DEPARTMENT OF HEALTH AND HUMAN SERVICES

ADMINISTRATION FOR CHILDREN AND FAMILIES

COMPANION GUIDE 3:

COST/BENEFIT ANALYSIS ILLUSTRATED FOR CHILD SUPPORT ENFORCEMENT SYSTEMS

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Document Overview

The Administration for Children and Families (ACF) has a continuing interest in helping States to improve the quality and usefulness of the plans and studies that support their development of public benefit information systems. To this end, ACF has published the *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* and the *Companion Guide: Cost/Benefit Analysis Illustrated* (for generic public benefit systems), sponsored State systems planning working groups, developed a set of model spreadsheet templates for cost/benefit analysis, and prepared cost/benefit training materials.

To augment these efforts, and especially to respond to requests from State personnel, the Office of Child Support Enforcement (OCSE) of the ACF has revised this *Companion Guide 3: Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems*. This optional guidance responds to the States' requests for more program-specific guidance.

This revised *Companion Guide 3* is divided into 2 Parts, presenting two alternative methodologies for CSE Cost/Benefit analysis (CBA) and Measurement in the Advance Planning Document (APD) process. For easier reference, the chapters in each Part are organized in a similar fashion, presenting information in parallel on the use of each CBA methodology in the Advance Planning Document (APD) process.

Part 1 Function-based Cost/Benefit Analysis in the APD Process

Chapters in Part 1 supplement information in prior ACF documents on cost/benefit analysis, and provide examples of using a function-based model for cost/benefit analysis in the APD process.

- Chapter 1-1: Introduction and Purpose. This introductory chapter provides general information to supplement the information presented in the *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* and the initial *Companion Guide: Cost/Benefit Analysis Illustrated*.

- Chapter 1-2: Implementation APD Documentation: Results of Feasibility Study. This chapter provides an example of the part of the Implementation APD that summarizes the cost/benefit analyses conducted in the State's Feasibility Study. The Feasibility Study uses a function-based cost benefit model. Feasibility Study results summarized in the Implementation APD most often use the function-based format. Therefore, this part of the IAPD remains the same, no matter which cost/benefit model is ultimately used for measurement and reporting. This example illustrates the summary or key information that ACF considers important in summarizing Feasibility Study results, in particular the identification of a clear baseline for later cost/benefit measurement and reporting.

- Chapter 1-3: Implementation APD Documentation: CBA and Measurement Plan. This chapter documents the detailed costs and benefits of the chosen system alternative that the State would include in its IAPD. The chapter also describes the Cost Benefit Measurement Plan the State proposes to use during the project to assess progress and status. (Note: This chapter documents one alternative methodology for Cost Benefit Measurement, a function-based model. This section in no way implies a standard approach or format that States must use. It is intended to illustrate the level of detail sufficient for ACF purposes.)

- Chapter 1-4: Annual APD Update Documentation. This chapter provides examples of cost/benefit measurement and reporting. The chapter is written as though the State is reporting status of costs and benefits for the third year of the CBA Measurement Plans described in Chapters 1-2 and 1-3. This chapter clarifies the relationship between the planning stage studies and the post-implementation measurement and reporting phase.

Part 2 Revenue-based Cost/Benefit Analysis in the APD Process

Chapters in Part 2 present information on an alternative methodology for CSE cost/benefit analysis, the Revenue Stream Model (RSM), and provide examples of using the RSM for cost/benefit analysis in the APD process.

- Chapter 2-1: Introduction and Purpose. This chapter introduces the Revenue Stream Model as an alternative methodology for monitoring cost/benefit analysis for Child Support Enforcement systems. The chapter explains the concept and operation of the RSM. This chapter does NOT duplicate information presented in the *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* or the initial *Companion Guide: Cost/Benefit Analysis Illustrated.*

- Chapter 2-2: Implementation APD Documentation: Results of Feasibility Study. Feasibility Study results are generally reported in the Implementation APD in the format used in the Feasibility Study, regardless of the cost/benefit model ultimately chosen for monitoring and reporting. Feasibility Studies have generally used function-based cost/benefit models, therefore the guidance in Chapter 1-2 remains valid even where the RSM is chosen for future cost/benefit measurement and reporting. We have included this chapter reference here as an important placeholder in the APD process. Please see Chapter 1-2 for guidance on reporting Feasibility Study results in the Implementation APD.

- Chapter 2-3: Implementation APD Documentation: CBA and Measurement Plan. This chapter assumes that the Revenue Stream Model is the chosen methodology for the State's Cost/Benefit Measurement Plan. This chapter illustrates how the State would document in its Implementation APD the baseline and summary-level costs and benefits for the chosen system alternative. (Note: This chapter documents one alternative methodology for Cost Benefit Measurement, a revenue-based model. This section in no way implies a standard approach or format that States must use. It is intended to illustrate the level of detail sufficient for ACF purposes.)

- Chapter 2-4: Annual APD Update Documentation. This chapter provides examples of cost/benefit measurement and reporting. The chapter is written as though the State is reporting status of costs and benefits for the third year of the CBA Measurement Plans described in Chapters 2-2 and 2-3. This chapter clarifies the relationship between the planning stage studies and the post-implementation measurement and reporting phase.

This *Companion Guide 3* is a supplement, not a replacement, for the prior guides. The *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* remains the definitive ACF reference on the subject of cost/benefit analysis to support State public benefit information systems advance planning. The initial *Companion Guide* (*Companion Guide: Cost/Benefit Analysis Illustrated)* also addresses material not duplicated in this document, including a generic example of a cost/benefit analysis, definition and clarification of terms, the importance of consistency, use of more sophisticated techniques, level of effort, compilation of data, development of benefits in general, and sensitivity analysis. The *Companion Guide*

also illustrates the difference between cost/benefit documentation that the State must maintain and cost/benefit documentation that must be submitted to ACF.

Part 1 Function-Based Cost/Benefit Analysis in the APD Process

1-1 CSE Benefits -- Supplementary Information

1-1.1 CHILD SUPPORT ENFORCEMENT BENEFITS IN PERSPECTIVE

Cost/Benefit Analysis must prove that the projected benefits are sufficient to warrant the expenditure for the system project. This implies that the justification will be based on measurable benefits and that the outlay for those benefits is reasonable. It is a two-step process that answers two questions:

- What am I buying in terms of outcomes?
- Is the cost of achieving those outcomes reasonable?

The most common and straightforward approach to justifying an acquisition is to project that the dollar value of the benefits for the proposed acquisition will exceed the costs. In other words, the system will break even. Such justifications can normally be approved at face value, so long as the stated benefits and costs appear reasonable.

Since Child Support Enforcement systems generate substantial revenues in the form of collections, the focus of CSE benefit analysis is on increased collections. “Increased collections” are key words in this concept. Only the increase above the previous collections norm is attributable as a benefit to changes in the CSE system or the CSE administrative program. We believe this is the most practical way in which CSE systems will justify their expense and achieve breakeven.

Other quantitative benefits that an effective, economical, and efficient child support system might deliver include:

- Reduced costs of CSE system development
- Avoided costs
- Reduced costs in other programs
- Social net benefit

The onus is on the States to present a compelling case that establishes that the cost of the investment is worth the projected outcomes. In addition, because States must report actual benefits, the onus is also on States to implement systems that achieve the projected outcomes.

1-1.2 DEVELOPING BENEFITS

Child Support Enforcement agencies generate collections (income or revenue) that offset (to a degree) the costs of the government's programs to collect or provide welfare support. By implementing improved information systems, we can increase collections, thereby achieving a net gain for the government, and by extension, for the constituency that government serves.

However, public sector cost/benefit analysis is also concerned with net program effect. With minor exceptions, the government does not charge for its services: public services and benefits are required by law to be provided. Therefore, the government's obligation is not necessarily to maximize cost-recovery, but to maximize the cost-effectiveness of the expenditures involved in delivery of public services and benefits.

In the planning stages, ACF views cost/benefit analysis as serving four fundamental and equally important needs — to:

- Evaluate alternative mixes of financial, human, and information resources,
- Support wise economic decisions on proposed information system investments,
- Establish a performance baseline against which to measure future success of the systems project, and
- Provide fundamental management tools to maximize benefits and minimize costs.

Therefore, initial cost/benefit analysis is a process of developing economic and performance indicators to serve as important tools for management decision-making. In the planning stages, these tools project how the several proposed solutions distribute costs over time - so that the net effect on the program can be evaluated. The questions to be answered at this stage include:

- Will the system result in measurable, sustainable improvements to current collections, such that the increases will "pay for" the costs of the enhanced automation,
- Are there additional savings that can be achieved from other categories of cost that can help "pay for" the costs of developing the enhanced automation, and
- Will the system project result in intangible improvements, however difficult to quantify, over current operations?

Public sector cost/benefit analysis is not an accounting process. When benefits equal costs, the analysis has not proven the system will cost nothing. Rather, it shows a reasonable likelihood that the effort can be accomplished within the overall, projected program budget - and that the projected increases in benefits are sufficient to warrant the overall expenditure for the system project.

1-1.3 CATEGORIZING BENEFITS

Benefits may be categorized into two broad areas: qualitative (intangible) and quantitative (tangible) benefits. *The Feasibility, Alternatives, and Cost/Benefit Analysis Guide* addresses the importance of qualitative benefits:

> "Despite the preponderant weight given quantified benefits, qualitative benefits are also important in the evaluation of alternatives, gaining weight as the cost differential between alternatives narrows."

That Guide also makes clear that qualitative benefits can have cost implications, but may be difficult or impossible to quantify. Examples might include enhanced compatibility between State human services systems, improved delivery of public assistance, improved management and delivery of information, and improved data security. Quantitative benefits, however, are at the heart of the cost/benefit analysis. Quantitative benefits may be defined on the basis of dollars or by other measures, such as time, percentages, caseloads, service delivery, and so forth.

The importance of the cost/benefit analysis is not only to prove that a course of action is cost-beneficial, but also to establish a baseline for performance measurement that includes such intangibles as enhanced customer service, decreased training time, and improved usability and utility of the system. Accordingly, ACF recommends that States develop both qualitative and quantitative benefits in their analyses.

1-1.4 STRUCTURED APPROACHES TO IDENTIFY BENEFITS

The task of identifying benefits may at first seem overwhelming. It may seem impossible to identify and quantify the millions of dollars of benefits needed to offset the costs of developing and acquiring a new information system. What is needed is a structured approach or a framework within which to analyze the effect of the systems project. This section suggests some frameworks for developing benefits that can be used separately or in combination. These are only suggested approaches. The State may use any structured methodology it wishes to develop a benefits profile.

1-1.4.1 Approach 1 - Generic Benefit Examples

The *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* provides a number of examples of quantitative and qualitative benefits, categorized as cost/resource, functional/programmatic, technical (system), legislative, and socio-political. An analyst could use this list as a starting point, identifying benefits that are applicable to the proposed State system. The analyst would then select the most critical, in terms of program or dollar impact, to develop in the initial cost/benefit analysis. The following chart presents a list of potential benefits to be considered:

Figure 1-1.1 Generic Benefits

QUANTITATIVE	QUALITATIVE
COST / RESOURCE	**LEGISLATIVE/SOCIO-POLITICAL**
• Reduced Costs • Controlled Costs • Reduced Staffing • Improved Staffing Utilization • Increased Productivity • Fewer Manual Functions • Increased Resources	• Integrated Benefits Automation • Improved Public Assistance • Increased Worker Satisfaction
FUNCTIONAL/PROGRAMMATIC	
• Increased Caseload Capacity • Increased Collections • Improved Management Information • Improved Controls • Interface / Matching • Less Data Redundancy	• Improved Management Information • Improved Controls • Interface / Matching • Enhanced User Acceptance
TECHNICAL	
• Faster Record Retrieval • More Timely Reporting • Reduced Operating Costs • Improved Access • Improved Security • Increased Automation • Greater Network Bandwidth • Reduced Training Time • Reduced Maintenance Costs	• More Timely Reporting • Expanded Capability/Flexibility • Improved Access • Improved Security • Increased Automation • Improved Usability • Greater Maintainability • Broader Technical Support

1-1.4.2 Approach 2 - CSE System Functions

Another framework is to examine the benefits of a proposed information system from the perspective of its effect on the functional areas of a Child Support Enforcement program:

- Case Initiation
- Locate
- Establishment
- Case Management
- Enforcement
- Financial Management
- Reporting
- Security and Privacy

Using this framework, the analyst would assess these functional areas, their domains (affected populations), and the effects or outcomes of the project, both quantitative and qualitative.

For example, the analyst might consider the effect of the system on the Case Management function by examining Case Management sub-functions and developing a chart similar to the following:

Figure 1-1.2 Case Management Benefit Analysis

EFFECT	DOMAIN	BENEFIT	TYPE
Cases moved between functions more quickly	Client	Payment received sooner and more reliably	Qualitative (for CSE Program)
	CSE Program	Increased collections	Quantitative
More accurate and complete information in the case record	Client	Improved service	Qualitative
	Caseworker	Improved morale	Qualitative
		Increased efficiency	Quantitative
		Reduced staff turnover	Quantitative
	CSE Program	Increased collections	Quantitative
Better status notification for the caseworker	Client	Improved service	Qualitative
	Caseworker	Improved morale	Qualitative
		Increased efficiency	Quantitative
		Reduced staff turnover	Quantitative
More timely case closure.	Caseworker	Increased efficiency	Quantitative
	CSE Program	Avoid costs of maintaining dead cases	Quantitative

The analyst may identify additional functional areas that could be evaluated. Notice that this type of analysis requires a number of steps:

1) Identify functional areas.
2) Analyze effects or outcomes of the system project on functional areas.
3) Analyze effects or outcomes of the system project on affected populations.
4) Determine the benefit of the effects or outcomes.
5) Decide whether each benefit is qualitative or quantitative (by dollars or other measures).
6) Decide how to value or measure each benefit.

Using this analytical framework, a State analyst might identify anticipated benefits for further evaluation. Although the initial list developed by the analyst might be quite lengthy, the State would select only the most critical, in terms of program or dollar impact, to develop in the cost/benefit analysis.

1-1.4.3 Approach 3 - CSE Regulatory Enhancements – e.g., PRWORA

This approach calls for evaluating the functionality introduced into the system requirements by changes in regulations, such as PRWORA. The benefits are evaluated for each of these changes using a methodology similar to Approach 2. The following table contains PRWORA enhancements that might generate benefits:

Figure 1-1.3 PRWORA Enhancement Analysis

FUNCTION	DOMAIN	BENEFIT	TYPE
Interstate Referrals through CSENet	CSE Program	Increased collections	Quantitative
Family Violence Indicator	Client	Public Safety	Qualitative
Federal Parent Locator Service	CSE Program	Increased collections	Quantitative
Federal Case Registry	CSE Program	Increased collections	Quantitative
National Directory of New Hires	CSE Program	Increased collections	Quantitative
Financial Institution Data Match	CSE Program	Increased collections	Quantitative
Multi-state Financial Institution Data Match	CSE Program	Increased collections	Quantitative
State Licensing Agencies and License Suspension	CSE Program	Increased collections	Quantitative
Paternity Establishment	CSE Program	Increased collections	Quantitative
Case Closure	CSE Program	Avoid costs of maintaining dead cases	Quantitative
Interstate Referral Guide	CSE Program	Increased Automation	Qualitative
Income Withholding	CSE Program	Increased Collections	Quantitative
EFT/EDI	CSE Program	Cost Savings	Quantitative
Federal Tax Refund Offset	CSE Program	Increased collections	Quantitative
Interstate Liens and Bonds	CSE Program	Increased collections	Quantitative
Credit Reporting Agencies	CSE Program	Increased collections	Quantitative
Passport Denial	CSE Program	Increased collections	Quantitative
Federal Administrative Offset	CSE Program	Increased collections	Quantitative
Distribution	CSE Program	Meet Federal Requirements	Qualitative
OCSE34-A reporting	CSE Program	Improved Reporting	Qualitative
Paternity Establishment Percentage reporting	CSE Program	Improved Reporting	Qualitative

The analyst would assess these areas and their quantitative and qualitative effects on the program and project.

For example, an analyst might consider the effect on collections of implementing Financial Institution Data Match. Estimates for collections increases using this enforcement remedy would be based on the State's current caseload, the current arrears balance, potential cooperating financial institutions, the degree of commitment of management, and legal ramifications. This analysis could then be compared with the experiences of other States employing this or a similar collection method.

Using this analytical framework, a State analyst might identify anticipated benefits for further evaluation. Although, as in Approach 2, the initial list developed by the analyst might be quite lengthy, the State would select only the most critical, in terms of program or dollar impact, to more fully develop in the cost/benefit analysis.

1-1.4.4 Approach 4 - Benefits to Other Programs

This approach recognizes that CSE enhancement often produces benefits in other programs. The approach calls for evaluating the effect enhancements to the State CSE Systems might have on other State and Federal programs. This approach requires thorough analysis by the State to justify the benefits.

The research paper *Child Support Enforcement Cost Avoidance: Evidence from Iowa* (Garasky, Keng, Jensen - Iowa State University, March 1999*)*, for example, shows that Iowa's CSE program results in lower State and Federal spending in several programs. The authors estimate that, in 1995, every dollar spent on the CSE program in Iowa resulted in $1.32 in savings to TANF, $0.14 in savings to Food Stamps, and $0.51 in savings to Medicaid. Further analysis could be done to assign a portion of this benefit to CSE system automation.

Several State Employment Security Agencies (SESAs), in partnership with OCSE, have developed an Unemployment Insurance Cross Match project, which use New Hire W-4 records to identify unemployment insurance overpayments. (*OCSE Fact Sheet* - February 15, 2000). These overpayments are then recovered by the State. If New Hire reporting is automated, part of this income may be considered a benefit due to CSE automation, since New Hire reporting was mandated by PRWORA.

1-1.5 APPLYING VALUES OR MEASURES TO BENEFITS

Once benefits have been identified, the State may begin assigning values or measures to the benefits. Chapters 1-2 and 1-3 give several examples assigning collections increases to a specific system enhancement. These chapters also provide examples of estimating collections increases, mostly based on comparisons with the collections of CSE systems of other States. For cost reductions and cost avoidance, perhaps the easiest way to determine where savings or improvements can be achieved is to take a close look at the budget and management reports - and to visit the accounting department.

Generally speaking, benefits may be derived from either or both of the systems area and the program area. Examples of systems-related quantitative benefits include future cost savings by avoiding such expenses as scheduled equipment upgrades, charge-back expenses for central data processing staffs, contractor support fees, and telecommunications fees. Examples of benefits derived from more current technology might be avoidance of courier fees, long distance tolls, postage, printing and large square-footage fees for housing systems and staff. Systems benefits include the following examples.

Reductions in system-related building overhead

Although computer systems have expanded in capabilities and price/performance, their environmental (overhead) requirements have decreased. For example, processor and storage capacity that recently required thousands of square feet of reinforced, raised floor, water cooling, and special air-conditioning can now be located in a much smaller area, in a normal office environment.

The savings in lease costs, utilities, and special environmental systems are quantifiable. The current annual costs for building and utilities overhead should be available from the operations support or budget staff. Using this and information available from the marketplace (for space and energy costs for new technology), the power and environmental expenses can be compared.

Reductions in telephone, postage, and printing cost

If the new system will reduce the number of telephone calls made or the number of letters, memoranda, or other documents printed and mailed by caseworkers, then a dollar value for this benefit can be developed. The dollar value can be estimated by assessing the effects of automation in other offices, then projecting a percentage reduction in current costs for these services.

For example, a program is currently paying $1,000,000 per year for telephone, printing, postage, and delivery costs. The agency has information from a pilot study and from contact with a recently automated office that access to electronic communication will reduce communication costs 15% in the first year and 25% per year after that as the system is implemented statewide. A five-year benefit of $1,150,000 is projected. This benefit can be monitored through implementation by reporting the actual expenditures in these categories.

Program benefits include the following examples.

Reduced staff turnover

Frequently, high rates of staff turnover are directly related to causes such as obsolete equipment, limited technological support, and excessive administrative overhead — causes that the project may be designed to eliminate. The human resources office should have information regarding historic levels of support staff turnover, and may have conducted exit interviews to identify the reasons that staffs have left. There may be evidence to suggest that more effective technological resources will reduce this turnover.

If this is the case, the human resources office and program management should be able to provide reasonable estimates of the cost of replacing an employee. The costs would be derived from the expenses of recruiting, management time dedicated to interviewing and reference checking, training, and lost productivity. The total of these costs, for the percent of staff who left for reasons related to the obsolete system, is reasonably a benefit of a new support system. Staff turnover can be monitored during implementation and operation of the new system, to determine the actual value of this projected benefit.

Improved ability to respond to program or legislative changes

CSE programs tend to be highly dynamic, as evidenced by welfare reform programs currently underway at the State and Federal level. Changes in procedure, forms, or reporting may be mandated at short notice by legislative changes or executive order. The costs of making such changes can be substantial; they typically involve system staff to modify or enhance the system, as well as program staff to implement the changes. Significant changes may require extensive retraining and may involve the production of new forms and instructions.

The historic costs of accommodating such changes should be available (or estimable) as hours of effort by various staff categories. Hours can be turned into dollar costs by applying average loaded hourly rates. Note that in order to project a benefit in this area, it will be necessary to show that specific features of the design and implementation of the new system will result in improved flexibility or ability to respond to necessary changes or enhancements.

1-1.6 REINVESTMENT

An important element of benefit analysis involves the concept of reinvestment. While automation often results in productivity improvements, care must be taken in how a value is placed on the improvement.

Benefits derived from program-related productivity improvements are often significant, because large staffs and expenditures are involved. However, one important caution must be kept in mind: productivity improvements may *not* generally be claimed as direct cost savings. A productivity improvement is not a direct savings unless staffing is reduced an equivalent percentage (and historically, CSE programs have not reduced staff levels). If staffing is not reduced, analysts need to determine the secondary effect. How will staff use the time saved by automation? Can a value be placed of the results of their new efforts? If so, the value of the new efforts becomes the value of the productivity improvement.

For example, automating the child support "Locate" function frees specific staff hours to be employed on tasks such as paternity and court order establishment. The benefit of automating “Locate” does *not* lie in the dollar value of the hours saved on Locate tasks. The benefit of automating “Locate” lies in the value of the additional paternity and court order establishment results made possible by the redirected hours. Most States have found that redirecting staff resources to take advantage of time saved and processes streamlined through automation results in higher benefits realized overall.

1-1.7 SUMMARY

Several key points were made in this chapter. When developing cost/benefit analyses for proposed CSE systems, States should:

- Develop both qualitative and quantitative benefits
- Use dollar and other quantitative measures for benefits to establish the performance baseline and goals
- Justify acquisitions on the basis of dollar-quantifiable benefits where possible
- Develop values or measures for program improvements wherever possible
- Emphasize not only cost reductions, but also program improvements
- Identify a broad list of potential benefits, but develop values or measures for only the most critical, in terms of program or dollar impact
- Evaluate and document program benefit due to reinvested time savings.

Generic examples of CSE program benefits were cited in this chapter. Other generic program and system benefits are cited in the *Companion Guide: Cost/Benefit Analysis Illustrated.*

Chapters 1-2 and 1-3 of this guide will explore examples of benefits specific to the CSE program.

States should view these examples of benefits as representative, not comprehensive. Statistics and studies cited in the examples in Chapters 1-2, 1-3, and 1-4 of this document do not depict specific historic situations and are used here for illustrative purposes only.

1-2 Documenting Feasibility Study Results in the Implementation APD

1-2.1 BACKGROUND

OCSE-AT-99-03 Addendum to the State Systems APD Guide for Child Support Enforcement Systems describes when a cost-benefit analysis must be performed:

> *"Federal regulations at 45 CFR 95.605 require that each State submit an annual report comparing the estimated cost benefits in its approved APD to actual cost benefits to date. Therefore, States must measure system costs and benefits throughout the system development effort, and begin reporting actual system costs and benefits as soon as any part of the system becomes operational (i.e., enters the pilot phase). This Cost/Benefit Analysis must be submitted as a part of the State's Annual APDU. The requirement to submit an annual Cost/Benefit Analysis continues until HHS/ACF determines that projected benefits or cost savings have been achieved. This should occur within two to five years after implementation.*
>
> *"Each State needs to assess the feasibility of enhancing their existing system to meet the statutory and regulatory requirements of PRWORA. Any State, which determines that its existing system cannot be modified to meet the new PRWORA requirements, must transfer or develop a new system. States concluding that it would be better to replace their existing system must conduct an IV&V assessment in order to justify that decision to the satisfaction of OCSE.*
>
> *"OCSE AT 96-10 offers two options for States planning to meet PRWORA requirements by enhancing their existing CSES:*
>
> *1. The State may treat the addition of the new PRWORA enhancements as a continuation of the existing CSES project and include them in an update to its FSA of 1988 APD; or*
>
> *2. The State can submit an Implementation APD to address the PRWORA enhancements.*
>
> *"States that choose to include the PRWORA requirements in their existing APD should incorporate the costs and benefits associated with the PRWORA enhancements in their existing Cost/Benefit Analysis. However, States that choose to address the PRWORA enhancements in a new Implementation APD must develop a separate and distinct Cost/Benefit Analysis for the PRWORA enhancements. States that are planning to transfer or develop a new CSES to meet PRWORA requirements must submit a separate Planning APD, an analysis of alternatives, an Implementation APD and Cost/Benefit Analysis, which address both FSA of 1988 and PRWORA requirements."*

1-2.2 INTRODUCTION

This chapter presumes that the State has previously submitted a Planning Advance Planning Document (PAPD) on its plans to implement the requirements of PRWORA, and has completed a Feasibility Study that has defined three alternative systems, one of which is the status quo (as required by ACF). In conducting its Feasibility Study, the State developed a detailed cost/benefit analysis for each alternative,

including detailed cost worksheets, detailed benefit worksheets, and system life cost/benefit measurement worksheets identified in ACF's *Feasibility, Alternatives, and Cost/Benefit Analysis Guide* and the *Companion Guide: Cost/Benefit Analysis Illustrated*. It is assumed that the State will maintain all Feasibility Study documents and analyses in State files.

The next step in the State's Advance Planning Document process is to submit an Implementation Advance Planning Document (IAPD). IAPD content must summarize the results of the Feasibility Study and Cost/Benefit Analysis necessary to support the State's development decisions. The IAPD must explain the final recommendations and decisions, document the detailed cost/benefit analysis of the chosen alternative, identify the baselines for measuring future costs and benefits, and establish exactly how future costs and benefits will be measured.

The remainder of Chapter 1-2 provides abbreviated sample content of an IAPD being prepared for submission to ACF to meet PRWORA requirements. The sample IAPD assumes that a feasibility study has already been conducted which has defined three viable system alternatives: a system upgrade, a system transfer, and development of a new system. The portion of the IAPD included in this chapter documents the Results of the Feasibility Study, including a Cost Summary table and a Benefits Summary table comparing all alternatives. This chapter summarizes those portions of the Feasibility Study Cost/Benefit Analysis necessary to support the State's development decisions.

Chapter 1-3 illustrates the detail required in the IAPD to document the chosen system alternative. This Chapter includes Functional Model representations of the alternative for which the State is seeking funding approval. This Chapter also outlines how the State proposes, in the IAPD, to measure future status and progress as the project proceeds. This Chapter profiles one viable methodology for describing and measuring benefits during an active project.

Chapter 1-4 steps forward in the APD process to the third year of the project. This Chapter provides sample content for the Cost/Benefit Analysis Section of the Annual APD Update, illustrating how actual costs and benefits would be measured for each of the benefits models.

This guide does not mandate a single format for cost/benefit analysis and reporting. The examples given are not designed to be exhaustive. They are designed to illustrate the summary or key information that ACF considers important, and the level of detail ACF considers necessary in order to assess the system cost effectiveness.

1-2.3 SAMPLE COST/BENEFIT ANALYSIS FOR IAPDS

Introduction

With this submission, the State requests approval and Federal participatory funding. As a summary of our justification, this systems project is projected to:

- Meet Federal mandates as the least cost alternative
- Breakeven in 27 months after implementation
- Achieve measurable benefits that reflect important program outcome improvements

Results of Feasibility Study and Alternatives Analysis

The State has evaluated the feasibility of and alternatives for modernizing the information technology and processing procedures supporting its Child Support Enforcement programs. As detailed in the feasibility study, this statewide Child Support Enforcement Information System project has the following primary objectives as required by Federal regulations:

- Be a comprehensive, statewide, operational system
- Be an integrated system
- Support efficient and effective program administration.
- Meet the requirements of FSA and PRWORA

This project also has program objectives to:

- Increase support for children through increased collections
- Increase family cohesion through paternity establishment
- Improve customer satisfaction through faster processing and case-worker efficiency

During the alternatives analysis, the State selected (and justified the selection of) three alternatives for evaluation of costs and benefits in comparison to the status quo. All alternatives are considered viable solutions that will achieve the system objectives.

The State currently has a statewide system approved for the Family Support Act of 1988. There are three alternatives for achieving a PRWORA-certified system. Alternative One is an upgrade of the existing system. Alternative Two is a transfer of an existing PRWORA-approved system from another State. Alternative Three is the development of an entirely new system.

Alternative One is the State's selected approach for implementation because it is less costly and, more importantly, will start realizing benefits sooner. It will also break even sooner. See the following Comparison of Alternatives Table. The disadvantages of Alternative One are that it is at some risk of technological obsolescence and will be less user-friendly than a new system. These risks and disadvantages have been addressed in our feasibility study.

Our sensitivity analysis indicates that factors outside the control of the child Support Enforcement program, such as TANF caseloads, could affect the ultimate realization of benefits. The less costly the solution, the more likely the system will prove cost-beneficial under post-implementation analysis. Even under the most negative assumptions, our projections indicate that this project will break even. The main drawbacks of Alternative One are in the Intangible Benefits Category (see chart on page 15), especially the risk of technological obsolescence. The risks will be included in the Project Risk Management Plan, and mitigation strategies will be developed.

The status quo is not a viable alternative because it does not meet PRWORA requirements, but it is costed out as required by ACF instructions in order to establish a baseline for comparison of the other alternatives under consideration.

Figure 1-2.1 Comparison of Alternatives

DESCRIPTION	STATUS QUO	ALTERNATIVE ONE (UPGRADE)	ALTERNATIVE TWO (TRANSFER)	ALTERNATIVE THREE (NEW DEVELOPMENT)
Total Present Value Benefits	$0	$1,501,740,000	$1,344,880,000	$1,178,020,000
Less Total Present Value Costs	$64,000,000	$84,000,000	$83,000,000	$103,000,000
Net Benefit (Cost)	($64,000,000)	$1,501,740,000	$1,344,880,000	$1,178,020,000
Benefit/Cost Ratio	0	17.8	16.2	11.4
Breakeven (Months)	NA	27	33	46

Feasibility Study Cost Summary

The costs evaluated in this analysis are those that directly relate to the systems design, development, conversion, implementation, and operation. For the status quo, recurring costs include site and facility, equipment and software lease and maintenance, travel, training, supplies, security, and personnel salaries (including benefits) and support services directly supporting systems development and operation. The same categories are evaluated for the alternatives. Operating costs for the Status Quo and Alternative One are estimated to be slightly higher due to the age of the system.

Nonrecurring costs for the status quo and Alternative One include a systems upgrade planned and budgeted for the third year of the systems life. Nonrecurring costs for the Alternatives include costs for new site and facilities, equipment, system testing, conversion, studies, procurement, database preparation, and overhead. Nonrecurring costs for the alternatives also include systems upgrade in the fifth year after system implementation or upgrade. Annual costs are provided in the cost/benefit profile on page 16.

Total project costs are analyzed regardless of funding source (State and Federal) and regardless of cost allowability for purposes of Federal Financial Participation (FFP), both of which are addressed by other documents.

Note: For detailed development of information system costs the States are referred to the ACF *Companion Guide Cost/Benefit Analysis Illustrated (August 1994).*

Feasibility Study Benefits Summary

All alternatives have the same quantitative benefits, with the exception of Benefit 3 (Avoid upgrade of existing system), which applies only to Alternatives Two and Three. Benefits 1 through 3 result in decreased program costs. Benefits 4 through 10 result in increased program collections. These benefits are considered because they offset the systems development cost, thereby achieving net benefits for the project. Quantitative Benefits are used in the breakeven calculation and are described in Chapter 1-3.

Annual benefits for the alternatives are provided in the Benefits Baselines (Figures 1-2.6, 1-2.7 and 1-2.8). The status quo is not considered a viable alternative so no benefits are evaluated. The project is projected to breakeven in 27-46 months. See Figure 1-2.11 for the cost/benefit profile of Alternative One.

Figure 1-2.2 System Benefits

REDUCED COSTS	
1	Reduced phone costs
2	Reduced overtime - Case closure
3	Avoid upgrade of existing system (Alt 2&3 only)
INCREASED COLLECTIONS	
4	Federal Person Locator Service/Federal Case Registry
5	National Directory of New Hires (NDNH)
6	Financial Institution Data Match (FIDM)
7	Multi-State FIDM
8	Drivers License Suspension
9	Federal Offset
10	Passport Denial
INTANGIBLES	
12	Avoid technology obsolescence
13	Customer satisfaction
14	Ease of use
15	Improved security

The third category, intangibles or Qualitative benefits, represents real benefits that are difficult or impossible to quantify. They are not included in the breakeven calculation. We do, however, give each intangible benefit a rating for each alternative in the following table:

Figure 1-2.3 Qualitative Benefits

ALTERNATIVE	BENEFIT	MEASURE OF EFFECTIVENESS			
		VERY EFFECTIVE	EFFECTIVE	MINIMALLY EFFECTIVE	NOT EFFECTIVE
1. Upgrade	1. Avoid Technology Obsolescence			X	
	2. Customer Satisfaction		X		
	3.Ease of Use		X		
	4. Security		X		
2. Transfer	1. Avoid Technology Obsolescence		X		
	2. Customer Satisfaction		X		
	3.Ease of Use		X		
	4. Security		X		
3. New Development	1. Avoid Technology Obsolescence	X			
	2. Customer Satisfaction	X			
	3.Ease of Use	X			
	4. Security	X			

Measurement Plan - Costs

The State's approach to measuring costs after implementation will ensure that actual costs are measured against the selected alternative's projected costs by the finance office, subject to review and approval by the program office. Costs will be measured by category, but reported in the aggregate annually to ACF. Variances of over 10% will be explained by supporting documentation that addresses expenditures by category.

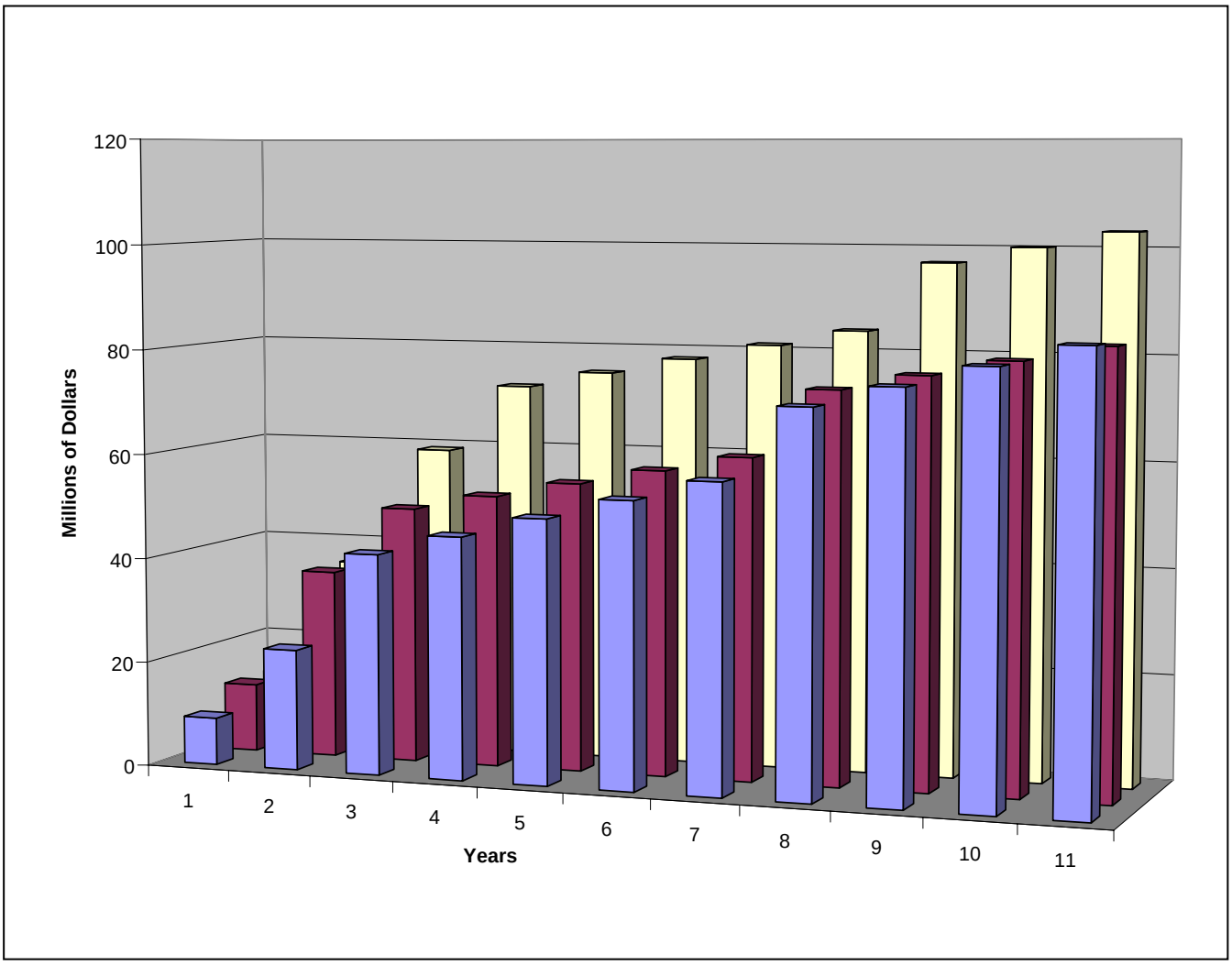
During and after implementation, the State will ensure that actual costs are measured against constant-dollar projected costs for the selected alternative from the cost/benefit analysis. Status quo costs will not be used, nor will present value discounted costs be used. Measurement dollars will not be discounted in any way.

The first figure below depicts the cumulative and annual baselines projected in the Feasibility Study., followed by a chart representation of the cost baselines for the alternatives. The Cost Baseline for Alternative One will be updated as part of project start-up activities.

Figure 1-2.4 Annual and System Life Cost Baseline

Projected Costs	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6
Status Quo	$4,000,000	$4,000,000	$14,000,000	$4,000,000	$4,000,000	$4,000,000
Alternative One	$9,000,000	$14,000,000	$19,000,000	$4,000,000	$4,000,000	$4,000,000
Alternative Two	$13,000,000	$23,000,000	$13,000,000	$3,000,000	$3,000,000	$3,000,000
Alternative Three	$13,000,000	$23,000,000	$23,000,000	$13,000,000	$3,000,000	$3,000,000
Projected Costs	**FY 7**	**FY 8**	**FY 9**	**FY 10**	**FY 11**	**Total**
Status Quo	$4,000,000	$14,000,000	$4,000,000	$4,000,000	$4,000,000	$64,000,000
Alternative One	$4,000,000	$14,000,000	$4,000,000	$4,000,000	$4,000,000	$84,000,000
Alternative Two	$3,000,000	$13,000,000	$3,000,000	$3,000,000	$3,000,000	$83,000,000
Alternative Three	$3,000,000	$3,000,000	$13,000,000	$3,000,000	$3,000,000	$103,000,000

Figure 1-2.5 Cumulative Costs



Measurement Plan - Benefits

The State's approach to measuring benefits after implementation will ensure that actual benefits are measured against the selected alternative's projected benefits by the program office, subject to review and approval by the finance office. Benefits will be measured individually, but reported in the aggregate annually to ACF. Variances of over 10% will be explained by supporting documentation that addresses individual benefits.

The following charts and tables depict the cumulative and annual baselines for each alternative considered in the Feasibility Study, and against which actual project benefits would be measured. The Benefit Baseline for Alternative One will be updated as part of project start-up activities. Actual benefits will be measured in accordance with the measurement plans in Chapter 1-3.

Figure 1-2.6 Annual and System Life Benefits Baseline - Alternative One

BENEFIT	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6
Benefit 1	$0	$0	$10,000	$10,000	$10,000	$10,000
Benefit 2	$0	$0	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Benefit 3	$0	$0	$0	$0	$0	$0
Benefit 4	$0	$0	$5,000,000	$5,000,000	$5,000,000	$5,000,000
Benefit 5	$0	$0	$16,700,000	$16,700,000	$16,700,000	$16,700,000
Benefit 6	$0	$0	$12,800,000	$12,800,000	$12,800,000	$12,800,000
Benefit 7	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Benefit 8	$0	$0	$68,000,000	$68,000,000	$68,000,000	$68,000,000
Benefit 9	$0	$0	$61,300,000	$61,300,000	$61,300,000	$61,300,000
Benefit 10	$0	$0	$50,000	$50,000	$50,000	$50,000
Total	$0	$0	$166,860,000	$166,860,000	$166,860,000	$166,860,000

	FY 7	FY 8	FY 9	FY 10	FY 11	TOTAL
Benefit 1	$10,000	$10,000	$10,000	$10,000	$10,000	$90,000
Benefit 2	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$18,000,000
Benefit 3	$0	$0	$0	$0	$0	$0
Benefit 4	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$45,000,000
Benefit 5	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$150,300,000
Benefit 6	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$115,200,000
Benefit 7	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$9,000,000
Benefit 8	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$612,000,000
Benefit 9	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$551,700,000
Benefit 10	$50,000	$50,000	$50,000	$50,000	$50,000	$450,000
Total	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$1,501,740,000

Figure 1-2.7 Annual and System Life Benefits Baseline - Alternative Two

BENEFIT	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6
Benefit 1	$0	$0	$0	$10,000	$10,000	$10,000
Benefit 2	$0	$0	$0	$2,000,000	$2,000,000	$2,000,000
Benefit 3	$0	$0	$10,000,000	$0	$0	$0
Benefit 4	$0	$0	$0	$5,000,000	$5,000,000	$5,000,000
Benefit 5	$0	$0	$0	$16,700,000	$16,700,000	$16,700,000
Benefit 6	$0	$0	$0	$12,800,000	$12,800,000	$12,800,000
Benefit 7	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000
Benefit 8	$0	$0	$0	$68,000,000	$68,000,000	$68,000,000
Benefit 9	$0	$0	$0	$61,300,000	$61,300,000	$61,300,000
Benefit 10	$0	$0	$0	$50,000	$50,000	$50,000
Total	$0	$0	$10,000,000	$166,860,000	$166,860,000	$166,860,000

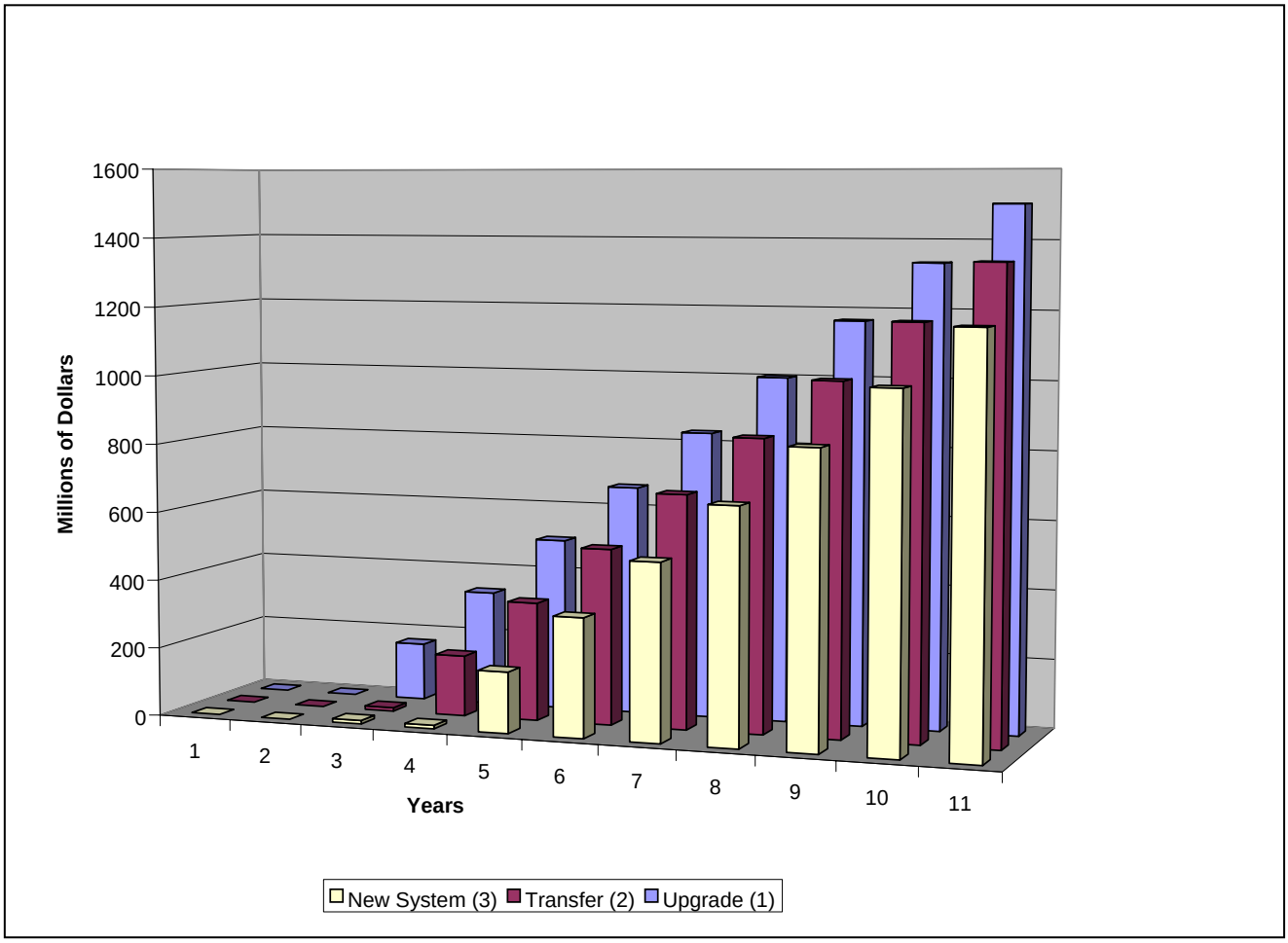
	FY 7	FY 8	FY 9	FY 10	FY 11	TOTAL
Benefit 1	$10,000	$10,000	$10,000	$10,000	$10,000	$80,000
Benefit 2	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$16,000,000
Benefit 3	$0	$0	$0	$0	$0	$10,000,000
Benefit 4	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$40,000,000
Benefit 5	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$133,600,000
Benefit 6	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$102,400,000
Benefit 7	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$8,000,000
Benefit 8	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$544,000,000
Benefit 9	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$490,400,000
Benefit 10	$50,000	$50,000	$50,000	$50,000	$50,000	$400,000
Total	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$1,344,880,000

Figure 1-2.8 Annual and System Life Benefits Baseline - Alternative Three

BENEFIT	FY 1	FY 2	FY 3	FY 4	FY 5	FY 6
Benefit 1	$0	$0	$0	$0	$10,000	$10,000
Benefit 2	$0	$0	$0	$0	$2,000,000	$2,000,000
Benefit 3	$0	$0	$10,000,000	$0	$0	$0
Benefit 4	$0	$0	$0	$0	$5,000,000	$5,000,000
Benefit 5	$0	$0	$0	$0	$16,700,000	$16,700,000
Benefit 6	$0	$0	$0	$0	$12,800,000	$12,800,000
Benefit 7	$0	$0	$0	$0	$1,000,000	$1,000,000
Benefit 8	$0	$0	$0	$0	$68,000,000	$68,000,000
Benefit 9	$0	$0	$0	$0	$61,300,000	$61,300,000
Benefit 10	$0	$0	$0	$0	$50,000	$50,000
Total	$0	$0	$10,000,000	$0	$166,860,000	$166,860,000

	FY 7	FY 8	FY 9	FY 10	FY 11	TOTAL
Benefit 1	$10,000	$10,000	$10,000	$10,000	$10,000	$70,000
Benefit 2	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$14,000,000
Benefit 3	$0	$0	$0	$0	$0	$10,000,000
Benefit 4	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$35,000,000
Benefit 5	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$16,700,000	$116,900,000
Benefit 6	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$12,800,000	$89,600,000
Benefit 7	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$7,000,000
Benefit 8	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$68,000,000	$476,000,000
Benefit 9	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$61,300,000	$429,100,000
Benefit 10	$50,000	$50,000	$50,000	$50,000	$50,000	$350,000
Total	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$166,860,000	$1,178,020,000

Figure 1-2.9 Cumulative Benefits



Project Breakeven

The following charts indicate the breakeven or payback point for the three alternatives. Cumulative total costs were compared against cumulative total benefits to determine the month of breakeven or payback. Projected values, in undiscounted constant dollars, were used in these calculations. As shown by the charts, breakeven for Alternative One (Upgrade) is 27 months, Alternative Two (Transfer) is 33 months, and breakeven for Alternative Three (New Development) is 46 months.

Figure 1-2.10 Breakeven - Alternative One

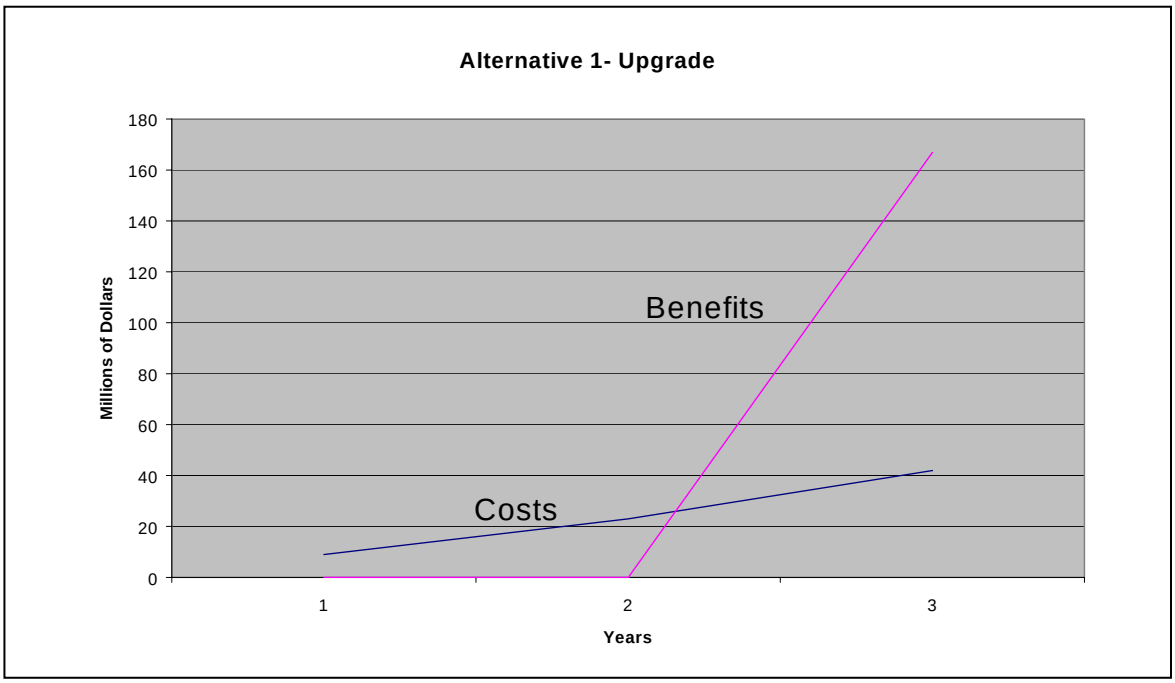


Figure 1-2.11 Breakeven - Alternative Two

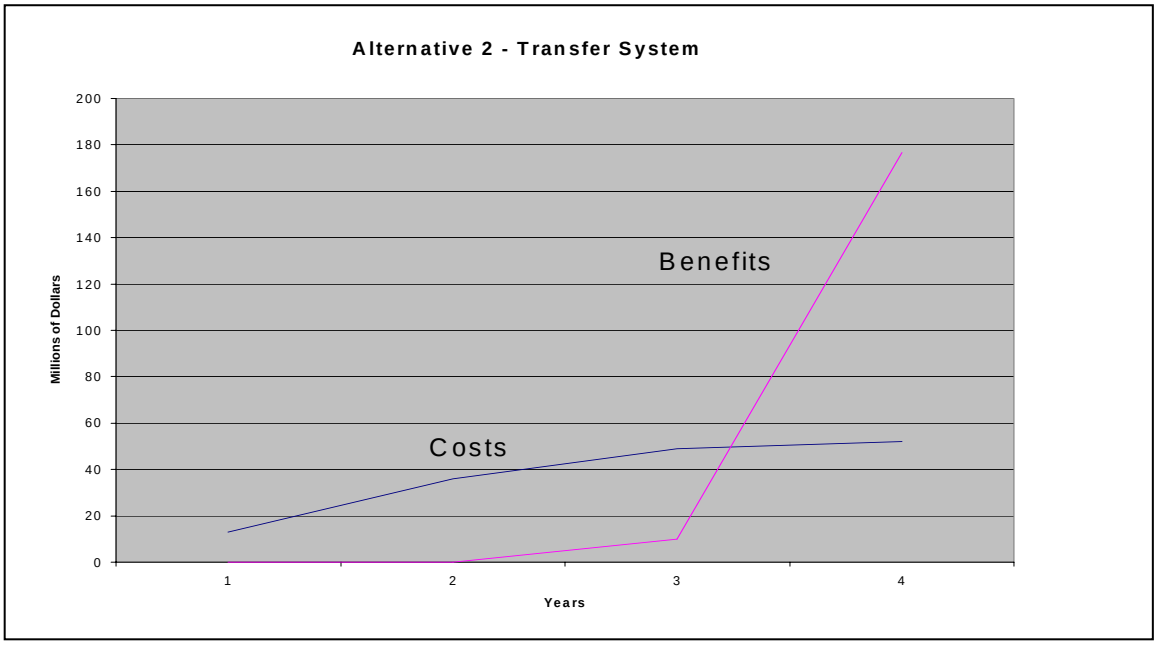
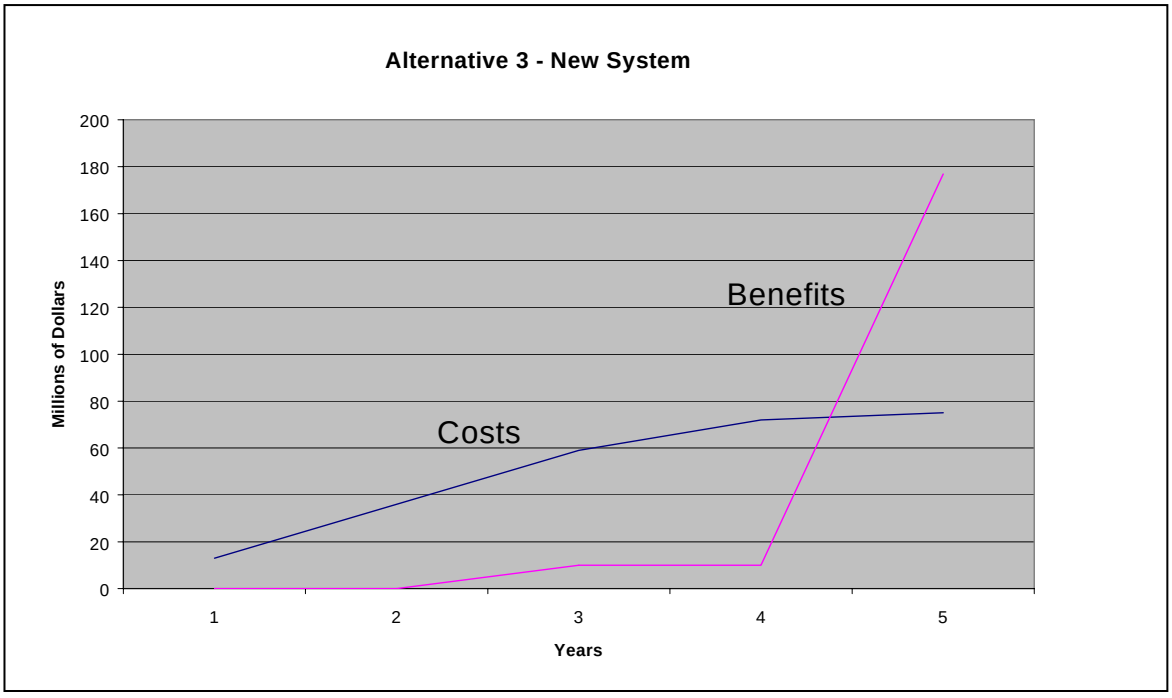


Figure 1-2.12 Breakeven Alternative - Three



Response to ACF Criteria:

We thoroughly evaluated the performance of and described the systems life costs of the status quo in the feasibility study, alternatives analysis, and cost/benefit analysis.

During the alternatives analysis, we considered a broad range of alternatives. We addressed six alternatives, varying in terms of technology and source. Those alternatives included enhancement of the existing system, transfer and new development. The reasons for selection of the two alternatives for cost/benefit analysis are documented in the alternatives analysis.

We applied cost/benefit analysis to the status quo and three viable alternatives. We evaluated all on a systems life basis, using present value discounting at 7%. Constant dollars were used.

Note: *Discussions of alternatives and evaluations are not shown here in the interest of brevity.*

We consider the evaluation and documentation of costs and benefits to be thorough, detailed, and well documented. Back-up documentation and studies will be maintained in the State throughout the systems life of the project. The cost and benefit projections are well documented and provide a sound basis for cost/benefit measurement.

In comparing alternatives, net benefits (costs), benefit/cost ratios, and breakeven points were calculated for each of the three alternatives. We have selected Alternative One as the most reasonable and as fully capable of meeting our systems objectives.

We have set forth a clear set of projected costs and benefits against which actuals can be measured. We have also set forth qualitative measures, linked to program objectives, which can be measured.

A narrative description of benefits (with benefit measurement plans) follows in Chapter 1-3.
The cost/benefit measurement profile for our selected alternative (Alternative One) is shown in Figure 1-2.13 on the following page. The graph in previous Figure 1-2.10 shows the breakeven point we anticipate, based on this cost/benefit profile.

Note: *This section is based on the criteria set forth in ACF's "Feasibility, Alternatives, and Cost/Benefit Analysis Guide" on pages 1-5 and 1-6.*

Figure 1-2.13 Cost/Benefit Profile - Alternative One

(MILLIONS OF DOLLARS)												
DESCRIPTION	**FY 1**	**FY 2**	**FY 3**	**FY 4**	**FY 5**	**FY 6**	**FY 7**	**FY 8**	**FY 9**	**FY 10**	**FY 11**	**TOTAL**
SYSTEM LIFE COST PROFILE												
Non-Recurring Costs	5.0	10.0	15.0	0	0	0	0	10.0	0	0	0	40.0
Recurring Costs	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	44.0
Total Projected Costs	9.0	14.0	19.0	4.0	4.0	4.0	4.0	14.0	4.0	4.0	4.0	84.0
Total Present Value Costs	8.7	12.6	16	3.1	2.9	2.7	2.5	8.4	2.2	2.1	1.9	63.1.0
SYSTEM LIFE BENEFIT BASELINE												
Total Projected Benefits	0	0	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	1501.2
Total Present Value Benefits	0	0	140.8	131.6	123.0	115.0	107.4	100.4	93.8	87.7	81.9	981.6
CUMULATIVE BENEFIT/COST BASELINE												
Cumulative Total Projected Benefits	0	0	167	334	501	667	834	1,001	1,168	1,335	1,502	NA
Cumulative Total Projected Costs	9	23	42	46	50	54	58	72	76	80	84	NA

QUALITATIVE BENEFITS				
BENEFITS	**MEASURE OF EFFECTIVENESS**			
	VERY EFFECTIVE	**EFFECTIVE**	**MINIMALLY EFFECTIVE**	**NOT EFFECTIVE**
1. Avoid Technology Obsolescence			X	
2. Customer Satisfaction		X		
3. Ease of Use		X		
4. Security		X		

1-3 FM: IAPD Cost/Benefit Analysis and Measurement Plan

1-3.1 INTRODUCTION

This Chapter continues our example of an Implementation Advance Planning Document (IAPD) that addresses cost/benefit analysis for a Child Support Enforcement system. Chapter 1-2 described the results of the Feasibility Study supporting the State's decision to select Alternative One for implementation. This Chapter illustrates the content of the CBA Section of the IAPD that establishes the individual and summary baselines that the State will use to measure future costs and benefits during the life of the project.

This Chapter illustrates the use of the Functional Model to track benefits to discrete system enhancements or components, such as New Hire Directory, Multi-State FIDM, etc. While this Chapter does not mandate the use of the Functional Model format, it does illustrate the level of detail sufficient for ACF purposes for this type of cost/benefit methodology.

1-3.2 EXAMPLE STATE PROFILE

As additional background to our example IAPD, the State Child Support Enforcement program on which it is based is profiled below.

Figure 1-3.1 State Statistical Profile

CASELOAD AND COLLECTIONS	
Cases	800,000
Cases with Orders	600,000
Cases with Collections	300,000
TANF	240,000
Non-TANF	60,000
Support orders established per year	100,000
Locates per year	120,000
Collections per year	$1,000,000,000
TANF	$200,000,000
Non-TANF	$800,000,000
Arrears	$1,000,000,000
Collections on arrears	$200,000,000
Average yearly collections per paying case	$3,334
SYSTEM PROCESSING TIMES	
Average time from case initiation to support order	6 weeks
Average time from support order to collection	12 weeks
OPERATING COSTS	
Staff Salaries and benefits excluding OT	$135,000,000
Overtime	$4,000,000
FTE Staff	3,000
Telecommunications	$1,500,000

The sizes of other States' caseloads used in benefit calculation have been taken from "Statistics in Brief: Analysis of Full Time Equivalent Staff per State Workload As it Appears in Fiscal Years 1997 and 1998" (Renee R. Jackson, DHHS, February 2000).

1-3.3 IAPD COST/BENEFIT ANALYSIS - FUNCTIONAL MODEL

Introduction

As a result of our Feasibility Study, we selected Alternative One as our preferred solution to implement PRWORA requirements. As our first process in developing a Cost/Benefit Measurement Plan, we reviewed, validated, and updated each proposed cost and benefit. In this process, all potential costs were updated. Although there was little change to the net total cost, our validation included elimination of one cost that was no longer applicable, and the addition of one unanticipated cost. All costs are measurable and will be auditable on a monthly and annual basis over the life of the project.

The cost and benefit baselines were updated to reflect changes and provide a more useful measurement strategy for the duration of the project. Individual benefit profiles shown on the following pages reflect updated baseline information. Summary-level Figure 1-3.1 illustrates the overall updated Cost/Benefit Measurement Baseline.

Figure 1-3.1 Cost/Benefit Measurement Baseline - Alternative One

(MILLIONS OF DOLLARS)												
DESCRIPTION	**FY 1**	**FY 2**	**FY 3**	**FY 4**	**FY 5**	**FY 6**	**FY 7**	**FY 8**	**FY 9**	**FY 10**	**FY 11**	**TOTAL**
SYSTEM LIFE COST BASELINE												
Non-Recurring Costs	5.0	10.0	15.0	0	0	0	0	10.0	0	0	0	40.0
Recurring Costs	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	44.0
Total Costs	9.0	14.0	19.0	4.0	4.0	4.0	4.0	14.0	4.0	4.0	4.0	84.0
SYSTEM LIFE BENEFIT BASELINE												
Total Projected Benefits	0	0	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	1501.2
CUMULATIVE BENEFIT/COST BASELINE												
Cumulative Total Projected Benefits	0	0	167	334	501	667	834	1,001	1,168	1,335	1,502	NA
Cumulative Total Projected Costs	9	23	42	46	50	54	58	72	76	80	84	NA

This Chapter includes an updated Benefit Profile for each proposed benefit that we will use to measure status and progress during the project.

We have chosen to use the Functional Model to monitor and measure costs and benefits. This model will monitor the relationship between each new system function and the corresponding increase in system benefits. The model estimates the increases in collections that should result from each major PRWORA function added to the system, combined with estimates of cost-savings from increased automation. Although the cost savings in this example are small relative to the increased collections, we consider them to be an important benefit for the State.

We understand that the weakness of this model is that it is sometimes difficult to determine which enhancement is responsible for a specific amount of increase in benefits, and have designed measurement mechanisms to minimize this effect. We also understand that this model carries the potential for benefit dollars being counted more than once. We are confident that the workflow and process analyses which support our benefit measurements will ensure that each benefit leads to only one summary measurement outcome.

The updated benefits we anticipate are summarized on the following pages.

Note: *This example includes only summary-level documentation. The Benefits Profile Measurement Worksheet (identifying all benefits),and the individual Annual Worksheet (monthly tracking) and System Life Worksheet (annual data all years) for each benefit are not shown. Formats for these functions are included in the Measurement Plan later in this Chapter.*

Benefit 1 - Reduced Phone Costs

A substantial portion of the States CSE telecommunication costs goes to pay for telephone calls on interstate cases. We expect a reduction in these costs due to automation of interstate case handling through Federal interfaces (FPLS, NDNH, CSENet etc.). Current yearly telecommunication costs are $1,500,000. 25% of this cost is long-distance charges. Assuming 25 % of out-of-state cases will be located and enforced automatically instead of by a manual process, we project a yearly reduction of $10,000 in long-distance telephone costs.

Figure 1-3.2 System Life Benefits Profile - Benefit 1

BENEFIT DESCRIPTION											
Benefit Number : 1 **Description:** Reduced phone costs											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	.01	.01	.01	.01	.01	.01	.01	.01	.01	0.09

Benefit Measurement: The State will track long-distance telephone costs by checking the monthly bills from our long-distance provider on a quarterly basis, and on an annual basis. We will consider any reduction from the base year as a benefit to automation.

Benefit 2 - Reduced Overtime -Case Closure

The State currently pays substantial overtime costs. We believe that with the increased efficiency of the new system these costs can be substantially reduced or eliminated. We anticipate no staff reductions. Overtime costs are approximately $4,000,000 per year. We estimate we will realize a $2,000,000 reduction based on improvement in case closure.

There are ongoing costs associated with maintaining a case past its eligibility for case closure. Mailing of notices, staff time, computer time etc. The State took a statistical sample of current caseload and

estimated 2% of 800,000 cases (16,000) could be closed under the criteria of 45 CFR 303.11. These cases should all be closed by the new system enhancements effecting case closure. The analysis showed that these cases on average are 2 years past their legitimate closure date. As future cases become eligible for closure, the enhanced system should act to close out these cases as well. The State should realize an immediate benefit from the closing of the initial 16,000 cases. The State should realize an ongoing benefit from the timely closure of 8,000 cases per year.

We performed a study in which caseworkers logged their time spent on each case. The cases were then evaluated to see if they were eligible for closure. We estimated that caseworkers spend 2% of their time on cases that should have been closed. The overtime rate is 3%. This should be cut at least in half if 2% of existing work can be eliminated through more effective case closure.

Figure 1-3.3 System Life Benefits Profile - Benefit 2

BENEFIT DESCRIPTION											
Benefit Number : 2 **Description:** Reduced overtime											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	2	2	2	2	2	2	2	2	2	18

Benefit Measurement: The State will track overtime payments using department time sheets and management reports on a monthly and quarterly basis, and summarize the benefit annually. Any decrease in overtime relative to the base year will be attributable as a benefit to the new system.

Note: A common error in developing benefits is claiming productivity improvements without indicating the effect of the improvement. For example, staff productivity will increase 50%, so I will claim half the payroll as a benefit. This leaves critical questions unanswered. Will payroll costs be cut in half? Will staff be released, reassigned, or idle half the day? Will the work change? Will overtime be reduced? In short, what is the effect? In this example, improved productivity is the basis for a specific benefit: reduced overtime pay. A reduction of staff through attrition would also be a specific benefit. A straight reduction in staff, without attribution to a specific cause, would be less acceptable as a possible benefit, because CSE agencies historically have not reduced staff.

Benefit 3 - Avoid Upgrade Cost of Existing System

The existing system has a system upgrade planned and budgeted for the third year of the systems life. While Alternatives 2 and 3, the transfer system and the new system, would have avoided this cost, this benefit does not apply to Alternative One.

Benefit Measurement: This benefit has been deleted from ongoing measurement plans.

Benefit 4 - Increased Collections-Federal Person Locator Service/Federal Case Registry

Based on past history, the system establishes 100,000 cases per year. The State has performed a statistical analysis of its caseload and has determined that for every established case that is located 30% will become paying cases. Average payment per case for our paying cases is $3,334 dollars per year. If FPLS/FCR matches result in an increase in locates of 5,000 per year (based on similar sized States with

FPLS/FCR interface established) and 30% of these become paying cases, an increase in collections of $5,001,000 dollars $\left(0.3 \times 5{,}000 \times \$3{,}334\right)$ should result.

Figure 1-3.4 System Life Benefits Profile - Benefit 4

BENEFIT DESCRIPTION											
Benefit Number : 4 **Description:** Federal Person Locator Service/Federal Case Registry											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	5	5	5	5	5	5	5	5	5	45

Benefit Measurement: The State will track all payments on new cases located through FCR match on a monthly and annual basis. The State will consider the resulting collections as an attributable benefit of the automated system.

Benefit 5 - Increased Collections-National Directory of New Hires

The State of Virginia reported $20,223,324 dollars in additional collections from income withholdings over a 29-month period. This amount could not have been collected without a New Hire reporting program. ("15 Facts on Employer New Hire Reporting Child Support Enforcement", OCSE, February 12, 1997). Since our caseload is approximately twice that of Virginia, we are projecting a yearly benefit of $16,736,544 $\left(\left(\$20{,}223{,}324 \div 29\right) \times 2 \times 12\right)$.

Figure 1-3.5 System Life Benefits Profile - Benefit 5

BENEFIT DESCRIPTION											
Benefit Number : 5 **Description:** National Directory of New Hires											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	150.3

Benefit Measurement: The State will track additional collections from income withholdings generated through New Hire Reporting on a monthly and annual basis, and consider them a benefit of the automated system.

Benefit 6 -Increased Collections-Financial Institution Data Match

The Commonwealth of Massachusetts collected $30,000,000 over 7 years of levying the in-state bank accounts of non-custodial parents (MSFIDM Success, OCSE March 2000). Since our caseload is about 3 times that of Massachusetts, we are projecting a yearly benefit from implementing FIDM of $12,857,142 $\left(\left(\$30{,}000{,}000 \div 7\right) \times 3\right)$.

Figure 1-3.6 System Life Benefits Profile - Benefit 6

BENEFIT DESCRIPTION											
Benefit Number : 6 **Description:** Financial Institution Data Match											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	115.2

Benefit Measurement: The State will track all payments collected through in-State FIDM on a monthly and annual basis, and consider them in full as a benefit of the automated system.

Benefit 7 -Increased Collections-Multi-State Financial Institution Data Match

The State of Florida collected $567,632 from MSFIDM levies in the five-month period between August 27, 1999 and January 25, 2000. (MSFIDM Success, OCSE, March 2000). Since our caseload is roughly the same size as that of Florida, we are projecting a yearly benefit from implementing MSFIDM of approximately $1,000,000. $(\$567,632 \div 5) \times 12 = 1{,}362{,}316$

Figure 1-3.7 System Life Benefits Profile - Benefit 7

BENEFIT DESCRIPTION											
Benefit Number : 7 **Description:** Multi-State Financial Institution Data Match											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	1	1	1	1	1	1	1	1	1	9

Benefit Measurement: The State will track all payments collected through MSFIDM on a monthly and annual basis, and consider them in full as a benefit of the automated system.

Benefit 8 - Increased Collections -Drivers License Suspension

Maryland, a state with a caseload approximately half the size of our State, collected $103,000,000 over a three-year period through driver's license suspension (Washington Post, September 9, 1999). We assume our State's collections for the first three years will be twice this amount, due to our larger caseload. We are projecting a yearly benefit of $68,666,667 $\left((\$103{,}000{,}000 \div 3) \times 2 \right)$.

Figure 1-3.8 System Life Benefits Profile - Benefit 8

BENEFIT DESCRIPTION											
Benefit Number : 8 **Description:** Drivers License Suspension											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	618.3

Benefit Measurement: The State will track all payments made in response to Driver's License Suspension on a monthly and annual basis. Any payment made on a previously non-paying case that begins within three months of license suspension will be considered payments made in response to license suspension. We will consider all such payments to be a benefit to the automated system.

Benefit 9 - Increased Collections -Federal Offset

As of November 1999, the State of Florida, had collected $61,337,604 dollars via Federal Offset for the year 1999 (Federal Offset Year-to-Date Statistics, Report MI-M-600, November 29,1999). We are projecting the same annual benefit for our state, since our caseload is similar to that of Florida.

Figure 1-3.9 System Life Benefits Profile - Benefit 9

BENEFIT DESCRIPTION											
Benefit Number : 9 **Description:** Federal Offset											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	551.7

Benefit Measurement: The State will track all payments collected through Federal Offset on a monthly and annual basis, and consider them in full as a benefit to the automated system.

Benefit 10 - Increased Collections-Passport Denial

From October 1, 1997 through November 30, 1999, Florida collected $96,606 through the Passport Denial Program (OCSE Passport Denial Program Summary Statistics - Report MI-M-630 - December 1, 1999). We are projecting an annual benefit of $48,303 ($96,606 ÷ 2 years) for our state, since our caseload is similar to that of Florida.

Figure 1-3.10 System Life Benefits Profile - Benefit 10

BENEFIT DESCRIPTION											
Benefit Number : 10 **Description:** Passport Denial											
SYSTEM LIFE BENEFITS PROFILE (MILLIONS OF DOLLARS)											
FY1	**FY2**	**FY3**	**FY4**	**FY5**	**FY6**	**FY7**	**FY8**	**FY9**	**FY10**	**FY11**	**Total**
ALTERNATIVE 1											
0	0	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.45

Benefit Measurement: The State will track all payments made in response to Passport Denial on a monthly and annual basis. Any payment made on a previously non-paying case that begins within three months of passport denial will be considered a payment made in response to passport denial, unless there has been an intervening license suspension (see Benefit 8 above). All such payments will be considered a benefit to the automated system.

1-3.4 MEASUREMENT PLAN - FUNCTIONAL MODEL

Note: Forms in this Section are taken directly from the ACF *Feasibility, Alternatives, and Cost/Benefit Analysis Guide (July 1993).* Please refer to *Guide* Chapter 5, Measuring Actual Costs and Benefits, for detail on specific computations and usage. Each form is referenced to its *Guide* antecedent.

As noted earlier in this section, the first step taken by the State in implementing a Cost/Benefit Measurement Plan was to validate, verify, and update the costs and benefits identified in the Feasibility Study.

We next determined the number and level of measurement formats we needed to ensure we could control costs and quantify benefits in a timely way in order to respond to emerging problems throughout the project. We have adopted a Measurement Plan similar to the one outlined in the ACF *Feasibility, Alternatives, and Cost/Benefit Analysis Guide (July 1993).*

Cost Measurement – The State will capture detail and summary data on costs through a series of four measurement forms. The State will use (*Guide* Tables 5-1, 5-2, and 5-3) to identify, record, and roll up cost data by cost category. We will use (*Guide* Table 5-9) to capture and monitor a single total figure for all costs for each project year.

Cost/Measurement Worksheet *(Guide* Table 5-1). This Worksheet will list our revalidated cost categories, and will be maintained in project files.

Annual Cost Measurement Worksheet *(Guide* Table 5-2). One iteration of this Worksheet will be created for each of the cost categories validated in (*Guide* Table 5-1). This Worksheet will capture the actual costs for each month of one project year, and calculate the annual total. Annual Cost Measurement Worksheets will be maintained in project files.

We will transfer the Annual total (rightmost column) to two other worksheets, the summary worksheet for costs (*Guide* Table 5-3, Systems Life Cost Measurement Profile), and the project-level summary cost/benefit worksheet (*Guide* Table 5-9, Cost/Benefit Measurement Profile).

Note: The State will use the line Cumulative Total Costs on this form to record actual costs to date, and projected costs for the remainder of the project, allowing us to monitor cumulative cost for the project at all times.

Systems Life Cost Measurement Worksheet *(Guide* Table 5-3). The State will transfer to this Worksheet the annual totals for each category from (*Guide* Table 5-2). This form will be used once a year to monitor total actual costs against cost projections for each year of the project. The Systems Life Cost Measurement Worksheet will be included in the Annual APD Update submitted to ACF.

Benefit Measurement – The State will capture detail and summary data on benefits through a series of six measurement forms. The State will use (*Guide* Tables 5-4, 5-5, and 5-6) to identify, record, and roll up benefit data by individual benefit. We will use (*Guide* Tables 5-7 and 5-8) to collect one summary line for each benefit (monthly and annual). We will use

(*Guide* Table 5-9) to capture and monitor a single total figure for all benefits for each project year.

Benefit Profile Measurement Worksheet *(Guide* Table 5-4). Each **quantitative** benefit on this worksheet will be tracked as a numbered benefit for our chosen system alternative. Each will be detailed more fully in a specific iteration of *Guide* Table 5-5, Quantified Benefits Measurement Annual Worksheet.

For each **qualitative** benefit we have identified on this form, progress will be described in narrative portion of the CBA Section of each Annual APD Update.

The Benefit Profile Measurement Worksheet will be maintained in project files.

Quantified Benefits Measurement Annual Worksheet *(Guide* Table 5-5). For every quantitative benefit identified in *Guide* Table 5-4, we have created one annual worksheet for each project year, on which we will capture monthly measurements for each benefit. These worksheets will be maintained in project files.

As each project year is complete, we will transfer the annual total benefits to the summary-level worksheet for that benefit (*Guide* Table 5-6, Quantified Benefits Measurement: Systems Life Worksheet), and to the project-level summary for all cost/benefit data (*Guide* Table 5-9, Cost/Benefit Measurement Profile).

Quantified Benefits Measurement Systems Life Worksheet *(Guide* Table 5-6). For every quantitative benefit identified in *Guide* Table 5-4, we have created a single project-level worksheet for all project years, on which we will capture annual total measurements for each benefit. These worksheets will be included in each Annual APD Update submitted to ACF.

Annual Benefits Measurement Profile and System Life Benefits Measurement Profile *(Guide* Tables 5-7 and 5-8) We have established one additional annual and summary measurement mechanism to allow us to monitor all benefits on one format. We will transfer the monthly total for each benefit to the Annual Benefits Measurement Profile for each project year (*Guide* Table 5-7). In addition, we will transfer the annual total for each benefit to the System Life Benefits Measurement Profile (*Guide* Table 5-8). The ability to view monthly and annual summaries of all benefits will allow additional tracking and control as the project proceeds. Measurement Profiles will be maintained in project files.

Project-Level Cost/Benefit Measurement — Cost/Benefit Measurement Profile (*Guide* Table 5-9).

Cost/Benefit Measurement Profile *(Guide* Table 5-9). We will maintain a single project-level summary of annual and cumulative costs and benefits. The Cost/Benefit Measurement Profile will display a summary cost total for each year (from *Guide* Table 5-2), and a summary benefits total for each year (from *Guide* Table 5-5). The Cost/Benefit Measurement Profile will be included in each Annual APD Update submitted to ACF.

The structure of each of the nine formats in our Measurement Plan is illustrated on the following pages.

Figure 1-3.11 (Guide Table 5-1) Cost Measurement Worksheet

Non-Recurring Costs					
Cost Categories	Actl	Proj	Cost Categories	Actl	Proj
Site and Facility • Purchase • Site Preparation/Modification • Other Equipment Purchase/One Time Fees • ADP • Data Communications • Environ. Conditioning • Security • Other Shipping Installation Software Purchase/One Time Fees • Operating System • Applications • Utilities • Other System Testing Conversion • Data • Software • Services			Studies Procurement • Cost of Planning • Cost of Conducting Database Preparation Personnel • Salaries • Benefits • Contract Support Services • Extraordinary Personnel Costs Travel Training • Development • Trainee Expenses • Trainer Expenses Overhead / Indirect Costs • Project and Technical • Management • Incremental • Lost Productivity		
Recurring Costs					
Cost Categories	Actl	Proj	Cost Categories	Actl	Proj
Site and Facility • Lease • Maintenance Fees • Other Equipment Lease / Maintenance • ADP • Data Communications • Environ. Conditioning • Security • Other Software Lease / Maintenance • Operating System • Applications • Utilities • Other			Personnel • Salaries • Benefits Direct Support Services • Contract • Detailed/Tasked Travel Training Supplies Utilities Security • Primary Facilities • Back-up Facilities Overhead / Indirect costs		

Figure 1-3.12 (Guide Table 5-2) Annual Cost Measurement Worksheet

☐ Developmental or ☐ Operational

Year _____

Cost Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Non-Recurring Costs:													
Site and Facility													
Equipment Purchase & Fees													
Shipping													
Installation													
Software Purchase													
System Testing													
Conversion													
Studies													
Procurement													
Database Preparation													
Personnel													
Travel													
Training													
Overhead													
Recurring Costs													
Site and Facility													
Equip. Lease & Maintenance													
Software Lease & Maintenance													
Personnel Salaries/Benefits													
Direct Support Services													
Travel													
Training													
Supplies													
Utilities													
Security (incl. Back-up)													
Overhead													
TOTAL COSTS (Actuals)													
TOTAL PROJECTED COSTS													
DIFFERENCE													
CUM. TOTAL COSTS / PRIOR YEAR	N/A	N/AN/	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CUMULATIVE TOTAL COSTS													N/A

Figure 1-3.13 (Guide Table 5-3) System Life Cost Measurement Profile

Years _____ - _____

Cost Category	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	System Life
Non-Recurring Costs:									
Site and Facility									
Equipment Purchase & Fees									
Shipping									
Installation									
Software Purchase									
System Testing									
Conversion									
Studies									
Procurement									
Database Preparation									
Personnel									
Travel									
Training									
Overhead									
Subtotal									
Recurring Costs									
Site and Facility									
Equip. Lease & Maintenance									
Software Lease & Maintenance									
Personnel Salaries/Benefits									
Direct Support Services									
Travel									
Training									
Supplies									
Utilities									
Security (incl. Back-up)									
Overhead									
Subtotal									
TOTAL COSTS (Actuals)									
TOTAL PROJECTED COSTS									
DIFFERENCE									

Figure 1-3.14 (Guide Table 5-4)Benefit Profile Measurement Worksheet

QUANTITATIVE			
Category	Actual	Projected	Description
COST / RESOURCE • Reduced Costs • Controlled Costs • Reduced Staffing • Improved Staffing Utilization • Increased Productivity • Fewer Manual Functions • Increased Resources • Other			
FUNCTIONAL/PROGRAMMATIC • Reduced Error Rate • Increased Collections • Improved Management Information • Improved Controls • Interface / Matching • Less Data Redundancy • Other			
TECHNICAL • Faster Record Retrieval • More Timely Reporting • Less Processing Time • Improved Access • Improved Security • Increased Automation • Other			
QUALITATIVE			
Category	Actual	Projected	Description
LEGISLATIVE			
SOCIO-POLITICAL • Integrated Benefits Automation • Improved Public Assistance • Increased Worker Satisfaction • Other			
FUNCTIONAL/PROGRAMMATIC • Improved Management Information • Improved Controls • Interface / Matching • Other			
TECHNICAL • More Timely Reporting • Expanded Capacity / Flexibility • Improved Access • Improved Security • Increased Automation • Other			

Figure 1-3.15 (Guide Table 5-5) Quantified Benefits Measurement Annual Worksheet

	Annual Worksheet	Year ____

BENEFIT CATEGORY / DESCRIPTION

Benefit Number:

Description:

PROJECTED BENEFIT VALUE

Assumptions:

Numbers	**Basis**	**Source**
Projected Measure/Volume At Implementation:		
Projected Increase/Decrease Over Time:		
Projected Value at Implementation:		

Projected Annual Benefits Profile

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

ACTUAL OR REVISED BENEFIT VALUE

Assumptions or Conditions:

Numbers	**Basis**	**Source**
Actual Measure/Volume At Implementation:		
Actual or Revised Increase/Decrease:		
Initial Value at Implementation:		

Annual Benefits Profile: ☐ Actual or ☐ Revised Projected

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Figure 1-3.16 (Guide Table 5-6) Quantified Benefits Measurement Systems Life Worksheet

BENEFIT CATEGORY / DESCRIPTION		
Benefit Number: **Description:**		
PROJECTED BENEFIT VALUE		
Assumptions:		
Numbers	**Basis**	**Source**
Projected Measure/Volume At Implementation:		
Projected Increase/Decrease Over Time:		
Projected Value at Implementation:		

Projected System Life Benefits Profile								
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total

ACTUAL OR REVISED BENEFIT VALUE		
Assumptions or Conditions:		
Numbers	**Basis**	**Source**
Actual Measure/Volume At Implementation:		
Actual or Revised Increase/Decrease:		
Initial Value at Implementation:		

Systems Life Benefits Profile: ☐ Actual or ☐ Revised Projected								
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total

Figure 1-3.17 (Guide Table 5-7) Annual Benefits Measurement Profile

Benefit Number and Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Benefit 1: Short Description													
Benefit 2: Short Description													
Benefit 3: Short Description													
etc.													
TOTAL BENEFIT VALUE (Actuals)													
TOTAL PROJECTED BENEFITS													
DIFFERENCE													
CUM. TOTAL BENEFITS / PRIOR YEAR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
CUMULATIVE TOTAL BENEFITS													N/A

Figure 1-3.18 (Guide Table 5-8) Systems Life Benefits Measurement Profile

Years ____ ____

Benefit Number and Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
Benefit 1: Short Description									
Benefit 2: Short Description									
Benefit 3: Short Description									
Etc.									
TOTAL SYSTEM LIFE BENEFITS (Actuals)									
TOTAL PROJECTED BENEFITS									
DIFFERENCE									

Figure 1-3.19 (Guide Table 5-9) Cost/Benefit Measurement Profile

SYSTEM LIFE COST PROFILE									
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
Non-Recurring Costs *									
Recurring Costs *									
Total System Life Costs *									
Total Projected Costs									
Difference									
SYSTEM LIFE BENEFITS PROFILE									
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
Total Benefit Values *									
Total Projected Benefits									
Difference									
CUMULATIVE BENEFIT / COST PROFILE									
Description	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
Cumulative Benefit Values *									N/A
Cumulative Costs *									N/A

QUANTITATIVE MEASUREMENT PROFILE		
Description	Actual	Projected
Total Benefits *		N/A
Less Total Costs *		N/A
Net Benefit (Cost) *		N/A
Benefit/Cost Ratio		
Breakeven		

1-4 FM: Cost/Benefit Reporting for Annual APD Updates

1-4.1 INTRODUCTION

This chapter is an example of a cost/benefit measurement report. It is written as though reporting in the third year of the 'Alternative One' project, to clarify the relationship between the planning stage studies and the post-implementation measurement and reporting phase.

Points of note: The project uses the Functional Model for cost/benefit measurement. The baseline costs that the State is measuring against during implementation are the projected costs for the selected alternative as noted in the IAPD cost/benefit analysis. Status quo costs are not used, present value discounted costs are not used, and measurement dollars are not discounted.

1-4.2 ANNUAL APD UPDATE: FM COST / BENEFIT MEASUREMENT REPORT

Overview

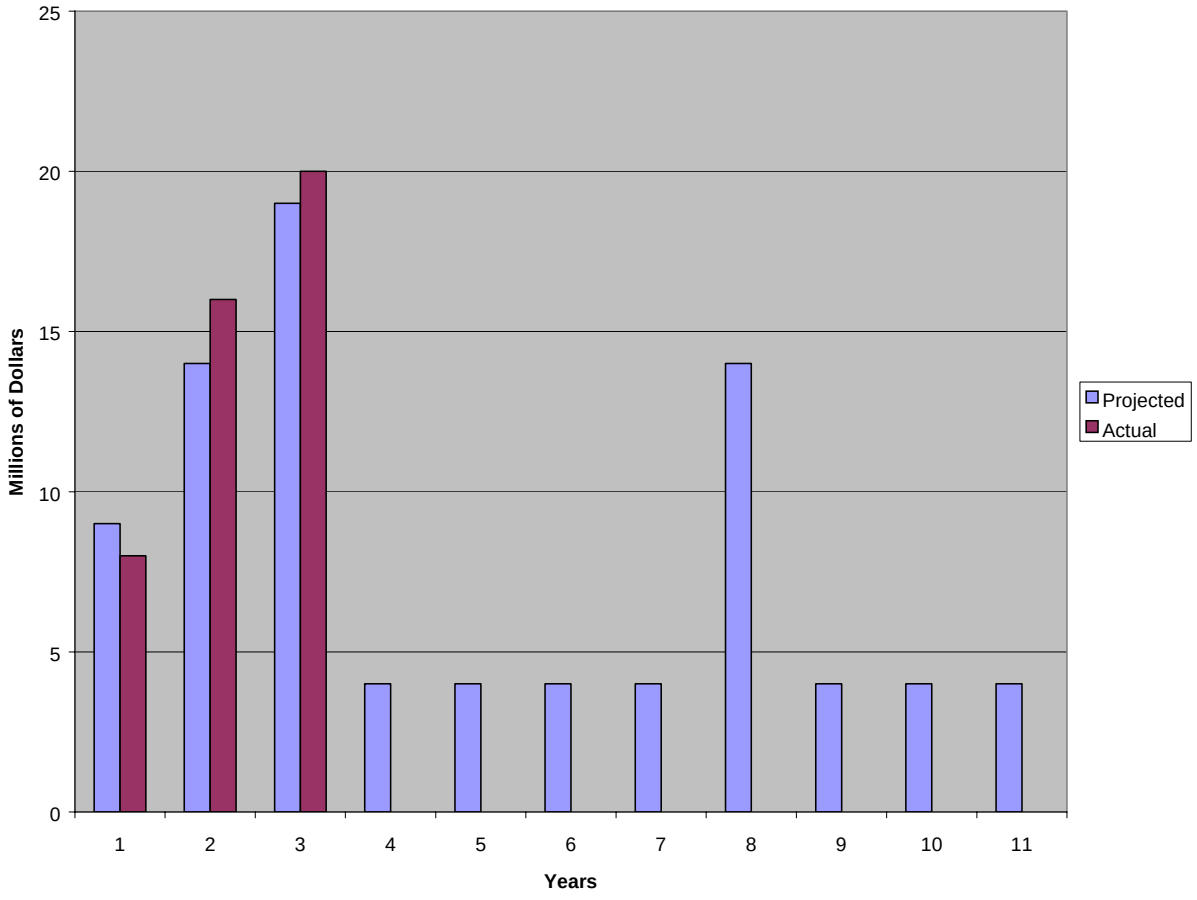
Costs and benefits conformed reasonably well this year with those projected during the planning phase of this systems development project. Although benefits have been, in some cases, lower than anticipated, they reflect (in absolute terms) significant improvement over prior systems and program operations. Overall, benefits slightly exceeded projections.

Costs

Costs incurred this fiscal year were about five percent more than anticipated, primarily due to higher-than-projected support services and training costs. In response, the State has (1) provided more in-house training and (2) initiated cost control procedures to regulate closely contractor task assignments and performance. Another important measure will be taken to reduce expenditures in the support services category. Rather than rely on a single contractor as originally planned, the State will award two support services contracts against which individual tasks will be competed. Note that part of this year's higher training costs were offset by lower than anticipated hardware prices, which resulted from keen competition for the system hardware upgrade.

The following graph depicts the relationship of actual costs in current dollars to the projected costs in constant dollars.

Figure 1-4.1 Cost Measurement: Years 1-3



Benefits Measurement

Dollar-quantifiable benefits were ahead of those projected for this year, although several benefit categories were lower than anticipated. (Benefits marked by asterisk in Figure 1-4.2, Projected vs Actual Benefits, vary by more than 10% from projections.) All benefits were measured in conformance with the measurement plan described in our Implementation APD. Federal interfaces were implemented and became operational in FY-2. This resulted in some benefits in FY-2 that were not originally projected, as noted in the status of individual benefits.

Benefit 1 - Reduced Phone Costs

The State tracked long-distance telephone costs and considered any reduction a benefit. The project saw no measurable decrease in phone costs. This may be due to lack of training in the automated features of the system. The planned in-house training may cause this benefit to be realized.

Benefit 2 - Reduced Overtime -Case Closure

The State tracked overtime payments and considered any decrease a benefit of the new system. The project, however, saw an actual increase in overtime costs. This may also be due to lack of training in the automated features of the system. The planned in-house training may cause this benefit to be realized.

Benefit 3 - Avoid Upgrade Cost Of Existing System

This benefit does not apply to Alternative One. The system upgrade took place this year

Benefit 4 - Increased Collections-Federal Parent Locator Service/Federal Case Registry

The State tracked all payments on cases located through FPLS and considered them a benefit. The system located 7,000 cases though its automated interface with FPLS and FCR, resulting in collections of $6,000,000 for FY-3. This interface was implemented in FY-2, resulting in $3,000,000 in collections in FY-2.

Benefit 5 - Increased Collections-National Directory of New Hires

The State tracked additional collections from income withholdings generated through New Hire Reporting and considered them a benefit. New Hire reporting generated additional collections of $18,000,000. This function was implemented in FY-2, resulting in $5,000,000 in collections in FY-2.

Benefit 6 -Increased Collections-Financial Institution Data Match

The State tracked all payments collected through in-State FIDM and considered them a benefit. Levying the in-state bank acoounts of obligors generated $9,000,000 in additional revenue.

Benefit 7 -Increased Collections-Multi-State Financial Institution Data Match

The State will track all payments collected through MSFIDM and consider them a benefit. This feature has not yet been implemented due to legal problems. No benefits have been generated yet.

Benefit 8 - Increased Collections -Drivers License Suspension

The State tracked all payments made in response to Driver's License Suspension and considered them a benefit. All payments on arrrears that occurred after an obligors license was suspeneded were assumed to be due to the suspension. Drivers license suspension generated $50,000,000 in additional revenue.

Benefit 9 - Increased Collections -Federal Offset

The State tracked all payments collected through Federal Offset and considered them a benefit. Federal offset programs generated $86,000,000 in revenue. This function was implemented in FY-2, resulting in $13,000,000 in collections in FY-2.

Benefit 10 - Increased Collections-Passport Denial

The State tracked all payments made in response to Passport Denial and considered them a benefit. Passport denial generated $30,000 in revenue in FY-3.

Figure 1-4.2 Projected vs Actual Benefits

ALTERNATIVE ONE - UPGRADE (MILLIONS OF DOLLARS)						
BENEFIT	**FY 1 PROJECTED**	**FY 1 ACTUAL**	**FY 2 PROJECTED**	**FY 2 ACTUAL**	**FY 3 PROJECTED**	**FY 3 ACTUAL**
Benefit 1 Phone Usage	0.0	0.0	0.0	0.0	0.01	*0.0
Benefit 2 Overtime	0.0	0.0	0.0	0.0	2.0	*0.0
Benefit 3 Avoid Upgrade	0.0	0.0	0.0	0.0	0.0	0.0
Benefit 4 FPLS	0.0	0.0	0.0	*3.0	5.0	*6.0
Benefit 5 NDNH	0.0	0.0	0.0	*5.0	16.7	18.0
Benefit 6 FIDM	0.0	0.0	0.0	0.0	12.8	*9.0
Benefit 7 MSFIDM	0.0	0.0	0.0	0.0	1.0	0.0
Benefit 8 License Suspension	0.0	0.0	0.0	0.0	61.3	*50.0
Benefit 9 Federal Offset	0.0	0.0	0.0	*13.0	68.0	*86.0
Benefit 10 Passport Denial	0.0	0.0	0.0	0.0	0.05	*0.03
Total	0.0	0.0	0.0	21	166.86	169.03

* = Variance Over 10%

Projected Breakeven

The systems project broke even during this project year, at approximately the same time as originally projected. (As noted in previous APDs, we added two comparisons to the Cost/Benefit Measurement Profile. In addition to Actual to Date and Cumulative Actual/Projected to Date, we have added a comparison for Projected to Date, and the Baseline Total for the project.)

During the next year, the State will make a determination on whether to maintain this APD in an open status to facilitate funding for future system upgrades, or to begin the close-out process.

Figure 1-4.3 Cost/Benefit Measurement Profile

ALTERNATIVE ONE - UPGRADE (MILLIONS OF DOLLARS)												
DESCRIPTION	**FY 1**	**FY 2**	**FY 3**	**FY 4**	**FY 5**	**FY 6**	**FY 7**	**FY 8**	**FY 9**	**FY10**	**FY11**	**TOTAL**
SYSTEM LIFE COST PROFILE												
Actual Non-Recurring Costs	4.0	12.0	16.0									32.0
Actual Recurring Costs	4.0	4.0	4.0									12.0
Actual Total Costs	8.0	16.0	20.0									44.0
Total Projected Costs	9.0	14.0	19.0	4.0	4.0	4.0	4.0	14.0	4.0	4.0	4.0	84.0
Difference	-1	2	1									2.0
SYSTEM LIFE BENEFIT PROFILE												
Actual Total Benefits	0	31	169									200
Total Projected Benefits	0	0	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	1501.2
Difference	0	31	2.2									33.2
CUMULATIVE BENEFIT/COST PROFILE (ACTUAL AND PROJECTED)												
Cumulative Total Actual and Projected Benefits	0	31	200	366.8	533.6	700.4	867.2	1034	1200.8	1367.6	1534.4	NA
Cumulative Total Actual and Projected Costs	8	24	44	48	52	56	60	74	78	82	86	NA

COMPARISONS				
Description	Actual to Date	Projected To Date	Cumulative Actual/Projected Total	Baseline Total
Total Benefits	200.0	166.8	1534.4	1501.2
Less Total Costs	44.0	42.0	86.0	84
Net Benefit (Cost)	156.0	124.8	1448.4	1417.2
Benefit/Cost Ratio	4.5	4.0	17.8	17.9
Breakeven	Has broken even	Has broken even	n/a	n/a

Part 2 Revenue-Based Cost/Benefit Analysis

2-1. Revenue Stream Model

2-1.1 INTRODUCTION

The Revenue Stream Model (RSM) is a spreadsheet-based software application using Microsoft Excel to conduct cost benefit analyses of Child Support Enforcement (CSE) Systems. The RSM uses a methodology developed by the Office of Child Support Enforcement (OCSE) specifically to model system benefits for automated CSE systems. The Model estimates the increase in revenue due to automation for the system as a whole, without trying to determine what new or specific system functions contribute to the increase.

The strength of this Model is that it is easy to predict, measure and verify changes in revenue. Because it works with total system revenues and costs; the RSM includes the effects of all changes to the CSE system environment, automated and non-automated, even those that are difficult to predict and/or quantify. Qualitative benefits (such as re-organizations and program changes) can and should still be acknowledged, measured and described using the most meaningful measurements, whether or not these are on a monetary scale.

The weakness of this Model is that it does not differentiate the benefits of individual system enhancements. For example, the RSM does not differentiate the various effects on collections attributable to improved Interstate Enforcement, Wage Withholding, Driver's License Suspension or Passport Denial.

OCSE designed this application to be used as part of the Advance Planning Document (APD) process. The RSM and supporting narrative provide the content required for the Cost Benefit Analysis (CBA) Section of each APD submitted by the State.

Model Description

Using baseline data and historical growth patterns prior to system implementation, the RSM projects how collections will continue to grow throughout the active life of the system. The RSM designates a portion of the collections increase as the benefit revenue stream. The benefit revenue stream is considered to result from the effects of the administrative functions of the CSE Program as well as the effects of the automated system.

Each year, the RSM attributes the benefit revenue stream appropriately to the administrative CSE functions and to the automated CSE system. To do this, the Model calculates the ratio between the Net Administrative costs and the total annual system cost.

The RSM divides the benefit revenue stream for the year by the percentages represented in the Net Administrative to annual system cost ratio. The RSM tracks and accumulates the annual costs and the annual revenues attributed to the automated system. When the cumulative benefit from the revenue stream exceeds the cumulative total of system development and ongoing operations and maintenance costs, the system has paid for itself or broken even.

The RSM calculates the breakeven point each year based on actuals to date plus current year projections. The RSM maintains data for each Benefit Year separately for historical purposes.

The RSM charts an overall breakeven point graphically, updating chart data with each year's actual input. Key project and RSM status data is summarized on the RSM Cost Effectiveness Chart.

The current RSM Cost Effectiveness Chart, as well as printouts of the current and prior Benefit Years, should be included in the Cost Benefit Analysis Section of each APD submitted by the State. The narrative portion of the CBA section should highlight significant RSM data statistics, and include explanations of data that varies significantly from original projections.

Data Used in the Model

As the basis for its calculations, the Revenue Stream Model uses initial input of the following baseline data.

- Project Data
  - State or Project Name
  - Base Year identified by the State
  - Estimated cost to develop the automated system from planning through completion (PRWORA certification or completion of significant future enhancements)
- Base Year Data -- actual values for
  - Caseload
  - Collections
  - Net Administrative costs
  - ADP O&M (Automated Data Processing Operations and Maintenance) costs
- Baseline Growth Rates -- historical rates of growth prior to system implementation

Note: Once entered, the Base Year data and pre-implementation Growth Rate projections are not modified through the life of the RSM. They constitute a snapshot of growth "before" system implementation. The RSM uses initial Base Year and Growth Rate input to project data for each Benefit Year for which actual data is not yet available.

To use the RSM, each year the State must update the estimated system development cost if this has changed during the year, and must enter the actual caseload, collections, net administrative costs, and system operations and maintenance costs for the year. The RSM does the rest, automatically projecting annual benefits and monitoring the overall breakeven status of the system.

2-1.2 PREPARING THE MODEL

The following sections provide guidance on preparing data and determining growth estimates for use in the RSM. These sections assume the RSM is being set up for use after the system has been implemented for end users. (Note: Setting up and using the RSM prior to system implementation is covered later in Section 2-3.)

Identify the Base Year

The first data decision is to identify the point at which the system was implemented for end use. The Base Year is the year immediately before end users gain operational use of the system.

The RSM uses a Federal Fiscal Year base, following the pattern of CSE Annual Reports to Congress. The examples that follow use a Base Year of 1997, during which the system was rolled out. The examples assume that FFY 1998 was the first year of system use.

Gather Historical Data

Historical data is used in preparing the RSM for initial use.

Actual historical values for Caseload and Collections are needed for several years **prior to** the chosen Base Year in order to calculate the growth percentages used in the RSM. National or state inflation values for the same several years prior to the chosen Base Year are needed to calculate Model growth percentages for Net Administrative and ADP O&M data. (Baseline Growth Percentages are discussed later in this Chapter.)

The RSM uses the actual values for Caseload, Collections, Net Administrative Costs, and ADP O&M for the Base Year, and for each subsequent year that the system has been in use.

By design, the Revenue Stream Model utilizes data already being submitted by the State on OCSE Forms on a quarterly basis, or used by the State in preparing APDU budget information. The OCSE Forms are discussed in more detail in the Revenue Stream Model Help Guide (ACF *Help Guide: Revenue Stream Model, Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems*, revised June 2004).

Separate the System Life Cycle Costs

For the purposes of the Revenue Stream Model, each dollar of system life cycle cost is accountable either as part of System Development Cost or as part of ADP Operations and Maintenance (O&M) Cost.

The System Development Cost is the total cost for developing the automated system over its estimated life span. System development costs include both actual and estimated costs involved with system planning, concept design, hardware and software implementation and installation, and system test and training.

Up to the point at which the automated system begins accumulating benefits, all costs associated with the system are considered to be development costs. In particular, the costs to operate and maintain the developing system are included in the system development costs, as those efforts serve to support the work of developers, not end users (and therefore do not have an effect on increasing collections.) When the system is implemented for end users, operations and maintenance efforts begin supporting the accumulation of system benefits. From that point onward, O&M costs must be tracked and reported separately in the Revenue Stream Model and must no longer be added to the System Development Cost. (Double-counting O&M costs serves to delay the system breakeven point.)

In preparing data for use in the Revenue Stream Model, all system life cycle costs must be separated as follows:

- System Development Cost. This is a single figure that represents all costs through system implementation (including Base Year operating and maintenance costs), plus the total remaining costs to complete system development.
- Base Year ADP O&M. This figure is also used separately by the RSM to provide a baseline for O&M projections. However, the base year operating cost remains a part of the total System Development Cost and the RSM treats it as such.
- ADP O&M costs for each Benefit Year. **O&M costs for years after system implementation must *not* be included in the total System Development Cost.** Doing so will only delay the point at which the system achieves cost effectiveness.

Identify the System Life

The System Life is the expected useful life of the system in years. In general, the System Life should be extended to reflect extensions in the development cycle, or to include the anticipated life span of significant future enhancements.

System Life is first identified by the State in its Implementation Advance Planning Document, along with an estimate of the time it will take to develop the automated system. However, the State may have to extend the development cycle due to legislative or budget cycle delays or technological problems, or to augment the scope of the system. Each change to the development cycle should be evaluated for effect on overall System Life, and the System Life should be adjusted accordingly. At minimum, in preparing initial data for the RSM, the System Life should be adjusted to reflect a reasonable period of system use after PRWORA Certification is achieved.

The System Life should be evaluated and adjusted periodically, to reflect changes in the development cycle identified in subsequent APDUs, or to include the anticipated life span of significant future enhancements identified in APDUs

The Revenue Stream Model is designed to project up to 15 years of System Life, to accommodate extended development cycles, or additional system enhancements after PRWORA Certification.

Determine Baseline Growth Percentages

To project future growth, the RSM uses the rates of change that occurred over a base period of time prior to system implementation. The baseline growth percentages are entered into the Model as part of Base Year Input.

State staffs must determine reasonable rates of change for caseload, collections, net administrative costs, and ADP operations and maintenance costs prior to system implementation. One example methodology is shown below. OCSE does not mandate that States use this particular methodology. However, should the State choose an alternative method of calculating growth, **an explanation should be included in the CBA narrative of the APDU**.

In general, for caseload and collections data, growth is calculated on the change in actual annual totals over the baseline period. For net administrative costs and ADP O&M costs, growth is calculated on the change in a chosen inflation index over the baseline period.

The State determines the number of years needed in the baseline period to fairly represent the 'normal' rate of change prior to system implementation. In most cases, a baseline period of three to five years will suffice. The same period of time should be used to derive all growth percentages. Examples in the following sections use three years as the baseline period.

- **Caseload Growth**

  The State Determines Caseload Growth Rate

  The Caseload Growth Rate is determined by calculating the average increase in Annual Caseload prior to system implementation. The following example uses a three-year baseline period prior to a Base Year of 1997.

1995 Growth Rate = (1995 Caseload - 1994 Caseload) ÷ 1994 Caseload
1996 Growth Rate = (1996 Caseload - 1995 Caseload) ÷ 1995 Caseload
1997 Growth Rate = (1997 Caseload - 1996 Caseload) ÷ 1996 Caseload

Average Caseload Growth Rate =
((1995 Growth Rate + 1996 Growth Rate + 1997 Growth Rate) ÷ 3)

Example:
1995 Growth Rate = (292,826 – 286,631) ÷ 286,631 = .0216
1996 Growth Rate = (302,503 – 292,826) ÷ 292,826 = .0330
1997 Growth Rate = (322,503 – 302,503) ÷ 302,503 = .0661

Average Caseload Growth Rate = ((.0216 + .0330 + .0661) ÷ 3) = .0403
This is a Caseload Growth Percentage of 4.03%, and is entered into the RSM as .0403.

RSM caseload growth projections can help pinpoint such anomalies as a large one-time jump in caseload growth due to a legislative change, economic change, or natural disaster. A large increase in Annual Caseload may cause an increase in the cost of Annual ADP O&M, which is a major component of this cost benefit model. If an anomaly like this causes a significant fluctuation in annual caseload for one or more RSM Benefit years, the State should include an explanation in the narrative portion of the Cost Benefit Analysis section of the APDU or As-Needed APD.

The Model Projects Future Caseload Data

The RSM projects an Annual Caseload total for each year in which actual data is not available. To do this, the RSM increases the prior year Annual Caseload by the Annual Caseload Growth Rate.

Annual Caseload for 1997 = Actual
Projected Caseload for 1998 = Caseload for 1997 × (1 + (Average Caseload Growth Rate))
Projected Caseload for 1999 = Caseload for 1998 × (1 + (Average Caseload Growth Rate))

Example:
Annual Caseload for 1997 = 322,503
Projected Caseload for 1998 = 322,503 × 1.0403 = 335,500
Projected Caseload for 1999 = 335,500 × 1.0403 = 349,021

- **Collections Growth**

The State Determines Collections Growth Rate

The Collections Growth Rate is determined by calculating the average growth increase in Annual Collections for the baseline period prior to system implementation. The following example uses a three-year baseline period prior to the Base Year of 1997.

1995 Growth Rate = (1995 Collections - 1994 Collections) ÷ 1994 Collections
1996 Growth Rate = (1996 Collections - 1995 Collections) ÷ 1995 Collections
1997 Growth Rate = (1997 Collections - 1996 Collections) ÷ 1996 Collections

Average Collections Growth Rate =
((1995 Growth Rate + 1996 Growth Rate + 1997 Growth Rate) ÷ 3)

Example:

1995 Growth Rate = (165,612,461 – 156,198,554) ÷ 156,198,554 = .0603
1996 Growth Rate = (174,127,769 – 165,612,461) ÷ 165,612,461 = .0514
1997 Growth Rate = (197,289,914 – 174,127,769) ÷ 174,127,769 = .1330

Average Collections Growth = ((.0603 + .0514 + .1330) ÷ 3) = .0816
This is a Collections Growth Percentage of 8.16%, and is entered into the RSM as .0816.

As the RSM is used, fluctuations in annual collections have a direct effect on Revenue Stream Model calculations and results. **The State should identify and explain significant fluctuations in collections in the narrative portion of the Cost Benefit Analysis section of the APDU**.

The Model Projects Future Collections Data

The RSM projects an Annual Collections total for each year that actual data is not available. To do this, the RSM increases the prior year Annual Collections by the Average Collection Growth Rate.

Annual Collections for 1997 = Actual Collections
Projected Collections for 1998 = Collections for 1997 × (1 + (Average Collections Growth Rate))
Projected Collections for 1999 = Collections for 1998 × (1 + (Average Collections Growth Rate))

Example:
Annual Collections for 1997 = 197,289,914
Projected Collections for 1998 = 197,289,914 × 1.0816 = 213,338,771
Projected Collections for 1999 = 213,338,771 × 1.0816 = 230,801,295

- **Net Administrative and ADP O&M Growth**

The State Determines Net Administrative Growth and ADP O&M Growth Rates

The demands of developing an automated system have significant effects on the staffing and budget of the CSE program long prior to system implementation. In many areas, growth prior to system implementation does not provide a good basis for estimating future expenditures. This is true of Net Administrative costs, and also of ADP O&M costs. To estimate growth in these areas, the Revenue Stream Model is designed to use an index of inflation to factor growth.

Growth in Net Administrative and in ADP O&M costs is determined by calculating the average increase in a chosen index of inflation prior to system implementation. The following example uses a three-year baseline period prior to the Base Year of 1997, and published national inflation data:

1995 Growth Rate = 1995 Annual Inflation Index
1996 Growth Rate = 1996 Annual Inflation Index
1997 Growth Rate = 1997 Annual Inflation Index

Average Inflation Growth = (1995 Inflation Rate + 1996 Inflation Rate + 1997 Inflation Rate) ÷ 3

Example:
1995 Inflation Growth Rate = 2.76% or .0276
1996 Inflation Growth Rate = 2.96% or .0296
1997 Inflation Growth Rate = 2.35% or .0235

Average Inflation Growth is 2.69% or .0269 = ((.0276 + .0296 + .0235) ÷ 3)

This is an Inflation Growth Percentage of 2.69%, and is entered into the RSM as .0269.
The inflation index used above is maintained at:
http://www.eh.net/ehresources/howmuch/inflationq.php

As a reflection of local conditions, States may choose to use a figure slightly above or below the published inflation index. OCSE expects, however, that the chosen values will remain within 2% (+ or -) for Net Administrative costs or within 1% (+ or -) for ADP O&M costs.

States are not obliged to use a particular inflation index. The one identified above provides a national index and is publicly available on the internet. However, equivalent inflation information may be maintained at the state level and more accurately reflect local conditions. The State is free to use its own inflation data, so long as the data source is identified and described in the narrative portion of the CBA Section of the APDU.

The Model Projects Future Net Administrative and ADP O&M Data

The RSM projects a Net Administrative costs total for each year that actual data is not available. To do this, the RSM increases the prior year Net Administrative costs by the Average Inflation Growth Rate. The RSM projects future ADP O&M costs in the same fashion.

While Net Admin and ADP O&M Growth are based on an inflation index, the State should include an additional factor to account for anticipated legislative increases in funding, such as large staffing expenditures. OCSE expects such factors may influence inflation growth to vary within a range of 2% (+ or -) for Net Administrative costs or 1% (+ or -) for ADP O&M costs.

For the examples used in this Chapter, we will presume the State has justified use of an inflation rate of 2.74% for Net Admin and 2.79% for ADP O&M data.

Net Admin Costs for 1997 = Actual
Projected Net Admin for 1998 = Net Admin for 1997×(1 + (Inflation Growth factor))
Projected Net Admin for 1999 = Net Admin for 1998×(1 + (Inflation Growth factor))

Examples:
Annual Net Admin Costs for 1997 = 45,998,417
Projected Net Admin for 1998 = 45,998,417 × **1.0274** = 47,258,774
Projected Net Admin for 1999 = 47,258,774× **1.0274** = 48,553,664

Annual ADP O&M Costs for 1997 = 5,510,682
Projected ADP O&M for 1998 = 5,510,682 × **1.0279** = 5,664,430
Projected ADP O&M for 1999 = 5,664,430× **1.0279** = 5,822,468

As the RSM is used, fluctuations in Net Administrative costs and in ADP O&M have a significant effect on how the RSM attributes benefits to the automated system. The State must identify and explain significant fluctuations in Annual Net Administrative Growth calculations in the narrative portion of the Cost Benefit Analysis section of the APDU.

Entering Data to RSM Software

The initial dataset is complete when it includes a single figure for System Development Cost, the number of years of anticipated System Life, Baseline Growth Percentages, and the actual Base Year values for Caseload, Collections, Net Admin, and ADP O&M. At that point, data may be entered to the RSM

software. The Tutorial in ACF's *Help Guide, Revenue Stream Model, Cost/Benefit Analysis Illustrated for Child Support Enforcement System* (revised June 2004) provides detailed instructions and illustrations on using the Revenue Stream Model, from entering data to the Base Year and to successive Benefit Years, to printing Benefit Year and Chart data.

Two RSM displays are included here to illustrate initial data entry. Figure 2-1.1 shows the Input Base Year and Growth Rate Data screen, completed with the initial data entry discussed in the prior paragraphs. Figure 2-1.2 shows the initial projections the RSM makes based on this initial data input. These projections are discussed in the following paragraphs.

Figure 2-1.1 Input Baseline Data

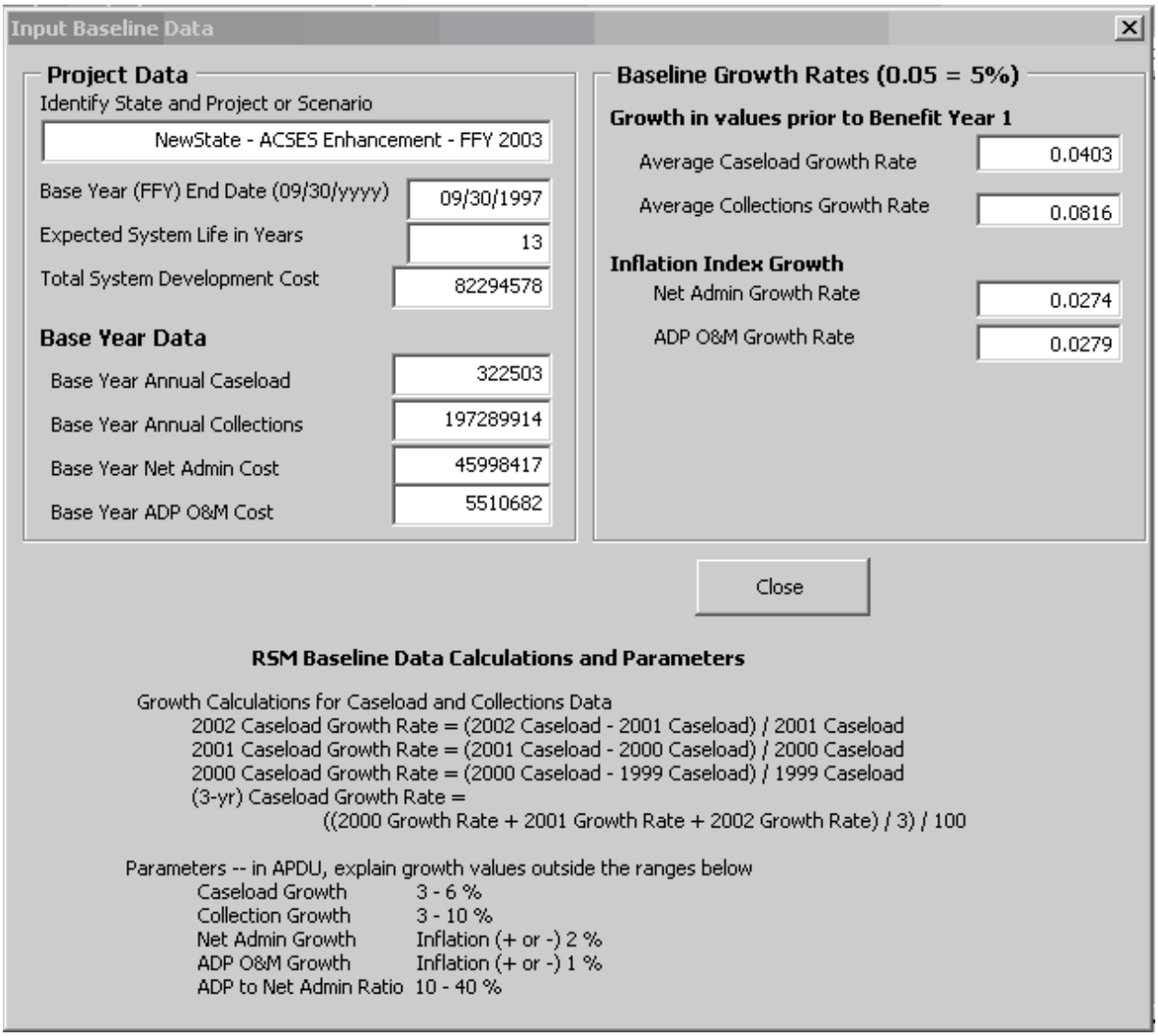


Figure 2-1.2 RSM Base Year Projections

NewState - ACSES Enhancement - Cost Benefit Analysis - Revenue Stream M

	Projected FFY 1998	Projected FFY 1999	Projected FFY 2000	Projected FFY 2001	Projected FFY 2002
Annual Caseload	335,500	349,021	363,087	377,719	392,941
Annual Collections	213,388,771	230,801,295	249,634,681	270,004,871	292,037,268
Annual Net Admin	47,258,774	48,553,664	49,884,034	51,250,857	52,655,130
Annual ADP Ops & Maint (O&M) Costs	5,664,430	5,822,468	5,984,915	6,151,894	6,323,532
Annual System Cost *	11,994,782	12,152,820	12,315,267	12,482,246	12,653,884
ADP to Admin (%)	25.38%	25.03%	24.69%	24.36%	24.03%
Base Year and Current Year Collection Difference	16,098,857	33,511,381	52,344,767	72,714,957	94,747,354
Annual Benefit Attributed To Automation	4,086,062	8,387,787	12,922,768	17,709,870	22,769,330
Total Accum Annual Costs	87,959,008	93,781,476	99,766,391	105,918,285	112,241,817
Total Accum Annual Benefits	4,086,062	12,473,849	25,396,617	43,106,487	65,875,817
Breakeven Amount					
Breakeven Month					
Breakeven Ratio	4.65%	13.30%	25.46%	40.70%	58.69%
Base Year Notes:					
System Development Cost	82,294,578				
Annual Caseload	322,503				
Annual Collections	197,289,914				
Annual Net Admin Cost	45,998,417				
Annual ADP O&M Cost	5,510,682				
Base Year FFY End Date	09/30/1997				
Projected Growth Rates					
Caseload Growth (%)	4.03%				
Collections Growth (%)	8.16%				
Net Admin Growth (%)	2.74%				
ADP O&M Growth (%)	2.79%				
System Life	13				
Amortization Rate (%)	7.69%				

2-1.3 HOW THE REVENUE STREAM MODEL CALCULATES COST EFFECTIVENESS

Overview of Revenue Stream Model Calculations

The Revenue Stream Model uses data input by the State in two important and different sets of calculations. In one set of calculations, the RSM identifies the Annual Benefit for the current Benefit Year. An entirely different set of calculations monitors the progress that the CSE system is making toward ultimate cost effectiveness. Used correctly, the RSM ensures that cost data is not 'counted twice,' which would effectively delay the point at which the system breaks even.

Annual Benefits Attribution Calculations. The RSM determines the proportion of benefits attributable to the automated system each year.

The State enters the System Development Cost, along with the System Life, the actual annual values for Net Admin costs and ADP O&M costs, and annual collections into the RSM. The Model calculates an Annual System Cost, calculates the ratio between the Annual System Cost and the Net Admin Expenditures, and determines what portion of annual collections make up the Revenue Stream for the year. The Model uses the ADP to Admin ratio to attribute a portion of the collections Revenue Stream to the automated system as the Annual Benefit. The Model aggregates the Cumulative Benefit to calculate the overall cost effectiveness of the system.

Cost Effectiveness Calculations. The RSM monitors Cumulative Costs and Benefits and projects overall system breakeven.

The System Development Cost is one component of the Cumulative Cost of the system. The other component is the ADP Operations and Maintenance (actual or projected) for each year. When the total Cumulative Cost is exceeded by the Cumulative Benefits attributed to the automated system, the system is considered to have broken even. The Model monitors these totals on a monthly basis to identify the earliest date that the system breaks even.

The following sections detail the calculations performed automatically by the Revenue Stream Model each year for Annual Benefits attribution and for Cost Effectiveness.

Determining Annual Benefit for the Automated System

The RSM determines the annual benefit attributable to the automated system through a series of calculations, including identifying and using the Annual System Cost to develop the ADP to Admin percentage. The RSM then determines the amount of the Annual Revenue Stream, and apportions it according to the ADP to Admin percentage to determine the Annual Benefit attributable to the automated system.

- **Annual System Cost**

  Each year, the RSM creates a single composite figure representing the total costs attributable to the automated system for the year. This figure is composed of the amortized portion of System Development Cost, plus the year's expenditures (actual or projected) for ADP Operations and Maintenance. The composite total is the Annual System Cost.

First, the Revenue Stream Model amortizes the total System Development Cost over the number of years of System Life. The amortized value assigned to each year of System Life is the result of dividing System Development Cost by System Life.

Amortization Rate = 1 ÷ Estimated System Life in Years
Amortized System Development Cost = System Development Cost ÷ Annual Amortization Rate
Annual System Cost (ASC) = Amortized System Development Cost + Annual ADP O&M
ASC for 1998 = Amortized System Development Cost + Annual ADP O&M Costs for 1998
ASC for 1999 = Amortized System Development Cost + Annual ADP O&M Costs for 1999
ASC for 2000 = Amortized System Development Cost + Annual ADP O&M Costs for 2000

Example values: System Life: 13 years
System Development Cost: $82,294,578
ADP O&M Costs for 1998: $5,564,430
(Refer to Figure 2-1.2 RSM Base Year Projections.)

Amortization Rate = 1 ÷ 13= 7.69% (NOTE: The RSM actually carries calculations to 7 places.)
Amortized System Development Cost = $82,294,578 × .076923077 = $6,330,352
Annual System Cost for 1998 = $6,330,352 + $5,564,430= $11,994,782

- **ADP to Admin Percentage**

The ADP to Admin Percentage is projected for each year of the RSM by dividing the Annual System Cost (ASC) by the annual Net Administrative Costs for each year.

ADP to Admin Percentage for 1998 = (ASC for 1998 ÷ Net Admin for 1998) × 100
ADP to Admin Percentage for 1999 = (ASC for 1999 ÷ Net Admin for 1999) × 100
ADP to Admin Percentage for 2000 = (ASC for 2000 ÷ Net Admin for 2000) × 100

The ADP to Admin Percentage is limited to a maximum of 100%.

Example:
ADP to Admin Percentage for 1998 = (11,994,782 ÷ 47,258,774) × 100 = 25.38%
(Refer to Figure 2-1.2 RSM Base Year Projections.)

- **Annual Revenue Stream (Base Year and Current Year Collections Difference)**

The RSM makes one key assumption about benefits. The RSM assumes that the level of annual collections handled prior to the implementation of the system is not attributable to the system.

Therefore, the RSM excludes the amount of Base Year Collections from its calculation of annual revenue available to apportion each year. It is the *difference* between Base Year Collections and Current Year collections that the Model uses as the Revenue Stream for the year. The Model calculates the annual Revenue Stream for each Benefit Year.

The Base Year and Current Year Collections Difference is calculated for each year of the RSM by subtracting the Base Year Annual Collections from the Current Year Annual Collections.

Revenue Stream for 1998 = Collections for 1998 - Collections for 1997
Revenue Stream for 1999 = Collections for 1999 - Collections for 1997

Revenue Stream for 2000 = Collections for 2000 - Collections for 1997

Example:
Revenue Stream for 1998 = 213,388,771 – 197,289,914 = 16,098,857
(Refer to Figure 2-1.2 RSM Base Year Projections.)

Note: If current collections fall below the level of base year collections, the RSM will show the difference as a negative value.

- **Benefits Attributed to Automation**

  The Annual Benefit attributed to automation is calculated for each year of the Model as a share of the Revenue Stream for the year. The RSM divides the Revenue Stream between the Net Admin and the Annual System Cost. In use, the RSM multiplies the Revenue Stream by the ADP to Admin Percentage for each year.

  Annual Benefit for 1998 =
  (Revenue Stream for 1998 × ADP to Admin Percentage for 1998) ÷ 100
  Annual Benefit for 1999 =
  (Revenue Stream for 1999 × ADP to Admin Percentage for 1999) ÷ 100
  Annual Benefit for 2000 =
  (Revenue Stream for 2000 × ADP to Admin Percentage for 2000) ÷ 100

  Example:
  Annual Benefit for 1998 = (16,098,857 × 25.38) ÷ 100 = 4,086,062
  (Refer to Figure 2-1.2 RSM Base Year Projections.)

  Note: In attributing benefits, the RSM always uses a number equal to or greater than zero. If current collections fall below the level of base year collections, the RSM will attribute a value of zero benefits for the year.

Cost Effectiveness (Determining System Breakeven Point)

The total System Development Cost is one component of overall Cumulative Cost for the system. The other component is the ADP Operations and Maintenance (actual or projected) for each year. When the total Cumulative Cost is exceeded by the Cumulative Benefits attributed to the automated system, the system is considered to have broken even. The RSM identifies the earliest month that the system breaks even.

- **Cumulative Cost**

  The RSM monitors Cumulative Cost on a monthly basis using actuals to date and cost projections for remaining Benefit Years. While each Benefit Year identifies an overall Cumulative Cost, the State must keep in mind that it is based on actual data *as of that Benefit Year*. Projections beyond the current Benefit Year are helpful for planning purposes and to assess the current progress toward ultimate cost effectiveness.

  Note: The system is not considered to be fully cost effective until the Cumulative Cost and Cumulative Benefits consist wholly of actual dollars expended and actual benefits attributed to the system, not projections.

As a convenience for RSM users, the RSM Cost Effectiveness Chart identifies the last year of actual data entry, and the actual Cumulative Costs and Cumulative Benefits as of that point in time.

The Cumulative Cost attributable to the system is calculated monthly for each year of the Model. Cumulative Cost is the total System Development Cost plus the (actual and projected) Annual ADP O&M Costs for each year.

Cumulative Cost for 1998 = System Development Cost + Annual ADP O&M Costs for 1998
Cumulative Cost for 1999 = Cum Cost for 1998 + Projected Annual ADP O&M Costs for 1999
Cumulative Cost for 2000 = Cum Cost for 1999 + Projected Annual ADP O&M Costs for 2000

Example:
Cumulative Cost for 1998 = 82,294,578 + 5,664,430 = 87,959,008
(Refer to Figure 2-1.2 RSM Base Year Projections.)

- **Cumulative Benefits**

The RSM monitors Cumulative Benefit on a monthly basis using actuals to date, and projections for remaining Benefit Years. While each Benefit Year identifies an overall Cumulative Benefit, keep in mind that it is based on actual data *as of that Benefit Year*. Projections beyond the current Benefit Year are helpful for planning purposes and to assess the current progress toward ultimate cost effectiveness.

Note: The system is not considered to be fully cost effective until the Cumulative Benefit and Cumulative Cost consist wholly of actual benefits attributed to the system and actual dollars expended, not projections.

As a convenience for RSM users, the RSM Cost Effectiveness Chart identifies the last year of actual data entry, and the actual Cumulative Benefit and Cumulative Cost as of that point in time.

The Cumulative Benefit attributable to the system is calculated monthly for each year of the RSM. Cumulative Benefit is the sum of each year's Revenue Stream (actual and projected) attributable to the automated system.

Cumulative Benefit for 1998 = Annual Benefit attributed to automation for 1998
Cumulative Benefit for 1999 =
Cumulative Benefit for 1998 + Annual Benefit attributed to automation for 1999
Cumulative Benefit for 2000 =
Cumulative Benefit for 1999 + Annual Benefit attributed to automation for 2000

Example:
Cumulative Benefit for 1998 = 4,086,062
Cumulative Benefit for 1999 = 4,086,062+ 8,387,787 =12,473,849
Cumulative Benefit for 2000 = 12,473,849+ 12,922,768=25,396,617

(Refer to Figure 2-1.2 RSM Base Year Projections.)

- **Breakeven Point**

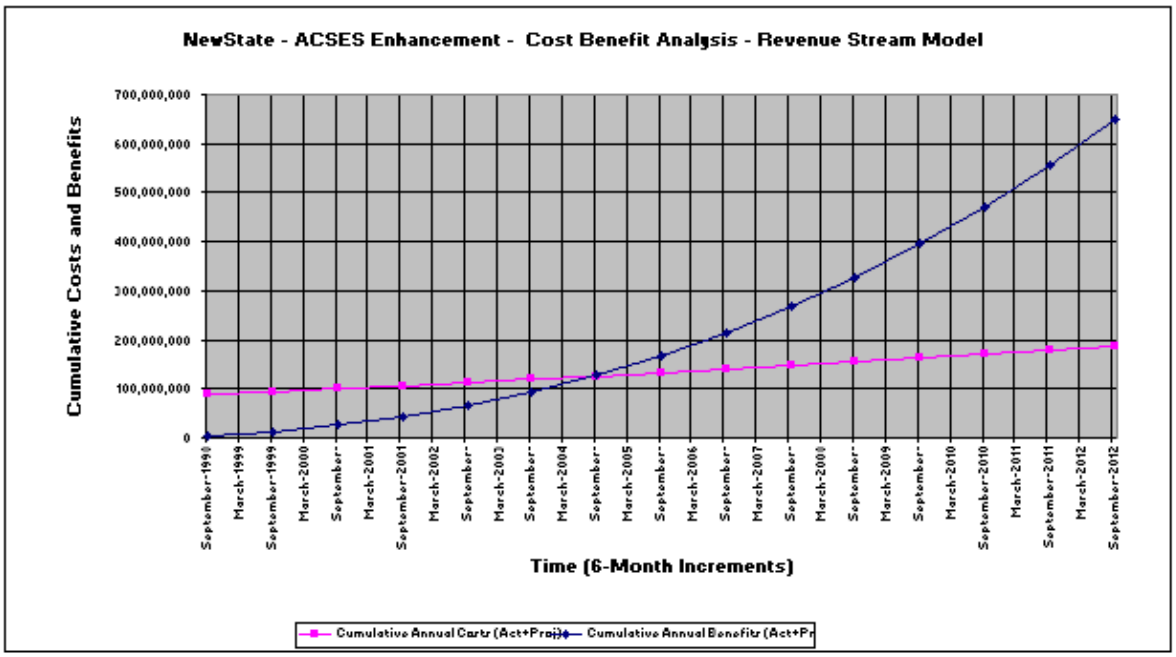
The RSM makes ongoing projections of the point at which the system is expected to break even. However, only when the *actual* Cumulative Benefit exceeds the *actual* Cumulative Cost, has the

system *actually* broken even. These values are compared monthly to identify the earliest possible date at which breakeven will occur.

The RSM maintains these calculations within each Benefit Year, based on the actual and projected data available up to that year.

The RSM also maintains the calculations for the system as a whole, using actual data entered in the individual Benefit Years, whether actual or projected. Using this data, the RSM creates a graphic representation of the state of system breakeven as of the last actual year of data entered to the system. This display is titled the RSM Cost Effectiveness Chart. Figure 2-1.3 shows the RSM Cost Effectiveness Chart display based on the initial data input for the Base Year.

Figure 2-1.3 RSM Cost Effectiveness Chart -- Base Year Projection



System Development Cos	$62,294,576
Base Year (Fiscal Year)	1997
System Life # Years)	13

Base Growth Rates			
Caseload	4.03%	Net Admin.	2.74%
Collections	6.16%	ADP O&M	2.79%

Last Year of Actual Data	1997
Breakeven Month	Aug-2004
Breakeven Amount	$124,376,320
Actual Cum. Costs	$62,294,576
Actual Cum. Benefits	$0

Model Parameters

Estimates used in the RSM should fall within the following parameters, based on national historical data from 1993 to 1997 in OCSE's Twenty-Second Annual Report to Congress. The 18th through the 23rd Annual Reports to Congress and the 1999 through 2002 Annual Statistics Reports are on the OCSE Web Site at www.acf.dhhs.gov/programs/cse/prgrpt.htm.

3% to 6% for Caseload Growth Rate
3% to 10% for Collections Growth Rate
Inflation Rate ± 2% for Net Administrative Growth Rate
Inflation Rate ± 1% for ADP O&M Growth Rate
10% to 40% for ADP to Administrative ratio

The State should supply justification for values that fall outside these parameters.

Reporting RSM Data

When the Revenue Stream Model is used, it provides the primary content for the Cost Benefit Section of the State's annual ADPU. The Cost Benefit Analysis section should consist of a brief supporting narrative (generally less than two pages) and printouts of relevant displays from the current RSM.

The narrative should include the following information:

- A description of the qualitative measures of success of the CSE project. These statements are a way to qualify what the numbers represent (e.g., court orders established rose from 24% to 61% of total caseload from 1992 to 2000, respectively).
- A recap of figures from the Revenue Stream Model, including breakeven date, breakeven ratio for the current point in the life of the system, and the total dollars that the ratio represents (total accumulated costs and benefits).
- A very brief description of how the following figures were chosen or updated:
    a. System Development Cost
    b. System Life
    c. Base Year
    d. Base Year figures for caseload, collections, net administrative cost, and ADP O&M cost
    e. Growth Percentages for collections, net administrative cost, and ADP O&M cost
- Explanation of any actual numbers for the year that vary significantly from the estimates projected in the original base year RSM, or where actual numbers vary from data submitted by the State on OCSE Forms.

In addition, the CBA Section should include a minimum of three sheets from the RSM:

Prior benefit year data display
Current benefit year data display
RSM Cost Effectiveness Chart.

2-2. RSM: Documenting Feasibility Study Results in the Implementation APD

Feasibility Study results are an important component of the APD process, regardless of whether the Revenue Stream Model or the Functional Model is ultimately chosen to measure and track cost/benefit progress as the project proceeds.

As noted in the Section 1-2, most Feasibility Studies use a function-based cost benefit model. Hence, Feasibility Study results summarized in the IAPD would be presented using a function-based format. (See prior section 1-2 on structure and format for documenting feasibility study results in an Implementation APD.)

The first use of the Revenue Stream Model in the APD process is in the Cost/Benefit section of the IAPD, as described in the following section.

2-3. RSM: IAPD Cost/Benefit Analysis and Measurement Plan

2-3.1 INTRODUCTION

This Chapter continues our example of an Implementation Planning Document (IAPD) that addresses cost/benefit analysis for a Child Support Enforcement System. Chapter 1-2 described the results of the Feasibility Study supporting the State's decision to select Alternative One for implementation. This chapter illustrates the content of the CBA section of a similar IAPD establishing the baselines that the State will use to measure future costs and benefits during the life of the project.

This Chapter illustrates the use of the Revenue Stream Model to track summary costs and benefits for the project. While this Chapter does not mandate the use of the Revenue Stream Model format, it does illustrate the level of detail sufficient for ACF purposes for this type of cost/benefit methodology.

2-3.2 IAPD COST/BENEFIT ANALYSIS – REVENUE STREAM MODEL

ACSES is NewState's statewide, Automated Child Support Enforcement System, replacing the functionality of the existing Child Support System (CSS). ACSES is being developed to meet the automation requirements of the Family Support Act of 1988 and the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA).

This Section of the Implementation APD presents the Cost/Benefit Analysis methodology the State will use to document and track costs and benefits for the ACSES project. This Section also presents the FFY 1995 Cost/Benefit Analysis for the ACSES system.

Cost/Benefit Methodology
ACSES benefits are expected to include increased child support payments to families, more accurate information provided to employers, and better customer service to our clients. In order to monitor and track the benefits attributed to automation, NewState will use the Revenue Stream Model. The RSM estimates the increases in revenue due to automation for the system as a whole without trying to determine what system function caused specific increases.

After the system is implemented in FFY 1997, we anticipate that the Revenue Stream Model will document actual costs and benefits as the project proceeds, calculate cost/benefit ratios, and project the point at which the benefits attributable to automation will exceed the costs of the developing the system (the breakeven point).

Until the system is implemented, we will use estimated Base Year values in the Revenue Stream Model. As noted below, we have calculated current growth rates for the immediate past 3 years. We applied the growth rates to actual FFY 1995 caseload, collections, net administrative and ADP O&M costs to project values for FFY 1996 and 1997. When the system is implemented, FFY 1997 estimations will be updated to the actual values.

The following paragraphs identify data required by the Revenue Stream Model.

System Development Costs

Costs for the NewState ACSES system are expected to total $71,500,000 for the procurement, development, and implementation of the system. An additional $700,000 was expended during the planning phase of the project, for an expected total project cost of $72,200,000.

System Life
NewState projects the life of this system to be a total of 13 years after system implementation.

Revenue Stream Model Inputs
We anticipate that the ACSES system will be implemented statewide in FFY 1997, with a majority of counties having full use of the system by the end of that year. As of the date of this IAPD, actual data is available only through FFY 1995. Therefore, we have created a preliminary Revenue Stream Model using estimated values for a Base Year of FFY 1997. Data sources are noted below, and values are identified in the table that follows.

- Baseline data and growth were drawn from program performance data for the years FFY 1992 through FFY 1995, as reported to ACF.
- Caseload data was obtained from OCSE 156 reports.
- Collection data was obtained from OCSE 34 reports.
- Net administrative costs as defined by OCSE were obtained from the Finance Office for the years FFY 1992 through FFY 1995.
- NewState has not previously reported annual ADP Operations and Maintenance (O&M) costs separately from administrative expenditures. Therefore, documentation for system costs was examined from Finance Office historical records and program office records. Budget spreadsheets were examined for previous years, and ADP O&M costs were identified.

Note: Spreadsheets included in the budget section of future APDU documents will support identification of ADP O&M costs for ongoing CBA analyses.

Revenue Stream Model – Estimated Base Year Inputs

A preliminary Revenue Stream Model for the ACSES project was created with the following values. Data will be updated with actual values and growth projections after system implementation.

NewState Table 1

Data	NewState Estimated Base Year Values	Notes
Base Year	Est. FFY 1997	IAPD estimate for implementation of ACSES
System Development Cost	72,200,000	IAPD estimated cost to complete ACSES development
System Life	13 years	Expected useful life of system
Base Year Caseload	322,144	Projected from 1992-95 values
Base Year Collections	188,748,805	Projected from 1992-95 values
Base Year Net Administrative	45,396,876	Projected from 1992-95 values
Base Year ADP O&M	5,129,328	Projected from 1992-95 values
Caseload Growth	6.49%	Average growth 1992 – 1995
Collections Growth	8.40%	Average growth 1992 – 1995
Net Admin Growth	2.78%	Average growth 1992 – 1995
ADP O&M Growth	2.78%	Average growth 1992 – 1995

Benefits of Automation
We are confident that our use of the Revenue Stream Model will clearly identify the benefits of increased automation in terms of the resulting increases in collections

In addition, we will be monitoring several intangible benefits important to the Program, including decreased distribution timeframes, increased number of cases with support orders, and increased worker satisfaction through better system availability and response.

Project Breakeven

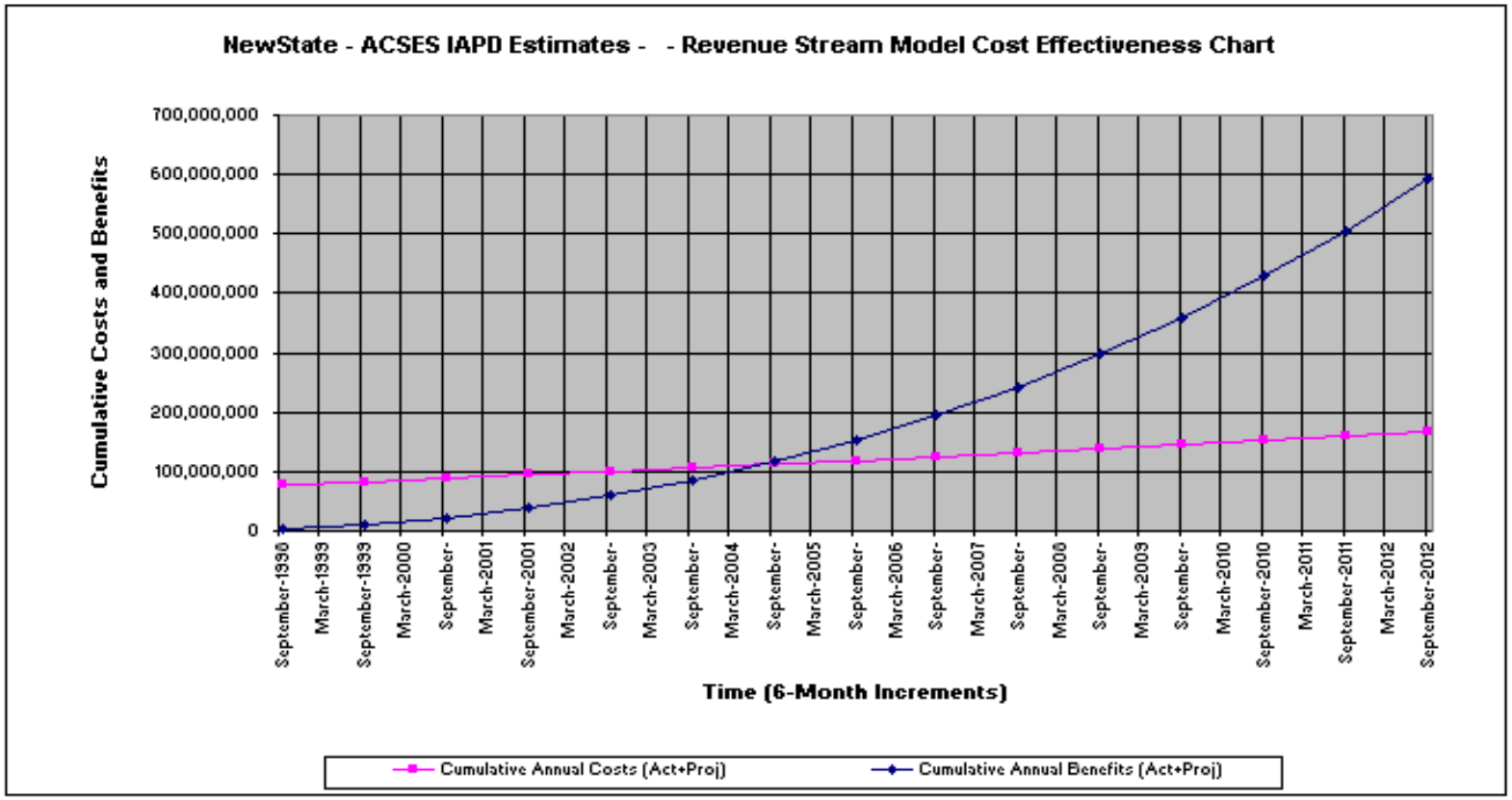
As the project proceeds on schedule and within planned costs, we anticipate that the ACSES system will achieve its breakeven point in FFY 2004.

ACSES Revenue Stream Model

We have included the RSM display of Base Year projections based on the estimated values for FFY 1997, and the RSM Cost Effectiveness Chart.

NewState - ACSES IAPD Estimates - Cost Benefit Analysis - Revenue Stream Model for Base Year

	Projected FFY 1998	Projected FFY 1999	Projected FFY 2000	Projected FFY 2001	Projected FFY 2002	Projected FFY 2003	Projected FFY 2004	Projected FFY 2005
Annual Caseload	343,051	365,315	389,024	414,272	441,158	469,789	500,278	532,746
Annual Collections	204,603,705	221,790,416	240,420,811	260,616,159	282,507,916	306,238,581	331,962,622	359,847,482
Annual Net Admin	46,658,909	47,956,027	49,289,205	50,659,445	52,067,778	53,515,262	55,002,986	56,532,069
Annual ADP Ops & Maint (O&M) Costs	5,271,923	5,418,482	5,569,116	5,723,937	5,883,062	6,046,611	6,214,707	6,387,476
Annual System Cost *	10,825,769	10,972,328	11,122,962	11,277,783	11,436,908	11,600,457	11,768,553	11,941,322
ADP to Admin (%)	23.20%	22.88%	22.57%	22.26%	21.97%	21.68%	21.40%	21.12%
Base Year and Current Year Collection Difference	15,854,900	33,041,611	51,672,006	71,867,354	93,759,111	117,489,776	143,213,817	171,098,677
Annual Benefit Attributed To Automation	3,678,643	7,559,913	11,660,682	15,999,078	20,594,586	25,468,157	30,642,326	36,141,335
Total Accum Annual Costs	77,471,923	82,890,405	88,459,521	94,183,458	100,066,520	106,113,131	112,327,838	118,715,314
Total Accum Annual Benefits	3,678,643	11,238,556	22,899,238	38,898,316	59,492,902	84,961,059	115,603,385	151,744,720
Breakeven Amount						113,049,858		
Breakeven Month						Aug-2004		
Breakeven Ratio	4.75%	13.56%	25.89%	41.30%	59.45%	80.07%	102.92%	127.82%
Base Year Notes:								
System Development Cost	72,200,000							
Annual Caseload	322,144							
Annual Collections	188,748,805							
Annual Net Admin Cost	45,396,876							
Annual ADP O&M Cost	5,129,328							
Base Year FFY End Date	09/30/1997							
Projected Growth Rates								
Caseload Growth (%)	6.49%							
Collections Growth (%)	8.40%							
Net Admin Growth (%)	2.78%							
ADP O&M Growth (%)	2.78%							
System Life	13							
Amortization Rate (%)	7.69%							



System Development Cost	$72,200,000
Base Year (Fiscal Year)	1997
System Life (# Years)	13

Base Growth Rates			
Caseload	6.49%	Net Admin.	2.76%
Collections	6.40%	ADP O&M	2.76%

Last Year of Data Entered	1997
Breakeven Month	Aug-2004
Breakeven Amount	$113,049,660
Actual Cum. Costs	$72,200,000
Actual Cum. Benefits	

4

2-4. RSM: Cost/Benefit Reporting for Annual APD Updates

2-4.1 INTRODUCTION

This Chapter is an example of a cost/benefit measurement report. It is written as though reporting in the third year of data input to the Revenue Stream Model, to clarify the relationship between the planning stage that culminated in the Implementation Advance Planning Document (IAPD) and the reporting phase represented by ongoing Annual APD Updates.

The ACSES project uses the Revenue Stream Model (RSM) for cost/benefit measurement. In its IAPD, submitted at project start-up in 1995, the State estimated that the system would be implemented by the end of FFY 1997, as projected in the Feasibility Study. The IAPD included an estimated RSM, projecting a Base Year of 1997. The system development cost used in the initial RSM was the projected cost for system development noted in the IAPD. The State updated the estimated cost of system development in the Annual APD Updates submitted for 1996 and 1997.

In the Annual APD Update for 1997, the State reported that the ACSES system had been implemented statewide. The RSM Base Year was confirmed as FFY 1997, and estimated Base Year values were updated to reflect actuals for the year.

The example that follows illustrates the content of the CBA section of the NewState's Annual APD Update for FFY 2000, and its use of the Revenue Stream Model to document the cost/benefit analysis.

2-4.2 ANNUAL APD UPDATE: RSM COST/BENEFIT MEASUREMENT REPORT

ACSES is NewState's statewide, Automated Child Support Enforcement System, replacing the functionality of the prior Child Support System (CSS). ACSES was developed to meet the automation requirements of the Family Support Act of 1988 and the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). The ACSES project began in 1995 and all counties were converted by September 1997. The Department of Health and Human Services officials conducted a certification review of the ACSES system on December 10, 1997, which resulted in a conditional certification of the ACSES for FSA88 functionality. Since that time, the project has shifted focus to completing the remaining functionality needed to achieve PRWORA certification, as well as complete functions needed to satisfy the remaining conditions for full FSA88 certification.

Project Costs

Development costs for the ACSES project were first incurred in 1995. Development costs to complete the system are currently estimated to total $82,294,578. Projected costs have exceeded estimates because we sustained unexpected costs for disaster recovery in the wake of last year's unprecedented storm activity, and required additional time and resources to complete certification related activities. As a result, our actual expenditures have exceeded the estimates provided in previous APDUs.

Project Data
As noted in our prior ADPUs, we continue to reconcile our project data input with data reported on OCSE Forms, as noted in Table 1 below.

NewState Table 1

Data	NewState Actual Base Year Input	Notes
Base Year	FFY 1997	IAPD estimate for implementation of ACSES
System Development Cost	82,294,578	Actual costs from FFY 1994-1998 and projections for FFY 1999-2004
System Life	13 years	Expected useful life of system
Base Year Caseload	322,503	Project data and OCSE Form 157
Base Year Collections	197,289,914	Project data and OCSE Form 34
Base Year Net Administrative	45,998,417	Project data and OCSE Form 396
Base Year ADP O&M	5,510,682	Project budget data
Caseload Growth	4.03%	Average growth 1994 – 1997
Collections Growth	8.16%	Average growth 1994 – 1997
Net Admin Growth	2.74%	Average growth 1994 – 1997
ADP O&M Growth	2.79%	Average growth 1995 – 1997

Revenue Stream Model Projections
At this point after system implementation, total accumulated costs as of 9/30/2000 are $105,344,006. The total accumulated benefits are $31,602,630. The breakeven ratio for this past fiscal year was 30%.

Breakeven
Projections in the Revenue Stream Model indicate that the project will break even in January 2005.

Benefits of Automation
Annual collections have increased from 197 million in FFY 1997 to 259 million in FFY 2000. Automated interfaces have been the single most important factor contributing to increases in collections. NewState has raised the percentage of current support collected from approximately 30% in 1997 to 41% in 2000.

Centralized collections, electronic funds transfer and the upgraded mainframe environment have significantly contributed to payments being distributed to clients in a more timely manner. Child support payments are being mailed to custodial parents the next day following receipt, down from an average 3 days in 1997.

In addition to faster distribution, the upgraded mainframe environment has contributed to increased worker satisfaction because of increased system availability and fewer calls about untimely payments. Prior to this upgrade, the system was typically down 3 days for month end processing. The system is now down only one day, and not at all when the first day of the month falls during a weekend.

The number of court referrals is up sharply. The paternity establishment rate is now at 61%. We have 65% of our cases under an order of support, a 5% increase in the last year alone.

Summary

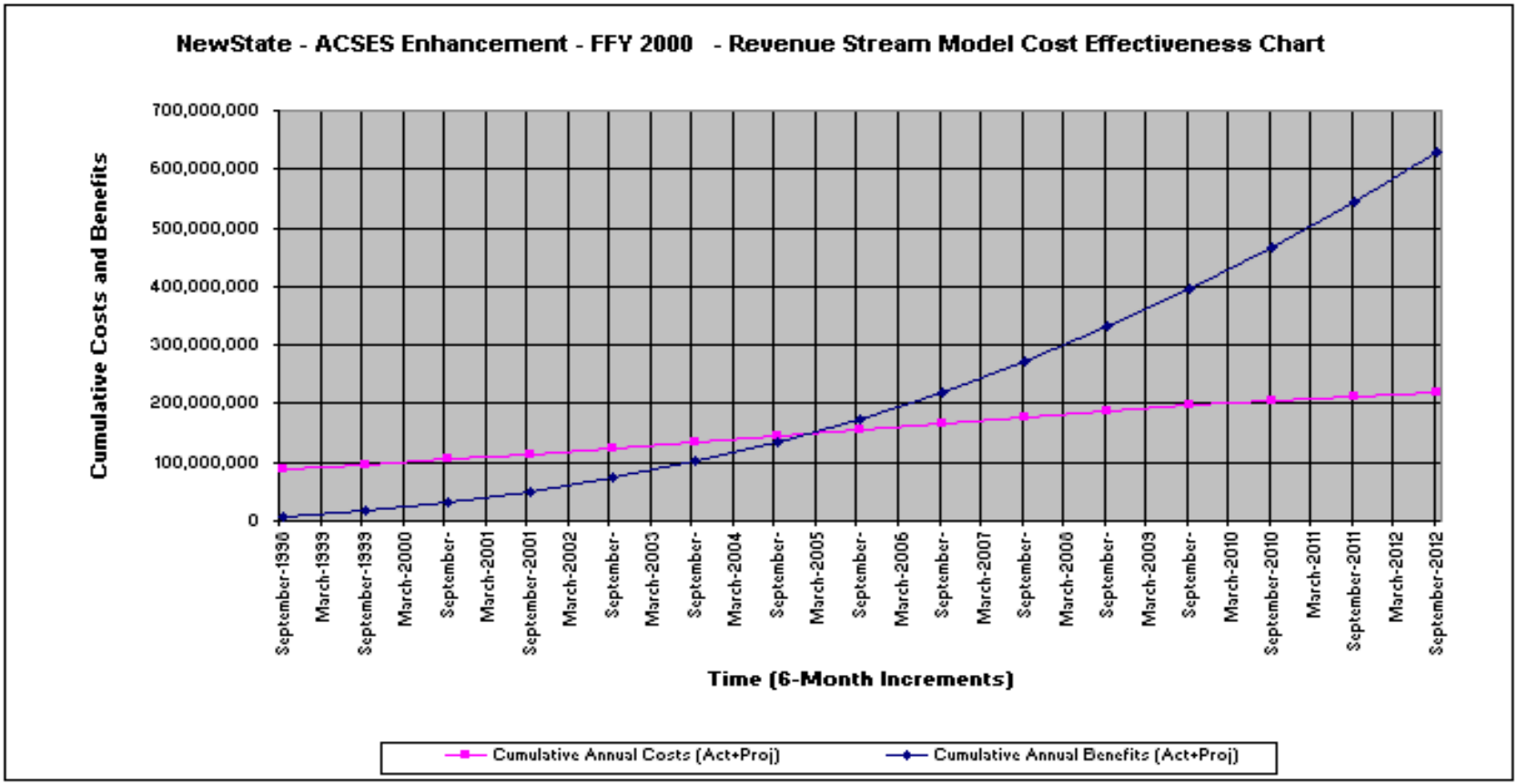
This Model has enabled us to establish a clear baseline for cost/benefit measurements that we can continue to use during the remaining life of ACSES. The RSM demonstrates the clear results in increased collection dollars attributable to automation, consistently and effectively.

ACSES Revenue Stream Model

We have included the RSM display of Benefit Year 3, and the RSM Cost Effectiveness Chart for Year 3 data.

NewState - ACSES Enhancement - FFY 2000 Cost Benefit Analysis - Revenue Stream Model for Benefit Year 3

	Actual FFY 1998	Actual FFY 1999	Actual FFY 2000	Projected FFY 2001	Projected FFY 2002	Projected FFY 2003	Projected FFY 2004	Projected FFY 2005
Annual Caseload	333,015	321,026	325,692	339,025	352,666	366,901	381,687	397,069
Annual Collections	221,386,560	242,795,516	259,597,013	280,780,129	303,691,786	328,473,030	355,276,430	384,266,995
Annual Net Admin	48,987,718	55,640,065	60,931,905	70,620,639	72,761,125	74,754,780	76,603,061	78,907,465
Annual ADP Ops & Maint (O&M) Costs	6,105,882	7,986,772	8,956,774	9,206,660	9,463,534	9,727,567	9,998,966	10,277,937
Annual System Cost *	12,436,234	14,317,124	15,287,126	15,537,020	15,793,886	16,057,919	16,329,318	16,608,289
ADP to Admin (%)	25.39%	25.64%	22.10%	21.94%	21.71%	21.48%	21.26%	21.05%
Base Year and Current Year Collection Difference	24,096,646	45,505,602	62,307,099	83,490,215	106,401,874	131,183,124	157,986,524	186,977,081
Annual Benefit Attributed To Automation	6,117,279	11,667,418	13,817,934	18,316,541	23,096,112	28,179,175	33,589,966	39,354,571
Total Accum Annual Costs	88,400,460	96,387,232	105,344,006	114,550,674	124,014,208	133,741,775	143,740,741	154,018,678
Total Accum Annual Benefits	6,117,279	17,784,696	31,602,630	49,919,171	73,015,283	101,194,458	134,784,424	174,138,995
Breakeven Amount							147,902,614	
Breakeven Month							Jan-2005	
Breakeven Ratio	6.92%	18.45%	30.00%	43.58%	58.88%	75.66%	93.77%	113.06%
Base Year Notes:								
System Development Cost	82,294,578							
Annual Caseload	322,503							
Annual Collections	197,289,314							
Annual Net Admin Cost	45,998,417							
Annual ADP O&M Cost	5,510,682							
Base Year FFY End Date	09/30/1997							
Projected Growth Rates								
Caseload Growth (%)	4.03%							
Collections Growth (%)	8.16%							
Net Admin Growth (%)	2.74%							
ADP O&M Growth (%)	2.79%							
System Life	13							
Amortization Rate (%)	7.69%							



System Development Cost	$82,294,578
Base Year (Fiscal Year)	1997
System Life (# Years)	13

Base Growth Rates			
Caseload	4.03%	Net Admin.	2.74%
Collections	6.16%	ADP O&M	2.79%

Last Year of Data Entered	2000
Breakeven Month	Jan-2005
Breakeven Amount	$147,302,614
Actual Cum. Costs	$105,344,006
Actual Cum. Benefits	$31,602,630

Appendix A. References

General References

Code of Federal Regulations 45 - Public Welfare
Office of the Federal Register
National Archives and Records Administration
October 1998

- CFR 45 Part 95.605 (2)(iv) - Cost/Benefit Analysis for IAPD
- CFR 45 Part 205.37 (a)(5) - ACF responsibility for Cost/Benefit Analysis
- CFR 45 Part 307.15(b)(11)-(14) - Approval of APD Cost/Benefit Analysis

Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs
Circular No. A-94
Office of Management and Budget
October 29, 1992

ACF References

Feasibility, Alternatives, and Cost/Benefit Analysis Guide
Office of Information Systems Management
July 1993

Companion Guide: Cost/Benefit Analysis Illustrated
Administration for Children and Families
U.S. Department of Health and Human Services
August 1994

Help Guide
Functional Model
Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems
August 2000, Revised March 2001

Help Guide
Revenue Stream Model
Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems
August 2000, Revised June 2004

Appendix B. Spreadsheets

The Microsoft Excel applications accompanying this guide contain integrated spreadsheets designed for entering and summarizing Child Support Enforcement Cost/Benefit Analysis data. There are two distinct applications, one for each benefits model.

Functional Benefit Model

In March 2001, the Functional Model application was updated significantly in format. The original five data bases or files, which were titled NewMainMenu.xls, Costs.xls, Benefits.xls, Summary.xls, and CBSummary.xls, were integrated into a single file titled *Functional Model V2.xls*.

The ‘save’ functionality of the application was integrated, as well. The options to save input data after selecting 'Return' from NewMainMenu.xls, Costs.xls, Benefits.xls, Summary.xls, and CBSummary.xls, menus' were replaced by a single option to save upon 'Exit' from the Functional Model V2.xls.

Open *Functional Model v2.xls* to start the application and display Main Menu options:

- CostsProfile-- Input Cost Data Menu for entry of recurring and non-recurring quarterly costs for the Status Quo and up to three alternatives. Totals costs and calculates Present Value Cost.

- BenefitsProfile -- Input Benefits Data Menu for quarterly entry of up to 11 benefits for the Status Quo 3 and up to three alternatives. Totals costs and calculates Present Value Cost.

- BenefitsSummary -- summary of the benefits for each alternative.

- CostsBenefitsSummary -- system life cycle cost and benefit profile; graphical representations of cumulative costs, benefits; and breakeven point for each alternative.

Functional Model menu and sub-menu organization is shown in the following table.

Figure B-1 Functional Cost/Benefit Analysis Spreadsheets

MAIN MENU OPTION	SUB MENU	SPREADSHEET		USE
CostsProfile	Input Cost Data Menu	Costs_StatusQuo		Data Entry
		Costs_Alt1		Data Entry
		Costs_Alt2		Data Entry
		Costs_Alt3		Data Entry
BenefitsProfile	Input Benefits Data Menu	Alt1	Benefit 1	Data Entry
			Benefit 2	Data Entry
			Benefit 3	Data Entry
			Benefit 4	Data Entry
		Alt2	Benefit 5	Data Entry
			Benefit 6	Data Entry
			Benefit 7	Data Entry
		Alt3	Benefit 8	Data Entry
			Benefit 9	Data Entry
			Benefit 10	Data Entry
			Benefit 11	Data Entry
BenefitsSummary	Benefits Summary Menu	Benefits_StatusQuo		Display
		Benefits_Alt1		Display
		Benefits_Alt2		Display
		Benefits_Alt3		Display
CostsBenefitsSummary	Comparison Menu	CBA_Summary		Display
		Chart_StatusQuo		Display
		Chart_Alt1		Display
		Chart_Alt2		Display
		Chart_Alt3		Display

Refer to the Help Guide for the Functional Model for more detail on data entry and Model operation:

> Help Guide
> Functional Model
> Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems
> August 2000, Revised March 2001

This document and Functional Model software are available on the ACF website.

Revenue Stream Benefit Model

This application consists of one Excel file, *Revenue Stream Model.xls*

Open R*evenue Stream Model.xls* to start the application and display main menu options.

- View or Enter Data
  - Base Year Input
    - Project Data (Project Name, Base Year, System Life, System Development Cost)
    - Base Year Data (Base Year Caseload, Collections, Net Administrative Costs and ADP Operations and Maintenance Costs)
    - Baseline Growth Rates (Caseload, Collections, Net Administrative, ADP O&M
  - Benefit Year 1 to 15 Input (Actual Caseload, Collections, Net Administrative Costs, and ADP O&M Costs)
- Print One or More Benefit Years

The application monitors and tracks annual costs and collections increases, and projects future costs and collections increases based on established growth rates. The Model calculates the annual benefit attributable to automation, calculates cumulative costs and benefits, and calculates the breakeven point. The application maintains historical views of data by year, and provides a graphical and data summary of current project status.

After initial set-up, the Model is designed to be used for annual data input. Once a year, the actual values for caseload, collections, net administrative costs, and ADP O&M costs are entered to the Model. System development cost may be updated. The Model provides all outcomes through its own calculations, updating the breakeven point based on new values.

Main menu options and spreadsheets are shown in the following table:

Figure B-2 Revenue Stream Cost/Benefit Analysis Spreadsheets

MAIN MENU OPTION	SPREADSHEET	Use
View or Enter Data	Baseline Data	Data Entry
	Base Year	Display
	Benefit Year 1	Data Entry
	Benefit Year 2	Data Entry
	Benefit Year 3	Data Entry
	Benefit Year 4	Data Entry
	Benefit Year 5	Data Entry
	Benefit Year 6	Data Entry
	Benefit Year 7	Data Entry
	Benefit Year 8	Data Entry
	Benefit Year 9	Data Entry
	Benefit Year 10	Data Entry
	Benefit Year 11	Data Entry
	Benefit Year 11	Data Entry
	Benefit Year 11	Data Entry
	Benefit Year 14	Data Entry
	Benefit Year 15	Data Entry
	RSM Chart	Display
Print One or More Benefit Years	Select any number of Benefit Years or RSM Chart	Print

Refer to the Help Guide for the Revenue Stream Model for more detail on data entry and Model operation:

Help Guide
Revenue Stream Model
Cost/Benefit Analysis Illustrated for Child Support Enforcement Systems
August 2000, Revised June 2004

This document and Revenue Stream Model software are available on the ACF website.