



North Carolina Department of Transportation State Funded Bridge Improvement Program



**An Overview of the NCDOT State Funded Bridge Improvement Program
and the Utilization of Design-Build Contracts**

**Terry R. Gibson, PE
NCDOT State Highway Administrator**



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Background Information

- North Carolina's highway system consists of 79,185 miles of roadway and 18,205 structures.
- The Division of Highways within the Department of Transportation is responsible for maintaining this system.
- Over the past 10 years, paved lane mile growth increased by 4% and bridge deck area grew by approximately 24%.
- While the system continues to grow, the traditional highway maintenance funds have increased, but not enough to keep pace with inflation and system growth.



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Background Information (cont.)

- Recognizing this gap between available funding and maintenance needs, the North Carolina General Assembly and the Department have worked together to not only increase maintenance funds, but also find non-traditional funding sources to narrow this gap.
- A report on the condition of the state highway system and maintenance funding needs is presented to the Joint Legislative Transportation Oversight Committee of the North Carolina General Assembly by December 31st of each even-numbered year.
- The most recent Maintenance Condition Assessment Report was provided on December 1, 2010.



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North Carolina State Funds

- Based on the Maintenance Condition Assessment Report and subsequent coordination between the NCDOT and the General Assembly, the North Carolina State Budget allocated the following funds during the last Legislative session to make improvements on structurally deficient bridges:

\$215M for State Fiscal Year 2011 - 2012, and
\$235M for State Fiscal Year 2012 - 2013

- The purpose of the NCDOT State Funded Bridge Improvement Program for State Fiscal Years 2011-12 and 2012-13 is to ensure that the Department successfully meets the Legislative initiative to commit approximately \$450M in state funds allocated for Bridge Improvement Projects by June 30, 2013.



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Primary Goal of the State Funded Bridge Improvement Program

- The primary goal for utilizing the \$450M in allocated state funds is to “move the needle” in regards to the overall statewide bridge health index by delivering as many bridge replacement, rehabilitation, and preservation projects as the funds will allow.
- A detailed analysis of state highway system bridges is conducted through Bridge Condition Surveys which evaluate five major elements: railings, decks, expansion joints, superstructure, and substructure. Every bridge in the state receives a detailed inspection once every two years.
- Based on current sufficiency ratings as a result of these Bridge Condition Surveys, approximately 1200 bridges have been identified as candidate projects under this Program.





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Non NBIS Structures

- FHWA National Bridge Inspection Standards (NBIS), CFR 23 Part 650 defines a bridge as:

A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

- As such, bridges less than 20 feet are not eligible for Federal Aid Funds.
- North Carolina currently has approximately 750 bridges less than 20 feet.
- As part of the State Funded Bridge Improvement Program, several projects will pursue the option of replacing several of these short bridges with a pipe or culvert.



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General Scope of the Program

- **Bridge Replacement Projects:** (1) Replace Bridge with Bridge, (2) Replace Bridge with Pipes or Culverts

Approximately 650 Replacement Candidate Projects

- **Bridge Rehabilitation Projects:** (1) Replacing Decks, Spans, Girders (2) Jacking Bridges (3) Major System Preservation

Approximately 50 Rehabilitation Candidate Projects

- **Bridge Preservation Projects:** (1) Hydro Demolition, Resurfacing Decks (2) Painting Structural Steel (3) Cleaning / Painting Bearings (4) Repairing / Replacing Expansion Joints (5) Pile Encapsulation

Approximately 500 Preservation Candidate Projects

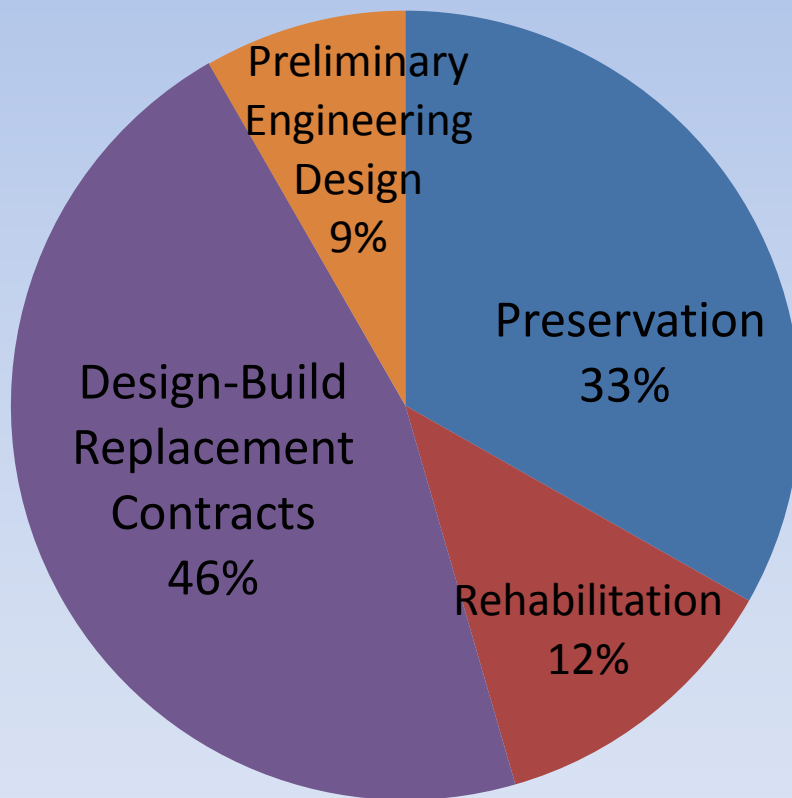


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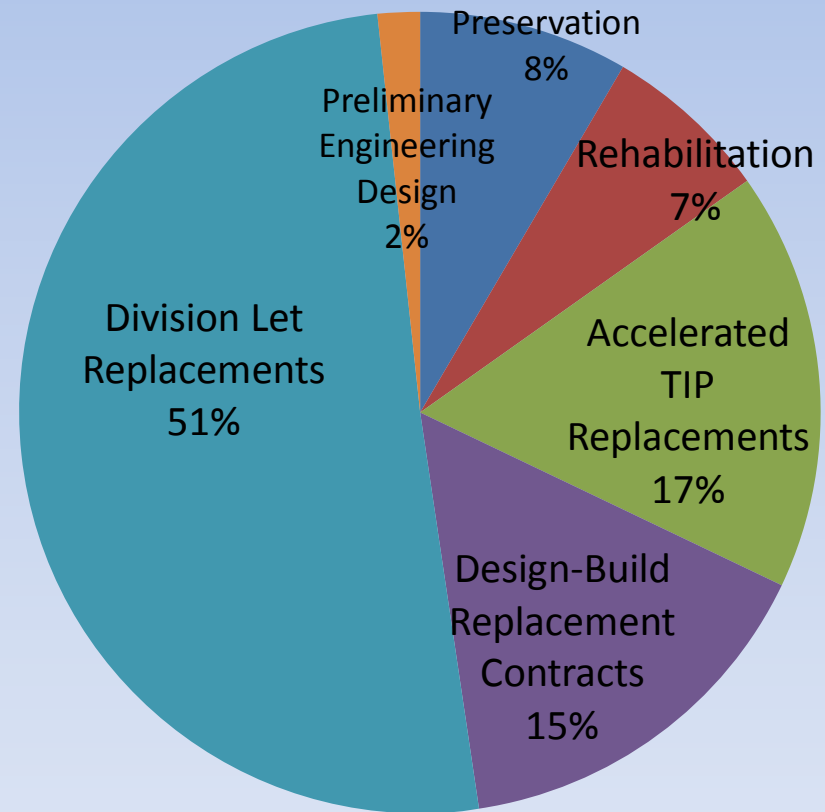


General Scope of the Program (cont.)

The charts below represent current forecasted approximations of program expenditures.



Year 1 (SFY ending 06/30/12)



Year 2 (SFY ending 06/30/13)

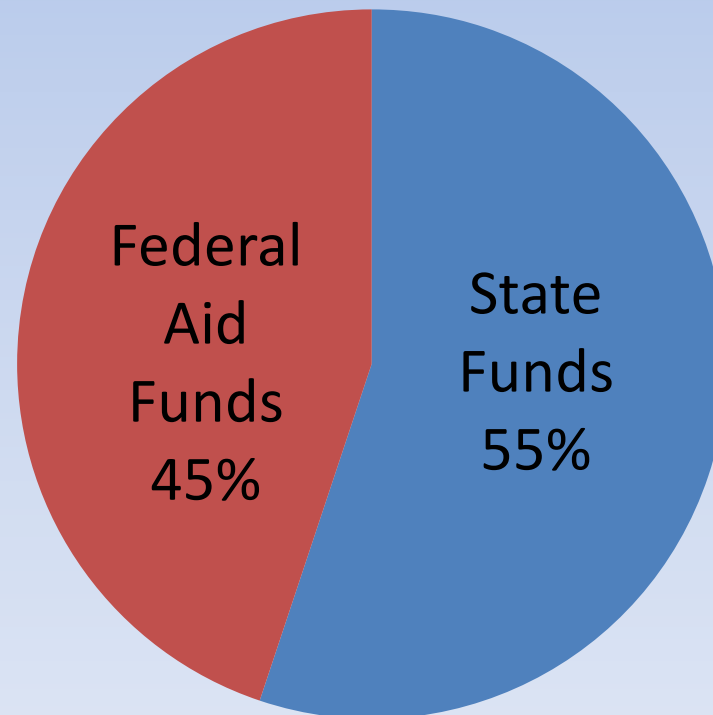


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Overarching NCDOT Bridge Program

The chart below represents the approximate funding structure for the entire NCDOT Bridge Program with the additional state funds allocated in SFY 2011–2012.





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Engineering Design Options

- In order to successfully meet this aggressive initiative to Let approximately 1200 bridge projects before June 30, 2013, the NCDOT will rely heavily on the utilization of Private Engineering Firms to provide engineering and design work.
- Limited Service Contracts and Design-Build Contracts will be the two primary procurement options utilized to provide preliminary engineering and design work focused on, but not limited to:
 - Hydraulic Surveys and Reports
 - Geotechnical Borings and Design
 - Structure Design
 - Roadway Design
 - Traffic Control
 - Erosion Control
 - Construction Engineering & Inspection (CEI)



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Limited Service Contracts

- Preliminary Engineering and Design Work has begun on several of the bridges as part of this Program.
- It is anticipated that the preliminary engineering and design expenditures as part of this 2 year program will be approximately \$45-\$70M (10-15% of the total \$450M).
- As a private consulting firm, you must be prequalified to perform work or services for NCDOT before you can submit your Letter of Interest for advertised opportunities. For information regarding advertised professional services opportunities and the NCDOT prequalification process, visit:

<http://www.ncdot.org/business/>



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Design-Build Projects

- In order to Let approximately \$215M in Bridge Improvement Projects as targeted by the General Assembly by June 30, 2012, the NCDOT intends to utilize Design-Build Contracts as part of the overall Program strategy.
- It is anticipated that there will be at least 1 Design-Build Contract in each of the 14 Divisions to replace approximately 10 – 15 bridges.
- The estimated timeframe for these Design-Build Contracts is to advertise later this year and Let all of the Year 1 Design-Build contracts by June 30, 2012.
- It is anticipated that there will be an additional round of Design-Build opportunities in certain Divisions in State Fiscal Year 2012 – 2013.



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Anticipated Timeline for Overall Project

Task Name	2011				2012				2013				G
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
BMU Preservation Contracts			■	■	■	■	■						
Rehab / Jacking Contracts				■	■	■							
Design-Build Replacement Contracts					■	■							
Division Let Replacements P&E Work		■	■	■	■	■	■	■					
BMU Preservation Contracts							■	■	■	■	■	■	
Rehab / Jacking Contracts								■	■	■	■	■	
Accelerated TIP Replacement Contracts								■	■	■	■	■	
Design-Build Replacement Contracts									■	■			
Division Let Replacement Contracts							■	■	■	■	■	■	



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More Information Online

- Advertisements and specific project information regarding the Design-Build Projects will be posted at:

http://www.ncdot.org/doh/preconstruct/altern/design_build/

- Advertisements regarding all NCDOT Letting Opportunities will be posted at:

<http://www.ncdot.org/doh/preconstruct/ps/contracts/letting.html>