State of New York
Office of the State Comptroller
Division of Management Audit and State Financial Services

OFFICE OF CHILDREN AND FAMILY SERVICES

DEVELOPMENT OF THE CONNECTIONS SYSTEM SUPPORTING CHILD WELFARE SERVICES

REPORT 97-S-68

H. Carl McCall

Comptroller

State of New York
Office of the State Comptroller

**Division of Management Audit and
State Financial Services**

Report 97-S-68

Mr. John A. Johnson
Commissioner
Office of Children and Family Services
Capital View Office Park
52 Washington Street
Rensselaer, NY 12144

Dear Mr. Johnson:

The following is our report on the development of the CONNEC-TIONS system by the Office of Children and Family Services and the now abolished Department of Social Services.

This audit was done according to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article 2, Section 8, of the State Finance Law. We list major contributors to the report in Appendix A.

*Office of the State Comptroller
Division of Management Audit
and State Financial Services*

November 17, 1998

Executive Summary

Office of Children and Family Services Development of the CONNECTIONS System Supporting Child Welfare Services

Scope of Audit

The Department of Social Services (DSS) was historically responsible for New York's child welfare programs. In August 1997, DSS was abolished and the Office of Children and Family Services (OCFS) became responsible for these programs within a newly created Department of Family Assistance.

In 1995 DSS began designing a statewide automated child welfare information system initiative, called CONNECTIONS. CONNECTIONS is designed to re-engineer and automate child welfare services; OCFS continues to design CONNECTIONS. The CONNECTIONS system is intended to give child welfare workers state of the art computer equipment and software to support and improve their efforts on behalf of children and families. It is expected to be a single, integrated system for the recording and collection of child protective, preventive, foster care, and adoption service information statewide. CONNECTIONS will provide information that is critical to efforts to protect vulnerable children; preserve, stabilize and support families; and provide efficient, economic and effective monitoring and oversight of all child welfare programs. The system will connect all 58 local social services districts, as well as local not-for-profit service providers, to OCFS.

The equipment in the system is provided by Integrated Systems Solutions Corporation (ISSC) in a contract totaling about $101 million, while software is provided by Andersen Consulting LLP (Andersen) in a contract totaling about $66 million. Other services were provided by a third vendor in a contract totaling about $10 million. It is expected that about $120 million of the $177 million in contract costs will be covered by Federal funding.

Our audit addressed the following questions about the development of the CONNECTIONS system from the release of the Request for Proposal on June 17, 1995 through April 30, 1998:

- Were project management techniques and a systems development life cycle methodology effectively used to plan, design, develop and implement CONNECTIONS?

- Were effective contract management practices used to ensure that the vendors met and documented contract requirements at a reasonable cost?

Audit Observations and Conclusions

We found that State officials were not effective in overseeing the development of the CONNECTIONS system and could have maintained better control over the change orders made to the ISSC and Andersen contracts. Because of delays and other problems in implementing the

CONNECTIONS system, we question whether the system can be successfully implemented by OCFS without significant changes in its approach to system development.

We identified a number of weaknesses in the procedures used to plan, design, develop and implement the CONNECTIONS system. For example, progress on the system was not formally monitored against a project schedule, system tests were not always thorough or complete, and system users were not adequately involved in the testing of the system. As a result, scheduled completion dates were not met, problems that should have been identified in the testing stage were not identified until the system was put into production, numerous revisions were made after the system was put into production, and many users are dissatisfied with the system. Moreover, the final cost of implementation could significantly exceed planned contract costs of $177 million. (See pp. 4-6)

We found that, in certain instances, erroneous information concerning child abuse cannot be corrected on the system and some information related to the child abuse hotline is frequently lost. As a result, duplicate manual records are maintained. Attempts by Andersen to fix such problems were often unsuccessful, leading to further revisions and further delays. The CONNECTIONS system was supposed to be implemented by September 1997. However, as of April 30, 1998, only three of the system's five planned segments had been implemented and OCFS officials could not give an estimated completion date for the two remaining segments. Moreover, because system users are not satisfied, additional changes may have to be made to the completed segments. (See pp. 6-9)

Because of change orders requiring additional goods and services, the original ISSC contract was increased by $24.6 million to $101 million and the original Andersen contract was increased by $28.5 million to about $66 million. We examined controls over change orders and found improvements were needed to ensure that the requirements targeted by change orders were addressed as efficiently and effectively as possible, goods and services obtained through change orders were acquired at a fair price, services paid for in change orders were not covered by the original contract, and services obtained through change orders were provided as required. As a result, needs may not have been fully met and the costs incurred through change orders may have been higher than necessary. (See pp. 10-12)

We conclude that, unless changes are made in the approach taken in developing the CONNECTIONS system, there is a substantial risk that the system will not be successfully implemented. In that case, New York State's child welfare services could be compromised and the Federal government could seek to recover its share of project funding (about $120 million). We therefore recommend that consideration be given to suspending further system development efforts until it can be determined what needs to be done to ensure that the system is successfully implemented. (See p. 13)

Comments of OCFS Officials

OCFS officials generally agree with our recommendations. They indicate that many of them have already been implemented.

Contents

Introduction

Background

The Department of Social Services (DSS) was historically responsible for administering the State's child welfare programs: the Child Protective Services Program, the Preventive Services Program, the Foster Care Program, and the Adoption Subsidy Program. The Child Protective Services Program is intended to safeguard children against abuse or maltreatment. The Preventive Services Program is intended to provide families with the services necessary to prevent the need to remove children from households and place them into foster care. The Foster Care Program is intended to provide temporary, substitute parental care to children who are in the State's custody. The Adoption Subsidy Program is intended to find and maintain stable and permanent homes for handicapped and other hard-to-place foster children. In August 1997, DSS was abolished and the Office of Children and Family Services (OCFS) became responsible for these programs within a newly created Department of Family Assistance.

In 1995 DSS began designing a statewide automated child welfare information system initiative, called CONNECTIONS. CONNECTIONS is designed to re-engineer and automate child welfare services; OCFS continues to design CONNECTIONS. The CONNECTIONS system is intended to give child welfare workers state of the art computer equipment and software to support and improve their efforts on behalf of children and families. It is expected to be a single, integrated system for the recording and collection of child protective, preventive, foster care, and adoption service information statewide. CONNECTIONS will provide information that is critical to efforts to protect vulnerable children; preserve, stabilize and support families; and provide efficient, economic and effective monitoring and oversight of all child welfare programs. The system will connect all 58 local social services districts, as well as local not-for-profit service providers, to OCFS.

Plans required developing CONNECTIONS in two phases. In phase I, which has been completed, preparations were made for the introduction of the CONNECTIONS system. (For example, some existing mainframe systems were enhanced with additional functionality to provide for better integration between the systems.) In phase II, which was to be completed by September 1997 but was still in process at the time of our audit, the new hardware and software of the CONNECTIONS system were to be installed and put into operation. The software was to consist of five segments, called "releases." Releases 1, 2 and 3 were to give system users the ability to perform such functions as communicating by e-mail, establishing staff/office/unit directories, reviewing online policy and

procedures, setting security procedures, providing for child protective service intakes and investigations, creating and maintaining contract information, and accessing service providers. Releases 4 and 5 were to provide the majority of the case management features including assessments, authorizations, plans and placements, financial management, and eligibility determinations.

In September 1995, PSI, International (PSI) was selected as the vendor for the phase I initiative at a contract cost of $10.4 million. A multi-vendor approach was chosen to accomplish phase II. The equipment in the CONNECTIONS system is provided by Integrated Systems Solutions Corporation (ISSC). ISSC has installed a total of 14,500 Pentium personal computers, 2,478 printers, and a network of 296 servers in more than 800 sites across the State, making CONNECTIONS the largest network installation of its type in the world. The software for the network is provided by Andersen Consulting LLP (Andersen), based upon a similar software product developed by Andersen for the State of Texas.

In May 1996, New York State executed four-year contracts with ISSC and Andersen for $76.1 million and $37.5 million, respectively. Both agreements also provide for two, one-year extensions. Subsequent to May 1996, additional equipment and services for the CONNECTIONS project were acquired from ISSC by executing a series of sixteen change orders totaling $24.6 million, raising the contract amount to $100.7 million. The Andersen contract was also amended to provide for additional software development, adding about $28.5 million to that agreement, for a total contract amount of $66 million. The ISSC contract can also be used by the local districts and voluntary agencies to purchase CONNECTIONS-related equipment. Included in the $100.7 million are projected costs of $12 million for such equipment and site preparation.

The contracts with PSI, ISSC and Andersen total about $177 million. It is expected that about $120 million of this amount will be covered by Federal funding.

Audit Scope, Objectives and Methodology

We examined efforts to implement CONNECTIONS from the release of the project's Request for Proposal on June 17, 1995 through April 30, 1998. The objectives of our performance audit were to determine (1) whether project management techniques and a systems development life cycle methodology were effectively used to plan, design, develop and implement CONNECTIONS, and (2) whether effective contract management practices were used to ensure that ISSC and Andersen delivered the

required end-products on time and at a reasonable and documented cost. To accomplish our objectives, we interviewed OCFS officials, conducted a survey of users of the CONNECTIONS system, reviewed systems development documentation, and reviewed other records maintained by OCFS. We also visited two local social services districts.

We did our audit according to generally accepted government auditing standards. Such standards require that we plan and do our audit to adequately assess OCFS operations that were within our audit scope. Further, these standards require that we understand OCFS's internal control structure and its compliance with those laws, rules and regulations that are relevant to the operations included within our audit scope. An audit includes examining, on a test basis, evidence supporting transactions recorded in the accounting and operating records and applying such other auditing procedures as we consider necessary in the circumstances. An audit also includes assessing the estimates, judgments, and decisions made by management. We believe our audit provides a reasonable basis for our findings, conclusions and recommendations.

We use a risk-based approach when selecting activities to audit. This approach focuses our audit efforts on those operations identified through a preliminary survey as having the greatest probability for needing improvement. Consequently, by design, we use our finite audit resources to identify where and how improvements can be made. Thus, we devote little audit effort to reviewing operations that may be efficient or effective. As a result, our audit reports are prepared on an "exception basis." This report, therefore, highlights those areas needing improvement and does not focus on activities that may be functioning properly.

Response of OCFS Officials

A draft copy of this report was provided to OCFS officials for their review and comment. Their comments have been considered in the preparation of this report and are included as Appendix B.

Within 90 days after final release of this report, as required by Section 170 of the Executive Law, the Commissioner of the Office of Children and Family Services shall report to the Governor, the State Comptroller, and leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons therefor.

Implementation of the CONNECTIONS System

The systems development life cycle process (SDLC) is a commonly accepted approach to developing automated systems. The major components of the SDLC include systems planning, systems design, and systems development and implementation. If a structured SDLC approach is combined with effective project management techniques and active user participation, scheduled completion dates are more likely to be met, cost overruns are more likely to be avoided, and user dissatisfaction is more likely to be minimized.

We identified a number of weaknesses in the procedures used to plan, design, develop and implement the CONNECTIONS system. In particular, we found that system users were not adequately involved in the testing of the system. As a result of these weaknesses, scheduled completion dates have not been met and users are dissatisfied with the CONNECTIONS system. Moreover, because of the delays in implementing the system, the final cost of implementation could significantly exceed the planned contract costs of $177 million.

Systems Planning

The systems planning process is intended to ensure that the needs and objectives of system users are adequately defined; that economical, technical, and operational constraints are sufficiently evaluated; and that adequate plans are made for monitoring project progress and controlling project cost.

In July 1996, New York State officials visited the Texas team responsible for managing the Andersen developed child welfare system. The officials wanted to determine the lessons learned by the Texas team and incorporate these lessons into the CONNECTIONS system. However, when we compared the problems found in the Texas system with the problems found in the CONNECTIONS system, we saw many of the same problems. For example, there is not a mechanism in CONNECTIONS to amend a child abuse hotline report after the intake information is sent to the local social services districts. Consequently, users of CONNECTIONS cannot modify incorrect information, resulting in a permanently inaccurate record. We also found that users of both the Texas system and CONNECTIONS do not consider the name search function to be reliable and accurate, have encountered problems with dial-in access, and find the system to be cumbersome and complex. Because such problems were not effectively addressed early in the development of CONNECTIONS, fixing

these problems later in the development of the system will add significant costs to the project.

We also identified weaknesses in the procedures used to monitor project progress. For example, OCFS does not formally compare system development activities against a project schedule. As a result, OCFS officials cannot say with any certainty whether Andersen has completed all the tasks associated with its contract, and cannot provide us with a schedule showing what tasks still need to be done to complete the CONNECTIONS project and when these tasks will be completed. For example, the officials cannot provide us with a revised schedule showing when CONNECTIONS release 4, a major component of the system containing case management and financial management capabilities, will be completed.

Systems Design

Systems design is a crucial function in the development of a system, and requires the cooperation, input and support of system users. During this phase, detailed requirements are defined and program specifications are developed. Andersen was to use Joint Application Development (JAD) teams to arrive at the detailed requirements for the system. This approach involves working with a mix of users, systems analysts, and technical specialists.

However, according to OCFS staff, when Andersen systems analysts started work on the system, they tried to persuade users of what they needed before the JAD teams had settled on the user requirements. As a result, the CONNECTIONS system is less likely to be based upon the requirements dictated by OCFS and local district casework processes, practices and policy. We found indications that the system is not working as intended, as more than 4,000 System Investigation Requests (SIRs) were identified during system testing. (SIRs are problems identified by CONNECTIONS users which need to be addressed by OCFS and the Andersen project team.)

We also sent a questionnaire to 37 not-for-profit service providers and the 58 local social services districts to determine their satisfaction with the CONNECTIONS system. We sent our questionnaire to all 58 local social service districts and selected a sample of 37 not-for-profit service providers on a random basis from a population of 292 providers. A total of 53 of the local districts responded to our questionnaire, and most of these districts (81 percent) have significant problems with the system in

their day-to-day work. In total, 59 percent of the districts told us they do not believe the system has added value and 69 percent of the districts do not feel the system is reliable. The not-for-profit service providers were not as critical of CONNECTIONS, but release 2 did not affect these service providers and release 3 affected only a small number of the providers. Release 4 will mainly affect these service providers, but OCFS has yet to implement release 4.

We also note that, because of ineffective system design, CONNECTIONS routinely loses child abuse hotline information. OCFS receives approximately 1,400 calls per day on this hotline. A narrative of the reported incident is entered on the system and sent to the local districts for investigation. However, on approximately every 500th call, the system loses the narrative. As a result, OCFS caseworkers have begun maintaining duplicate manual records of hotline narratives and have filed a class action grievance, as they can be held personally liable for mishandling child abuse information.

<u>Response of OCFS Officials to Audit:</u> OCFS officials stated that in those cases where a portion of the intake data appeared to have been lost, they have been able to retrieve the information through technical measures. They further add that they are continuing to work with the project consultant to correct the problems completely.

Systems Development and Implementation

The systems development process should ensure that computer programs are constructed according to user-approved system design specifications and are thoroughly tested. Computer programs should be tested to ensure that they meet the design specifications (design tests) as well as the needs of system users (user acceptance tests). The following tests are performed in a typical SDLC:

- Unit tests are done on each individual program or module making up the entire system.

- System tests are done to prove the logic of a system in a controlled environment. All the programs or modules are tested together, similar to a live production environment, so that output from one program becomes input to other programs. Users should participate in and sign off on these tests.

- As the project moves into the systems implementation phase, users should actively participate in acceptance testing of the system to

evaluate the system's tolerance to errors and its ability to respond to exceptional circumstances such as a high volume of input transactions, illogical conditions, and out-of-sequence transactions. The objective of these tests is to make the system fail. In addition, special emphasis should be placed on pilot tests that test the system in a few locations and provide the most intensive tests of accuracy under actual conditions. Users should validate and sign off that the system performs according to their objectives and approved design specifications.

Andersen used a testing strategy called a product test to ensure that the new system met the functional requirements of the users as defined in the logical and detailed design specifications. Under this testing methodology, the operation of individual modules is tested, the operation of business functions is tested, interrelationships among all parts of the system are tested, and the performance of the system is tested. In addition, the strategy allowed for pilot testing the system prior to moving it into production.

We found inadequate system design tests and the Andersen testing methodology to be deficient for user acceptance tests. Design tests were deficient for the following reasons:

- In order to meet deadlines that were required to retain Federal funding for the development of the CONNECTIONS system, tests of system design were not always completed.

- Not enough OCFS and/or user staff members were assigned to participate in the tests and individuals did not always execute all the required steps in the tests. There was also a lack of account-ability as the individuals executing the tests were not required to sign off on the tests or note which steps they had executed.

- The testing environment established by Andersen was not stable and would periodically shut down when scheduled testing was to take place. In addition, the database testing environment was not comparable to the production environment, performance criteria were not established and adequate performance tests to determine system response time were not conducted.

- Andersen did not abide by traditional controls that segregate the development environment from the test environment, as application

programmers had access to the test environment and would make program changes in that environment.

The Andersen testing methodology was also deficient for user acceptance tests. Andersen's methodology does not clearly indicate when user acceptance testing is to occur. Normally, user acceptance testing occurs after the completion of the system design tests. However, Andersen's methodology does not provide for any user sign-off after tests are completed. Andersen did provide a memorandum documenting the completion of its product test, but there was no required user sign-off for the tests. According to the Andersen test methodology, the product test ensured that the system conformed to design specifications and user requirements. Our review of test documentation showed that the functionality and logic of the system was tested, but we found nothing in the test documentation to suggest that the system was tested according to user requirements. As a result, there is no user acceptance and validation of the CONNECTIONS system.

As a result of the inadequate testing done on the system, problems in design that should have been found in the testing process were not found until the system was placed into production. As of March 24, 1998, a total of 1,592 SIRs had been identified by system users for releases 1, 2 and 3 after these releases had been put into production. (These production SIRs were in addition to the more than 4,000 SIRs identified during testing.) When we reviewed these production SIRs, we found that many of the problems identified during the testing phase continued when the releases were put into production. For example, during the testing phase, 523 SIRs were identified when caseworkers processed intake information; after the release was put into production, 266 SIRs were identified when caseworkers processed intake information. For some child welfare activities, more SIRs were identified during production than had been identified during testing. Because it is more expensive to correct problems in the later stages of the SDLC, the cost of CONNECTIONS could increase significantly.

As solutions are found to the SIRs, program changes are made to the system and tested. These changes are then included in a new version of the release referred to as a "build." At the time of our audit, ten builds had been issued for release 2 and eight builds had been issued for release 3. According to our questionnaire, these frequent changes to the releases have added to user dissatisfaction.

Moreover, even when Andersen developed solutions to the SIRs, the solutions often failed. Andersen would then develop new solutions that had to be retested by users. For example, 729 of the 1,590 (46 percent) SIRs identified in release 2 were retested, and 838 of the 2,083 (40 percent) SIRs identified in release 4 were retested. This retesting led to delays in releasing the builds, further frustrating users.

The CONNECTIONS system was supposed to be implemented by September 1997. However, as of April 30, 1998, only three of the five releases had been implemented and OCFS officials could not give an estimated completion date for the two remaining releases (release 4 and release 5). Moreover, system users are not satisfied with the three releases that have been implemented, and as a result, OCFS may require additional changes to those releases (as of April 1998, OCFS was still meeting with Andersen about release 2). We note that management has assigned three different project managers to the CONNECTIONS system, and OCFS's Director of Information Systems has left OCFS. Because of this lack of continuity and because of the project management weaknesses identified by this report, we question the ability of OCFS to complete the project.

Controls Over Change Orders

Change orders increased the ISSC contract by $24.6 million to $101 million and the Andersen contract by $28.5 million to about $66 million. We examined controls over change orders and found that improvements were needed to ensure that the requirements targeted by change orders were addressed as efficiently and effectively as possible, goods and services obtained through change orders were acquired at a fair price, services paid for in change orders were not covered by the original contract, and services obtained through change orders were provided as required. As a result of these control weaknesses, the costs incurred through the change orders may have been higher than necessary and needs may not have been fully met.

ISSC Change Orders

Change orders authorize a contractor to add or delete work because of unanticipated changes in design or product specifications. Sixteen change orders have been added to the contract with ISSC including ordering a specialized server, additional printers, additional support for a help desk, and other additional equipment and services. These change orders increased the total value of the ISSC contract to about $101 million, an increase of approximately 32 percent.

To provide reasonable assurance that the goods and services obtained through change orders are necessary, officials should assess and document (1) the underlying need for the goods and services, (2) possible alternatives for meeting this need, and (3) why one alternative is preferable to the others. Because change orders are not subject to competitive bidding, there is a significant risk that the price charged for the goods or services will be higher than if the goods or services had been competitively bid. To provide reasonable assurance that the goods and services obtained through change orders are obtained at a fair market price, the prices charged by the contractor need to be carefully reviewed.

We reviewed all nine ISSC change orders costing $25,000 or more. While OCFS officials could explain the underlying needs for each change order, they could not show that those needs had been thoroughly discussed and evaluated by State officials prior to purchase, or that alternatives for meeting these needs had been considered. For example, the officials could provide no such documentation in relation to a $200,000 specialized server that was obtained through a change order to improve remote access to the CONNECTIONS system.

We believe such needs assessments were not documented because of an emphasis on project deadlines. Consequently, a comprehensive control environment was never developed for the project. OCFS officials stated that system designers were charged with meeting target dates for establishing the system infrastructure, developing software and meeting Federal requirements for reimbursement. Because the change orders were not thoroughly evaluated, there is less assurance that only necessary equipment and services were acquired, and the most efficient and effective approach was used. For example, even after the installation of the new server, CONNECTIONS users continued to have problems with remote access. In addition, a change order to begin purchasing additional help desk capacity from ISSC was added in June of 1997 at a cost of about $2.6 million through December 1997. However, most of this additional capacity was not needed and the change order was eventually canceled after at least $1.25 million was spent on unused help desk services. We note that $780,000 of this amount would have been avoided if the change order had been canceled after the first month of the agreement, when it was clear that excess capacity had been purchased.

We also found that the prices charged by ISSC on the change orders were not always thoroughly reviewed to ensure products and services were acquired at a fair price. For example, OCFS officials could not provide us with documentation supporting that there was a review of equipment prices to ensure that they reflected market value or that there was a review of the contractor's estimated level of effort to ensure that it was reasonable. As a result, OCFS management does not have reasonable assurance that additional products and services were obtained at a reasonable price. Because CONNECTIONS may require additional work, further change orders may be needed; it is therefore important that controls over change orders be improved.

Andersen Change Orders

Because of legislative changes affecting child welfare and because changes were needed in system design, OCFS added a change order to acquire additional systems development services from Andersen. According to the change order, the first 5,448 days of additional effort are considered a pre-paid cost of the original contract and are not to be billed to OCFS. In addition, the next 200 days of additional effort are also not to be billed to OCFS. For any additional days spent in performing work not included in the scope of the original contract, Andersen is to provide a cost estimate to OCFS. The cost of this additional work is not to exceed $28.5 million, which would increase the contract to $66 million (an increase of 76 percent).

We asked OCFS officials how they would ensure that the work performed by Andersen under the change order did not include services covered by the original contract. We found that OCFS officials had not designated anyone to be responsible for ensuring that tasks performed by Andersen under the change order were not included in the scope of the original contract. Consequently, OCFS has no assurance that the State has not been charged more than once for the same tasks.

We also found that OCFS officials could not provide any documentation that accounted for the first 5,648 days of work performed by Andersen under the change order. As a result, contrary to the terms of the change order, these days may have been billed to OCFS. Since Andersen was paid at least $592 a day for work performed under the change order, the value of these days may have exceeded $3.3 million. OCFS officials also could not provide us with any documentation showing that they had evaluated the reasonableness of Andersen's estimates of effort required for additional tasks provided under the change order after the first 5,648 days, or that the rate charged per hour was appropriate. As a result, the officials have less assurance that the amounts charged by Andersen were reasonable.

We reviewed the invoices submitted by Andersen for work performed under the change order and could find no evidence that anyone had evaluated Andersen's services prior to the payment of the invoice. Consequently, management cannot be assured that the services met expectations.

Conclusion

We conclude that, unless changes are made in the approach taken to implementing the CONNECTIONS system, there is substantial risk that OCFS will not be successful in implementing the system. If the system is not successfully implemented, New York State's child welfare services could be compromised and the Federal government could recover its share of the funding for system hardware installation and software development (approximately $120 million). We therefore recommend that OCFS convene the major stakeholders of the system and determine what needs to be done to ensure that the system is successfully implemented. Until these decisions are made, we recommend that consideration be given to suspending further system development efforts.

Recommendations

1. Convene major CONNECTIONS system stakeholders (including representatives from the Division of the Budget, local social services districts, the New York City Administration for Children's Services, and not-for-profit service providers) for the purpose of determining the long and short-term actions needed to ensure that the system is successfully implemented. Until these decisions are made, consider suspending any significant further development or commitment of resources to CONNECTIONS.

2. If a decision is made to continue development of the CONNECTIONS system, improve controls over change orders by:

- formally evaluating the need for the goods and services obtained through change orders, considering possible alternatives for meeting this need, and documenting why one alternative is preferable to the others,

- formally evaluating the prices charged in change orders to ensure that they are fair,

- ensuring that payments are not made under change orders for services covered by the original contract, and

- formally determining that the goods and services obtained through change orders meet expectations before authorizing payment.

   (In response to these recommendations, OCFS officials stated that they have put in place a process to actively engage all system stakeholders in the full range of project activities. They have also established a project management structure that will enable them to better focus on accountability, quality assurance and adherence to fiscally sound practices and procedures. Specific actions taken and procedures established since the audit was completed are detailed in the OCFS response included as Appendix B of this report.)

Major Contributors to This Report

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October 14, 1998

Honorable H. Carl McCall
State Comptroller
A.E. Smith State Office Building
Albany, NY 12236

re: OSC Draft Audit #96-S-68
     CONNECTIONS

Dear Mr. McCall:

The Office of Children and Family Services (OCFS) is in general agreement with the recommendations contained within draft audit report 97-S-68, Development of The Connection System Supporting Child Welfare Services.

The CONNECTIONS project represents one of the largest information technology projects ever undertaken by any state agency. As noted in the Audit Report, "CONNECTIONS is the largest network installation of its type in the world."

OCFS believes the findings and recommendations contained in the audit report can serve as a useful starting point for initiating significant changes in the manner in which the CONNECTIONS project is further developed and managed. Many of the changes recommended have already been implemented.

The audit report reveals the negative implications of failing to adequately engage system stakeholders and not developing the appropriate management infrastructure. We agree that both of these steps must be taken if the project is to be successful.

As is made clear in the attached, detailed response to the audit report, we have put in place a process that appropriately and actively engages all system stakeholders in the full range of project activities. For example, we have expanded membership on the Project Steering Committee to include representatives of all major stakeholder groups. We have also established a project management structure that will enable us to better focus on accountability, quality assurance and adherence to fiscally sound practices and procedures.

Appendix B

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Consistent with the recommendations made in the report,
we have implemented a more rigorous process for review-
ing, approving and monitoring all change order
activities.

The continued and successful implementation of the
CONNECTIONS system will require nothing less than the
full cooperation and commitment of all involved. We
welcome the opportunity to work with the Office of the
State Comptroller in this critical undertaking.

Sincerely,

John A. Johnson

Response to Draft OSC Audit #97-S-68
"Development of the Connections System"

The Office of Children and Family Services (OCFS) is in general agreement with the recommendations contained within draft audit report 97-S-68, Development of The Connection System Supporting Child Welfare Services.

As noted in the Audit Report, "CONNECTIONS is the largest network installation of its type in the world." As indicated in Commissioner Johnson's cover letter, the agency intends to comply substantially with the audit recommendations. Many of the changes recommended have already been implemented. From user input to administrative procedures, the OCFS has moved quickly to enhance the capacity of the CONNECTIONS project to achieve the goals that have been established for it. Provided below is the OCFS response to each of the two recommendations contained in the audit report. Additionally, provided in Appendix A is the agency's response to specific statements contained in the audit.

RESPONSE TO RECOMMENDATIONS

1. Convene major CONNECTIONS system stakeholders (including representatives from the Division of the Budget, local social services districts, the New York City Administration for Children's Services, and not-for-profit service providers) for the purpose of determining the long and short-term actions needed to ensure that the system is successfully implemented. Until these decisions are made, consider suspending any significant further development or commitment of resources to CONNECTIONS.

   As a result of involving the "major CONNECTIONS stakeholders", it has become clear that the agency must proceed with the project. To discontinue it would present an undue risk of compromising New York State's child welfare system and the possibility that the federal government would seek to recover its share of project funding.

   Among the specific actions taken by OCFS since taking over responsibility for the CONNECTIONS system project are:

   a. Adding additional local districts and the New York City Administration for Children's Services (ACS) to the existing Steering Committee. This committee meets every other week in Albany to discuss and resolve the significant issues raised by the districts and voluntary agencies.

   b. Establishing a Management Committee, which meets every other week to discuss and resolve system and programmatic issues. This committee is comprised of staff from Andersen

Consulting (AC), IBM, local district and state personnel from HSASC (Human Services Application Services Center) and OCFS who have day-to-day responsibility for the project. Local district staff are welcome to attend these sessions.

c. Convening bi-weekly meetings involving the Director of the Human Services Application Service Center (HSASC), the Director of Strategic Planning and Policy Development within the OCFS, the on-site partner for Anderson Consulting and senior project staff. The purpose of these meetings is to resolve outstanding project issues, review current operations and monitor project progress against established timelines.

In sum, our CONNECTIONS management team has moved quickly to undertake multiple targeted activities to address identified concerns with regard to the system's "release" segments referred to in the audit. Appendix B provides a detailed listing of all meetings convened with the user community and other stakeholders.

2. **If a decision is made to continue development of the CONNECTIONS system, improve controls over change orders by:**

   - **formally evaluating the need for the goods and services obtained through change orders, considering possible alternatives for meeting this need, and documenting why one alternative is preferable to the others,**

   - **formally evaluating the prices charged in change orders to ensure that they are fair,**

   - **ensuring that payments are not made under change orders for services covered by the original contract, and**

   - **formally determining that the goods and services obtained through change orders meet expectations before authorizing payments.**

As can be seen from the information presented above, the CONNECTIONS user community has an integral role in evaluating the operational status of each component of the application, identifying the application's problem areas and the proposed solutions. The agency has used, and will continue to use, the services of the HSASC to provide us with the technical resources to review proposed solutions and to verify the scope, timetable and cost estimates developed by Andersen Consulting. OCFS will also use the HSASC to verify the scope of the contract and assist us in ensuring that payments are made only for those work items that constitute redesign or enhancements to existing functionality.

OCFS recognizes the shortcomings of the change order process followed in the early stages of the project and has drafted procedures which will apply a consistent review process and management oversight to each change item, establish appropriate cost and scope controls, improve documentation and assure the quality of deliverables. OCFS will use the technical resources of the HSASC to review the solutions, scope, schedule, and cost estimates proposed by the consultants and assist OCFS' review of the contract scope to ensure that the work item is, in fact, a valid change item and not a deliverable under the existing contract.

SUMMARY

The Office of Children and Family Services is in agreement with the recommendations contained in the audit. We have already taken steps to implement many of the suggested recommendations before the audit issuance. Commissioner Johnson has maintained an unyielding commitment to moving forward in a manner that is responsive to the user community, that requires accountability among all parties engaged in the project and is fiscally sound. While the scope and breadth of this undertaking is unlike any other the child welfare system in New York has engaged in, the Commissioner and OCFS staff firmly believe that, when fully implemented, will improve services for the children, youth and families of New York State.

APPENDIX A

OCFS RESPONSE TO SPECIFIC STATEMENTS INCLUDED
IN THE OSC AUDIT REPORT

IMPLEMENTATION of the CONNECTIONS SYSTEM (page 4)
The report states: "In particular we found that system users were
not adequately involved in the testing of the system."

Notwithstanding the processes that were put in place prior to
OCFS' assuming responsibility for the project, OCFS testing for
all remaining components will be structured according to SDLC
guidelines and no component will be released to the user community
for either evaluation or implementation until it has passed inter-
nal tests. Future customer acceptance tests will include
individual component testing, a "walk through test", complete
written specifications, and the developer test plan and results.
Beyond this individual component testing, all components will be
put through fully integrated test scenarios with both new and con-
verted case data, as well as with all appropriate Legacy
interfaces before release to the user community.

The agency will also employ an "end-to-end test plan" to operate
newly developed/modified systems applications in the context of
the prevailing end user requirements. The "end-to-end " test plan
is currently under development by OCFS test staff and will involve
user community test environments and test materials.

SYSTEM PLANNING (page 5)

The report states: "OCFS does not formally compare system develop-
ment activities against a project schedule... and they cannot
provide us with a revised schedule showing when Release 4 will be
completed."

Because of our engagement of the user community in all project ac-
tivities, OCFS has refrained from developing detailed project
schedules until such time as we have achieved user community con-
sensus on issues and solutions. It has been and will continue to
be OCFS' intention to develop a detailed implementation schedule
for all system development activities once a broad consensus has
been obtained.

SYSTEM DESIGN (page 6)

The report states: "...because of ineffective system design,
CONNECTIONS routinely loses child abuse hotline information."

OCFS takes exception to this statement. A review of the records
for narrative Intake tickets indicates that every intake report

that was entered was capable of providing the necessary information to support the follow-up investigation. While the agency acknowledges the incidents where duplicate manual records were necessary, this approach is part of the fail-safe system to ensure that the intake report information is always available to support the follow-up investigation and prevent a reported incident from being lost. In cases where a portion of the intake data appeared to have been lost, OCFS has been able to retrieve the information through technical measures. Incidents involving Microsoft WORD software anomalies (portion of narratives temporarily lost) have now been almost entirely eliminated. We are continuing to work with the consultant to correct the problems completely.

SYSTEMS DEVELOPMENT AND IMPLEMENTATION (page 7)

The report states: "We found inadequate system design tests and the Andersen Consulting testing was found to be deficient for user acceptance tests."

As was indicated previously, OCFS testing for the remaining components will be structured according to SDLC guidelines and no components will be released to the user community for either evaluation or implementation until it has passed a full test protocol in-house. Future customer acceptance tests will include individual component testing, a "walk through test", complete written specifications and the developer test plan and results. Beyond this individual component testing, all components will be put through fully integrated test scenarios with both new and converted case data as well as with all appropriate Legacy interfaces before release to the user community.

The agency also intends to employ an "end-to-end" test plan, the purpose being to rigorously operate newly developed/modified systems applications in the context of the prevailing end user requirements. The "end-to-end" test plan is currently under development by OCFS test staff and will involve user community test environments and test materials.

APPENDIX B

LIST OF MEETINGS WITH USER COMMUNITY
RELATING TO RELEASES 2, 3, and 4

Release 2:

o   In February, 1998, OCFS staff initiated a series of meet-
ings with representatives of twelve (12) local districts
and ACS to review Release 2 and identify critical issues.
In March, a working group of district representatives and
ACS convened to develop solutions to the critical design
issues. The Policy Review Panel, consisting of local dis-
tricts and ACS, with support from OCFS, AC and the States'
central system support, the Human Services Application
Services Center (HSASC), met on April 16th to establish
the priorities for the identified solutions.

o   One significant issue, Person Search functionality, was
identified at the February meeting, and at subsequent site
visits to Onondaga, Erie, Monroe and the City of New York
(ACS). In March, a special focus group composed of repre-
sentatives from each of the districts, OCFS and the HSASC
met in Albany for a detailed review of the person search
issues. As a result of these meetings, HSASC provided the
technical design to OCFS and reviewed the Andersen
Consulting proposals to determine validity of scope,
timetable, and cost estimates for the proposed Release 2
solutions.

o   Teams have completed Requirements documents (definition of
user needs) for most of the priority areas established by
the Policy Review Panel. We are in the process of
developing schedules in these areas for the design test-
ing, and implementation.

Release 3:

o   In April, 1998 a group consisting of eleven (11) districts
and three (3) voluntary (not-for-profit) agencies met in
Albany to discuss the Release 3 critical issues and
develop documentation detailing these issues. A sub-group
of representatives from this meeting, consisting of 6
(six) districts and 2 (two) voluntary agencies, reconvened
in Albany to develop proposed solutions to the issues
raised at the earlier meeting. The results of the above
efforts (Release 3 Change Descriptions) were submitted to
Andersen Consulting for scope, timetable and cost es-
timates. These were then submitted to the HSASC for
verification of Andersen Consulting's scope, timetable and
cost estimates.

o   The Release 3 Change Descriptions, scope and cost es-
        timates have been submitted to the Policy Review Panel for
        priority ranking of the proposed solutions.

Release 4:

o   In April, 1998 a group of twenty-one (21) districts and
        voluntary agencies met in Albany to define the critical
        case management design changes required for Release 4. As
        some of the participants had not been involved in an ear-
        lier Release 4 field test and as the complexity of Release
        4 (over 96 windows/screens) significantly exceeds earlier
        releases, an expanded field evaluation was deemed neces-
        sary to allow for meaningful user input. An expanded
        "field evaluation" was therefore conducted with twenty-one
        (21) districts and voluntary agencies to evaluate Release
        4 Case Management components. This field test focused on
        evaluation criteria that specifically dealt with several
        issues identified in the audit, (i.e. Is this component
        necessary or required? Is it useful? Does it add value
        in supporting work? Does it support good casework and su-
        pervisory practices? What needs to be modified to make
        each required component function effectively and effi-
        ciently?). Field evaluators convened on May 12th to begin
        the identification of critical areas and prioritization
        process.

o   A separate Release 4 fiscal "field evaluation" commenced
        in August with a subset of five (5) districts and a number
        of voluntary agencies. Note there is considerable overlap
        and interdependencies between the case management and fis-
        cal components. All program and fiscal participants will
        convene in Albany in October, 1998 to identify critical
        design changes. OCFS is completing the field evaluation
        process and will convene all participants (districts,
        voluntary agencies, Andersen Consulting, HSASC,OCFS,
        Policy Review Panel) in a process similar to that fol-
        lowed for Releases 2 and 3. The Release 4 process will
        accommodate the fact that while Release 2 and 3 are opera-
        tional, Release 4 is not currently operational.

        These activities were presented in detail to highlight the
        efforts and impact OCFS has made in engaging the "major
        system stakeholders" since assuming responsibility for
        CONNECTIONS. We will continue to engage stakeholders in
        all efforts to resolve the key issues which have, thus
        far, precluded the ultimate success of the CONNECTIONS
        project.

APPENDIX C

CHANGE ORDER REVIEW AND APPROVAL PROCEDURE

Using the changes required in R2 as a hypothetical example, the following steps and procedures will be utilized in reviewing all project change orders:

1. Contract Amendment for 30 R2 Priority Issues is in place.

2. Project teams will be assigned by project management (OCFS, AC, HSASC) and user lead will be identified, including tech lead and advisory county liaisons. The involvement of advisory counties throughout the development of the project will insure that the delivered product meets expectations.

3. Each project will be initiated by OCFS and HSASC Management. Project initiation will define which Modification items are included in the project and the total project costs estimate.

4. All contractor and state development costs are tracked to the project budget.

   - Development Costs (state and Andersen Consulting assigned staff, excludes observers) may not exceed original proposal.
   - If state staff are assigned to the project this will reduce the Andersen Consulting project billable cost and pro-rationed % of Admin cost.
   - This cost reduction is banked and will be used by OCFS management (Deputy Commissioner for Administration & Planning and Policy Development) to cover other CONNECTIONS project shortfalls.

5. Any cost increase in project estimate must be approved by OCFS management, as follows:

   - If final requirements result in a cost estimate increases of 5% or more, the proposal must go to OCFS for approval. Documentation of reason for change must be included. For example, if a cost item was missed in the original estimate, if SIR(s) are added to the requirement, a change in project scope, or any other problem is encountered, the details of the change and the projected increase must be sent to OCFS for approval.

   - If development or construction costs estimate increases the final requirement estimate approved by OCFS management, the project must be re-submitted for approval to OCFS management.

6. All issues will be tracked in the "Issues Data Base" to insure efficient resolution.

7. Testing, training and implementation plans will be developed for each project during the logical design phase.