

Innovative  
Planning & Financing  
for North Carolina's  
Toll Roads

September 2008



**Semi-Annual Report  
2008**



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## Roads to the Future

*A message from David W. Joyner, Executive Director of the North Carolina Turnpike Authority*

Dedicated to becoming an efficient road-building agency, the North Carolina Turnpike Authority has embraced the challenge to deliver strategically significant highway projects in a period of rampant cost increases, soaring population growth and declining revenue from traditional highway funding sources. We have adopted a strict business-like model to see that projects are delivered years ahead of conventional schedules by using a unique combination of financial and technological innovations. We work in close coordination with NCDOT and adhere to strict environmental and design standards while striving to retain complete openness and accountability.

Illustrations of our success include:

- Pioneering new paths in the areas of environmental review, aesthetic design, electronic toll collection and project finance.
- Establishing open and collaborative planning processes with our local public and private sector leaders and interested citizens.
- Developing and maintaining aggressive schedules in efforts to minimize rapidly increasing inflationary costs.
- Establishing the nation's first totally electronic start-up toll facility -- the Triangle Expressway -- and in doing so, offering motorists a more convenient and safer form of nonstop travel.

These are just a few examples of the ways we are meeting our commitment to the state while retaining public accountability and generating local support. Our policy is to listen to and respond to suggestions from interested citizens, business leaders, metropolitan planning organizations, and local elected officials. As we see it, the general public will choose whether to become our customers and ultimately determine the success of our projects. Without local support, we have no market and no way to repay our debt.

Created as a strategic resource to support alternative financing of a few of the state's major highway projects, the North Carolina Turnpike Authority is a resource that can be used in limited circumstances in specific, highly traveled areas. We are excited about our opportunities, and proud to accept the challenge of providing this new form of highway delivery.

Sincerely,

David W. Joyner



## Why tolling? Why now?

With gas and tax revenues declining, construction costs soaring, and the state's population exploding, NCDOT estimates that North Carolina will fall \$65 billion short of its revenue needs for roads, bridges and transit over the next 25 years. More than 100 bridges are structurally deficient, our roads are increasingly congested, and the Federal Highway Trust Fund is on the verge of bankruptcy. As a result, the state has had no choice but to search for alternative financing sources to build transportation infrastructure more rapidly than ever before.

Financing new projects with toll-backed securities provides one such opportunity. It allows bonds to be issued to finance new transportation infrastructure decades sooner than otherwise possible. Toll financing is based on user fees and does not require an increase in taxes and in fact frees existing resources for use on other transportation projects.

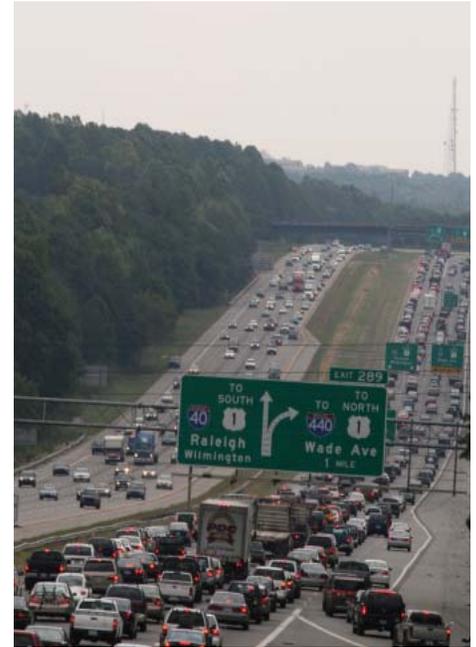
The Turnpike Authority works closely with local planning organizations, the NCDOT, transportation advocacy groups, local chambers of commerce, and especially with local and state elected officials to ensure full public participation through every step of the planning, design and engineering process. With the support of these partners, five projects have been legislatively approved for study, design and construction.

By building these projects with toll-backed financing, we will remove nearly \$4 billion from the state's transportation balance sheet while providing motorists a convenient, time-saving travel option they would not otherwise have for decades. Certainly, tolling will not solve all of North Carolina's transportation problems; it is not designed as such. However, it will inject billions of dollars into the project delivery paradigm with minimal state investment.

## Turnpike Authority's Mission and Accomplishments

Utilizing a strict business-model structure, the Turnpike Authority launched daily operations just over three years ago. Since then, the Authority has moved rapidly to accomplish its mission to build roads as quickly and efficiently as possible through innovative finance, electronic toll collection, and expedited planning and engineering. During this time, the Authority has moved its first project, the \$1-billion Triangle Expressway, from a study on the shelf to a project that is ready to be built.

The Authority faces unique demands: to act and operate in a pure business-like manner while remaining open and accountable to the legislature and the public. To date, we believe we have managed to achieve this balance with marked success.





For example, this year the Turnpike Authority:

- Received a commitment of \$99 million in gap funding from the General Assembly for four turnpike projects including the Triangle Expressway, the Monroe Connector/Bypass, the Mid-Currituck Bridge, and the Garden Parkway.
- Worked in close cooperation with the General Assembly to successfully enact toll enforcement legislation critical to obtaining private financing. This legislation also allows North Carolina to become the first state to build an open road toll system without toll booths or stopping.
- Advanced North Carolina's first modern turnpike project, the Triangle Expressway, by securing an investment-grade credit rating, completing a complex federal TIFIA loan application, and receiving design-build bids that were \$62 million below the engineering estimates.
- Conducted a first-of-its-kind demonstration of video tolling technology with manufacturers from around the world to ensure that the Turnpike Authority will employ the latest and most advanced video imaging capabilities.
- Hosted an international industry forum with investors and contractors interested in partnering with the Turnpike Authority to design, build, finance, operate and maintain the Mid-Currituck Bridge project as a joint public-private partnership venture.
- Founded the Alliance for Toll Interoperability, a coalition of more than 30 state and regional turnpike authorities to establish interoperable technology that will facilitate toll collections from customers in different states.
- Advanced the use of an innovative, "coordination-based" environmental review process outlined in the Federal Highway Administration's SAFETEA-LU, Section 6002, to move projects more efficiently and expeditiously through the environmental approval process.

Every day new challenges arise. Volatile interest rates and soaring construction costs create financing uncertainties. At the same time, hundreds of thousands of new citizens are calling North Carolina home in search of a better quality of life with safe and reliable forms of mobility. In a small - yet strategic - way, our mission is to help the state provide that mobility at the lowest possible cost.



## The Complex Business of Tolling

### Project Financing

The Turnpike Authority must identify new ways of financing large transportation projects to offset escalating construction costs. The Authority's finance staff works closely with a nationally recognized team of financial advisors, bankers, and underwriters to develop plans of finance that will support issuing bonds secured by toll revenue and state-provided gap funds. The Turnpike Authority is constantly seeking ways to improve that model in its search for even more innovative financing techniques.

Today, virtually every toll project has a gap - the difference between the private financing that projected toll revenue can support and the total cost of the project. Much like a home-buyer seeking a mortgage, the Turnpike Authority calculates an estimate of the amount it can generate (or borrow) through bond sales and the amount needed to build the project. The difference is known as "the gap" (or in the case of a home, it's the down payment). Once private financing has been secured, the revenue generated from tolls coupled with the gap funds allows the Turnpike Authority to repay its debt to the bond holders.

To secure private financing, the Turnpike Authority must accurately estimate project costs and forecast revenue amid a constantly changing capital market. Moreover, these estimates and forecasts must be accurately projected over the 40-year life of the bonds. In 2008, the Turnpike Authority overcame many challenges, such as shifting traffic and revenue forecasts, higher financing costs associated with the widening spread between AAA and BBB rated bonds, and the uncertainty of the municipal bond market.

With the Mid-Currituck Bridge project, however, the Turnpike Authority is pursuing the state's first highway public-private partnership. The Authority is moving forward with a pre-development agreement to select a private partner to work and invest with the Authority to conduct environmental reviews, create functional designs, and complete financial assessments of the project's economic viability. By identifying a partner in the early stages of the project's life, the Turnpike Authority expects to maintain an aggressive delivery schedule, thus saving time and money over the course of the project's development.

### Turnpike Operations

As a business, the Turnpike Authority must create a product customers will choose to use and support. The Authority must provide motorists a faster, safer, and more enjoyable travel experience than available alternatives. A significant way the Turnpike Authority can do that is to differentiate its roads from the typical toll road where motorists are required to stop and often wait in line to pay a toll.

Tolling is a straight-forward, albeit sophisticated and complex business, comprised of three highly integrated components - project financing, turnpike operations, and project engineering and construction.

- David Joyner



North Carolina will be the first startup toll agency in the United States to open a toll road without toll booths. Open road tolling is an all-electronic toll collection system that utilizes transponders and cutting-edge camera technology to identify customers. Open road tolling will allow motorists to drive on turnpike roads at highway speeds rather than having to stop to pay. These toll facilities are less expensive to build, maintain, and operate, and by eliminating the treacherous merging of traffic associated with traditional toll booths, they offer customers a much safer and more relaxing trip.



The Turnpike Authority is making significant efforts to ensure high operability levels in its open-road tolling system:

- In May, the Turnpike Authority hosted a video tolling demonstration to test and evaluate the latest in advanced camera equipment. Manufacturers from all over the world put their equipment and software on display. Testing over I-40 near Research Triangle Park, the Authority was able to gather data in real time and in real-world conditions that confirm the reliability of the technology.
- In 2008, the Alliance for Toll Interoperability (ATI) was incorporated to develop industry-wide standards that will provide collection interoperability between multiple state agencies. ATI now has more than 30 member agencies committed to making toll operations more convenient, efficient and effective. This organization will help ensure that motorists from other states pay tolls the same as North Carolina motorists.

Like any state agency, the Turnpike Authority must remain accountable to its Board of Directors, the legislature and its local constituencies - our future customers. The Authority is committed to operating projects that North Carolina drivers choose to use while maintaining the highest levels of service.

## Project Engineering and Construction

Inflationary pressures are quickly driving up the costs of large-scale construction projects. The cost of the Triangle Expressway, for example, increases at a rate of more than \$1 million a week. The Turnpike Authority is keenly aware that the longer it takes to move a project from the drawing board to construction, the more it is going to cost. For that reason, three years ago the Turnpike Authority took a bold step in publicly announcing the projects' open to traffic dates. And today, all of our projects remain on schedule.

The North Carolina Turnpike Authority was instrumental in founding the Alliance for Toll Interoperability, an organization comprised of more than 30 state agencies across the US teaming to set the standards for nationwide toll interoperability.



To that end, the Turnpike Authority’s engineering team is utilizing the innovative, “coordination-based” environmental review process outlined in the Federal Highway Administration’s SAFETEA-LU, Section 6002. This new process allows the Authority to move environmental reviews and studies more efficiently and expeditiously without compromising the environmental integrity of the projects.

Moreover in 2007, the Turnpike Authority took a design-build construction process developed by NCDOT and modified it to meet the requirements of a privately financed toll road. These adjustments included adapting both the contract request-for-proposal procedures and the right-of-way purchase procedures to meet the specific needs of toll projects. This design-build process allows for quality-based selections of design and construction teams who are suited for the unique needs of each project and include a cost component that ensures that the selected teams are truly a “best value.”

This innovative process was recently used in securing design-build teams for the Triangle Expressway. The Authority issued requests for proposals for both the Triangle Parkway and Western Wake Freeway segments of the Triangle Expressway. Proposals were reviewed and evaluated using this process, and in August, the Board of Directors approved Conditional Notices of Award to S.T. Wooten Corporation for the Triangle Parkway segment and the Raleigh-Durham Roadbuilders (a joint venture of Archer Western Construction, LTD and Granite Construction Company) for the Western Wake Parkway. Both firms submitted the lowest prices and received the highest technical scores for their respective project segment. In fact, their proposals were nearly \$62 million below the engineering estimates.

By utilizing the most progressive and advanced environmental processes and design-build strategies, the Turnpike Authority is reducing the traditional timeline to move a project from conception to construction by years, if not decades. The result is more infrastructure for fewer dollars.





# **North Carolina Turnpike Authority Project Updates**





## Project Summary

Note: The finance summary below was presented to the General Assembly in the second quarter of 2008. Because of inflationary pressures, increasing capital costs, the uncertainty of bond insurance, and fluidity in the municipal bond markets, the Turnpike Authority will reevaluate the financial projections for each project prior to the 2008 Annual Report and will continually update financing estimates of all the projects until the bonds are issued.

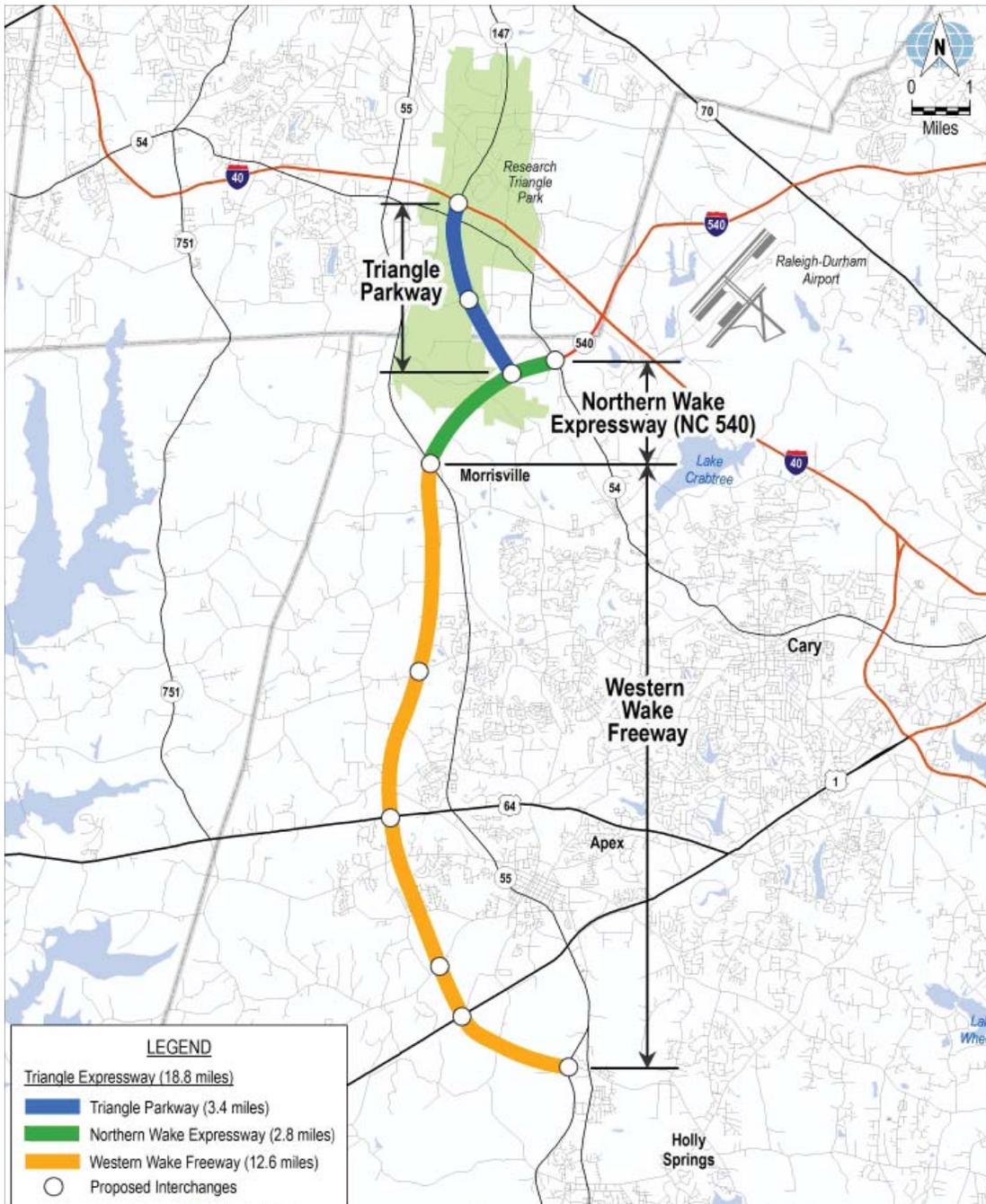
<b>Project Engineering, Construction and Finance Summary</b>					
Current Projects	Triangle Expressway	Monroe Connector / Bypass	Mid- Currituck Bridge	Garden Parkway <i>I-485 to US 321</i>	Cape Fear Skyway
<b>Engineering / Construction</b>					
Draft EIS	Complete	December 2008	January 2009	January 2009	December 2011
Preferred Alternative	Complete	April 2009	May 2009	May 2009	May 2012
Final EIS	Complete	August 2009	August 2009	May 2010	May 2013
Record of Decision	Complete	October 2009	October 2009	October 2010	October 2013
RFP for Procurement	Complete	June 2009	October 2009	June 2010	June 2013
Construction	January 2009	November 2009	March 2010	November 2010	December 2013
Open to Traffic	2010-2011	2013	2013	2015	2017
<b>Finance (in millions)</b>					
Project Cost Estimate	\$967.5	\$756.6	\$636.0	\$765.4	\$971.5
Senior Bonds	\$635.7	\$494.7	\$284.2	\$416.9	\$167.6
TIFIA	\$386.1	\$268.9	\$162.7	\$267.2	\$339.4
Plan of Finance (GAP) Begins	Complete	October 2008	October 2008	October 2009	October 2012
Annual Gap Appropriated	July 2008	July 2009	July 2009	July 2010	--
Annual Gap Amount	\$ 25.0	\$ 24.0	\$ 15.0	\$ 34.0	\$ 45.0
Bond Grade T&R Study	June 2008	September 2009	January 2010	September 2010	September 2013
Close Bonds	Fall 2008	Fall 2009	Pending PPP	Fall 2010	--



## Triangle Expressway

### Project Description

The Triangle Expressway, in Durham and Wake counties, is a new-location roadway from the NC 55 Bypass near Holly Springs to I-40 at NC 147. This toll road system is approximately 18.8 miles in length and is comprised of three projects: Western Wake Freeway, Triangle Parkway, and existing NC 540 between NC 55 and NC 54.





## Project Timeline

Approval by Local Government Commission	October 2008
Financial close for TIFIA loan and bond sales	October 2008
Execution of construction contracts	October 2008
Initiation of right-of-way acquisition	October 2008
Begin construction	January 2009
Open to traffic:	
Triangle Parkway	Late 2010
Western Wake Freeway	Late 2011

## Plan of Finance

### Sources

Par Amount of Senior Current Interest Bonds	\$ 375,540,029
Par Amount of Senior Capital Appreciation Bonds	\$ 234,043,829
Premium / (Discount)	\$ 10,360,490
<b>Total Bond Proceeds</b>	<b>\$ 619,944,348</b>
NCDOT / Research Triangle Park Contribution	\$ 128,177,763
TIFIA Loan	\$ 394,741,200
<b>Total Sources</b>	<b>\$1,142,863,310</b>

### Uses

Net Construction Deposit	\$ 615,323,226
TIFIA Construction Deposit	\$ 263,807,922
Net Capitalized Interest Fund Deposit	\$ 42,722,408
TIFIA Capitalized Interest Fund Deposit	\$ 27,252,484
I-540-P Construction and Donated Right-of-Way	\$ 128,177,763
Debt Service Reserve Fund	\$ 60,958,386
Underwriter's Discount	\$ 3,340,474
Other Costs of Issuance	\$ 1,280,648
Bond Insurance @ 1.25%	--
Contingency	--
<b>Total uses</b>	<b>\$1,142,863,310</b>



## 2008 Project Milestones

- A \$25 million annual appropriation by the NC General Assembly was approved in July 2008 to begin immediately to supplement toll revenues for support of debt service and related financing costs and expenses on revenue bonds issued for construction of the Triangle Expressway project.

### Western Wake Freeway:

- The Section 401 Water Quality Certification was received in March 2008.
- The Section 404 Permit was received in April 2008.
- The Turnpike Authority Board of Directors approved a Conditional Notice of Award to the Raleigh-Durham Roadbuilders Design-Build Team (a joint venture of Archer Western Contractors, Ltd. and Granite Construction Company) in August 2008.

### Triangle Parkway:

- The Environmental Assessment (EA) was approved in February 2008.
- Permit applications for the Section 404 Permit and Section 401 Water Quality Certification were submitted to the environmental agencies in March 2008. These approvals are expected in September 2008.
- A Local Officials Meeting and Public Hearing were held in March 2008.
- A Finding of No Significant Impact (FONSI) was approved in July 2008.
- The Turnpike Authority Board of Directors approved a conditional notice of award to the S.T. Wooten Design-Build Team August 2008.

### NC 540:

- The Categorical Exclusion for installation of tolling equipment was approved in August 2008.





## Project Timeline

Draft Environmental Impact Statement	December 2008
Final Environmental Impact Statement	August 2009
Record of Decision	October 2009
Award construction contract	November 2009
Project open to traffic	2013

### Finance Estimates (in millions)

Project Cost Estimate	\$756.6
Senior Bonds	\$494.7
TIFIA	\$268.9
Annual Gap	\$ 24.0

*These estimates were submitted to the General Assembly in June 2008. They will be updated prior to the 2008 Annual Report.*

## 2008 Project Milestones

- A \$24 million annual appropriation by the NC General Assembly was approved in July 2008 to begin July 1, 2009, to supplement toll revenues for support of debt service and related financing costs and expenses on revenue bonds issued for construction of the Monroe Connector/Bypass project.
- As of August 2008, functional design plans are almost complete.
- As of August 2008, studies for 16 detailed study alternatives are almost complete.
- Public open houses will be in September 2008 to give the public an opportunity to view the latest project designs and information.
- The Draft Environmental Impact Statement is being drafted and will undergo review at NCDOT and FHWA the last quarter of 2008.
- The Turnpike Authority will recommend a preferred alternative in the Draft Environmental Impact Statement in December 2008.

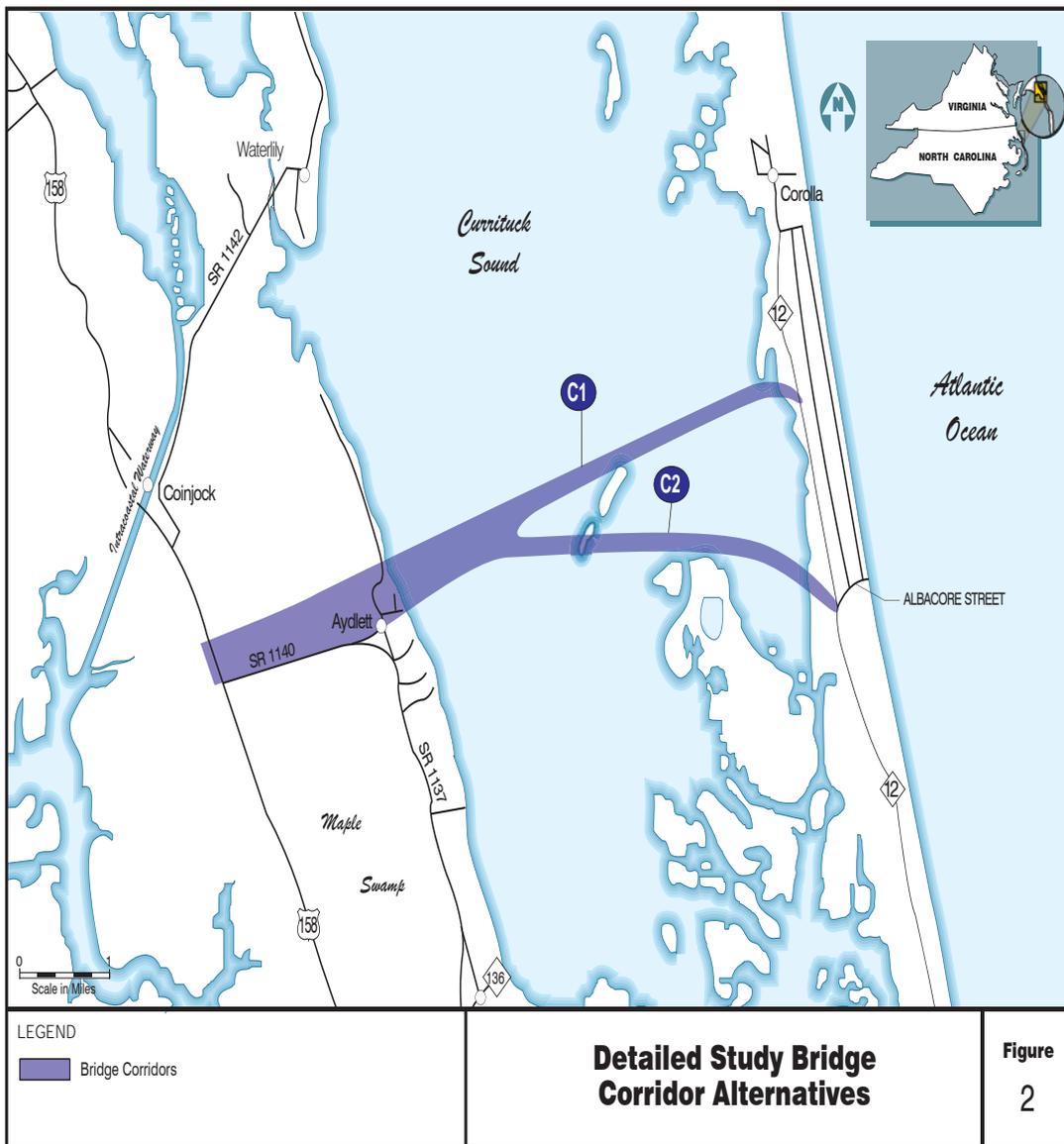


## Mid-Currituck Bridge

### Project Description

The Mid-Currituck Bridge project is a new facility, approximately 7 miles in length, from US 158 on the Currituck County mainland to NC 12 on the Currituck County Outer Banks. The majority of the project will be on structure, bridging the Currituck Sound and Maple Swamp.

Based on the projected traffic volumes through year 2035, the Turnpike Authority has decided to plan, design and construct a two-lane bridge.





## Project Timeline

Draft Environmental Impact Statement	January 2009
Final Environmental Impact Statement	August 2009
Record of Decision	October 2009
Project open to traffic	2013

### Finance Estimates (in millions)

Project Cost Estimate	\$636.0
Senior Bonds	\$284.2
TIFIA	\$162.7
Annual Gap	\$ 15

*These estimates were submitted to the General Assembly in June 2008. They will be updated prior to the 2008 Annual Report.*

## 2008 Project Milestones

- A \$15 million annual appropriation by the NC General Assembly was approved in July 2008 to begin July 1, 2009, to supplement toll revenues for support of debt service and related financing costs and expenses on revenue bonds issued for construction of the Mid-Currituck Bridge project.
- In February 2008, the Turnpike Authority conducted a Local Officials meeting and three Citizens Informational Workshops in the project area.
- The Draft Purpose and Need Statement and the Draft Alternatives Screening Report were completed in April 2008. The alternatives report documents the alternatives that were developed for consideration of the project and identified the detailed alternatives the Turnpike Authority recommended for study. These reports were made available for public review and comment in April 2008. The report was made available at several local government offices and is posted on the Turnpike Authority's website.



- In May 2008, the Turnpike Authority hosted an international industry forum attended by more than 150 investors and contractors interested in partnering with the Authority to design, build, finance, operate and maintain the project as a joint public-private venture. This project will be the first public-private partnership for major transportation infrastructure in North Carolina.
- In June 2008, the Turnpike Authority decided to move forward with a pre-development agreement to select a private partner to work alongside the Turnpike Authority's environmental study and finance teams to conduct preliminary engineering and assess the project's economic viability. By identifying a partner early in the project's life, the Turnpike Authority expects to maintain an aggressive delivery schedule.



## Garden Parkway

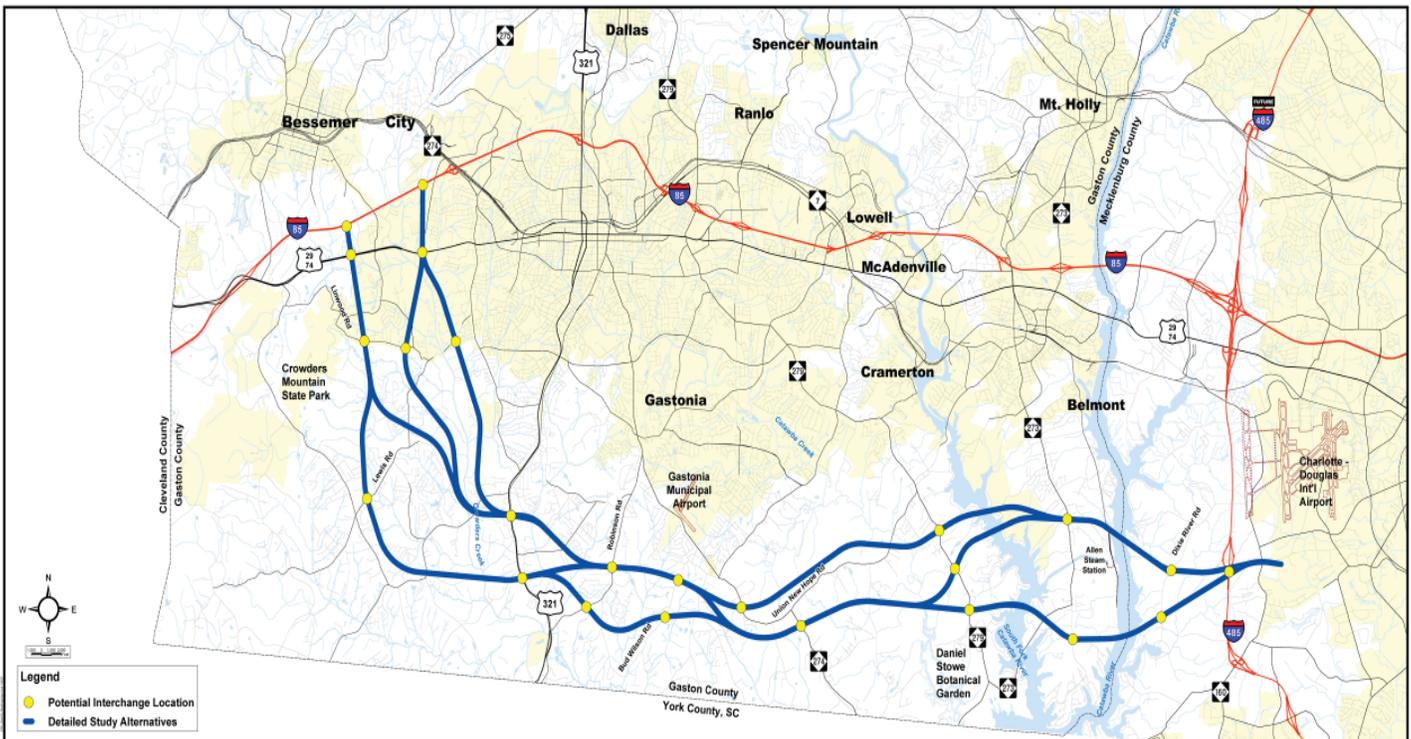
### Project Description

The Garden Parkway, also known as the Gaston East-West Connector, is a new roadway from I-85 west of Gastonia to I-485/NC 160 in Mecklenburg County. The project is approximately 21.5 miles long.

The magnitude of this project, the results of the preliminary traffic and revenue studies, and the financial analysis determined the need to assess building the project in phases. Originally, three phasing scenarios were considered.

In July 2008, the General Assembly allocated gap funding for the project. The expectation is that the gap funding allocated for the project is sufficient to build the project at least from I-485/NC 160 in Mecklenburg County west to US 321, a distance of approximately 14.7 miles.

The Turnpike Authority continues to conduct the required environmental and engineering studies for the entire project and will continue to pursue funding to implement the entire project.





## Project Timeline

Draft Environmental Impact Statement	January 2009
Final Environmental Impact Statement	May 2010
Record of Decision	October 2010
Project open to traffic	2015

### Finance Estimates (in millions)

*Total Project Cost* \$1,255.0

I-485 to US 321

<b>Project Cost Estimate</b>	\$765.4
<b>Senior Bonds</b>	\$416.9
<b>TIFIA</b>	\$267.2
<b>Annual Gap</b>	\$ 35.0

*These estimates were submitted to the General Assembly in June 2008. They will be updated prior to the 2008 Annual Report.*

## 2008 Project Milestones

- A \$35 million annual appropriation by the NC General Assembly was approved in July 2008 to begin July 1, 2010, to supplement toll revenues for support of debt service and related financing costs and expenses on revenue bonds issued for construction of the Garden Parkway project.
- Earlier this year, four of the 16 detailed study alternatives were eliminated from further study. The Turnpike Authority is continuing to study 12 possible routes for the project.
- In August 2008, the Turnpike Authority's environmental study team conducted a Local Officials meeting and three Citizens Informational Workshops to give officials and residents an update on the project and an opportunity to ask questions and make comments. More than 1,000 people attended these meetings.
- The Draft Environmental Impact Statement is being drafted and will undergo review at NCDOT and FHWA the last quarter of 2008.
- The Turnpike Authority will recommend a preferred alternative in the Draft Environmental Impact Statement in January 2009.



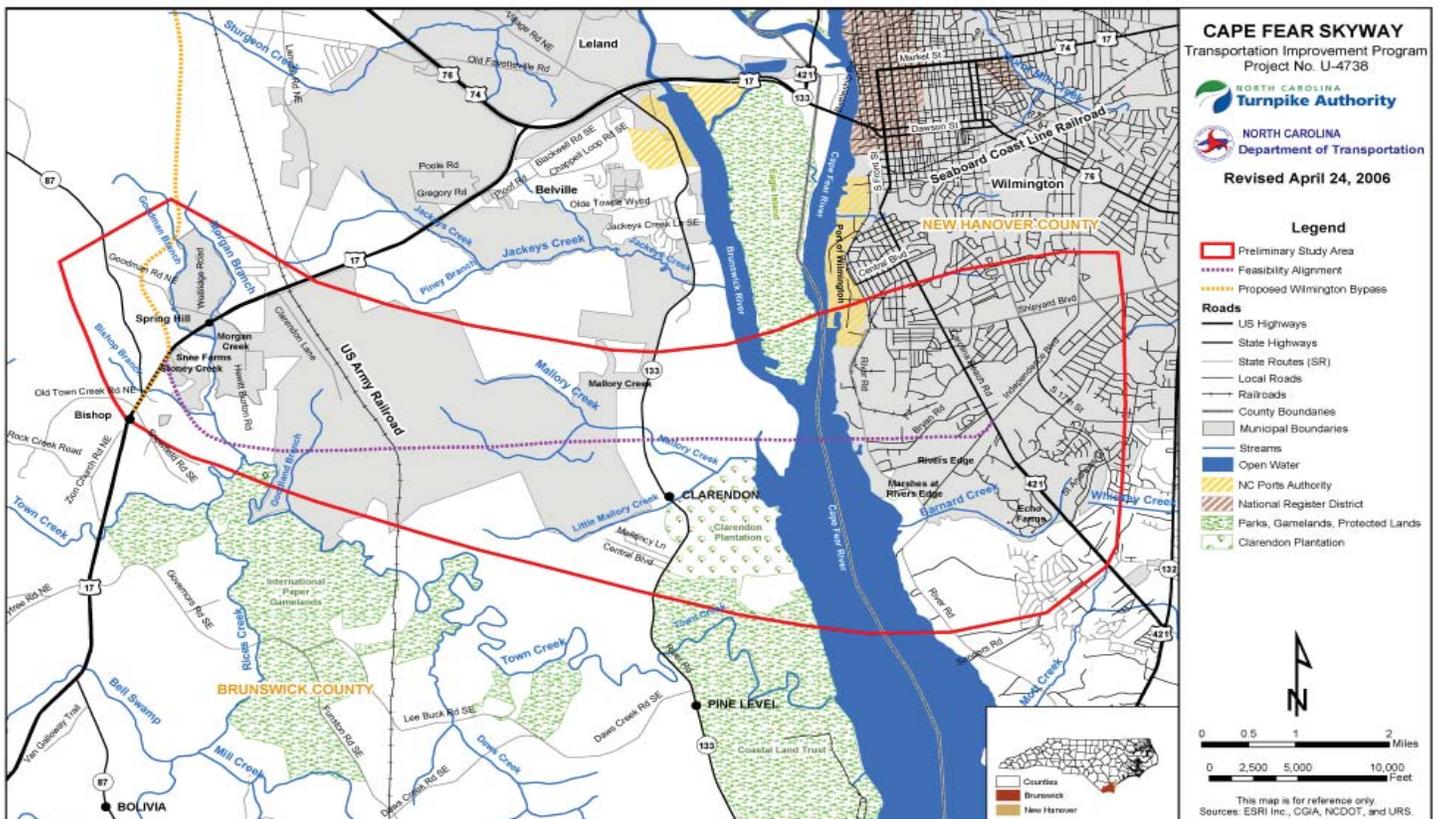
# Cape Fear Skyway

## Project Description

The Cape Fear Skyway is an approximately 9.5 mile new-location roadway from the US 17 Bypass to US 421 near Wilmington, including a bridge over the Cape Fear River. The project is located in Brunswick and New Hanover Counties.

## Project Timeline

The project timeline is being reevaluated due to a recent change in the Wilmington MPO Long Range Transportation Plan that created the need to reassess the traffic forecasts for the project.





### Finance Estimates (in millions)

Project Cost Estimate	\$971.5
Senior Bonds	\$167.6
TIFIA	\$339.4
Annual Gap	\$ 45.0

*These estimates were submitted to the General Assembly in June 2008. They will be updated prior to the 2008 Annual Report.*

### 2008 Project Milestones

- The natural resources inventory report for the study area was completed in July 2008.
- The initial traffic forecasts to be used in the early stages of the project study were completed in August 2008.
- A draft bridge location and type study is undergoing review. This study will define assumptions for bridge type and assist in the refinement of project costs.