

Jordan Nutrient Rules: Existing Development TAG#1

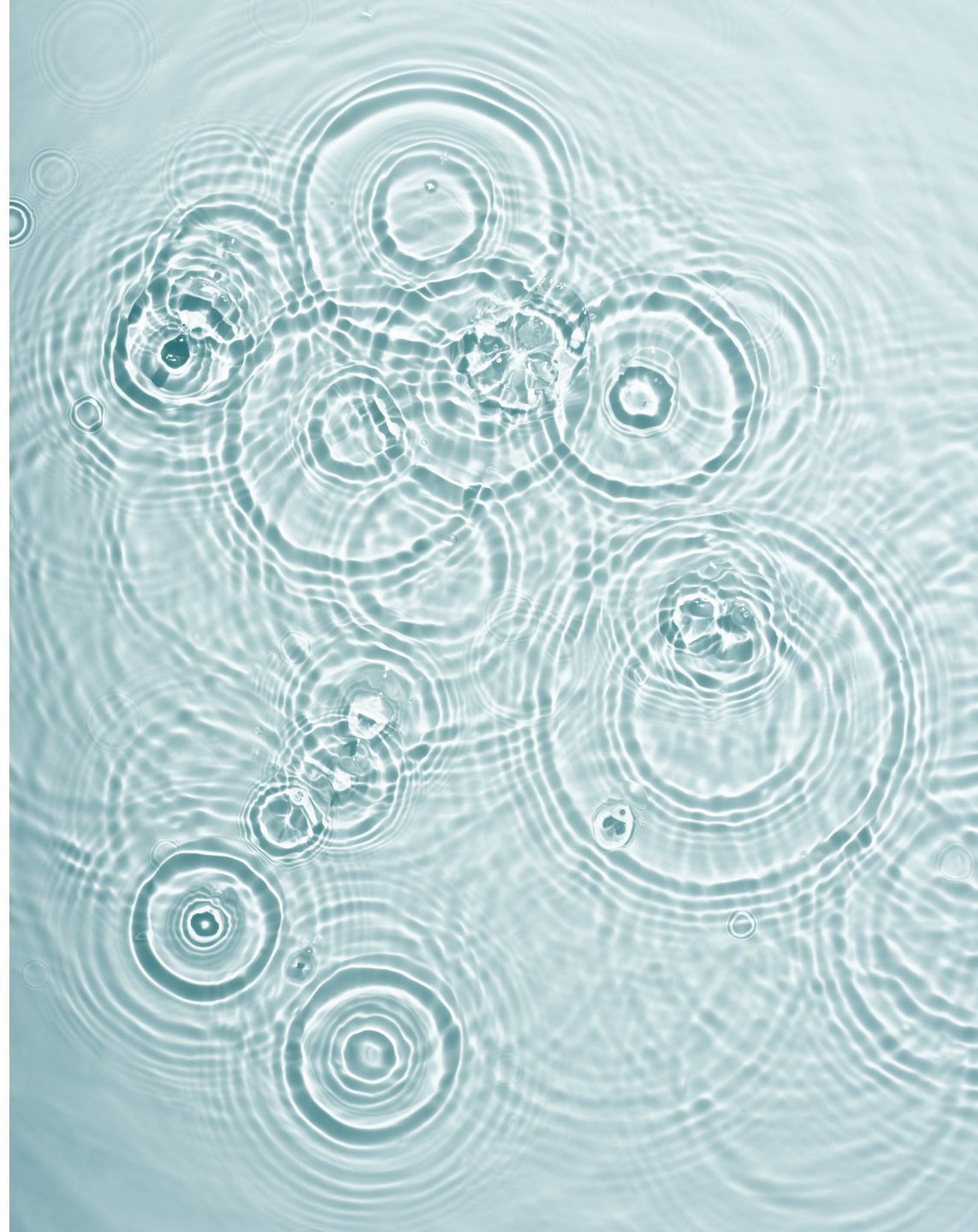
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NC DWR, May 2024



Welcome to the first Technical Advisory Group (TAG) for Existing Development Stormwater Jordan Rule Readoption.

Introductions: please state name, affiliation – sector work in.

Ag, Stormwater, Wastewater, Other.



TAG Purpose & Process

- Purpose of TAGs: to get feedback from stakeholders on current implementation and rule revision concepts.
- TAG Process
 - May 1st – Review basics of Jordan Existing Development Stormwater Rule, discuss implementation (Stage 1), review Falls IAIA program, review general new concepts and discussion questions.
 - 2nd TAG (Spring-Sum) – aim to send **draft rule concept prior to meeting**, review in the meeting and discuss implementation questions.
 - 3rd TAG (Sum) – aim to send **draft rule language prior to meeting**, review in meeting and discuss implementation questions.
 - Intent: Complete stakeholder engagement, comments on all rules by November 2024. Draft rules to WQC mid-February for **March 2025 WQC meeting**.

**‘Informal’
Stakeholder
Engagement**

2024

- DWR stakeholder engagement.
- DWR rule drafts and internal review.
- Stakeholder groups review rule language.

**WQC
Approval to Proceed
(expected multiple reviews)**

2025

- **March WQC:** Info item – draft rules
- Begin fiscal analysis.
- **May or July WQC:** Action item
 - Request to proceed w/rules
 - Share rough fiscal analysis
- Full fiscal analysis
- **Sept or Nov WQC:** 2nd attempt if needed
- **Fiscal – seek OSBM approval**
(filing dates = 1 mo prior to meetings)

**“Formal” Rulemaking
(steps can require > 1 pass)**

2026-2027

- Fiscal Analysis - OSMB approval
- EMC approval to proceed
- 60-day public comment period
- Hearing Officers deliberate
- Develop Hearing Officers report
- EMC adopts rules
- Rules Review Commission approves

Modeled Reductions to Meet Chl-a Standard

- Overall, new model is calling for significant additional nutrient loading reductions to meet chl-a standard

Current Rule – Lake Reduction Goals*		
	N	P
Upper NH	35%	5%
Lower NH	0%	0%
Haw	8%	5%

* relative to 1997-2001 baseline period

New Lake Model – Further Lake Reduction Needs*		
	N	P
Upper NH	62%	0%
Middle NH	30-50%	10-60%
Haw	0-30%	40-70%

* relative to 2014-2016 model period

- Internal DWR review of model is underway, additional insights pending.

Content - Jordan Existing Development Stormwater Rule

- Local governments to reduce loading from existing developed areas
 - Stage 1: programmatic actions – most addressed in MS4 permits
 - Stage 2: develop, implement programs for 8% N, 5% P
 - Triggered by lake monitoring – ongoing impairment
 - Use 2014 watershed model results; involved specifics
- Local governments would have created and implemented plans



SCMs

- Stormwater Control Measures (SCMs) are devices used to control and clean stormwater runoff that flows off a property when it rains.
- Primary.
- Secondary.
- NC DEMLR manual.

Table 2: List of Primary and Secondary SCMs

List & Uses	Primary SCMs	Secondary SCMs
List	<ul style="list-style-type: none"> - Bioretention Cell - Infiltration System - Permeable Pavement - Wet Pond¹ - Stormwater Wetland¹ - Sand Filter - Rainwater Harvesting 	<ul style="list-style-type: none"> - Green Roof - Disconnected Impervious Surface - Level Spreader-Filter Strip - Pollutant removal Swale - Dry Pond
Uses	<ul style="list-style-type: none"> - As a stand-alone SCM to treat a new development site (when 100% sized). - As a retrofit. 	<ul style="list-style-type: none"> - In series with a primary SCM to reduce the volume of runoff and thus reduce the size of the primary SCM. - In series with a primary SCM to provide pretreatment. - In series with a primary SCM as a hydraulic device to slowly “feed” the stormwater runoff to the primary SCM, to reduce the size of the primary SCM. - In series with another secondary SCM to treat the design storm in a manner that meets or exceeds performance standard. - As a retrofit.

SNAP

- Currently used in Falls and Neuse, Tar-Pamlico
- Spreadsheet calculation, annual nitrogen and phosphorus runoff export from a development site with or w/o treatment (lb/ac/yr)
 - Annual runoff volume * landcover-specific nutrient concentrations
 - Annual runoff volume calculated with Simple Method
 - Models nutrient reductions by Stormwater Control Measures (SCMs)
- SCM nutrient treatment (NOT simple % efficiencies):
 - Inflow = catchment land covers area-weighted aggregate concentration
 - Inflow partitioned through SCM to hydrologic fates
 - Effluent - fixed event mean concentrations, SCM-specific
- Site aggregated into annual runoff load N and P across discharge points (lb/ac/yr)

Questions and Comments

Falls Rules Existing Development Options

- Individual Local Program (Option #1)
 - Local Government plan to implement Stage I reductions
 - SNAP and lbs. of nutrients tracking
- Joint Compliance Approach - Investment (Option #2)
 - Interim Alternative Implementation Approach (IAIA)
 - All 13 UNRBA members
 - Investment based tracking

Option 1: Falls Individual Local Program

- Calculate Stage I load reduction needs aka “Jurisdictional Load”
- Measure opportunity assessment
 - Evaluation of opportunity & load reduction potential of practices
- Implementation plan
 - Types of activities and lands affected
 - Prioritization of practices; magnitude and duration of reductions expected
- Annual Reporting Plan to Document Implementation

Individual Local Program: Roxboro

- Stage I load reduction needs
 - SNAP Tool method; modest load reductions needs (5.38 lbs/N/year 3.87 lbs/P/year)
 - Development during 2006-2012 limited by economic recession
- Measures opportunity assessment
 - Original 2013 inventory identified limited options; reductions needs also low
 - Assessed use of street sweeping and other measures
- Implementation plan for offsetting loads
 - Street sweeping - primary practice, started in 2012
 - Collection system improvements & nutrient offset payments - alternative options
 - Existing stormwater fee used as funding mechanism
- Annual Reporting
 - Implementation reports submitted annually on October 31st

Option 2: Falls Alternative Investment Program

- Voluntary Implementation – Parties Merge Reductions, Meet Collectively
 - Merge municipalities w/ counties and wastewater w/ existing development
- UNRBA: **Interim Alternative Implementation Approach (IAIA)**
 - Combines wastewater over-reductions w/ existing development
 - Ensures projects implemented in Stage I, deemphasizes pounds-counting
 - Provides additional flexibility in types practices implemented
 - Affected parties commit to fixed amount of \$ invested each year on projects
- Annual Individual & Joint Summary Reports to DWR
- Process for Terminating Participation in Joint Approach
 - Advance written notice to DWR; local program in place

Falls Alternative Investment Program

- Joint Compliance
- Developed through collaboration – UNRBA, DWR, NGOs
 - Addresses Required Elements of Model Program for Joint Compliance
- IAIA Guiding Principals
 - Lays foundation for innovative management approaches
 - Implements water quality improvement projects now while re-examination ongoing
 - Expands list of allowable practices - adds flexibility
 - Simplifies approach; committed annual funding levels
 - Demonstrates continued commitment to cost-effective and equitable management of lake
- Program Document Contents
 - Investment commitments for each participant
 - Identifies eligible projects
 - Describes process for additional practices/projects to be approved
 - Outlines reporting procedures; provides general implementation guidance

Falls ED Investments

- Annual Investment levels determined cooperatively by participating jurisdictions using UNRBA fee structure that weights area in watershed, water withdrawal and other factors distributed equally among each member

UNRBA Member	Annual Funding Level	UNRBA Member	Annual Funding Level
Town of Butner	\$23,393	Town of Hillsborough	\$34,221
City of Creedmoor	\$16,926	Orange County	\$161,943
City of Durham	\$337,587	Person County	\$114,394
Durham County	\$133,300	City of Raleigh	\$466,081
Franklin County	\$19,058	Wake County	\$88,968
Granville County	\$100,453	Town of Wake Forest	\$13,692
Town of Stem	\$11,605	Combined Total	\$1.5 million

Eligible Activities for Investment

- Eligible activities for annual (\$) commitments
 - All state-approved practices w/ established nutrient credits (SCMs & retrofits)
 - Green Infrastructure & BMPs that include water quality & quantity benefits
 - Stream and riparian buffer restoration
 - Programmatic Measures - fertilizer education, pet waste stations, onsite maintenance
 - Infrastructure improvements - Repair leaking infrastructure, Reduction of SSOs
 - Illicit discharge detection and elimination
 - Land conservation in high priority areas
 - Floodplain restoration & reconnection
 - Operation & Maintenance of practices to ensure long-term functionality
 - Hydrilla removal
 - Greenways & parks with documented water quality benefits
- Additional activities allowed pending DEQ/DWR approval

IAIA Administration & Annual Reporting

- UNRBA Compliance Group Committee
 - Decision making body for implementation of UNRBA Joint Compliance Approach
 - Responsible for tracking & submitting joint combined annual progress report to DWR
 - Provide guidance to IAIA participants
- Annual Reports
 - LG's submit individual implementation reports to DWR annually September 30th
 - Compliance Group Committee submits joint summary report by November 30th
- Initial duration of IAIA Program July 1, 2021 – June 30, 2026
 - May be extended if Falls Rules not readopted by 2026

Progress of Falls ED approval and implementation

- **July 2021:** LG's submit local or joint programs & begin implementation
- **September 2022:** Division provides local program recommendations to EMC
- **December 2022:** Implementation of EMC approved programs begins
- **December 2024:** EMC to begin Falls rules readoption
- **2026-2028:** Anticipated end to Stage I Implementation
 - Overall, ED IAIA program has been well received

DWR Discussions on Jordan ED

Load reduction requirements:

- How develop **load estimates for a standard approach**
- If alternative metric of compliance is dollars, how translate from **load reduction requirements, what basis should be used for benchmarking reasonable scale of investment**

Eligible activities:

- **Weight practices that have greater impact** on nutrient reduction
 - How include load prevention practices like forest preservation but **incentivize load reduction practices**
- Role for **in situ practices?**
- There will be ability to **expand eligible activities**

Compliance:

- What reporting provides **data on effectiveness of practice/program**; Still require tracking of **load reductions from SCMs**, others as feasible and report to DWR

DWR Discussions on Jordan ED

Compliance (continued):

- Currently in Falls, if a jurisdiction is not in compliance, their participation in **joint option is terminated** and jurisdiction starts standard local program – how structure to minimize transfers
- What would ‘credit’ mean for practices implemented pre-rule, and what time period is appropriate

Investments:

- What are **equitable investment allocations**, what criteria
- Should **grant funding** be accepted on par with sustainable jurisdictional sources
- How make sure **grant funding** is used only for practices that are not required in MS4 permits or by other regulation

Administration/Org:

- How design approvable rule using **investments as compliance standard**
- Should JLOW have parallel role to UNRBA - what should be required of a non-profit to serve as a compliance option, and must a jurisdiction be a member of non-profit to participate in the Investment Option

Research Status

- Surveyed Investment Based Watershed Programs in US and Reviewing Research Reports - 2024.
- Fiscal analysis 2025-2026.

EFC – Revenueshed Report

Erin Riggs, Evan Kirk, and Jeff Hughes. 2019. Paying for Nutrient Reduction and Management in Jordan Lake. Environmental Finance Center at The University of North Carolina at Chapel Hill.

- Team at EFC investigated **sources of revenue** for watershed management, **governance structure**, and how **revenue is spent** to improve water quality.
- They reviewed several investment-based cases in NC and other States.



UNC

SCHOOL OF GOVERNMENT

Environmental Finance Center

EFC – Future Finance and Gov Approaches

Model	Revenue	Governance	Spending
Existing Framework	Existing Water/Sewer Rates; Stormwater Fees; Property Taxes	Existing (in place) Municipalities; Counties; Water and Sewer Authorities; Stormwater Utilities	Existing within jurisdictional boundaries of local governments
Expanded Framework	Expanded County-level Stormwater Fees; Watershed Improvement Tax; Watershed Protection Fee; Removal of County Boundary for Fee Generation	Expanded Water and Sewer Authorities with regional watershed management; Joint Management Agencies; Interlocal Agreements	Expanded stormwater fees outside jurisdictional boundaries
Watershed Fees or Taxes	New Water Allocation Fees; Countywide Tax (e.g. LA County); Watershed-Wide Fee (e.g. Chesapeake Bay)	Existing Municipalities; Counties; Water and Sewer Authorities; Stormwater Utilities; State Agencies	Existing or Expanded Depending on Fee Structure
Regional Watershed Utility	New Fee or tax stream of revenue that would go specifically to a new utility (e.g. Minnesota)	New Local government Authority or Utility	New Watershed Boundary; Grant Proposal; Point System/Prioritization

NPSP Branch
 Reviewed the EFC
 paper and other
 reports on investment-
 based programs: 15
 cases

Categories	Description
Project Name and main link	Name of project example
Project location	Location of example project
General Project Goal	Project goals/priorities (i.e stormwater, drinking water, flood protection)
Main Actors	The groups that are primarily involved in coalition, funding, and/or project implementation
Governing Body	Is a governing agency involved and how - A group that can enforce laws
Compliance mechanisms	Regulations created for the program or regulations used to make the program enforceable, other formal or semi-informal rules (i.e. coalition by-laws)
Funding determination	How member funding allocations determined, rate structure
Type of funding mechanism	Is it tax based, types of grants, other
Funding Info	Total amount funded, number of investors, years funded
Project types approved	Were project types approved by governing agency
Project types	What is the project type used (i.e. land conservation, well head protection, retrofits)
Record keeping	Any record keeping tools identified (if time - are they monitoring for effectiveness, such as water quality indicators)

x

Name	State	Funding	Funding Mech	Project Type
Denver Water-US Forest Service Watershed Protection Partnership	CO	\$21.6 Million by U.S. Forest Service, and \$16 Million by Denver Water	Denver rate increase on water customers' bills, average monthly cost of \$0.14 per household, federal funding	Forest Projection
Portland Water District Project	OR	\$2M by the District; \$13M by land trusts, such as Nature Conservancy and the Open Space Institute.	District collected utility ratepayer funds, land grants	Watershed restoration and wastewater improvements
Partnership for the Delaware Estuary	DE	\$7 million by National Fish and Wildlife Foundation; \$30 million by William Penn Foundation; \$3.8 million by Suburban Philadelphia	Open space bond initiatives, private grants and federal grants	Watershed restoration and water quality

Main takeaways

- **Many mechanisms to fund** environmental protection, depends on the actors and boundaries.
- Majority of regional programs have pooled **funding over \$1 million** (current UNRBA target) and had **federal funding** contributions.
- Best to review **efficient and useful reporting** to gauge effectiveness with actor support.
- Compliance depends on the agreement, MOU, regulatory framework.

Questions and Comments

Discussion questions

- Is there interest in developing an investment-based option for existing development stormwater?
- Is there interest in weighting practices w/greater nutrient reduction?
Sequencing first with infiltration practices or Categories of practices?

Discussion questions

- What should be the investment assignments? IAIA funding follows UNRBA member dues weighting: 10% equal base rate, 50% based on share of water demand, 40% based on share of land area.
- Should there be an option for individual and group investment?
- Are stakeholders interested in JLOW having a compliance and record keeping role in the investment program? Should role be modeled after wastewater compliance associations?

Discussion questions

- Preferred load estimation method for standard approach? Choice?
 - NLCD land covers x provided export coefficients vs
 - Development records and export coefficients vs
 - Development records and SNAP Tool (CN-based by then if data support)
 - Reduce by *creditable SCMs;
 - Equivalent or more rigorous methods acceptable to the Division.
- How should credit be given for prior implementation?
- Support for the use of grants? Do they only apply to the investment-based option?
- Nutrient reduction requirements: to provide goals, do we need to provide them for individuals or as a whole?

Next steps:

DWR: Complete interviews, research outstanding questions and comments, write up supporting research and new concepts, identify and send advance questions.

TAG: Read write up and email/prepare comments before next TAG meeting.

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Thank you for your time and input.

We appreciate your time sending us your comments and any data/reports that can support Existing Development Stormwater decisions.



Current NC Stormwater Reg's in Jordan

- NC DEQ –
 - Federal NPDES Stormwater rules - Phase I, II communities implement MS4 post-construction requirements
 - Water Supply Watershed rules (DEMLR) – local governments implement in WSW areas falling in their jurisdictions
 - Jordan State & Federal Entities rule - DEMLR implements post-construction requirements
 - Jordan Existing Development Stormwater rule – local implementation barred pending rules readoption; Stage 1 in effect, Stage 2 on hold
- Local stormwater ordinances, depending on authority, may have further requirements
- Depending on local requirements and project intensity, stormwater may/not be treated before discharge to surface water.

History -

- SL 2009-484: EMC-adopted rule enacted w/minor modification
- SL 2012-200: Implementation delayed 2 yrs
- SL 2013-395: Implementation (all rules) delayed 3 yrs more
- SL 2016-94: **Local implementation barred pending rules readoption – Stage 2 on hold**