B. Collections of Information Employing Statistical Methods

1. Respondent Universe

The proposed sampling plan for the district survey was developed with the primary goal of providing a nationally representative sample of districts to assess the prevalence of district support for data-driven decision making. A secondary goal was to provide numbers of districts adequate to support analyses focused on subgroups of districts. To conduct such analyses with reasonable statistical precision, we have created a six-cell sampling frame stratified by district size and poverty rate. From the population of districts in each cell, we will sample at least 90 districts. Below, we discuss our stratifying variables, describe the overall sampling frame, and show the distribution of districts in the six-cell design.

District Size

Districts vary considerably in size, the most useful available measure of which is pupil enrollment. A host of organizational and contextual variables that are associated with size exert considerable potential influence over how districts can support data-driven decision making. Most important of these is the capacity of the districts to design data management systems, actively promote the use of data for educational improvement, and provide professional development and technical support for data interpretation. Very large districts are likely to have professional development and research offices with staff to support school data use, whereas extremely small districts typically do not have such capacity. Larger districts also are more likely to have their own assessment and accountability processes in place, which may support accountability and data-driven decision making practices. District size is also important because of the small number of large districts that serve a large proportion of the nation's students. A simple random sample of districts would include few—if any—of these large districts. Finally, accountability-related school improvement efforts are much more pronounced in large districts. For example, longitudinal analyses of district-level data from the Title I Accountability Systems and School Improvement Efforts study indicated that although the total number of schools identified for improvement has remained approximately the same from 2001 to 2004, there has been a steady trend toward a greater concentration of identified schools in large districts (U.S. Department of Education, 2006).

We propose to sort the population of districts nationally into three categories so that each category serves approximately equal numbers of students, based on enrollment data provided by the National Center for Education Statistics' Common Core of Data (CCD):

- **Large** (estimated enrollment 25,800 or greater). These are either districts in large urban centers or large county systems, which typically are organizationally complex and often are broken up into subdistricts.
- **Medium** (estimated enrollment from 5,444 to 25,799). These are districts set in small to medium-size cities or are large county systems. They also are organizationally complex, but these systems tend to be centralized.
- **Small** (estimated enrollment from 300 to 5,443). The small district group typically includes suburban districts, districts in large rural towns, small county systems, and small rural districts. These districts tend to have more limited organizational capacity.

Districts with 299 or fewer students will be excluded from the study. Such districts account for approximately one percent of all students and 21 percent of districts nationwide. The distribution of districts among the size strata and the proportion of public school students accounted for by each stratum are displayed in Exhibit 6. The proportion of districts among the three size strata in the district sample (excluding districts with 299 or fewer students) are: large (2.2 percent), medium (13.5 percent), and small (84.3 percent).

Exhibit 6
Distribution of Districts and Student Population, by District Size*

Enrollment Size Category	Number of Districts	Percent of Districts	Number of Students (000s)	Percent of Students
Large (>25,800)	249	1.8	15,834	33.0
Medium (5,444 – 25,799)	1,497	10.6	15,844	33.0
Small (300 – 5,443)	9,378	66.6	15,853	33.0
Very small (299 or less)	2,956	21.0	478	1.0
TOTAL	14,080	100.0	48,008	100.0

* Based on 2004-05 NCES Common Core of Data (CCD).

District Poverty Rate

Because of the relationship between poverty and achievement, schools with large proportions of high-poverty students are also more likely than schools with fewer high-poverty students to be low achieving, and thus to be identified as in need of improvement. Under NCLB, districts are required to provide identified Title I schools with technical assistance to support school improvement activities, including assistance in analyzing data from assessments and other student work to identify and address problems in instruction and assistance in identifying and implementing professional development strategies and methods of instruction that have proven effective in addressing the specific instructional issues that caused the school to be identified for improvement. We expect that high-poverty districts face greater demands for educational

improvement, as well as the demands of working with larger numbers (or higher proportions) of schools identified for improvement. Consequently, we want our sample to include a sufficient number of both relatively high-poverty and relatively low-poverty districts so that survey results from these districts can be compared.

As a measure of district poverty, we will use the percentage of children ages 5 to 17 who are living in poverty, as reported by the U.S. Census Bureau and applied to districts by the National Center for Education Statistics. The distribution of districts among strata and the proportion of students accounted for by each stratum are displayed in Exhibit 7.

Exhibit 7
Distribution of Districts and Student Population, by District Poverty Rate*

District Poverty Rate	Number of Districts	Percent of Districts	Number of Students (000s)	Percent of Students
Other (≤20%)	8,555	76.9	33,370	70.2
High (>20%)	2,569	23.1	14,160	29.8
TOTAL	11,124	100.0	47,530	100.0

* Excluding districts with 299 or fewer students. Based on data from the 2003 U.S. Census for the percentage of children ages 5 to 17 who are living in poverty and applied to districts by NCES.

District Sample Selection Strategy

Our original proposal called for a sample of 500 districts. We had anticipated an 85 percent participation rate, which would result in approximately 425 respondents. We currently propose to increase our sample size (up to 588 districts) with the goal of obtaining approximately 500 respondents.

The two variables of district size and poverty rate generate a six-cell grid into which the universe of districts (excluding very small districts) can be fit. Exhibit 8 shows the strata, a preliminary distribution of the number of districts in each stratum, and the initial sample size in each cell.

For most analyses, we will be combining data across cells. When examining data from the full 498 responding districts, the confidence interval is ± 6.5 percent. With 498 district respondents, if we are looking at data from all 249 high-poverty district respondents, the confidence interval is ± 9 percent. In those cases where we are examining survey responses in a single cell, 83 respondents will yield a statistic with a confidence interval of no more than

± 11 percent.[1] For example, if we find that 50% of medium-size, high-poverty districts report a particular approach to supporting schools for data-based decision making activities, then the true population proportion is likely to be within 11 percentage points of 50 percent. More precisely, in 95 out of every 100 samples, the sample value should be within 11 percentage points of the true population value.

Exhibit 8
Number of Districts in the Universe and Quota Sample Size, by Stratum

District Size	District Poverty Rate		Total
	Low (≤20%)	High (>20%)	
Large			
Sample	*83*	*76*	166
Universe	*160*	*89*	*249*
Medium			
Sample	*83*	*83*	166
Universe	*1,155*	*342*	*1,497*
Small			
Sample	*83*	*83*	166
Universe	*7,240*	*1,155*	9,378
TOTAL			
Sample	*249*	*249*	491*
Universe	*8,555*	*2,569*	*11,124*

* Initially we will sample 89 districts in each cell (i.e., 534 districts). As required, additional samples will be added (up to a total of 588 districts) to meet our quota of respondents in each strata.

2. Data Collection Procedures

As described in the first section of this document, the district survey is a component of an interrelated data collection plan that also includes case studies of 30 schools in 10 districts and a review of secondary sources that address the same set of evaluation questions. Exhibit 9 outlines the schedule of data collection activities for which clearance is being sought. OMB has already approved case study data collection activities (OMB Control Number 1875-0241).

Exhibit 9
General Timeline of Data Collection Activities

	Conduct Case	

[1] The value of 11 percent assumes responses to yes/no questions with 50 percent probability of a "yes" response. The half-width of the confidence interval will be smaller for other probabilities of a "yes" response.

Year	Studies	Survey Districts
Winter 2006 to Spring 2007	✓	
Fall 2007		✓

District Survey

The evaluation questions outlined in the first section of this document, along with an analysis of the literature and pretesting of case study protocols, have generated a list of key constructs that have guided survey development. Below we describe the district survey in greater detail.

The district survey will focus on the characteristics of district data systems and district supports for data-driven decision-making processes within schools. Proposed questions for the district survey will include transferability of data between state and district systems through the use of unique student and teacher identifiers, uses of the systems for accountability, and the nature and scale of the supports districts are providing for school-level use of data to improve instruction. In addition, the district survey will include a section on the types of student information available in district systems (information on types of student data available from state systems will be drawn from the survey conducted by NCEA). Our district survey will cover the suggested topics shown in Exhibit 10.

Exhibit 10

District Survey Topics

Topic	Subtopic	Evaluation Question Addressed
Data systems	▪ Types of student data in district data systems. ▪ Features and functions of district systems. ▪ Linkages between unique student and teacher identifiers at the local and state levels (interoperability). ▪ Limitations of district data systems. ▪ Accessability of student data to school staff. ▪ Data quality.	Q1: What kinds of systems are available to support district and school data-driven decision making?
DDDM tools for generating and acting on data	▪ Features and tools of district systems. ▪ Types of queries the system supports to link student performance with other data. ▪ Frequency of DDDM activities related to student-level data and other types of decision making related to improving instructional practice.	Q2: Within these systems, how prevalent are tools for generating and acting on data?
Supports for DDDM	▪ Extent to which DDDM has supported district improvement goals/activities. ▪ Steps taken to increase the capacity of district staff to engage in DDDM. ▪ District provision of training, resources, technical assistance, and the establishment of policies and practices to increase school-level capacity in DDDM. ▪ How long districts have been providing supports for school use of data. ▪ Areas where districts and schools need more support for data system use and DDDM. ▪ Current barriers to expanding district DDDM practices.	Q3: How prevalent are state and district supports for school use of data systems to inform instruction?

The district survey will be formatted to contain structured responses that allow for the quantification of data, as well as open-ended responses in which district staff can provide more descriptive information on how DDDM is carried out in their district.

As noted earlier, respondents will also be given the option to complete the district survey online. The paper survey will contain the URL for the electronic version. In order to determine which districts have responded using the online survey, respondents will be requested to enter the identification number at the top of the survey as well as the name and location of their district on their online survey form.

Our approach to survey administration is designed to elicit a high response rate and includes a comprehensive notification process to achieve "buy-in" prior to data collection as well as multiple mailings and contacts with nonrespondents described later in this document. In addition, a computer-based system will be used to monitor the flow of data collection—from survey administration to processing and coding to entry into the database. This monitoring will help to ensure the efficiency and completeness of the data collection process.

Secondary Data Sources

The use of secondary data sources will enhance our analysis and avoid duplication of efforts. We have currently identified two main sources of additional data on how states, districts, and schools are using data systems.

The first source of data for secondary analysis is the NETTS study which is focusing on the implementation of the Enhancing Education Through Technology (EETT) program at the state and local levels. A teacher survey was completed through NETTS in January 2005 that gathered data from over 5,000 teachers in approximately 850 districts nationwide. Teachers were asked about their use of technology in the classroom, including the use of technology-supported databases. Questions about data systems addressed issues related to the accessibility of an electronic data management system with student-level data, the source of the system (state, district, school), the kinds of data and supports provided to teachers to access data from the system, and the frequency with which teachers use data to carry out specific educational activities, and the types of supports available to teachers to help them use student data.

The second major source of data for secondary analysis is the National Center for Educational Accountability (NCEA) state survey, first administered in August 2005, which focused on data system issues related to longitudinal data analysis. The second administration of the NCEA state survey was scheduled for completion by the end of September 2006. The 2006 survey updates data from the 2005 survey and adds some new items as well. The NCEA state survey will continue to be used as a secondary data resource for this study in the future. NCEA data provide key information on the data systems that states are building and maintaining as they gear up to meet NCLB requirements for longitudinal data systems (i.e., NCEA's "ten essential elements").[2]

[2] Creating a longitudinal data system that will provide data to improve student achievement is one of the major goals of the Data Quality Campaign. The campaign is a national, collaborative effort to encourage and support state policymakers to improve the collection, availability and use of high-quality education data.

Prepare Notification Materials and Gain District Cooperation

Gaining the cooperation of district representatives is a formidable task in large-scale data collection efforts. Increasingly, districts are beset with requests for information, and many have become reluctant to participate. Our efforts will be guided by three key strategies to ensure adequate participation: (1) an introductory letter signed by the Department, (2) preparation of high-quality informational materials, and (3) follow up contacts with nonrespondents.

U.S. Department of Education Letter. A letter from the Department will be prepared that describes the purpose, objectives, and importance of the study (i.e., documenting the prevalence of data-driven decision making, identifying practices for effective data-driven decision making, identifying challenges to implementation) and the steps taken to ensure privacy. The letter will encourage cooperation and will include a reference to the U.S. Department of Education Department General Administrative Regulations (EDGAR) participation requirements, stating that the law requires grantees to cooperate with evaluations of ESEA-supported programs (EDGAR Section 76.591). As noted earlier, the study is part of the national technology activities supported under Section 2404(b)(2) of Title II, Part D, of the Elementary and Secondary Education Act and 85 percent of districts receive EETT funds under ESEA. A draft of the letter is included in Appendix A.

High-Quality Informational Materials. Preparing relevant, easily accessible, and persuasive informational materials is critical to gaining cooperation. The primary component of the project's informational materials will be a tri-fold brochure. This brochure includes the following information:

- The study's purpose.
- Information about the design of the sample and the schedule for data collection.
- The organizations involved in designing and conducting the study.

A draft copy of the brochure is included in Appendix B. All informational materials will be submitted to ED for approval before they are mailed. Mailing of informational materials to districts will begin in spring 2007, prior to the mail out of the survey.

Contacting Districts. The first step in contacting districts will include the notification letter and information packet sent to the district superintendent. As part of the notification process, we will request the most appropriate respondent for the district survey (i.e., the district staff member who has primary responsibility for leading data-driven activities related to instructional improvement). As initial pretest activities have shown, the position held by this particular staff member is not consistent across districts (e.g., Director of Technology, Director

of Research and Assessment, Director of Curriculum). Therefore, we will take extra steps during the notification process to identify the best respondent for the survey (this will be particularly important in very large districts). The survey will then be shipped via Priority Mail to the district staff member identified by the superintendent. (A copy of the notification letter is included in Appendix A.)

Every effort is being made to minimize the burden on districts, but at the same time, very large districts that serve large numbers of students will be included in multiple studies given the proportion of the student population they serve. In these districts, great care will be taken during notification activities to respond to the concerns and questions of participants. If needed, project staff will be prepared to submit proposals to district research committees.

3. Methods to Maximize Response Rates

A number of steps have been built into the data collection process to maximize response rates. Special packaging (e.g., Priority Mail) and a cover letter from the U.S. Department of Education have served to increase survey response rates in other recent national studies (e.g., NETTS, Evaluation of Title I Accountability Systems and School Improvement Efforts). In addition, by targeting the appropriate respondent for the survey, we are more likely to obtain a completed survey. Finally, all notification materials will include a reference to the U.S. Department of Education Department General Administrative Regulations (EDGAR) participation requirements, stating that the law requires grantees to cooperate with evaluations of ESEA-supported programs. The Study of Education Data Systems is part of the national technology activities supported under Section 2404(b)(2) of Title II, Part D, of the Elementary and Secondary Education Act and 85 percent of districts receive EETT funds under ESEA.

Other steps to be taken to maximize response rates include multiple mailings and contacts with nonrespondents:

- The surveys will be mailed with postage-paid return envelopes and instructions to respondents to complete and return the survey within 3 weeks.
- Three weeks after the initial mailing, a postcard will be sent out reminding respondents of the survey closing date and offering to send out replacement surveys as needed or the option of completing the survey online.
- Four weeks after the initial mailing, a second survey will be sent to all nonrespondents, requesting that they complete and return the survey (in the postage-paid envelopes included in the mailing) or complete the survey online within 2 weeks.
- Six weeks after the initial mailing, telephone calls will be placed to all nonrespondents reminding them to complete and return the survey. A third round of surveys will be sent after telephone contact, if necessary.

The final step will be for SRI to conduct interviews by phone (i.e., in the event of response rates below 80 percent) to increase the response rate. We will use the data gathered through the phone interview to do a study of nonresponse bias. The responses obtained in the phone interview will be compared with those obtained from respondents to see whether people who did not respond to the mail and online survey are different in systematic ways from those who did. Respondents will also be asked their reasons for not responding to the mail or online survey to learn the reasons for nonresponse.

4. Pilot Testing

To improve the quality of data collection instruments and control the burden on respondents, all instruments will be pre-tested. Pilot tests of the district survey will be conducted with several respondents in districts near SRI offices in Arlington and Menlo Park, with districts among the case study pool that were not selected for inclusion in the case study sample, and with selected members of the TWG. The results of the pre-testing will be incorporated into revised instruments that will become part of the final OMB clearance package. If needed, the revised survey will be piloted in a small set of local districts with nine or fewer respondents prior to data collection. The district survey can be found in Appendix C.

5. Contact Information

Dr. Barbara Means is the Project Director for the study. Her mailing address is SRI International, 333 Ravenswood Avenue, Menlo Park, CA 94025. Dr. Means can also be reached at 650-859-4004 or via e-mail at barbara.means@sri.com.

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