

Problem

Within the current context of the devolved provision of social services local service providers must spend a good deal of their organizational resources writing grants and raising funds. Funding sources have, in turn, increased the demands they make on potential grantees in local communities to use data in a sophisticated fashion to assess the needs of local communities and to demonstrate service provider capacity to meet those needs.

This situation holds for a wide spectrum of social service organizations. In the fields of *health promotion* and *prevention* (prevention of substance abuse, child abuse and neglect, juvenile delinquency, suicide, etc.) it is common practice for federal and state funding organizations to require that planning and programming be provided through *community-based coalitions* of organizations (nonprofits, agencies, school districts, community organizations) and citizens. Across the United States, large numbers of such groups have been organized over past 15 years. And for each and every one that is funded through federal sources, a mandate exists to base planning and service provision on information about the communities they serve – on data!

Communities for Children represents a network of 71 community-based coalitions in Maine, all of which are working on some aspect of prevention and/or health promotion in their local towns and communities, and all of which are supposed to base their planning on data. In addition, there are at least five other types of community coalitions in Maine, working on related issues. Many overlap, but even so, Maine, one of the smallest states with a population of 1.2 million, has over 150 community-based coalitions in the general areas of prevention and health promotion. Throughout the United States there are many thousands of such groups.

Fulfilling the mandate to conduct data-based planning is generally difficult for community groups, which are composed of service providers and citizens, not statisticians. Nonetheless, over the years community coalitions have increased their capacity to work with data. Improvements in information technology applications and their accessibility to a wider variety of users, especially desktop and server based databases and internet applications that have delivered the server utility to the desktop, combined with community education efforts undertaken by funders and the local community groups themselves, have increased the availability of data and the capacity of local communities to use it. Diverse data have become widely available on the Internet in diverse formats, summarized in diverse ways, and for diverse purposes. Methods for extracting information from large amounts of data have also developed, as well as methods, such as GIS, for communicating that information effectively to a variety of audiences. Despite the progress made in building the capacity of local communities to use data, community groups and organizations continue to face the following problems:

- *Research and Marketing.* Although a great deal of information is available on the Internet, it is distributed and aggregated according to a logic that is not always shared by local social service providers and the marketing strategies of data providers do not always match the research or data shopping skills of local organizations.
- *Data Overload.* The amount of data available on the Internet can be overwhelming. Extracting meaningful information from the mass of data available can be daunting.
- *Disparate sets of data.* Organizations and individuals usually develop and provide data to answer research questions. Although summaries of data available through the Internet may be meaningful to designers, they do not necessarily answer the questions that local communities ask and can limit the ways in which the data can be used.

- *Ownership of Data.* Collectors and managers of data are concerned about the uses to which they will be put. While making the data available to for public use potentially increases its meaning and social value, the potential for misuse also increases. Data workers have an interest in preserving the integrity of their data sets.
- *Cost of Technology and Expertise.* GIS desktop applications are beyond the resources of nearly all community-based coalitions and most nonprofits in the social service arena. Most urban and regional planning agencies focus their work on land use issues.

Credible Solution

With regard to both the Internet and community-based coalitions, some of the best solutions develop when disparate interests share ideas and tools that will work for both/all. In many ways, that is exactly why, in our face-to-face communities, *coalitions* are used for planning and solving problems. Unless a “solution” solves more than one problem, or solves a problem for more than one community organization, it is inefficient to proceed. When Communities for Children began to address the problems described in the previous section, we found an unexpected partnership.

In 1996, the original planners of the C4C Initiative created a town-level dataset for the communities to use in their planning. The dataset, which contained 1990 Census data and data from several state agencies, while useful, was static and difficult to access. In 2002, C4C began to re-create this data resource with the intent to incorporate the 2000 Census data and create a more accessible web-based system. In the planning process, C4C encountered an Internet-based system, OIK/OS, that was so close to what we wanted to do, that we contacted the developer of the system. The design for the project proposed here came out of the dialogue that ensued.

The Wilderness Society created OIK/OS, an easy to use internet-based GIS mapping system for presenting census and economic data. OIK/OS comes from the “oikos,” the Greek word for “house” and the root of the “eco” in economics and ecology. This concept describes a commonality of interest between C4C and the Wilderness Society, meaning that development work will contribute to both, if continued planning is coordinated, as this project will do

The Internet Mapping for Communities (IM4C) project will develop an Internet mapping system containing national spatial data to the minor civil division level (town level) and thematic data from the Census, the Regional Economic Indicators Survey and other social service data, using OIK/OS as the base. Users of the system will be able to select and combine towns and counties and they will be able to create downloadable on-line reports that contain the data elements they have selected. To do this, the project will:

- Deploy the OIK/OS system. InforME, the Maine state web site, will host OIK/OS.
- Deploy a C4C-developed “portal” to the information on OIK/OS and other web sites that based on different sets of prevention “risk and protective” factors to help users select the data they need. This portal will be partially developed before the project begins.
- Test system use in demonstration communities (6 in the first year and an additional 6 in the second year). The project evaluation will explore the different ways the communities use the data, the results they obtain, the problems they have and the supports they need.
- Modify the system based on the experience of the test communities. Enhance OIK/OS through a development process involving community data teams and a Project Advisory and Data Review Team; add data sets relevant to local community/funder interests; arrange data into sets that reflect user needs; enhance the user interface and report generator. The risk and protective factors portal will also be modified and further developed.

- Test again, and continue through six iterations (3 in year 1 and 3 in year 2). Communities have committed to 3 tests each, with written feedback on uses and problems.
- Part of the community test will be to determine the kinds of training and support needed for communities to use such a system *without* special funding from a project like TOP. Thus the second set of 6 communities will be testing a “minimum expense” diffusion model.
- Add at least three data sets from state agencies in Maine and incorporate the use of this data into the tests. The Maine Office of Substance Abuse will be first. It has committed to putting its Maine Youth Drug and Alcohol Use Survey (MYDAUS) data into the system.

A credible solution must make data available and accessible to users (local and state) at affordable cost to producers (local and state) and preserve integrity of original data sets while allowing maximum flexibility for innovative use. Our approach will do this. Much of the basic system development work has already been done. What this project will do is make all that work *usable* in a practical way to those who are planning programs at a local level and those at state level who want data-based planning to occur. Lessons learned from this project will apply to literally thousands of similar groups in the U.S.

Project Outcomes (measures are specified in the evaluation section)

Agency and Organizational Outcomes:

1. At least 3 state-level program data sets will have been incorporated into IM4C system by the end of the project, indicating adoption and use by state-level agencies.
2. The different elements of the system will be adopted by appropriate organizations at the state level in Maine to assure sustainability of system deployment after the grant period ends.

System-wide Outcomes:

1. The use of the Prevention Risk and Protective Factors Portal will increase during the course of the project as measured by user feedback built into the web portal itself.
2. Usage of the IM4C system developed by the project will continue to increase during the course of the project. Data will be obtained for: a) demonstration communities and other C4C community partners; b) Wilderness Society Users; c) other agency users/general public
3. Visitors to the web site will provide positive feedback on the usability and comprehensiveness of the system, based on an evaluation form that is part of the site.

Community Outcomes:

1. Demonstration community coalitions (in both Years 1 and 2) will increase the frequency with which they use data and the amount of data used in their needs assessment, planning and public relations activities.
2. Demonstration community coalitions will report expanding the ways in which they use data.
3. Demonstration community coalitions will report that they are sharing data with groups in their communities to a greater extent than prior to the project; evaluations by community members who participate in data/planning sessions using the system’s GIS maps and other data generated by the project will be positive.
4. Demonstration community coalitions will report satisfaction with their role as providers of feedback to the system developers.
5. Demonstration community coalitions will report that the quality of their data-based planning has improved during the project and provide detailed reasons for this assessment.
6. Year 2 demonstration sites will report satisfaction with the technical assistance provided by Year 1 sites.

Innovation

The innovation represented by the IM4C project lies not in making GIS technology available on the web, nor even in application of GIS to social service themes, but rather in the organizational approach to the partnerships that it will initiate, develop and eventually sustain.

IM4C will bring together organizations that share goals in common, but whose wider missions diverge. Rather than approaching this incomplete mission alignment as a weakness, the IM4C partners recognize that diverse organizational foci may also lead to diverse strengths that may be leveraged to accomplish a common goal. C4C has as its strength the building of political and cultural ties among communities and has recognized the need to use data to accurately describe community environments. The Wilderness Society has been involved in economic and ecological assessments of environments, and in its work has recognized the centrality of communities in sustainable development and the importance of their political and social aspects. A partnership between Communities for Children and The Wilderness Society will deliver benefits to both partners at costs that each can afford.

C4C can leverage the efforts of its partner communities to provide The Wilderness Society an opportunity to research the effectiveness of its platform, thereby allowing it to extend its mission to promote sustainable development. With a TOP grant, Communities for Children also offers the Wilderness Society a potential no-cost permanent host for its OIK/OS application. In return, The Wilderness Society offers C4C partners its data expertise and the opportunity to tailor the OIK/OS application C4C needs. Each partner can use the strengths of the other to solve a common problem while maintaining the integrity of its own mission.

Another way in which IM4C is innovative is in the approach it takes to promote partnerships among social service organizations, including state agencies. Despite a common interest in promoting social well being and communicating important data to local communities, differences that exist among the missions and goals of social service agencies can be real and significant. IM4C will allow agencies to participate without requiring them to relinquish any of the control that they need over the data sets they have developed. The IM4C tool will provide a generic method for an agency to share data as they choose. IM4C will thus be able to take advantage of the controls that agencies already have in place for protecting the privacy of individuals.

In a similar fashion, IM4C will work with the various project stakeholders to identify the incentives and means to support specific aspects of the system in order to sustain its development past the life of the grant. The process will begin by locating the servers at InforME, the contractor who manages the State of Maine Web Site. After initially taking the lead in application and data management, The Wilderness Society may become one of many contributors to the IM4C data set as other entities adopt IM4C data preparation standards. One responsibility of the Project Advisory and Data Review Team will be to identify stakeholders, recruit them to the project, and then assign roles during the period of the grant and beyond.

IM4C's final innovation will be its attention to the fit of the data and technology to the needs of local community users and its inclusion of their input in application development. Too often, local communities have had to settle for whatever technology and data tools happen to be available to them. Too often, what is developed is unsuitable or the expert help may move away, leaving the community with a useless tool. This project will offer participating communities the opportunity to build an application responsive to their own needs.

Community Involvement

Partnerships: There are several levels of partnerships in this project -the partnership between C4C and the Wilderness Society; the partnerships with the six initial demonstration communities (6 more will be recruited for Year 2); the partnerships with state agencies who will provide Project Advisory and Data Review Team membership; and the partnership with the Maine Children's Cabinet, who will support the project from the Commissioner level and encourage the use of the system through its Regional Children's Cabinets. The roles of these partners are described in great detail in other sections of this proposal because each of these partnerships is absolutely essential to accomplishing project objectives. Letters of support and *commitment* from each of the partners can be found in the Appendix, starting on page 14.

Year 1 demonstration sites include: Community Wellness Coalition, York County, Diane Brandon, Executive director; Communities for Children, Winthrop, Gladys Richardson; Communities for Children Augusta, Kathi Wall; Getting Healthy Maine, Gardiner, Joanne Joy; Communities for Children, Greater Waterville, Lauren Walsh; and Youth Promise of Lincoln County, Mary Trescot. Letters of commitment are in the Appendix, starting on page 19.

Community Involvement: The entire purpose of the Communities for Children Initiative, described in the Appendix on page 2, is to develop and support community coalitions to plan and provide programming in the areas of prevention, health promotion and positive youth development. Thus, the development of data supports is an integral part of the effort.

Furthermore, it is based in experiences of local community partners, who provide continual feedback to the central organization. Their needs that gave rise to the project in the first place. More specific to this proposal, in the early fall of 2002, the central C4C office began to host a monthly discussion group on data issues with a dozen volunteers from both state and community level (5 from local communities). It was this group that gave rise to the problem/need portion of this proposal and it was this group that reviewed early drafts of the ideas presented. Three of the six demonstration communities come from this group. In addition, presentations on the project were made to the Children's Cabinet and to two programs that support community coalition work in a manner similar to C4C. Each provided feedback that helped to shape this proposal.

Evaluation and Dissemination

Evaluation Strategy: The stakeholders for the evaluation represent all the groups who are involved with developing and testing the IM4C system, including: 1) TOP; 2) Communities for Children; 3) Wilderness Society; 4) Demonstration Community Coalitions; 5) Maine Children's Cabinet; 6) Participating state agencies; 7) InforMe; and 8) Maine OGIS.

The chart on the next page provides a detailed breakdown of evaluation questions and the approach to measurement for each question. The evaluation strategy will be two-fold. A ***process evaluation*** will assure that the project is being implemented as planned, based on a *Quarterly Status Assessment Survey* that is developed from the project timeline. The process evaluation will also collect feedback from each of the community demonstration sites in a *Quarterly Feedback Report on System Use and Problems to Address* that will provide information for the developing design and the refinement of the system itself. Specific feedback on the uses they have made of the system, problems encountered and suggestions for improvement will go to the Project Advisory and Data Review Team as well as the project administrator. Selected community-level outcome information will also be collected from this report. A ***Progress Summary*** will be

distributed to all the stakeholders two times in each year. This internal report will contain results of evaluation activities up to the time of the report.

An **outcome evaluation** will determine the degree to which the project achieves the outcomes that it set out to accomplish. Data on infrastructure development/sustainability, usage of the IM4C system overall, and usage and results of use of the system by demonstration communities will be collected. The table on the next page provides more detail. For most system-wide and community outcomes, the initial data collection will occur in the first month of the project and provide a baseline against which subsequent quarters will be measured.

Project Evaluator: The Evaluation Services Team of the Institute for Public Sector Innovation (IPSI) at the University of Southern Maine will be contracted to evaluate this project. With a staff of over 150 and an annual budget exceeding \$14 million, IPSI is one of the three nationally recognized Research Institutes of the Edmund S. Muskie School of Public Service at the University. IPSI's 60+ research, evaluation, training, organizational development and strategic planning projects include collaborations with federal and state agencies such as the Departments of Human Services, Behavioral and Developmental Services, Health and Human Services, Corrections, Justice, Education, Agriculture, the Judiciary, and the Centers for Disease Control and Prevention, in areas such as behavioral health, child welfare, criminal justice, cross-systems collaboration, domestic violence, health and nutrition, human services, public management, public welfare, technology and youth development. IPSI's Evaluation Services Team, headed by Dr. Michel Lahti, has 13 full-time staffers from diverse academic, public management, and direct service backgrounds, including education, health, performance management, strategic planning, needs assessment, human services, anthropology and political science (resume on Appendix page 12). They possess wide experience with a full range of quantitative, qualitative and mixed methodologies for doing their work. The Team typically handles 10 to 15 evaluation and data analysis projects per year.

Dissemination: Dissemination activities will include presentations at in-state conferences and meetings by various project participants, including demonstration communities, information provided through listservs, websites and newsletters, and announcements made by participating state agencies. Web site usage will be monitored to guide dissemination efforts.

Project Feasibility

Technical Approach: IM4C will use tested technical approaches in its deployment in order to support promising efforts in community mobilization and education. C4C has developed a planning infrastructure for its network of communities. The Wilderness Society has also enhanced the assessment capacity of local communities and is in the early stages of the development of a valuable tool for that purpose. The IM4C project is not just about developing and deploying an enhanced version of that tool, although that too will happen. The main aim of the IM4C project is to facilitate and manage the use and evaluation of the deployment so that it can continue to develop according to the needs and capacities of the communities it serves.

Just as OIK/OS does now, IM4C's initial deployment will generate reports through a series of web pages employing a web based query and report generator linked to ArcIMS server using Microsoft SQL Server to manage the spatial and spatially referenced data. This current configuration has been sufficient thus far. The IM4C system will consist of two dedicated servers, one running ArcIMS for deploying map services and the other running SQLserver for data storage, on the premises of InforME, Maine State government's contractor for web service.

Evaluation Questions	Strategy	Data Collection and Analysis	Timing
Is the IM4C system developed and implemented as planned?	Process	<i>Quarterly Status Assessment Survey</i>	Quarterly
Do communities follow through on their commitments to test the system, provide feedback and provide technical assistance to other communities?	Process	<i>Quarterly Status Assessment Survey Project Reports of System Use (including satisfaction with role and planning quality)</i>	Quarterly/ At least quarterly, as data is used
Does the Project Advisory and Data Review Committee use feedback and provide advice to project development and how satisfied are its members with the project?	Process	<i>Semi-annual Interview on Project Progress</i>	Two times a year
Are the pieces of the system “adopted” to assure sustainability by the end of the project?	Outcome	<i>Memoranda of Agreement from agencies that will host and maintain the system.</i>	By end of project
Do the demonstration communities increase the frequency with which they use data and the amount of data they use?	Outcome	<i>Quarterly Feedback Report Semi-Annual Survey of Project Outcomes</i>	Quarterly
Do the demonstration coalitions expand the ways in which they use data?	Outcome	<i>Quarterly Feedback Report Semi-Annual Survey of Project Outcomes</i>	Quarterly
Do the demonstration communities test the use of GIS-based, mapped data with a community group and what are the results?	Process	<i>Quarterly Feedback Report Semi-Annual Survey of Project Outcomes Data Session Evaluation Form</i>	Quarterly 2 times a year As needed
Does the use of the Prevention Risk and Protective Factors Portal increase during the course of the project?	Outcome	Measurement based on user feedback built into the web portal itself.	Tracked Quarterly
Does the use of the IM4C system developed by the project continue to increase during the course of the project on the part of 1) demonstration communities & other C4C communities; 2) Wilderness Society users 3) other agency users & the public at large?	Outcome	Measurement: automated counts of system usage/ user feedback built into the web site itself to collect numbers of maps/charts/ tables requested and numbers of reports generated from the web site itself; other information inferred from log file analysis.	Tracked Quarterly
Do IM4C users provide positive feedback on the usability and comprehensiveness of the system,	Outcome	Web-based evaluation form offered on the site	Tracked Quarterly
Do Year 2 demo communities report satisfaction with the TA provided by Year 1 communities?	Process/ Outcome	<i>Quarterly Status Assessment Survey</i>	Quarterly

Web services will either be provided on a third server at InforME or run on the ArcIMS server. Currently OIK/OS runs on one server running ArcIMS, SQLServer, and web services. By dedicating a server to each service, we hope to increase the overall performance of the system. ArcIMS and SQL Server use standards that have been widely adopted in the GIS community because of their interoperability and scalability, using standards that allow for importing diverse data formats in a relatively straightforward fashion and designed to support an enterprise environment. IM4C will constitute but one Internet mapping service in a system that has the potential to run *multiple* services. Thus, the IM4C project will provide one Internet mapping service and the potential to host multiple future Internet Mapping Systems.

The spatial data in OIK/OS is currently stored in shape file format, but future conversion to ArcSDE is being considered in order match standards being adopted by the State of Maine. Migrating to other Oracle data servers already maintained by the State of Maine may also be possible, depending on future cost benefit analysis having to do with the cost of storing non-Maine agency data on Maine servers. Using the Maine Office of GIS's IMS deployment is also a possibility, but because the current configuration seems adequate and because of the possible unanticipated administrative costs connected to migration, the most prudent course of initial action seems to be to minimize as many operational variables as possible. Setting up a system that closely matches an already functioning system will give IM4C the best chance of initial success and a stable platform from which to develop.

Just as a two server deployment of ArcIMS and SQL Server were chosen for reasons of reliability and scalability, so too was the choice to co-locate the servers at InforMe, Maine's contractor for Internet services. By doing so, IM4C servers will be hosted on a WAN with Internet connectivity and access to Maine state agency data networks behind a state firewall maintained by InforMe. This location provides more than suitable rack space for the servers and will facilitate the transfer of data from state agencies in the future. Co-location costs will be absorbed by InforME as part of its contract with the state of Maine. Working from a solid and tested technical deployment (actually pre-deployment), IM4C project members will be able to focus on providing for effective use, relevant evaluation, future development and sustainability.

Applicant Qualifications: Project personnel will include Meredith Fossel, who is based in the C4C Initiative and will act as Project Supervisor, providing day-to-day oversight (.5 FTE). She has worked on support systems for community-based coalitions in Maine for the past seven years, has spent many years doing program evaluation and has supervised numerous projects. Bernardo Feliciano will be contracted (.5 FTE) to facilitate organizational relationships, technical assistance around community use of technology and development of systems, strategy development, and provide assistance in data preparation. His experience with technical support and planning encompasses a variety of settings and he played a pivotal role in the development of this project. Spencer Phillips of The Wilderness Society will also provide project development time. His primary responsibility will be the development of interface according to feedback from project stakeholders. Susan Savell, the Executive Coordinator for Communities for Children, will donate her time as Project Director. Resumes start on Appendix page 6.

Project Implementation and Completion: The Project Timeline, on page 1 in the Appendix, provides information on specific tasks and the timing of implementation over a two-year period. Project tasks are broken down into three categories: application development, organization development, and stakeholder and community education. Some tasks within categories and across categories occur concurrently, while others will depend on the completion of others.