Working Capital Fund Benefit/Cost Analysis Update, (1997-2002)

Introduction

The purpose of this paper is to update the financial benefit/cost analysis for the Working Capital Fund to include estimated Fund financial results for FY 2002.

This paper relies on the basic methodology set forth in the October 2001 report, *Working Capital Fund Benefit/Cost Analysis, (1997-2001)*. Specifically, it compares the Department's average annual spending levels for the services included in the Fund for the four years before the creation of the Fund to the six years since creation of the Fund. Spending levels in the pre-Fund era are calculated from budget obligations, whereas spending levels since creation of the Fund are calculated as billings to program office customers. The data referred to in the text are included in Appendix A.

Summary of Results:

- **During the six years of the Fund, the average annual costs of continuing businesses decreased by over $9 million per year or almost 11% in current (as spent) dollars. When inflation is taken into consideration, the savings from the Fund are estimated to be as high as $16.7 million/year or slightly over $100 million over the life of the Fund in FY 1996 dollars.**
- **While there are many qualifiers on this analysis, the evidence remains strong that the Department has achieved substantial net economic benefits from the market-like approach of the Fund to the provision of common administration services to Headquarters.**

WCF Trend Overview

This analysis includes ten fiscal years of expenditures, covering FY 1993 through FY 2002.[1] The Fund was created in the FY 1997 budget process, so the first four fiscal years (FY 1993-96) in the data series represent the Department's spending patterns before the Fund was created, whereas the last six years of the data series cover the six fiscal years of Fund operation (FY 1997-2002).

As shown in Table A-1, before adjustments for business composition or for inflation, the spending levels of the activities that have ever been included in the Fund, included "discontinued businesses", have fluctuated from a high of $94.4 million in FY 1993 to a low of $79.8 million in FY 1998. The variation in spending has been relatively low:

- The ten-year average is $85 million;
- The pre-WCF average is $86 million;
- The WCF 6-year average is $84 million; and
- Eight of the ten years have been between $80 and $90 million.

[1] FY 2002 data are derived from the annualized estimates of customer billings as set forth in Table III of the July 2002 WCF bill, issued to customers on August 8, 2002.

Continuing Business Analysis

The composition of the Working Capital Fund has changed over time, with the addition and removal of business activities. The following are examples of these dynamics:

- The DCAA Audits business line was in the Fund for one year only (FY 1997); it was removed in the FY 1998 budget process;
- In FY 1998, the Payroll business line was added, and the CHRIS business line was added for FY 2002;
- The Executive Information System business line was added to the Fund for FY 1999 and FY 2000, but was removed from the Fund for FY 2001;
- Starting in FY 2000, some customers financed improvements of their office space through supplemental payments into the Fund, and for FY 2001, the Board embarked on a policy of making approximately $3 million/year in upgrades in Headquarters facilities;
- Contract Closeout had been funded in diverse ways before creation of the Fund, so a full 10-year trend does not exist;
- On-Line Learning was added to the Fund in FY 2002 after a pilot period outside the Fund, but this service did not exist in the FY 1993-96 period; and
- In FY 2001, the DOENet segment was added to the Network business line, nearly doubling the size of that line.

To adjust for these changes, we are using the concept of "continuing businesses." This concept is used in the private sector to distinguish between trends due to acquisition or divestiture of businesses and trends that reflect changes for those activities that were managed throughout the period of analysis – the "continuing businesses".

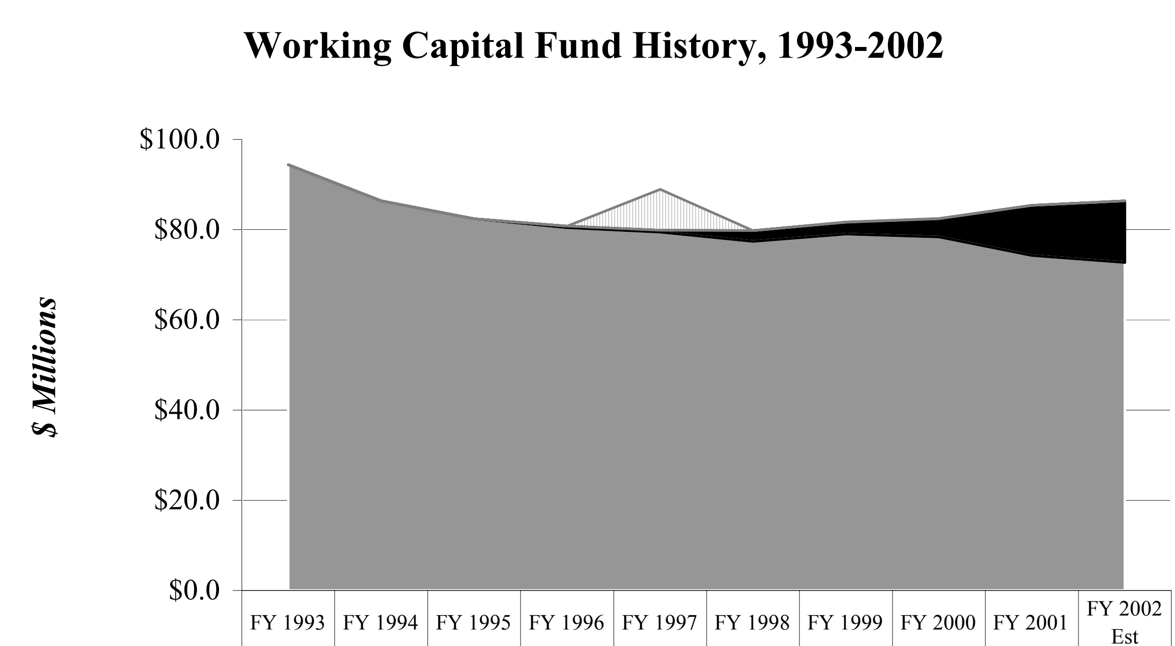
A further methodological issue is that the cost structure of the Fund businesses during the FY 1997-2002 does not always match the cost classifications during the years prior to the Fund. For example:

- Prior to FY 1997, the costs of the Information Management business lines were grouped in two classification, Telephone and Desktop, and Network costs were distributed between these lines; and
- The costs of copying paper were borne by what became the Supplies business line, rather than the Copying business line.
- Printed stationary is now sold through the Printing business line, rather than in the privately-operated PaperClips supply store.

To permit an accurate comparison of costs before and after the Fund, therefore, we needed to remove certain activities from the analysis, and we also needed to group the continuing businesses into larger categories to match pre-Fund cost records. Table A-2 starts with the gross business totals from Table A-1 and then identifies new business segments and discontinued activities to be removed from the trend analysis. The remaining data are then grouped into three business areas, displayed at the bottom of Table A-2.

Figure I below shows how the gross financial level described in Table A-1 converts to a "continuing business" trend line on Table A-2. Most notable is the removal of the one-year business line for audits in FY 1998. Also shown is the gradual addition of business activities to the Fund.

Figure I



	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002 Est
Discontinued	$0.0	$0.0	$0.0	$0.0	$9.1	$0.0	$0.1	$0.1	$0.0	$0.0
New/Expanded	$0.0	$0.0	$0.0	$0.4	$0.4	$2.4	$2.7	$4.0	$11.1	$13.7
Continuing	$94.4	$86.4	$82.4	$80.4	$79.4	$77.4	$79.0	$78.4	$74.3	$72.7

Current-Dollar Analysis

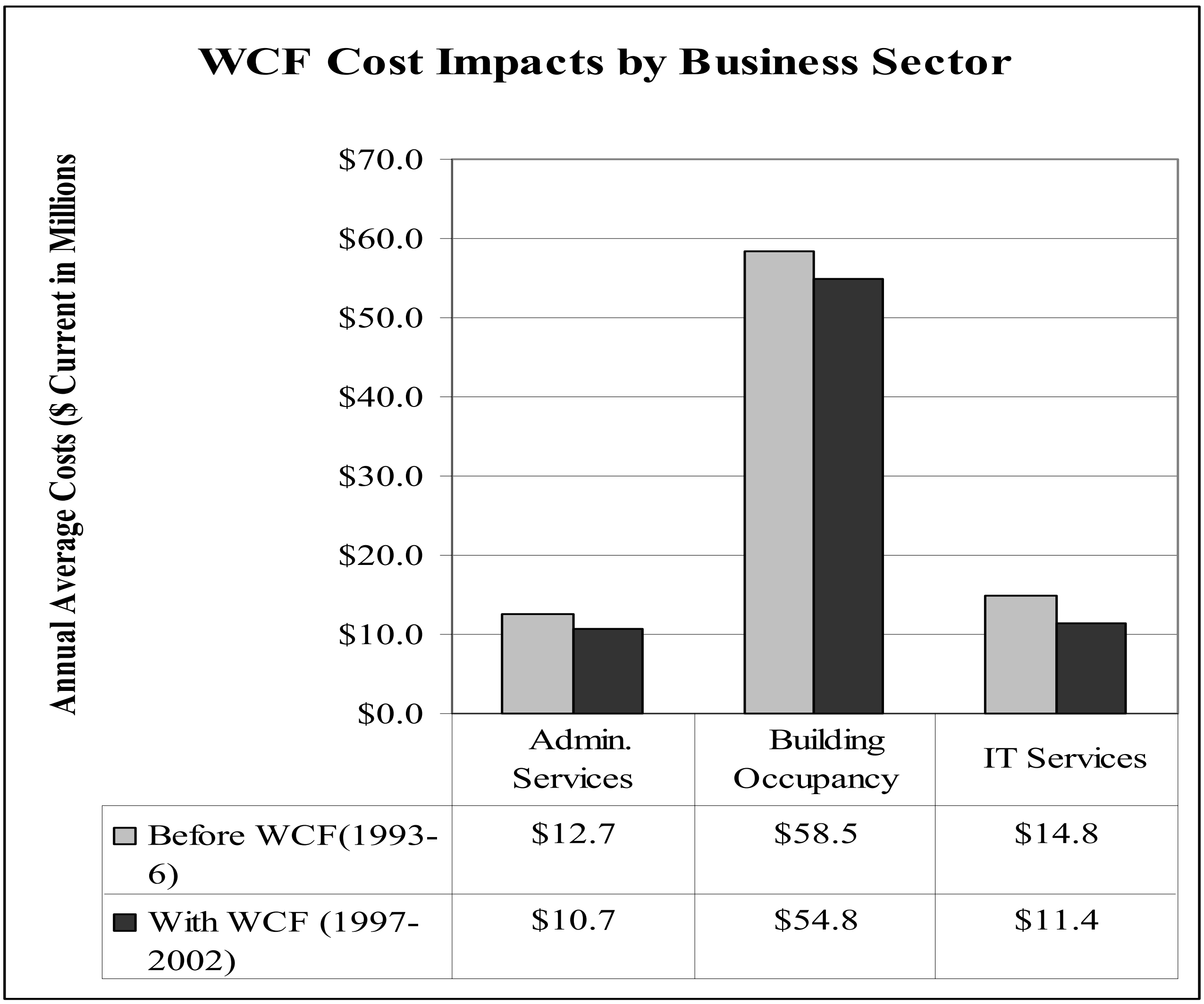
As Table 1 below demonstrates, before accounting for inflation effects, the average annual cost of continuing businesses in the Fund has been $9 million or nearly 11% lower during the six years of Fund operation than in the four years (FY 1993-6) before the Fund was created. Specifically, the average annual cost in FY 1993-96 for all continuing businesses was $86 million, whereas the six-year average for Fund billings to customers was $76.9 million. Over a six-year period, savings would total $54 million.

There have been cost reductions in all three business areas. The highest absolute reduction has been in the Building Occupancy Business, the largest in the Fund. The largest percentage reduction has been in the Information Technology (IT) business lines.

Table 1: Annual Cost Patterns by Business Area ($ Current in Millions)				
	Average Annual Costs, FY 1993-96	Average Annual Costs, FY 97-2002	Reduction ($Millions)	Percent Reduction
Admin. Services	$12.7	$10.7	$2.0	16%
Building Occupancy	$58.5	$54.8	$3.7	6%
IT Services	$14.8	$11.4	$3.4	23%
Total	$86.0	$76.9	$9.1	11%

Figure II displays these data in graphic form.

Figure II



Constant Dollar Analysis

The analysis above is in "current dollars", unadjusted for inflation effects. In this section, we convert these data to "constant" dollars, removing the effects of inflation. Table A-3 uses the OMB deflator for Federal Non-Defense Expenditures[2] to convert the continuing business data from Table A-2 to constant FY 1996 dollars. Figure III compares the trends for continuing business in current ("as spent") dollars (solid line) to constant FY 1996 dollars (dashed line).

Figure III

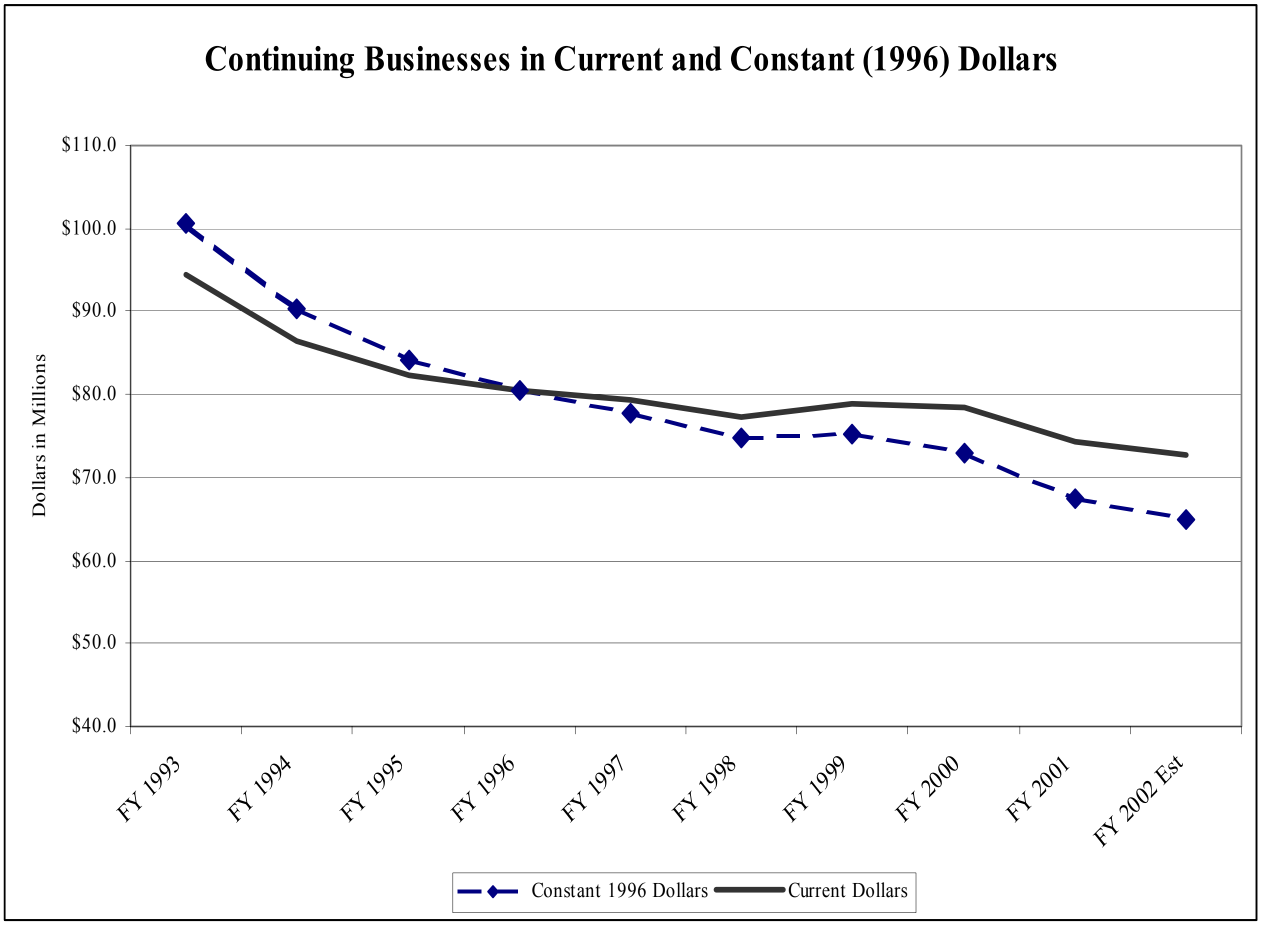


Table 2 below compares the average annual costs by business area before the Fund was created to the average annual costs during the six-year period of Fund operation. Because these data are adjusted to FY 1996 dollars, the annual costs shown for the pre-Fund period are higher than the current dollar analysis in Table 1, whereas the constant FY 1996 dollar costs for the FY 1997-2002 period are lower. This expands the estimated net savings from Fund operation to $16.7 million/year or 19% in real FY 1996 dollars. Over the six-year period of Fund operation, total savings would amount to slightly over $100 million under this methodology.

[2] Taken from Table 10.1 of the "Historical Tables" section of the ***Budget of the United States Government, FY 2003.*** http://w3.access.gpo.gov/usbudget/fy2003/hist.html

Table 2: Annual Cost Patterns by Business Area (Constant $ FY 1996 in Millions)				
	Average Annual Costs, FY 1993-96	Average Annual Costs, FY 97-2002	Reduction ($Millions)	Percent Reduction
Admin. Services	$13.1	$10.0	$3.1	24%
Building Occupancy	$60.5	$51.5	$9.0	15%
IT Services	$15.3	$10.7	$4.6	30%
Total	$88.9	$72.2	$16.7	19%

Discussion

Both the current –dollar and constant-dollar analyses strongly suggest that there have been significant net economic benefits to the creation and six-year operation of the Working Capital Fund. The more extensive methodological discussion in the five-year analysis and the methodological notes and comments in Appendix B are intended to recognize that there are and will be a number of different ways to approach this subject. Specifically, there are factors such as customer satisfaction, customer choice, net earnings, business-type financial accounting, and the current exclusion of Federal employee salaries and expenses that need to be considered, even if they are not easily incorporated into a single bottom-line analysis. Appendix B categorizes some of these other considerations in terms of whether they would tend to add to or detract from the conclusions of this analysis.

Notwithstanding the inevitable analytic limitations, this analysis shows a clear, systematic, and substantial pattern of cost reduction since the creation of the Fund.

Appendix A

Table A-1:Working Capital Fund Financial Evaluation Data										
	(Obligations in $ Millions)				(Earnings in $ Millions)					
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002 Est
Supplies/PaperClips	$3.7	$2.8	$3.1	$3.3	$2.6	$2.8	$3.0	$2.8	$2.9	$3.3
Mail	$3.4	$3.4	$2.2	$4.6	$2.2	$1.9	$1.7	$1.6	$1.7	$1.9
Mail: 9/11 Suppl.										$0.2
Copying	$1.5	$1.1	$1.3	$1.0	$2.2	$2.7	$2.5	$2.7	$2.4	$2.0
Printing/Graphics	$5.7	$5.4	$4.3	$3.8	$3.9	$3.3	$3.5	$3.5	$4.1	$2.9
Building Occupancy	$60.9	$60.4	$57.3	$55.2	$56.4	$55.5	$57.4	$56.1	$51.8	$51.5
Improvements					$0.0	$0.0	$0.0	$1.3	$4.6	$4.4
Telephones	$9.2	$6.4	$6.1	$7.1	$6.8	$6.6	$6.3	$7.0	$6.8	$6.7
Desktop	$10.0	$6.9	$8.1	$5.4	$2.3	$1.5	$1.6	$1.4	$1.2	$1.0
Desktop: Virus Suppl.										$0.2
Network					$3.1	$3.1	$3.1	$3.2	$3.4	$3.5
DOENet					$0.0	$0.0	$0.0	$0.0	$2.7	$2.7
Contract Closeout				$0.4	$0.4	$0.4	$0.6	$0.5	$0.7	$0.7
Payroll					$0.0	$1.9	$2.1	$2.2	$3.1	$3.1
CHRIS					$0.0	$0.0	$0.0	$0.0	$0.0	$2.2
EIS					$0.0	$0.0	$0.1	$0.1	$0.0	$0.0
Audits					$9.1	$0.0	$0.0	$0.0	$0.0	$0.0
On-Line Learning					$0.0	$0.0	$0.0	$0.0	$0.0	$0.3
Gross Total	**$94.4**	**$86.4**	**$82.4**	**$80.8**	**$89.0**	**$79.8**	**$81.7**	**$82.5**	**$85.4**	**$86.4**

Table A-2: Working Capital Fund Continuing Business Data										
	(Obligations in $ Millions)				(Earnings in $ Millions)					
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002 Est
Gross Total (See Table B-1)	**$94.4**	**$86.4**	**$82.4**	**$80.8**	**$89.0**	**$79.8**	**$81.7**	**$82.5**	**$85.4**	**$86.4**
Discontinued Businesses										
EIS	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0
Audits	$0.0	$0.0	$0.0	$0.0	$9.1	$0.0	$0.0	$0.0	$0.0	$0.0
Total	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$9.1**	**$0.0**	**$0.1**	**$0.1**	**$0.0**	**$0.0**
New/Expanded Businesses										
Mail: 9/11 Suppl.	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.2
Improvements	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$1.3	$4.6	$4.4
Desktop: Virus Suppl.	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.2
DOENet	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$2.7	$2.7
Contract Closeout	$0.0	$0.0	$0.0	$0.4	$0.4	$0.4	$0.6	$0.5	$0.7	$0.7
Payroll	$0.0	$0.0	$0.0	$0.0	$0.0	$1.9	$2.1	$2.2	$3.1	$3.1
CHRIS	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$2.2
On-Line Learning	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.3
Total	**$0.0**	**$0.0**	**$0.0**	**$0.4**	**$0.4**	**$2.4**	**$2.7**	**$4.0**	**$11.1**	**$13.7**
Continuing Business	**$94.4**	**$86.4**	**$82.4**	**$80.4**	**$79.4**	**$77.4**	**$79.0**	**$78.4**	**$74.3**	**$72.7**
Composition:										
Admin. Services	$14.3	$12.7	$10.9	$12.7	$11.0	$10.7	$10.6	$10.6	$11.0	$10.0
Building Occupancy	$60.9	$60.4	$57.3	$55.2	$56.4	$55.5	$57.4	$56.1	$51.8	$51.5
IT Services	$19.2	$13.3	$14.2	$12.5	$12.1	$11.2	$11.0	$11.7	$11.4	$11.2

Table A-3: Working Capital Fund Continuing Business Data in Constant FY 1996 Dollars										
	(Obligations in $ Millions)				(Earnings in $ Millions)					
	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002 Est
OMB Deflator for Non-Defense Expenditures	0.9372	0.9566	0.9797	1.0000	1.0205	1.0338	1.0491	1.0759	1.0997	1.1213
Continuing Businesses in Real 1996 Dollars										
Admin. Services	$15.3	$13.3	$11.1	$12.7	$10.7	$10.3	$10.1	$9.8	$10.0	$9.0
Building Occupancy	$65.0	$63.1	$58.5	$55.2	$55.2	$53.7	$54.7	$52.2	$47.1	$45.9
IT Services	$20.5	$13.9	$14.5	$12.5	$11.9	$10.8	$10.5	$10.9	$10.4	$10.0
Total	**$100.7**	**$90.3**	**$84.1**	**$80.4**	**$77.8**	**$74.9**	**$75.3**	**$72.9**	**$67.5**	**$64.8**

Appendix B

Methodology Notes

There are a number of factors that have not been taken explicitly into consideration in the Working Capital Fund benefit/cost analysis. This section discusses these factors in terms of whether, had they been included, they would have added to or detracted from conclusions about the net efficiency of the Fund.

Items potentially adding to net benefits

- Net Earnings: In the analysis above, the cost metric for the period during which the Fund has operated was the billings to customers, rather than business expenses. In fact, the Fund had net earnings (billings minus business expenses) of approximately $7.5 million over the first five years of operation, or $1.5 million per year[3].[4] If business expenses were used instead of customer-experienced expenses, the average annual costs, in nominal dollars, would be further reduced. However, much of the net earnings of the Fund has been in Building Occupancy, where earnings from improvements have been booked in advance of expenditures. Another source of net earnings has been the Payroll business line, which has accumulated reserves in anticipation of the one-time costs of system conversion. Since both Business Occupancy Improvements and Payroll have been excluded from the Continuing Business category, it would not be appropriate to include their net earnings as an added economic benefit. Therefore, while net earnings for continuing businesses might have been an added economic benefit, we have excluded net earnings from the analysis to avoid inclusion of inappropriate items.

- Product Substitution and Choice: The Fund gives customers the opportunity to make decisions on the mix, level, and quality of services. This has allowed customers to adapt to technological changes and to substitute, for example, LAN connections for telephone connections. It has also allowed customers to substitute for activities that are financed outside the Fund. For example, the flexibility to acquire supplies, copying, or printing services may have allowed customers to make better use of current Federal staff and reduced use of contractors to prepare and disseminate information. Or, the availability of enhanced telephone or network services may have reduced the need for travel.

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[3] Working Capital Fund FY 2001 Annual Report.

[4] FY 2002 net earnings results are not available at this writing. It is projected that they will be consistent with the overall patterns of the first five years, except for the potential one-time effects of a writeoff of Telephone equipment assets, based on possible changes in accounting policy.

While it cannot be proven empirically that better information and broader flexibility for managers will reduce in more cost-effective operations, expanding choice is, in directional terms, an advantage of the Fund compared to the pre-Fund years, when services were rationed by non-market means. That is, an $80 million annual expenditure that reflects customer priorities would be expected to have higher value for the accomplishment of the Department's missions than the same level of expenditure in centrally-rationed services.

Items Potentially Reducing Net Benefits

- Fund administrative costs (direct): The Department obligated approximately $363,000 ($73,000/year) for contractual services related to the administration of the Fund over the first five years of Fund operation. These costs include the development and maintenance of the monthly billing system plus professional assistance to business lines in preparation of five-year plans. The costs have been financed through unbilled contributions to the Fund from the Office of Management, Budget and Evaluation/CFO (formerly the Office of Management and Administration, hence they are not included in business earnings and would be additive to the Fund costs discussed above. It should be noted, however, that at least some of the administrative overhead of the Fund would have been incurred under continued direct appropriations for the Fund services. If the Fund had not been created, it is possible that the need for non-price "rationing" of centrally-funded services would have required more expensive management systems than those employed for the Fund.

- Headquarters Population Decreases: From the mid-point of the base period under analysis to the mid-point of the five years of Fund operation, Headquarters personnel levels declined approximately 18% from an estimate 7,700 to 6,300. This includes not only DOE Federal staff but also support services contractors and other staff occupying space within the Headquarters complex. It is unlikely that, without the Fund, there would have been an 18% decrease in spending levels, since some Fund businesses finance infrastructure that is characterized by costs that are fixed in the near-term. However, it needs to be acknowledged that at least some of the observed cost savings may have occurred without the creation of the Fund.

Items with Uncertain Impact

- Business Accounting: The Fund uses business-type financial accounting that capitalizes certain costs but reflects depreciation on the current capital stock. Among other things, this has permitted the Fund to accumulate and invest cash to replace or upgrade capital equipment, and there have been significant upgrades in telephone switching equipment and copiers.[5] Likewise, the Fund uses business-type accounting for inventory transactions, and these business concepts have been built into the pricing policies that have become the basis for the earnings. In contrast, the obligation accounting for the FY 1993-96 base period does not reflect

[5] The building upgrades have been factored into the analysis by deleting WCF earnings associated with tenant improvements.

these business concepts. It is not known at this point whether, had business accounting been applied during the earlier periods, implied business expense levels would have been higher (due to depreciation and inventory drawdown) or lower (due to capital acquisition and inventory increases) than the obligation levels used for comparison purposes.

- Business Subsidies: The parent organizations of Fund businesses (MBE/CFO and CIO) have subsidized the businesses and their customers by an estimated 14% of billings in FY 2001 and an estimated 15% in FY 2002. Most of this subsidy is attributable to the fact that the Fund does not pay for an estimated $8.5 million in salaries and benefits for Federal employees that are associated with the businesses, including the small central staff associated with billing and management oversight. During the period of Fund operation, there is evidence of a gradual but minor (1%/year) decline in the number of Federal employees supporting the operations of continuing businesses, as defined in this study. However, it is unclear whether this trend would have extended back in time to the period before the Fund was created, since the parent organization's staffing decreased substantially in the mid-1990's , during the same period the Fund was being planned. It is also unclear whether and how this decline could be attributed to the creation of the Fund rather than to other factors.

- It is possible that some customer organizations have taken advantage of the opportunity to acquire services from outside vendors rather than through the Fund organizations. To the extent that this has occurred, then the savings estimates provided above overstate the total net benefits of the Fund. However, the availability of alternatives may also have stimulated Fund businesses to become more competitive in both pricing and quality. The evidence on this point is very limited. Probably the strongest evidence is the drop-off in customer interest in using the Fund for computer hardware repair services, when new equipment purchases with warranties may have become more attractive.