

EO 4 - Sustainable Landscaping

Background:

New York State agencies and authorities own or lease a significant percentage of the 31,106,541 acres in New York State. While management of some of this land is mandated by statute, as in the Adirondack and Catskill Forest Preserves; and some is determined by the designated purpose of the property, as in State Forests and Wildlife Management Areas; the management of much of the rest may be in part arbitrary. As the collective environmental impact of these individual management decisions is significant; in accordance with Executive Order No. 4, which directs state agencies "...to implement sustainability initiatives"; this guidance has been developed to establish a vision for a less environmentally destructive human/nature interface, with strategies to achieve it. Increasing impacts from climate change make clear that sustainability requires a sea-change in the entrenched cultural expectations to "control" nature and to associate good character with a "well-kept" property, that result in landscaping valued according to the work, energy, and cost to maintain it. NYS needs to lead by example in reducing our foot-print to maximize places for natural systems to perform critical, life-sustaining functions.

Applicability:

- State-owned properties (or portions there-of) exterior to buildings, except where in conflict with specific and necessary agency or site management requirements
- Contracts for State rental properties with exceptions as above
- Recommendations to the landowners of properties rented by the State (except as above)
- New construction
- Renovations
- Existing management
- Site infrastructure improvement projects

Covered Practices:

- Master planning
- Integrated site design
- Construction practices
- Hardscaping and other groundcovers
- Plant selection
- Operating and maintenance practices
- Stormwater management
- Control of invasive species
- Use of pesticides (includes herbicides, fungicides, and insecticides)
- Use of fertilizers

Goal:

For NYS to become a leader in more sustainable landscaping practices that:

- Set an example for others
- Conform to the "Precautionary Principle" that if an action or policy has a suspected risk of causing harm to the environment, the burden of proof that it is *not* harmful falls on those taking the action
- Reduce human impacts to and maximize the environmental benefits of vegetation and natural systems
- Consider the suite of probable environmental costs and benefits of an action over the long term in cost/benefit analyses

- Enhance planning, operations and maintenance
- Slow climate change, buffer the impacts, and support adaptations to it
- Work *with* nature more than *against* it
- Result in:
 - Reduced energy use
 - Reduced pesticide use
 - Reduced fertilizer use
 - Reduced emissions
 - Reduced stormwater run-off and increased on-site infiltration
 - Reduced use of non-native plants
 - Reduced spread of invasive species
 - Soil conservation
 - Water conservation
 - Water quality improvement
 - Air quality improvement
 - Increased carbon sequestration
 - Increased biological diversity
 - Temperature moderation
 - Wildlife habitat enhancement
 - Conservation of natural resources
 - Increased connectivity between natural systems
 - Natural disaster prevention and mitigation
 - Support of natural ecosystem functions
 - Public awareness and education
 - Acceptance of new landscaping aesthetics

Specifications:

The “Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes” with addendum “Supporting the Health of Honey Bees and Other Pollinators” at <http://www.whitehouse.gov/administration/eop/ceq/sustainability/landscaping-guidance> is hereby adopted in full, and key points from it are incorporated into the following:

- Site Selection & Planning:
 - Assess opportunities to protect and improve ecosystem services.
 - Use an integrated, multi-disciplinary process.
 - Engage stakeholders, including maintenance personnel
 - Design for low maintenance
 - Avoid development on prime agricultural and permeable soils
 - Protect and enhance floodplain functions
 - Preserve existing natural systems and open space
 - Preserve/restore/enhance/create connectivity between natural systems and habitats in the landscape
 - Preserve wetlands and restore those that are degraded
 - Preserve and restore riparian buffers
 - Minimize site disturbance
 - Preserve historic and cultural assets
 - Preserve threatened/endangered species and habitats
 - Integrate stormwater treatment methods early in site selection
 - Design to minimize need for deicers and environmental degradation from their use

- Preserve and restore natural infrastructure buffers in coastal areas
- Soils:
 - Preserve valuable soils
 - Minimize soil compaction
 - Prevent erosion
 - Restore damaged and compacted soils
 - Remediate contaminated soils
 - If gardening for consumption, take appropriate measures to ensure that the soil is sufficiently free of contaminants to pose no threat to human health.
 - Preserve and restore sand dunes and other natural barriers in coastal areas
- Water:
 - Minimize potable water usage for landscaping purposes
 - Minimize surface water and groundwater withdrawals
 - Maximize alternative use of collected rainwater, run-off, and snow-melt
 - Minimize irrigation through the use of native plant species that are adapted to the site conditions.
 - Maximize on-site stormwater infiltration
 - Protect on-site water resources and restore those that are degraded
 - Preserve and restore riparian and shoreline buffers
 - Minimize instream barriers to aquatic species movement
 - Minimize stream crossings for minimal effect on aquatic habitat
- Vegetation:
 - Preserve existing native vegetation, especially plant communities and mature trees, whenever possible; otherwise restore native vegetation on-site or replace in-kind to the extent feasible elsewhere
 - Preserve plants that are rare/endangered or critical to rare/endangered wildlife
 - Use plants that are pollinator-friendly as appropriate
 - Maximize the area, connectivity, and complexity of native plant communities
 - Use plants that are non-invasive, low or no maintenance, and preferably native
 - Attempt to eradicate existing invasives and prevent their establishment
 - Use plants for utilitarian functions like shade, windbreaks, reducing stormwater runoff, and coastal stabilization and buffering
 - Preserve, restore, enhance, and create wildlife corridors and habitat connectivity
- Materials Selection
 - Maximize use of existing structures and salvaged materials
 - Maximize use of non-toxic, natural, locally sourced, sustainably harvested or produced, recycled and recyclable materials
- Human Health and Well-Being:
 - Maximize opportunities to view and access natural spaces
 - Reduce noise and light pollution
 - Enhance and create recreational and educational opportunities
 - Design so that security is supported rather than compromised by the landscaping
 - Increase natural areas and open spaces in floodplains and coastal zones, in an effort to migrate development and inappropriate use away from places prone to flooding and the harmful impacts of storm surge and sea level rise
 - Use of landscape to create a quality of place
- Existing Historic Facilities and Cultural Landscapes:
 - Identify any significant historic or cultural features on-site and how they might be impacted by the landscape design and maintenance

- Preserve these features while minimizing any negative environmental impacts.
- Construction
 - Use local labor, materials and supplies to minimize climate impacts
 - Use most energy efficient methods and/or equipment
 - Reduce, reuse, recycle construction materials to the maximum extent practicable
- Operations and Maintenance:
 - Minimize areas of turf and hardscape
 - Minimize use of fertilizers and pesticides
 - Use the least environmentally destructive and smallest quantity of deicers necessary to ensure human safety
 - Follow IPM and water consumption management plans
 - Time any necessary mowing or other activities to minimize impacts to wildlife
 - Reduce frequency of mowing and other activities to reduce climate impacts
 - Consider eliminating mowing in some or all areas
 - Keep all mowers and equipment free of invasive plant material, seed, and invasive insects or larva
 - Use most energy efficient methods and/or equipment
 - Use non-internal combustion powered equipment to the extent possible
 - Consider life-cycle environmental impacts in cost/benefit analyses of equipment purchasing
 - Monitor new landscaping designs and green infrastructure technologies for effectiveness as appropriate and practicable

Implementation:

- Educate staff on all facets of this sustainability initiative and guidance, providing updates and retraining as needed.
- Assess all existing facilities and develop site-specific plans (including IPM and water consumption management) and contracts, to align landscaping design, construction, renovation, maintenance, etc. with the goals of this specification.
- Review existing watershed plans for that location, identify opportunities to incorporate objectives, and implement where possible.
- Report achievements pursuant to this guidance with other sustainability accomplishments.
- Encourage the implementation of green roofs and green walls on appropriate structures, particularly on sites with limited space and restricted opportunities for landscaping at the ground level; as well as the incorporation of support for greening of building surfaces into guidance for building construction and retrofitting.

Resources:

- *US: “Guidance for Federal Agencies on Sustainable Practices for Designed Landscapes” with addendum “Supporting the Health of Honey Bees and Other Pollinators” at <http://www.whitehouse.gov/administration/eop/ceq/sustainability/landscaping-guidance>
- Sustainable Sites Initiative: SITES v2 rating system at <http://www.sustainablesites.org/rating-system>
- The Association for the Advancement of Sustainability in Higher Education: Sustainability Tracking, Assessment & Rating System™ (STARS) at <https://stars.aashe.org/>
- International Code Council: Green Construction Code at <http://www.iccsafe.org/cs/igcc/pages/default.aspx?usertoken={token}&Site=icc>
- US Green Building Council: LEED rating system at <http://www.usgbc.org/leed#rating>
- NYS DOT: Green Leadership In Transportation Environmental Sustainability (GreenLITES)

- Program at <https://www.dot.ny.gov/programs/greenlites>
- Sustainable Cities Institute: “Upgrade Your Infrastructure” at <http://www.sustainablecitiesinstitute.org/topics/water-and-green-infrastructure/green-infrastructure-101/upgrade-your-infrastructure-a-guide-to-the-green-infrastructure-portfolio-standards-and-building-stormwater-retrofits>
 - EPA: <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>
http://water.epa.gov/infrastructure/greeninfrastructure/gi_what.cfm
http://www.epa.gov/watersense/our_water/learn_more.html#tabs-2
 - *NYS DEC: “New York State Stormwater Management Design Manual” at <http://www.dec.ny.gov/chemical/29072.html>
 - NYC DEP Office of Green Infrastructure: “Standards for Green Infrastructure” at www.nyc.gov/html/dep/pdf/green_infrastructure/bioswales-standard-designs.pdf
 - Delaware County SWCD: “Post-Flood Emergency Stream Intervention Training Manual” at <http://www.dcswcd.org/Stream%20Program.htm>
 - NYS DEC Division of Fish & Wildlife: “Comprehensive Wildlife Conservation Strategy” at <http://www.dec.ny.gov/animals/30483.html>
 - *NYS: EO 4 specifications at <http://www.ogs.ny.gov/EO/4/ApprovedSpecs.asp> for
 - Turf and Ornamental Management
 - Pest Management
 - Mulches for Horticultural and Non-Horticultural Use (tentatively approved)
 - NYS Regulation 6 NYCRR Part 575 Prohibited and Regulated Invasive Species at http://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf
 - *NYS DEC and NYS Ag&Markets: “New York State Prohibited and Regulated Invasive Plants” at <http://www.dec.ny.gov/animals/265.html>
 - *NYS DEC: “Protected Native Plants” at <http://www.dec.ny.gov/regs/15522.html>
 - NYS DEC: “Be Green Organic Yards NY” at <http://www.dec.ny.gov/public/65071.html>
 - NYS OPRHP: Native Plant Policy at <http://nysparks.com/inside-our-agency/documents/PolicyOnNativePlantPolicy.pdf>
 - Don Leopold: Native Plants of the Northeast: A Guide for Gardening & Conservation at <http://www.amazon.com/Native-Plants-Northeast-Gardening-Conservation/dp/0881926736>
 - Alexis Alvey: Finding Alternatives to Invasive Ornamental Plants in New York at http://www.nyis.info/user_uploads/files/Alvey%20Alt%20to%20Inv%20Orn%20Spp.pdf
 - NYC Parks and Rec: The Greenbelt Native Plant Center at <http://www.nycgovparks.org/greening/greenbelt-native-plant-center>
 - Connecticut Invasive Plant Working Group at <http://cipwg.uconn.edu/cipwg-publications/>
 - Jessica Lubell: Native Shrubs: Guide to Landscape Uses at <http://cipwg.uconn.edu/wp-content/uploads/sites/244/2013/12/NativeLandUseGuide.pdf>
 - New England Wild Flower Society: Go Botany at <https://gobotany.newenglandwild.org/>
 - Lady Bird Johnson Wildflower Center: Native Plant Information Network at <http://www.wildflower.org/>
 - http://www.wildflower.org/howto/howto_resources/Plantwise_Brochure.pdf
 - Plant Native at <http://www.plantnative.org/index.htm>
 - <http://adkinvasives.com/wp-content/uploads/2014/03/Plantwise-ADK-brochure.pdf>
 - Pollinator Partnership at <http://www.pollinator.org/guides.htm>

* These must be adhered to.