



April 26, 2010

Via Electronic Submission and U.S. Mail

Water Docket
U.S. Environmental Protection Agency,
Mail Code: 2822T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Administrator Lisa P. Jackson
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

**RE: Docket ID No. EPA-HQ-OW-2009-0596
Proposed Adoption of Numeric Nutrient Water Quality Criteria for Florida**

Dear Administrator Jackson,

The Florida Water Environment Association Utility Council (FWEA Utility Council), Florida Section of the American Water Works Association Utility Council (FSAWWA Utility Council), and Florida Rural Water Association (FRWA) hereby file these comments regarding the Environmental Protection Agency's (EPA's) proposed numeric nutrient criteria for Florida's lakes and flowing waters, including canals.¹

FWEA Utility Council, FSAWWA Utility Council, FRWA members share significant concerns regarding EPA's proposed nutrient criteria, which if adopted would severely and negatively impact our members and the communities they serve. As described in more detail in the enclosed comments, these proposed numeric nutrient criteria for Florida's lakes and flowing waters confirm that EPA could not develop scientifically defensible numeric standards within the timeframes imposed by EPA's Consent Decree with EarthJustice. Florida's sophisticated Total Maximum Daily Loads (TMDL) program, National Pollutant Discharge Elimination System (NDPES) program, and comprehensive water supply programs all stand to needlessly suffer because of EPA's unwarranted federal intervention into Florida's water quality program. Utility

¹ 75 Fed. Reg. 4174 (Jan. 26, 2010).

ratepayers, including the poor and those on fixed incomes, will bear the economic costs of complying with the criteria. EPA has not -- and indeed cannot -- justify this rulemaking initiative. The only reasonable outcome is for EPA to seek relief from the Consent Decree and then re-empower the State of Florida to continue leading its peers in the regulation of nutrients.

I. Background Information on the FWEA Utility Council, FSAWWA Utility Council, and FRWA

As the state umbrella organizations for municipal wastewater treatment utilities, public water supply utilities, and rural wastewater and water utilities, these comments represent the collective voice of a broad spectrum of Florida utilities.

The FWEA Utility Council is an association of 47 local government and private utilities in Florida that own and operate domestic wastewater treatment, disposal, reuse, and recycling facilities. FWEA Utility Council members provide essential wastewater treatment infrastructure and services for over 8 million Florida residents. The membership is highly diverse, both in terms of the communities served and the way utility members serve them, but Utility Council members share a commitment to environmental protection and scientifically sound environmental policies.

The FSAWWA Utility Council consists of over 100 utilities providing drinking water to over 9 million residents. The FSAWWA Utility Council's diverse membership ranges from small water utilities serving a few hundred customers to utilities serving over a million customers. The FSAWWA Utility Council actively assists the FSAWWA to meet the challenges facing the water supply industry, including representation on federal regulatory initiatives that will impact the ability of utilities to meet the drinking water needs of Floridians.

The FRWA is a consortium of 1,200 rural water districts; public and private authorities; local governments; and other water and wastewater systems engaged in the collection, treatment, and reuse or disposal of wastewater and/or the treatment and distribution of water. A substantial portion of the FRWA membership provides essential infrastructure and services to rural areas of Florida. Absent the wastewater collection and treatment services of FRWA members, these rural areas would be served by conventional septic tanks that provide little treatment and virtually no nutrient removal prior to discharging wastewater to the surficial aquifer. Many of FRWA wastewater system members live in the non-coastal central Florida rural areas where poverty is most prevalent, including counties such as Dixie, Gadsden, Hamilton, Hardee, and Putnam, where over a quarter of the population of children live in poverty. The ratepayers in these areas cannot afford substantial increases in utility fees, and the typically small utilities serving these areas lack the economies of scale to implement cutting edge treatment technologies.

II. EPA's proposed numeric nutrient criteria confirm that EPA cannot develop scientifically defensible numeric nutrient criteria in the timeframes provided by the Consent Decree

The preamble to the proposed rule explains that EPA used a "statistical distribution methodology" to derive total nitrogen (TN) and total phosphorus (TP) standards for Florida's streams. In essence, EPA divided the state into geographical regions; analyzed nutrient data

from a set of biologically healthy streams in each region; and then set the numeric nutrient criteria at the 75th percentile of the TP and TN data for these streams. This approach -- which on the one hand identifies sets of streams as healthy and on the other hand declares 25% of the same streams to be impaired -- confirms that EPA significantly underestimated the challenge of establishing scientifically valid numeric nutrient criteria for Florida streams.

In January 2009, Assistant Administrator Benjamin Grumbles anticipated that it would only take six months to set scientifically valid nutrient criteria at the levels at which Florida's flowing waters exhibit signs of nutrient impairment:

EPA anticipates that six months will then be required to complete detailed analyses of the data to identify the relationships between nutrient causal variables, e.g. nitrogen and phosphorus, and key response variables, e.g., chlorophyll a, Secchi depth, periphyton, and dissolved oxygen (DO).²

EPA thus initially represented that within half a year, by July 2009, it could use a cause and effect analysis to establish true numerical interpretations of Florida's existing narrative nutrient standard (i.e. affix numeric nutrient standards at the nutrient levels at which Florida water bodies will exhibit imbalances of naturally occurring populations of flora and fauna).

Ten months later, however, EPA used less definitive terms when assuring Northern District Court of Florida Judge Hinkle that the agency could propose "protective criteria" within the strict timeframes of the Consent Decree. A sworn declaration of Denise Keehner of EPA's Office of Science and Technology stated:

EPA is able and capable of proposing protective criteria for lakes, rivers, streams, and estuaries/coastal waters based on scientifically defensible methodologies, and appropriately taking into account current data and other information, as well as the state of the science.³

By the time EPA issued its proposed rule in January 2010, the agency signaled a full retreat with respect to stream standards from Mr. Grumbles' prognostication a year earlier:

...EPA analyzed stressor-response relationships in Florida streams based on available data, but...did not find sufficient scientific support for their use in the derivation of numeric nutrient criteria for Florida streams. More specifically, EPA was not able to demonstrate a sufficiently strong correlation between the biological response indicators...and TN or TP concentrations. ...⁴

Thus, due to the self-imposed timeframes of the Consent Decree, EPA abandoned its attempt to proffer a numerical interpretation of Florida's narrative standard for Florida's streams. Instead,

² EPA, Letter from EPA Assistant Administrator Benjamin Grumbles to FDEP Secretary Michael Sole, 9 (Jan. 14, 2009) (emphasis added), *hereinafter*, Necessity Determination.

³ *Florida Wildlife Federation v. EPA*, Case No: 08-00324, Declaration of Denise Keehner, ¶ 5 (November 3, 2009).

⁴ 75 Fed. Reg. 4174,

EPA utilized a crude averaging methodology that by its very nature will deem healthy streams as impaired.

The obvious flaw in EPA's approach is that it fails to recognize that

[n]utrients are unlike any other "pollutant" regulated by the federal Clean Water Act (CWA). Most water quality criteria are based on a toxicity threshold, evidenced by a dose-response relationship, where higher concentrations can be demonstrated to be harmful, and acceptable concentrations can be established at a level below which adverse responses are elicited (usually in laboratory toxicity tests). In contrast, nutrients are not only present naturally in aquatic systems, they are absolutely necessary for the proper functioning of biological communities, and are sometimes moderated in their expression by many natural factors. Therefore, the development of protective nutrient criteria is immensely more complicated than that for toxic substances.⁵

EPA's broad-brushed regional criteria fail to acknowledge that the level of nutrients that water bodies need for biological health -- as well as the level of nutrient loads that create problems -- varies from water body to water body. The proposed rule confirms what the scientific community has known and reminded EPA for quite sometime: the relationship between nutrients and natural factors such as stream biology, color, shading, flow rate, pH, etc. requires site specific nutrient criteria.⁶ In the words of EPA's Science Advisory Board, "statistical associations may not be biologically relevant and do not prove cause and effect," and "in order to be scientifically defensible, empirical methods must take into consideration the influence of other variables."⁷ As FDEP notes, the proposed rule fails to "fully acknowledge the basic limitation of the 'reference approach', that there is no link between criteria and impairment (no 'dose-response' relationship)."⁸

Crudely derived, generally applicable nutrient standards, such as those proposed by EPA, will cause numerous unintended consequences, including the designation of healthy water bodies as impaired and an overlay of standards that conflict with existing, scientifically vetted nutrient standards.

The following case studies demonstrate the reality of these negative consequences, and these examples demonstrate that EPA needs to abandon its present derivation methodology.

⁵ FDEP, State of Florida Numeric Nutrient Criteria Development Plan, 1 (March 2009) (emphasis added).

⁶ EPA, Science Advisory Board, Processes and Effects Committee Advisory Report, Draft, 1 (Jan. 8, 2010) ("The empirical stressor-response framework described in the Guidance [developed by EPA for promulgating nutrient standards] is one possible approach for deriving numeric nutrient criteria, *but the uncertainty associated with estimated stressor-response relationships would be problematic if this approach were used as a 'stand alone' method because statistical associations do not prove cause and effect.*") (emphasis added); FDEP, *Main Concerns with the Environmental Protection Agency's Proposed Numeric Nutrient Criteria for Florida's Lakes and Flowing Waters published January 26, 2010* (Feb. 17, 2010), available at http://www.dep.state.fl.us/water/wqssp/nutrients/docs/federal/dep_concerns_epa_nutrients_0210.pdf.

⁷ EPA, Science Advisory Board, Processes and Effects Committee Advisory Report, Draft, at 22.

⁸ FDEP, *Main Concerns with the Environmental Protection Agency's Proposed Numeric Nutrient Criteria for Florida's Lakes and Flowing Waters published January 26, 2010* (Feb. 17, 2010).

Case Study 1: FDEP Reference Streams

Prior to abandoning its own nutrient criteria rulemaking,⁹ the Florida Department of Environmental Protection (FDEP) selected “reference streams” (a.k.a. benchmark sites) in Florida’s Bone Valley, North Central, Panhandle, and Peninsular regions. These streams are pristine. An EPA peer-review team lauded the scientific rigor of FDEP’s approach to selecting these minimally disturbed streams as reference sites, and EPA representatives even visited several of these streams.¹⁰ Notably, one EPA reviewer stated, “The rigorousness of the benchmark screening process leads me to believe that all nutrient concentrations observed at the benchmark sites are fully protective of the use.”¹¹

Despite EPA’s prior endorsement of FDEP’s selection of reference streams, over one-third of these same streams fail to meet one or more of the applicable EPA regional criteria (i.e. in-stream protective values). The following charts demonstrate that numerous streams in the North Central, Panhandle, and Peninsular regions that are considered healthy by FDEP’s state water quality experts fail to meet EPA’s proposed in-stream protective values.¹²

Nutrient Region	Percent of FDEP Reference Sites that Fail EPA <i>Total Nitrogen</i> Criteria Based on 1 in 3 Year Exceedance		Percent of FDEP Reference Sites that Fail EPA Criteria Based on Long-term Average Exceedance	
	Sites	WBIDS	Sites	WBIDS
North Central	47.6%	46.7%	16.7%	15.0%
Panhandle	26.7%	18.2%	15.6%	23.5%
Peninsula	40.4%	41.5%	37.2%	31.8%
Statewide Total	34.7%	31.9%	24.5%	24.5%

Nutrient Region	Percent of FDEP Reference Sites that Fail EPA <i>Total Phosphorus</i> Criteria Based on 1 in 3 Year Exceedance		Percent of FDEP Reference Sites that Fail EPA Criteria Based on Long-term Average Exceedance	
	Sites	WBIDS	Sites	WBIDS
North Central	4.2%	6.3%	4.2%	10.0%
Panhandle	46.2%	39.4%	48.3%	42.4%
Peninsula	20.0%	17.4%	11.1%	9.1%
Statewide Total	24.0%	22.0%	19.8%	19.8%

⁹ According to FDEP Secretary Michael Sole, FDEP abandoned its rulemaking upon learning of the Consent Decree between EPA and EarthJustice. FDEP Secretary Michael Sole, Florida Governor and Cabinet December 8, 2009 Board Meeting, Official Transcript at <http://www.myflorida.com/myflorida/cabinet/mart.html>. Unlike EPA, FDEP at least recognizes that there is no link between the criteria and impairment in the reference stream approach. See FDEP, *Main Concerns with the Environmental Protection Agency’s Proposed Numeric Nutrient Criteria for Florida’s Lakes and Flowing Waters* Published January 26, 2010, 1 (Feb. 17, 2010).

¹⁰ FDEP, Comments Regarding Stream Criteria, Review Draft, 12-13 (March 12, 2010).

¹¹ *Id.* at 13 (emphasis added).

¹² FDEP, Comments Regarding Stream Criteria, Review Draft, 44 (March 12, 2010).

So, in its haste to meet the deadlines of a consent decree, EPA has proposed nutrient standards that deem over a third of Florida’s most pristine streams as impaired. These noncompliant, yet pristine, streams include flowing waters in state parks and conservation lands, such as the Econfina River in the Econfina River State Park and Black Water Creek in the Seminole State Forest.¹³ This outcome evidences the arbitrary and capricious nature of EPA’s crude regional criteria, and it demonstrates that nutrient criteria must be set at the nutrient levels at which water bodies will exhibit imbalances of naturally occurring populations of flora and fauna, based on cause and effect determinations.

Case Study 2: “Good Quality Waters” in the SJRWMD

A 2006 report by the St. Johns River Water Management District (SJRWMD) analyzed water quality trends for select SJRWMD waters.¹⁴ Although the district was not utilizing FDEP’s Impaired Waters Rule or attempting to determine if waters were meeting designated uses, the analysis specifically considered the nutrient health of the district waters.¹⁵ A dozen of the lakes, streams, and springs that graded out as exhibiting “good water quality” in this report nevertheless fail to meet one or more parameters of EPA’s proposed criteria.¹⁶

Good Quality Waters in SJRWMD		Compliance with Proposed Regional Federal Standards			
WBID	Name	TN	TP	NO3/NO2	Chl-a
28930	Lake Washington	Fails	Fails	n/a	Passes
3084	Jane Green Creek	Fails	Passes	n/a	n/a
2893K	Lake Poinsett	Fails	Fails	n/a	Passes
2549	Deep Creek	Fails	Fails	n/a	n/a
2925A	Lake Ashby	Passes	Fails	n/a	Passes
2964A	Lake Harney	Fails	Fails	n/a	Passes
3731	Wekiva River	Passes	Passes	Fails	n/a
2987	Little Wekiva River	Fails	Fails	n/a	n/a
3528Z	Blue Springs	n/a	n/a	Fails	n/a
2921	Lake Woodruff	Fails	Fails	n/a	Passes
2790A	Lake Weir	Fails	Fails	n/a	Fails
2899B	Lake Kerr	Passes	Fails	n/a	Passes

SJRWMD water quality experts (the proverbial “boots on the ground”) have analyzed these springs, lakes, and streams within their district boundaries and found these waters to be healthy. A federal bureaucracy in Washington DC has promulgated and applied generalized standards for these same waters and declared these waters impaired. Again, this conflict highlights that crude

¹³ FDEP, Evaluation of Florida Benchmark Site Exceedance Frequency Relative to EPA’s Proposed In-stream Protection Values (IPVs) and Downstream Protection Values (DPVs) (Feb. 1, 2010) at http://www.dep.state.fl.us/water/wqssp/nutrients/docs/federal/eval_epa_proposed_criteria_020210.pdf. The streams cited in the text fail instream protective values for one or more parameters.

¹⁴ SJRWMD, 2004 *Status and Trends in Water Quality at Selected Sites in the St. Johns River Water Management District* (2006), available at <http://floridaswater.com/technicalreports/pdfs/TP/SJ2006-6.pdf>.

¹⁵ *Id.* at 8.

¹⁶ The analysis provided in the chart utilized FDEP’s online analysis of surface water compliance with EPA instream protective values available at <http://www.dep.state.fl.us/water/wqssp/nutrients/federal.htm>.

broadly applicable criteria do not work; nutrient criteria must be set at the nutrient levels at which individual water bodies will exhibit imbalances of naturally occurring populations of flora and fauna, based on cause and effect determinations.

Case Study 3: Waters with EPA-approved, Site Specific Nutrient Standards

EPA has approved several Total Maximum Daily Loads (TMDLs) based on Florida's existing narrative criteria for nutrients. EPA's approval of such nutrient TMDLs constituted its determination that all nutrient load allocations and waste load allocations are protective of designated uses.¹⁷ Because EPA specifically confirmed that these existing nutrient standards meet federal Clean Water Act requirements, it cannot also be the case that new water quality criteria are "necessary" for such waters.

Apparently cognizant of this fact, FDEP's July 2009 draft nutrient criteria rule expressly determined that these vetted nutrient TMDLs constituted site specific numeric nutrient water quality criteria, and its draft rule thus avoided an overlay of imprecise regional criteria for these waters.¹⁸ EPA's proposed rule, however, imposes new, conflicting nutrient standards on these waters. Therefore, the following waters will have their existing EPA-approved nutrient standards – and all of the environmentally beneficial projects designed to achieve the standards – rendered moot upon the adoption of EPA's conflicting proposed nutrient criteria:

Santa Fe River, Alligator Lake, Lower St. Johns River, Lake Apopka, Lake Beauclair, Lake Dora, Dora Canal, Lake Eustis, Haines Creek, Lake Griffen, Lake Harris, Little Lake Harris, Helena Run, Lake Wauberg, Lake Yale, Lake Yale Canal, Newmans Lake, Orange Lake, Palatlahaha River, Trout Lake, Lake Carlton, Alachua Sink, Lake Jesup, Crane Strand Drain, Long Branch, Wekiwa Spring, Wekiva River, Rock Springs, Rock Springs Run, Little Wekiva Canal, Spring Lake, Lake Florida, Lake Orienta, Lake Adelaide, Lake Lawne, Silver Lake, Bay Lake, Lake Hell n' Blazes, Indian River, Banana River, Newfound Harbor, Thirty Mile Creek, Lake Hunter, Lake Cannon, Lake Howard, Lake Idylwild, Lake Jessie, Lake Lulu, Lake May, Lake Mirror, Lake Shipp, St. Lucie River, Lake Okeechobee, C-24 Canal WBID 3197, C-23 Canal WBID 3200, Bessey Creek, C-44 Canal, Pompano Canal, Lake Okeechobee, Hendry Creek, Imperial River, Gordon River.

All of the above-listed lakes, canals, streams, and springs have site specific numeric nutrient standards established through the TMDL program, but none of these site specific numeric nutrient standards match the crude regional criteria EPA proposes to impose on all of these waters. Again, this outcome highlights the invalidity of EPA's proposed criteria. Nutrient criteria must be set at the nutrient levels that cause imbalances of naturally occurring populations of flora and fauna, based on cause and effect determinations.

¹⁷ 40 CFR § 130.7.

¹⁸ FDEP, Draft Rule 62-302.800(7)(b) (July 17, 2009). FDEP promulgated its draft rule in response to EPA's necessity determination.

Case Study 4: Waters EPA has agreed do not need Nutrient-Related TMDLs

In the late 1980's, the consulting firm of CH2M Hill evaluated the existing nutrient background data for a small stream in central Florida (within WBID #3170) that is commonly known as Reedy Creek. The purpose of this study was to determine the total nitrogen and total phosphorus levels that were representative of natural background conditions, before the influence of development in the watershed. Available data from reliable sources (prior to 1970 and collected by USGS) was gathered and evaluated and a determination made that natural background was 1.46 mg/L-TN and 0.04 mg/L-TP. These levels were reviewed and accepted by FDEP (then FDER) as representative of unaffected, natural background levels for nutrients in this stream.

These levels differ than the regional criteria proposed by EPA that would be applicable to this stream.¹⁹ Additionally, the export of organic nitrogen from wetland parcels in this watershed is well documented and shows that nitrogen export from wetlands in the flood plain of the stream typically exceed the numeric criteria set by EPA. Consequently, the EPA criteria are set too low for natural conditions and fail to account for the organic nitrogen export from deciduous hardwood swamp forests that are characteristic of much of Central Florida. These wetlands are also a factor in the low dissolved oxygen conditions exhibited by WBID 3170C and for which site specific alternative criteria was granted in the mid-1980's. As recently as 2007, FDEP and EPA agreed that the low dissolved oxygen in this WBID was naturally occurring and completely unrelated to anthropogenic nutrient loading.²⁰

Case Study 5: Undeveloped Lake Abutting Nature Conservancy Property

Lake Russell in Osceola County (WBID #3170B) exhibits historic TN and TP levels exceeding the proposed criteria for colored lakes in the peninsular region of Florida (per correspondence from FDEP). This small, tannin influenced lake of about 700 acres has very limited shoreline development, receives no point source discharges, and is surrounded by wetlands. Most notably, this lake is also shoreline for part of the Nature Conservancy's property. The Nature Conservancy website touts Lake Russell as "one of the last remaining undeveloped lakes in central Florida" and "home to hundreds of wildlife species."²¹ Despite these accolades and conditions, this lake would be considered non-compliant with the proposed criteria.

Case Studies: Conclusion

The only reasonable conclusion to draw from these case studies is that EPA's reference condition approach is arbitrary and capricious. EPA's statistical guesswork has resulted in overly conservative criteria that do not reflect the level of nutrients needed to maintain water body

¹⁹ The applicable proposed regional criteria are 1.205 mg/L-TN and 0.107 mg/L-TP.

²⁰ FDEP, OGC Nos: 06-2451-2453, 06-2457-2466; 06-2473-2515; 06-2518-2520; 06-2522-2544; 06-2547-2577; 06-2579-2583; 06-2596, Order Revising Verified List of Impaired Waters, ¶ (d) (Jan. 3, 2007) (enclosed); Letter from James D. Giattina, Director, EPA Water Management Division, to Winston K. Borkowski, Hopping Green & Sams, (Oct. 16, 2006) ("EPA...has concluded that the low dissolved oxygen in Reed Creek above Lake Russell is due to natural conditions. Therefore, the EPA has determined that a TMDL is not needed for Reedy Creek above Lake Russell.").

²¹ Nature Conservancy in Florida, Places We Protect, at www.nature.org/wherewework/northamerica/states/Florida/preserves.

health; instead, the criteria actually deem healthy streams as impaired. The proposed nutrient criteria fall far short of EPA's own regulations, which explicitly require criteria to be based on a "sound scientific rationale."²²

Therefore, the FWEA Utility Council, FSAWWA Utility Council, and FRWA request that EPA seek judicial relief from its consent decree with EarthJustice, because it is obvious that EPA's derivation methodology and resulting proposed regional nutrient criteria are scientifically flawed. Just as an alchemist will never successfully turn copper into gold, EPA cannot massage these crude proposed criteria into scientifically defensible standards. EPA must completely rethink its approach to developing numeric nutrient criteria. We recommend revoking the necessity determination and re-empowering the State of Florida to manage its own sophisticated water quality standards program without the specter of an unwarranted federal usurpation.

III. Not only is the reference condition approach an invalid method for setting regional nutrient criteria, but EPA's application of the reference condition approach is fatally flawed

EPA was forced to utilize the reference condition to set numeric nutrient criteria for Florida streams and canals, because the agency could not identify a causal relationship between nutrients and biological responses for these waters. As explained above, this is a scientifically invalid method for setting numeric nutrient criteria. Additionally, EPA's application of this methodology in this rulemaking is also fatally flawed. The proposed instream protective values fail to use sufficient data to reliably generate an instream protective value; all sources of variability have not been taken into account in determining the criteria; and the false positive rates resulting from adoption of the EPA's proposed criteria fail to comport with widely accepted statistical and scientific principles.

The instream protective criteria for streams proposed by the EPA rely upon insufficient data necessary to obtain a reliable estimate of a protective threshold. The result is statistically indefensible criteria when applied to EPA's own reference streams. It follows that the instream protective criteria cannot conceivably be defensible when applied to other streams across an entire region of Florida. Fully 70% of the stations utilized by the EPA have data for only one year and another 15% have data for only two years during the 19 year period covered by the data. As a result of having such limited time coverage, the temporal (i.e. year-to-year) variability cannot be reliably measured, and therefore this critical component is missing from EPA's threshold calculation. Instead, the EPA simply ignores the year-to-year variability by utilizing stations aggregated over years, which, for 70% of the stations, is a single observation in a single year. This methodology does not produce statistically defensible criteria that can be used to judge whether an annual site mean is or is not out of compliance.²³

EPA also proposed an alternative methodology developed by the FDEP. This methodology utilizes data collapsed to the waterbody-year level, averaged over stations and sampling events. With sufficient data, a statistical method that considers the spatial (station-to-station) and

²² 40 C.F.R. 131.11(a).

²³ Info Tech, *Critique of EPA's Proposed of EPA's Proposed Numeric Nutrient Criteria for Streams*, (April 20, 2010). The full text of this critique, as well as a signed affidavit from Dr. Jim McClave of Info Tech and Dr. McClave's curriculum vitae, are enclosed with these comments.

temporal (year-to-year) variability *could* be used to develop a statistically reliable criterion,²⁴ at least for the streams from which the data was collected. EPA's use of aggregated data that ignores the variability inherent in the data, however, will not reliably measure nutrient levels needed to regulate water quality.²⁵

Regardless of which set of standards are adopted -- that developed by EPA or FDEP -- the chance of declaring a site out of compliance when it is truly in compliance is a critical attribute of any test criteria. The probability of incorrectly declaring a site out of compliance is referred to as the "false positive rate" for the compliance criteria. False positive rates are routinely calculated and published for medical screening tests, where a "false positive" occurs when the test incorrectly indicates an individual has a disease and treatment is therefore unnecessarily applied. The goal is to develop tests that have low false positive rates, particularly when the treatment is invasive and expensive. Similarly, the false positive rates for water quality compliance criteria are important in evaluating the likelihood of undertaking extensive, expensive, but ultimately unnecessary, remedial actions.²⁶

EPA apparently attempts to overcome its inadequate data problem by using the 75th percentile to derive its instream criteria for Florida's streams. This method generates unacceptable false positive levels exceeding 25%, even assuming the criteria are calculated reliably, which, as explained above, they are not. The actual false positive rates may be much higher due to the insufficient data, and improper data aggregation, employed by the EPA. This means that sites that are fully compliant will have at least a 25% chance of being declared out of compliance. Although FDEP's use of the 90th percentile (in its draft rule promulgated in response to the Necessity Determination) would in theory result in more reasonable false positive rates, the criteria still must be based on sufficient data to be reliable. In addition, the criteria must be applied at the same level at which it is calculated, which for the FDEP data is to water body annual means, and not site level annual means, as EPA appears to be proposing.²⁷

Similar to EPA's instream values for streams, EPA's instream values for canals fail a robust statistical analysis.²⁸ EPA's use of the 75th percentile results in the same fatal flaw for canals as it did for streams: an unacceptably high false positive rate. EPA's false positive rate flaw is compounded by EPA's decision to ignore site-to-site variability and develop the proposed criteria using data aggregated across sites. And the false positive rate flaw is even further compounded by EPA's use of a long-term arithmetic mean of annual geometric means. The end result is statistically indefensible canal criteria.

EPA could conceivably correct data flaws in its application of the reference condition to streams and canals by collecting sufficient data upon which to base a compliance test, consider and analyze all sources of variability, and then determine the criteria for the test based on sound scientific principles. However, this correction would take time, and time is not something EPA

²⁴ Statistically reliable, of course, does not equate to biologically relevant.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ Info Tech, *Critique of EPA's Proposed of EPA's Proposed Numeric Nutrient Criteria for Canals*, (April 20, 2010).

has provided itself in the Consent Decree. Further, as explained in the preceding section, improving the application of the reference stream approach would not render the approach defensible for deriving nutrient criteria.

Thus, not only is the reference stream approach an invalid means of developing nutrient criteria, but EPA's application of the reference stream approach is flawed. Again, this analysis demonstrates that EPA has not developed scientifically defensible numeric nutrient criteria for streams or canals. The appropriate action for EPA to take is to revoke the necessity determination and secure judicial relief from the Consent Decree, so FDEP can resume its management of Florida's sophisticated nutrient water quality programs.

IV. Florida does not need EPA's numeric nutrient criteria to comply with the Clean Water Act

The FWEA Utility Council, FSAWWA Utility Council, and FRWA believe that EPA's numeric nutrient criteria rulemaking is unwarranted. If and when EPA rethinks its approach to developing numeric nutrient criteria, EPA should defer to the State of Florida, which has a long, proud history of progressively dealing with nutrient issues. Such due deference would be directly in line with the cooperative federalism established by Congress in the CWA.

In crafting the CWA, Congress cast the states as the lead player; EPA assumes an oversight role. Congress codified its intent "to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and to consult with the Administrator in the exercise of his authority under this chapter. ..." ²⁹ Congress gave the states "primary authority" in part because it was "[c]oncerned that federal promulgation would discourage state plans for water quality and 'would place in the hands of a single Federal official the power to establish zoning measures over to control the use of land within watershed areas' throughout the nation."³⁰ Further, Congress "recognize[d] that the States should have a significant role in protecting their own natural resources" and thus gave states "a strong voice in regulating their own pollution."³¹

Consistent with the states' featured role, Congress only allows EPA to impose federal standards when EPA first conclusively determines such new standards are "necessary" for the state to comply with the CWA.³² Such federal action is extraordinary. As EPA has itself noted,

²⁹ CWA § 101(b) (codified as amended at 33 U.S.C.A. § 1251(b) (2009)).

³⁰ *Miss. Comm'n on Natural Res. v. Costle*, 625 F.2d 1269, 1272 (5th Cir. 1980) (citing H. Rep. 215, 89th Cong., 1st Sess., reprinted in (1965)).

³¹ *Int'l Paper Co. v. Ouellette*, 479 U.S. 481, 489 (1987).

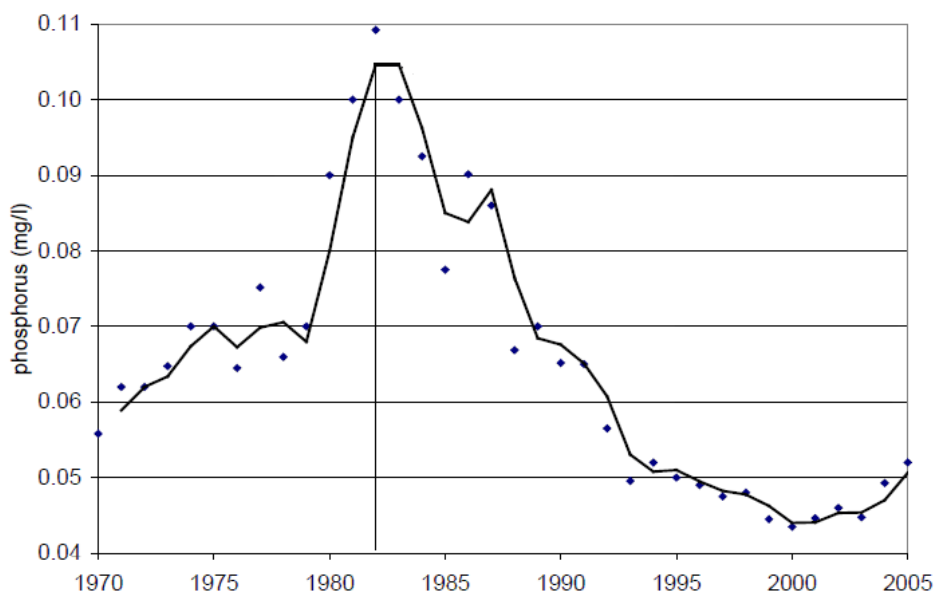
³² CWA § 303(c)(4)(B). Despite the statutory requirement that EPA issue determinations only when determined to be necessary under the CWA, other EPA documents indicate that EPA considered nonstatutory factors in reaching its determination. Specifically, EPA issued the determination in an effort to promote the settlement of a lawsuit. See Memorandum from Luis Luna to Stephen Johnson, *One-time Delegation of Authority for the Purpose of Determining Pursuant to Section 303(c)(4)(B) of the Clean Water Act Whether the State of Florida Needs New or Revised Water Quality Standards for Nutrients*, (Dec. 22, 2008); State-EPA Nutrient Innovations Task Group, *An Urgent Call to Action: Report of the State-EPA Nutrient Innovations Task Group*, 30 (Aug. 2009) (identifying "EPA determinations to establish numeric standards in response to litigation" as an agency nutrient management strategy); see also, FWEA Utility Council, Notice of Intent to File Suit under § 505 of the Clean Water Act (Aug. 13, 2009).

“Federal promulgation of State water quality standards should be a course of last resort. It is symptomatic of something awry with the basic statutory scheme.”³³

EPA has yet to demonstrate that Florida needs numeric nutrient standards, much less demonstrated that Florida’s water quality standards program has gone “awry.”³⁴ The January 2009 determination letter primarily justified EPA’s decision on general assertions that such standards would improve the state’s TMDL and NPDES programs. However, neither of EPA’s “regulatory convenience” justifications withstands close scrutiny, particularly in light of the regulatory implications of EPA’s proposed rule. EPA’s proposed rule and subsequent workshop presentations backfilled EPA’s rationale for federal involvement based on concerns regarding blue baby syndrome, bladder cancer, liver failure, red tide events, algal blooms, and generally declining water quality. Again, none of EPA’s justifications survive close scrutiny.

V. Florida’s nutrient water quality is not getting worse

At a December 2009 meeting of the Governor and Cabinet, FDEP Secretary Sole was asked whether assertions that nutrient problems are getting worse in Florida were true, and his response was: “I am hugely confident that statement is not true.”³⁵ The Secretary is right. Floridians should be proud of the work that their state, local governments, regulated industries, and everyday citizens have done to address the quality of Florida’s waters. The fruits of Floridians’ labors can clearly be seen in the following 2008 chart of phosphorus trends in 3,300 of Florida’s surface waters:³⁶



³³ EPA, *Notice of Final Rule, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants; States' Compliance*, 57 Fed. Reg. 60848, at 60858 (Dec. 22, 1992).

³⁴ EPA regulations specifically acknowledge that a narrative criterion is appropriate “where numerical criteria cannot be established.” 40 CFR 131.11(b)(2).

³⁵ FDEP Secretary Michael Sole, Florida Governor and Cabinet December 8, 2009 Board Meeting, Official Transcript at <http://www.myflorida.com/myflorida/cabinet/mart.html>.

³⁶ FDEP, *Integrated Water Quality Assessment for Florida: 2008 305(b) Report and 303(d) List Update*, 33 (Oct. 2008) (notations omitted), available at http://www.dep.state.fl.us/water/docs/2008_Integrated_Report.pdf.

In addition to this general declining trend in phosphorus since the early 1980s,³⁷ substantial efforts in Florida are leading to dramatic improvements to the water quality of some of Florida's most prominent surface waters: Lake Apopka, Tampa Bay, and Sarasota Bay.

Lake Apopka

EPA's presentation during public workshops in February included a 1995 picture of Lake Apopka. This picture showed Lake Apopka covered in a dense algal bloom, and the clear assertion was that EPA's proposed numeric nutrient standards could be justified based in part on the nutrient impairment of Lake Apopka. It is unreasonable to draw any relevant conclusions from a 15-year old picture of Lake Apopka.

As a threshold matter, isolated pictures of Lake Apopka and a handful of other Florida surface waters cannot conceivably justify statewide imposition of numeric nutrient criteria. In the words of Dr. Garrett Hardin in his groundbreaking 1968 article, *The Tragedy of the Commons*:

“One picture is worth a thousand words,” said an ancient Chinese; but it may take 10,000 words to validate it. It is as tempting to ecologists as it is to reformers in general to try to persuade others by the way of the photographic shortcut. But the essence of an argument cannot be photographed: it must be presented rationally – in words.³⁸

The epilogue to EPA's 1995 snapshot of Lake Apopka proves Dr. Hardin's point. The picture predates Florida's TMDL program by five years and fails to acknowledge the good work of the St. Johns River Water Management District (SJRWMD) and other Florida stakeholders to recover the lake. As SJRWMD recently explained

Historically, Lake Apopka was clear, densely vegetated, and well known for its sports fishery. SJRWMD is currently restoring thousands of acres of muck farms, adjacent to Lake Apopka and the Ocklawaha chain of lakes, to aquatic and wetland habitat. These activities include removing internal and external nutrient loads, restoring wetland and river habitats, and managing water levels to mimic the natural hydrologic cycle (FDEP 2001). After years of decline, SJRWMD restoration efforts appear to be improving water quality in the lake. Basinwide, these efforts appear to be paying off, as the Ocklawaha Basin has the highest percentage of improving stream and lake sites when compared to the other basins.³⁹

³⁷ Secretary Sole represented in December 2009 that the slight uptick in Phosphorus levels observed in the 2004-2005 timeframe was related to the abnormal hurricane season during those years. In fact, it is likely that the precipitous decline in phosphorus pollution in the late 1990's was due at least in part to the severe drought Florida experienced during this time. This drought concluded abruptly with the 2004 hurricane season, and Florida has returned to more “normal” weather patterns.

³⁸ Garrett Hardin, *The Tragedy of the Commons*, SCIENCE (Dec. 13, 1968).

³⁹ SJRWMD, 2004 *Status and Trends in Water Quality at Selected Sites in the St. Johns River Water Management District*, at 50.

The SJRWMD further reports that phosphorus levels have been reduced by 56% and water clarity has improved by 54% over earlier high levels.⁴⁰ Additionally, recent pictures provided by the SJRWMD paint a very different picture than those shown by EPA at its public workshops.⁴¹

Instead of misleading Floridians regarding the current state of Lake Apopka, EPA should commend SJRWMD and other Florida stakeholders for their extraordinary efforts in recovering this lake.

Tampa Bay

As explained in great detail in the comment letter submitted by the Tampa Bay Nitrogen Management Consortium, water quality in the Tampa Bay estuary has improved dramatically since the 1970s, when almost 50% of the bay's seagrass populations died off as a result of insufficient light and poor water quality.⁴² Thanks to efforts of stakeholders in Tampa Bay area, the once nutrient degraded reaches of Tampa Bay now support 30,000 acres of seagrass -- more than at any time measured since the 1950s.⁴³

Sarasota Bay

Similar to Tampa Bay, water restoration efforts in Sarasota Bay have resulted in substantial water quality and aquatic habitat improvements. The Sarasota Bay Estuary Program provides the following top ten list of program accomplishments:

1. Fifty percent reduction in nitrogen loading inputs to the Bay since 1988 resulting in significant improvements in water quality and water clarity
2. Creation or enhancement of 5,500 acres of seagrasses
3. Restoration and enhancement of 250 acres of intertidal wetland habitat
4. Establishment of the first oyster re-colonization project for the Bay
5. Creation of 20 new ecological parks around the Bay
6. Manufacture and deployment of 2500 artificial reef modules
7. Creation and continued promotion of the Gulf Coast Heritage Trail to provide public access to points of historical, cultural and environmental interest around the Bay
8. Establishment of a Special District within the State of Florida to manage Bay resources
9. Implementation of a comprehensive public education program including PIER,

⁴⁰ SJRWMD, Lake Apopka, Water Quality Improvements, North Shore Restoration, available at http://sjr.state.fl.us/publications/pdfs/fs_lapopka.pdf.

⁴¹ *Id.*

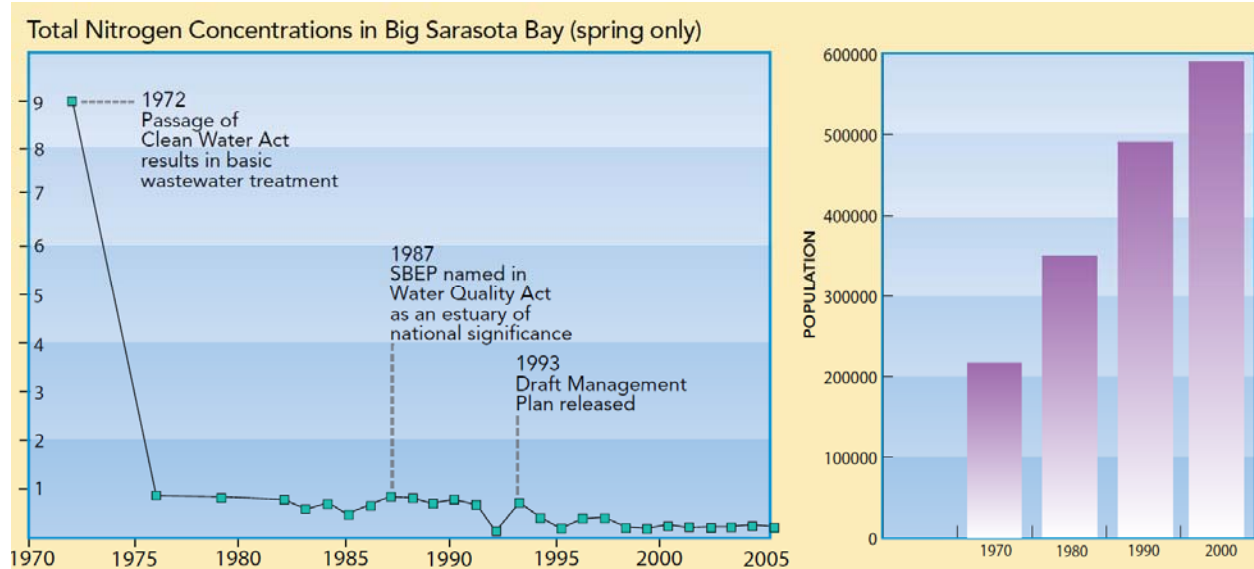
⁴² Tampa Bay Nitrogen Management Consortium, *Comments and Request Regarding the Development of Protective Loads for the Tampa Bay Estuary as It Relates to Establishing Numeric Nutrient Criteria for Lakes, Flowing Waters and Estuaries in Florida* (March 4, 2010), available at http://www.tbeptech.org/attachments/074_FINAL_NMC_Response_NNC_03082010.pdf.

⁴³ *Id.* In August 2009, the State-EPA Nutrient Innovations Task Group -- a group that included the Director of EPA's Office of Science and Technology -- noted these significant achievements in Tampa Bay. State-EPA Nutrient Innovations Task Force, *An Urgent Call to Action*, 11 (August 2009), available at www.epa.gov/waterscience/criteria/nutrient/nitgreport.pdf.

Sarasota Bay Buddies and Florida Yards & Neighborhoods

10. Provide outdoor and ecological education opportunities for approximately 6200 local school children since 2004.⁴⁴

The Sarasota Bay Estuary Program has accomplished these objectives in spite of the dramatic population growth in the Bay Area:⁴⁵



These nutrient trends clearly undercut the EPA’s repeated assertions in the proposed rule’s preamble that population growth necessarily equates to increases in nutrient concentrations in surface waters.⁴⁶

The water quality enhancements to Sarasota Bay are due in no small part to the efforts of the wastewater treatment community in the Bay area. Wastewater treatment utilities have invested in advanced wastewater treatment systems, reclaimed water beneficial reuse programs, and septic-to-sewer programs.⁴⁷

VI. EPA cannot justify its federal takeover of Florida’s nutrient water quality standards program on periodic red tide events

The preamble to EPA’s proposed rule includes ad nauseam citations to red tide events in Florida as justification for its proposed numeric nutrient criteria; however, EPA fails to acknowledge that the prevailing scientific opinion is that onshore activities in Florida do not cause such events.

⁴⁴ Sarasota Bay Estuary Program, SBEP Accomplishments, available at <http://www.sarasotabay.org/aboutsbep-accomplishments.html>.

⁴⁵ Sarasota Bay Estuary Program, State of the Bay 2006, 10 (2006), available at http://www.sarasotabay.org/pdfs/StateOfTheBay_06.pdf.

⁴⁶ 75 Fed. Reg. at 4175, 4180, 4181.

⁴⁷ Sarasota Bay Estuary Program, State of the Bay 2006, 11-12 (2006), available at http://www.sarasotabay.org/pdfs/StateOfTheBay_06.pdf.

“Red tide” is the common name for high concentrations of the harmful marine alga *Karenia brevis*, one of many types of Harmful Algal Blooms (HABs).⁴⁸ It is sometimes assumed that red tide events are anthropogenic water nutrient loadings, which lead to eutrophication.⁴⁹ Perceptions of increased bloom frequency are partially attributable to increased scientific awareness and detection capabilities, which have increased significantly in recent years.⁵⁰

It is well known that in many instances, HABs are caused by natural factors such as circulation, upwelling relaxation, and river flow.⁵¹ These are substantially implicated with red tides in Florida, where a number of natural factors interact to cause blooms of *Karenia brevis*.⁵² Of course *Karenia* blooms can be natural, as evidenced by reports of Spanish explorers in the 1500s, (and as documented more carefully as early as the 1840s).⁵³

There is little consensus on the exact mechanisms causing *Karenia* blooms. The theory with the most support has been developed at length by Stumpf et al. They found that *Karenia* blooms develop even when the nutrients on the west Florida shelf are low.⁵⁴ Summer winds push water and nutrients from the Mississippi River plume onto the west Florida shelf, where fall upwelling pushes these concentrations onshore, resulting in blooms.⁵⁵ Thermal fronts in the winter can re-intensify the blooms.⁵⁶ Stumpf et al. find that the nutrient loads found in some of these studies from Florida rivers are an unlikely source of growth of *Karenia* blooms.⁵⁷ Even at the maximum nutrient loads these rivers might provide, currents probably disperse them too quickly to cause blooms.⁵⁸ These loads are quite small and short in duration compared to the nutrients from the Mississippi River.⁵⁹

No other study has yet been able to integrate available data into a cognizable theory. Researchers have not been able to otherwise identify nutrient sources adequate to support high-density growth of the *Karenia* species.⁶⁰ This explains why *Karenia* blooms are less frequent off the Texas coast -- because Texas rarely has upwelling -- even though nutrient loads are often higher there.⁶¹ This conclusion also is considered more satisfactory than previous natural cause

⁴⁸ R.H. Pierce & M.S. Henry, *Harmful Algal Toxins of the Florida Red Tide (Karenia brevis): Natural Chemical Stressors in South Florida Coastal Ecosystems*, 17 *Ecotoxicology* 623, 623 (2008).

⁴⁹ Kevin G. Sellner et al., *Harmful Algal Blooms: Causes, Impacts & Detection*, 30 *J. Ind. Microbiology & Biotechnology* 383, 383 (2003). *See, e.g.*, Pierce & Henry at 629 (speculating that “human activities” generate the nutrients necessary for *Karenia* blooms, but providing no evidence, in a study that focused on the effects of the blooms, rather than their causes).

⁵⁰ Donald M. Anderson, *Approaches to Monitoring, Control, and Management of Harmful Algal Blooms*, 52 *Ocean & Coastal Mgmt.* 342, 343 (2009)..

⁵¹ *Id.*

⁵² Sellner et al. at 387-88.

⁵³ Pierce & Henry at 623-24 (citing numerous scientific and historical sources). *See also* Richard P. Stumpf, *Hydrodynamic Accumulation of Karenia off the West Coast of Florida*, 28 *Continental Shelf Research* 189, 203 (2008) (citing P.M. d’Anghiera, *De Orbe Novo, The Eight Decades of Peter Martyr D’Anghera* (1912).

⁵⁴ *Id.* at 189.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.* at 209.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.* at 190, 207.

⁶¹ *Id.* at 191, 209.

theories, such as that dust deposition indirectly causes *Karenia* blooms is inadequate to completely explain historic blooms.⁶²

Even the studies that have concluded that there could be a relationship between nutrient-rich runoff and *Karenia* blooms recognized the limitations of such conclusions. For example, Vargo et al. found that “a combination of sources is required to maintain populations...,” and “[i]dentifying nutrient sources, primarily nitrogen (N) and phosphorus (P), sufficient to support high biomass blooms ... has remained problematic.”⁶³ In another study, Olascoaga et al. summarized the various theories of *Karenia* bloom development and found two nearshore nutrient sources near the bloom they studied, which “were inferred” to be its cause.⁶⁴ However, they admitted that current technology makes “the early stage of the development of HABs” quite difficult to detect, “which makes it quite difficult to test [any of these] theories.”⁶⁵

EPA has already acknowledged, in other contexts, the state of the science on this issue. It sponsored, and its scientist participated in, a “roundtable discussion to develop a consensus on the relationship between eutrophication and [HABs].”⁶⁶ The consensus recognized the complex interactions causing HABs and the need for individualized study of the many organisms causing HABs.⁶⁷ There were few comments in this consensus concerning red tides in Florida, but the comments that were made are revealing. One pointed to evidence that *Karenia* blooms have natural sources. Another pointed to the very unusual circumstances leading to a *Synechococcus* blue-green algae blooms in Florida Bay, none of which were attributable to normal runoff.⁶⁸

This scientific literature demonstrates that EPA cannot justify its federal takeover of Florida’s nutrient water quality program based on red tide events. Simply stated, there is no reasonable expectation that numeric nutrient criteria are necessary or appropriate to eliminate or reduce red tide events in Florida.

VII. EPA cannot justify its federal takeover of Florida’s nutrient water quality standards program based on claims concerning bladder cancer

The preamble to EPA’s proposed rule attempts to justify EPA’s federal takeover of Florida’s nutrient water quality standards program based in part on an assertion that “[p]ublic health concerns related to eutrophication include...possible formation of disinfection byproducts in drinking water, some of which have been associated with serious human illnesses such as bladder cancer.”⁶⁹ EPA supports the linkage between eutrophication and bladder cancer by citing to (1) an obscure study in Spain analyzing the correlation between bladder cancer and

⁶² *Id.* at 209-10 (discussing theory posited in J.J. Walsh, *Red Tides in the Gulf of Mexico: Where, When, and Why?*, 111 J. Geophysical Research C11003 (2006)).

⁶³ *Id.* (recognizing that *Karenia* blooms occur frequently and persist for months on the West Florida Shelf, which is oligotrophic).

⁶⁴ M.J. Olascoaga et al., *Tracing the Early Development of Harmful Algal Blooms on the West Florida Shelf with the Aid of Lagrangian Coherian Structures*, 113 J. Geophysical Res. C12014 (2008).

⁶⁵ *Id.* at C12016.

⁶⁶ J. Heisler et al., *Eutrophication and Harmful Algal Blooms: A Scientific Consensus*, 8 Harmful Algae 3, 3 (2008).

⁶⁷ *See id.* at 3-8.

⁶⁸ *Id.*

⁶⁹ 73 Fed. Reg. 4175, 4178.

chlorinated water in public water supplies and swimming pools and (2) a generic EPA website concerning the risk of cancer caused by disinfection byproducts in drinking water sources. In other words, EPA's sources supporting its assertions do not concern eutrophication, algal blooms, or nutrient standards. Rather, EPA seems to imply -- without any directly supporting authority -- that numeric nutrient standards for Florida surface waters will reduce the use of chlorine in public water supply utilities and thus reduce the rate of bladder cancer in Florida. This tenuous assertion ignores that the treatment and/or prevention of the formation of disinfection by-products is relatively easy, and the technology and processes are fairly well established. The claim also overlooks that EPA adopted a "Stage 1 Disinfectants and Disinfection Byproducts Rule" that applies to "all community and nontransient noncommunity water systems that treat their water with a chemical disinfectant for either primary or residual treatment."⁷⁰ Utility members report that Florida surface waters often have significant concentrations of Total Organic Carbon just from the run off from natural areas, and these conditions already require treatment for prevention of disinfection by-product formation. In addition, utilities simply do not as a rule treat and distribute water that has had algae in it because of taste and odor concerns. So, although it may be true that if algae laden water were filtered, then chlorinated, then served to customers, who then drank the foul tasting water for many years, that bladder cancer could go up, but the simple fact is none of these things actually happen. The water treatment industries practices, the public's aesthetic demands, and water treatment regulations themselves, all prevent it. It might be fair to say that to the extent that anthropogenic activity might increase the prevalence of algae in an urban water body that water body is rendered temporarily unusable as a public water supply. It is incorrect, however, to infer that the mere presence of algae increases bladder cancer rates on waters that are not used as public drinking water supplies -- and would not be used -- because of the presence of algae.

As anyone who has ever been touched by cancer can confirm, the word "cancer" carries a unique emotional impact, and an assertion that a particular activity or event is linked to cancer should be carefully made, particularly when it is a public servant making the assertion. In light of the paltry support for this justification for its proposed rule, EPA should formally retract its bladder cancer assertion in the preamble.

VIII. EPA cannot justify its federal takeover of Florida's nutrient water quality standards program based on claims of blue baby syndrome in Florida

EPA's preamble and public workshop presentations attempt to justify the proposed nutrient standards based on concerns that elevated nitrates in Florida's drinking water supply will cause or has caused cases of "blue baby syndrome" in Florida. From the outset, this claim ignores that Florida already has a drinking water standard of 10 mg/L Nitrate-Nitrite.⁷¹ Further, our correspondence and conversations with Florida Department of Health staff did not uncover any record of a blue baby syndrome occurrences in Florida.⁷²

⁷⁰ EPA, Stage 1 Disinfection and Disinfection Byproducts Rule, at <http://www.epa.gov/safewater/mdbp/dbp1.html>; see also 40 CFR Parts 9, 141, and 142

⁷¹ Rule 62-550.310(1)(a)-(b), F.A.C.

⁷² See enclosed email correspondence.

So, similar to EPA's tenuous bladder cancer rationale, EPA's "blue baby syndrome" justification for this rulemaking does not survive even passing scrutiny. Again, one has to wonder why federal public servants would attempt to justify an environmental policy on hollow claims that appear designed simply to inflame public emotion. In light of these facts, EPA should formally retract "blue baby syndrome" as a justification for this proposed rule.

In sum, when one peels away EPA's various spurious justifications for its proposed rule, all that is left is a progressive state water quality program; a lawsuit that led to a Consent Decree; a federal takeover of the state program; and claims by EPA that the takeover will benefit state environmental programs. EPA's claims of program benefits to environmental programs, however, are also severely flawed.

IX. The finalization of EPA's proposed rule will cause severe negative policy consequences

EPA claims that its proposed rule will facilitate the administration of Florida's TMDL and NPDES programs. The opposite is true. The proposed rule will upset state administration of both of these programs. Additionally, the proposed rule will severely impact other state policies supporting the development of alternative water supplies, particularly including reclaimed water supply development.

Florida's TMDL Program

The State of Florida has perhaps the most sophisticated TMDL program in the nation. Even EPA's necessity determination lauded the state's Impaired Waters Rule and Basin Management Action Plan (BMAP) process.⁷³ A 1999 Consent Decree conceived the state's TMDL program,⁷⁴ which the Florida Legislature birthed in the Florida Watershed Restoration Act.⁷⁵ Unlike the TMDL programs of other states, a TMDL is not an aspirational goal in Florida; rather, the establishment of a TMDL sets the state and regulated stakeholders (both point and non-point sources) into action to recover the water body. The Florida Legislature has allocated millions of dollars to FDEP in support of its existing, science-based, TMDL program, and many Florida utilities, on behalf of the communities they serve, are investing in environmentally beneficial projects designed to meet a TMDL nutrient target. As described above and in the submitted comments of JEA, GRU, Clay County Utility Authority, the Tampa Bay Estuary Program Nitrogen Management Consortium, and other Florida stakeholders, these programs are reaping environmental benefits.

Unfortunately, EPA's proposed rule snatches defeat from the jaws of victory for these TMDL waters. This proposed rule undoes the very solution for recovering those impaired waters. In Kafkaesque fashion, EPA only provides an opportunity to potentially have existing, EPA-

⁷³ See, EPA Necessity Determination. The state implements BMAPs to achieve numeric nutrient endpoints. See <http://www.dep.state.fl.us/Water/watersheds/bmap.htm>.

⁷⁴ See enclosed 1999 TMDL Consent Decree.

⁷⁵ Laws of Florida, 99-223, codified §§ 403.067, 805, Fla. Stat.

approved TMDLs considered as site specific alternative criteria.⁷⁶ Instead of destabilizing Florida's sophisticated TMDL program, EPA should allow the state to use the program to solve any to any nutrient impairment problems, and EPA should adopt existing EPA-approved TMDLs as site specific nutrient criteria.

To add insult to injury, EPA in its public workshops paraded pictures of Lake Apopka, the Lower St. Johns River, and other waters that already have TMDLs to correct nutrient problems (or are in the queue to get a TMDL), as justifying EPA's intervention into this issue. EPA representatives failed to mention that these waters violate Florida's existing narrative criterion. EPA also failed to explain its tortured logic whereby impaired waters that already have EPA-approved numeric endpoints can justify the need for establishing federal standards for other waters. Every TMDL DEP has established (which again, includes a numeric endpoint designed to recover a water body with nutrient problems) has been approved by EPA, and with the ink still wet on many of its approval documents, EPA points to the very same waters and alleges that despite the ongoing investment of public monies on these TMDLs and EPA's approval of these TMDLs, EPA must impose new nutrient criteria on these and all other state waters.

In addition to harming projects recovering water bodies that already have TMDLs, EPA's overly conservative nutrient criteria will also harm Florida's TMDL program in general, because waters that do not need TMDLs will be listed as impaired and placed in the queue for a TMDL. Overwhelming Florida's TMDL program by listing numerous unimpaired waters cannot be reasonably viewed as helping the program. The state should not spend its limited resources developing a Basin Management Action Plan (BMAP) and attempting to "recover" biologically healthy waters such as the Econfina River or Black Water Creek; however, that is exactly what will happen with the finalization of EPA's proposed rule.

Of course, the state could attempt to secure site specific alternative criteria for the unimpaired waters swept up by EPA's proposed rule and wrongly declared impaired, but this too would require a significant expenditure of state resources. Also, if a stated objective of EPA's proposed rule is to make the state program easier to administer by eliminating the need for time consuming site specific analyses through the TMDL program, then how is that objective served when the proposed standards bear such little relation with reality that the state will need to pursue numerous exceptions to the rule on site specific bases?

EPA cannot justify its proposed rule based on claims that it will facilitate administration of the state's TMDL program.

Florida's NPDES Permitting Program

The preamble for the proposed rule is duplicitous when it comes to the impact of the rule on NPDES permittees. On the one hand EPA justifies its proposed rule based on claims the numeric standards will facilitate the issuance of NPDES permits,⁷⁷ and on the other hand, EPA

⁷⁶ Letter from Denise Keehner, EPA, to Jerry Brooks, FDEP, 3 (Sept. 16, 2009) (explaining how FDEP can package existing, EPA-approved TMDLs, for consideration for re-approval by EPA as site specific alternative criteria), available at http://www.dep.state.fl.us/water/wqssp/nutrients/docs/epa_comments_091609.pdf.

⁷⁷ 75 Fed. Reg. at 4181-82.

claims that “[e]ntities discharging nitrogen or phosphorus to lakes and flowing waters of Florida could be indirectly affected by this rulemaking because WQS are used in determining National Pollutant Discharge Elimination System (“NPDES”) permit limits.”⁷⁸ EPA should understand its own water quality standards program well enough to know that the numeric water quality standards will be used as water quality based effluent limitations in NPDES permits. In other words, NPDES permittees, including a number of Florida utilities, are directly impacted by this rulemaking.

EPA, in its oversight role, will impose these proposed nutrient standards into discharge permits. FDEP will be unable to impose these standards itself, because under Florida law, FDEP cannot impose a permit condition that has not been approved by the state Environmental Regulation Commission or expressly required by state statute.⁷⁹ For years FDEP has issued -- and presumably will continue to issue -- NPDES permits with numeric Water Quality Based Effluent Limitations based on the state’s existing narrative criteria.⁸⁰ Thus, NPDES permittees will be forced to deal with a two-track permitting system: track one on the state level and track two on the federal level.⁸¹ This outcome cuts against EPA’s suggestion that its numeric nutrient criteria can be justified on the grounds of administrative convenience.⁸²

The proposed TN standards will also uniquely impact wastewater treatment facilities with surface water discharges. EPA’s proposed TN standards will result in construction of new facilities that will inappropriately remove minute concentrations of inert forms of nitrogen that do not contribute to the degradation of surface water bodies.

Currently Florida utilities that discharge to surface waters use “best available treatment” (BAT) technologies that target significant reduction of ammonia-nitrogen a waste product of human activities and a nutrient known to contribute to surface water impairment. These BAT plants use a form of nutrient removal known as an Advanced Wastewater Treatment (AWT) process.

The AWT process converts the ammonia-nitrogen in three stages. First the ammonia-nitrogen is converted to nitrate-nitrogen, a plant nutrient responsible for surface water impairment. Then this nitrate-nitrogen is biologically converted and released to the atmosphere as harmless nitrogen gas. After this process is completed, a very small amount of organic-nitrogen will remain in the wastewater effluent. This remaining organic nitrogen constituent is basically inert and is the largest percentage of the total nitrogen that remains. Perhaps as high as 98% of the recalcitrant effluent total nitrogen that survives treatment may be in the organic form, and is not considered to be bio-available within receiving streams. The small amounts of organic-nitrogen contained in the effluent of an AWT plant does not contribute to surface water impairment to any

⁷⁸ 75 Fed. Reg. at 4177.

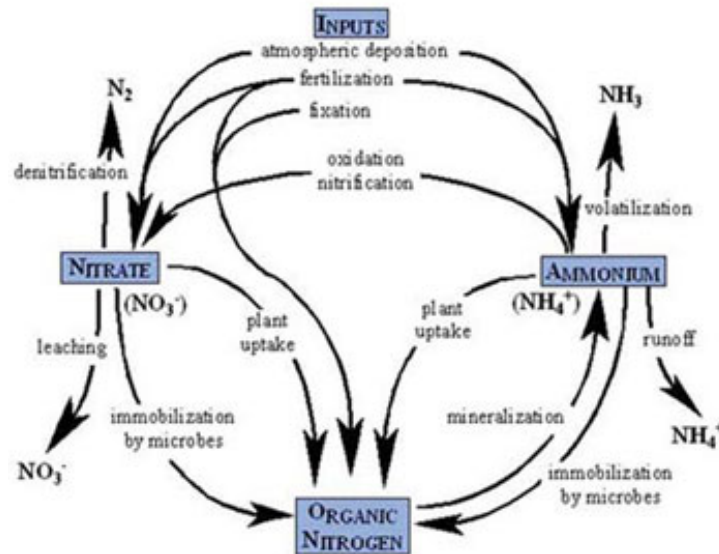
⁷⁹ §§ 120.52(10), 120.60, 403.804(1), 403.805(1), Florida Statutes. It is highly unlikely the regional standards, as presently proposed, would survive judicial scrutiny under state law. It is highly likely that an attempt by FDEP to pass rules implementing EPA’s crude numeric standards would face widespread opposition and litigation from Florida’s regulated public.

⁸⁰ See enclosed correspondence and supporting documentation from Jan Mandrup-Poulsen of FDEP, dated March 30, 2010.

⁸¹ EPA should consider whether this likely outcome will motivate the state to extend EPA’s takeover of Florida’s water quality standards program to also include a takeover of Florida’s NPDES permitting program.

⁸² 75 Fed. Reg. at 4175, 4181.

appreciable degree. Conversely, the forms of nitrogen in sewage that do contribute to nutrient impairment in receiving streams are quite readily removed by the BAT process. The figure below illustrates the nitrogen cycle and the uptake of ammonium and nitrate by photosynthetic plants such as algae.⁸³



In contrast, there are many natural causes of total-nitrogen discharge in a natural environment. These include: atmospheric deposition of nitrogen produced from discharges from the combustion of fossil fuels, effluents from septic tanks, leaching and runoff from direct application nitrogen containing commercial fertilizers from homeowners and agricultural uses, runoff from urban and agricultural areas, natural processes such as lightning and by the natural degradation of organic matter. All of these processes are contributors of ammonia-nitrogen, nitrate-nitrogen and organic-nitrogen to the receiving environment. All of these contributors produce forms of nitrogen that are significantly more bio-available than the organic-nitrogen or TN discharged from an AWT facility.

This lack of recognition by EPA of the nitrogen species and then ignoring their bio-availability is an incorrect application when assessing nitrogen contributions to surface water impairment.⁸⁴ In fact, EPA’s own users guide for estimating algal growth ignores the input of organic nitrogen as shown in the following figure from the EPA reference.⁸⁵

⁸³ The Habitable Planet, Ecosystems Online Textbook (Image: National Park Service), available at <http://www.learner.org/courses/envsci/unit/text.php?unit=4&secNum=4>.

⁸⁴ Hein, Pederson and Sand-Jensen, SIZE-DEPENDENT NITROGEN UPTAKE IN MICRO- AND MACROALGAE, Vol. 118, Marine Ecology Progress Series, 3/1995

⁸⁵ WASP7 Benthic Algae, Model Theory and Users Guide

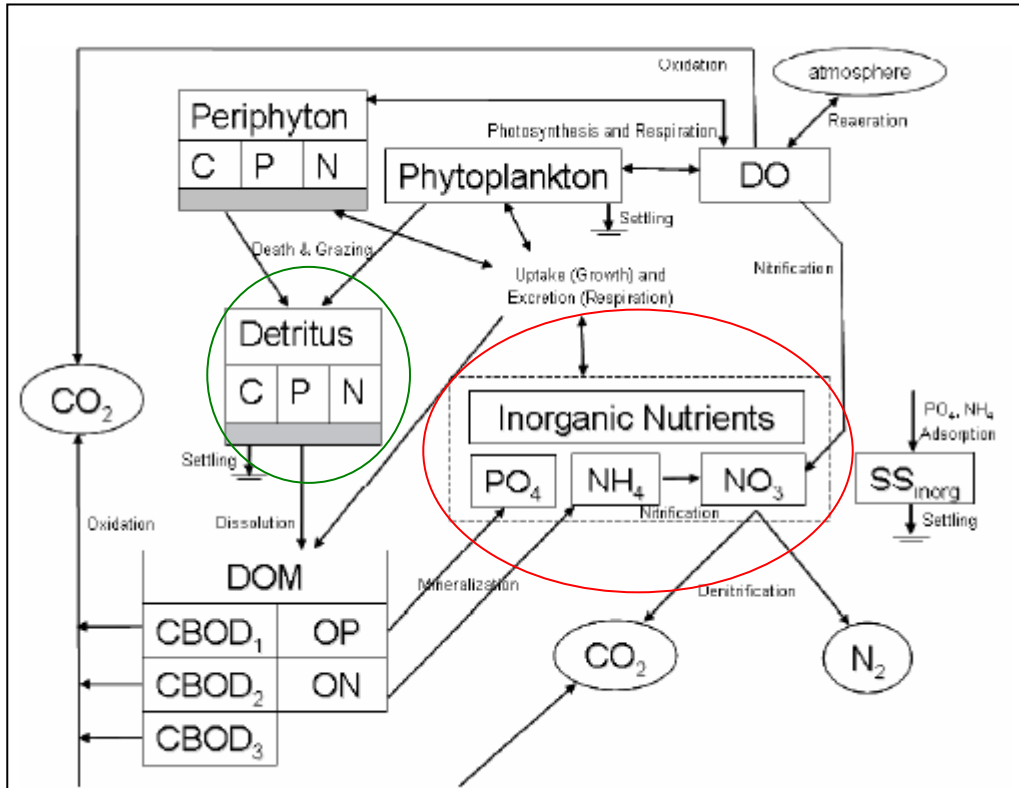


Figure 2 WASP Version 7 Eutrophication Kinetics

In the figure above and for algal modeling purposes, Inorganic Nitrogen Nutrient input variables are shown as Ammonium (NH_4) and Nitrate (NO_3) within the red circle. The Organic Nitrogen input variables (ON) are shown within the green circle. EPA's reference states, "these carbonaceous variables (as shown inside the green circle) are formed only by detrital dissolution, and are not linked directly to algal cell excretion or death. In other words, organic nitrogen input into surface water systems are not used as input variables for predicting algal growth by EPA's own model.⁸⁶

When all nitrogen forms are grouped together, the grouping erroneously targets AWT facilities organic nitrogen contributions as contributors to surface water impairment. This treatment significantly exaggerates the potential impacts from AWT plants and while minimizing the impacts of the actual sources of bio-available nitrogen from the many sources that were previously noted.

The following figure illustrates these contributions from various sources of biologically available nitrogen in surface water bodies.

⁸⁶ USEPA, WASP7 Benthic Algae, Model Theory and Users Guide, EPA 600/R-06/106 September 2006, <http://www.epa.gov>

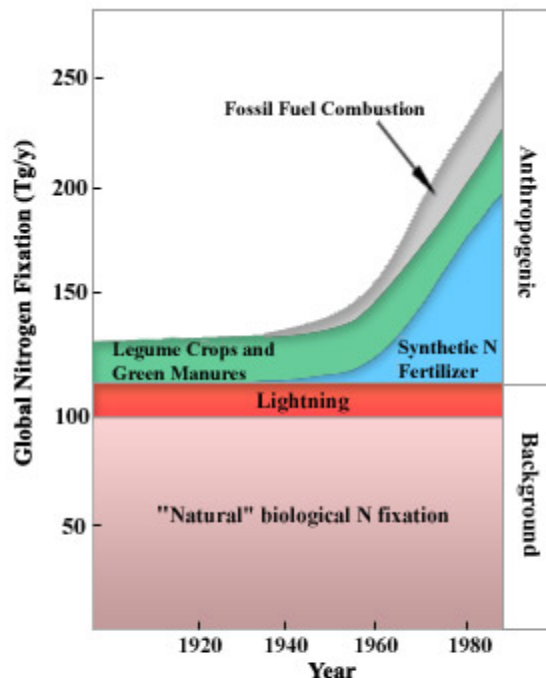


Figure 3: Recent increases in anthropogenic N fixation in relation to "natural" N fixation. Modified from Vitousek, P. M. and P. A. Matson (1993). Agriculture, the global nitrogen cycle, and trace gas flux. *The Biogeochemistry of Global Change: Radiative Trace Gases*. R. S. Oremland. New York, Chapman and Hall: 193-208.

Due to the specific nature of the Florida surface water receiving environment, many surface water bodies are phosphorus not nitrogen limited. This means that additional nitrogen inputs of any sort will have little or no effect on eutrophication. This phenomenon is prevalent in the Florida Citrus Belt.⁸⁷ In these cases where surface water bodies are phosphorus limited, removing additional nitrogen, as proposed by EPA with its numeric total nitrogen limits, has no measurable impact on improving water quality. Nitrogen limits should be scientifically established on a site specific basis as currently performed in Florida, when requiring beyond AWT "best available treatment" technologies for nutrient removal. Doing anything else is wasting valuable resources and producing "lost opportunity costs" for state residents.

EPA's failure to recognize or distinguish between the forms of nitrogen and grouping all nitrogen species under the total nitrogen label, ignores the long-standing practice of developing a sound scientific rationale for environmental regulations and for setting discharge limits. The grouping results in establishing confusing and complicated nutrient removal objectives with no real benefits. This grouping confuses the public who does not understand the scientific basis for the regulations. The end result is costly and ineffective wastewater treatment requirements and practices that the citizens of the State of Florida must build, operate and maintain.

⁸⁷ Lake Regions of Florida, Glenn Griffith (US EPA), Daniel Canfield, Jr. (University of Florida), Christine Horsburgh (University of Florida), James Omernik (US EPA), Sandra Azevedo (OAO Corp.), available: ftp://ftp.epa.gov/wed/ecoregions/fl/fl_lkreg_front.pdf

Use of a total nitrogen limit by EPA exacerbates an already inappropriate application of a numeric nitrogen limit. EPA has taken this a step farther and imposed a total nitrogen limit that has no relationship to the impairment of Florida waters. EPA then imposes this non-scientifically based standard on Florida's wastewater utilities. EPA's failure to differentiate the species of nitrogen will result in significant financial burdens with the net benefit of insignificant environmental results. Florida's current narrative criterion implicitly acknowledges that the potential for biological impairment caused by nutrient levels varies based on the bioavailability of the nutrient species; a numeric nutrient criterion should do the same.

NPDES permittees will be forced to comply with EPA's standards in the form of "end of the pipe" effluent limits. The only "relief" available under EPA's proposal would be securing a SSAC for the water body or applying for a "restoration standard." These relief mechanisms are only needed because of the crudeness of EPA's proposed criteria. With respect to the SSAC process, a regulated entity would be forced to do what EPA should have done in the first instance: derive a nutrient standard that bears a meaningful relationship with the water environment (i.e. actually determine the levels of nutrients needed by a specific water body). With respect to the proposed restoration standard concept, Florida would be forced to "restore" unimpaired waters until they each match EPA's broad brushed criteria. EPA has not explained how Floridians are to restore biologically healthy waters to nutrient levels they would not naturally meet.

Alternative Water Supply Development

In Florida, we are facing significant water supply challenges. Strains on traditional water supplies have led to caps on groundwater withdrawals in central Florida,⁸⁸ water use caution areas in southwest Florida,⁸⁹ and a substantial initiative to meet projected water demands in southeast Florida with reclaimed water.⁹⁰

EPA's proposed rule provides no indication that the agency has even considered how this rulemaking will affect regulatory programs and projects designed to achieve water supply demands. Florida's water management districts, however, are absolutely depending on the reuse of reclaimed water to meet projected water supply demands,⁹¹ and water supply utilities are also

⁸⁸ Groundwater withdrawals are presently capped by the three water management districts sharing jurisdiction over the "Central Florida Coordination," because the districts have concluded that "sustainable quantities of groundwater in central Florida are insufficient to meet all future public water supply demands and that there is an immediate need to develop and implement supplemental water supply projects." See <http://www.swfwmd.state.fl.us/projects/cfca/>; https://my.swfwmd.gov/portal/page/portal/pg_grp_sfwmw_watersupply/pg_sfwmw_watersupply_centralflcoord; and <http://cfcawater.com/>.

⁸⁹ The Southwest Florida Water Management District has established the "Southern Water Use Caution Area" in a region of Southwest Florida where the District has concluded that water resources will become critical over the next twenty years. See SWFWMD, SWUCA, at <http://www.swfwmd.state.fl.us/waterman/swuca/>.

⁹⁰ See discussion infra regarding Ocean Outfalls legislation.

⁹¹ SRJWMD, *2005 District Water Supply Plan, Fourth Addendum*, 5 (May 12, 2009) ("SRJWMD has estimated that 200 million gallons per day (mgd) of alternative water supplies or a reduction in demand through water conservation and increased use of reclaimed water (see subsection titled Replacement of Potable Water Supply Use) would have to be implemented to meet the projected water demands identified in Water Supply Assessment 2003 (WSA 2003) without resultant unacceptable impacts to water resources and related natural systems."), available at <http://sjr.state.fl.us/technicalreports/pdfs/TP/SJ2006-2Addendum4.pdf>; SWFWMD, *2006 Regional Water Supply*

investing in treatment systems that convert raw water sources (e.g. brackish water and sea water) into potable water.

Reuse of Reclaimed Water

Florida policy promotes the use of reclaimed water to meet these public supply demands. Chapter 373, Florida Statutes, states that “[t]he encouragement and promotion of water conservation and reuse of reclaimed water...are state objectives and considered to be in the public interest.”⁹² Further, the Florida Legislature has determined “that the reuse of reclaimed water is a critical component of meeting the state's existing and future water supply needs while sustaining natural systems”⁹³ FDEP facilitates the reuse of reclaimed water through its Water Resource Implementation Rule, which requires the FDEP and water management districts to advocate and direct the reuse of reclaimed water as an integral part of water management programs, rules and plans.⁹⁴

When a utility applies to FDEP for a permit to construct or modify a facility that provides reclaimed water for irrigation purposes, the utility must provide FDEP with reasonable assurances that the project will not “cause or contribute to violations of water quality standards in surface waters.”⁹⁵ FDEP rules require that “[i]f water quality standards cannot be met, additional treatment or disinfection shall be provided or other operational control measures shall be implemented.”⁹⁶

The adoption of EPA’s proposed nutrient criteria rule will seriously -- and needlessly -- impede the development of reclaimed water supplies. EPA’s proposed rule will place greater than 80% of Florida’s flowing waters -- including waters showing no signs of nutrient impairment -- in violation of water quality standards. Utilities developing reclaimed water irrigation projects located in these so-called impaired watersheds will be required to demonstrate that the projects do not “cause or contribute” to the nutrient impairment of those water bodies, even if the nutrient impairment is an illusory artifact of EPA’s broad-brushed regional nutrient criteria. These reuse permitting requirements are over and above the requirements imposed on utilities through the TMDL program (a TMDL program that of course will be overwhelmed by healthy, yet “nutrient impaired,” water bodies). Further, industries that may otherwise accept reclaimed water to meet

Plan (Dec. 2006) (“Reclaimed water, if used effectively and efficiently, has great potential to help meet the 2025 water supply demand.”), available at <http://www.swfwmd.state.fl.us/documents/plans/RWSP/previous/rwsp.pdf>; NWFWMMD, *2008 Region III Regional Water Supply Plan*, 9 (Aug. 2008) (“Reuse of treated wastewater and stormwater also comprises a strategy that holds promise for both reducing near term and managing long-term water demand.”) available at http://www.nwfwmd.state.fl.us/rmd/water_supply_planning/Region%20III%20RWSP_08-12-08%20FINALweb%20version.pdf; SFWMD, *Below the Surface: An In-depth Look at Water Reuse: A Safe and Effective Way to Save Water* (2005), available at <http://www.sfwmd.gov/portal/pls/portal/docs/15246931.PDF>.

⁹² § 373.250(1), F.S.

⁹³ § 403.064(1), F.S.; *see also*, § 373.1961(3)(f), F.S. (listing reuse system development as a criterion to guide WMD funding towards water supply projects that protect public and environmental health) and § 373.0831(4)(a)3, F.S. (stating that reuse water supply projects contributing to the “sustainability of regional water sources” shall receive “priority funding” from the WMDs).

⁹⁴ Chapter 62-40, F.A.C.

⁹⁵ Rules 62-610.850(1)(a); 610.800(1), F.A.C.

⁹⁶ *Id.* at (1)(d).

their non-potable demands for industrial processes may decline or be unable to use reclaimed water due to the impact of the nutrients in the reclaimed water on their industrial discharges.

The adoption of the proposed standards would particularly impact utilities in Palm Beach, Broward, and Miami-Dade County. In 2008, the Florida Legislature passed comprehensive ocean outfalls legislation that requires six major treatment facilities in southeast Florida discharging 300 million gallons per day of effluent through ocean outfalls to achieve 60 percent reuse of reclaimed water by December 31, 2025.⁹⁷ The Legislature passed this bill in response to strains on public water supply sources in southeast Florida,⁹⁸ because reports indicated that the groundwater supplies and “regional system” of the Everglades and Lake Okeechobee could not support the projected growth in public supply over the next twenty years.⁹⁹ In response, the Legislature mandated that these Southeast Florida utilities develop reuse systems to substitute potable water sources for urban and agricultural landscapes, industrial and commercial uses, and augmenting or recharging surface and groundwater supplies.¹⁰⁰

EPA’s proposed nutrient criteria for Florida canals places these utilities in an untenable position. On the one hand, the utilities must develop extensive reuse systems to comply with state law. On the other hand, the utilities must also comply with EPA’s crude canal standards through both the TMDL program and by demonstrating in their operating permit applications that their reuse systems will not cause or contribute to violations of water quality standards.¹⁰¹ Because discharges to groundwater have the potential to influence surface water quality in Southeast Florida,¹⁰² this will be an extraordinary, if not insurmountable, task.

Reclaimed water with nutrient concentrations of 3 mg/L-TN is generally considered the “gold standard” for domestic wastewater treatment effluent regulation, due to the limits of biological treatment.¹⁰³ Southeast Florida utilities faced with nutrient reductions due to EPA’s canal standards may be forced to utilize extraordinarily expensive membrane technologies to achieve further nutrient reductions. It is unclear what environmental benefit EPA’s nutrient criteria would achieve when applied to these reclaimed water providers, but it is clear that the implementation of a state public water supply program will be severely frustrated, and ratepayers in Southeast Florida will likely see their utility rates increase exponentially.

⁹⁷ 2008 Laws of Florida 232.

⁹⁸ See Florida Senate Bill Analysis and Fiscal Impact Statement, CS /CS / 1302 (April 2, 2008), available at <http://www.flsenate.gov/data/session/2008/Senate/bills/analysis/pdf/2008s1302.ga.pdf>.

⁹⁹ *Id.*

¹⁰⁰ While the cost of implementing this program is still disputed, a University of Florida study projected that the costs of developing these reclaimed water systems will range from \$1.85 to \$3.33 per 1000 gallons treated and cause the average sewer bill for these utilities to increase by nearly \$20 per month. Koopman/Heaney et al, *Ocean Outfall Study*, University of Florida Department of Environmental Engineering Sciences (April 18, 2006), available at <http://dep.state.fl.us/water/reuse/docs/OceanOutfallStudy.pdf>

¹⁰¹ Rules 62-610.850; 610.800, F.A.C.

¹⁰² See, e.g., C.D. Langevin, et al., *Numerical Simulation of Integrated Surface Water / Groundwater Flow and Solute Transport in the Southern Everglades, Florida*, USGS, available at http://time.er.usgs.gov/publications/abstracts/Langevin_paper.pdf; Harry Jenkins, *The Biscayne Aquifer in Southeast Florida*, Emporia State University (Spring 2009), available at <http://academic.emporia.edu/schulmem/hydro/TERM%20PROJECTS/2009/Jenkins/Harry.htm>.

¹⁰³ See, Carollo Engineers, *Technologies to Meet Numeric Nutrient Criteria at Florida’s Domestic Water Reclamation Facilities* (2010).

In light of this particularly troubling impact to a regional water supply initiative in Southeast Florida, we believe that key questions need to be answered by EPA regarding its proposed canal criteria:

- What constitutes a “reference canal” in EPA’s reference condition approach?
- What biological community is EPA trying to protect with its proposed canal criteria?¹⁰⁴
- Florida canals are not natural systems; rather, they are manmade alterations to the landscape that serve numerous vital functions, particularly including flood control. How has EPA taken these functions into account in deriving its standards?
- Why is EPA proposing a TN standard, when the agency specifically determined in 2007 that a TN standard was not needed for EPA’s Everglades nutrient TMDL, because there was no evidence of TN causing an imbalance of flora or fauna in canals?¹⁰⁵

Raw Water Sources

Several Florida public water supply utilities use brackish, marine, and similar raw water sources to meet public water supply demands. The typical process used to convert these sources into potable supplies is reverse osmosis. Reverse osmosis filtration results in the production of a concentrate solution that is typically high in sodium and also includes nutrient levels that vary based on the water source. The average TN and TP concentrations may be three to four times that of EPA’s proposed regional criteria.¹⁰⁶ The finalization of EPA’s proposed criteria will likely eliminate the option of discharging the concentrate and force utilities operating these facilities to either dispose of the concentrate via deep-well injection or by an energy-intensive combination of evaporation and landfill disposal of residue.

X. EPA’s Cost Analysis is Indefensible and Misinforms the Public

In conjunction with its proposed numeric nutrient criteria, EPA completed a preliminary estimate of compliance costs and benefits for its proposal in a document entitled “Preliminary Estimate of Potential Compliance Costs and Benefits Associated with EPA’s Proposed Numeric Nutrient Criteria for Florida” (hereinafter, “Cost Estimate”).¹⁰⁷ EPA’s Cost Estimate includes numerous unsupported assumptions, resulting in a misinformed and unrealistic estimate of the costs of complying with EPA’s proposed numeric nutrient criteria.

The threshold flaw in EPA’s Cost Estimate is that EPA inappropriately used DEP’s draft criteria to establish baseline costs. Instead of calculating costs based on the present state of regulations in Florida, EPA assumes that FDEP would have or has already passed its own numeric nutrient standards. EPA then cuts the difference between the costs of EPA’s standards and conceptual

¹⁰⁴ See 40 C.F.R. 131.2.

¹⁰⁵ See EPA, Proposed TMDL for Dissolved Oxygen & Nutrients In the Everglades (WBIDs 3252A, 3252B, 3252C, 3260, 3263, 3265B), 18 (Sept. 2007), available at http://www.epa.gov/region4/water/tmdl/florida/documents/Version2_Everglades_TMDL_9-30-07.pdf.

¹⁰⁶ See attached data sheet from the City of Boca Raton, Florida.

¹⁰⁷ Office of Water, EPA, Preliminary Estimate of Potential Compliance Costs and Benefits Associated with EPA’s Proposed Numeric Nutrient Criteria for Florida [hereinafter Cost Estimate] (2010), available at <http://www.flcitrusmutual.com/files/3b8175e3-d681-44c5-8.pdf>.

DEP standards (i.e. the baseline is the difference between “the costs necessary for compliance with FDEP’s draft water quality standard ... and any costs incurred to reduce nutrient loads to waters on the existing state Clean Water Action ... Section 303(d) list or with an existing total maximum daily load (TMDL).”)¹⁰⁸ By this logic, one can transform a large number, such as 50 billion, into a much smaller number with a simple adjustment: start counting at 49.5 billion.

This approach cannot be defended. FDEP itself has stated that “EPA inappropriately used [F]DEP’s draft criteria to establish baseline costs.”¹⁰⁹ FDEP’s draft rule, which has now been abandoned as a result of EPA’s Consent Decree with EarthJustice, never progressed beyond the most initial stages of Florida’s rule development process. Neither the regulatory costs nor the purported environmental benefits that might flow from the abandoned preliminary draft rule can therefore be taken as a given or as sunk costs that have already been incurred. Any of FDEP’s cost estimates related to the former draft rule should not be weighed heavily and cannot be relied upon, as they would only be very rough estimates based on a rule that was only in informal development.¹¹⁰

Notwithstanding that, EPA proposes to treat the costs associated with draft rule as given, or as sunk costs, that must be incurred regardless of whether EPA’s proposal is adopted. Yet that is simply not the case. Based on the rigors of Florida’s Administrative Procedures Act, it would be highly unlikely for FDEP’s draft rule to have been adopted as-is. In fact, EPA’s very proposal led to FDEP’s abandonment of the draft rule. Thus, a proper baseline for EPA’s Cost Estimate is the situation today, not the hypothetical situation after a draft, now-defunct rule was adopted. EPA implicitly acknowledges this by including an analysis of how much it would cost to implement FDEP’s draft rule, but this \$102-130 million is left out of any total cost estimates.¹¹¹

The second flaw with the Cost Estimate is that, while EPA’s benefits analysis provides an impression of precision, in reality it is so misleading and cursory it is completely as to be nearly useless. EPA prominently touts the estimated benefits associated with water quality improvements from its proposed numeric nutrient criteria.¹¹² Additionally, EPA insists that there are numerous “unquantified benefits” in this analysis.¹¹³ However, in its actual analysis, EPA indicates in bold type that its presentation is “a very rough benefit estimate.”¹¹⁴ Further, EPA explains that its analysis “depend[s] on a number of assumptions that we have not rigorously tested or been able to validate in other data or the literature.”¹¹⁵ The analysis concludes, “[p]robably most importantly, our assumptions about the nature of Florida water quality and expected changes heavily influence the results. If changes are larger than we were able to

¹⁰⁸ Cost Estimate, *supra* note 107, at executive summary 1. Even here, EPA obfuscates what it actually proposes. It takes the liberty of using a baseline that “differ[s] slightly” from the draft FDEP rule. *Id.* at n.1. It is not immediately clear that it is only a slight, inconsequential difference for EPA to combine two regions from the draft FDEP rule into one. In addition, it does not appear that EPA provides for any way to grandfather TMDLs already developed in Florida, unlike the draft FDEP rule.

¹⁰⁹ FDEP, *Main Concerns with EPA Proposal*, at 2.

¹¹⁰ FDEP did not reach the advanced rulemaking stage where the agency would have been required to prepare a Statement of Estimated Regulatory Costs pursuant to state law. *See* §§ 120.54-.541, Florida Statutes.

¹¹¹ *See* Cost Estimate, *supra* note 107, at executive summary; *id.* at attachment 1 8-1.

¹¹² *See* Cost Estimate, *supra* note 107, at 2, 13-14.

¹¹³ *Id.* at 14.

¹¹⁴ *Id.* at Attachment 2-2.

¹¹⁵ *Id.* at Attachment 2-8.

roughly estimate then benefits may be substantially higher.”¹¹⁶ The obvious corollary to this is if the estimated water quality changes are less than estimated, benefits would be substantially lower. Thus, due to the tenuous nature of its analysis, EPA’s benefits estimate should not be considered as mitigating the regulatory cost burden of the proposed standards.

The third serious flaw with the Cost Estimate is that it is much too simplistic. EPA has not properly considered the technologies that will be necessary to comply with the proposed numeric nutrient criteria. Although EPA cites Metcalf and Eddy (2003) and Jeyanayagam (2005) for the limits of technology (LOT) it has proposed for total phosphorus, EPA mischaracterizes these studies. A proper reading of these studies supports a LOT of 0.3 mg/L-TP for biological nutrient removal (BNR), and a LOT of 0.15 mg/L-TP for granular filtration. Consequently, the Cost Estimate should include estimates for implementing granular filtration, as well as estimates for whatever technology EPA proposes to get lower than 0.15 mg/L. Upgrading a single 30 mgd facility in Florida from basic secondary treatment to AWT is more than EPA’s estimated costs to achieve numeric nutrient criteria throughout the state. This fact alone renders EPA’s cost ludicrous.

Even disregarding EPA’s misunderstanding of these studies, the EPA Cost Estimate prominently errs in disregarding the costs of compliance where the criteria are below the LOT cited by EPA. EPA acknowledges that there are numerous waters that where the LOT cannot achieve the criteria, and it speculates that these facilities discharging in these waters will successfully utilize one of EPA’s proposed implementation mechanisms: “(1) lake criteria adjustment or reallocation procedure of the DPV methodology for estuary protection, (2) site-specific alternative criteria, (3) restoration standards, (4) variances, [and/or] (5) UAAs and resulting changes to designated uses.”¹¹⁷ EPA simply assumes away the costs of compliance with no analysis and provides no assurance that these implementation mechanisms will suffice for all—or even most—facilities. EPA seems unaware of the very real limitations of actually employing these implementation mechanisms. FDEP, however, analyzed these alternatives and concluded that they are likely unusable.¹¹⁸ Further, FDEP further concludes that the proposed criteria are not achievable for domestic wastewater and will require alternative disposal methods; if reuse systems are chosen as an alternative, they would need to have a back-up surface water discharge (presumably, such discharges would have to achieve the criteria) or deep-well injection.¹¹⁹

In light of this reality, the FWEA Utility Council, in cooperation with FRWA and the FSAWWA Utility Council, retained a reputable engineering consulting firm, Carollo Engineers, to evaluate the technological and economic implications of EPA’s proposed rule. This report determined that in order to comply with the rule, Florida municipal wastewater treatment utilities will spend an estimated \$24.4 to \$50.7 billion in capital costs for nonconventional treatment facilities and incur an estimated \$0.4 to \$1.3 billion dollars per year in additional operating costs.¹²⁰

¹¹⁶ *Id.*

¹¹⁷ *Id.* at 6.

¹¹⁸ FDEP, *Main Concerns with EPA Proposal*, at 2.

¹¹⁹ *Id.*

¹²⁰ Carollo Engineers, *Technologies to Meet Numeric Nutrient Criteria at Florida’s Domestic Water Reclamation Facilities* (2010); see also, FDEP Secretary Sole, Presentation before the House Agriculture & Natural Resources Policy Committee, Feb. 3, 2010 (“Conventional municipal wastewater technology (EPA, 2008) cannot achieve EPA

Consistent with FDEP’s analysis, Carollo treated EPA’s proposed criteria as “end of the pipe” limits, and Carollo acknowledged that the criteria would impact the beneficial use of reclaimed water. Further, Carollo noted the substantial energy demands (and associated greenhouse gas emissions) required to comply with the proposed nutrient criteria.

EPA should promulgate a meaningful cost analysis of its proposed rule that informs the public of the drastic economic implications of its proposal. Further, EPA should engage in an honest dialogue with Florida’s wastewater treatment and water supply community regarding the drastic technical challenges of reducing nutrient levels to those contemplated by the proposed rule. The FWEA Utility Council, FSAWWA Utility Council, and FRWA all have a successful track record of helping their utility members understand and comply with new environmental regulations. In particular, FRWA has helped small communities remain in compliance with state and federal regulations, despite the limited resources of this segment of the utility sector. Unfortunately, EPA appears unwilling to communicate -- or even acknowledge -- the substantial regulatory and treatment implications of this rulemaking.

XI. Contrary to EPA’s assertion in the preamble that the “proposed rule does not regulate or affect any entity,” the proposed rule directly affects utilities and constitutes an unfunded mandate

In the preamble to the proposed rule, EPA asserts that “[t]his proposed rule does not regulate or affect any entity and, therefore is not subject to the requirements of [the Unfunded Mandates Reform Act].”¹²¹ This statement cannot be reconciled with the facts or the law. As explained above, water quality criteria are used in the NPDES and TMDL programs. If EPA truly believes that its proposed rule does not “regulate or affect” anyone, then this rulemaking is a useless and futile exercise that does not comply with the Clean Water Act or EPA’s own (albeit, invalid) necessity determination.¹²²

The only reasonable conclusion to draw from EPA’s odd assertion that this rulemaking is meaningless is that EPA wished to avoid the requirements of the Unfunded Mandates Reform Act to conduct an exhaustive cost-benefit analysis and consider regulatory alternatives. EPA cannot simply opt out of the statute’s requirements, even when confronted with an unreasonable rulemaking schedule in a Consent Decree.

Rather than seeking to avoid the Unfunded Mandates Reform Act, EPA should simply acknowledge that its rule constitutes an unfunded mandate. The unreasonable costs imposed by this can either be remedied by a grant program to pay all costs incurred by each entity required to comply with this flawed rulemaking or by revoking the necessity determination.

proposed criteria”). Secretary Sole’s presentation also notes that “[c]ompliance will force an investment of billions of dollars without environmental benefit.” (Emphasis added).

¹²¹ 75 Fed. Reg. at 4222 (emphasis added). EPA also mysteriously asserts that its proposed rule does not establish requirements applicable to small entities (including utilities serving populations of less than 50,000), and thus the Regulatory Flexibility Act does not apply. *Id.*

¹²² Earlier in the preamble, EPA admits that “if EPA does finalize this proposed rule, the EPA promulgated [water quality standards] would be applicable [water quality standards] for the purposes of the CWA.” *Id.* at 4216.

XII. EPA must seek Judicial Relief from the Consent Decree

EPA has provided no sound basis for its proposed numeric nutrient criteria; EPA's proposed nutrient criteria are scientifically invalid; and the finalization of EPA's proposed criteria would cause significant negative economic and policy consequences. In light of the foregoing, the FWEA Utility Council, FSAWWA Utility Council, and the FRWA request that EPA revoke its necessity determination and seek judicial relief from its Consent Decree.

In response to a question from Judge Hinkle of the United States Northern District Court of Florida about whether the Consent Decree obligated EPA to finalize invalid criteria, United States Department of Justice Attorney, Martha Mann, explained:


...It is not forced to promulgate something that is not a good rule just because there is a deadline in the consent decree.¹²³

Further, she acknowledged that EPA may revoke its necessity determination:

I think that if EPA were to conclude that numeric nutrient criteria were not necessary in the state of Florida, we would have to come back to you and seek a termination of the consent decree, because we would still be obligated under the terms. ...¹²⁴

We ask that you follow the parameters outlined by the court and your legal counsel for terminating the Consent Decree. The State of Florida does not need EPA's crude nutrient criteria. Instead, EPA should allow the State of Florida to continue to lead its peers in nutrient water quality regulation.

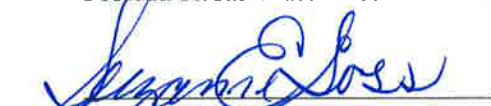
Sincerely,



Gary Williams
Florida Rural Water Association



Paul Steinbrecher
FWEA Utility Council



Suzanne Goss
FSAWWA Utility Council

¹²³ *FWF v. EPA*, Official Transcript of Motion Hearing Before Honorable Robert L. Hinkle, United States District Judge, 79 (Nov. 16, 2009).

¹²⁴ *Id.* at 81.

cc: David Childs, Hopping Green & Sams
Jim Oskowis, FWEA Utility Council President

Encl: Cited documents (provided in mailed copy only)