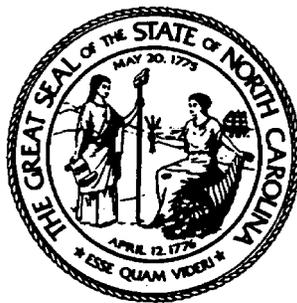


# **Evaluation of the Delegation of Construction Authority to The University of North Carolina System for Projects Less Than \$500,000**

As Directed by Section 12(a), Senate Bill 862, 1997 Session  
of the North Carolina General Assembly

**June 2001**

**The State Building Commission and The Office of  
State Budget, Planning and Management**



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# EXECUTIVE SUMMARY

This analysis is submitted to satisfy the requirement as defined in Section 12(a), Session Law 1997-412, Senate Bill 862 of the 1997 Session of the North Carolina General Assembly. This legislation directed the Office of State Budget, Planning, and Management (OSBPM) and the State Building Commission to evaluate the process and quality of construction projects managed by the University of North Carolina General Administration (UNC-GA). Specifically, the legislation stated that the report shall:

“...include an analysis of the time required to complete projects, project savings or costs, necessary increases or decreases in staffing, if any, and any other benefits or detriments regarding the delegation of authority under G.S. 116-31.11. The evaluation shall also include recommendations regarding the continuance of the delegated powers, continuance with modifications, expansion, or discontinuance. The Office of State Budget and Management and the State Building Commission shall jointly report their findings and recommendations to the Board of Governors of the University of North Carolina and to the General Assembly by April 15, 2001.”<sup>1</sup>

As it pertains to this report, the enabling legislation gave UNC-GA the authority to manage all university system capital projects requiring an estimated expenditure of up to \$500,000. The evaluation period for this report was defined as July 1, 1997 to December 31, 2000. All university system managed construction projects in this timeframe have been included in this analysis, as were projects managed by State Construction.

The recommendations contained below are based on an extensive analysis of the data gathered during the evaluation period. These recommendations are summarized as follows:

1. Increase the delegation amount to The University of North Carolina to a baseline of \$1,000,000 by July 1, 2001.
2. The University of North Carolina Board of Governors should be given the authority to determine the threshold for construction delegation for each campus of the University of North Carolina System
3. The University of North Carolina General Administration should submit consolidated electronic monthly reports to the State Building Commission on all construction related activity. Construction management information for both organizations should be maintained in common formats for management analysis.
4. No staffing increases are recommended as a result of the increased construction delegation to the University of North Carolina System.
5. The University of North Carolina Board of Governors, The State Building Commission and the Office of State Construction should continue to ensure compliance with all laws and procedures regarding the delegation of construction authority.

It is anticipated that these recommendations will enhance the state's construction management program both at the University System and the Office of State Construction. At the same time it offers the University System additional management flexibility and provides alternative channels through which projects can be managed.

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<sup>1</sup> “An Act to Provide Greater Flexibility to the University of North Carolina and other Agencies in Negotiating Certain Contracts and Capital Projects, to Increase the Benchmark for Purchases by the University of North Carolina and Other State Agencies, and to Authorize Employee Payroll Deductions for Certain Discretionary Privileges of University service at the University of North Carolina.” The General Assembly of North Carolina, 1997 Session. Session Law 1997-412, Senate Bill 862.

# INTRODUCTION

## **Scope**

This analysis is submitted to satisfy the requirement as defined in Section 12(a), Session Law 1997-412, Senate Bill 862 of the 1997 Session of the North Carolina General Assembly. This legislation directed the Office of State Budget, Planning, and Management (OSBPM) and the State Building Commission to evaluate the process and quality of construction projects managed by the University of North Carolina General Administration (UNC-GA). Specifically, the legislation stated that the report shall:

“...include an analysis of the time required to complete projects, projects savings or costs, necessary increases or decreases in staffing, if any, and any other benefits or detriments regarding the delegation of authority under G.S. 116-31.11. The evaluation shall also include recommendations regarding the continuance of the delegated powers, continuance with modifications, expansion, or discontinuance. The Office of State Budget and Management and the State Building Commission shall jointly report their findings and recommendations to the Board of Governors of the University of North Carolina and to the General Assembly by April 15, 2001.”<sup>2</sup>

As it pertains to this report, the enabling legislation gave UNC-GA the authority to manage all university system capital projects requiring an estimated expenditure of up to \$500,000. Section 1 of the bill also required UNC-GA to develop policies and procedures that the University System must follow for the management of these construction projects.

The evaluation period for this report was defined as July 1, 1997 to December 31, 2000. All university system managed construction projects in this timeframe have been included in this analysis. In addition, the Office of State Construction has supplied project related data from July 1, 1992 to December 31, 2000 on all state construction projects for which they were responsible for managing.

## **Background**

The Office of State Construction (State Construction) is the primary agency responsible for the management of capital construction, repair, and renovation projects for agencies throughout the state. In the basic construction process, all state agencies currently are delegated with local authority to manage projects up to \$100,000 on their own. Any project above that delegation must be managed by State Construction.

The delegation of construction authority to the University System in 1997 of construction projects up to \$500,000 was the first time that a state agency was delegated the ability to manage the projects to that dollar amount on their own without the managerial oversight of State Construction. The authority, delegated under G.S. 116-31.11 required the University system to develop procedures and reasonable limitations governing the use of the \$500,000 delegation. These procedures were approved by the State Building Commission in 1997 in accordance with the requirements of G.S. 16-31.11.

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<sup>2</sup> “An Act to Provide Greater Flexibility to the University of North Carolina and other Agencies in Negotiating Certain Contracts and Capital Projects, to Increase the Benchmark for Purchases by the University of North Carolina and Other State Agencies, and to Authorize Employee Payroll Deductions for Certain Discretionary Privileges of University service at the University of North Carolina.” The General Assembly of North Carolina, 1997 Session. Session Law 1997-412, Senate Bill 862.

UNC-GA has served as the central point of administrative management for the delegated projects. To this end, UNC-GA developed a web-based project management tool in 1997, called "CAPSTAT". CAPSTAT allows the capital projects coordinators at the various university campuses to collect and input data about capital projects in a standard format. This data is then collected and analyzed by staff at UNC-GA and the campuses. UNC-GA feels that the use of CAPSTAT has enhanced the management of construction projects around the university system and provided decision-makers with timely and accurate information about the status of projects. It is noteworthy to point out that all the data received from UNC-GA contained in this report was provided by their CAPSTAT system.

## ***Methodology***

The evaluation period for this report was defined a July 1, 1997 to December 31, 2000. All university system managed construction projects in this timeframe have been included in this analysis. In addition, the Office of State Construction has supplied project related data from July 1, 1992 to December 31, 2000 on all state construction projects for which they were responsible for managing.

Construction data was gathered from State Construction for all projects from 1992 to 2000. UNC-GA submitted project data for projects between \$100,000 but less than \$500,000 from 1997 to 2000<sup>3</sup>. The 1992 to 1997 data from State Construction serves as the baseline on which the pre-delegation (pre-1997) period will be compared to the post-delegation (post 1997) period. The data captured from both agencies contains all the relevant data concerning construction project such as appropriated amount, the project timelines, project milestones, the actual construction amount, and information concerning change orders. Meetings were held with staff from both State Construction and UNC-GA to discuss the data submitted. These meetings were held to ensure that the data was complete enough to accurately represent the construction management processes in place at both agencies.

Information was collected about the overall process which construction projects are required to follow. This was collected in order to understand the impact of review processes by agencies other than State Construction and UNC-GA. Claims data was collected to analyze the impact of claims against the state related to construction projects. Both State Construction and UNC-GA submitted all claims activity for the period of the study. Although not required by legislation, data was collected on the use of Historically Underutilized Businesses (HUB's) to analyze the use of qualified HUB contractors and sub-contractors and any impact that the delegation has had on their use.

Finally, State Construction provided input from their Facilities Condition and Assessment Program (FCAP) related to the quality of construction. It is important to note however, that none of the projects included within the scope of the delegation have been included in any FCAP analysis. Because FCAP analysis is conducted on a periodic 3-year cycle, none of the delegated projects had the opportunity to be included in the regular cycle for assessment.

Considerable attention was given to investigation of the data from both State Construction and UNC-GA to ensure that the data from each was compatible. After this analysis, we are of the opinion that the data from each is accurate and reasonably describes the management on construction projects within each organization. Since the outset of this study, both agencies have undertaken projects to enhance their ability to collect project management data. The study team recognizes the fact that the data provided by both agencies is the most accurate information available concerning their respective operations. It is important to note that the information systems that both organizations utilize are separate systems, and the data captured by each is unique in some characteristics. This is primarily due to different

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<sup>3</sup> Prior to the 1997 delegation of construction authority to the University System, each university already had a \$100,000 delegation authority for construction projects. For this reason, only the additional delegation is included for the purposes of analysis.

management emphases that each organization places on particular types of information. Because each organization approaches the definition of a “project” differently as it pertains to its management information, this study accepts the fact that there are slight differences in how the data is reported by each.

The sections presented in this report address the elements that are required by the legislation enabling this study. For presentation purposes, within each one of those sections, findings related to that section are presented. A “Recommendations” section at the end of the report encapsulates recommendations from the entire report and considers the findings that were located in previous sections.

## **Target Data Set**

### **University System**

As described earlier, the University System collects data through its CAPSTAT project management system. UNC-GA has captured detailed project data since the delegation of construction authority in 1997. OSBPM received a download of construction data for projects between \$100,000 and \$500,000 for the period of July 1, 1997 to December 31, 2000. Data was not collected subsequent to December 31, 2000 to allow time for the completion of the analysis contained within this report.

The following list summarizes the data captured from UNC-GA:

- The project timelines for all construction projects between \$100,000 and \$500,000. Projects started after July 1, 1997 to any project completed by December 31, 2001
- System-wide staffing for delegated projects
- Project costs, including initial budgeted or appropriated amount and final amount
- Final design fee analyses for all projects between \$100,000 and \$500,000
- Contract claims activity for the period of the delegation, to include the number of contract claims, and any final settlement amount
- Any costs related to the delegation of construction authority
- HUB activity for the period of the delegation
- Listing all of capital projects funded by the 2000 Bond Referendum

### **Office of State Construction**

State Construction captures construction data for all state agency projects, including university system projects over \$500,000. Since the delegation of construction authority to the University System in 1997, State Construction has not captured data for university projects less than \$500,000 because the information was not available to them. For those projects under State Construction’s authority, OSBPM received a download of all construction data for all projects of any value for the period July 1, 1992 to December 31, 2000. Data was not collected subsequent to December 31, 2000 to allow time for the completion of the analysis contained within this report.

The following list summarized the data captured from State Construction:

- The project timelines for all construction projects of any value from July 1, 1992 to December 31, 2000 (University projects between \$100,000 and \$500,000 from July 1, 1997 to December 31, 2000 would be reported only by UNC-GA, and not duplicated in the data provided from State Construction)
- Agency staffing patterns
- Project costs, including initial budgeted or appropriated amount

- Final design fee analyses for all projects
- Contract claims activity for the period of the delegation, to include the number of contract claims
- Any costs or savings related to the delegation of construction authority
- HUB activity for the period of the delegation

## Analysis of Data

### Time to Complete Projects

Construction timeline data from State Construction and UNC-GA were analyzed in the same manner. Each agency submitted project timeline data that captured the total elapsed time in days from the date of funds availability to the date of the Notice to Proceed (NTP). It is important to note that the actual “construction period” is not included in the analysis of the timelines. The intent of this evaluation is to analyze the segments of the overall construction management process where each agency has the most administrative control. For this reason, the actual construction period was omitted because of the number of external influences that could adversely affect the timeline. Problems such as weather-related delays, supplier problems, labor shortages, etc., can all have a significant impact on the total length of time required to complete the project.

Table 1 below, summarizes the average number of total elapsed days that both UNC-GA and the State Construction Office required to take a project from designer selection to the Notice to Proceed.

**Table 1. Summary of Average Total Elapsed Days from Certification of Funds Available to Notice to Proceed for University Delegated and State Construction Projects**

Project Oversight, Projects \$100K to \$500K	Number of Projects Included in This Analysis	Certification of Funds Available to Designer Selection	Designer Selection to Design Agreement/Design Contract	Design Agreement/Design Contract to Date of Approved Bid Documents	Approved Bid Documents to Actual Bid Date*	Actual Bid Date to NTP**	Certification of Funds Available to NTP
University Oversight, University Projects Post 1997	215	72	43	109	56	25	305
SCO Oversight, Non-University Projects Post 1997	110	109	38	218	39	104	508
SCO Oversight, University Projects Pre 1997	189	97	65	205	34	100	501
SCO Oversight, Non-University Projects Pre 1997	312	75	48	322	47	92	584

\*Note: The University System data reports this column as “Design Complete to Award”

\*\*Note: The University System data reports this column as “Award to Notice to Proceed”

Source: Office of State Construction, and the University of North Carolina General Administration

It is important to remember that the data shown in Table 1 represents *elapsed days*, and not working days. For this reason, all the timeline data submitted by both State Construction and UNC-GA is slightly inflated in terms of the time required to complete a milestone within the project. In addition, there are a limited number of situations where advance planning money may be appropriated for a project, lengthening the reported timeline although only advance planning work is being done. In these limited cases, actual construction may not begin for another 1 or 2 years, making the timeline seem abnormally long. Given the number of projects included in the database, the analyst believes that the data accurately represents the overall project management process.

It is noteworthy to illustrate the fact that many of the projects for both State Construction and the University System were subject to being funded in multiple years. This is a common situation with many projects. They receive some initial funding for the first year, and must often wait for additional funding to be budgeted or appropriated to complete the project in the second or

third year. The difficulty that arises in analyzing these projects is how the management information is captured. In the case of university projects, UNC-GA was able to categorize those projects that were split funded, versus those that were not. In the case of State Construction, records had to be checked manually against the information provided in their database. For purposes of accuracy for both State Construction and the University System, only those projects with complete and accurate data have been included in the analysis. Therefore, some projects were excluded for lack of accurate data, incomplete data, or were not included because the management information system did not capture data about those projects.

To mitigate this problem, an analysis of how projects were funded was undertaken to determine if both State Construction and the University System were subject to the same processes that would determine if a project were split funded or not. Based on the fact that both agencies rely on the same appropriations process to receive funding for their projects, it is reasonable to conclude that each organization is just as susceptible to scenarios involving split funded projects as the other.

While the construction management processes for both the University System and State Construction are essentially similar, there are noteworthy differences. State Construction no longer participates or oversees design fee negotiations following the selection of a designer by the Board of Trustees. In addition, State Construction no longer provides oversight during the design review or oversight during construction compliance review phases of the project. The net effect is that less time is spent on oversight and review activities by State Construction that are now being completed by the university campuses. To a large degree, the elimination of duplicative work along with the less administrative time required to manage these projects account for the majority of time savings for the University System in moving the project towards construction more rapidly.

Since the delegation of construction authority to the University System, State Construction has made a marked reduction in the time required to the Notice to Proceed milestone. With the University System managing construction projects that were once managed by State Construction, State Construction has that many less projects to manage. Secondly, it is important to note that since 1997, the state has had less capital, and repair and renovation funds available for state agencies as a whole. While it is probably that over the longer term that fewer projects will be undertaken, State Construction still was required to manage those projects already underway.

### **Findings for Time to Complete Projects**

- 1. On average during the evaluation period, University System projects under \$500,000 arrive at the Notice to Proceed milestone 279 days, or in 47% less time than university projects managed by State Construction prior to 1997.**
- 2. On average during the evaluation period, University System projects under \$500,000 arrive at the Notice to Proceed milestone in 203 days, or in 40% less time than non-university system projects currently managed by State Construction since 1997.**
- 3. Since 1997, State Construction has improved the average elapsed time to Notice to Proceed a total of 76 days for non-university projects under \$500,000, or since the delegation to the University System.**

## Staffing Requirements

Extensive effort was dedicated to measuring any changes in staffing as a result of the increase in construction authority to the University System. Data was provided by the University System at the outset of the delegation in 1997 that provided a baseline for any measurement of the changes in staffing patterns in the subsequent years.

One of the primary concepts behind the delegation of construction authority was to give the University System more managerial authority over a process for which university staff were already performing a great deal of the work. When the delegation was granted to the University System in 1997, UNC-GA promoted the idea that the increased construction delegation was to be handled by the staffing complement in place at that time. One risk that is inherent in delegating authority from a central management agency is that those agencies receiving the delegated authority will request additional staff to handle any additional work.

Because staffing is dynamic and changes from year to year, this adds a degree of complexity to measuring changes against a baseline. Added to this complexity was legislation that was passed during the 1999 Session of the North Carolina General Assembly that appropriated additional money to the University System for facilities management staff.

**Table 2. Construction Delegation Staffing Analysis for the University System, FY 1997-2000**

Campus/School	Total Full-Time Equivalent Employees of December 2000	Total Full-Time Equivalent Employees as of July 1997	Percent Change for the Period
Appalachian State University	4	4	0%
East Carolina University	8	8	0%
Elizabeth City State University	3	1	200%
Fayetteville State University	2	1	100%
North Carolina A&T State University	8	4	100%
North Carolina Central University	5	2	150%
North Carolina School of the Arts	1	1	0%
North Carolina State University	18	18	0%
University of North Carolina-Asheville	3	3	0%
University of North Carolina-Charlotte	4	4	0%
University of North Carolina-Chapel Hill	15	15	0%
University of North Carolina-Greensboro	9	9	0%
University of North Carolina-Pembroke	2	1	100%
University of North Carolina-Wilmington	3	3	0%
Western Carolina University	3	3	0%
Winston-Salem State University	3	1	200%
<b>Total</b>	<b>91</b>	<b>78</b>	<b>17%</b>

Source: University of North Carolina General Administration, and the Office of State Budget, Planning, and Management

Table 2 contains a breakdown by campus of the staffing levels currently in place for construction management and the staffing levels prior to the delegation of construction authority. These totals represent the staffing complement that supports all projects, regardless of dollar amount. During the 1999 Session of the North Carolina General Assembly (Session Law 1999-237), the University System received an appropriation of \$10,000,000 for focused growth enrollment at the system's historically black campuses. Of the \$10,000,000, Section 10.8 of Session Law 1999-237 allocated \$1,000,000 (recurring) for the development of facilities management positions. Section 10.8 reads as follows:

Section 10.8.(f) Of the funds appropriated to the Board of Governors of The University of North Carolina, the sum of one million dollars (\$1,000,000) in continuing operating funds shall be allocated to further develop facilities management support for the smaller campuses facing rapid growth and having greater than average needs for renovation and repair of existing facilities. Funds may be allocated directly to the institutions needing assistance or may be dedicated to providing the assistance needed by other methods. The Board of Governors shall report to the Joint Legislative Education Oversight Committee on the allocation and use of these funds by April 15, 2000.<sup>4</sup>

The additional 13 positions added for the enhancement of the facilities management programs at the historically black campuses has provided a net benefit to these institutions by providing staff that assist in the management of construction projects less than \$500,000. These staff members also perform functions not associated with the management of delegated construction projects. Part of their time is spent on other facilities management activities not directly related to this evaluation. Prior to the addition of these positions, most of the smaller university campuses were “supported” by the larger campuses in the management of the their delegated construction projects.

**Table 3. Construction Delegation Staffing Analysis for State Construction, FY 1997-2000**

State Construction FTE	Total FTE as of December 2000	Total FTE as of July 1997	Percent Change 7/1997-12/2000
<b>Total</b>	<b>56</b>	<b>57</b>	<b>-1.8%</b>

Source: Office of State Construction, Department of Administration, and Office of State Personnel

Table 3 contains staffing data for State Construction for staff that support construction management for all projects, regardless of dollar amount. This total does not include those staff that work in the Facilities Condition and Assessment Program. The work of the staff in this area is not directly related to the type of activity that is included within the scope of this study.

### Findings for Staffing Requirements

- 1. The University System has experienced a 17% increase in the number of staff working in the facilities and construction management function during the delegation period.**
- 2. While the intent of Session Law 1999-237, Section 10.8 was to provide facilities management positions to historically black campuses, some of these positions are spending a portion of their time working on construction projects under the delegation of authority to the University System.**
- 3. It is reasonable to assume that the total cost to the state of managing construction projects less than \$500,000 has increased during the period of this evaluation for both State Construction and the University System.**
- 4. There has been a net reduction in the number of State Construction Office staff of 1 FTE (1.8%) during the evaluation period for construction delegation to the University System. Based on data from the Department of Administration, the reduction is attributed to reallocation of FTE within the department, and not the result of the delegation of construction authority to the University System.**

<sup>4</sup> Session Law 1999-237, Section 10.8 of the 1999 Session of the North Carolina General Assembly.

## Project Costs or Savings

This evaluation was to consider any additional costs or savings as a result of the delegation of construction authority. The following is a breakdown of those costs that are directly attributable to this delegation:

- University System: \$50,000 (CAPSTAT Development)
- University System: \$20,000 (Development of construction management policies and procedures)
- State Construction: No additional costs incurred

Project costs or savings can also be found in the projects themselves, primarily in two areas, through change orders and design fees. These two measures are key areas that reflect an organization's ability to estimate project costs, and manage those costs through the life of the project.

Both State Construction and the University System classify change order information differently within their management systems. State Construction provides a breakdown of the type of change order as to its source of origin. The University System does not track the origin of change orders at a management level, although it certainly tracks them at the individual project level. The data presented here summarize the change order activity for the evaluation period.

**Table 4. Change Order Activity for University System and State Construction Projects Less Than \$500,000 from FY 1997 – 2000**

Oversight	Number of Change Orders Per Project
University System	1.49
State Construction	1.02

Source: University of North Carolina General Administration, Office of State Construction, and Office of State Budget, Planning, and Management

## Findings for Project Costs or Savings

1. Based on the change order data presented above, there has been no significant change in the number of change orders for project delegated to the University System.
2. Given the limited amount of change order data available for analysis, both the State Building Commission and OSBPM recognize that the number of change orders per projects is not the most accurate measure of how change orders impact the overall cost of a project. Based on interviews and other data from the University System, it is reasonable to assume that there has been no adverse pattern of unusual change order activity for University System projects.

## Contract Claims Activity

Both State Construction and the University System have similar processes in place by which disagreements can be resolved with contractors. These disagreements generally manifest themselves in the following ways: 1) change orders are issued and approved that authorize additional work to be done to correct the problem(s), or 2) a higher level formal hearing process.

- University System: There were no contract disputes that rose to the level of the hearing officer (Assistant Vice-President for Finance, University of North Carolina General Administration)

**Findings for Contract Claims Activity**

**There has been no abnormal activity in contract claims as a result of the delegation of construction authority.**

## Participation of Historically Underutilized Businesses (HUBs)

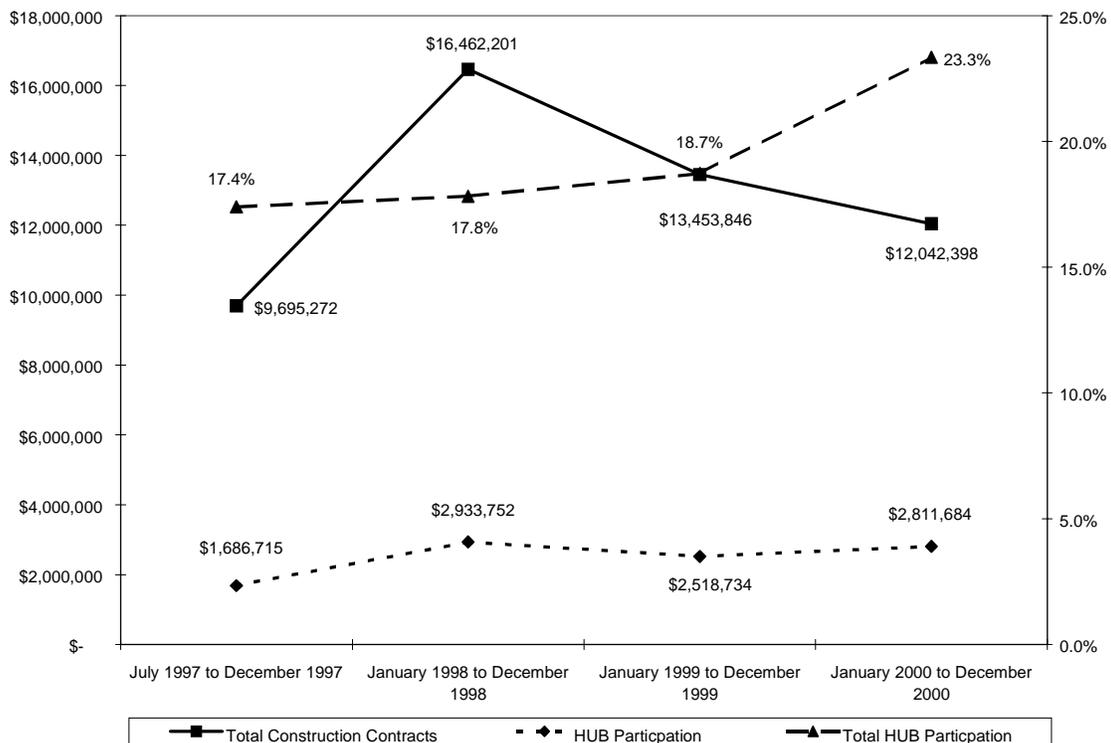
State Construction and the University System both are required to provide data to the Office of Historically Underutilized Businesses regarding their individual performance in awarding contracts to HUBs. The data presented below represent different sets of data that require some interpretation. The data in Table 8 for State Construction contains HUB participation data for all construction contracts, of any dollar amount. In the case of State Construction it is noteworthy to point out that their HUB participation rates greatly exceed those rates reported by the University System. At the same time, it is important to point out that State Construction has one of the highest average participation rates of any agency within state government every year.

**Table 5. Analysis of HUB/MBE Utilization for State Construction Projects Between \$100,000 and \$500,000, July 1997 to December 2000**

Period	Total Construction Contracts	Total HUB Participation	HUB %
July 1997 to December 1997	\$ 9,695,272	\$ 1,686,715	17.4%
January 1998 to December 1998	\$ 16,462,201	\$ 2,933,752	17.8%
January 1999 to December 1999	\$ 13,453,846	\$ 2,518,734	18.7%
January 2000 to December 2000	\$ 12,042,398	\$ 2,811,684	23.3%
<b>Total</b>	<b>\$ 51,653,717</b>	<b>\$ 9,950,885</b>	<b>19.3%</b>

Source: Department of Administration, Office of State Construction

**Chart 1. Graphical Analysis of HUB/MBE Utilization for State Construction Projects Between \$100,000 and \$500,000, July 1997 to December 2000**

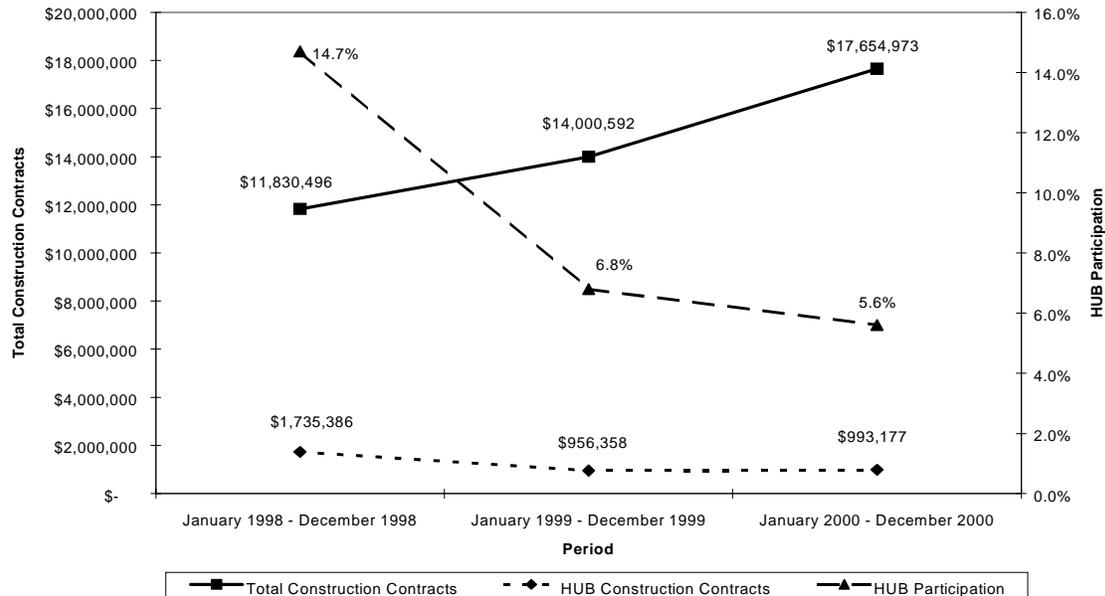


**Table 6. Analysis of HUB/MBE Utilization for University System Construction Projects Between \$100,000 and \$500,000, January 1998 to December 2000**

Period	Total Construction Contracts	Total HUB Participation	HUB %
January 1998 - December 1998	\$ 11,830,496	\$ 1,735,386	14.7%
January 1999 - December 1999	\$ 14,000,592	\$ 956,358	6.8%
January 2000 - December 2000	\$ 17,654,973	\$ 993,177	5.6%
<b>Total</b>	<b>\$ 43,486,061</b>	<b>\$ 3,684,921</b>	<b>8.5%</b>

Source: Department of Administration and University of North Carolina General Administration

**Chart 2. Graphical Analysis of HUB/MBE Utilization for University System Construction Projects Less Than \$500,000, January 1998 to December 2000**



**Findings for Historically Underutilized Businesses**

1. Both State Construction and the University System have programs in place to encourage and monitor HUB participation in construction contracts.
2. Based on the HUB participation data provided, there has been a significant decrease in the rate of participation in construction projects less than \$500,000 by HUBs. In addition, the participation rate has decreased over the three year period. While the exact reason(s) for this decline are not clear at this point, this decline warrants further examination during the delegation period to more fully ascertain its cause.

## Quality of Construction

For the purposes of this analysis, it was determined that no reasonable measure of construction quality could be developed without excessive expense. After thorough research, it was determined that there was no documentation available that provided a sound analytical basis on how to determine the quality of a construction project. Because the projects vary so widely by type, cost, location, etc., any evaluation of quality would largely be subjective and not based on fact. Furthermore, a more accurate assessment of quality is determined through the useful life of a project. It is reasonable to believe that in many cases, defects or problems in workmanship do not manifest themselves for several years, only to show up later as problems that require resources to correct.

Based on their day to day experience, both State Construction and the University System believe that they have adequate processes and systems in place to ensure that the state receives work of adequate quality on state construction projects. This is done through design reviews by the owner, designer, and Department of Insurance to identify areas that need attention or improvement. In addition, both State Construction and the University System utilize a series of inspections that identify problems during the design, construction, and final inspections phases of all projects.

Discussion with both State Construction and UNC-GA indicated the most reasonable assessment of quality will come through the FCAP evaluation process. Because FCAP is conducted once every several years for a facility, none of the projects in this analysis were included in any FCAP reports. It is important to note that the work performed for university projects is, in many cases, done by the same contractors that conduct work for other state agency projects. Because these contractors continue to perform work for the state, it is reasonable to assume that the work is of adequate quality to meet the specifications outlined in the contract.

### Findings for Quality of Construction

- 1. The Facilities Condition and Assessment Program conducted by the Office of State Construction is the most reasonable measure of long-term construction quality for state projects.**

## RECOMMENDATIONS

- 1. Increase the delegation amount to The University of North Carolina to a baseline of \$1,000,000 by July 1, 2001, to include Repair and Renovation Projects within the \$1,000,000 threshold.**

Based on the findings included in this analysis, there has been no overall adverse impact on the construction management process for the State as a whole. There is no doubt that the Office of State Construction adds a significant measure of engineering expertise to state construction projects. In many cases, some of these same disciplines are replicated at the university campuses.

**Table 7. Summary of University System Capital Project Funded Through the Bond Referendum**

Total Value of All Projects	\$ 2,495,414,100
Total Value of Projects \$1 Million or Less	\$ 20,362,457
Total Number of Bond Projects	316
Total Number of Bond Projects \$1 Million or Less	33
% of the Total Number of Bond Projects \$1 Million or Less	10.44%
% of Total Cost for Bond Projects \$1 Million or Less	0.82%

Source: University of North Carolina General Administration and the Office of State Budget, Planning, and Management

Increasing the threshold to \$1,000,000 increases the management complexity of the projects due to the fact that projects over \$500,000 must be bid both single and multi-prime, requiring additional technical work on the part of the university. The State Building Commission and OSBPM believe that this added complexity will increase the technical work required by the various campuses. This additional technical complexity is a prime factor in determining the level of delegation threshold for any institution, and it is a criteria that weighed heavily in the decision to recommend additional construction delegation authority to the University System.

The delegation of construction authority to the University System expires on July 1, 2001 in accordance with Session Law 1997-412, s.14. It is recommended that the delegation be increased prior to the deadline so as to avoid any administrative disruptions in the construction processes at both State Construction and UNC-GA.

**2. The University of North Carolina Board of Governors should be given the authority to determine the threshold for construction delegation for each campus of the University of North Carolina System. The University of North Carolina Board of Governors should develop performance criteria by which they will establish the delegated amounts to each individual institution. The Board of Governors should carefully consider the technical impact of single versus multi-prime bids on projects over \$500,000 and how this added statutory complexity will impact construction management staffs at the various campuses. Once developed, these delegation criteria shall be reported to the State Building Commission no later than September 30, 2001.**

Because each university campus is different with respect to the types of projects and technical resources available for managing those projects, the Board of Governors should have the flexibility to delegate lower levels of authority to each university. The Board of Governors should develop criteria that would outline the requirements for the various levels of delegation for the University System. It is the belief of the State Building Commission and OSBPM that the Board of Governors is in the best position to determine how much construction delegation should be granted to each campus based on criteria developed and approved by the Board.

**3. The authority for the increased delegation to the University System shall expire on June 30, 2005. At such time, the State Building Commission shall have reviewed the increase in construction delegation for the delegated period, and make recommendations to the North Carolina General Assembly regarding the continuance, modification, or elimination of the construction delegation authority.**

**4. The University of North Carolina General Administration should submit consolidated electronic monthly reports to the State Building Commission on all construction related activity. The Office of State Construction should compile and maintain this data so that the State Building Commission may maintain a consolidated report of all state construction projects. The following standard metrics should be captured for all projects by both the University System and the Office of State Construction: Date of Certification of Funds Availability, Date of Designer Selection, Date of Design Agreement/Design Contract, Date of Approved Bid Documents, Actual Bid Date, and Date of Notice to Proceed. The University System shall submit the standard contractor and designer evaluation documents to the State Building Commission. All data and documentation shall be submitted monthly for projects completed the previous month.**

It is important that the State have a consolidated and accurate source of management information for all construction related activity. Decision makers must have the ability to collect and analyze information from a single source that is both timely and accurate. Project data for university projects should be in a format that is consistent with the Office of State Construction so that this data could be included with the existing management information systems.

**5. No staffing increases are recommended as a result of the increased construction delegation to the University of North Carolina System.**

**6. The University of North Carolina Board of Governors, The State Building Commission and the Office of State Construction should continue to ensure compliance with all laws and procedures regarding the delegation of construction authority.**

Through internal audit programs, the FCAP program, and The State Building Commission's authority under G.S. 143-135.26, all parties should work to ensure that all work is in compliance with the laws and procedures that govern the state's construction program.