

## *Attachment B*

### *Comparison Chart:*

#### *Jordan Lake Rules, Neuse Rules, Tar-Pamlico Rules, NPDES Phase II*

*In their current form, these proposed rules are the strictest watershed rules to date in North Carolina with the inclusion of measures that will require retrofitting of existing development, stormwater management plan/program development in addition to the newly implemented NPDES Phase II stormwater. The rules are significantly more stringent and costly than the Neuse and the Tar-Pamlico Nutrient Management Strategy rules.*

The following chart displays the requirements of the Jordan Lake Rules and how they compare to other existing Nutrient Strategy and Stormwater Rules:

- Proposed Jordan Lake Nutrient
- Neuse River
- Tar-Pamlico Rules
- NPDES Phase II Rules

The following is a comparison chart of the Jordan Lake Rules, Neuse Rules, the Tar-Pamlico rules, and the recent NPDES Stormwater Phase II rules. Accompanying this chart are the Jordan Lake Rules edited to show the excessive measures when compared to existing nutrient control rules.

- **Red text** representing Jordan Rule requirements that significantly exceed the Neuse and Tar-Pamlico Nutrient Rules;
- **Blue text** representing requirements already covered under other existing regulations;
- ~~strikethrough~~ **strikethrough text** through all Jordan Lake measures that are either **unprecedented** or **significantly exceed** the existing Neuse and Tar-Pamlico Rules;
- **Green text** representing any language added to the document (minimal)

**Comparison Chart: Jordan Lake Rules, Neuse Rules, Tar-Pamlico Rules, NPDES Phase II**

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Jordan Lake Rules	Neuse	Tar Pam	NPDES PHASE II
<p>.0262– Designation of “Critical Water Supply Watershed” for all of Jordan Lake Watershed</p> <p>Designated Nutrient Sensitive WatersAND Entire area is designated Critical Water Supply Watershed</p>	Designated Nutrient Sensitive Water only	Designated Nutrient Sensitive Water only	No Designation
<p><b>Load Reductions</b></p> <p>Item (2) – The Jordan Watershed is divided into three arms only for the purpose of applying different load reduction targets for each.</p> <p style="text-align: center;"><b>NITROGEN</b></p> <hr/> <p>The <u>Upper New Hope Arm</u> Total Mass Daily Load (TMDL) reduction goal of 35 percent, and a resulting TMDL of 641,021 # /year. The initial point source mass load target is 336,079 # /year and the initial nonpoint source mass load target is 304,942 #nitrogen/year</p> <p>The <u>Lower New Hope Arm</u> 221,929 # /year, the nitrogen TMDL is capped at the baseline nitrogen load, and the resulting TMDL is 221,929 # /year. The initial point source mass load target is 6,836 # /year and the initial nonpoint source mass load target is 215,093 # /year</p> <p><u>The Haw River Arm</u> nitrogen load of 2,790,217 # /year, a TMDL percentage reduction of 8 percent, and a resulting TMDL of 2,567,000 # /year The initial point source mass load target is 895,127 # /year and the initial nonpoint source mass load target is 1,671,873 # /year</p> <p style="text-align: center;"><b>PHOSPHORUS</b></p> <hr/> <p>The <u>Upper New Hope arm</u> baseline phosphorous load of 87,245# /year,a TMDL percentage reduction of 5 percent, and a resulting TMDL of 82,883 # /year. The initial point source mass load target is 23,108 # /year, and the initial nonpoint source mass load target of 59,775 # /year.</p> <p>The <u>Lower New Hope arm</u> baseline phosphorus load of 26,574 # /year, the phosphorus TMDL is capped at the baseline phosphorus load, and the resulting TMDL is 26,574 # /year. The initial point source mass load target is 498 # /year, and the initial nonpoint source mass load target of 26,078 # /year.</p>	<p style="text-align: center;"><b>NITROGEN</b></p> <hr/> <p>30% reduction</p> <p style="text-align: center;"><b>PHOSPHORUS</b></p> <hr/> <p>No additional phosphorus reductions</p>	<p style="text-align: center;"><b>NITROGEN</b></p> <hr/> <p>30% reduction</p> <p style="text-align: center;"><b>PHOSPHORUS</b></p> <hr/> <p>No phosphorus reductions</p>	<p style="text-align: center;"><b>NITROGEN</b></p> <hr/> <p>No target reduction</p> <p style="text-align: center;"><b>PHOSPHORUS</b></p> <hr/> <p>No phosphorus reductions</p>

**Comparison Chart: Jordan Lake Rules, Neuse Rules, Tar-Pamlico Rules, NPDES Phase II**

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Jordan Lake Rules	Neuse	Tar Pam	NPDES PHASE II
<b>The Haw River arm</b> has a 1997-2001 baseline phosphorus load of 378,569 #/year a TMDL percentage reduction of 5 percent, and a resulting TMDL of 359,641 #/year. The initial point source mass load target is 106,001 #/year, and the initial nonpoint source mass load target of 253,640 #/year.			
.0262, Item (7). DWQ “Adaptive Management approach”	Not included in Rules	Not Included in Rules	Not Included in Rules
<b>.0263 – Nutrient Management</b>  No significant differences	Included, no significant differences	Included, no significant differences	Not included
<b>.0264 – Agriculture</b>  Similar to Neuse Rules with the exception of Item (4) found only in the Jordan Lake Rules  Item (4) “This Rule does not require specific actions by any individual person or operation if the county or counties in which they conduct operations can otherwise achieve their initial nutrient reduction targets in the manner described in Item (5) of this Rule, within five years of the effective date....	Similar  With the exception of the Item (4) JLR rules	Similar  With the exception of the Item (4) JLR rules	Does not address agriculture
<b>.0265 New Development Rule</b>  <b>Nitrogen and phosphorus loading rate</b>  2.2#/year and 0.82#/year in the Upper New Hope;  4.4#/year and 0.78#/year in the Lower New Hope; and  3.8#/year and 1.43#/year in the Haw.  <b>Buy-down thresholds</b> -minimum level of treatment required through on-site BMP's before any remaining nitrogen or phosphorous export loading can be "paid for."  <b>Haw River Arm thresholds for nitrogen is 4.0 #/acre/year for single family and duplex developments, and 8.0 #/acre/year for all other development, including multi-family.</b>  There is no threshold for phosphorous, but the nitrogen threshold must be met before payments can be made for either nitrogen or phosphorous.	New Development requirements is addressed under one umbrella stormwater management rule  Nitrogen export standard of 3.6 pounds/acre/year  <b>Buy Down thresholds</b>  for nitrogen are 6.0 #/acre/year for residential development, and 10 #/acre per year for non-residential development	New Development requirements is addressed under one umbrella stormwater management rule  <b>Buy Down thresholds</b>  for nitrogen are 6.0#/acre/year for residential development, and 10 #/acre per year for non-residential development	Stormwater Management Plan is required under NPDES Phase II  Item 10: Post Construction requirements not substantially different from Jordan Rules.  <b>Requirements include</b>  <i>(k) a program to control the maximum extent practical, the sources of fecal coliform (nutrient sources)</i>  <i>Programs with development/redevelopment draining to Nutrient Sensitive Waters, the following additional requirements must be incorporated into their program</i>  <i>(i) a local ordinance ... to insure that the best management practices for</i>

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Jordan Lake Rules	Neuse	Tar Pam	NPDES PHASE II
			<p><i>reducing nutrient loading is selected when ...meeting Post Construction (Item 10) requirements.</i></p> <p><i>(ii) A nutrient application management program shall be developed....</i></p>
<p><b>.0267– Stormwater Management for Existing Development</b></p> <p>Extensive Existing Development Rules - Unprecedented, extreme financial burden on local government, not feasible</p> <p>Includes additional requirements for stormwater management plans which are already required under Phase II</p>	<p>Not included in Neuse Rules</p> <p>Stormwater management for New, Existing, State and Fed entities is all under one rule.</p>	<p>Not included in Tar-Pam rules</p> <p>Stormwater management for New, Existing, State and Fed entities is all under one rule.</p>	<p>Education, Public Involvement, Illicit discharge identification and elimination</p> <p>Stormwater Management Plans required for local government, new development</p>
<p><b>.0267 Protection of Existing Riparian Buffers</b></p> <p>50’ buffers</p> <p>Includes an unfunded requirement for local government to develop and implement riparian buffer programs. (unprecedented). This is historically the responsibility of the state. The state does not have the authority to delegate Riparian Buffer Program development and implementation to local governments.</p>	<p>50’ Buffers</p> <p>State implements buffer program requirements</p>	<p>50 ‘ Buffers</p> <p>State implements buffer program recruitments</p>	<p>30’ Buffers</p> <p>State implements buffer programs</p>
<p><b>.0267 Mitigation for Riparian Buffers</b></p> <p>Rules delegate buffer program development and implementation to local government</p>	<p>State implemented Buffer Program</p>	<p>State Implemented Buffer Program</p>	<p>No Buffer Program</p>
<p><b>.0269 Options for Offsetting Nutrient Loads</b></p> <p>Requirements for Buying Credit:</p> <p>New Development: Must meet reduction requirements in Section 3 (a)(vi)</p> <p>Wastewater: New and expanding must make reasonable effort to obtain allocation from existing dischargers</p> <p>State and Federal Non-DOT entities: Must meet reduction requirements in Section 3 (a)(vi)</p> <p>Selling Credit:</p>	<p>No offset options or requirements stated</p>	<p>No offset options or requirements stated</p>	<p>N/A</p>

**Comparison Chart: Jordan Lake Rules, Neuse Rules, Tar-Pamlico Rules, NPDES Phase II**

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Jordan Lake Rules	Neuse	Tar Pam	NPDES PHASE II																														
<p>Load reductions eligible if load reduction goals are met or in excess of percentage reduction goals</p> <p>Trades only within the same sub watershed as the reduction need they will offset.</p> <p>Must define activity that produces the reduction.</p>																																	
<p><b>.0270 Wastewater Discharge Requirements</b></p> <p>WWTP dischargers &gt; .1 mgd discharge</p> <p><i>Wastewater Rules continued:</i></p> <p><u>Meet Individual Mass-Based Limits for Nitrogen.</u> Each discharger's limit is the same fraction of the group's total allocation as the discharger's permitted flow is of the group's total flow. These allocations will be included in each discharger's permit as discharge limits.</p> <table><tr><td></td><td>Nitrogen</td><td>Phosphorous</td></tr><tr><td><i>Upper New Hope Arm</i></td><td></td><td></td></tr><tr><td>Perm flows ≥0.1 MGD</td><td>332,467</td><td>22,498</td></tr><tr><td>Perm flows &lt;0.1 MGD</td><td>3,613</td><td>608</td></tr><tr><td><i>Lower New Hope Arm</i></td><td></td><td></td></tr><tr><td>Perm flows ≥0.1 MGD</td><td>6,836</td><td>498</td></tr><tr><td>Perm flows &lt;0.1 MGD</td><td>0</td><td>0</td></tr><tr><td><i>Haw River Arm</i></td><td></td><td></td></tr><tr><td>Perm flows ≥0.1 MGD</td><td>881,757</td><td>104,004</td></tr><tr><td>Perm. flows &lt;0.1 MGD</td><td>13,370</td><td>1,996</td></tr></table>		Nitrogen	Phosphorous	<i>Upper New Hope Arm</i>			Perm flows ≥0.1 MGD	332,467	22,498	Perm flows <0.1 MGD	3,613	608	<i>Lower New Hope Arm</i>			Perm flows ≥0.1 MGD	6,836	498	Perm flows <0.1 MGD	0	0	<i>Haw River Arm</i>			Perm flows ≥0.1 MGD	881,757	104,004	Perm. flows <0.1 MGD	13,370	1,996	<p>WWTP dischargers &gt; .5 mgd/</p> <p>Nig</p> <p>Similar to JLR rules.</p> <p>Nitrogen Same mass limits methodology.</p> <p><b>PHOSPHORUS</b></p> <p>All existing facilities above and below Falls Lake Dam with permitted flows &gt;= 0.5 MGD shall meet a quarterly average total phosphorus limit of 2 mg/l.</p>	<p>No rule for No rule/no limits Wastewater dischargers. WWTP formed an association under agreement with the state to meet certain limits voluntarily <sup>1</sup></p> <p><b>PHOSPHORUS</b></p> <p>No Phosphorous limits</p>	<p>No WWTP requirements. Strictly NPS</p>
	Nitrogen	Phosphorous																															
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<sup>1</sup> Association agreed to either reduce their nutrient loading to the estuary or, if they exceeded an annual collective loading cap, to fund agricultural Best Management Practices (BMPs) through the state's existing Agriculture Cost Share Program. Develop an estuarine water quality model that would allow establishment of an instream nutrient reduction goal. Such a goal would be set based on estuary monitoring and modeled estimates of nutrient reductions needed to meet instream water quality standards rather than setting discharge concentration requirements based on best available technology; do an efficiency study of all Association facilities and make minor capital, operation and maintenance changes to optimize their nutrient reduction performance; and provide up-front funding for nonpoint source BMPs and for staff to administer them.

Every year, the Association kept nutrient loading beneath an annually decreasing cap, reducing overall nitrogen and phosphorus loads by about 20% despite growth as reflected in a flow increase of about 7%. They did so largely by improving treatment facilities' efficiencies following the optimization study. The estuary model was completed, setting the stage for establishment in Phase II of an overall reduction goal for the estuary based on water quality standards. Such a reduction goal could be applied to nonpoint sources in addition to point sources. The Association provided up-front funding of almost \$1 million worth of agricultural BMPs, in large part through a federal EPA grant. They banked credit from this toward future cap exceedences. Fourteen dischargers equaling about 90% of all point source flows to the river joined the Association

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<p><b>.0271 Stormwater Requirements for State and Federal Entities</b></p> <p>NC DOT is working toward complying with NPDES Phase II. Jordan Rule requirements for DOT are a restating of NPDES requirements with added measures which are excessive and not proven.</p>	No separate rule for state and federal entities	No separate rule for state and federal entities	State and DOT fall under NPDES Phase II