

**Department of Environment
and Natural Resources
Mitigation Credit Determinations**



Special Report to the General Assembly

Report Number 2009-04

December 16, 2009



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Director

December 16, 2009

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Senator Fletcher L. Hartsell, Jr., Co-Chair, Joint Legislative Program Evaluation Oversight Committee

North Carolina General Assembly

Legislative Building

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Raleigh, NC 27601

Honorable Co-Chairs:

The Program Evaluation Division 2009-2010 Work Plan, updated September 1, 2009, directed the Program Evaluation Division to evaluate the Ecosystem Enhancement Program of the Department of Environment and Natural Resources. We limited the scope of the enclosed special report to a review of a controversy surrounding the certification and purchase of nutrient offset credits by the Ecosystem Enhancement Program.

In particular, we would like to acknowledge the Department of Environment and Natural Resources staff for its assistance. I am pleased to report that we received full cooperation and that departmental staff were at all times courteous to our evaluators.

Sincerely,

A handwritten signature in black ink, appearing to read "John W. Turcotte".

John W. Turcotte
Director



PROGRAM EVALUATION DIVISION

NORTH CAROLINA GENERAL ASSEMBLY

December 2009

Report No. 2009-04

Department of Environment and Natural Resources Wetland Mitigation Credit Determinations

Summary

This special report responds to the controversy surrounding the certification and purchase of nutrient offset credits offered by the Environmental Banc and Exchange, an ecosystem restoration firm. The Program Evaluation Division examined mitigation credit certification and transactions that were the crux of the controversy, including the context, events, and response to those events.

The review focused on the overlap of mitigation credits that prompted allegations of “double dipping,” wherein mitigation credits based on ecological assets not serving discrete mitigation functions were certified by the North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality and paid for twice, once by the North Carolina Department of Transportation in 2000 and again by DENR’s Ecosystem Enhancement Program in 2009.

DENR provided information to the Program Evaluation Division showing the overlap consisted of credits generated by the same 46 acres of wetlands. This property generated wetland credits purchased in 2000 and nutrient offset credits purchased in 2009. The result of this overlap was that, of the full \$910,920 paid in 2009, \$698,372 did not purchase any additional mitigation value above and beyond what was associated with credits sold in 2000.

In response to this controversy, DENR’s Division of Water Quality issued a moratorium on certifying nutrient offset credits based on land that had already been used to generate wetland credits. In addition, the division has drafted policies and rules related to the controversy that would prohibit the problem from occurring in the future. However, the division decided that it would continue to honor overlapping credits even though they were derived from land that had previously been used for wetland credits sold in 2000.

The Division of Water Quality’s decisions related to this controversy resulted in actual and potential future losses to the environmental integrity of the Neuse River basin. The actual and potential loss incurred by certifying nutrient offset credits that overlap wetland credits already allotted comprise a net loss to North Carolina’s environment.

Scope

This preliminary review was conducted in response to specific concerns surrounding the certification and purchase of nutrient offset credits offered by the Environmental Banc and Exchange, an ecosystem restoration firm. This report is not intended to be an exhaustive examination of the issue but rather provides an initial look at mitigation credit certification and transactions that were the crux of the controversy, including the context, events, and response to those events by the North Carolina Department of Environment and Natural Resources (DENR).

The central issue was over certification by DENR's Division of Water Quality of nutrient offset credits derived from the same wetland acres previously used to generate wetland credits. This certification led to so-called "double dipping" when the state of North Carolina paid the Environmental Banc and Exchange twice for what appeared to be the same environmental services: first, by the North Carolina Department of Transportation, and then, by DENR's Ecosystem Enhancement Program (the state agency responsible for overseeing mitigation compensation). This incident captured public attention when it was reported in the *News and Observer* on December 8 and 9, 2009.

The Program Evaluation Division gathered information for this report from

- interviews with staff from DENR, including those from the Division of Water Quality and the Ecosystem Enhancement Program;
- documents from the Division of Water Quality and the Ecosystem Enhancement Program; and
- pertinent literature.

Questions and Answers

1. What is compensatory mitigation?

Recognizing the critical role of wetlands in improving water quality in watersheds, federal and state laws require developers to avoid or minimize ecological damage to streams or wetlands that occurs as a result of public or private development. If damage is unavoidable, developers must compensate by mitigating the negative effects on the ecosystem. The concept of compensatory wetland mitigation is at the core of the current issue.

The Department of Environmental and Natural Resources, Ecosystem Enhancement Program defines compensatory mitigation as any mitigation action, required by permit, taken to compensate for stream and/or wetland impacts associated with a development project. In addition to streams and wetlands, mitigation covers riparian buffers and nutrient loading. These terms are defined as follows.

- **Wetlands** – The Clean Water Act of 1977¹ defines wetlands as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

¹ 40 CFR Part 230, Section 404(b)(1).

- **Riparian Buffer** – Riparian buffers are vegetated areas next to water resources that reduce pollutant movement into surface waters and provide bank stabilization and aquatic and wildlife habitats. Buffer zone widths vary but are typically a minimum of 25 to 50 feet on each side of perennial streams.
- **Nutrient Loading** – Nutrient pollution or loading, especially from nitrogen and phosphorus, is a leading cause of environmental degradation in some waters. Thresholds for nutrient loading are set by the state. Developers can offset excess nutrient loading on development sites where damage is done or choose a third-party mitigation provider (e.g., the Ecosystem Enhancement Program or a mitigation bank) to “buy down” loading requirements.

Compensating for damage to streams, wetlands, and riparian buffers is accomplished through the restoration, establishment, enhancement, or preservation of wetlands, streams, or other aquatic resources. The compensatory activity is intended to offset unavoidable adverse impacts associated with development and may occur at the same or another site within the river basin. The amount of compensation required is determined by a system of measurement for damage done known as credits.

- **Compensatory mitigation credits** – Compensatory mitigation credits define the value of mitigation. Regulatory agencies create an instrument that identifies the number of credits available for sale and requires the use of ecological assessment techniques to certify that those credits provide required ecological functions. Credits can be sold to developers to offset environmental damage and satisfy the requirements of a permit issued by a regulatory agency. Four types of credits are recognized in North Carolina: stream, wetland, riparian buffer, and nutrient offset.
- **Credit certification** – Credit certification is the process of evaluating preserved or restored property, based on the environmental offset it provides as compensation to damage done elsewhere. Certification is provided by the Division of Water Quality (for riparian buffer and nutrients offset credits) and by the U.S. Army Corps of Engineers (for stream and wetland credits).
- **Credit stacking** – Credit stacking is selling more than one type of credit on a single parcel of land. When each credit is counted as a discreet unit of natural resource value, or asset, different types of credits can be appropriately bundled together (e.g., stream and wetland) when they result in ecological gains. “Double-dipping” occurs when the same ecological asset is used as the basis for credits that are sold twice as different types of credits. The issue at hand concerns wetland and nutrient offset.
- **Mitigation banks** – Mitigation banks provide credits that are derived from wetlands or other significant natural areas that have been restored, enhanced, created, and/or preserved by private companies for the purpose of yielding mitigation credits. Mitigation bankers assume responsibility for long-term maintenance of banks and market mitigation credits to

developers and regulatory agencies as offsets for damage incurred by other projects in the same area.

This report includes several acronyms defined in Exhibit 1.

Exhibit 1

Acronyms Used in this Report

DENR (North Carolina Department of Environment and Natural Resources) – the lead stewardship agency for the preservation and protection of North Carolina's outstanding natural resources

DOT (North Carolina Department of Transportation) – state agency responsible for building roadways; DOT purchases a large number of mitigation credits

DWQ (North Carolina Department of Environment and Natural Resources, Division of Water Quality) – DENR division responsible for statewide regulatory programs for groundwater and surface water protection

EEP (North Carolina Department of Environment and Natural Resources, Ecosystem Enhancement Program) – DENR agency designed to provide compensatory mitigation to offset damage associated with development and restore, enhance, and protect the state's ecosystems

EBX (Environmental Banc and Exchange) – private ecosystem restoration firm that created and maintains mitigation banks in North Carolina

RFP (Request for Proposals) – the document issued to solicit proposals from offerors

USACE (U.S. Army Corps of Engineers) – federal entity responsible for issuing permits for development projects and determining mitigation requirements

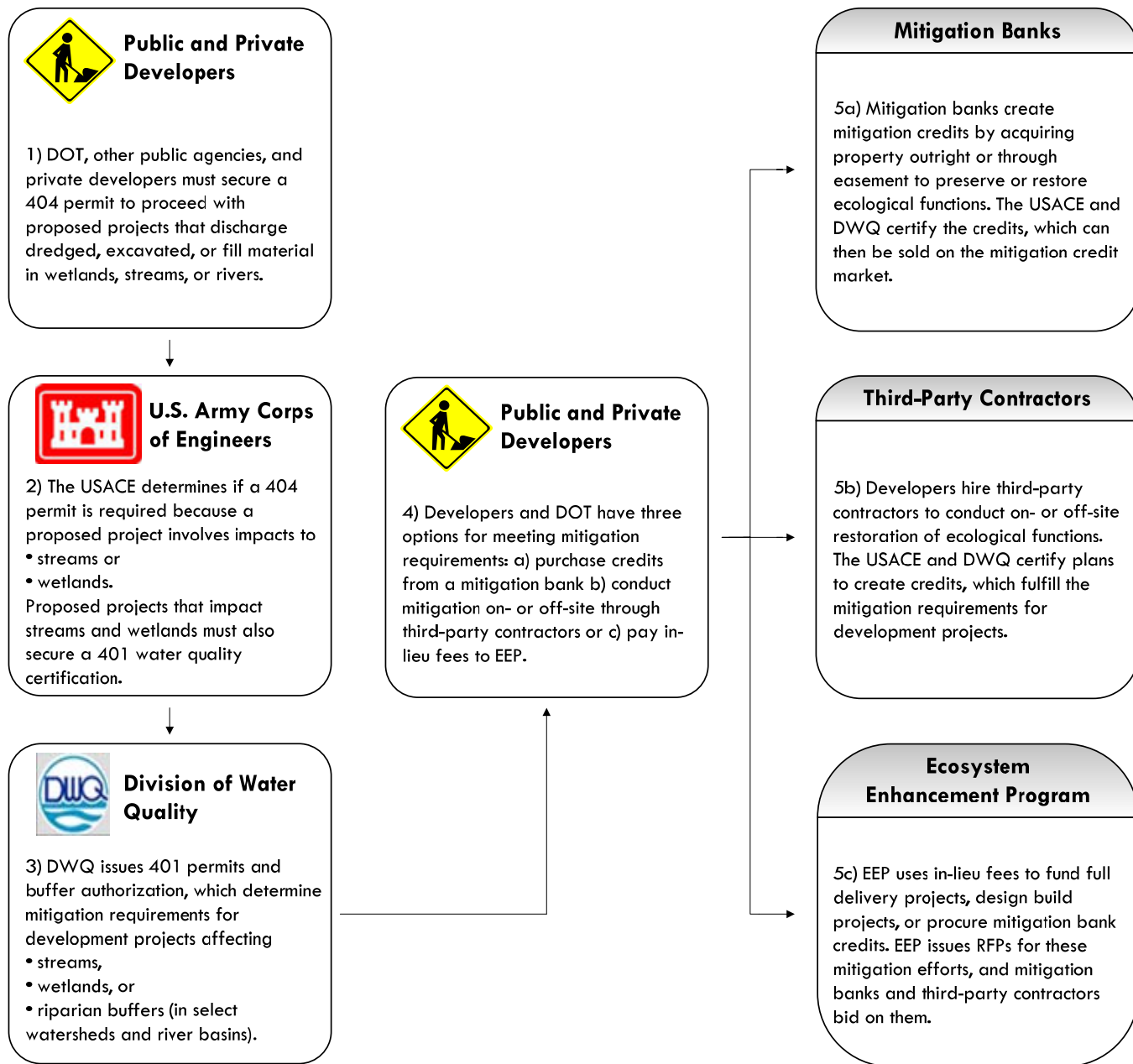
Note: EEP replaced the North Carolina Wetlands Restoration Program. The operating procedures were established by joint agreement of DENR, DOT, and USACE in 2003.

Source: Program Evaluation Division based on information from the North Carolina Department of Environment and Natural Resources.

The process of determining the need for and obtaining mitigation credits is shown in Exhibit 2. The objective of the federal Clean Water Act of 1977 is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. When a state agency or private developer plans a development project that discharges dredged, excavated, or fill material into wetlands and/or streams, they must obtain a 404 permit from USACE (Step 2, Exhibit 2). This permit ensures the reduction of environmental damage to streams and wetlands by requiring mitigation of ecological assets.

At the state level (Step 3, Exhibit 2), DWQ is responsible for statewide regulatory programs in surface water and aquifer protection. State regulators review development proposals and issue permits when development affects streams and wetlands. In these instances, developers must acquire a 401 water quality certification from the division. This permit provides state verification that a given project will not violate water quality standards. The 401 permit has two important features: it requires compensatory mitigation for unavoidable impact to streams and wetlands, and it identifies the inclusion of storm-water management features for a given project. Most 401 certifications are triggered by 404 permits issued by USACE. The combination of 404 and 401 permits establish the ecological impact and required mitigation of development projects.

Exhibit 2: Compensatory Mitigation in North Carolina



Source: Program Evaluation Division based on information from state and federal documents.

When development is planned in the Catawba, Neuse, and Tar-Pamlico River Basins or the Randleman Watershed, developers also may be required to obtain a buffer authorization permit from the state and provide mitigation for damage done. A buffer authorization permit is triggered by development that will disturb the vegetated buffers within 50 feet of streams in these areas.

Once compensatory mitigation requirements for development have been determined, developers have three options for satisfying mitigation requirements: purchasing credits directly from a mitigation bank; hiring a third-party contractor to perform on- or off-site mitigation activities; or

paying in-lieu fees to EEP. These options are shown in Steps 5a through 5c in Exhibit 2.

Mitigation activities may occur before, during, or after the development and associated environmental damage occur. For example, mitigation activities occur before a proposed development when mitigation banks generate credits that offset ecological damage. These credits may be available for purchase when the permit for the work is issued.

Time also affects when credits are available from mitigation banks: banks may be certified for a certain number of credits, but not all of those credits may be available at once. Often, credits are released for sale over time as a site matures (e.g., as plants mature, they offer more environmental benefit); the initial certification, however, takes this delay into account and provides a timeline for anticipated credit availability.

2. What events were associated with the alleged “double dipping” incident involving the Environmental Banc and Exchange in 2009?

A series of events beginning in 1999 relate to the controversy.

Events related to DOT transactions with EBX

- **1999** – EBX began creating the 3,000+ acre Neu-Con Umbrella Wetland Mitigation and Stream Restoration Bank (Neu-Con Mitigation Bank) by preserving or restoring land along the Neuse River.
- **October 17, 2000** – DOT paid EBX \$7.1 million for wetland credits derived from acreage at eight sites in the Neu-Con Mitigation Bank, based on projections of credits needed for upcoming road projects.²

Events related to EEP transactions with EBX

- **January 2, 2007** – DWQ issued a memorandum to clarify stream restoration and riparian buffer mitigation, stating, “riparian buffers planted for stream restoration [can] also count toward riparian buffer mitigation” credit because the primary purpose of both is the protection, maintenance, and improvement of water quality.
- **September 1, 2007** – Session Law 2007-438 became effective, allowing the sale of nutrient offset credits from private mitigation projects (e.g., mitigation banks).
- **July 24, 2008** – EEP issued an RFP for full-delivery projects to provide riparian buffer mitigation in the Neuse River Basin. A full-delivery project is a mitigation project that is planned, designed, constructed, and monitored by a private firm on property acquired by that firm.

² In November 2002, DOT paid EBX an additional \$4.1 million for stream credits on eight sites in the Neu-Con Mitigation Bank, based on projections of credits needed for upcoming road projects; according to DWQ, these credits are not at issue in the current controversy.

- **September 2008** – EBX submitted a proposal to DWQ to establish the EBX Neuse Riparian Buffer Umbrella Mitigation Bank to provide riparian buffer mitigation credits. The riparian buffer mitigation was located at three sites (Westbrook, Marston, and Nahunta) that also generated wetland and stream mitigation credits purchased by DOT in 2000 and 2002.
- **October 2008** – EBX amended their September 2008 proposal by adding nutrient offset credits derived from buffer zones that did not overlap riparian buffers initially proposed. Some of the credits in the proposal were derived from wetlands that had already generated credits purchased by DOT. EBX’s proposal to use the same land twice—previously for wetland credits and now for nutrient offset credits—was a new concept and there were no rules that directly addressed the issue. DWQ relied on its January 2007 rule clarification that allowed credit stacking for riparian buffer and stream restoration. DWQ concluded wetlands counted for wetland mitigation also could be used to generate nutrient offset credits.
- **November 11, 2008** – DWQ issued a banking instrument for the EBX Neuse Riparian Buffer Umbrella Mitigation Bank, certifying 31.2 riparian buffer credits and 192,000 pounds of nutrient offset credits.
- **November 17, 2008** – EEP closes RFP bidding.
- **November 25, 2008** – In a letter to DWQ, Restoration Systems, LLC³ questioned “whether buffer restoration carried out as part of a stream mitigation project may also be used for Nutrient Offsets.” Although the letter opposed DWQ’s certification of credits issued to EBX, no appeal was filed.
- **February 16, 2009** – DWQ decided not to rescind the banking instrument that issued nutrient offset credits to the EBX Neuse Riparian Buffer Umbrella Mitigation Bank. However, DWQ stated it “will not approve any additional banks where unallocated credits are proposed to be generated from previously approved and permitted sites.” The division also decided to review policies and procedures related to the generation of credits and issue a policy clarification.
- **Summer 2009** – DWQ began the rule-making process to address several issues, including clarification of situations where multiple credits are involved.
- **June 17, 2009** – EEP became aware of potential overlap in mitigation credits offered by EBX in response to the July 2008 RFP. EEP verified the mitigation credits being offered were valid and assured by DWQ.

³ Restoration Systems, LLC is a private ecosystem restoration firm that also bid on the RFP issued by EEP.

- **July 20, 2009** – EEP awarded EBX the contract for nutrient offset credits generated from two sites in the Neuse Riparian Buffer Umbrella Mitigation Bank (Westbrook and Nahunta).
- **October 13, 2009** – EEP paid EBX \$910,920 for the contracted nutrient offset credits.

Events following the contract award

- **Fall 2009** – DWQ began obtaining stakeholder comment on “Determining Impacts and Calculating Mitigation Credit on Multi-Resource Sites (Version 1.4 – 10/19/2009),” the most recent version of DWQ policy clarifications and rule changes.
- **December 8 and 9, 2009** – *News and Observer* articles publicizing the controversy appeared.
- **December 11, 2009** – DENR Assistant Secretary for Environment sent a memorandum to legislative leaders in response to the *News and Observer* articles explaining DENR’s position on EBX mitigation bank credits.

As shown in this sequence of events, in 2000, DOT paid EBX \$7.1 million for wetland credits on eight sites in the Neu-Con Mitigation Bank. In 2009, EEP paid EBX \$910,920 for riparian buffer and nutrient offset credits in two of those eight sites—Nahunta and Westbrook. The double-dipping issue arose because some of the 2009 nutrient offset credits were derived from some of the same wetland acres used to derive the 2000 wetland credits. In order to determine exactly how many of the 2009 nutrient offset credits were “overlapping” with the 2000 wetland credits and what was paid for them, the Program Evaluation Division requested and analyzed information from DWQ and EEP. The results of the analysis are shown in Exhibit 3 which details how the overlapping credits were certified and purchased.

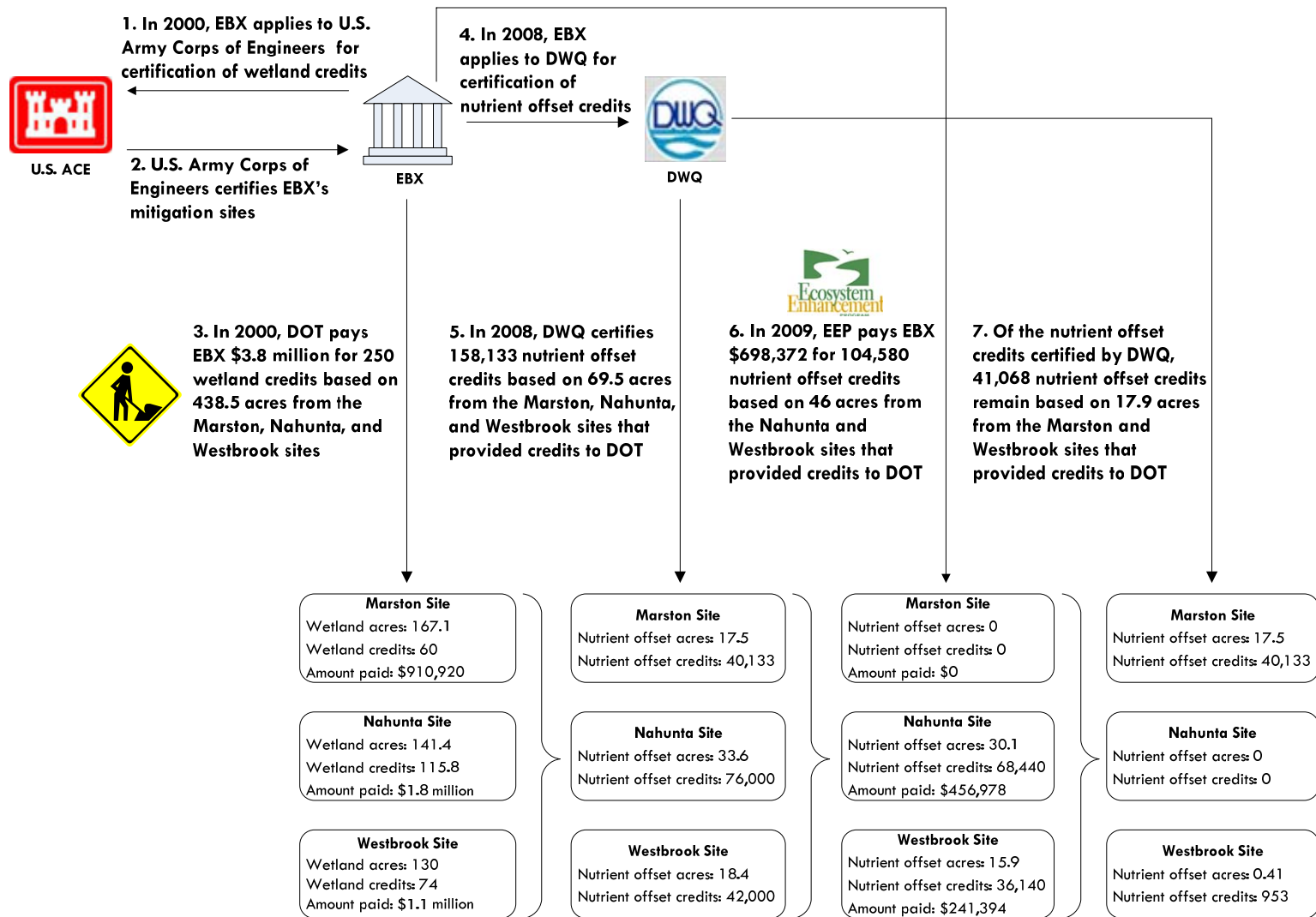
Exhibit 3 illustrates the part of the 2000 DOT purchase that consisted of \$3.8 million paid to EBX for 250 wetland credits. These credits were derived from 438.5 acres at the Marston, Nahunta, and Westbrook sites (Step 3, Exhibit 3). Of the 438.5 acres, 69.5 were used by DWQ to certify 158,133 nutrient offset credits in 2008 (Step 5, Exhibit 3).

In 2009, EEP paid EBX an estimated \$698,372 for 104,580 nutrient offset credits derived from 46 acres (Step 6, Exhibit 3).⁴ Currently, 41,068 of the overlapping nutrient offset credits (generated from 17.9 acres) are still available for purchase (Step 7, Exhibit 3).⁵

⁴ EEP paid an additional \$212,548 for riparian buffer credits that did not overlap with the wetland credits purchased by DOT; these buffer credits represent nutrient offsets that provide mitigation credits that had not been sold before.

⁵ In addition, 33,867 of unused, non-overlapping nutrient offset credits (based on 14.9 acres) from the Marston site are also available for purchase. These credits have the potential to provide additional environmental benefit.

Exhibit 3: The Certification and Purchase of Overlapping Wetland and Nutrient Offset Credits from EBX Mitigation Sites



Notes: Calculations for credits vary by the type of credit, but the number of acres to derive credits is constant. DOT paid a total of \$7.1 million to EBX for wetland credits, \$3.8 million of which was based on credits that overlapped with EEP's 2009 purchase of nutrient offset credits.

Source: Program Evaluation Division based on data from the Division of Water Quality and the Ecosystem Enhancement Program.

3. How has the Department of Environmental and Natural Resources responded to the controversy?

Once the controversy was raised in November 2008, DWQ placed a moratorium on certifying nutrient offset credits based on land that had already been used to derive wetland credits. The division also decided to continue to honor its certification of nutrient offset credits granted at the EBX Neuse River Riparian Buffer Mitigation Bank, even though these credits were derived from land that had previously been used for wetland credits sold to DOT.

In the December 11, 2009 memorandum to legislative leaders explaining DENR's position on EBX mitigation bank credits, the DENR Assistant Secretary for Environment asserted,

- “Approval of the EBX buffer/nutrient offset bank did not impose additional costs on taxpayers. The ability to use nutrient offset credits from an established stream and wetland restoration site made those credits less expensive.
- The issue posed by the new EBX mitigation bank was not cost to taxpayers, but whether a distinct environmental value was received for each type of mitigation credit approved by the Division of Water Quality.” (emphasis in the original)

These claims are at odds with Program Evaluation Division findings, which are based on information provided by DENR itself.

In spite of actions taken by DWQ to avoid future approval of overlapping mitigation credits, decisions related to this controversy resulted in actual and potential future losses to the environmental integrity of the Neuse River basin.

- **Actual Loss:** EEP spent \$698,372 to purchase nutrient offset credits from EBX that were derived from 46 acres of wetlands that had already been used to generate wetland credits for DOT. Therefore, the state of North Carolina received no return on investment in the form of additional nutrient offsets from \$698,372 of the \$910,920 paid by EEP.
- **Potential Loss:** In addition, DWQ continues to honor its certification of another 41,086 nutrient offset credits from EBX derived from 17.9 acres of wetlands also previously used to generate wetland credits for DOT. These credits remain available for purchase even though they will provide no additional environmental benefit.

After imposing the moratorium on certifying nutrient offset credits based on land that had already been used to derive wetland credits, DWQ initiated a review of division policies for determining impacts and calculating mitigation credit on multi-resource sites. The resulting draft policy has been reviewed by requisite federal agencies. Currently, the division is discussing the proposed policy with stakeholders and has begun

the rule-making process through the Environmental Management Commission.⁶

The draft policy provides guidance and clarification for determining impacts and calculating mitigation credits on multi-resource sites.

- A mitigation site generates stream credit when stream restoration occurs.
- Areas within the riparian buffer zone can be used to generate one of the following credits: riparian buffer credit or nutrient offset credit.
- Wetland credit cannot be generated within the 50-foot riparian buffer.
- Areas located outside the 50-foot riparian buffer but within a minimum of 200 feet from the stream can be used to generate one of the following: wetland credit or nutrient offset credit.

Implementation of these policy clarifications and rule changes will prospectively eliminate credit stacking of nutrient offset credits with wetland or riparian buffer credits. However, the actual and potential loss incurred by certifying nutrient offset credits in 2008 that overlapped with wetland credits already allotted in 2000 comprise a net loss to North Carolina's environment.

Program Evaluation Division Contact and Acknowledgements

For more information on this report, please contact Program Evaluation Division Director John Turcotte, john.turcotte@ncleg.net

We would like to acknowledge the Department of Environment and Natural Resources, Division of Water Quality, and Ecosystem Enhancement Program for their full cooperation with us and the courtesies shown to our evaluators.

⁶ Although these policy clarifications and rule changes are new for DWQ, EEP already has an internal policy for quantifying mitigation credits for all of its non-mitigation bank projects. The EEP policy does not allow nutrient offset mitigation to be used to generate stream, wetland, or buffer credits. DWQ's policy clarifications and rule changes will not affect EEP's internal policies.