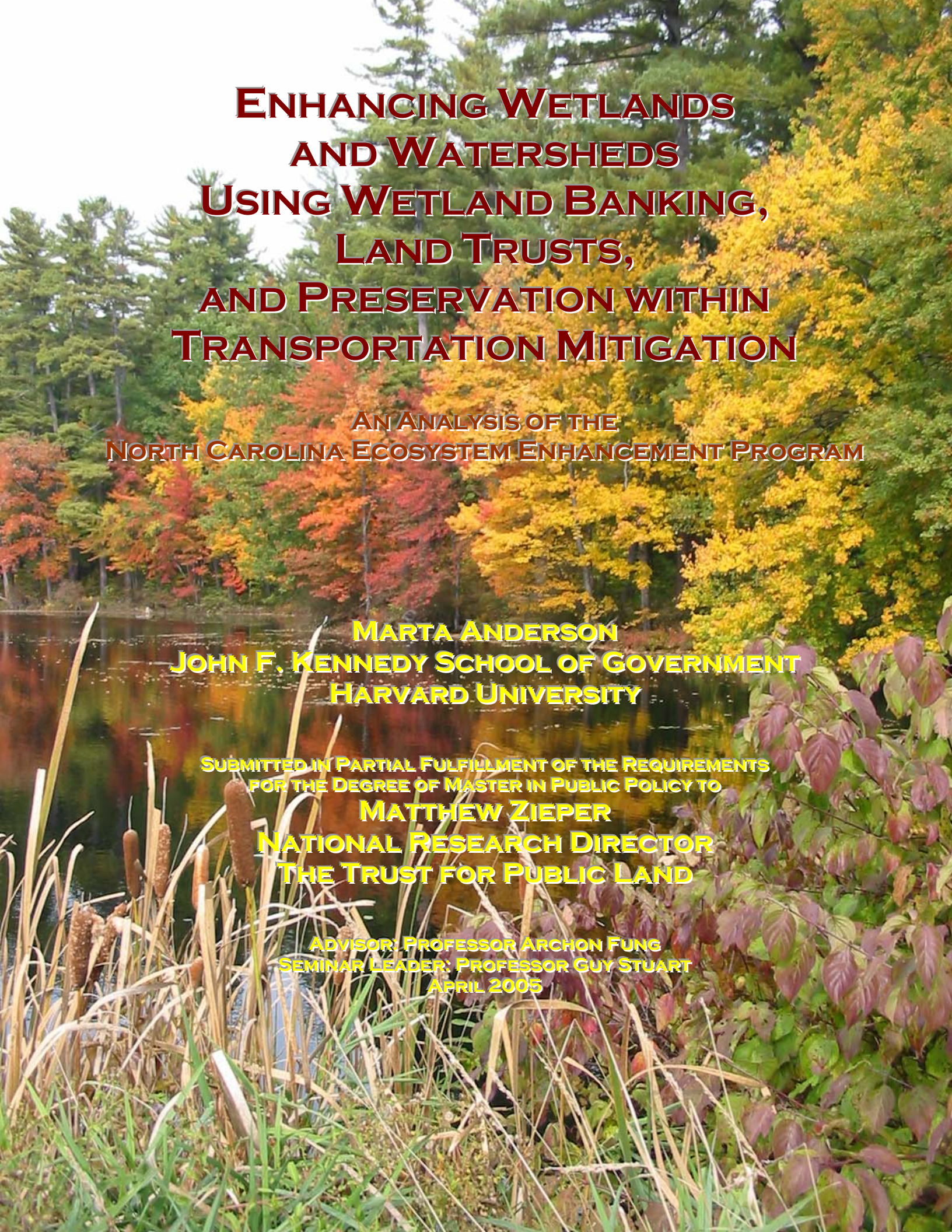

Enhancing Wetlands and Watersheds Using Wetland Banking, Land Trusts, and Preservation within Transportation Mitigation

An Analysis of the North Carolina Ecosystem Enhancement Program

Marta Anderson
John F. Kennedy School of Government
Harvard University

Submitted in Partial Fulfillment of the Requirements
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Matthew Zieper
National Research Director
The Trust for Public Land

Advisor: Professor Archon Fung
Seminar Leader: Professor Guy Stuart
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Executive Summary

The sight of road construction often seems ubiquitous in the United States. Each year about 5,500 new miles of roads are added to this country's unparalleled network of paved surfaces, not including the more than 50,000 lane miles added each year through road widening. The toll that transportation projects take on the natural environment, especially our wetlands and watersheds, is significant. Between water, air and soil pollution, habitat loss, road kill, the introduction of nonnative species, and the loss of valuable wetland functions including groundwater recharge and flood control, more roads mean a *lot* more impacts to our drinking water and natural lands.

Section 404 of the federal Clean Water Act, however, provides legal protection for wetlands in the face of transportation projects. If a transportation project is going to impact wetlands, in order to receive the necessary permit from the state or federal government, the project must first try to avoid the wetlands, then minimize its impact to the wetlands, and finally, if no other alternative can be found, the permittee must compensate for the impacted or destroyed wetlands. Compensation, or "compensatory wetland mitigation," is the common outcome of transportation development.

Compensatory wetland mitigation provides a challenge and opportunity for the environment, specifically with wetlands and watersheds. Unfortunately its execution in the past thirty years has been largely unsuccessful due to many factors including: lack of sufficient monitoring and maintenance, poor engineering, proximity to development, isolation from similar ecosystems, the absence of strategic, science-based mitigation within the watershed, and a significant lag time between the impact of development and the actual compensation. This has resulted in an overall loss of wetlands in the U.S. despite the legal requirements of Section 404 of the Clean Water Act and

the goal of "no net loss." Reports of the failure of compensatory wetland mitigation by the National Academy of Sciences and the Government Accountability Office prompted the current major overhaul of regulations and guidance within the federal government for wetland mitigation; state Departments of Transportation and Departments of Environment are also increasingly aware of shortcomings in current wetland mitigation while simultaneously receiving more pressure to streamline environmental permitting. However, if compensatory wetland mitigation were restructured and maximized through better state programs and policies, it could potentially save time and money for transportation while also providing many more benefits to wetlands and watersheds. ***Conservation and transportation can come together with a win-win solution for wetlands mitigation.***

The Trust for Public Land's Interest

Within The Trust for Public Land's mission is a strong commitment to protecting watersheds and wetlands for clean drinking water, recreation and wildlife habitat. The Trust for Public Land works with regulatory agencies and all levels of government in order to make their efforts better incorporate sound land protection. High-quality wetland mitigation represents both a conservation need and strategic land protection opportunity for the Trust for Public Land, especially as some states are rethinking their approaches to mitigating transportation projects. ***If a model bringing conservation and transportation together exists, the Trust for Public Land wants to understand its benefits to wetlands and watersheds, and potentially promote it in other states.***

The overall purpose of this study is to enhance wetland and watershed protection in the United States. This purpose is achieved through three goals:

1. **Explaining how the North Carolina Ecosystem Enhancement Program (EEP), a potential model for improved wetland mitigation came about and how it works.**

2. **Analyzing the major elements of EEP: wetland, upland and streamside preservation, land trust involvement, and wetland banking.**

3. **Determining whether EEP is a model that should be promoted by TPL in other states and, if necessary, making recommendations for improvement.**

Conclusions and Recommendations

Essential Elements of EEP

There are three key components to EEP that provide the basis for analysis of whether this program is a model for the purpose of enhancement of wetlands and watersheds: the preservation of critical wetlands and supporting uplands; wetland banking; and land trust involvement. Each element is considered in terms of its ability within EEP to achieve the stated purpose and how it might be improved or monitored over time. In conclusion, **EEP's approach to these three elements indicates that it is a model for wetland and watershed enhancement.**

Element 1: Preservation. While the preservation that is allowed as compensatory wetland mitigation in the first two years of EEP is a sound way to get transportation projects started because restoration is also required after this period, a future approach that values preservation as integral for successful restoration adds value for wetlands and watersheds. EEP should take their program to this next level of water resource protection as they move forward with this next phase of policy development. Currently, however, their approach to preservation is mindful of "no net loss" while permanently preserving key wetlands and uplands. In this way, EEP serves as a model.

Element 2: Wetland banking. EEP capitalizes on wetland banking's distinct advantages in providing larger more biologically and hydrologically sound areas that are chosen based on their importance to the watershed. Because EEP issues Requests for Proposals (RFP) that are highly specific to anticipated mitigation needs within certain watersheds and hydrologic units, this is not a case of wetland banking occurring on cheap land far from impacts and needing little actual restoration. EEP also monitors and holds accountable private wetland banking companies in order that projects are satisfactorily completed. Private wetland banking companies also compete in the RFP process, giving the public the greatest value while also receiving sufficient funding to do quality mitigation well. Therefore, on the element of wetland banking, EEP serves as a model in its full utilization of this effective means for wetland and watershed protection.

Element 3: Land trust involvement. Because local and regional land trusts are closest to the ground when it comes to knowing the priority lands needing protection, tapping into their expertise certainly enhances wetlands and watersheds as strategic preservation and restoration is conducted by EEP. EEP is wise to have established an official relationship with the Conservation Trust of North Carolina, an umbrella organization for land trusts through the state, particularly for the two-year period allowing preservation. Thanks to previous grant funding and internal strategic land planning, land trusts had already done streamside buffer conservation plans in addition to other sensitive land identification, rendering them ready to take on guiding preservation and restoration with the state. This has led to some of the most critical lands being protected in the past two years, lands which will support the health of watersheds and help future restored wetlands to succeed. EEP's incorporation of land trusts from the beginning stages of program development have been good for wetlands and watersheds, as local conservation priorities and strategic planning have been fully utilized. This again makes EEP a model for wetland and watershed enhancement.

Lessons from EEP's Experience

- Have a commitment from the top.
- Forge a Memorandum of Agreement.
- Design the program in a collaborative way.
- Be prepared for resistance to change.
- Upfront capital is essential.
- House the new program in the Department of Environment, not the Department of Transportation.
- Oversee all contracts with private wetland bankers to ensure project goals are met.
- Incorporate regional and statewide conservation plans into all actions.

Next Steps

- Maintain relationships with EEP and NC land trusts.
- Get involved with Tennessee and Georgia's land trusts, DOT and Departments of Environment.
- Analyze all states to determine where an EEP-type program might be promoted.
- Build a relationship with the Federal Highway Administration.
- Push for TEA-21 reauthorization to include the continued promotion of wetland banking, integration between transportation and environment, and the use of conservation planning in transportation development decision-making.

North Carolina's Ecosystem Enhancement Program serves as a model for enhancing wetland and watershed protection in the United States. By using wetland banking that accomplishes wetland restoration and protection long before transportation impacts occur, as well as utilizing land trusts to

target sensitive water resources for preservation and restoration, EEP makes large strides from the wetland mitigation of the past that has been deemed unsuccessful in achieving "no net loss".

Making a program like EEP happen is challenging politically, programmatically and administratively; however, with a commitment from the top which starts with the Federal Highway Administration and the clear opportunity to save DOTs large amounts of project funding while doing a significantly better job for water resources, there is potential for other states to follow suit. Should future analysis indicate other states that are ripe for change, many key elements of EEP must be included in the program in order to ensure the maximum enhancement of wetlands and watersheds. There are also predictable hurdles, such as gaining upfront funding and overcoming resistance from agencies comfortable with the status quo.

However, if the program can gain momentum and forge needed partnerships to get started, it can succeed for enhanced wetland and watershed protection provided it: taps into the potential of private wetland banking through transparent, competitive processes while holding firms to strict performance standards; conducts a level of wetland, upland and streamside preservation driven by land trusts' priority protection plans in addition to restoration; and involves land trusts and strategic watershed planning throughout all levels of transportation and wetland mitigation decision-making.

The Need and Opportunity for Better Conservation within Transportation Development

TPL recognizes the strong opportunity and need within transportation impacts to promote better conservation. First, the toll that transportation projects take on the natural environment is huge. Between water, air and soil pollution, habitat loss, road kill, the introduction of nonnative species, and the loss of valuable wetland functions including groundwater recharge and flood control, more roads mean significantly more impacts to our drinking water and natural lands. Scientists assert that the impact of roads, called the "road-effect zone," is 20 times larger than where the pavement alone is laid, rendering approximately twenty percent of the land area of the U.S. directly experiencing these detrimental impacts.[1] Add to this about 5,500 new miles of road being built each year in the United States, not including the more than 50,000 lane miles added each year with road widening.[2]

"When you look at how much money goes into [transportation] mitigation in a year, it's such a huge opportunity to do some really good natural resource management."
–Suzanne Klimek,
Director of Operations at EEP

Secondly, when it comes to wetlands and transportation projects, there are legal protections and funding for these critical natural resources that can be maximized for watershed and land protection. Section 404 of the federal Clean Water Act requires a permit from the federal or state government if wetlands are going to be impacted by development and if impacts will occur they must be compensated for with wetland restoration (or sometimes enhancement or creation). A significant amount of money goes towards wetland mitigation in any transportation department,

[1] Forman, Richard T. T. "Estimate of the Area Affected Ecologically by the Road System in the United States." Conservation Biology 14: No. 1, 31-35.
[2] Forman, Sperling et al. Road Ecology: Science and Solutions. Island Press, 2003, 39.

typically around to 10% to 12% of project costs[3], offering a big opportunity for better conservation. As permitted wetland impacts by transportation are common, getting the most out of the required mitigation is clearly an opportunity with financial backing.

In addition, the wetland mitigation for transportation projects of the past thirty years simply has not been successful overall and there is a window of opportunity for change as governments and science recognize the need for reform. Studies by the Government Accountability Office and the National Academy of Sciences in 2001 found that the goal of "no net loss" of the remaining wetlands in the United States is not being met, much less the goal of eventually increasing the amount of wetlands (only 50% remains of our original wetlands in the U.S.).[4] Current efforts by the Environmental Protection Agency, the Army Corps of Engineers, and the Departments of Agriculture, Commerce, Interior, and Transportation are coming together in the National Wetlands Mitigation Plan to be completed by the end of the 2005, which will attempt to overhaul wetland mitigation. Non-profits, states and other parties should take advantage of the current leverage for better wetland mitigation. Many states are evaluating their programs in light of these findings, while also attempting to better streamline environmental permitting processes. The time is ripe for change.

[3] Personal interview with Rob Ayers, Environmental Programs Coordinator, Federal Highway Administration-NC Division. March 31, 2005.
[4] "Wetland Values and Trends", Natural Resources Conservation Service. U.S. Department of Agriculture. <www.nrcs.usda.gov/technical/land/pubs/ib4text.html>. Cited March 2005.

Improving Wetland Mitigation: An Opportunity for The Trust for Public Land

Founded in 1972, the Trust for Public Land (TPL) is dedicated to protecting land for human well-being and enjoyment. This includes urban parks, working lands, open space and historical and cultural sites. TPL works at protecting the lands and waters that are most valuable in preserving quality of life in many ways including working with communities, assisting local land trusts and decision makers, and structuring, negotiating, and completing land transactions.[5] TPL is continually looking for new opportunities with private landowners, government and communities to promote land protection that meets communities' specific needs and strategic conservation goals.

Doing strategic land conservation embraces conservation planning, especially in regards to TPL's goals with watershed protection for clean drinking water which is the TPL Conservation Initiative most relevant in this study. Protecting drinking water depends on targeted protection of the wetlands that filter out pollution and recharge the groundwater, establishment of buffer zones between developed areas and water resources, and guarding the headwaters of streams and rivers in order to keep the source of water pure.

But in accomplishing strategic, community-driven land conservation, one of the most challenging aspects in the face of rapid development is how to pay for it as land values continue to rise. TPL is continually seeking new ways to finance the acquisition and protection of parks, river corridors, coastal areas and open space. In some cases, this means getting the right tools and the necessary funding into local, state and federal hands; in others, it is working closely with regulatory agencies

[5] "About TPL" from the Trust for Public Land's website. <http:// www.TPL.org.html> Cited 1 March 2005.

and various levels of government in order to make their efforts better incorporate sound land protection.

TPL, in seeking to enhance wetland and watershed protection, is looking for a model that brings together strategic land conservation that is not only community-driven by local land trusts, but is made possible through dramatically different transportation wetland mitigation. TPL is looking for a model that takes state and federal obligations under the Clean Water Act for the mitigation of transportation projects impacting wetlands and making the most of them with targeted, proactive watershed protection with a significant land preservation component and a strong role for local and regional land trusts around the state.

By finding successful models for land conservation, TPL can promote these models elsewhere, determining and sharing the best practices with those in the field as well as providing targeted resources and assistance. In so doing, TPL can actively increase strategic land conservation and enhance wetlands and watershed protection.

Purpose and Goals

The overall purpose of this study is to enhance wetland and watershed protection in the United States. This purpose will be achieved through three goals:

1. Explaining how the North Carolina Ecosystem Enhancement Program (EEP), a potential model for improved wetland mitigation came about and how it works.

The North Carolina Ecosystem Enhancement Program (EEP) is an award-winning new approach to compensatory wetland mitigation for transportation development. EEP seeks to streamline the Section 404 permitting process while improving wetland mitigation to better protect watersheds. While other states are making changes to their wetland mitigation procedures to address permitting and environmental issues, North Carolina has gone the farthest in developing a separate government program that brings transportation and conservation together before permitting or impacts happen from development. Understanding how EEP came about and how it works allows analysis to determine if it is structured to achieve enhanced wetland and watershed protection, and if it is potentially a model.

2. Analyzing the major elements of EEP from the wetland and watershed perspective: wetland, upland and streamside preservation; land trust involvement; and wetland banking.

There are three elements to EEP that make it a significant change from traditional, on-site wetland mitigation. First, the role of wetland banking in EEP puts the majority of mitigation work (restoration) in the hands of private wetland bankers who are responding to watershed-based mitigation project requests from EEP several years before the associated transportation

development will begin. Second, an official role for local and regional land trusts in EEP allows for preservation and restoration that meet some of the conservation goals of these organizations and needs of the watershed. Third, the preservation component of EEP is especially unique as it allows preservation to count as mitigation in order to get transportation projects off the ground during the transition years of the new program, allowing additional new land protection throughout the state. How these three elements work for the purpose of enhancing wetland and watershed protection will define whether EEP is indeed a model.

3. Determining whether EEP is a model that should be promoted in other states and, if necessary, making recommendations for improvement.

If the major elements of EEP show it is a model, any areas that might be improved for additional wetlands and watershed enhancement will be discussed. Integral elements of and lessons from EEP will be identified, with recommended next steps of action.

Methods

Numerous interviews were conducted with the most relevant policy analysts, land trust leaders, private sector players and program administrators regarding wetlands banking, integrating transportation and conservation, and the North Carolina Ecosystem Enhancement Program. These valuable perspectives were supplemented with research on the history and status of wetland banking and the author's professional background with state wetlands protection at the Massachusetts Association of Conservation Commissions.

Watersheds, Wetlands and the Law

Why Watersheds and Wetlands Matter

Protecting watersheds not only provides clean drinking water, but benefits wildlife habitat, recreational opportunities and economic bases such as tourism and sustainable fisheries. At the core of a healthy watershed are wetlands. Wetlands, a term which encompasses coastal areas, bogs, estuaries, marshes and swamps, serve as natural pollution filters. Wetlands capture heavy metals, chemicals and sediment and provide a protective buffer to water bodies, rivers and streams from neighboring development and roads. They are also essential at some point of the life cycles of the majority of fish and wildlife species thanks to their high biological productivity: seventy-five percent of commercially harvested fish depend on wetlands (if shellfish are included, 95% of harvested fish are dependent on wetlands); half of the birds in the United States need wetlands for breeding and feeding.[6] Wetlands also provide significant erosion and flood control, capturing polluted runoff before it enters water bodies as well as absorbing the brunt of major storm events.[7]

Wetlands improve drinking water quality by preventing pollutants, nutrients and sediments from entering lakes, streams and reservoirs – and ultimately our taps.

With half of our wetlands in the United States already gone, holding onto what remains while also restoring the wetlands that have been filled and destroyed is essential in protecting healthy watersheds, homes for people, and habitat for wildlife. Considering the impacts wetland sustain due to transportation development projects, legal compensatory wetland mitigation obligations should be maximized.

[6] "Functions and Values of Wetlands." The U.S. Environmental Protection Agency, EPA 843-F-01-002C. September 2001. <http://www.epa.gov/owow/wetlands/pdf/fun_val.pdf>

[7] Enger and Smith. Environmental Science: A Study of Interrelationships. McGraw-Hill, 2000. 222.

Understanding the Clean Water Act and Wetland Mitigation

A proposed transportation project must first *avoid*, and then *minimize* its impacts on wetlands. If no alternative can be found and the permit is granted, this is when compensation is required in the form of *compensatory mitigation*.

The protection of wetlands is primarily thanks to the Clean Water Act and specifically Section 404, which regulates the discharge of dredged or fill material into waters including wetlands. The U.S. Army Corps of Engineers administers the permitting program of Section 404 and must authorize any filling of wetlands. Projects must first avoid impacting wetlands if at all possible, and if permitted, minimize impacts and then conduct compensatory mitigation in the form of wetland enhancement, restoration or creation.

Compensatory mitigation is traditionally and more typically done at or near the project site and is driven by the Administration's "no net loss of wetlands" policy, so a designated amount of wetland is either enhanced, restored or created to an extent that the wetland and its functions and values lost in the impacts of the project should be fully compensated for. But the reality is that conducting traditional wetland compensation near the transportation project is problematic in many ways. Wetland banking, now more than twenty years old, tries to ameliorate these problems.

Wetland banking recognizes that larger wetland areas offer more biologically and hydrologically sound functions and values than a small, isolated patch of wetland, which due to its proximity to the project site likely provides only storm water and flood control to the area, with no wildlife habitat or watershed protection values. Instead of traditional compensatory mitigation at or near the site, "credits" (typically a number of acres) are purchased at a wetland bank where contiguous wetland

areas are being created or restored.[8] This means that wetland banking can speed up project review time by simplifying environmental permitting aspects; take advantage of economies of scale by providing more high quality wetland per dollar; and leave the acquisition and long-term management to professional wetland banking companies or special state programs.

Alternatives to Traditional On-Site Wetland Mitigation

Wetland mitigation banking Often conducted by a private banker, an agency or an organization, it establishes larger off-site wetland areas that then are used to mitigate for numerous smaller projects.

In-lieu-fee mitigation Like wetland mitigation banking, in-lieu-fee mitigation is consolidated off-site for multiple permittees, who pay a fee. However, the mitigation ***doesn't*** happen in advance of impacts--- which is important in achieving "no net loss", as a lag time leave wetland functions and values lost often for years.

From: Banks and Fees: The Status of Off-Site Wetland Mitigation In the United States. Environmental Law Institute, 2002. Page 7-8.

However, wetland banking has elements that require some caution. First, any wetland destruction is intended to be a last resort. There is always the concern that wetland banking as a quick and easy mitigation option may encourage the compensatory route more than it should. Second, banking far offsite from the project area also means that most of the wetland functions are completely lost to that local area and possibly the watershed, depending on the location of the wetland bank.[9] So wetland bank siting must meet the actual needs of the specific wetland where impacts are experienced. But a growing consensus including the National Academy of Sciences and the Federal Highway Administration agree when these concerns are accounted for in program design, wetland banking solves many of the inherent problems within compensatory mitigation, and rendering wetland banking far more successful for watersheds, wildlife, streamlining, and true "no net loss."

[8] Stein et al. "Wetland Mitigation Banking: A Framework for Crediting and Debiting." Environmental Management. Vol. 26., No. 3, pp. 233-250.

[9] White, Patricia and Ernst, Michelle. "Second Nature: Improving Transportation Without Putting Nature Second." Defenders of Wildlife. Surface Transportation Policy Project. 2003. Page 26. <www.tranact.org/report.asp?id=206>

Compensatory mitigation as a whole, including wetland banking, has been deemed far from successful in the past twenty years, however, in terms of maintaining no net loss of wetlands. The report by the National Academy of Sciences in 2001, "Compensating for Wetland Losses Under the Clean Water Act" as well as the Government Accountability Office's report in 2001, "Assessments Needed to Determine Effectiveness of In-Lieu-Fee Mitigation," were very critical in their assessment of compensatory mitigation and have prompted a major push within federal agencies to overhaul the current compensatory mitigation permit conditioning to require clear and enforceable performance requirements, better take into account wetland diversity and connectivity within watersheds, establish a longer time for restoration and monitoring, promote the importance of upland and riparian areas in buffering wetland areas, and make clear the biological and hydrological shortfalls in wetland creation.[10]

Principal Findings by the Committee on Mitigating Wetland Losses within the National Academy of Sciences

1. The goals of no net loss of wetlands are not being met for wetland functions by the mitigation program, despite progress in the last 20 years.

2. A watershed approach would improve permit decision making.

3. Performance expectations in Section 404 permits have often been unclear, and compliance has often not been assured nor attained.

4. Support for regulatory decision making is inadequate.

5. Third-party compensation approaches (mitigation banks, in-lieu fee programs) offer some advantages over permittee-responsible mitigation.

From: National Research Council. Compensating for Wetland Losses Under the Clean Water Act. National Academy Press, 2001.

"Smaller pieces [of on-site wetland mitigation] don't amount to much more than stormwater management."
–Richard Mogensen,
Director of Mid-Atlantic Mitigation Bank

The National Wetlands Mitigation Action Plan, a joint effort of the Environmental Protection Agency, the Army Corps of Engineers, and the Departments of Agriculture, Commerce, Interior, and Transportation will be completed by the end of 2005 with the goal of significantly improving

[10] National Research Council. Compensating for Wetland Losses Under the Clean Water Act. National Academy Press. 2001.

the performance measures and standards for ecological success, plus the monitoring and oversight needed for mitigation projects to ensure their success.[11] The Plan's action items, many of which are now complete and intended to integrate mitigation into a watershed context, improve accountability, clarify performance standards, and improve date collection and availability, include guidance on: 1) compensatory mitigation projects for aquatic resources, 2) use of off-site and out-of-kind compensatory mitigation, 3) vegetated buffers, 4) preservation, 5) difficult to replace aquatic resources, 6) performance standards, and 7) TEA-21 banking.[12] These changes throughout surely will shape the states' decisions and provide political and regulatory backing in reworking programs to address the failures of compensatory mitigation.

The Federal Highway Administration's Take on Mitigation

One of the reasons wetland banking has been on the rise is its consistent promotion by the Federal Highway Administration (FHWA). In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) passed by Congress included a provision allowing federal aid highways funds to be used for wetland mitigation banks that were going to compensate for federal aid highway projects impacting wetlands.[13]

The more recent version of ISTEA, TEA-21 (Transportation Equity Act for the 21st Century enacted in 1998) includes a preference for wetland mitigation banking when compensation for highway impacts is needed. The federal guidance on the use of the TEA-21 preference for mitigation banking also promotes the role of early coordination in mitigation planning to better

[11] "Background." National Wetlands Mitigation Action Plan. <http://www.mitigationactionplan.gov/background.html>. Cited March 2005.
[12] "Draft Federal Guidance on the Use of Preservation as Compensatory Mitigation Under Section 404 of the Clean Water Act." National Wetlands Mitigation Action Plan. < http://www.mitigationactionplan.gov/Preservation_8-27-04.htm>. August 27, 2004.
[13] Page 15 Banks and Fees: The Status of Off-Site Wetland Mitigation in the United States Environmental Law Institute September 2002

streamline environmental review and consider of environmental impacts and regional needs for aquatic resources in advance of any transportation decisions. It also encourages localized agreements between regional and district offices of the agencies.[14]

TEA-21 is a fundamental backdrop for better integrating conservation with transportation.

TEA-21 is awaiting reauthorization, which could happen at any time in Congress. It will almost certainly maintain the preference for wetland banking, and may also include provisions that will boost better wetland enhancement and land protection in other ways including requiring state DOT's to utilize state conservation plans into their long term planning.

[14] Federal Highway Administration, U.S. Environmental Protection agency, U.S. Army. "Federal Guidance on the Use of the TEA-21 Preference for Mitigation Banking to fulfill Mitigation Requirements under Section 404 of the Clean Water Act." July 11, 2003. <http://www.epa.gov/owow/wetlands/pdf/TEA-21Guidance.pdf>

The North Carolina Ecosystem Enhancement Program

In achieving the purpose of this study of enhancing wetlands and watershed protection in the United States, the first goal in achieving this purpose is to understand the new approach to wetland mitigation being taken by North Carolina. North Carolina has received significant attention since the creation of its Ecosystem Enhancement Program; this section will now explain how the North Carolina Ecosystem Enhancement Program (EEP) came to be and how it works.

"EEP is really a revolving fund program."
–Leonard Shabman, Resources for the Future

Every state does compensatory wetland mitigation; some states have wetland banking as an option within this. But EEP does all of its compensatory mitigation through wetland banking, which is completed several years before ground is broken for a transportation project.

The creation of EEP was driven by several factors. First, transportation projects were experiencing severe delays related to environmental permitting issues which the predecessor program to EEP, the Wetlands Restoration Program, was not successfully streamlining. When Roger Sheats was appointed as Deputy Secretary for Environment, Planning and Local Affairs within North Carolina's Department of Transportation (NCDOT), he found that in 2001, 55% of NCDOT projects were being held up because of difficulties meeting wetland mitigation

In 2001, 55% of NCDOT's projects were held up by problems meeting wetland mitigation requirements.

obligations.[15] Improving and streamlining wetland mitigation for transportation projects was clearly a problem to tackle.

In addition, the political climate was ripe for change. The new governor of North Carolina, Michael Easley, had embraced environmental issues within his platform and his appointments to key positions in NCDOT and North Carolina Department of Environment and Natural Resources (NCDENR) were chosen to build bridges between agencies, as well as make a break from traditional agency thinking.

"Our postage stamp approach of the past wasn't doing anything for the environment."
–Roger Sheats,
Deputy Secretary for Environment, Planning, and Local Governmental Affairs, NCDOT

Finally, the National Academy of Sciences report made many in natural resource agencies take a long hard look at their current compensatory wetland mitigation, and North Carolina recognized that it was not achieving "no net loss" with current practices.[16] Thus, after a lot of brainstorming and trust and partnership building between NCDOT and the N.C. Department of Environment and Natural Resources, the regional Army Corps of Engineers, the conservation community and private wetland bankers, EEP was born: a programmatic approach to mitigation that consolidates mitigation programs in transportation and environmental agencies; promotes mitigation within the watershed context; taps into the local expertise of land trusts and skills of private wetland bankers; and pushes for functional wetlands replacement, not just acres and fees.

[15] Personal interview with Roger Sheats, Deputy Secretary for Environment, Planning, and Local Governmental Affairs, North Carolina Department of Transportation, March 23, 2005.
[16] Personal interview with Suzanne Klimek, Director of Operations at EEP, February 5, 2005.

EEP's purpose is to "provide a comprehensive, natural resource enhancement program that identifies ecosystems needs at the local watershed level and preserves, enhances and restores ecological functions within the target watersheds while addressing impacts from anticipated N.C. Department of Transportation transportation projects and other development."[17] EEP brings together the mitigation resources of the N.C. Department of Transportation (NCDOT) and the N.C. Wetlands Restoration Program (NCWRP), which is within the N.C. Department of Environment and Natural Resources (NCDENR). The goal is that long before any pavement is poured EEP will be anticipating transportation impacts on a watershed basis, buying up and protecting land, restoring and maintaining functional wetlands that are valuable to the health of the watershed. Success between the three parties means that in advance of impacts authorized by the USACE, exemplary, watershed-based mitigation projects will be completed and functioning for several years – up to fourteen years ahead of time.

"We're embracing the recommendations of the National Academy of Sciences."
–Suzanne Klimek,
Director of Operations at EEP

Preservation projects must have demonstrable threat and must be in an ecoregion that has need (need is defined as projected mitigation needed to offset DOT impacts during the EEP transition period within each Ecoregion).
-from EEP's Preservation Guidance Criteria, updated March 9, 2004

EEP was officially established through a Memorandum of Agreement (MOA) between the Wilmington district office of the Army Corps of Engineers (which covers most of the state of North Carolina), the NCDOT and the NCDENR. Within the MOA it lays out how EEP will conduct compensatory mitigation when a permitted project will negatively impact wetlands.[18] Once a project avoids and minimizes impacts to wetlands, there is then an established preference for EEP mitigation credits for meeting the compensation requirements—which EEP banks based on the

[17] "Wetlands Restoration Program 2003 Annual Report." North Carolina Wetlands Restoration Program, North Carolina Department of Environment and Natural Resources. Page 15. < http://www.nceep.net/news/annualreport/2004/annual_report.htm>.
[18] Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Transportation and the United States Army Corps of Engineers, Wilmington District. July 22, 2003. Page 1.

needs of the NCDOT's seven-year plans, which it receives far ahead of time. This means that as soon as approximate road corridors are known, EEP can begin determining where wetland mitigation should be done based on location, area, and wetland type in order to protect watersheds in a targeted way and keep wetland functions and values within a certain proximity of the project's future impacts. This is based on an action plan EEP has developed for each of the 54 watersheds in North Carolina.

EEP technically provides the mitigation to NCDOT in the form of mitigation credits *after* NCDOT goes through all permitting processes, including NEPA. It is completely separated from the process of first avoiding, then minimizing, and then mitigating that NCDOT must go through. However, funding from NCDOT (EEP will eventually be mostly self-sustaining as NCDOT pays on a per project basis for compensatory mitigation) allows EEP to do Requests for Proposals to solicit projects from contractors in the private wetland banking industry and get banking started on the ground several years before construction.

"We get their [NCDOT's] seven-year Transportation Improvement Plan which becomes the baseboard for what we do… but we do not endorse *any* TIP project. We provide mitigation after they have gone through the avoid-minimize-mitigate process."
–Bill Gilmore,
Director, EEP

Element 1: Restoration, Creation, and Preservation

However, because EEP is new and there were transportation projects that needed to get started immediately, it was not possible to mitigate for them with banked wetlands that have been restored and up-and-running successfully for several years. So for the first two years of EEP, wetland preservation is allowed as compensatory mitigation. The distinctness between restoration and preservation is critical to understand.

In thinking about restoration, first imagine that for many years there has been a cow pasture along a stream, with waste entering the water and the original buffer of wetland plants having been mowed and filled decades ago, offering no benefit to the stream. This stream has also been identified as critical to the health of the watershed, as it eventually drains into a water body connected with a public drinking water source. Then consider someone working with the landowner to put a permanent conservation easement on the land or perhaps purchasing the land outright. The cows are then fenced off several hundred meters away. Fill and waste is removed. Native wetland species are planted and maintained. Years pass as neighboring plant species fill in the area, with wildlife returning to the wetland as it takes hold where it used to be. This reborn wetland is now permanently protected and improves the integrity of the stream and the ground water, making for a healthier watershed.

Wetland preservation is the protection of preexisting and functioning natural wetlands.

Wetland restoration takes seriously degraded non-functioning historic wetlands and through bio-engineering, seeding, native plantings and monitoring is brought close to its natural state and protected as such.

Wetland enhancement improves an existing wetland – a wetland that may be somewhat degraded, but is still providing some wetland functions such as flood control.

Wetland creation builds a wetland where there has never been one before. While a created wetland is able to provide some of the functions of a natural wetland, many scientists, feel that created wetlands are a poor substitute for the real thing.

NCEEP focuses on wetland restoration with a significant preservation component for the first two years.

Wetland creation attempts to do the same by creating a wetland where there historically is not one. However, this is much more difficult and many studies show that a human-made wetland in a non-wetland area will never be able to provide the range of functions and values that a natural (or

restored historical) wetland can.[19] Creating a wetland is scientifically and technically very difficult.[20] There are also many unique wetland types that are virtually impossible to replicate.

Preservation is different. Preservation is protecting land—in this case wetlands and critical supporting uplands—that are currently intact and healthy. When thinking watershed-wide, there can be upland areas that are highly valuable for water quality and health of wetlands. Preserving the land surrounding the headwaters of a river, for example, can mean a lot for the success of the wetlands being restored downstream and the watershed as a whole.

When it comes to meeting wetland mitigation requirements, preservation is not typically considered adequate because the Clean Water Act is intended to already be protecting these wetlands. The goal of no net loss could not be achieved if only existing wetlands were preserved as compensation for wetlands being destroyed: overall, we would lose wetlands.

However, in the design of EEP preservation *is* allowed – but only for the first two years of the program as the transition into mitigation in the form of restoration is fully established. Preservation is currently being used as mitigation in the form of collateral for restoration, with EEP conducting ten units (units are either in acres or linear feet of stream) of preservation for every one unit of impact, while restoration is done on a one to one basis. This is allowing DOT projects to move forward now while preserving targeted land that meets local land trust priorities and watershed goals

"Preservation is a very complimentary piece to the restoration part [of wetland mitigation]."
–Lisa Creasman,
Conservation Trust of North Carolina

[19] Mitsch, W.J. and R.F. Wilson. "Improving the Success of Wetland Creation and Restoration with Know-How, Time, and Self Design." Ecological Applications 6: 77-83. 1996.

[20] "National Wetland Mitigation Banking Study: Wetland Mitigation Banking." Environmental Law Institute. 1994c. U.S. Army Corps of Engineers, Institute for Water Resources, Washington, DC, USA. IWR Report 94-WMB-6.

and state preservation criteria. After the initial two years, the projects that were allowed to go forward with preservation as their compensation will still require a one to one ratio of restoration to be done as well. But in the meantime, preservation has allowed some land trusts to get portions of their priority watershed lands protected.

Some land trusts have not had much happen in their area for preservation during this two year period, however. The preservation criteria being used prioritizes Natural Heritage Areas, for example (see Attachment A, EEP's Preservation Guidance Criteria), meaning that some areas do not have land eligible for preservation. The Charlotte area, rapidly experiencing road development right now, has had little preservation occur through EEP. It is anticipated and hoped by the local land trust, the Catawba Lands Conservancy that the area will see more activity once more restoration projects commence.[21]

Element 2: Partnering with Land Trusts

Land trusts were involved in the design of EEP, establishing themselves as part of the process in identifying priority wetlands for restoration and preservation. EEP has an agreement with the Conservation Trust of North Carolina (CTNC), an umbrella organization and liaison for 22 local and regional land trusts which taps into the local expertise of land trusts in targeting for protection by EEP the most critical land and water resources. It also taps into the ability of local land trusts to bring landowners into the wetland protection process that may not be as easy for government or private entities.[22]

[21] Personal interview with Sonia Perillo, Associate Director, Catawba Lands Conservancy. March 24, 2005.
[22] Personal interview with Jeff Fisher, Executive Director of the Tar River Land Conservancy. January 25, 2005.

The three-year contract signed in November of 2003 between CTNC and the North Carolina Department of Environment and Natural Resources (and within this EEP) gives an official role to CTNC in targeting and facilitating land preservation by coordinating the identification of much of the land meeting the Preservation Guidance Criteria. CTNC taps into the expertise of the local and regional land trusts, many of which have done streamside buffer and corridor conservation plans thanks to previous funding from the NC Clean Water Management Fund, which indicate which wetlands and stream buffer zones are most important in protecting water quality and watershed health.[23] This meant that land trusts were ready to run with this partnership when opportunity arrived due to previous conservation planning and the corridor conservation plans.

In addition, while land trusts are not submitting any restoration projects to EEP, they can be contractors to help find suitable land for restoration. Often land trusts, due to their local nature, work better with landowners on gaining easements and interest and orchestrate the land conservation side for EEP. In fact, the process-oriented nature of the planning has led to relationships between land trusts and landowners, which lend well to EEP's goals.[24] Even wetland bankers agree it is often easier for local land trusts to convince a landowner to do an easement.

"The key is to have land trusts at the helm saying where that conservation happens so that spending is done in a way that furthers public conservation goals."
–Jeff Fisher,
Executive Director
of the Tar River Land Conservancy

The Tar River Land Conservancy (TRLC), which serves nine counties in eastern North Carolina including Raleigh-Durham, is highly involved with EEP due partly to the fact that the Tar River watershed encompasses much of where mitigating are due to the locations of future DOT projects. TRLC wanted to work with governmental agencies to better accomplish land conservation and to

[23] Personal interview with Lisa Creasman, Preservation Project Manager for the Conservation Trust of North Carolina, February 16, 2005.
[24] Personal interview with Sonia Perillo, Associate Director, Catawba Lands Conservancy. March 24, 2005.

find more funding for the riparian corridors and watershed lands they have prioritized for protection, so TRLC has taken on many of the preservation needs by EEP as contractors in identifying and acquiring land. TRLC has submitted around 40% of the preservation projects during this transition period, working with landowners to then submit the proposals for protection to the CTNC who ensures that the projects meet strict preservation criteria as well as receive approval from the Preservation Review Committee.

Stewardship of these lands over the long-term is a key concern of land trusts, as the funds to monitor and maintain the sites is critical. EEP is still determining how stewardship will be conducted, with possibilities including a stewardship endowment. The long-term relationship between CTNC and EEP is also still unknown as once the three-year contract ends the role of CTNC is unclear as the use of preservation as mitigation will likely mostly be phased out at this time. Stewardship, especially enforcement over the long run, is a consistent concern within the land trust community. The conservation easements on lands protected by EEP through preservation or restoration are held by the state – not the land trusts. These lands are held by Parks and Recreation in perpetuity as parks. Land trusts often have contracts to conduct monitoring for the first five years and CTNC will have a continued role in identifying and acquiring lands for restoration, but they have no ability to do enforcement.

Element 3: The Role of Private Wetland Banking Companies

With EEP, almost every part of the actual on-the-ground wetland mitigation is outsourced, and the role of the private sector in actually implementing wetland mitigation is significant. EEP does some project identification and oversees contracts in order to ensure they are consistent with project goals, but in the end, all restoration work is done by private wetland banking companies. Interestingly

enough, there was not an abundance of private wetland banking activity happening in North Carolina previous to EEP. But with EEP's process of open and fair competition for RFPs, much more banking activity has been brought into North Carolina and those already working in the state are growing to meet the need.

In accomplishing its proactive wetlands protection goals, EEP does not purchase, restore and manage wetlands on its own; it partners with more than 20 private mitigation banking and engineering companies whose expertise is in successful wetland mitigation.

Private wetland banking companies have to take a significant amount of risk and put in plenty capital investments in order to compete in a bidding process like EEP's. They must acquire the rights to a property, develop a proposal, put together a team, and then wait potentially a long time to receive a contract and funding.[25] If receiving projects is slow and unpredictable, private bankers stand to lose out, as does the public. EEP has been very receptive to improving the Request for Proposal rounds for private bankers; a timely and competitive process is good for all parties. EEP has undoubtedly been a big boost for bankers in North Carolina as EEP is now presents guaranteed demand for wetland restoration credits into the future.

Funding for EEP

"The credit, in terms of sacrifice, has to be given to the DOT for giving that financial commitment."
–Bill Gilmore, Director, EEP

According to the EEP Memorandum of Agreement, the planning, land acquisitions, restoration and construction, and management for mitigation projects used as compensatory mitigation for transportation impacts will be eligible

[25] Personal interview with Richard Mogensen, Director of Mid-Atlantic Mitigation Bank and Former President of the National Mitigation Banking Association, January 12, 2005.

for funding from many sources, but is primarily funded through NCDOT, who approves a biennial EEP budget. Once EEP is fully up and running, whenever NCDOT receives a permit requiring EEP's compensatory mitigation services, it will provide sufficient funds on a project-by-project basis for proactive wetland mitigation.[26]

EEP is responsible for dropping wetland mitigation costs for NCDOT from an estimated 8% to less than 3% of total project costs.

Before EEP was established, it is estimated that approximately 8% of NCDOT project costs were going towards wetland mitigation, and the cause for 55% of project delays. With EEP now in place, wetland mitigation is now costing NCDOT less than 3% of project costs (it is currently 2.8% of construction costs; NCDOT is currently determining the precise percentage of total project costs which mitigation will be an even smaller percentage of).[27] With a project budget running from $650 million to $1.3 billion per year[28], a drop from 8% to 3% is a savings of $32,500,000 to $65,000,000 per year. EEP's budget is approximately 2.3% of what the NCDOT spends on construction alone in a year, not including road design and NEPA processes.[29] The delivery rate for NCDOT's Transportation Improvement Projects (TIPs) under EEP are experiencing no delays due to wetland mitigation needs.

However, it should be noted that NCDOT, like many state DOTs, was folding wetland mitigation costs into construction costs

"I thought we'd save money, but I didn't think we'd save *this* much money."
–Roger Sheats,
Deputy Secretary for Environment, Planning, and Local Governmental Affairs, NCDOT

[26] Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Transportation and the United States Army Corps of Engineers, Wilmington District. July 22, 2003. Page 7.
[27] Personal interview with Roger Sheats, Deputy Secretary for Environment, Planning, and Local Governmental Affairs, North Carolina Department of Transportation, March 23, 2005.
[28] Personal email from Roger Sheats, Deputy Secretary for Environment, Planning, and Local Governmental Affairs, North Carolina Department of Transportation, March 31, 2005.
[29] Personal interview with Suzanne Klimek, EEP Director of Operations, February 1, 2005

previous to EEP, making it difficult to determine exactly what was being spent on wetland mitigation. Making the case for saving money with EEP was initially more difficult because of a lack in exact numbers; these new figures paint a striking picture of cost savings.

These figures also paint a striking picture for the scope of funding for wetland restoration and preservation. Considering the fee schedule below and the range of NCDOT project funds being spent on wetland mitigation ranging from $19,500,000 to $39,000,000 in a year, to get a sense of the potential scope in acreage, if we assume the average acre for restoration costs ~$20,000 that translates into 975 to 1950 acres restored and protected by NCDOT alone in a year.

Fee Category (Units)	Fee
Stream (linear feet)	$205
Non-riparian wetland (acres)	$12,276
Riparian wetland (acres)	$24,552
Saltwater wetland (acres)	$122,760
Riparian Buffer (square feet)	$0.96

EEP uses this fee schedule to determine how much a permit applicant must pay to fulfill their compensatory wetland mitigation requirements. Available at NCEEP's website at <http://www.nceep.net/pages/fee.htm>.

"The concept is transferable to other states. I hope and expect to see other states doing something similar."
–Rob Ayers,
Environmental Programs Coordinator, Federal Highway Administration-NC Division

Meanwhile, EEP has received the Exemplary Ecosystem Award from the Federal Highway Administration as well as approximately $700,000 and a staff member on loan to EEP to help the program get started.[30] The Federal Highway Administration has also been studying the program for possible export to other states.[31]

[30] Personal interview with Rob Ayers, Environmental Programs Coordinator, Federal Highway Administration-NC Division, March 31, 2005.
[31] Personal interview with Bill Gilmore, EEP Director, March 31, 2005.

Conclusions and Recommendations

Essential Elements and Analysis of EEP

There are three key components to EEP that provide the basis for analysis of whether this program is a model for the purpose of enhancement of wetlands and watersheds: the preservation of critical wetlands and supporting uplands; wetland banking; and land trust involvement. Each component is considered in terms of its ability within EEP to achieve the stated purpose and how it might be improved, if at all.

Element 1: Preservation of critical wetlands and supporting uplands. A unique element of EEP is its allowance of wetland preservation to serve as mitigation credits during the two year transition period of the program, as wetland restoration projects ramp up. An immediate concern regarding preservation is that if "no net loss" is the ultimate goal, by preserving existing, healthy wetlands that should already be protected by the Clean Water Act, over time there would be an overall loss of wetlands. However, EEP addresses this by requiring projects that receive permitting approval based on the securing of preservation credits to also achieve a one to one ratio of restoration. Therefore, the legally required wetland mitigation is being completed while also being significantly enhanced by additional preservation of critical wetlands and sensitive supporting uplands which ultimately is much more wetlands and watershed enhancement than would be traditionally done.

EEP is also determining how they will incorporate some amount of preservation after the two-year ramp up of EEP is complete and restoration projects are completed successfully. While preservation should not alone be the source of mitigation credits, preservation of critical headwaters and buffer areas could go a long way in enhancing wetlands and watersheds overall and contribute

to the success of restored wetlands. If EEP can fully meet wetland mitigation requirements while also preserving the sensitive lands that will better ensure the success of the wetland mitigation the program's benefits for wetlands will be significantly boosted.

Therefore, while the preservation that is allowed in the first two years is a sound way to get transportation projects started while still meeting wetland and watershed protection needs and legal mitigation requirements with restoration, an approach in the future that values preservation as part of what is needed for successful restoration adds value for wetlands and watersheds. EEP should take their program to this next level of water resource protection as they move forward with this next phase of policy development and continue required restoration *and* preservation. Currently, however, their approach to preservation is mindful of "no net loss" while permanently preserving key wetlands and uplands. In this way, EEP serves as a model.

Element 2: Wetland banking. Wetland banking is growing in favor as a form of wetland mitigation and EEP capitalizes on its distinct advantages in providing larger more biologically and hydrologically sound areas that are chosen based on their importance to the watershed.
Because EEP issues Requests for Proposals (RFP) that are highly specific to anticipated mitigation needs within certain watersheds and hydrologic units, this is not a case of wetland banking occurring on cheap land far from impacts and needing little actual restoration. EEP also monitors and holds accountable private wetland banking companies in order that projects are satisfactorily completed. Private wetland banking companies also compete in the RFP process, giving the public the greatest value while also receiving sufficient funding to do quality mitigation well on behalf of wetlands and watersheds.

Without a program design that ensures private wetland banking truly meets the needs of EEP and wetlands, banking's major role in how EEP succeeds in providing proactive wetland mitigation might not be as effective. However, EEP has structured wetland banking for the maximum benefits to wetlands and watersheds and as long as it continues to improve the RFP process in order that the process is as predictable as possible for private bankers, banking will grow in North Carolina and elsewhere as a highly professional and ecologically sound approach. Therefore, on the element of wetland banking, EEP serves as a model in its full utilization of this effective means for wetland and watershed protection.

Element 3: Land trust involvement. The role of land trusts is a key component in whether EEP is a model. Because local and regional land trusts are closest to the ground when it comes to knowing the priority lands needing protection, tapping into their expertise certainly enhances wetlands and watersheds as strategic preservation and restoration is conducted by EEP. EEP is wise to have established an official relationship with the Conservation Trust of North Carolina, an umbrella organization for land trusts through the state, particularly for the two-year period allowing preservation. Thanks to previous grant funding and internal strategic land conservation planning, land trusts had already done streamside buffer conservation plans in addition to other sensitive land identification, rendering them ready to take on guiding preservation and restoration with the state. This has led to some of the most critical lands being protected in the transition period of the program, lands which will support the health of watersheds and help newly restored wetlands to succeed.

One concern from land trusts is their inability to enforce conservation easements on preserved or restored land that they may be doing monitoring on or hold abutting easements to. A solid commitment from the Attorney General's office to maintain strong enforcement of easements while

also providing resources for continued monitoring is required if EEP is to maintain its success over time. However, EEP's incorporation of land trusts from the beginning stages of program development have been good for wetlands and watersheds as local priorities and strategic planning have been fully utilized. This again makes EEP a model for wetland and watershed enhancement.

Therefore… as all three of these elements of EEP go far in maximizing the requirements of transportation projects under the Clean Water Act for the enhancement of wetlands and watersheds, this program can indeed be seen as a model. While EEP is very new and must be closely monitored over time to determine areas needing improvement, it has the potential to vastly improve wetland mitigation and therefore enhance wetland and watersheds. Overall the program has carefully addressed the many problems of the past in wetland mitigation.

Lessons from EEP's Experience

Have a commitment from the top. In North Carolina's case, the commitment started with the new governor's commitment to an environmental platform. According to Bill Gilmore, EEP Director, you also need at least one champion and a commitment at the secretary level to keep the momentum during every step of transition.

Forge a Memorandum of Agreement and design the program in a collaborative way. When North Carolina was forging its MOA, it had to deal with numerous legal concerns due to the commitments each agency was agreeing to within the MOA. Any state taking on such a transformation must be prepared for legal challenges. However, by pulling in all agency partners and likely challengers from the beginning the buy-in needed later for legal and structural reasons is more probable.

The buy-in and ongoing participation by private bankers, land trusts, transportation experts, the Army Corps of Engineers, and the various state and federal environmental agencies is essential; without it, opposition and public outcry could have stymied EEP completely. Everyone who cared about how EEP would evolve had their livelihood partly dependent on it, from the engineering firms to the wetland bankers, so their participation was requisite for success. Ensuring the process and product were transparent and competitive kept the partners engaged and the ball rolling.[32]

"To make it work it's got to be a win-win-win."
–Bill Gilmore,
Director, Ecosystem Enhancement Program

Be prepared for resistance to change. During the process of forming EEP, a change management specialist was brought in to observe the dynamics and resistance within different divisions and bring them up to the secretary level to be addressed.[33] EEP continues to meet some internal challenges to its efforts. For example, in the original concept of the program, both the NCDOT mitigation staff and the NCDENR were intended to meld together. Eighteen people at the DOT were identified to be shifted to become part of the new EEP; if these employees took the option it included a 10% raise. Only three people left DOT to join EEP. All executive-level staff continues to meet every week to address challenges such as these.

"Nobody in operations thought this really was going to work until about six months ago."
–Roger Sheats,
Deputy Secretary for Environment, Planning, and Local Government Affairs, NCDOT

With EEP, project by project review by the Army Corps and the USFWS no longer happens and NCDOT no longer does any off-site compensatory mitigation itself. Changing what agencies fundamentally do and how people do their jobs and see themselves is a challenging part of an

[32] Personal interview with Bill Gilmore, Director of the North Carolina Ecosystem Enhancement Program. March 31, 2005.
[33] Ibid.

overhaul like EEP. However, this process also allowed NCDOT to build up credibility and trust with NCDENR and the conservation community, which it had admittedly been lacking for some time due to an "our way or the highway" attitude.

Be prepared for sticker shock—but upfront capital is essential. The Board of Transportation approves EEP's budget. However, they had never seen a line-item for wetland mitigation previous to the creation of EEP, even though they had always paid for it. The cost of wetland mitigation had been clumped in with project costs in a way that there was no line-item recognition of what DOT was spending. When EEP first submitted a line-item for $200 million for the first two years of the program, the Board of Transportation was shocked. This request forced them to think differently about how they manage their Transportation Improvement Project funds. However, the $200 million is essential for EEP to be able to get ahead of transportation impacts and get the wetlands projects up and running successfully—thus saving DOT time and money later. The case was made and the money has allowed a quick ramp up of EEP.

House the new program in the Department of Environment, not the Department of Transportation. Suzanne Klimek maintains that by housing EEP within North Carolina's Department of Environment and Natural Resources, wetland protection becomes the priority it should be within the law. Even when state DOTs are doing good wetland mitigation work, their fundamental mission is to get transportation projects completed. Having them involved at the programmatic level instead of the site by site review allows for efficiency, plus mitigation projects being done by the resource restoration professionals, wetland bankers. Roger Sheats, Deputy Secretary for Environment, Planning, and

"A key element is housing the program in the Department of Environment, not the Department of Transportation."
–Suzanne Klimek,
Director of Operations at EEP

Local Government Affairs at NCDOT agreed, expressing that by moving mitigation out of NCDOT, it made all partners more comfortable with EEP and built new trust with NCDOT.

Oversee all contracts with private wetland bankers to ensure project goals are met.

"We make money only when we provide successful mitigation."
–Richard Mogensen,
Mid-Atlantic Mitigation Bank

Private wetland bankers in NC are held to high standards for the restoration projects they are contracted to complete. Ensuring that the restored sites are ecologically successful over the long run is the only way a program like EEP can rely on private wetland bankers to do the on-the-ground restoration for them in a competitive, timely way. Monitoring and enforcing site restoration projects is part of this; the fact that EEP uses the Request for Proposals to do projects in specific watersheds and Army Corps hydrologic units while providing enough funding to make the projects successful is also key.

Incorporate regional and statewide conservation plans into transportation decisions from the beginning. By better integrating conservation planning into transportation decision-making, the most sensitive and prioritized wetlands can be avoided from the start. That way in the beginning stages of transportation planning, DOTs can steer around the areas that will be difficult to successfully mitigate. While EEP does utilize watershed priority plans in their mitigation siting as well as using land trust plans for preservation decisions, it is unclear if NCDOT is aware of any of these sensitive areas during their early-stage planning.

"The [state] conservation plan should be a roadmap for transportation planning. And the land trust could be right there as stewards."
–Patricia White,
Defenders of Wildlife

Next Steps

Stay in touch with EEP and NC land trusts. The EEP model is a strong one, but how EEP continues beyond these first few years will be informative for other states and likely provide feedback for improvement to EEP. Its stewardship policies are still being determined, as are future levels of preservation within the bigger restoration and mitigation picture. How involved local land trusts will remain after the transition period allowing preservation as mitigation ends on July 22nd of this year is undetermined. Therefore, staying engaged with EEP to ensure maximum wetland and watershed enhancement over time will provide educational for all parties.

"I think it's a great model. I want to take this model elsewhere." –Jeff Fisher, Executive Director of the Tar River Land Conservancy

Get involved with Tennessee and Georgia. Both states have been studying EEP and considering better streamlining their own wetland mitigation processes through integration of transportation and the environment. By working with the local land trusts in Tennessee and Georgia to get them engaged in restructuring processes, the programs or agencies that are developed can incorporate the best elements of wetland banking, especially land trust involvement and targeted preservation.

Analyze all states to determine where an EEP-type program might be promoted. Determining where the next EEP could happen is contingent on many factors, including: political will, agency leadership, the ability of agencies to partner, current mitigation permitting delays, prevalence of wetland banking, level of transportation development and mitigation need, and the presence of an active and organized land trust community. Analyzing states based on these factors should provide an indication of where efforts might be best next spent.

Build a relationship with the Federal Highway Administration. The Federal Highway Administration (FHWA) is engaged with and very supportive of EEP and considering promoting it in other states. Working with FHWA to ensure the land trust involvement happens in states upon the creation of any new programs is a significant opportunity to get local priority watershed lands preserved and make a permanent place for land trusts within transportation wetland mitigation.

Make state DOTs aware of the money to be saved. Much of motivation behind the creation of EEP was because the predecessor program was not working: it was dramatically slowing the permitting process and doing a disservice to wetland protection goals. But does a state does not need to be failing in order to consider restructuring. Every state is looking to save precious funds, and environmental streamlining is being promoted nationwide as a way to control costs and improve predictability for development and planning. In addition, any state natural resource department that is looking to *maximize* mitigation dollars for wetland and watershed protection has incentive to pursue the key elements of NCEEP: wetland mitigation through banking before impacts occur, the watershed-based criteria for wetland protection and use of preservation with restoration, and partnerships with land trusts. If a state DOT has the opportunity to decrease the amount of their budget spent on wetland mitigation by millions of dollars *and* do better by the environment, there should be some opportunity to make broader changes.

Push for TEA-21 reauthorization to include the continued promotion of wetland banking, integration between transportation and environment, and the use of conservation planning in transportation decision-making. The more the Federal Highway Administration and Congress can provide the legal backdrop and encouragement for state governments to restructure for the enhancement of wetlands and watersheds, the more justification and political clout those trying to

instigate change will have. As long as environmental streamlining ensures environmental protection first, pressure to move to integrate conservation and transportation will only help get states moving in a better direction for wetlands and watersheds sooner.

Final Thoughts

In conclusion, North Carolina's Ecosystem Enhancement Program does serve as a model for enhancing wetland and watershed protection in the United States. By using wetland banking that accomplishes wetland restoration and protection long before transportation impacts occur as well as utilizing land trusts to target sensitive water resources for preservation and restoration, EEP makes large strides from the wetland mitigation of the past that has been deemed unsuccessful in achieving "no net loss".

Making a program like EEP happen is challenging politically, programmatically and administratively; however, with a commitment from the top starting with the Federal Highway Administration and the clear opportunity to save DOTs large amounts of project funding while doing a significantly better job for water resources, there is potential for other states to follow suit. Should future analysis indicate other states that are ripe for change, many key elements of EEP must be included in the program in order to ensure the maximum enhancement of wetlands and watersheds. There are also predictable hurdles, such as gaining upfront funding and meeting resistance from agencies married to the status quo. However, if the program can gain momentum and forge needed partnerships to get started it can succeed for enhanced wetland and watershed protection if it: taps into the potential of private wetland banking through transparent, competitive processes while holding firms to strict performance standards; conducts a level of wetland, upland and streamside preservation driven by land trusts' priority protection plans in addition to restoration; and involves

land trusts and strategic watershed planning throughout all levels of transportation and wetland mitigation decision-making. EEP is saving NCDOT a lot of time and money through this streamlining while still providing millions for significantly better wetland and watershed protection. Everyone, including the environment, seems to be winning with EEP and this model should be promoted elsewhere.