



**Water Quality Credit Trading**  
**A Report to the Governor and Legislature**  
**December 2006**

# Water Quality Credit Trading

## December 2006

### Executive Summary

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The Florida Legislature, through the Watershed Restoration Act (Section 403.067, Florida Statutes), directed the Florida Department of Environmental Protection (DEP) to provide a report with recommendations on water quality credit trading (referred to as “pollutant trading” in the law). The DEP consulted extensively with a Pollutant Trading Policy Advisory Committee (PTPAC) comprising expertise from regulated interests, environmental organizations, water management districts, and local governments.

Water quality credit trading is a voluntary, market-based approach to promote protection and restoration of Florida’s rivers, lakes, streams and estuaries and would supplement and enhance the other voluntary, regulatory and financial assistance programs already in place. Trading is based on the fact that businesses and industries, wastewater treatment facilities, urban stormwater systems, and agricultural sites that discharge the same pollutants to a waterbody (basin, watershed or other defined area) may face substantially different costs to control those pollutants. Trading allows pollutant reduction activities to be environmentally valued in the form of “credits” that can then be traded on a local “market” to promote cost-effective water quality improvements.

The purpose of water quality credit trading is not financial gain but, rather, to promote more effective, lower cost reductions of pollutants in order to restore Florida’s surface waters. Financial savings will accrue to parties that buy trading credits (pollutant reductions) from others for less than the cost of implementing the reductions themselves; those that sell credits will do so only if the value of the trade is equal to or higher than their investment in the facilities or activities necessary to achieve the pollutant reductions. Credits are not in any sense a right to pollute; they are solely an accounting mechanism to establish and verify the market exchange of effective pollutant reduction actions.

This report contains a brief history of trading, which, in the water quality arena, has been minimally effective to date. The DEP expects the demand for trading to increase as growth and development continue and water quality protection becomes more challenging; the supply of pollutant reduction measures to be traded would develop to meet the demand. The report also describes the legal context, both federal and state, for trading and outlines a number of fundamental considerations, including principles of fairness, public interest, cost-effectiveness, verifiability, and enforceability.

Within this report, the DEP is also providing its recommendations for the statutory and rule changes necessary to promote an effective trading program, including:

- Basic foundational authority to create and implement a trading program that can effectively account for the environmental value of trading pollutant reduction actions and assure their enforceability (*statutory*).
- Formal trading should take place only where Basin Management Action Plans (BMAPs) – detailed water quality clean-up plans, including implementation schedules and financing options – have been publicly adopted (*statutory*).
- Trades should be incorporated into permits, BMAPs, certifications, or other binding mechanisms that assure the enforceability required by the Watershed Restoration Act (*statutory*).
- An existing, outmoded form of public interest test (so-called “equitable abatement”) should be limited to areas where a BMAP has not yet been adopted and a new, more effective public interest test should be established for areas where a BMAP has been adopted (*statutory*).
- The limitation that administrative orders, a legal compliance mechanism, may only be issued with permits and permit renewals should be expanded so that these orders may also be issued with permit revisions and modifications, which would be used to sanction trades and the reasonable implementation schedules necessary for reducing pollutants (*statutory*).
- Mechanisms for and limitations on credit generation (*rule*).
- Credit adjustment factors, including location and uncertainty factors, to reflect that some technologies and activities are more effective at reducing pollutants than others, but that trading may still take place when this fact is appropriately accounted (*rule*).
- Establishment of a credit tracking registry to account for the environmental value of credits and their exchanges in the trading market (or markets), without assessing the shifting monetary value of credits and, thus, leaving proprietary and privacy issues to be addressed between trading parties (*rule*).

Finally, the report recognizes that the uncertain timing and magnitude of the growth in trading has uncertain workload implications for the DEP. Trading will increase the level of review, administrative process and documentation associated with assessing, verifying, tracking, and enforcing trades. These burdens should be considered as trading moves forward to assure that it can promote improved and more cost-effective water quality restoration and preservation in Florida.

# Water Quality Credit Trading

## December 2006

### Purpose

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The Florida Legislature directed the Department of Environmental Protection (DEP), no later than November 30, 2006, to report to the Governor, the President of the Senate, and the Speaker of the House of Representatives with recommendations on water quality credit trading (sometimes referred to as “pollutant trading”). While there is no right to pollute under Florida law and thus no “pollutant rights” to be traded, the investments in infrastructure and management activities to reduce pollution and protect water quality represent “commodities” that can be traded to achieve mutually beneficial, cost-effective outcomes.

Section [403.067\(8\), Florida Statutes \(F.S.\)](#), authorizes the DEP to adopt various rules related to restoring surface water quality in Florida, including the general content of trading rules in paragraph (c):

*Procedures for pollutant trading among the pollutant sources to a water body or water body segment, including a mechanism for the issuance and tracking of pollutant credits. Such procedures may be implemented through permits or other authorizations and must be legally binding. Prior to adopting rules for pollutant trading under this paragraph, and no later than November 30, 2006, the Department of Environmental Protection shall submit a report to the Governor, the President of the Senate, and the Speaker of the House of Representatives containing recommendations on such rules, including the proposed basis for equitable economically based agreements and the tracking and accounting of pollution credits or other similar mechanisms. Such recommendations shall be developed in cooperation with a technical advisory committee that includes experts in pollutant trading and representatives of potentially affected parties*

This water quality credit trading report addresses the statutory directive and recommends changes to Florida law and DEP rules necessary to promote trading in a manner that restores and protects surface water quality.

The report was prepared after extensive consultation with a Pollutant Trading Policy Advisory Committee (PTPAC) comprising expertise and experience in a wide range of relevant disciplines and activities, including regulated interests, environmental organizations, water management districts, and local governments. The DEP solicited nominations for PTPAC membership by letter to parties on the agency’s Total Maximum Daily Load (TMDL) Program distribution list and others who previously expressed interest in the program. Members were selected based on their knowledge of Florida’s program and water quality credit trading and whether they could effectively

represent a significant, affected constituency. The PTPAC met approximately monthly from November 2004 through July 2005, every other month from September 2005 through July 2006, and monthly from July to October 2006. A list of committee members is in Appendix 1.

## What Is Water Quality Credit Trading?

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Water quality credit trading is a voluntary, market-based approach to promote protection and restoration of Florida's rivers, lakes, streams and estuaries. It would supplement and enhance the various other voluntary, regulatory and financial assistance programs already in place to improve surface water quality.

Trading is based on the fact that businesses and industries, wastewater treatment facilities, urban stormwater systems, and agricultural sites that discharge the same pollutants to a waterbody (basin, watershed or other defined area) may face substantially different costs to control those pollutants. A credit trading program provides a forum through which dischargers facing higher pollution control costs can purchase environmentally equivalent (or superior) pollution reductions from other sources of the same pollutant that can achieve the necessary reductions at a lower cost. "Credits" are simply an accounting mechanism to reflect the value of pollution reductions in terms of water quality benefits, not dollar costs. (The differential monetary costs of pollution reductions will vary substantially from situation to situation and over time. Costs are precisely what businesses, industries and local governments will evaluate when considering trading – but they are not relevant to the **environmental value** of the credits in a trading program.) The objective of a water quality credit trading program is to facilitate economic exchanges that demonstrably reduce pollution and clean up impaired surface waters more quickly.

Pollution control is expensive, especially where local lakes, rivers, streams, and estuaries are already polluted because of past management practices and must be cleaned up to protect public health, improve drinking water supplies, reestablish fishing stocks and other critical wildlife habitat, and restore recreational opportunities. In some major watersheds, like Lake Okeechobee and the Lower St. Johns River, restoration is expected to cost hundreds of millions of dollars or more. Some methods of pollution control are simply cheaper to implement than others. Depending on the unique characteristics of different watersheds, the nature and extent of the pollution problems, and the varying types of pollutant sources, cost-effective solutions will differ. A trading program – just like Florida's overall water quality protection program – must be flexible enough to account for this variability.

Water quality trading can accelerate clean-up because potentially unaffordable costs on individual dischargers can be reduced and cooperative relationships built through

trading agreements, which will foster shared responsibility and commitment. Trading also provides a mechanism to accommodate new growth, including increased pollutant loadings from urban stormwater and new domestic and industrial wastewater discharges. It offers the possibility for the owners of potential new or increased discharges to purchase credits – that is, **quantifiable pollutant reductions** – from existing dischargers so that overall pollutant loadings to a watershed are not increased and water quality is preserved.

## Limitations on Water Quality Credit Trading

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There is no right to pollute under Florida law; there is no right to discharge pollutants to surface waters even where a temporary authorization to discharge has been granted by a permit. In fact, there is an affirmative duty to protect water quality. Among many other provisions, section [403.021\(2\), F.S.](#), provides that:

*It is declared to be the public policy of this state to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies, for the propagation of wildlife and fish and other aquatic life, and for domestic, agricultural, industrial, recreational, and other beneficial uses and to provide that no wastes be discharged into any waters of the state without first being given the degree of treatment necessary to protect the beneficial uses of such water.*

Any permit or other license to discharge pollutants must be demonstrably based on assurances that it will protect water quality and the designated beneficial uses (drinking water, shellfish harvesting, fishing, swimming, etc.) of those waters. Such permits are conditional, time-limited and subject to change.

Thus, water quality trading in Florida does not involve – and does not imply – the trading of pollution “rights.” It is, instead, a market-based exchange of pollution reduction “credits” among pollutant sources with the objective of achieving lower net costs or more practical alternatives for meeting water quality standards. Water quality trading credits represent the environmental value, rather than the economic cost, of the pollution reduction activities.

The life of any water quality trading credit would be no more than the life of the permit or other instrument authorizing the discharge of pollutants, such as an adopted Basin Management Action Plan (BMAP), for example, or a certification. While credits would be time-limited, their life could potentially be extended when a permit or other authorization is renewed. And agreements between trading partners certainly could reflect long-term expectations for continuing the trading relationship and the resulting pollutant reductions.

The only rights emerging out of a water quality trade, then, would be enforceable contractual rights under the agreements between trading parties. The DEP would not be a signatory to trading contracts, but would expect the trading parties to enforce contractual obligations. The ultimate enforceability of trading from the state's perspective would arise out of permits or other equivalent authorizing instruments.

## History of Environmental Trading Programs

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### Water Quality Trading

Water quality credit trading of one sort or another has been the subject of much discussion over the last 25 years, and approximately 40 different trading programs have been established across the country (Breetz, et al, 2004)<sup>1</sup>. Despite this interest, relatively little trading has actually taken place.

Several states, including Michigan, Connecticut, Colorado, Oregon, and Idaho have established statewide trading policies or rules. However, in practice, most trading has been limited to selected watersheds and the resulting programs have varied greatly. Among the better-known programs, for example, is the Lake Dillon Trading Program (Colorado), which capped phosphorus loadings to the lake at 1982 levels and allows domestic wastewater facilities to meet required phosphorus reductions through trading with agricultural operations and other "nonpoint" sources in the basin. Only two trades have occurred to date primarily because increased treatment at the wastewater facilities has resulted in little demand for the credits.

The Tar-Pamlico Nutrient Trading System (North Carolina) was formed in 1989 to address excessive nutrient (nitrogen and phosphorus) loadings in the Pamlico River through an association of 12 domestic wastewater facilities and one industrial facility, with an aggregate cap on nutrient loads. If the association does not meet its aggregate cap, it must purchase offsets – earmarked for the basin – by paying into the state's agricultural cost-sharing program to underwrite best management practices. The association has met its aggregate cap each year, however, and has not needed to purchase offsets.

Another example is the Long Island Sound Trading Program (Connecticut), which was established in conjunction with a TMDL that requires a 58 percent reduction in total nitrogen loading by 2014. A nitrogen credit exchange was established for the 84 domestic wastewater facilities discharging to the Sound, with credit prices set by an

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<sup>1</sup> Breetz, H. L., K Fisher-Vanden, L. Garzon, H. Jacobs, K. Kroetz, and R. Terry. 2004. Water Quality Trading and Offset Initiatives in the U.S.: A Comprehensive Survey. A Report for the U.S. Environmental Protection Agency. Hanover, N.H.; Dartmouth College Rockefeller Center.



advisory board, which also monitors compliance. The State of Connecticut acts as a banker, pays facilities that are under their caps and accepts money from credit purchases. Surplus funds are then available for loans to domestic wastewater facilities. The program projects a \$200 million savings over time but it is unclear whether this will materialize or how the program will assure compliance with the TMDL because credits are available for purchase even if there is no surplus.

## Air Quality Trading

Interest in water quality trading also has been generated by the sulfur dioxide (SO<sub>2</sub>) allowance market developed under the 1999 amendments to the Clean Air Act (Title IV), which established a cap on SO<sub>2</sub> emissions representing a 50 percent reduction from 1980 emissions. The United States Environmental Protection Agency (EPA) then allocated allowable emissions to existing sources based primarily on past emissions and allowed the recipients to use, sell or bank the allowances. Technology-based standards were eliminated and facilities are required to report emissions and ensure they own enough allowances at the end of each year to cover any emissions. Facilities that began operating after 1995 were required to purchase credits in order to do so. Allowances may be purchased on the market as a commodity and transactions are handled by the Chicago Board of Trade and recorded by the EPA.

While the SO<sub>2</sub> trading program has spurred interest in water quality trading, it is fundamentally different. "Airsheds" comprise the entire contiguous United States whereas water quality trading must take place within geographically limited basins or watersheds to benefit water quality. The SO<sub>2</sub> program does not require compliance with local air standards, but water quality trading must achieve local water quality standards. Thus, the number of potential credit traders (buyers and sellers), and therefore the market, will naturally be much smaller for water quality trading. Other differences include:

- Water quality credits cannot be "banked" for use in future years, as can SO<sub>2</sub> credits, because local water quality standards must be continuously met and maintained.
- The federal Clean Water Act does not allow waiver of technology-based controls on permitted dischargers; waivers are allowed under the SO<sub>2</sub> program.
- The number and types of regulated air sources are relatively small compared with the number and types of facilities that discharge to surface waters.
- The size of regulated air facilities is generally very large while water facilities vary considerably in size and environmental impact.
- Air emissions for eligible trading parties can be measured directly and with precision while pollutant loads from many potential trading parties in the water program cannot be readily measured.



## Economics of Trading

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Water quality credit trading implies a market or multiple markets. Even purely financial markets and financial transactions may be highly controlled to the extent of prohibited transactions, set or indexed prices, price caps, or other similar constraints; or they may be freer to the point of free-for-all. In fact, virtually all financial markets are regulated to some degree both to control abuse (for example, price fixing, collusion and monopolies) and to promote or subsidize desired outcomes (for example, production of desired goods reflecting established public interest).

The purpose of water quality credit trading markets is not financial gain. Markets in this context are intended to promote more effective, lower cost reductions of pollutants to restore water quality and maintain healthy rivers, lakes, streams, and estuaries in the future. Financial savings will certainly accrue to those parties that buy credits from others for less than the cost of implementing the pollution reductions themselves. And those that sell water quality credits will, presumably, do so only if the value of the trade is equal to or higher than their investment in the facilities or activities necessary to achieve the pollutant reductions.

The DEP envisions local trading markets that are guided by principles of fairness; meet the requirements and objectives of Florida law and the federal Clean Water Act; promote cost-effective water quality protection and restoration; and result in water quality credit trades that are verifiable and fully enforceable. As previously noted, water quality trading in other states to date has been minimal and has generally been limited to two partners rather than multiple players in a basin. Why should the situation be different in Florida?

King, et al (2003)<sup>2</sup>, concluded that institutional obstacles to trading in the context of water quality protection – such as those noted in *History of Trading*, above – are significant but can be overcome. They concluded that the primary obstacles to water quality credit trading are inadequate supply and demand of credits. In part this is because of the relatively small area of many watersheds and the relatively limited number of pollutant sources in each. Water quality trading markets are inherently vastly smaller than conventional financial markets; they also are smaller than the nationwide SO<sub>2</sub> air quality market.

Even so, demand will increase over time primarily because of the requirement to improve wastewater treatment, stormwater management, and other pollutant-reducing actions necessary to restore impaired surface waters and maintain water quality

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<sup>2</sup> King, D.M. and P.J. Kuch. 2003. "Will Nutrient Credit Trading Ever Work? An Assessment of Supply and Demand Problems and Institutional Obstacles." *Environmental Law Reporter*. 33: 10352 -10368.

standards in the face of Florida’s continuing growth and development. Florida’s TMDL program, as envisioned by the Legislature through passage of the Watershed Restoration Act of 1999, makes all potential sources of water pollution responsible for water quality clean-up. It goes beyond simple regulation and promotes the implementation of voluntary best management practices, creative financing, regional treatment facilities, public-private partnerships, and other approaches to water quality restoration. This comprehensive approach culminates in the cooperative development, adoption and implementation of BMAPs – local stakeholder agreements embodying clean-up strategies, compliance schedules and other enforceable provisions, financing options, and performance measures.

This demand for participation by all parties to clean up Florida’s surface waters will promote innovation in treatment technologies, management practices, financing incentives, and other cost-effective solutions to pollution. It will encourage or push dischargers to seek out trading partners and enter into cooperative partnerships. It likely also will encourage entrepreneurs whose interest is in developing and selling solutions. Hence, over time, the “supply” of water pollution reduction credits will grow in order to fulfill the demand, particularly in areas experiencing rapid growth.

## Trading Context in Florida

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As suggested in the previous section, the market for trading will arise out the obligations and responsibilities of all pollutant sources to find cost-effective strategies to protect water quality in the face of increasing growth and development. Those obligations arise out of the federal Clean Water Act and EPA requirements as well as the Florida Watershed Restoration Act and its focus on impaired waters, TMDLs, and BMAPs.

### Federal Clean Water Act

Federal requirements for state TMDL programs are based on section 303(d) of the federal Clean Water Act ([Title 33, Chapter 26 of the United States Code](#)). Section 303(d) requires states to submit lists of surface waters that do not meet water quality standards (“impaired waters”) in spite of the implementation of basic water pollution control programs. It then requires states to establish TMDLs for these waters on a prioritized schedule. A TMDL establishes the maximum amount of a given pollutant or pollutants that a particular waterbody can assimilate without exceeding its water quality standards.

The EPA exercises considerable oversight of state water quality protection programs under the federal Clean Water Act, including National Pollutant Discharge Elimination

System (NPDES) surface water discharge permits, TMDL determinations, and water quality standards. Through these programs it also will oversee water quality credit trading. For that reason, the EPA issued a “Final Water Quality Trading Policy” in 2003 asserting that state trading programs are to provide:

- Timely public access to information on trades;
- Public participation during program development and implementation;
- Mechanisms to monitor progress, evaluate program effectiveness, and revise the program as necessary;
- Legal mechanisms to facilitate trading;
- Clearly defined units of trade;
- Methods to quantify credits and address uncertainty;
- Compliance and enforcement provisions;
- Accountability for all trades; and
- Assurance that NPDES permit holders meet their permit limits.

History suggests that the EPA’s oversight of and potential exercise of control over water quality credit trading in Florida injects a degree of uncertainty in the program. In an effort to minimize that uncertainty, the DEP invited EPA to participate in PTPAC meetings and has involved the federal agency in every aspect of the trading discussions and the development of this report. In addition, under a memorandum of agreement, the DEP will submit proposed water quality trading rules to the EPA for review.

### **Florida Watershed Restoration Act**

In the Florida Watershed Restoration Act (section [403.067, F.S.](#)), the Florida Legislature established the authority and obligation for the DEP to identify and list impaired waters; develop and adopt TMDLs; allocate pollutant load reductions among pollutant sources; and implement clean-up actions through BMAPs and other means, including enforceable water quality credit trading. This legislation fulfilled the minimum requirements of the federal Clean Water Act and created an even more comprehensive approach to restoring water quality; and it created the context in which water quality credit trading can become a viable mechanism for water quality improvement.

A TMDL establishes the maximum amount of a given pollutant or pollutants that an impaired waterbody can assimilate without exceeding the water quality standards for those pollutants. Because it represents quantitative calculations of pollutant loadings from all sources in a watershed or basin, it allows the responsibility for pollutant load reductions to be equitably allocated among those pollutant sources. These pollutant reduction allocations may then be incorporated into permits for regulated facilities and otherwise accounted for through best management practices and other pollution control measures.

The allocations also will be reflected in the basin's BMAP, which will establish the schedule for implementing projects and activities to meet the pollution reduction allocations, the basis for evaluating the plan's effectiveness and making adaptive changes, and funding strategies. The BMAP represents the opportunity for local stakeholders, including affected dischargers, local government and community leaders, and the general public to collectively determine and share water quality clean-up responsibilities. The DEP will work with stakeholders to develop effective BMAPs, which then must be adopted by Secretarial order pursuant to section [403.067\(7\), F.S.](#)

As dischargers in a basin evaluate pollutant reduction options and refine strategies, finding practical, effective, low-cost alternatives will be critical. The collective interests in a basin will presumably seek greater overall pollutant reductions than could be independently achieved by individual dischargers, if only to accommodate the community's future economic needs and its potential for growth and development.

When one pollutant source determines that 1) there may be a lower cost alternative for achieving its required reductions and 2) the alternative requires the assistance of another pollutant source or sources, a potential market is created. It is the BMAP process and the adoption of formal, inter-related pollution reduction requirements that creates the conditions where market exchanges become more likely – the demand for the supply.

## **DEP Recommendations**

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Because the BMAP process establishes the cooperative, collective context for market-based water quality credit trading – and an enforceable basis by which to assure success – the DEP's statutory and rule recommendations are predicated on formal adoption of these plans. A specific legal context should be established that facilitates water quality credit trades, promotes cost-effective water quality restoration, assures fairness and accountability, and comports with state and federal law.

### **Recommended Statutory Changes**

In order to promote an effective, accountable water quality credit trading program, including providing statutory support for the rule proposals described in the next subsection, several statutory changes are needed. Currently, section [403.067\(8\), F.S.](#), provides that the DEP may adopt rules establishing “procedures for pollutant trading among the pollutant sources to a water body or water body segment, including a mechanism for the issuance and tracking of pollutant credits,” to be implemented through permits or other legally binding authorizations.

The DEP believes this general authority must be expanded to more broadly outline the activities that a trading program may or in some cases must accomplish, for example:

- Consistency with federal Clean Water Act requirements.
- Adherence to minimum water quality requirements, including technology-based permit limits (that is, credits can only result from actions that go beyond minimum requirements to achieve pollution reductions).
- Prevention of pollution “hot spots” where specific water quality criteria are violated.
- Authority to limit trading to pollutants (nutrients, for example) or waterbody characteristics (dissolved oxygen levels, for example) that have cumulative effects that would lend themselves to successfully trading without creating the likelihood of “hot spots” (see immediately above).
- Public participation.
- Availability of public information.
- Credit valuation and quantification.
- Credit adjustment factors (see rule recommendations, below).
- Credit retirement or set-asides; margins of safety.
- Accounting for federal and state funding of pollutant reductions.
- Priority considerations for existing dischargers in a basin.
- Minimum information about credit generating activities (for example, the nature of facilities or activities generating credits, technologies or practices employed, discharge locations, loading and concentration amounts of pollutants, timing of credit generation, etc.).
- Compliance monitoring.
- Limitations on credit availability (for example, credits may only be exchanged among trading partners in the same basin).
- Development of credit trading authorizing mechanisms (for example, certifications).
- Formalizing of credit marketplaces and development of a credit trading registry.

These issues could then be developed through further consultations with the PTPAC, environmental and local government interests, the EPA, and other experts and taken to the public rulemaking forum. The following statutory changes are recommended as well.

### **Basin Management Action Plan Adoption**

As noted in the previous section, the BMAP process set forth by the Florida Legislature in section [403.067\(7\), F.S.](#), establishes the cooperative, collective context for market-based water quality credit trading. Each BMAP will provide the comprehensive plan to achieve the pollutant reductions established in a TMDL, including specific projects,

timeframes and compliance schedules, and financing options. The BMAP will be negotiated by local stakeholders with full public participation and will be publicly adopted by Secretarial order. It will include the pollutant reduction allocations and obligations for all sources in the basin, which can generate the demand for trading. It will create accountability among the stakeholders and promote enforceability of any water quality trades. For these reasons, the DEP recommends that water quality credit trading be authorized only in basins where a BMAP has been adopted by Secretarial order pursuant to section [403.067, F.S.](#) (Nothing would prevent dischargers in basins without adopted BMAPs from working out formal agreements with other local dischargers to achieve cost-effective “offsets” for their pollutant loadings, which could then be incorporated into permits or other authorizing instruments.)

### **Amended Secretarial Order**

Where water quality credit trades involve permitted discharges, the trades can be fully reflected in and made enforceable through revised permits. However, for owners of activities that are not required by law to have permits but nonetheless want to participate in trades (agricultural operations, for example), the DEP believes the most straightforward mechanism for codifying these trades is through an amended Secretarial order for the adopted BMAP. Such an action would follow the form of original BMAP adoption; however, it would not open any other, already adopted provision of the BMAP to challenge. It would be subject to public scrutiny similar to a permit revision and would be enforceable. While the authority to amend BMAPs in this way exists within current law, it would be useful to make the law, and when and how it would be applied, explicit for all parties.

There are other potential mechanisms for formalizing trades for unregulated parties, such as a certification program. The PTPAC recommended that the DEP develop some sort of general or generic permit for this purpose. However, the DEP does not believe a permit for currently unregulated entities, especially given the unique and varying characteristics of their activities, is appropriate at this time.

### **Equitable Abatement and Public Interest**

The DEP’s rules contain a provision for equitable abatement (rule 62-4.242(4), Florida Administrative Code; see also Appendix 2), which allows new surface water dischargers to petition the agency for an equitable reallocation of authorized pollutant loadings so that the new source may be authorized – that is, to make room under the overall pollutant loading ceiling while protecting water quality. The provision was adopted in 1979, long before the comprehensive pollutant reduction allocations associated with TMDLs and BMAPs were envisioned.



The equitable abatement provision was progressive in that it foresaw that future activities might be prohibited if their discharges would cause surface water problems unless other dischargers could reasonably be required to further reduce their loadings. It was, in effect, a form of public interest test that promoted the protection of water quality while still accommodating the potential for new growth. In the absence of comprehensive TMDLs and BMAPs to this point, equitable abatement has been dormant.

With the advent of TMDLs and BMAPs to fully and equitably address pollutant reduction allocations, the equitable abatement provision becomes problematic. Because it takes no account of the TMDL's comprehensive assessment of a waterbody's assimilative capacity or the very public, stakeholder-driven BMAP process, it could undermine the financial motivation for trading because new pollutant sources could petition the DEP to reallocate the TMDL at any time, regardless of local stakeholder decisions, rather than having to purchase credits or otherwise negotiate with the stakeholders. It would undercut the collaborative stakeholder process, which the DEP believes is a powerful force in promoting local control over growth management decisions.

For these reasons, the DEP recommends a statutory change to establish that the equitable abatement provision in rule does not apply in areas addressed through a BMAP adopted pursuant to section [403.067, F.S.](#) While this change likely could be made through the rulemaking process, it is more practical, efficient and straightforward to incorporate it with the other statutory revisions necessary to create the basis for effective trading. The equitable abatement rule would continue to apply in all other watersheds or basins until such time as a comprehensive BMAP were adopted for that area.

The DEP also recommends that section [403.067, F.S.](#), be amended to authorize the agency to develop, by rule, a more appropriate public interest test where BMAPs have been adopted. Such a public interest test would promote fairness in the decisions made by basin stakeholders with respect to potential new dischargers; preserve potential incentives for water quality credit trading; and assure that facilities or activities demonstrably in the public interest would have recourse in the event the local stakeholder process became stalled or were otherwise failing to produce a fair and practical outcome.

### **Administrative Order for Permit Revisions**

As already discussed, where water quality credit trades involve permitted discharges, they can be fully reflected and made enforceable in revised permits. Because a trade may depend on the construction of enhanced treatment facilities or implementation of



new pollutant reduction activities, which will take time to come on line, a compliance schedule should accompany the revised permit reflecting the water quality credit trade.

Section [403.088\(2\)\(f\), F.S.](#), states as follows: “A permit issued, renewed, or reissued pursuant to paragraph (e) shall be accompanied by an order establishing a schedule for achieving compliance with all permit conditions. Such permit may require compliance with the accompanying order.” This provision does not explicitly provide that an administrative order can be issued with permit **modifications or revisions**, which is the most expeditious way to reflect credit trades for regulated facilities.

For this reason, the DEP recommends that the provision be revised explicitly to include permit revisions and modifications to the list of authorizing actions that are to be accompanied by an administrative order to reflect compliance schedules. This action will properly subject the credit trade and compliance schedule to public scrutiny without opening all other aspects of the already-settled and previously publicly noticed permit.

## Recommended Rule Changes

With the recommended statutory changes in place, the DEP could finalize rulemaking to assure effective implementation of water quality trading. Among the key components of those rules would be provisions relating to the following issues.

### Credit Generation

Water quality trading involves the generation and environmental (not monetary) valuation of “credits.” Credits account for the exchange of pollutant reduction benefits from a party (“seller”) that can generate reductions beyond its basic obligations to a party (“buyer”) that wants or needs those “excess” reductions to meet its obligations more cost-effectively than it otherwise could. Thus, the environmental value of the credits (how much pollutant reduction will occur) and when that credit will be generated to assure its value are critical.

The DEP proposes that its rules reflect the initial generation of water quality credits for point source sellers (for example, wastewater treatment facilities) only after the seller’s permit has been revised to reflect a reduction in its pollutant loading beyond its basic allocation – that is, when the seller agrees and is legally bound to improve water quality beyond a minimum regulatory requirement. For nonpoint source sellers (say, agricultural operations implementing best management practices), credits would only be generated when the seller agrees to increase its pollutant reduction measures beyond standard best management practices and have this commitment reflected and binding through a revision to the order adopting the BMAP or some other form of authorization. (These measures could include dedication of buffer areas where no

fertilization takes place, conversion of growing areas to treatment areas, or other pollution reduction measures.)

Thus, the generation of credits is initially based on binding commitments to upgrade infrastructure or implement improved management practices in the future. The accounting of actual credits – that is, the fulfillment of the trading commitment to reduce pollutants – will only occur after the upgrades or management practices have been implemented. Trades are not hypothetical; they must achieve actual water quality improvements. In all cases, credits would have to be used by a buyer during the same timeframe that they are generated (and functionally useful) by a seller. This timing is necessary to fulfill the demands of a TMDL, which typically is expressed in terms of needed annual pollutant reductions, in order that the water quality improvement benefits are assured. Credits will not be generated simply because a facility or site incidentally or occasionally discharges less than its allocation or permit limits.

For trades between a point source buyer and a nonpoint source seller, the buyer's permit could include a condition incorporating the credit-generating activity of the nonpoint source. The buyer could be liable, at least to some degree depending on circumstances, for non-performance of the seller. This mechanism will help fulfill the statutory obligation in the Watershed Restoration Act that all water quality credit trades be enforceable. The DEP also anticipates (and recommends) that trades involve contractual arrangements between the trading parties. These contracts would contain mutual obligations and, presumably, remedies in the event of non-performance. Contracting is a standard free-market tool, well understood, and as effective as the freely agreeing parties make it. The DEP does not propose to play a direct role in such contracts, although the contracts will likely help establish reasonable assurance that the pollutant reductions addressed in trades will be accomplished.

The DEP proposes that its rules require those entities ("buyers") planning to meet their pollutant reduction allocations through water quality credit trading to identify the source from which they plan to purchase credits. Credit buyers will be subject to a compliance schedule that allows the credit seller time to generate the credits, whether by building or upgrading treatment facilities, implementing enhanced management practices, changing production methods, or other specified actions. As with the other elements of water quality credit trading, compliance schedules must be consistent with federal requirements.

The rules also will need to address other circumstances, such as when permits incorporating trades are transferred (for example, from one facility owner to another) or when facility owners holding or selling credits go bankrupt or abandon their facilities. Provision can be made for credit transfer if another facility accepts responsibility for the pollutant discharge, although the requirements of any bankruptcy proceedings would have to be accounted.

## **Location Factors**

The impact of a pollutant on surface water quality may differ based not only on its loading or concentration but also where it is discharged and the manner by which the waterbody assimilates it. Location factors are mathematical calculations that account for the effects of location. The DEP proposes to adopt rules to require the application of location factors when trading partners discharge to different segments of a waterbody. In some cases, location may make little or no difference in pollutant impact; hence, the location factor would be negligible. In other instances, however, the difference may be significant, and fair and accurate location factors would have to be developed based on the site-specific circumstances. In no case could a location factor result in pollutant loads beyond the limitations established in a TMDL.

## **Uncertainty Factors**

Pollution reductions always involve some degree of uncertainty, particularly before they are implemented and monitoring data or other means of measurement reflect impacts over time. When permitting wastewater dischargers, for example, or establishing TMDLs, the DEP must build in reasonable margins of safety to account for this uncertainty. In determining the environmental value of water quality credits, uncertainty factors must be applied to account for the relatively limited data and variable effectiveness of best management practices used to control nonpoint sources of pollution (urban and agricultural stormwater runoff, for example). Based on consultation with the PTPAC, the DEP proposes to adopt default uncertainty factors of 2:1 for urban stormwater best management practices and 3:1 for agricultural best management practices. However, in order to assure flexibility, the rule also would allow credit generators to document more accurate site-specific factors.

## **Credit and Trade Tracking**

The DEP will maintain the information from trades, including an accounting of credits generated and used, in a credit registry database. This system will not account for the monetary value of trades, which is a matter between the parties seeking to maximize their mutual benefit. Thus, it will respect proprietary and privacy considerations. The system will account for the environmental value of the credits traded, including reflections of the location and uncertainty factors explained previously.

## **Summary**

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Water quality credit trading represents another, potentially significant tool local governments, businesses and industries can use to restore the quality of Florida's

unique rivers, lakes, streams, and estuaries. An effective trading program provides a market forum through which dischargers facing higher pollution control costs can purchase environmentally equivalent (or superior) pollution reductions from other sources of the same pollutant that can achieve the necessary reductions at a lower cost. Thus, trading can complement and be integrated into Florida's existing regulatory programs; pollution prevention, waste minimization and reuse; urban and agricultural best management practices; regional treatment facilities and other public works; land acquisition; financial assistance; and other creative water quality protection and restoration programs.

As a means to restore and protect Florida's water resources, the purpose of water quality credit trading markets is not financial gain but, rather, to promote effective, lower cost pollutant reductions. Financial savings certainly will accrue to those parties that buy credits from others for less than the cost of implementing the pollution reductions themselves. In turn, those that sell pollutant reduction credits will do so only if the value of the trade is equal to or higher than their investment in the reductions themselves. From the state's perspective, trading must be guided by principles of fairness, meet the requirements of state and federal law, promote cost-effective water quality protection and restoration, and be verifiable and fully enforceable.

While there is significant intellectual interest in trading, it remains unclear how much or how quickly trading actually will take place. Thus, the workload implications for the DEP also are unclear. Because trading will largely be implemented through the permitting and BMAP process, it will increase the level of review, administrative process and documentation associated with these activities, which will increase workload over time. The development of a credit trading registry will be a relatively short-term effort, but the long-term maintenance and, more significantly, administration and security of the system will also impose a continuing workload obligation. These burdens should be considered as the trading program materializes so that its effectiveness will not be compromised.

## Appendices

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- 1 - Pollutant Trading Policy Advisory Committee
- 2 - Equitable abatement provision of DEP rules

## Appendix 1

### Pollutant Trading Policy Advisory Committee

Name	Stakeholder Group Represented
Rebecca O'Hara	Florida League of Cities
Linda Shelley	Florida Home Builders Association
J. Allison DeFoor, II, D. Min.	Environmental Groups
Ron Stewart	Florida Pulp and Paper Association
Kurt Spitzer	Florida Stormwater Association
Rick Renna	Florida Department of Transportation
Robert McConnell	Public Drinking Water Supply Utilities
Stephen R. Lienhart, P.E.	Local Government
Avinash Patwardhan, Ph.D.	Florida Engineering Society/Agricultural/Local Government
Jacob F. Stowers	Local Government (Pinellas County)
Casey Fitzgerald	Water Management Districts
Thomas Helgeson, P.E.	FWEA and FWEA Utility Council
Paul K. Steinbrecher, P.E.	JEA/Florida Manufacturers Association (FMA)
Rich Budell	Agriculture
Don Loop	Environmental Groups
Mike Branch	Silviculture

More information on activities, including documentation of the committee's meetings, is available at.

## Appendix 2

### Equitable Abatement Rule

#### Section 62-4.242, F.A.C., Equitable Abatement

(4) Equitable Abatement.

(a) It shall be Department policy to further protect and enhance the quality of those surface waters whose quality has been artificially lowered below the quality necessary to support their designated uses. For such waters, no new activity or discharge shall be issued a Department license to construct unless the applicant affirmatively demonstrates that:

1. Water quality standards once achieved would not be violated as a result of the proposed activity or discharge;
2. The proposed activity or discharge is necessary or desirable under federal standards; and
3. The proposed activity or discharge is clearly in the public interest.

(b) To allocate equitably the relative levels of responsibility for abatement among persons directly discharging significant amounts of pollutants into waters which fail to meet one or more of the water quality criteria applicable to those waters, it is necessary to determine the amounts of those pollutants contributed by each of those persons and to consider all factors relevant to the equitable allocation of that responsibility. The following provisions of this section prescribe the means by which the Department, upon the petition of a license applicant, will equitably allocate among such persons the relative levels of abatement responsibility of each for abatement of those pollutants and by which it will establish for each of those persons, if necessary, an abatement program and schedule to accomplish any abatement determined necessary under the provisions of this Section.

(c)1. For a surface water body, or portion thereof, which is determined by the Department to fail to meet one or more of the water quality criteria applicable to that water body, an applicant for a license to construct or operate a stationary installation to discharge wastes which contributes, or will contribute, to that failure may petition the Department in writing for an equitable allocation of the relative levels of responsibility for abatement among the stationary installations which discharge significant amounts of one or more of the pollutants which contribute to the failure of those waters to meet the water quality criterion (a) specified in the petition.

2. The applicant shall identify in the petition the location of each of the existing stationary installations which it wishes the Department to consider and the legal name and mailing address of the owners of each of those stationary installations.

3. The county government within which each stationary installation identified under subparagraphs 1. and 2. of this paragraph is located shall be given notice of the proceeding, as shall the municipality, if the stationary installation is located within a municipality.

4. The Department may identify any other owners of existing stationary installations which it deems necessary to allocate equitably the relative levels of responsibility for abatement of pollutants which contribute to the failure of those waters to meet any criterion specified in the petition.

5. Those owners identified by the petitioner and the Department shall be joined as parties in the licensing proceeding. Nothing shall preclude any party from requiring the joinder, as a party to the proceeding, of the owner of any other existing stationary installation upon written motion and an affirmative demonstration that such stationary installation is discharging significant amounts of one or more pollutants which contribute to the failure of the subject water body to meet any criterion specified in the petition. A motion for joinder shall be filed within 20 days of receipt by the movant of notice that it has been joined in the proceeding.

(d) License applications filed by the petitioner, or any other party, for waste discharges which are identified pursuant to Subsection paragraph (2)(c) above in the equitable allocation process under this Section shall be deemed incomplete or the subject of a dispute of material fact for purposes of Chapter 120, F.S. However, if an application for renewal of an existing license has been timely filed with the

Department, the existing license shall remain in full force and effect until such time as a new or modified license has been issued pursuant to paragraph (2)(k).

(e) Prior to determining the most equitable allocation of responsibility for abatement under subparagraph (f), the Department shall determine the percentage and quantification of the total contribution and the contribution by each of the stationary installations identified under paragraph (c) of the pollutants identified under paragraph (c) which contributes to the failure of the subject waters to meet the water quality criterion specified in the petition. Provided, however, that the Department, upon petition by an affected party pursuant to Section 62-3.031, F.A.C., may establish more appropriate less stringent criteria upon which to base quantification calculations. For the purpose of performing quantification calculations, the Department shall assume waste discharges entering the water body from an adjacent state as a separate point source of pollution.

(f) The following factors shall be considered by the Department in determining the most equitable allocation among the parties identified pursuant to paragraph (c) of the relative levels of responsibility of each for abatement of the pollutants with which the petition is concerned:

1. The percentage and quantification of the abatement achieved by abatement techniques previously undertaken, if any, by each of those stationary installations and the costs previously incurred, if any, with respect to each, along with any economic or production benefits gained from said abatement techniques.

2. The identification and estimated cost of alternative abatement techniques available for each stationary installation. Identified techniques shall include:

(i) Those techniques which would abate the level of pollutants to the degree required by the quantities of contributed pollutants determined under paragraph (e), or the maximum degree possible, if the degree required is not presently attainable.

(ii) Those techniques which would abate additional quantities of pollutants beyond the quantities determined under paragraph (e) and the approximate percentage of additional abatement which could be provided.

3. The economic and production impacts of additional abatement on each party, if any.

4. Other environmental impacts of available abatement techniques.

(g) In determining the percentages and quantities under paragraph (e), the Department shall use the best scientific and technical information, methods, and data in the possession of the Department.

(h) Each party to the licensing proceeding shall provide the Department, and each other party except as provided by Section 403.111, F.S., with any information which is requested by the Department and necessary for the determination under paragraphs (e) and (f). With regard to the determination under subparagraph (f)2.(ii), however, parties shall only be required to provide that information within their possession at the time of the Department's request. The Department shall make available to a party any information in its possession, and shall provide reasonable assistance to any party in identifying that information which would assist the party in complying with the Department's request.

(i) Each party shall undertake a program approved by the Department to abate the quantity of contributed pollutants for which it is determined responsible under Subsection (e). Such abatement program shall include but not be limited to, a quantified effluent limitation, best management practices or specific techniques for abatement, and a schedule for commencement and completion of the required abatement. In establishing an abatement schedule, the Department shall consider the previous abatement efforts and their costs, the reasonable remaining usable life of the discharge facility, and any commitments for phasing out the discharge from the facility.

(j) An abatement program required under paragraph (i) may include the agreement of one owner to undertake additional abatement on behalf of another owner. When such an agreement has been executed fully and filed in writing with the Department within a reasonable period of time set by the Department, the agreement shall be recognized in the licenses of the signatory parties to the extent that it satisfies the levels of abatement, determined for those parties under paragraph (e).

(k) Each party shall be issued an appropriate license of modified license, which shall include any abatement program required of the party and approved under paragraph (i), as well as any other conditions authorized by Chapter 403, FS.