
DEPARTMENT OF ENVIRONMENTAL PROTECTION

LAND USE MANAGEMENT

WATER MONITORING MANAGEMENT

Surface Water Quality Standards N.J.A.C. 7:9B

Proposed Amendments: N.J.A.C. 7:9B-1.4, 1.5, 1.14, and 1.15

Authorized By:	Bradley M. Campbell, Commissioner, Department of Environmental Protection
Authority:	N.J.S.A. 58:10A-1 *et seq*., 58:11A-1 *et seq*., N.J.S.A. 13:1D-1 *et seq*.
Calendar Reference:	See Summary below for explanation of exception to calendar requirement
DEP Docket Number:	28-02-10/347
Proposal Number:	

Public hearings concerning this proposal will be held at the following locations and times:

December 10, 2002
6 PM to close of testimony
County Administration Building
75 Bayard Street
New Brunswick, NJ

and

December 18, 2002

1 PM to close of testimony

Department of Environmental Protection
401 East State Street
Public Hearing Room
First Floor
Trenton, NJ 08625

Submit written comments by **January 17, 2003**, to:
Gary J. Brower, Esq.
Attn. DEP Docket Number 28-02-10/347
Office of Legal Affairs
New Jersey Department of Environmental Protection
P.O. Box 402
Trenton, NJ 08625-0402

The Department requests that commenters submit comments on 3.5-inch diskettes as well as paper. Submission of a diskette is not required. The Department prefers Microsoft Word, Word Perfect 5.x or 6.0, and ASCII, but can convert and review many other formats as well. MacIntosh formats should not be used. Any commenter who wishes to use software not mentioned above may contact the Department at (609) 292-1623 to check compatibility.

Text enhancements such as underlines, bold, etc., are often not converted correctly between software documents. Therefore, when suggesting text revisions, commenters should show the text, as they desire to see it in the rule.

Comments on the proposal summary should be included with comments on the pertinent section of the rule text, wherever possible, to eliminate duplicative comments and facilitate the Department's task of organizing and responding to comments. Since

comments will be sorted electronically, the following format should be used for each comment:

Citation (tab)COMMENT: Comment text (Company Name). For example:

7:9B-1.4 COMMENT: ABC Corp. believes that the definition of “criteria” should also refer to the Ground Water Quality Standards. (ABC Corp.)

Copies of this rule proposal can be downloaded electronically from the Department’s web page at www.state.nj.us/dep/wmm/bfbm/sgwqt.html.

The agency proposal follows:

Summary

The Department is proposing amendments to the Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B, to upgrade the antidegradation designations for fifteen (15) waterbodies from Category Two (C2) to Category One (C1) to provide enhanced protection and to add wildlife criteria for DDT and its metabolites, mercury, and PCBs, along with the applicable design flows.

The fifteen waterbodies determined by the Department to meet the requirements for being upgraded to C1 were highlighted in Governor McGreevey's announcement on Earth Day, April 22, 2002. Of the fifteen, six waterbodies being designated as C1 are based on an integrated ecological assessment conducted by the Department to determine “exceptional ecological significance”, while nine water supply reservoirs are being designated as C1 based on their "exceptional water supply significance.

The Department is also proposing to add definitions for bioaccumulation factor, bioconcentration factor, and MA90CD10 at N.J.A.C. 7:9B-1.4 and a clarification at N.J.A.C. 7:9B-1.15(b)6.

As the Department has provided a 60-day comment period on this notice of proposal, this proposal is excepted from the rulemaking calendar requirement pursuant to N.J.A.C. 1:30-3.3(a)5.

The Department administers the SWQS for the protection of surface water quality of the waters of the State. The Department develops and administers the SWQS pursuant to the Water Quality Planning Act (WQPA), N.J.S.A. 58:11A-1 *et seq*., the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 *et seq*., and in conformance with requirements of the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*., commonly known as the Clean Water Act (CWA), and the Federal regulatory program established by the United States Environmental Protection Agency (USEPA) at 40 CFR 131. The SWQS include general requirements, use designations, classifications, antidegradation categories, and water quality criteria applicable to the surface waters of the State. The SWQS are established to address the Department's responsibilities to conduct a continuous planning process pursuant to Section 303 of the CWA, 33 U.S.C. § 1313, and the WQPA, N.J.S.A. 58:11A-1 et seq.

The SWQS are intended to aid the Department's implementation of the New Jersey Pollutant Discharge Elimination System (NJPDES) rules at N.J.A.C. 7:14A, Freshwater Wetlands Protection Act rules at N.J.A.C. 7:7A, Flood Hazard Area Control Act at N.J.A.C. 7:13-4, and Water Quality Planning rules at N.J.A.C. 7:15.

The Department will propose additional waters for designation as antidegradation Category One and additional stream reclassifications in the near future. Additionally, the Department is considering proposal of revisions to the antidegradation provisions of the SWQS to expand and enhance the policies and implementation procedures.

The following is a summary of the proposed amendments.

N.J.A.C. 7:9B-1.4 Definitions: The Department is proposing definitions for "bioaccumulation factor" or "(BAF)", "bioconcentration factor" or "(BCF)" and "MA90CD10".

Bioaccumulation, which is defined in the existing rules at N.J.A.C. 7:9B-1.4, refers to the accumulation of a substance retained by an organism as a result of uptake from all environmental sources. "Bioaccumulation factor" is the ratio (in L/kg) of a substance's concentration in tissue of an aquatic organism to its concentration in the ambient water, in situations where both the organism and its food are exposed and the ratio does not change substantially over time.

Bioconcentration, which is defined in the existing rules at N.J.A.C. 7:9B-1.4, refers to the uptake and retention of pollutants solely from water. “Bioconcentration factor,” is the ratio of pollutant residues in the tissues of aquatic organisms to the pollutant concentration in the waters where the organisms reside.

Both terms are used in compiling the list of toxic substances for the purposes of design flows and regulatory mixing zones. As explained in the Summary of the December 18, 2000 Proposed Amendment to the Surface Water Quality Standards (32 N.J.R. 4397), the Department compiled a list of toxic substances whose carcinogenic effect-based criteria were based on bioconcentration factors over 200 L/Kg. The design flow for these substances is the flow that is exceeded 75 percent of the time for the appropriate "period of reference". Additionally, with regard to regulatory mixing zones, the Department compiled another list of bioaccumulative chemicals of concern with a bioaccumulation factor of greater than 1000 L/kg. Regulatory mixing zones are prohibited for new discharges of these pollutants. A reference to BAFs and BCFs can be found in the SWQS with regard to design flows as listed at N.J.A.C. 7:9B-1.5(c)2i). These factors are also used in the derivation of surface water quality criteria.

The Department is proposing to add a definition of "MA90CD10" at N.J.A.C. 7:9B-1.4 to mean the minimum average 90 consecutive day flow with a statistical recurrence interval of ten years. This design flow is proposed for use exclusively with the wildlife criteria.

N.J.A.C. 7:9B- 1.5(c) General technical policies - Design Flows: The Department is also proposing a wildlife criteria design flow of MA90CD10 at N.J.A.C. 7:9B-1.5(c). The Department decided to use the same design flows as specified in the Great Lakes Water Quality Initiative (GLWQI) (60 Fed. Reg. 15366, 15418; March 23, 1995). The wildlife criteria were developed as a joint effort between the Department, USEPA and the United States Fish and Wildlife Service (USFWS) who decided to use the GLWQI methodology for the derivation of the criteria and the applicable design flows (see the Summary of amendments to N.J.A.C. 7:9B-1.14). The Department has reviewed the GLWQI basis and agrees that the design flow of MA90CD10 for wildlife criteria is the appropriate value.

Aquatic organisms comprise a major portion of the diet of many wildlife species. The impacts of chemicals with a high tendency to bioaccumulate in aquatic organisms are a significant concern for wildlife protection. As explained in the Proposed Water Quality Guidance for the Great Lakes System (58 Fed. Reg. 20802, 20933; April 16, 1993), because of relatively slow rates of uptake by aquatic organisms of bioaccumulative chemicals, residues in the food chain would have a delayed response to increases in ambient concentrations of chemicals during short-time periods, such as during low flow events. The Department recognizes that the use of a more conservative design flow may not be appropriate given the long time it may take for bioaccumulative chemicals to reach steady-state in an aquatic organism. Therefore, the Department has determined that a MA90CD10 flow is appropriate for wildlife criteria.

N.J.A.C. 7:9B- 1.14 Surface water quality criteria: The Department is proposing new wildlife criteria for DDT, mercury, and PCBs at N.J.A.C. 7:9B-1.14(c). The Department

is also proposing to amend the note at N.J.A.C. 7:9B-1.14(c)13 to indicate that criteria followed by (W) are surface water criteria for the protection of wildlife.

As part of the 1994 approval of the New Jersey SWQS triennial review process, the USEPA, in collaboration with the USFWS, indicated that the human health based criteria for PCBs were not protective of the threatened and endangered species bald eagle, peregrine falcon, and dwarf wedgemussel. As a result, the Service prepared a Biological Opinion document in 1996 (*Biological opinion on the effects of the U.S. Environmental Protection Agency's approval of the state of New Jersey's surface water quality standards on the bald eagle, peregrine falcon, and dwarf wedgemussel*. U.S. Department of the Interior, Fish & Wildlife Service, New Jersey Field Office, Pleasantville, New Jersey. 1996). The lack of wildlife criteria for DDT and its metabolites, mercury, and PCBs was a concern to the USFWS. DDT and its metabolites, mercury, and PCBs are bioaccumulative pollutants that are persistent in the environment, accumulate in biological tissues, and biomagnify in the food chain. Due to these characteristics, the concentration of these contaminants may increase as they are transferred up through various food chain levels. As a result, adverse impacts to non-aquatic, piscivorous (fish-eating) organisms may arise from low surface water concentrations. The peregrine falcon is not a piscivorous species. However, it feeds on other piscivorous bird species. Therefore, biomagnification may be of even greater concern for the peregrine falcon.

The USEPA developed site-specific wildlife criteria for the Great Lakes based on a number of factors, including the toxicity of various pollutants and their tendency to bioaccumulate and biomagnify. In addition, the USEPA gathered and applied information about piscivorous wildlife endemic to the Great Lakes region in its derivation of water quality criteria. That effort resulted in the promulgation of numeric surface water concentrations designed to be protective of all avian and mammalian wildlife using Great Lakes waters.

An inter-agency committee (NJDEP, USEPA, and USFWS) was assembled to derive New Jersey-specific wildlife water quality criteria for DDT and its metabolites, mercury, and PCBs that would minimize adverse effects of these pollutants on the bald eagle and peregrine falcon. The dwarf wedgemussel was not included in the calculation of water quality criteria for the protection of wildlife because of its lower trophic level, the danger of contaminant biomagnification should be less than with a higher trophic level organism in the food chain. As indicated in the inter-agency committee report on derivation of the wildlife criteria, the State's aquatic life-based criteria are intended to provide the necessary level of protection for these mussels. Recognizing that the GLWQI criteria were developed using information gathered from the Great Lakes, which may not be directly transferable for use in New Jersey for several reasons (see *Derivation of New Jersey-Specific Wildlife Values as Surface Water Quality Criteria for: PCBs, DDT, and Mercury*, July 2001 at www.state.nj.us/dep/wmm/bfbm/sgwqt.html), the inter-agency committee derived New Jersey-specific criteria. The bald eagle, peregrine falcon, and osprey were selected as representative species for calculation of New Jersey-specific Wildlife Values. The bald eagle and peregrine falcon are classified as endangered species, and the osprey a threatened species on New Jersey's threatened and endangered wildlife list. Wildlife Values were calculated for each of these species using an equation developed under the GLWQI (see below). The majority of the input and species-specific exposure parameters used to derive the criteria for PCBs, DDT and its metabolites, and mercury were based on the GLWQI. These included test dose, uncertainty factors, amount of water and food consumed, and the average weight of the animals. Bioaccumulation factors (BAFs) were based on work subsequent to the GLWQI and the use of New Jersey-specific values for dissolved and particulate organic carbon.

Wildlife Values were calculated using the following equation and input parameters:

$$WV = \frac{TD \times [1/(UF_A \times UF_S \times UF_L)] \times Wt}{W + 3(F_{TLi} \times BAF_{TLi})}$$

Where: WV = Wildlife Value in milligrams of substance per liter (mg/L).

TD = Test Dose (TD) in milligrams of substance per kilograms per day (mg/kg-d) for the test species. This should be either a no observed adverse effect level (NOAEL) or a lowest observed adverse effect level (LOAEL).

UF_A = Uncertainty Factor (UF) for extrapolating toxicity data across species (unitless). A species-specific UF should be selected and applied to each representative species, consistent with the equation.

UF_S = UF for extrapolating from subchronic to chronic exposures (unitless).

UF_L = UF for LOAEL to NOAEL extrapolations (unitless).

Wt = Average weight in kilograms (kg) for the representative species.

W = Average daily volume of water consumed in liters per day (L/d) by the representative species.

F_{TLi} = Average daily amount of food consumed from trophic level ‘i’ in kilograms per day (kg/d) by the representative species.

BAF_{TLi} = Bioaccumulation factor (BAF) for wildlife food in trophic level ‘i’ in liters per kilogram (L/kg). For consumption of piscivorous birds by other birds (e.g., herring gull by eagles), the BAF is derived by multiplying the trophic level 3 BAF for fish by a biomagnification factor (BMF) to account for the biomagnification from fish to the consumed birds.

Due to its high position on the predator-prey food chain, the Peregrine Falcon may be significantly more susceptible to adverse impacts from exposure to bioaccumulative pollutants than the other two representative species. Therefore, the Wildlife Values calculated for the Peregrine Falcon are being used for numeric wildlife

criteria to be incorporated into the Department's Surface Water Quality Standards. The numeric criteria, which resulted from this process, are proposed at N.J.A.C. 7:9B-1.14. These derived maximum allowable wildlife surface water concentrations should adequately protect at-risk wildlife species in the State. For an in-depth derivation of the criteria, please refer to "*Derivation of New Jersey-Specific Wildlife Values as Surface Water Quality Criteria for: PCBs, DDT, Mercury*" at the web site listed above. The proposed New Jersey wildlife values, 0.000004 for DDT and its metabolites, 0.00053 for mercury, and 0.000072 for PCBs, are expressed in micrograms per liter (µg/L) or parts per billion [ppb].

The addition of new wildlife criteria will potentially affect new and existing NJPDES permit holders. These dischargers will be required to monitor their effluent and analyze it with more sensitive methods to determine whether a water quality based effluent limitation (WQBEL), is necessary. The WQBEL would then be reflected in the NJPDES permits. The implementation of the wildlife criteria in NJPDES permits will take into account the quantitation limits for each of the three parameters. A quantitation limit is the lowest concentration of a particular substance that can be reliably determined, under routine laboratory conditions, within defined limits of precision and accuracy, pursuant to the Department's regulations. Listed in Table A below for example, are USEPA analytical methods and their current achievable quantitation levels.

Table A - Comparison of New Jersey-based proposed Wildlife Values, Human Health Criteria, and Quantitation Limits (QLs)

Compound	Wildlife Value (µg/L)	**Human Health Criteria** (µg/L)	QLs (µg/L)[1]	EPA Method
DDT	0.000004 (sum of DDT + DDE + DDD)	DDT: 0.000588 DDD: 0.00083 DDE: 0.000588	0.02	508

Total Mercury	0.00053	0.14	0.0005	1631
Total PCBs	0.000072	0.00017	0.00005 - 0.001 (congener specific)	1668 A

[1]**EPA Method 1668 (PCB Congeners):** Minimum Levels of Quantitation range from 0.00005 to 0.001 µg/L for individual congeners when common laboratory contaminants are present. Without interferences, the quantitation level is 0.00001 µg/L for aqueous samples. **EPA Method 1631 (Mercury):** Minimum Level of Quantitation is 0.0005 µg/L.

N.J.A.C. 7:9B-1.15 Surface water classifications for the waters of the State of New Jersey: The Department is proposing to amend the description of FW1 at N.J.A.C. 7:9B-1.15(b)6i. The Department amended the definition of FW1 at N.J.A.C.7:9B-1.4 in 1998. The definition of FW1 had been identical to the existing description at 1.15(b)6i prior to that amendment. However, at the time of the 1998 amendment, the Department inadvertently neglected to amend N.J.A.C. 7:9B-1.15(b)6i to reflect the new definition language. Therefore the Department is proposing to make this correction at this time. The amendment proposed at N.J.A.C. 7:9B-1.15(b)6i identifies the FW1 waters as designated in N.J.A.C. 7:9B-1.15(h) Table 6, and as defined at N.J.A.C. 7:9B-1.4. The use of cross reference to the definition at N.J.A.C. 7:9B-1.4 will eliminate any uncertainty as to whether the description at N.J.A.C. 7:9B-1.15(b)6i differs in any way from the definition.

The Department is proposing to provide Category One protection for 15 waterbodies. The SWQS definition for “Category One Waters” at N.J.A.C. 7:9B-1.4 states that this term

> “means those waters designated in the tables at N.J.A.C. 7:9B-1.15(c) through (h), for the purposes of implementing the antidegradation policies set forth at N.J.A.C. 7:9B-1.5(d), for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance or exceptional fisheries resource(s). These waters may include, but are not limited to:

1. Waters originating wholly within Federal, interstate, State, county or municipal parks, forests, fish and wildlife lands, and other special holdings that have not been designated FW1 at N.J.A.C. 7:9B-1.15(h) Table 6;

2. Waters classified at N.J.A.C. 7:9B-1.15(c) through (g) as FW2 trout production waters and their tributaries;

3. Surface waters classified in this subchapter as FW2 trout maintenance or FW2 nontrout that are upstream of waters classified in this subchapter as FW2 trout production;

4. Shellfish waters of exceptional resource value; or

5. Other waters and their tributaries that flow through, or border Federal, State, county or municipal parks, forests, fish and wildlife lands, and other special holdings."

Under the antidegradation policies, Category One waters are protected from any measurable changes (including calculable or predicted changes) to the existing water quality.

The Department's goal for watershed and water quality management is to maintain water quality that is necessary to protect existing and designated uses, including threatened and endangered species. The presence of threatened and endangered species and the trout populations listed in Table B are considered to be existing uses. The State and Federal requirements define existing uses as "those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards." (N.J.A.C. 7:9B-1.4 and 40 CFR 131.13(e)). States are required to prohibit removal of existing uses and ensure that those uses be appropriately recognized in the water quality standards (63 Fed. Reg. 36742; July 7, 1998 Advanced Notice of Proposed Rule Making).

Waterbodies proposed for C1 designation based on an Integrated Ecological Assessment:

As referenced above, the Department is proposing to amend the antidegradation designation of 15 waterbodies at N.J.A.C. 7:9B-1.15. The proposed upgrade to C1 antidegradation designation for the following six stream segments is based on an integrated ecological assessment conducted by the Department. The integrated ecological assessment utilizes a variety of water quality, biological survey, and environmental indicator information to determine if a stream exhibits characteristics that are of “exceptional ecological significance” and, thus, should be protected as a category One waterbody. The information used includes the aquatic physical and chemical monitoring data collected in the USGS/NJDEP Cooperative Ambient Surface Water Monitoring Network, the aquatic benthic macroinvertebrate biological monitoring and in-stream habitat quality data collected in the Department's Ambient Biological Monitoring Network, the fish species data collected in the Department's Fish Index of Biotic Integrity Network, information on threatened and endangered species, and riparian habitat assessments.

One source of ecological assessment data was the USGS/NJDEP Cooperative Ambient Surface Water Monitoring Network, which was established in 1976 to determine status and trends of ambient surface waters in New Jersey. The network currently consists of 115 stations. A wide range of conventional parameters, metals, pesticides/volatile organic chemicals and sediments are monitored in this program. Network data is available from the following sources:

1. The USGS computerized data system, NWISWeb, available at the following websites: http://wwwnj.er.usgs.gov/, and http://waterdata.usgs.gov/nwis
2. EPA's computerized data system, STORET, available at http://www.epa.gov/storet/dbtop.html, and
3. USGS's annual reports *Water Resources Data-New Jersey*.

Another ecological assessment tool used by the Department was the Ambient Biological Monitoring Network (AMNET). AMNET is an evaluation of the biological health of New Jersey streams, based upon an assessment of the resident in-stream benthic macroinvertebrate community. Macroinvertebrates are larger-than-microscopic, primarily benthic (bottom-dwelling) fauna, which are generally ubiquitous in freshwater and estuarine environments, and play an integral role in the aquatic food web. Insects (largely immature forms) are especially characteristic of freshwaters; other major groups include worms, mollusks (snails, clams) and crustaceans (scuds, shrimp, water fleas, etc.). Species comprising the in-stream community occupy various niches, based on functional adaptation or feeding mode (for example, predators, filter or detritus feeders, scavengers). Their presence and relative abundance is governed by environmental conditions (which may determine available food supply), and by pollution tolerance levels of the respective species. The overall community thus holistically reflects the conditions in its environment. Each sample is analyzed using the USEPA Rapid Bioassessment Protocol (RBP). This statistical methodology provides a consistent view of stream community health. Stations are ranked and classified as impaired, moderately impaired and non-impaired.

The Department also evaluates the quality of in-stream habitat as it relates to viable populations of benthic macroinvertebrates. The physical attributes of habitat play an integral role in the health of the macroinvertebrate community. Stream habitat assessment includes the evaluation of the in-stream substrate, channel morphology, bank structural features, and riparian vegetation. The assessment encompasses an area of 100 to 200 feet around each AMNET sampling site. The qualitative habitat assessment, based on a version of the USEPA RBP calibrated for New Jersey streams, results in each station being assigned one of four condition categories, optimal, sub-optimal, marginal or poor. The Department samples over 800 stations, distributed in a stratified random pattern over every sub-watershed, once every five years. A detailed description of the monitoring program and copies of result reports are available from the Department's website at http://www.state.nj.us/dep/wmm/bfbm/.

The Fish Index of Biotic Integrity (IBI) is another ecological assessment tool utilized by the Department. The Fish IBI is an ecological indicator of environmental health based upon a statistical evaluation of fish species observed at selected stream stations. The Fish IBI is an index that measures the health of a stream based on multiple attributes of the resident fish assemblage, such as the number and type of fish species observed. As a result of the multi-metric analysis, stations are ranked and classified as either excellent, good, fair, or poor. A qualitative habitat assessment, similar to the assessment conducted for the AMNET program and based on a version of the USEPA RBP calibrated for New Jersey streams, is also performed at each of the Fish IBI stations. A detailed description of the monitoring program and copies of result reports are available from the Department's website at http://www.state.nj.us/dep/wmm/bfbm/.

A significant factor in the selection of the proposed stream segments was their ability to support threatened and endangered species and/or trout or trout associated species. The Department's Endangered and Nongame Species Program (ENSP) additionally reviewed records of other aquatic dependent Species of Special Concern associated with the selected sections of these waterbodies. Species of special concern are the species that warrant special attention because of inherent vulnerability to environmental deterioration or habitat modification that would result in their becoming threatened. It also applies to species for which there is little understanding for their current population status in the State. Information regarding the threatened and endangered species can be found at www.njfishandwildlife.com. Additionally, "The Landscape Project" document (New Jersey Endangered and Nongame Species Program, New Jersey Department of Environmental Protection), is also an innovative mechanism for the stewardship of New Jersey's important wildlife habitat.

Table B below summarizes stream-specific supporting data. For two of the six stream segments being classified as C1, Sidney Brook and South Branch Rockaway

Creek, the Department received petitions for rulemaking requesting an upgrade to C1. After reviewing the basis for the petitions and conducting an integrated ecological assessment of these stream segments, the Department concluded that these two waterbodies were of exceptional significance and should be upgraded to the C1 designation. Notice of Action granting these petitions are published at -- N.J.R. ---- and --N.J.R. ---- on October 21, 2002.

The following narrative describes the assessments conducted on each waterbody proposed for upgrade:

Assiscunk Creek – Delaware River Basin - Headwaters to its confluence with Barker's Brook, including all tributaries.

Surrounded by farmland and bordered by a rich floodplain of oak and maple forested swamp, vernal pools, marshes, and wet meadows, the Assiscunk Creek provides the most important habitat for State-threatened wood turtles and State-endangered and Federally-threatened bog turtles in all of the inner coastal plain physiographic region. Although these species were once common species throughout this region of the State, intensive agricultural practices and poorly planned development has degraded many of the region's drainages and associated wetlands and thus eliminated habitat for wood and bog turtles. A significant portion of the Assiscunk within Mansfield and Springfield Townships, however, has been spared large-scale degradation and maintains a level of ecological integrity that is conducive to supporting these two turtles which are sensitive to changes in both water quality and quantity.

Unique to the Inner Coastal Plain, bog turtle habitats are primarily located along marshy floodplains of creeks, such as the Assiscunk, and are, therefore, frequently inundated during storm events. It is well documented that waters rich in nitrogen, phosphorous, chlorides and other pollutants facilitate the establishment of invasive flora (for example, purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris*

arundinacea), and phragmites (*Phragmites australis*)) in bog turtle habitats, which is a significant threat to bog turtles in New Jersey.

Data on the health of the benthic macroinvertebrate community in the Assiscunk Creek indicate that there is some stress to that portion of the aquatic community (moderate impairment), while an assessment of the in-stream habitat quality demonstrated only a slightly less than optimal habitat quality (sub-optimal). Furthermore, an assessment of the physical / chemical monitoring data demonstrated that the water quality in this stream segment of the Assiscunk Creek is "Fully Attaining" surface water quality standards for nitrate, dissolved solids and unionized ammonia, with the results for attaining standards for both pH and Total Suspended Solids being inconclusive. Further degradation in water quality is not compatible with the survival of the existing populations of wood and bog turtles. Accordingly, the Department has determined that the Assiscunk Creek is a waterbody of "exceptional ecological significance" and is proposing to amend the antidegradation designation for the stream stretch of Assiscunk Creek from its headwaters to its confluence with Barkers Brook, including all tributaries, from C2 to C1.

Beaver Brook – Delaware River Basin - Beaver Avenue bridge downstream to the lower-most I-78 bridge.

The location of Beaver Brook in relation to Sidney Brook and South Branch Rockaway Creek suggests that wood turtles are likely to occur in this drainage as well. Landscape maps indicate critical habitat for wood turtles in this section of Beaver Brook.

Data on the health of the benthic macroinvertebrate community in the stream segment of Beaver Brook indicate that there is some stress to that portion of the aquatic community (moderate impairment), while an assessment of the in-stream habitat quality demonstrated only a slightly less than optimal habitat quality (sub-optimal).

Young-of-year brown trout (indicating a reproducing population) have been confirmed in the Beaver Brook segment by the Bureau of Freshwater Fisheries. Documentation of reproducing trout populations is routinely used by the Department as the basis for stream classification upgrades. In addition, trout production streams receive C1 antidegradation protection.

Accordingly, the Department has determined that the Beaver Brook is a waterbody of "exceptional ecological significance" and supports a trout production classification and, therefore, is proposing to amend the antidegradation designation for the stream stretch of Beaver Brook from Beaver Avenue bridge downstream to the lower-most I-78 bridge from FW2-TM(C2) to FW2-TP(C1).

Flat Brook – Delaware River Basin - Headwaters at Stokes State Forest to its confluence with the Delaware River.

The Flat Brook watershed in rural Sussex County is one of the most expansive, ecologically intact, high water quality stream systems in the State. The Flat Brook is home to several of the State's rare freshwater mussel species, including the Federally and State endangered dwarf wedgemussel (*Alasmidonta heterodon*), the State endangered brook floater (*Alasmidonta varicosa*) and the creeper (*Strophitus undulatus*), a State Species of Special Concern. The dwarf wedgemussel population in the Flat Brook represents one of the few known populations in New Jersey. These mussels mostly occur between the bridge above Walpack Center and the bridge above Flatbrookville.

Freshwater mussels are among the most rapidly declining animal groups in the country. Threats to freshwater mussels include destruction of habitat and degraded water quality due to dredging, channelization and erosion; introduction and spread of exotic mollusks, and dam construction. Since they have a low tolerance for water-borne pollutants, freshwater mussels are excellent indicators of water quality and overall

stream health. Declines within freshwater mussel populations may serve as an early warning of deteriorating water quality. Since freshwater mussels are among the longest living animals on Earth, population declines may not be immediately apparent.

Since freshwater mussels are sensitive to various toxins in the environment, they may suffer lethal or sub-lethal effects from pollutants discharged into waters. Glochidia, the free-floating larval stage of most freshwater mussels is especially vulnerable to environmental toxins. Dwarf wedgemussels in particular are susceptible to overcollecting and loss of genetic diversity due to small geographically isolated populations. The species requires silt-free, stable streambeds and well-oxygenated, pollutant-free water. In addition, dwarf wedgemussel survival depends upon the presence of a viable fish population. The life cycle of the species includes a larval stage that must attach itself temporarily to a host fish.

Flat Brook also provides exceptional habitat for the State threatened wood turtle (*Clemmys insculpta*). Wood turtles, which inhabit the entire drainage of the Flat Brook from its headwaters in Stokes State Forest to its confluence with Delaware River in Flatbrookville, are the hallmark of the river. This population of wood turtles ranks among the top three in the State. According to researchers from Hofstra University and the Wildlife Conservation Society, who are currently studying wood turtles in the Flat Brook and the nearby Van Campens Brook, the populations of turtles in these brooks together form one of the most significant wood turtle meta-populations in the Northeast.

Wood turtles are semi-aquatic turtles preferring clear, well-oxygenated streams surrounded by a mosaic of woodlands, scrub-shrub/herbaceous wetlands, and successional meadows. In New Jersey, the wood turtle is commonly associated with water-quality sensitive fish such as native brook trout and brown trout. While once ubiquitous throughout northern New Jersey, most of the viable wood turtle populations remain in rural portions of Sussex and Warren counties. Degraded water quality, habitat fragmentation, road mortality, and predation are the primary factors behind its

extirpation from developed portions of the State. Observational evidence from the Passaic River suggests that siltation of streams, as a result of stormwater discharge and urbanization of the surrounding land, can lead to a decline in turtle populations.

The ENSP has records for other aquatic dependent species associated with this section of the Flat Brook. These include bog turtles (*Clemmys muhlenbergi*) and herptile species of special concern including spotted turtles (*Clemmys guttata*), Jefferson salamanders (*Ambystoma jeffersonianum*) and marbled salamanders (*Ambystoma opacum*). The bog turtle, a Federally threatened species, occurs in seepage wetlands, such as those that comprise the headwaters of the Flat Brook, as well as fens and marshes within the riparian corridor. The Flat Brook's bog turtle population is ranked as one of the top ten best in New Jersey. Spotted turtles and the two special concern salamander species are dependent upon the rich assemblage of vernal pools that are concentrated along the Flat Brook's riparian corridor.

Data on the health of the benthic macroinvertebrate community in this stream segment of Flat Brook indicate that there is low stress (non-impaired) to the aquatic community, while an assessment of the in-stream habitat quality demonstrated exceptional habitat quality (optimal habitat). Assessment of the physical / chemical monitoring data demonstrated that the water quality in this stream segment shows that it meets standards except for the fecal coliform and temperature criteria.

Maintaining and improving water quality and maintaining habitat is critical for the survival of these threatened and endangered mussels, turtles, and also species of special concern. The proposed upgrade in antidegradation designation would result in the entire Flat Brook, except for those segments already classified as FW1, being designated as C1. Accordingly, the Department has determined that the Flat Brook is a waterbody of "exceptional ecological significance" and is proposing to amend the antidegradation designation of portions of Flat Brook that are currently designated as C2 to C1.

Pequest River – Delaware River Basin - Lehigh and Hudson River railway bridge to its confluence with the tributary at Janes Chapel.

The Pequest River serves as habitat for the Federally and State endangered dwarf wedgemussel (*Alasmidonta heterodon*) and the State threatened triangle floater (*Alasmidonta undulata*). The segment supporting these rare mussels is mostly within the Pequest River Wildlife Management Area. The dwarf wedgemussel population in the Pequest River, represents one of the few known populations in New Jersey.

Freshwater mussels are among the most rapidly declining animal groups in the country. Threats to freshwater mussels include destruction of habitat and degraded water quality due to dredging, channelization and erosion; introduction and spread of exotic mollusks, and dam construction. Since they have a low tolerance for water-borne pollutants, freshwater mussels are excellent indicators of water quality and overall stream health. Declines within freshwater mussel populations may serve as an early warning of deteriorating water quality. Since freshwater mussels are among the longest living animals on Earth, population declines may not be immediately apparent.

Since freshwater mussels are sensitive to various toxins in the environment, they may suffer lethal or sub-lethal effects from pollutants discharged into waters. Glochidia, the free-floating larval stage of most freshwater mussels is especially vulnerable to environmental toxins. Dwarf wedgemussels in particular are susceptible to overcollecting and loss of genetic diversity due to small geographically isolated populations. The species requires silt-free, stable streambeds and well-oxygenated, pollutant-free water. In addition, dwarf wedgemussel survival depends upon the presence of a viable fish population. The life cycle of the species includes a larval stage that must attach itself temporarily to a host fish. The Pequest River provides habitat for the tessellated darter, a documented host fish for the dwarf wedgemussel. The ENSP

also has documented records of marbled salamander (*Ambystoma opacum*), a species of special concern in this section of the Pequest River.

Data on the health of the benthic macroinvertebrate community in this stream segment of Pequest River indicate that there is low stress (non-impaired) to the aquatic community, while an assessment of the in-stream habitat quality indicates an exceptional to slightly less than optimal habitat quality (optimal to sub-optimal habitat).

Accordingly, the Department has determined that the Pequest River is a waterbody of "exceptional ecological significance" and is proposing to amend the antidegradation designation of portions of Pequest River from the Lehigh and Hudson River railway bridge to its confluence with the tributary at Janes Chapel that are currently designated as C2 to C1.

Sidney Brook – Raritan River Basin - Headwaters to its confluence with the South Branch Raritan River, including all tributaries.

Sidney Brook, a clear, rocky tributary of the South Branch Raritan surrounded by a mosaic of successional fields, forested wetland, wet meadows, and cropland, provides excellent habitat for the State threatened wood turtle, and the bog turtle (*C. muhlenbergii*), listed by New Jersey as an endangered species and by the Federal government as a threatened species. Several wood turtles of various age classes have been documented along the Sidney Brook during limited surveys performed by the ENSP, which are excellent signs that a viable population is present within this drainage. Wood turtles are dependent on the Sidney Brook's clear waters for foraging, breeding and hibernating. The complex of wetland and upland habitats surrounding the riparian corridor provides important nesting and foraging habitat for the wood turtle during the summer months.

Data on the health of the benthic macroinvertebrate community in Sidney Brook indicate that there is low stress (non-impaired) to the aquatic community. Additionally, an assessment of the in-stream habitat quality demonstrated exceptional habitat quality (optimal habitat) with 15 different fish species including adult brook trout. Some of the significant features present include stable banks with infrequent erosion, little sediment deposition, no channelization, a healthy riparian corridor, and a good mix of substrates including riffles, boulders, runs and pools.

Accordingly, the Department has determined that the Sidney Brook is a waterbody of "exceptional ecological significance" and is proposing to amend the antidegradation designation of the entire Brook from headwaters to its confluence with the South Branch Raritan River, including all tributaries from C2 to C1.

South Branch Rockaway Creek – Raritan River Basin - Headwaters to Lake Cushetunk, including all tributaries.

The South Branch Rockaway Creek provides exceptional wood turtle habitat. Wood turtles have been documented at several locations along the riparian corridor, suggesting that the entire stretch of the South Branch Rockaway Creek, from the headwaters to where it becomes impounded at Lake Cushetunk, is critical habitat for the species. The clear waters of the South Branch Rockaway Creek and the diverse structure of the riparian habitat and surrounding habitats, which includes fallow fields, woodlands, and wet meadows, are highly conducive to supporting a viable population of wood turtles. Based on the quality of the habitat and the high frequency of wood turtle sightings, the South Branch Rockaway Creek may support one the best wood turtle populations in the Piedmont physiographic province. The State is divided into four regions based on geological and land form characteristics, the piedmont physiographic province is one of them and runs roughly northeast to southwest from Trenton to Carteret.

Data on the health of the benthic macroinvertebrate community in South Branch Rockaway Creek indicate that there is low stress (non-impaired) to the aquatic community, while an assessment of the in-stream habitat quality demonstrated exceptional habitat quality (optimal habitat). The Department selected South Branch Rockaway Creek to be proposed for a higher antidegradation designation of C1 based upon the wood turtle survey and optimal habitat conditions. The 98-acre P. Lomar Nature Preserve could also benefit from the proposed C1 antidegradation designation by maintaining the existing excellent water quality. Accordingly, the Department has determined that the South Branch Rockaway Creek is a waterbody of "exceptional ecological significance" and is proposing to amend the antidegradation designation from headwaters to Lake Cushetunk, including all tributaries from C2 to C1.

Summary of Comments Received on Sidney Brook and South Branch Rockaway Creek Petitions and the Department's responses:

The Department received comments on the initial Notice of Action for both Sidney Brook and South Branch Rockaway Creek. The Department has summarized the comments received and the Department's responses below:

(1) The Department received several comments that the existing definition of "Category One" (C1) in the Surface Water Quality Standards (N.J.A.C. 7:9B-1.4) does not support the upgrade to an antidegradation classification of C1.

Response: While the petitions were based primarily on the presence of threatened and endangered species, the Department conducted its own investigation of the available information for these waterbodies in order to determine whether a Category One designation is appropriate on the basis of it being a resource of "exceptional ecological significance". The Department has a significant amount of information available upon which to evaluate the overall condition of waterbodies. This includes ambient biological monitoring data, fish assemblage data, habitat

evaluation data, threatened and endangered species information. The Department utilized this information to evaluate the waterbodies in the petitions to determine if they qualified as a resource of "exceptional ecological significance." The available technical information supports the determination that these waterbodies qualify as a resource of "exceptional ecological significance."

(2) The Department received a comment that the existing Surface Water Quality Standards do not include a procedure to change the antidegradation designation.

Response: The Department is authorized by the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 *et seq*., and the Water Quality Planning Act (WQPA) at N.J.S.A. 58:11A-7b to "conduct a statewide assessment of water quality and establish water quality goals and water quality standards for the waters of the State." The classification system is part of the Surface Water Quality Standards program established to implement the objectives of the WQPA. The stream classification listings in the Surface Water Quality Standards, includes the antidegradation designation assigned to each waterbody. Therefore, it is appropriate to utilize the "petition for rulemaking" process to request an upgrade in the antidegradation designation of a waterbody.

(3) The Department received a comment that the affected development is part of Clinton Township's 1985 COAH Fair Share Plan and Master Plan Housing Element.

Response: This Master Plan Housing Element and implementing ordinance approved by COAH remain in effect. Further, in 2000, COAH recertified Clinton's Fair Share Plan, which continues to include these affordable housing units. The decision on the petition does not prevent the development of the property. The discharge of treated wastewater into Category One waterbodies is not prohibited.

(4) The Department received comments that the current antidegradation designation of Category Two allows for the degradation of water quality that would have a negative effect on the survival of the Federally threatened and State endangered bog turtle and the State threatened wood turtle in the watershed. The sensitivity of the bog turtle to degradation of water quality and hydrological alterations resulting from development has been documented by the U.S. Department of Interior in its final rule adoption listing the Bog Turtle as a threatened species.

Response: The proposed change in antidegradation designation will act to prevent adverse impacts to the bog turtle due to degradation of water quality. Designation as C1 alone may not prevent impacts on habitat of the endangered bog turtle and the threatened wood turtle. The Department regulates these types of impacts primarily through its Freshwater Wetlands Program. In addition, the Department's rules prohibit the use of "mixing zones" for point source discharges of wastewater into threatened or endangered species habitat (N.J.A.C. 7:9B-1.5(h)1viii. and (h)5iv.)

5) A commenter pointed out that the Department recently designated the Sidney Brook from Category One to Category Two, and that this petition fails to establish that a further change is warranted.

Response: Initially, Sidney Brook was not specifically listed in the surface water quality classification tables at N.J.A.C. 7:9B-1.15. However, in accordance with N.J.A.C. 7:9B-1.15(b)5i, unlisted freshwater streams take the classification of the classified stream into which they flow. In the case of Sidney Brook, it flows into the South Branch Raritan River, a stream that is classified as FW2-TM with an antidegradation designation of Category Two. On July 18, 1996 the Department sampled Sidney Brook and determined that young of the year trout were not present and that the Incidence of Occurrence (I/O) score for the stream segment was 17.45. This score was less than the 20% needed to classify the waterbody as FW2-TM. Therefore, when the Department, on December 15, 1997, proposed surface water

reclassifications based on stream sampling data (29 N.J.R. 5128(a), 5133, 5150), a specific listing of FW2-NT was proposed for Sidney Brook in the classification tables. The antidegradation designation remained Category Two, and there was no redesignation of Sidney Brook from Category One to Category Two. The amendments were adopted on May 18, 1998. (30 N.J.R. 1778(a)).

Table B - Supporting Data for the Proposed Reclassifications

Integrated Ecological Assessment:

Basin	Waterbody	Current Classification	Proposed Classification	T&E Species / Trout Present	Supplemental Information on Aquatic Community Health / Habitat Quality
Delaware River Basin	Assiscunk Creek (Columbus) - Head waters to confluence with Barkers Brook, including all tributaries	FW2-NT	FW2-NT(C1)	Wood & Bog turtle	Most important habitat for wood and bog turtles in the inner coastal plain region
	Flat Brook - Flatbrook-Roy Wildlife Management Area boundary to its confluence with Delaware River (portions that are currently designated as C2)	FW2-TM	FW2-TM(C1)	Dwarf wedgemussel, Brook floater, Creeper mussel, Wood & Bog turtle, trout associated species	- Non-impaired benthic macroinvertebrate community with optimal habitat quality. - Species of special concern - Spotted turtles, Jefferson, & Marbled salamanders
	Pequest River (Townsbury) - Lehigh and Hudson River railway bridge to the upstream boundary of Pequest Wildlife Management Area (Townsbury) - Upstream boundary of Pequest Wildlife Management Area boundary to the downstream boundary (segment that is not C1 already)	FW2-NT FW2-TM	FW2-NT(C1) FW2-TM(C1)	Dwarf wedgemussel, Triangle floater mussel, trout associated species	- Non-impaired benthic macroinvertebrate community with optimal to sub-optimal habitat quality. - Pequest Wildlife Management Area - Species of special concern - Marbled salamanders
	Beaver Brook (Annandale) - Beaver Avenue bridge downstream to the lower most I-78 bridge	FW2-TM	FW2-TP(C1)	Brown Trout	Critical wood turtle habitat
Raritan River Basin	South Branch Rockaway Creek (Clinton) - Headwaters to Lake Cushetunk, including all tributaries	FW2-TM	FW2-TM(C1)	Wood turtles, trout associated species	- Consistently non-impaired benthic macroinvertebrate community with optimal habitat quality - P. Lomar Nature Preserve

	Sidney Brook (Grandin) - Headwaters to its confluence with South Branch Raritan River, including all tributaries	FW2-NT	FW2-NT(C1)	Wood turtles	- Excellent fisheries community and non impaired benthic macroinvertebrate community with optimal habitat quality - Critical bog turtle habitat - Wetland of exceptional resource value

(Table B Continued)
Reservoirs:

Basin	Waterbody	Current Classification[1]	Proposed Classification	Reason for Proposed Classification
Atlantic River Basin	Doughty Reservoir (Atlantic City)	[FW2-NT]	FW2-NT(C1)	EXCEPTIONAL WATER SUPPLY SIGNIFICANCE
	Glendola Reservoir (Glendola)	[FW2-NT]	FW2-NT(C1)	
	Manasquan Reservoir (Oak Glen)	[FW2-NT]	FW2-NT(C1)	
Passaic, Hackensack, and New York Harbor Complex Basin	Boonton Reservoir / Jersey City Reservoir (Boonton)	FW2-TM	FW2-TM(C1)	
	Charlotteburg Reservoir (Charlotteburg)	FW2-TM	FW2-TM(C1)	
	Oradell Reservoir (Oradell)	[FW2-NT]	FW2-NT(C1)	
	Wanaque Reservoir	FW2-TM	FW2-TM(C1)	
Raritan River Basin	Round Valley Reservoir (Clinton)	FW2-TP	FW2-TP(C1)	
	Swimming River Reservoir (Red Bank)	[FW2-NT]	FW2-NT(C1)	

1 Brackets around a current classification indicate that the waterbody is not specifically named or listed in the Surface Water Quality Standards and has therefore, by default, assumed the classification given herein.

Proposed Reservoirs for C1 designation based on Exceptional Water Supply Significance:

The Department is proposing to protect the reservoirs listed below based on their exceptional water supply significance through a higher antidegradation designation of C1 (see Table B). The reservoirs proposed for C1 antidegradation protection are all part of water supply systems serving at least 100,000 or more people for at least a

portion of the year. The following is a list of reservoirs proposed for a higher antidegradation designation of C1 and the population served:

System Name	**Reservoirs**	**Population Served by System** (approximate)
Jersey City - United Water	Boonton Reservoir	235,000
Newark Water Department	Charlottesburg Reservoir	275,000
Atlantic City MUA	Doughty Reservoir	37,000 - 150, 000
NJ American - Monmouth	Glendola Reservoir	302,000
NJ Water Supply Authority	Manasquan Reservoir	150,000
United Water NJ - Main	Oradell Reservoir	700,000
NJ Water Supply Authority	Round Valley Reservoir	750,000
NJ American - Monmouth	Swimming River Reservoir	302,000
North Jersey Dist. WSC	Wanaque Reservoir	1,000,000

The Department has determined that a preventive focus, in the form of a more protective antidegradation designation for these reservoirs, is necessary for the following reasons:

First, the listed reservoirs are a major source of drinking water for many of the residents and businesses of New Jersey. Each of the reservoirs proposed, except for Round Valley reservoir, is part of a New Jersey water supply system having water supply intakes, drainage areas adjacent to the reservoir, and providing potable water to populations of 100,000 or more during all or parts of the year. In the case of the Round Valley reservoir, it has a direct release to a river that provides potable water to a water supply system for a population of at least 100,000. Combined, these reservoirs provide potable water to nearly 4 million New Jersey residents - almost one-half the State's population. As the State's population increases in the decades ahead, more residents and businesses may rely on a safe and plentiful supply of drinking water from these reservoirs. It is essential that initiatives be put into place today to preserve and manage the drinking water supplies serving such a significant portion of the State's residents.

Second, the population in New Jersey is expected to increase by nearly one million in the next 20 years and by nearly two million in the next 40 years. Some of this population increase can be expected to be in close proximity to these reservoirs. Experience dictates that with increases in population come increases in point and nonpoint source pollutant loadings to the waters of the State. Previous investigations have concluded that anthropogenic sources of pollutants are presently negatively affecting the quality of water in some of the reservoirs. Indeed, some of the State's purveyors are not allowed to divert water from the rivers during the summer months due to low flow conditions. In other cases, purveyors sometimes choose not to divert water from their primary available river supply due to less-than-desirable quality and, as a result, have become more reliant on higher quality, but less plentiful, sources. These phenomena are expected to be exacerbated as the State's population grows unless attention is focused on increased management and guardianship of these supplies.

Third, water purveyors reliant on the above listed reservoirs have had to make costly improvements over the years to their treatment systems in order to meet increasingly more protective drinking water standards.

Fourth, the vast majority of sites for the development of new water supply reservoirs in New Jersey have already been developed. Impairment of existing reservoirs will result in the premature need for alternative water supplies. It is thus essential that existing reservoirs be provided maximum protection.

As the Governor stated on Earth Day, April 22, 2002, "We must protect our State's limited and healthiest water sources for our families and future generations. We must take action to ensure that our communities have clean and plentiful water supplies now and into the future."

The proposed designation of C1 for these listed reservoirs is a significant first step in meeting the Governor's challenge of protecting these important sources of

drinking water. However, the fact that some reservoir systems are already affected by human activities implies that there is more that needs to be accomplished. Indeed, additional steps will be required to not only mitigate the effects of future increases in population, but also to more adequately manage present impacts associated with current development in the source waters of these reservoir systems.

Other Changes:

Great Egg Harbor River segment at Tuckahoe is being amended to be consistent with the language as listed in Table 6 in the SWQS at N.J.A.C. 7:9B1.15(h) where all the FW1 waters are listed.

The classification of Timber Swamp Brook is being amended as a result of the construction of the Manasquan reservoir on the brook. The proposed amendment clarifies the classification of Timber Swamp Brook from the Manasquan Reservoir dam to its confluence with the Manasquan River as FW2-NT.

The FW1 classifications for the stream segments of East Creek in Delaware River Basin (Table 2) at N.J.A.C. 7:9B-1.15(d) and Franklin Pond Creek tributary at Hamburg Mountain in Wallkill River Basin (Table 5) at N.J.A.C. 7:9B-1.15(g) are being amended to be consistent with Table 6 at N.J.A.C. 7:9B-1.15(h), where all the FW1 waters are listed.

The listing of Black Creek tributaries listed in Table 5 at N.J.A.C. 7:9B-1.15(g) in Wallkill River Basin under Hamburg is being amended to include the word 'former' before Hamburg Mountain Wildlife Management Area. A portion of the Wildlife Management Area (WMA) was sold to private groups, therefore, the boundaries of the WMA have changed and the FW1 streams are no longer within the WMA boundaries.

Social Impact

The proposed amendments to the stream reclassifications and antidegradation designations, and the addition of wildlife criteria will allow the Department to continue to protect the surface waters of the State and will, therefore, result in a positive social impact. The proposed antidegradation designations to C1 will help prevent degradation of water quality and may provide increased recreational opportunities and improved

health to human and aquatic resources. The maintenance of high quality water resources is important to all residents, particularly to the many communities that depend upon surface waters for public, industrial, and agricultural water supplies, recreation, tourism, fishing, and shellfish harvesting. In addition, the proposed amendments will enable the Department to maintain existing water quality for the protection of existing and designated uses of the State's waters.

Economic Impact

The proposed wildlife criteria for DDT and its metabolites, mercury, and PCBs may result in increased monitoring, consulting, and analytical costs for dischargers. The exact cost cannot be determined except on a case by case basis due to variations in existing compliance requirements, the size of the discharge, and the current levels of these pollutants in the wastewater. The potentially affected dischargers within the upstream sub-watershed (HUC 14) are listed in Table C below. In addition, dischargers located above a potable water intake to one of the proposed C1 reservoirs could potentially be impacted, depending upon factors including the distance from the intake, the magnitude of the discharge, the specific pollutant, and the assimilative capacity of the waterbody.

The proposed amendments concerning stream classifications or antidegradation designations may result in a range of economic impacts, ranging from no economic impact to potentially significant impact. The actual impact depends on the conditions within each segment. Where there are no existing discharges to a segment being proposed for reclassification, no economic impacts are anticipated.

For existing NJPDES dischargers that are not proposing an expansion, the proposed C1 antidegradation designation amendments will not automatically require the existing facility to upgrade its treatment capabilities. However, existing dischargers, upon renewal of their permit, would be subject to any new water quality criteria, such as when

reclassifying waters from FW2-NT to FW2-TP, which may or may not require an upgrade of wastewater treatment.

Costs of compliance for water quality sampling, analysis, and reporting will not change substantially because these activities are already required by the Department to satisfy existing Federal / State regulations whenever NJPDES permits are initially issued, renewed, or modified. These amendments may have a positive economic

Table C.- Potentially affected NJPDES dischargers

Waterbody	Facilities
Streams proposed for C1 designation based on Exceptional Ecological Significance:	
Assiscunk Creek	None
Beaver Brook	NJ0028487 NJDC - Youth Correct - Mt. View NJ0035084 Exxon Research & Eng Co. NJ0078018 Clinton Twp STP - West
Flat Brook	None
Pequest River	None
Sidney Brook	NJ0131725 Milligan Farms
South Branch Rockaway Creek	NJ0023175 Clinton Twp BOE - Round Valley NJ0114189 H K B & Sons Inc NJ0107565 Clinton Twp STP - East
Reservoirs proposed for C1 designation:	
Boonton Reservoir	None
Charlottesburg Reservoir	NJ0063711 Newark - Pequannock WTP
Doughty Reservoir	NJ0108014 New Jersey Air National Guard
Glendola Reservoir	None
Manasquan Reservoir	None
Oradell Reservoir	NJ0051373 United Water New Jersey
Round Valley Reservoir	None
Swimming River Reservoir	Upstream NJ0027031 Holmdel BOE - Village School NJ0027529 Holmdel Nursing/Convalescent NJ0035718 Prudential Insurance NJ0035823 Laird & Company (Closest) NJ0022586 Marlboro Psychiatric Hospital NJ0031771 Colts Neck Inn
Wanaque Reservoir	NJ0062111 North Jersey Dist Water Comm. Upstream NJ0029432 Ringwood BOE - Erskine School

WTP Water treatment plant
STP Sewage treatment plant
BOE Board of education

benefit for the public health (including reduction in medical expenses) and ecological values, as well as for recreational, industrial, and agricultural users of the State's waters.

For existing NJPDES dischargers that are seeking to expand their discharge in the waterbody segments upgraded for C1, such expansions will be limited to those that result in no additional pollutant loading to the waterbodies. The antidegradation

provision at N.J.A.C. 7:9B-1.5(d) protects Category One waters from measurable changes to existing water quality. Therefore, additional treatment technologies or changes in operation and maintenance may be necessary in order to maintain the existing permitted effluent loadings at the increased wastewater flows. The cost of capital improvements and/or operation and maintenance will vary depending upon the current level of treatment, the pollutants involved, the degree of additional treatment required, and the treatment technology available. Expanding dischargers may also need to incur professional costs such as engineering fees for the redesign of the current treatment systems. Table D below represents an estimate of the capital costs for wastewater treatment technologies, which can be used to assist in the calculation of additional costs.

Wetlands associated with waters classified as trout production are deemed "exceptional resource value" wetlands in accordance with the Freshwater Wetlands Protection Act (FWPA) at N.J.S.A. 13:9B-1 et seq. The FWPA rules at N.J.A.C. 7:7A-2.5(d) require a 150 foot transition area for exceptional resource value wetlands.

For potential dischargers, the economic costs will vary with the effluent limitations based on the relative size of the proposed discharge to the size of the receiving water. The larger the stream, relative to the discharge, the smaller the economic impact will be based on variations in existing compliance requirements, the size of the discharge, and the current levels of these pollutants in the wastewater.

Environmental Impact

The proposed amendments increasing the number of waterbodies with C1 antidegradation designation will have a positive effect on the environment by helping prevent degradation to existing water quality. Implementation of these rules through

permitting and planning programs will specifically restore, maintain, and enhance the chemical, physical, and biological integrity of the proposed C1 waters. The proposed wildlife criteria are designed to protect threatened and endangered species from harmful effects caused by ingestion of water and food containing DDT, mercury, and PCBs. The proposed wildlife criteria were derived to ensure adequate protection of wildlife in New Jersey.

Table D - Capital Costs for Wastewater Treatment Technologies

(In Millions of 2002 Dollars)

	FLOW[a], MGD					
	0.01	0.1	0.5	1.0	5.0	10.0
Activated Sludge[b]	0.87	2.31	4.76	7.93	19.46	28.4
Air Stripping	0.1	0.3	0.81	1.59	3.89	7.38
Equalization	0.19	0.35	1.05	1.35	2.92	5.11
Neutralization	0.12	0.25	0.48	0.63	1.36	1.99
Chemical Precipitation	0.33	0.92	2.0	3.17	7.79	12.21
Filtration	0.16	0.46	0.71	1.03	2.34	3.12
Chemical Oxidation (peroxide)	0.17	0.39	0.81	1.35	3.70	6.25
Chemical Oxidation (ozone)	0.34	0.69	1.47	2.38	5.06	8.24
Granular Activated Carbon Columns[c]	0.32	0.65	1.19	1.74	4.87	6.53
Powdered Activated Carbon[c] Treatment[d]	0.1	0.21	0.62	0.79	1.56	1.99
Powdered Activated Carbon[c] Regeneration	NA	NA	2.09	3.33	9.34	13.35
Anaerobic Biological Treatment	0.52	1.96	4.28	7.14	17.9	25.8

Operation and Maintenance Costs for Wastewater Treatment Technologies

(In Millions of 2002 Dollars)

Activated Sludge[b]	0.101	0.231	0.721	0.937	2.307	3.489
Air Stripping	0.015	0.058	0.144	0.159	0.415	0.593
Equalization	0.002	0.007	0.022	0.056	0.138	0.244
Neutralization	0.007	0.028	0.115	0.187	0.738	1.186
Chemical Precipitation	0.016	0.046	0.144	0.225	0.761	0.471
Filtration	0.002	0.016	0.050	0.094	0.185	0.488
Chemical Oxidation (peroxide)	0.015	0.058	0.159	0.272	0.992	1.570
Chemical Oxidation (ozone)	0.005	0.021	0.108	0.216	1.038	2.093
Granular Activated Carbon Columns	0.010	0.028	0.072	0.094	0.208	0.314
Granular Activated Carbon Regeneration	0.014	0.028	0.115	0.169	0.715	1.082
Powdered Activated Carbon[c] Treatment[e]	0.035[f]	0.099[f]	0.05[g]	0.103[g]	0.208[g]	0.279[g]
Powdered Activated Carbon[c] Regeneration	NA	NA	0.159	0.197	0.369	0.593
Anaerobic Biological Treatment	0.014	0.044	0.216	0.319	0.854	1.256

a - Wastewater: 1,000 mg/L COD, 500 mg/L BOD.
b - Includes sludge handling, dewatering, and disposal.
c - Based on carbon utilization rate of 2 lbs. carbon/1,000 gallons.
d - Based on 250 mg/L carbon dose.
e - Powdered Activated Carbon[(c)] dose of 250 mg/L.
f - Includes cost of makeup carbon with no regeneration.
g - Assumes on-site Powdered Activated Carbon regeneration as a separate cost.
Engineering News Record Construction Cost Index = 6588.7 (September 2002)
NA = Not Applicable

Source: Lankford, P.W. and Eckenfelder, W.W., editors, Toxicity Reduction in Industrial Effluents, Van Nostrand Reinhold, New York, 1990.

Federal Standards Analysis

Executive Order 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c.65) require that State agencies which adopt, readopt, or amend State regulations that exceed any Federal standards or requirements include in the rulemaking document a Federal standards analysis.

The Federal Clean Water Act (CWA), 33 U.S.C. 1251 et seq., as amended by the Water Quality Act of 1987 (PL 100-4) requires the establishment of water quality standards for all surface waters of the United States. (The Water Quality Act of 1987 amended the CWA to require the adoption of criteria for toxic pollutants identified as causing or contributing to an impairment of a waterbody's designated use(s).) Individual states are given the primary responsibility for developing and adopting surface water quality standards applicable to their waters. The USEPA is given responsibility to oversee and approve state water quality standards, provide guidance on the content of the standards and to develop water quality criteria guidance documents. Key elements of the surface water quality standards program required under the CWA are: a classification system establishing designated beneficial uses of the waters; ambient water quality criteria necessary to protect those uses; minimum uses to be attained, which reflect the fishable and swimmable goals of the CWA; and antidegradation

policies and implementation procedures to prevent water quality from deteriorating. Furthermore, the CWA includes provisions requiring the USEPA to promulgate superseding Federal standards where the USEPA concludes that a State's standards are not consistent with the requirements of the CWA or where Federal requirements are necessary to meet the requirements of the CWA.

The SWQS amendments being proposed are required by and consistent with the Federal statutes, regulations and guidance. The Department has prepared the following section by section analyses of the SWQS for purposes of comparing each section with the applicable Federal law, regulations and guidance, as required under Executive Order 27 (1994) and P.L. 1995, c. 65.

N.J.A.C. 7:9B-1.4 contains definitions of terms used within the SWQS. The proposed definitions were obtained from the Water Quality Guidance for Great Lakes, and are approved by the USEPA, therefore, are consistent with the Federal Standards.

N.J.A.C. 7:9B-1.5(c)2 - contains design flows applicable to toxic substances. The Department is proposing to include design flows for the proposed wildlife criteria. The proposed design flows are equivalent to the design flows adopted for the Great Lakes. The wildlife criteria were developed as a joint effort between the Department, USEPA and USFWS who decided to use the Great Lakes methodology for the derivation of criteria and the applicable design flows. Therefore, the Department has determined that the design flow applicable to wildlife criteria is consistent with Federal guidance and does not exceed Federal standards.

N.J.A.C. 7:9B-1.14 contains the surface water aquatic life and human health protection criteria (both narrative statements and numerical values) for waters classified as FW1, PL, FW2, SE and SC. New Jersey has adopted criteria for pollutants to protect the aquatic biota and humans from detrimental effects from exposure to these pollutants

in the surface waters of the State. N.J.A.C. 7:9B- 1.14 also states that the surface water criteria for the Delaware River and Bay are as contained in the Delaware River Basin Commission regulations. Federal regulations require that states must adopt water quality criteria that protect the designated uses (see 40 CFR 131.11 (a)(1)). The numerical criteria should be based on CWA Section 304(a) guidance or 304(a) guidance modified to reflect site-specific conditions, or other scientifically defensible methods (40 CFR 131.11(b)(1) (i.-iii.)).

Wildlife Criteria

The Department has proposed new wildlife criteria for DDT and its metabolites, mercury, and PCBs at N.J.A.C. 7:9B-1.14(c). There are no Federal wildlife criteria available for comparison. However, an USEPA recommended methodology that was used to develop wildlife criteria in the Great Lakes Water Quality Initiative was used to develop the proposed wildlife criteria. An inter-agency committee (the Department, USEPA, USFWS) was assembled to derive New Jersey-specific wildlife criteria for DDT and its metabolites, mercury, and PCBs. Therefore, these criteria are the criteria that would be proposed as Federal criteria. In addition, the USEPA has a commitment with the USFWS to propose and adopt these criteria should the Department not adopt these criteria. Therefore, the wildlife criteria do not exceed Federal standards and no further analysis is required.

N.J.A.C. 7:9B-1.15 contains specific waterbody classification listings and antidegradation designations, arranged by major drainage basin, and instructions for the use of the classification tables. The Federal water quality regulations at 40 CFR 131.10 require that states specify appropriate water uses to be achieved and protected. The Department's SWQS waterbody classification listing is a tool to identify these designated uses such as protection and propagation of fish, shellfish, and wildlife,

recreation in and on water, public water supplies, agricultural, industrial, etc. Therefore, these waterbody classifications are consistent with the Federal regulations.

In addition, 40 CFR 131.12 establishes requirements for the states to develop and adopt antidegradation policies and implementation procedures to ensure that the level of water quality needed to protect existing uses is maintained, and that water quality better than necessary to protect existing uses is maintained and protected unless demonstrations are made in support of lowering the water quality. The proposed changes in antidegradation designation for the 15 waterbodies identify the level of protection and implementation procedures that must be followed. The antidegradation designations are consistent with and do not exceed Federal standards, therefore, no further analysis is required.

Jobs Impact

Pursuant to N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 166), all rule proposals must contain a jobs impact statement assessing the number of jobs to be generated or lost if the proposed rule takes effect.

The proposed higher use classification and antidegradation categories are not expected to create any additional jobs or cause any jobs to be lost. Losses of existing jobs would only occur in the event that a discharger to one of the waterbodies proposed for reclassification would curtail or cease operations rather than provide the necessary measures to abate NJPDES regulated discharges so as to comply with any new permit requirements based on the SWQS.

As discussed in the Economic Impact statement, the imposition of requirements based on the SWQS is waterbody and facility specific. Failure to implement the

proposed amendments could result in lost employment opportunities in businesses and industries that are water quality dependent, such as tourism and fishing. The implementation of the SWQS through the NJPDES permitting and other NJDEP programs will continue to result in job opportunities in analytical and environmental consulting services to assess permit compliance and evaluate and design the most cost effective abatement measures to achieve permit compliance. Should such abatement measures involve new capital improvements, job opportunities related to construction contracting services and operation and maintenance of these improvements would be created. Implementation of actions to achieve the SWQS will result in more of the State's waters achieving designated uses which will enhance job opportunities in industries and businesses that are directly and indirectly water related.

Agriculture Industry Impact

Pursuant to P.L. 1998, c.48, adopted on July 2, 1998, the Department has evaluated this rulemaking to determine the nature and extent of the impacts of the proposed rules on the agriculture industry. Because agricultural operations generally do not require NJPDES permits, the proposed rules are not expected to have a significant impact upon the agriculture industry. Concentrated Animal Feeding Operations (CAFO) may have to install hydraulic controls to maintain the existing water quality of the receiving waterbody. However, the Department is not aware of any CAFOs that are located on the proposed C1 designated waterbodies.

Regulatory Flexibility Analysis

The proposed amendments might affect small businesses engaging in activities that affect the quality or uses of the surface waters of the State through pollutant discharges. As a result of the proposed change in the antidegradation designation for the waterbodies covered by this proposal, new or expanded NJPDES dischargers to these waterbodies will have to demonstrate that their discharge will not impact water quality in the Category One waterbody. Additionally, new or expanded dischargers to Category Two streams upstream of the Category One waterbody will be required to demonstrate that their discharge does not impact water quality at the Category One boundary. In order to meet these more stringent standards, dischargers may have to hire consultants, provide a higher level of pollutant removal by building additional treatment units, expanding existing treatment units, or changing to a treatment technology that can remove more pollutants. In addition to any capital costs, there may be annual operating costs such as, increased use of chemicals, increased electrical costs, increased costs for sludge handling/disposal, etc. The cost to small businesses, where there are costs incurred, is expected to vary from several thousand dollars to several million dollars, depending on facility specific factors such as type of activity, size of the discharge relative to the receiving stream, classification and antidegradation designation of waterbody affected, and required level of pollutant reduction. In proposing these amendments, the Department has balanced the need to protect the environment and the public health and to comply with the Federal law against any expected economic impacts of the rules upon small businesses and has determined that to exempt them from any requirements or reduce the requirements for them would endanger the environment, public health, and safety.

Smart Growth

Executive Order No. 4 (2002) requires State agencies which adopt, amend or repeal any rule adopted pursuant to N.J.S.A. 52:14B-4(a) of the Administrative Procedure Act to describe the impact of the proposed rule on the achievement of smart growth and implementation of the New Jersey State Development and Redevelopment Plan (State Plan), N.J.S.A. 52:18A-196 et seq. The Department has evaluated this rulemaking to determine the nature and extent of the proposed amendments' impact on smart growth and implementation of the State Plan. Smart growth discourages development where it may impair or destroy natural resources or environmental qualities that are vital to the health and well being of the present and future citizens of New Jersey. The proposed amendments regarding the upgrading of use classifications and antidegradation designations will likely impact decisions concerning land use and infrastructure development because wastewater discharges will have to meet the antidegradation policies at N.J.A.C. 7:9B-1.15(d). Category One antidegradation designation requires that discharges are regulated to ensure that the quality of the Category One waters are protected from changes in water quality. The amendments are intended to conserve the State's natural resources, namely, its surface waters and associated biota, which implements State Planning Goal 2: Conserve The State's Natural Resources and Goal 4: Protect The Environment. Goal 2 provides that the State's natural resources (including - rivers, fresh and saltwater wetlands, habitats of unique flora and fauna) have significant intrinsic value as critical elements of the State's quality of life. The implementing strategy calls for conserving the State's natural resources. Goal 4 provides that "A clean, safe and attractive environment is essential to assuring the health of our citizens. Sustainable supplies of clean water, clean air and an abundance of open space and recreational opportunities also will assure a sustainable economy." The implementing strategy is to "Protect the environment by planning for growth in compact forms, at locations and densities of use that make efficient use of existing and planned infrastructure and by increasing infrastructure capacities and growth potential in areas where development will not damage water

resources, critical habitats or important forests…" This proposal advances the goals of the plan by designating waters which provide a sustainable supply of water, support unique flora/fauna, and other selected water resources, for additional protections. This also provides a database, to be used in planning, which identifies resources to be protected from the adverse impacts of growth. Finally, this proposal also provides additional protections for areas identified through the State Planning process. For example, the upper portion of Sidney Brook lies in Union Township, which is located at the southern edge of the New Jersey Highlands. This area has been designated in the State Development Redevelopment Plan as a Special Resource Area and the designation of this stream segment as Category One provides additional protections consistent with the goals of the State Plan.

These amendments will additionally discourage development where it would impair or destroy natural resources and environmental qualities vital to the health and well being of the citizens of New Jersey consistent with Executive Order No. 4 (2002).

Full text of the proposal follows (additions indicated in boldface **thus**; deletions indicated in brackets [thus]:

CHAPTER 9B SURFACE WATER QUALITY STANDARDS

SUBCHAPTER 1. SURFACE WATER QUALITY STANDARDS

7:9B-1.4 Definitions:

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

...

"Bioaccumulation Factor" or "BAF" means the ratio (in L/kg-tissue) of a substance's concentration in the tissue of an aquatic organism to its concentration in the ambient water, where the tissue concentration resuts from the uptake of pollutants from the water column and food, and the ratio does not change substantially over time.

...

"Bioconcentration Factor" or "BCF", means the ratio (in L/kg-tissue) of the concentration of a substance in the tissue of an aquatic organism to its concentration in the ambient water, where the tissue concentration results from the uptake of pollutants from the water column only, and the ratio does not change substantially over time.

…

"MA90CD10" means the minimum average 90 consecutive day flow with a statistical recurrence interval of ten years.

...

7:9B-1.5 Statements of policy

(a) and (b) No Change.)

(c) General technical policies are as follows:

1. (No Change.)

2. Water quality criteria are expected to be maintained during periods when nontidal or small tidal stream flows are at or greater than the appropriate design flow. For carcinogenic effect-based human health criteria, toxic substances with a bioaccumulation or bioconcentration factor greater than 200 Liters/kilogram (L/kg) (as listed at 1.5(c)2i below) and for bromodichloromethane (BDCM), the design flow shall be the flow which is exceeded 75 percent of the time for the appropriate "period of record" as determined by the United States Geological Survey (USGS). For acute aquatic life protection criteria, the design flow shall be the MA1CD10 flow. For chronic aquatic life protection criteria for ammonia, the design flow shall be the MA30CD10 flow. **For wildlife criteria the design flow shall be MA90CD10 flow.** The design flow for all other criteria shall be the MA7CD10 flow.

i. (No Change.)

3. - 6. (No Change.)

(d) - (h) (No Change.)

7:9B-1.14 Surface water quality criteria

(a) and (b) (No Change.)

(c) Surface Water Quality Criteria for FW2, SE and SC Waters:

1 - 12 (No Change.)

Substance	Criteria	Classifications
13. Toxic Substances (µg/L):		

NOTE: Except as noted, aquatic life criteria followed by an (a) represent acute aquatic life protection criteria as a one-hour average (three-hour for ammonia, six-hour for lead) and aquatic life criteria followed by (c) represent chronic aquatic life protection criteria as a four-day average (30-day for ammonia). No exceedance of aquatic life criteria shall be permitted at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2. Criteria followed by an (h) are noncarcinogenic effect-based human health criteria as a 30-day average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2. Criteria followed by an (hc) are carcinogenic effect-based human health criteria as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one-million. Criteria followed by an (hcc) are for toxic substances considered to be possible human carcinogens as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one hundred thousand. Criteria followed by an (OL) are organoleptic effect-based criteria and are maximum concentrations. **Criteria followed by (W) are maximum allowable surface water quality criteria for the protection of wildlife.**

i. - xli.	(No Change.)		
xlii.	4,4'-DDD (p,p'-TDE)	(1) 0.000832(hc) (2) 0.000837(hc) **(3) Ú**	All FW2 All SE, SC

Substance	Criteria	Classifications
xliii. 4,4'-DDE	(1) 0.000588(hc) (2) 0.000591(hc) **(3) Ú**	All FW2 All SE, SC
xliv. 4,4'-DDT	(1) 1.1(a); 0.0010(c); 0.000588(hc) (2) 0.13(a); 0.0010(c); 0.000591(hc) **(3) 0.000004(W) Ú**	All FW2 All SE, SC **All FW2, SE, and SC**

Ú Applies to the sum of 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

xlv. - lxxxiv. (No Change.)

lxxxv. Mercury (Total recoverable)	(1) 0.144(h) (2) 0.146(h) **(3) 0.000530(W)**	All FW2 All SE, SC **All FW2, SE, and SC**

lxxxvi. - civ. (No Change.)

cv. Polychlorinated biphenyls (PCBs)	(1) 0.014(c); 0.00017(hc) (2) 0.030(c); 0.00017(hc) **(3) 0.000072(W)**	All FW2 All SE, SC **All FW2, SE, and SC**

cvi.- cxxiv. (No Change.)

14 (No Change.)

(d) (No Change.)

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7:9B-1.15 Surface water classifications for the waters of the State of New Jersey

(a) (No change.)

(b) (No change.)

1. - 5. (No change.)

6. The following 10 classifications are used for the sole purpose of identifying the water quality classification of the waters listed in the tables in (c) through (h) below:

[i. "FW1" means freshwaters wholly within Federal or State lands or special holdings that are preserved for posterity and are not subject to manmade wastewater discharges.]

i. "FW1" means those fresh waters, as designated in N.J.A.C. 7:9B-1.15(h) Table 6, and as defined at N.J.A.C. 7:9B-1.4.

ii. - x. (No Change.)

7. (No Change.)

(c) The surface water classifications in Table 1 are for waters of the Atlantic Coastal Basin:

TABLE 1

Waterbody	Classification
...	
DOUGHTY RESERVOIR (Atlantic city)	**(FW2-NT(C1)**
...	
GLENDOLA RESERVOIR (Glendola)	**(FW2-NT(C1)**

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...

GREAT EGG HARBOR RIVER	
(Berlin) - Source to confluence with Tinker Branch	FW2-NT
(Berlin) - Tinker Branch, the River from its confluence with Tinker Branch, and all tributaries within the Pinelands Protection and Preservation Area, downstream to the boundary at the Rt. 40 bridge in Mays Landing	PL
(Winslow) - All tributaries or segments of tributaries outside of the boundaries of the Pinelands Protection and Preservation Area, downstream to Rt. 40 at Mays Landing	FW2-NT
(Mays Landing) - Rt. 40 bridge to Great Egg Harbor, except those tributaries described separately below	FW2-NT/SE1
(Mays Landing) - All tributaries or segments of tributaries within the boundaries of the Pinelands Protection and Preservation Areas	PL
(Egg Harbor) - Tributaries and all other waters within MacNamara Wildlife Management Area, except tributary described below	FW2-NT/SE1(C1)
(Tuckahoe) - **[Stream] Hawkins Creek and the stream** adjacent to and north of Hawkin's Creek, and [its] **their** tributaries, from their origins to the point where the influence of impoundment begins	FW1

...

MANASQUAN RESERVOIR (Oak Glen)	**FW2-NT(C1)**

...

TIMBER SWAMP BROOK (Oak Glen) - [Entire length] **Manasquan Reservoir dam to its confluence with the Manasquan River**	FW2-NT

...

(d) The surface water classifications in Table 2 are for waters of the Delaware River Basin:

TABLE 2

Waterbody	Classification
...	
ASSISCUNK CREEK [(Burlington) - Entire length	FW2-NT]
(Columbus) - Headwaters to confluence with Barkers Brook, including all tributaries	**FW2-NT(C1)**
(Burlington) - Confluence with Barkers Brook to the Delaware River	**FW2-NT**
...	
EAST CREEK	
(Dennis) - Source to boundaries of the Pinelands Protection and Preservation Area except those portions described separately below	PL
(Belleplain) - A stream and tributary that originate just south of East Creek Mill Rd., 1.2+ miles north-northeast of Eldora and are located entirely within the boundaries of Belleplain State Forest	FW1
(Belleplain) - All tributaries to Lake Nummi from their origins downstream to the Lake	**FW1**
(Eldora) - Boundary of the Pinelands Protection and Preservation Area to Delaware Bay except segment described separately below	FW2-NT/SE1
(Dennis Creek) - Segment within the boundaries of the Dennis Creek Wildlife Management Area	FW2-NT/SE1(C1)
...	

FLAT BROOK

(Flatbrook-Roy) - Confluence of Big Flat Brook and Little Flat Brook to the boundary of Flatbrook-Roy Wildlife Management Area, except segments described below	FW2-TP(C1)
[(Flatbrook-Roy) - Brook within the boundaries of Flatbrook-Roy Wildlife Management Area]	[FW2-TM(C1)]
[(Flatbrookville) - Flatbrook-Roy Wildlife Management Area boundary to Delaware River, except segments described below]	[FW2-TM]
[(Walpack) - Segment of the Brook within Walpack Wildlife Management Area]	[FW2-TM(C1)]
(Walpack) - Flatbook-Roy Wildlife Management Area boundary to the Delaware River, except segments described below	**FW2-TM(C1)**
(Stokes State Forest) - Two tributaries to Flat Brook which originate along Struble Road in Stokes State Forest to their confluences with Flat Brook within the boundaries of Flatbrook-Roy Wildlife Management Area	FW1(tm)
(High Point) - All surface water of the Flat Brook drainage area within the boundaries of High Point State Park and Stokes State Forest, except the following waters: 1. Saw Mill Pond and Big Flat Brook downstream to the confluence with Flat Brook; 2. Mashipacong Pond and its outlet stream (Parker Brook) to the confluence with Big Flat Brook; 3. Lake Wapalanne and its outlet stream to the confluence with Big Flat Brook; 4. Lake Ocquittunk and waters connecting it with Big Flat Brook; 5. Stony Lake and its outlet stream (Stony Brook) to the confluence with Big Flat Brook; 6. Kittatinny Lake, that portion of its inlet stream outside the Stokes State Forest boundaries, and its outlet stream, including the Shotwell	FW1

Camping Area tributary, to the confluence with Big Flat Brook;
7. Deer Lake and its outlet stream to Lake Ashroe;
8. Lake Ashroe, portions of its tributaries outside the Stokes State Forest boundaries, and its outlet stream to the confluence with Big Flat Brook;
9. Lake Shawanni and its outlet stream to its confluence with Flat Brook;
10. Crigger Brook and tributary to its confluence with Big Flat Brook

(Del. Water Gap) - All tributaries to Flat Brook that flow from the Kittatiny Ridge and are located entirely within the boundaries of the Delaware Water Gap National Recreation Area	FW1

...

PEQUEST RIVER

(Tranquility) - Source to Tranquility bridge except segments described below	FW2-TM
(Whittingham) - Northwesterly tributaries, including Big Spring, located within the boundaries of the Whittingham Wildlife Management Area, southwest of Springdale, from their origins to their confluence with the Pequest River	FW1(tm)
(Whittingham) - Stream and tributaries within the Whittingham Wildlife Management Area, except those classified as FW1, above	FW2-TM(C1)
(Vienna) - Tranquility bridge to [Townsbury bridge] **Lehigh and Hudson River railway bridge**	FW2-NT
(Townsbury) - Lehigh and Hudson River railway bridge to the upstream most boundary of the Pequest Wildlife Management Area	**FW2-NT(C1)**
(Townsbury) - Upstream most boundary of the Pequest Wildlife Management Area boundary to the downstream most boundary of the	**FW2-TM(C1)**

Pequest Wildlife Management Area	
(Townsbury) - [Townsbury bridge] **Downstream**	FW2-TM
most Pequest Wildlife Management Area boundary	
to Delaware River[, except segment described below]	
[(Pequest) - Segment and tributaries within the boundaries of the Pequest Wildlife Management Area]	[FW2-TM(C1)]
TRIBUTARIES	
(Townsbury) - Tributaries within the Pequest Wildlife Management Area	**FW2-TM(C1)**
(Petersburg) - Headwaters and tributaries downstream to Ryan Road bridge	FW2-TP(C1)

...

(e) The surface water classifications in Table 3 are for waters of the Passaic, Hackensack and New York Harbor Complex Basin:

TABLE 3

Waterbody	Classification
...	
BOONTON RESERVOIR - See JERSEY CITY RESERVOIR	
...	
CHARLOTTEBURG RESERVOIR (Charlotteburg)	FW2-TM**(C1)**
...	
JERSEY CITY RESERVOIR (Boonton)	FW2-TM**(C1)**
...	
ORADELL RESERVOIR (Oradell)	**FW2-NT(C1)**
...	

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WANAQUE RESERVOIR	FW2-TM**(C1)**

...

(f) The surface water classifications in Table 4 are for waters of the Raritan River and Raritan Bay Basin:

TABLE 4

Waterbody	Classification
...	
BEAVER BROOK	
(Cokesbury) - Source to Reformatory Road bridge	FW2-TP(C1)
(Annandale) - Reformatory Rd. bridge to **Beaver Ave.**	FW2-TM
bridge [Raritan River, South Branch]	
(Annandale) - Beaver Ave. bridge downstream to	**FW2-TP(C1)**
the lower most I-78 bridge	
(Clinton) - Lower most I-78 bridge downstream to,	**FW2-TM**
the South Branch Raritan River	
...	
GRANDIN BROOK (see SIDNEY BROOK)	
...	
ROCKAWAY CREEK	
NORTH BRANCH	(No Change.)
SOUTH BRANCH [(Whitehouse) - Entire length]	[FW2-TM]
(Clinton) - Headwaters to Lake Cushetunk, including	**FW2-TM(C1)**
all tributaries	
(Whitehouse) - Lake Cushetunk to its confluence	**FW2-TM**
with main stem Rockaway Creek	
MAIN STEM	(No Change.)

...

ROUND VALLEY RESERVOIR (Clinton)	FW2-TP**(C1)**

...

SIDNEY BROOK (Grandin) - [Entire length	FW2-NT]
Headwaters to its confluence with the South Branch Raritan River, including all tributaries	**FW2-NT(C1)**

...

SWIMMING RIVER RESERVOIR (Red Bank)	**FW2-NT(C1)**

...

(g) The surface water classifications in Table 5 are for waters of the Wallkill River Basin:

TABLE 5

Waterbody	Classification

...

BLACK CREEK	
(McAfee) - Source to Rt. 94 bridge, except those tributaries described separately, below	FW2-TM
(Vernon) - Rt. 94 bridge to Pochuck Creek	FW2-NT
TRIBUTARIES	
(Hamburg) - Three tributaries to Black Creek which originate in the **former** Hamburg Mtn. Wildlife Management Area from their sources to the **former** Management Area boundaries	FW1(tm)
(Rudeville) - Tributaries within the **former** Hamburg Mtn. Wildlife Management Area not classified as FW1, above	FW2-TM(C1)
(McAfee) - Entire length	FW2-TP(C1)
(Vernon Valley) - Entire length	FW2-NT

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...

FRANKLIN POND CREEK	
(Hardyston) - Source to, but not including, Franklin Pond	FW2-TP(C1)
(Hamburg Mtn.) - Tributaries within the Hamburg Mtn. Wildlife Management Area	FW2-TM(C1)
TRIBUTARY (Hamburg Mtn.) - The first tributary to Franklin Pond Creek just south of Hamburg Mountain, flowing toward the Wallkill River and located entirely within the former Hamburg Mtn. Wildlife Management Area	**FW1**

...

(h) (No Change.)

Based on consultation with staff, I hereby certify that the above statements, including the Federal standards analysis addressing the requirements of Executive Order 27 (1994), permit the public to understand accurately and plainly the purposes and expected consequences of these proposed amendments. I hereby authorize this proposal.

Date:_____

_____

Bradley M. Campbell, Commissioner

Department of Environmental Protection