15A NCAC 02B .0271 is adopted pursuant to 150B-21.5(a)(5) as follows:

15A NCAC 02B .0271 JORDAN WATER SUPPLY NUTRIENT STRATEGY: STORMWATER REQUIREMENTS FOR STATE AND FEDERAL ENTITIES

(See S.L. 2009-216 and 2009-484)

The following is the stormwater strategy for the activities of state and federal entities within the Jordan watershed, as prefaced in Rule 02B .0262.

(1) PURPOSE. The purposes of this Rule are as follows.

(a) To achieve and maintain, on new non-road development lands, the nonpoint source nitrogen and phosphorus percentage reduction goals established for Jordan Reservoir in 15A NCAC 02B .0262 relative to the baseline period defined in that Rule, to provide the highest practicable level of treatment on new road development, and to achieve and maintain the percentage goals on existing developed lands by reducing loading from state-maintained roadways and facilities, and from lands controlled by other state and federal entities in the Jordan watershed;

(b) To ensure that the integrity and nutrient processing functions of receiving waters and associated riparian buffers are not compromised by erosive flows from state-maintained roadways and facilities and from lands controlled by other state and federal entities in the Jordan watershed; and

(c) To protect the water supply uses of Jordan Reservoir and of designated water supplies throughout the Jordan watershed.

(2) APPLICABILITY. This Rule shall apply to all existing and new development, both as defined in 15A NCAC 02B .0263, that lies within or partially within the Jordan watershed under the control of the NC Department of Transportation (NCDOT), including roadways and facilities, and to all lands controlled by other state and federal entities in the Jordan watershed.

(3) NON-NCDOT REQUIREMENTS. With the exception of the NCDOT, all state and federal entities that control lands within the Jordan watershed shall meet the following requirements:

(a) For any new development proposed within their jurisdictions that would disturb one-half acre or more, non-NCDOT state and federal entities shall develop stormwater management plans for submission to and approval by the Division. These stormwater plans shall not be approved by the Division unless the following criteria are met:

(i) The nitrogen and phosphorus loads contributed by the proposed new development activity in a given subwatershed shall not exceed the unit-area mass loading rates applicable to that subwatershed as follows for nitrogen and phosphorus, respectively, expressed in units of pounds per acre per year: 2.2 and 0.82 in the Upper New Hope; 4.4 and 0.78 in the Lower New Hope; and 3.8 and 1.43 in the Haw. The developer shall determine the need for engineered stormwater controls to

meet these loading rate targets by using the loading calculation method called for in this Section or other equivalent method acceptable to the Division.

(ii) Proposed new development subject to NPDES, water supply, and other state-mandated stormwater regulations shall comply with those regulations in addition to the other requirements of this Sub-Item. Proposed new development in any water supply watershed in the Jordan watershed designated WS-II, WS-III, or WS-IV shall comply with the density-based restrictions, obligations, and requirements for engineered stormwater controls, clustering options, and 10/70 provisions described in Sub-Items (3)(b)(i) and (3)(b)(ii) of the applicable Rule among 15A NCAC 02B .0214 through .0216;

(iii) Stormwater systems shall be designed to control and treat the runoff generated from all surfaces by one inch of rainfall. The treatment volume shall be drawn down pursuant to guidance specific to each practice as provided in the most recent version of the *Stormwater Best Management Practices Manual* published by the Division, or other technically at least equivalent guidance acceptable to the Division. To ensure that the integrity and nutrient processing functions of receiving waters and associated riparian buffers are not compromised by erosive flows, stormwater flows from the development shall not contribute to degradation of waters of the State. At a minimum, the development shall not result in a net increase in peak flow leaving the site from pre-development conditions for the one-year, 24-hour storm event;

(iv) Proposed new development that would replace or expand structures or improvements that existed as of December 2001, the end of the baseline period, and which would not result in a net increase in built-upon area shall not be required to meet the nutrient loading targets or high-density requirements except to the extent that it shall provide stormwater control at least equal to the previous development. Proposed new development that would replace or expand existing structures or improvements and would result in a net increase in built-upon area shall have the option either to achieve at least the percentage load reduction goals stated in 15A NCAC 02B .0262 as applied to nitrogen and phosphorus loading from the previous development for the entire project site, or to meet the loading rate targets described in Sub-Item (3)(a)(i);

(v) Proposed new development shall comply with the riparian buffer protection requirements of 15A NCAC 02B .0267 and .0268;

(vi) The entity shall have the option of offsetting part of the nitrogen and phosphorus loads by implementing or funding offsite management measures as follows: Before using offsite offset options, a development shall meet any requirements for engineered stormwater controls described in Sub-Item (3)(a)~~(ii)~~(iii) of this Rule, and

shall attain a maximum nitrogen loading rate on-site of four pounds per acre per year for single-family, detached and duplex residential development and eight pounds per acre per year for other development, including multi-family residential, commercial and industrial and shall meet any requirements for engineered stormwater controls described in Sub-Item (3)(a)(iii) of this Rule. An entity may make offset payments to the NC Ecosystem Enhancement Program contingent upon acceptance of payments by that Program. An entity may propose other offset measures to the Division, including providing its own offsite offset or utilizing a private seller. All offset measures identified in this Sub-Item shall meet the requirements of 15A NCAC 02B .0273(2)-(4); and

(vii) The non-NCDOT state or federal entity shall include measures to ensure maintenance of best management practices (BMPs) implemented as a result of the provisions in Sub-Item (3)(a) of this Rule for the life of the development.

(b) For existing development, non-NCDOT state and federal entities shall develop and implement load reduction programs for achieving and maintaining nutrient load reductions from existing development based on the standards set out in this Sub-Item. Such entities shall submit these programs for approval by the Division. A load reduction program shall include the following elements and meet the associated criteria:

(i) The long-term objective of this program shall be for the entity to achieve the percentage nutrient load reduction goals in Item ~~(3)~~(5) of 15A NCAC 02B .0262 relative to annual mass loads, in pounds per year, representative of the baseline period defined in that Rule and reaching Jordan Reservoir from existing developed lands within each subwatershed under its control. Loads shall be calculated by applying the Tar-Pamlico Nutrient Export Calculation Worksheet, Piedmont Version, dated October 2004, or an equivalent or more accurate method acceptable to the Division, to acreages of different types of existing developed lands as defined in this Sub-Item and in Item (2) of this Rule. To provide entities spatial latitude to obtain reductions in different locations, loads thus calculated shall be converted to delivered loads to Jordan Reservoir using transport factors established in the Division document, *Nitrogen and Phosphorus Delivery from Small Watersheds to Jordan Lake*, dated June 30, 2002. Subject entities shall include estimates of, and plans for offsetting, nutrient load increases from lands developed subsequent to the baseline period but prior to implementation of new development programs. For these post-baseline developed lands, the new loading rate shall be compared to the applicable loading rate target in Sub-Item (3)(a)(i) of ~~15A NCAC 02B .0273~~ this Rule for the subwatershed and acres involved, and the difference shall constitute the load reduction need. Should percentage reduction goals be adjusted pursuant to

Item ~~(7)~~(8) of 15A NCAC 02B .0262, then the annual load goals established in this Sub-Item shall be adjusted accordingly. Entities may seek to fund implementation of load-reducing activities through grant sources such as the North Carolina Clean Water Act Section 319 Grant Program, or other funding programs for nonpoint sources;

(ii) The load reduction program shall include a plan and supporting technical analysis for achieving half of each load reduction goal within 10 years after the effective date of this Rule, and a plan and timeframes for achieving the remaining half subject to modification based on technical analysis at 10 years after effective date. A load reduction program may propose an alternative compliance timeframe provided it includes a technical analysis that demonstrates the need for that timeframe. A program technical analysis shall examine the feasibility of achieving stated goals and shall consider factors such as magnitude of reduction need relative to area within a subwatershed, the potential for utilizing the range of load-reducing activities listed in Sub-Item (3)~~(a)~~(b)(iv), and relative costs and efficiencies of each activity to the extent information is available. The load reduction program shall propose implementation rates and timeframes for each activity, and shall provide for proportionate annual progress toward meeting the reduction goals as practicable, that is capable of being put into practice, done, or accomplished;

(iii) The load reduction program shall identify specific load-reducing practices implemented to date subsequent to the baseline period and for which it is seeking credit. It shall estimate load reductions for these practices using methods provided for in Item (8), and their anticipated duration;

(iv) The load reduction program shall identify the types of activities the entity intends to implement and types of existing development affected, relative proportions or a prioritization of practices, and the relative magnitude of reductions it expects to achieve from each. An entity may credit any nitrogen or phosphorus load reductions in excess of those required by other rules in this Chapter. The program shall identify the duration of anticipated load reductions, and may seek activities that provide sustained, long-term reductions. The load reduction program shall meet the requirements of 15A NCAC 02B .0273. Potential load-reducing activities may include stormwater activities such as street sweeping, improvement of existing ponds and stormwater structures, removal of existing built-upon area, retrofitting of existing development with engineered best management practices (BMPs), treatment of runoff in redevelopment projects, over-treatment of runoff in new development projects, source control activities such as pet waste reduction and fertilization reduction, alternative stormwater practices such as rain barrels, cisterns,

downspout disconnections, and stormwater capture and reuse, restoration of ecological communities such as streams and riparian buffers, and wastewater activities such as creation of surplus allocation through advanced treatment at wastewater facilities, expansion of surplus allocation through regionalization, collection system improvements, and removal of illegal discharges;

(v) The load reduction program shall identify anticipated funding mechanisms or sources and discuss steps taken or planned to secure such funding;

(vi) An entity shall have the option of working with municipalities or counties within its subwatershed to jointly meet the load targets from all existing development within their combined jurisdictions. An entity may utilize private or third party sellers. All reductions shall meet the requirements of 15A NCAC 02B .0273;

(vii) The entity shall include measures to provide for operation and maintenance of retrofitted stormwater controls to ensure that they meet the load targets required in Sub-Item (3)(b) of this Rule for the life of the development; and

(viii) An entity may choose to conduct monitoring of stream flows and runoff from catchments to quantify disproportionately high loading rates relative to those used in the accounting methods stipulated under Item (8), and to subsequently target load-reducing activities to demonstrated high-loading source areas within such catchments for proportionately greater load reduction credit. An entity may propose such actions in its initial load reduction program submittal or at any time subsequent, and shall obtain Division approval of the monitoring design. It shall also obtain Division approval of any resulting load reduction benefits based on the standards set out in this Rule. As detailed in Item (5), an entity that chooses such monitoring initially may delay submittal of its load reduction program by one year for the purpose of incorporating monitoring findings into its program design provided it submits to the Division within six months of the effective date of this Rule a satisfactory monitoring proposal involving at least one year of up-front monitoring, executes the monitoring, and provides the results to the Division as part of its load reduction program submittal.

(4) NCDOT REQUIREMENTS The NCDOT shall develop a single Stormwater Management Program that will be applicable to the entire Jordan watershed and submit this program for approval by the Division according to the following standards:

(a) Identify NCDOT stormwater outfalls from Interstate, US, and NC primary routes;

(b) Identify and eliminate illegal discharges into the NCDOT's stormwater conveyance system;

(c) Establish a program for post-construction stormwater runoff control for new development, including new and widening NCDOT roads and facilities. The program shall establish a process by which the Division shall review and approve stormwater designs for new NCDOT

development projects. The program shall delineate the scope of vested projects that would be considered as existing development, and shall define lower thresholds of significance for activities considered new development. In addition, the following criteria shall apply:

(i) For new and widening roads, compliance with the riparian buffer protection requirements of Rules 15A NCAC 02B .0267 and .0268 which are expected to achieve a 30 percent nitrogen reduction efficiency in runoff treatment through either diffuse flow into buffers or other practices) shall be deemed as compliance with the purposes of this Rule.

(ii) New non-road development shall achieve and maintain the nitrogen and phosphorus percentage load reduction goals established for each subwatershed in 15A NCAC 02B .0262 relative to either area-weighted average loading rates of all developable lands as of the baseline period defined in 15A NCAC 02B .0262, or to project-specific pre-development loading rates. Values for area-weighted average loading rate targets for nitrogen and phosphorus, respectively, in each subwatershed shall be the following, expressed in units of pounds per acre per year: 2.2 and 0.82 in the Upper New Hope; 4.4 and 0.78 in the Lower New Hope; and 3.8 and 1.43 in the Haw. The NCDOT shall determine the need for engineered stormwater controls to meet these loading rate targets by using the loading calculation method called for in Item (8) or other equivalent method acceptable to the Division. Where stormwater treatment systems are needed to meet these targets, they shall be designed to control and treat the runoff generated from all surfaces by one inch of rainfall. Such systems shall be assumed to achieve the nutrient removal efficiencies identified in the most recent version of the *Stormwater Best Management Practices Manual* published by the Division provided that they meet associated drawdown and other design specifications included in the same document. The NCDOT may propose to the Division nutrient removal rates for practices currently included in the BMP Toolbox required under its NPDES stormwater permit, or may propose revisions to those practices or additional practices with associated nutrient removal rates. The NCDOT may use any such practices approved by the Division to meet loading rate targets identified in this Sub-Item. New non-road development shall also control runoff flows to meet the purpose of this Rule regarding protection of the nutrient functions and integrity of receiving waters.

(iii) For new non-road development, the NCDOT shall have the option of partially offsetting its nitrogen and phosphorus loads by implementing or funding offsite management measures. These offsite offsetting measures shall achieve at least equivalent reductions in nitrogen and phosphorus load to the remaining reduction needed onsite to comply with Sub-Item (4)(c)(ii) of this Rule. Before using offsite

offset options, a development shall attain a maximum nitrogen loading rate of 8 pounds per acre per year. The NCDOT may make offset payments to the NC Ecosystem Enhancement Program contingent upon acceptance of payments by that Program. The NCDOT may propose other offset measures to the Division. All offset measures identified in this Sub-Item shall meet the requirements of 15A NCAC 02B .0273.

(d) Establish a program to identify and implement load-reducing opportunities on existing development within the watershed. The long-term objective of this effort shall be for the NCDOT to achieve the nutrient load goals in 15A NCAC 02B .0262 as applied to existing development under its control, including roads and facilities.

(i) For existing non-roadway development, the program shall include estimates of, and plans for offsetting, nutrient load increases from lands developed subsequent to the baseline period but prior to implementation of its new development program. It shall include a technical analysis that includes a proposed implementation rate and schedule. This schedule shall provide for proportionate annual progress toward reduction goals as practicable throughout the proposed compliance period. The program shall identify the types of activities NCDOT intends to implement and types of existing non-roadway development affected, relative proportions or a prioritization of practices, and the relative magnitude of reductions it expects to achieve from each.

(ii) For existing roadway development, NCDOT may meet minimum implementation rate and schedule requirements by implementing retrofits or other load-reducing measures in the watershed to achieve load reductions at the rate of 500 pounds of nitrogen reduction per 5-year period and at least 50 pounds per year. To the maximum extent practicable, retrofits shall be designed to treat the runoff generated from all surfaces by 1 inch of rainfall, and shall conform to the standards and criteria established in the most recent version of the Division-approved NCDOT BMP Toolbox required under NCDOT's NPDES stormwater permit. To establish removal rates for nutrients in the Toolbox, design criteria for individual practices therein shall be modified as needed consistent with such criteria in the most recent version of the *Stormwater Best Management Practices Manual* published by the Division, or other technically at least equivalent guidance acceptable to the Division, and the Division shall approve such modifications as part of the accounting process defined in Item (8) of this Rule. Other aspects of nutrient mass load calculations shall be based on the accounting process defined in Item (8) of this Rule.

(e) Initiate a "Nutrient Management Education Program" for NCDOT staff and contractors engaged in the application of fertilizers on highway rights of way. The purpose of this program shall be to contribute to the load reduction goals established in 15A NCAC 02B .0262 through proper application of nutrients, both inorganic fertilizer and organic nutrients, to highway rights of way in the Jordan watershed in keeping with the most current state-recognized technical guidance on proper nutrient management; and

(f) Address compliance with the riparian buffer protection requirements of 15A NCAC 02B .0267 and .0268 through a Division approval process.

(5) NON-NCDOT RULE IMPLEMENTATION. For all state and federal entities that control lands within the Jordan watershed with the exception of the NCDOT, this Rule shall be implemented as follows:

(a) Within six months after the effective date of this Rule, any entity that intends to use water quality monitoring to guide the initial design of its load reduction program shall provide a monitoring design to the Division. The Division shall notify any such entity of the adequacy of its design within three months of submittal. When an entity's monitoring design is deemed adequate, it may delay submittal of its load reduction program by up to one year from the timeframe given in Sub-Item (5)(c) of this Rule, whereupon the same time interval would be added to the approval and implementation timeframes given in Sub-Items (5)(d) through (5)(f) of this Rule;

(b) Upon Commission approval of the accounting methods required by Item (8) of this Rule, subject entities shall comply with the requirements of Sub-Item (3)(a) of this Rule for any new development proposed within their jurisdictions;

(c) Within 24 months after the Commission's approval of the accounting methods, subject entities shall submit load reduction programs to the Division for preliminary approval according to the standards set out in Sub-Item (3)(b) of this Rule;

(d) Within 34 months after the Commission's approval of the accounting methods, the Division shall request the Commission's approval of entities' load reduction programs. The Commission shall either approve the programs or require changes. Should the Commission require changes, the Division shall seek Commission approval at the earliest feasible date subsequent to the original request;

(e) Within 36 months after the Commission's approval of the accounting methods, or within two months following Commission approval of a load reduction program, whichever is later, entities shall begin to implement load reduction programs; and

(f) Upon implementation of the requirements of Item (3) of this Rule, subject entities shall provide annual reports to the Division documenting their progress in implementing those requirements.

(6) NCDOT RULE IMPLEMENTATION. For the NCDOT, this Rule shall be implemented as follows:

(a) Within 30 months of the effective date of this Rule, the NCDOT shall submit the Stormwater Management Program for the Jordan watershed to the Division for approval. This Program shall meet or exceed the requirements in Item (4) of this Rule;

(b) Within 40 months of the effective date of this Rule, the Division shall request the Commission's approval of the NCDOT Stormwater Management Program;

(c) Within 42 months of the effective date of this Rule, the NCDOT shall implement the approved Stormwater Management Program; and

(d) Upon implementation, the NCDOT shall submit annual reports to the Division summarizing its activities in implementing each of the requirements in Item (4) of this Rule. This annual reporting may be incorporated into annual reporting required under NCDOT's NPDES stormwater permit.

(7) RELATIONSHIP TO OTHER REQUIREMENTS. A party may in its program submittal under Item (5) or (6) of this Rule request that the Division accept its implementation of another stormwater program or programs, such as NPDES stormwater requirements, as satisfying one or more of the requirements set forth in Item (3) or (4) of this Rule. The Division shall provide determination on acceptability of any such alternatives prior to requesting Commission approval of programs as required in Items (5) and (6) of this Rule. The party shall include in its program submittal technical information demonstrating the adequacy of the alternative requirements.

(8) ACCOUNTING METHODS. Within 18 months after the effective date of this Rule, the Division shall submit a nutrient accounting framework to the Commission for approval. This framework shall include tools for quantifying load reduction assignments on existing development for parties subject to this Rule, load reduction credits from various activities on existing developed lands, and a tool that will allow subject parties to account for loading from new and existing development and loading changes due to BMP implementation, The Division shall work in cooperation with subject parties and other watershed interests in developing this framework. The Division shall periodically revisit these accounting methods to determine the need for revisions to both the methods and to existing development load reduction assignments made using the methods set out in this Rule. It shall do so no less frequently than every 10 years. Its review shall include values subject to change over time independent of changes resulting from implementation of this Rule, such as untreated export rates that may change with changes in atmospheric deposition. It shall also review values subject to refinement, such as BMP nutrient removal efficiencies.

History Note: *Authority G S. 143-214.1; 143-214.5; 143-214.5(i); 143-214.7; 143-214.12; 143-214.21; 143-215.3(a)(1); 143-215.6A; 143-215.6B; 143-215.6C; 143 215.8B; 143B-282(c); 143B-282(d); S.L. 2005-190; S.L. 2006-259;*
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