



# Climate Smart Communities

<http://www.dec.ny.gov/energy/50845.html>

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New York State

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[www.dec.ny.gov/energy/44992.htm](http://www.dec.ny.gov/energy/44992.htm)

**GreenLITES** Recognizing Leadership  
in Transportation  
Environmental Sustainability



# NYSDOT **GreenLITES** Program and Local Communities

## **NYSDEC Climate Smart Communities Webinar Series**

May 4, 2011

Paul Krekeler, NYSDOT **GreenLITES** Manger



# NYS Multi-Modal System

## Diverse, Complex and Vital



7,632 State Bridges  
9,800 Local Bridges



4,137 Rail Route  
Miles



40,000 State Lane  
Miles



> 80 Million  
Passengers  
through airports



141 billion vehicle  
miles annually





# NYS Geography and Demographics

also Diverse, Complex and Vital

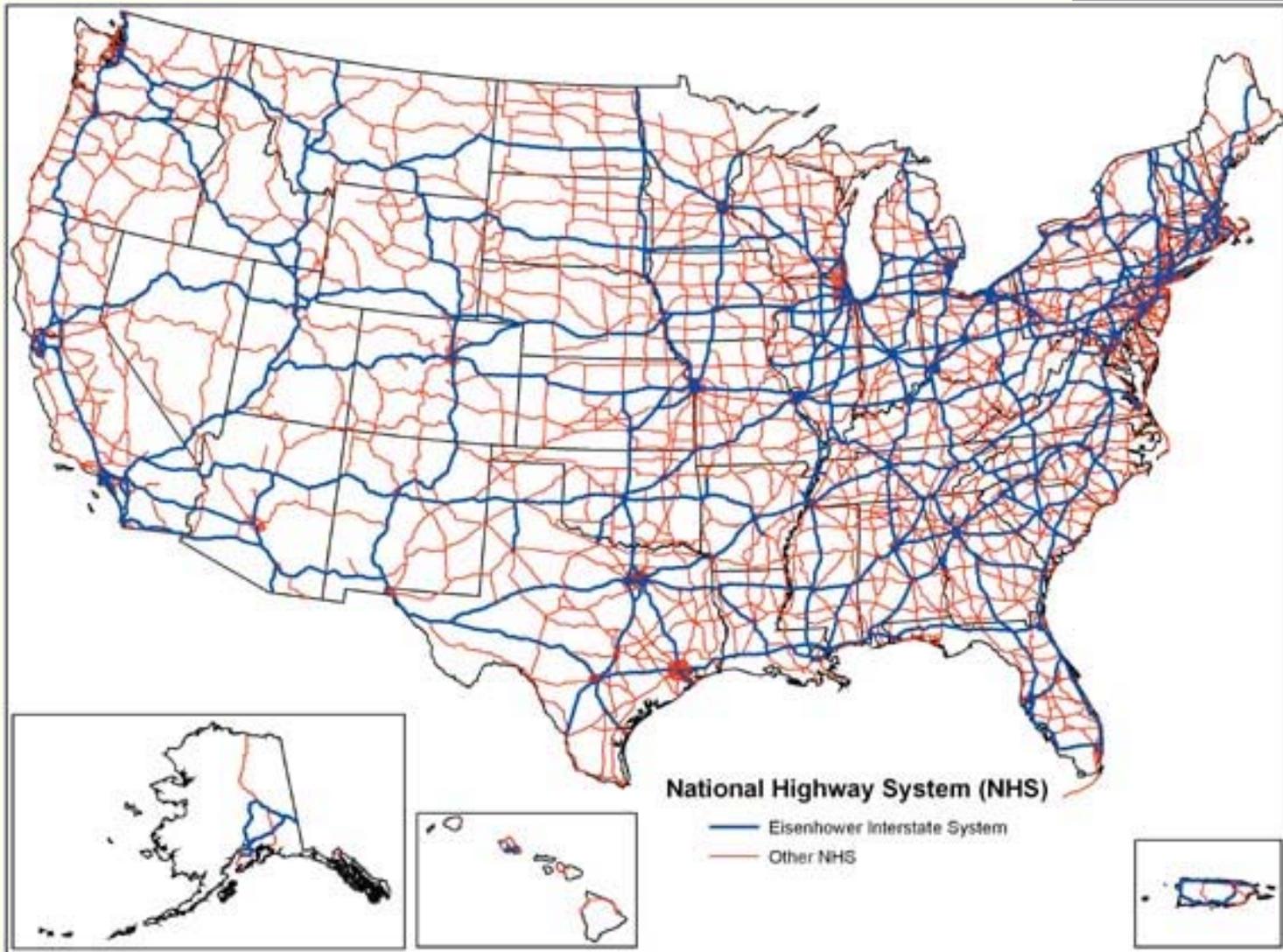
- Diverse Landscape
- Climate
- Population



- 47,000 sq. miles land area
- Drained by > 70,000 miles of streams
- 10 major river systems
- 64% population in NYC metro area
- ~87% land area is rural



# Our System is Built



# Our System is Aging

Shift in investments from new construction to preservation of infrastructure.



# What's Next?

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# Sometimes we know, sometimes we do not know....

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# Sustainability and Transportation

## Need for Sustainable Decisions:

- Support a sustainable society
- Environmental, Economic and Social Benefits
- Global perspective

## Includes, but goes beyond:

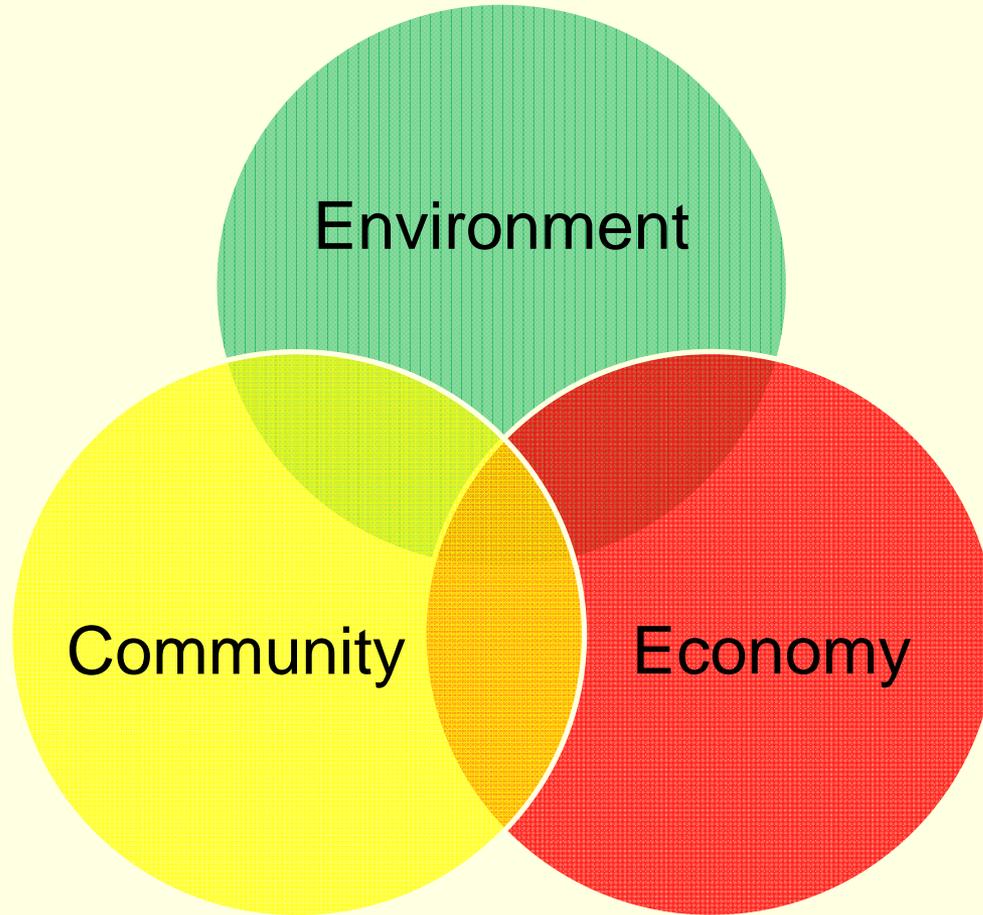
- Sustainable Projects and Actions
  - Life cycle costs, recycled materials, impact avoidance, enhancements – local context
- Sustainable Transportation System
  - Access, mobility, multi-modal linkages – regional context





# Sustainability – Triple Bottom Line

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# Sustainability Principles



***“A society grows great when old men plant trees in whose shade they will not sit.”*** Ancient Greek Proverb



***“In every deliberation, we must consider the impact on the seventh generation . . .”*** Great Law of the Iroquois



***The Congress . . . declares that it is the continuing policy . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill social, economic and other requirements of present and future generations of Americans.”*** Section 101, National Environmental Policy Act, 1969



# NYSDOT Sustainability Commitment

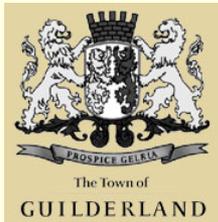
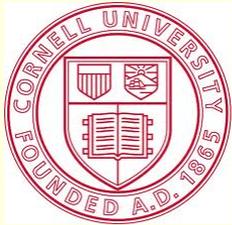
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- *“The Department is more than concrete, asphalt and steel. We are, in fact, a vital connection to and part of the path toward economic recovery. As we plan for the future, our transportation investments must be done in a manner that is both environmentally sensitive and sustainable. **GreenLITES** is the Department’s nationally recognized program which keeps us focused on making transportation decisions that support a sustainable society.”*

- Commissioner McDonald, Earth Day 2011



# We Can't Do It Alone



New York State  
Department of Transportation



Clarkson  
UNIVERSITY



The Nature Conservancy  
Protecting nature. Preserving life.™



ASCE AMERICAN SOCIETY  
OF CIVIL ENGINEERS



U.S. Department of Transportation  
Federal Highway  
Administration



NEW YORK STATE  
Adirondack  
parkagency



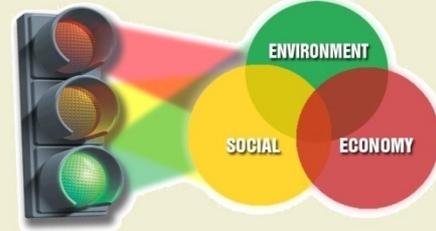
# NYSDOT GreenLITES Program

- **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, Planning & DOT Regions**



# The Right Tool for the Job

*What gets measured gets done*



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

Please fill in all yellow highlighted cells

CATEGORY	ID	POINTS
S-1 Alignment Selection	S-1a	Avoidance of previous alignments
	S-1b	Selecting an alignment that serves the purpose of the project (avoidance of park commercial buildings, etc.)
	S-1c	Alignments which serve the purpose of the project (avoidance of park commercial buildings, etc.)
	S-1d	Design vertical alignment to provide adequate sight triangles
	S-1e	Adjust alignment to avoid park commercial buildings, etc.
	S-1f	Alignments that provide for the minimum clearances
	S-1g	Micro-adjustments that do not compromise the difference in providing sufficient clearances
	S-1h	Clear zones seeded with seed mixtures to increase carbon sequestration.
	S-1i	Provide a depressed roadway alignment
	S-1j	Use of launched soil nails as a more effective option to stabilize a slope rather than, for example, closing a road to construct a retaining wall which may negatively affect traffic flow and neighboring properties.
	S-1k	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

Evaluates individual projects for incorporation of sustainable practices.

Ensures balanced approach in selecting projects and making sustainable transportation decisions.

## Maintenance and Operations Plan for Program Update

Blue Rows are for M.O. Programs  
Red rows are Capital Improvements Intended to achieve SOGR or SOHO  
(version 11/2/08) GreenLITES 10012009 Submitted by Residency/Reg'l Bridge Maint. iOther:

Program	Line	Asset Type	Activity	Cycle (yrs)	Unit of Accomplishment	TOTAL INFRASTRUCTURE		MAINTENANCE BY STATE FORCES		Central Office Funds	Regional
						Total Units	Ideal # per yr	Target Treated # per yr	% on Cycle		
Bridges Puls Highway	1	Bridges	Bridge Cleaning	1	Each Span						
	2	Bridges	Bridge Painting	12	Each Bridge						
	3	Bridges	Deck Sealing	4	Each Bridge						
	4	Bridges	Deck Treatment								
	5	Bridges	Joints								
	6	Bridges	Bearing Restoration								
	7	Bridges	Corrective Rep								
	8	Bridges	Demand Repair								
	9	Bridges	Deck Rehab/R								
	10	Bridges	Rehabilitation								
	11	Bridges	New Bridges								
12	MO Program	MO Variable P									
12A	GreenLITES	Use Environm									
12B	GreenLITES	Environmental									
12C	GreenLITES	Survey for Pub									
12D	GreenLITES	Construct Pub									
12E	GreenLITES	Regional Maint									
12F	GreenLITES	Improve or Re									
12G	GreenLITES	Use High Prod									
12H	GreenLITES	Use Dust-Free									
12I	GreenLITES	Soil Preparedness									
12J	GreenLITES	Innovative and/or Unlisted Activities									
12K	Bridges	Regulatory Cost (Fines)									
13	Pavement	Crack Sealing									
14	Pavement	Single Course Overlay									
15	Pavement	Liquid Asphalt Treatments									
16	Pavement	Pavement Patch (Temporary and Permanent)									
17	Pavement	In-Place Recycle									
18	Pavement	Joint Sealing									
19	All Pavements	Shoulder Maintenance / Treatments									
20	All Pavements	Regional Arterial Maintenance Agreement									
21	Pavement	Multi-course overlay									
22	Portland Cement Concrete Pavement	Rehabilitation, Ck & Seal, Rubblize, CPR									
23	All Pavements	Reconstruction									
24	All Pavements	New Highway/Interchange/Intersection									
25	All Pavements	Alignment/Channelization/Grade Separation/RR									
26	MO Program	Arterial Maintenance Agreements									
27	MO Program	MO Variable PM									
27A	GreenLITES	Pave with Recycled Asphalt									
27B	GreenLITES	Use Green Cleaning Products									
27C	GreenLITES	Spent Asphalt/Concrete Recycling (Re-Use by Other)									
27D	GreenLITES	Shoulder Restoration for Ped/Bicycle Safety									
27E	GreenLITES	Reduce Impervious Surface Areas									
27F	GreenLITES	Innovative and/or Unlisted Activities									

Integrates sustainability into Maintenance and Operations Plan.

1. Is the project consistent with current... plan (developed within last 10 years), and does that Plan address sustainable practices (see below)?

	YES	NO	Comments
1a.	<input type="checkbox"/>	<input type="checkbox"/>	Does the Plan provide a clear vision of community objectives and priorities?
1b.	<input type="checkbox"/>	<input type="checkbox"/>	Is the Plan consistent with regional plans?
1c.	<input type="checkbox"/>	<input type="checkbox"/>	Does the zoning map and zoning ordinances reflect the intent of the Plan?
1d.	<input type="checkbox"/>	<input type="checkbox"/>	Does the Plan incorporate "walkable communities" and/or "complete streets" concepts?
1e.	<input type="checkbox"/>	<input type="checkbox"/>	Has the Plan been developed through an enhanced public outreach effort? This would involve reaching

**GreenLITES: 2010-11 Sustainability Assessment Pilot**  
Mar 3, 2010

**Draft GreenLITES Regional Assessment Table**  
Region: \_\_\_\_\_  
Date Submitted: \_\_\_\_\_

Economy	Current State	Desired State
Access to jobs and labor		

Considers current and desired state of economy, environment and social equity as related to transportation.

Surface water

Habitat:

- Terrestrial
- Aquatic
- Visual / Aesthetics

Electrical energy reduction

Noise reduction

Other:

**Social Equity**  
(Includes Livability & Safety)

- Fatality and injury reductions per VMT
- Improved mobility for all including the disadvantaged and disabled
- Improved mobility options & choices
- Generational Equity
- Access to affordable transportation
- Incorporate community cohesion, long range land use plans and smart growth principles
- Progress Environmental Justice & ADA

Other:

For ease of access, this table is posted to the NYS DOT GreenLITES web page at: <https://www.nysdot.gov/programs/greenlites>.



# GreenLITES Guiding Principles



- Not prescriptive
- Intent is to have all staff consider sustainability
- Promotes/encourages team decisions
- Flexibility in what to include
- Recognizes that cost is a competing priority
- Keep it simple

# GreenLITES Design



Project designs are evaluated for over 175 possible sustainable practices in the five categories.

GreenLITES Project Environmental Sustainability Rating System Scorecard v 2.0.1			POINTS		Project:	Type:	
Please fill in all yellow highlighted cells and follow all instructions in red text.			Available	Scored	PIN: _____	Contact Name: _____	
CATEGORY	ID	DESCRIPTION	Available	Scored	INSTRUCTIONS	EXPLANATION	
S-1 Alignment Selection	S-1a	Avoidance of previously undeveloped lands (open spaces or "greenfields").	2		<= Please enter 0 or 2		
	S-1b	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.	2		<= Please enter 0 or 2		
	S-1c	Alignments which minimize overall construction "footprint." Examples: use of retaining walls, selecting design option with minimal footprint.	2		<= Please enter 0 or 2		
	S-1d	Design vertical alignments which minimize total earthwork.	1		<= Please enter 0 or 1		
	S-1e	Adjust alignment to avoid or minimize impacts to social/environmental resources (avoidance of parklands, wetlands, historic sites, farmlands, residential and commercial buildings, etc.).	1		<= Please enter 0 or 1		
	S-1f	Alignments that optimize benefits among competing constraints (the goal is not always the minimum-length alignment, but the one with the best benefit overall).	1		<= Please enter 0 or 1		
	S-1g	Micro-adjustments that do not compromise safety or operation but that might make the difference in providing sufficient clear area for tree planting.	1		<= Please enter 0 or 1		
	S-1h	Clear zones seeded with seed mixtures that help to reduce maintenance needs and increase carbon sequestration.	1		<= Please enter 0 or 1		
	S-1i	Provide a depressed roadway alignment.	1		<= Please enter 0 or 1		
			is as a more cost effective option to stabilize a slope rather than building a road to construct a retaining wall which may negatively impact neighboring properties.	1		<= Please enter 0 or 1	
			Highway features to respond to the unique character or sense of place of the area ("Unique character" means whatever makes a place distinctive, memorable, important to the community, views, historic bridges & buildings, parkways, landmarks, materials, a notable stand of trees, etc.).	2		<= Please enter 0 or 2	
		Use of natural materials for substantial visual elements (e.g., bridge abutments, retaining walls, etc.).	2		<= Please enter 0 or 2		
		Screening objectionable views, strategic placement of vegetation, etc.	2		<= Please enter 0 or 2		
		Lighting/apertures.	1		<= Please enter 0 or 1		
		Painted (colored and/or textured) pedestrian crosswalk	1		<= Please enter 0 or 1		
		Manual, Section 23 - Aesthetics	1		<= Please enter 0 or 1		
		& detailing	1		<= Please enter 0 or 1		
		Washers v	1		<= Please enter 0 or 1		





# GreenLITES Design Categories

- **Five categories:**
  - Sustainable Sites
  - Water Quality
  - Materials and Resources
  - Energy and Atmosphere
  - Innovation/Unlisted



# Sustainable Sites

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

