DESIGN STANDARD 32 93 00

LANDSCAPE PLANTING DESIGN

I. GENERAL

A. Intent of Standard: This Design Standard provides a methodology to guide development of appropriate planting plans across the Seattle Department of Parks and Recreation (SPR) system. Important elements of this methodology include:

1. Establishment of the functional boundaries for each type of activity covered in the project scope (e.g. athletic field, play area, natural area, community garden, wetland, etc.), consistent with the Park Classification;
2. Determination of the soil and ecological context and characteristics of land contained within each functional boundary;
3. Determination of the existing and desired character and habitat potential of the land contained within each functional boundary;
4. Strive for sustainable landscape designs that support plants, trees, and wildlife that are native to the Cascadia region;
5. Identification of how the plantings and land use is or will be classified within SPR's "Land Use Metrics", and
6. Develop a planting plan that will establish the best possible balance between the intended function, the soil/land conditions, and meeting SPR goals for applicable Land Use Metrics and standard maintenance practices.

B. Design Mission: SPR's goal is to provide Seattle with planted landscapes that are designed to be aesthetically pleasing and functionally appropriate for the park feature in question, while utilizing all feasible opportunities to include native plants that celebrate and support the Northwest's diverse ecosystem. Important objectives include fulfillment of the intended land function, urban wildlife and habitat support, environmentally sustainable land management including pesticide and hazardous chemical use reduction/elimination, environmental education, cultural/historic land preservation, water/utility conservation, and maintenance efficiencies.

C. Definitions:

Functional Boundary: The boundary line where a given land use or classification transitions to a different land use or classification. See Section III

Functional Landscape: The infrastructure, structures, and plantings contained within a given functional boundary.

Land Use Metric: A measurement intended to quantify and analyze the extent to which SPR meets a given land use function, for land classification and/or comparison against a land use goal. See Section V of this standard.

Native Plants: For the Seattle area, a plant that is genetically native to the "Cascadia" Region, including the Pacific Northwest. Refer to the following links for more information about and listings of native plants:

http://oregonstate.edu/dept/ldplants/

http://www.greatplantpicks.org/

http://green.kingcounty.gov/gonative/

http://gardening.wsu.edu/NWnative/

Sustainable: A term characterizing a design concept or maintenance practice that will result in the healthy long-term survival of a given set of plantings, while minimizing associated maintenance and utility costs, and without depleting or destroying natural resources and/or polluting the environment.

D. Application of Standard: This design standard has been developed to address any situation -- from a limited landscape renovation project to a complete new park. As such, there are design deliverables and criteria defined herein that do not apply to every situation. The designer shall exercise professional discretion in applying the standard, and contact the Park Engineer for clarification/guidance whenever a design deliverable seems excessive for the Scope of Work. This design standard shall apply in any situation wherein one or more of the following conditions are present:

- There is a change in plant species utilized over a planting area in developed park land that is 1,000 square feet or larger in total area addressed by project;
- For natural area restoration projects, any project that triggers a DPD review process per CAM Publication 331 or is greater than 5,000 square feet;
- The project will change the existing functional boundaries of elements within the physical area covered by the project (refer to Sections III & IV of this standard);
- The project will increase or eliminate irrigation requirements;
- The project will increase maintenance requirements;
- The project area contains critical areas; and/or
- Use of this standard is stipulated in the designer scope of work.

E. Design Team Approach: This standard utilizes a collaborative approach, including team meetings, SPR's Proview and Proview Tech review processes, bringing different perspectives together in a team setting to assess whether SPR's goals will be met by plantings at key points throughout the design process. It also delineates the responsibilities of the Designer in developing the deliverables that will be reviewed through the Proview/Proview Tech process, including planting design, how it will impact "Land Use Metrics", and provision of future plant establishment and ongoing maintenance needs and associated costs.

F. Designer Qualifications: Individuals participating in the design of plantings for functional landscapes shall either have or be under the direct supervision of an individual who has the following qualifications and credentials:

- Licensed Landscape Architect with minimum 5 years experience

- Demonstrated ability to forecast accurate maintenance/cost implications for plantings by providing examples of previous estimates of similar nature
- If in-house design, in consultation with Parks Senior Landscape Architect.

G. Design Product: The design product shall include the following elements, as applicable in the Design contract:

1. **Physical Site Analysis:** A comprehensive site description, including layout drawing(s), compiling all information relevant to establishing landscape and planting plans for the park features addressed in the design Scope of Work. Information shall include but not be limited to sun exposure, topography, ground water and/or irrigation water presence, soils analysis (including results of soil sample tests), existing sewer/utilities (both surface and underground), surrounding trees/vegetation, overhead power lines, presence of contaminants, current and past land use, target/planned use, vandalism and CPTED considerations, etc.
2. **Functional Landscape Concept Plan:** A description of the existing and proposed functional landscape plan for the complete physical area designated in the Scope of Work. Information shall include Park Classification (see Section III), functional boundaries and Land Metrics report (see Section IV), and a complete description of all soil amendment needs, plantings, included structures/accessories, and other landscape components. The plan shall describe how plantings and other elements will influence applicable land use metrics, stakeholder goals, and any other performance goals that are specifically identified by SPR. Information shall include cost estimates showing that the proposal is consistent with the project budget, as well as sketch(es) depicting how the plantings and other project elements will appear, all in accordance with the scope of work established by the Designer's contract or agreement with SPR.
3. **Maintenance and Utility Impact Report:** If deemed necessary by the Park Engineer, the Functional Landscape Concept Plan shall be accompanied by a Maintenance and Utility Impact Report that quantifies expectations in terms of irrigation needs (both for plant establishment and long-term support), anticipated water usage, pesticide use, and ongoing maintenance costs (labor, materials, and consumables associated with plant upkeep) for the proposed concept. This report shall be prepared using the format and applicable labor and utility rates provided by SPR at the request of the Designer, such request being made at the time the report is prepared.
4. **Review Meeting Support:** Planting plans shall be reviewed and approved by appropriate SPR staff (including but not limited to landscape architects and senior gardeners) at regular intervals during initial planning and design development, following the protocol/procedures practiced in the SPR Proview and Proview Tech Review meeting process. The Designer shall provide the required deliverables and attend such meetings when they are scheduled in order to describe the plan and respond to questions. A current "Land Use Metrics Report" (see Section 1.04) shall be provided by the Designer at each review session.
5. **Construction Drawing Set:** A complete set of drawings showing all site preparation, demolition, installation, irrigation system components, and instructions

necessary for successful implementation of the planting plan. SPR Standard Details as listed in Section 1.02 shall be utilized to the extent feasible. Drawings shall also include reference to "Dial-a-Dig" and in-house locate needs and provide direction for protection of soil structure during construction as appropriate.

6. **Final Technical Specifications:** The Designer shall complete all relevant SPR template technical specifications, including but not limited to those listed in Section 1.02.A.1, to the extent required to properly coordinate with the approved planting plan and the design drawings, as needed for inclusion as part of the final Construction Contract Documents. Text within the template specifications that is intended to be edited by the Designer is generally identified by use of highlighted red bold font or similar special formatting. Such items usually entail making choices about what type of equipment or material is needed for the conditions and requirements particular to the subject project. Other than appropriate finalization of these specially-identified areas in the template specification, the Designer shall not make any changes (add, delete, or alter) to the template specification unless specifically approved by the Park Engineer, through the project's technical review process.

7. **Coordinate Inspection Plans Before, During, and After Construction:**

   a. Prior to construction, the Designer shall arrange a pre-construction walk-through if/as needed to identify tree root protection needs, address plant relocation needs, and similar issues. At minimum, the Designer shall invite the appropriate district gardener and a Parks landscape architect.

   b. During construction, the Designer shall answer all questions and respond to any issues that arise with respect to the planting plan. In addition, a district gardener and Parks landscape architect shall be provided written invitation to inspect all plants and rootballs prior to planting, with a minimum of 2 business days advance notice (5 days preferred).

   c. Upon both substantial and physical completion, the Designer shall coordinate a site walk-through that will include inspection of all plants incorporated in the planting plan, involving key Parks staff such as landscape architect, senior gardener, Crew Chief, plumber, Irrigation Coordinator, electrician, urban forester, and Parks Resource Manager. The Designer shall identify any issues or corrections that need to be made to bring the actual plantings into accordance with the planting plan, for inclusion on the contract close-out punch list.

8. **Record Documents:** The Designer shall submit a complete record drawing set based on as-built drawings/records within 10 calendar days of substantial completion, developed in accordance with the process outlined below. The Designer shall verify that the Construction Contract Project Manual is completed in a manner that contractually obligates the Contractor to follow this process.

   a. The Contractor shall keep a current working set of drawings with all as-built changes or actual conditions as work proceeds, to be submitted to Designer at substantial completion of irrigation system installation.

b. The Designer shall interpret and incorporate field information into a scaled AutoCAD drawing (utilizing same scale as contract documents) and provide to the Park Engineer prior to close-out of project.

c. The Designer shall prepare Mylar record drawings ("as-builts") with contractor's and SPR surveyor's information included, and CD(s) containing electronic AutoCAD and Adobe pdf drawings with that same information, to be submitted to the Owner along with all other required information, manuals, etc.

9. **Plant Establishment and Warranty Support:** The standard warranty period for all Parks construction projects is one year minimum, with longer periods identified for specific work components when appropriate. During the interval for plant establishment, a Parks Landscape Architect and District Senior Gardener shall periodically inspect the plantings to verify that they are receiving proper care as needed to ensure establishment and to identify any warranty issues. No later than one month prior to the warranty expiration date, the Consultant, a Parks Landscape Architect, and District Senior Gardener shall make a final inspection of the plantings and identify any plants that should be replaced under the contract warranty.

II. GOVERNING REGULATIONS, POLICIES, AND STANDARDS

A. Federal, State, County, and Municipal Standards:

1. **Noxious and Invasive Plants:** Plants that are classified by federal, state or King County authorities as noxious and/or invasive shall not be utilized in any planting plans, even when they are native. Refer to:

   a. **US Department of Agriculture:** http://www.aphis.usda.gov/plant_health/permits/organism/federal_noxious_weeds.shtml

   b. **Washington State:**

   - RCW Chapter 17.10 Noxious weeds — control boards
   - WAC Chapter 16-750 State noxious weed list and schedule of monetary penalties
   - Washington State Department of Ecology: Wetland Rating System for Western Washington, Invasive Plant List, page 78

     http://www.ecy.wa.gov/biblio/0406014.html

   c. **King County:**

   - http://dnr.metrokc.gov/wlr/lands/weeds/laws.htm
   - http://dnr.metrokc.gov/wlr/lands/weeds/weedid.htm

   d. City of Seattle:

   - http://www.seattle.gov/DPD/Publications/CAM/cam331.pdf

B. Seattle Parks and Recreations Department Standards: The following Policies, Standards, Specifications, and Historic Resources Plan are available at the weblinks provided and/or from the Park Engineer, and shall be used as applicable to the Scope of Work:

1. **Native Plant Policy:** SPR's goal is to utilize native plants in functional landscaping designs whenever appropriate for the land function and feasible for successful establishment of the plant(s), while adhering to the basic principle of using the right plants in the right places. Native plantings shall conform to SPR's formal Native Plant Policy.

   a. **SPR Native Plant Policy:** Reference http://www.seattle.gov/parks/parkboard/briefings/native_plant_policy_revision.pdf

   b. **SPR's Native Plant Listing:** *Currently under development; Web link will be provided when available.*

   c. **King County Native Plant Guide:** Plants that are considered "native" and acceptable for the purposes of implementing SPR's native plant planting goals include, but are not limited to, those plants described as native by King County. Reference http://dnr.metrokc.gov/wlr/pi/go-native/Index.aspx

2. **SPR Park Classification System:** See Section III and refer to *[final document still under development; web link will be provided when available]*

3. **SPR Tree Management Policy:** http://seattle.gov/parks/Publications/policy/treepolicy.pdf

4. **SPR's Related Design Standards:** Several existing SPR Design Standards may be pertinent to elements of the planting plan and various other elements included in this design standard. Such standards shall apply to the extent applicable in terms of establishing functional boundaries and land use metrics (see Section IV), planting plans and their supporting infrastructures, and may include, but are not limited to:
   - 32 80 00 Irrigation Systems Design
   - 32 93 00 Site Restoration of Natural Areas

5. **SPR's Technical Specifications:** The Designer shall modify the available template technical construction specifications to the extent needed to address the planting plan, and may create a stand-alone technical section specifically for that planting plan only if appropriate and approved in advance by the Park Engineer. If the stand-alone option is utilized, the Designer is responsible to verify that all technical specifications are consistent with Parks standards and that there are no contradicting requirements contained in other sections of the Construction Contract Documents. SPR template technical specifications that may be utilized as applicable to the planting plan include, but are not limited to:
   - 01 56 39 Temporary Tree Protection
   - 32 60 00 Trail Construction & Restoration
   - 32 80 00 Irrigation Systems

- 32 91 13 Soil Preparation
- 32 92 19.13 Mechanical Seeding
- 32 92 19.16 Hydroseeding
- 32 92 19.19 Hand Seeding
- 32 92 23 Sodding
- 32 93 00 Landscape Plantings
- 32 93 53 Landscape Boulders
- 32 96 00 Transplanting

6. **SPR's Standard Detail Drawings:** Whenever possible, the Designer shall utilize SPR Standard Details in implementation of planting plans. Such details shall be used as provided by SPR (without alterations) and shall be included in the Contract Documents. SPR Standard Details that may be utilized as applicable to the planting plan include, but are not limited to:
   - 01 56 39 Temporary Tree Protection
   - 01 56 43 Tree Protection Notes
   - 32 22 19 Typical Slope Rounding
   - 32 93 13 Ground Cover Planting
   - 32 93 33 Shrub Planting
   - 32 93 36 Typical Planting Pattern
   - 32 93 43 Deciduous Tree Planting
   - 32 93 46 Coniferous Tree Planting
   - 32 93 49 Tree & Shrub Planting on Slopes
   - 32 93 53 Landscape Boulders
   - 32 94 43 Typical Tree Grate

7. **Historic Resources Plan:** Identifies SPR's historic resources and recommends policy for how to preserve these assets.

C. Exceptions: In general, all aspects of the design shall be in accordance with the accepted standards cited in Section II.B. However, the Designer has the added responsibility to expand upon these documents as required, dictated and/or warranted by the approved Functional Landscape Concept Plan and/or considerations that include, but are not limited to, the following:

1. As directed by the Park Engineer as a result of SPR's Review process;
2. Special conditions pertaining to the project and/or site;
3. Environmental considerations and constraints;
4. The integrity of the proposed design;
5. The health, safety, and welfare of the general public and employees;
6. Adherence to other applicable codes or legal standards.

III. PARK CLASSIFICATION

The Designer shall establish functional boundaries within the project limits for the park features included in the landscape design, consistent with the design scope of work and as appropriate for the park classification. The following general classifications have been developed to describe different types of parks within the SPR system:

1. Triangle
2. Pocket Park
3. Downtown Park
4. Neighborhood Park
5. Community Park
6. Recreation Complex
7. Destination Park
8. Special-Use Park
9. Natural Area/Greenbelt
10. Boulevard

A full description of the Park Classification system is available at: *[final document still under development; web link will be provided when available]*

IV. LAND USE METRICS

SPR sets goals for meeting various objectives in terms of utilizing Parks lands for the benefit of the public and the environment. Objectives typically reflect values of SPR, such as water conservation, energy conservation, native plant use, various forms of recreation, retention of historic or cultural characteristics, etc., and do not tend to change much over time. Metrics provide ways to quantify and analyze the extent to which SPR meets those objectives, for comparison against goals that are set and may vary considerably with time. As applicable to the project scope of work, specific functional boundaries shall be established and metrics shall be determined as needed to measure performance against the land metrics listed below. Some of the categories below may overlap somewhat (e.g., Tree Count versus Native Plantings) – in such case include the overlapping aspect in both categories. This information shall be compiled by the Designer during design development as a report, presenting the information both graphically in a plan view and numerically in a tabular fashion, and shall be presented to the Park Engineer for approval at each stage of the design process. In addition to providing the metrics below as applicable, the Designer shall also provide a total square footage value reflecting the total surface area addressed by the project, as needed for purposes of comparison.

Units of measurement shall be as appropriate for the metric in question, and may include square feet (SF or ft^2), thousand square feet (KSF), lineal feet (LF, ft, or KLF), acres (Ac.), each (EA), etc. In general, English units are preferred over metric (SI).

A. Natural Habitat: (SF or Ac.) The goal of natural habitat land is to support ecosystems native to the Pacific Northwest region, including native plants and wildlife, as practicable

in the urban environment. Native plants should be used for restoration projects to the maximum extent practicable. Show natural habitat boundaries in a plan view and provide the square footage coverage attributable to natural habitat. The categories listed below are considered specific types of natural habitat areas, and shall be subdelineated as such:

1. **Wetlands/Meadows**
2. **Greenbelts**
3. **Lakes/Streams/Ponds** (provided they are not typically utilized by large and/or motorized watercraft)
4. **Critical Slope Areas**
5. **Other Environmentally Critical Areas**
6. **Other**

B. Native Plantings: (EA) Unless otherwise directed in the Scope of Work or as determined through the design development process, native plants and trees should be considered in appropriate settings outside of natural habitat where they can be sustained by the overall landscape design. This could include container plantings, facility planting beds, play area landscaping, etc. Show areas of native plantings in a plan view and provide the plant count covered by native plantings. SPR encourages retention of existing healthy plant associations, salvage and re-use of existing native plants if disturbance is required, as well minimizing disturbance areas to preserve healthy ecosystems.

1. Replaced, Retained, or Salvaged/Re-used on Site Native Plantings

2. New/Additional Native Plantings

C. Low Water Use Plantings: Unless otherwise directed in the Scope of Work or as determined through the design development process, low water use plants should be utilized in any non-wetland setting where they can be sustained by the overall landscape design. This could include select native plants, natural habitat, container plantings, facility planting beds, play area landscaping, open fields, etc. Show areas of low water use plantings in a plan view and provide the square footage covered by low water use plants.

D. Tree Count: (EA) Indicate the number of trees removed and the number of trees added by the project within each functional boundary.

E. Surface Permeability: (SF or Ac.) Seattle Public Utilities (SPU) charges SPR drainage rates that are based on how permeable the land is – higher degrees of impervious surfaces have higher drainage rates applied. Clearly the SPR goal here is to minimize the presence of impervious surfaces. The Designer shall indicate the square footage of land addressed by the Scope of Work that falls into each of the following categories:

1. Undeveloped (0-15% Impervious)
2. Light (16-35% Impervious)
3. Medium (36-65% Impervious)
4. Heavy (66-85% Impervious)

5. Very Heavy (86-100% Impervious)
6. Biofiltration features such as rain gardens, green roofs, bioswales, infiltration trenches or shall be specifically identified as a subset within the appropriate SPU impervious rating category.

F. Programmed Recreation: (SF, EA, LF) This category includes outdoor features which are primarily intended for structured or team play. Show configuration of each feature in a plan view and provide the square footage covered by the feature. Include stands and spectator areas in square footage measurements. The categories listed below are considered specific types of programmed recreation areas, and shall be subdelineated as such:

1. **Athletic Fields**
2. **Basketball courts**
3. **Tennis Courts**
4. **Golf Courses**
5. **Bathing Beaches** (with lifeguards)
6. **Wading Pools & Waterspray Play Features**
7. **Other**

G. Unprogrammed Recreation: (SF, Ac., EA, LF) This category includes outdoor features which are primarily intended for unstructured or individual play or activities. Show configuration of each feature in a plan view and provide the square footage covered by the feature. The categories listed below are considered specific types of unprogrammed recreation areas, and shall be subdelineated as such:

1. **Play Areas**
2. **Dog Off-Leash Areas**
3. **Trails**
4. **Skateparks**
5. **Open Turf Areas**
6. **Lakes and Larger Water Bodies:** Any water body that is typically used for casual swimming and/or boating.
7. **Beaches**
8. **P-Patches and Community Gardens**
9. **Other**

H. Cultural/Historic: (SF, Ac., EA) This category includes entire parks or portions of parks that have official historical significance or are deliberately reflective of specific cultures, traditions and/or art forms. Show configuration of each historic or cultural feature in a plan view and provide the square footage covered by the feature. The categories listed below are considered specific types of cultural or historic features, and shall be subdelineated as such:

1. **Olmsted Parks/Designs**
2. **Specialty Gardens**
3. **Ornamental Fountains**
4. **Cultural/Historic/Art Features** (includes amphitheatres, historic structures, etc.)
5. **Other**

I. Planted Areas Not Otherwise Covered In Above: (SF, Ac.)

1. Shrub beds: irrigated (areas by zone) and non-irrigated

2. Turf: irrigated (areas by zone) and non-irrigated

V. DESIGN GUIDELINES

The following guidelines apply to all planting plans to the extent practicable:

A. Preservation of Historic or Cultural Land: Special Gardens, Historic Parks (including Olmsted and landmarked parks), Boulevards, and Viewpoints are designated by the department as places of cultural or historic value and preserved as close as possible to their original intent.

B. SPR's 2005 Best Management Practices (BMP): BMPs are defined as a clear and consistent set of directions to SPR staff for the management and maintenance of landscaped and natural parkland, and the individual assets contained within those areas. The BMPs include landscaped, horticultural, and urban forest landscape types. SPR, through its staff, is charged with responsibility as primary steward of these vast and valuable resources. The BMPs are listed below are available on-line and may be downloaded from http://www.cityofseattle.net/parks/projects/bmp.htm. Prior to commencing design work, the Designer shall check with the Park Engineer to determine whether updated or additional applicable BMPs exist.

- Chapter 1: Construction Site Management in Landscapes
- Chapter 2: Greenhouse Operations
- Chapter 3: Integrated Pest Management
- Chapter 4: Irrigation Management
- Chapter 5: Natural Areas
- Chapter 6: Nursery Operations
- Chapter 7: Plant Bed Management
- Chapter 8: Trees in Landscaped Areas and Developed Parks
- Chapter 9: Turf Management

C. Vegetation Management Plans (VMP): VMPs are written to guide the growth, development, and maintenance of parks and open spaces. Each VMP is designed to bring together the diverse interests at work (and at play) in a park or open space, and inform and direct the actions of the organizations and individuals that manage it. The

VMPs listed below are available on-line at http://seattle.gov/parks/Horticulture/vmp.htm. Prior to commencing design work, the Designer shall check with the Park Engineer to determine whether a VMP exists for any site not listed below.

1. **Burke-Gilman Trail VMP**
2. **Camp Long VMP**
3. **Carkeek Park Draft Forest Management Plan**
4. **Cheasty Greenspace VMP**
5. **Cowen Park Draft VMP**
6. **Discovery Park VMP**
7. **Fauntleroy Park VMP**
8. **Golden Gardens VMP**
9. **Green Lake VMP**
10. **Hitt's Hill VMP**
11. **Kerry Park and Viewpoint VMP**
12. **Lake Washington Boulevard VMP**
13. **Laurelhurst VMP**
14. **Lawton Park VMP**
15. **Licton Springs**
16. **Lincoln Park VMP**
17. **Magnolia Boulevard VMP**
18. **Marshall Park VMP**
19. **Northeast Queen Anne Greenbelt VMP**
20. **Orchard Street Ravine VMP**
21. **Ravenna Woods Forest Management Plan**
22. **Seward Park VMP - Draft**
23. **Viewpoints VMP - Draft** (Covers 12th Ave S, Bagley, Belvedere, Bhy Kracke, Commodore, Discovery, Dr. Jose Rizal, East Portal Overlook, Kobe Terrace, Lakeview, Louisa Boren, McCurdy, Montlake, Mt Claire, Myrtle Edwards, Plymouth Pillars Park, Rainbow, Riverview, Roanoke Street, Rotary, Sunset Hill, Viretta and West Seattle Golf Course)
24. **Volunteer Park VMP - Draft**
25. **Warren G. Magnuson Park VMP**
26. **Warren G. Magnuson North Shore Restoration Plan**
27. **West Raye Street VMP**
28. **Woodland Park Draft VMP**

D. Boulevard Plans:

1. **Cheasty Boulevard Boundary Project Guidelines**

2. **Queen Anne Boulevard/Bigelow Avenue Project Design Guidelines**

E. Urban Wildlife and Habitat Management Plan: The purpose of this plan is to provide the framework and guidelines for integrating natural and human systems in Seattle's park and open spaces. The overall goal of the plan is to benefit both the people and the native wildlife that use these lands. Reference http://www.seattle.gov/parks/Publications/UrbanWildlifeandHabitatMngtPlan2000.pdf

F. Sustainability: SPR encourages the use of strategies developed in the Sustainable Sites Initiative™, and functional landscape plans should consider the functions of soils, hydrology, vegetation, materials and recognize that these sites perform "ecosystem services" as well as support human well being. Please refer to the excerpt below and the draft/final SSI report available at: **http://www.sustainablesites.org/report.html** for additional strategies.

GENERAL GOALS from
Preliminary Report on the Standards & Guidelines Sustainable Sites Initiative™

SOILS
1. Maintain and/or improve soil health so that on-site and surrounding ecosystem services are sustained or enhanced.
2. Avoid the use of pollutants, chemicals, or soil amendments that can harm human and ecological health.
3. Create a net zero waste site.
4. Reduce greenhouse gas emissions.

HYDROLOGY
1. Value all water on the site.
2. Maintain or regenerate healthy hydrologic processes.
3. Promote water quality and healthy aquatic habitats.

VEGETATION
1. Design and maintain vegetation so that on-site and surrounding ecosystem services are sustained or enhanced.
2. Reduce resource consumption and waste.

MATERIALS
1. Manage resources and materials efficiently.
2. Select and use sustainable landscape materials.
3. Reduce energy use, both embodied and operational.
4. During all phases, avoid materials, products. and practices that are harmful to humans and the environment.

HUMAN WELL-BEING
1. Design and maintain conditions to promote health and physiological benefits.
2. Enhance human cognitive function.
3. Promote positive social dynamics.