New Jersey Green Infrastructure Municipal Toolkit

Sample Green Infrastructure Checklist for Site Plan Development and Review

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Green infrastructure should be considered early in the design phase of a development project and ideally should be distributed around a site. Local officials and their professionals may take the opportunity to work with developers and their teams before a site is engineered, to discuss the developer's plan for the site, have informal Q&A that can ease the review process, and to ensure that green infrastructure is understood and used.

This checklist can be helpful before or during a pre-application meeting between an applicant and pertinent review personnel to discuss the municipality's green infrastructure and low-impact development goals and requirements in order to optimize the development's nonstructural stormwater management design.

Item Number	Site Plan Review Checklist	Green Infrastructure Techniques
1	Existing natural/environmental features (e.g., geologic features, historic and archaeological considerations, soil characteristics, topography, vegetation, and hydrologic features).	☐ Preservation of undisturbed areas – Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain. ☐ Preservation of buffers – Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands. ☐ Locating sites in less sensitive areas – Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.

		□ Stream daylighting – Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.
2	Grading and drainage plan, showing existing and proposed contours.	□ Reduction of clearing and grading – Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities. □ Vegetated open channel – The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.
3	Location, design, type of construction, proposed use and exterior dimensions of all buildings.	□ Building footprint reduction – Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor-to-area ratio. □ Rooftop and overland disconnection – Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates. □ Green roof – Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system. □ Rain tank/Cistern – Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.
4	Location, design and type of construction of all parking and truck loading areas, showing access and egress.	□ Roadway reduction – Minimize roadway widths and lengths to reduce site impervious area. □ Driveway reduction – Minimize driveway lengths and widths to reduce site impervious area. □ Cul-de-sac reduction – Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover. □ Parking reduction – Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate. □ Porous Pavement – Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate

		rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.
5	Provision for pedestrian access.	□ Pervious pavers – Pervious types of pavement that provide an alternative to conventional paved surfaces designed to infiltrate rainfall.
6	Location of accessory structures, such as detached garages, storage sheds, small boathouses, carports, gazebos, picnic pavilions, and pole barns.	□ Whenever practical, accessory structures should not be located in the 100-year floodplain (e.g. 1% annual chance flood zone) or in a drainage way. Accessory buildings that are located in these areas should be wet-flood proofed, which involves using flood-resistant materials and elevating items subject to flood damage.
7	Location, design and construction materials of all existing or proposed site improvements including drains, culverts, retaining walls and fences.	□ Stormwater planter – Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.
8	Description of the method of sewage disposal and location, design and construction materials of such facilities.	□ Consider whether utilities can be placed under the paved section of the right of way (ROW) to reduce impervious cover or if reserve septic field areas need to be cleared of trees at the time of development to preserve natural features. Avoid the installation of new septic systems in the 100-year floodplain (e.g. 1% annual chance flood zone).
9	Description of the method of securing public water and location, design and construction materials of such facilities.	□ Infrastructure costs for subdivision road construction, utility installation, and drainage systems are usually less expensive for cluster developments than conventional subdivision design, which in turn creates fewer impervious surfaces and more natural drainage to reduce stormwater runoff, flooding, and soil erosion.
10	Location of fire and other emergency zones, including the location of fire hydrants.	□ New streets in the 100-year floodplain (e.g. 1% annual chance flood zone) should be at or above the base flood elevation to provide access for emergency vehicles during a flood.
11	Location, design and construction materials of all energy distribution facilities, including electrical, gas and solar energy.	□ Encourage on-site renewable energy sources, such as wind or solar, and energy efficient boilers, heaters, furnaces, incinerators, or generators and high-efficiency HVAC systems.
12	Location and proposed development of all buffer areas, including existing vegetative cover.	□ Conservation design – Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space, and protect water resources. □ Conservation of natural areas, streams, and wetland buffers – Retain the pre-development hydrologic and water quality characteristics of

		undisturbed natural areas, stream, and wetland buffers by restoring and/or permanently conserving these areas on a site. □ Vegetated buffer, filter strip, and riparian reforestation – Undisturbed natural areas such as forested conservation areas, buffers, or vegetated filter strips can be used to treat and control stormwater runoff from some areas of a development project.
13	General landscaping plan and planting schedule.	□ Soil restoration – Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices. □ Tree planting/tree box – Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control. □ Rain garden – Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.