Project Compliance Matrix

Christopher Estates

mmary of Regulation		Citation		Non-Compliant	NA
	NJAC	RSIS	Compliant		
onstructural stormwater management strategies:				i i	
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	5:21-7.1(d)1		X	
finimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	5:21-7.1(d)2		Х	
faximize the protection of natural drainage features and vegetation		, ,		Х	
finimize the decrease in the "time of concentration" from pre-construction to post-construction		` ,		Х	
finimize land disturbance including clearing and grading	7:8-5.3(b)5	, ,		Х	
finimize soil compaction	7:8-5.3(b)6	. ,		Х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	5:21-7.1(d)7		Х	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated area:	7:8-5.3(b)8	5:21-7.1(d)8		Х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	5:21-7.1(d)9		х	
rosion control, groundwater recharge and runoff quantity standards:					
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				1	
emonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	5.21-7.7		v	
r		7:8-5.3(b)6 7:8-5.3(b)6 7:8-5.3(b)7 7:8-5.3(b)7 7:8-5.3(b)8 7:8-5.3(b)9 7:8-5.4(a)2i(1) 7:8-5.4(a)2i(2) 8-5.4(a)2iv 7:8-5.4(a)3ii 7:8-5.5 7:8-5.5(c) 7:8-5.5(d) 7:8-5.5(e) 7:8-5.6(a)1i 7:8-5.6(a)2 7:8-5.6(a)3 7:8-5.6(a)4 5:21-7.2(e)		i ^ i	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)3iii 7:8-5.5 7:8-5.5(c) 7:8-5.5(d)			i i	
ssess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.3(b)9 7:8-5.4(a)2i(1) 7:8-5.4(a)2i(2) 7:8-5.4 (a)2iv 7:8-5.4 (a)2iv 7:8-5.4(a)3ii 7:8-5.4(a)3iii 7:8-5.5(c) 7:8-5.5(d) te 7:8-5.5(e) 7:8-5.6(a)1ii			i i	Х
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following					
emonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7.0 5 4/-\2:			!	
unoff hydrographs for the same storm events	7:8-5.4(a)31			!!!	
r		5.24.7.5			
emonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and tha	t	5:21-7.5		X	
ne increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)311			i i	
r				i i	
esign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii			i i	
tormwater runoff quality standards	(-,-				
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,					
expressed as an annual average.	7:8-5.5			х	
more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)				Х
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	. ,	5:21-7.6			
alculation using a weighted average	7:8-5.5(d)			Х	
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water				i	
uality design storm.	7:8-5.5(e)			Х	
alculation of stormwater runoff and groundwater recharge					
he design engineer shall calculate runoff using one of the following methods					
he USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7·8-5 6/a\1i	5·21-7 2(c)1		!	
r	7.0 3.0(4)11	3.21 7.2(0)1		Х	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7·8-5 6/a)1ii	5·21-7 2(c)1		i i	
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7.0-3.0(a)111	J.21-7.2(c)1		i	
or at least five years without interruption prior to the time of application	7:8-5.6(a)2	5:21-7.2(a)		i i	Х
re-construction stormwater runoff accounts for all significant land features and structure:	7.9 5 6/2/2	E:21 7 2/a)		X	
re-construction stormwater runon accounts for all significant faint features and structure:	7.6-3.0(a)3	5.21-7.2(a)		*	
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)		х	
the country of the subject of the su					
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	5:21-7.8(c)		i	x
f structural stormwater management measures.	7.0 F C/b)1	F.21 7 7		i	
roundwater recharge may be calculated with NJ GSR-32	1.0-5.b(D)1	5.21-7.7	X	i i	
tandards for structural stormwater management measures	7.0 5 7/-14				
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7.8-5.7(a)I			X	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	5:21-7.8(d)1ii		х	
ppropriate.	, <i>,</i>	, ,			
Maintenance requirements	7.0.5.0()				
he design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	5:21-7.9	Х	i	
he maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)		Х	i	
equirements for trash racks, overflow gates and escape provisions					
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	5:21-7.8(d)6vii		i_	X
new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	5:21-7.8(d)6viii	Х		
			14%	68%	18%

ummary of Regulation	Citation		Compliant	Non-Compliant	NA
	NJAC	RSIS			
onstructural stormwater management strategies:				i i	
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	5:21-7.1(d)1		Х	
finimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	5:21-7.1(d)2		х	
1aximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	5:21-7.1(d)3		Х	
finimize the decrease in the "time of concentration" from pre-construction to post-constructior	7:8-5.3(b)4	5:21-7.1(d)4		Х	
finimize land disturbance including clearing and grading	7:8-5.3(b)5	5:21-7.1(d)5		Х	
finimize soil compaction	7:8-5.3(b)6	5:21-7.1(d)6		х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	5:21-7.1(d)7		Х	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated area:	7:8-5.3(b)8	5:21-7.1(d)8		Х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo rosion control, groundwater recharge and runoff quantity standards:	7:8-5.3(b)9	5:21-7.1(d)9		х	
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either					
emonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	5:21-7.7		x	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)			1	
ssess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv				Х
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following	7.0 3.4 (0)210				
emonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events	7:8-5.4(a)3i	_			
r emonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	at 7:8-5.4(a)3ii	5:21-7.5		X I	
r ender the second of the seco				!!!	
esign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate tormwater runoff quality standards	7:8-5.4(a)3iii				
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,	7:8-5.5			х	
more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)				Х
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a elculation using a weighted average	7:8-5.5(d)	5:21-7.6		i i	х
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the wa	te 7:8-5.5(e)			х	
alculation of stormwater runoff and groundwater recharge					
he design engineer shall calculate runoff using one of the following methods					
he USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	5:21-7.2(c)1	1	1	
re about the inclinating the fines ration equation and officersonics of the ray of graph	7.0 3.0(0)11	3.21 7.2(0)1	1	Х	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computations	7:8-5.6(a)1ii	5:21-7.2(c)1	1	i	
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the sit		J.21-7.2(C)1			
	7:8-5.6(a)2	5:21-7.2(a)	х	i i	
or at least five years without interruption prior to the time of application re-construction stormwater runoff accounts for all significant land features and structures	7.9 5 6/2)2	F.21 7 2/a\			
re-construction stormwater runori accounts for all significant land features and structure.	7:8-5.6(a)3	5:21-7.2(a)	Х	! !	
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)	х	1	
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design engineer.	7:8-5.6(a)5	5:21-7.8(c)		1	х
f structural stormwater management measures.	` '	```			
roundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	5:21-7.7		Х	
tandards for structural stormwater management measures					
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1		Х	ii	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as oppopriate.	7:8-5.7(a)2	5:21-7.8(d)1ii		х	
aintenance requirements					
he design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	5:21-7.9		х	
he maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance equirements for trash racks, overflow gates and escape provisions	7:8-5.8(b)	5.21-7.9			х
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet	7:8-6.2(c)2	5:21-7.8(d)6vii			х
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	5:21-7.8(d)6viii	x	i	
	. ,,		•		21%

Project Compliance Matrix

Waterview Center

mary of Regulation	Citation		Compliant	Non-Compliant	NA
Sammary of Regulation	NJAC	Local Ordinance	Compilant	Non-compliant	14/4
Nonstructural stormwater management strategies:				1	
Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a		х	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b	Х	i	
Vlaximize the protection of natural drainage features and vegetation	7:8-5.3(b)3	158-4(e)(2)c		i x	
Minimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		x	
Winimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		X	
Minimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f	X		
Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		X	
Provide vegetated open-channel conveyance systems discharging into and through stable vegetated area:	7:8-5.3(b)8	158-4(e)(2)h	X	^	
Provide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	158-4(e)(2)i	^		x
rosion control, groundwater recharge and runoff quantity standards:	7.8-3.3(0)3	138-4(6)(2)1			^
The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				1 1	
Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	158-4(f)(1)b1A		x	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)	158-4(f)(1)b1B		1 1	
Assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv	158-4(f)(1)b4		1	¥
n order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following	J. 1 (a)21V	100 I(I)(1)07		<u>;</u> ;	
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events	7:8-5.4(a)3i	158-4(f)(1)c1			
or .				x	
Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)3ii	158-4(f)(1)c2			
or .				i i	
Design stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate stormwater runoff quality standards	7:8-5.4(a)3iii	158-4(f)(1)c3			
Stormwater runoff generated from the water quality standards Stormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,				!	
expressed as an annual average.	7:8-5.5	158-4(g)(1)		х	
f more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)			Y
f there is more than one onsite drainage area, the 80% TSS reduction for a site, the applicant shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a				1 1	^
calculation using a weighted average	7:8-5.5(d)	158-4(g)(4)		1	X
Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the wate quality design storm.	7:8-5.5(e)	158-4(g)(5)		х	
Calculation of stormwater runoff and groundwater recharge					
The design engineer shall calculate runoff using one of the following methods					
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a		1 1	
or	7.0 3.0(0)11	130 3(4)(1)4		Х	
The Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	158-5(a)(1)b		i i	
A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7.8-3.0(a)111	130-3(a)(1)0			
	7:8-5.6(a)2	158-5(a)(2)		i i	Х
or at least five years without interruption prior to the time of application	7.0 5 6/2\2	150 5/2\/2\		1 ,	
Pre-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	158-5(a)(3)		х	
Stormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)		х	
f the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	158-5(a)(5)		! !	х
of structural stormwater management measures.		.== = (1) (1)		 	
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	158-5(b)(1)	Х		
Standards for structural stormwater management measures				i i	
Structural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1	158-6(a)1		Х	
Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	158-6(a)2	x		
appropriate. Maintenance requirements					
•	7.0 E 0/a\	158-10(b)(1)			
The design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	, ,, ,		X	
The maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance Requirements for trash racks, overflow gates and escape provisions	7:8-5.8(b)	158-10(b)(2)		х	
Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet	7.8 6 2/2\2	150 0/h\/2\h	v	!	
	7:8-6.2(c)2	158-8(b)(3)b	X		
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c	Х		
			25%	54%	219

mary of Regulation	Citation		Compliant	Non-Compliant	NA
	NJAC	Local Ordinance	Compilant	iton compilant	
Ionstructural stormwater management strategies:					
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a		х	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b		х	
Maximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	158-4(e)(2)c		Х	
Animize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		х	
Ainimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		х	
Ainimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f		Х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		Х	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated area	7:8-5.3(b)8	158-4(e)(2)h		х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	158-4(e)(2)i		X	
rosion control, groundwater recharge and runoff quantity standards:				! !	
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either					
Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	158-4(f)(1)b1A	x	1 1	
	7.0.5.4/ \0:/0\	450 4/5/4)! 45		i i	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)	158-4(f)(1)b1B			
ssess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv	158-4(f)(1)b4		!	Х
n order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following				!!!	
emonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7:8-5.4(a)3i	158-4(f)(1)c1		!!!	
unoff hydrographs for the same storm events	7.0 3.4(0)31	150 4(1)(1)(1			
r				x	
emonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that	t 7.9 E 4/2\2;;	1EQ A/f\/1\c2		i î	
he increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)3ii	158-4(f)(1)c2		i i	
r				i i	
besign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii	158-4(f)(1)c3		1 1	
tormwater runoff quality standards				!	
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,		.== .()(.)			
xpressed as an annual average.	7:8-5.5	158-4(g)(1)	Х	1 1	
more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)	X		
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a					
alculation using a weighted average	7:8-5.5(d)	158-4(g)(4)	Х	i i	
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water					
uality design storm.	7:8-5.5(e)	158-4(g)(5)		X	
alculation of stormwater runoff and groundwater recharge					
he design engineer shall calculate runoff using one of the following methods					
he USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a		1 1	
r	710 510(4)21	100 0(0)(1)0		Х	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	158-5(a)(1)b		i i	
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7.0 3.0(0)111			i	
or at least five years without interruption prior to the time of application	7:8-5.6(a)2	158-5(a)(2)		1 1	Х
re-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	158-5(a)(3)		X	
Ÿ				^	
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)	X	1 1	
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	158-5(a)(5)		j j	x
f structural stormwater management measures.	7.8-3.0(a)3	130-3(a)(3)		! !	^
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	158-5(b)(1)	Х	! !	
tandards for structural stormwater management measures					
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1	158-6(a)1	Х	i	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7.9 5 7/2\2	150 6/5\2	.,	i	
opropriate.	7:8-5.7(a)2	158-6(a)2	x	_ii	
Aaintenance requirements				Ţ I	
he design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	158-10(b)(1)	х	!	
he maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	158-10(b)(2)	x	!	
requirements for trash racks, overflow gates and escape provisions	(-)	- (-)()		1	
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet	7:8-6.2(c)2	158-8(b)(3)b			х
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c	x	+	
The second second second, the maximum metror stope for an earther damp embanationly of being shall not be steeper than three notizontal to one verticals.	7.0 0.2(0)	130 3(0)(3)0	^		

Instrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts or to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following strate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction hydrographs for the same storm events stormwater management measures so that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that reased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate water runoff quality standards water management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site, set than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio 1 is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a tion using a weighted average vater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticip	7:8-5.3(b)1 7:8-5.3(b)2 7:8-5.3(b)3 7:8-5.3(b)4 7:8-5.3(b)5 7:8-5.3(b)6 7:8-5.3(b)7 7:8-5.3(b)8 7:8-5.3(b)9 7:8-5.4(a)2i(1) 7:8-5.4(a)2i(2)	RSIS 5:21-7.1(d)1 5:21-7.1(d)2 5:21-7.1(d)3 5:21-7.1(d)4 5:21-7.1(d)5 5:21-7.1(d)6 5:21-7.1(d)7 5:21-7.1(d)8 5:21-7.1(d)9	X X X X X X X X X X X X X X X X X X X	Non-Compliant	NA
tareas that provide water quality benefits or areas particularly susceptible to erosion and sediment los tee impervious surfaces and break up or disconnect the flow of runoff over impervious surface the decrease in the "time of concentration" from pre-construction to post-construction to post-construction to post-construction to post-construction to post-construction to post-construction to compaction and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide evegetated open-channel conveyance systems discharging into and through stable vegetated area e other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo no notrol, groundwater recharge and runoff quantity standards: sign engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either strate through hydrologic and hydraulic analysis that the site and its stormwater measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit strate through hydrologic and hydraulic analysis that the increase of stormwater runoff understand the hydraulic impacts or the groundwater table and design the site so as to avoid adverse hydraulic impacts to the ordinavater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff (aclulations at NJAC 7:8-5.6, complete one of the following strate through hydrologic and hydraulic analysis that the increase of stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction hydrographs for the same storm events. **Stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate water management measu	7:8-5.3(b)2 7:8-5.3(b)3 7:8-5.3(b)4 7:8-5.3(b)5 7:8-5.3(b)6 7:8-5.3(b)7 7:8-5.3(b)8 7:8-5.3(b)9 7:8-5.4(a)2i(1)	5:21-7.1(d)2 5:21-7.1(d)3 5:21-7.1(d)4 5:21-7.1(d)5 5:21-7.1(d)6 5:21-7.1(d)7 5:21-7.1(d)8	x x x		
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ation of stormwater runoff and groundwater recharge					
sign engineer shall calculate runoff using one of the following methods				1 1	
DA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7·8-5 6/a\1i	5:21-7.2(c)1	1	-	
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tional Method for peak flow and the Modified Rational Method for hydrograph computation:	7·9 5 6/a\1ii	5·21.7.2(c\1	1	i i	
ff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7.0-3.0(a)III	J.21-7.2(c)1		ii	
	7:8-5.6(a)2	5:21-7.2(a)		i i	х
east five years without interruption prior to the time of application	7.0.5.6/-\2	F 24 7 2/-\		+	
nstruction stormwater runoff accounts for all significant land features and structure	7:8-5.6(a)3	5:21-7.2(a)		Х	
water runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)		l x	
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nvert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	5:21-7.8(c)		!!!	х
ctural stormwater management measures.		` ,		1	
dwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	5:21-7.7	X		
ords for structural stormwater management measures				i i	
ural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1			Х	
ural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	5:21-7.8(d)1ii	x	i i	
priate.	7.0-3.7(a)2	3.21-7.0(U)111	X	<u> </u>	
enance requirements				ļ l	
sign engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	F-24 7.0	х		
aintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	5:21-7.9	х	1	
ements for trash racks, overflow gates and escape provisions	- 1 - 7				
ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet		5:21-7.8(d)6vii			х
stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)2		1	+	
de manuel de manuel metro, sièpe les un current aun, embaniente, el bern situit net de steeper than une nonzontal to one vertical.	7:8-6.2(c)2 7:8-6.2(c)3	5:21-7 8(d)6viii	¥		
	7:8-6.2(c)2 7:8-6.2(c)3	5:21-7.8(d)6viii	х	+	

mmary of Regulation		Citation		Non-Compliant	NA
	NJAC	RSIS	Compliant		
Nonstructural stormwater management strategies:				i i	
Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	5:21-7.1(d)1	X	ļ	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	5:21-7.1(d)2		Х	
Maximize the protection of natural drainage features and vegetation	7:8-5.3(b)3	5:21-7.1(d)3		Х	
Minimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	5:21-7.1(d)4		Х	
Minimize land disturbance including clearing and grading	7:8-5.3(b)5	5:21-7.1(d)5		Х	
Minimize soil compaction	7:8-5.3(b)6	5:21-7.1(d)6		Х	
Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	5:21-7.1(d)7		X	
Provide vegetated open-channel conveyance systems discharging into and through stable vegetated area	7:8-5.3(b)8	5:21-7.1(d)8		Х	
Provide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	5:21-7.1(d)9		Х	
Erosion control, groundwater recharge and runoff quantity standards:					
The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				i	
	7:8-5.4(a)2i(1)	5:21-7.7		х	
or .				i i	
	7:8-5.4(a)2i(2)				
	7:8-5.4 (a)2iv				Х
n order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following				1 1	
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7:8-5.4(a)3i			1 1	
runoff hydrographs for the same storm events				i	
or		5:21-7.5		i x	
Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that	7:8-5.4(a)3ii			i i	
the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7.0 3.1(0)311			1 1	
or				!!!	
Design stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii				
Stormwater runoff quality standards					
Stormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,	7:8-5.5			x	
expressed as an annual average.				·	
If more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)				Х
If there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7:8-5.5(d)	5:21-7.6		Y I	
calculation using a weighted average	7.0 3.5(u)			^	
Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the wate	7:8-5.5(e)			l X	
quality design storm.	7.0 3.5(c)			^	
Calculation of stormwater runoff and groundwater recharge				i i	
The design engineer shall calculate runoff using one of the following methods				i i	
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	5:21-7.2(c)1		x	
or					
The Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	5:21-7.2(c)1			
A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7:8-5.6(a)2	5:21-7.2(a)		1 1	х
for at least five years without interruption prior to the time of application	. ,	3.21 7.2(d)			^
Pre-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	5:21-7.2(a)	X	ii	
Stormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)		i x i	
Accountable full of state states and for four the state of per four and impervious surfaces separately to deducely compare the fallowing of states and volume of states and volum	7.0 3.0(0) 1	3.21 7.2(c)		<u>ļ</u> ,	
If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	5:21-7.8(c)		!!!	х
of structural stormwater management measures.		3.21 7.0(0)			^
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	5:21-7.7			Х
Standards for structural stormwater management measures				i .	
Structural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1			х	
Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	5:21-7.8(d)1ii		i , i	
appropriate.	7.0 3.7 (a)2	3.21 7.0(u/111		^	
Maintenance requirements					
the design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	5:21-7.9		х	
The maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	3.21-7.3		х	
Requirements for trash racks, overflow gates and escape provisions					
Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet	7:8-6.2(c)2	5:21-7.8(d)6vii	х		
In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	5:21-7.8(d)6viii	Х		
					189

nmary of Regulation	Citation		Compliant	Non-Compliant	NA
	NJAC	Local Ordinance	Compilant	Non-compliant	IVA
onstructural stormwater management strategies:				1	
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a		х	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b		х	
Maximize the protection of natural drainage features and vegetation	7:8-5.3(b)3	158-4(e)(2)c		х	
Alinimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		х	
Ainimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		х	
Ainimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f		х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		х	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated area	7:8-5.3(b)8	158-4(e)(2)h		х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	158-4(e)(2)i		х	
rosion control, groundwater recharge and runoff quantity standards:	(- / -	(-/(/		i i	
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				1	
	7:8-5.4(a)2i(1)	158-4(f)(1)b1A			
remonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7.0-3.4(a)21(1)	130-4(1)(1)#1		х	
	7.0 5 4/2/2:/2/	1FQ 4/f\/1\b1D		!!!	
	7:8-5.4(a)2i(2)	158-4(f)(1)b1B			
	7:8-5.4 (a)2iv	158-4(f)(1)b4	Х	!	
n order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following				1 1	
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7:8-5.4(a)3i	158-4(f)(1)c1		1 1	
unoff hydrographs for the same storm events	7.0 0(0,0.	150 1(1)(1)01		i i	
r				х	
emonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that	7:8-5.4(a)3ii	158-4(f)(1)c2		i ^ i	
he increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7.0-5.4(a)511	136-4(1)(1)(2		i i	
r				1 1	
besign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii	158-4(f)(1)c3			
tormwater runoff quality standards	` '	,,,,			
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,					
xpressed as an annual average.	7:8-5.5	158-4(g)(1)	X	!!	
more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)	X		
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7.8-3.5(0)	130-4(8)(3)	^		
	7:8-5.5(d)	158-4(g)(4)		1 1	х
alculation using a weighted average				 	
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water to be a signed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water to be a signed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water to be a signed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water to be a signed	7:8-5.5(e)	158-4(g)(5)		х	
uality design storm.				<u> </u>	
alculation of stormwater runoff and groundwater recharge				i i	
he design engineer shall calculate runoff using one of the following methods				T I	
he USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a		x	
r				! "!	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	158-5(a)(1)b			
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7:8-5.6(a)2	158-5(a)(2)		!!!	х
or at least five years without interruption prior to the time of application	7.6-3.0(d)2	130-3(a)(2)		1 1	Х
re-construction stormwater runoff accounts for all significant land features and structure	7:8-5.6(a)3	158-5(a)(3)		Х	
	7056()4	450 5()(4)		i	
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)		Х	
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design					
f structural stormwater management measures.	7:8-5.6(a)5	158-5(a)(5)		х	
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	158-5(b)(1)	Х	1	
tandards for structural stormwater management measures	7.0 3.0(0)1	130 3(0)(1)	^		
•	7:8-5.7(a)1	158-6(a)1		X	
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	1.0-3.7(d)1	130-0(q)1		Χ	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	158-6(a)2		х	
ppropriate.					
Aaintenance requirements					
he design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	158-10(b)(1)		Х	
he maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	158-10(b)(2)		х	
lequirements for trash racks, overflow gates and escape provisions					
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	158-8(b)(3)b		i i	Х
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c			Х
<u> </u>	` '			T i	
			15%	71%	14%

ummary of Regulation		Citation		Non-Compliant	NA
• •	NJAC	Local Ordinance	Compliant	1 1	
lonstructural stormwater management strategies:				i i	
protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a		Х	
Ainimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b		Х	
Maximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	158-4(e)(2)c		Х	
Alnimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		Х	
Ainimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		Х	
Ainimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f		Х	
provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		Х	
Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas	7:8-5.3(b)8	158-4(e)(2)h		Х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	158-4(e)(2)i		х	
rosion control, groundwater recharge and runoff quantity standards:					
the design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				!	
Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	158-4(f)(1)b1A	x	1	
r .			*	i	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)	158-4(f)(1)b1B		i i	
assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv	158-4(f)(1)b4		Х	
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following					
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7054/10:	450 4(5)(4) 4		<u> </u>	
unoff hydrographs for the same storm events	7:8-5.4(a)3i	158-4(f)(1)c1		!	
or .				!!!	
bemonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that				Х	
he increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)3ii	158-4(f)(1)c2		1	
or				i i	
Design stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii	158-4(f)(1)c3		i i	
tormwater runoff quality standards	710 51 1(u)5	200 1(1)(2)00			
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,				!	
expressed as an annual average.	7:8-5.5	158-4(g)(1)	X	!!!	
f more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)	X		
f there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7.0 3.3(c)	130 4(8)(3)	Α		
alculation using a weighted average	7:8-5.5(d)	158-4(g)(4)		1	Х
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water					
	7:8-5.5(e)	158-4(g)(5)		х	
uality design storm. Calculation of stormwater runoff and groundwater recharge					
the design engineer shall calculate runoff using one of the following methods				!	
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a		!!!	
, , ,	7.0-3.0(a)11	130-3(a)(1)a		Х	
The Debiased Marked for each flow and the Markified Debiased Marked for body assertation	7.0 [(/2)1::	150 5/a\/1\b		1	
The Rational Method for peak flow and the Modified Rational Method for hydrograph computations	7:8-5.6(a)1ii	158-5(a)(1)b			
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7:8-5.6(a)2	158-5(a)(2)		i i	х
or at least five years without interruption prior to the time of application	7.0.5.6(-)2	450 5/-1/21		i i	
re-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	158-5(a)(3)		X	
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)		x	
	· ·			<u> </u>	
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	158-5(a)(5)		1	х
f structural stormwater management measures.					
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	158-5(b)(1)	Х		
tandards for structural stormwater management measures		1== -1.1.		i i	
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1	158-6(a)1	X	i i	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	158-6(a)2	х	į – t	
ppropriate.	7.0 3.7 (u)2	155 5(4)2	^	<u>!</u>	
faintenance requirements					
ne design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	158-10(b)(1)	Х		
he maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	158-10(b)(2)		х	
equirements for trash racks, overflow gates and escape provisions				i i	
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet	7:8-6.2(c)2	158-8(b)(3)b		i i	х
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c		i i	х
			<u> </u>		
			25%	57%	18

Summary of Regulation	Cit	ation	Compliant	Non-Compliant	NA
	NJAC	Local Ordinance			
Ionstructural stormwater management strategies:				i i	
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a			х
Ainimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b		Х	
Naximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	158-4(e)(2)c		Х	
Ainimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		Х	
Ainimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		Х	
Ainimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f		Х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		X	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated area:	7:8-5.3(b)8	158-4(e)(2)h		х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	158-4(e)(2)i		Х	
rosion control, groundwater recharge and runoff quantity standards:					
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				1 1	
emonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	158-4(f)(1)b1A		x	
				i "i	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)	158-4(f)(1)b1B			
ssess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv	158-4(f)(1)b4		<u> </u>	>
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following				!!!	
emonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7:8-5.4(a)3i	158-4(f)(1)c1		!	
unoff hydrographs for the same storm events	7.0-3.4(a)31	130-4(1)(1)(1		1 1	
r				x	
Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that	7:8-5.4(a)3ii	150 4/f\/1\c2		i	
he increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)311	158-4(f)(1)c2		i i	
				i i	
besign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii	158-4(f)(1)c3		1	
tormwater runoff quality standards				!	
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,		.== ./ \/.\			
expressed as an annual average.	7:8-5.5	158-4(g)(1)		Х	
f more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)			>
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a				i i	
alculation using a weighted average	7:8-5.5(d)	158-4(g)(4)		i i	>
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water		4 4/ 1/-1			
uality design storm.	7:8-5.5(e)	158-4(g)(5)		Х	
Calculation of stormwater runoff and groundwater recharge					
'he design engineer shall calculate runoff using one of the following methods					
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a		1 1	
r	7.0 5.0(0/2.	250 5(4)(2)4		Х	
The Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	158-5(a)(1)b		i i	
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site					
or at least five years without interruption prior to the time of application	7:8-5.6(a)2	158-5(a)(2)		1	>
Pre-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	158-5(a)(3)	x	!	
·		150 5(0)(5)	, <u>, , , , , , , , , , , , , , , , , , </u>		
stormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)		Х	
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design					
	7:8-5.6(a)5	158-5(a)(5)		i i	х
of structural stormwater management measures.	7.0 E 6/h\1	150 5/b)/1)	v	i i	
Groundwater recharge may be calculated with NJ GSR-32 Itandards for structural stormwater management measures	7:8-5.6(b)1	158-5(b)(1)	X	i .	
•	7.9 5 7/2)1	150 6/5\1			
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1	158-6(a)1		X	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	158-6(a)2		х	
propriate.					
laintenance requirements	7050()	450.46(1)(4)			
ne design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	158-10(b)(1)		Х	
ne maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	158-10(b)(2)		Х	
equirements for trash racks, overflow gates and escape provisions				i i	
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	158-8(b)(3)b		<u> </u>	>
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c			Х
			7%	64%	29

Summary of Regulation	Cit	ation	Compliant	Non-Compliant	NA
January of Regulation	NJAC	RSIS	Compilant	Itali compilant	
Nonstructural stormwater management strategies:					
Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	5:21-7.1(d)1		Х	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	5:21-7.1(d)2		х	
Maximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	5:21-7.1(d)3		х	
Minimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	5:21-7.1(d)4		х	
Minimize land disturbance including clearing and grading	7:8-5.3(b)5	5:21-7.1(d)5		Х	
Minimize soil compaction	7:8-5.3(b)6	5:21-7.1(d)6		Х	
Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	5:21-7.1(d)7		Х	
Provide vegetated open-channel conveyance systems discharging into and through stable vegetated area:		5:21-7.1(d)8		х	
Provide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	• • • • • • • • • • • • • • • • • • • •	5:21-7.1(d)9		x	
Erosion control, groundwater recharge and runoff quantity standards:	7.0 0.0(0)	3.22 7.2(0)3		į į	
The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				! !	
Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	F.24 7 7		!	
or	. , , , ,	5:21-7.7		1	Х
Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)			1	
Assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.3(b)6 5:21-7 7:8-5.3(b)7 5:21-7 7:8-5.3(b)8 5:21-7 7:8-5.3(b)9 5:21-7 7:8-5.4(a)2i(1) 5:21-7 7:8-5.4(a)2i(2) 7:8-5.4(a)2iv 7:8-5.4(a)3ii 7:8-5.4(a)3iii 7:8-5.5(c) 7:8-5.5(d) 7:8-5.5(e) 7:8-5.6(a)1i 5:21-7 7:8-5.6(a)2 5:21-7 7:8-5.6(a)3 5:21-7 7:8-5.6(a)4 5:21-7				х
In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following	7.0 3.4 (u)21v				
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction		-		i i	
	7:8-5.4(a)3i			i i	
runoff hydrographs for the same storm events		-		i i	
or		5:21-7.5		x	
Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and tha	t 7:8-5.4(a)3ii			1	
the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7.0 3.1(0/311			1	
or				1 1	
Design stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii			!	
Stormwater runoff quality standards					
Stormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,					
expressed as an annual average.	7:8-5.5			х	
If more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7·8-5 5(c)			X	
If there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7.0 3.5(0)	5:21-7.6		^	
	7:8-5.5(d)	3.21-7.0		х	
calculation using a weighted average		-			
Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the water	7:8-5.5(e)			х	
quality design storm.	` '			i .	
Calculation of stormwater runoff and groundwater recharge				i i	
The design engineer shall calculate runoff using one of the following methods				i i	
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	5:21-7.2(c)1		X	
or				1 ^ 1	
The Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	5:21-7.2(c)1		1	
A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7056()0	50470()			
for at least five years without interruption prior to the time of application	7:8-5.6(a)2	5:21-7.2(a)		Х	
Pre-construction stormwater runoff accounts for all significant land features and structure:	7·8-5 6(a)3	5:21-7.2(a)		X	
•				- "	
Stormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)	х	1 1	
If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5 6(a)5	5:21-7.8(c)		į į	х
of structural stormwater management measures.		3.21 7.0(c)			
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	5:21-7.7			х
Standards for structural stormwater management measures					
Structural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1			Х	
Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as		E 04 E 04 N 4 11		i	
appropriate.	7:8-5.7(a)2	5:21-7.8(d)1ii	Х	i i	
Maintenance requirements				i i	
The design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)		х	I i	
The maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	5:21-7.9	^	x	
	7.0-3.8(D)			X	
Requirements for trash racks, overflow gates and escape provisions	7.0.6.24.12	E 24 7 0/ 1\0 ::			
Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	5:21-7.8(d)6vii		Х	
In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	5:21-7.8(d)6viii		Х	
			11%	75%	14%
					71 /1 ()

mmary of Regulation	CIT	ation	Compliant	Non-Compliant	NA
	NJAC	RSIS			
Nonstructural stormwater management strategies:				i	
Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	5:21-7.1(d)1		Х	
Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	5:21-7.1(d)2		x	
Maximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	5:21-7.1(d)3		х	
Minimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	5:21-7.1(d)4		х	
Minimize land disturbance including clearing and grading	7:8-5.3(b)5	5:21-7.1(d)5		Х	
Minimize soil compaction	7:8-5.3(b)6	5:21-7.1(d)6	Х	i i	
Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	5:21-7.1(d)7		Х	
Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas	7:8-5.3(b)8	5:21-7.1(d)8		х	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo	7:8-5.3(b)9	5:21-7.1(d)9		Х	
Frosion control, groundwater recharge and runoff quantity standards:					
the design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either		-		i i	
	7:8-5.4(a)2i(1)	5:21-7.7		х	
or .				i i	
	7:8-5.4(a)2i(2)			<u> </u>	
	7:8-5.4 (a)2iv			ļ .	X
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following		-		1	
Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction	7:8-5.4(a)3i			1 1	
unoff hydrographs for the same storm events				i i	
or .		5:21-7.5		i x	
Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that	7:8-5.4(a)3ii			1 1	
he increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	(.,			!!!	
or .				!!!	
Design stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii				
tormwater runoff quality standards					
tormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site,	7:8-5.5			х	
expressed as an annual average.				i	
f more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	7:8-5.5(c) 5:21-7.6	Х		
f there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7:8-5.5(d)	5:21-7.6		l x	
calculation using a weighted average	7.10 0.15(0)			"	
Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the wate	7:8-5.5(e)			X	
uality design storm.					
Calculation of stormwater runoff and groundwater recharge				i i	
The design engineer shall calculate runoff using one of the following methods				1	
The USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	5:21-7.2(c)1		l x	
or .				! "!	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	5:21-7.2(c)1			
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7:8-5.6(a)2	5:21-7.2(a)		x	
or at least five years without interruption prior to the time of application		` '			
Pre-construction stormwater runoff accounts for all significant land features and structure:	7:8-5.6(a)3	5:21-7.2(a)		Х	
Stormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	5:21-7.2(e)	x	1 1	
	7.0 3.0(0)	3.22 7.2(0)	^	<u>!</u>	
f the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	5:21-7.8(c)		!!!	х
of structural stormwater management measures.		` '			
Groundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	5:21-7.7	Х		
tandards for structural stormwater management measures					
tructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1			х	
tructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	5:21-7.8(d)1ii	x	į – I	
opropriate.	7.0 3.7 (u/2	3.21 7.0(u)111	^	<u> </u>	
faintenance requirements					
he design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	5:21-7.9	х		
ne maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance	7:8-5.8(b)	3.21-7.3		Х	
equirements for trash racks, overflow gates and escape provisions					
afety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	5:21-7.8(d)6vii			х
n new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	5:21-7.8(d)6viii		х	
			21%		_
				68%	119

ummary of Regulation	Cit	ation	Compliant	Non-Compliant	NA
	NJAC	Local Ordinance	•		
onstructural stormwater management strategies:				i i	
rotect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment los	7:8-5.3(b)1	158-4(e)(2)a		Х	
finimize impervious surfaces and break up or disconnect the flow of runoff over impervious surface	7:8-5.3(b)2	158-4(e)(2)b		х	
Asximize the protection of natural drainage features and vegetatior	7:8-5.3(b)3	158-4(e)(2)c		х	
finimize the decrease in the "time of concentration" from pre-construction to post-construction	7:8-5.3(b)4	158-4(e)(2)d		Х	
finimize land disturbance including clearing and grading	7:8-5.3(b)5	158-4(e)(2)e		х	
finimize soil compaction	7:8-5.3(b)6	158-4(e)(2)f		х	
rovide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticide	7:8-5.3(b)7	158-4(e)(2)g		х	
rovide vegetated open-channel conveyance systems discharging into and through stable vegetated areas	7:8-5.3(b)8	158-4(e)(2)h		x	
rovide other source controls to prevent or minimize the use of exposure of pollutants at the site in order to prevent or minimize the release of those pollutants into stormwater runo rosion control, groundwater recharge and runoff quantity standards:	7:8-5.3(b)9	158-4(e)(2)i		х	
he design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at NJAC 7:8-5.6 either				1	
emonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual pre-construction groundwater recharge volume for the sit	7:8-5.4(a)2i(1)	158-4(f)(1)b1A		x	
emonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrate	7:8-5.4(a)2i(2)	158-4(f)(1)b1B		! !	
ssess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts	7:8-5.4 (a)2iv	158-4(f)(1)b4		v	
order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at NJAC 7:8-5.6, complete one of the following	7.0 3.4 (a)21v	130 4(1)(1)04		^	
emonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction unoff hydrographs for the same storm events	7:8-5.4(a)3i	158-4(f)(1)c1			
emonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site	7:8-5.4(a)3ii	158-4(f)(1)c2	x		
r esign stormwater management measures so that the post-construction peak runoff rates for the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rate	7:8-5.4(a)3iii	158-4(f)(1)c3			
ormwater runoff quality standards	- (-,-	() ()			
ormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site, spressed as an annual average.	7:8-5.5	158-4(g)(1)	х	1 1	
more than one BMP in series is necessary to achieve 80% TSS reduction for a site, the applicant shall utilize listed formula to calculate TSS reductio	7:8-5.5(c)	158-4(g)(3)			Х
there is more than one onsite drainage area, the 80% TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a	7.0 3.5(c)	130 4(8)(3)			
alculation using a weighted average	7:8-5.5(d)	158-4(g)(4)	X	i i	
tormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated for the wate uality design storm.	7:8-5.5(e)	158-4(g)(5)		х	
alculation of stormwater runoff and groundwater recharge				i	
he design engineer shall calculate runoff using one of the following methods				i i	
he USDA NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph	7:8-5.6(a)1i	158-5(a)(1)a	X	I I	
			^	I	
he Rational Method for peak flow and the Modified Rational Method for hydrograph computation:	7:8-5.6(a)1ii	158-5(a)(1)b		<u>!</u> !	
runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or a portion of the site	7.9 5 6/2\2	150 5/2)/2)		!!	v
or at least five years without interruption prior to the time of application	7:8-5.6(a)2	158-5(a)(2)		1	Х
re-construction stormwater runoff accounts for all significant land features and structure	7:8-5.6(a)3	158-5(a)(3)	х		
tormwater runoff shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site	7:8-5.6(a)4	158-5(a)(4)	х		
the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design	7:8-5.6(a)5	158-5(a)(5)		1 1	х
structural stormwater management measures.	7056014	450 5(1)(4)			
roundwater recharge may be calculated with NJ GSR-32	7:8-5.6(b)1	158-5(b)(1)			Х
andards for structural stormwater management measures				i .	
ructural stormwater management measures shall be designed to take into account the existing site conditions (env. critical areas, wetlands, slopes, etc	7:8-5.7(a)1	158-6(a)1	X	ļ	
ructural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as	7:8-5.7(a)2	158-6(a)2	x	<u> </u>	
aintenance requirements				ļ I	
ne design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major developmen	7:8-5.8(a)	158-10(b)(1)	х	!	
ne maintenance plan shall contain specific preventative maintenance tasks and schedules, cost estimates, contact info for persons responsible for preventative and corrective maintenance tasks and escape provisions	7:8-5.8(b)	158-10(b)(2)	Х		
fety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half fee	7:8-6.2(c)2	158-8(b)(3)b			х
new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.	7:8-6.2(c)3	158-8(b)(3)c	X		^
The Associated and indicated and the Indian interior stope for an earther daily embandment, or bean shall not be seeper than time notizontal to one vertical.	7.0-0.2(C)3	130-0(D)(3)C	^	+	
			39%	43%	189

Project Compliance Matrix

Summary of Projects Reviewed

Part Part			Complian	Non-Compliant	ľ
	cal Ordinance RSIS	NJAC Local Ordinance	•	· ·	
interior improvisions contracts and horizon part discourses for throat of murity developments on state and contract of murity and objective contracts. The murity of murity of the contracts of t					4
sense the particut or disturcil attenting betanest and vegetation in the least and introduced to the control of				9	-
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sion central, groundwater rechange and runnill quantity standards: **Entire Every the epities will, long the estamptions and state to the Starmards morning and groundwater rechange evaluate for the oile **78-54/02/21 126-44 **The Analysis of the increase of starmards may be increased as summater management measures morning 10th of the increase and supplied products analysis that the increase of summater management measures morning 10th of the increase and supplied products and supplied products analysis that the increase of summater management measures morning 10th of the increase of summater management measures as the product increased as an around as designed to the same as an around as designed to the same as an around as designed to the same as an around as designed to the same around as a start of the control start of the control start of the same around as a start of the same around	, ,, ,			10	1
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rountsries through hydrologic and hydraulic analysis that the increase of sommwater nucoff volume from pre-construction to post-construction for the two-per storm is infiltrated 78.5.4 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.5 (a)20 78.5.	58-4/f\/1\b1A	7:8-5.4(a)2i(1) 158-4(f)(1)b1A		<u>l</u>	Į.
monator are through hydroxide; and hydraxic analysis that the increase of stormovater north volume from per-construction to peak construction for the two-yes stem is inflitted 3.8.5.4,6,0,00,00 3.8.5.4,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0	5:21-7	7.8-3.4(a)21(1) 138-4(1)(1)01A	3	8	Į.
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ander to control stormwater manifer quantity impacts, the eight engineer shall, sing the assumptions and factors for formwater manifer activations at NAC 7.8.5.6, complete one of the following memoritars through lydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that the increased as an annual montarizes through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that the increased as an annual responsibility standards. The standard of the same storm events and the post-construction peak runoff rates for the two, 20, and 100-year storm events are 50, 73 and 80%, respectively, of the pre-construction peak runoff rates. The standard of the pre-construction peak runoff rates of stormwater management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site, expressed as an annual runger management measures shall be designed to reduce the post-construction load of TSS in stormwater runoff generated from the water quality design storm by 80% of the anticipated load from the developed site, expressed as an annual runger runner measures shall all all be designed to reduce the fine shall are shall use the construction in the stormwater runoff generated for the water quality design storm by 80% of the anticipated load from the developed site, expressed as an annual runger runner than the stormwater runoff generated for the water quality design storm by 80% of the anticipated load from the developed site, expressed as an annual runger runner than the storm of the stormwater runoff generated for the water quality design stormwater runoff generated for the water quality design stormw	.,,,				
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interpretation for the same summ events more start for the same summ events more start for the same summ events more change in timing of stormwater runoff will not increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100-year storm events and that the increase face disanges at or downstream of the site. 7.8-5.4(a)311 158-4 36gs stormwater management measures so that the post-construction peak runoff rates. 7.8-5.4(a)311 158-4 378-5.4(a)311 158-4 378-5.4(a)311 158-4 378-5.4(a)311 158-4 378-5.4(a)311 158-4 378-5.4(a)311 158-4 378-5.4(a)311 378-5.5(a) 3	L58-4(f)(1)c1	7:8-5.4(a)3i 158-4(f)(1)c1			1
romostate through thydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the two, 10, 100 year storm events and that the increased rate of the work of the anticipated load from the developed site, expressed as an annual regular transparement measures so that the post-construction peak runoff rates of the two, 10, and 100-year storm events are 50, 75 and 80%, respectively, of the pre-construction peak runoff rates. 7,8-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)311 158-4 278-5,4(3)31	(-)(-)(-)				1
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