

View Point



The State Transportation Improvement Program started out in 1973 as the Highway Improvement Program. The first Transportation Improvement Program (STIP) was required by the State General Assembly in 1977. The time frame required in that law was seven years because that was the time required to bring a major project to construction. Since that time there have been several legislative changes impacting the development of the Program. Highlights include NC's 1989 Trust Fund focus on distributing money throughout the state by formula for urban loop and intrastate system con-

THE STATE TRANSPORTATION PROGRAM MOVING TO STRATEGIC TRANSPORTATION INVESTMENTS

By: Calvin Legget, P.E., Manager, Program Development Branch

struction; the 1993 ISTEA bill (making the TIP a federal requirement and mandating inclusiveness of other modes), and the emphasis on transportation data in NC's recent 2013 Strategic Transportation Investments (STI) law. In totality these laws and regulations have altered the programming process, modified funding streams, and play an increasing role in the development of the program.

Additionally other functionalities such as enhancing safety, meeting air quality goals, compatibility with MPO and RPO long range plans, prioritizing enhancement projects and quantifying project benefits have added to the complexity of developing the program. However since the original 1973 document the primary purpose of the TIP remains the same – to outline the scheduling of and funding for NCDOT's capital projects to provide the public and Department staff a guide as to which projects are intended to be built in each future year.

The latest Draft STIP (covering years 2016 -2025) was released in December 2014 and the final version is expected to be approved by the Board of Transportation in June 2015. This approved document will then be forwarded to USDOT along with the required air quality conformity determinations for their approval. This approval has to occur prior to October 1, 2015 in order for the state to continue receiving federal highway and transit funds. This document consists of two five year periods. The first five year period (2016 – 2020) is considered the “delivery STIP”, and projects therein have a higher confidence and probability level of delivery. The second five year window (2021 – 2025) is considered the “developmental STIP” which indicates projects in a developmental stage migrating towards inclusion in the first five year window.

The development of this Draft STIP was challenging on many fronts and was particularly impacted by the pas-

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NORTHERN LONG-EARED BAT PROGRAMMATIC CONFERENCE OPINION



Pictured L-R: Mary Frazer (NCDOT), Donnie Brew (FHWA), Neil Medlin (NCDOT), Gary Jordan (USFWS), Heather Wallace (NCDOT). Not pictured: Lori Beckwith (USACE).

On April 2, 2015 the US Fish and Wildlife Service (USFWS) officially listed the northern long-eared bat (*Myotis septentrionalis*; NLEB) as a federally threatened species, providing protection under the Endangered Species Act. In anticipation of this listing, an interagency team of representatives from NCDOT's Biological Surveys Group, Federal Highway Administration (FHWA), US Army Corps of Engineers (USACE), and USFWS began working together to develop a strategy to address the potential effects that NCDOT projects may have on the NLEB. The goal of the working group was to “Advance (transportation)

projects forward without schedule delay(s) and ensure (NLEB) species protection/ uplift in the most efficient way”.

On April 9, 2015 NCDOT received a favorable programmatic biological opinion (PBO) from USFWS. The PBO will provide incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8. As a result of the interagency coordination, no NCDOT projects will suffer scheduling delays as a result of a need for Endangered Species Act compliance related to the NLEB.

Project Spotlight



New Roadways, Bridges, Rail Line projects etc. are all facing development challenges at the federal, state and local levels. As projects continue to encounter these challenges, social approval of projects is becoming an ever more important hurdle.

PUBLIC ENGAGEMENT TOOLKIT ...THE COOLEST PET!

By: Jamille Robbins, Public Involvement Group Leader

The National Environmental Policy Act (NEPA) established federal processes for environmental review of development projects, including public comment periods, to allow communities to have a voice. Comments are collected, reviewed, considered and sometimes include in revisions of the environmental review documents.

Fifty years ago, people had fewer opportunities to engage in projects outside of attending public hearings

and reading mailed information. Today we have television, radio, internet, and social media, just to name a few, and with the younger, more tech-savvy millennials coming of age, it is important to find ways to reach out to them in a meaningful manner.

Successful public engagement has the ability to strengthen community relationships and reputations for projects and NCDOT itself. We are constantly developing new best practices and reviewing success stories from projects nationwide. Encouraging meaningful

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NCDOT STUDIES RELATED TO NC12, ON A NATIONAL WILDLIFE REFUGE, DARE COUNTY PART 1 OF A 2 PART SERIES

By: Kathy Herring, Environmental Program Supervisor

BACKGROUND

Pea Island National Wildlife Refuge was established under President Franklin D. Roosevelt on April 8, 1938 under Executive Order #7864 "in order to effectuate further the purposes of the Migratory Bird Conservation Act" (45 Stat.1222). Stipulations of the Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. 703–712) require that the National Wildlife Refuge and its properties adhere to the protection of migratory birds. To knowingly allow any disturbances of migratory birds would violate the legal requirements of the National Wildlife Refuge System and therefore put Pea Island National Wildlife Refuge in jeopardy of criminal prosecution for illegal take and could result in a federal injunction. The Migratory Bird Treaty Act of 1938 states that by virtue and pursuant to the authority of the MTBA, areas designated as National Wildlife Refuges can designate a closed area in which hunting, taking, capturing, killing, or attempting to hunt take capture or kill migratory birds is strictly prohibited.

Pea Island National Wildlife Refuge lies on a narrow piece of barrier island on the Outer Banks of North Carolina

between Oregon Inlet and the village of Rodanthe on Hatteras Island in Dare County. It is situated on a typical southeastern barrier island system with ocean beach, dune, brackish ponds, and marsh communities dissected by tidal creeks. The Refuge is a very important place for migratory birds due to its location along the Atlantic Flyway. It is this position in the Flyway and the Refuge's diverse habitats that make it a haven for species requiring special environments, such as the Federally Threatened piping plover, red knot, Atlantic sturgeon, peregrine falcon and 5 species of sea turtles. These protected species not only use the Refuge for resting and foraging but many also nest and raise their young here.



Piping plover

The State of North Carolina has a 100-foot wide easement within the Refuge for the purposes of maintaining NC 12. Situated as it is, separated from the mainland of the state and jutting out into the Atlantic Ocean, this 13 mile sandbar is very vulnerable to storms with high winds and tides. This is evidenced by the many times since the 1950's that the NCDOT has moved portions of the road westward to avoid the encroaching sea. It is a barrier island's nature to migrate to the south and west; this is evident by the remnants of old maritime forests that grew on the backside of the island that can now be seen on the beach face.



Remnant of old roadbed on beach

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sage of recent federal and state legislation. In 2012 the US Congress passed a new Surface Transportation Bill - Moving Ahead for Progress in the 21st Century Act (MAP-21) which consolidated a large number of federal aid programs as well as making changes to many other program requirements. A second and more challenging event was the 2013 passage of the state’s Strategic Transportation Investment (STI) law. This was the first major change in how transportation funds are identified and distributed throughout the state since 1989. It codified the use of the Department’s Strategic Prioritization process (Prioritization 3.0 was used for this program) whose output had only been used as a guide in past programming. The bill also expanded the use of data driven project selection processes to fund highway and non-highway (Aviation, Bike/Ped, Ferries, Rail and Transit) capital (capacity expansion) projects.

The law established 3 tiers of funding for projects within the state. 40% of the funds subject to STI would be spent on projects on the statewide mobility category. Category eligibility includes primarily Interstate and US highways, airports with international service and Class 1 Railroads. Statewide funds are assigned to the highest scoring eligible 3.0 projects regardless of geographical location. One significant constraint on statewide project funding is a “corridor cap” which states no more than 10% of the statewide funds available in any five year period may be spent on any one corridor in the same or adjacent highway divisions. This cap is roughly \$ 200 Million in the 2016 -2020 time period, and \$ 300 Million in the 2021 - 2025 period.

30% of the STI funds, assigned to 7 funding regions within the state, are targeted for the Regional Impact category. These regions are the same paired divisions used in the 1989 Trust Fund legislation. Region A is Divisions 1 & 4, Region B is Divisions 2 & 3, Region C is Divisions 5 & 6, Region D is Divisions 7 & 9, Region E is Divisions 8 & 10, Region F is Divisions 11 & 12, and Region G is Divisions 13 & 14. Funds are distributed to the regions based on their relative population.

These distributions range from 8.63% of the available funds to Region A to 21.89% of the funding to Region C. Project scores in this category are based 70% on technical P3 rankings and 30% based on input from MPOs, RPOs and the respective Division offices. Eligible projects include those eligible in the Statewide category plus NC routes; other commercial airports; ferry, rail and transit service that crosses county lines.

The final tier is for Division needs. Virtually all public (highways and other modes) transportation capacity expansion projects are eligible in this category. The remaining 30% of the STI funds are distributed to each division equally. Project rankings in this category are 50% determined by the P3 technical scores and 50% based on input from local MPOs, RPOs and Division offices.

There are also categories of projects such as CMAQ that are exempt from the STI law and budgeted separately; and several categories of projects that due to their specific nature are prioritized under alternate criteria. These projects, such as safety, bridge replacements, interstate maintenance, and funds directly apportioned to large MPO areas (direct attributable or DA funds) are selected based on criteria other than P3, but are charged to the appropriate funding category and geographical area.

There are also categories of projects such as CMAQ that are exempt from the STI law and budgeted separately, and several categories of projects that due to their specific nature are prioritized under alternate criteria. These projects, such as safety, bridge replacements, interstate maintenance, and funds directly apportioned to large MPO areas (direct attributable or DA funds) are selected based on criteria other than P3, but are charged to the appropriate funding category and geographical area. STI also made provision for projects deep into NCDOT’s delivery pipeline. Much of our current work is on “transition projects” that have funds authorized for construction between October, 2013 and July, 2015 and is therefore excluded from prioritization. There were 108 major transition projects which will consume (due to how NCDOT cash flows projects) future year STI funds.

In passing the STI law the General Assembly challenged the department to develop a competitive process for selecting projects across modes and in the statewide category projects were selected based solely on their P3 technical scores. 85 Highway projects were selected and 11 Aviation. No rail projects scored high enough to be funded. In the Regional and Division categories the task of fairly comparing the value of a new ferry boat versus a bike path versus an airport runway, highway or transit service expansion proved to be difficult. For the 2016 STIP a set of budget controls was developed to serve this purpose. Based on departmental funding history, 90% of the available funds were reserved for highway projects, 4% for non-highway purposes, and 6% was allowed to go to the highest scoring projects regardless of mode. This methodology of using relative project rankings within overall budget constraints appears to have worked well with roughly 95% of the funds being assigned to highway projects and 5% to other modes.

A quick summary of the projects in the draft STIP by category and mode follows:

	STATEWIDE	REGIONAL	DIVISION	TOTAL
P3 PROJECTS				
Highway	85	149	184	418
Aviation	11	7	37	55
Bike/Ped	0*	0*	70	70
Ferry	0*	0	1	1
Public Transit	0*	4	6	10
Rail	0	2	3	5
ALTERNATE CRITERIA				
Bridge	16	22	213	251
Interstate				
Maintenance	138	0*	0*	138
Safety**	5	6	6	17
TOTAL	255	190	520	965

*Projects not eligible for funding in this tier

**Safety projects are selected quarterly, so most safety funds are being held for future project selections

In summary, we are very pleased with the outcome of our first Program based on the new STI law. A workgroup is reviewing the P3 scoring systems and their results to recommend improvements for the P4 cycle for the 2018 – 2027 STIP.

(NC 12, Continued from page 2)



Remnant forest at S-curves after Sandy

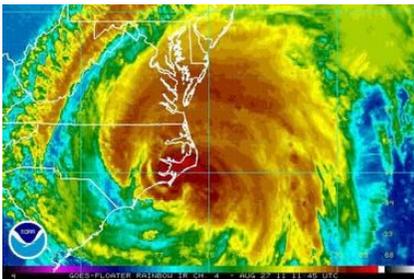


Hurricane Irene Breach on Pea Island immediately after storm and after NCDOT repairs to NC12.



Rodanthe Breach Immediately After Hurricane Irene and After NCDOT Repairs

HURRICANE RESPONSE



Hurricane Irene August 2011

Many storms have hit the Outer Banks over the years; the most recent devastating Hurricanes were Irene and Sandy. On August 27, 2011 Hurricane Irene hit the NC Outer Banks as a Category 1 storm and created a 273 foot wide inlet within the Pea Island National Wildlife Refuge across NC 12, 6 miles south of the Bonner Bridge, and a smaller breach at the southern end of the Refuge in northern Rodanthe.

Within days of the storm, the NCDOT had emergency and Special Use Permits and other necessary permits from the agencies in hand. The processing of these permits so quickly was crucial for a timely restoration of the only transportation corridor from Hatteras Island to the mainland. The NCDOT Engineers and Biologists worked closely with the agencies during this time to ensure that all of their regulatory needs were being addressed. This included the presence of an NCDOT biologist during all construction activities to monitor for any potential effects to protected species.

After Hurricane Irene, it took 44 days for NCDOT to construct the temporary bridge over the new inlet in the middle of PINWR and re-open Highway 12; repairs also included filling in the smaller breach in Rodanthe and repairing the protective sandbag duneline..

A few months after completion of the temporary bridge and re-opening of the road, the Pea Island inlet began to migrate southward, threatening the stability of the southern approach to the temporary bridge.

Once again, this situation presented some unique ecological, design, and engineering challenges to be faced in such an environmentally sensitive and physically dynamic area. In February 2012, the NCDOT applied to multiple federal and state agencies for permits to dredge the sand that had accumulated on the northern side of the inlet and place it on the southern side of the inlet under the bridge and to install stabilizing structures in order to preserve the integrity of the temporary bridge that was constructed over the inlet. This work was allowed to continue during the piping plover nesting season with the condition that NCDOT monitors would patrol the area for bird activity.

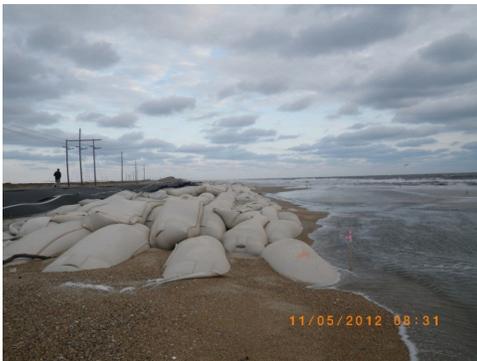


Sandbag Installation Under Temporary Bridge to Stabilize Southern Approach

NC 12 in Mirlo Beach After Hurricane Sandy

(NC 12, Continued from page 4)

In October 2012, Hurricane Sandy came just offshore of the NC outer banks and once again, breached NC 12 in Rodanthe. This hurricane was followed in the subsequent weeks by nor'easters that did additional damage to the road. An emergency repair including rebuilding the protective sandbag dune ensued. Once again the permits to allow this construction activity required that NCDOT Biologists be on site to monitor for any effects on protective species.



ROW Stakes in Surf Zone, Hurricane Sandy



S-Curves, Hurricane Sandy



Sandbag reconfiguration and replacement, S-Curves after Hurricane Sandy

The lessons learned from recovery efforts necessary after both Hurricanes Irene and Sandy continue to facilitate quick response to this physically dynamic area. Close collaboration between NCDOT and both federal and state agencies allowed the NCDOT to succeed in restoring the transportation corridor quickly and build a model for future disaster response.

SURVEYS TO MONITOR NEW HABITAT

At the request of the US Fish and Wildlife Service, the NCDOT Biological Surveys Group has designed multiple monitoring programs, in response to storms and the resulting repairs which track changes in the newly created inlet, as well as documenting the species of birds that began to utilize the new Pea Island inlet for foraging, resting and nesting. Monthly shorebird surveys are conducted to chronicle habitat utilization and provide detailed location information of protected species activity for the piping plover and the recently listed red knot, as well as information on species of special concern such as American oystercatchers, terns, and black skimmers. The pending replacement of the temporary bridge with a permanent longer structure necessitated more monitoring of the Pea Island beach and inlet area. These ongoing physical and biological surveys facilitate informed decision making from the federal and state agencies and the NCDOT when necessary to protect this crucial transportation corridor and to aid in the design of fu-

ture phases of NC 12.



Pea Island Inlet, 1 year after Hurricane



Pea Island Inlet, February 2015.

In March of 2013, Pea Island inlet closed and flow through the Inlet has subsequently been reduced to limited sheet flow overwash during full moon high tides and strong nor'easters.

NESTING SURVEYS in CONSTRUCTION ZONE

During the early stages of construction of the new bridge to replace the temporary bridge over Pea Island Inlet, PINWR biologists noticed that piping plovers, American oystercatchers and least terns were exhibiting nesting activity in close proximity to the construction zone. Once again, NCDOT Biologists were responsible for monitoring this area during any construction activi-

(Project Spotlight Continued from page 2)

participation can smooth the way for projects in the future.

A well-Coordinated, inclusive and robust engagement process will help develop a project that is sustainable and that provides a framework for relationship-building in any area. It is nearly impossible to apply a standardized outreach approach to public engagement.

With that thought in mind, NCDOT partnered with the Federal Highway Administration (FHWA), Metropolitan Planning Organizations (MPO) and Rural Planning Organizations (RPO) throughout the state, and developed a Public Engagement Toolkit (PET). The toolkit is designed to

Assist with involving the public in the best manner possible

Focus on the customer and their needs

Effectively engage historically underserved and under-represented populations

The toolkit provides technique descriptions, search and filter functions, how to's and experiences, sample documents, user ratings, resource links, and a glossary of terms. In just a few minutes, you can learn about techniques and how to apply them, Identify the most suitable public engagement techniques for your plan, project or study and find resources. You can also share experiences and coming in the next version, you will be able to participate in user forums.

Address for the PET:

<https://connect.ncdot.gov/projects/toolkit>

There are two levels of users – Basic and Registered.

Basic users can access technique descriptions and ratings, search and filter techniques and read about how others have used the techniques.

Registered users have all the basic abilities plus they can upload techniques, stories and resource documents and rate techniques.

To become a registered user you simply request to become a registered user by sending the PET administrators an e-mail listing your NCID and your e-mail address.

We encourage everyone to go to the site and browse through the toolkit. There are over 90 techniques, numerous documents, and hyperlinks to various resources. We also invite anyone interested to become a registered user and help us continue to enhance the toolkit. It is an ever evolving resource as methods and technology are continually changing. Input from practitioners is needed for the toolkit to be valuable. Your shared experiences help us to learn what works, what doesn't and why or when.

Check out the toolkit and feel free to contact us if you have questions!

ICOET 2015 Update



As the 2015 International Conference on Ecology and Transportation (ICOET) quickly approaches, here is an update on where things stand. The conference website has been activated and it contains among other things, registration package options and also the availability for sponsorship participation. Please go to http://www.icoet.net/ICOET_2015/index.asp for more details.

Currently, the planning committee is in the process of reviewing all the abstract entries. The NCDOT Natural Environment Section is busy arranging the three separate field trips to be held as part of

the conference, along with preparing interesting work videos to be shown during the travel that will promote and educate the conference participants on the cutting-edge environmental initiatives the Department is engaged.

Please go on-line and register at http://www.icoet.net/ICOET_2015/index.asp so you can be part of this great international conference to be held on September 20-24 in the heart of downtown. We look forward to seeing you there!!!

NES CONSULTANT SELECTION RESULTS

The following firms have been selected to provide on-call environmental services for NES for the 2015-2017 period.

AECOM Technical Services of NC
 Atkins North America
 Carolina Ecosystems
 Dewberry Engineers
 Environmental Services, Inc.
 HDR Engineering
 J.H. Carter and Associates
 KCI Associates
 Kimley Horn & Associates
 McCormick Taylor
 Michael Baker Engineering
 Moffat and Nichol
 Mulkey Engineers and Consultants
 RK&K
 Sepi Engineering and Construction
 The Catena Group
 Quible and Associates

Employee Spotlight



Deanna Riffey is an Environmental Program Consultant for the Natural Environment Section. Since 2003 she has worked within the Environmental Coordination and Permitting Group where she performs and oversees

NCDOT’s natural resource work, and obtains the environmental permits necessary for construction. This work entails a myriad of interactions not only with consultants and resource agency personnel, but also covering the broad spectrum of NCDOT from those units centrally located here at the Century Center, to those downtown, and on out to the Divisions.

Deanna began her professional career with the City of Bristol in Virginia, where she spent almost 8 years. There, she cut her teeth with environmental regulation, policy, and permitting, working in the Solid Waste Industry, as well as working on health and safety issues, eventually developing the City’s Safety Manual. Her health and safety duties also led her to work with the City’s fire department.

A native of Bluff City, a small town in the northeastern corner of Tennessee,

Deanna graduated from the University of Tennessee with her undergraduate degree in Biology and earned a Master of Science in Environmental Health degree from East Tennessee State University. The bright orange Volunteer flag is proudly displayed outside her cube and Deanna is currently the President of the Triangle Chapter of the UT Alumni Association.

Outside of work, her environmental slant continues with weekend hikes and kayaking. She is also active within the First Baptist Church of Garner. Deanna has two border collies – Kate and Ty – that she regularly enters in agility competitions. While Ty is more of a novice, Kate has earned several titles.

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ties. Least terns and the American oystercatcher successfully nested and fledged their young from the area east of the construction zone. The piping plovers did not return to nest after their initial scraping (pre-nesting) activity.



Least tern nesting area east of construction zone, June 2014

SUMMARY

All of these studies are a part of the B-2500 Transportation Management Plan, Coastal Monitoring Program which will measure changes in the conditions on NC 12 and the surrounding environment, as compared to baseline coastal conditions set forth in Section 3.6.2 of the FEIS, for the purpose of guiding NCDOT’s planning for future phases of action through 2060.



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