

**Minnesota Statewide Automated Child  
Welfare Information System (SACWIS)  
Cost/Benefit Analysis Final Report**

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Minnesota Department of Human Services  
SSIS Project

Revised: May 2002

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## I. Summary

As described in the Implementation Advance Planning Document of October 1995, the focus of the cost/benefit analysis is on productivity improvements. The expectation was that the Social Services Information System (SSIS), Minnesota's SACWIS, would reduce the amount of time spent on information processing activities.

Productivity improvements were measured using three factors: caseload, paperwork per case and time spent on information processing activities. A random moment time study was used to determine information-processing time. Five counties, representing a mix of urban, suburban and rural locations, participated in the evaluation. The baseline study was completed in 1996. An interim report was based on measurements made in 1998.

This report is based on final measurements made in 2000. The study found that caseloads decreased by 4.3% while paperwork per case increased by 32%. However, time spent on information processing activities remained virtually unchanged over these four years. The result was an overall productivity improvement of 11.2% for all staff time, resulting in a payback period of 8 years from the implementation of Phase 1 of the Minnesota SACWIS system.

This final report was revised in order to correct an error discovered in the first analysis. The error occurred in an adjustment that was made to account for time that staff spent on break and lunch. During the time study participants were instructed to leave their random moment generating "beepers" on during work breaks. This approach was used because of the high probability that participants would forget to turn their beepers on and off at every break, resulting in an inaccurate sampling of their time.

A second revision was made to the report in May 2002, after ACF notified DHS that it was not necessary to use the net present value when calculating the break-even point. Table 6 was added, and the calculation using current values moves the break-even point to 2003, one year earlier than previously reported.

## II. Background and Methodology

As described in the Implementation Advance Planning Document of October 1995, the focus of the cost/benefit analysis is on productivity improvements. The expectation is that the Social Services Information System (SSIS), Minnesota's SACWIS, will reduce the amount of time spent on information processing activities. (The Cost Benefit Plan approved with the IAPD is included here as Appendix A.)

The measurement of productivity improvements involves an outputs/inputs equation. The output is the production of all of the information necessary to assess, document, review, and manage child welfare cases. The input is the amount of time required to produce and use the information.

The amount of output is determined by two factors: caseload and paperwork burden. Because each case requires its own information, an increase in caseload will result in an increase in information output. For example, if the caseload of a given social worker increases by 20%, the amount of information processing time required of that social worker can also be expected to increase by 20%, if all else remains the same.

The second factor is the paperwork “burden” required for each case. An increase in the amount of information processing required due to changes in procedures and/or documentation will increase the amount of time required, if all else remains the same.

The input variable is the amount of time expended on information processing activities. This is determined through a random moment time study. The development of the time study was described in the Annual APD Update of December 16, 1996. The time study was conducted in five volunteer counties representing a mix of urban, suburban and rural locations. Staff participants included social workers, case aides, licensing workers, support staff and supervisors.

These three variables--caseload, paperwork burden and information processing time--are the components of the productivity equation. This equation is:

$$\text{Caseload} * \text{Paperwork Per Case} / \text{Information Processing Time} = \text{Productivity Measure}$$

The baseline measurements were established in 1996. The baseline consists of the time spent on information processing activities (determined by the time study) and the number of active cases being serviced in each county. The 1996 data is the baseline from which the impact of SSIS is determined for each subsequent study period.

Phase 1 of SSIS was implemented statewide in 1997. In 1998 the random moment study was repeated and data was collected to measure changes in caseloads and paperwork burden since the implementation of Phase 1. Based upon those data, Phase 1 of SSIS resulted in a productivity benefit of 23.53% and an overall productivity improvement of 10.53%. For additional details, see “Cost/Benefit Analysis Interim Report” submitted October 30, 1998.

Implementation of Phase 2 of SSIS was begun in 1999 and was completed statewide by June 2000. In 2000 we repeated the random moment time study. Each staff member participated for a two-week period, as was done in 1996 and 1998. The 2000 study was conducted during the similar times of year as the measurements of 1996 and 1998 to minimize the impact of seasonal workload fluctuations. Participating staff were re-trained on the study instructions and the task definitions. We also shared the results of the 1998 study period and compared each county to the statewide averages.

Information on the number of active cases was collected again. We also examined the change in the amount of paperwork required for each case through the use of a survey administered to the study participants during training and through interviews with key informants at the Department of Human Services.

### III. Random Moment Time Study Data

The time study consisted of three independent questions to be answered for each random moment.

1. Was the task client related?
2. Was a computer used?
3. What was the task?

The task list has ten choices, nine of which involve some aspect of information processing activity. The final choice is "Other". Other was defined to include all activity that did not fit into any of the information processing related activities. A copy of the data entry form is included below. A copy of the "Instructions and Task Definitions" is included as Appendix B. The same materials were used for all three time study periods.

#### DATA ENTRY FORM

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**GENERAL QUESTIONS** (Select one answer from each A & B.)

**A. Was this task**   —Client-related? \_\_\_\_\_  
                                  —Non client-related? \_\_\_\_\_

**B. Did you use a computer for this task?**    Yes \_\_\_\_\_    No \_\_\_\_\_

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*For each random moment, select one type of task (from 1 to 10) below, and complete all information for that numbered task.*

#### INFORMATION PROCESSING

1. \_\_\_\_\_ ***Retrieving/searching for information***
  - a) Resource identification                                   Yes \_\_\_\_\_    No \_\_\_\_\_
2. \_\_\_\_\_ ***Entering information (answer A, B, and C)***
  - a) \_\_\_\_\_ Original    \_\_\_\_\_ Duplicate    \_\_\_\_\_ Error Correction/Edit
  - b) Narrative Composition  
      \_\_\_\_\_ Yes        \_\_\_\_\_ No
  - c) Plan, Report or List Preparation  
      \_\_\_\_\_ Yes        \_\_\_\_\_ No
3. \_\_\_\_\_ ***Reading/editing***

#### DOCUMENT PROCESSING

4. \_\_\_\_\_ ***Printing/copying***
5. \_\_\_\_\_ ***Document transfer and exchange***

6. \_\_\_ *Filing/organizing information*

**SCHEDULING AND TIME REPORTING**

7. \_\_\_ *Scheduling*

8. \_\_\_ *Time reporting*

**ALL OTHERS**

9. \_\_\_ *Other* (all other tasks/activities not in a previous category)

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**MANAGING WORK ASSIGNMENTS**

10. \_\_\_ **Managing Work Assignments** (supervisors only)

**IV. Data Analysis**

A. Caseload Factor

Caseload information was collected from each county for the month in which the time study occurred. The analysis of caseload data is complicated by the difficulty in comparing one type of case against another. For example, a child protection caseload may be 14 cases; a caseload of developmentally disabled children may be 50 cases. The same amount of overall time is available to serve both caseloads. Thus an increase of one child protection case has a significantly different impact on overall information processing time than the addition of a single developmentally disabled case.

Two approaches were taken to analyzing caseload changes, the Unit/Position Change and the Caseload Count. These approaches are described below. The county level results from each approach were weighted by the number of cases in the county in 1996 to produce a statewide weighted average change. The results of these two analyses were averaged together. This resulted in an overall reduction in caseload of 4.3%. The final Caseload Factor is  $1 - .043 = .957$ . A summary of the analysis is included in Table 1.

*1. Average Unit/Position Percentage Change*

The percentage change in caseload from 1996 to 2000 was determined, either by unit or by staff position. The average for each county as a whole was calculated. The county averages were weighted by the number of cases in 1996, and a statewide percentage change was determined.

In the two smaller counties the percentage change was calculated for each position with a caseload. In the three larger counties mobility among workers and reassignments of staff between units made unit averages a more appropriate level of analysis.

This method assumes that a percentage change in one type of case is the equivalent of the same percentage change in another type of case.

## 2. Caseload Count

The overall number of cases in the county is divided by the overall number of workers to determine the average caseload for the county as a whole, for both 1996 and 2000. The county percentage changes were weighted by the number of cases in 1996, and a statewide percentage change was determined.

This methodology is more conservative, in that it assumes that the information processing activities for all type of cases are equal.

### B. Paperwork Burden

There has been a significant increase in the amount of paperwork required per case over the last four years. The average change reported by county staff between 1996 and 1998 in the staff survey was 15.25%. The average change similarly reported between 1998 and 2000 was 14.7%. These increases were confirmed in discussions with county administrators and with state staff.

Based on this analysis the paperwork burden is estimated to have increased by 32.2% from 1996 to 2000 ( $1.1525 \times 1.147 = 1.322$ ). The Paperwork Per Case Factor used in the productivity equation is 1.322.

An example of this increase is the revised Out-of-Home Placement Plan that was implemented for all child placements in 1997. Workers reported that it took an average of 94 minutes longer with the new plan. In addition, the advent of concurrent planning involved even more paperwork per case. Under concurrent planning county staff are required to plan for a permanent placement simultaneously with planning for family reunification. This is intended to shorten the average time a child remains in temporary placement.

The ability of county staff to accurately gauge the impact of paperwork on their time was confirmed in 1996, 1998, and 2000 by their responses to the survey they completed at the beginning of the training sessions. They were asked the question "How much of your time is spent doing paperwork, such as filling out forms, writing case notes, preparing service plans, etc.?" The average response was 44% in 1996, 43%, in 1998, and 46% in 2000. These results closely match the amount of information processing time determined from the time studies. While the paperwork per case has increased significantly, the total time spent doing paperwork was essentially unchanged.

### C. Information Processing Activities

Table 2 summarizes the results of the random moment studies. Information processing activities are the total of all tasks except "Other". The amount of information processing time from the study was 42.44% in 1996, 44.00% in 1998, and 42.47% in 2000. This is an increase of 3.68% between 1996 and 1998, but an increase of only 0.1% over the four years. Therefore the Information Processing Time factor used in the productivity equation is 1.001 ( $= 42.47/42.44$ ).

## V. Findings

Table 3 details the Productivity Benefit Calculation described above. This equation is:

$$\text{Caseload} * \text{Paperwork Per Case} / \text{Information Processing Time} = \text{Productivity Benefit}$$

Because 1996 is the baseline, we have calculated the change from 1996 to 2000. The Caseload Factor is .957. The Paperwork Per Case Factor is 1.322. The Information Processing Time Factor is 1.001. The Productivity Benefit is 1.264:

$$.957 * 1.322 / 1.001 = 1.264$$

Because the 1996 baseline is equal to 1, the overall productivity benefit is 26.4%. This benefit applies only to the 42.47% of all staff time that is information processing activity, for an overall productivity improvement of 11.2% as a result of SSIS implementation (.264\*.4247= .112).

Tables 4 and 5 present a summary of benefits and a net present value calculation of the net benefit. These tables are based on the same assumptions of net present value that were stipulated by ACF and used in the original APD and the interim report.

The productivity gains included in the forecast are the results of the 1998 and 2000 studies. These gains are assumed to carry forward. As seen in Table 5, using the net present value calculation, the break-even point occurs in the Year 2004. Table 6 illustrates the calculation without using net present value, moving the break-even point to 2003.

## VI. Next Steps

The time study is complete and will not be repeated. The productivity benefits identified in the 2000 study will provide the basis for future cost benefit analyses until such time as reporting is no longer required.

### List of Tables

- Table 1 Caseload Analysis
- Table 2 Time Study Results
- Table 3 Productivity Benefit Calculation
- Table 4 Summary of Benefits
- Table 5 Cost/Benefit Summary
- Table 6 Cost/Benefit Summary – Current Values

**Appendix A**  
**Approved Cost Benefit Plan**  
**(From IAPD 10/17/95)**

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## VI. COST/BENEFIT ANALYSIS

This section describes the major benefits which are expected to result from the MN SACWIS system. To the extent these benefits are quantifiable, a dollar value has been determined. The financial benefits have been compared to the expected system costs. The “payback period” for MN SACWIS is five years.

System benefits are summarized in Exhibit VI-1. The cost/benefit payback period is shown in Exhibit VI-2. Exhibit IV-3 illustrates the impact on the payback period of two alternative scenarios, in which system benefits are twenty percent less and twenty percent more than expected.

### A. The Minnesota Context

Determination of the benefits of MN SACWIS is greatly affected by the organizational structures in which child and family services are delivered. The county-administered structure delegates most operational decisions to the counties. For example, six of the seven Twin Cities metropolitan area counties operate their own personnel systems. Numbers of employees by service area and job classification are not routinely reported to DHS. Most, but not all, of the balance of counties make use of the state operated Merit System for hiring personnel, but each county conducts its own labor relations. As a result of the autonomy exercised by the counties there are many different structures and styles of operation. These differences occur in many areas in addition to personnel, such as workload management, time reporting, current use of automation and information systems, and accounting structures.

As a consequence, while Minnesota fully expects the MN SACWIS to result in a broad range of benefits, most of these benefits are not discretely measurable. For example, it is expected that the introduction of MN SACWIS will result in a significant redirection of paraprofessional and clerical staff time from documentproduction to improved client service. Differences among the counties in how they use staff and the number of paraprofessional and clerical staff relative to caseloads makes it difficult to quantify this benefit independently from overall productivity improvements. This is but one example of how the decentralized structure of Minnesota’s delivery system affects DHS’s capabilities to determine baseline data on performance.

Similarly, the benefits of business process re-engineering in the child welfare area will be realized at the county level. There are literally 84 different county agencies (several counties jointly operate human services programs), each of which is independently responsible for meeting statewide standards in the most efficient and effective way. MN SACWIS will replace the current information collection systems on a statewide basis, but the responsibility for making the

best possible use of the system to improve productivity and client services will continue to belong to the counties.

County-based computer systems for financial management and other functions also affect anticipated benefits. For example, counties which maintain their own computer systems for human services regularly incur expenses related to the modification of software required to implement state level changes in program regulations. In many states the anticipated benefits of SACWIS include a reduction in costs for the maintenance and modification of current computer systems. Minnesota is anticipating a benefit of this type at the county level, but is unable to quantify the amount. Many of those systems will continue to support services which are not included in SACWIS; therefore the need to maintain and modify those systems will also continue.

Concurrent with the development of MN SACWIS there are changes taking place in the arena of children and family services in Minnesota. As noted earlier in this document, the administration has placed a major emphasis on improving the state's services to children and families. At the local level there is an ongoing effort to build collaborative efforts between different agencies and local governments, including education, public health, law enforcement, the courts, corrections, mental health services, and other human services programs. These collaboratives are taking many forms, dependent on local needs and functions. Within the Department of Human Services there is a concerted effort to reduce the use of out-of-home placements and focus on family preservation and intensive in-home services.

These broad changes in children and family services will have as yet unknown effects on what services are provided and how they are delivered. These changes will not be uniform across Minnesota. Many of the benefits which might otherwise be attributable to SACWIS development in other states are very difficult to claim in Minnesota. For example, some states are anticipating a reduction in length of stay in placement as a result of the improved management capability provided by SACWIS. It is our belief that in Minnesota a reduction in length of stay is likely to be the result of several interrelated initiatives in addition to SACWIS, such as family preservation services or early intervention by the school system. It could also be the result of budget restrictions.

As a consequence of this complicated and dynamic environment we have focused our measurement of system benefits on more direct indicators of staff productivity.

## **B. Quantifiable Benefits: Productivity Improvements**

### **1. Areas of Expected Improvement**

There are many features of the MN SACWIS which will improve the productivity of child and family services. Much of the expected improvement involves more efficient and

effective use of information that is now collected through the use of forms and other documents. In order to illustrate how paperwork permeates the child welfare services system, the process of a typical child welfare/short-term foster placement case is presented in Exhibit VI-4 at the end of this chapter. This exhibit was prepared by a county social worker and documents the paperwork burden in a representative county.

The more specific areas of expected improvement include:

- Efficient data capture - Information about the client and case will be entered only once and then used throughout the system. Currently, manual entry of information onto forms frequently requires redundant effort, both on the many forms that must be filled out and transcribing the information on the forms to the computer. The MN SACWIS project has documented over 130 forms which may apply to a child welfare case. The typical case would use 30 to 50 of these forms. With MN SACWIS any information already entered in the system will not need to be entered again, nor will it need to be manually recorded on additional forms.
- Document management - MN SACWIS will include state-of-the-art document management software which will not only produce documentation needed by the state, but will allow counties and individual staff to produce customized document templates. To realize the importance of this flexible capability it is again necessary to understand the county-administered system of Minnesota. The standards for case planning for a particular child welfare service are set by federal and state programs, but the format for writing a case plan is determined by the county. In MN SACWIS documents will be created for the system which meet the federal and state requirements. Counties will be able to modify these standard documents to meet additional county needs. Another application of document management is in the provision of copies of case files to the client. When a client requests a copy of her or his file someone at the county must first go through the file and remove or black out confidential material. This task will be greatly simplified through the use of word processing features such as word searches and the overall ease with which electronic documents can be edited.
- Information retrieval - Although paper files will not be eliminated, staff will no longer have to rely on physical files. Electronic files will be more easily available and more current. Rather than manually searching through a paper file to find specific information, staff will be able to use the classification and search capabilities of the system for easier access without leaving their desks.
- Communications - The use of electronic mail and local area networks will improve communications. E-mail will speed up communications within the county agency.

Subject to data privacy considerations, it will be possible to share information about clients and cases more easily and quickly. This will improve consultation among staff and reduce the time required for carrying out administrative functions, as paper will no longer need to travel from one location to another.

- Report generation - All of the information needed to produce reports will be available in the system, and report production will be automated. In addition to standard statewide reporting, counties will be able to create customized and ad hoc reports as needed. The benefit of eliminating duplicate entry has been discussed previously. Many of the 130 forms mentioned in the "Data capture" paragraph are used as inputs to other reports, or are actually reports in and of themselves. The SACWIS system will provide the information management tools needed to support the elimination of forms and reports which will no longer be required. These opportunities to eliminate unnecessary work are another benefit of SACWIS.
- Time reporting - Time reporting will be incorporated into the system, reducing the burden of data collection and compilation and improving the capacity to examine resource use within the county agency.
- Workload management - For the individual staff person, system features such as ticklers and alerts, scheduling, e-mail and document management can help improve management of an individual workload. For supervisory and management personnel these features and others, such as the ability to easily track caseloads and make case assignments, will make workload management easier.

## 2. Anticipated Level of Improvement

The primary benefits of MN SACWIS are in the area of improved productivity on the part of social services staff. Less time spent on administrative and clerical functions will result in more time spent on client services. In estimating the impact of SACWIS on staff productivity information was collected from a number of sources.

Dr. David Bouchard, in a presentation to a recent conference on human services and technology, described his work on the Nolan Software Productivity Model. Nolan and Bouchard have found that the first phase of building productivity, which they call the Basic Competence Model, results in a productivity improvement of 10-20%. This phase in their model is focused on efficiency gains. As people gain system skills and begin to apply those skills and the system capabilities to task automation and process improvements, additional productivity gains of 50-200% can be realized.

The State of Texas, in its APD update of January 1995, estimated that its SACWIS will

result in 10 additional hours per month per caseworker and supervisor which can be redirected to client-oriented services. Texas conducted a survey of "lead offices" to assess the impact of office automation tools, which were introduced prior to the implementation of the SACWIS system. At the time of the interviews computers had been in use for four months or less. The report states, "When asked about the time being spent on paperwork, 16 (53%) of the workers/supervisors interviewed reported they are spending less time doing paperwork now that they have automation. The average time savings reported was 19%. Eight (27%) of those interviewed reported they are spending the same amount of time on paperwork as they did before automation, and three (10%) reported they are spending more time on paperwork than they did before automation. However, most of those individuals explained that while they might not be spending less time doing paperwork, they are completing more paperwork, decreasing backlogs, or carrying heavier caseloads."

In Minnesota, the Scott County Department of Human Services conducted an assessment of the impact which could be expected from the introduction of an information system with most of the same functional features that will be provided in SACWIS. Time savings were estimated for the various tasks performed by different classes of employees. Total time savings were estimated at 20% for supervisors and managers, 53% for clerical staff and 10% for case managers.

Several counties in Minnesota have provided some office automation technology to certain social services staff. These computerization projects have affected a particular unit or a portion of the staff within a unit. They have not provided the full range of worker functions which will be provided in SACWIS. County staff involved with these projects believe that time savings achieved are possibly 10% already. They also point out that the proof of the value of office automation is found in the reactions of social workers. Social services staff who have access to office automation will not give it up, and their positive experiences have led to requests from other staff to gain access to the technology.

The experience of the Minnesota DHS FAMIS system, known as MAXIS, is also illustrative. MAXIS documented an annual productivity improvement in excess of 20% within three years of the introduction of the system. While there are significant differences between the work of income maintenance staff and social services staff, there is a significant amount of time spent on paperwork in both areas. Cahill and Feldman (Child Welfare, V.LXXII, N.1, 1993) found that social workers in a New Jersey child protection agency were spending approximately 60% of their time on paperwork. Based on the above experience and research, a 10% overall increase in productivity as a result of the implementation of SACWIS appears to be a conservative estimate.

As noted above, MN SACWIS will be implemented in two phases. Each phase will provide some of the functionality which results in worker productivity improvements. We

estimate that half of the improvement potential will be provided in each implementation phase. However, it will take time for the potential of the system to be realized. It takes time for people to learn to use new tools efficiently and to adapt their work styles to take full advantage of the benefits available. Over the last several years information systems and work stations have been introduced into county human service agencies in the areas of income maintenance and health care. We expect that the work cultures of the county agencies will be much more receptive to the introduction of SACWIS than they would have been several years ago. We estimate that the productivity improvements made possible by each phase of implementation will not be realized for a year after their introduction. This results in a projected productivity improvement of 5% beginning one year after the Phase I roll-out, increasing to 10% the following year (one year after the Phase II roll-out). The 10% productivity gain is expected to continue for the balance of the useful life of the system.

### 3. Measurement of Productivity Improvements

A random moment study approach will be taken to quantify the expected improvements. Minnesota currently operates a random moment study in social services called the Social Services Time Study, or SSTS. SSTS is the federally approved cost allocation and claiming mechanism used by the state and counties to claim reimbursement from federal and state funding sources, including Title IV-E and Title XIX. In SSTS professional and paraprofessional social services staff are sampled at five random moments during each calendar quarter. This provides valid data at the county level in large counties, and for regional groupings of smaller counties.

The SSTS currently collects information regarding programs and services for which reimbursement of some kind is available. It does not include supervisors without caseloads or clerical staff. The SSTS provides an established, federally approved method of collecting valid and reliable information on worker time, and it has become an accepted part of daily activity in Minnesota counties.

In order to measure the impact of SACWIS on worker activity, we intend to use the established system of generating random moments and collecting information from staff. An additional set of codes will be developed which focus on the activity that a staff person is engaged in rather than the program in which he or she is working. These codes will include activities such as forms entry, information retrieval, resource identification, and case plan documentation. The pool of staff included in the study for the purposes of measuring productivity improvement will be expanded to include supervisors and clerical staff, so that other county staff who are impacted by SACWIS are included in the random moment sample. Fiscal staff will also benefit from SACWIS; however, at this time we do not anticipate including fiscal staff in a time study.

Because SSTS is well established, the number of measurements needed to produce a sample which is valid at the state level has been identified. Minnesota DHS will solicit volunteer counties to participate. Training will be provided to county staff in the appropriate use of the new codes. In order to establish a baseline and measure changes over time it is expected that four measurements will be taken before, during, and after the implementation of SACWIS. The baseline measurement will take place prior to the introduction of any SACWIS hardware and software in the county. The second measurement will take place after the installation of the hardware and Phase I SACWIS roll-out. The third measurement will happen shortly after the introduction of the complete SACWIS system. The fourth measurement will take place approximately one year after the introduction of the complete system. The productivity improvement demonstrated during this fourth measurement period will be assumed to continue into future years for the purpose of documenting system benefits.

**C. Quantifiable Benefits: Systems Cost Savings**

The primary social services information system presently maintained by DHS is the Community Services Information System (CSIS) which has been described in Chapter IV. Because the counties use parts of CSIS for functions that go beyond SACWIS functionality, some portions of that system will operate with SACWIS. The interface between SACWIS and CSIS will, however, eliminate the need for paper forms and manuals related to the operation of CSIS. The annual impact is estimated at \$24,650.

**D. Non-Quantifiable Benefits**

There are numerous possible benefits to be realized from the implementation of SACWIS. Many of these are difficult to measure and verify, due to the structure of services in Minnesota and the general difficulty of isolating effects in a dynamic environment.

1. Direct Client Benefits

- Better matching of services to client needs - The resource directory feature will be available to workers on-line, at the time it is needed. A variety of search parameters will be provided. Information about the full range of services and providers which can be applied to a particular client need will be more readily available. Over time SACWIS will provide the ability to evaluate program effectiveness in relation to client needs.
- Improved case planning and management - System features such as the ability to carry forward previously entered information, linkage of the individual case plan with the family, individual and family history on line, and the up-to-date tracking of all

activity will make important information readily available to county social services staff.

- Enhanced collaborative service delivery - Minnesota is undertaking major initiatives at the state and local levels to provide collaborative services for children and their families. Participating organizations may include education, public health, health care, law enforcement, courts, corrections, and other social services. SACWIS will enable county child welfare staff to be more knowledgeable about the entire spectrum of resources available and the specific services being provided to a given family.

## 2. Delivery System Benefits

- Enhanced management information and controls - SACWIS will make information such as services being provided, case status, obligated and expended funds, and the timeliness of employee actions available to line and management staff on a real time basis. It is expected that the cumulative effect will be to improve responsiveness and the use of resources.
- Eligibility tracking - Minnesota has made major efforts over the last several years to identify and track eligibility for various reimbursements. While major improvements are not anticipated, the SACWIS interfaces to other systems will assure that information is up to date with less staff effort.
- Outcome measurement and evaluation - SACWIS will substantially improve the capability to track and measure outcomes in relation to clients, cases and services. As the human services field develops valid and practical outcome based approaches to service delivery, Minnesota will have the information management tools needed to use outcome information to improve processes.
- Use of information to improve efficiency and reduce costs - SACWIS will provide policy makers with capabilities which have never existed in Minnesota. For example, it will be possible to examine the complete set of services and supports provided to families over time, including income maintenance and health care as well as social services. Perhaps the best example of the potential uses of such comprehensive information is currently found in the area of health care. Minnesota health maintenance organizations have been in the forefront nationally in using comprehensive information systems to identify efficient clinical practices and to modify processes accordingly. Similar results can be expected as researchers and policy makers take advantage of the capabilities made possible by SACWIS.
- Reduced duplication of information system development and maintenance efforts -



Counties and groups of counties which use unique computer systems for child welfare services will no longer need to update, maintain and support those systems.

- Improved morale - The cumulative effects of productivity improvements will result in less time spent on administrative duties and more time spent with clients. This is expected to result in improved morale and greater job satisfaction on the part of all staff.

## Exhibit VI - 4

### **The course of a typical child welfare case with a short-term placement in foster care .**

Intake receives a request for services. A one-page *narrative intake sheet* is completed. The case is registered on the *intake log* and the transaction is recorded on the *time sheet* log. A referral is sent to *assessment (four documents)*.

The client is scheduled for an assessment and further information is collected. First the *Data Privacy Notice* is explained, read and signed. Next, the *CSIS case information combination form*, the “*your rights*” form and several *consent to release information forms* are completed, signed and a *brief intake case plan* is developed with the client **(five or more documents)**. A *narrative social history*, a *family and/or individual needs assessment*, an *assessment summary* are completed **(three documents)**.

Next, *referrals* to the following departments are completed: To financial services for *financial eligibility paperwork*; to the social service case aide to complete *Title XX and county fee determination paperwork*; to child support and collections to complete *child support paperwork*; and to licensing to *request a foster care placement (four documents)*. *Progress notes* and *time sheets* are recorded, a *referral* to the ongoing case manager is completed **(three documents)**.

CSIS forms are sent to accounting for data entry and processing and the *CSIS Case Information Turnaround* form is returned to the worker. The ongoing case manager completes the following forms and related paperwork: the *pre-placement screening form*; a *family case plan*, an *out-of-home placement plan*, and the *family preservation plan (four documents)*. Additional forms required include a *parental fee agreement*, *voluntary placement agreement*, *medical care coverage release*, *physical exam*, *health history report*, a *notice to the school that the child was placed in foster care*, and a *referral for mental health services (eight documents)*. Additional forms to complete consist of the *difficulty of care point sheet*, the *clothing and personal belongings sheet*, *notice of clothing allowance*, and the *service agreement (four documents)*. *Case notes/progress notes* and activities completed on a file are documented on the *time sheet (two documents)*.

If the child continues in placement beyond six months, an *administrative or judicial review* with corresponding paperwork is required **(four or more documents)**. Every three months the *case plan* is reviewed and updated **(one document)**. A change in the case plan launches a chain of updates of the CSIS documentation, in order to revise the information and keep the file current.

Upon meeting the stated goals in the case plan, the case will be closed. Notices of case closings are sent to: *financial services*, *child support and collections*, *social services collections*, *the eligibility determination case aide* and the *foster care licensing unit (four documents)*. The *closing case plan summary* is completed, along with a *notification to the school*, *case notes* and all related *CSIS forms (four documents: Case Information Turnaround, Substitute Care Turnaround, time sheets)* are updated.

## **Appendix B**

# **SSIS Benefits Evaluation**

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Minnesota Statewide Automated Child Welfare  
Information System (SACWIS)  
Cost/Benefit Analysis Final Report

# SSIS Benefits Evaluation

<i><b>Instructions and Task Definitions</b></i>	
<b>Field</b>	<b>What do I enter?</b>
<b>Time:</b>	<ul style="list-style-type: none"> <li>• Write in the time at which the random moment occurred.</li> <li>• Circle “a.m.” or “p.m.” as appropriate.</li> </ul>
<b>Date:</b>	Enter the date, using numbers in the month/day/year format.
<b>Position:</b>	Check the category which most closely describes your job. <i>The categories are:</i> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>SW = Social Worker</span> <span>CA = Case Aide</span> <span>SS = Support Staff</span> </div> <div style="display: flex; justify-content: space-around;"> <span>LI = Licensor</span> <span>SU = Supervisor</span> <span>FW = Fiscal Worker</span> </div>

## **General Questions**

### **A. Client-Related/Non Client-Related**

**Client-related** This includes:

- Information and referral activities in response to a specific request from an individual or family, whether or not a case is open.
- All tasks which involve a specific client or case. The client will have an open case, will have had an open case, or you will be trying to determine whether a case should be opened.
- Group activities, when the group is composed of clients or family members.
- Consultation regarding a case, client or group of clients.
- Licensing related to the placement of a specific client.

**Not client-related** This includes:

- All tasks in which a specific client, case or group of clients is not the primary focus.  
 Examples include:
  - Discussions concerning administrative issues or agency planning
  - Public information and outreach
  - Service development and program design
  - Aggregate reports (including more than one client or case)
  - Licensing, contract monitoring, provider relations
  - Budgeting and analysis
  - Personnel issues
  - Agency plan preparation
  - Training
  - Time reporting

### **B. Did you use a computer for this task?**

Answer **Yes** if you’re using a computer to perform the task, regardless of the task.

*Many times a given task will involve the use of more than just one method (for example, entering handwritten notes into a computer involves using both paper and a computer). Answer **Yes** if you are using a computer for the task, even if it is not the only kind of medium you’re using.*

## **Information Processing**

### **1. Retrieving/Searching for Information**

This category should be used when you are retrieving or searching for information at the time the random moment occurs. The following two types of information should be included.

- All tasks directed toward locating information from within the county human services agency (that is, information which, to the best of your knowledge, has been recorded by the agency, should have been recorded by the agency, or is otherwise contained in a document available to the agency). **Examples** include:
  - Looking for a file
  - Looking through a file for a particular piece of information
  - Looking for information about a service or program
  - Telephone calls, conversations, letters or E-mail for the purpose of getting information
  - Time spent getting to the information, such as walking to the file location
- All tasks directed toward locating resources, whether that information is inside or outside the county agency. **Examples** include:
  - Seeking information about available services
  - Looking for an appropriate foster care placement or group home
  - Looking for a support group or therapy provider
  - Looking for legal references, rule provisions, policies and bulletins

#### **a) Resource Identification, Yes or No**

Check “Yes” if the task is directed at finding resources, as defined above.

**Exceptions:** Retrieving/Searching for Information does not include tasks which primarily involve the categories of:

*Reading/Editing (#3), Filing/Organizing (#6), Scheduling (#7) and Time Reporting (#8).*

This also does not include general client or collateral contacts, which most likely are *Other (9)*.

### **2. Entering Information**

This includes tasks involving entering or recording information. This category should be used when you are entering information at the time the random moment occurs.

Keep in mind that you can be with a client or other contact or in a meeting while doing the task of entering information. For example, if you are interviewing a client and, at the instant the random moment occurs you are taking notes, filling out a form or entering information into a computer, entering information is the category to check.

*If you are talking with a client or other contact, or are in a meeting, and are not taking notes or filling out a form at the instant the random moment occurs, Entering Information is not the right category. The most likely correct category is Other (#9).*

**Information Processing (cont.)**

**2. Entering Information (cont.)**

**Examples** include:

- Data entry of all kinds
- Filling out forms and taking notes (when the random moment occurs)
- Writing a narrative or text
- Preparing a plan, list or report
- Recording case notes and contacts
- Recording other notes
- Entering accounting information, such as payment authorizations
- Dictation

**Exceptions:** This does not include information entry which is being done as part of one of the following categories: *Filing/Organizing (#6)*, *Scheduling (#7)*, *Time Reporting (#8)*

**a) Original, Duplicate or Error Correction/Edit**

Original—Information which has not, to the best of your knowledge, already been recorded by the county human service agency.

Duplicate—Information which, to the best of your knowledge, has already been entered into a system or is contained in a document available to your agency. The most common example is repeating the same information on different forms.

Error Correction/Data Edit—Changing information which was entered incorrectly. This does not include updating records due to changes in the information

**b) Narrative composition, Yes or No**

If the primary task involves writing a narrative or text, check Yes (even if you are not actually keyboarding or speaking at the specific moment). Examples include; case notes, correspondence unrelated to a plan or report, procedures, administrative memos.

**c) Plan, Report or List Preparation, Yes or No**

If the primary task involves preparing a plan and report, check Yes.

- Client-Related examples include individual service plans and court reports.
- Not Client-Related examples include preparing various management reports for county or state use, numeric and financial reports, aggregate client reports, developing state or county required plans, and preparation of lists for mailing or distribution.

**3. Reading/Editing**

This category should be used when the information is already located or entered, or the report/plan/list is written, and the primary task is reading for understanding and comprehension. **Examples** include:

- Memos      Bulletins      Newsletters      Journal articles
- Reviewing a client file to assess the overall situation
- Reviewing a policy (which has already been located) for applicability to a case.

Reading for editing purposes should also be included here.

## **Document Processing**

### **4. Printing/Copying**

This includes all aspects of printing and copying, such as preparing documents for copying, walking to the location of the equipment, waiting to use equipment, use of equipment and collating copies.

**NOTE:** This is a good example of the importance of identifying what is going on when the moment occurs. There will be some moments when an employee is waiting to use equipment and some other task is the primary task. For example, if you are waiting at a copier machine and a colleague comes up and asks for your ideas about how to work with a particular client, case consultation (*Other, #9*) is the primary task at that moment.

### **5. Document Transfer and Exchange**

This category includes activities such as mailing, faxing, electronic mail and other document exchange. Both inter-office and outside communications are included.

**Examples** include:

- Addressing and stuffing envelopes
- Putting on postage
- Sorting and delivering mail
- Faxing, including waiting at the fax machine
- Time spent executing electronic mail commands
- Preparing a fax cover sheet, or other note to accompany the document

**Exceptions** include:

- Copying something so it can be put in the fax machine (*Printing/Copying, #4*)
- Preparing mailing/faxing lists (*Entering Information, #2*)
- Activities primarily involved with *Scheduling (#7)*

### **6. Filing/Organizing Information**

This includes opening and managing client and other files, and organizing information so it is available and able to be located when needed. Both paper and computer files are included.

This category should be used when the primary task is filing and organizing, even though the immediate activity might be entering information (typing a file label or creating a computer directory), or reading (looking at a document to determine where it should be filed).

**Exception:** *Retrieving/Searching for Information (#1)* should be used if the primary task involves finding information or materials to be included in a file. Once the information is located, then the task shifts to *Filing/Organizing Information*.

## **Scheduling and Time Reporting**

### **7. Scheduling**

This includes all activities involved in scheduling work, such as sending requests for available times, responding to scheduling requests, leaving phone messages about schedules, and locating and reserving meeting and interview rooms.

- Mailing, faxing and e-mailing activities which are primarily for the purpose of scheduling should be included in this category.
- Retrieval of information, such as locating a fax number or address, which is primarily for the purpose of scheduling should be included here.

### **8. Time Reporting**

This includes all activities which are primarily for the purpose of reporting time spent working with clients or programs, other than this study. Examples include preparing time reports and responding to other random moment studies. This includes reporting hours for payroll purposes, such as completing time sheets. Activities which involve retrieving/searching and entering information for the primary purpose of time reporting should be included here.

## **All Other**

### **9. Other**

This is the place to put all activities and tasks which are not specifically included above. It is expected that this category will be large. Meetings, interviews, collateral contacts, breaks, lunch, travel, and site visits are just a few examples of tasks which are included in *Other*. If the task does not fit one of the above categories, this is place it goes.

## **Managing Work Assignments**

### **10. Managing Work Assignments (supervisors only)**

This includes assigning work to staff, reviewing case loads, and reviewing case files.

It does not include coaching, case consultation, conducting performance reviews, working with employee problems, or other supervisory and management tasks. These types of tasks would most likely fit in *Other* (#9).



**TABLE 1**  
**Caseload Analysis**

<u>County</u>	<u>Unit/Person Change %</u>	<u>Case Count Change %</u>	<u>Number of Cases in 1996</u>	<u>Weighted Unit/Person</u>	<u>Weighted Case Count</u>
Carver	0.9589	0.9579	889	852.46	851.57
Freeborn	1.354	1.305	575	778.55	750.38
Olmsted	1.178	0.8944	2645	3115.81	2365.69
Ramsey	0.7987	0.9111	2044	1632.54	1862.29
Washington	<u>0.9193</u>	<u>0.7854</u>	<u>2064</u>	<u>1897.44</u>	<u>1621.07</u>
Total	5.2089	4.8538	8217	8276.80	7450.99
<b>Average</b>	<b>1.04178</b>	<b>0.97076</b>		<b>1.0073</b>	<b>0.9068</b>

Average of the two weighted methods = 95.7%  $(1.0073 + 0.9068) / 2$   
 Final Caseload Factor = 0.957

**Notes:**

- 1) Unit/person change is the average % change in caseload by unit or person.
- 2) Case Count Change is the % change in total cases divided by total workers, from 1996 to 2000.
- 3) The county level results from each approach were weighted by the number of cases in the county in 1996 to produce an all county weighted average change.
- 4) Weighting is done by multiplying the number of cases in the baseline year of 1996 by the caseload change factor for each county.
- 5) The sum of all the weights is then divided by the total number of cases in 1996. This provides an overall Caseload Factor that weights all cases equally.

**TABLE 2**  
**Time Study Results - 1996, 1998, and 2000**

All Moments, All Counties

	1996	1998	2000
	<u>Percent</u>	<u>Percent</u>	<u>Percent</u>
<b>Client Related</b>			
Yes	57.02	62.65	58.45
No	42.98	37.35	41.55
<b>Computer</b>			
Yes	14.30	21.25	25.05
No	85.70	78.75	74.95
<b>Task</b>			
Retreive Info	11.37	11.14	11.67
Enter Info	16.05	16.89	16.48
Read/Edit	3.75	3.47	3.36
Print/Copy	1.60	1.62	1.43
Documents	1.63	1.39	1.02
Filing	2.59	3.08	2.05
Scheduling	2.43	2.54	1.68
Time Reporting	1.92	2.06	1.49
Other	57.56	56.00	59.51
Managing	1.10	1.80	1.32
	100.00	100.00	100.00
<b>All Information Processing Activity</b>	42.44	44.00	40.49
<b>Entering Information</b>			
Original	71.01	85.45	81.02
Duplicate	23.70	9.60	13.57
Error/Edit	5.30	4.95	5.41

## TABLE 3

### Productivity Benefit Calculation

I. Basic Formulas:

1) Information Workload (IW) = Case Load (CL) X Paperwork per Case (PW)

2) Information Productivity (IP) = IW/Information Labor (IL).

3) Productivity Benefit(PB) = (2000 IP/1996 IP) -1

Since all data for 1996 will be set to unity, the actual formula used to calculate the Productivity Benefit is:

4)  $PB = [(1+\Delta CL) \times (1+\Delta PW)/(1+\Delta IL)]-1$ , where " $\Delta$ " means the fractional change from 1996 to 2000 for the variable.

II. Data Sources:

1) The change in Case Load ( $\Delta CL$ ) is measured using the change in the caseload estimated for the five sample counties from Table A. Case Load decreased by 4.3%, resulting in a caseload factor of  $1+(-0.043) = 0.957$ .

2) The change in Paper Work per Case ( $\Delta PW$ ) is taken from the 1998 and 2000 surveys of those workers participating in the random moment study. Each worker was asked to estimate the percentage change in paperwork per case during the two preceding years in 1998 and in 2000. The estimates for each worker were averaged for each year, and the 1998 change was multiplied by the 2000 change. The total four-year change is an increase of 32.2%, resulting in a Paper Work factor of  $1+0.322 = 1.322$

3) The change in Information Labor ( $\Delta IL$ ) is obtained from data from the random moment time study of the five sample counties. Information processing time is defined in that study as any task not recorded as "Other". Information processing time increased by 0.1% over the four years, resulting in an Information labor factor of  $1+(0.001) = 1.001$

III: Calculation of Productivity Benefit from the 1996 to 2000:

$$PB (4 \text{ year}) = (0.957 \times 1.322 / 1.001)-1 = 0.264 = 26.4\%$$

## TABLE 4 Summary of Benefits

### Productivity Improvement Benefits

Assumptions: Net present value and cost inflation assumptions are the same as in the original APD.

Measurement: Measurements made in 2000 generated an estimated productivity increase of 26.4% and an estimate that 42.47% of all worker time was impacted.

This resulted in an estimated benefit per cent of 11.2% for SSIS implementation.

Benefit Base: Estimated personnel costs for social services staff providing child protection and child welfare services. The 1996 baseline was \$123,029,000. The assumed annual increase is 3%.

Federal Fiscal Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
(000's)													
Baseline	\$123,029	\$126,720	\$130,521	\$134,437	\$138,470	\$142,624	\$146,903	\$151,310	\$155,849	\$160,525	\$165,341	\$170,301	\$175,410
Benefit %	0	0	10.35%	10.35%	11.20%	11.20%	11.20%	11.20%	11.20%	11.20%	11.20%	11.20%	11.20%
Benefit Amounts	0	0	\$13,509	\$13,914	\$15,509	\$15,974	\$16,453	\$16,947	\$17,455	\$17,979	\$18,518	\$19,074	\$19,646

**TABLE 5**  
**Cost/Benefit Summary (000'S)**

	Federal Fiscal Year												
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>COSTS</b>													
Annual Cost	\$ 7,386	\$12,817	\$7,994	\$10,010	\$12,502	\$12,228	\$12,595	\$12,973	\$13,362	\$13,763	\$14,176	\$14,601	\$15,039
NPV Factor	0.9667	0.9035	0.8444	0.7892	0.7376	0.6893	0.6442	0.6021	0.5627	0.5259	0.4915	0.4593	0.4293
Present Value Cost	\$7,140	\$11,580	\$6,750	\$7,900	\$9,221	\$8,429	\$8,114	\$7,811	\$7,519	\$7,238	\$6,967	\$6,706	\$6,456
Cumulative PV Cost	\$7,140	\$18,720	\$25,470	\$33,370	\$42,592	\$51,020	\$59,134	\$66,945	\$74,464	\$81,701	\$88,669	\$95,375	\$101,831
<b>BENEFITS</b>													
Annual Benefits	\$0	\$0	\$13,509	\$13,914	\$15,509	\$15,974	\$16,453	\$16,947	\$17,455	\$17,979	\$18,518	\$19,074	\$19,646
NPV Factor	0.9667	0.9035	0.8444	0.7892	0.7376	0.6893	0.6442	0.6021	0.5627	0.5259	0.4915	0.4593	0.4293
Present Value Benefits	\$0	\$0	\$11,407	\$10,981	\$11,439	\$11,011	\$10,599	\$10,204	\$9,822	\$9,455	\$9,102	\$8,761	\$8,434
<b>Cumulative PV Benefits</b>	\$0	\$0	\$11,407	\$22,388	\$33,827	\$44,838	\$55,437	\$65,641	\$75,463	\$84,918	\$94,020	\$102,780	\$111,214
<b>Cumulative PV Benefits less PV Costs</b>	(\$7,140)	(\$18,720)	(\$14,063)	(\$10,982)	(\$8,764)	(\$6,182)	(\$3,697)	(\$1,304)	\$999	\$3,217	\$5,351	\$7,405	\$9,383

Costs include both development and operations. Costs for 2001 and beyond are estimated.

**TABLE 6**  
**Cost/Benefit Summary (000'S) - Current Values**

	Federal Fiscal Year												
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>COSTS</b>													
Annual Cost	\$7,386	\$12,817	\$7,994	\$10,010	\$12,502	\$12,228	\$12,595	\$12,973	\$13,362	\$13,763	\$14,176	\$14,601	\$15,039
Cumulative Cost	\$7,386	\$20,203	\$28,197	\$38,207	\$50,709	\$62,937	\$75,532	\$88,505	\$101,866	\$115,629	\$129,805	\$144,406	\$159,444
<b>BENEFITS</b>													
Annual Benefits	\$0	\$0	\$13,509	\$13,914	\$15,509	\$15,974	\$16,453	\$16,947	\$17,455	\$17,979	\$18,518	\$19,074	\$19,646
Cumulative Benefits	\$0	\$0	\$13,509	\$27,423	\$42,932	\$58,906	\$75,359	\$92,306	\$109,761	\$127,740	\$146,258	\$165,331	\$184,977
Cumulative Benefits less Costs	(\$7,386)	(\$20,203)	(\$14,688)	(\$10,784)	(\$7,777)	(\$4,031)	(\$173)	\$3,801	\$7,894	\$12,111	\$16,453	\$20,926	\$25,533

Costs include both development and operations. Costs for 2001 and beyond are estimated.