



GreenLITES *Project Design Certification Program*

Recognizing Outstanding Leadership In Transportation and Environmental Sustainability

September 2008

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**Certification Program for NYSDOT Designs Meeting Criteria for Sustainable
Transportation Infrastructure using Environmentally Friendly Practices**

GreenLITES Project Design Certification Program
September 2008

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Background

The New York State Department of Transportation (NYSDOT) is committed to improving the quality of our transportation infrastructure in ways that minimize impacts to the environment, including the depletion of irreplaceable resources. To recognize transportation project designs that incorporate a high level of environmental sustainability, NYSDOT is implementing “**GreenLITES** (Leadership In Transportation and Environmental Sustainability),” a project rating program. The concept of “Green” certification is not new, as the building industry has used the [Leadership in Energy and Environmental Design \(LEED™\) rating system](#) since the mid 1990s to certify over 850 buildings worldwide. For transportation project design, no such program has been nationally implemented, although the University of Washington and CH2M Hill are creating a prototype nationwide road design and construction sustainability rating system called “[Green Roads](#).” Other Green Roads participants are Washington State DOT, TransNow and the State Pavement Technology Consortium. The [Green Highways Partnership](#) is also working, at a national level, to integrate transportation and ecological sustainability.

What is GreenLITES?

“Sustainability” is commonly understood to describe any human use of resources which does not exhaust those resources. As we improve safety and mobility in New York State, transportation sustainability at NYSDOT is a design philosophy that ensures we:

- Protect and enhance the environment.
- Conserve energy and natural resources.
- Preserve or enhance the historic, scenic, and aesthetic project setting characteristics.
- Encourage public involvement in the transportation planning process.
- Integrate smart growth and other sound land-use practices.
- Encourage new and innovative approaches to sustainable design.

These concepts are not new to the Department, which has been following many of these practices in one form or another for a number of years. NYSDOT developed the **GreenLITES** certification program to better integrate these principles by:

- 1) Recognizing and increasing the awareness of the sustainable methods and practices we already incorporate into our project designs.
- 2) Expanding the use of these and other innovative alternatives which will contribute to improving transportation sustainability.

It is also important to understand that sustainability is about balancing what is beneficial to people, while considering what is economically sound, and environmentally compatible. This may or may not necessarily increase project costs. Where project costs are increased, it may be warranted when all external costs are considered.

GreenLITES is a **self-certification program** that distinguishes transportation projects based on the extent to which they incorporate sustainable design choices. This is primarily an internal management program for NYSDOT to measure our performance, recognize good practices, and

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identify and improve where needed. However, it will also provide the Department with a way to demonstrate to the public how we are advancing sustainable practices. NYSDOT project designs will be evaluated for sustainable practices, and an appropriate certification level, based on the total credits received, will be assigned to each project. The rating system recognizes varying certification levels, with the highest level going to designs that clearly advance the state of sustainable transportation solutions.

NYSDOT will begin **GreenLITES** certification by evaluating projects with Plans, Specifications & Estimates (PS&E) submitted after September 25, 2008. This certification program builds on other environmental initiatives already begun by the Department and is the next step in a long-term commitment to evaluating and refining practices to encourage sustainable choices in project design. Initially, only projects with plan sheets will be evaluated; proposal-only maintenance, element specific, and standby projects will not be included in this program. However, as the program evolves, these and other Department practices may be included. The certification program is designed to be flexible. As new best practices emerge and new innovative approaches are developed, including maintenance and construction considerations, they will be added to the program. The rating system described in this document is for Design; points are assigned to projects which then get “certified” before they go to bid. The program is also intended to be a model for other Department sustainability initiatives, providing a benchmark to follow for incorporating greater levels of sustainability into our work.

Certification Categories and Objectives

GreenLITES certification categories are:

- 1) Sustainable Sites
- 2) Water Quality
- 3) Materials and Resources
- 4) Energy and Atmosphere
- 5) Innovation/Unlisted

Project design details are compared to objectives and credit descriptions in each **GreenLITES** category. Points are awarded and the project is scored according to its impact and contribution to advancing “the state of practice” in furthering sustainability. It is recognized that some sustainable design choices may be cost-prohibitive. Sustainable options considered must be carefully weighed with other competing project priorities using existing Department practices for alternative selection and Department performance goals. This way, an appropriate balance is achieved with available resources.

The following is a brief description of each category and a listing of the objectives that will be addressed by the project design in order to obtain credits toward **GreenLITES** certification. Appendix A contains a more complete and detailed description of the certification categories and associated credits. Note there is some overlap and synergy among these categories. Specific credits in the Appendix are placed only once, in the category that best describes their predominant benefit.

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Sustainable Sites (S)

This category focuses on the “setting” of Department projects. It also includes measures which can protect and enhance the landscape’s ability to regulate climate, provide cleaner air and water, and improve quality of life. This is consistent with Department policy to select the best available alternative based on program/project goals and objectives, public involvement, and overall sustainability. Subcategories are:

- ❖ Alignment Selection
- ❖ Context Sensitive Solutions
- ❖ Land Use/Community Planning
- ❖ Protect, Enhance, or Restore Wildlife Habitat
- ❖ Protect, Plant, or Mitigate for Removal of Trees and Plant Communities

Water Quality (W)

NYSDOT seeks to protect the State’s water bodies by improving water quality and reducing stormwater runoff. This can be achieved by treating stormwater runoff using various Best Management Practices (BMPs) and including designs that properly treat stormwater quality and quantity. Subcategories are:

- ❖ Stormwater management (volume and quality).
- ❖ Reduce runoff and associated pollutants by treating stormwater runoff through BMPs .

Materials and Resources (M)

This category is consistent with NYSDOT specifications that encourage reducing waste by reusing and recycling materials in beneficial ways. Local materials would be used to the greatest extent possible to minimize haul distances. Subcategories are:

- ❖ Reuse of Materials
- ❖ Recycled Content
- ❖ Locally Provided Material
- ❖ Bioengineering Techniques
- ❖ Hazardous Material Minimization

Energy and Atmosphere (E)

This category is consistent with the Department’s understanding of climate change impacts and our goals for energy conservation and efficiency. It also supports projects developed with air

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quality improvements, encourages car pooling, mass transit, and non-motorized transportation. Subcategories are:

- ❖ Improve Traffic Flow
- ❖ Reduce Electrical Consumption
- ❖ Reduce Petroleum Consumption
- ❖ Improve Bicycle and Pedestrian Facilities
- ❖ Noise Abatement
- ❖ Stray Light Reduction

Innovation/Unlisted (I)

This category is intended to give credit to designs that significantly build upon **GreenLITES** categories and objectives or incorporate significant innovations in transportation environmental sustainability that have not been previously utilized on NYSDOT projects.

Certification Levels

Depending on the cumulative score acquired by incorporating sustainable choices into the project design, one of the following **GreenLITES** certification levels may be assigned:



Certified: This certification highlights a project design that has incorporated a number of sustainable choices.



Silver: Silver certification highlights a project design that has incorporated a number of sustainable choices with several of these choices having a high level of impact, or having advanced the state of practice.



Gold: Gold certification highlights a project design that has incorporated a substantial number of sustainable choices with many of these choices having a high level of impact, or having advanced the state of practice.



Evergreen: Evergreen certification highlights a project design that has incorporated the highest number of sustainable choices with many of these choices having an extremely high level of impact. Additionally, these projects may advance the state of practice or are innovative in the way environmental sustainability is approached on the project.

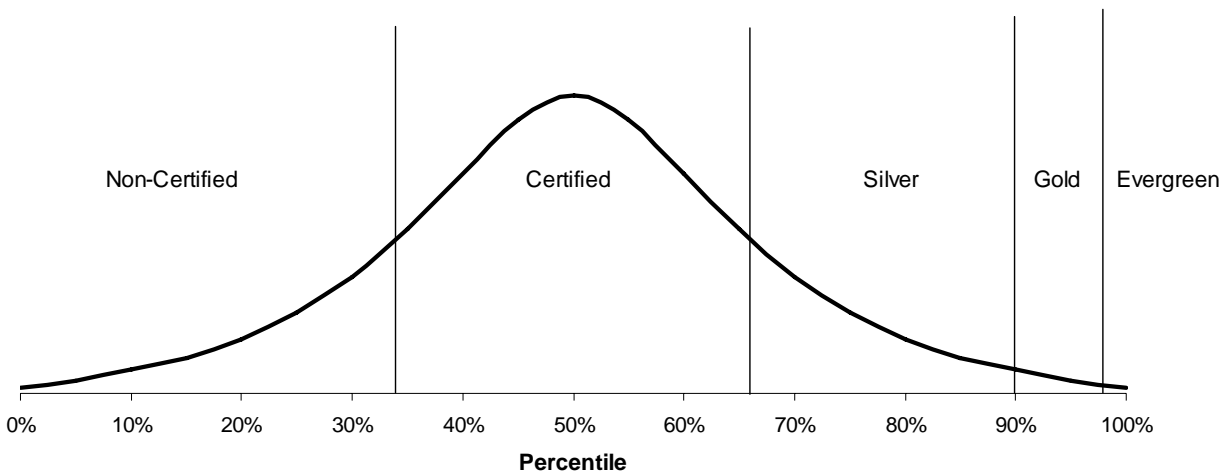
Appendix B contains a detailed checklist or “Scorecard” for calculating design project scores.

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Scoring Methodology

Depending on the level of sustainable choice inclusion, project designs may fall within one of these four certification levels. These levels are determined by the total number of points the project receives compared to the total points available for each certification level. In order to set a baseline, statistical thresholds were established for each certification level (by standard deviation from the mean). Certification levels were determined by dividing all project scores into thirds representing low, middle, and high levels of environmental sustainability. The lower third of all projects did not receive certification, the middle third are *Certified*, and the upper third were further subdivided into *Silver*, *Gold*, and *Evergreen*, with progressively increasing requirements for attainment to each successive level. Then 26 recently completed designs were rated so that realistic point quantities could be assigned to each award level (see table below). The intent is, after the **GreenLITES** program goes into full implementation using these established point thresholds, the bell curve shape representing the project distributions will start to skew to the right. This means more and more projects will score into higher and higher categories as projects are developed with more and more sustainable choices.

Proposed Initial Green LITES Award Distribution



Name	Point Range	Percentile Range	Approximate Std Dev Range	% of Dept Projects
Non-certified	0 – 14	< 33%	< -0.5σ	33%
Certified	15 – 29	33 – 67%	-0.5σ – 0.5σ	34%
Silver	30 – 44	67 – 90%	0.5σ – 1.5σ	23%
Gold	45 – 59	90 – 98%	1.5σ – 2.5σ	8%
Evergreen	60 & up	> 98%	> 2.5σ	2%

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Implementation

Applicability

Initially, all projects with plan sheets will be rated under the **GreenLITES** program. Regional Offices may optionally rate proposal-only projects; however, data from those projects will not be used for statistical purposes as it will likely skew the results.

Certification criteria for proposal-only element-specific, maintenance, and standby projects will be developed in the future. The certification criteria for these projects may be much narrower, reflecting the limited scope of work. Several hypothetical examples:

- The certification criteria for bridge painting projects could be based on the volatile organic compound content of the specified paint, the removal and disposal of existing lead-based paint, and the inclusion of a paint containment system.
- The certification criteria for guide rail replacement projects could be based on the 100% recycling/reusing of scrap steel.
- The certification for “mill-and-fill” paving projects could be based on the 100% recycling or reusing of asphalt millings.

Project Rating

Early within the project’s development, the Design Project Manager (Team Leader, Squad Leader, or Consultant Job Manager) and other project team members will evaluate how the project may implement the practice of sustainability. Project budget and competing regional needs will be an important consideration in determining appropriate sustainable solutions. At Design Approval, an informal preliminary evaluation using the **GreenLITES** scorecard will be carried out by the project team to determine progress towards achieving **GreenLITES** certification. A **GreenLITES** rating scorecard has been developed to simplify the rating process (see Appendix B) and will be available on the **GreenLITES** Web page.

Between Advanced Detailed Plans (ADP) and PS&E submission, a formal and final rating using the **GreenLITES** scorecard will be prepared for inclusion in the PS&E submission. This will be completed by the Design Project Manager and the Regional Environmental Contact. The rating team is encouraged to make use of the project Environmental Commitments and Obligations for Construction (ECOPAC), as this document will contain useful information needed to rate the project. Regional design staff will add the appropriate certification symbol to the plan cover sheet for certified and above projects (the symbols are located in the CADD sheet cell library).

The final project scorecard will become part of the PS&E, and the PS&E transmittal memo will be the conduit to provide scorecard data to the Chief Engineer’s Office. Designers must “cc” the Chief Engineer’s Office (Attn: Paul Krekeler, 50 Wolf Road, Albany, NY 12232 or pkrekeler@dot.state.ny.us.) on the PS&E Transmittal Memo and attach only the project **GreenLITES** scorecard. If extenuating circumstances prevent the completion of the final **GreenLITES** scoring at PS&E, this can be noted in the “incomplete items” section of the PS&E transmittal letter and completed prior to the advertisement of the project documents. Projects may not be advertised, and lettings may be delayed, without a completed project rating sheet. The submittal of **GreenLITES** scoring at PS&E submission will eventually be formalized through

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revisions to Chapter 21 and Appendix 21D of the Highway Design Manual.

Projects attaining the Gold or Evergreen certification level or having points in the innovation or unlisted category will require a post-PS&E review by a Main Office review team to confirm certification level attainment. This four-person team will be comprised of the **GreenLITES** Project Manager, who will lead the team, and representatives from the Office of Environment, the Office of Design, and the Delivery Division. If the review team does not agree with the Gold or Evergreen certification level, the team will contact the Project Manager to seek clarification on how the original score was derived and to discuss the discrepancy. If this discussion does not result in the concurrence of the Gold or Evergreen certification level, the review team will officially notify the region of the decision. A Regional Director can appeal this decision to the Chief Engineer.

Internal Recognition

The Engineering Division will issue a **GreenLITES** certificate to the region shortly after the PS&E is submitted for Certified, Silver, Gold, and Evergreen level projects. Additionally, in an annual celebration to commemorate Earth Day, a representative from the Commissioner's Office will present award plaques made of environmentally friendly materials to the appropriate Regional Directors for projects attaining the Gold or Evergreen certification level in the previous year.

Publishing Results

The Engineering Division will maintain a database of **GreenLITES** results and will prepare an annual report to the Commissioner on or before March 15. On Earth Day (April 22), the Office of Communications will issue a press release highlighting the program results and announcing the complete report availability on the Web at NYSDOT.gov. The Engineering Division will maintain an external **GreenLITES** Web page highlighting the program's purpose and accomplishments. This schedule will allow approximately four months from the last PS&E in the calendar year until the report's release on April 22. Since this is the first year of **GreenLITES**, some regions may want to rate a recently constructed project, or a project currently in construction of which they are particularly proud. We will let each region select one such project, rate it, and publicize it, but this project will not be included in the baseline statistics.

Performance Indicators and Program Goals

The Engineering Division will establish **GreenLITES** performance measurements, collect data from **GreenLITES** rating forms, and provide performance measurement statistics to appropriate NYSDOT managers. Projects will be rated for one year to develop a **GreenLITES** performance baseline. After the first year, with a baseline established, annual **GreenLITES** performance goals will be set by the Commissioner, the Chief Engineer, and the Delivery Division Director. The Engineering Division will develop and maintain a **GreenLITES** IntraDOT Web page that provides background and statistical information on the program.

Quality Assurance and Policy Updates

The Engineering Division will maintain the **GreenLITES** Project Design Certification Program document, will revise rating procedures as necessary, and will conduct random checks on **GreenLITES** certified projects as a quality assurance measure.

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APPENDIX A

Detailed Certification Category and Credit Descriptions

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Sustainable Sites (S)

This category is intended to give credit for designs that improve sustainability by reducing impacts to the environment due to effective roadway alignment selection, the integration of smart growth practices, and sound land use practices.

S-1: Alignment Selection

“Alignment” in this subcategory considers the horizontal and vertical roadway alignment center line and the general location of all cross-sectional features in the project foot print (e.g., shoulder, ditch, slopes, right-of-way). The objective is to reduce impacts due to highway project alignment selection, for both new projects and for alignment adjustments, such as shoulder and ditch realignments. In evaluating this category, consideration will be given to what was possible given the particular project’s scale and context; choices made during alignment selection, both on the macro and micro level, can have a substantial effect on wetlands, forest preservation, historic resources, avoidance of impacts to open spaces, and other environmental issues.

- Two points will be awarded to project designs that include alignment selection decisions above and beyond typical considerations. Specifically:
 - a) Avoidance of previously undeveloped lands (open spaces or “greenfields”).
 - b) Selecting an alignment that establishes a minimum 100-foot buffer zone between the edge of pavement and a natural watercourse or significantly sized natural wetland to serve the purpose of stormwater filtration.
 - c) Alignments which minimize overall construction “footprint” to avoid or minimize the introduction of new areas requiring mowing.

- One point will be awarded to project designs that incorporate other alignment selection decisions that support the goals of this objective and which minimize overall construction footprint and reduce the creation of new areas requiring mowing. Specifically:
 - d) Minimize total earthwork by matching proposed vertical alignments as closely as possible to existing grades.
 - e) Adjust alignment to avoid or minimize impacts to social/environmental resources (avoidance of parklands, wetlands, historic sites, farmlands, residential and commercial buildings, etc.).
 - f) Alignments that optimize benefits among competing constraints (the goal is not always the minimum-length alignment, but the one with the best benefit overall.).
 - g) Micro-adjustments that do not compromise safety or operation but that might make the difference in providing sufficient clear area for tree planting.
 - h) Clear zones seeded with seed mixtures that help to reduce maintenance needs and increase carbon sequestration.
 - i) Provide depressed roadway alignment.

S-2: Context Sensitive Solutions

The objective is to design a project that is in harmony with the community, and preserves the environmental, scenic, aesthetic, historic, and project site natural resource values.

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- Two points will be awarded for project designs that consider the project context above and beyond typical considerations. Included measures should be more about overall geometry, proportion, and functionality rather than the inclusion of add-on aesthetic embellishments. Specifically:
 - a) Adjust or incorporate highway features to respond to the unique character or sense of place (both natural and built) of the area (“Unique character” means whatever identifiable elements make a place distinctive, memorable, important to the community, etc. – landmarks, views, characteristic use of materials, a notable stand of trees, etc.).
 - b) Incorporate local or natural materials for substantial visual elements (e.g., bridge fascia, retaining walls).
 - c) Visual enhancements (screening objectionable views, or enhancing scenic views).

- One point will be awarded for project designs that include other context sensitive solutions. Specifically:
 - d) Period street furniture/lighting/appurtenances.
 - e) Inclusion of visually-contrasting pedestrian crosswalk treatments.
 - f) Planting of native species.
 - g) Follows the [NYS Bridge Manual, Chapter 23 - Aesthetics](#).
 - h) Site materials selection and detailing that reduces the overall urban “heat island” effect.
 - i) Permanently protect the viewshed through an environmental or conservation easement.

S-3: Land Use/Community Planning

The objective is to balance community and transportation needs through increased public participation throughout project development.

- Two points will be awarded for development of projects that include public, private or unique stakeholder involvement beyond NEPA/SEQRA and other required outreach. Specifically:
 - a) Use of more engaging public participation techniques (e.g., charettes, task forces).
 - b) Enhanced outreach efforts (e.g., newsletters, project-specific Web page).
 - c) Projects promoting use of public transit (e.g. “Park-and-Ride”).
 - d) Projects that apply “[Walkable Communities](#)” and/or “[Complete Streets](#)” concepts.
 - e) Projects that increase transportation efficiencies for moving freight through features such as dedicated rail or intermodal facilities or the use of unit trains to remove trucks from highways and conserve fuel.
 - f) Public/Private partnerships that provide environmental or technological advancement or financial assistance to the agency.
 - g) Project is consistent with regional plans (beyond those generated by the MPO) and local Smart Growth-based Master/Comprehensive plans. Examples are Local

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Waterfront Revitalization Plans, Local Greenway Plans, and the Scenic Byway program.

- One point will be awarded for development of projects that include more traditional land use and community planning outreach. Specifically:
 - h) Project reports and community outreach materials available online.
 - i) Project reports and community outreach materials made available in multiple languages.

S-4: Protect, Enhance or Restore Wildlife Habitat

The objective is to design projects that protect, enhance, or restore the natural habitat for fish and/or wildlife.

- Three points will be awarded for project designs that include major efforts to protect, enhance, or restore wildlife habitat. Specifically:
 - a) Mitigation of habitat fragmentation through use of significant techniques such as creation of dedicated “eco viaducts.” (Raised roadways that serve to avoid impacts to ecologically important areas such as rare plant communities, diminishing habitats and wildlife migration corridors.)
- Two points will be awarded for project designs that protect, enhance or restore wildlife habitat in a way that extends beyond required measures. Specifically:
 - b) Providing for enhancements to existing wildlife habitat (e.g. bird and bat houses, nesting boxes, osprey poles, turtle nesting areas, and avoiding piping plover habitat).
 - c) Partial mitigation of habitat fragmentation through techniques (United States Army Corp of Engineers (USACE) regional conditions) such as over-sizing culverts to accommodate aquatic and non-aquatic species passage.
 - d) Use of natural-bottomed culverts.
 - e) Wildlife crossings that are structures that allow for the safe passage of wildlife across highways without their crossing directly on the roadway. Examples include wildlife overpass/underpass and amphibian tunnels.
 - f) Wetland restoration, enhancement, or establishment that is above and beyond what is required to obtain a wetland-related permit.
- One point will be awarded for project designs that protect, enhance or restore wildlife habitat. Specifically:
 - g) Minimize use of lands that are part of a significant contiguous wildlife habitat.
 - h) Right-of-way fence, deer reflectors, moose signs, etc.
 - i) Wetland restoration, enhancement, or establishment that is required to obtain a wetland-related permit.
 - j) Provide mitigation required by permit to offset wetland impacts due to construction.

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- k) Stream restoration/enhancement.
- l) Installation of mowing markers to protect natural areas and wetlands.
- m) Inclusion of scheduling and logistic requirements to avoid disrupting wildlife nesting or breeding activities
- n) Permanently protects the new or expanded habitat through an environmental or conservation easement.

S-5: Protect, Plant or Mitigate for Removal of Trees and Plant Communities

The objective is to improve carbon sequestration and enhance the visual and natural environment by protecting, planting, or replacing trees and plant communities on NYSDOT projects. The emphasis is on achieving the optimum balance of species and preserving self-sustaining functioning landscapes, while meeting safety requirements and operational capabilities. Evaluation in this category will take into account variations in the range of opportunities and possible tools inherent to the particular project's context. For instance, in some constrained urban areas, it may only be possible to plant street trees. Other settings might allow preservation, extension, or new establishment of a more complete and self-sustaining community of overstory, understory, shrub, and forest floor. (See the [International Society of Arboriculture Mitigation Recommendations](#) on Tree Ordinance Guidelines for a good discussion of preservation/mitigation.) Evaluation will consider the degree to which the inherent potential of the site is creatively realized.

- Two points will be awarded for project designs that include measures to protect non-hazardous trees and native plant communities and plant/replace vegetation in a way that extends well beyond typical practices. Specifically:
 - a) Avoidance/protection of significant contiguous stands of established, desirable trees and/or vegetation communities, especially those which show signs of self-regeneration.
 - b) Designs which demonstrate, through a combination of preservation and new planting, an anticipated ultimate (new trees at projected maturity) net increase in tree canopy cover within the project limits.
 - c) Re-establishment or expansion of native vegetation into reclaimed work areas or abandoned roadway alignments. (e.g. native seed mixes, "re-forestation" approach with multiple seedlings rather than traditional large nursery stock, etc.)
 - d) Use of trees, large shrubs or other suitable vegetation (beach rose, honeysuckle & shrub willows) as living snow fences.
 - e) Use of native species for seed mixes and other plantings.
- One point will be awarded for project designs that protect, enhance or restore trees and natural plant communities. Specifically:
 - f) Avoidance/protection of individual significant trees and localized areas of established, desirable vegetation.
 - g) Designs which demonstrate, through a combination of preservation and new planting, no ultimate (new trees at projected maturity) net loss of tree canopy within the project limits (minimum one-to-one replacement of trees lost) or, if

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overall available planting area has been reduced, mitigation with trees to the extent possible (either on or off-site) for trees lost.

- h) Planting trees, shrubs and/or plant material in lieu of traditional turf grass.
- i) Removal of undesirable plant species, in particular removal/burial of invasive species, to preserve desirable overall species diversity.
- j) Preserving, replacing, or enhancing vegetation associated with historic properties or districts, or which maintain the character of unique areas.

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Water Quality (W)

W-1: Stormwater Management (Volume and Quality)

The objectives are to reduce thermal impacts and to reduce the quantities of pollutants in typical highway runoff that are discharged into adjacent water resources. These pollutants include sediment, oil and grease, chemicals such as deicing salts and pesticides, litter and trash, and metals.

- Two points will be awarded for project designs that include measures to mitigate stormwater pollution above and beyond [State Pollutant Discharge Elimination System](#) (SPDES) requirements, provided that the design is approved by the NYS Department of Environmental Conservation. Specifically:
 - a) Improve water quality and/or nearby habitat through the use of stormwater retrofitting, stormwater crediting strategies, stream restoration, additional wetlands protection, and inclusion of permanent stormwater management practices.
 - b) Detecting and eliminating any non-stormwater discharges from unpermitted sanitary or other residential, commercial or industrial sources that enter the right-of-way or flows that ultimately discharge to the right-of-way.
 - c) Demonstrate, through the use of models, a reduction of pollutant loadings to adjacent water resources by the use of best management practices.
 - d) Reducing the existing impervious area.

- One point will be awarded for project designs that meet SPDES requirements, and include standard stormwater pollution mitigation practices. Specifically:
 - e) Project designs that include sound erosion and sediment control practices.
 - f) Requirements for staged construction so that less than five acres of bare soil are exposed at any given time and site runoff is controlled.
 - g) Detecting non-stormwater discharges from unpermitted sanitary or other residential, commercial or industrial sources that enter the right-of-way or flows that ultimately discharge to the right-of-way but which cannot be eliminated for reasons beyond our control.

W-2: Best Management Practices (BMPs)

The objective is to reduce runoff and associated pollutants to adjacent water resources by allowing infiltration of surface water, filtration of pollutants, or other methods to treat stormwater runoff.

- Two points will be awarded for incorporating best practices known to reduce pollutant loadings above and beyond requirements. Specifically:
 - a) Design features that make use of highly permeable soils to remove surface pollutants from runoff through infiltration trenches or basins, bioretention cells or

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rain gardens, grass buffers and stormwater wetlands that treat water quality and water quantity requirements in accordance with NYSDOT Highway Design Manual Chapter 8, Appendix B, subsections 2.3.2 and 2.3.3.

- b) Use of other structural BMPs including wet or dry swales, sand filters, stormwater treatment systems (e.g., oil/grit separators and hydrodynamic devices), underground detention systems or catch basin inserts.
 - c) Inclusion of “permeable pavement” such as grid pavers if practical within project boundaries.
- One point will be awarded for project designs that include standard practices to utilize permeable areas. Specifically:
 - d) Minimizing the increase in impervious area due to the project.
 - e) Including grass channels, where appropriate.

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Materials and Resources (M)

M-1: Reuse of Materials

The objective is to reduce haul distances and consumption of natural resources through effective reuse of on-site and local materials.

- Two points will be awarded for project designs that reuse project materials above and beyond typical practices. Specifically:
 - a) Specify that 75% or more of topsoil removed for grading is reused on site.
 - b) Design the project so that “cut-and-fills” are balanced to within 10 percent.
 - c) Reuse of excess fill (“spoil”) within the project corridor to minimize project site material in and material out.
 - d) Specify rubblizing or crack and seating of Portland Cement Concrete pavement.
 - e) Reuse of previous pavement as subbase during full-depth reconstruction projects.
 - f) Arranging for the reuse of excess excavated material, asphalt pavement millings, or demolished concrete by another municipality or state agency.
 - g) Specify the processing of demolished concrete to reclaim scrap metals and to create a usable aggregate material.
 - h) Salvaging removed trees for lumber or similar uses other than standard wood-chipping (e.g. - milling valuable heartwood from ash trees whose outer wood was infected by ash borers, necessitating removal).

- Two points will be awarded for project designs in environmentally sensitive areas, such as the Adirondack or Catskill Park, that reuse project materials above and beyond typical practices. Specifically:
 - i) Use surplus excavated material on nearby state highways for slope flattening to eliminate guide rail or as fill in areas designated by Park officials as acceptable for spoil disposal.
 - j) Use surplus excavated material, demolished concrete, or millings at nearby abandoned quarries to help fulfill an approved DEC reclamation plan.

- One point will be awarded for project designs that incorporate lower levels of material reuse, where practical. Specifically:
 - k) Specify that 50% or more of topsoil removed for grading is reused on site.
 - l) Design the project so that cut and fills are balanced to within 25 percent.
 - m) Reuse (i.e., remove and reset versus remove and replace) of granite curbing.
 - n) Reuse of stone veneer or other elements of the previous structure (decorative railing, etc.).
 - o) Designing an on-site location for chipped wood waste disposal from clearing and grubbing operations.
 - p) Specifying the recycling of chipped untreated wood waste for use as mulch and/or ground cover. (Pressure- or preservative-treated, and painted or coated wood cannot be used as mulch and must be disposed properly.)

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- q) Project documents make scrap metals available for reuse or recycling.
- r) Identify approved, environmentally acceptable and permitted sites in the contract documents for the disposal of surplus excavated material.
- s) Obtain and implement a project specific DEC Beneficial Use Determination for the innovative re-use of otherwise waste material from a location within the New York State
- t) Specify the salvage and/or moving of houses rather than demolition for disposal in landfills.

M-2: Recycled Content

The objective is to find effective uses for recycled materials.

- Two points will be awarded for project designs that:
 - a) Use tire shreds in embankments.
 - b) Use recycled plastic extruded lumber or recycled tire rubber (e.g., noise barriers).
 - c) Specify hot-in-place or cold-in-place recycling of hot mix asphalt pavements.
 - d) Specify the use of recycled glass in pavements, as drainage material or filter media where adequate local sources can be obtained.
 - e) Specify asphalt pavement mixes containing Recycled Asphalt Pavement (RAP).
 - f) Specify Portland cement pavement mixes containing Recycled Concrete Aggregate (RCA).
 - g) Use crumb rubber or recycled plastic for noise barrier material.

M-3: Locally Provided Material

The objective is to reduce the transportation of materials not available on site by using locally provided materials.

- Two points will be awarded for project designs that:
 - a) Specify locally available natural light weight fill. Contact Geotechnical staff to help in locating these materials.
 - b) Specify local seed stock and plants.

M-4: Bioengineering Techniques

The objective is to increase the use of soil bioengineering to reduce the amount of heavy stone fill mined and transported to the site, reduce the amount of runoff and erosion from the site, and to increase the amount of carbon sequestration. Specifically:

- Two points will be awarded for:
 - a) Project designs that utilize soil bioengineering treatments (the reliance on plant

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material for slope protection, rebuilding, stabilization, and erosion control) along water bodies/wetlands.

- b) Project designs that utilize soil biotechnical engineering treatments (combination of plant materials and structural elements to achieve slope protection, rebuilding, stabilization, and erosion control) along water bodies/wetlands. Examples are: vegetated crib wall, vegetated gabion, and vegetated mats.
 - c) Projects that use targeted biological control methods to reduce invasive species, such as the release of specific types of beetles to control purple loosestrife.
- One point will be awarded for:
 - d) Project designs that utilize soil biotechnical engineering treatments (combination of plant materials and structural elements to achieve slope protection, rebuilding, stabilization, and erosion control) NOT along water bodies/wetlands. Examples are: vegetated crib wall, vegetated gabions, vegetated Geosynthetic Reinforced Earth Systems (GRES), vegetated geocells, and vegetated mats.
 - e) Project designs that utilize soil bioengineering treatments or soil biotechnical engineering treatments in upland areas.

M-5: Hazardous Material Minimization

The primary objective is to reduce the degree of hazards present in the materials specified for the project. A secondary objective is to identify, remove, and properly dispose of hazardous materials identified on the project site. The design also minimizes worker exposure to toxic chemicals.

- Two points will be awarded for project designs that consider the lifetime minimization of hazardous material use, emissions, and releases through abrasion or leaching over the long term construction, maintenance and rehabilitation needs of the facility. Specifically:
 - a) Project design substantially minimizes the need to use hazardous materials to maintain the bridge or highway, or increases the interval before re-construction must be performed using hazardous or toxic materials. The project design improves durability of components that contain hazardous substances.
- Two points will be awarded for project designs that include practices that reduce environmental impacts from materials typically used in transportation construction. Specifically:
 - b) Project design specifies less hazardous materials or avoids generating contaminated wastes by:
 - Reducing the volatile organic compounds (VOCs) or hazardous air pollutants (HAPs) emitted during project construction (e.g., non-solvent traffic or bridge paints, lower VOC / nonhazardous air pollutant bridge deck sealers)

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- Eliminating or reducing toxic metals or other toxic components.
- Two points will be awarded for identifying, removing, and disposing of materials that can cause widespread groundwater pollution:
 - c) Removing and disposing of contaminated soils beyond what is necessary for project construction.
- One point will be awarded for identifying, removing, and disposing of materials that can cause localized hazards:
 - d) Removing and disposing of contaminated soils, lead based paints, asbestos, tanks containing hazardous contents as necessary for project construction.

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Energy and Atmosphere (E)

E-1: Improve Traffic Flow

The objective is to reduce petroleum consumption and air emissions by improving traffic flow.

- Three points will be awarded for project designs that substantially improve traffic flow. Specifically:
 - a) Special use lane (HOV/Reversible/Bus Express).
 - b) Innovative interchange design (diverging diamond, single point urban, etc.)
 - c) Roundabout.
 - d) Implementation of a robust Traffic Management Center operation.

- Two points will be awarded for project designs that improve traffic flow above and beyond typical measures. Specifically:
 - e) Installation of a closed-loop coordinated signal system.
 - f) Installation of a transit express system(s) (queue jumper, pre-emptive signals, etc.).
 - g) Expansion of a Traffic Management Center operation.

- One point will be awarded for project designs that improve traffic flow using standard practices. Specifically:
 - h) Limiting/consolidating access points along highway.
 - i) Improving a coordinated signal system and other signal timing and detection systems.
 - j) Bus turnouts.

E-2: Reduce Electrical Consumption

The objective is to reduce the project's electrical consumption.

- Two points will be awarded for project designs that reduce electrical consumption above and beyond typical measures. Specifically:
 - a) Solar/battery powered street lighting or warning signs.
 - b) Retrofit existing street/sign lighting with high efficiency types.
 - c) Use of LED street lighting.
 - d) Solar bus stops.

- One point will be awarded for project designs that include more traditional practices to reduce electrical consumption. Specifically:
 - e) Use of LED traffic signals.

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E-3: Reduce Petroleum Consumption

The objective is to design projects that reduce the consumption of petroleum for transportation.

- Three points will be awarded to project designs that substantially reduce petroleum consumption. Specifically:
 - a) Provide new Park & Ride lots.
 - b) Provide new intermodal connections.
- Two points will be awarded for project designs that reduce the consumption of petroleum above and beyond typical measures. Specifically:
 - c) Increase bicycle amenities at Park & Rides and transit stations (bike lockers/shelters, Web-based reservations system for lockers, providing showers or partnering with health clubs for these services).
 - d) Incorporate ITS technology to improve traffic flow.
- One point will be awarded for project designs that include more traditional practices to reduce petroleum consumption. Specifically:
 - e) Operational improvements of an existing Park & Ride lot.
 - f) Improve an existing intermodal connection.
 - g) Reduce mowing areas outside of the clear zone, reestablishing natural ground cover and/or seeding with low maintenance seed species.
 - h) Use of warm mix asphalt.
 - i) Documented analysis proving the project design reduces the Department's carbon footprint.
 - j) Documented analysis proving the MPT scheme chosen is the alternative that overall requires the least amount of petroleum.
 - k) Improved shading through vegetation at Park & Ride lots to cut down on heat island effect and the use of automotive air conditioning by waiting motorists.

E-4: Improve Bicycle and Pedestrian Facilities

The objective is to establish or improve bicycle and pedestrian facilities that are likely to be used primarily for transportation or that are otherwise likely to result in a modal shift from motorized means. (Can include recreational uses where that use might otherwise reduce motorized means.)

- Three points will be awarded for project designs that establish significant bicycle and pedestrian facilities. Specifically:
 - a) New grade-separated (bridge or underpass) bike/pedestrian crossing structure.
- Two points will be awarded for project designs that create or improve bicycle and pedestrian facilities and connectivity above and beyond typical measures. Specifically:
 - b) Separate bike lane at intersection.
 - c) Shoulder widening to provide for an on-road bike lane or new separated bicycle

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- pathway.
 - d) New or extended sidewalks.
 - e) New pedestrian signals.
 - f) Aligning the roadway and other highway features and structures within the ROW as to enable the development of separated multi-use paths or other facilities (bicycle/pedestrian) in the future.
 - g) Work with local communities to create parallel bike routes where state roads are not suitable for less experienced cyclists.
- One point will be awarded for project designs that include more traditional measures to improve bicycle and pedestrian facilities. Specifically:
 - h) Sidewalk or bikeway rehabilitation or widening
 - i) Upgrading pedestrian signals, inclusion of pedestrian buttons.
 - j) Installation of bikeway signs.
 - k) Shoulder restoration for bicycling.
 - l) Inclusion of five-rail bridge rail system for bicyclists.
 - m) Installation of bicycle racks.
 - n) New crosswalks.
 - o) Curb bulb-outs and pedestrian refuge islands.

E-5: Noise Abatement

The objective is to reduce noise impacts in developed areas through effective noise abatement.

- Two points will be awarded for project designs that include measures to reduce noise levels. Specifically:
 - a) Construction of a new noise barrier.
 - b) Incorporate traffic system management techniques to reduce prior noise levels (e.g. use of truck routes, progressive traffic signals, lowering speeds).
 - c) Provide a buffer zone for adjacent receptors.
 - d) Provide sound insulation to public schools.
- One point will be awarded for project designs that include more traditional noise abatement practices. Specifically:
 - e) Diamond grinding of existing Portland Cement Concrete (PCC) pavement.
 - f) Rehabilitation of an existing noise wall.
 - g) Berms designed to reduce noise.
- One point will be awarded for project designs that improve community acceptance of highway noise. Specifically:
 - h) Provide planting to improve perceived noise impacts.

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E-6: Stray Light Reduction

The objective is to reduce stray light.

- Two points will be awarded for project designs that reduce stray light above and beyond typical measures. Specifically:
 - a) Retrofit existing light heads with full cut-offs
 - b) Increase retro-reflectivity of signs to eliminate need for spot lighting.

- One point will be awarded for project designs that include more traditional stray light reduction practices. Specifically:
 - c) Use cut-offs on new light heads.

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Innovation/Unlisted (I)

The objective is to give credit to designs that significantly build upon **GreenLITES** categories and objectives or that incorporate significant innovations in transportation environmental sustainability that have not been previously utilized on NYSDOT projects.

I- 1: Innovation

- Up to Four points will be awarded for each:
 - a) Item or method that incorporates new and/or innovative ways to provide a more environmentally, economically and/or sustainable transportation system. Points awarded in this category are subject to review by the **GreenLITES** Review Team.

I-2: Unlisted

- Up to two points will be awarded for each:
 - a) Item or method which might contribute to a more sustainable transportation system but not specifically listed in this document. Points awarded in this category are subject to review by the **GreenLITES** Review Team.

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APPENDIX B

GreenLITES Scorecard

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GreenLITES Project Environmental Sustainability Rating System Scorecard					
CATEGORY	ID	DESCRIPTION	POINTS		
			Available	Scored	
Sustainable Sites (S)	S-1 <i>Alignment Selection</i>	S-1a	Avoidance of previously undeveloped lands (open spaces or greenfields).	2	
		S-1b	Alignment establishes 100' buffer between highway & natural watercourse/wetland.	2	
		S-1c	Alignment which minimizes overall construction "footprint" to avoid or minimize the introduction of new areas requiring mowing.	2	
		S-1d	Minimize total earthwork by matching proposed vertical alignments as closely as possible to existing grades.	1	
		S-1e	Adjust alignment to avoid/minimize impacts to social/environmental resources.	1	
		S-1f	Alignments that optimize benefits among competing constraints.	1	
		S-1g	Micro-adjustments which do not compromise safety or operation but which might make the difference in providing sufficient clear area for tree planting.	1	
		S-1h	Clear zones seeded with seed mixtures that help to reduce maintenance needs and increase carbon sequestration.	1	
		S-1i	Provide depressed roadway alignment.	1	
	S-2 <i>Context Sensitive Solutions</i>	S-2a	Adjust highway features to respond to the area's unique character.	2	
		S-2b	Incorporate local or natural materials for substantial visual elements.	2	
		S-2c	Visual enhancements (screen objectionable views, enhance scenic views).	2	
		S-2d	Period street furniture/lighting/appurtenances.	1	
		S-2e	Inclusion of visually-contrasting pedestrian crosswalk treatments.	1	
		S-2f	Planting of native species.	1	
		S-2g	Follows the Bridge Aesthetics Manual.	1	
		S-2h	Material selection & detailing that reduces overall urban "heat island" effect.	1	
		S-2i	Permanently protect viewshed through environmental/conservation easement.	1	
	S-3 <i>Land Use/Community Planning</i>	S-3a	Use of more engaging public participation techniques (charette, task force, etc).	2	
		S-3b	Enhanced outreach efforts (e.g. newsletters, project-specific Web page).	2	
		S-3c	Projects promoting use of public transit (e.g. "Park-and-Ride").	2	
		S-3d	Project applies "Walkable Communities"/"Complete Streets" concepts.	2	
		S-3e	Projects that increase transportation efficiencies for moving freight through features such as dedicated rail or intermodal facilities or the use of unit trains to remove trucks from highways and conserve fuel.	2	
		S-3f	Public/Private partnerships that provide environmental or technological advancement or financial assistance to the agency.	2	
		S-3g	Project is consistent with regional plans (beyond those generated by the MPO) and local Smart Growth-based Master/Comprehensive plans.	2	
		S-3h	Project reports and community outreach materials available online.	1	
		S-3i	Project reports and community outreach materials in multiple languages.	1	
	S-4 <i>Protect, Enhance or Restore Wildlife Habitat</i>	S-4a	Mitigation of habitat fragmentation through significant techniques such as creation of dedicated "eco viaducts."	3	
		S-4b	Provide enhancements to existing wildlife habitat (bird/bat houses, etc).	2	
		S-4c	Partial mitigation of habitat fragmentation through over-sizing culverts.	2	
		S-4d	Use of natural-bottomed culverts.	2	
		S-4e	Wildlife crossings that allow for the safe passage of wildlife across highways	2	

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GreenLITES Project Environmental Sustainability Rating System Scorecard					
CATEGORY	ID	DESCRIPTION	POINTS		
			Available	Scored	
	S-4f	Wetland restoration, enhancement or establishment above what is required to obtain a wetland-related permit.	2		
	S-4g	Minimize use of lands that are part of a significant contiguous wildlife habitat.	1		
	S-4h	ROW fence, deer reflectors, moose signs, etc.	1		
	S-4i	Wetland restoration, enhancement or establishment.	1		
	S-4j	Provide additional mitigation to offset wetland impacts due to construction.	1		
	S-4k	Stream restoration/enhancement.	1		
	S-4l	Installation of mowing markers to protect natural areas and wetlands.	1		
	S-4m	Inclusion of scheduling and logistic requirements to avoid disrupting wildlife nesting or breeding activities.	1		
	S-4n	Protect new or expanded habitat with environmental/conservation easement.	1		
	<i>S-5 Protect, Plant or Mitigate for Removal of Trees and Plant Communities</i>	S-5a	Avoidance/protection of significant contiguous stands of established, desirable trees and/or vegetation communities.	2	
		S-5b	Designs which demonstrate, through a combination of preservation and new planting, an anticipated ultimate net increase in tree canopy.	2	
		S-5c	Re-establish/expand native vegetation in reclaimed work areas or abandoned old alignments.	2	
		S-5d	Use of living snow fences (beach rose, honeysuckle & shrub willows).	2	
		S-5e	Use of native species for seed mixes and other plantings.	2	
		S-5f	Avoidance/protection of individual significant trees and localized areas of established, desirable vegetation.	1	
		S-5g	Designs which demonstrate no ultimate net tree canopy loss within the project limits or mitigation with trees either on or off-site for trees lost.	1	
		S-5h	Planting trees, shrubs and/or plant material in lieu of traditional turfgrass.	1	
		S-5i	Removal of undesirable plant species, removal/burial of invasive species.	1	
		S-5j	Preserving, replacing, or enhancing vegetation associated with historic properties or districts, or which maintain the character of unique areas.	1	
Water Quality (W)	<i>W-1 Stormwater Management (Volume & Quality)</i>	W-1a	Improve water quality and/or nearby habitat through stormwater retrofits, crediting strategies, stream restoration, added wetlands protection, etc.	2	
		W-1b	Detect & eliminate any non-stormwater discharges from unpermitted sanitary or other residential, commercial or industrial sources.	2	
		W-1c	Demonstrate, through the use of models, reduction of pollutant loadings to adjacent water resources by the use of Best Management Practices.	2	
		W-1d	Reducing the existing impervious area.	2	
		W-1e	Design includes sound erosion & sediment control practices.	1	
		W-1f	Req's for stage construction so <5 acres of bare soil exposed at any time.	1	
		W-1g	Detect non-stormwater discharges from unpermitted sanitary or other residential, commercial or industrial sources that enter the right-of-way or flows that ultimately discharge to the right-of-way but which cannot be eliminated for reasons beyond our control.	1	
	<i>W-2 Best Management Practices</i>	W-2a	Use of highly permeable soils to remove surface pollutants from runoff.	2	
W-2b		Use of other structural Best Management Practices including wet or dry swales, sand filters, stormwater treatment systems.	2		
W-2c		Inclusion of "permeable pavement" such as grid pavers (if practical).	2		

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GreenLITES Project Environmental Sustainability Rating System Scorecard					
CATEGORY	ID	DESCRIPTION	POINTS		
			Available	Scored	
<i>(BMPs)</i>	W-2d	Minimizing the increase in impervious area due to the project.	1		
	W-2e	Including grass channels, where appropriate.	1		
Materials & Resources (M)	<i>M-1 Reuse of Materials</i>	M-1a	Specify that 75% or more of topsoil removed for grading is reused on site.	2	
		M-1b	Cuts and fills balanced to within 10 percent.	2	
		M-1c	Reuse spoil within project corridor to minimize material in and out of site.	2	
		M-1d	Specify rubblizing or crack and seating of Portland Cement Concrete pavement.	2	
		M-1e	Reuse of previous pavement as subbase for full-depth reconstruction projects.	2	
		M-1f	Arranging for the reuse of excess excavated material, asphalt pavement millings, or demolished concrete by another municipality or state agency.	2	
		M-1g	Specify the processing of demolished concrete to reclaim scrap metals and to create a usable aggregate material.	2	
		M-1h	Salvaging removed trees for lumber or uses other than standard wood-chipping.	2	
		M-1i	Use surplus excavated material on nearby state highways for slope flattening to eliminate guide rail or as fill in areas designated by Park officials as acceptable for spoil disposal.	2	
		M-1j	Use surplus excavated material, demolished concrete, or millings at nearby abandoned quarries to help fulfill an approved DEC reclamation plan.	2	
		M-1k	Specify that 50% or more of topsoil removed for grading is reused on site.	1	
		M-1l	Design the project so that "cut-and-fills" are balanced to within 25 percent.	1	
		M-1m	Reuse (i.e. remove and reset versus remove and replace) of granite curbing.	1	
		M-1n	Reuse of stone veneer or other elements of the previous structure.	1	
		M-1o	Design on-site location for chipped wood waste disposal from clearing & grubbing.	1	
		M-1p	Specifying the recycling of chipped untreated wood waste for use as mulch and/or ground cover.	1	
		M-1q	Project documents make scrap metals available for reuse or recycling.	1	
		M-1r	Identify approved, environmentally acceptable and permitted sites in the contract documents for the disposal of surplus excavated material.	1	
		M-1s	Obtain and implement a project specific DEC Beneficial Use Determination for the innovative re-use of waste material from a location within NYS.	1	
		M-1t	Specify the salvage/moving of houses rather than demolition & landfill disposal.	1	
<i>M-2 Recycled Content</i>	M-2a	Include tire shreds in embankments.	2		
	M-2b	Use of recycled plastic extruded lumber (e.g. noise barriers).	2		
	M-2c	Specify Hot-in-Place or Cold-in-Place recycling of Hot Mix Asphalt pavements.	2		
	M-2d	Specify local recycled glass in pavements, as drainage material, or filter media.	2		
	M-2e	Specify asphalt pavement mixes containing Recycled Asphalt Pavement (RAP).	2		
	M-2f	Specify Portland cement pavement containing Recycled Concrete Aggregate.	2		
	M-2g	Use crumb rubber or recycled plastic for noise barrier material.	2		
<i>M-3 Local Mat'l</i>	M-3a	Specify locally available natural light-weight fill.	2		
	M-3b	Specify local seed stock and plants.	2		
<i>M-4 Bio- engineering</i>	M-4a	Bioengineering treatments along water bodies/wetlands.	2		
	M-4b	Biotechnical engineering treatments along water bodies/wetland.	2		
	M-4c	Use of targeted biological control methods to reduce invasive species.	2		

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GreenLITES Project Environmental Sustainability Rating System Scorecard					
CATEGORY	ID	DESCRIPTION	POINTS		
			Available	Scored	
<i>Techniques</i>	M-4d	Soil biotechnical engineering treatments NOT along water bodies/wetlands.	1		
	M-4e	Soil bioengineering treatments or soil biotechnical engineering treatments in upland areas.	1		
	M-5 <i>Hazardous Material Minimization</i>	M-5a	Project design substantially minimizes the need to use hazardous materials to maintain the bridge or highway, or increases the interval before re-construction must be performed using hazardous or toxic materials. The project design improves durability of components that contain hazardous substances.	2	
		M-5b	Specify less hazardous materials or avoid generating contaminated wastes.	2	
		M-5c	Removing and disposing of contaminated soils beyond that necessary for project construction.	2	
		M-5d	Removing and disposing of contaminated soils, lead-based paints, asbestos, tanks containing hazardous contents for project construction.	1	
	Energy & Atmosphere (E)	E-1 <i>Improved TrafficFlow</i>	E-1a	Special use lane (HOV/Reversible/Bus Express).	3
E-1b			Innovative interchange design (diverging diamond, single point urban, etc.).	3	
E-1c			Roundabout.	3	
E-1d			Implementation of a robust Traffic Management Center operation.	3	
E-1e			Installation of a closed-loop coordinated signal system.	2	
E-1f			Installation of a transit express system(s).	2	
E-1g			Expansion of a Traffic Management Center operation.	2	
E-1h			Limiting/consolidating access points along highway.	1	
E-1i			Improve coordinated signal system or other signal timing and detection systems.	1	
E-1j			Bus turnouts.	1	
E-2 <i>Reduced Electrical Consumption</i>		E-2a	Solar/battery powered street lighting or warning signs.	2	
		E-2b	Retrofit existing street/sign lighting with high efficiency types.	2	
		E-2c	Use of LED street lighting.	2	
		E-2d	Solar bus stops.	2	
		E-2e	Use of LED traffic signals.	1	
E-3 <i>Reduce Petroleum Consumption</i>		E-3a	Provide new Park & Ride lots.	3	
		E-3b	Provide new intermodal connections.	3	
		E-3c	Increase bike amenities at Park-n-Rides & transit stations (bike lockers/shelters).	2	
		E-3d	Incorporate ITS technology to improve traffic flow.	2	
		E-3e	Operational improvements of an existing Park & Ride lot.	1	
		E-3f	Improving intermodal connections.	1	
		E-3g	Reduce mowing areas outside of clear zone, reestablishing natural ground cover and/or seeding with low maintenance seed species.	1	
		E-3h	Use of warm mix asphalt.	1	
		E-3i	Documented analysis proving the design reduces NYSDOT's carbon footprint.	1	
		E-3j	Documented analysis proving that the MPT scheme chosen is the alternative which overall requires the least amount of petroleum.	1	
		E-3k	Improved shading through vegetation at Park & Ride lots to cut down on heat island effect and the use of automotive air conditioning by waiting motorists.	1	

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GreenLITES Project Environmental Sustainability Rating System Scorecard					
CATEGORY	ID	DESCRIPTION	POINTS		
			Available	Scored	
E-4 <i>Improve Bicycle & Pedestrian Facilities</i>	E-4a	New grade-separated (bridge or underpass) bike/pedestrian crossing structure.	3		
	E-4b	Separate bike lane at intersection.	2		
	E-4c	Shoulder widening to provide for on-road bike lane or providing for a new separated bicycle pathway.	2		
	E-4d	New or extended sidewalks.	2		
	E-4e	New pedestrian signals.	2		
	E-4f	Aligning the roadway and other highway features and structures within the ROW as to enable the development of separated multi-use paths or other facilities (bicycle/pedestrian) in the future.	2		
	E-4g	Work with locals to create parallel bike routes where state highways are not suitable for less experienced bicyclists.	2		
	E-4h	Sidewalk or bikeway rehabilitation or widening.	1		
	E-4i	Upgrading pedestrian signals, inclusion of pedestrian buttons.	1		
	E-4j	Installation of bikeway signs.	1		
	E-4k	Shoulder restoration for bicycling.	1		
	E-4l	Inclusion of five-rail bridge rail system for bicycles.	1		
	E-4m	Installation of bicycle racks.	1		
	E-4n	New crosswalks.	1		
	E-4o	Curb bulb-outs and pedestrian refuge islands.	1		
	E-5 <i>Noise Abatement</i>	E-5a	Construction of a new noise barrier.	2	
E-5b		Incorporate traffic system management techniques to reduce prior noise levels (e.g. use of truck routes, progressive traffic signals, lowering speeds).	2		
E-5c		Provide a buffer zone for adjacent receptors.	2		
E-5d		Provide sound insulation to public schools.	2		
E-5e		Diamond grinding of existing Portland Cement Concrete (PCC) pavement.	1		
E-5f		Rehabilitation of an existing noise wall.	1		
E-5g		Berms designed to reduce noise.	1		
E-5h		Provide planting to improve perceived noise impacts.	1		
E-6 <i>Stray Light Reduction</i>	E-6a	Retrofit existing light heads with full cut-offs.	2		
	E-6b	Increase retro-reflectivity of signs to eliminate need for spot lighting.	2		
	E-6c	Use cut-offs on new light heads.	1		
Innovation/Unlisted (I)	I-1 <i>Innovation</i>	I-1a	Incorporation of new and/or improved ways to provide a more environmentally, economically and/or socially sustainable transportation system (subject to review by GreenLITES Review Team). <i>Up to 4 points.</i>	4	
	I-2 <i>Unlisted</i>	I-2a	Incorporation of items or methods into the project which might contribute to a more sustainable transportation system but are not specifically listed above (subject to review by GreenLITES Review Team). <i>Up to 2 pts each, no total limit.</i>	2	
			Total:		