Lessons Learned During the Implementation of an Environmental Management System

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MassHighway Organization

MassHighway Depots and Districts

Commonwealth of Massachusetts

Legend
- Depot
- District Office
- District Boundary
- Municipal Boundary
- Neighboring State

MassHighway Districts

District 1
- 718 Main St.
- Canton, MA 02021
- 508-385-2737
- 508-385-2736

District 2
- 201 County Rd.
- Northborough, MA 01532
- 508-520-3107
- 508-520-3106

District 3
- 323 Massachusetts Ave.
- Framingham, MA 01701
- 508-875-2600
- 508-875-2601

District 4
- 400 W. 10th St.
- Worcester, MA 01608
- 508-799-7000
- 508-799-7001

District 5
- 111 Washington St.
- Springfield, MA 01105
- 413-787-8200
- 413-787-8201
“State, EPA Agree on $20M Waste Cleanup”

“The Massachusetts Highway Department has agreed to spend tens of millions of dollars to clean up hazardous waste after federal inspectors discovered nearly 200 aging barrels of it outside maintenance facilities in....”
Consent Order Required an Audit

Over 6,000 compliance issues discovered and placed into compliance programs

- Hazardous waste
- Hazardous materials
- Water Quality
- Solid Waste
- Tanks
- Wetlands
- Asbestos (added later)
Summary of Audit Findings

MassHighway's Environmental Management Issues at 136 Maintenance Facilities

<table>
<thead>
<tr>
<th>Facility Activity</th>
<th>No. of Facilities Conducting Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Washing</td>
<td>92</td>
</tr>
<tr>
<td>Vehicle Maintenance</td>
<td>58</td>
</tr>
<tr>
<td>Fuel Dispensing</td>
<td>66</td>
</tr>
<tr>
<td>Salt and Sand Storage</td>
<td>122</td>
</tr>
<tr>
<td>Street Sweepings and Catchbasin Cleanings</td>
<td>76</td>
</tr>
<tr>
<td>Equipment and Material</td>
<td>108</td>
</tr>
<tr>
<td>Roadside and Construction</td>
<td>118</td>
</tr>
<tr>
<td>Debris Storage</td>
<td></td>
</tr>
</tbody>
</table>

- Hazardous Materials
- Hazardous Waste
- Solid Waste
- Water Quality
- Tanks
- Wetlands
The Audit Also Concluded:

- No Training
- No Dedicated Budget
- No Clearly Defined Roles and Responsibilities
- Incomplete Knowledge of Regulatory Applicability
MassHighway retained a plumber to install approved drinking water cross-connection prevention devices on the water supply lines to the boiler and fire suppression sprinkler system. The installation work was completed on March 10, 2004. As MassHighway has achieved compliance in accordance with the Corrective Action Plan and within the Projected Corrective Action Completion Date, delisting of this matter is requested. (RFJ)
Achieving Compliance Became Priority 1

- Our Management System Improvement Plan presented our Strategy for the organizational, operational and system improvements necessary to achieve and maintain compliance.
The Implementation Plan

- Identified the schedule and funding required to program the work over several budget cycles
  - $50 Million over 6 fiscal years
  - Today, 55 issues remain open
    - wetland restoration and solid waste capping projects due to previously buried debris
MassHighway’s EMS Tools

- Regular inspections are conducted by the EMS Compliance Coordinators to ensure a sustained level of compliance. This is currently the primary method for identification and correction of violations.
MassHighway’s EMS Tools

- Standard Operating Procedures – provide directives
- Handbook - provides simple instruction
MassHighway’s EMS Tools

- Facility Maps – identify general and permitted activities and, locate compliance points
MassHighway’s EMS Tools

- EMS Manual – describes the elements of the EMS and how the system works and reinforces the Plan-Do-Check-Act cycle.
MassHighway EMS Elements

- Environmental Commitment
- Roles and Responsibilities
- Funding
- Environmental Requirements
- Emergency Preparedness
- Standard Operating Procedures

- Facility Handbooks and Maps
- Training
- Compliance Tracking
- Self-Auditing
- Pollution Prevention
- EMS Review and Evaluation

System is designed to Achieve and Maintain Environmental Compliance
Independent Audit Completed in 2004-2005

- Conducted by independent consultant
- 125 facilities audited
- First comprehensive system check
- Produced high anxiety
- Hopefully we won’t find violations but what if we do?
- We found Violations
## Summary of Independent Audit Findings

<table>
<thead>
<tr>
<th>( \text{Findings} )</th>
<th>( \text{Violations/Findings} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Miscellaneous (not adhering to SOPs)</td>
<td>163</td>
</tr>
<tr>
<td>2. Right-to-know (labeling of materials)</td>
<td>111</td>
</tr>
<tr>
<td>3. Solid waste management</td>
<td>105</td>
</tr>
<tr>
<td>4. Tank management</td>
<td>96</td>
</tr>
<tr>
<td>5. Hazardous waste management</td>
<td>94</td>
</tr>
<tr>
<td>6. Underground injection</td>
<td>62</td>
</tr>
<tr>
<td>7. Asbestos</td>
<td>33</td>
</tr>
<tr>
<td>8. Air management (stage II and air permits)</td>
<td>25</td>
</tr>
</tbody>
</table>
Audit Results

- Resolved 68% of our regulatory findings within 14 days

- Bulk of the remaining regulatory issues are related to fuel reconciliation equipment upgrades

- 61% of the total findings were good management practices
We Reported Findings to DEP

We are pleased to report that the Environmental Management System Review and Recommendation Report has been completed. Attached for your information is a copy of the report.

I am proud of the work that MassHighway has done in this area. I hope you and the DEP will find the report informative and a valuable testimony to the hard work and dedication of MassHighway’s continued environmental improvement. I hope that we can both use this as a wonderful opportunity to collaborate between our two agencies as we all strive to develop and sustain performance.

Sincerely,

[Signature]

Lisa Provost
Commissioner

c: John Cugiany, Secretary of Transportation
Robert N. Cohen, Deputy Commissioner
John Blundio, P.E., Chief Engineer
Gregory Pendergast, Director, Environmental Services
Scott Brown, Chief Engineer’s Office
“At MassHighway, we understand that an EMS requires a long-term commitment, focus, and support from all levels of the agency.”

Commissioner Luisa Paiewonsky
Trust the process

- Commitment from the top must be established early
- Change occurs slowly
- As long as there is commitment at all levels of management, continuous improvement will happen

Lessons Learned
Collaborate with Regulators

Lessons Learned

- Relationship required development of trust
- Understand the respective missions
- Educate the regulators - these changes require
  - several budget cycles
  - time to train and integrate responsibilities into day to day operations
Collaborate with Regulators

Lessons Learned

- Without proper coordination, the EMS risked being created to suit the regulators more than the agency.
- Tailor the implementation plan to achieve compliance issues first.
Collaboration with State and Federal Regulators Proved Beneficial

**Developed a Self-Disclosure Policy that works for state Agencies**

- Requires that the agency has a system
- DEP exercises enforcement discretion
Experience and Organization are Important

- Need staff with strong working knowledge of regulations. This builds regulator’s confidence that the agency is taking the EMS seriously.

- Compliance Coordinators work in the Districts but report to Boston HQ. This allows inspections to be transparent within the Agency.

- Use consultants to help develop and update your EMS tools. While you’ll need their support; to truly understand the system, you need to own it.
As our System Matured

Lessons Learned

- Compliance activities became part of everyone’s job.
- Roles and responsibilities changed over time
- Funding needed to maintain compliance decreased substantially
Operations is Moving the Fence-line to Roadway Maintenance

- Build on our Experience
- Utilize AASHTO Tools
- For more information on AASHTO
  [http://environment.transportation.org](http://environment.transportation.org)

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