



CASE STUDY IN SUSTAINABILITY: NYSDOT's GreenLITES Tool and Sustainability Program

Overview

The New York State Department of Transportation (NYSDOT) created the GreenLITES (Green Leadership in Transportation and Environmental Sustainability) certification program to facilitate their existing and on-going sustainability efforts. Initially, the program served solely as a sustainability assessment tool for individual capital projects, but it has since grown to include many other elements and to encompass a more holistic approach. It now includes an expanding array of tools, metrics, and spreadsheets which focus on design, operations, capital programming and transportation system planning. GreenLITES and NYSDOT's sustainability program have evolved from environmentally-based beginnings to a more comprehensive approach integrating social, economic, and environmental concerns in pursuit of a sustainable society.

Approach

NYSDOT designed and implemented GreenLITES in stages. The program started in September 2008 with the GreenLITES Project Design Program, which uses a transparent, metrics-based rating system to evaluate individual transportation construction projects. This program was followed by the April 2009 GreenLITES Maintenance/Operations Plan Spreadsheet, the March 2010 Regional Pilot Sustainability Assessment Table, and, GreenLITES Planning, drafted in April 2010, which uses a Project Solicitation Tool to identify priority projects within a broader context. Currently NYSDOT is refining the sustainability assessment table to include specific measures which will better align it with regional capital program update planning efforts.

Although NYSDOT began adopting sustainable practices long before 2008, it had not yet fully articulated a cohesive vision for sustainability. The GreenLITES program was designed to meet this need by helping NYSDOT to:

- Evaluate, understand, and track its sustainability performance continuously on the basis of social, economic, and environmental priorities
- Discover new methods for improving sustainability practices
- Identify and foster best practices and share them with the public
- Identify needed partnerships
- Relate transportation investments to jobs, quality of life, and environmental stewardship

Outcomes and Next Steps

Importantly, GreenLITES has institutionalized sustainable practices in NYSDOT. All transportation projects must now be evaluated using the Project Design self-certification tool. At the same time, GreenLITES is dynamic; its structure allows for constant evolution. Practitioners use a basic scorecard for each rating system, but they may also submit additional sustainability innovations or actions to a review committee, and may receive credits if the committee approves. These new ideas may be added to the baseline list if appropriate and state-of-the-practice innovations move into the mainstream. The use of "launched soil nails" is one such technique that is now gaining widespread exposure as a result of this process (See Figure 1). Instead of completely shutting down a section of roadway for three or four months, the roadway can remain open while a damaged bank is incrementally rebuilt with the use of these nails. This addresses all three points of the "triple bottom line" of sustainability. Environmentally, it uses less material and causes less fossil fuel emissions; economically, it is more cost-effective; socially, it causes less disruption and allows for the continued use of the highway.



Figure 1: Launched soil nails address environmental, economic and social aspects of sustainability.

GreenLITES also inspired the development of an overarching sustainability policy and program for NYSDOT to address sustainability from a more strategic level. Over the past few years, NYSDOT has examined various ways of integrating GreenLITES into its broader planning process, including incorporating sustainable goals in long-range plans and in the development of the Department’s capital program (i.e., asset management, the comprehensive program update, and capital investments decisions). A statewide sustainability asset management team works to coordinate efforts at the State level, while each of the eleven regions also has their own asset management team for sustainability. The creation of committees on a regional level expands the leadership for the program and builds opportunities for integrating new initiatives within the program.

According to NYSDOT, GreenLITES has had the greatest impact on large, complex projects because these types of projects provide more opportunities to show that NYSDOT is considering sustainability from many angles. The strength of the program and its application on complex project design comes from the blending of many concepts, such as Flexible Highway Design, Context Sensitive Solutions, Livability, Complete Streets, Smart Growth, and Environmental Stewardship. Accordingly, it does not overburden the project with increased funding needs to achieve sustainability, yet stimulates creative, forward-thinking design that maximizes the use of the Department’s multi-disciplinary knowledge base. The Route 347 project in Suffolk County, Long Island, is a good example (Figures 2 – 5). This project was controversial from the outset with many different special interest groups providing, at some points, conflicting input. After a “Vision Plan for a Green Route 347” was developed and presented to all stakeholders, as a result of the GreenLITES initiative, the project gained the support of former dissenters and received a Federal Highway Administration, Environmental Excellence award at the International Conference on Ecology and Transportation, and a Vision Long Island, Smart Growth Achievement award. Project features include: transit facilities, a shared use path, solar lighting, raised-planted median and bio-swales.



Figure 2 (left): Solar powered light fixture on Route 347, Long Island, NY; Figure 3 (top middle): Decision-makers had to carefully assess stream impacts along the Route 347 Project; Figure 4 (bottom middle): Public participation was integral to the success of the Route 347 Project; Figure 5 (right): planners integrated alternative transportation infrastructure into the Route 347 Project

NYSDOT reports that the education of practitioners and stakeholders is the most important and successful outcome of GreenLITES. People now better understand what it means to discuss sustainability and how the “triple bottom line” of environmental, economic, and social concerns relates to the transportation system. Nevertheless, NYSDOT acknowledges it is still an ongoing challenge to ensure that the program is consistently interpreted and implemented state-wide.

Lessons Learned

NYSDOT recognizes that sustainability must come from all three levels of decision-making: operational (the “how”), tactical (the “what”), and strategic (the “why”). This necessitated the development of multiple program components and a mechanism to allow feedback and exchange between decision-makers at the State and regional level. However, this means that the department must also focus on the challenge of interconnecting various regional and statewide committees to foster synergistic efforts and minimize duplication. NYSDOT has also learned that a sustainability certification program is not sufficient without an overarching “sustainability policy and program” for strategic support. NYSDOT’s program provides a powerful example to other State DOTs, not only through cutting edge metrics, but even more importantly through the transparent and adaptive process by which the program itself was created and implemented. To learn more, contact NYSDOT: <https://www.dot.ny.gov/about-nysdot/contact>.