New Jersey Nonstructural
Stormwater Management Strategies Point System (NSPS)

User's Guide

January 31, 2006

Introduction

The New Jersey Stormwater Management Rules at N.J.A.C. 7:8-5.2(a) require nonstructural stormwater management strategies to be incorporated into the site design of a major development. A total of nine strategies are to be used to the maximum extent practicable to meet the groundwater recharge, stormwater quality, and stormwater quantity requirements of the Rules prior to utilizing structural stormwater management measures. The New Jersey **N**onstructural Stormwater Management **S**trategies **P**oint **S**ystem (NSPS) described herein provides a tool to assist planners, designers, and regulators in determining that the strategies have been used to the "maximum extent practicable" at a major development as required by the Rules.

The nine mandatory nonstructural strategies contained in the Stormwater Management Rules are presented below:

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion;
2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
3. Maximize the protection of natural drainage features and vegetation;
4. Minimize the decrease in the "time of concentration" from pre-construction to post-construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed;
5. Minimize land disturbance including clearing and grading;
6. Minimize soil compaction;
7. Provide low-maintenance landscaping that encourages the retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;
8. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas; and
9. Provide other source controls to prevent or minimize the release of those pollutants into stormwater runoff. These source controls include, but are not limited to:

i. Site design features that help to prevent accumulation of trash and debris in drainage systems;
ii. Site design features that help to prevent discharge of trash and debris from drainage systems;
iii. Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and
iv. When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.

These mandatory strategies are implemented through a variety of nonstructural stormwater management measures. When properly integrated into the site design, these nonstructural measures can be effective in reducing development-induced increases in runoff volumes, rates, pollutant loads, and concentrations. The New Jersey Stormwater Best Management Practices (BMP) Manual contains guidelines for the design of individual nonstructural measures.

Important Note: If the NSPS demonstrates that sufficient nonstructural stormwater management measures have been utilized at a major development, no further proof of compliance with the maximum extent practicable requirement shall be required. However, if the NSPS fails to demonstrate such compliance, such results shall not be used to disapprove any permit application sought by a proposed major development. Instead, the applicant for such permit will be required to demonstrate compliance through other and/or additional means. This includes the Low Impact Development (LID) Checklist contained in Appendix A of the New Jersey Stormwater Best Management Practices Manual, which includes a rigorous alternatives analysis for each measure. Finally, it should be noted that the NSPS is not presently intended for use on roadway construction, improvement, and other linear development projects. As a result, other means, including the LID Checklist, should be used for such projects.

NSPS Overview

The New Jersey NSPS is a Microsoft Excel-based computer spreadsheet program that can be used to demonstrate that sufficient nonstructural stormwater management measures have been incorporated into the design of a major land development project to the meet the maximum extent practicable requirement for nonstructural strategies in the Stormwater Management Rules. The NSPS assigns points based upon the existing and proposed conditions at the development site. A specific percentage of existing or pre-developed points must be achieved under proposed or post-developed conditions in order to demonstrate compliance through the NSPS. As described in detail below, the required percentage of existing points

varies according to the size of project site and the State Planning Area in which it is located.

To use the NSPS, the user begins by providing basic information about the proposed major development project. Next, the user describes the project site under existing or pre-developed conditions. This is accomplished by specifying in tabular form the various land uses and/or covers for each type of soil present at the existing site. From the user's input data, the NSPS computes a nonstructural point total that reflects the site's existing or pre-development stormwater runoff condition. The computations are based upon the USDA Natural Resources Conservation Service (NRCS) Runoff Equation and on a variation of the NRCS Runoff Curve Number (CN). The NSPS then determines what percentage of this existing point total must be retained or achieved under proposed or post-developed conditions to demonstrate compliance with the nonstructural requirements of the Rules.

To complete the analysis, the user describes the project site under proposed or post-developed conditions. This includes the proposed land uses and/or covers that will exist following site construction in the same tabular format as the existing uses and covers were specified. In addition, the user provides information regarding any additional nonstructural stormwater management measures that will be used at the proposed development site. These include minimizing and disconnecting impervious surfaces, minimizing ground disturbance and soil compaction, utilizing vegetated runoff conveyance systems, and residential lot clustering. The user provides this information by responding to a series of program questions concerning critical aspects of each proposed measures. The NSPS then computes a nonstructural point total for proposed site conditions by combining the proposed land use/land cover points with those for the various additional nonstructural measures. The program then computes the actual ratio of proposed to existing nonstructural points and compares the result to the percentage of existing nonstructural points required for approval. Based upon this comparison, the NSPS reports whether the proposed nonstructural measures for the development site are adequate or that further effort is necessary to demonstrate compliance with the Stormwater Management Rules' nonstructural requirements.

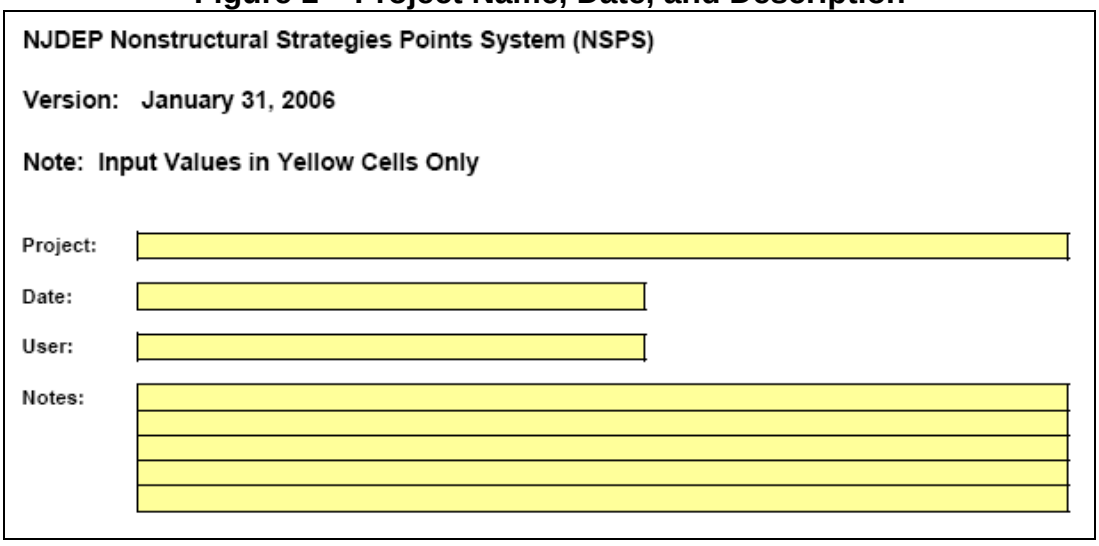
It should be noted that all of the required input data described above is provided on a single worksheet in the NSPS titled "NSPS Computations", which is the first of seven worksheets in the overall program. Detailed instructions for entering program input data is presented below.

Entering NSPS Input Data

As noted above, all input data to the NSPS is entered on the NSPS Computations worksheet. At the top of the worksheet, the user can enter a project name, date, user name, and information about the project or NSPS run. This information is

purely descriptive and is not included in any point computations. This portion of the NSPS Computations worksheet is shown in Figure 1 below. It should be noted that all NSPS input data can only be entered in cells shaded in yellow, while all NSPS results are presented in cells shaded in green.

Figure 1 – Project Name, Date, and Description

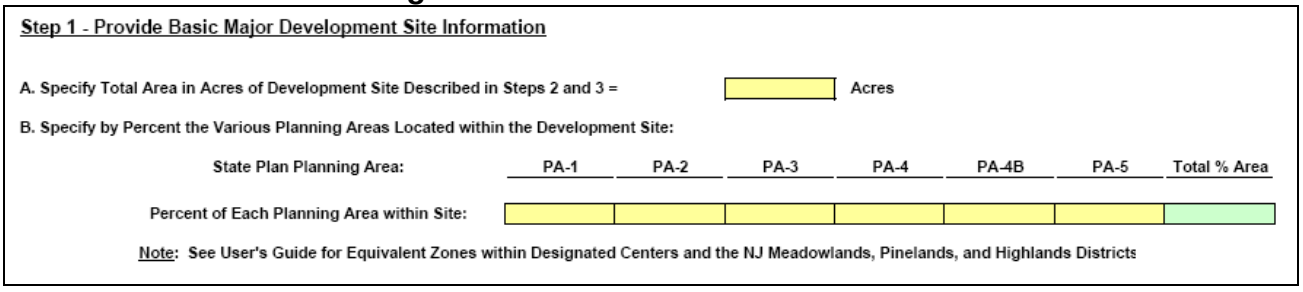


Step 1: Provide Basic Site Information

The Basic Site Information portion of the NSPS Computation worksheet is duplicated in Figure 2 below. Entering the required basic site information begins with the total area of the development site in acres (Cell E24). This area will be used at numerous locations throughout the NSPS and, therefore, should be the first input data entered. Failure to enter the total site area will prevent the computation of any existing or proposed nonstructural points.

Next, the user must designate the State Plan Planning Area(s) in which the site is located. Planning Area coverage is specified by the percentage of the total site area within each Planning Area (Cells C30 to H30). The sum of all input percentages for the Planning Areas must equal 100 percent. To help prevent errors, a warning message will appear if the total percentage does not equal 100 percent.

Figure 2 – Basic Site Information



Determination of the appropriate State Plan Planning Areas should be based upon the State Plan Policy Map from the March 1, 2002 New Jersey State Development and Redevelopment Plan. State Plan Planning Areas PA1, PA2, PA3, PA4, PA4B and PA5 are currently included in the NSPS. For sites within other planning or development areas, the following guidelines should be used to determine the equivalent NSPS planning area:

- If the site is located within a Designated Centers, use PA1 in the NSPS.
- If the site is located in PA5B, use PA5 in the NSPS.
- If the site is located in PA6, PA7, or PA8, use the largest of planning areas PA1 through PA5 located immediately adjacent to the site in the NSPS.
- If the site is located in a Highlands Preservation Area, use PA5 in the NSPS.
- If the site is located in a Highlands Planning Area, use the Planning Area in the State Development and Redevelopment Plan unless superseded by the Highlands Regional Master Plan.
- If the site is located in the New Jersey Meadowlands District, use PA1 in the NSPS.
- If the site is located in a New Jersey Pinelands Management Area, use the guidance in the table below:

Pinelands Management Area	NSPS Planning Area
Pinelands Towns, Pinelands Villages	PA1
Regional Growth Area	PA2
Rural Development Area	PA3
Agricultural Production Area and Forest Area	PA4
Special Agricultural Production Area and Agricultural Production Area	PA4B
Forest Area, Preservation Area and Special Agricultural Production Area	PA5

The March 1, 2002 New Jersey State Development and Redevelopment Plan is available through the Office of Smart Growth at the New Jersey Department of Community Affairs and at http://www.nj.gov/dca/osg/plan/. The Pinelands Comprehensive Management Plan is available through the New Jersey Pinelands Commission and at http://www.state.nj.us/pinelands/cmp/.

As noted above, the NSPS uses both the site's total area and State Plan Planning Area to compute the percentage of existing or pre-development nonstructural site points that must be achieved under proposed or post-development conditions in order to demonstrate compliance with the nonstructural requirements of the Stormwater Management Rules. In considering the site's area, the NSPS applies the

user-specified value to a sliding scale ranging from 0.1 to 10 acres. This value is combined with a value for the site's Planning Area based upon the percentages shown in Table 1 below. For site within multiple Planning Areas, the final value is based upon a weighted average of the various Planning Area percentages specified by the user.

Table 1 - Required Percentage of Existing Nonstructural Site Points

Site Area	PA-1	PA-2	PA-3	PA-4	PA-4B	PA-5
0.1 - 2 Acres	60% - 69%	75% - 84%	80% - 89%	84% - 93%	89% - 98%	95% - 104%
2 -10 Acres	69% - 80%	84% - 95%	89% - 100%	93% - 104%	98% - 109%	104% - 115%
>10 Acres	80%	95%	100%	104%	109%	115%

As shown in the Table, the required percentage of existing condition nonstructural site points for a given site increases as the site location changes from Planning Area 1 to Planning Area 5. For example, a 2-acre development site in Planning Area 1 must achieve 69 percent of its existing nonstructural points, while the same site in Planning Area 4 must achieve 84 percent of its existing nonstructural points. The required percentage also increases as the site area increases. A 15-acre development site in Planning Area 1 must achieve 80 percent of its existing nonstructural points, as opposed to a 2-acre site within the same Planning Area that must achieve 69 percent. Due to the sliding site area scale, the required percentage is interpolated within each Site Area and Planning Area category shown in Table 1 for site areas less than 10 acres. For example, the required percentage of existing nonstructural points for a 5-acre development site in Planning Area 1 is 73 percent, as opposed to 69 percent for a 2-acre site.

Step 2: Describe Existing or Pre-Developed Site Conditions

As described above, a development site's existing or pre-developed nonstructural points are based on the land use/land cover and soil data for existing site conditions provided by the user in Step 2. This portion of the NSPS Computations worksheet is shown below in Figure 3. The land use/land cover categories contained in the NSPS are shown below in Table 3. The site soil data in the NSPS is based upon the four NRCS Hydrologic Soil Groups A, B, C, and D. Also shown in Table 3 are the nonstructural points assigned to each combination of land use/land cover and Hydrologic Soil Group. It should be noted that these nonstructural points are also used for proposed or post-developed site conditions in Step 3.

Figure 3 – Existing or Pre-Developed Site Conditions

Step 2 - Describe Existing or Pre-Developed Site Conditions

A. Specify Existing Land Use/Land Cover Descriptions and Areas:

Site Segment	Land Use/Land Cover Description	Specify Land Use/Land Cover in Acres for Each HSG: HSG A	HSG B	HSG C	HSG D	Use/Cover Subtotals	Points
1	Wetlands and Undisturbed Stream Buffers					0.0	0
2	Lawn and Open Space					0.0	0
3	Brush and Shrub					0.0	0
4	Meadow, Pasture, Grassland, or Range					0.0	0
5	Row Crop					0.0	0
6	Small Grain and Legumes					0.0	0
7	Woods - Indigenous					0.0	0
8	Woods - Planted					0.0	0
9	Woods and Grass Combination					0.0	0
10	Ponds, Lakes, and Other Open Water					0.0	0
11	Gravel and Dirt					0.0	0
12	Porous and Permeable Paving					0.0	0
13	Directly Connected Impervious					0.0	0
14	Unconnected Impervious with Small D/S Pervious					0.0	0
15	Unconnected Impervious with Large D/S Pervious					0.0	0
	HSG Subtotals (Acres):	0.0	0.0	0.0	0.0	**Total Area:**	0.0
	HSG Subtotals (%):	0.0%	0.0%	0.0%	0.0%	**Total % Area:**	0.0%
						Points Subtotal:	0

As noted above, the points shown in Table 3 are based upon a variation of the NRCS Runoff Curve Numbers (CNs) contained in Technical Release 55 – Urban Hydrology for Small Watersheds (TR-55). However, as shown in Table 3, it is important to note that six additional Land Use/Land Cover categories (and their associated points) have been included in the NSPS. These six additional categories are: Wetlands and Stream Buffers; Woods - Planted; Ponds, Lakes, and Other Open Waters; Porous and Permeable Paving; Unconnected Impervious with Small D/S Pervious, and Unconnected Impervious with Large Downstream Pervious. A description of each of these additional land use/land cover categories is presented below along with guidance on describing the surface areas of various structural stormwater BMPs.

Table 2 - Nonstructural Points for Land Use/Cover and Hydrologic Soil Group

Land Use/Cover Descriptions:	Land Use/Land Cover Points A	B	C	D
Wetlands and Undisturbed Stream Buffers	900.000	600.000	410.000	330.000
Lawn and Open Space	500.000	331.000	230.450	180.750
Brush and Shrub	550.000	364.100	253.495	198.825
Meadow, Pasture, Grassland, or Range	650.000	430.300	299.585	234.975
Row Crop	400.000	264.800	184.360	144.600
Small Grain and Legumes	450.000	297.900	207.405	162.675
Woods - Indigenous	700.000	463.400	322.630	253.050
Woods - Planted	650.000	430.300	299.585	234.975
Woods and Grass Combination	600.000	397.200	276.540	216.900
Ponds, Lakes, and Other Open Water	700.000	463.400	322.630	253.050
Gravel and Dirt	300.000	198.600	138.270	108.450
Porous and Permeable Paving	500.000	331.000	230.450	180.750
Directly Connected Impervious	0.000	0.000	0.000	0.000
Unconnected Impervious with Small D/S	150.000	99.300	69.135	54.225
Unconnected Impervious with Large D/S	400.000	264.800	184.360	144.600

Wetlands and Undisturbed Stream Buffers: This NSPS land use/land cover category should be used for 1) undisturbed portions of a Special Water Resource Protection Area (SWRPA) buffer; 2) wetland areas regulated under the Freshwater Wetlands Protection Act or the Wetlands Act of 1970; 3) contiguous undisturbed buffers within 75 feet of streams with a bed and bank or a contributory drainage area of 50 acres. Wetland areas include both natural and constructed wetlands but do not include transition areas. With regards to stream buffers, it is important to emphasize that this category should only be used for the undisturbed portions of those buffers described above. For disturbed portions of these buffers, an appropriate NSPS land use/land cover that best characterizes the disturbed land cover should be used. Similarly, when a disturbed buffer area is proposed to be restored, the appropriate NSPS land use/land cover for the restored area should be used.

Woods - Planted: This NSPS land use/land cover category should be used to describe an area of the development site that has been or will be planted with trees to create a woods. The planted woods category has somewhat lower nonstructural points than indigenous wood in recognition of the fact that, while a planted woods may be hydrologically beneficial, it typically is not as effective as a mature, indigenous woods.

Ponds, Lakes, and Other Open Waters: This NSPS land use/land cover category should be used for any areas of ponded water on the development site. This

includes both natural and man-made impoundments, including wet ponds and other structural BMPs with permanent pools.

Porous and Permeable Paving: This NSPS land use/land cover category should be used to describe any porous or permeable paving area that will include a subsurface stone bed with sufficient storage capacity to contain, at a minimum, the New Jersey Stormwater Quality Storm runoff from the paving. Details of such paving can be found in Chapter 9 of the New Jersey Stormwater Best Management Practices Manual.

Unconnected Impervious with Large Downstream Pervious: This NSPS land use/land cover category should be used to describe any impervious area that meets all of the requirements of an unconnected impervious area contained in Chapter 5 of the New Jersey Stormwater Best Management Practices Manual. This includes the requirement for a minimum downstream pervious sheet flow length of 25 feet.

Unconnected Impervious with Small Downstream Pervious: This NSPS land use/land cover category should be used to describe any impervious area that meets all of the requirements of an Unconnected Impervious Area with Large Downstream Pervious area but which only has a minimum downstream pervious flow length of 10 feet,

Structural Stormwater BMPs: The area occupied by a structural stormwater BMP should be described by the NSPS land use/land cover category that best characterizes the dominant cover in the BMP. For example, a dry detention basin with a grassed surface should be included in the Lawn and Open Space category, while sand filters and infiltration basins with sand bottoms should be included in the Gravel and Dirt category. Bioretention basins should be included in either the Brush and Shrub, Meadow and Pasture, or Woods – Planted category depending again on the dominant type of vegetation in the basin. As noted above, wet ponds should be included in the Ponds, Lakes, and Open Waters category and constructed wetlands should be included in the Wetlands and Undisturbed Buffers category.

Roofs with Drywells: The area occupied by roofs that discharge their runoff to drywells with sufficient capacity to contain, at a minimum, the roofs' groundwater recharge storm should be included in the Unconnected Impervious with Large Downstream Pervious category.

Vegetated Roofs: The area occupied by a building with vegetated roofs should be included in the Unconnected Impervious with Large Downstream Pervious category.

Finally, it is important to note that the above land use/land cover characterizations have been made only for the purposes of the NSPS and should be not used in any direct rainfall-runoff computations,

Step 3: Describe Proposed or Post-Developed Site Conditions

As noted above, the total nonstructural points for a development site under proposed or post-developed conditions is a combination of the points earned by the site's proposed land use/land cover (Step 3A) and additional nonstructural stormwater management measures proposed for the development (Steps 3B to 3G). These additional measures in the NSPS represent nonstructural strategies that minimize site disturbance, minimize and/or disconnect impervious surfaces, minimize soil compaction, utilize vegetated stormwater conveyances, or cluster residential development.

Step 3A – Proposed Land Use/Land Cover Description: Characterization of the site's proposed land use/land cover and Hydrologic Soil Group data in Step 3A is performed in the same manner described above for existing or pre-developed site conditions in Step 2. This includes the guidance provided for the additional NSPS land use/land cover categories, structural stormwater BMPs, and roofs with drywells. The portion of the NSPS Computations worksheet for proposed land use/land cover and soil data in Step 3A is shown below in Figure 4.

Figure 4 – Proposed or Post-Developed Site Conditions

Step 3 - Describe Proposed or Post-Developed Site Conditions

A. Specify Proposed Land Use/Land Cover Descriptions and Areas:

Site Segment	Land Use/Land Cover Description	Specify Land Use/Land Cover in Acres for Each HSG: HSG A	HSG B	HSG C	HSG D	Use/Cover Subtotals	Points
1	Wetlands and Undisturbed Stream Buffers					0.0	0
2	Lawn and Open Space					0.0	0
3	Brush and Shrub					0.0	0
4	Meadow, Pasture, Grassland, or Range					0.0	0
5	Row Crop					0.0	0
6	Small Grain and Legumes					0.0	0
7	Woods - Indigenous					0.0	0
8	Woods - Planted					0.0	0
9	Woods and Grass Combination					0.0	0
10	Ponds, Lakes, and Other Open Water					0.0	0
11	Gravel and Dirt					0.0	0
12	Porous and Permeable Paving					0.0	0
13	Directly Connected Impervious					0.0	0
14	Unconnected Impervious with Small D/S Pervious					0.0	0
15	Unconnected Impervious with Large D/S Pervious					0.0	0
	HSG Subtotals (Acres):	0.0	0.0	0.0	0.0	Total Area:	0.0
	HSG Subtotals (%):	0.0%	0.0%	0.0%	0.0%	Total % Area:	0.0%

Step 3B – Compare Proposed and Maximum Impervious Coverages: Additional nonstructural points may be earned under proposed site conditions if the amount of proposed impervious surface at the development site is less than maximum allowable percentages on the Maximum Impervious Cover Table worksheet. This worksheet immediately follows the NSPS Computations worksheet in the NSPS. A copy of the Table, including the maximum allowable impervious cover for each NSPS land use/land cover category, is shown below in Figure 5.

To determine the maximum impervious site coverage for the proposed development site and the amount of additional nonstructural points (if any) earned due to the amount of proposed impervious site coverage specified in Step 3A, the user must select "Table" in Cell E110 on the NSPS Computations worksheet and then complete the table on the Maximum Impervious Cover Table worksheet. In doing so, the user must insure that the sum of the various Land Use Zone areas entered in the table must equal the total site area specified in Cell E24 of the NSPS Computations worksheet (and reproduced in Cell B7 on the Maximum Impervious Cover Table worksheet). Failure to do so will prevent to computation of a maximum impervious coverage in Cell D28 as well as produce a warning message at the bottom of the table. As a result, the entire development site must be characterized in the table. For actual site land use zones not listed in the table, the user should select a listed land use zone that has a maximum impervious cover similar to the actual zone.

Figure 5 – Maximum Impervious Cover Table

NJDEP Nonstructural Strategies Points System (NSPS)

Maximum Impervious Cover Table

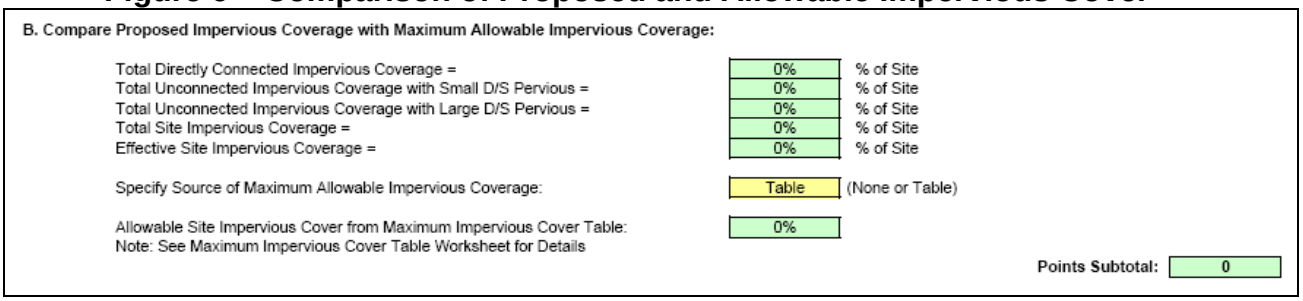
Project:

Total Site Area: Acres Date:

Land Use Zone	Planning Areas PA-1 and PA-2		Planning Areas PA-3, PA-4, PA-4B, and PA-5	
	Maximum % Impervious	Zone Area (Acres)	Maximum % Impervious	Zone Area (Acres)
Single Family Residential:				
1/8 Acres or Less	65%		12%	
Greater than 1/8 to 1/4 Acre	38%		12%	
Greater than 1/4 to 1/3 Acre	30%		12%	
Greater than 1/3 to 1/2 Acre	25%		12%	
Greater than 1/2 to 1 Acre	20%		12%	
Greater than 1 to 2 Acres	12%		12%	
Greater than 2 Acres	10%		10%	
Commercial	85%		12%	
Business	85%		12%	
Industrial	72%		12%	
Institutional	72%		12%	
Multi-Family Residential	65%		12%	
Total Zone Areas (Acres) =		0.0		0.0
Maximum % Impervious =			0%	

Upon completion of the above steps, the NSPS will determine whether the proposed site impervious cover specified in Step 3A is less than the maximum impervious cover computed in the Maximum Impervious Cover Table and, if so, will compute additional nonstructural points for the proposed site. These points will be displayed in Cell I114 on the NSPS Computations worksheet. A copy of this portion of the worksheet is shown below in Figure 6.

Figure 6 – Comparison of Proposed and Allowable Impervious Cover

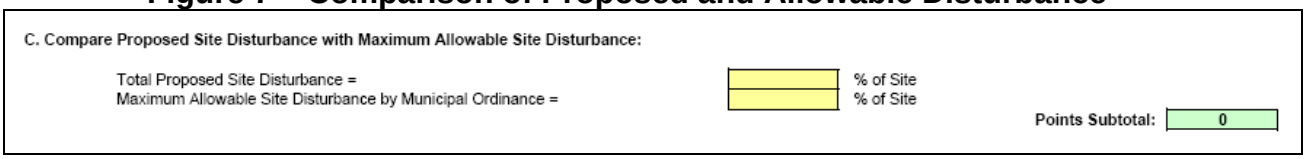


As noted above, the NSPS will automatically compute the actual proposed impervious cover at the development site. This computation will be based upon the Directly Connected Impervious, Unconnected Impervious with Large Downstream Pervious, and Unconnected Impervious with Small Downstream areas entered in the proposed land use/land cover and soil table in Step 3A. In addition, the NSPS will also compute an effective site impervious cover for the proposed site based upon a weighted average of these three impervious surfaces. The NSPS will then use this effective impervious cover in the computation of any nonstructural points.

Weighting factors for the Directly Connected Impervious, Unconnected Impervious with Large Downstream Pervious, and Unconnected Impervious with Small Downstream Pervious surfaces are 1.0, 0.5, and 0.85, respectively. As a result, it can be seen that increased use of unconnected impervious surface will result in a lower effective impervious cover for the development site and potentially greater nonstructural points. For example, one acre of Unconnected Impervious with Large Downstream Pervious will only count as one half acre of effective impervious surface.

Step 3C – Compare Proposed and Maximum Disturbances: Additional nonstructural points may be earned under proposed site conditions if the amount of proposed disturbance at the development site is less than maximum allowed by municipal ordinance. A copy of this portion of the NSPS Computations worksheet is shown below in Figure 7.

Figure 7 – Comparison of Proposed and Allowable Disturbance

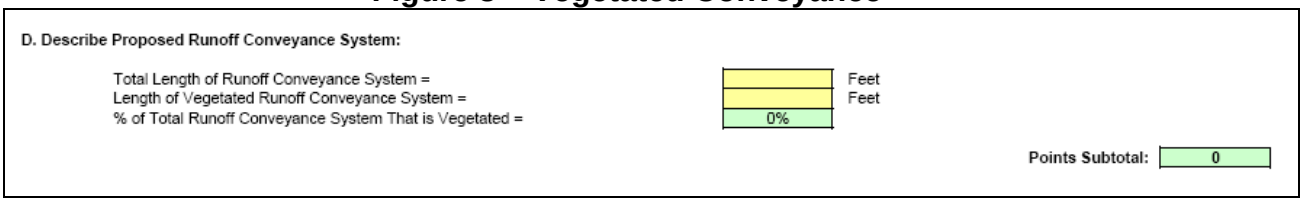


To complete Step 3C, as shown in Figure 7, the user must specify both the proposed (Cell E119) and maximum allowable (Cell E121) site disturbance at the development site. The maximum allowable site disturbance must be based upon an applicable ordinance of the municipality in which the project is located. As a result, additional nonstructural points can only be computed under this Step if such an ordinance and maximum site disturbance exists.

The proposed site disturbance is the sum of all areas that will be temporarily or permanently disturbed during the construction of the proposed site. This area is generally included within the development's proposed limit of disturbance line and should include all impervious surfaces, lawns, landscaped areas, and construction clearing, access, staging, and stockpile areas.

Step 3D – Vegetated Conveyance: Additional nonstructural points may be earned under proposed site conditions if vegetated conveyance measures such as swales and channels are used at the proposed development site. A copy of this portion of the NSPS Computations worksheet is shown below in Figure 8.

Figure 8 – Vegetated Conveyance



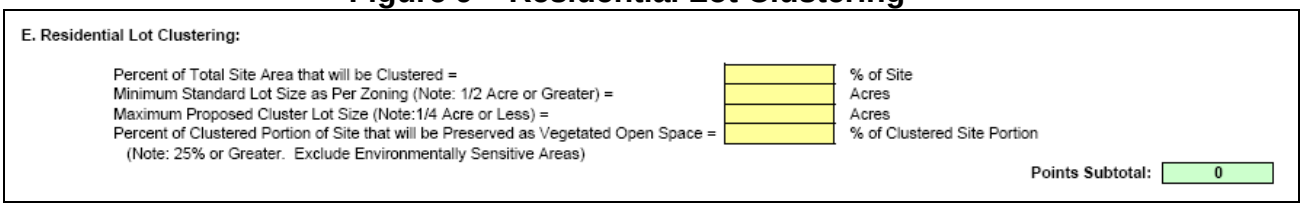
To complete Step 3D, as shown in Figure 8, the user must specify the total length of the development's proposed runoff conveyance system (Cell E127) as well the length of that portion that will be vegetated (Cell E128). In measuring both of these lengths, upstream system limits are to be established at those points where the drainage area to the system are comprised of at least one acre of pervious surface or 0.1 acre of impervious surface. For drainage areas that include both pervious and impervious surfaces, the following equation should be used to determine the minimum amount of each surface:

$$(\text{Impervious Area} * 10) + \text{Pervious Area} \geq 1.0 \text{ Acres}$$

Finally, it should be noted that swales created during normal site grading (such as those created along property lines between adjacent single family residential lots) should not be considered part of the development's proposed runoff conveyance system regardless of the size of the pervious or impervious area draining to them.

Step 3E – Residential Lot Clustering: Additional nonstructural points may be earned under proposed site conditions at residential developments if lot clustering is utilized. A copy of this portion of the NSPS Computations worksheet is shown below in Figure 9.

Figure 9 – Residential Lot Clustering



To complete Step 3E, as shown in Figure 9, the user must specify the following information:

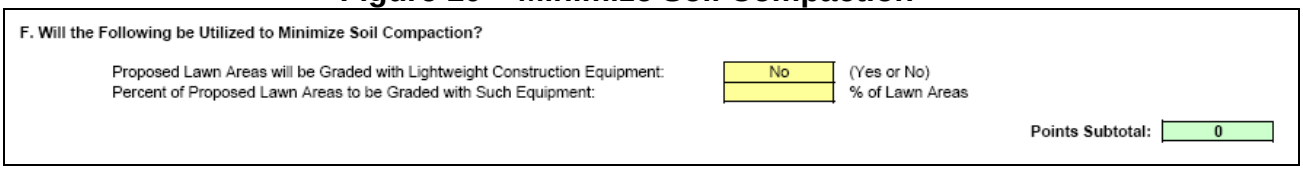
1. The percent of the total site area that will be clustered (Cell E136).
2. Minimum standard residential lot size in clustered portion of site in acres (Cell E137).
3. Maximum proposed clustered lot size in acres (Cell E138)
4. Percent of clustered portion of site that will be preserved as open space (Cell E139).

In providing the above information, the following NSPS conditions must be met.

1. The minimum standard residential lot size as specified in the municipality's zoning ordinance must be ½ acre or greater.
2. The maximum proposed clustered lot size must be ¼ acre or smaller. This requirement is independent of any lot size requirements contained in the municipality's cluster ordinance.
3. The percentage of the clustered portion of the site that will be preserved as open space must be 25 percent or greater. This requirement is independent of any open space requirements contained in the municipality's cluster ordinance.
4. The preserved open space must be permanently vegetated and may not include any areas such as wetlands, transition areas, stream buffers, and floodways that are already protected from development.

Step 3F – Soil Compaction: Additional nonstructural points may be earned under proposed site conditions if measures are taken during construction to minimize soil compaction that can increase runoff volumes and rates and adversely impact the growth of vegetation. A copy of this portion of the NSPS Computations worksheet is shown below in Figure 10.

Figure 10 – Minimize Soil Compaction



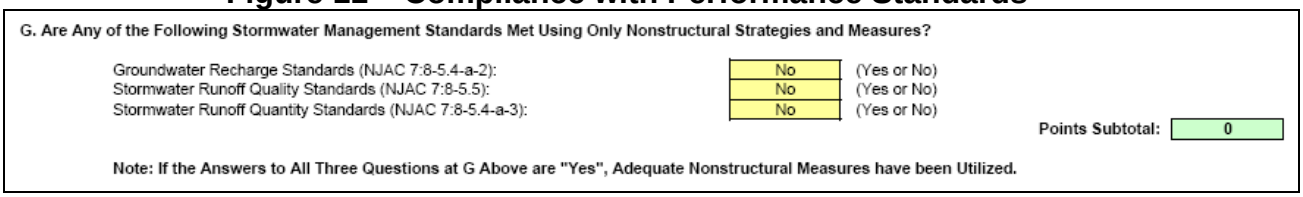
To complete Step 3F, the user must agree to use lightweight, low impact earth moving equipment for the final grading of proposed lawn areas (Cell E145). To qualify as lightweight and low impact, this equipment must exert a maximum pressure of eight pounds per square inch on the ground surface during grading operations. The percentage of the proposed lawn areas where such equipment will be utilized must also be specified (Cell E146).

In providing the above information, the following NSPS conditions must be met:

1. The approved plans must include appropriate notes and/or drawings specifying the lightweight grading equipment requirements and designating the limits of the proposed lawn areas on which it shall be used.
2. If during construction inspection it is found that equipment that exceeds the maximum eight pounds per square inch requirement has been used for backfilling or final grading of designated lawn areas, the applicant agrees to modify the affected lawn areas to a minimum of 18 inches below finished grade. Procedures to restoration of the permeability of the upper 18 inches of compacted soil shall be site-specific, and subject to the approval of the reviewing authority.

Step 3G – Compliance with Performance Standards: Additional nonstructural points may be earned under proposed site conditions if the performance standards for groundwater recharge, runoff quality, and/or runoff quantity in the Stormwater Management Rules are achieved entirely through nonstructural measures. A copy of this portion of the NSPS Computations worksheet is shown below in Figure 11.

Figure 11 – Compliance with Performance Standards



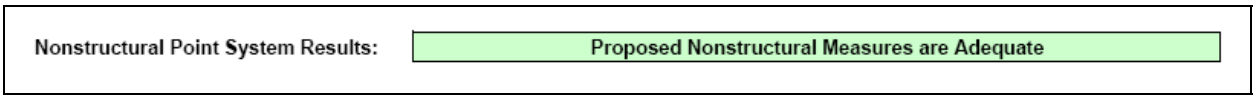
To complete Step 3G, the user must indicate which of the performance standards have been achieved entirely through nonstructural measures at the proposed development site. For each standard met in this way, the site will earn 1/3 of the proposed nonstructural points necessary to demonstrate compliance with nonstructural requirements of the Stormwater Management Rules. As such, meeting all three performance standards entirely through nonstructural measures will automatically demonstrate compliance with the nonstructural requirements of the Rules.

It should be noted that supporting computations and plans must accompany any claim of compliance indicated in Step 3G. In addition, the use of the NSPS is, of course, optional if compliance with all three performance standards through entirely nonstructural measures has in fact been achieved.

NSPS Results

As the user completes the required input for any of Steps 3A to 3G, the NSPS automatically updates the total nonstructural points for proposed site conditions and computes the ratio of this total to total existing nonstructural points computed in Step 2. The NSPS then compares this ratio to the required existing nonstructural points ratio also computed in Step 2 to determine if the proposed site meets the nonstructural requirement of the Stormwater Management Rules.

If the ratio of proposed to existing nonstructural points equals or exceeds the required ratio, the NSPS will provide the following result:



As described in the Introduction, achieving this result means that no additional demonstration of compliance with the nonstructural requirements of the Stormwater Management Rules is necessary.

However, if the ratio of proposed to existing nonstructural points is less than the required ratio, the NSPS will provide the following result:

Nonstructural Point System Results:	Further Review of Proposed Nonstructural Measures is Necessary

As described in the Introduction, this result indicates that other and/or additional justification must be provided to demonstrate compliance with the nonstructural requirements of the Stormwater Management Rules. This includes the Low Impact Development (LID) Checklist contained in Appendix A of the New Jersey Stormwater Best Management Practices Manual. However, this result shall not be used to disapprove any permit application sought by a proposed major development.

Additional NSPS Worksheets

In addition to the NSPS Computations and Maximum Impervious Cover Table worksheets described above, the NSPS contains five additional worksheets.

The Site Comparison Table worksheet, shown below in Figure 12, provides the user with a summary of the existing and proposed areas and nonstructural points for each land use/land cover and soil category specified in the NSPS Computations worksheet. This summary allows the user to identify how the areas and nonstructural points of each existing land use/land cover changes under proposed conditions. In addition, the Site Comparison Table displays the difference between the total exiting and proposed nonstructural points as well as the target or required point difference necessary to achieve compliance. This information is intended to assist the user in selecting the most effective nonstructural strategies for the proposed development site.

Finally, the remaining four worksheets in the NSPS include:

1. The Data and Formulas worksheet, which contains the nonstructural points tables associated with each NSPS Planning Area and land use/land cover category as well as the equations and other input data necessary to compute the various NSPS results.
2. The Planning Area Points worksheet, which displays in tabular and graphical form the required percentage of existing nonstructural points for each NSPS Planning Area.
3. The Impervious and Disturbance Effects worksheets, which display in tabular and graphical form the relative effects of reducing proposed site impervious cover and disturbance, respectively, on a site's proposed nonstructural points.

It is important to note that these five additional worksheets do not contain any user input cells. Therefore, the NSPS user should not attempt to input or alter any data or other information on these worksheets.

Figure 12 – Site Comparison Table

NJDEP Nonstructural Strategies Points System (NSPS)

Pre- and Post-Developed Site Comparison Table

Project:

Date: Total Site Area: Acres

Site Segment	Land Use/Land Cover Description	Existing Area (Acres)	Proposed Area (Acres)	Change (Acres)	Existing Points	Proposed Points	Change in Points
1	Wetlands and Undisturbed Stream Buffers	0.0	0.0	0.0	0	0	0
2	Lawn and Open Space	0.0	0.0	0.0	0	0	0
3	Brush and Shrub	0.0	0.0	0.0	0	0	0
4	Meadow, Pasture, Grassland, or Range	0.0	0.0	0.0	0	0	0
5	Row Crop	0.0	0.0	0.0	0	0	0
6	Small Grain and Legumes	0.0	0.0	0.0	0	0	0
7	Woods - Indigenous	0.0	0.0	0.0	0	0	0
8	Woods - Planted	0.0	0.0	0.0	0	0	0
9	Woods and Grass Combination	0.0	0.0	0.0	0	0	0
10	Ponds, Lakes, and Other Open Water	0.0	0.0	0.0	0	0	0
11	Gravel and Dirt	0.0	0.0	0.0	0	0	0
12	Porous and Permeable Paving	0.0	0.0	0.0	0	0	0
13	Directly Connected Impervious	0.0	0.0	0.0	0	0	0
14	Unconnected Impervious with Small D/S Pervious	0.0	0.0	0.0	0	0	0
15	Unconnected Impervious with Large D/S Pervious	0.0	0.0	0.0	0	0	0
				Total Points =	0	0	0

Additional Points for Other Nonstructural Measures = 0

Total Point Difference = 0

Target Point Difference = 0