Building and Using Community Information Systems: Inventory of Available Tools and Guides

Draft Report

November 2004

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Abstract

During the 1990s, computerization of local government administrative records and the advent of inexpensive geographic information system (GIS) software enabled development of local community information systems (CIS) in several dozen cities across the nation. CISs combine GIS technology with multi-source, geographically detailed data on topics such as property conditions, property tax arrears, mortgage originations, vital statistics, crime, health, educational performance, and public assistance. These data are generally made available over the Internet to support a variety of local planning and programmatic purposes. Local information intermediaries, such as the members of the National Neighborhood Indicators Partnership (NNIP), have been instrumental in creating and maintaining CISs and working with local communities to apply CIS data.

Members of the NNIP and others have developed guides, data inventories, primers, and other tools that document and support the emerging CIS movement. This paper develops an organizational framework and then catalogues these resources in the following areas: building and using CISs, assembling and using data sources, developing indicators, using CISs for change, developing CIS technology, building user capacity, and building institutional capacity. Although a variety of resources already exist to support the CIS movement, the paper finds needs for creating or updating resources in areas such as practical guidance on how to apply data effectively, stories of successful CIS applications, and documentation of technical developments related to Web applications. The paper also finds a need to translate resources into more widely accessible forms such as Web-based learning modules.

INTRODUCTION

The Community Statistical Systems (CSS) Network is made up of individuals and representatives of organizations interested in furthering the effective use of data in local policy making and community building. The Network's Development, Management and Utilization Workgroup was charged with "catalyzing the preparation and dissemination of information regarding effective practices in the construction, maintenance and utilization of community statistical systems." This paper, which presents an inventory and assessment of available materials of this type, is the workgroup's initial response to that charge.

Development of the inventory has broader significance because the members of the workgroup represent several organizations whose missions highlight building long-term local capacity in the community information system field: Barbara Harris, program administrator at the U.S. Bureau of the Census; Pari Sabety, who directs the Urban Markets Initiative (UMI) at the Brookings Institution and is also leading an effort to create a National Infrastructure for Community Statistics; Pat Simmons, director of housing demography at the Fannie Mae Foundation, who also bears major responsibility for the development of DataPlace, the new data portal for the Foundation's KnowledgePlex® Web site; and Tom Kingsley (chair), who directs the NNIP at the Urban Institute.[1] Our hope is that this initial inventory can help the members and the organizations they represent, as well as others, coordinate future work in developing additional tools and guides.

The paper begins with a brief introduction of recent trends in the development of community information systems in the United States. It then uses concepts from that discussion to establish a framework for defining and categorizing the contents of the inventory. Then the inventory is presented. An appendix describes in greater detail the categories used in the inventory. It also discusses ideas that guided the selection of items included in the inventory and offers preliminary ideas about future needs for resource materials that would support continued development and use of community information systems.

Trends in Developing Community Information Systems

Data for cities and counties as a whole are not very useful for many local stakeholders because conditions normally vary dramatically across smaller sub-areas (such as neighborhoods) within these large areas. For example, if you want to direct resources to, or plan programs for, the neediest areas, small area data are clearly essential.

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[1]Harris, Sabety and Simmons, along with Andrew Reamer of The Brookings Institution, made major contributions to this paper. They reviewed several drafts and suggested many helpful additions and modifications to the inventory. The workgroup also appreciates the valuable suggestions offered by Peter Tatian, Kathryn L.S. Pettit and Audrey

Community development corporations, neighborhood associations, service providers, and government planners are now more cognizant of the need for data at the neighborhood or parcel level in their work. An increasing number of private investors also want to scan geographically detailed data on inner city areas to find attractive investment opportunities. All need data from multiple sources on physical, social and economic conditions and trends in neighborhoods. The problem is that most of the would-be data users have other jobs to do. Few of them individually can afford to take on the task of assembling the data from multiple sources – going from agency to agency to work out data sharing arrangements and then acquiring data sets and putting them in forms suitable for analysis – and do the job properly on an ongoing basis.

The obvious solution is to assign that task to a single intermediary (government agency, nonprofit civic group, or a partnership of such institutions) that would assemble most of the relevant data into an ongoing system (that is, create a community information system) and then share it with all of the other prospective users on a regular basis. That still has not happened in most of America's urban areas, but it has in a few. Prominent among them are the partners in NNIP (now in 21 cities), but such systems are being developed in a few other cities as well.[2] Where intermediaries have established community information systems, there have been some exciting payoffs as local actors have used such data to further their objectives more effectively.

All community information systems developed so far use advanced GIS technology with integrated, recurrently updated information from multiple sources on detailed locations. The capacity to combine GIS with detailed, multi-source local data did not exist in any U.S. city until the 1990s. This breakthrough became possible because: (1) most administrative records of government agencies (for example, on property sales, crimes, or births) are now computerized; and (2) inexpensive GIS software now exists that can match the thousands of addresses in these records to point locations, and then add up area totals for small geographic areas such as blocks or census tracts.

The systems of the NNIP partners typically include data on property conditions, business trends, tax arrears, mortgage originations, births, deaths, crime, health status, educational performance, and public assistance. Operating under long-term data-sharing agreements with the agencies that create the base records, the partners recurrently obtain new data (annually or more frequently in some cases), integrate them into their systems, and make them available to a variety of users for a variety of purposes. Their accomplishments demonstrate that, while never easy, it is quite possible to overcome the resistance of major public agencies to sharing their data in this way.

In the face of the data assembly problem noted above, the most attractive feature of these local intermediaries is that they serve as a one-stop shop for data. All are intent on making the data in their systems available to a broad array of users. Most now do so via the

Internet. These days, the data in community information systems do not have to be physically stored all in one place. They can be stored in several places and brought together under agreed-upon data sharing protocols in one Web site, forming a "virtual data warehouse." The point is that the user can go to only one place to get a vast amount of free, quality, spatially detailed information.

A Framework for Defining and Categorizing the Inventory

In developing an inventory of available guidance for the community information system field, the CSS Network's Development, Management and Utilization Workgroup followed three basic principles.

1.   We thought it essential to cover materials on ***how to use community information systems as well as how to build them***. This derives from a key operating theme of the NNIP partners. They see their core missions as supporting *action agendas* that will facilitate change, not just creating data and research for their own sake, and they use data as the basis for forming collaborations among stakeholders toward that end. In part, this viewpoint originates from a belief that community information systems are not likely to be sustained by local funders over the long term if they do not consistently produce a stream of practical, beneficial results.

2.   We also thought it essential to include materials oriented to ***a range of audiences, including community residents***. Another NNIP theme has been to emphasize the use of neighborhood data by the residents of distressed communities as a part of their own empowerment. Thus, we seek materials accessible to audiences with little prior experience in using data as well as more experienced practitioners and professionals.

3.   Finally, we recognize the need to be ***creative about finding ways to include enough material in the inventory, but not too much***. For example, we want to include good examples of the use of neighborhood-level data in analyzing housing issues or welfare trends, but not include all of the many excellent studies on these topics at higher geographic levels (for example, state and national studies). However, the workgroup agreed that it would probably be good to list some review articles and other pieces that might link an interested reader to that broader literature. Similarly, we do not want to list every statistics textbook ever written or every GIS guidebook. However, we think it would be wise for us to list one or two exemplary guides on these topics (accessible to non-professional users) and, again, review articles and other materials that could lead someone who is interested to a broader array of resources.

To address the interests of the range of potential audiences likely to have interest in this work, we developed a topical framework for the inventory:

1.   Building and Using Community Information Systems – Orientation

2.   Assembling and Using Data Sources
            2.01 Using existing data sources
            2.02 Collecting and using new data
            2.03 National data sources
            2.04 Data standards and metadata

 3.   Developing Indicators
            3.01 Approach and methods
            3.02 Example neighborhood indicator reports

 4.   Using Community Information Systems for Change—Analysis and Evaluation
            4.01 General approaches to analysis
            4.02 Evaluation
            4.03 Community change analysis – collections of examples
            4.04 Community change analysis – individual reports

5.   Developing Community Information System Technology
            5.01 Hardware
            5.02 Software – general
            5.03 Geographic information systems (GIS)
            5.03 Internet/Web applications

6.   Building Community Information System User Capacity
            6.01 Training - general
            6.02 Engaging and training community residents

7   Building Institutional Capacity for Community Information Systems
            7.01 Building and strengthening local data intermediaries
            7.02 Integrating/strengthening public information systems

        The members of the workgroup, with assistance from CSS Network Coordinator Andrew Reamer, developed the framework above and suggested an initial set of tools and guides to be included in the inventory. This work was presented to the semi-annual meeting of NNIP in November 2003. The NNIP partners offered comments and suggestions for additions that were incorporated in a revised version. The modified inventory paper was then presented at the Community Indicators Consortium conference in Reno, Nev., in March 2004. Comments received at the conference have since been addressed. The workgroup intends that the inventory and assessment will become a "living document," to be updated at regular intervals and presented on the Web sites of the four institutions represented on the workgroup, most importantly on the Fannie Mae Foundation's DataPlace site.

THE INVENTORY

1.   **BUILDING AND USING COMMUNITY INFORMATION SYSTEMS --
      ORIENTATION**

Community and Quality of Life: Data Needs for Informed Decision Making, by The National
      Research Council. Washington, D.C.: National Academy Press, 2002.
      http://www.nap.edu/books/0309082609/html

"University-Community IT Partnerships: Lessons from the UCLA Advanced Policy Institute's
      Projects in Internet-based Mapping and Data Analysis," by Neal Richman, in *Papers of
      the Summit on Technology and Community Development.* Chicago: Living Cities -
      National Community Development Initiative. 2002

*Indispensable Information: Data Collection and Information Management for Healthy
      Communities*, by Peter Tatian. (Part of the Accelerating Community Transformation
      Learning Module Series). National Neighborhood Indicators Partnership Report. March
      2000. www.urban.org/nnip/publications.html.

Building and Operating Neighborhood Indicator Systems: A Guidebook, edited by G. Thomas
      Kingsley. National Neighborhood Indicators Partnership Report. Washington, D.C.: The
      Urban Institute, March 1999. www.urban.org/nnip/publications.html.

Mapping Your Community: Using Geographic Information to Strengthen Community Initiatives, by
      G. Thomas Kingsley, Claudia J. Coulton, Michael Barndt, David S. Sawicki, and Peter
      Tatian. Washington, D.C.: U.S. Department of Housing and Urban Development, October
      1997. www.urban.org/nnip/publications.html.

Charting a Course: Assessing a Community's Strengths and Needs, by Charles Bruner, Karen
      Bell, Claire Brindis, Hedy Chang and William Scarbrough. Des Moines, Iowa: National
      Center for Service Integration. 1993.

*Building Communities from the Inside Out: A Path Toward Finding and Mobilizing Community
      Assets,* by John L. McKnight and John P. Kretzman. Evanston, Ill.: Center for Urban
      Affairs and Policy Research, Northwestern University. 1993. Intro at
      http://www.northwestern.edu/ipr/publications/community/introd-building.html.

2.   **ASSEMBLING AND USING DATA SOURCES**

 2.01   Using existing data sources

"Catalog of Administrative Data Sources," by Claudia J. Coulton with Lisa Nelson and Peter
      Tatian, in *Mapping Your Community: Using Geographic Information to Strengthen
      Community Initiatives,* by G. Thomas Kingsley, Claudia J. Coulton, Michael Barndt, David
      S. Sawicki, and Peter Tatian. Washington, D.C.: U.S. Department of Housing and Urban
      Development, October 1997. http://www.urban.org/nnip/publications.html.

Vital Records: A Source for Neighborhood Indicators, by Claudia J. Coulton.   National
      Neighborhood Indicators Partnership Report. Cleveland: Center on Urban Poverty and

Social   Change,   Case   Western   Reserve   University,   March   1999.
http://www.urban.org/nnip/publications.html.

Public Assistance Records: A Source for Neighborhood Indicators, by Claudia J. Coulton.
National Neighborhood Indicators Partnership Report. Cleveland: Center on Urban
Poverty and Social Change, Case Western Reserve University, September 1999.
http://www.urban.org/nnip/publications.html.

Socioeconomic Data for Understanding Your Regional Economy: A User's Guide, by Joseph
Cortright and Andrew Reamer. Washington, D.C.: Economic Development
Administration. 1998.   http://www.econdata.net

A Guide to the Home Mortgage Disclosure Act, by Kathryn Pettit. Washington, D.C.: Fannie Mae
Foundation. Forthcoming 2005. http://www.dataplace.org

2.02   Collecting and using new data

"Identifying Community Assets and Resources," by Bill Berkowitz and Eric Wadud. University of
Kansas Community Toolbox. http://ctb.ku.edu.

American Statistical Association brochure series on survey research. American Statistical
Association. http://www.amstat.org/sections/srms/whatsurvey.html.

Focus Groups as Qualitative Research, by D. L. Morgan. Newbury Park, Calif.: Sage
Publications, Inc., 1988.

2.03   National data sources (Note: This section lists Web sites that either provide data from national sources directly or link to other sites that do so.)

DataPlace: http://www.dataplace.org. DataPlace provides direct access to several nationwide
housing and demographic data sets and provides an extensive set of links to national
demographic and housing data sources on the Web.

Econdata.net: http://www.econdata.net. Links and guides to a variety of national data sources.

The AmericanFactFinder: http://www.factfinder.census.gov. An electronic system for access and
dissemination of Census Bureau data on the Internet (data tables and maps from Census
1990, Census 2000, the 1997 Economic Census, and the American Community Survey).

FedStats Web site: http://www.fedstats.gov .

DataFerrett, for The Data Web: http://www.thedataweb.org/. A network of online data libraries.
Users Guide: http://www.thedataweb.org/support/user/index.html.
Tutorial: http://www.thedataweb.org/support/DataFerrettTutorial/index.html.

Census Tract Street Locator: http://factfinder.census.gov/servlet/AGSGeoAddressServlet. Find
census tract numbers for residential street addresses.

Census Bureau Geography: http://www.census.gov/geo/www/index.html. Source for Census
2000 maps and boundary files; Relationship Files; Census 2000 TIGER/Line Files;
Census 2000 map series; census tract resources; TIGER Mapping Service Internet
mapping engines; online guides and tutorials.

Landview 6: http://www.census.gov/geo/landview/. The LandView database system allows users
to retrieve and create large-scale maps for Census 2000 statistical areas and contains
EPA Envirofacts data and USGS Geographic Names Information System features.

Geospatial One-Stop: http://www.geodata.gov. Makes it easier, faster, and less expensive for all
levels of government and the public to access geospatial information.

2.04   Data standards and metadata

Metadata Primer: A "How To" Guide on Metadata Implementation, by David Hart and Hugh
        Phillips. National States Geographic Information Council.
        http://www.lic.wisc.edu/metadata/metaprim.htm
Tools for Creation of Formal Metadata in Plain Language, U.S. Geological Survey
        http://geology.usgs.gov/tools/metadata/tools/doc/ctc/
Federal Geographic Data Committee Web site, http://www.fgdc.gov/

3.   DEVELOPING INDICATORS

3.01   Approach and methods

Community Indicators, by Rhonda Phillips. Planning Advisory Service Report 517. Chicago:
        American Planning Association. December 2003.
Success Measures Project: Evaluation That Shows Results.   Boston: Development Leadership
        Network and the McAuley Institute. 2000.
        http://www.developmentleadership.net/smp/manual/toc.htm.
*Community-Level Indicators for Understanding Health and Human Services Issues: A
        Compendium of Selected Indicator Systems and Resource Organizations,* by Deborah
        Gibbs, Research Triangle Institute, and Brett Brown, Child Trends. Washington, D.C.:
        Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health
        and Human Services. September 2000.
        http://www.aspe.hhs.gov/progsys/community/index.html#TOC
Neighborhood Indicators: Taking Advantage of the New Potential, by G. Thomas Kingsley.
        Working Paper. Chicago: American Planning Association, October 1998.
        http://www.planning.org/casey/pdf/kingsley.pdf.
Measures for Community Research. Aspen Institute Roundtable on Community Change Web
        site: http://www.aspenmeasures.org.
*The Community Indicators Handbook: Measuring Progress Toward Healthy and Sustainable
        Communities,* by Redefining Progress, Tyler Norris Associates, and Sustainable Seattle.
        San Francisco: Redefining Progress. 1997.

3.02   Example neighborhood indicator reports

Washington DC Issues Scan, by DC Agenda. Washington, D.C.: DC Agenda. January 2004.
Creativity and Innovation: A Bridge to the Future, by The Boston Foundation. Boston: The
        Boston Foundation. 2003*.* http://www.tbf.org/indicators/shared/news.asp?id=1542
The Wisdom of Our Choices: Boston's Indicators of Progress, Change and Sustainability, 2000.
        by The Boston Foundation and The City of Boston. Boston: The Boston Foundation.
        2000*.* http://www.tbf.org/indicators/shared/news.asp?id=1542.
*Vital Signs for Baltimore Neighborhoods: Measuring Baltimore's Progress Toward Strong
        Neighborhoods and a Thriving City,* by The Baltimore Neighborhood Indicators Alliance.

Baltimore: The Baltimore Neighborhood Indicators Alliance. 2003.
http://www.bnia.org/indicators/index.html

Neighborhood Facts 1999: The Status of Denver Neighborhoods, by The Piton Foundation.
Denver: The Piton Foundation. 1999. http://www.piton.org/default.asp?nav_id=4.

4.   USING COMMUNITY INFORMATION SYSTEMS FOR CHANGE – ANALYSIS AND EVALUATION

4.01   General approaches to analysis

Basic Methods of Policy Analysis and Planning (Second Edition)*,* by Carl V. Patton and David S.
Sawicki. Englewood Cliffs, N.J.: Prentice-Hall. 1993*.*

*Community Mapping: Using Geographic Data for Neighborhood Revitalization (A Tool from the
Equitable Development Toolkit),* by Josh Kirschenbaum and Lisa Russ. Oakland, Calif.:
PolicyLink*.* 2002. http://www.policylink.org/publications.html.

Mapping for Change: Using Geographic Information Systems for Community Development, by
the Local Initiatives Support Corporation. New York: Local Initiatives Support
Corporation. December 2002.

GIS for Housing and Urban Development, by The National Research Council. Washington, D.C.:
National Academy Press. 2003. http://www.nap.edu/books/0309088747/html.

4.02   Evaluation

*New Approaches to Evaluating Community Initiatives: Volume 2: Theory, Measurement, and
Analysis*, edited by Karen Fulbright-Anderson, Anne C. Kubisch and James P. Connell.
Washington, D.C.: The Aspen Institute. 1998.
http://poverty.worldbank.org/library/view/11354.

New Approaches to Evaluating Community Initiatives: Concepts, Methods and Contexts, edited
by James P. Connell, Anne C. Kubisch, Lisabeth B. Schorr, and Carol H. Weiss.
Washington, D.C.: The Aspen Institute. 1995.
http://poverty.worldbank.org/library/view/11345.

Evaluation Strategies for Human Services Programs: A Guide for Policymakers and Providers, by
Adele Harrell with Martha Burt, Harry Hatry, Shelli Rossman, Jeffrey Roth and William
Sabol. Washington, D.C.: The Urban Institute. 1996.
http://evaluationwebsite.org/bja/guide/documents/evaluation_strategies.html

Principles for Evaluating Comprehensive Community Initiatives, by the Association for the Study
and Development of Community. Washington, D.C.: National Funding Collaborative on
Violence Prevention. 2001.

4.03   Community change analysis: collections of examples

Stories: Using Information in Community Building and Local Policy. National Neighborhood
Indicators Partnership Report.   Washington, D.C.: The Urban Institute. Updated March
1999. www.urban.org/nnip/publications.html.

Using Census Data to Help Local Communities: The Census Information Centers at Work, by U.S. Bureau of the Census. Washington, DC: U.S. Census Bureau. October 2003. http://www.census.gov/prod/2003pubs/clo-03cic.pdf.

Using Census Data Effectively, by U.S. Census Bureau. Washington, D.C.: U.S. Bureau of the Census. http://www.census.gov/mso/www/casestudies/.

4.04   Community change analysis: individual reports

Health

Neighborhoods and Health: Building Evidence for Local Policy, by Kathryn L.S. Pettit, G. Thomas Kingsley and Claudia J. Coulton, with Jessica Cigna. Washington, D.C.: The Urban Institute. May 2003*. http://aspe.hhs.gov/hsp/neighborhoods-health03/.*

Housing

Housing in the Nation's Capital 2004, by Margery Austin Turner, G. Thomas Kingsley, Kathryn L.S. Pettit, and Noah Sawyer. Washington, D.C.: The Fannie Mae Foundation. 2004. http://www.fanniemaefoundation.org/publications/reports/hnc/2004/hnc2004.shtml.

Performance measurement

How Effective are Your Community Services?: Procedures for Measuring Their Quality, by Harry P. Hatry, Louis H. Blair, Donald M. Fisk, John M. Greiner, John R. Hall Jr., and Phillip S. Schaenman. Washington, D.C.: The Urban Institute. 1998*.*

Schools/education

Counting on Ourselves. The Providence Demography Initiative/A First Portrait: Schools. The Providence Blueprint for Education and the Providence Plan, 1998. http://www.providenceplan.org/html/info/pdf_pubs/Counting.pdf.

Reading in Hamilton County, by Teletha L. McJunkin and Ione Farrar. Chattanooga, Tenn.: Southeast Tennessee Information Service (SETNIS). January 2004.

Welfare-to work

"Housing, Transportation, and Access to Suburban Jobs by Welfare Recipients in the Cleveland Area," by Claudia Coulton, Laura Leete and Neil Bania, in Sandra J. Newman, ed. *The Home Front: Implications of Welfare Reform for Housing Policy.* Washington D.C.: The Urban Institute Press. 1999. http://www.urban.org/pubs/home_front/.

Exploring Welfare-to Work Challenges in Five Metropolitan Regions, by Margery Austin Turner, Mark Rubin, and Michelle DeLair. Washington, D.C.: The Urban Institute. June 1999*.* http://www.urban.org/nnip/pdf/welfare.pdf

5.   DEVELOPING COMMUNITY INFORMATION SYSTEMS TECHNOLOGY

5.01   Hardware

Hardware resources on TechSoup Web site:
http://www.techsoup.org/howto/articles.cfm?topicid=1&topic=Hardware&cg=nav&sg=hardware.

5.02   Software -- general

Software resources on TechSoup Web site:
http://www.techsoup.org/howto/articles.cfm?topicid=2&topic=Software&cg=nav&sg=soft

5.03   Geographic information systems (GIS)

Geographic Information Systems (GIS) Poster, by U.S. Geological Survey, updated 2001,
http://erg.usgs.gov/isb/pubs/gis_poster/
Geographic Information Systems FAQ, by U.S. Census Bureau
http://www.census.gov/geo/www/faq-index.html
Geographic Information Systems: A Tool for Community Livability, by the Local Government
Commission. http://www.lgc.org/freepub/land_use/factsheets/gis.html.

5.04   Internet/Web applications

Web Style Guide *(2nd Edition)*, by Patrick J. Lynch and Sarah Horton. New Haven, Conn.: Yale
University Press. March 2002. http://www.webstyleguide.com/index.html?/.
Designing Web Usability: The Practice of Simplicity, by Jacob Nielsen. New Riders. 1999
"Internet-based Neighborhood Information Systems: A Comparative Analysis," by Danny Krouk,
Bill Pitkin and Neal Richman, in M. Gursteing, ed., *Community Informatics: Enabling
Communities with Information and Communications Technologies.* Hershey, Pa.: Idea
Group. 2000.
"University-Community IT Partnerships: Lessons from the UCLA Advanced Policy Institute's
Projects in Internet-based Mapping and Data Analysis," by Neal Richman, in *Papers of
the Summit on Technology and Community Development.* Chicago: Living Cities-
National Community Development Initiative. 2002

6.   BUILDING COMMUNITY INFORMATION SYSTEM USER CAPACITY

6.01   Training -- General

Peer Assistance: Emerging Lessons, by the Center for the Study of Social Policy and the EZ/EC
Foundation Consortium. Washington, D.C.: the Center for the Study of Social Policy and
the EZ/EC Foundation Consortium. 2003.
A Beginners Guide to Using Census 2000 Data, by Anthony E. Fairfax. Washington, D.C.: U.S.
Bureau of the Census. March 2002. http://www.censuschannel.com/.

Bureau of the Census, Census Information Centers (CICs) and State Data Centers (SDCs). Offer training to community groups and data users. Check availability at: http://www.census.gov/clo/www/cic.html and http://www.census.gov/sdc/www/

6.02   Engaging and training community residents

Information Is Power: Resident Leadership in Using Data for Social Change, by Terri J. Bailey. Report on a cross-community learning opportunity sponsored by the Annie E. Casey Foundation's Making Connections Initiative and the Urban Institute's National Neighborhood Indicators Partnership, November 13-14, 2003, Denver. http://www.urban.org/nnip/publications.html#community.

Building Community Capacity to Use Information: Framework, by Terri J. Bailey. National Neighborhood Indicators Partnership Report. Washington, D.C.: The Urban Institute. October 1997. http://www.urban.org/nnip/publications.html#community.

Building Community Capacity to Use Information: Four Training Options from the Experience of the National Neighborhood Indicators Partnership, by Terri J. Bailey. National Neighborhood Indicators Partnership Report. Washington, D.C.: The Urban Institute. December 2000. http://www.urban.org/nnip/publications.html#community.

Resident Experts: Supporting Neighborhood Organizations and Individuals in Collecting and Using Information, by Veronika Kot and Charles Bruner. Des Moines, Iowa: National Center for Service Integration. 1999. http://www.cfpciowa.org/npnpreABS.shtml.

7.   BUILDING INSTITUTIONAL CAPACITY FOR COMMUNITY INFORMATION SYSTEMS

7.01   Building and strengthening local data intermediaries

Building and Operating Neighborhood Indicator Systems: A Guidebook, edited by G. Thomas Kingsley. National Neighborhood Indicators Partnership Report. Washington, D.C.: The Urban Institute. March 1999. http://www.urban.org/nnip/publications.html#operating.

7.02   Integrating/strengthening public sector information systems

Neighborhood Early Warning Systems: Four Cities' Experience and Implications for the District of Columbia, by Christopher W. Snow, Kathryn L.S. Pettit, and Margery Austin Turner. Washington, D.C.: The Fannie Mae Foundation. 2004. http://www.knowledgeplex.org/showdoc.html?id=39186

APPENDIX A

APPROACH AND PRELIMINARY NEEDS ANALYSIS

Description of Approach and Framework

Below we discuss our approach for identifying references within each topic area.

1. ***Building and Using Community Information Systems – Orientation****.*

This section includes guides that offer an orientation to the overall subject, or at least a large part of it. Most of the guides cover, at a general level, several of the topics identified in other parts of the framework.   A unifying thread is that all of the guides address data assembly, system building, and applications at the community (neighborhood) level, rather than for higher levels of geography.

2. ***Assembling and Using Data Sources****.*

This topic covers guides to assembling and using data. The first subcategory is labeled "using existing data sources."   Most guides listed in this subcategory were prepared under the auspices of NNIP. A particularly valuable entry here is the comprehensive catalog of administrative data sets typically available for local use, prepared by Coulton et al (1997). Two others (also by Coulton, 1999) relate to using specific data sources: vital records and public assistance files. A series of other guides could be prepared, dealing with other files typically available and useful at the local level; for example, assessor's records, building permit data, or files on demolitions and vacant properties. The Fannie Mae Foundation is planning a series of guides on data sources scheduled for inclusion in DataPlace. Most important in the short term is a guide on using the Home Mortgage Disclosure Act (HMDA) data files for various local purposes.

The second subcategory focuses on guides to collecting and using new data. Although the availability of administrative data sets is expanding, many applications in community improvement work will always require types of information that administrative sources cannot provide and that must be obtained from local surveys, systematic observation of changes in physical conditions, or qualitative (ethnographic) work. Entries in the current inventory are just a few examples of guides to such data collection activities. We believe there are other examples that offer useful guidance on doing this work *at the community level,* and we hope to get suggestions for additions to this subcategory. However, this is an area in which it would be easy to add too much. For example, a vast literature exists on how to design and conduct

surveys. This inventory should link to that literature, but include directly only a selection of those items that are likely to be most valuable for community-level users.

The third subcategory is unlike all other sections of the inventory. Whereas all of the other categories list reference documents, this one contains Web sites that either provide data from national sources directly or link to other sites that do so.

The fourth subcategory includes materials related to data standards and definitions of variables and sources. Only three basic guides about metadata (that is, data about data) are listed at this point.

3.   *Developing Indicators*

The development and use of community indicators deserves a special place in this review – one separate from the use of local data in specific policy analysis and community development applications. Intermediaries in a number of American cities now regularly update a comprehensive set of indicators on numerous aspects of community well-being. Most of these indicators are citywide measures, but intermediaries in some cities have brought comprehensive indicator systems down to the neighborhood level.

The current inventory lists only a few documents under the topic of general approach and methods, and these are partial and out of date. The most interesting recent works are in the second subcategory that lists examples of indicator reports prepared by NNIP partners in Boston, Baltimore, and Denver. We believe there is a need for a new guidebook documenting these and other NNIP experiences in using indicators.

4.   *Using Community Information Systems for Change — Analysis and Evaluation*

The first subcategory in this group covers "general approaches to analysis." This is another area where we want to include only a selection of the best and most accessible items. A few are included now, but we still seek recommendations for a few more items to include this subcategory.

The second subcategory, which focuses on evaluation, is similar to the first. The items presently listed include one general but well regarded "overview" guide to the topic of evaluation (Harrell et al, 1966) and several other guides that focus on evaluation of community initiatives. Missing are guides specifically focused on how to use community information systems in community evaluations and reports on good local evaluations that have done so.

The remaining subcategories are meant to include examples of how local researchers, practitioners, and community groups have "put it all together" to address different substantive

topics; that is, used data from community information systems and other sources in analyses to support local policy development, strategic planning, and community development. A huge number of good policy analysis reports and articles exist in each of these topic areas. Here we include only those that have used neighborhood-level data as the focus of the work and that are local in nature (analysis of one urban or rural area or comparative analyses of several such areas).

5.   *Developing Community Information System Technology*

The first two subcategories (on hardware and software generally) only offer links to other resources on these topics via the TechSoup Web site. We think there is a need for a report (not yet written to the best of our knowledge) on the specific hardware and software used by existing community information system managers. However, we do not expect to add much more to these subcategories.

The third subcategory presents only three very basic references on GIS, and thus we believe additional resources on GIS software packages need to be identified. The fourth subcategory relates to the rapidly changing area of Internet and Web applications.

The most important elements for the first three subcategories will continue to be links to other resources that will be updated in the future by others. We do not plan to directly list references related to individual hardware and software advances.

6.   *Building Community Information System User Capacity*

Through NNIP we have observed a growing number of instances where neighborhood residents (not just professionals) are using data to design their own improvement efforts and motivate change in external policies. Terri Bailey of the Piton Foundation (NNIP's partner in Denver) has already developed initial guides on these topics as listed in the present inventory. We suspect, however, that other relevant training curricula may be available that have not yet been identified.

7.   *Building Institutional Capacity for Community Information Systems*

The first topic in this category relates to local data intermediaries. NNIP has recognized that much of the work needed to help communities effectively use information for change cannot be done by individual community development corporations or neighborhood associations one-by-one. There is a need to develop local data intermediaries like the NNIP partners and other community information system managers who can assemble and integrate local data systems and then facilitate the use of those data by grassroots organizations. Only one guide on this topic is available (Kingsley, 1999), and it is now out of date, covering the experiences of only the first six NNIP partners. There is a clear need to update this guide, and members of the NNIP

executive committee have begun work on an expanded document that describes NNIP's Elements of Practice more completely and that should be completed in 2005. Beyond that, there will be need for more detailed guides on specific topics (for example, managing organizational relationships for community information systems and sustaining financing for operations).

The second topic is guidance on integrating/strengthening public information systems. The CSS Workgroup on "the next generation of CSS," headed by Joseph Ferreira of the Massachusetts Institute of Technology, is focusing on this topic, and its products will be listed in this section of the inventory as they emerge.

Assessment: Identified Resource Gaps

It is clear that a considerable amount of information is already available to guide those who want to build, operate and apply community information systems. However, there are important resource gaps. Furthermore, the state of the art is advancing rapidly, in terms of applications as well as technical potentials. We are aware of a number of recent efforts that probably are yielding innovations, but which have not yet been documented, and we suspect there are other efforts of which we are not aware.

Interestingly, in feedback received to date on resource gaps, the most frequent request is not for help with information technology issues. Rather, it is for more practical guidance on how to apply data effectively to develop sound strategies and to actually change policies, programs, laws, and processes.   However, there also is interest, particularly among NNIP members, in technical developments related to Web applications. Another recurrent theme is the need to translate some of the currently available guidance into more accessible forms such as Web-based learning modules. Suggested needs by category are as follows:

1. Building and Using Community Information Systems – Orientation
   - None, except possibly an updated overview after some other items listed below are complete.

2. Assembling and Using Data Sources
   - Guides on using newly available individual national datasets (for example, those guides being developed for DataPlace and the Urban Markets Initiative).
   - Update of Claudia Coulton's 1997 *Catalog of Administrative Data Sources.*

3. Developing Indicators
   - Review of experiences in recent prominent neighborhood indicator projects (for example, Boston and Baltimore), with lessons and recommendations for the field.

4. Using Community Information Systems for Change—Analysis and Evaluation
    - More case studies (stories) of experiences where small area data have been used successfully to actually change policies, programs, laws, and processes.
    - Weaving together such stories into a guidebook on using data effectively for advocacy.

5. Developing Community Information System Technology
    - Guides on developing/using Web technology in general.
    - Guide on using DataPlace.
    - Guide for local data intermediaries on developing their own Web sites.

6. Building Community Information System User Capacity
    - Translating materials from other guides into easily accessible training curricula (including Web-based distance learning modules).

7. Building Institutional Capacity for Community Information Systems
    - Documentation of how more NNIP partners do what they do (update of current guide that covers experiences of only six of the 21 partners).
    - Guides on new challenges (for example, maintaining capacity over time, fund-raising).
    - Guide on the potential of using DataPlace as a "starter kit" in a new city.

This list is only suggestive at this stage. More complete listings and consideration of priorities will be incorporated after the inventory has been reviewed by more audiences.