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Memorandum

To: State Funding Board
From: Virginia Rutledge 
Re: Study on Budgeted Contingency Costs of Capital Outlay Projects and Related Issues

Executive Summary

Enclosed with this executive summary is a report providing detailed information regarding the Study on Budgeted Contingency Costs of Capital Outlay Projects and Related Issues.

Introduction

This is the first report to the State Funding Board (SFB) on Phase I of a project known as "The Study of Budgeted Contingency Costs of Capital Outlay Projects." The goals for Phase I are to:

- Identify the universe of information that is available within the State to analyze capital and related contingency costs;
- Identify current State practices relating to contingency funding;
- Provide information on observations made and issues identified during the review and interview process;
- Determine next steps in the process.

As a part of this process, we interviewed State employees in a number of different agencies, collected samples of reports, and examined and analyzed information about the capabilities of existing systems. Discussions primarily centered on the following offices:

- Office of State and Local Finance (OSLF), Comptroller of the Treasury
- Acting State Architect (SA), Department of Finance and Administration (F&A)
- Real Property Administration (RPA), Department of Finance and Administration
- University of Tennessee (UT)
- Tennessee Board of Regents (TBR)
- Office of Business Finance (OBF), Department of Finance and Administration
- Treasurer's Office
- Budget Division/ Capital Projects, Department of Finance and Administration
- Division of State Audit, Comptroller of the Treasury



This report is organized into the following sections:

- Summary of key findings and observations
- Existing information systems and data sources
- Improvements and integration of new systems
- Current practices
- Contingency, cost and capital project budget management
- Options for contingency fund management
- Other observations and issues
- Next steps

We look forward to discussing this information with you. We would also like to thank State employees that we interviewed for their assistance in this project.

Summary of Key Findings and Observations

While this study was focused on identifying data sources and looking at current State practices, there were several larger issues that were observed and noted as well. The following is a summary of those key points.

- While there are a number of systems that contain information about capital projects, there are limited, if any, interfaces between the existing systems. This condition results in additional time spent reentering missing information and then reconciling the data. The State is in the process of developing new accounting and debt management systems which are expected to share data. However, there may be other new systems in the future that should rely on some information contained in another system. The State should ensure, wherever possible, that data can be effectively transmitted between future systems as well.
- Throughout the review of the data sources, we observed that there was a lack of management level summary reports. Generally, the systems and reports are designed for a specific purpose, and they may meet that purpose, but do not generate (and in some cases may not be able to do so), management level summary reports that provide a higher level focus. The reports are specific to managing individual projects or accounting for the fund allocations properly. This issue may eventually be resolved, at least in part, with the implementation of new systems that are in the development stage. It will be important that the new systems provide management level reporting to assist in a review of broader issues such as actual use of contingencies; budget performance vs. original approvals; aggregate cash flows compared to project authorizations; lags in budgeted projects not authorized, projects not initially included in capital budgets, and similar information.
- Even if/ when all systems are updated and can communicate through various interfaces, there may some challenges to consistent management reporting. The existing systems (both accounting and project management) have limited information relating to projects for the



TBR and UT. Both higher education systems maintain their own accounting and reporting systems, and manage their own capital projects. This is not to say that this approach should be changed, but at this time the higher education projects comprise a substantial part of the universe of capital projects. To the extent that any future management reports rely on data that is not maintained in the central systems, the State will need to address this issue, either by incorporating more data for TBR and UT in the central systems, or by receiving compatible information from those separate systems.

- None of the existing systems include a project or total cash flow estimate; a projected construction schedule at the start of the project, or any other information that would provide more assistance in the timing of debt issuance or investment of related funds. While the State has addressed this issue, in part, by the utilization of its Commercial Paper (CP) program, it does not have information that may assist it in analyzing other options or investing those funds that it does have. The same issue is applicable for projects that are funded by cash.
- Any discussion of the use of contingencies needs to be considered in the context of the State's current practices for the general use of contingencies, for change orders, and for capital budgeting as a whole. While the initial focus has been on the use of contingencies, the larger issue is how to address overall risk to project budgeting. Project budgets may need additional funds due to changes in the construction market, timing, a more refined scope, site conditions, or any number of other factors.
- There are existing guidelines for the level of contingency for capital projects, the purpose of having a contingency and controls on its use. The contingency is not intended to be a cushion for higher than budgeted contract bids; it is intended to address the unknown conditions that may be encountered during construction. These conditions may be due to undetected code deficiencies, environmental hazards, utility infrastructure issues, and other factors. User agencies cannot independently establish an amount, or approve the use of a contingency.

Budgeted Contingency Costs of Capital Outlay Projects and Related Issues

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EXISTING INFORMATION SYSTEMS AND DATA SOURCES

The State and many of its agencies are utilizing various systems for the purpose of tracking, monitoring, and where possible, reporting information related to capital projects and bond financing activity. There is an agency responsible for maintaining each system; it generally is the primary (but not exclusive) user of the system. However, among the various systems and sources of data there is no one source of information or report which efficiently and effectively contains the information to answer some of the questions posed by the State Funding Board (SFB) and the State Building Commission (SBC). The following section describes the current systems, their purpose, location and the team responsible for managing and maintaining each system.



The History of Bonds Authorized and Unissued File

Type of software. Excel file.

Responsible agency/ office. Office of State and Local Finance.

Purpose. This file was developed to account for the increases and decreases in bond authorization within a fiscal year. The information in this file is used to produce a report required for each bond closing and is included in each bond transcript.

Description. The file reports the changes in bond authorizations, including bonds issued each year, commercial paper redeemed that is not taken to long-term debt, bond authorizations cancelled, and end-of year balances. The file includes the Public Act and Chapter and other subsets of bond allocations within a public act and chapter, such as the Tennessee Department of Transportation (TDOT), F&A, and others. The file includes a separate tab for each year starting in 1988.

Primary system users. Office of State and Local Finance, F&A Budget Division and Division of Accounts.

Observations and comments.

- This system does not include information at the project level, and therefore does not include SBC or other project identifiers.
- This is the only file that reflects cancellations of bond authorizations. Therefore, for a complete tracking of bond activity, this is the only source of that data.
- In its current form, the information makes comparing and summarizing data by functional area somewhat difficult. Because the information is in an Excel file, the data contained in the file can be reformatted to provide some flexibility in sorting, summarizing and calculating totals, averages, counts, etc based on various data points included in the file.



The Debt Under Management File, or “DUM” File

Type of software. Excel file.

Responsible agency/ office. Office of State and Local Finance.

Purpose. The purpose is to track the funding of each bond funded capital project to the bond issues that provided permanent funding. The information in this file is used to produce a report required for each bond closing and included in each bond transcript.

Description. This file includes information for each project funded by debt, including Public Act, Chapter, and project number. For projects funded by more than one bond authorization, it includes a separate line of information for each public act and chapter, but not for current funds allocated to the project.

Primary system users. Office of State and Local Finance.

Observations and comments.

- The file does not include data for other sources of funding if the project is only partially funded with debt.. That is, if a project was partially funded from a grant, the grant information is not included in this data.
- This file does reflect authorized but unissued bonds by project by debt funding source; it does not include cancelled authorizations.
- This file does not include the SBC number.
- As an excel file, the data can be sorted and searched, and can be used (within the limitations of the data included in the file) to provide some high level management reports such as how quickly authorized bonds are issued, unissued bond authorizations by project type or year authorized; or similar information.
- The data in this file includes information at the project and bond source level, but does not track line items, contracts, budget changes, use of contingencies or change orders.
- The data reflects when bonds were issued, not when proceeds were spent. However, in recent years, the State has typically issued bonds to refund Commercial Paper (CP) or Variable Rate Demand Notes (VRDNs) after short-term proceeds have been expended on capital projects. General Obligation bonds are usually issued every year, as the commercial paper approaches its maximum authorized capacity of \$350 million. This approach provides some proxy for dollars being spent, and provides the year the bonds are issued versus the year authorized.



- The purpose of the report is to track debt under management, not all capital projects. The data does not include authorized but unissued bonds or bonds identified for projects not yet approved by the SBC. It also excludes projects that are not debt-funded.



The Statewide Accounting and Reporting System (STARS)/ Fund 31

Type of software. Legacy mainframe accounting system.

Responsible agency/ office. Office of Business Finance/Division of Accounts.

Purpose. Fund 31 in the STARS system is used to account for activity for capital projects.

Description. The system contains all basic financial information about each capital project, including revenue sources (specific bond authorizations, grants or other sources), budget, and expenditures by major object codes and encumbrances.

Primary system users. Office of State and Local Finance, Office of Business Finance, Division of Accounts.

Observations and comments.

- The State is in the process of installing a new accounting system, the Edison system. The Division of Accounts has indicated that the OBF will convert to Edison on or about July 1, 2011. This system is the most comprehensive source of information related to capital projects activity. However, there are some system limitations.
 - Ideally, we would approach an analysis by selecting closed projects for a number of years, and then look at use of contingencies, and other changes. However, this system does not actually “close” capital projects. Fund 31, the current fund used for capital projects, contains years of projects, both active and completed. There are no reports produced that separate out data for active projects, thus making staff time in monitoring these projects cumbersome. There is some means of identifying projects that should be closed. When projects are closed, even though not removed by the system, the remaining funds are “zeroed out” (i.e. moved to an unallocated account) so appropriations and expenditures are equal.
 - For the purposes of identifying contingency fund use, another limitation of this system is that the contingency amount identified on the SBC-1 form is not shown as a separate line item. It is most likely included in the appropriate construction line item.
 - There is data in STARS that can likely help address some questions. For example, the funds or bond allocation removed from a project at closing, as a percent of the total project budget, might be considered a proxy for



contingency or other funds that were unspent, but STARS does not identify the original contingency as a source of available funds in the project, and that percentage is not always the same. Identifying the contingency budgeted would facilitate tracking usage.

- Capital projects may be funded by more than one bond issue or other source of revenue. A number of projects have at least some level of current funding. Additionally, where there are multiple sources of funding, the application of revenues usually observes a “bonds spent first” rule. These nuances will also need to be considered in any analysis of contingency usage or budget changes.

- All capital projects that are bond financed are included in this fund (Fund 31), but each project does not necessarily have the same information. For example, both UT and the TBR maintain their own accounting systems, manage their own projects, and have separate project tracking systems. The UT information will be included in STARS, but only when UT seeks reimbursement for funds it has spent. The TBR does have invoices for capital projects paid directly by the State. However, for both UT and TBR the STARS information is typically recorded as single line item, with no contract (encumbrance) data for these projects. The Higher Education projects currently comprise roughly half the universe of capital projects funded by bonds. STARS is not integrated with the debt management systems or with the RPA’s project management system. Data that is in more than one system is reentered independently in each system.



Capital Project Reports

Type of software. Fox Pro, with data downloaded from STARS.

Responsible agency/ office. Division of Accounts.

Purpose. These reports are used to assist the Commercial Paper Committee (CPC) in determining when to issue CP, and when to issue bonds to refund CP.

Description. There are four separate but related reports: All Projects Report; Projects to be Taken to Debt Report; Needs Questionnaire Report; and On Hold Report. Projects and project financial information are downloaded from STARS, but the Division of Accounts, OBF and OSLF together provide additional project classifications. These classifications are used to meet specific management needs of the Commercial Paper Committee (CPC). The CPC has the responsibility for determining draws on the CP program for capital projects. These reports classify projects and related expenditures for purposes such as: (i) commercial paper spent to be taken to long term debt; (ii) projects on hold; (iii) and the status of tax questionnaires.

Primary system users. Office of State and Local Finance, Office of Business Finance, and the Commercial Paper Committee.

Observations and comments.

- This report contains project level detail of bonds authorized, bonds issued, CP drawdowns and unspent balances. The information included is for active projects only; projects that are completed, or don't otherwise currently meet the criteria for the report are not included.
- Until very recently, these reports were provided in hard copy only. The reports are now provided in excel format as well.
- These reports were designed for a specific purpose and the data contained in the report speaks only as of the date the reports were created. The reports only portray expenditures to be taken to debt, not all project expenditures. They do not include information related to contingencies, contract changes, or related items.
- Certain data from these reports are currently used by the OSLF to update their debt management excel files (discussed earlier). All such data are reentered in those files by OSLF staff.



Project and Information Tracking System (PITS)

Type of software. Aging legacy system.

Responsible agency/ office. Real Property Administration and Office of Business Finance.

Purpose. This system is used by RPA and OBF to manage and track capital projects.

Description. In addition to financial information about the project, this system includes location, critical dates for the project, key firms and other information that relates to the status of the project.

Primary system users. Real Property Administration and Office of Business Finance.

Observations and comments.

- The purpose of PITS is to assist RPA in managing and tracking projects *for which it is responsible*. It also contains certain more limited information about other projects, including UT and TBR projects, but those projects are managed by the staff of those entities.
- PITS does not communicate with other State systems. Certain data is entered by RPA staff, and other data by OBF, even data that is also included in STARS.
- PITS does separately identify the amount of the contingency; the only system where that is the case. However, in discussions with management, there is no real certainty that entries within the system related to contingencies have been consistent over time.
- The project information does have certain critical dates included, but these dates are generally the recording of dates when an action is taken; for example, the date of the notice to proceed. An expected completion date is the only future date recorded, and this date is entered only after there is a contract and an agreed-to completion date. Departments/ Agencies generally do not provide a planned construction or spending schedule at the time of initial funding of a project.
- The system is considered by all parties familiar with it to be an aging and delicate system. There are no management reports produced to assist RPA management, the SBC, or anyone else; there is general concern that attempts to create any type of customization (e.g. management reports, exporting of selected data, etc.) within the system might generate system problems. At this time, we have not probed further into the data that may be available to pull from this system.
- The RPA does produce some limited management reports via a separate Access database but it is geared towards project work phase, not funding and change orders. It is limited to projects under RPA management



- In theory, a good working project tracking system can provide a great deal of management information that can pertain to cash flow, bond issuance needs, project time lines, the accuracy of initial budget estimates as compared to final, and other information.
- RPA is reviewing a new software packages to replace PITS, but there is not a definitive schedule for implementation at this time.



University of Tennessee Project Tracking System

Type of software. Excel file.

Responsible agency/ office. UT Facilities Planning.

Purpose. This system is used by UT to manage and track capital projects.

Description. The UT system includes location, critical “point-in-time” dates which provide snapshots of various project phases to shows what’s behind/ahead of schedule, key firms and other information that relates to tracking the progress or status of individual projects. The system tracks information on all projects managed by UT.

Primary system users. UT Facilities Planning.

Observations and comments.

- This system is used for project tracking only. It does not include financial information about capital projects. Financial information, including SBC -1 project budget information, is housed in UT’s SAP system.
- UT is currently evaluating other system options for the management and tracking of capital projects.



Tennessee Board of Regents Project and Information Tracking System (PITS)

Type of software. The TBR system is an upgraded and on line version of the central PITS system.

Responsible agency/ office. TBR Office of Facilities Development.

Purpose. This system is used by TBR to manage and track capital projects.

Description. In addition to financial information about the project, this system includes location, critical dates for the project as various phases are completed, key firms and other information that relates to the status of the project. The system tracks information on all projects managed by TBR.

Primary system users. TBR Office of Facilities Development.

Observations and comments.

- TBR is responsible for managing its capital projects, and the TBR system tracks only those projects. The general format of the TBR system is similar to the PITS system, but the system has substantially more reporting capability.
- Limited information about the status of the TBR capital projects budget can also be found in the RPA PITS system.



IMPROVEMENTS AND INTEGRATION OF NEW SYSTEMS

While there are data and reporting limitations in some of the existing systems, there are projects underway that will replace these older outdated systems. The current system activity includes:

- The STARS system is currently being replaced by Edison, which is the State's new accounting and reporting platform. Some funds and modules have been converted to Edison. The capital projects fund has not been converted at this time. The current schedule calls for conversion to be completed by June 30, 2011.
- The OSLF is in the process of installing a debt management system. When completed, this system will replace both of the Excel files used by OSLF to manage State debt, as well as other related Excel files maintained in the OSLF. Additionally, since the new debt management system will have data imported from Edison, the processes are expected to eliminate data being reentered for other purposes. Between this new system and Edison, it is anticipated that the OSLF and the Commercial Paper Committee will be provided with the information made available through the Capital Project Reports. However, it will not include other sources of funding nor contingency data nor will it track projects funded from sources other than bonds.
- The RPA office is considering the purchase of a replacement system for the PITS system but there is not a defined implementation schedule at this time.

CURRENT PRACTICES

Any discussion of the use of contingencies needs to be considered in the context of the State's current practices for the general use of contingencies, for change orders, and for capital budgeting as a whole. While the initial focus has been on the use of contingencies, the larger issue is how to address overall risk to project budgeting.

- *Project budgets.* Contingencies are one cost component of a capital project's budget. Those funds are intended to address unknown/ undetected conditions that may arise after the project is under construction, and contracts have been awarded. There are other factors and conditions that can impact the overall budgetary requirements of a capital project as well.
 - The process for requesting a capital project begins 6-12 months before any approval by the SBC as projects are disclosed in the Governor's Budget, authorized in the Bond Act and funded by the General Assembly in the Appropriations Act. The process includes developing a scope, a justification for the project and a requested budget prior to any action taking place by the General Assembly.
 - Some, but not all, agencies use the assistance of a designer/ consultant in developing the project. Additionally, some agencies, including both TBR and UT, have in house staff, due to the overall volume of capital projects. Projects are scrutinized during



the budget development process. After approval in the budget, a project scopes and estimated budgets are again reviewed, this time in what seems to be in additional detail, before being placed on the SBC agenda. Receipt of the authorization to spend funds is not automatic; SBC approval is required *after* inclusion in the budget. SBC approval is received closer to the start date. Project cost estimates are reviewed again at the time projects are placed on the SBC agenda for approval. Costs may be revised as the project is scoped in more detail and estimates developed to coincide with the current construction market conditions.

- Any difference in the cost estimate may be due to a clarified scope, timing and current construction cost expectations, and other factors. In those cases where the project cost estimate is higher, staff indicates they do not simply lower the contingency to address a shortfall; they will either require a reduced scope, find other available funds, or some combination of these options. For these reasons, the project cost recommended by staff to the SBC may vary from the amount included in the original project budget. The initial contingency in the budget, as approved by SBC, is the level the RPA believes is appropriate for the project at the time the project is considered by the SBC.
- The potential for cost changes can be higher or lower, depending on a number of factors. More refined project requirements are one element that can change funding needs. Estimates for land acquisition may change once a specific location is identified. Project budgets may also be impacted by higher than expected cost escalations given the long lead time between initial project budget estimates and approval. For example, post-Katrina construction markets affected many project budgets (even if the projects were ready to move ahead after the first SBC meeting of the new fiscal year.)
- Not all projects move ahead quickly, and the State does not track project plans as submitted and approved during the capital budgeting process vs. project plans ultimately approved by SBC. If projects are approved in the budget, but don't move forward quickly, either due to a lack of project managers to handle the volume, controversy about siting, permit issues or for any other reason, there may be more risk that the budgets will need to be revised.
- The State does have a number of procedures in place to help address higher than estimated prices. Among them, designers are required by the terms of their contract, to make design changes or re-scope projects if the bid for the project exceeds the SBC-approved budget (excluding contingency).
- Another issue that can cause a need for additional funds, excluding estimation issues, relates to projects that were never in the budget to begin with (e.g. projects deemed emergencies, projects to meet unexpected needs, projects to address critical issues such as health and safety concerns, or any other project approved for funding subsequent to approval of the budget). These unplanned projects create the need for



new projects not previously disclosed in any budget. They are not changes in existing projects, and have the potential to be substantial. It does not appear that any of the State's systems track the number, cost or impact of these unplanned projects on the overall capital budget.

- *Change orders.* In November 2010, the Acting State Architect provided a memo to the SBC that discussed current practices on the use of change orders. A copy of the memo is attached.
 - Budgets for capital projects include contingency amounts. The guideline for the level of contingency is usually 5% for new projects and 10% for maintenance projects. However, some projects may have justifiably different exposures that warrant higher or lower contingency amounts. The contingency is not intended to be a cushion for higher than budgeted contract bids; it is intended to address the unknown conditions that may be encountered during construction. These conditions may be due to undetected code deficiencies, environmental hazards, utility infrastructure issues, or other factors.
 - The project budgets, as well as the contingency amounts included in the project budget are not determined solely by the user agency; those amounts, as well as the overall budget, are reviewed by RPA, and the State Architect's Office, or other parties, as appropriate prior to the project being considered by the SBC.
 - The contingency amount in the project is then managed by the RPA project manager. Change orders have a defined process for approval and cannot be independently executed by the user agency or the project manager.
 - While there is a substantial amount of information reported on change orders for individual projects, this data is focused on individual project activity. It is not in a data form to be easily compared to total expenditures or to look at trends on a broader range of projects. There is no existing report that provides total budgeted contingencies for all projects; contingency amounts used, or available contingency.
 - A number of capital projects are funded by more than one revenue source, such as cash and GO bonds. Unless there are other restrictions, bond proceeds are usually spent first. This prioritization may impact the source of any funds remaining in a project when it is closed. For example, for a project with a mix of current funds and bonds, all remaining funds upon close-out may be current funds if all bond authorization allocated to the project was expended first.
- *Pools of available cash and bond authorizations.* The "Pools" are where residual (available) cash and bond authorizations are allocated and tracked. The Pool allocations are determined and tracked through STARS. There are separate pools for "current funds" allocated to capital



projects and "bond authorization" allocated to capital projects. Those Pools for bond authorization must be maintained by authorization.

Pool money is generated by: (i) excess or residual authorization from projects completed under budget or (ii) excess or residual unused contingency.

- Pool funds are generally used to provide funding for new projects for which estimates exceed the original budget or for new projects for which funding is recommended.
- While the balances of each pool are contained in STARS and the Pool is identified as a source of funding, there does not appear to be any regular reporting or discussion of the balances available in these funding sources.
- Pool bond authorization is not cancelled and pool cash is not reverted to the General Fund.

CONTINGENCY, COST AND CAPITAL PROJECT BUDGET MANAGEMENT

A key question related to the management of contingencies, and capital budgets in general, is the goal of these processes. There can be several goals; but they are likely to fall into one (or more) of the following categories:

- Improved management of cash flow and the cash management of debt proceeds.
 - The State currently collects no information about expected cash flow needs for projects funded by debt or current funds. Generally, the State has managed the lack of cash flow needs for debt funded projects by using its CP program as bond anticipation notes. CP can be drawn down as needed, and, in the current market environment of negative arbitrage, this process helps reduce having substantial unspent balances that are earning at an interest rate less than the bond yields.
 - However, information about expected cash flows, at least for larger projects, may provide the State informed decisions about the timing of debt issuance, cash flow needs and will assist the Treasurer's Office in making related investment decisions. Cash flow information is particularly important for those circumstances where the CP program is not used to fund a project. Cash flow projections are also useful to the State in managing its cash funded projects to maximize the investment of State funds. Finally, capital cash flow information would also assist the State in navigating through future financial market disruptions where the State may need to adjust its debt issuance plans (both long term bonds and CP) in response to market conditions.



- Improve or refine budgeting of funds for debt service.
 - Authorized but unissued bonds include any unused contingency funds, bond authorizations that are eventually cancelled, and authorizations that are eventually reprogrammed for other projects. Improved cash flow information and some additional analysis of authorizations may help the State in refining how it budgets for unissued debt.
 - An initial review of data from the Debt Under Management file shows that there is usually a lag of a couple of years, sometimes more, between the debt authorization and the issuance of long term debt. This is due to a combination of factors including the use of the CP program and the general lags in obtaining bids, completing contracts, receiving various approvals, permits, and other front-end requirements for some capital projects. Over the last 10 years, it appears that the State has issued less than 30% of the bonds authorized in the fiscal year of authorization.
 - With additional information the State may still budget conservatively for these funds. However, it would likely benefit from some additional quantification. It could use the information on projected savings in the debt service budget to plan for other uses, such as additional unfunded capital needs, planned reversions to the general fund or for other designated purposes.
- Reduce the capital budget or ensure that funds available are used to finance as many projects as feasible, and as soon as possible.
 - If the goal is to reduce the capital budget, or to apply unused funds to other projects as efficiently and soon as possible, then either goal can be advanced by identifying available funds as soon as possible. Unused, available authorization can either be cancelled or reprogrammed. Cancelling unneeded authorizations as soon as they are reasonably available will relieve the State of the burden of appropriating funds for the related debt service.
 - Reprogramming unneeded authorizations as soon as possible can either help the State address what is typically, for most states, a long list of needed capital maintenance projects, energy efficiency or other projects that will reduce long term operating costs, and other strategic investments.
 - There is no consistent ongoing review of projects to pull out unused/ untapped funds. While the State has occasionally scoured projects for funds to be freed up and/ or cancelled, there is no regular process for this, except when projects are closed out or when an emergency capital project is identified.
 - Some funds also may be identified after contracts have been issued but early in the life of the project. In the memo to the SBC, the Acting State Architect noted that when project bids came in under budget, any additional funds have not been typically pulled out of the project budget at that point; they have been reclassified to either



contingency, administrative or miscellaneous expenditures. The amount of unused allocation for other needs or for cancellation is more difficult to identify if the allocation remains in the project. There has been some discussion of moving available authorization to a more central and transparent location. The section below discusses this issue in more detail.

- To identify funds and/or bond authorization in projects that will be available upon closing, it is important to have a timely and consistent process for identifying projects ready to close, and then getting it done. In any number of organizations, closing projects is often not as high a priority as managing the active ones. When projects are closed, unused authorizations are transferred to central accounts where they are more readily identifiable, either for use in another project, or for cancellation. It is also important that there be a general understanding of the State's policy for the timeline for that process. Project managers in any agency may have a different view of what is reasonable.

OPTIONS FOR CONTINGENCY FUND MANAGEMENT

One issue that has been discussed is whether there is an opportunity for more a more efficient/reduced level of contingency funds if those funds are deposited in a general contingency fund pool, rather than assigned to each project. There are several key issues to be considered in the application of this concept:

- Currently the State appropriates funds for capital projects for both broad categories and individual projects. For example, the approved capital appropriations for FY 2010-11 include items for Statewide Capital Maintenance as well as the Falls Branch Radio Tower Replacement. Under current rules and procedures, funds cannot be allocated for other uses outside the category unless the funds can be certified as not needed for the specific category. Under a pooled contingency concept, the State would need to revise the process for appropriating contingency funds, or change the rules to allow for a pooled approach.
- A number of projects have multiple funding sources, which may include bonds, grants, or other sources. Since a number of these sources are restricted as to use, the State could not comingle all funds. Currently the OBF manages the allocation of funding sources and expenditures for the capital projects, including use of contingencies, on a project basis. When a project is complete, any remaining funds are transferred within the limitation/restrictions of the project's funding sources. Under a pooled concept, the State would still need to manage the separate funding sources, and any related restrictions.
- To achieve efficiencies from a pooled contingency fund concept, the State should expect to reduce the overall level of funds tied up for contingency purposes. Currently, the State has no real data to support any specific funding level for a pooled contingency fund.



- The level of projects, as well as exposure to unexpected conditions, which is the real purpose for a contingency fund, will change over time. If the State is going to effectively use a pooled contingency fund, it will need to develop a process for periodically reviewing the appropriate level for the fund.
- The State currently has a prescribed process for approvals for the use of contingency funds, even when they are already included in the project budget. Some items can be approved by the project manager; others must be approved by the SBC. If the State uses a pooled contingency fund approach, it would want to ensure that the new approach did not slow the process and that the power to approve changes is vested in the appropriate officials.

The use of a pooled approach has the potential to reduce funds tied up in contingency allocations, but there are a number of practical issues that must be addressed before changing the approach. Additionally, the State should be able to estimate the potential funds that might be made available, or saved, with the revised approach.

OTHER OBSERVATIONS AND ISSUES

- *Lack of management reports.* Throughout the review of the data sources, there is a lack of management reporting. Generally, the systems and reports are designed for a specific purpose. They may meet that purpose, but they do not generate (and in some cases may not be able to do so), management reports that look at broader issues. The reports tend to be specific to managing individual projects or accounting for the funds properly.
- *The systems are not integrated.* There are few, if any interfaces among the various systems that currently provide some level of information. This practice is inefficient from a staffing and management perspective as staff is required to enter data that is already in another system. This fact is well-known among the systems users, and a number of different efforts are currently underway that are intended to upgrade the systems and integrate relevant data between various systems.
 - *Management reports for new systems currently in implementation.* New systems in and of themselves don't create management reports. While there may be more readily accessible data, the data availability does not automatically lead to reports or data in a form that answers management questions. This situation may especially be the case when the legacy systems have not truly generated management reports to address concerns in the past. For example, the current accounting system does not separately identify the component of the project budget that is designated for contingency. There are likely ways of identifying this information or some proxy. However, if this is an issue the State may want to be able to track and to have management level reports, then it is important that the needs be communicated and factored into the reporting and structure of any new data system. The new systems



in some stage of implementation will have vastly improved capabilities for reporting. They will also have tools to create new reports if needed. However, they can only develop reports using the data that exists in that specific system.

- *Future systems requirements.* Another consideration in the purchase of any new systems for any one of the offices/ agencies involved in some phase of capital/ debt management is the necessity of interfacing between the systems. It appears that historically some systems have been developed to meet a specific need. Such systems were not considered in the context of what they could do for other offices. The development has not necessarily considered the needs of other related offices that could also be addressed to solve broader overall management issues.

We encourage consideration of management/ information needs on a broader scope when such projects are being considered. Agencies that will have “ownership” of a system and agencies that have information needs should coordinate meeting all of the needs that might be solved by such a system.

- *Historical data in legacy systems.* Regardless of the advantages of the new systems, the State should also consider the information on the old (both active and completed) projects that will be transferred into the new systems. It may take some time before the new systems contain sufficient data to provide a great deal of insight for projects that may take multiple years to construct. There still may be a need to mine the old legacy systems for reporting information particularly as it relates to tax or other legal requirements for bond funded projects. These requirements may last as long as the bonds are outstanding.
- *The new systems don't necessarily address the different accounting and project management structures in the State.* For any management reports to be effective in the future, the State needs to address the issues of the three different entities responsible for accounting and managing projects. For this purpose, these entities include the State overall accounting and project management systems, as well as those of the TBR and UT. Unless all pertinent information to address management reporting for all capital projects is to be recorded in the State systems at approximately the same level of detail, the SBC and SFB must address this issue. This is not to say that the State must try to fold UT and TBR into the State systems, but it must be able to have sufficient data to provide reporting on all projects, including the higher education projects. That data can be compiled either via combined reports from the State systems, receipt of compatible information from the other entities that can be interfaced/ combined, or a bit of both. Absent addressing this issue, the SBC and SFB may still have data that isn't sufficient for about half the projects.
- There are a number of potential data issues that should be considered in the development of collecting, reporting and analysis of data, with either old or new systems. The following are some concerns we noted in our interviews:



- *What is a project?* Some capital needs may be in the form of a program for roof, chiller or boiler replacements, for example, where there are a number of locations for the same facility improvement, and the needs are funded over a number of years. It did not appear that the State was necessarily consistent in the definition of a project in such cases. If such a program is managed via a single project or SBC number, over a number of years, it is more difficult to: (i) identify funds no longer needed for the original phase; (ii) to identify uses of contingency funds; or (iii) to know when to close a project. A review of the Debt Under Management file shows some projects with funding sources for each of multiple years, and some with one or more years of a gap in funding for the same project. The State should determine a specific protocol for the definition of a project, or a phase of a project and apply it consistently
- *Application of old authorizations.* We noted, in our review of available data, that some bond issues incorporated bond authorizations from six or more different years. Further examination and questioning pointed, in part, to the reallocation of old unused authorizations. When a project is closed, or zeroed out, the remaining authorization is transferred out of the project to an “available and unallocated” designation in the appropriate pool. When a project requires authorization beyond its budgeted amount, typically the oldest unused authorization is applied to this new need. This is an efficient approach to application of old authorizations, but it can also show some odd patterns in issuance versus year of bond authorization. Older authorizations don’t necessarily mean older or delayed projects. This might be addressed with reports derived from STARS, the new accounting system or other system reports.
- *All uses of contingency funds may not be in the form of change orders.* While it is more likely that contingency funds will be used to fund change orders to contracts, the funds might also be used via another contract in the same project. There are likely other causations as well. If the State does commence a more detailed data analysis phase of the use of capital funds, this is an area that needs to be considered and addressed to ensure the data and policies accurately explain the story on project management.

NEXT STEPS

This memo addresses several items in the initial scope of work related to contingency funding and sources of information. We have included observations about data sources and practices that might be changed to provide management information.

- One outstanding issue is the limitations on data for a real analysis of the actual contingency usage; it is not certain whether the data will yield results that are useful. However, PFM and staff have identified potential approaches that may be successful with available data. One approach may be to select limited data and review results. If results appear to be useful, the



State can pursue a more thorough analysis. This will require some staff time and effort due to the diversity and number of data sources.

- If the State does plan to pursue alternatives, it also needs to determine if it can effectively manage a pooled contingency pool, given the assorted restrictions on uses of funds. Staff may want to review the list of issues presented earlier in this report to see if there are any roadblocks that cannot be managed.
- The State also plans to survey a group of other States (a peer group) to identify their practices as well. That portion of the assignment will proceed as soon as we have agreed on the survey questions.
- One other issue for the State is whether it wants to proceed with a best practice review of public and private sector capital project management. If the State is interested in looking at practices beyond a limited peer group survey with the idea of comparing those practices to State practices, they may see benefits from such review.

Attachment: Memo on Change Orders prepared by the Acting State Architect November 19, 2010

Memo**To: Executive Subcommittee of the State Building Commission****From: Alan Robertson, Acting State Architect****Reference: Change Orders and those with cumulative over 10% of base contract amount****Date: November 19, 2010**

I met with staff on Friday, November 19, 2010 to review the "Report of Change Orders Resulting in Cumulative Change Order Costs to Exceed 10% of Base Contract Amount" as presented to the SBC on November 10, 2010. As noted in the meeting minutes of this referenced SBC meeting, Treasurer Lillard made a "motion to request that all of these items be discussed at staff level and brought to the Subcommittee for approval, and that the Commission be furnished a list of the cumulative change orders that make up these various cumulative percents so they know where the monies are coming from." During my meeting with staff, regarding this topic, it was suggested that I compose a memorandum to inform the Executive Subcommittee of the oversight and approval processes involved with change orders, whose cumulative amount exceed 10% of the base contract amount, and a proposal to provide further information with these reported change orders to allow a better understanding of what the particular project's status is and its history of prior change orders.

The Policy and Procedure of the State Building Commission, Item 6, 6.04C, Signature Requirements, item 1. States, *The signatures required to execute a contract change order are as follows:*

- a. *Contractor*
- b. *Designer*
- c. *State Architect or Head of Capital Projects Management, Department of Finance and Administration, or, in the case of Higher Education, the Head of the Agency's Facilities Development Office.*

Current signature authority for change orders, within Real Property Administration, is stipulated in a memorandum to Mike Morrow and Dottie Hagood, dated June 3, 2010, stating that all change orders shall be signed by the Director of Construction Management or the Director of Agency Development for RPA. Any change order exceeding \$100,000 shall be reviewed by the State Architect. Any change order less than \$30,000 can be signed by the Construction Field Representative(excluding contract employees).

I would like to discuss Change Orders in general first. When a project budget is first established, many cost provisions are inserted to try and account for needs in a project budget. Obviously, the construction cost estimate is established first and foremost. Next, the User Agency, along with the Project Manager, work to review possible unforeseen conditions the project might encounter through history of the particular site the project is located, soils conditions, environmental hazards, undetected building code and/or fire code deficiencies, completeness of a User Agency's functional program needs for the facility, age of infrastructural utilities serving the facility, etc. This review constitutes an estimate for the construction contingency amount to be included in the budget. The budget will carry on including amounts for the Designer's Fee, which is a percentage of the total of the construction bid target and the construction contingency amounts (Maximum Allowable Construction Cost), any needed costs for telecommunications through our state's OIR group, FFE (Furnishings Furniture and Equipment), Commissioning fees, needed consultants on the project, and Administration and Miscellaneous, which includes costs for reimbursable expenses, and unforeseen administrative costs associated with the project.

The contingency amount in the project should be managed by the Project Manager, representing the Procurement Agency, during the implementation of the project. This individual has the most insight in the project during the development of this estimated cost and should utilize it on a responsible basis. There are times when this contingency amount might be tapped to allow a project, which bids over the Bid Target, to be awarded, with the understanding that there is a comfort level of a healthy contingency amount still remaining for the duration of the project to account for unforeseen conditions. The User Agency cannot manipulate the contingency, nor can they execute change orders from this contingency. The Project Managers are the first line of defense when it comes to managing the projects and being responsible in the use of contingency amounts for projects. As stated above, there are certain approval and signature processes in place to review the appropriate utilization of these funds.

As stated before, the budget for a project contains the estimated contingency for the project. These project budgets are compiled and reviewed and then ultimately go before our Governor and Legislature for review and approval. As each project budget and scope are carried forward for implementation, they too are reviewed for approval by the SBC. The use of contingency funds on a project should rest solely with the Project Manager and the Procurement Agency, with provided oversights, unless there is an overrun in the previously approved project budget, which would require the addition of funds and further approvals by the SBC.

One issue that I discussed with staff during our meeting is when a project bids much below the bid target and there exists a large surplus of budget funds. Historically, this overage amount has been shifted in the project budget to either reside in the

“contingency” line or to the “administration and miscellaneous” line of the budget. The fact is that this amount has to be accounted for somewhere in the budget accounting, and therefore will typically reside in either of these two locations. The intent is to protect the use of these funds as “savings” in the project. These said savings could be generated from bids that are a result of our current economic times, or from reaction to a designer’s construction cost estimate, before bid, that exceeds the bid target where the Project Manager, along with the User Agency, decide to “value engineer” certain things out of the project, such as proposing an asphalt shingle roof instead of a much more expensive metal roof for a building, without sacrificing the project’s scope, etc., only to find that the project bid way under. These are times when the Project Manager, along with the User Agency might request to have the upgrade added back into the project, utilizing the “contingency” or “surplus funds” in the project. When I am involved with reviewing a request like this, I try and make sure that the original intent was for the upgrade to occur, and that by enacting this change the maintenance needs of the state are diminished and we have a better long term investment. I have discussed with staff the possibility of directing these project savings to some other location within the project budget to provide better oversight of the possible use of these funds, with the understanding that the contingency amount proposed in the project is still healthy and intact. I am certainly interested in furthering discussion on this topic with you, staff, and possibly Office of Business and Finance, who manages the accounting.

The Policy and Procedure of the State Building Commission, Item 6, 6.04C, Signature Requirements, item 3. States, *Change Orders which result in a net aggregate increase or decrease in excess of ten (10%) percent of the original contract sum must be approved, in writing, by the State Architect and shall be reported to the State Building Commission.*

The SBC agenda item each month for this is stated as “Report of Change Orders Resulting in Cumulative Change Order Costs to Exceed 10% of Base Contract Amount”. The intent of the Policy and Procedures is for the SBC to “acknowledge” the report, along with any concerns they might express in their review. This report is not *intended* to be acted upon by an “approval” by the SBC, at least this is how the Policy and Procedures is currently interpreted.

Each month my office receives requests for signature and approval for change orders which exceed a cumulative 10% over the base amount. I will, typically, speak directly with the Project Managers, concerning these requests, to ask them the reason for the request, what the change order is composed of, if the change order is within the original project scope, when the project is scheduled for completion, and if there is still a contingency amount remaining in the project to account for any future needs for change orders.

It has been suggested that this report also contain information regarding prior history of change orders that caused the base amount to exceed 10%, the scope of those prior change orders, percent likely for any future change orders, contingency amount remaining in the project, as well as the original written scope of the project. I would like to further our discussion regarding this suggestion.

Last, I would like to discuss the topic of the written project scope that is included in the SBC 1 for the project. This is typically used as a reference point to refer to when evaluating change orders, to validate if the change order work parallels the intended scope of the project. Smaller scope projects, such as a roof replacement, parking lot replacement or expansion, sewer line extension, etc., should provide enough written scope, or project description, to provide the general intent of the work, with square footages and other measures as deemed appropriate. This scope is not intended to try and state what type of roof flashing will be used, the specific type of asphalt shingles to be used, whether the parking lot will have curbs and/or wheel stops at each parking space, or whether the sewer line will have to be located 2' below grade or 15' below grade. These examples are issues that get defined as the project goes through design, estimating, and construction field testing to further define the level of quality and functionality can be met as it relates to the projects budget and scope description.

Larger projects, such as major building renovations or new buildings, will have a project scope, or project description that states the intended use of the structure, appropriate square footages intended, usually any site improvements, and typically states "other associated work". It is not the intent of this written scope or description to state whether this renovation or new building will be designed and built with poured concrete floors or steel framed floor structure and decking, be served by a septic tank or tied into a sewer main, have plaster ceilings or lay in ceilings, or what the superstructure of the walls might be. These are all items that get addressed as the design progresses and building and fire codes are reviewed that will reveal certain impacts on the project. It becomes evident that this level of detail cannot be addressed within a project scope, or project description, when this scope/description is developed at the infancy stage of budgeting for a project, and without having a designer under contract on the project. However, even though as much information is gathered from the User Agency regarding their needs for a project, or any possible project programming they may have initiated through an architectural consultant, it is sometimes in the best interest of the project and budget to contract for more intensive architectural programming to uncover more exact needs of the client.

It is understood, in the industry, that when procuring the design and construction services for a renovation or new construction project, that all the "associated work", such as the building's site impact, required foundation, mechanical system, security needs, site utility infrastructure needs, etc., are a part of the scope of the project.

Our Procurement Agencies typically, and realistically, have to be fairly generic with their project scopes and descriptions to allow some flexibility in getting the project executed without coming back to the SBC to get approval for a “change in project scope” due to them leaving some form of “associated work” item out of their scope and description.

I look forward to continuing our conversation regarding this topic within a future meeting.