Sustainability is a Zero sum game.
A Sustainable Society

- Manages resources in a way that fulfills the community/social, economic and environmental needs of the present without compromising the needs and opportunities of future generations.
Today, more than ever before, transportation agencies are going ‘Above & Beyond’ Toward Sustainable Transportation.”
NYSDOT’s Goals

- To design, operate and maintain our transportation system in support of a sustainable society.
- Not to deplete, and if possible, enhance resources for future generations.
- Support a vibrant economy.
- Enhance quality of life for everyone.
What is **GreenLITES**?

Program used to:
- Measure our sustainability performance,
- Recognize and promote sustainability best practices and
- Identify areas where we need to improve our sustainability practices.

**GreenLITES Design Modeled after:**
- Building industry LEED program.
- University of Washington Greenroads initiative.

**A self certification program.**
**A way to demonstrate to public officials and the public how NYSDOT is advancing sustainable practices.**
**Includes Design, Operations & Local Projects**
Program Guiding Principles

- Not prescriptive
- Intent is to have all staff consider and contribute to sustainability
- Regional decision as to what to include
- Understand cost will be a competing priority
- Keep it simple
Certification Categories: Design

- Five categories:
  - Sustainable Sites
  - Water Quality
  - Materials and Resources
  - Energy and Atmosphere
  - Innovation/Unlisted
## Design and Construction Example

### GreenLITES Project Environmental Sustainability Rating System Scorecard v 2.0.1

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ID</th>
<th>DESCRIPTION</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-1 Reuse of Materials</td>
<td>M-1d</td>
<td>Specify rubblizing or crack and seating of Portland Cement Concrete pavement.</td>
<td>2</td>
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<tr>
<td></td>
<td>M-1e</td>
<td>Reuse of previous pavement as subbase during full-depth reconstruction projects.</td>
<td>2</td>
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<tr>
<td></td>
<td>M-1f</td>
<td>Arranging for the reuse of excess excavated material, asphalt pavement millings, or demolished concrete by another municipality or agency.</td>
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<tr>
<td></td>
<td>M-1g</td>
<td>Specify the processing of demolished concrete to reclaim scrap metals and to create a usable aggregate material.</td>
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<tr>
<td>M-2 Recycled Content</td>
<td>M-2e</td>
<td>Specify asphalt pavement mixes containing Recycled Asphalt Pavement (RAP).</td>
<td>2</td>
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<tr>
<td></td>
<td>M-2f</td>
<td>Specify PCC pavement mixes containing Recycled Concrete Aggregate (RCA).</td>
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<tr>
<td></td>
<td>M-2h</td>
<td>Use of porous pavement systems in light duty situations (e.g. sidewalks, truck turnarounds, rest stops, parking lots, police turnarounds).</td>
<td>2</td>
</tr>
</tbody>
</table>
e.g., Highway-stream Crossings
AASHTO: Environmental Aspects Paving

Key In-Place Recycling Process Activities:
- Identify highway sections to pave;
- Develop pavement design;
- Develop, let, & award paving contract;
- Purchase materials & supplies;
- Mobilize equipment & personnel;
- Pave highway & maintain equipment;
- Perform quality control/assurance;
- Correct deficiencies; &
- Measure & document costs & benefits.
AASHTO: Environmental Aspects Paving

- Reuse & conservation of pavement materials & reduced waste;
- Reduced transport of pavement materials & associated construction vehicle traffic impacts (air & noise) on neighbors & highway system;
- Lower emissions of volatiles with use of non-volatile materials; &
- Avoid/minimize environmental impacts of batch plants, quarries, & stockpiles.
Key Environmental Considerations
While Measuring & Documenting Costs & Benefits

- What are the cost of the environmental measures of in-place pavement recycling in comparison with other paving methods?
- What are the environmental benefits of in-place pavement recycling as compared to other paving methods?
GreenLITES: Four Certification Levels

- Certification level based on total points received.
- The highest certification goes to designs which clearly advance the state of sustainable transportation solutions.

<table>
<thead>
<tr>
<th>Level:</th>
<th>Non-Certified</th>
<th>Certified</th>
<th>Silver</th>
<th>Gold</th>
<th>Evergreen</th>
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<tr>
<td>Symbol:</td>
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<td><img src="#" alt="Certified" /></td>
<td><img src="#" alt="Silver" /></td>
<td><img src="#" alt="Gold" /></td>
<td><img src="#" alt="Evergreen" /></td>
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<tr>
<td>Points:</td>
<td>0 - 14</td>
<td>15 - 29</td>
<td>30 - 44</td>
<td>45 - 59</td>
<td>60 &amp; up</td>
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</tbody>
</table>
Scoring Methodology

- All "D" let projects are scored. Includes element-specific (plan sheet or proposal only) and maintenance projects.
- A modified rating system is used for element-specific and maintenance projects.
- Standby, where-and-when, or job order contracts are exempt.

![Proposed Initial Green LITES Award Distribution](image-url)
Current Statistics

Project Certification by Percent

- Non-certified: 39%
- Certified: 35%
- Silver: 16%
- Gold: 5%
- Evergreen: 5%

Total Projects Evaluated to Date: 250
Implementation Basics

- Applies to all “D” let projects
- Consider “green” items at scoping
- Mid-point check
- GreenLITES “scorecard” at PS&E
- Add certification level to cover sheet
- Certified and above projects get certificate
Recognition

- All Certified, Silver, and Gold projects receive certificates.
Evergreen Recognition

- Regions with Evergreen projects get a plaque to list all their Evergreen projects. Presented yearly by the Commissioner.
Program Management

- A review team:
  - Verifies all Gold & Evergreen projects.
  - Verifies and approves all unlisted and innovative items.
  - Updates program as appropriate.
- Engineering Division maintains a database and prepares reports.
- Program goals are reviewed by the Commissioner and Chief Engineer.
Academic Advisory Team

• **Purpose**
  - To obtain academic perspective on GreenLITES
  - To have external Evergreen project review
  - Build better relationships between engineering schools and NYSDOT

• **Responsibilities**
  - Program review
  - Evergreen project review

• **Benefits**
  - Professors bring emerging practices to classroom
  - Potential student paper research topics
  - Venue for NYSDOT to recruit interns and employees
Local Projects Certification

- Other New York State government agencies and authorities, local municipalities, and non-governmental organizations (NGOs) may use GreenLITES to certify their federally funded transportation projects.
- Use is voluntary
- Offers others the opportunity to:
  - Distinguish their transportation projects based on the extent to which they incorporate sustainable design choices.
  - Show their commitment to improving transportation infrastructure in ways that minimize environmental impacts.
  - Show they have taken intentional steps they are advancing sustainable practices.
GreenLITES Operations

- Use Maintenance & Operations Plan (MOP) to rate Operations
- Categories in MOP
  - Bridges, Pavement, Drainage, Signal & Lighting, Snow & Ice, Facilities, ITS, Roadside Environment, Guiderail, Signs, Fleet Admin, Walls & Rock Slopes, Multimodal & Other
- Each category now has GreenLITES lines
- Over 95 “green” items added
**GreenLITES Operations**

- Based on Work Performed by Fiscal Year
- Scores Derived by * of Weighted Factor and Work Performed Max
- Provides Platform to Evaluate and Share Best Practices
Operations Certifications

- Certifications are available for:
  1) Residencies
  2) Regional Bridge Maintenance Groups
  3) Regional Traffic and Safety Groups

- Special GreenLITES awards are available for:
  1) Main Office Operations Program Areas
  2) Regional Operations Program Areas
## Operations MOP

### Maintenance and Operations Plan for Program Update

<table>
<thead>
<tr>
<th>Program</th>
<th>Line Asset Type</th>
<th>Asset Type</th>
<th>Activity</th>
<th>Unit of Accomplishment</th>
<th>Total Units</th>
<th>Ideal # per gr</th>
<th>Target # per gr</th>
<th>% Cycle</th>
<th>Total # Treated</th>
<th># Treated by S.F.</th>
<th>Central Office F-Exp ($M)</th>
<th>Exp ($)</th>
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<td>Maintaining Ditches &amp; Shoulder</td>
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<td>Foot</td>
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### Total Infrastructure

- Total Units
- Ideal # per gr
- Target # per gr
- % Cycle
- Total # Treated
- # Treated by S.F.
- Central Office F-Exp ($M)
- Exp ($)

### Maintenance by

- Pavement
- Shoulder Maintenance & Treatments
- Mid-Course Overlay
- Shoulder Reconstruction
- New-Hydrant Installation
- Alignment/Contraction/Grade Separation
- Shoulder Maintenance Agreements
- MD Variable Plan
- Pavement-Related Assalt
- Use Street Cleaning Products
- Spent Assalt/Concrete Recycling/Recycle or Other
- Shoulder Resurfacing for Pavement
- Reduce Improper Drainage
- Innovative and/or Unlined Drainage
- Pavement Investment in Pavement
- Maintaining Ditches & Shoulder
- Pavement Ditch, Shoulder, & Trenching
- Pavement Investment in Pavement
- Pavement Investment in Pavement
- Pavement Investment in Pavement
- Pavement Investment in Pavement

### Notes

- Blue rows are for M.O. Programs
- Red rows are Capital Improvements intended to achieve SGIR or SDHO

**Version:** 5/2008

**Edited by:** Residency/Res.1 Bridge Maint. ID6
Operations Sustainable Practice Examples

- Promote sustainability through careful roadside work practices and enhancements.

Install Living Snow fence

Stream Bank Restoration
Operations Sustainable Practice Examples

- Make highways, fleet and facility buildings cleaner and operate with greater energy efficiency.
  - Install LED traffic signals
  - Use CNG vehicles
  - Use solar panels on roofs
<table>
<thead>
<tr>
<th>Economy</th>
<th>Current State / Metric?</th>
<th>Desired State</th>
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</thead>
<tbody>
<tr>
<td>Access to jobs and labor</td>
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<tr>
<td>Transportation Preservation (Maintenance backlog)</td>
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<td>Transit passenger miles</td>
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<tr>
<td>Environment</td>
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<tr>
<td>Petroleum consumption reduction</td>
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<td>Air Quality - CO2 emissions</td>
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<td>Water Quality</td>
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<td>Habitat Quality</td>
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<td>Social Equity (Includes Livability &amp; Safety)</td>
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<tr>
<td>Fatality and injury reductions per VMT</td>
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<tr>
<td>Improved mobility for all including the disadvantaged and disabled</td>
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<td>Generational Equity</td>
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<tr>
<td>Access to affordable transportation</td>
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<td></td>
</tr>
</tbody>
</table>
Sustainability – Triple Bottom Line

- Environment
- Social
- Economy
GreenLITES Coordination

- Our goal is to integrate and align GreenLITES practices into our Planning, Design/Construction and Operations programs.
AASHTO Commitment

The Center for Environmental Excellence & AASHTO are ready to assist you in making the roads and transportation network and the environment “better than before” through inplace pavement recycling.

Wayne W. Kober
E-Mail: wkober@hughes.net
Phone: 717-502-0179
On Behalf of the Center for Environmental Excellence: Thank You!

Shannon Eggleston, Director
E-Mail: seggleston@ashto.org
Phone: (202) 624-3649

www.environment.transportation.org
And on behalf of NYSDOT: Thank You!

The complete **GreenLITES** document is located on our web site at:

https://www.nysdot.gov/programs/greenlites

Questions?
Sustainability / GreenLITES

Change Awareness
Change Attitudes
Change Policy
Change Practice
Change Results