River-Friendly Business Program Standards Guidance – January 2012

Introduction

The River-Friendly Business Certification Program is a voluntary, collaborative certification partnership between the New Jersey Water Supply Authority (NJWSA) and businesses within the North and South Branch of the Raritan River and the Mainstem of the Raritan River Watershed. Ideal businesses are those seeking to have a leading role in conserving their community's environmental resources. The goal of the River-Friendly Business Program is to improve water quality by modifying land management techniques. Benefits for participating businesses include public recognition of their achievements, healthier landscaping, lowered operating costs, and the opportunity to be a leader in environmental stewardship.

The River-Friendly Business Program holds all facilities to a set of baseline standards (see "River-Friendly Business Baseline Standards" below), as well as requiring businesses to complete site-specific actions during the certification and re-certification phases. Baseline standards are listed by numbers (1-19), and letters (A-F) are used to categorize the baseline standards. The baseline standards are a set of actions that act as the framework of the River-Friendly Business Program. Certified River-Friendly Businesses will meet all of the baseline standards. The baseline standards may be met prior to entering the program, and if a certain baseline standard does not apply to a facility, the business does not need to work towards achieving that baseline standard. The site-specific actions are tailored to each business and typically build upon the baseline standards. Site-specific actions will be decided upon by NJWSA, the Technical Advisory Committee, and the participating business. The table below determines the number of site-specific actions that must to be completed for certification based on how many baseline standards are met upon joining the program. A list of example site-specific actions can be found at the end of this document.

Number of baseline standards met at time of application	Number of baseline standards to be met during certification	Number of site-specific actions required	TOTAL Actions and Standards to be Completed
18-19	0-1	8	8-9
15-17	2-4	7	9-11
12-14	5-7	6	11-13
9-11	8-10	5	13-15
6-8	11-13	4	15-17
3-5	14-16	3	17-19
0-2	17-19	2	19-21

**stream assessment baseline standards are not included in this calculation (see baseline standards G1 and G2).

For example, if a business meets 4 baseline standards upon review of the application and site visit, the business will need to work to meet the additional 15 baseline standards, and three

site-specific actions. If the business campus has a stream on-site, two additional actions must be completed (see baseline standards G1 and G2).

The River-Friendly Business Certification Program standards below include information on the intent of the baseline standard, the requirements needed to complete the standard, and useful links and background information to assist in the completion of the standard.

River-Friendly Business Baseline Standards

A) Integrated Pest Management

Intent

The over-application of lawn and landscape chemicals can contribute to water quality impairments and can also have an impact on human health. The development and usage of an integrated pest management (IPM) plan provides a framework to guide the usage of lawn and landscape chemicals to handle issues such as pest occurrences on an individual basis with an emphasis on cultural practices before the use of chemicals with the long-term goal of reducing overall landscape chemical usage. The purpose of this plan is to maintain an aesthetically pleasing landscape while reducing the usage of chemical fertilizers, pesticides, herbicides, and fungicides through proper plant selection, proper irrigation, soil tests, and other cultural and physical techniques. Monitoring is a key component of an IPM plan, as is an understanding of local pest pressure, pest lifecycles, how plants exhibit stress, and knowledge of the management options for various pest problems. This document, as well as the supplemental maps and the monitoring sheets, not only helps to better understand a site's individual pest challenges, but also helps to capture knowledge that a site manager may have accumulated from years of familiarity with a site. Through the implementation of an IPM plan, environmental stewardship is enhanced and less landscape chemicals reach local waterways. Additionally, some sites may experience time and cost savings through reduced chemical applications.

Requirements

To meet this River-Friendly baseline standard, develop a site-specific dynamic plan (or amend a current plan) that employs best management practices (BMPs) in controlling outdoor turf and plant pests. This plan provides the framework to more accurately apply the proper amount of all landscape chemicals (including fertilizers and pesticides) at the proper time to maximize effectiveness and reduce the impact on local waterways with the long-term goal of reducing overall landscape chemical usage. In combination with the Soil and Landscape Vegetation Care plan (Standards Heading B), the IPM plan will help to maintain the aesthetics and functionality of the turf and vegetation while working towards the goal of reducing landscape chemical applications. A chemical use reduction goal will be determined through site-specific actions. A

business must submit a copy of the plan, maps and monitoring sheets for credit. The plan should include the following components:

1. A site map that delineates and prioritizes areas as high, medium, and low maintenance. This map should include a description of what these designations mean for this site. For example, high priority areas might be near the building where traffic is frequent and aesthetics are of high importance. The description of this area should include turf height, level of irrigation, level of fertilization, how much grub or other pest damage is tolerable in a 100 square foot area, etc.
2. Descriptions of common pests on the site, where and when these pests occur, and the management options. Maps that identify pest hotspots should be included and updated yearly. These maps serve as indicators of a pest problem, and help to identify where additional monitoring or action should be taken. List the various cultural, physical, biological and chemical controls for each pest. In the description of each management technique, include a brief description on the potential water quality impacts of that technique. For each pest, list the threshold for action for each management area delineated and described for baseline standard A1 (site map). [NJWSA has a sample IPM for businesses.]
3. Descriptions of the plant species on the site, where they are located, and the pests common to each of the species.
4. A narrative of the guiding principles of landscape management at the site that are preventative in nature and reduce the need for all chemical usage. Examples include: soil tests and proper fertilization as a result of this testing, properly timed watering, proper storage and disposal of chemicals, the use of native plants that are less vulnerable to pests, attracting birds, bats and beneficial insects to the site that prey on pests, no spray areas within 25 feet of a water body, dew dragging, improving air circulation to reduce fungal growth, etc. This also includes pruning of damaged trees to reduce disease potential, hand pulling of weeds to reduce infestation and other actions to improve landscape plant health. These examples are not required, but highly recommended practices to be implemented where appropriate.
5. Use IPM monitoring sheets to record instances of pest problems, the action(s) taken and the result. To meet baseline standards, the facility must provide 1 growing season of monitoring sheets.

Resources

The following websites and texts provide justification for implementing an IPM plan as well as further guidance on how to develop a plan.

- What is IPM? (Rutgers): http://njaes.rutgers.edu/pubs/publication.asp?pid=FS748
- Integrated Pest Management Conservation Practice Standard (NRCS): http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044470.pdf

B) Soil and Landscape Vegetation Care

Intent

The purpose of this action is, in conjunction with the Integrated Pest Management plan (baseline category A and the Water Conservation actions (baseline category E), to foster healthier soils and landscape vegetation and reduce the need for chemical fertilizer and pesticide application through preventative measures. The benefits of maintaining a healthy vegetation community (including turf) are both environmental and financial. By encouraging healthy soils, and in turn, healthy turf, less chemicals (including fertilizers and pesticides) are needed over time; therefore, reducing the amount of landscape chemicals reaching local waterways. Turf with deeper roots can promote better rain water infiltration. A diversity of native plants can provide food and cover for wildlife. By minimizing pest problems and reducing chemical and irrigation needs, less money has to be spent on chemicals and the labor for their application.

Requirements

To meet this baseline standard, submit a document to NJWSA that details how site staff is caring for the landscape vegetation in a River-Friendly manner. This companion document to the IPM plan should include photos, soil test results, and a narrative detailing the practices. This plan can either reference the Maintenance Level map in Baseline Standard A1 or create a new map that delineates the various landscape care options.

6. The following actions should be implemented on the site and specific descriptions of the actions taken are to be included in the Soil and Landscape Vegetation Care narrative:

    - Maintain turf at a minimum of 3 inches and do not cut more than 1/3 of the grass blade length off when mowing.
    - Do not fertilize if heavy rains are predicted or winds prevent proper application.
    - Adjust (calibrate) fertilizer application equipment to ensure fertilizer is not spread onto impervious surfaces where it could runoff into water bodies or the storm sewer system
    - Do not spread fertilizer within 25 feet of a stream or other water body, and use caution around storm sewers.

- Areas within 25 feet of a stream or water body should be designated as low maintenance (no spray, reduced mow).
- When replacing vegetation or installing new vegetation, use native species that are adapted to pests and typical weather conditions.
- Water during the morning hours to reduce fungal growth and evaporative loss. Avoid watering on windy days to avoid water loss.
- Aerate turf areas once a year to improve air flow around roots and reduce compaction. If no benefit from this practice is realized at the site, provide a brief discussion on why.
- Provide a list of all landscape vegetation care chemicals that are currently used and potential organic alternatives. Consider whether or not organic alternatives can be used, and document your reasoning.
- Take an inventory of bare or exposed soil, and any erosion-prone areas on the campus. Address any issues, especially any noticed during site visits. Severe issues may become site-specific actions.

7. Conduct soil tests biennially (every two years) in all areas that are treated with fertilizer and other chemicals, such as lime, and every 3 years for areas not being fertilized (see note below for explanation). We recommend sending soil samples to an independent contractor (as opposed to a fertilizer wholesaler). Key parameters to sample for are phosphorus, potassium, and pH. Proper pH is necessary for nutrients in the soil to be used by plants. Provide results and an interpretation of the results and how they relate to fertilizer and chemical applications (or non-application), e.g. based on results showing a pH of 5.95 for cool season turfgrass (target pH is 6.30), apply calcitic limestone at a rate of 20 pounds per 1000 square feet in the fall or spring; take an additional soil test before applying additional lime. NOTE: Soil testing in areas that aren't being fertilized still reveals important information and can help in making decisions to establish and maintain healthy vegetation and reduce soil erosion.

Resources

The following web pages provide other lawn care and management tips that encourage a healthier turf while reducing impacts on water quality:

- Rutgers Fertilizer Calibration: http://snyderfarm.rutgers.edu/fertspreadercalibration.html
- Healthy Lawns, Healthy Water (NJDEP): http://www.nj.gov/dep/healthylawnshealthywater/
- Best Management Practices for Nutrient Management of Turf in New Jersey (Rutgers): http://njaes.rutgers.edu/pubs/publication.asp?pid=E327

C) Snow Removal and De-icing Practices

Intent

A snow removal and de-icing plan will help to identify the physical and chemical snow removal practices, with the long-term goal of reducing the amount of salt, chlorides, and other de-icing materials (including sand and grit) that reach storm drains during the winter season. The salinity of small streams and rivers, as well as the flora and fauna in and around these riparian ecosystems can be affected by these materials.

Requirements

By managing snow removal and de-icing procedures, the environment can benefit through the use of alternatives, determining the amount of material used, method of application, and process in which snow and ice is handled, while still maintaining safety for employees, staff, visitors, and the public. By implementing BMPs, including calibrating spreaders and applying the recommended rates/amount of de-icing materials, a facility can more efficiently utilize their resources and protect water quality. A documented plan preserves institutional knowledge for years to come, and may help to reduce de-icing material usage.

8. Develop and implement a written Snow Removal and De-icing Plan which includes:
    - Name(s), contact information of responsible parties; include contact information for contractors, if used;
    - General approach to snow and ice control operations (e.g., pre-wetting, pre-treating, abrasives, plowing, solution, etc.);
    - Treatment timing and sequence (prioritize which areas should receive treatments first, and in what order);
    - Anticipated equipment (shoveling, plow trucks, etc.) and staffing required;
    - Location where snow will be piled; when possible away from stream channels, wetlands, and high maintenance areas indentified in the IPM.
    - Restrictions on parking or parking lot closures (low priority), if applicable;
    - Current chemicals used in which locations (e.g., on driveways, on sidewalks, near child care area, etc.);
    - BMPs implemented:
        - Calibrate spreaders prior to each storm application. This ensures that the appropriate amount of snow-melt solids and liquids are applied, rather than too much or too little.
        - Ensure salt and other snow-melt chemicals are stored appropriately. Chemicals should be stored on a pad and covered with a roof or a temporary covering such as tarpaulin.

9. Track the amount of de-icing material used as a winter season total for each product. By tracking the amount of material used, a facility can determine if any reductions can be made in any areas. This can also aid in ordering de-icing material for future winter seasons based on product performance. Notes about the severity of storms may be helpful (e.g., winter 2010-2011 had frequent (weekly) storms with snow accumulation and several significant snow events (10+ inches)). Provide tracking sheets for at least one winter season

Resources

- Written Snow and Ice Control Plans (The Salt Institute): http://www.saltinstitute.org/content/download/452/2860
- Spreader Calibration (The Salt Institute): http://www.saltinstitute.org/content/download/9657/62271
- Salt Storage (The Salt Institute): http://www.saltinstitute.org/Uses-benefits/Winter-road-safety/Salt-storage
- Salt and the Natural Environment (The Salt Institute): http://www.saltinstitute.org/Issues-in-focus/Road-salt/Road-salt-our-environment/Natural-environment

D) Stormwater Drainage Management

Intent

For the best management of stormwater, a business needs to know where their stormwater goes, what BMPs are in place (some may be hidden underground), and how best to maintain those practices for the long-term. The intent of these baseline standards is to be aware of the stormwater drainage system and associated BMPs on the business campus, and to document maintenance practices associated with stormwater management. The long-term goal is to ensure BMPs are implemented properly, and to re-route runoff before it enters the stormwater system, if possible. The intent is to infiltrate, filter, and reduce volume and velocity of water reaching storm drains by re-routing runoff.

Requirements

To meet the stormwater drainage baseline standards, businesses must provide a map of the drainage system and components, develop a comprehensive written maintenance plan for structural stormwater BMPs, and prepare a narrative of other cultural water quality or quantity BMPs.

10. Develop a digital map of the stormwater drainage system. The location of surface storm drains, manhole accesses, underground pipes, and any surface conveyance systems such as rooftop drains, swales or ditches, should be included. Mapping how stormwater flows, and which areas drain to which BMPs can help identify improvements to the BMP or to maintenance of the BMP. Any existing AutoCad drawings of the BMPs and/or topographic information should be incorporated into the digital map for enhanced accuracy.
11. Develop a comprehensive written maintenance plan for all structural stormwater BMPs, including detention/retention basins, manufactured treatment devices, etc. that includes:
    - A location map for all BMPs;
    - The names and contact information for all responsible parties, on and off site;
    - The schedule of inspection and tasks;
    - Mosquito control information;
    - The proper function of each BMP;
    - Indications of failure for each BMP;
    - The aesthetics for each BMP;
    - The appropriate equipment required for maintenance;
    - Preventative and corrective maintenance;
    - Cost estimates of maintenance;
    - Training of personnel required for upkeep and maintenance;
    - The number of personnel required for maintenance.
    - Tracking sheets for maintenance.
12. Develop a narrative for other cultural stormwater quality or quantity best management practices. For example, maintenance of stormwater drainage swales, rinse water management (e.g., rinse water is recycled, treated, separated, etc.), catch basin cleaning, street and parking lot sweeping, etc.

Resources

- New Jersey Stormwater Best Management Practices Manual - Maintenance and Retrofit of Stormwater Management Measures (NJDEP): http://www.nj.gov/dep/stormwater/bmp_manual/NJ_SWBMP_8%20print.pdf
- NJ Stormwater BMP Manual – All Chapters (NJDEP): http://www.nj.gov/dep/stormwater/bmp_manual2.htm
- Stormwater in New Jersey (NJDEP): http://www.njstormwater.org/

- Urban Polluted Runoff (University of Wisconsin-Extension): http://clean-water.uwex.edu/pubs/pdf/urban.pdf
- A Self-Assessment for Businesses (University of Wisconsin-Extension): http://runoffinfo.uwex.edu/pdf/BusinessSelf-Assess.pdf
- Vehicle and Equipment Washing (US EPA – Good Housekeeping Practices): http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=132&minmeasure=6
- Vehicle and Equipment Maintenance (US EPA – Good Housekeeping Practices): http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=112&minmeasure=6
- Storm Drain System Cleaning (US EPA – Good Housekeeping Practices): http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=102&minmeasure=6
- Parking Lot and Street Cleaning (US EPA – Good Housekeeping Practices): http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=99&minmeasure=6

E) Water Conservation

Intent

Although New Jersey may not have the level of water-deficit issues as do other parts of the United States; there are areas where water allocations exceed supply. Exceedances are likely to occur in other areas in the future; therefore, it is a good practice to consider water conservation, set goals, and develop a plan to reduce water usage. Water conservation practices can benefit the environment and also save money. By evaluating indoor and outdoor water consumption, a business can better determine areas where water consumption can be reduced, and to educate employees to reduce water usage at work and at home. NOTE: This plan is not legally binding. It is non-regulatory in nature and does not supersede or replace any allocation permits that a business may have.

Requirements

Develop a written water conservation plan intended to identify and track water usage with the goal of reducing potable water consumption. Irrigation is typically the biggest water user at most businesses. Over-watering is not only wasteful, but can be harmful to vegetation. By reviewing and conducting checks of the irrigation system, ways to conserve water can be identified.

13. Develop a written Water Conservation Plan that includes:

- Source of potable water (e.g. wells or public water supply) and any additional sources of water (e.g. ponds for irrigation);
- The names and contact information for all responsible parties, on and off site;
- Categories of water usage – for instance, landscaping and irrigation, indoor use – and levels of use for each category. Irrigation usage levels can reference the site map from baseline standard A1, if the two maintenance levels match.
- Goals for dealing with large (more than 25% of facility water usage) or inefficient uses of water (short term or long term);
- Current and planned water conservation practices (e.g., installation of low-flow toilets, automatic faucets, etc.);
- Information about historical annual peaks in water usage (e.g., what months are the highest for indoor and outdoor water usage, etc.);
- Considerations and/or a plan for drought times, before any water restrictions are imposed (e.g., will the irrigation system continue as normal in periods of little to no rain, or will an adjustment be made in the watering schedule, etc.);
- An employee awareness campaign about water use at the facility and at home.

14. Develop a narrative for outdoor water usage which includes:
    - Irrigation schedule: water early in the morning to avoid evaporation loss. Watering late at night can lead to mold and other turf problems.
    - Weather considerations: for example, do not water when heavy rain is predicted or on windy days.
    - Individual sprinkler head spray zones: ensure that the irrigation system does not water sidewalks, driveways and other impervious surfaces.
    - Zone considerations based on drainage: determine if some zones are better suited for more or less water. The drainage map created as part of Baseline Standard D10 may be helpful.
    - Additional outdoor water use reduction actions.
15. Conduct maintenance checks of the irrigation system throughout the watering season. Provide a checklist/tracking sheet for at least one year.
    - Monitor the system, including sprinkler heads frequently, and address any issues quickly.
16. Consider collecting rainwater in cisterns or ponds to use for watering. If pursuing rainwater collection, ensure a reasonable method of utilizing the water for irrigation. Develop a narrative that explains any rainwater collection options

appropriate for the site, what alternatives have been implemented, or any rainwater collection alternatives that are scheduled for implementation.

Resources

- 52 Ways to Conserve—Business Tips (Water—Use It Wisely): http://www.wateruseitwisely.com/100-ways-to-conserve/business-tips/
- Business Goes Green by Saving Blue (WUIW): http://wateruseitwisely.com/blog/miscellaneous/business-goes-green-by-saving-blue-water-management-plans-reduce-costs
- Using Water Efficiently—Ideas for Commercial Businesses (EPA): http://epa.gov/watersense/docs/commercial508.pdf
- Efficient Turf Watering (URI Cooperative Extension): http://www.uri.edu/ce/factsheets/sheets/waterturf.html
- Water Efficient Landscaping (EPA): http://www.epa.gov/owm/water-efficiency/docs/water-efficient_landscaping_508.pdf
- WaterSense (EPA): http://www.epa.gov/WaterSense/

F) Employee Education Programs

Intent

A River-Friendly Business should be proud of the steps it has taken to be environmental stewards and a leader in the community. By showcasing what the business has done, we hope that employees, visitors and their families will want to do their part as well.

Requirements

The goal of these baseline standards is to spread the River-Friendly message to employees, clients, visitors, and the community.

17. River-Friendly tips for employees
    - Send periodic emails to employees and/or post information in common areas. NJWSA has several write-ups that are ready to use by River-Friendly Business participants.
18. Have NJWSA attend at least one outreach program for employees (Earth Day, Environmental Health & Safety Fair, etc.)
    - NJWSA has a display that highlights the River-Friendly programs, what steps can be taken in and around the home, and why programs like this are important to protecting water supply.
19. Hold a water-related educational opportunity for a small group of employees (e.g., Lunch and Learn session). NJWSA can present, or can offer appropriate presenter

options and/or topics for this session. Sample topics may include: rain barrels, rain gardens, home landscaping practices, outdoor water conservation, and developing wildlife habitat.

G) Stream Assessment (if applicable)

Intent

To assess baseline conditions for any stream(s) on River-Friendly Business campuses, which can lead to recommendations for improving riparian quality and, in turn, water quality and quantity.

Requirements

With the assistance of NJWSA staff, complete a Stream Visual Assessment (SVAP) based on the USDA's Natural Resource Conservation Service's SVAP2. SVAPs provide insight into stream health by looking at a variety of parameters including riparian quantity, riparian quality, vegetative cover, stream substrate, and macroinvertebrate life. By gathering information on up to 16 parameters, NJWSA staff and the TAC can make recommendations on ways to improve stream and riparian health for water quality and quantity.

1. Complete one Stream Visual Assessment with NJWSA staff. If two or more streams are on the facility property, additional SVAPs may be completed as site-specific actions.
2. Complete an overall assessment of stream/riparian buffer conditions and/or needs. This includes identifying areas with no understory or forest cover within 25 feet of the stream. If buffers are poor, adopt a minimal maintenance approach for these areas, at least within 25 feet of the stream, or within reason for special circumstances (e.g., line of sight, existing parking lot, etc.). Ideally, minimal maintenance is no mow, no chemical applications, and no irrigation.

Resources

- Stream Visual Assessment Protocol Version 2 Handbook (NRCS): ftp://ftp-fc.sc.egov.usda.gov/ID/technical/svap.pdf
- Introduction to Riparian Buffers (Connecticut River Joint Commissions): http://www.crjc.org/buffers/Introduction.pdf
- Riparian Buffers (Riverkeepers): http://www.riverkeepers.org/pdf/riparian_buffers_fact_sheet.pdf

Site-specific action examples

Based on the current conditions of the site, the facility's goals through joining the River-Friendly program and the areas in need of improvement, NJWSA will select the appropriate number of site-specific actions to be completed. Examples of these actions are found below. Other actions may be suggested by NJWSA or facility staff.

Water Quality Management

- **Install a rain garden** to infiltrate, evaporate and filter runoff from a rooftop, parking lot, or other impervious surface. Rain gardens are a shallow, landscaped depression that should not be placed in areas that remain wet. Visit http://www.raritanbasin.org/rain_garden.html for more information.
- **Implement a reduced-mow area** that reduces your mowed lawn area by 10% or more. Reduced mow areas should be mowed once or twice per year to discourage woody plant growth.
- **Naturalize a detention basin** through mowing schedule reductions or a native planting.
- **Replace an existing impervious surface (asphalt or concrete) with pervious pavers/asphalt/concrete.** This area should at least cover 100 square feet.
- **Create or enhance a stream buffer.** This action, by nature, is site-specific, guided by the stream(s) on the property. An example to qualify for this action would be at least 100 linear feet of buffer, with 25 foot width on each side of the stream (50 feet total from the stream centerline).

Water Conservation

- **Install rain barrels or a cistern** to collect rainwater. At least 200 gallons should be collected. Water should be used for irrigation as an alternative to using a sprinkler system.

Wildlife and Habitat Enhancement

- **Perform a wildlife inventory.** This should be a living document, to which multiple (or all) employees can contribute what wildlife species have been observed on the facility campus.
- **Install and monitor bird boxes and/or bat houses.** At least 5 boxes should be installed to qualify for this action. Monitoring should consist of developing a map of box locations, a maintenance checklist, and regular monitoring every 2-3 months.

- **Develop an invasive species removal and maintenance plan.** This plan should identify any invasive plant species on the facility campus; list the best method(s) for removal; and develop a plan for removal, monitoring, and maintenance.
- **Create a garden that encourages native pollinators,** such as butterflies. Selected plants should be native plants (butterfly bush, genus *Buddleja*, is a non-native plant and should not be used). A maintenance document is required to indicate plans for long-term care of the garden.
- **Develop and implement a plan for goose management.** This plan should include the implementation of management measures, including (but not limited to) nest and egg destruction, exclusion by vegetation, and deterrents such as cut-outs or border collies.

Education and Outreach

- **Develop and install signage for River-Friendly projects**. Signage provides employees and visitors with information about what actions a business is taking. At least one sign for a distinct action is required. Signage for multiple actions can be installed, and will count as separate site-specific actions, for up to three signs.
- **Conduct a stream clean-up or other campus clean-up.** Employees have an opportunity to participate and reduce trash in or potentially entering local waterways.
- **Hold an additional water-related educational opportunity for a small group of employees** (e.g., Lunch and Learn session) [This is in addition to baseline standard F19]. NJWSA can present, or can offer appropriate presenter options and/or topics for this session.
- **Create an informational website** to inform employees, staff, visitors, and the general public of what your business is doing to be River-Friendly.

Glossary

Anthropogenic: caused by humans.

Aquatic macroinvertebrate: an aquatic insect, worm, or crustacean.

Aquifer: any water-saturated zone in sedimentary or rock stratum which is significantly permeable so that it may yield sufficient quantities of water from wells or springs to serve as a practical source of water supply.

Bank: means the inclined sides of the stream channel.

Bed: the floor of the stream channel.

Biodiversity: the variety of living organisms, habitats and ecosystems as well as the processes occurring therein.

Channel: the well-defined bed and banks of a watercourse that confine and conduct flowing water continuously or intermittently.

Consumptive water use: the use of water in such as way that a portion of the water used is lost to evaporation, transpiration, incorporation in product, etc., and not discharged to any location.

Critical habitat: the ecosystems upon which endangered and threatened species depend.

Crown closure: the amount of shading provided by the tree canopy over land or water surfaces.

Deforestation: long-term or permanent removal of forest cover and conversion to a non-forested land use.

Depletive water use: the withdrawal of water from a water supply resource (ground or surface water) where the water, once used, is not discharged to the same water supply resource in such a manner as to be useable within the same watershed.

Designated use: is the use specified in water quality standards for each water body or segment, whether or not they are being attained.

Detention basin: an impoundment area made by constructing an embankment, or excavating a pit, or both, for the purpose of temporarily storing water.

Drought: a condition of dryness due to lower than normal precipitation, resulting in reduced stream flows, reduced soil moisture and/or lowering of the potentiometric surface in wells.

Ecological indicators: plant or animal species, communities, or special habitats with a narrow range of ecological tolerance.

Ecosystem: an ecological community together with its environment, functioning as a unit.

Endangered species: a species in imminent danger of extinction throughout all or a significant portion of its range.

Erosion: the detachment and movement of soil or rock fragments by water, wind, ice or gravity.

Eutrophication: a process affecting waters that are rich in mineral and organic nutrients, whereby plan life (especially algae) proliferates, eventually reducing the dissolved oxygen content and often killing off other organisms.

Evapotranspiration: the combined loss of water to the atmosphere by evaporation and from growing plants.

Exceptional resource value wetlands: freshwater wetlands exhibiting any of the following characteristics: those which discharge into FW-1 waters or FW-2 trout production waters or their tributaries; or those which are present habitats for threatened or endangered species, or those which are documented habitats for threatened or endangered species, and which remain suitable for breeding, resting, or feeding by these species during the normal period these species would use the habitat.

Exotic plant species: plant species that are foreign to an environment, having come from another part of the world.

Flood hazard areas: the floodway and flood fringe areas determined by the NJDEP under Section 3 of the Flood Hazard Areas Control Act (P.L. 1979, c.359).

Flood plain: the areas adjacent to a stream or river that are subject to flooding or inundation during severe storm events. [Often referred to as a 100-year floodplain, this refers to a flood level in an area with a 1 percent chance of being equaled or exceeded in any given year.]

Flood prone areas: those areas that frequently flood but are not necessarily part of the regulated 100-year flood plain.

Floodway: the channel of a natural stream and portions of the flood hazard areas adjoining the channel, which are reasonably required to carry and discharge the flood water or flood flow of any natural stream. Typically this area is expected to flood every year.

Flow, natural: the flow of a stream as it occurs under natural conditions; that is, not subjected to any regulation or diversions.

Fragmentation: the disruption of extensive habitats into isolate and small patches.

Freshwater: all nontidal and tidal waters generally having a salinity due to natural sources of less than or equal to 3.5 parts per thousand at or near high tide.

Groundwater: that portion of water beneath the land surface that is within the zone of saturation (below the water table) where pore spaces are filled with water.

Headwaters: the beginnings or sources for watercourses. Typically the land surrounding the point in the landscape where sufficient runoff collects to form an intermittent stream.

HUC System: the national hydrologic unit code system used by the United States Geological Survey as a way to identify individual watershed areas.

Hydric soils: a soil that in its undrained condition is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.

Hydrologic cycle: the continuous movement of water from the Earth's surface into the atmosphere (via evaporation, transpiration and condensation) and back to the earth's surface again (via precipitation, runoff and infiltration).

Impairment: a detrimental effect of the biological integrity of a water body caused by a change in the chemical, physical, or biological quality or condition that prevents attainment of the designated use.

Impervious surface: an artificial surface (such as pavement, concrete, buildings or compacted earth) that prohibits or essentially prohibits the infiltration of water from the land surface into the ground.

Impoundment: a body of water confined by a dam, dike, floodgate or other barrier.

Infiltration: the soaking of water into the ground.

Integrated Pest Management: an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices.

Intermediate resource value wetlands: freshwater wetlands not defined as exceptional or ordinary.

Invasive plants: a plant that moves in and takes over an ecosystem to the detriment of other species (often the result of environmental manipulation).

Maximum contaminant level: the highest level of a contaminant that is allowed in drinking water.

Mitigation: the policy of constructing or creating wetlands to replace those lost to development.

Modified wetlands: wetlands that have been altered, but still retain wetlands status and support most uses.

Nitrate: the most highly oxidized form of nitrogen in the nitrogen cycle. It is generally nonreactive (conservative) and moves readily in water.

Nonpoint source pollution: pollution that results from storm water runoff over different land uses to receiving waters.

Ordinary resource value wetlands: freshwater wetlands which are isolated wetlands which are more than 50 percent surrounded by development and less than 5,000 square feet in size.

Point source pollution: pollution that is derived from a localized, single source and is discharged from a pipe or other distinct source.

Potable water: water that does not contain objectionable pollution, contamination, minerals, or infective agents and is considered satisfactory for domestic consumption using conventional water treatment processes (e.g., chemical coagulation/flocculation, clarification, filtration, disinfection).

Public community water system: a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Recharge: the process of addition of water to the saturated zone; also the water added to an aquifer.

Retention basin: an impoundment area with a permanent pool made by constructing an embankment, or excavating a pit, or both for the purpose of temporarily storing stormwater.

Riparian area: streamside land areas that are generally transitional areas between the stream and upland areas.

Septic tank: an underground tank designed to hold household sewage waste and its decomposition products. It commonly is connected to a series of pipes (leachate field) to allow liquid to exit the tank to the ground. These components in total are called a "septic system" or, more formally, an "individual subsurface sewage disposal system."

Storm water runoff: the flow of water on the surface of the ground, resulting from precipitation.

Stream order: the number assigned to a stream based on the size and shape of the channel.

Subwatershed: a smaller geographic section of a larger watershed that comprises the drainage area for a tributary stream within the watershed or a section of the primary

stream.

Succession: the process of changing plant and animal populations and developing communities over time.

Surface water: water at or above the land's surface that is neither ground water nor contained within the unsaturated zone. Surface waters include, but are not limited to, the ocean and its tributaries, all springs, streams, rivers, lakes, ponds, wetlands, and artificial water bodies.

Threatened species: a species that is likely to become endangered in the foreseeable future.

Total maximum daily load: (TMDL) is the amount of constituent load that a receiving water body can receive and still meet water quality standards. Essentially, a TMDL and the process of determining the TMDL become a surface water pollution control plan, for specific constituents and stream reaches.

Treated wastewater: the treated liquid waste water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any ground water, surface water, and storm water that may be present.

Water quality criteria: a scientifically derived ambient concentration of a contaminant that protects human health and aquatic life.

Water quality standard: an allowable contaminant concentration in a water supply that is enforceable by law.

Water table: the upper surface of a zone of saturation except where that surface is formed by a confining unit. The upper surface of the zone of saturation at which the water pressure in the porous medium equals atmospheric pressure.

Watershed Management Area: one of the areas incorporating one or more contiguous watersheds as delineated in the Statewide Water Quality Management Plan. A watershed management area is used as a planning area for the watershed management process.

Watershed: a geographic area in which all water, sediments and dissolved material drain to a particular receiving body.

Wetland transition area: an area of land adjacent to a freshwater wetland which minimizes adverse impacts on the wetland or serves as an integral component of the wetlands ecosystem.