

# **Using an Environmental Management System (EMS) to Meet Transportation Challenges and Opportunities**

## **AASHTO Workshop #1**

### **Building an EMS in Your State DOT Using the EMS Process Roadmap – Part 1**

**WORKSHOP #1**  
**Building an EMS in Your State DOT Using the EMS Process Roadmap**

*This Workshop is being conducted to help DOT personnel understand the AASHTO EMS Process Roadmap and learn how the Roadmap can be implemented in DOTs.*

**WORKSHOP INSTRUCTIONS**

The information presented on the following pages provides specific instructions to help in applying EMS Process Roadmap Steps 1 through 5 to DOT activities. Following is General Information to be reviewed before moving to the detailed step-by-step instructions.

1. Your Team will be asked to share information on its efforts and findings during a panel discussion with other EMS Workshop participants. As one of your Team's first steps – select one or two individuals (the assignments may be split between the first and second workshops) who would participate in this panel discussion.

See Item 6 for a list of questions that may be addressed when reviewing Team efforts during the panel discussion.

2. Worksheets are provided at the end of the detailed instructions for EMS Process Roadmap Steps 1 through 5. These worksheets are provided for your convenience in taking notes and keeping track of your Team's efforts.
3. Determine the focus and basic scope of the DOT activity within your Team's functional area which will be addressed in this Workshop. This activity will also be the focus of your Team's efforts in Workshop 2 this afternoon. Following are several key points to consider:
  - Select an activity which will be the focus of your Team's the EMS implementation Workshop efforts.
  - Identify an approximate number of employees that would be covered by the EMS.
  - Determine the geographic coverage of the efforts (i.e., the entire state, a district/region, or a county).
  - Identify any other selection factors which your Team considers as relevant.
4. The time allotted for each workshop is believed to be adequate to work through the assigned steps of the EMS Process Roadmap. However, to help the Team complete each step of the EMS Process Roadmap we offer the following suggested schedule:

9:30 – 9:35	Introductions, selection of potential presenter(s).
9:35 – 9:45	Select and characterize EMS focus activity.
9:45 – 10:10	Step 1, Identify issue(s) and/or opportunity(ies) to be addressed by EMS.
10:10 – 10:30	Step 2, Identify desired environmental and business results and benefits.
10:30 – 10:55	Step 3, Establish objectives, measures and targets, and milestones.
10:55 – 11:15	Step 4, Obtain commitment, characterize needs, and identify EMS leaders.
11:15 – 11:30	Step 5, Identify existing initiatives, programs, procedures, processes, and tools.

5. Workshop participants are encouraged to use the results of and the thought processes used in the workshop exercises to help develop and implement an EMS in your own DOT.

**WORKSHOP #1 (cont'd)**  
**Building an EMS**

**WORKSHOP INSTRUCTIONS (cont'd)**

6. Following are items and questions to consider when reviewing your Team's efforts during the Panel Discussion.

- Plan for questions from other participants.
- The focus will be on what you have learned from applying the EMS process steps.
  
- Describe your reasons for selecting the Team's focus activity. For example, it offered the quickest payback, was in most need of a system, or could be most readily implemented.
- Briefly describe your Team's:
  - Expected benefits,
  - Anticipated resource needs, and
  - Selling points to obtain management commitment.
- Describe any barriers that could affect EMS implementation and potential solutions to overcome these barriers?
- How did you reach a consensus on the focus activity and on specific elements of the EMS? What formed the basis(es) for this consensus?
- How would you apply what you've learned in applying Steps 1 through 5 to your own DOT?
- With the focus on understanding and learning how to implement Steps 1 through 5 of the EMS Process Roadmap, what are some key points that you would like to share with other Teams or would like to hear other Teams discuss?

## WORKSHOP #1 (cont'd) – Building an EMS

### WORKSHOP INSTRUCTIONS (All steps will focus on the activity or facility selected for use.)

1. Identify environmental issue(s) and/or opportunity(ies) to be addressed by EMS.

Gather and prioritize environmental information and select focus:

- List associated environmental issues – these may include: recent compliance problems, prior Notices of Violation, prior formal notifications from regulatory authorities, citizen complaints, increased potential for violations or complaints, lack of employee familiarity with relevant requirements, and changing conditions.
- List relevant environmental opportunities – consider: cost savings, cost avoidance, increased productivity (e.g., do more work with existing resources),
- Rank/prioritize the issues and opportunities (IOs) – considerations may include: resources needed to fulfill the IOs, time required, relative magnitude of environmental effect from fulfilling the IOs (may be viewed as “low hanging fruit”), relative acceptance/acknowledgement by public and regulators, ability to get and affect on employee “buy-in”, and management interest or view that an issue is a problem.
- Identify the specific aspect(s) of the activity, operation, or location associated with the IOs (e.g., materials handling and storage at stockpiles, storm water control during roadway maintenance, or storm water management permit process for construction projects).
- Identify the specific aspects and IOs (using the ranking information from above) to be addressed by the EMS and BRIEFLY document your rationale (for presentation to the group).

**PLEASE NOTE:** Keep your EMS effort manageable, you don't need to fix everything at once.

2. Identify desired environmental and business results and benefits.

Identify results. Referring to: the selected activity, operation, or facility; selected aspects; and chosen issues and opportunities –

- List associated environmental benefits that can be measured (to the extent practical) – these may include: quantities or volumes, customer satisfaction score re: the environment, improved regulatory relationships, and # of violations or incidents prevented or avoided (based on recent history).
- Identify associated business benefits (including benefits related to the noted environmental benefits) that can also be measured – including: dollars saved, cost avoided, manhours saved or available for other use as a result of avoiding incidents or violations, dollars and hours associated with reduced monitoring or regulatory oversight, time saved (and associated hours, dollars, and schedule advancement) as a result of improved regulatory relationships/enhanced review process.

**PLEASE NOTE:** EMS implementation and acceptance can be facilitated through the use of existing tracking and measurement systems/processes, and existing data and measures. Identify systems, measures, and data in your organizations that would be applicable.

## WORKSHOP #1 (cont'd) – Building an EMS

### WORKSHOP INSTRUCTIONS (All steps will focus on the activity or facility selected for use.)

3. Establish objectives, quantifiable measures and targets, and associated milestones.

#### Set performance and success measures.

- Identify actions to address the selected issues, opportunities, and activity, operation, or facility and to realize the benefit(s) identified in step 2. PLEASE NOTE: there may be near-term and future actions – consider a step-by-step approach.
- Keep the list of actions short – too many actions can lead to confusion, loss of focus, and an effort that is difficult to manage.
- Identify objectives that provide a goal/focus for each action. For example, an action could be to train employees in a certain requirement, the objective could be to reduce incidents of notices of violation. Keep the list as short as practical.
- Establish a performance measure(s) for each objective. The measures could be near-term as well as long-term. In the example noted in the preceding bullet a near-term measure could be % of work force trained, while the long-term measure would be # of incidents. In this example, the measure(s) should address the real reason/benefit for an action.
- Establish a target(s) for each measure. The target(s) should be realistic and achievable, but should challenge an organization to improve. Realistic targets help to ensure success and, thus, build buy-in for future EMS efforts that may present a greater challenge. Referring to the example, the targets could be 95% of work force trained leading to zero incidents without a follow up to prevent recurrence.
- Establish a milestone(s) for meeting each target.
- Identify the position(s) that would be responsible for taking the action and meeting the target(s).

4. Obtain management commitment to EMS, characterize EMS resource needs, and identify EMS leaders.

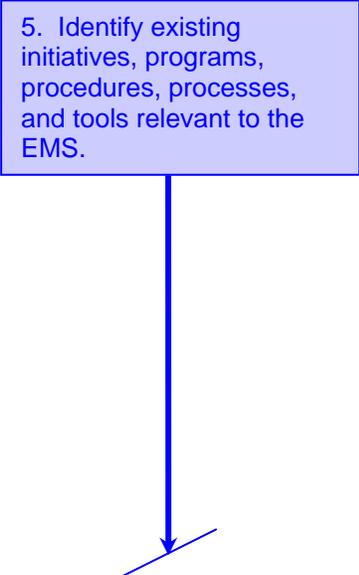
#### Prepare the EMS Business Case.

- Estimate the resources (personnel, financial, contractors, etc.) needed to implement the actions and meet the targets.
- If the resource needs span 2 or more planning/business cycles estimate the relative splits (% of total or estimate for each cycle).
- Using the information developed in steps 2 and 3, summarize the expected benefits, when they would be realized, and for how long.
- Identify the position that will manage the EMS effort and the positions that will play key roles (e.g., those responsible for an objective and target.
- Identify the senior management position who will serve as the leader (i.e., management “champion”). This leader would ensure that: resources are available when needed, managers of units outside of the EMS area coordinate with and support the EMS effort, and employees throughout the organization recognize the commitment of senior management.

## WORKSHOP #1 (cont'd) – Building an EMS

### WORKSHOP INSTRUCTIONS (All steps will focus on the activity or facility selected for use.)

5. Identify existing initiatives, programs, procedures, processes, and tools relevant to the EMS.



Building on existing achievements. Using the typical organization described in step 4 and the issues, opportunities, aspects, actions, objectives, and targets developed in steps 2 and 3:

- List the typical initiatives, etc. that could be used or adapted for use in the EMS to fulfill the selected actions and meet the targets.
- Initiatives would be strategic in nature (e.g., plans to improve environmental performance).
- Programs could be department- or unit-wide directives (e.g., activities to fulfill an initiative).
- Procedures would be step-by-step instructions.
- Processes would be activities to fulfill programs or procedures (e.g., training courses).
- Tools would be used to support programs, procedures, and processes (e.g., checklists, computer databases, or performance “scorecards.”)

**PLEASE NOTE:** This effort is intended to focus on WHAT IS ALREADY IN PLACE that can be used or adapted for use in an EMS effort. Experience shows that use of existing procedures, processes, and tools helps to break through the inherent resistance to change.

**WORKSHOP #1 (cont'd) – Building an EMS**

**EMS PROCESS ROADMAP WORKSHEETS**

**Activity Selected for Consideration:**

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1. Identify environmental issue(s) and/or opportunity(ies) to be addressed by EMS.

	Relative Priority
Environmental Issues:	
Environmental Opportunities:	
Specific Aspects of Activity to be Addressed by EMS with Reason(s) for Selection:	

**WORKSHOP #1 (cont'd) – Building an EMS**

2. Identify desired environmental and business results and benefits.

3. Establish objectives, quantifiable measures and targets, and associated milestones.

	Actions	Objectives	Measures	Targets	Milestones
Environmental Benefits					
Business Benefits					

**PLEASE NOTE: The actions, objectives, measures, targets, and milestones should correspond to the benefits identified.**

**WORKSHOP #1 (cont'd) – Building an EMS**

4. Obtain management commitment to EMS, characterize EMS resource needs, and identify EMS leaders.

Benefits Summary:

Resource Needs:

EMS Manager:

Senior Management Lead:

5. Identify existing initiatives, programs, procedures, processes, and tools relevant to the EMS.

Existing initiatives, programs, procedures, processes, and tools.

## WORKSHOP #1 (cont'd) – Building an EMS

### COMMENTS:

Describe any issues or highlights from your workgroup exercise that can be shared with the other workgroups and that would help others in developing an EMS.