Appendix One

DEFINITION OF *CAPITAL ASSETS*

Capital assets are land, structures, equipment, and intellectual property, including software, that are used by the Federal Government and have an estimated useful life of two years or more. Capital assets exclude items acquired for resale in the ordinary course of operations or held for the purpose of physical consumption such as operating materials and supplies. The acquisition cost of a capital asset includes both its purchase price and all other costs incurred to bring it to a form and location suitable for its intended use.

Capital assets may be acquired in different ways: through purchase, construction, or manufacture; through a lease-purchase or other capital lease, regardless of whether title has passed to the Federal Government; through an operating lease for an asset with an estimated useful life of two years or more; or through exchange. Capital assets include the environmental remediation of land to make it useful, leasehold improvements and land rights; assets owned by the Federal Government but located in a foreign country or held by others (such as federal contractors, state and local governments, or colleges and universities); and assets whose ownership is shared by the Federal Government with other entities. Capital assets include not only the assets as initially acquired but also additions; improvements; modifications; replacements; rearrangements and reinstallations; and major repairs but not ordinary repairs and maintenance. Examples of capital assets include the following, but are not limited to them:

- office buildings, hospitals, laboratories, schools, and prisons;
- dams, power plants, and water resources projects;
- furniture, elevators, and printing presses;
- motor vehicles, airplanes, and ships;
- satellites and space exploration equipment;
- information technology hardware, software and modifications;
- Department of Defense (DOD) weapons systems; and
- environmental restoration (decontamination and decommissioning efforts).

Capital assets may or may not be capitalized (i.e., recorded on an entity's balance sheet) under Federal accounting standards. Examples of capital assets not capitalized are DOD weapons systems, heritage assets, stewardship land, certain assets acquired for environmental cleanup efforts, and some software.

Capital assets do not include grants for acquiring capital assets made to state and local governments or other entities (such as National Science Foundation grants to universities or Department of Transportation grants to AMTRAK). Capital assets also do not include intangible assets such as the knowledge resulting from research and development (R&D) or the human capital resulting from education and training, although capital assets do include land, structures, equipment and intellectual property (including software) that the Federal Government uses in R&D and education and training. Agencies are encouraged to use the capital programming process or elements thereof, in planning for expenditures not covered by this definition, to the extent that they find it useful.

Appendix Two

SELECTED EXAMPLES OF PERFORMANCE MEASURES

"TRADITIONAL" PRODUCTION OR DELIVERY TYPE MEASURES

Production

Output: *Number* of armor-piercing 120mm *projectiles* manufactured and delivered in FY1997.
Outcome: *Produce sufficient* 120 mm armor-piercing *projectiles* to achieve a 60 day combat use supply level by 1999 for all Army and Marine Corps tank battalions.

Transaction Processing

Output: *Process* 3.75 million payment *vouchers* in FY 1995.
Outcome: *Ensure* that 99.5 percent of *payment vouchers are paid* within 30 days of receipt.

Records

Output: *Update* earnings *records* for 137 million employee contributors to Social Security Trust Fund.
Outcome: *Ensure* that all annual wage reports are posted within 6 months following the close of the tax year.

Service Volume

Output: *Provide meals and temporary shelter for 35,000 homeless individuals* for up to 18 months following the Short Beach tsunami disaster.
Outcome: *Maintain a capacity to provide*, nationally, *meals and temporary shelter* for an indefinite period *for up to 100,000 individuals* who are homeless as a result of major disasters.

Frequency Rates

Output: *Issue* 90 day national temperature and precipitation forecasts *every six weeks*.
Outcome: *Provide* users of meteorological forecasts with *advance information sufficiently updated to be useful* for agricultural, utility, and transportation planning.

Inventory Fill

Output: *Store* a minimum of 3.5 million barrels of *petroleum* stock.
Outcome: Petroleum *stocks* shall be maintained at a level sufficient to *provide a 60 day supply* at normal daily drawdown.

OPERATING-TYPE MEASURES

Utilization Rates

Output: *Number or percentage of* tactical fighter aircraft simulator training *facilities operational at not less than 85 percent of rated capacity.*

Outcome: *Ensure* optimized *operation* of all *simulator facilities to provide* all active duty tactical fighter aircraft *pilots with a minimum of 80 hours of simulator training* every 12 months.

Out-of-Service Conditions

Output: All Corps of Engineer *locks* on the Showme River basin shall be *operational during at least 22 of every consecutive 24 hours*.

Outcome: *Ensure no significant delays* in commercial traffic transiting through the Showme River basin system.

Maintenance and Repair Intervals

Output: All out-of-service aircraft requiring unscheduled repairs shall be *repaired within 72 hours*.

Outcome: The Forest Service will *maintain 90 percent of* its 135 firefighting *aircraft* in an *immediately deployable status* during forest fire season.

QUALITY-TYPE MEASURES

Defect Rates

Output: *Percentage* of 120 mm armor piercing projectiles that are *rejected as defective*.

Outcome: *No armor-piercing ammunition projectiles* fired in combat *shall fail to explode* on impact.

Mean Failure Rates

Output: *Premature* space Shuttle main engine *shutdown shall not occur more than once in every 200 flight cycles*.

Outcome: The Space Shuttle shall be maintained and operated so that *99.95 percent of all flights safely reach orbit*.

Accuracy

Output: The *initial* monthly *estimate* of the previous month's value of exports *shall be within one percent of the revised final value*.

Outcome: All *preliminary, periodic estimates of economic activity shall be within three percent of the final value*.

Error Rates

Output: Not more than four percent of initial *determinations* of the monthly entitled benefit amount *shall be incorrectly calculated*.

Outcome: No errors materially affecting customers will be made.

CUSTOMER-RELATED MEASURES

Complaints

Output: Percent of individuals seeking information *who subsequently re-request* the same information *because the initial response was incomplete*.

Outcome: Customers express a high degree of satisfaction.

Customer Satisfaction Levels (Output and outcome measures may often be indistinguishable.)

Output: *In 1998*, at least *75 percent* of individuals receiving a service *will rate the service delivery as good to excellent*.
Outcome: At least *90 percent* of recipients will *rate the service delivery* as good to excellent.

Timeliness

Response Times

Output: Adjudicative *decision* on all claim disallowances will be *made within 120 days* of appeal hearings.
Outcome: *Provide* every claimant with *timely determination* on claims filed.

Adherence to Schedule

Output: *Operate* 95 percent of all passenger trains *within 10 minutes of scheduled arrival times*.
Outcome: *Provide* rail *passengers* with reliable and *predictable* train *service*.

Responsiveness

Output: *98 percent of notices* to the Department of Transportation of navigational hazards will *result both in an on-site inspection of the hazard and Notice to Mariners within 48 hours of receipt* of the notice
Outcome: Ensure prompt response to potential public safety concerns in the navigation of coastal and off-shore waters.

EFFICIENCY AND EFFECTIVENESS MEASURES

Efficiency

Output: Number of transaction costs/production costs/delivery of service costs projected on a per unit basis. Number of rounds of armor-piercing *ammunition at a cost of $17.75 per round*.
Outcome: (Not commonly measured as an outcome.)

Effectiveness

Output: In FY 1999, *not more than 7,000 in-patients* in military hospitals will be readmitted, post discharge, for further treatment of the same diagnosed illness at the time of initial admission.
Outcome: Annually, *initial treatment* will be therapeutically *successful for 85 percent* of all hospital admissions.

OTHER TYPES OF MEASURES

Milestone and activity schedules

Output: *Complete 85 percent of required flight-worthiness testing* for Z-2000 bomber *by July 30, 1999*.

Outcome: The Z-2000 *bomber* will be flight-certified and *operational by December 1, 2000*.

Design Specifications

Output: Imaging *cameras* on Generation X observational satellite will have *resolution of 0.1 arc second*.

Outcome: Generation X observational satellite will successfully map 100 percent terrain of six Jovian moons to a resolution of 100 meters.

Status of Conditions

Output: In 1995, *repair and maintain 1,400 pavement miles* of federally owned highways *to a rating of "good"*.

Outcome: By 2000, *35 percent of all federally owned highway pavement miles* shall be *rated as* being in *good condition*.

Percentage Coverage

Output: Provide *doses of vaccine to 27,000 pre-school children* living on tribal reservations.

Outcome: *100 percent* of children living on tribal reservations will be *fully immunized* before beginning school.

Appendix Three

INTEGRATED PROJECT TEAMS (IPTs)

Agencies should apply an integrated project and process development (IPPD) approach to manage capital assets, using Integrated Project Teams (IPTs) assigned, as appropriate, to manage the various capital programming Phases or major acquisition programs within the agency. The approach of having specific teams, accountable for managing all or specific parts of the capital programming process for large projects, enjoys a successful track record in industry and government.

A program manager with the appropriate level of knowledge, skills, and experience shall normally lead the IPT. The program manager should understand user needs and constraints, and demonstrate the ability to manage large projects to achieve cost, schedule and performance goals. This manager should have sufficient tenure and interest in the project to provide continuity and to ensure personal accountability for her or his actions. Continuity reinforces accountability. Program managers and other senior IPT staff (e.g., contracting officer who should be assigned to the IPT from its inception and remain at least through the procurement phase) should commit to remain with the project for four years or the completion of the procurement phase whichever is earlier, or at least until (a) the Phase that is underway is completed, or (b) a milestone during the Phase is completed where accountability for success or failure to achieve goals may be assessed. When possible, senior members of the IPT should be encouraged to remain with the project from the Baseline Assessment Step of the Planning Phase into the Management-In-Use Phase.

The program manager should be provided with a written charter defining the team's responsibilities, budget constraints, and the extent of authority and accountability for accomplishing project objectives. The charter should be updated as necessary, but at least at the start of each Phase, and should be based on decisions of the Executive Review Committee. Program managers should be given sufficient funding to establish an IPT to meet the charter. To keep the project moving on a tight schedule, management layers between the program manager and senior management should be limited to ensure accountability for the program manager and timely decisions from above.

The members of the IPT should be dedicated to the project and responsible to the program manager for the duration of their assignment to the IPT. Where services of team members are not needed on a full-time basis, support to the IPT should take priority over other duties. This is necessary to maintain the continuity for good management and team accountability.

The team should be cross-functional, as necessary, to accomplish the various tasks of the project. The members should reflect the user community, the project's stakeholders and should have a core of project management, value management, budget, finance, and procurement knowledge.

Appendix Four

EXAMPLE OF EARNED VALUE CONCEPT AND COST AND SCHEDULE VARIANCES FOR CAPITAL ASSETS

Introduction. Earned value is a management technique that relates resource planning to schedules and to technical, cost, and schedule requirements. All work is planned, budgeted, and scheduled in time-phased "planned value" increments constituting a cost and schedule measurement baseline. There are two major objectives of an earned value system:

- to encourage contractors to use effective internal cost and schedule management control systems; and

- to permit the government to be able to rely on timely data produced by those systems for determining product-oriented contract status.

The example shown here illustrates how the earned value concept works. The analysis begins with a baseline schedule showing how much work is planned for each time period. The subsequent sections show how to calculate the deviation from the planned schedule (schedule variance) and the deviation from the planned cost (cost variance).

Baseline. For this hypothetical example, the baseline plan (planned value increments) in Table 1 shows that 6 work units (A-F) would be completed at a cost of $100 for the period covered by this report.

Table 1. Baseline Plan

	Work Units						
	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100

Schedule Variance. As work is performed, it is "earned" on the same basis as it was planned, in dollars or other quantifiable units such as labor hours. Planned value compared with earned value measures the dollar volume of work planned vs. the equivalent dollar volume of work accomplished. Any difference is called a schedule variance. In contrast to what was planned, Table 2 shows that work unit D was not completed and work unit F was never started, or $35 of the planned work was not accomplished. As a result, the schedule variance shows that 35 percent of the work planned for this period was not done.

Table 2. Schedule Variance

	Work Units						
	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100
Earned value ($)	10	15	10	10	20	0	$ 65
Schedule variance	0	0	0	-15	0	-20	$ -35 = -35%

Cost Variance. Earned value compared with the actual cost incurred (from contractor and agency accounting systems, not through estimation techniques) for the work performed provides an objective measure of planned and actual cost. Any difference is called a cost variance. In this example, a *negative* variance means more money was spent for the work accomplished than was planned. Table 3 shows the calculation of cost variance. The work performed was planned to cost $65 and actually cost $91. The cost variance is 40 percent.

Table 3. Cost Variance

	Work Units						
	A	B	C	D	E	F	Total
Earned value ($)	10	15	10	10	20	0	$ 65
Actual cost ($)	9	22	8	30	22	0	$ 91
Cost variance	1	-7	2	-20	-2	0	$ -26 = -40%

Spend Comparison. The typical spend comparison approach, whereby contractors report actual expenditures against planned expenditures, is not related to the work that was accomplished and is not a valid measure of program status. Table 4 shows a simple comparison of planned and actual spending which indicates the program is underrunning by 9 percent. When compared to the schedule and cost variance examples under an earned value system, the management information provided below gives a false indication of true program performance.

Table 4. Spend Comparison Approach

	Work Units						
	A	B	C	D	E	F	Total
Planned value ($)	10	15	10	25	20	20	$100
Actual cost ($)	9	22	8	30	22	0	$ 91
Variance	1	-7	2	-5	-2	20	$9 = 9%

Appendix Five

ACCOUNTING FOR CAPITAL ASSETS

The Statement of Federal Financial Accounting Standards (SFFAS) No. 6, *Accounting for Property, Plant, and Equipment (PP&E)*, establishes standards for most capital assets.[1] These standards were recommended by the Federal Accounting Standards Advisory Board and published by OMB November 30, 1996.

One significant objective of financial accounting standards is to support assessment of operating performance. Financial reporting should provide information to determine: (1) the cost of providing specific programs and activities, including the composition of these costs and changes over time; (2) financial inputs in relation to a program's outputs; and (3) the efficiency and effectiveness of the Government's management of its assets. To facilitate meeting these information needs, PP&E has been divided into four categories: general PP&E; Federal mission PP&E; heritage assets; and stewardship land.

For general PP&E (i.e., PP&E used to produce general Government goods and services), SSFAS 6 supports these information needs by allocating costs -- including cleanup costs -- of general PP&E to the periods in which the assets are used through historical cost depreciation methods. The cost is allocated to the period when it is incurred. Managerial cost accounting standards, established by SFFAS 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, will result in these period costs being tied to outputs. In addition, deferred maintenance reporting will provide financial statement users with information on the condition and management of assets.

For the remaining three categories, SFFAS No.6 recognizes that period-by-period cost allocation and allocation of period costs to outputs is not relevant. The standards provide for a new type of reporting. SFFAS No.8, *Supplementary Stewardship Reporting*, requires that information on these three categories of PP&E (known collectively as stewardship PP&E) be reported in a manner that highlights their long-term-benefit nature and demonstrates accountability over them. Depending on the nature of the PP&E, stewardship reporting could consist of financial and non-financial data. Deferred maintenance reporting also applies to these categories.

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[1] SFFAS No. 6 will become effective for fiscal year 1998, although earlier implementation is encouraged.

Appendix Six

RISK MANAGEMENT IN THE PROCUREMENT PHASE

Risk management is an organized method of identifying and measuring risk and developing, selecting, and managing options for handling these risks. There are several types of risk an agency should consider as part of risk management. The types of risk include:

- schedule risk;
- cost risk;
- technical feasibility;
- risk of technical obsolescence;
- dependencies between a new project and other projects or systems (e.g., closed architectures); and
- risk of creating a monopoly for future procurement.

Risk management is the responsibility of everyone on the IPT. It implies control of possible future events and is proactive rather than reactive. There are four elements of risk management.

1. ***Risk Assessment***. The first step in risk management is to identify and assess all potential risk areas. A risk area is any part of a project where there is an uncertainty regarding future events that could have a detrimental effect on meeting the program goal. Risk assessment continues throughout the life cycle of a program. As the program progresses, previous uncertainties will become known and new uncertainties will arise.

2. ***Risk Analysis***. Once risks are identified, each risk should be characterized as to the likelihood of its occurrence and the severity of potential consequences. Risk analysis will result in a "watch list" of potential areas of risk. The watch list may identify early warning signs that a problem is going to arise. As in risk assessment, risk analysis continues through the life cycle of the program; the watch list should be updated as appropriate.

3. ***Risk Treatment***. After a risk has been assessed and analyzed, the agency should consider what to do about it. Alternatives include:

- *Transfer*. The agency may transfer the risk to the contractor or some third party. It may be appropriate to transfer the risk to the contractor when it is in the best position to exercise effective control and manage the risk within economically reasonable bounds. At other times it may be more appropriate to transfer the risk to a third party (e.g., bonding, insurance).

- *Avoidance*. When looking at the risks of achieving various solutions to an agency's needs, the program manager may determine that the risks of a particular solution are so great that the solution should be removed from further consideration and alternative solutions should be found.

- *Reduction*. Another method for dealing with the risk is to take the necessary measures to minimize the likelihood that it will occur, minimize the damage to program goals should it occur (e.g., contingency plans), or both.

- *Assumption*. The agency may chose to assume the risk if it is in the best position to exercise effective control, the probability of risk is small, or the potential damage is either minimal or too great for the contractor to bear. The decision should depend on whether the expected benefits of the project exceed the expected costs by enough to compensate the agency for assuming the risk. It may assume the risk through differing site conditions clause, or other means. As long as the program manager has done appropriate risk analysis and understands the situation, the agency may take the programmatic equivalent of an "I'll cross that bridge when I come to it" position. Effective risk management makes assumption of the risk a conscious decision rather than an oversight.

- *Sharing*. When the risk cannot be appropriately transferred -- nor is it in the best interest of the agency to assume the risk -- the agency and contractor may share the risk. Such shared risks require extensive monitoring.

4. ***Lessons Learned***. After encountering problems on a program, the IPT should document any warning signs that, with hindsight, preceded the problem, what approach was taken, and what the outcome was. This will not only help future acquisitions, but could help identify recurring problems in existing programs.

Appendix Seven

PRINCIPLES OF BUDGETING FOR CAPITAL ASSET ACQUISITIONS

Introduction and Summary

The Administration plans to use the following principles in budgeting for capital asset acquisitions. These principles address planning, costs and benefits, financing, and risk management requirements that should be satisfied before a proposal for the acquisition of capital assets can be included in the Administration's Budget. See the Glossary of this Guide for key terms. The principles are organized in the following four sections:

A. ***Planning: Raines Rules***. This section focuses on the need to ensure that capital assets support core/priority missions of the agency; the assets have demonstrated a projected return on investment that is clearly equal to or better than alternative uses of available public resources; the risk associated with the assets is understood and managed at all stages; and the acquisition is implemented in phased, successive segments, unless it can be demonstrated there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time.

B. ***Costs and Benefits***. This section emphasizes that the asset should be justified primarily by benefit-cost analysis, including life-cycle costs; that all costs are understood in advance; and that cost, schedule, and performance goals are identified that can be measured using an earned value management system or similar system.

C. ***Principles of Financing***. This section stresses that useful segments are to be fully funded with regular or advance appropriations or both, enforced by a proposed new Budget Enforcement Act scorekeeping rule; that as a general rule, planning segments should be financed separately from procurement of the asset; and that agencies are encouraged to aggregate assets in capital acquisition accounts and take other steps to accommodate lumpiness or "spikes" in funding for justified acquisitions.

D. ***Risk Management***. This section is to help ensure that risk is analyzed and managed carefully in the acquisition of the asset. Strategies can include separate accounts for capital asset acquisitions, the use of apportionment to encourage sound management, and the selection of efficient types of contracts and pricing mechanisms in order to allocate risk appropriately between the contractor and the Government. In addition cost, schedule, and performance goals are to be controlled and monitored by using an earned value management system or a similar system; and if progress toward these goals is not met there is a formal review process to evaluate whether the acquisition should continue or be terminated.

As defined here, capital assets are land, structures, equipment, and intellectual property (including software) that are used by the Federal Government, including weapon systems. Not included are grants to States or others for their acquisition of capital assets. A more detailed definition appears in Appendix One.

A. Planning:

Investments in major capital assets proposed for funding in the Administration's budget should:

1. support core/priority mission functions that need to be performed by the Federal Government;

2. be undertaken by the requesting agency because no alternative private sector or governmental source can support the function more efficiently;

3. support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial, off-the-shelf technology;

4. demonstrate a projected return on the investment that is clearly equal to or better than alternative uses of available public resources. Return may include: improved mission performance in accordance with measures developed pursuant to the Government Performance and Results Act; reduced cost; increased quality, speed, or flexibility; and increased customer and employee satisfaction. Return should be adjusted for such risk factors as the project's technical complexity, the agency's management capacity, the likelihood of cost overruns, and the consequences of under- or non-performance.

5. for information technology investments, be consistent with Federal, agency, and bureau information architectures which: integrate agency work processes and information flows with technology to achieve the agency's strategic goals; reflect the agency's technology vision and year 2000 compliance plan; and specify standards that enable information exchange and resource sharing, while retaining flexibility in the choice of suppliers and in the design of local work processes;

6. reduce risk by: avoiding or isolating custom-designed components to minimize the potential adverse consequences on the overall project; using fully tested pilots, simulations, or prototype implementations when necessary before going to production; establishing clear measures and accountability for project progress; and, securing substantial involvement and buy-in throughout the project from the program officials who will use the system;

7. be implemented in phased, successive segments as narrow in scope and brief in duration as practicable, each of which solves a specific part of an overall mission problem and delivers a measurable net benefit independent of future segments, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time; and

8. employ an acquisition strategy that appropriately allocates risk between the Government and the contractor, effectively uses competition, ties contract payments to accomplishments, and takes maximum advantage of commercial technology.

   Prototypes require the same justification as other capital assets.

As a general presumption, OMB will recommend new or continued funding only for those capital asset investments that satisfy these criteria. Funding for those projects will be recommended on a phased basis by segment, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time. (For more information, see the Glossary entry, *Capital Project and Useful Segments of a Capital Project*.)

OMB recognizes that many agencies are in the middle of ongoing projects, and they may not be able immediately to satisfy the criteria. For those projects that do not satisfy the criteria, OMB will consider requests to use FY 1997 and FY 1998 funds to finance additional planning, as necessary, to support the establishment of realistic cost, schedule, and performance goals for the completion of the project. This planning could include: the redesign of work processes, the evaluation of alternative solutions, the development of information system architectures, and, if necessary, the purchase and evaluation of prototypes. Realistic goals are necessary for agency portfolio analysis to determine the viability of the project, to provide the basis for fully funding the project to completion, and setting the baseline for management accountability to deliver the project within goals.

Because OMB considers this information essential to agencies' long-term success, OMB will use this information both in preparing the Administration's budget and, in conjunction with cost, schedule, and performance data, as apportionments are made. Agencies are encouraged to work with their OMB representative to arrive at a mutually satisfactory process, format, and timetable for providing the requested information.

B. Costs and Benefits

The justification of the project should evaluate and discuss the extent to which the project meets the above criteria and should also include:

1. an analysis of the project's total life-cycle costs and benefits, including the total budget authority required for the asset, consistent with policies described in OMB Circular A-94: "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs" (October 1992);

2. an analysis of the risk of the project including how risks will be isolated, minimized, monitored, and controlled, and, for major programs, an evaluation and estimate by the Chief Financial Officer of the probability of achieving the proposed goals;

3. if, after the planning phase, the procurement is proposed for funding in segments, an analysis showing that the proposed segment is economically and programmatically justified -- that is, it is programmatically useful if no further investments are funded, and in this application its benefits exceed its costs; and

4. show cost, schedule, and performance goals for the project (or the useful segment being proposed) that can be measured throughout the acquisition process using an earned value management system or similar system. Earned value is described in Appendix Four.

C. Principles of Financing

Principle 1. Full Funding

Budget authority sufficient to complete a useful segment of a capital project (or the entire capital project, if it is not divisible into useful segments) must be appropriated before any obligations for the useful segment (or project) may be incurred.

Enforcement. The *FY 1998 Budget* proposes a new Budget Enforcement Act scorekeeping rule to enforce this principle. The proposed rule is the following:

> "An appropriations act that provides only partial funding for a useful segment of a capital project will be scored for the estimated total budget authority for the useful segment in the fiscal year in which the partial funding is provided, unless the appropriation language clearly prohibits obligations from being incurred until complete funding for the useful segment is provided.
>
> "A useful segment of a capital project is defined as a component of a capital project that provides either:
>
> - information that allows the agency to plan the capital project, develop the design, and assess the benefits, costs, and risks before proceeding to full acquisition of the useful asset (or canceling the acquisition). This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. Because of uncertainty regarding the identification of separate planning segments for research and development activities, the application of full funding concepts to research and development planning will need more study pending preparation of the 1999 budget; or
>
> - a useful asset for which the benefits exceed the costs even if no further funding is appropriated."

Explanation. Good budgeting requires that appropriations for the full costs of asset acquisition be enacted in advance to help ensure that all costs and benefits are fully taken into account at the time decisions are made to provide resources. Full funding with regular appropriations in the budget year also leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. Full funding increases the opportunity to use performance-based fixed price contracts, allows for more efficient work planning and management of the capital project, and increases the accountability for the achievement of the baseline goals.

When full funding is not followed and capital projects or useful segments are funded in increments, without certainty if or when future funding will be available, the result is sometimes poor planning,

acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects, the loss of sunk costs, or inadequate funding to maintain and operate the assets.

Principle 2. Regular and Advance Appropriations

Regular appropriations for the full funding of a capital project or a useful segment of a capital project in the budget year are preferred. If this results in spikes that, in the judgment of OMB, cannot be accommodated by the agency or the Congress, a combination of regular and advance appropriations that together provide full funding for a capital project or a useful segment should be proposed in the budget.

Explanation. Principle 1 (Full Funding) is met as long as a combination of regular and advance appropriations provide budget authority sufficient to complete the capital project or useful segment. Full funding in the budget year with regular appropriations alone is preferred because it leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. In contrast, full funding for a capital project over several years with regular appropriations for the first year and advance appropriations for subsequent years may bias tradeoffs in the budget year in favor of the proposed asset because with advance appropriations the full cost of the asset is not included in the budget year. Advance appropriations, because they are scored in the year they become available for obligation, may constrain the budget authority and outlays available for regular appropriations of that year.

If, however, the lumpiness caused by regular appropriations cannot be accommodated within an agency or Appropriations Subcommittee, advance appropriations can ameliorate that problem while still providing that all of the budget authority is enacted in advance for the capital project or useful segment. The latter helps ensure that agencies develop appropriate plans and budgets and that all costs and benefits are identified prior to providing resources. In addition, amounts of advance appropriations can be matched to funding requirements for completing natural components of the useful segment. Advance appropriations have the same benefits as regular appropriations for improved planning, management, and accountability of the project.

Principle 3. Separate Funding of Planning Segments

As a general rule, planning segments of a capital project should be financed separately from the procurement of a useful asset.

Explanation. The agency must have information that allows it to plan the capital project, develop the design, and assess the benefits, costs, and risks before proceeding to procurement of the useful asset. This is especially important for high risk acquisitions. This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. The construction of a prototype that is a capital asset, because of its cost and risk, should be justified and planned as carefully as the project itself. The process of gathering information for a capital project may consist of one or more planning segments, depending on the nature of the asset. Funding these

segments separately will help ensure that the necessary information is available to establish cost, schedule, and performance goals before proceeding to procurement.

If budget authority for planning segments and procurement of the useful asset are enacted together, OMB may wish to apportion budget authority for one or several planning segments separately from procurement of the useful asset.

Principle 4. Accommodation of Lumpiness or "Spikes" and Separate Capital Acquisition Accounts

To accommodate lumpiness or "spikes" in funding justified capital acquisitions, agencies, working with OMB, are encouraged to aggregate financing for capital asset acquisitions in one or several separate capital acquisition budget accounts within the agency, to the extent possible within the agency's total budget request.

Explanation. Large, temporary, year-to-year increases in budget authority, sometimes called lumps or spikes, may create a bias against the acquisition of justified capital assets. Agencies, working with OMB, should seek ways to avoid this bias and accommodate such spikes for justified acquisitions. Aggregation of capital acquisitions in separate accounts may:

- reduce spikes within an agency or bureau by providing roughly the same level of spending for acquisitions each year;

- help to identify the source of spikes and to explain them. Capital acquisitions are more lumpy than operating expenses; and with a capital acquisition account, it can be seen that an increase in operating expenses is not being hidden and attributed to one-time asset purchases;

- reduce the pressure for capital spikes to crowd out operating expenses; and

- improve justification and make proposals easier to evaluate, since capital acquisitions are generally analyzed in a different manner than operating expenses (e.g., capital acquisitions have a longer time horizon of benefits and life-cycle costs).

D. Risk Management

Risk management should be central to the planning, budgeting, and acquisition process. Failure to analyze and manage the inherent risk in all capital asset acquisitions may contribute to cost overruns, schedule shortfalls, and acquisitions that fail to perform as expected. For each major capital project a risk analysis that includes how risks will be isolated, minimized, monitored, and controlled may help prevent these problems.

The project cost, schedule and performance goals established through the planning phase of the project are the basis for approval to procure the asset and the basis for assessing risk. During the procurement phase performance-based management systems (earned value or similar system) must be used to provide contractor and Government management visibility on the achievement of, or

deviation from, goals until the asset is accepted and operational. If goals are not being met, performance-based management systems allow for early identification of problems, potential corrective actions, and changes to the original goals needed to complete the project and necessary for agency portfolio analysis decisions. These systems also allow for Administration decisions to recommend meaningful modifications for increased funding to the Congress, or termination of the project, based on its revised expected return on investment in comparison to alternative uses of the funds. Agencies must ensure that the necessary acquisition strategies are implemented to reduce the risk of cost escalation and the risk of failure to achieve schedule and performance goals. These strategies may include:

1. having budget authority appropriated in separate capital asset acquisition accounts;

2. apportioning budget authority for a useful segment;

3. establishing thresholds for cost, schedule, and performance goals of the acquisition, including return on investment, which if not met may result in cancellation of the acquisition;

4. selecting types of contracts and pricing mechanisms that are efficient and that provide incentives to contractors in order to allocate risk appropriately between the contractor and the Government;

5. monitoring cost, schedule, and performance goals for the project (or the useful segment being proposed) using an earned value management system or similar system. Earned value is described in Appendix Four; and

6. if progress is not within 90 percent of goals, or if new information is available that would indicate a greater return on investment from alternative uses of funds, institute senior management review of the project through portfolio analysis to determine the continued viability of the project with modifications, or the termination of the project, and the start of exploration for alternative solutions if it is necessary to fill a gap in agency strategic goals and objectives.

Appendix Eight

ALTERNATIVE COMPETITIONS AND OMB CIRCULAR A-76

The August 1983 Office of Management and Budget (OMB) Circular No. A-76, *Performance of Commercial Activities*, and its March 1996 *Revised Supplemental Handbook* establish Federal policy for the performance of recurring commercial activities. The Circular provides guidance and procedures for determining whether recurring commercial activities should be provided through contracts with commercial sources, through in-house resources using Government facilities, equipment and personnel, or through inter-service support agreements (ISSAs) with other Federal or State and local agencies.

Americans want to know that they are "getting their money's worth" and want a Government that is more businesslike and better managed. The reinvention of Government begins by focusing on core mission competencies and support service requirements. Thus, the reinvention process must consider a wide range of alternatives to continued capital investment, including: the consolidation, restructuring or reengineering of activities; privatization options; make or buy decisions; joint ventures with the private sector; the possible devolution of activities to other federal, state or local agencies; and the termination of obsolete services or programs. Circular A-76 provides a minimum level of analytic rigor for the evaluation of these alternatives. It is designed to: (1) balance the interests of the parties; (2) provide a level playing field between public and private offerors; and (3) encourage competition and customer choice.

Generally, agencies will conduct cost comparisons when activities do not meet established performance standards, when agencies believe fair and reasonable prices cannot be obtained from qualified commercial sources, or as otherwise provided to permit the conversion of work to or from in-house, contract or ISSA performance. The Circular requires a cost comparison whenever an expansion, modernization, replacement, upgrading or the enlargement of an in-house commercial activity or capability is being considered.

The cost comparison process, similar to the capital programming process discussed in this Guide, consists of six major components. They are: (1) the development of a Performance Work Statement (PWS); (2) the performance of a market and a management study to determine the Government's Most Efficient Organization (MEO); (3) the development of in-house Government cost estimates; (4) issuance of the Request for Proposal (RFP) or Invitation for Bid (IFB); (5) the comparison of the in-house bid against a proposed contract or ISSA offer; and (6) the Administrative Appeal Process, which is designed to assure that all costs entered on the Cost Comparison Form (CCF) are fair and accurate.

Appendix Nine

VALUE MANAGEMENT

The value management methodology, (also know as value analysis, value engineering, value planning, etc.) should be considered for use in the Planning, Procurement and Management-In-Use Phases of capital programming. The value methodology uses a systematic job plan to identify essential functions necessary to accomplish an activity; analyze those functions; and, generate alternatives to secure them at their greatest worth, on a life-cycle benefit-to-cost basis. By following the process defined in the job plan, the use of the value methodology will facilitate the selection, through evaluation and analysis of the "best value"alternative for those functions. The process provides plans and actions to acquire and implement the selected alternatives. The IPT may employ the use of the value management methodology in several ways; including a professional value management specialist as a member of the team; using team leaders trained in the value management methodology; or using value specialists, either agency employees or industry consultants to perform studies.

Planning Phase

This process has seven elements which define capital asset needs in terms of the performance and functional requirements necessary to meet an agency's strategic goals. The seven elements are:

1. ***Selection of the Function/Process*** to be studied.

2. ***Determination of Why The Function is Performed***. The need for the function itself may be questioned, "What does it do?"

3. ***Information Gathering***. The collection and assembly of all necessary information concerning the selected study item. This provides an understanding of what is to be accomplished through the performance of the function and provides answers to the questions, "What does it cost?" and "What is the function worth?"

4. ***Development of Alternatives.*** This is the single most important element of the process. The use of free imagination, tempered with experience, will develop the best ideas. In initial brainstorming sessions, all ideas, even the wildest, should be duly recorded and encouraged. Many times, the most progressive, breakthrough ideas, with the greatest payoff, will come from near or beyond the edge of the current function paradigms in the area being studied. This element provides answers to the question, "What are the different ways this function can be performed?"

5. ***Analysis of Alternatives***. The purpose of this analysis process is to eliminate those ideas that are technically or financially unfeasible in order to permit the selection of alternatives for further feasibility testing based on the resulting cost estimates. This element will answer the question, "What is the cost of the selected alternative?"

6. ***Feasibility Testing and Function Verification***. Determines that the selected alternative can perform the required function and is technically feasible. A viable alternative must provide the essential function performance and be capable of being implemented. This element answers three questions for each selected alternative: "Is the alternative feasible?"; "Does the alternative provide the essential function?"; and "Does the alternative meet the definition of function worth?"

7. ***Implementation and Follow-up.*** Selection of the final alternative, documentation of the decision, and preparation of the necessary implementation plans complete the process in this phase. Integrating schedules and funding requirements documents into the agency capital plan is part of this element.

Procurement Phase

The agency should include the FAR Part 48, Value Engineering, requirements in its contracts and actively encourage the contractor(s) to identify potential cost savings, along with schedule and performance enhancements.

Management-In-Use Phase

The use of statistical process control, Pareto analysis and the value management function analysis methodology can be used to analyze performance data to determine whether the asset is meeting cost and performance goals and can help identify if there are better ways for the asset to meet is life-cycle cost and performance goals.

The IPT may perform the value management function in several ways: including a professional value management specialist as a member of the team; using team leaders trained in the value management methodology; or using value process facilitators, either agency employees or commercial consultants, to perform the value management studies.

Appropriations. An appropriation provides budget authority that permits Government officials to incur obligations that result in immediate or future outlays of Government funds.

- **Regular annual appropriations**. These appropriations are:

  - *enacted* normally in the current year;
  - *scored* entirely in the budget year; and
  - *available for obligation* in the budget year and subsequent years if specified in the language. (See "Availability," below.)

- **Advance appropriations**. Advance appropriations may be accompanied by regular annual appropriations to provide funds available for obligation in the budget year as well as subsequent years. Advance appropriations are:

  - *enacted* normally in the current year;
  - *scored* after the budget year (e.g., in each of one, two, or more later years, depending on the language); and
  - *available for obligation* in the year scored and subsequent years if specified in the language. (See "Availability," below.)

  Availability. Appropriations made in appropriations acts are available for obligation only in the budget year unless the language specifies that an appropriation is available for a longer period. If the language specifies that the funds are to remain available until the end of a certain year beyond the budget year, the availability is said to be "multi-year." If the language specifies that the funds are to remain available until expended, the availability is said to be "no-year." Appropriations for major procurements and construction projects are typically made available for multiple years or until expended.

Assets. Tangible or intangible items owned by the Federal Government which would have probable economic benefits that can be obtained or controlled by a Federal entity (adapted from *SFFAS No. 6, Elements of Financial Statements*, and *Kohler's Dictionary for Accounting*).

Baseline Goals. Baseline cost, schedule, and performance goals will be the standard against which actual work is measured. They will be the basis for the annual report to the Congress required by FASA Title V on variances of 10 percent or more from cost and schedule goals and any deviation from performance goals. The goals, and any changes to the goals, must be approved by OMB.

- ***Cost and schedule goals***. The baseline cost and schedule goals should be realistic projections of total cost, total time to complete the project, and interim cost and schedule goals. The interim cost and schedule goals should be based on the value of work performed or a comparable concept. Appendix Four illustrates the earned value concept for establishing cost and schedule goals, one of several concepts that could be used.

- ***Performance goals***. The performance goals should be realistic assessments of what the acquisition is intended to accomplish, expressed in quantitative terms if possible. For

example, an illustrative performance goal may be that the asset will allow the agency to process, on average, 1,000 units of work per month.

- ***Illustrative major milestones in establishing goals***. Illustrative major milestones in establishing or proposing revised baseline goals could be:

  - agency mission analysis, process design, and requirements development;
  - agency submission and justification to OMB;
  - approval for inclusion in the Administration's budget proposal to Congress;
  - enactment of appropriations;
  - before and after the contract or contracts are signed; and
  - other times after the contracts are signed, depending on circumstances.

Budget Authority. Budget authority (BA) is the authority provided by Federal law to incur financial obligations that will result in outlays.[2] Most budget authority for acquisitions is in the form of appropriations; other types are contract authority, authority to borrow, and spending authority from offsetting collections.[3]

Capital Assets. See Appendix One.

Capital Project and Useful Segments of a Capital Project. The total capital project, or acquisition of a capital asset, includes useful segments that are either planning segments or useful assets.

- **Planning segments**. A planning segment of a capital project provides information that allows the agency to develop the design; assess the benefits, costs, and risks; and establish realistic baseline cost, schedule, and performance goals before proceeding to full acquisition of the useful asset (or canceling the acquisition). This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. The process of gathering information for a capital project may consist of one or more planning segments, depending on the nature of the asset. If the project includes a prototype that is a capital asset, the prototype may itself be one segment or may be divisible into more than one segment. Because of uncertainty regarding the identification of separate planning segments for research and development activities, the application of full funding concepts to research and development planning will need more study pending preparation of the FY 1999 budget.

- **Useful asset**. A useful asset is an economically and programmatically separate segment of the asset procurement stage of the capital project that provides an asset for which the benefits exceed the costs, even if no further funding is appropriated. The total capital asset

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2 This is consistent with the definition of budget authority contained in Section 3(2) of the Congressional Budget and Impoundment Control Act of 1974, as amended by the Omnibus Budget and Reconciliation Act of 1990.

3 OMB Circular A–11: Section 14.2 (b) explains budget authority in more detail.

procurement may include one or more useful assets, although it may not be possible to divide all procurements in this way. Illustrations follow:

Illustration 1. If the construction of a building meets the justification criteria and has benefits greater than its costs without further investment, then the construction of that building is a "useful segment." Excavation is not a useful segment because no useful asset results from the excavation alone if no further funding becomes available. For a campus of several buildings, a useful segment is one complete building if that building has programmatic benefits that exceed its costs regardless of whether the other buildings are constructed, even though that building may not be at its maximum use.

Illustration 2. If the full acquisition is for several items (e.g., aircraft), the useful segment would be the number of complete aircraft required to achieve benefits that exceed costs, even if no further funding is available. In contrast, some portion of several aircraft (e.g., engines for five aircraft) would not be a useful segment if no further funding is available, nor would one aircraft be a useful segment if two or more are required for benefits to exceed costs.

Illustration 3. For information technology, a module (the information technology equivalent of "useful segment") is separable if it is useful in itself without subsequent modules. The module should be designed so that it can be enhanced or integrated with subsequent modules if future funding becomes available.

Commercially Available Off-The-Shelf (COTS) Item. Any item, other than real property, that is of a type customarily used by the general public for nongovernmental purposes, and that has been sold, leased, or licensed to the general public; is sold, leased, or licensed in substantial quantities in the commercial marketplace; and is offered to the Government, without modification, in the same form in which it is sold, leased, or licensed in the commercial marketplace.

Cost. Defined in SFFAC No. 1, *Objectives of Federal Financial Reporting*, as the monetary value of resources used. Defined more specifically in SFFAS No. 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*, as the monetary value of resources used or sacrificed or liabilities incurred to achieve an objective, such as to acquire or produce a good or to perform an activity or service. Depending on the nature of the transaction, cost may be charged to operations immediately (i.e., recognized as an expense of the period) or to an asset account for recognition as an expense of subsequent periods. In most contexts within SFFAS No. 7, *Accounting for Revenue and Other Financing Sources*, "cost" is used synonymously with expense. See also, "Full Cost."

Full Cost. All direct and indirect costs to any part of the Federal Government of providing goods, resources, and services (OMB Circular A-25). The total amount of resources used to produce the output. More specifically, the full cost of an output produced by a responsibility segment is the sum of: (1) the costs of resources consumed by the responsibility segment that directly or indirectly contribute to the output; and (2) the costs of identifiable supporting services provided by other responsibility segments within the reporting entity and by other reporting entities (SFFAS No. 4, *Managerial Cost Accounting Concepts and Standards for the Federal Government*).

Funding

- **Full funding**: Full funding means that appropriations -- regular appropriations or advance appropriations -- are enacted that are sufficient in total to complete a useful segment of a capital project before any obligations may be incurred for that segment. Full funding for an entire capital project is required if the project cannot be divided into more than one useful segment. If the asset can be divided into more than one useful segment, full funding for a project may be desirable, but is not required to constitute full funding.

- **Incremental (partial) funding**: Incremental (partial) funding means that appropriations -- regular appropriations or advance appropriations -- are enacted for just part of a useful segment of a capital project, if the project has useful segments, or for part of the capital project as a whole, if it is not divisible into useful segments. Under incremental funding for a capital asset, which is not permitted under the principles in this Guide (See Appendix Seven), the funds could be obligated to start the segment (or project) despite the fact that they are insufficient to complete a useful segment or project.

Information Technology. Section 5002 (3) of the Clinger-Cohen Act defines information technology as follows:

> "(3) INFORMATION TECHNOLOGY. (A) The term 'information technology", with respect to an executive agency means any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. For purposes of the preceding sentence, equipment is used by an executive agency if the equipment is used by an executive agency directly or is used by a contractor under a contract with the executive agency which (I) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product.
>
> (B) The term "information technology" includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.
>
> © Notwithstanding subparagraphs (A) and (B), the term 'information technology' does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract."

Information Technology Systems for National Security. Section 5142 of ITMRA defines a national security system as follows:

> "(a) DEFINITION. In this subtitle, the term 'national security system' means any telecommunications or information system operated by the United States Government, the function, operation, or use of which:
>
> 1. involves intelligence activities;
> 2. involves cryptologic activities related to national security;

3. involves command and control of military forces;

4. involves equipment that is an integral part of a weapon or weapons system; or

5. subject to subsection (b), is critical to the direct fulfillment of military or intelligence missions.

(b) LIMITATION. Subsection (a)(5) does not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications)."

Life-cycle Costs. Life-cycle costs of an asset are all direct and indirect initial costs, including planning and other costs or procurement; all periodic or continuing costs of operation and maintenance; and costs of decommissioning and disposal.

Nation's Integrated Industrial Base. The nation's integrated industrial base includes those companies with facilities, design and manufacturing processes, and technologies capable of servicing both commercial and government needs.

Non-developmental Item (NDI). Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a state, or local government that requires only minor modifications or modifications of a type customarily available in the commercial marketplace.

Outcome Measure. An assessment of the results of a program activity compared to its intended purpose.

Outlay. The issuance of checks, disbursement of cash, or electronic transfer of funds made to liquidate a federal obligation. Outlays also occur when interest on the Treasury debt held by the public accrues and when the Government issues bonds, notes, debentures, monetary credits, or other cash-equivalent instruments in order to liquidate obligations. Also, under credit reform, the credit subsidy cost is recorded as an outlay when a direct or guaranteed loan is disbursed.

Output Measure. A tabulation, calculation, or recording of activity or effort that can be expressed in a quantitative or qualitative manner. They shall have two key characteristics: 1) they shall be periodically or systematically captured through an accounting or management information system; and 2) there shall be a logical connection between the reported measures and the program's mission, goals, and objectives.

Performance Measurement. A means of evaluating efficiency, effectiveness, and results. Performance measurement should include program accomplishments in terms of outputs (quantity of products or services provided) and outcomes (results of providing outputs in terms of effectively meeting intended agency mission objectives).

Risk Management. See Appendix Six.

Support Costs. Costs of activities not directly associated with production. Typical examples are the costs of automation support, communications, postage, process engineering, and purchasing.

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