

MEMORANDUM

March 13, 1998

TO: Management and Fiscal Policy Committee

FROM: Sue Richards, Program Evaluator
Office of Legislative Oversight

SUBJECT: OLO Budget Project: Sample Review of the PDF Development Process

The attached Memorandum Report presents the results of OLO's budget project to review a sample of Project Development Forms (PDFs). Because the sample PDFs were for Recreation Department projects, the PHED Committee received an excerpt of the project scope and findings on March 12. The MFP Committee will discuss the process issues identified in the attached Memorandum Report on Monday, March 16.

This is the first of four or five budget project reports OLO will complete over the next six to eight weeks. Unlike OLO's longer-term projects, these budget projects are accomplished within the time constraints of the Council's FY 99 budget review process. This review of the PDF development process, as an example, occurred within a three week time frame.

This project could not have been completed without significant contributions from staff in the Department of Recreation, the Office of Management and Budget (OMB) and the Division of Facilities and Services (DFS) in the Department of Public Works and Transportation. Staff from DFS and OMB will be available to participate in the MFP Committee worksession.

Attachment



MEMORANDUM REPORT

March 13, 1998

TO: Management and Fiscal Policy Committee

FROM: Sue Richards, Program Evaluator
Office of Legislative Oversight

SUBJECT: OLO Budget Project: Sample Review of the PDF Development Process

PROJECT PURPOSE AND SCOPE

On March 3, 1998 the County Council amended OLO's FY 98 Work Program to add projects related to Council's review of the FY 99 Budget and Capital Improvements Program. This memorandum reports the results of Budget Project #2: Sample Review of the PDF Development process.

This project examines how the County government develops budgets for capital projects published in the Capital Improvements Program. The purposes of the project are:

- to better understand how the Project Description Form (PDF) cost estimates are developed,
- to explain how the Division of Facilities and Services (DFS) determined the cost estimates for two specific projects, and
- to identify discussion issues that may merit further study.

The scope of this review is limited to a sample of two County government projects managed by the Division of Facilities and Services (DFS) in the Department of Public Works and Transportation. At the recommendation of DFS, OLO selected the Rosemary Hills Community Center and the Wheaton/Glenmont Pool Replacement as sample projects. DFS recommended these projects because both are fairly far along in the capital project process and because each project has had at least one independent cost estimate.

Both of these projects are currently in the design phase of the capital project process. As a result, the scope of this review is limited to planning and

Office of Legislative Oversight

100 Maryland Avenue, Rockville, Maryland 20850, 301/217-7990

Printed on Recycled Paper



design issues only. Questions about how the construction budget compares to the actual construction award or what happens to money in the project budget after construction are outside the scope of this review because the construction phase for these projects has not started. (Note: The term "construction budget" refers to the combined costs of three components in the PDF: Site Improvements and Utilities, Construction and Other.)

SUMMARY OF OLO'S FINDINGS AND RECOMMENDATION

OLO's review suggests DFS's planning for capital projects produces reasonable project budgets that require only minor adjustments. DFS's management of the design phase works effectively to keep project design costs as well as future construction costs under control.

1. DFS typically incorporates professional cost estimates in developing an initial construction budget for a project. DFS adjusts the professional cost estimates based on its knowledge of the project.
2. DFS uses the construction budget as a starting point to determine the Planning, Design and Supervision (PDS) budget for a project. As a guideline DFS estimates the total PDS budget at 17% to 20% of a project's construction budget with 18% being standard. DFS allocates 8% to 12% of the construction budget for architectural and engineering (A&E) services, 4% of the construction budget for DFS staff charges, and the remainder to other categories.
3. The FY 99 budgets for the Wheaton/Glenmont Pool and the Rosemary Hills Community Center are within or below the DFS guidelines. The PDS budget for the Wheaton/Glenmont Pool is \$660,000 or 18% of the project's construction budget. The PDS budget for Rosemary Hills is \$603,000 or 15% of the \$4.06 million construction budget which is below the DFS guideline.
4. DFS negotiates a Construction-Contract Award Price as part of the contract for A&E services. The C-CAP limits the largest component of the project, i.e., the construction budget, and establishes a project contingency fund. DFS uses this fund to address issues that arise during the project.
5. Issues that merit further discussion include:
 - whether the amount of the PDS budget is appropriate, and
 - whether the elapsed time from project start to completion is reasonable.

PROJECT BACKGROUND AND DETAIL

OLO conducted this project over a short time period. OLO received assistance from staff in DFS, OMB, Recreation and Procurement. OLO would like to acknowledge the contributions of Fred Edwards, Steve Nash, Rodney Driver and Hamid Omidvar in DFS, Martha Lamborn and Ketta Absehouse in OMB, Rick Robinson and Bill Bullough in Recreation and Frank Daly in Procurement.

This memorandum report has three parts:

Part A explains how DFS develops construction cost estimates and the PDF project budgets.

Part B presents information for the Rosemary Hills Community Center and the Wheaton Glenmont Pool projects.

Part C identifies issues that may merit further review.

A. HOW DFS DEVELOPS CONSTRUCTION COST ESTIMATES AND THE PDF PROJECT BUDGETS

Capital improvements or construction projects are long term projects the County undertakes and manages primarily through the six year Capital Improvements Program. Capital projects have three phases - planning, design and construction. Throughout a project DFS uses multiple milestones to manage each project. The DFS milestones that form the basis of this OLO review are in the planning and design phases of the project as follows:

Planning Phase Milestones of Interest

- Program of Requirements
- Professional Cost Estimate
- Initial Project Budget (PDF) in the CIP

Design Phase Milestones of Interest

- The Construction-Contract Award Price
- Design Phase Cost Estimates

1. Planning Phase Milestones

DFS develops a project budget or PDF cost estimate during the planning phase of a project. DFS follows three steps to develop the project budget eventually published in the CIP. These steps are:

- a) Create a program of requirements (POR)
- b) Obtain a professional cost estimate for the POR
- c) Review and adjust the cost estimate to establish the PDF costs.

a) Create a Program of Requirements (POR)

The program of requirements is a document that specifies the program requirements and building program for an individual project. The architectural and engineering (A&E) contract defines the POR as "a detailed written summary of the requirements of the facilities which sets forth the County's design objectives, constraints and criteria including space requirements and relationships, quality levels, flexibility and expandability, special equipment and systems and site requirements." The purpose of a POR is to identify program needs and the associated facility solutions or requirements.

DFS develops a POR using in-house resources unless the size or cost of the project is unusual or the department has limited experience with a particular type of facility. The DFS project manager has lead responsibility for developing the POR. The DFS project manager works with department staff to define and discuss the program requirements of the facility. The project manager also works with DFS maintenance, roofing, and energy staff to address future building maintenance and operating issues. DFS also shares working copies of the draft with OMB staff who review the draft for "walking around" sense.

DFS, the program department, the Office of Management and Budget (OMB) and the Chief Administrative Officer (CAO) all sign off on the POR. Once completed, the POR is part of the Request For Proposal (RFP) for architectural and engineering (A&E) services and is attached to the signed A&E contract. The A&E contract states no deviation from the POR is allowed without a written design adjustment.

b) Obtain a Professional Cost Estimate based on the POR

When the POR is complete, DFS contracts with a professional architect or engineer to prepare a cost estimate for the POR. Although the scope of the POR addresses all building requirements - i.e., construction, site work, HVAC systems and furniture and equipment - the project manager has the discretion to request a cost estimate for some or all of these elements. This decision is based on the expertise of the project manager, the resources in DFS and DFS's track record with the cost estimator. (Note - DFS does not have any professional cost estimators on staff.)

The professional cost estimator prepares a cost estimate based on actual supplier and material prices. The cost estimate identifies the construction cost for a project and provides documentation and backup calculations to show how this cost was developed. DFS reviews and verifies the cost estimate by comparing the total cost to previously completed projects or calculating the cost per square foot to determine if it is reasonable. The project manager meets with the cost estimator to discuss the basis for his/her estimate.

c) Review and Adjust the Cost Estimate to Establish the PDF Costs

The professional cost estimate is the initial building block of the project budget published in the CIP. The estimate usually provides costs for construction, site work, utilities and specialized furniture or equipment. DFS adjusts the professional cost estimate in two ways. First, if the cost estimator has made assumptions DFS disagrees with or if DFS believes certain items have been overlooked or unnecessarily included, DFS may increase or decrease the construction budget accordingly.

Secondly, DFS adds additional costs for the project's operating budget (in the Planning Design and Supervision) to complete the project budget. Typical project operating costs added by DFS are fees for DFS staff time; architectural and engineering (A&E) services; and permits, surveys, printing, and advertising. Construction management is part of the PDS cost component. Construction management may or may not be included in A&E services and DFS staff charges.

An internal DFS memorandum (July 1997) sets forth "Rules of Thumb/Guidelines" for CIP budgeting. The following guidelines from the DFS memorandum relate to estimating project budgets:

- Add 10% to 15% of the construction budget for project contingency to site and facility construction cost estimates.
- The total Planning, Design and Supervision (PDS) cost should range from 17% to 20% of the construction budget with 18% being standard.
- The breakdown of the PDS cost should be:
 - 4% of the construction budget for staff charges
 - 8% to 12% of the construction budget for A&E fees, and
 - the balance of the PDS in other costs.
- The memorandum also establishes a total cost per DFS workyear of \$72,000.

The DFS project manager records these adjusted numbers on a PDF and Cost Summary Worksheet. Over the years, OMB has modified the cost categories. The FY 97 cost categories are for design, construction management, land, site improvements, utilities, construction and other. The subtotals for these categories are combined to produce the cost elements shown on the PDF. (See the technical appendix at the end of this report for an explanation of the PDF cost categories.)

Although the CIP shows the project budget divided into sub-elements, control for budgeting purposes is at the project level. When the County Council appropriates money for design or construction, the funds are made available to the project as a whole. DFS charges personnel and operating expenses to a particular sub-category shown in the CIP. DFS cannot overspend the total appropriation provided to the project but can overspend in a particular category.

OMB and Finance monitor expenditures at the project level and may shift money between categories from year to year to more properly show actual spending patterns.

2. Design Phase Milestones

DFS uses a Construction-Contract Award Price (C-CAP) and up to three independent cost estimates to manage projected construction costs of a project during the design phase.

a) The Construction Contract Award Price (C-CAP)

DFS includes a Construction-Contract Award Price (C-CAP) in the project contract for architectural and engineering (A&E) services. The C-CAP is a dollar amount set by DFS that limits the construction cost of the project. By signing the contract, the project architect agrees "to prepare drawings, specifications and other documents necessary so that the construction contract bid from a responsive, responsible contractor will be within the C-CAP."

DFS and the project architect jointly establish the C-CAP during negotiations on the contract. In most cases, the C-CAP is equal to the construction budget less the project contingency. The C-CAP may be modified in writing only in the form of a contract amendment.

b) Design Phase Cost Estimates

During the design phase of a project, independent costs estimates (reimbursed out of the architect's budget) are submitted directly to DFS so that DFS can monitor whether the project design is in compliance with the C-CAP. A project has three design phases and may have a cost estimate at the end of each phase. The design phases are:

- Schematic Design
- Development Design
- Construction Drawings

DFS may also obtain its own cost estimate after the construction drawings are complete. If a cost estimate exceeds the C-CAP, the architect must redesign the project to meet the C-CAP.

The design contract may require the A&E to identify a list of "project deduct alternates" or substitute items during the Development Design Phase. DFS requires these items in the event the construction bids come in over the C-CAP. These items are designed as part of the project but, according to DFS, the project would comply with the POR without them. DFS states they are not

critical to the functioning of the building. Program departments perceive that sometimes these items are critical to their program.

If a bid comes in over the C-CAP, DFS and the program department jointly decide whether to use the deduct alternates or to take the project back to request more funding. If DFS and the program department cannot agree, OMB would resolve the issue. Typically, the County government's practice has been not to bring projects back for more funding unless there are very compelling circumstances.

B. PROJECT INFORMATION FOR THE WHEATON/GLENMONT POOL RENOVATION AND THE ROSEMARY HILLS COMMUNITY CENTER

OLO compiled information for the Wheaton/Glenmont Pool and the Rosemary Hills Community Center to understand how the cost estimating components of the DFS capital project management system work in practice. OLO obtained the information from interviews with DFS and OMB staff, CIP documents, and the project contract files. Unless otherwise indicated, the cost information in this section is in thousands of dollars.

1. The Wheaton/Glenmont Pool Replacement

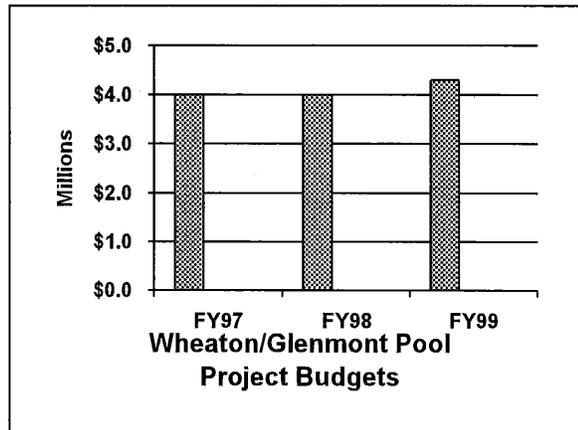
This project (#729739) reconstructs the Wheaton/Glenmont Outdoor Pool complex located on Dalewood Drive next to Wheaton High School. The project grew out of a 1993 consultant study which recommended the County totally replace the pool instead of undertaking major repairs to the existing complex. The Council first approved this project in July 1996 in the Approved FY97-02 CIP. The Recreation Facility Development Plan, FY 1997-2010 includes this project in the list of plans for renovation and modernization.

Has the total project budget changed significantly since the Council approved the first project budget in 1996?

In July 1996 the Council approved a budget of \$4.05 million for this project. As of January 1998, the recommended project budget is \$4.3 million. The graph shows the project budget has increased 6% or \$245,000 since 1996 due to adjustments for inflation. Approximately half of this increase is in the PDS budget and half is in the construction budget.

Estimate Date Capital Budget Year	Fall 95 FY97	Fall 96 FY98	Fall 97 FY99
Planning, Design and Supervision (PDS)	\$525	\$525	\$660
Construction (Includes sitework, utilities, construction and other)	\$3,524	\$3,524	\$3,634
Total	\$4,049	\$4,049	\$4,294

*Estimates in thousands of dollars



How does the PDF construction budget compare to the project cost estimate DFS obtained during the project planning phase?

In 1993, a consultant estimated the costs of construction, sitework and a contingency at \$3.1 million. In 1996, DFS budgeted \$3.5 million in the PDF for construction, site improvements and utilities and other costs. DFS used the consultant's construction cost estimate of \$2.4 million to budget the construction costs. DFS increased the consultant's estimate for site work \$300,000 to address the complexities created by a constrained site adjacent to two other public uses. DFS also added \$100,000 for utility work and demolition of the pool not included in the original consultant study estimate. (See the technical appendix for a more detailed comparison.)

How did DFS develop the PDS budget and what components does it include?

The approved FY 96 PDS budget was \$525,000 or 14.8% of the \$3.5 million construction budget. The chart shows the breakdown for the specific items included in the original PDS budget.

PDS Sub-Elements	1996	% Constr. Budget
A/E Fee	\$290	8%
DFS Staff	147	4%
Printing/Advertising/Cost Estimates	13	.4%
Geotech Survey	75	.2%
PDS Subtotal	525	15%
Construction Cost Subtotal	\$3,524	

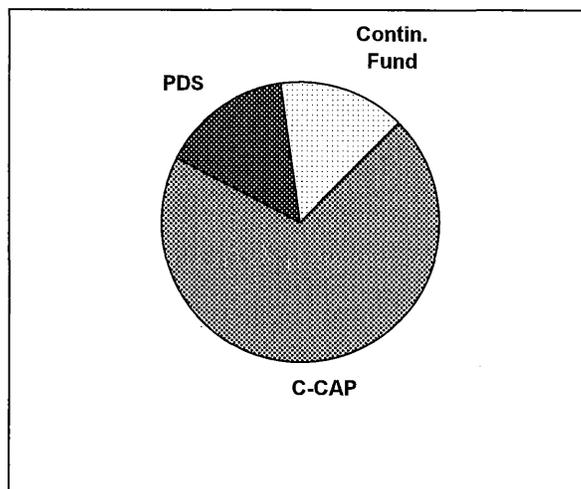
*Estimates in thousands of dollars

The FY 99 PDS budget is \$660,000 or 18% of the current \$3.6 million construction budget. This budget shows increased costs for permits and A&E fees.

What is the C-CAP for the Wheaton/Glenmont Pool? How does it compare to the costs budgeted in the PDF?

The C-CAP for the Wheaton/Glenmont Pool is \$3.0 million. DFS states this limit was based on the construction cost estimate (including the site) of \$2.8 million with an adjustment to account for contingencies. According to DFS this limit was set to encourage the architect to design the pool as economically as possible. Although DFS did not use a formula to set the C-CAP, it is close to 85% of \$3.5 million construction budget. The graph shows the relationship between the C-CAP, the project contingency fund and the PDF project budget.

WHEATON/GLENMONT POOL



2. The Rosemary Hills Community Recreation Center

This project (#729610) demolishes the existing Rosemary Hills community center and constructs a new 23,500 SF center on the same site. The project first

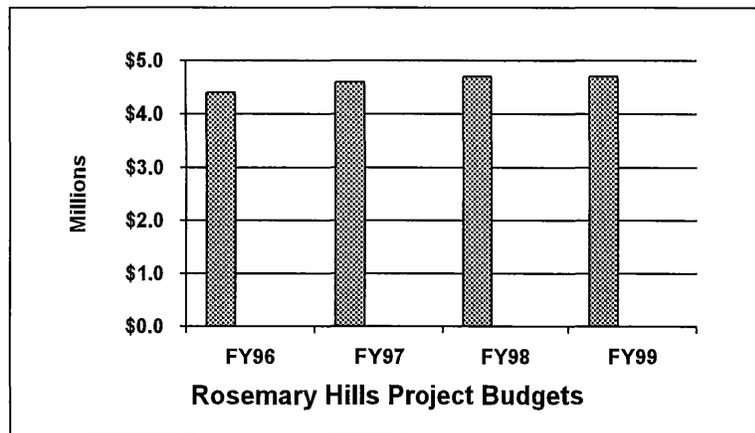
appeared as a stand alone capital project in January 1995. The project is recommended in the Recreation Facility Development Plan, FY 1997 - 2010 published by the Recreation Department last summer.

Has the total project budget changed significantly since the project first appeared in the CIP in 1995?

DFS has adjusted the project budget for inflation twice since the initial budget was developed for an overall increase of \$233,000. The graph shows the initial and revised project budgets through FY 99.

Estimate Date Capital Budget Year	Fall 94 FY96	Fall 94 FY97	FY98	Fall 97 FY99
PDS	\$595	\$603	\$603	\$603
Construction Costs (sitework, utilities, construction and other)	3850	3966	4065	4065
Total	\$4,435	\$4,569	\$4,668	\$4,668

*Estimates in thousands of dollars



How does the PDF construction budget compare to the project cost estimate DFS obtained during the project planning phase?

In September 1994, DFS prepared its in-house estimate of the Project Budget for the Rosemary Hills Community Center. DFS used a cost estimate prepared by Architectura Ltd. to set the \$3.8 million budget for site improvements and utilities, construction and furniture and equipment. There

was no difference between the professional cost estimate and the PDF project budget. (See the technical appendix for a detailed explanation.)

How did DFS develop the PDS budget?

DFS used the \$3.85 million construction budget to develop the PDS budget for the project. The five cost components of the PDS budget for Rosemary Hills include A&E fees, DFS staff, printing, advertising and cost estimates, geotechnical and survey work. The exhibit shows the PDS budget DFS prepared in September 1994.

PDS Sub-Elements	1994	% of Constr. Budget
A/E Fee	\$395	10.4%
DFS Staff	150	4%
Printing/Advertising/Cost Estimates	20	.5%
Geotech Survey	20	.5%
PDS Subtotal	\$585	15.3%
Construction Cost Subtotal	\$3,850	

*Estimates in thousands of dollars

DFS has re-distributed the cost items within the PDS budget since the project began. In 1996, DFS shifted \$54,000 from A&E services to Printing/Advertising/Cost Estimates. This was done in response to the restructuring of the Department of Permitting Services (DPS) as an enterprise fund and the decision that public projects should pay permit fees. DFS estimated the cost of permits for the Community Center at \$60,000 and shifted funds within PDS to cover this anticipated cost. The table shows estimates for elements in the PDS budget from FY 96 through FY 99.

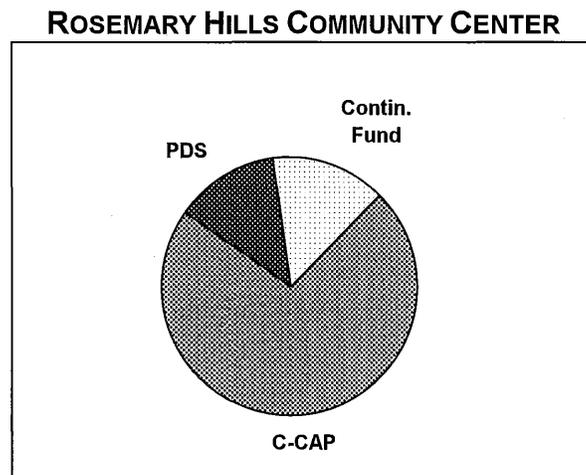
PDS Sub-Elements	FY 96	FY 97	FY 98	FY 99
A/E Fee	\$395	\$404	\$350	\$350
DFS Staff	150	157	157	157
Printing/Advertising/Cost Estimates	20	21	75	75
Geotech Survey	20	21	21	21
PDS Subtotal	\$585	\$603	\$603	\$603

*Estimates in thousands of dollars

What is the C-CAP for the Rosemary Hills Community Center? How does it compare to the project budget published in the CIP?

The contract for A&E services for the Rosemary Hills Community Center signed last summer set the C-CAP at \$3.375 million. DFS set this limit at the construction budget less a 15% contingency fund. Thus, the C-CAP is equal to 85% of the construction budget. The A&E contract requires the architect to design a community center building with a cost estimate below \$3.375 million.

By establishing the C-CAP, DFS has \$690,000 (or 15% of the total project budget) set aside in a project contingency fund. DFS will use the money in this fund to resolve issues that arise during project construction. The graph shows the relationship between the project budget, the PDS budget and the C-CAP.



What design cost estimates have been completed for Rosemary Hills? How does the information in these estimates compare to the C-CAP?

Two design cost estimates have been completed for the Rosemary Hills Community Center. The project architect obtained a schematic estimate in August 1997. The estimate showed the total construction cost at \$3.048 million or \$327,000 below the C-CAP. This breakdown of the cost estimate includes \$2.6 million in construction costs - \$2.1 million for building construction costs, \$529,000 for sitework. The estimate also includes \$398,000 - (15% of the \$2.6 million construction costs) - for a design contingency fund.

A second cost estimate was completed in February 1998 at the end of the design development stage. The estimate showed the total construction cost at \$3.1 million. The estimate reported \$2.7 million for construction costs including

\$2.2 million for building costs and \$540,000 for sitework. The estimate also provided \$357,000 (13% of the total construction costs) for design and general condition contingencies.

3. OLO Observations about the Sample Projects

OLO's review suggests DFS's planning for capital projects produces reasonable project budgets that require only minor adjustments. DFS's management of the design phase works effectively to keep project design costs as well as future construction costs under control.

Sequence of Planning, Estimating and Budgeting

DFS described the process to develop the project budget as a series of sequential steps. Ideally, the process begins with a strategic plan, followed by a POR, followed by a professional cost estimate, followed by a project budget.

In practice, neither the Wheaton/Glenmont Pool nor the Rosemary Hills Community Center followed these steps sequentially. Nonetheless, the project budgets appear to be holding firm.

The sequence for the Wheaton/Glenmont Pool was the consultant study with the cost estimate was completed first (1994), followed by the POR and PDF budget in 1996. The final POR was signed in April four months after the PDF was published in January.

The sequence for the Rosemary Hills Community Center was the consultant study with the cost estimate was completed first (1994), the PDF was published next (1995) and the POR was completed after that (1996). The strategic plans for both projects were published last summer, one or two years after the first project budgets.

DFS states its most important threshold is to have an understanding with the customer about the program of requirements. DFS also notes, if necessary and appropriate, when they develop a project budget they may incorporate estimates from consultant studies they have on hand instead of obtaining a separate professional cost estimate based on the POR.

The DFS Cost Estimating Approach

DFS developed project budgets for the Rosemary Hills Community Center and the Wheaton/Glenmont Pool in 1994 and 1996 respectively, before the 1997 internal DFS memorandum that set forth CIP budgeting guidelines. Even so, the

project budgets meet or exceed DFS guidelines and have not changed significantly over time.

OLO's review shows that for both projects DFS used information from the independent estimates to establish the construction budget. In 1994, the PDS budget for the Rosemary Hills Community Center was 15% of the construction budget. (Today, it has dropped to only 13% of the construction budget.) In 1996, the PDS for the Wheaton/Glenmont Pool was set at 15% of the construction budget. In 1998, it is recommended at 18% of the construction budget. Within the PDS budget, DFS allocated money for architectural fees (8% to 11% of the construction budget), DFS staff salaries (4% of the construction budget) and the remainder to other surveys, studies and permit fees.

The Construction -Contract Award Price (C-CAP) and the Project Contingency Fund

As a project management tool, the C-CAP plays a useful role by setting a limit on the largest expense category in the project budget. By setting the C-CAP below the construction costs defined in the initial budget, DFS carves out a portion of the construction budget for issues that may come up as construction proceeds. DFS provided the following examples of how money in a project contingency fund could be used:

- To address problems that are the owner's responsibility in the construction phase of a project. These may include problems with soil contamination, asbestos abatement or utilities.
- To pay for unanticipated accommodations that must be made to keep a facility in operation while construction is underway. DFS notes that most of its projects require keeping the building in operation while the project is underway.
- To pay for change orders required by regulatory changes that take effect while the project is in planning or design.

For example, DFS stated soil borings for the construction of the Quince Orchard library uncovered waste material buried on site and it is the County's responsibility to correct these problems. Money from the owner's contingency fund could be used to address this problem. DFS said the renovation of the Dennis Avenue Health Center was done while the center was in operation. Money from the project contingency fund was used to manage the infiltration of dust, pay for special paints and carpets, construct temporary walkways and for DFS overtime salaries. In rare cases, DFS said money in this fund may be used to address the irregularities of the market and bid timing and award a construction bid that comes in over the C-CAP.

OLO's review found the design estimates for the Rosemary Hills Community Center also budgeted money for contingency. The schematic design estimate included a contingency equal to 15% of the estimated construction costs. The design development estimate included a contingency of 13% of the estimated construction costs.

Since OLO's sample projects did not include a project with a construction drawing estimate and since OLO did not look at construction bid awards, it is unclear what this contingency estimate is for or what happens to this money as a project proceeds to construction. OLO did look at the summary sheets for three estimates for the Quince Orchard Library and found that the construction drawing estimate did not include a contingency estimate. More analysis is needed to understand the relationship between the contingency estimates used in the design process and the project contingency fund.

C. ISSUES FOR DISCUSSION OR FURTHER STUDY

OLO's review and discussions in Committee worksessions have identified the following issues related to the capital project planning and management process which merit further discussion.

1. What is the appropriate amount of a capital project to budget for planning, design and supervision (PDS) activities? What should be charged to a project and should this budget vary with the size of the project?

OLO's review shows DFS uses a standard of 18% of the construction budget. This budget pays for planning and design services as well as DFS salaries for construction management. The salaries of OMB and the program department are not charged to the capital project.

During the Council's review of the CIP this year, questions have been raised about the amount of project money budgeted for management, supervision and oversight costs. At a Transportation & Environment Committee worksession on WSSC projects, Council staff questioned whether the size of the PDS budget must always be a flat percent or whether certain economies of scale are realized as projects get larger. For transportation projects, Council staff notes the rule is the bigger the project, the smaller the percentage of PDS money. OLO's review did not address these issue because both sample projects were approximately the same size.

If the Council is interested in pursuing these types of questions either for the County government or across agencies, the Council needs a better understanding of how other agencies develop their PDS budgets and what items

are charged to the PDS budget. The Council would also want to examine a sample of completed projects to compare the money budgeted for PDS versus what was actually spent.

2. Is the elapsed time it takes to construct a project reasonable? Is the sequencing in the CIP from planning to design to construction logical and does it make sense?

The time it takes for a project to move from start to finish was identified as an issue in OLO interviews. Recreation staff noted it was difficult to develop and commit to a program of requirements (POR) years ahead of when the construction would start. Recreation staff stated the proposed schedule for community centers in their Long Range Facility Plan was optimistic and would only happen if nothing went wrong. They noted the schedules for the Wheaton/Glenmont Pool and Rosemary Hills Community Center benefited from the fact that no land acquisition was required. Finally, Recreation staff noted part of the reason the community center program moved to a concept of the prototype facility in the strategic plan was to improve the time it takes to build a center.

To examine this issue, OLO prepared project timelines for Rosemary Hills and the Wheaton Glenmont Pool. OLO also asked DFS for information on milestones for the Germantown, Fairland and East County community centers. These project time lines are found in the Technical Appendix at the end of this report.

The timelines show for the Rosemary Hills Community Center five years will have elapsed from the publication of the first PDF to opening of the center in the summer of 1999. The timeline for the Wheaton Glenmont Pool shows five years will have elapsed from the first project budget in 1996 to the projected opening in the summer of 2000.

For the comparative samples, OLO found:

- The Germantown Community Center first appeared in the Recommended CIP in January 1987. The original project budget showed planning funds programmed in Year 3 (FY 90) and construction beginning in Year 4 (FY 91). Eleven years elapsed from the year the project was first published in the CIP until it was open in January 1998.
- The East County Community Center first appeared in the Recommended CIP in January 1993. The original project budget showed planning funds programmed in Year 3 (FY 90) and construction beginning in Year 4 (FY 91). Six years will have elapsed from the time until it opens this summer.

- The Fairland Community Center first appeared in the Recommended CIP in January 1990 as a stand alone project. The original project budget showed design in Year 2 (FY 92) and construction in Year 4 (FY 94). Ten years will have elapsed from the time the Fairland Center first appeared as a stand alone project in the CIP until it opens in December 1999.

As the notes on the timelines explain, the Germantown Community Center was coordinated with MCPS. The delay for the Fairland Community Center was due to a site change and the establishment of a Special Protection Area. OMB notes other factors that contribute to the time it takes to build a project include where the project is initially programmed in the six year CIP, the County's ability to afford the project, and the biennial CIP.

Related to the issue of the elapsed time is the sequencing, value and efficiency of each phase in the process. The timelines show that the design and construction phases are typically one to two years each. The planning phase varies more widely and is longer (3 to 8 years), particularly if the start date is when a project first appeared in a plan or study. In reviewing CIP projects this year, some Committees have raised concerns about the consistency of the facility planning process and the facility planning PDFs. Also, at issue is the relationship between the facility planning PDFs and the establishment of stand alone projects in the context of a biennial CIP process.

TECHNICAL APPENDIX

1. Definition of the Cost Components shown in a Project Description Form (PDF)

In the Capital Improvements Program, the budget for each project displayed on the PDF distributes the total cost of a project among the five cost elements listed below. Typically the PDS element represents the non-construction or soft costs and the other four elements make up the construction costs. (Note: construction costs represent expenses that contribute to the value of a building. Non-construction costs are expenses to design and manage the project or the project operating budget.):

Planning, design and supervision (PDS)- Funds the design, planning and supervision of a capital project. The cost element represents 17% to 20% of a total project cost. The operating expense categories for the management of a capital project include A&E fees, DFS staff charges, costs for permits, surveys, printing, advertising and other numbers. DFS uses a set of internal guidelines (explained above) to set these costs.

Land - Funds the acquisition costs of site needed for a project.

Site improvements and utilities (SIU) - Funds grading, stormwater management, parking, landscaping, fencing and utility distribution work. May also include costs for demolition.

Construction - Funds labor and materials for building construction and mechanical and electrical systems. May also include some furniture and equipment, such as library shelves or basketball backboards, that are considered part of the building.

Other - Funds furniture and equipment not included in the construction component plus miscellaneous costs not included in other categories.

2. The Relationship between the 1993 Sullivan & Almy Consultant Study for the Wheaton/Glenmont Pool and the FY 97 PDF in the CIP

In 1993, the County contracted with Sullivan & Almy, Inc. to investigate the cost of repairs for the Wheaton/Glenmont Pool. The consultant concluded that the pool had so many potentially fatal problems that major repairs to the facility would cost as much as replacement. The consultant's report included a one page estimate of "Probable Costs for Recommended Improvements." The exhibit below shows the components of this cost estimate.

Item	Estimate*
Olympic Main Pool with filters and equipment	\$600
Leisure and alternative water activities	800
Bathhouse	600
Decks, walls, steps and ramps	400
Site improvements	400
Construction Cost Subtotal	2,800
10% Contingency	280
A&E Fees (9%)	277
TOTAL	\$3,357

Source: OLO, Sullivan & Almy. *Estimates in thousands of dollars

In 1996, the project budget was published in the CIP. The exhibit on the next page compares the estimates for each construction cost element with the estimates from the Sullivan and Almy study. The PDF construction budget totals \$3.5 million compared to the consultant's cost estimate of \$3.1 million for a difference of \$400,000. The main difference in the estimates is in the costs for site improvements and utilities.

The DFS budget for sitework and utilities is higher than the consultant's study because DFS added estimates for utility work and demolition of the pool. DFS also increased the consultant's estimate for site work by \$300,000 to address the complexities created by a constrained site adjacent to two other public uses.

Cost Element	PDF	Consult. Est.	Differ.
SIU	\$1,006	\$400	\$606
Construction	2,418	2,400	18
Other/Contingency	100	280	(180)
Construction Total	\$3,524	\$3,080	\$444

Source: OLO. *Estimates in thousands of dollars

The FY 96 construction budget for the PDF was based on the consultant's cost estimate of \$2.4 million. (The FY 99 estimate of \$2.490 includes an additional \$92,000 to provide for telephones and security which were not included in the original estimate.)

3. The Relationship between the 1994 Architectura Consultant study and the PDF for the Rosemary Hills Community Center

In 1994, DFS managed a study by Architectura, Ltd. that explored the issue of whether the County should undertake a major renovation of the Rosemary Hills Center or demolish the existing building and construct a new 23,500 square foot center. Architectura Ltd. estimated the cost of a new facility

at \$3.85 million. The exhibit shows the subcomponents of the Architectura cost estimate.

Name	Items Included	Amount
Section 1	General Requirements and Allowance	\$339
Section 2	Site Work, Utilities, Storm Sediment Control, Building Demolition	\$542
Sections 3-16	Concrete, Masonry, Steel, Carpentry, Thermal and Moisture Protection, Doors and Hardware, Finishes, Specialties, Conveying Systems, Mechanical, Plumbing, Fire Protection, Electrical	\$2,455
10% Construction Cost Contingency	For items in Sections 1-16 with a total estimate of	\$334
Furniture and Equipment	(Based on Leland and Long Branch)	180
GRAND TOTAL		\$3,850

Source: OLO, Architectura Ltd. *Estimates in thousands of dollars

DFS used the Architectura Ltd estimates to determine the construction budget for the Rosemary Hills Community Center. The chart below shows the relationship between the consultant's cost estimates and the project budget.

CIP Component	Source of Estimate/Items Included	Amount
Site Improvements and Utilities	Architectura Study/ Estimates for Section 2	\$542
Construction	Architectura Study Estimates for Sections 1 and 3-16	3098
Furniture and Equipment	Architectura Study	180
TOTAL: CONSTRUCTION COSTS		\$3,820

*Estimates in thousands of dollars

sue\budprojs\pdfcosts\memdraft2

Rosemary Hills Community Center Wheaton/Glenmont Pool Capital Project Timelines

Time from PDF to Construction Completion									
Rosemary Hills Community Center	5 Years								
Wheaton/Glenmont Pool	5 Years								
	Year 1	Year 2	Year 3	Year 5	Year 6	Year 7	Year 8	Year 9	
Rosemary Hills Community Center									
PLANNING PHASE									
1994 Consultant Study	▶								
First PDF Published in C.E. Rec. FY96		▶	▶	▶					
Program of Requirement Signed Oct-96			▶						
RFP for A/E Services Posted Nov-96			▶						
DESIGN PHASE									
Contract Awarded for A/E Services Mar-97									
Initial CIP Cost Estimate Revised Jul-97									
Schematic Design Estimate Completed Aug-97									
Design Development Estimate Completed Feb-98					▶				
Construction Documents Prepared Summer-98*					▶				
CONSTRUCTION PHASE 1998-1999*									
Wheaton/Glenmont Pool									
PLANNING PHASE									
1993 Sullivan & Almy Study	▶								
First PDF - Published in CE Rec. CIP FY97									
Program of Requirements Signed Apr-96									
RFP For A/E Services Posted Sep-97					▶				
DESIGN PHASE									
Contract Awarded for A/E Services Jan-98									
Initial CIP Cost Estimate Revised Jan-98									
Schematic Design Est. Complete May-98*						▶			
Design Development Est. Complete Sep-98*									
Construction Documents Prepared Jan-99*						▶			
CONSTRUCTION PHASE Aug-99-00*									

Source: OLO and Dept. of Public Works and Transportation, DFS, 1998.

* Projected Schedule

Capital Project Timelines for a Sample of Community Centers

Time From PDF to Construction Completion												
Germantown Community Center	11 Years											
East County Community Center	6 Years											
Fairland Community Center	10 Years											
Germantown Community Center (1)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
1988 "Com. Rec. Facility Study"	Planning											
First PDF Published in C.E. Rec. CIP FY 88	▶											
First Appropriation				▶								
Contract Awarded for A/E Services/Design Begins								Design				
Contract Awarded for Construction										Construction		
Construction Completed											▶	
East County Community Center (2)												
1988 "Com. Rec. Facility Study"	Planning											
First PDF Published in C.E. Rec. CIP FY94						▶						
First Appropriation								▶				
Contract Awarded for A/E Services/Design Begins								Design				
Contract Awarded for Construction										Construction		
Construction Completed											▶	
Fairland Community Center (3)												
1988 Task Force Recommends Center	Planning											
Combined PDF Published in C.E. Rec. CIP FY90		▶										
Separate PDF Published in C.E. Rec CIP FY91			▶									
First Appropriation				▶								
Contract Awarded for A/E Services/Design Begins								Design				
Contract Awarded for Construction										Construction		
Construction Completed												▶

1) Germantown Community Center - First published in Year 3 of six year CIP. The scope, funding and siting was subsequently coordinated and developed with MCPS. Contract was awarded through MCPS.

2) East County Community Center - First published in Year 2 of six year CIP.

3) Fairland Community Center - First published in Year 3 of six year CIP. Subsequent changes in site to Special Protection Area after first appropriation required significant site analysis which delayed design start.

Source: OLO & Dept. of Public Works and Transportation, DFS, 1998.