Promoting Environmental Stewardship in Transportation Maintenance and Operations in New York State Department of Transportation

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ABSTRACT

The New York State Department of Transportation (NYSDOT) is firmly committed to a proactive environmental ethic in providing a safe, efficient, balanced and environmentally sound transportation system in the State of New York. This includes conducting maintenance, equipment management and construction activities appropriately to prevent and/or minimize adverse impacts upon the environment and to enhance the environment when we can. This paper describes how the operational capabilities of a Department of Transportation can be brought to bear on the environmental stewardship responsibilities shared by all governmental organizations.
INTRODUCTION

Historically, transportation agencies have progressed their capital programs in a way that ensures strict regulatory compliance. However, they seldom went above and beyond compliance. Though this reactive approach served to reduce unnecessary environmental damage, it did little to improve the environment.

It is the responsibility of all state agencies, not just that of the environmental agencies, to protect the environmental resources within the state. As New York’s largest public works agency, NYSDOT recognizes its potential and opportunity to proactively advance the State environmental program. NYSDOT has affirmed its obligation and responsibility to the people of New York to protect, improve and enhance the environment as opportunities arise, especially when this can be done for little or no additional cost.

To address this obligation, NYSDOT developed an Environmental Initiative in the spring of 1998. Through proactive actions, NYSDOT has become an important part of New York's environmental solution and has changed its working relationships with environmental agencies and groups. As these agencies and groups have become partners, permit approval times have improved, mitigation costs have declined, morale has improved and cost-effective environmental benefits are being realized.

By progressing the philosophy of environmental stewardship, NYSDOT has moved beyond the conventional reactive regulatory to that of protecting and enhancing the environment. The Environmental Initiative is a paradigm shift applicable to all Public Works Agencies.

BACKGROUND

New York State Department of Transportation is the state’s largest public works agency. As such, the Department recognizes its obligation and responsibility to the people of New York State to protect, improve and enhance the environment in the course of its business of planning, building and maintaining a transportation system. Environmental stewardship builds on the values of the Department’s employees to protect the natural and cultural resources of the state. Caring for the environment while providing a transportation network allows DOT employees to feel good about being “good neighbors”, ones that a community or an individual welcome rather than shun. Environmental stewardship builds credibility, trust, and good will as well as building staff enthusiasm and morale.

OVERVIEW OF NYSDOT’S ENVIRONMENTAL STEWARDSHIP PROGRAM

NYSDOT’s Environmental Initiative began in April 1998 with the creation of the Environmental Initiative Statement (See http://www.dot.state.ny.us). Following some kickoff activities throughout the summer of 1998, Governor George Pataki formally announced the Initiative on October 20, 1998. Since that time, NYSDOT has undertaken deliberate actions and adopted a much more proactive approach to addressing environmental matters.
Objectives

NYSDOT’s Environmental Initiative has five major objectives:

✓ Promote and strengthen an environmental ethic throughout the Department.
✓ Advance State environmental policies and objectives with NYSDOT resources.
✓ Partner with others to construct environmental enhancements.
✓ Pilot new environmental protection and enhancement methods.
✓ Strengthen relationships with environmental agencies, organizations and local municipalities.

Action Plans

Each of the eleven NYSDOT Regions and Main Office Functional Units have been directed to prepare an action plan for their program to address the Environmental Initiatives’ major objectives. The regional and program-specific action plans identify:

✓ Planned tasks to advance each of the five major objectives.
✓ Individuals/groups that are primarily responsible for implementing each action.
✓ Groups/program areas that will provide the necessary assistance.
✓ Target completion date.
✓ Actual completion date.
✓ Reporting mechanisms.

Integration with Other Initiatives

The first phase of the Environmental Initiative, as described in McVoy, et al., 2000 (1), has been considered a success. NYSDOT has gone beyond the original concept of the “Initiative” to adopt an overarching stewardship approach, whereby the Department’s Environmental Ethic integrates and progresses other concepts such as Context Sensitive Solutions, Quality Communities, public outreach, and an expanded appreciation of what we see around us. The environmental ethic has permeated into the planning, design, construction, maintenance and operations of transportation systems. The Department is now doing business differently instead of progressing a new concept. The Environmental Ethic is more than a vocabulary change or a volunteer effort – it’s an integral part of DOT procedures.

Agency managers are strongly committed to the idea, and business leaders are coming to see it as a positive way to promote business in New York rather than just another street torn up by construction. Our “customers” in the communities and regulatory agencies such as the NYS Department of Environmental Conservation and Office of Parks, Recreation and Historic Preservation have now come to expect this of NYSDOT. They are learning to view NYSDOT as a partner in a joint effort to enhance the environment rather than as an agency that needs to be carefully watched and regulated.

PROGRESS ON NYSDOT’S ENVIRONMENTAL STEWARDSHIP PROGRAM

NYSDOT assesses progress on its Environmental Stewardship Program in four categories: Leadership, Implementation and Monitoring, Partnerships, and Results.
Leadership

NYSDOT has shown leadership in progressing environmental stewardship by:

- Establishing agency-specific environmental goals.
- Adopting a mission statement that reflects an environmental stewardship ethic.
- Issuing an official statement from executive management endorsing an agency-wide environmental stewardship ethic (http://www.dot.state.ny.us/eab/eistate.html).
- Issuing official procedures and guidance on implementing environmental stewardship goals (http://www.dot.state.ny.us/eab/eieab3.pdf).
- Issuing an official Environmental policy adopting environmental stewardship goals (http://www.dot.state.ny.us/eab/files/policyen.pdf).

Implementation and Monitoring

Implementing a new program involves developing plans, revising procedures and guidelines, and monitoring progress. Steps that NYSDOT has taken (and continues to take) to implement and monitor the environmental stewardship effort are:

- Developed and updated Environmental Stewardship Action Plans for each unit in the agency.
- Reported progress on the Environmental Stewardship Action Plans monthly.
- Developed and conducted environmental training for various Department and regulatory agency staff.
- Revised procedures and guidelines to incorporate environmental stewardship goals and objectives.
- Developed reports, promotional publications, displays, and brochures relating to the Department’s environmental stewardship goals and objectives.
- Routinely consider environmental elements in NYSDOT’s activities.

Partnerships

The success of the Department’s environmental stewardship efforts relies on building a strong team with partners that share the vision. Internal partners include managers and staff from all the program areas. External partners include federal and state agencies, local municipalities, community groups, environmental organizations, and the public. NYSDOT has built strong partnerships by:

- Meeting with Department staff from various functional units to discuss crosscutting issues.
- Forming multi-disciplinary project teams that investigate and consider innovative environmental elements.
- Meeting with state and federal agencies to discuss and progress environmental stewardship goals and objectives.
Discussing NYSDOT’s environmental stewardship philosophy at public information meetings.

Modifying projects to incorporate environmental elements on the basis of continuous public feedback.

Partnering with agencies, advocacy groups, and municipalities on projects.

Results

The key measure of success is getting positive results. NYSDOT has demonstrated its results by:

- Including lists of Environmental Initiative projects in the annual Capital Program Update.
- Developing and updating an environmental accomplishments book.
- Formally recognizing NYSDOT teams or individuals for outstanding environmental accomplishments.
- Establishing an environmental stewardship website [http://www.dot.state.ny.us/eab/envinit.html](http://www.dot.state.ny.us/eab/envinit.html) Identifying and tracking environmental accomplishments.
- Receiving recognition for environmental accomplishments by letters of commendation or awards.
- Receiving or initiating positive media coverage for environmental contributions.

INCORPORATING ENVIRONMENTAL STEWARDSHIP INTO TRANSPORTATION MAINTENANCE AND OPERATIONS

NYSDOT has made a concerted effort to ensure that environmental stewardship objectives are incorporated into its maintenance and operations activities. Transportation maintenance and operations activities are typically associated either with work conducted along the right-of-way (ROW) or as facility-based activities conducted at a residency or shop. These operations activities must comply with various and complex federal and state environmental regulations and avoid or minimize environmental impacts. With the implementation of the NYSDOT Environmental Initiative in April 1998, the Department has gone beyond strict regulatory compliance to proactively protect, improve and enhance the environment as opportunities arise, especially when this can be done for little or no additional cost.

Environmental Handbook for Transportation Operations

NYSDOT has developed an Environmental Handbook for Transportation Operations to provide general awareness and guidance of the primary environmental responsibilities associated with the types of activities conducted by NYSDOT Operations staff. The Environmental Handbook for Transportation Operations describes the environmental requirements in the context of the operation or type of facility or equipment most affected by the issue. This guidance serves as a summary of typical issues and as a flag for certain issues that may require more assistance from the NYSDOT Landscape/Environmental staff or other appropriate resource personnel. The Environmental Handbook for Transportation Operations can be found on the NYSDOT website at [http://www.dot.state.ny.us/eab/oprhbook.html](http://www.dot.state.ny.us/eab/oprhbook.html)
Environmental Initiative Checklist for Maintenance and Operations

To face the challenge of routinely incorporating environmental components into maintenance and operations, NYSDOT staff developed an extensive list of maintenance improvement areas that support the Environmental Initiative. Some of the primary issues include reducing waste, reducing pesticide and chemical applications, improving water quality and improving aesthetics.

General operations activities identified include:
✓ reusing and recycling various materials, including pavement
✓ improving environmental factors of facilities (oil/water separators, sewer connections, salt storage buildings, energy conservation measures, visual screening)
✓ implementing erosion control and vegetation management (e.g., mowing guidelines, herbicide controls)
✓ improving roadside appearance (adopt-a-highway, graffiti abatement)
✓ cleaning pavement with biodegradable agents

Snow and ice operations activities identified include:
✓ training in snow and ice control treatments and equipment calibration to reduce material use
✓ training of municipal snow and ice contractors and local DPWs regarding snow and ice control techniques
✓ testing and using new snow and ice equipment, including on-board liquid systems and temperature sensors
✓ testing and using new materials for prewetting or anti-icing applications, such as magnesium chloride, agricultural products (MAGIC), salt brine and calcium chloride

Bridge-specific operations activities identified include:
✓ using bioengineering techniques for stream stabilization
✓ conducting clearing/snagging and scour protection of streams
✓ cleaning bridges in an environmentally sound manner according to specification
✓ restricting stream work dates to protect fisheries
✓ installing fish passages, improving habitat and protecting riparian habitat

In addition to conducting maintenance activities in an environmentally sensitive manner, the NYSDOT maintenance program is going the next step to improve and enhance the environment. Examples include:
✓ conducting outreach to County & Local DPW’s on all the above techniques
✓ providing an online publication of the Environmental Handbook for Transportation Operations

✓ building fishing access sites
✓ constructing boat launch sites
✓ installing historic signs
✓ erecting interpretive kiosks
✓ installing peregrine nest boxes on bridges
✓ installing kestrel and bluebird boxes along the right-of-way
As a quality assurance measure, maintenance staff has developed an Environmental Initiatives Checklist to track the environmental practices performed by maintenance staff in the Residencies, by the bridge crews and by special crews. The report is completed by the regional managers and reported annually to the Main Office program manager. This allows the program area to pilot new techniques and re-evaluate the effectiveness and extent of implementation of the various tasks. It also serves to identify areas that need increased awareness and implementation and to delete tasks that are no longer warranted.

Environmental Audit

Every year, each state agency is required to assess the environmental status of each of the activities carried out at or by each of its facilities, projects and operations. To improve this process, NYS DOT volunteered to be a pilot agency in submitting its annual audit electronically. Additionally, NYS DOT developed a data form for field staff to include information on Environmental Initiatives/Enhancements for the State Environmental Audit. This data form provides another source of information to report and track types of activities and enhancements that are being progressed to further the Department’s environmental stewardship objectives.

Environmental Staff in Operations

NYS DOT has determined that it needs to adjust its organizational structure to have more environmental expertise on the ground to sustain its efforts of proactive environmental stewardship. Environmental support with NYS DOT has traditionally been provided by the Regional Landscape / Environmental Units housed in the Design Bureaus. As environmental requirements and expectations have increased, there has been an increase in the need for maintenance and construction-phase assistance in the environmental field. The effort has grown to the level that requires a full time regional staff commitment in each of the regional construction and maintenance units. To meet that need, the Department is hiring 22 seasoned environmental managers to teach stewardship, deal with the various regulatory agencies and to make critical on-site decisions.

RESULTS

Momentum has grown with the success of the environmental stewardship effort. The word has spread throughout the Department, the State and the Nation. Policies, procedures and guidance have been revised to incorporate the Environmental Initiative in the Department’s projects and activities. More specific guidance and policy has been drafted drawing on the success of the projects. A website has been developed to post examples and to share successes with other staff and the public. The Department has been a national leader in helping to spread the philosophy to other state and federal agencies.

The Initiative has resulted in significant intangible benefits in the form of improved morale. Since it’s “OK to be green,” DOT workers enjoy more of a sense of “ownership” of the environment that constitutes the rights-of-way and other property in DOT ownership. Through outreach to communities and groups, NYS DOT has gained stronger, more positive working
relationships with external agencies, the public, local municipalities and other environmental groups. These improved relationships result in avoided costs by reducing delay, litigation, frustrating do-overs and wasted effort arguing contentious issues. By working together at the start, projects are accomplished in a more timely and productive manner for all concerned.

CONCLUSION

NYSDOT has found that there are numerous opportunities to incorporate environmentally sound practices and environmental improvements into routine maintenance and operations activities. Considering the highly visible public role that maintenance and operations staff has as representatives of NYSDOT, it is a critical step to improving the public perception and increasing the Department’s credibility as an environmentally sensitive state agency and as a partner in progressing the state environmental program. This is an area where there can be great gains at little expense. NYSDOT’s framework can be adapted to any state and strengthens best practices from any source. While specific projects may bring incremental improvements, a progressive ethical framework can be the basis for continuing progress for all DOTs.

FURTHER INFORMATION

More information about NYSDOT’s Environmental Initiative can be found on our website, http://www.dot.state.ny.us/eab/envinit.html.

REFERENCES