental Performance Time ▪Planning ▪Implementation ▪Evaluation Previous work with Printers: Great Printers, Printer GOP work, memo establishing compliance demonstration methods for printers, cooperative environmental agreements	1.Obtain baseline information on: a. DNR collects VOC emissions baseline data from participating facilities using Air Emissions Inventory Data b. DNR collects data on construction permit application submittals and permit revision requests at participating facilities for the previous 5 years using Air Permit databases. c. DNR collects data on time lag between when a participating facility made the decision to make an operational change and the date the change actually occurred using facility records and DNR permit databases d. DNR collects information on the administrative time DNR has spent processing construction permits and revisions at participating facilities over the previous five years using Air Permit databases and employee time sheets. e. DNR collects information on the administrative time DNR has spent on compliance and enforcement activities at participating facilities during the last 5-year period using DNR compliance databases and employee time sheets. f. Participating facilities provide DNR with information on the administrative time needed for them to meet regulatory commitments over the previous five years. g. DNR surveys the public to ascertain their awareness of public involvement requirements, their past participation, and their satisfaction with past participation over the previous 5 years.	•Portion of printing sector needing Title V permits •Interested public •Stakeholders •EPA •DNR personnel	S1. Data to show that a performance-based Title V permit incorporating EMS elements can meet all the requirements of Part 70.[start gathering data upon permit issuance Oct 05 and continue through life of grant] S2. Ability to quickly and efficiently establish a performance-based permit which incorporates EMS. S3. Understanding by the public of their role in the Performance-based Title V permits process. S4. Ability of DNR Staff to audit environmental management systems and to be able to evaluate compliance with a performance-based permit that incorporates EMS. S5. Ability of DNR staff to understand and create a Performance-based Title V permit that incorporates EMS elements.	M1. Collect data to show that a performance-based Title V permit incorporating EMS elements can be as effective or more effective in reducing emissions and driving innovation as a traditional Title V permit. M2. Gain acceptance by EPA of a permit that uses the structure of an EMS to hold the requirements of a performance-based Title V permit. M3. Measure a reduction in VOC emissions. M4. Measure a reduction in Hazardous Air Pollution Emissions. M5. Measure reductions in pollutants in other media besides air that were established as priorities during the cross media planning step. M6. Measure a reduction in the amount of time DNR needs to review construction permit applications and revisions requests from participating facilities M7.Establish increased compliance rates.	L1. Attain and maintain 8-hr Ozone Standard L2. Attain and maintain environmental standards from other media established as priorities during the cross media planning step. L3. Reduced administrative time for DNR staff in air management and in other affected programs. L4. Reduced administrative time for facilities to meet regulatory obligations. L5.Establishment of lasting and meaningful partnerships between interested public and participating facility.

Wisconsin
Performance-Based Title V Permit for the Printing Sector

INPUTS		OUTPUTS				OUTCOMES	
		Activities	Customers Reached		Short-term (Learning)	Medium-term (Actions)	Long-term (Conditions)
Educational/Instructional Materials: Printwi$er Printer's expertise in EMS EPA's Environmental Management Guidance document		2. Start programs with 2 or 3 facilities a. Select facilities in Aug 04, b. Begin meeting with partners in September 04, c. Establishment of a relationship between EMS capabilities and major source permitting requirements. c. Establish env. Goals by March 05, d. Start permit drafting by Oct. 04, 3. e. Finalize permit by Oct. 05 4. Cross Media Planning Step: Air staff meets with DNR staff in other areas and participating facilities to establish a. Other media regulatory concerns, priorities, and goals b. Cross media impacts. c. Baseline data that needs to be collected. d. Possible permit conditions including facility wide limits, variance needs, etc, 5. Use outside consultants to provide training for facilities, DNR staff, and public partners a. Provide training to DNR staff and facilities and any other interested parties on EMS b. Provide training to interested parties group and participating facilities on expectations, roles, responsibilities, etc. for participation in such a group c. Provide training to select DNR compliance staff with the goal that they would become certified auditors of EMS. 6. Gather data on baseline info in 1[start after permit is finalized and continue].				M8. Survey public to establish whether there is increased public satisfaction. M9. Cultivated interest from other business sectors in pursuing Performance-based Title V permits process.	L6. Use of the Performance-based Title V permits by sectors other than the Printing industry.

Wisconsin
Performance-Based Title V Permit for the Printing Sector

INPUTS		OUTPUTS			OUTCOMES		
		Activities	Customers Reached		Short-term (Learning)	Medium-term (Actions)	Long-term (Conditions)
		7. In conjunction with DNR's CEA program, establish criteria for approval of EMS. 8. After evaluation of the program, create model documents and strategies for: a. Performance-based Title V model permit using EMS structure. b. EMS elements needed to satisfy our requirements specifically for printers. c. Compliance procedures to be used with performance-based approach. d. Procedures for establishing emission-caps. e. Procedures for establishing variance from selected non-performance-based requirements. a.Strategy for obtaining meaningful and continuing public involvement in the EMS and permit process. 9. DNR and pilot facilities and their interested parties groups provide training for other DNR staff and facilities and potential interested parties on the procedures laid out in 7.					

Maine's Auto Body and Auto Repair Volunteer ERP: Logic Model Work Flow

Inputs/Activities

Inputs:
Maine DEP personnel engaged in ERP Program*****
-Hire staff
-Train staff in multimedia inspections

Activities:
-Establish performance measurements for auto body
-Establish performance measurements for auto repair
-Prior to ERP, conduct inspection at random auto body & auto repair facilities
-Provide technical assistance to auto body & auto repair sector through workshops
-Evaluate compliance performance using the results of the self-certifications and inspections

Outputs

-Review process with stakeholder group compliance Advisory Panel
-Multi-media inspector trained and qualified
-Compliance checklist guidebooks distributed to auto body and auto repair
-Workshops with training conducted
-Compliance site visits conducted

Customer Reached

Auto Body & Auto Repair Facilities

Short-term Outcomes

-Technical transfer to auto body & auto repair
-Increased knowledge of compliance, pollution prevention and human health exposure reductions

Intermediate Outcomes

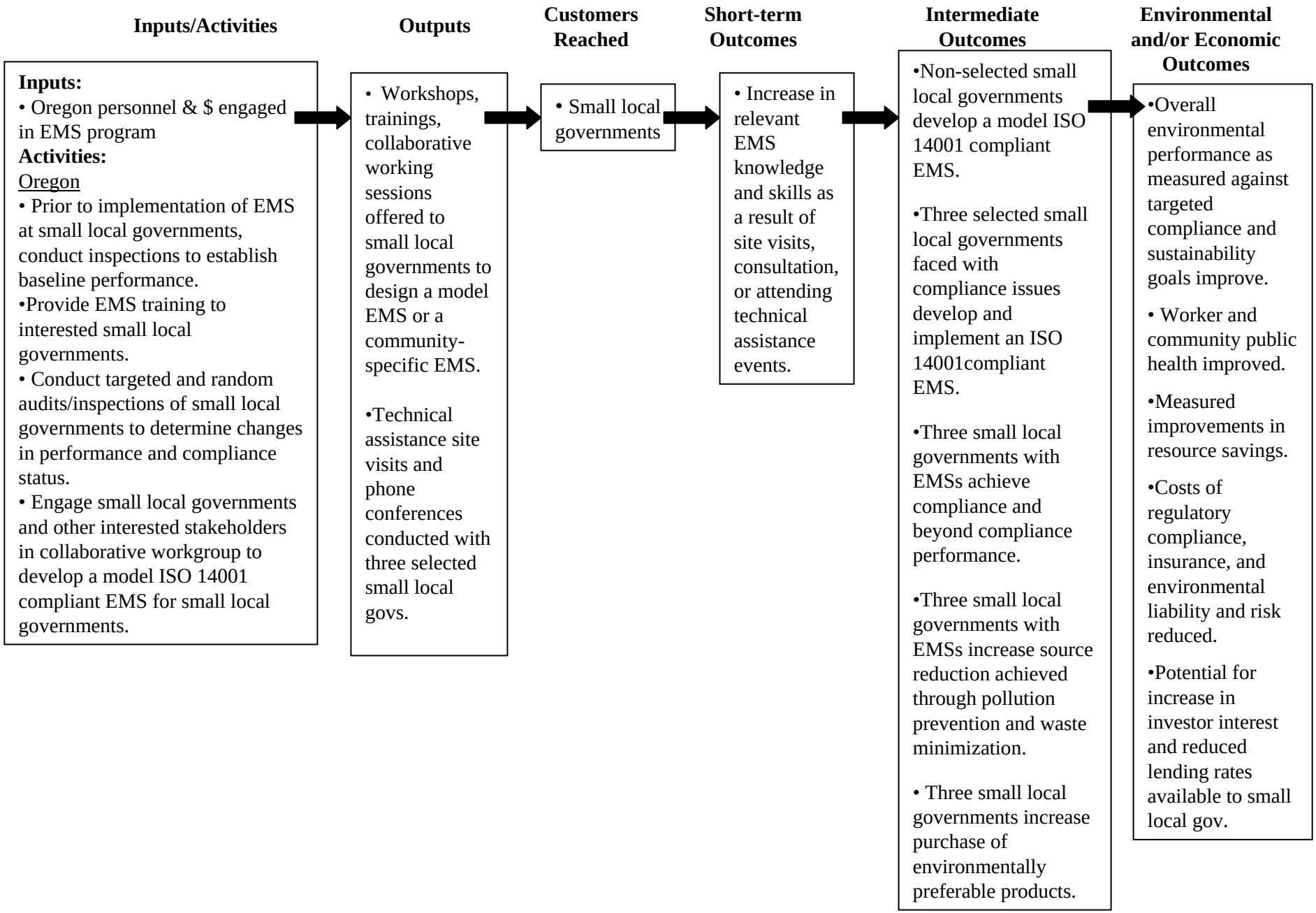
-Auto body & repair shops keep records of all chemicals, solvents and paints uses
-Auto body & repair shops HW regulations, UIC program, VOC/Air emission regs
-Auto body & repair shops

Environmental & or Economic Outcomes

-Auto body & repair compliance improves
-Worker and community public health improve
-Auto body & repair increase environmental results overall
-Environmental Administration and compliance costs are reduced by suing the self certification tools

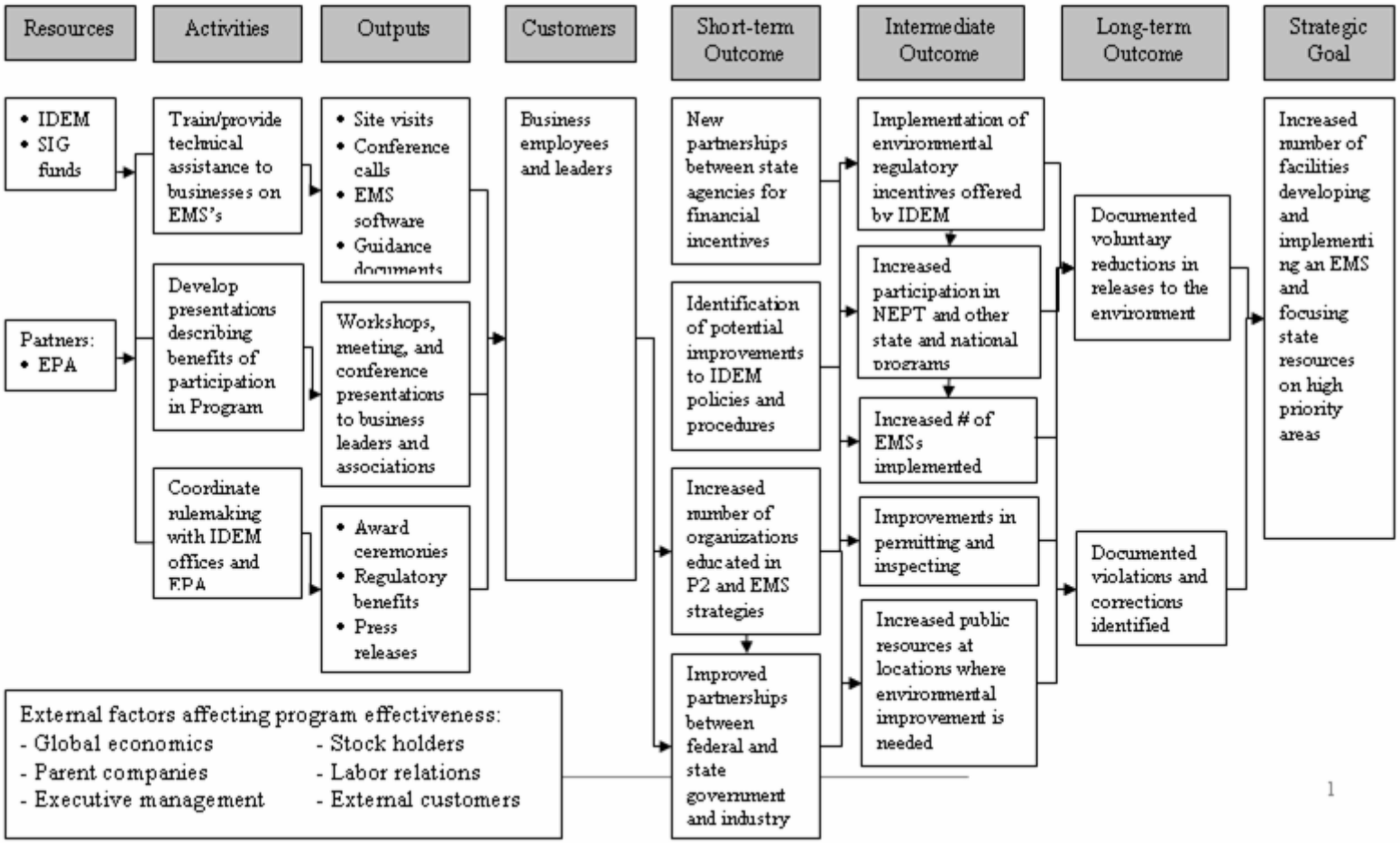
***** Work with hazardous waste, UIC and Air licensing to determine how ERP interfaces with their program reporting requirements including incorporating information into annual program reports.

OREGON EMS PROPROSAL FOR SMALL LOCAL GOVERNMENTS
STATE INNOVATION GRANT – LOGIC MODEL



Logic Model: Indiana Environmental Performance-Based Program

Mission: To develop and implement a voluntary program to encourage Indiana businesses to implement environmental management systems that potentially will achieve environmental quality improvements and direct public resources to areas where the most environmental improvement can be made.
Evaluation question to assess: Does participation in a voluntary performance-based program increase business' environmental management and permit IDEM to focus on areas deemed as high priority?



Oregon's Toxic Use Waste Reduction Assistance Program

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.

Activities

- Assist with preparation and implementation of Reduction Plans and meeting regulatory requirements through site visits and follow-up visits, training seminars and workshops, fielded phone calls, educational materials, etc.

Resources (FY 03)

- 6.6 FTE
- $ 0.52 million

Outputs

- Site visits and follow-up visits
- Recommen-dations
- Training seminars and workshops
- Published information and outreach materials
- Fielded phone calls
- Public meetings

Customer

- Large Quantity Generators of hazardous waste
- Small Quantity Generators of hazardous waste
- Conditionally-Exempts Generators of hazardous waste
- Reporters to the Toxic Release Inventory

Knowledge Outcomes

- Regulated entities increase understanding of regulations and what it will take to achieve regulatory compliance
- Regulated entities increase understanding of "beyond compliance" options

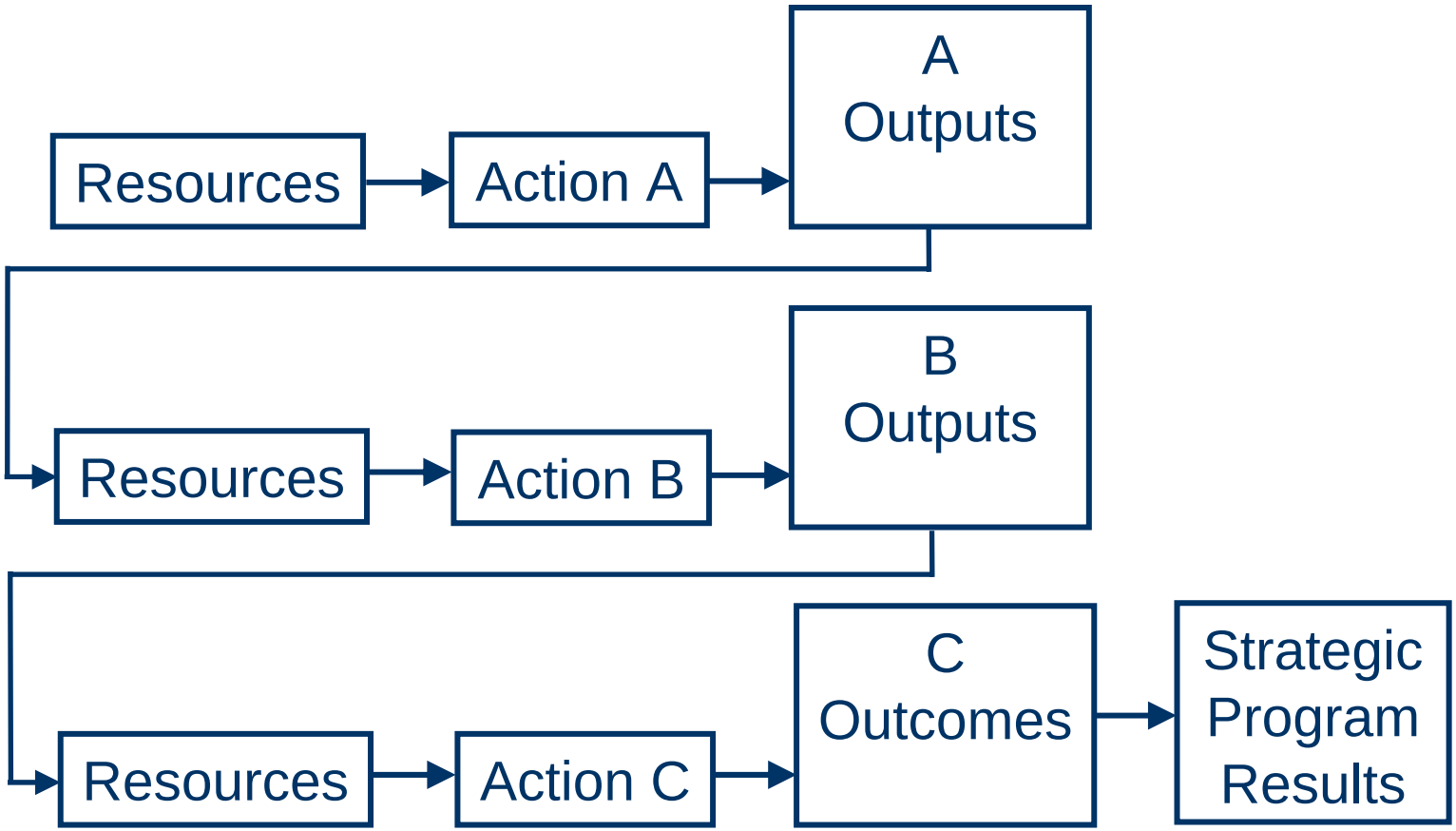
Behavioral Outcomes

- Regulated entities implement Reduction Plan recommendations
- Coordination increases between trade associations, local colleges, regulated entities, and local governments
- Regulated entities more safely manage hazardous waste and toxic chemicals during storage and transportation
- Regulated entities improve compliance and "beyond compliance" rates

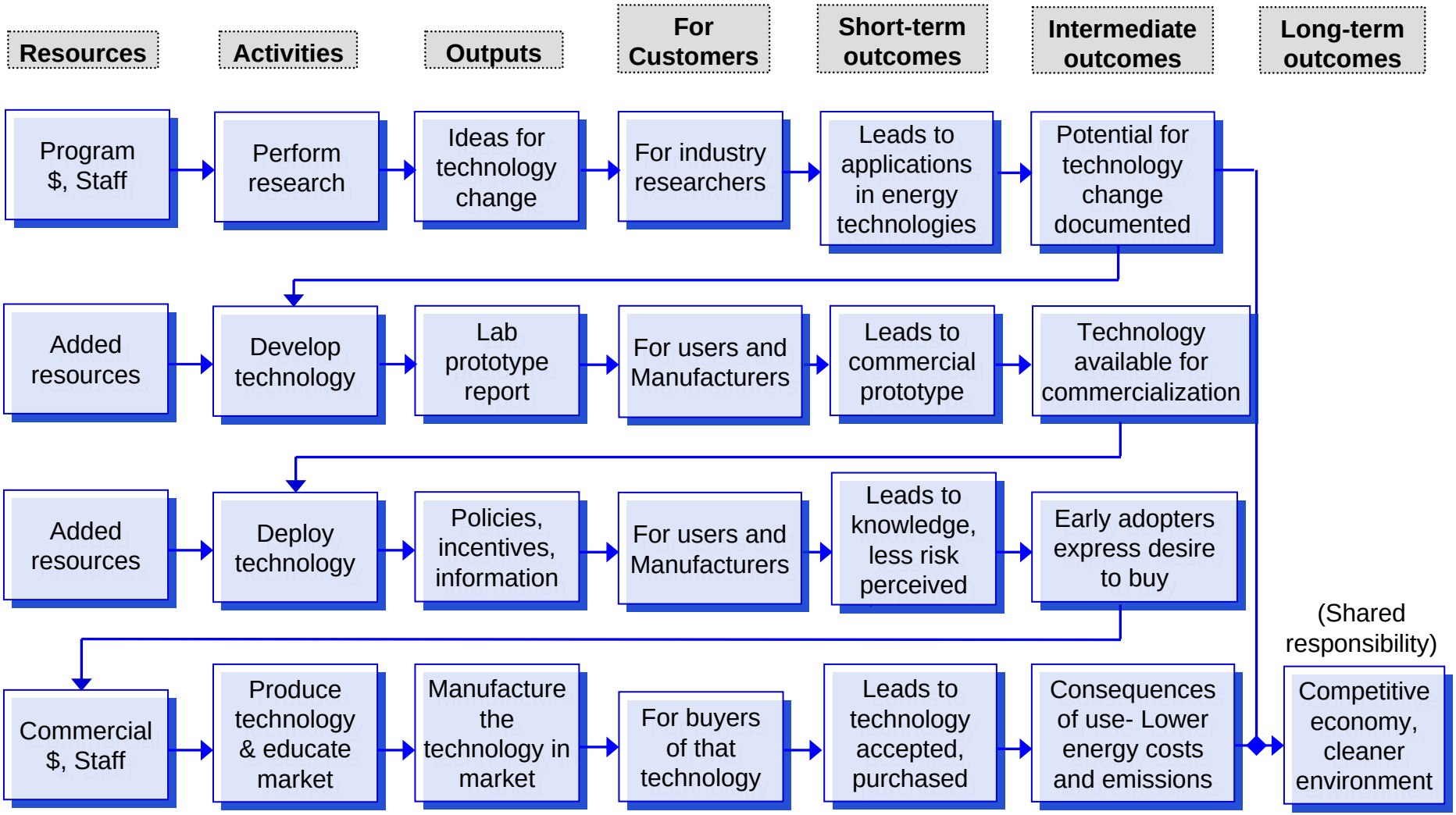
Environmental Outcomes

- Regulated entities use fewer toxic chemicals and generate less hazardous waste
- Regulated entities safely dispose of toxic chemicals and hazardous waste
- Regulated entities reduce the severity of toxic and hazardous spills

What is “Z” Logic?



Energy R,D,&D Program Using 'Z' Logic



External Influences: Price of oil and electricity, economic growth in industry and in general, perception of risk of global climate change and need for national energy security, market and technology assumptions.

Source: McLaughlin and Jordan, 1999

Exercise 1: Logic Modeling

Developing your own logic model

Module 2:

Identifying and Developing Performance Measures

Definitions:

Performance Measurement:

The ongoing monitoring and reporting of program progress and accomplishments, using pre-selected performance measures.

- Performance measure – a metric used to gauge program or project performance.
- Indicators – measures, usually quantitative, that provide information on program performance and evidence of a change in the “state or condition” in the system.

Definitions:

Program Evaluation:

A systematic study that uses measurement and analysis to answer specific questions about *how well a program is working to achieve its outcomes and why*.

Differences between PM and PE

Performance Measurement

- Ongoing monitoring and reporting of accomplishments.
- Examines achievement of program objectives.
- Describes program achievements in terms of outputs, outcomes in a given time against a pre-established goal.
- Early warning to management.

Program Evaluation

- In-depth, systematic study conducted periodically or on ad-hoc basis.
- Examines broader range of information on program performance than is feasible to monitor on an on-going basis.
- Explains why the results occurred.
- Longer term review of effectiveness.

Relationship between PM and PE

- Performance measurement data provides information needed to conduct the evaluation and assess program performance.
- Lack of performance measurement data is a major obstacle to conducting an evaluation.

Performance Measurement Questions

- What are they?
  - Questions designed to assess progress/ accomplishments of various aspects of a program/project.
  - Performance measurement questions ask/tell you ***what*** your program is doing.

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 (Which leads to these outcomes)
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 attitude, knowledge, skills or understanding change?	▪Are customers using the change as expected? With what results? ▪Are customers served changing in the expected direction and 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 INFLUENCES:	What factors might influence my program's success?					

Measures Across the Logic Model Spectrum

Element	Definition	Example Measure
Resources/ Inputs	Measure of resources consumed by the organization.	Amount of funds, # of FTE, materials, equipment, supplies (etc.).
Activities	Measure of work performed that directly produces the core products and services.	# of training classes offered as designed; Hours of technical assistance training for staff.
Outputs	Measure of products and services provided as a direct result of program activities.	# of technical assistance requests responded to; # of compliance workbooks developed/delivered.
Customer Reached	Measure of target population receiving outputs.	% of target population trained; # of target population receiving technical assistance.
Customer Satisfaction	Measure of satisfaction with outputs.	% of customers dissatisfied with training; % of customers “very satisfied” with assistance received.
Outcomes	Accomplishment of program goals and objectives (short-term and intermediate outcomes, long-term outcomes--impacts).	% increase in industry’s understanding of regulatory recycling exclusion; # of sectors that adopt regulatory recycling exclusion; % increase in materials recycled.

Work Quality Measures

Category	Definition	Examples
Efficiency	Measure that relates outputs to costs.	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.

Types of Performance Measures

Example	Type of Measure
1. Total annual funding for compliance assistance	1. _____
2. Number of new entities (from target list) met with	2. _____
3. Number of compliance assistance requests responded to.	3. _____
4. Percentage increase in compliance within the sector	4. _____
5. Estimated reduction in VOCs as a result of increased compliance	5. _____

Steps for Developing Measures

- Step 1: Identify Potential Measures
- Step 2: Assess Each Measure
- Step 3: Choose the Best Measures
- Step 4: Identify Baseline, Target, Timeline and Reporting Schedule

Key Steps in Identifying Potential Measures

STEP 1: Identify the information needed and the audience

- Identify measures in existing documents
- Review the logic model and select the appropriate logic model element
- Express the logic model element as a performance measure
- Determine if the measure clearly relates to the program/project goal or objective

STEP 1: Identify the information needed and the audience

- Review the performance measurement questions developed earlier
- Consider what information is needed to assess whether your program/project is meeting its goals and objectives.

  Ask yourself:

- Who needs to know what about the program, why, and in what format?

Identify Measures in Existing Documents

- Review measures specified in:
  - Program/Project Mission, Goals, Objectives, Service standards
  - Legislation, Strategic plans (GPRA), Court Orders, PART, Regional Plans, National Program Management Guidance, Regional Priority Commitments
  - Previous evaluations and research reports
  - Consider other sources

Review the Logic Model

- Review the logic model –
  - Identify the aspects of performance that are most important to measure (resources, activities, outputs, outcomes)
  - Identify contextual factors that could influence the program either positively or negatively and generate measures for them as appropriate

Express the Logic Model element as a performance measure

- Consider how to express the measure in terms of:
  - Data:
    - Raw Numbers (tons of 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?

Determine whether the measures clearly relate to the mission/goal

- Review the program/project mission and or goal
  - What key activities, outputs or outcomes are specified in the mission or goal?
- Review the list of potential measures developed
  - Will the data collected from the measures developed clearly demonstrate that the mission and or goal was accomplished?

Example Performance Measures

Resources

- Michigan personnel engaged in ERP project
- MDEQ
- USEPA
- Association members
- Environmental group members
- Private citizens

- Are resources sufficient?
  - # of personnel engaged in the MERP project
- Level of stakeholder involvement
  - # of stakeholders involved in the process
  - # of individual stakeholders identified by affiliation (group or independent)
  - Extent of stakeholder involvement (qualitative measure)

Example Performance Measures

Outputs

- Workshops and trainings conducted.
- Compliance assistance materials distributed to dry cleaners.
- BMPs developed

- Compliance assistance site visits conducted and phone calls processed.

- List of area sources within Michigan prior to pilot

- Do we have the right level of outputs?
  - # of workshops and trainings conducted
  - # of compliance assistance materials distributed to dry cleaners
  - # of BMPs prior, during, and after pilot
  - # of compliance assistance visits conducted and phone calls processed
  - # of area sources within Michigan prior to implementation of pilot
  - # of area sources using MERP during pilot
  - # of area sources using MERP after pilot

Example Performance Measures

Customer Reached

• Dry cleaning facilities

- Are we reaching the right customers?
  - # (% of dry cleaners participating in program
  - #/% of dry cleaners attending events, requesting a compliance assistance site visit or telephone consultation

Short-term Outcome

• Dry cleaners increase relevant knowledge and skills as a result of site visits; consultation; or attending compliance assistance events (workshops and trainings).

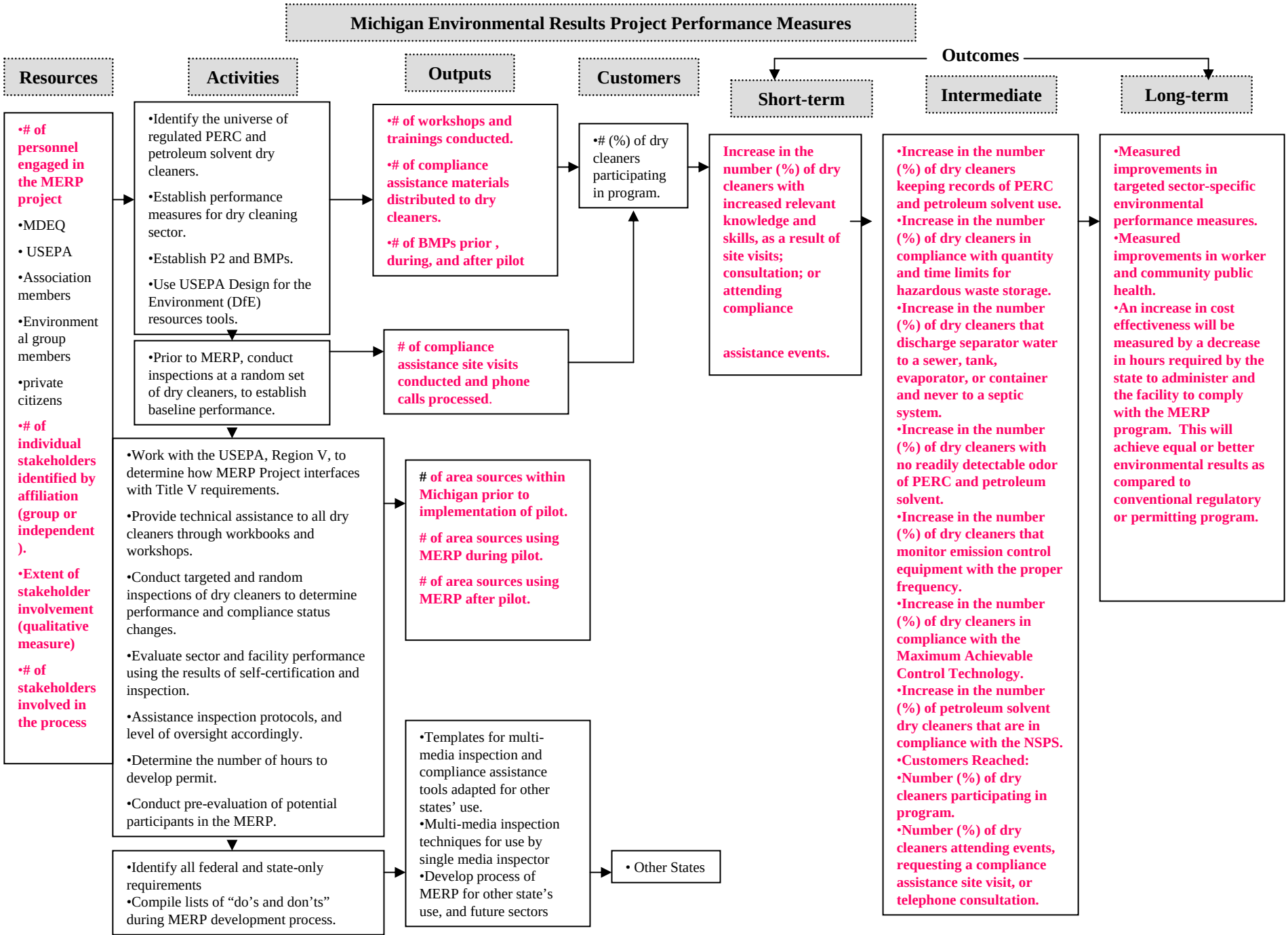
- Increase in the number (%) of dry cleaners with increased relevant knowledge and skills, as a result of site visits, consultation or attending compliance assistance events

Example Performance Measures

Intermediate Outcomes

- Dry cleaners keep records of PERC and petroleum solvent use.
- Dry cleaners in compliance with quantity and time limits for hazardous waste storage
- Dry cleaners discharge separator water to a sewer, tank, evaporator, or container and never to a septic system.
- Dry cleaners have no readily detectible odor of PERC or petroleum solvent.
- Dry cleaners monitor emission control equipment with proper frequency.
- Dry cleaners in compliance with MACT
- Petroleum solvent dry cleaners in compliance with NSPS.

- Have customers adopted new practices?
  - Increase in # (%) of dry cleaners keeping records of PERC and petroleum solvent use.
  - Increase in # (%) of dry cleaners in compliance with quantity and time limits for hazardous waste storage.
  - Increase in #(%) of dry cleaners in compliance with MACT.


Michigan Environmental Results Project Performance Measures
Resources
Activities
Outputs
Customers
Outcomes
Short-term
Intermediate
Long-term
•# of personnel engaged in the MERP project
•MDEQ
• USEPA
•Association members
•Environmental group members
•private citizens
•# of individual stakeholders identified by affiliation (group or independent).
•Extent of stakeholder involvement (qualitative measure)
•# of stakeholders involved in the process
•Identify the universe of regulated PERC and petroleum solvent dry cleaners.
•Establish performance measures for dry cleaning sector.
•Establish P2 and BMPs.
•Use USEPA Design for the Environment (DfE) resources tools.
•Prior to MERP, conduct inspections at a random set of dry cleaners, to establish baseline performance.
•Work with the USEPA, Region V, to determine how MERP Project interfaces with Title V requirements.
•Provide technical assistance to all dry cleaners through workbooks and workshops.
•Conduct targeted and random inspections of dry cleaners to determine performance and compliance status changes.
•Evaluate sector and facility performance using the results of self-certification and inspection.
•Assistance inspection protocols, and level of oversight accordingly.
•Determine the number of hours to develop permit.
•Conduct pre-evaluation of potential participants in the MERP.
•Identify all federal and state-only requirements
•Compile lists of "do's and don'ts" during MERP development process.
•# of workshops and trainings conducted.
•# of compliance assistance materials distributed to dry cleaners.
•# of BMPs prior , during, and after pilot
# of compliance assistance site visits conducted and phone calls processed.
# of area sources within Michigan prior to implementation of pilot.
# of area sources using MERP during pilot.
# of area sources using MERP after pilot.
•Templates for multi-media inspection and compliance assistance tools adapted for other states' use.
•Multi-media inspection techniques for use by single media inspector
•Develop process of MERP for other state's use, and future sectors
• Other States
•# (%) of dry cleaners participating in program.
Increase in the number (%) of dry cleaners with increased relevant knowledge and skills, as a result of site visits; consultation; or attending compliance
assistance events.
•Increase in the number (%) of dry cleaners keeping records of PERC and petroleum solvent use.
•Increase in the number (%) of dry cleaners in compliance with quantity and time limits for hazardous waste 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 and petroleum solvent.
•Increase in the number (%) of dry cleaners that monitor emission control equipment with the proper frequency.
•Increase in the number (%) of dry cleaners in compliance with the Maximum Achievable Control Technology.
•Increase in the number (%) of petroleum solvent dry cleaners that are in compliance with the NSPS.
•Customers Reached:
•Number (%) of dry cleaners participating in program.
•Number (%) of dry cleaners attending events, requesting a compliance assistance site visit, or telephone consultation.
•Measured improvements in targeted sector-specific environmental performance measures.
•Measured improvements in worker and community public health.
•An increase in cost effectiveness will be measured by a decrease in hours required by the state to administer and the facility to comply with the MERP program. This will achieve equal or better environmental results as compared to conventional regulatory or permitting program.

Summary of Wisconsin Title V EMS Permit Pilot Project Evaluation Approach

Goals	Objectives	Measures (Sources in parentheses)	Potential Targets/Data/Sources/Baselines
Improve efficiency for regulated entities and for agency	**Reduce agency permitting costs, time, and other resources.**	DNR administrative time needed to implement EMS permit vs. traditional permitting (ARTWM, APII, LM, PN)	Target: By June 2006, reduce the hours spent per permit review, renewal, and revision by 20-40% (APII). **Indicator:** Number of person-hours spent annually per individual permit action (review, renewal, revision) (APII). Source: Air permit databases, employee timesheets. (LM) Baseline: Data from previous five years. (LM)
		Amount of air permit activity, including applications received, and air permit revisions requested with EMS permit vs. traditional permitting (ARTWM, APII, LM, PN)	Target: By June 2006, reduce by 40-50% the need to revise or modify permits (APII). **Indicator:** Number of operation permit revision requests and the numbers of construction/ modification permit applications submitted at each permitted facility (APII, LM). Source: Air permit databases (LM) Baseline: Data from previous five years. (LM)
	Reduce agency compliance-related costs and other resources	Administrative time spent on compliance activities related to EMS permit vs. traditional approach (ARTWM, LM)	Target: Reduce agency compliance-related administrative time for pilot facilities by X% to Y% **Indicator:** Number of person-hours spent annually on compliance activities per facility. Source: Compliance databases, employee timesheets. (LM) Baseline: Data from previous five years. (LM)
	Reduce regulated entity permitting costs and other resources	Facility's administrative time needed to implement EMS permit vs. traditional permitting vs. traditional approach (ARTWM, PN)	Target: Reduce facility's permit-related administrative time by X% to Y%. **Indicator:** Number of person-hours spent annually per individual permit action. Source: Data provided by facility. Baseline: Data from previous five years.

Summary of Wisconsin Title V EMS Permit Pilot Project Evaluation Approach

	Reduce regulated entity compliance-related costs and other resources	Facility's time spent on compliance activities affected by use of EMS permit (ARTWM, LM, PN)	Target: Reduce facility's time spent on compliance-related activities by X% to Y%. **Indicator:** Number of person hours spent annually on compliance-related activities related to permit by facility. Source: Data provided by facility. Baseline: Data from previous five years.
	Increase operating efficiency of regulated entity	Time lag between industry's decision to make an operational change and the date the change is implemented, under the EMS permit vs. the traditional approach. (ARTWM, LM, PN)	Target: Reduce average lag time by X% to Y%. **Indicator:** Average lag time Source: Facility records and DNR permit databases (LM, PN) Baseline: Data from previous five years.
Improve environmental performance	Reduce air emissions beyond what is required in regulation	Emissions of VOCs and HAPS with EMS permit vs. traditional approach (ARTWM, APII, LM, PN, GT)	Target: Reduce emissions by X% to Y% for VOCs and A% to B% for HAPs. **Indicator:** Annual VOC and HAP emissions (APII, LM, PN) Source: Air Emissions Inventory data (annual consolidated report) Baseline: Data from previous five years.
	Reduce other pollution	Reduce pollution (other than air) with EMS permit vs. traditional approach (LM, PN, GT)	Target: Reduce emissions/discharges/transfers of [pollutant] by X% to Y%. To reflect continuous improvement, could be to reduce emissions X% per year. **Indicator:** Annual measure of pollution Source: Will vary Baseline: Data from previous five years.
	Drive innovation	Innovation under EMS permit vs. traditional approach (LM)	Target: Able to identify permit-related innovations **Indicator:** List of innovations per facility Source: Facility discussions/survey Baseline: Perception of traditional levels of innovation and barriers to innovation
Transferability	Consistency with Title V requirements	Consistency with Title V air permit requirements (LM)	Target: Consistency with Title V. **Indicator: Acceptance/approval by EPA** Source: Not applicable Baseline: Not applicable
	Transfer approach to other firms/sectors	Interest of other facilities (in and out of printing industry) to participate (LM, PN)	Target: X facilities or Y% of facilities interested in innovation **Indicator:** Facilities expressing an interest in undertaking the innovation Source: Discussions/survey Baseline: Not applicable
Improve compliance	Maintain or increase compliance rates	Compliance rates (ARTWM, APII, LM, PN)	Target: Maintain compliance or increase compliance to X% compliance. **Indicator:** Compliance rates Source: WACD and Compliance Certification Reports (APII) Baseline: Data from previous five years.

Summary of Wisconsin Title V EMS Permit Pilot Project Evaluation Approach

Improve public involvement in permit development	Increase public involvement	Public involvement in EMS permit vs. traditional approach (LM, PN, GT)	Target: Increase number of participating person-events by X% to Y%. **Indicator:** Attendance at meetings and other events; visits to website; etc. Source: DNR survey of the public (LM, PN); number of people touring facility (GT); number of hits to website (APII) Baseline: Data from previous five years or perceptions about pre-innovation participation.
		Opportunities for public involvement in EMS permit vs. traditional approach (GT)	Target: Increase public involvement opportunities by X% or be able to document efforts to improve opportunities. **Indicator:** Number of opportunities for public interaction (e.g., meetings, tours) or efforts to improve public involvement opportunities (e.g., revised website). Source: Facility and agency records and information. Baseline: Data from previous five years or perceptions about pre-innovation participation.
	Satisfaction with public involvement	Satisfaction with public involvement process with EMS permit vs. traditional approach (ARTWM, APII, LM, PN)	Target: Increase % of public satisfied by X% to Y%. **Indicator:** Public satisfaction with meaningful participation (APII) Source: Survey (LM, APII, PN) Baseline: Data from previous five years or perceptions about pre-innovation participation.
	Knowledge of public involvement	Knowledge of public involvement opportunities in EMS permit vs. traditional approach (LM, PN)	Target: % increase in knowledge about public involvement activities. **Indicator:** Public awareness of public involvement requirements (LM, PN) and/or role of public (LM) Source: DNR survey of the public Baseline: Data from previous five years or perceptions about pre-innovation participation.

OREGON EMS PROPOSAL FOR SMALL LOCAL GOVERNMENTS
STATE INNOVATION GRANTS – SAMPLE PERFORMANCE MEASURES

Inputs/Activities

Inputs:
• Number of Oregon personnel & $ engaged in EMS program

Activities:

Oregon

• Prior to implementation of EMS at small local governments, conduct inspections to establish baseline performance.
•Provide EMS training to interested small local governments.
• Conduct targeted and random audits/inspections of small local governments to determine changes in performance and compliance status.
• Engage small local governments and other interested stakeholders in collaborative workgroup to develop a model ISO 14001 compliant EMS for small local governments.

Small Local Governments

• Small local government conducts an assessment of its environmental performance status.
• Small local government sets goals for specified areas in which to improve performance.
• Small local government conducts a gap analysis to compare its current status to its goals.
• Small local government develops action plan and institutionalizes plan-do-check-act approach as part of implementing EMS.

Outputs

• Number of workshops, trainings, collaborative working sessions offered to small local governments to design a model EMS or a community-specific EMS.

•Number of technical assistance site visits and phone conferences with selected three small local govs.

Customers Reached

• Number (%) of small local governments attending EMS training events or workshops.

• Number of small local governments who were not selected to develop an EMS requesting technical assistance site visits or phone consultations.

• Number of stakeholder groups engaged in developing model EMS.

Short-term Outcomes

• Number of regulated entities with increased relevant EMS knowledge and skills as a result of site visits, consultation, or attending technical assistance events

Intermediate Outcomes

•Number (%) of small local governments engaged in developing a model ISO 14001 compliant EMS.

•Three small local governments faced with compliance issues develop and implement an ISO 14001compliant EMS.

•Increase in the three selected small local governments with EMS that are in compliance and have achieved beyond compliance performance.

• Increase in the three small local governments with EMS that have achieved pollution prevention and waste minimization through source reduction.

• Increase in the three small local governments that are purchasing environmentally preferable products.

Environmental and/or Economic Outcomes

• Improvements in overall environmental performance as measured against targeted compliance and sustainability goals.

• Measured improvements in worker and community public health.

• Measured improvements in resource savings; reductions in the the costs of regulatory compliance, insurance, and environmental liability and risk; and potential for increase in investor interest and reduced lending rates available to the small local government.

EPA Strategic Plan 2003-2008

Goal 2: Clean and Safe Water

Objective 2.1: Protect Human Health with targets of:

• Increase the percentage of the population served by community water systems that will receive drinking water that meets all applicable health-based drinking-water standards through effective treatment and source water protection (Sub-objective 2.1.1: Water Safe to Drink)

Objective 2.2: Protect Water Quality

• Support sustainable wastewater infrastructure (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)
• Increase the percentage of UST facilities that are in significant operational compliance with both release detection and release prevention requirements (Sub-objective 3.1.2)

Goal 4: Healthy Communities and Ecosystems

Objective 4.1: Prevent and reduce chemical risks to humans, community, and ecosystems.

Objective 4.2: Communities

• Sustain community health (Sub-objective 4.2.1)
• Restore community health by facilitating restoration of communities impacted by environmental problems (Sub-objective 4.2.2)

Step 2: Assess the Measures

- Assess the value of the measures in relation to goals and objectives
- Assess the feasibility of the measure in terms of:
  - Data collection (availability, implementation cost, baselining)
  - Data quality (reliability, validity, objectivity)
  - Analysis
  - Reporting (how to report, to whom to report, frequency of reporting, meaningfulness to audiences)

Step 3: Choose the Best Measures

- 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.
- Check in with managers and stakeholders.
- Identify a priority list of measures

Step 4: Identify a Standard

For each performance measure develop a:

1. Baseline – current state
2. Target – desired level of performance
3. Timeline – date when performance will be achieved

Tips for Choosing the Best Measures

For each measure ask…

- Does the measure clearly relate to the project goal and objective?
- Is the measure important to management and 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 or objective?
- Are your measures primarily outcome, efficiency, or quality measures?

Exercise 2: Application of Performance Measure Development

Developing Your Own Measures

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