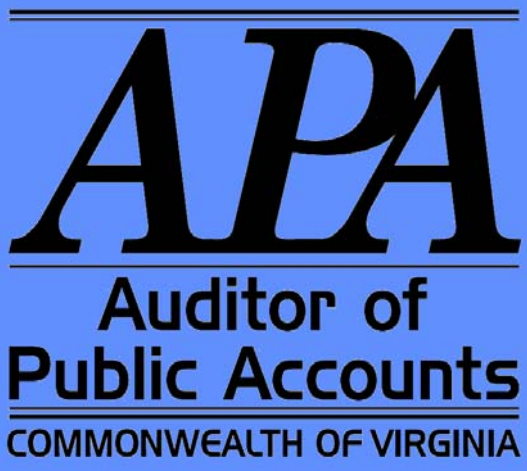
STATEWIDE REVIEW OF CAPITAL OUTLAY

JUNE 2008



EXECUTIVE SUMMARY

Our analysis in this report of selected capital projects found that poor planning for capital projects results in the need for more time and more funding to complete the project. Based on projects included in this review, we found that requests for increased appropriations were rarely due to increases in basic construction costs. Increases were usually due to changes in the size, design, materials, and needs and unanticipated site conditions. Therefore, proper and detailed planning can improve the cost estimation process and decrease the need for additional appropriations.

During the writing of this report, the 2008 Special Session of the General Assembly passed a capital outlay bond bill (Chapter 2 of the Acts of Assembly) to fund numerous capital projects and changed the capital project planning and funding process. This Act incoportated a number of recommendations we have made in previous reports on the Capital Outlay and Deferred Maintenance process.

This new Act solidified the process of providing planning funds for projects to ensure better cost estimates before committing funding for project construction. The Act provides funding in three possible stages: pre-planning, detailed planning, and construction. We have attempted to design our recommendations so that they consider the implementation of these new processes.

To implement the requirements in the new capital outlay bond act, General Services received funding to acquire a capital project electronic information management solution. The system will manage the Commonwealth's capital program from project conception through construction closeout and occupancy using a web-based system that includes program management, project management, document management, forms management, work process management, and time tracking. The system will eventually interface with other Commonwealth systems to reduce or eliminate data redundancy. We encourage and support this effort to provide the Commonwealth with a centralized capital project system to capture project cost and schedule data in a single location.

We recommend that the Governor and the General Assembly consider the following.

- Require facility condition assessments and scheduled, periodic updates.

- Expand the current capital budget process to include an implementation plan and annual status report for all capital projects that includes proposed construction schedules, detailed draw schedules, and an estimate of any additional costs for staffing and equipping each project.

We recommend that the Department of Planning and Budget and the Bureau of Capital Outlay Management consider the following.

- Capital Outlay Management and Planning and Budget should ensure that the capital budget submission process captures adequate details related to project cost estimates and cash flow timing to make fiscally responsible decisions and recommendations to the Governor and General Assembly regarding approval of capital project for pre-planning, detailed planning, and construction funding.

- Planning and Budget should create annual status reports on capital projects that include benchmarks by which to assess key measurement figures, identify specific issues, and provide for regular monitoring of financial and project activity.

-TABLE OF CONTENTS-

INTRODUCTION

The Commonwealth has made a significant investment in real property, including land, buildings, infrastructure, parks, and other facilities. These real property assets serve a wide array of purposes and include many stakeholders. As of the end of fiscal year 2007, real property investments totaled $23.9 billion; and each year additional acquisitions and construction projects increase the investments. Between fiscal years 1999 and 2007, the Commonwealth spent over $6.0 billion on capital projects and $400 million on maintenance reserve. In fiscal year 2007 alone, the Commonwealth spent $1.2 billion on capital projects and $60 million on maintenance reserve. Capital projects are highly visible and can have expensive consequences if the Commonwealth does not properly plan, fund, and construct the assets.

The Commonwealth is constructing capital projects at an accelerating rate. Risk lies in the pressure to build a building without adequate alignment of the budgeting and design process. The process to plan, budget, and execute these projects is a large undertaking that involves multiple state agencies and requires time critical activities to take place as scheduled. There are concerns with the capital outlay process and the persistent need to provide additional funding for previously approved projects.

Our analysis in this report of selected capital projects found that poor planning for capital projects results in the need for more time and more funding to complete the project. Capital projects that receive planning funds separately required less time and fewer funding increases than projects that received planning and construction funds in one appropriation. We reviewed ten capital projects. For the five projects that received planning funds, the original appropriations were $158.7 million. Final appropriations were $169.3 million, an increase of $10.6 million or 6.7 percent. The original appropriations for the five projects that did not receive planning funds were $104.7 million, which increased to final appropriations of $157.7 million, an increase of $53.0 million or 50.6 percent.

Based on projects included in this review, we found that requests for increased appropriations were rarely due to increases in basic construction costs. Increases were usually due to changes in the size, design, materials, and needs and unanticipated site conditions. Therefore, proper and detailed planning, as evidenced below, can improve the cost estimation process and decrease the need for additional appropriations.

CHAPTER 1

CAPITAL OUTLAY STATEWIDE REVIEW RESULTS

We selected a cross-section of capital projects from multiple agencies that were completed or substantially complete between fiscal years 2005 and 2006, and evaluated the projects against the capital outlay process from the planning phase through to project completion. We specifically selected projects where the final appropriation exceeded the original appropriation. We analyzed such items as appropriation increases, cost escalation, scope creep and reduction, change orders, and length of time from authorization to completion. We also reviewed the effectiveness of the traditional practice for project funding as a one-step process where capital projects receive funding for planning and construction in a single appropriation versus a two-step process where capital projects receive planning and construction funding in separate appropriations. Most of the projects selected were from colleges and universities, museums, and the Department of General Services, simply because this is where the majority of capital projects occur. The table below provides a brief overview of each project and the narratives below the table provide further explanations.

Agency	Project Title	Delivery Method #	Initial Appropriation Amount For Design and Construction	Additional Appropriations Amount	Additional Appropriations as a Percent of Original Amount	Planning Funds provided (Yes/No)
Christopher Newport University	Center for the Arts, Phase I and II	DBB	$31,750,000	$25,992,517	82%	No
Department of Corrections	New Construction: Medium Security Prison	CM@R	2,085,000	42,845,263	*	Yes
Department of General Services	New 1400 (Minimum) Vehicle Parking Structure	CM@R	23,150,000	-	0%	Yes
George Mason	Housing V	DBB	25,530,000	7,033,695	28%	No
James Madison University	CISAT Academic Building, Phase III	DBB	25,499,200	4,369,000	17%	Yes
University of Mary Washington	Alumni Center	DBB	4,600,000	2,744,480	60%	No
University of Virginia	New Construction: Observatory Hill Dining Hall	CM@R	11,500,000	14,249,575	124%	No
Virginia Community College System	(NVCC) Medical Education Building	CM@R	31,350,000	2,998,000	10%	No
Virginia Museum of Natural History	New Construction: Construct New Museum Facility	DBB	19,262,363	6,305,000	33%	Yes
Virginia Tech	Alumni/CEC/Hotel Complex	DBB	45,831,000	-	0%	Yes

(Source: Commonwealth Accounting and Reporting System)

* Federal grants were the significant funding source for this project and are the additional funds. Therefore, the additional amounts as a percentage do not apply for this project.

DBB – Design, Bid, Build CM@R – Construction Manager at Risk

Projects Reviewed

Christopher Newport University:
Center for the Arts, Phase I and II:

Original Appropriations:	$31,750,000
Additional Appropriations:	25,992,517
Total Appropriations:	$57,742,517
Actual Expenses:	$57,485,132

Christopher Newport originally proposed this project as the construction of a performing arts center. However, the project scope continuously grew, incorporating the construction of the performing arts center along with renovations to a recently purchased local high school. The original $15 million appropriation in 1996 was for the construction of the performing arts center. When Christopher Newport combined the performing arts center project with the renovation of the high school in 1997, the appropriations increased to $31.7 million. The University increased this original $31.7 million budget by $26.0 million, which came through additional funds over the course of eight years. Part of the reason for this was that Christopher Newport continued to develop the scope and detailed construction design documents which increased the estimated cost of the project. Christopher Newport continually requested the additional funds necessary to complete the construction and renovations; however, the General Assembly often approved much less funding than requested. Christopher Newport continued to design the project with the assumption that they would eventually receive funding to support the entire project.

This design-bid-build project took ten years to complete and was broken up into two phases, both of which had change order delays; phase one by 182 days and phase two 85 days. The General Assembly could have made a more informed decision by providing planning funds first and having Christopher Newport develop a complete design with a total project budget. This would have allowed the General Assembly to determine whether they were willing to support the project as a whole rather than approve it piecemeal.

Department of Corrections:
New Construction: Medium Security Prison:

Original Appropriations:	$ 2,085,000
Additional Appropriations:	42,845,263
Total Appropriations:	$44,930,263
Actual Expenses:	$43,343,055

Corrections proposed this project as new construction of two similar correctional facilities. The initial funding of $2 million was for planning purposes only. During planning, Corrections decided to replace an existing facility with a new one instead and to complete the project in phases. Only phase one was complete at the time of this review. Corrections estimated costs of phase one to be approximately $41 million, most of which would come from federal grants. Because the grants came in several different years, there were multiple appropriations. This led to time delays because Corrections could only contract for portions of the construction, as funding was available. Construction would halt when funds ran low until additional appropriations became available. This project took ten years to complete from initial appropriations to occupancy; this is not typical for construction of Correctional facilities, but the site

decisions occurring during the design stage increased the design time needed. Because of the complexity, Corrections used the Construction Manager at Risk (CM at Risk) delivery method. This project was successful as the scope of the project was consistent throughout the life of the project and construction costs remained within budget of the multiple federal grants.

Department of General Services:
New 1400 (Minimum) Vehicle Parking Structure:

Original Appropriations:	$23,150,000
Additional Appropriations:	-
Total Appropriations:	$23,150,000
Actual Expenses:	$19,414,095

General Services proposed and completed this project as the demolition of an old laboratory building and construction of a new 1500 space parking deck in its place. This CM at Risk project received $2 million initial funding for planning purposes. General Services scaled the project down to 1400 parking spaces after construction appropriations of $21 million were less than the amount requested. In addition to limited appropriations, General Services anticipated partial funding to come from a contract to lease out a portion of the parking spaces. Despite inclusion of the lease funds in the project appropriation, this lease never materialized and therefore the funds were not available for the project. General Services received $4.4 million in funding to replace the lease revenue appropriation of $7.6 million that General Services did not use. This did not increase their total appropriations, but supplanted the anticipated lease revenue.

There were a minimal number of change orders mainly due to unforeseen site conditions during the demolition of the existing laboratory building. General Services completed the project within four and a half years, on time, on budget, and even achieved the original proposed scope of 1500 parking spaces. The project took four years from the initial appropriation for planning to the end of construction. This timeline was reasonable and included the Construction Manager's involvement in the design phase. This project's use of planning funds and the CM at Risk delivery method were successful.

George Mason University:
Construct Housing Building V:

Original Appropriations:	$25,530,000
Additional Appropriations:	7,033,695
Total Appropriations:	$32,563,695
Actual Expenses:	$32,037,671

George Mason proposed and completed this project as an apartment complex for the students. The initial $25.5 million appropriation for the design-bid-build project was for full design and completion of the project. However, the project required an additional $7 million in appropriations after the architect/engineering firm (A/E) completed the design. This project reasonably took three years to complete from initial appropriations to occupancy. This project was not successful because the original cost estimates were not accurate enough. The General Assembly could have made a more informed decision by providing planning funds first. In this case, funding the project in a lump sum, instead of just planning funds, did not meet the needs of the Commonwealth.

James Madison University:
CISAT Academic Building, Phase III:

Original Appropriations:	$25,499,200
Additional Appropriations:	4,369,000
Total Appropriations:	$29,868,200
Actual Expenses:	$29,868,199

James Madison proposed and completed this project as the third in a series of science and technology buildings. The General Assembly appropriated $1.25 million in planning funds and later appropriated $24.25 million to fund construction and equipment, for a combined total of $25.5 million. James Madison redirected $3.9 million budgeted for equipment and furnishings to fund construction before signing a construction contract. James Madison moved forward on the project, with Planning and Budget's approval, despite not having the funds needed to furnish the building. The project faced multiple change orders due to A/E design errors and omissions, and eventually the A/E filed for bankruptcy. James Madison received additional appropriations of $0.7 million to fund change orders and $3.7 million to replenish the budget for equipment and furnishings. James Madison was still able to reasonably complete the project within six years and with minimal delays (84 days). This project's use of planning funds was not successful, since the project needed additional funds to furnish the building for use and occupancy.

University of Mary Washington:
Alumni Center:

Original Appropriations:	$4,600,000
Additional Appropriations:	2,744,480
Total Appropriations:	$7,344,480
Actual Expenses:	$6,580,169

Mary Washington proposed and completed the project as a renovation to an existing alumni building and new construction of additional affiliated buildings. The General Assembly appropriated $4.6 million for full funding for the project and Mary Washington chose the Design-Bid-Build delivery method. Mary Washington required an additional $2.7 million in appropriations to complete the project based on revised cost estimates as the design drawings progressed and for items identified during construction to achieve the required building functionality and desired levels of finish. The project reasonably took four years from appropriation to occupancy. However, the additional $2.7 million required to complete the project represents a 60 percent increase in project funds. The General Assembly could have made a more informed decision by providing planning funds first based on an advanced design and cost estimate. In this case funding the project in one lump sum, instead of just planning funds, did not meet the needs of the Commonwealth.

University of Virginia:
Observatory Hill Dining Hall Expansion:

Original Appropriations:	$11,500,000
Additional Appropriations:	14,249,575
Total Appropriations:	$25,749,575
Actual Expenses:	$25,578,727

The University originally proposed the dining hall project as the renovation of an existing dining hall and snack bar, for which the General Assembly funded the project in one lump sum of $11.5 million. After designing the renovation, the University received construction bids that exceeded original estimates by 30 percent. The University determined that it was more cost effective to demolish the existing dining hall and snack bar and construct a new dining hall than to renovate the existing structures.

This change in plans tripled the scope and doubled the needed appropriations of the project from $11.5 million to $25.75 million. The University chose to use the CM at Risk method for the project. Due to the significant change in scope and need to redesign the project for a more cost effective solution, the project took five years to complete from original appropriations to occupancy. In addition, change orders, for varying reasons, cost the project an additional $1.8 million and extended the project nearly a year longer than planned. The additional year was reasonable because it was the result of unforeseen site conditions. This project demonstrates the fact that planning and designing a project prior to determining the total cost of the project is essential to having an accurate project cost estimate.

Virginia Community College System:
Medical Education Building (NVCC):

Original Appropriations:	$31,350,000
Additional Appropriations:	2,998,000
Total Appropriations:	$34,348,000
Actual Expenses:	$34,335,557

The College proposed and completed the project as an academic and administration building with a parking deck. The original funding of $31.4 million covered the construction of both the building and the parking deck. The College required an additional $3 million, $2.4 million of which increased the equipment and furnishings portion of the project's budget to properly furnish the building, and $.6 million covered a portion of construction change orders. This project reasonably took six years to complete from initial appropriations to occupancy, a year of which was due to the construction of the parking deck. The General Assembly could have made a more informed decision by providing planning funds first. In this case, funding the project in one lump sum, instead of just planning funds, did not meet the needs of the Commonwealth.

Virginia Museum of Natural History:
New Construction: Construct New Museum Facility:

Original Appropriations:	$19,262,363
Additional Appropriations:	6,305,000
Total Appropriations:	$25,567,363
Actual Expenses:	$22,908,549

The Museum proposed and completed this project as a new museum facility. The initial funding of $1.65 million was for planning and design purposes of this design-bid-build project. After the Museum completed the project design, there was a three-year delay before they received $22.5 million of funding for construction. During the three-year delay, the Museum experienced lay-offs reducing personnel and budget cuts that downsized its programs. As a result, the Museum re-allocated space within the design to incorporate these changes. In addition, the Museum hired a new director who also made some changes to the design. These changes required extensions to the A/E and construction contractor's contracts, resulting in additional costs.

The project required an additional $2 million appropriation to cover the changes discussed above and for an exhibit design that was not included in the original scope. Despite the three year gap between design and construction, some of the construction change orders were avoidable had the agency changed the designs to meet the Museum's updated needs prior to beginning construction. In this project, planning funds did not prevent the need for additional appropriations for the nine-year project due to the length of time between planning and construction. This emphasizes the need for up to date and accurate designs and cost estimates.

Virginia Tech:
Alumni/CEC/Hotel Complex:

Original Appropriations:	$45,831,000
Additional Appropriations:	-
Total Appropriations:	$45,831,000
Actual Expenses:	$42,823,256

Virginia Tech proposed and completed this project as the construction of a new hotel and alumni conference center. This project initially received $2.3 million in planning funds to design the project to derive a project scope. The remaining $43.5 million required for the construction of the project all came in one final appropriation; the University did not need further appropriations to complete the construction. Virginia Tech chose to use the Design-Bid-Build delivery method and successfully completed the project within the original total construction budget.

The project had many change orders that included unforeseen site conditions most of which were because the conference center was built on a golf course that had been there for many years. There were also many substitutions/alternate methods for items that the Architect designed one way but the contractor had more experience in that area and made recommendations during construction. Unfortunately, this is an inherent risk in the Design-Bid-Build process because the contractor is not involved until after the design is completed. Additionally, weather delays extended the project by approximately six months, bringing the total project time to seven years; however, this was not within the control of the University and was reasonable. This project's use of planning funds and the Design-Bid-Build delivery method were successful.

Common problems and recommendations

During the writing of this report, the 2008 Special Session of the General Assembly passed a capital outlay bond bill (Chapter 2 of the Acts of Assembly) to fund numerous capital projects and changed the capital project planning and funding process. This new Act solidified the process of providing planning funds for projects to ensure better cost estimates before committing funding for project construction. The Act provides funding in three possible stages: pre-planning, detailed planning, and construction. Pre-planning is a process meant to obtain a more detailed definition and cost estimate of a project, which goes through the conceptual design stage. Detailed planning includes the preparation of architectural and engineering documents up to the preliminary design stage. Construction includes preparation of final working drawings and specifications, advertising for a sealed bid or proposal, awarding a contract pursuant to law, and actual construction of a project. We have attempted to design our recommendations so that they consider the implementation of the new processes set out in the new capital outlay bond act.

Project Funding

The traditional practice for project funding in the Commonwealth is a one-step process where capital projects receive funding for planning and construction in a single appropriation. However, the Commonwealth has recently begun experimenting with funding planning and construction separately through a two-step process on some projects and the General Assembly formalized this process in the capital outlay bond act discussed above. Appropriations for projects under the one-step process use cost estimates developed from conceptual ideas and drawings. These cost estimates do not use the final detailed drawings, resulting in inaccurate estimates. Under the two-step funding process, agencies receive funding to hire an A/E and develop detailed project designs on which to base more accurate construction costs. Then, the General Assembly makes its funding decision for construction based on more accurate cost estimates.

Agencies frequently request additional appropriations to complete capital projects. The common causes are scope creep, mid-stream project changes in the design phase, and insufficient scope and cost estimates during project proposals. Under the two-step funding process, agencies should be able to address all of these issues in the planning and design phase before requesting construction funding. There will always be the potential for unforeseen circumstances requiring additional appropriations; however, the goal is to reduce the need for additional appropriations due to inaccurate cost estimates under the one-step appropriation process.

Of the ten projects reviewed, five received a single appropriation and five received separate funding for planning and construction. Eight projects needed additional appropriations to complete the project. All five of the projects under the one-step appropriation process required additional appropriations throughout the life of the project. The other three projects that required additional funds received separate funding for planning and construction; however, one of these three projects was federally funded requiring appropriations to occur as federal funds became available. This project is an example of a situation in which multiple appropriations are necessary and reasonable. The other two-step projects with additional appropriations averaged an increase of 24 percent of the combined original planning and construction appropriations.

The five projects following the one-step appropriation process averaged additional appropriations of 51 percent. The projects that followed the two-step funding process required less additional appropriations than those projects that received a single appropriation. The construction cost estimates produced in the projects that received planning funds appeared to be more realistic, with the exception of the one project that had a three-year gap between the end of the design phase and beginning of construction phase. This was a calculated “risk” that the General Assembly chose to take, which resulted in increased costs due to changes in need and scope.

Additionally, several of the projects that received a single appropriation changed the project scope or made several revisions to upgrade the quality of the project that required additional appropriations. If those projects had received planning funds first, the agency could have included those considerations in the final designs and cost estimate when requesting funding for construction, instead of slowly adding or revising the project and continuously seeking more funds to accommodate those changes. In this manner, the General Assembly could make a better-informed decision based on preliminary or working drawings stage designs and estimates.

The two-step funding process did not lead to excessive increases in the time needed to complete projects. None of the ten projects were planned, designed, and started construction within the same year; only two had the construction contract bid within a year of the A/E beginning services (both were 11 months). The ten projects were a mixture of CM at Risk and Design-Bid-Build with neither method showing signs of the two-step funding process slowing down the progress of the projects. Complications could exist for CM at Risk projects in which the agency wants the CM involved early on in the design phase or in Design-Build projects in which there is only one contract for the whole project. The General Assembly could address this issue by appropriating funds to cover both the A/E and CM design phase costs for CM at Risk projects in the initial appropriation, then provide the construction phase funding in a separate appropriation. Typically, a CM at Risk has separate contracts for the design and construction phase anyway. However, Design-Build projects may still require a single appropriation. This would require the agency to determine from the beginning whether they will use CM at Risk, Design-Build, or Design-Bid-Build procurement when requesting initial appropriations.

The General Assembly only meets once per year, which could cause delays for some projects in requesting construction funds when the project timeline does not match up with the General Assembly's schedule. However, agencies could avoid this by planning and scheduling their projects to coincide with the General Assembly.

No process will fit every scenario; however, the pros of better-informed decisions outweigh the cons of project schedules that may not coincide with the General Assembly's schedule. To cover such timing issues, the new capital outlay bond act changes the timing of updating the Six Year Capital Outlay Plan. In the past, the Governor revised the Six Year Capital Outlay Plan every two years, with minor changes in the middle year. Under the new Act, the Governor and General Assembly will update and add new projects to the Six Year Capital Outlay Plan every year. That way projects have the opportunity to move from planning to construction every year, minimizing delays.

Recommendation: The General Assembly may wish to require agencies to determine the project delivery method prior to requesting the initial capital appropriation. Projects using the Design-Build method may not be eligible for phased appropriations due to the one contract nature of the delivery method.

Under the current capital outlay appropriation process, a project receives approval and goes into the Appropriation Act under the capital outlay section. The entry shows the appropriation amount and the source of funding. Unless there is a significant change, the project does not appear in the Appropriations Act again even though the expenses and funding for the project will actually occur over several years. Until recently, even when projects received additional appropriations, the Act only showed the new appropriation amount. It did not identify the fact that it was a supplemental appropriation, include the total appropriation to date, or show the expenditure status of the project.

Because of this process, the General Assembly was not always fully aware of how much they previously appropriated to each project, the number of times they have appropriated additional funding, or the current status of the project. Recently, the General Assembly began adding wording to the Appropriation Act related to the timing of original appropriations and total funding to date. However, the General Assembly has not consistently applied this documentation to the capital projects in the Appropriation Act. In some instances, there is just wording noting that the appropriation is supplemental to a previously approved project. In other instances, the Act includes the details of all past appropriations and the total to date.

The new capital outlay bond act eliminates the problem of tracking additional appropriations. The Appropriation Act will no longer appropriate projects individually. The Appropriation Act will fund the construction phase of multiple projects in a lump sum amount by monetary tiers based on the total project cost. Because projects will already be through the pre-planning or planning phase with better cost estimates, the construction estimate should be more accurate. To monitor the need for additional appropriations, Planning and Budget and General Services will have the authority to approve the awarding of construction contracts for each project if it does not exceed 105 percent of the general fund-supported resources for the project as determined during the detailed planning phase. If the lowest construction bid is above 105 percent of the general-fund supported resources, the agency may:

- supplement the general fund resources with non-general fund resources to cover the amount exceeding 105 percent;
- reduce the size or scope of the project; or
- request supplemental allocation of general fund resources, if supplemental non-general funding is not available or reducing the size or scope is not feasible.

Planning and Budget and General Services will be responsible for tracking the estimated costs and any additional allocations during the life of the project. Planning and Budget and General Services will need to develop a method to track this new information and ensure that agencies provide the necessary detail.

Overlap of required information

The Commonwealth does not have a central repository, database, or information system that contains the data necessary for statewide administration of capital projects. There is repeated duplication of information that already exists because agencies must repeatedly provide the same information to multiple users. Currently, various entities need information related to capital projects. Many of these users, such as General Services, Planning and Budget, Art and Architectural Review Board, Conservation and Recreation, Environmental Quality, and Historic Resources, provide reviews and approvals at different stages of the project. These users all need information from either the agency building the project or one of the reviewing/approving agencies. The transfer of information to and from these agencies all takes extra time and results in duplication of information. While some of the sources of information are hardcopy drawings and plans, much of the information is financial, budgetary, and text driven.

General Services, Planning and Budget, and the agencies use numerous capital outlay forms to gather and transfer data. These forms are in Microsoft Excel spreadsheets, manually filled out by the agencies, and e-mailed for approvals to General Services and Planning and Budget. These capital outlay forms often include repetitive information as the project progresses from schematic drawings to project completion. In addition, agencies provide summarized project information to Planning and Budget annually and to General Services semi-annually. These manual and repetitive processes result in duplication, inefficiencies, and inconsistent data.

To support and implement the new processes and requirements in the new capital outlay bond act, General Services received funding to determine the technical and functional requirements and acquire a capital project electronic information management solution. The system will manage the Commonwealth's capital program from appropriation or approval of funds through construction closeout and occupancy using a web-based system that includes program management, project management, document management, forms management, work process management, and time tracking. The system will eventually interface with other Commonwealth systems to reduce or eliminate data redundancy. At the time of this report, General Services was preparing to put the Request for Proposal out for bid.

Recommendation: Acquisition and implementation of this system is essential to the advancement and improvement of the Commonwealth's capital program. We encourage General Services to continue with this effort.

Project budgets

Throughout the projects we reviewed, we found multiple project management issues. One of which is the lack of maintaining proper project budgets. At the beginning of the capital outlay process, agencies establish a project budget for six separate areas, which General Services and Planning and Budget approve:

- Construction- to cover the construction contract
- A/E Fee- to cover the A/E contract and A/E change orders
- Project Inspection- to cover regular inspections of the project
- Moveable Equipment and Furnishings- to provide equipment and furnishings
- Other Costs- for items such as special consultants or inspections
- Construction Contingency- to cover construction change orders

Agencies are only required to update and revise project budgets to infuse additional funds, revise the moveable equipment and furnishings budget, and realign the budget when construction change orders exceed the construction contingency limit. However, this does not occur on a timely basis.

Five of the ten projects reviewed had occurrences in which construction change orders exceeded the construction contingency during the life of the project. Only two of these five had additional available funds in the construction budget line to cover the change orders, three of the projects did not.

Agencies tend to catch up "after the fact" which usually results in moving funds from other budget lines, most notably from moveable equipment and furnishings, or by requesting additional appropriations. We have also seen a pattern of this throughout projects audited outside of this review. Because agencies make construction contract payments in installments, the funds exist to cover the shortcomings; however, this is a sign that unless the agency revises the budget and adds supplementary funds, actual construction payments will eventually exceed the budget. It is up to the agencies to monitor these conditions.

Our review also found that many agencies do not submit the Project Completion Reports to the Bureau of Capital Outlay Management at General Services to close completed projects. In addition, the agencies do not report the project as completed to Planning and Budget. This results in unused funds not reverting and staying with the agency. Some agencies tend to use these funds for repairs and maintenance, sometimes for several years after the project is complete.

By holding onto the funds, the agencies do not have to wait for future maintenance reserve appropriations for repairs. This is not the intended purpose of any remaining capital outlay funds. The General Assembly designated the funds for agencies to use for the construction or renovation of buildings and infrastructure, not for repairs and maintenance; operating and maintenance reserve funds fund repairs and maintenance.

Another project management issue is that agencies do not properly plan for moveable equipment and furnishings when requesting construction funding. In four of the projects reviewed, the agencies did not budget enough, did not budget any, or greatly reduced the funds for the moveable equipment and furnishings budget in order to move funds to cover change orders. Although this requires Planning and Budget's approval, the result is a building with less equipment and furnishings than required for a "complete" building, and can result in the need to request additional funding in the future to finish furnishing the building. Because the building is almost complete and cannot open without the required equipment and furnishings, the General Assembly is compelled to provide additional funds.

Recommendation: Planning and Budget should coordinate with General Services and the agencies to include the following measurement figures as part of annual status reports on capital projects: 1) a comparison of project amounts committed though contracts and change orders to the project budget for these items, and 2) the number of projects without suitable funds budgeted for moveable equipment and furnishings. Capital Outlay Management should identify and investigate projects with a certificate of occupancy but the agencies have not reported the projects as complete within a timely manner.

CHAPTER 2

CAPITAL OUTLAY: WHAT IS IT AND HOW DOES IT WORK?

WHAT IS CAPITAL OUTLAY?

The Department of Planning and Budget differentiates the capital budget from the operating budget as follows: The Appropriation Act contains two types of budgets: an operating budget and a capital budget. The operating budget shows those expenses associated with the general activities and programs provided by state agencies and institutions of higher education. An operating budget appropriation is limited to the costs of running operations for each year of a biennium.

The capital budget deals with large non-recurring expenditures such as the construction of a building, repairs and improvements to a water supply system, or the installation of a new sewage system. A capital budget appropriation is limited to the cost of the item and may be expended over a longer period until the project is completed. In addition to the cost for construction, costs associated with a capital project include architectural and engineering services, site development and improvements, and installed equipment. As provided for in the Appropriations Act, the General Assembly or the Governor must authorize all capital outlay projects.

The cost, size, and scope of a project determine whether a project is included in the capital or operating budget. For budgeting purposes, the Commonwealth defines a capital project as follows.

- **Acquisitions -** obtaining any interest in real property, including improvements of any kind located on the acquired land, except certain utility easements. All acquisitions, including by gift, are subject to the capital outlay process.

- **New Construction -** a single undertaking involving construction of one or more facilities with building space greater than 5,000 square feet; or it has a total project cost of $250,000 or greater; or it is acquired through a lease with options to purchase, or any other alternative financing approach.

- **Improvements -** complete and usable change to an existing facility or structure with a cost of $500,000 or greater. This includes building and infrastructure alterations, renovations, restorations, and major facility repairs.

- **Equipment -** permanent or long-term nature used in an operation or activity.

Also, included in the capital budget are maintenance reserve projects. Maintenance reserve projects are a single effort undertaking, which involves major repair or replacement to plant, property, or equipment performed to maintain the facility for its present use. Examples of such projects include repair or replacement of damaged or inoperable equipment, components of a plant, or existing utility systems; correction of deficiencies in property and plant that are required to conform to building and safety codes; and correction of problems resulting from erosion and drainage.

The day-to-day operational costs of real property are not included in the capital budget; these are included in the operating budget. Projects funded through the operating budget are not subject to the state's capital outlay process. Only capital projects, not maintenance reserve or non-capital projects, are included in this statewide review.

CAPITAL OUTLAY PLANNING AND BUDGETING PROCESS

Since the 1992-94 biennium, state agencies and institutions of higher education with a physical plant have prepared capital outlay proposals covering a prospective period of six years. Agencies justify the need for the requested projects with respect to their strategic and master plans as well as their current and projected customers, programs, and services. These six-year capital outlay plans identify the agencies' capital needs over the next six years, rank the projects in priority order, and represent one component of the Commonwealth's efforts to integrate long-range planning into its fiscal decisions. The Commonwealth's Six Year Plan is a consolidation of the agencies' six-year plans and identifies the most critical capital outlay projects that the agencies have asked the Governor to conclude are necessary for the next six fiscal years.

The 2002 session of the General Assembly formalized the six-year capital improvement planning process by requiring the Governor to submit to the General Assembly by November 1 of each odd numbered year a six-year capital improvement plan that identifies the capital projects that the Governor deems necessary for the next six years. The inclusion of a project in the six-year plan is not a guarantee of funding. Given the changing nature of the economic climate over the six-year period, projects and priorities are subject to change. Furthermore, agency needs and priorities may change. Therefore, there is the potential for significant revisions to occur over time.

This legislation further refined the process for funding capital outlay projects and established parameters for the Governor to use when recommending the type of funding for future capital budgets. These parameters specify a minimal size for the capital budget in the Governor's budget bill, excluding maintenance reserve, as being no less than two percent of the projected general fund revenues for the biennium. In addition, the legislation also specifies the maximum percentage of debt recommended based upon the expected growth in general fund revenues over the preceding fiscal year.

As mentioned earlier in this report, the 2008 Special Session of the General Assembly passed a new capital outlay bond act that again refined the six-year capital improvement planning process. The Act established the Six-Year Capital Outlay Plan Advisory Committee, which includes membership representing the legislative and executive branches and is responsible for review of capital project requests and recommendation of a preliminary list of projects to the Governor and General Assembly for inclusion in the Six-Year Capital Outlay plan. The Act also required the Governor to submit the Six Year Capital Outlay Plan as a bill for review and approval by the General Assembly. The Act changes the format and timing of the Six Year Capital Outlay Plan.

To address funding issues, the Act created two pooled capital accounts for the administration of capital project appropriations, which General Services and Planning and Budget will administer jointly. The Act also created a central capital planning fund, which will pay for pre-planning and preliminary working drawings for projects. Once the General Assembly approves a project for construction, the funding source for the construction will reimburse the planning fund for the planning costs.

The processes documented below convey how the capital outlay process currently functions. Passage of the new capital outlay bond Act will change these processes.

Capital Outlay Process

Planning and Budget breaks down the capital outlay process into three distinct phases: budget development, legislative review, and execution. Budget development and legislative review comprise the capital budget process; execution is procurement and construction, which take place after the capital budget process. The minimum amount of time for the complete capital outlay process to occur from initial project proposal to construction completion is 18 months.

There are two major state agencies highly involved in the capital outlay process, the Department of Planning and Budget and the Department of General Services' Bureau of Capital Outlay Management. Planning and Budget is mainly involved in coordinating capital project budget development and recommending projects for funding in the Governor's executive budget.

Capital Outlay Management is involved in the approvals of capital project designs. Capital Outlay Management's main responsibilities are over capital outlay projects for state agencies. These responsibilities are to assure compliance with life safety and code requirements in design and construction; provide building code, cost, and procurement reviews; develop policies, procedures, standards, forms, and other documents for the procurement of professional and construction services; and author, maintain, and provide training on the Commonwealth's Construction and Professional Services Manual.

Budget development phase

The budget development phase encompasses all of the activities prior to recommending capital projects for inclusion in the Governor's budget. During budget development, the main parties involved are Planning and Budget, Capital Outlay Management, and the agencies proposing the capital projects. This phase is broken out into actions occurring in odd and even numbered years, with the bulk of the activity occurring in odd numbered years due to the nature of the biennial budget process.

During odd numbered years, agencies revise strategic plans to identify capital project requirements based on programmatic need, space guidelines, enrollment, site master plans, and State Council of Higher Education for Virginia guidelines. The State Council of Higher Education publishes space utilization guidelines every two years, which indicate whether an institution is using available space effectively and efficiently. Planning and Budget uses this information in reviewing capital project requests from the higher education institutions. Also, during odd numbered years, agencies submit summaries of all projects in their six-year plan to Planning and Budget. The summary includes the size, scope, budget, and funding needs for capital projects being requested for the next biennium; requests new capital outlay leases; describes and justifies subprojects within an umbrella project; and provides a general description, justification, and cost estimate for projects requested in the second and third biennium of the agency's six-year plan.

During the fall of even numbered years of each biennium, agencies submit capital requests for emergency projects or supplemental funding on previously approved projects that have insufficient funds. These capital requests are included as possible budget amendments in the legislative phase.

Planning and Budget reviews the summaries and requests and requires agencies to provide detailed justifications for capital projects. Planning and Budget reviews the detailed justifications for the programmatic intent of the project and determines whether the project supports the agency's strategic plan. Planning and Budget forwards cost and scope information for selected projects to Capital Outlay Management to review the cost for accuracy. Capital Outlay Management contracts with an outside consultant, while providing oversight management, for these reviews. Capital Outlay Management and the outside consultant use the scope for purposes of understanding the size and features of the proposed project, so that they can provide a reasonable cost recommendation to Planning and Budget.

Capital Outlay Management reviews the project scope to ensure that usable square feet are within industry standards. However, Capital Outlay Management does not evaluate each agency's specific needs or programs in order to justify the scope. Capital Outlay Management relies on the Council of Higher Education's review of the project scope for higher education institutions. For non-higher education state agencies, project scope is often a mandated need such as a new medium security prison for 500 inmates or a

new mental health facility with 300 beds. The agency uses industry practices to determine the square footage necessary to accomplish the mandated project.

Planning and Budget forwards technology information on projects with a significant technology component to the Virginia Information Technologies Agency, who reviews the general scope of work and cost estimates of the technology component for accuracy and ensures that the agency IT approach is consistent with the Commonwealth's IT master plan. Planning and Budget forwards energy profiles for selected projects to the Department of Mines, Minerals, and Energy to review the energy component and identify any potential energy savings.

Capital Outlay Management and Planning and Budget establish interagency teams on selected major projects, consisting of agency staff from Capital Outlay Management, Planning and Budget, the Council of Higher Education, Mines, Minerals, and Energy, Environmental Quality, and the legislative money committees. The team works together from budget development throughout the life of the project to reach agreement on "design to" targets for each project such as space requirements, characteristics of construction, construction budget, and length of time to design and complete the construction.

Planning and Budget, with the assistance of cabinet secretaries, identifies and recommends capital projects to the Governor for inclusion in the next biennial Executive Budget. The Governor makes the determination to fund the projects using pay as you go or debt.

Legislative Phase

The legislative phase begins in the odd numbered years with the Governor's submittal of the Six Year Capital Improvement Plan to the General Assembly with input from the Governor's Cabinet and Treasury's Debt Capacity Advisory Committee. The Improvement Plan identifies the capital projects that the Governor deems necessary for the next six years. Additionally, the Governor submits the Executive Budget to the General Assembly. The purpose of the Debt Capacity Advisory Committee is to review the debt of the Commonwealth and its agencies, institutions, boards, and authorities. Each year, the Committee submits their estimate of the amount of prudently allowable tax-supported debt for ensuing fiscal years to the Governor, along with a report explaining the basis for this estimate.

In even numbered years, the General Assembly prepares its own version of the budget and eventually the General Assembly approves a formal budget and the Governor signs it.

Year End Procedures

Agencies must review all capital outlay projects recorded in the Commonwealth's accounting system at the end of the fiscal year to identify unobligated appropriation balances that can be reverted, along with completed projects that require close out. Agencies submit reappropriation requests electronically to Planning and Budget, including maintenance reserve projects. If a capital project meets at least one of the following conditions, unexpended balances will not be reverted:

- Construction is in progress;
- Equipment purchases are authorized by the Governor but have not been received;
- Plans and specifications are authorized by the Governor but have not been completed; and/or
- Obligations are outstanding at the end of the fiscal year.

Planning and Budget reverts all unobligated balances to their original funding sources. Planning and Budget closes out any unapproved carry forward projects, removes appropriations as of June 30 of the fiscal year, and assumes projects without reappropriation requests are complete and closes them out. Planning and Budget shares its list of closed projects with Capital Outlay Management to aid in compliance with the project completion submission requirements. However, if an agency claims one of the four non-reverting conditions above, then Capital Outlay Management would not expect a completion submission.

CAPITAL OUTLAY EXECUTION

Capital Outlay Management develops Commonwealth polices and procedures for the procurement of professional and construction services. Within the Commonwealth, the procurement of professional and construction services for capital outlay is also subject to the Virginia Public Procurement Act. While all agencies have responsibility for the use of funds budgeted to them for capital outlay, most agencies must obtain approvals from Capital Outlay Management as they proceed through the construction process. This report will refer to these agencies as "centralized" agencies.

The General Assembly granted some agencies permission to develop their own policies and procedures to manage the capital construction process for non-general fund projects. These agencies include Christopher Newport University, the College of William and Mary, George Mason University, James Madison University, Old Dominion University, Radford University, the University of Virginia, Virginia Commonwealth University, Virginia Polytechnic Institute and State University (Virginia Tech), and the Virginia Port Authority. This report will refer to these agencies as "decentralized" agencies. Decentralized agencies do not have to submit plans and drawings, contracts, or change orders for Capital Outlay Management approval on non-general fund projects, but instead perform their own reviews and approval of plans and change orders. For fiscal year 2007, decentralized agencies accounted for $444 million and centralized agencies accounted for $790 million in capital project expenditures.

Additionally, on July 1, 2006, the Restructured Higher Education Financial and Administrative Operations Act went into effect, which grants covered institutions expanded freedom from state policies in completing capital projects. There are three tier levels within the Act; however only Tier III institutions have significant deviations from the decentralized agencies' capital outlay process. In general, status as a Tier III institution replaces the post-authorization system of reviews, approvals, policies, and procedures carried out by a variety of central state agencies.

The institution's Board of Visitors governs the system for carrying out the covered institution's capital outlay process. This applies to the planning and budget development for capital projects, capital project authorization, the implementation of capital projects, and hiring a specifically qualified individual to issue required building and occupancy permits, whether funded by a general fund appropriation of the General Assembly, proceeds from state tax supported debt, or funding from other sources. Currently this Act affects the College of William and Mary, Virginia Tech, and the University of Virginia. However, as of the date of this report, only the College of William and Mary and the University of Virginia have designated their own Building Official to issue building and occupancy permits. For fiscal year 2007, the three Tier III institutions accounted for $329 million of the $444 million in decentralized agencies' capital project expenditures.

The execution phase includes the designing of the capital project by an architect/engineering (A/E) firm, the actual construction of the project, and the procurement of these activities. Capital Outlay Management is involved in the execution phase of the capital outlay process. During the execution phase, Capital Outlay Management provides building code reviews, permits, inspections, enforcement of the

Virginia Uniform Statewide Building Code, and the mandatory capital outlay forms used for project management.

Planning and Budget allocates appropriated funds and approves project budgets during the various stages of the capital outlay process through the capital outlay forms. Additionally, Planning and Budget monitors the funding status of capital projects while active, reviews requests to reappropriate fiscal year end balances, and provides Treasury with updated draw schedules on debt projects annually.

Construction Delivery Methods

There are multiple types of construction delivery methods; the most common are design-bid-build, design-build, and construction manager at risk. Each of these project delivery methods includes varying procurement procedures for the A/E and Construction Contractor. Provided below is a summary of each of these delivery methods. Another construction delivery method is use of the Public-Private Education and Infrastructure Act of 2002 (PPEA). This act allows private entities to acquire, design, construct, improve, renovate, expand, equip, maintain or operate qualifying projects and encourages new approaches to financing construction and renovation. However, due to the uniqueness of this method, we will not address the use of PPEA in this report. In addition, agencies may use competitive negotiation for projects with a value less than $1 million. However, since this review focuses on higher dollar value projects, we will not address this method.

Design-Bid-Build

Design-Bid-Build is the basic method for procuring capital construction in the Commonwealth; the agency contracts separately with an A/E and a construction contractor. Design-Bid-Build is a competitive sealed bidding process and is the default procurement method for all state projects. There are three main sequential phases to the Design-Bid-Build delivery method: design, bid, and construction. The objective of the Design-Bid-Build method is to invite competitive sealed bids from as many qualified and interested contractors as possible, thereby increasing competition among bidders, which, in turn, will provide the lowest construction cost to the agency.

Design-Bid-Build is the most widely used procurement and delivery method for construction. Most agencies, A/E firms, and general contractors are familiar with the process. The Commonwealth benefits by receiving the lowest possible construction cost within an agency-defined period. The construction bid is a direct competition based on the lowest cost for a project in which the well-defined design includes a complete set of construction documents, and all contractors are bidding on the same work. This means that construction does not start until all designs are complete, resulting in a longer project delivery time.

It is very important that the agency contracts with an experienced A/E firm for the type of project the agency needs. If the design team is not familiar with the specific project type and current related construction costs, cost estimates could be inaccurate resulting in cost increases during the design phase. This could cause project delays if the A/E must revise construction documents to reduce costs. If the agency is not fully engaged in the design process this can lead to unrealistic expectations, frustrations, and higher costs. The design-bid-build method encourages a cheaper is better mentality among the general contractors bidding on the project. Contractors are generally forced to seek out the lowest cost sub-contractors in a given market; resulting in increased risk and lower construction quality. Additionally, there is little or no opportunity for the contractor to present cost or time efficient construction alternatives.

Design-Build

Design-Build is an alternate capital construction delivery method that focuses on a single point of contractual responsibility and uses a two-step competitive negotiation procurement process. The agency holds a single contract with a general contractor. The A/E design firm is a subcontractor; there is no contract between the agency and the A/E. The Design-Build method can result in overall project cost savings compared to Design-Bid-Build. The potential also exists for a shortened turnaround time from project proposal to completed building resulting from an overlap of design and construction services.

The prequalification procurement process allows the consideration of factors other than price. While not focused on saving the agency construction costs, the design-build method often saves the agency money on the overall project through the overlap of design and construction periods, which reduces the length of time required for the subcontracted A/E's services. Other benefits include total project time condensed, accountability of the service provider increases, and single source project delivery. However, the design-build method may make it difficult to estimate the cost of the project. Plans are usually very basic in the preliminary stages and can change drastically over the course of the project. Therefore, the agency must write contracts to provide for unexpected situations without penalizing either the Design-Builder or the agency. Change orders to increase the cost and extend the construction time are likely if the agency has not clearly outlined the project scope. In addition, the owner must rely on the integrity, expertise, and competence of the Design-Builder because of the high level of uncertainty. Additionally, this method does not allow for separate funding for planning and construction.

Construction Manager-at-Risk

Construction Manager at Risk (CM at Risk) is a third construction delivery method that is best suited to large, very complex building types such as hospitals, laboratories, and research facilities and uses competitive negotiation procurement. Similar to Design-Bid-Build, the agency procures two contracts: one with an Architect/Engineer firm to design the project and one with a Construction Manager at Risk firm. CM at Risk firms provide services as a value-engineering consultant during the design phase and then as the construction contractor during the construction phase, building the project for a Guaranteed Maximum Price. Similar to Design-Build, the prequalification procurement process allows the consideration of factors other than price. As in Design-Build, initial construction may begin while the A/E completes the construction documents for the remainder of the building, which allows an overlap of design and construction and a potential decrease in project delivery time.

The CM at Risk project delivery method gives the owner the stability of the design-bid-build method. Procuring the CM at Risk firm early in the project design allows input on materials, systems, and constructability. If the CM at Risk contractor is not involved early in the design process, the agency may forgo this major benefit.

The Guaranteed Maximum Price along with the agency's ability to select a Construction Management firm best suited to the particular project type can result in fewer construction change orders and a more "constructible" facility. However, tracking the development of the construction documents and the progress of construction of a large project is very complicated and requires more agency time for project management and oversight. This method works best for agencies experienced with sizeable construction projects. To reduce changes to the project construction, agencies must have the ability to discern differences between legitimate change orders and changes that are the responsibility of the CM at Risk Contractor. Additionally, this method inherently costs more because the contractor is providing additional services as compared to the other methods.

The table below outlines the major differences between the project delivery methods:

	Capital Project Delivery Method		
Task/Item	Design-Bid-Build	Design-Build	CM at Risk
Agency contracts separately with A/E	Yes, through a Request for Proposal	No, the A/E is a subcontractor of the contractor	Yes, through a Request For Proposal
Agency contracts separately with construction contractor	Yes, through an Invitation For Bid based on competitive sealed bids	Yes, through a Request For Proposal with competitive negotiation	Yes, through a pre-qualification process and a Request For Proposal with competitive negotiation
Level of drawings submitted by the agency to BCOM	Schematic, preliminary, and working drawings	Preliminary and working drawings only	Preliminary and working drawings only
Design Period	Prior to construction bidding	Overlaps with construction	During construction
Design Cost	Fixed price	Included in construction costs	Slightly higher than Design-Bid-Build
Construction Cost	Fixed price	Higher fixed price	Higher fixed price
Total Cost	Approximately the same	Approximately the same	Higher total cost
Agency input	At design stage	At Request for Proposal or through change orders	At design stage
Control over finishes and quality	Agency and A/E	Contractor	Agency, A/E, and contractor
A/E errors	Agency at risk	Contractor at risk	Agency and contractor at risk
Contractor initiated change orders	High probability	Low probability	Moderate probability
Agency initiated change orders	Moderate probability	High probability	Moderate probability

The table below outlines the pros and cons of each of the project delivery methods:

Delivery Method	Pros	Cons
Design-Bid-Build	▪ Completed working drawings used for contractors to base bids on; provides an "even playing field" ▪ Potentially "lowest cost" ▪ Agency has control over quality of systems ▪ Wide experience of use of this method by A/E's and contractors	▪ Delays start of construction until design is complete ▪ Cost estimates could be inaccurate resulting in cost increases during the design phase ▪ Cheaper is better mentality, lowest cost approach carries through to subcontractors ▪ Contractor has no input on the project design ▪ Multiple points of project liability ▪ Less opportunity for SWAM vendors
Design-Build	▪ Allows earlier award of construction contract ▪ Single point of contractual responsibility ▪ Procurement allows factors other than price ▪ Project delivery time decreases from overlap of design and construction periods ▪ Allows contractor "initiative" in selecting systems	▪ Agency loses control over selection of systems and construction details ▪ Sometimes difficult to estimate full cost of the project ▪ Change Orders can negate cost or time savings ▪ Procurement process can make for an uneven playing field between proposers
Construction Manager at Risk	▪ Allows earlier award of construction contract ▪ Procurement allows factors other than price ▪ A Guaranteed Maximum Price can result in fewer change orders ▪ Contractor has input on the design of systems ▪ Contractor has input to control costs ▪ Better opportunities for SWAM vendors	▪ Procurement process can make for an uneven playing field between proposers due to a lack of experience in this area. However, the new capital bond act requires that Virginia based contractors with less experience not be penalized when considered. ▪ A/E's and Contractor's fees will be higher ▪ Requires more agency time for project management/oversight

Capital Outlay Execution Process

Since the Design-Bid-Build project delivery method is the most common, we will explain the capital outlay execution process based on this method.

Project Initiation

Only after capital project approval can agencies begin the execution phase. Both Planning and Budget and Capital Outlay Management review and approve agency requests to initiate projects, and Planning and Budget releases funding for the design phase of projects. Planning and Budget reviews the initiation request for accurate project, appropriation, and total budget information, whereas Capital Outlay Management reviews the initiation request for proper project scope and project budget items. State law also requires agencies to prepare and submit an Environmental Impact Report to the Department of Environmental Quality for each major state project prior to project initiation. After these approvals, agencies may hire the A/E and begin the design stage.

Design stage

Agencies procure an A/E based on the policies and procedures in Capital Outlay Management's construction and professional services manual. The agency and A/E attend a pre-design conference with Capital Outlay Management before developing the design beyond the concept presented in the capital budget request. This meeting helps to clarify and establish roles, communication, design review schedules, and other similar tasks that the agency and A/E will need to proceed with the project.

After the pre-design conference, the A/E prepares three progressively advanced and complete sets of designs; these are schematic designs, preliminary drawings, and working drawings. Schematic designs incorporate design direction, scope, budget, and review comment agreements reached during the pre-design meeting. The preliminary drawings and working drawings progressively include more details and specifications than the prior level of drawings. The agency submits each set of drawings to Capital Outlay Management for review and approval before moving to the next level of design.

Agencies also present or send approved drawings to other agencies for review and comment, including the Department of Historic Resources, the Art and Architectural Review Board, the Department of Conservation and Recreation, and the Department of Environmental Quality. Capital projects with an estimated construction cost greater than $5 million must have a 40-hour value engineering study conducted on the preliminary design. A multi-discipline team of qualified professionals conducts the study. The team presents the study results to the agency and prepares a report that encompasses their recommendations and includes detailed cost estimates, life cycle analysis, and sketches. Both the agency and the A/E review and evaluate the value engineering recommendations; not all value-engineering recommendations are automatically appropriate for inclusion in state projects. Recently passed legislation requires the agency to give each item included in the value engineering report a status designation of accepted, declined, or accepted as modified; which the agency reports to Capital Outlay Management for approval.

The A/E prepares working drawings and specifications based on the preliminary drawings review and the value engineering comments and resolutions. The working drawings set forth in detail the requirements for the construction of the entire project and include applicable construction bidding information. Working drawings are required to be complete, coordinated, and ready for approval to bid the construction contract. The drawings consist of architectural and engineering drawings in such detail as to show clearly the work to perform and include a set of plans with all disciplines coordinated to describe the work required. The A/E submits a detailed cost estimate and advises the agency of any adjustments to previous construction cost estimates. The A/E also furnishes the agency with an estimate of the time for constructing the project. Based

on Capital Outlay Management and other review agencies' comments of the working drawings design, the agency either revises the working drawings or receives approval of working drawings from Capital Outlay Management and approval to advertise for construction bids.

Construction bidding

Agencies, with the help of their A/E, bid out the construction project based on the policies and procedures in Capital Outlay Management's construction and professional services manual. Agencies contact Capital Outlay Management to establish a bid date for the construction contract and issue an Invitation for Bid. The agency's construction contracting officer receives all construction bids. The agency determines the lowest bidder and if the bid is within the project budget, the agency requests approval to award the construction contract from Capital Outlay Management and Planning and Budget. If the lowest bid is over budget but within range for negotiation, the agency requests approval to negotiate from Capital Outlay Management. Upon successful negotiations and approvals from Capital Outlay Management and Planning and Budget, the agency awards the construction contract. After the agency awards the construction contract, they obtain a building permit from Capital Outlay Management.

Physical construction

Physical construction of a capital project includes everything from land and site prep to constructing or renovating a complete building ready for occupancy. The contractor has responsibilities in three basic areas during construction: monitoring and control; resource management; and documentation and communication.

Monitoring and control include tracking the progress of the project against the construction schedule. The contractor must ensure the subcontractor completes his work on schedule and that the work is in agreement with the plans, specifications, and budget. The contractor is also responsible for ensuring safety on the worksite and reducing environmental impacts. The building code requires inspections at various points in the construction process. The A/E should have identified these inspections and included them in the project specifications. As needed, the agency may have inspectors on staff or may hire independent inspectors to verify construction is in accordance with building codes and with the contract.

The second area of the contractor's responsibility is resource management. Proper resource management ensures contractors are managing materials and labor efficiently and appropriately to ensure completion on time. Changes in the construction plan may be necessary; however, all stakeholders must closely review and manage the plan to maintain the project budget.

The final responsibility for the contractor is to document and communicate with the agency the project status and any current or potential problems. The agency's responsibility during the construction period is to monitor the work against the plan provided by the contractor. The agency should be observing the progress and comparing its observations to the contractor's communications. Further, the agency must monitor the progress of construction and track time against the construction schedule and budget. The agency must approve change orders in consultation with the A/E.

The change order process provides a means to manage and review changes during the construction period. Both decentralized and centralized agencies may request a change order for a modification of requirements or needs. The contractor can also submit change orders to request adjustments including materials substitution and time extensions or changes due to unforeseen site conditions. Agencies may approve change orders to the contract until the cumulative changes have increased the total contract by more than 25 percent or $50,000, whichever is larger. At that point, the Governor must approve any further changes. All changes in project scope, including change in building size, also require the Governor's

approval. The Director of General Services reviews and approves centralized agency change orders for the Governor. In some cases, agencies must also request the allotment of funds by Planning and Budget to pay for the change orders.

During construction, changes to the A/E or contractor's contract may be necessary to accommodate increases and decreases in the scope of work or time extensions. Most commonly, these are due to unforeseen site or building conditions; errors or omissions in the contract documents; an opportunity to reduce the operating cost of the facility under construction; technology changes occurring since contract award which must be incorporated in the project; or a change in the agency requirements. Agencies document these changes to the contract documents by a change order. Effective management of the design process and close control during the construction period should reduce the need for changes. Agencies should negotiate costs at the time of the change and not wait until the end of construction to consider all change orders at that time. However, this is not always the practice as some parties agree to "settle up" at the end of construction for all change orders. The A/E reviews all change orders and recommends whether the changes are necessary.

Throughout construction, updated capital outlay forms are necessary to infuse or transfer additional funds into the project. Capital Outlay Management approves most of these forms; however, Planning and Budget also approves items such as infusing additional funds and adjusting the moveable equipment and furnishings budget. During the year, each agency must update General Services on the status of capital outlay projects in April and September. They provide the status of projects in the construction process and the status of the construction contract. The Appropriations Act requires General Services to submit this report to the Senate Finance and House Appropriations Committees. Agencies must also report information to Planning and Budget at year-end to carry forward funds into the next fiscal year.

Project Completion

Agencies cannot occupy a new building, addition to a building, or renovated area of a building until the state building official issues a certificate of use and occupancy, except the College of William and Mary and the University of Virginia. Agencies must close out every capital project that has a certificate of use and occupancy by completing and submitting a project completion report to Capital Outlay Management as soon as practical after the project is physically complete, but no later than 12 months after the agency occupies the building or the agency accepts the work as substantially complete. Agencies must also notify Planning and Budget that the project is complete and that any remaining funds can be reverted. This includes projects that agencies may have cancelled and never constructed, projects in which funds were reverted, projects that agencies combined with another project and the funds transferred, and projects in which Planning and Budget never allotted funding.

CHAPTER 3

BEST PRACTICES

We reviewed the capital project planning, budgeting, and execution processes of several other states and researched professional organizations related to facility management and capital construction, noting several industry best practices against which to evaluate the Commonwealth. In our 2004 "Review of the Commonwealth's Capital Outlay Process," we compared the Commonwealth's capital outlay practices to those of private industry. We determined the Commonwealth's practices did not significantly deviate from private practice other than the length of time needed from project idea to project completion. The extra time in the Commonwealth's process related to time required to obtain both the Governor's and General Assembly's approval of a project. Though the Commonwealth's basic practices are similar to private industry, we discuss below several areas that could enhance the Commonwealth's capital program.

Assess Capital Assets and Identify Issues, Opportunities, and Challenges

Governments should assess the condition of capital assets and identify factors that could affect the ability to maintain the assets in the future. The assessment should include an evaluation of issues, challenges, and opportunities affecting the continuation of capital assets in the future, such as community needs and priorities; the impact of deferred maintenance; funding issues; changes in technology; economic, demographic, or other factors that may affect demand; and legal or regulatory changes. Development of measurement standards for the acceptable condition of capital assets is a valuable output of this practice.

Governments may not review the condition of a capital asset and how well it is meeting its intended purpose very often, particularly if there is little change occurring. However, the information obtained from these assessments can be an important component of an overall evaluation of community needs and issues. Governments should examine capital assets that have shorter lives, or require additional maintenance, more frequently than longer-lived assets or assets requiring little maintenance.

The condition of the Commonwealth's capital assets is critical to the quality of services provided, and is important in determining whether the Commonwealth can meet the needs and priorities of its citizens. The Commonwealth has begun assessing and tracking the condition of its buildings through a facility inventory condition and assessment system (FICAS). Although the system currently maintains information only for buildings, buildings are the largest capital assets the Commonwealth owns and maintains other than road infrastructure.

Capital Outlay Management and agencies use the information in this system in the planning for maintenance reserve funding. We addressed this issue in detail in the 2004 and 2005 Review of Deferred Maintenance in the Commonwealth reports. However, since those reports, the Commonwealth has not dedicated the resources necessary to move forward with implementing a formal condition assessment program for state-owned buildings. We continue to recommend that the General Assembly and the Governor require facility condition assessments and scheduled periodic updates for agencies and institutions as part of the overall capital outlay process.

Recommendation: The General Assembly and the Governor should consider requiring facility condition assessments and make scheduled, periodic updates a requirement for agencies and institutions as part of the overall capital outlay process.

Develop a Multi-Year Capital Improvement Plan

Governments should develop a multi-year capital improvement plan that identifies its priorities and time frames for undertaking capital projects and provides a financing plan for those projects. Development of a capital improvement plan provides a framework for prioritizing projects and identifying funding needs and sources. A process should exist for evaluating proposed capital projects and financing options and developing a long-range capital improvement plan that integrates projects, time frames, and financing mechanisms. The plan, including both capital and operating costs, should project at least five years into the future and integrate with the government's overall financial plan. The process for developing the plan should allow ample opportunity for agency involvement in prioritizing projects and review.

The Commonwealth, like most states, uses multiple year capital plans and prioritizes construction projects. Virginia has a six-year statewide capital plan, which largely defers to capital priorities established by the agencies. Agencies justify the need for the requested projects with respect to their strategic and master plans as well as their current and projected customers, programs, and services. The six-year capital outlay plans identify the agencies' capital needs over the next six years and rank the projects in priority order.

There is the potential for significant revisions to occur over time because of the changing nature of the economic climate and agency needs over the six-year period. Virginia's six-year capital outlay plan identifies high priority capital projects versus other requested projects through statewide prioritization efforts. Inter-agency project teams review high priority, large dollar capital projects.

The Commonwealth's current six-year capital plan does not include time frames or cash flow needs. The plan shows the entire amount for each project in the fiscal year proposed. However, cash flows for a capital project can occur over as little as a two-year period but often occur over many years. In addition, projects do not always start immediately upon receiving funding. Under the new capital outlay bond act, the Appropriation Act will no longer appropriate projects individually and will not include information on cash flow. The new format will not show estimated costs by project. The Appropriation Act will list capital projects in different tiers based on the total estimated cost of each project, although the estimated project cost will not be included, and will fund multiple projects in a lump sum amount. If the General Assembly does not want detailed information in the Appropriation Act because they are going to rely on General Services and Planning and Budget to administer the program, then General Services and Planning and Budget must ensure that they have the details related to project cost estimates and cash flow timing to make fiscally responsible decisions and recommendations to the Governor and General Assembly.

Recommendation: Under the new capital outlay bond act, General Services and Planning and Budget should ensure that the capital budget submission process captures adequate details related to project cost estimates and cash flow timing to make fiscally responsible decisions and recommendations to the Governor and General Assembly regarding approval of capital projects for pre-planning, detailed planning, and construction funding.

Capital Budget Process

Once a government entity has adopted a multi-year capital plan, the next step in the capital process is to develop and implement a capital budget. A properly prepared and adopted capital budget is essential to ensure proper planning, funding, and implementation of major projects. Most capital budgets are formally adopted as part of the annual or bi-annual budget process, and should be directly linked to, and flow from, the multi-year capital improvement plan. The capital budget should include the following information.

- A definition of what a capital expenditure is for that entity.

- Summary information of capital projects by fund, category, etc.

- A schedule for completion of the project, including specific phases of a project, estimated funding requirements for the upcoming year(s), and planned timing for acquisition, design, and construction activities.

- Descriptions of the general scope of the project, including expected service and financial benefits to the entity.

- A description of any impact the project will have on the current or future operating budget.

- Estimated costs of the project, based on recent and accurate sources of information.

- Identified funding sources for all aspects of the project, specifically referencing any financing requirements for the upcoming fiscal year.

- Funding authority either based on total estimated project cost or estimated project costs for the upcoming fiscal year. Consideration of carry-forward funding for projects previously authorized.

- Any analytical information deemed helpful for setting capital priorities (this can include any cost/benefit comparisons and related capital projects).

Currently, the Commonwealth has a capital budget process that includes some of the recommended items above. However, the process and the resulting capital budget do not include several of the other critical items.

Best practices recommend that for each project the capital budget process include a completion schedule, including specific phases of a project, estimated cash flow requirements for the upcoming year(s), and planned timing for acquisition, design, and construction activities. Planning and Budget collects some of this information in the budget preparation process. However, the final capital budget does not show cash flow needs by year throughout the life of the project. The capital budget shows the entire amount for each project in the fiscal year approved. Under the new capital outlay bond act, the Appropriation Act will list capital projects in different tiers based on the total estimated cost of each project and will fund multiple projects in a lump sum amount.

In 2002, the Commonwealth authorized the issuance of $1.7 billion in bonds for capital projects. Within the legislation authorizing the general obligation bonds, the General Assembly required an initial capital implementation plan and annual status report for the debt funded projects that included proposed construction schedules for each project, detailed draw schedules, and an estimate of any additional costs for staffing and equipping each project. The responsible parties have prepared this status report annually since 2002. However, there is no similar status or reporting for capital projects funded through other sources. The Commonwealth's capital budget process should include a similar implementation plan and annual status report for all capital projects.

Recommendation: The Governor, General Assembly, and Planning and Budget may wish to consider expanding the current capital budget process to include an implementation plan and annual status report for all capital projects that includes proposed construction schedules for each project, detailed draw schedules, and an estimate of any additional costs for staffing and equipping each project.

Best practices also recommend including estimated costs of each project, based on recent and accurate sources of information. The Commonwealth's capital budget includes unreliable project estimates. Agencies have to prepare cost estimates prior to developing detailed requirements and designs. Without a definitive, detailed scope and plan, estimates are not accurate. We discussed this issue and made recommendations for improvement in the previous section "Capital Outlay Statewide Review Results."

Monitor, Measure, and Evaluate Capital Program Implementation

Given their scale and cost, capital projects can represent a significant risk for governments. Executive leadership, legislators, and citizens should all have the ability to review the status and expected completion of approved capital projects. Governments should plan and design systems to collect, store, and analyze project data and to report results. Often, more than one system or technological solution is required to properly address all informational requirements. To simplify this process, officials should designate which system is the main system for storing capital project financial and operational data. When establishing a data system specifically for capital projects, government officials should consider the following factors at a minimum:

- Appropriate technological solutions for project accounting, scheduling, and reporting. Solutions may include spreadsheets, customized databases, ERP systems, or project management software.

- Positional roles, including access, input and editing privileges for system users who will be charged with compiling, analyzing, and reporting financial and management information.

- The process for controlling and managing project changes.

- Accountability and data integrity within the financial management system.

- Data accuracy is of particular importance when there are interfaces between separate information systems, such as geographic systems, project management systems, and financial systems. Governments should give careful consideration to avoid duplicative data among these different systems.

- Triggers and protocols for identifying and addressing project cost overruns.

Governments should incorporate appropriate system controls and security consistent with their technology standards and strive for consistency and standardized language when compiling information from various sources. Once governments establish legal, fiduciary, and informational requirements and information systems are in place, finance officials should monitor capital project activity on a regular basis.

Governments should routinely issue periodic reports on all ongoing capital projects. Meaningful reports should provide straightforward project information for executive leadership and internal staff as well as citizens and the media. The reports should compare actual expenditures to the original budget, identify level of completion of the project, enumerate any changes in the scope of the project, and alert management to any concerns with completion of the project on time or on schedule.

Agencies should identify and report the status of meeting project milestones, such as dates for completion of such tasks as planning, land acquisition, engineering and design, and construction. Governments should monitor quality compliance and financial performance. Status reports should include summary information for projects that are progressing as planned and more detailed information for projects where there are issues. This practice promotes the development of mechanisms to ensure that decision makers are not overwhelmed with information on which they do not need to make a decision and that they receive accurate and timely information when they must make decisions or take actions.

The Commonwealth does not have reliable systems to collect, store, and analyze project data and to report results. The current capital outlay process requires Capital Outlay Management, Planning and Budget, and the agencies to use numerous capital outlay forms to gather and transfer data. These forms are in Microsoft Excel spreadsheets, manually filled out by the agencies, and e-mailed for approvals to Capital Outlay Management and Planning and Budget.

These capital outlay forms, which Capital Outlay Management verifies budget and scope but not expenses for accuracy, often include repetitive information. These manual and repetitive processes result in duplication, inefficiencies, and inconsistent data. Because the Commonwealth does not have a reliable centralized system to capture project data, the Commonwealth cannot produce reports that are meaningful to agency staff, citizens, and the media.

To support and implement the new processes and requirements in the new capital outlay bond act, General Services received funding to determine the technical and functional requirements and acquire a capital project electronic information management solution. The system will manage the Commonwealth's capital program from project conception through construction closeout and occupancy using a web-based system that includes program management, project management, document management, forms management, work process management, and time tracking. The system will eventually interface with other Commonwealth systems to reduce or eliminate data redundancy. At the time of this report, General Services was preparing to put the Request for Proposal out for bid.

Recommendation: We encourage General Services to continue forward with the effort to create a centralized capital project system to capture project cost and schedule data in a single location. Such a database should link to the financial systems, such as the Commonwealth Accounting and Reporting System (CARS), for true accountability.

The Commonwealth's six-year capital plan reports key measurement figures against which to assess capital project performance. The figures include period to hire architects, period to project completion, change in costs from original estimate to final cost, change order quantity and total cost, and average cost per change order. However, these figures are very high level and reported only every two years, using statewide data, which obscures individual project performance. The plan does not discuss where specific issues exist, does not set benchmarks by which to measure the figures, only baselines, and does not provide for regular monitoring of capital projects' financial and project activity information.

Recommendation: Planning and Budget should create annual status reports on capital projects that include benchmarks by which to assess the key measurement figures, identify where specific issues exist, and provide for regular monitoring of capital projects' financial and project activity information.

Other progress reports on state (non-transportation) capital projects are infrequent, usually twice a year. Capital Outlay Management compiles these reports based on information provided directly by agencies and does not verify the information even though it does not come from any one central system. The information comes from each agency's internal project tracking systems, which can vary from simple spreadsheets to more complex databases or software systems.

Agencies manually provide the information to Capital Outlay Management on spreadsheets; Capital Outlay Management then manually compiles the information. These reports mostly identify the project's appropriated amounts and percent of completion for the design and construction phases. There is no central monitoring of the status of capital projects to ensure that projects progress as planned, management identifies problems early enough to take corrective action, funds are available when needed, and legal requirements are met. Such standard reports on capital project implementation do not exist for decision makers.

Recommendation: The General Assembly may wish to require reports summarized by agency or secretariat that detail the number, cost, and reason for change orders; actual project timeline compared to planned schedule for major milestones; and funds spent and remaining funds available as compared to the percent of project remaining. Currently this information is not reliably available from any one single source. Because each agency is responsible for its own project and cost management, there is not a coordinated source of information.

CHAPTER 4

OTHER ISSUES

Virginia Construction Contracting Officer

Each agency with capital projects must have a Virginia Construction Contracting Officer (VCCO) to perform the procurement and contracting duties for capital projects, including developing initial project budgets. Each VCCO completes training and testing provided by Capital Outlay Management in Commonwealth procurement law, policy, and procedures. However, not every agency with capital projects currently has a VCCO, in which case, Capital Outlay Management performs additional reviews. After becoming a VCCO, Capital Outlay Management does not require individuals to attend any follow-up training. Although the VCCO is deeply involved in capital projects, the actual project manager for the agency is normally responsible for tracking project budgets. The project managers are not required to attend training at Capital Outlay Management.

Recommendation: Capital Outlay Management should require agencies with consistently large amounts of capital projects to have at least one VCCO on staff, who should attend periodic refresher training provided by Capital Outlay Management or continuing education classes available from sources outside of the state to maintain their certification. This is a similar format as the Virginia Contracting Officer certification and maintenance program. Additionally, Capital Outlay Management should require agency project managers to attend periodic training on the Commonwealth's construction manual so that they stay up to date on the policies and can ensure that their projects operate in compliance with Commonwealth policies.

Capital Outlay Management workload

Agency submissions to Capital Outlay Management nearly doubled from 2,200 submissions in 2003 to 4,200 submissions in 2006 without an increase in staffing. Capital Outlay Management is not achieving internal goals on turn-around time of submissions because of the man-hours required for these submissions. Currently Capital Outlay Management is internal service funded.

Recommendation: The General Assembly may wish to consider an increase in full time equivalency staffing for Capital Outlay Management possibly to include one general fund position and one non-general fund position to provide adequate support for all projects. Increased staffing would reduce the turn around time on submissions in the event that a statewide system is not achievable.

Commonwealth of Virginia

Walter J. Kucharski, Auditor

Auditor of Public Accounts
P.O. Box 1295
Richmond, Virginia 23218

June 11, 2008

The Honorable Timothy M. Kaine
Governor of Virginia
State Capital
Richmond, Virginia

The Honorable M. Kirkland Cox
Chairman, Joint Legislative Audit
and Review Commission
General Assembly Building
Richmond, Virginia

We have reviewed the capital outlay planning, budgeting, and executing process and are pleased to submit our report entitled **Statewide Review of Capital Outlay**. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Objectives

We had four objectives in our review of the Commonwealth's capital outlay process. These objectives were to:

1. Review and document the processes used in the Commonwealth for the construction of capital assets.

2. Understand the roles and responsibilities of the Governor, General Assembly, Department of Planning and Budget, Department of General Services' Bureau of Capital Outlay Management, various capital project reviewing entities, and the centralized and decentralized agencies and institutions in the management of the capital outlay process.

3. Determine the successfulness of the Commonwealth's capital outlay process.

4. Determine how the Commonwealth's capital outlay process compares to best practices for capital construction.

Scope and Methodology

We reviewed the Code of Virginia and the Appropriations Act to identify key agencies in the capital outlay process and to understand their legislatively mandated roles.

We interviewed personnel from key agencies that govern and develop the capital outlay process. We also reviewed the Department of Planning and Budget's procedures for developing the capital budget and the Bureau of Capital Outlay Management's Construction and Professional Services Manual to understand the capital outlay process from inception to completion.

We analyzed information on construction projects gathered from the Department of Planning and Budget, the Bureau of Capital Outlay Management, and the Commonwealth's Accounting and Reporting System (CARS). From this information, we selected a cross-section of capital projects of varying types from multiple agencies that were completed or substantially complete between fiscal years 2005 and 2006, and evaluated the projects against the capital outlay process from planning through to project completion. We analyzed such items as appropriation increases, cost escalation, scope creep and reduction, change orders, and length of time from authorization to completion. We used this analysis to determine the successfulness of the selected capital construction projects.

We performed research to identify best practices for capital construction. We used these various sources to compare to the Commonwealth's procedures and recommend improvements in the capital outlay process.

Results

Through our analysis of the selected capital outlay projects, we found that the traditional practice for project funding as a one-step process where capital projects receive funding for planning and construction in a single appropriation frequently results in the need for greater additional funding. We also found that there is repeated duplication of capital project information among the various agencies that need information related to capital projects.

Additionally, we found multiple project management issues including the lack of maintaining proper project budgets, the lack of agencies closing completed projects with Planning and Budget and Capital Outlay Management, and a lack of planning for moveable equipment and furnishings. We also found that each agency with capital outlay projects does not have a Virginia Construction Contracting Officer to perform procurement and contracting duties for capital projects as required by the Bureau of Capital Outlay Management. Additionally, the agency project managers are normally responsible for tracking project budgets yet are not required to attend training. We also found that Capital Outlay Management is not achieving internal goals on turn-around time of reviewing capital submissions because of the increased number of submissions and a lack of personnel to perform the reviews.

Through our research, we found that best practices call for the assessment of the condition of capital assets for capital budgeting and development of a multi-year capital improvement plan that identifies its priorities and time frames for undertaking capital projects and provides a financing plan for those projects. We also found that a properly prepared and adopted capital budget should contain a schedule for completion of the project, including specific phases of a project, estimated funding requirements for the upcoming year(s), and planned timing for acquisition, design, and construction activities. Best practices also propose that governments should plan and design systems to collect, store, and analyze project data and to report results and should designate which system is the main system for storing capital project financial and operational data. Lastly, best practices propose that governments should routinely issue meaningful periodic

reports on all ongoing capital projects that provide straightforward project information for executive leadership and internal staff as well as citizens and the media.

We recommend that the Governor and the General Assembly consider the following:

- requiring facility condition assessments and scheduled, periodic updates;

- requiring agencies to determine the project delivery method prior to requesting the initial capital appropriation;

- expanding the current capital budget process to include an implementation plan and annual status report for all capital projects that includes proposed construction schedules for each project, detailed draw schedules, and an estimate of any additional costs for staffing and equipping each project;

- requiring detailed meaningful capital outlay reports summarized by agency or secretariat; and

- increasing the full time equivalency staffing for Capital Outlay Management.

We recommend that the Department of Planning and Budget and the Bureau of Capital Outlay Management consider the following:

- General Services should continue moving forward with the effort to create a centralized capital project system to capture project cost and schedule data in a single location. Acquisition and implementation of this system is essential to the advancement and improvement of the Commonwealth's capital program;

- Planning and Budget should create annual status reports on capital projects that include benchmarks by which to assess key measurement figures, identify where specific issues exist, and provide for regular monitoring of capital projects' financial and project activity information;

- Capital Outlay Management and Planning and Budget should ensure that the capital budget submission process captures adequate details related to project cost estimates and cash flow timing to make fiscally responsible decisions and recommendations to the Governor and General Assembly regarding approval of capital projects for pre-planning, detailed planning, and construction funding;

- Planning and Budget, Capital Outlay Management, and the agencies should coordinate to include detailed measurement figures as part of an annual status report on capital projects;

- Capital Outlay Management should require agencies with consistently large amounts of capital projects to have at least one Virginia Construction Contracting Officer on staff, who should attend periodic refresher training or continuing education classes to maintain their certification; and

- Capital Outlay Management should require agency project managers to attend periodic training on the Commonwealth's construction manual.

Exit Conference and Report Distribution

We discussed this report with the Departments of General Services and Planning and Budget on June 11, 2008. We have included their responses at the end of this report.

This report is intended for the information and use of the Governor and General Assembly, management, and the citizens of the Commonwealth of Virginia and is a public record.

AUDITOR OF PUBLIC ACCOUNTS

DBC/clj

COMMONWEALTH of VIRGINIA

Department of General Services

Richard F. Sliwoski, P.E.
Director

Joseph F. Damico
Deputy Director

Bobby Myers
Deputy Director

202 North Ninth Street
Suite 209
Richmond, Virginia 23219-3402
Voice/TDD (804) 786-6152
FAX (804) 371-8305

June 23, 2008

Ms. DeAnn B. Compton
Director, Capital Assets Management
Auditor of Public Accounts
P. O. Box 1295
Richmond, VA 23218

Dear Ms. Compton:

The Department of General Services (DGS) appreciates the time and effort taken by the Auditor of Public Accounts (APA) staff in their review of the State Capital Outlay process.

APA's review was a comparison of projects that had been fully funded at the onset versus projects that had been provided with only planning funds at the beginning and then fully funded for construction at a later time. The analysis was to compare and contrast the percentage of cost overruns experienced by each type of project. The review and analysis provided in the report indicates that projects funded for planning only at the beginning had a much better track record than those fully funded at the beginning. The conclusions provided in the report support the new process that has been put into place by the General Assembly.

DGS Response:

- The Department of General Services (DGS) has reviewed the draft report and has provided you comments that we understand will be included in the final version of the report when issued

Sincerely,

Richard F. Sliwoski, P. E.

COMMONWEALTH of VIRGINIA

Richard D. Brown
Director

Department of Planning and Budget

1111 E. Broad Street
Room 5040
Richmond, VA 23219-1922

June 30, 2008

Mr. Walter J. Kucharski
Auditor of Public Accounts
P.O. Box 1295
Richmond, Virginia 23218

Dear Mr. Kucharski:

Thank you for the opportunity to comment on the Auditor of Public Accounts' (APA) 2007 audit of the capital outlay process in the Commonwealth entitled Statewide Review of Capital Outlay. The Department of Planning and Budget (DPB) has reviewed this report and offers the following comments.

First, the APA report notes that the traditional practice for capital project funding is one-step, meaning capital projects receive one appropriation for both planning and construction. This approach results in requests for additional funds because of the lack of upfront planning. While the Department of Planning and Budget (DPB) agrees that projects that receive planning funds prior to an appropriation for construction do have a less frequent need for supplemental funding, the sample of ten capital projects selected by the APA in support of this finding does not appear to be representative of the different types of capital projects in the Commonwealth. A majority of the projects in the sample are nongeneral fund projects at institutions of higher education. These nongeneral fund projects often do not receive upfront planning money, as general fund projects sometimes do.

The reality is that it is more difficult to regulate how nongeneral funds are actually used during the execution of capital projects. For example, the nongeneral fund projects listed for Virginia Tech, the University of Virginia and George Mason University did not receive any oversight by DGS or DPB during the planning and execution of those projects. This is because all of these schools had been delegated authority over executing their nongeneral fund projects. In essence, there was no central oversight as to whether value engineering was used or whether the final project scope and materials was the same as that assumed during the planning process. Moreover, when these schools found they had cost overruns, the General Assembly did not express any concern over adding additional appropriation for these projects mainly because the burden to finance these projects fell on the affected institution. This issue will only be

exacerbated in the future with higher education restructuring. Level III schools, and potentially some Level II schools, will be able to initiate nongeneral fund capital projects without approval of the General Assembly. Accordingly, while it may be ideal to treat nongeneral fund projects the same as general fund projects, the reality is that they are, and will continue to be, treated differently. The APA report fails to make this distinction.

I would also point out that the traditional funding process for capital outlay is evolving and will be changed as the result of recent bond legislation passed by the 2008 General Assembly. The legislation (Chapter One, 2008 Acts of Assembly, Special Session I) includes a pre-planning program, a detailed planning program, and a construction program, each with a set amount of funds. The pre-planning program is a process meant to obtain a more detailed definition and cost estimate of a capital project. With pre-planning funds, a project can only advance to preliminary drawings. If recommended to go forward, the project will enter the detailed planning phase. Here the project will receive funding to prepare architecture and engineer documents up to the preliminary design phase as defined by the Department of General Services' Construction and Professional Services Manual. After this phase, if a project is still recommended, it will then move into the construction phase where it will receive funding for construction. The new process will to allow the Commonwealth to better plan capital outlay projects and it will ensure that the Commonwealth can stop a capital project from going forward if it is going to be too costly.

Additionally, while the APA report makes several recommendations which would be beneficial in terms of improving the capital outlay process in the Commonwealth, it neglects to note the cost of implementing some of these recommendations. For example, requiring agencies to conduct facility condition assessments and scheduled, periodic updates will result in funding requests from agencies. To illustrate, it costs approximately $0.09/square foot for an agency to conduct a complete facility assessment. Therefore, a 100,000 square foot building would cost $9,000. Increasing the staffing of Capital Outlay Management by two positions also requires additional funding.

Finally, the report charges DPB and the Bureau of Capital Outlay to create annual status reports (with benchmarks) and to capture adequate budget details of capital projects. Many of these processes are currently in place with year-end close capital reappropriation review, capital performance measures, and capital budget submissions. For example, as part of yearend close process, agencies must report the status of each active project. In order to justify the carryforward of anticipated June 30 balances, the agencies report the status of each project and explain and justify the need to reappropriate funds. To assist with the analysts' review, Department of General Services also sends a list of projects to DPB that appear to be closed-out on DGS records. After completion of its review, DPB prepares a consolidated list of projects to be closed out so that the Department of General Services project records can be updated as necessary. In addition to these type of current activities, many of the recommended requirements included in this APA report will be addressed in the centralized capital project system currently underway at DGS or in the Enterprise Application new performance budgeting system initiative.

Again, thank you for the opportunity to review the Statewide Review of Capital Outlay. While DPB agrees with the spirit of most of the recommendations in this report, we believe it is important to note that some recommendations are currently being addressed and others are costly to implement.

Sincerely,

Richard D. Brown

c: The Honorable Jody M. Wagner
Richard Sliwoski