15th Annual GOLD/GALILEO Users Group Conference

Diving for Data:
Using Demographics for Strategic Planning

Presented by

Marc Futterman, CIVICTechnologies

maf@civictechnologies.com/888.606.7600

Introduction

Welcome

- **Handout**

- **Presentation**

- **Q & A**

- **Show of hands**
  - **Directors**
  - **Assistant directors**
  - **Technologists**
  - **Branch managers**
  - **Librarians**
  - **Reference desk**
  - **Outreach**
  - **Development**
  - **Others**

Objectives

- **Introduce GIS**

- **Demonstrate how GIS works with data**

- **Examples of GIS in action**

Civic Technologies…who we are

- **Pasadena, California based GIS company**

- **Service oriented, decision support software**

- **Focus on public libraries and selected public agencies and consumer product companies**

- **Develops**
    - **Customized applications**
    - **Web services**

- **ESRI authorized business partner**

- **Background in urban and regional planning and community consensus planning processes**

CIVICTechnologies library customers

- **Customized applications**
  - **County of Los Angeles Public Library**
  - **Smiley Library, City of Redlands, California**
  - **Glendale Public Library, California**
  - **San Diego Public Library**

- **LibraryDecision**
  - **Forsyth County Public Library, Georgia**
  - **Gwinnett County Public Library, Georgia**
  - **County of Los Angeles Public Library**
  - **Houston Public Library**
  - **Harris County Public Library, Texas**
  - **Orange County Library System, Florida**
  - **San Jose Public Library**
  - **Solano, Napa and Partners, California**

Introduction to GIS

GIS: decision support software

- ## GIS
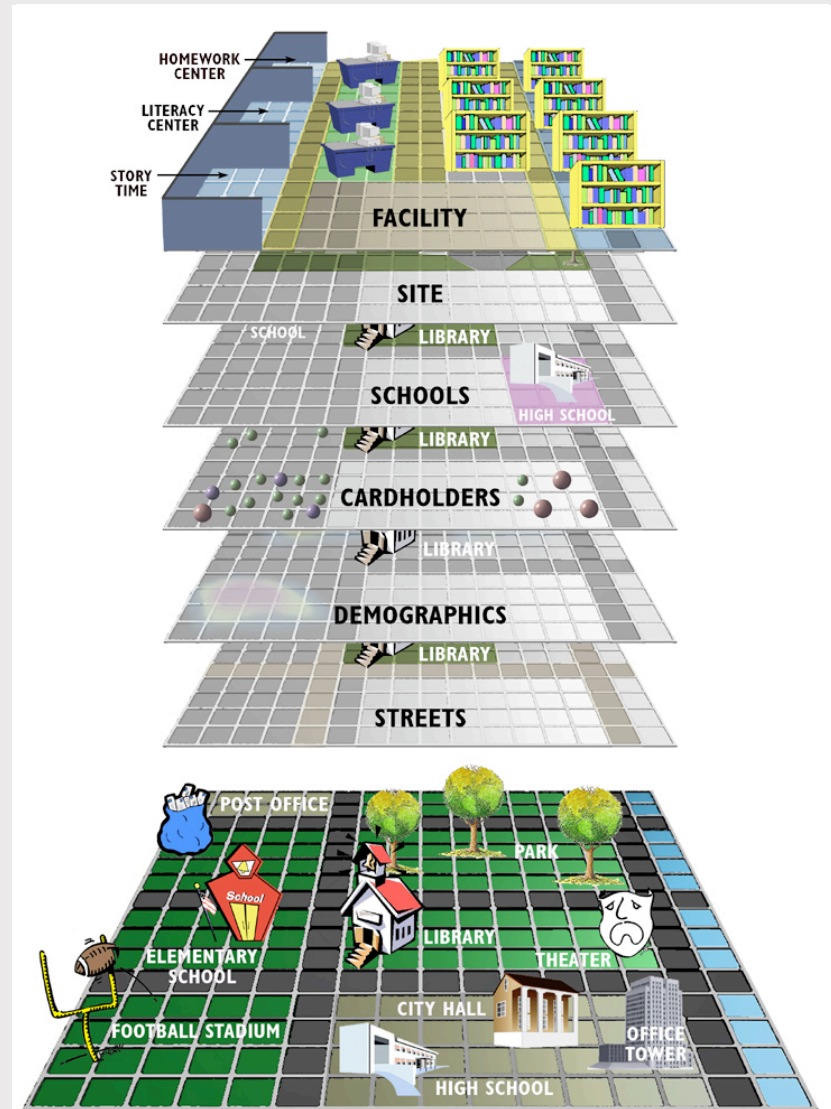 - **Geographic information systems**

- ## Method
  - **To visualize, manipulate, analyze, and display data by layers**

- ## Accurate
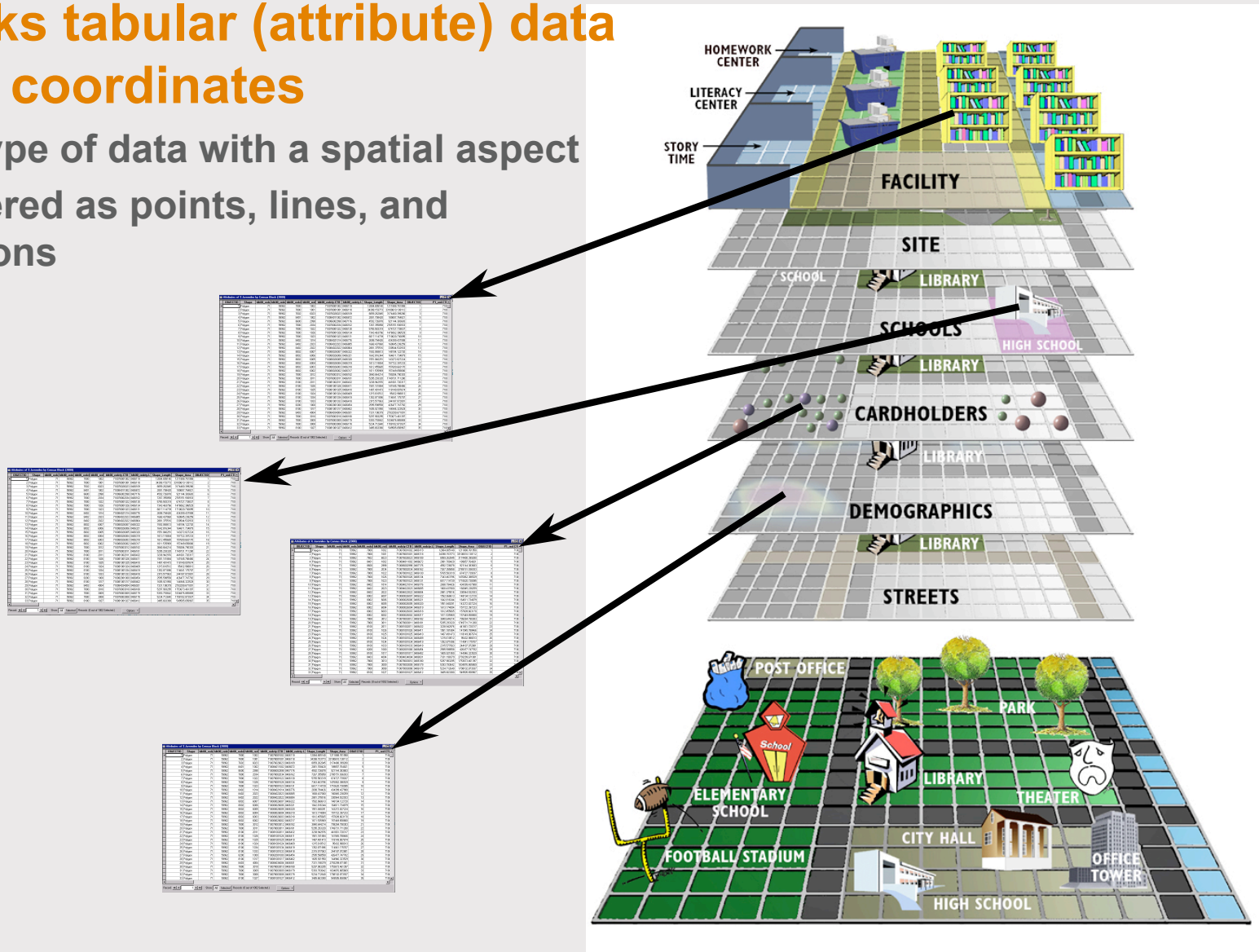 - **Translates data into real world latitude and longitude**

- ## Results
  - **Smart maps that enable visualization of relationships and scenarios previously unimaginable**

GIS: data the source

- **GIS links tabular (attribute) data to map coordinates**
  - **Any type of data with a spatial aspect**
  - **Rendered as points, lines, and polygons**

Purpose of GIS

- **Serving professional staff planning and management functions**

- **What question do you need answering?**

- **What problem do you need solved?**

- **Objectives**
  - Deliver more effective public services
  - Provide information to make better informed decisions
  - Build consensus faster
  - Allocate resources more wisely
  - Implement organizational changes more quickly
  - Get everyone on the same page

- **What GIS does**
  - Measures the geography of use over time
  - Helps you figure how to best meet community needs by deploying the right resources to the right places

Types of GIS

- **Customized application or GIS project**
  - **Desktop based**
  - **Must be customized**

- **Web service**
  - **Web based**
  - **Standardized service can be customized**
  - **Key issue: managed hosting**

- **Future: server-based web service**
  - **Like a web service**
  - **Standardized service can be customized**
  - **Very powerful and robust**
  - **Key issue: managed hosting**

Implementing a GIS

- **Do it yourself**
  - **GIS project application**
  - **Disadvantages**
    - **High cost and learning curve for creating a "GIS startup"**
    - **Lose focus on library services**
  - **Minimum cost: $23,500**
    - **Staff time (40%)$16,000 +**
    - **Training $2,500 +**
    - **Data $2,500 +**
    - **Software $2,500 +**

- **Assign to a sister agency**
  - **GIS project application**
  - **Disadvantages**
    - **Lose time and control**
    - **Costs must still be expended**
    - **"They" don't get libraries**
    - **Not customer oriented**

- **Outsource**
  - **GIS project application**
  - **Web service**
  - **Advantages**
    - **Saves staff time and energy to remain focused on delivering library services, not GIS services**
    - **Cost effective**
    - **Obtain our analytical and interpretive insights**
    - **No startup learning curve or cost**
    - **Timely results**
    - **Customer oriented & service**

GIS software platform

- **ESRI "serves" 50% of the $1.2 billion GIS software market**

- **Other players include Autodesk, Microstation, Intergraph, MapInfo, Microsoft Map**

- **Not to be confused with GPS (global positioning systems) which also use GIS**

- **Approach**
  - **Open and interoperable**
  - **Secure**
  - **Data integrity**
  - **Scalability**
  - **Supports relational data base management system integration**

ESRI software: a type for every platform

- **Desktop based**
  - ArcGIS with ArcMap, ArcCatalog, ArcInfo, ArcView, ArcToolBox
  - Analytical extensions

- **Server based**
  - ArcGIS Server for corporate environments

- **Reader**
  - Client reader of served data (like Acrobat)

- **Internet-delivered**
  - ArcIMS (Internet Map Server)

- **Database integration**
  - Fully RDBMS compliant
  - ArcSDE (Spatial Data Engine)

- **Mobile based**
  - ArcPAD

Angela Lee, Minneapolis
  - *ESRI's vertical marketing manager for libraries*
  - *Get to know her*
  - *alee@esri.com*

Other public agency GIS applications

- ## Other agencies using GIS
  - **Public works**
  - **Emergency services (police, fire, 911, etc.)**
  - **Transportation**
  - **Planning, growth management, and community development**
  - **Health care**
  - **Environmental**
  - **Economic development**

- ## Libraries are late to the party

Evolving GIS delivery models

- **GIS model of use in public agencies: like the old secretarial pool**
  - Go to the in-house expert for expertise
  - But their expertise is in GIS or public works or planning or transportation, NOT libraries

- **Our objective is to get rid of the middle-person and put GIS directly in the hands of the library experts: you**
  - Just like the ILS companies put tools in your hands
  - Just like the search engine companies put tools in your hands

- ✓ *Our goals is teach you how to use the GIS we offer as a web service, then get out of your way*

Library applications

- **Focus on planning and management**

- **Viable across any scale as standalone or integrated**
    - State
    - Region (consortium/cooperative)
    - County
    - City
    - Township
    - School district
    - Neighborhood

- **Uses a range of data**
    - Just about anything that can have a spatial attribute

Data sources

Census data and geography

- **Tracts > block groups > blocks**

- **Census 2000 SF1 and SF3**
  - **Population, age, ethnicity, households, income, work, language spoken, education, occupation, and more**

Many blocks actually follow the street grid and describe the local city block.

Others are larger.

Example of census tracts

Example of census blocks
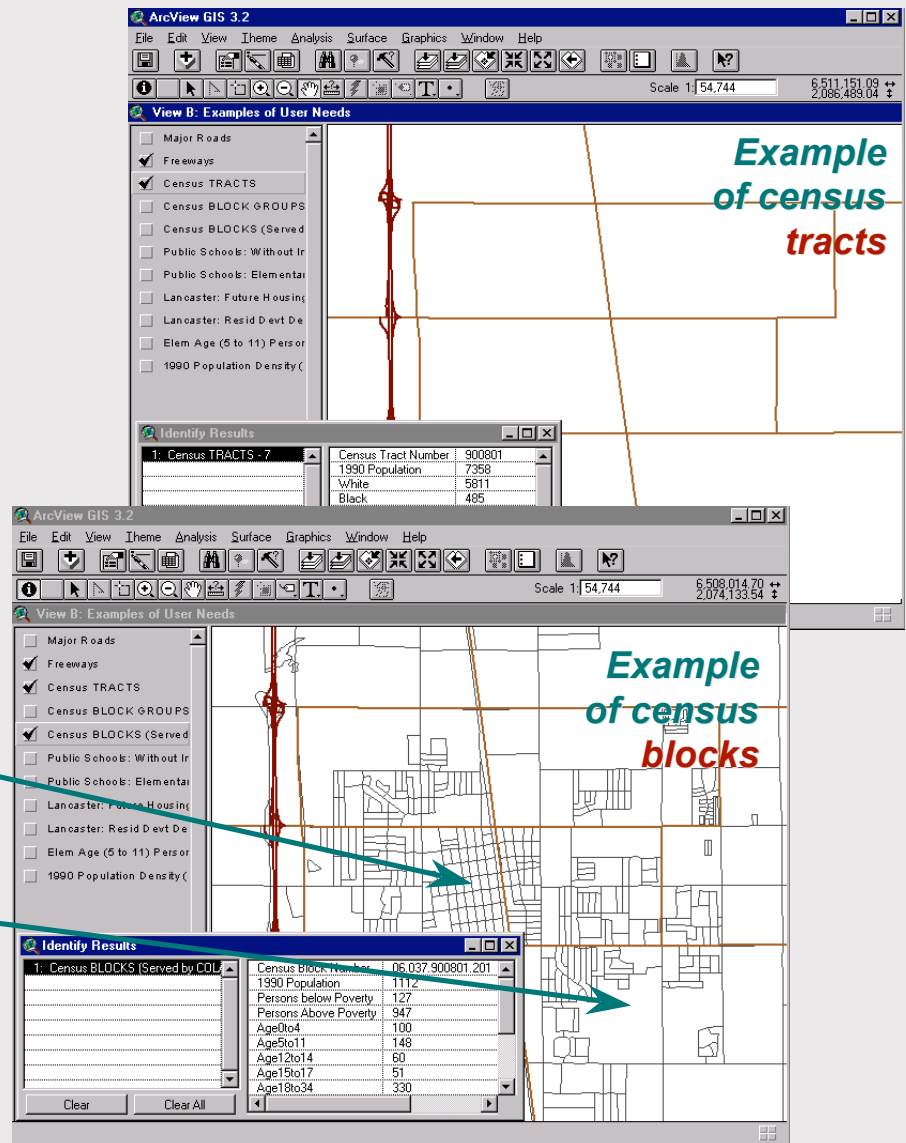
Other non-library data

- **Geographic data**
  - **National data providers**
    - **TeleAtlas**
    - **ESRI**
  - **Data includes freeways, major roads, local streets, railroads, landmarks, lakes and rivers, political subdivisions, administrative entities, special districts, zip codes, and more**

- **School data**
  - **Local data provided by NCES or state and local school districts**

- **Current year estimate of population**
  - **From U.S. Census Bureau or your state**

- **Population projection**
  - **Based upon prior census counts, current year estimates, and Federal State Cooperative Population Projection Program**

Possible indicators

- **Measures library services in relation to the population served, ideally by branch service area**

- **Basics**
  - **General information**
  - **Holdings**
  - **Usage**
  - **Facilities**
  - **Computers**
  - **Operations**
  - **Turnover rate**
  - **Circulation rate**

- **Cardholder use tracking**
  - **Penetration rate**
  - **Checkouts**
  - **Proportion of items borrowed by service area**

- **Facility use tracking**
  - **Programs and audience**
  - **Gatecount**

- **Prospective cardholder tracking**
  - **Segmentation analysis**
  - **Opportunity rate**
  - **Conversion rate**

Examples of GIS in action

Some examples of what's possible

- **Desktop GIS**
  - **Patron use analysis**
    - **Smiley Library, City of Redlands**
  - **Proportion of items borrowed**
    - **Glendale Public Library**

- **Web service: LibraryDecision**

  A web service that utilizes state of the art GIS to analyze and visualize the relationships between community needs and library resources in order to deliver more effective library services.

Cardholder analysis example

- **Example: Smiley Library in the City of Redlands, California**

  - **Customized GIS forms the basis for what we created in LibraryDecision**

  - **Redlands is in San Bernardino County 60 miles east of Los Angeles**

  - **There is one library serving 70,000 people in a city of approximately 35 square miles**
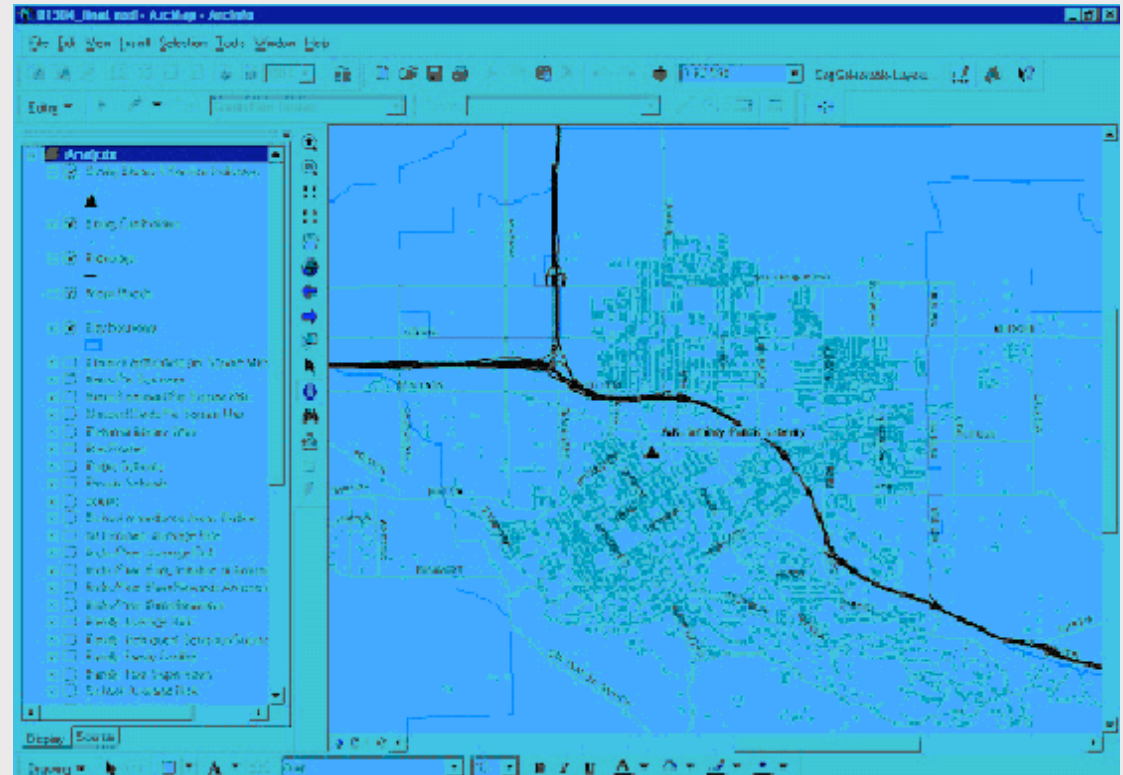
Cardholder analysis basic data

- **Map shows geocoded locations of cardholders at a given point in time**

- **The map appears to show that cardholders are evenly distributed throughout the city**

- **As indicated in the Identify Results window, each dot on the map represents a cardholder address (red oval). The number of items borrowed for each cardholder is attached to that record (blue oval).**
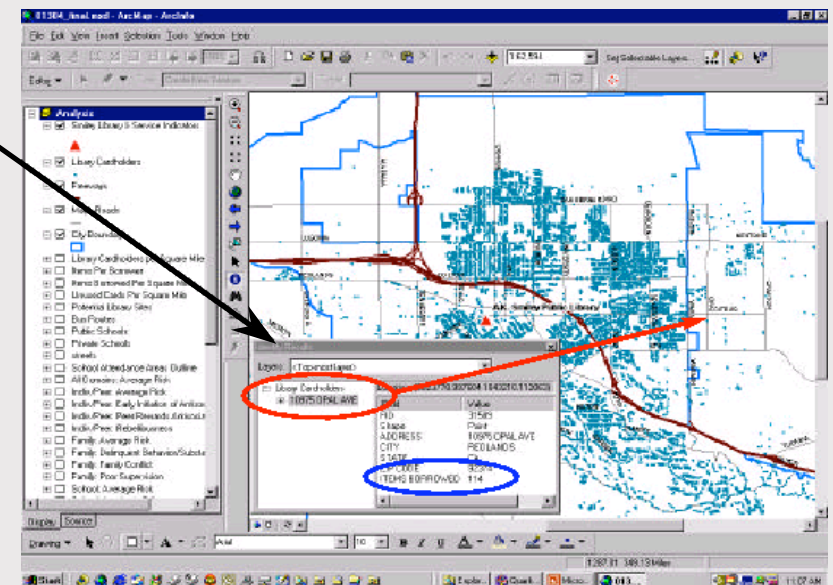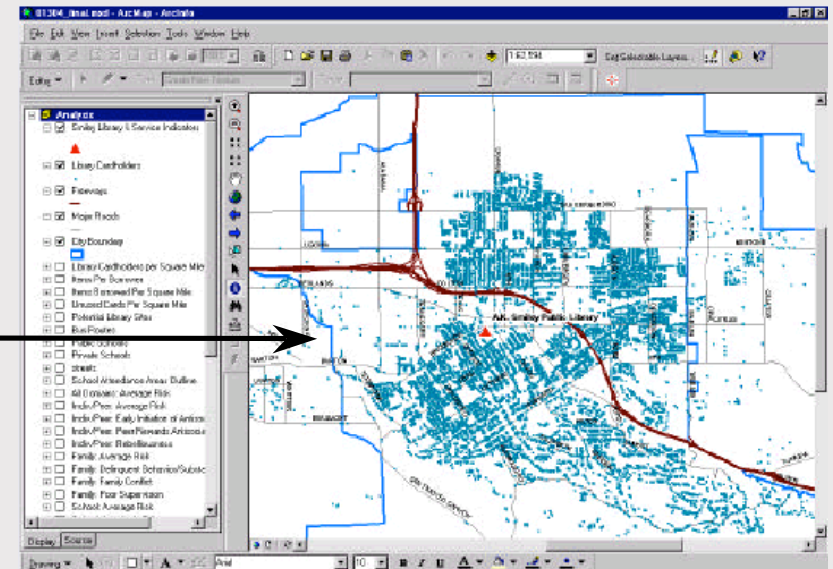
Cardholder density

- **This map shows cardholder density in three poles:**

  - **North Redlands**
  - **Southeast Redlands**
  - **East Redlands**

- **The highest density of cardholders live in the areas represented by the darkest color, while the lower density is represented by the lighter colors**
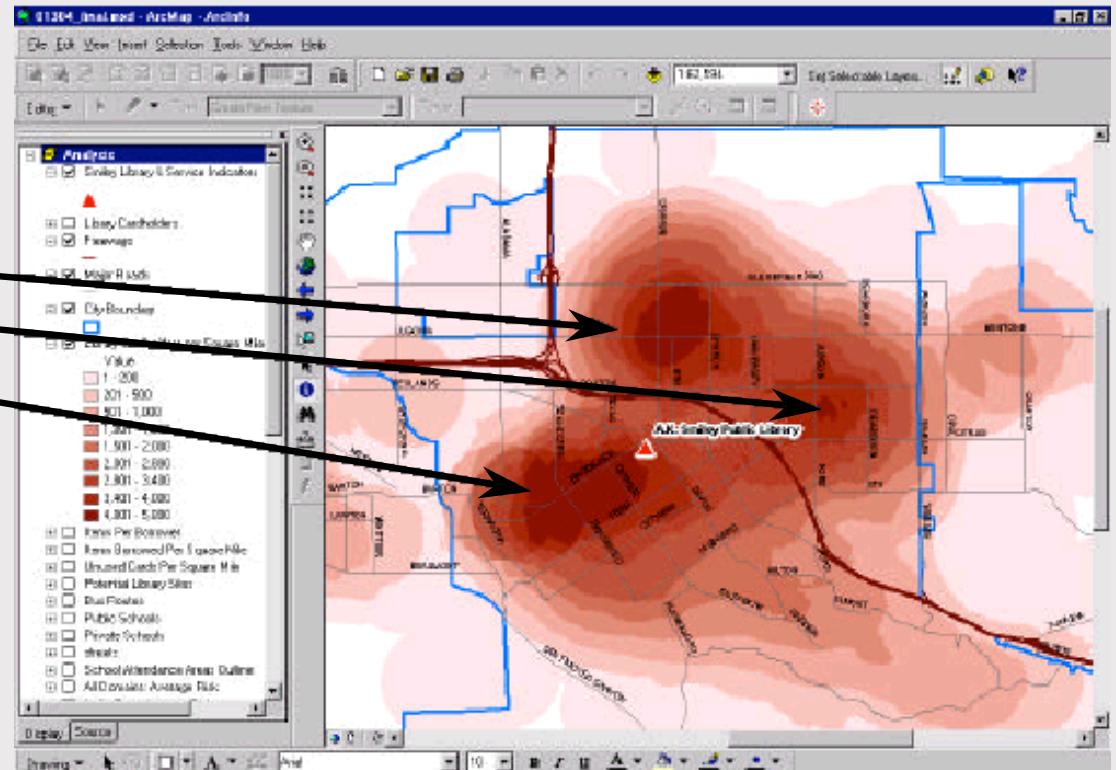
Density of unused cards

- **While the previous map seemed to indicate a significant number of users in north Redlands, this map actually the area with the highest density of cards with zero checkouts**

- **Based upon demographic analysis and community workshops, this area has a large at risk youth population who receive library cards at school but don't use them**

- **This map indicates the locations that should be targeted to youth and families, including language and literacy training, career development, homework support, and bibliographic instruction.=**
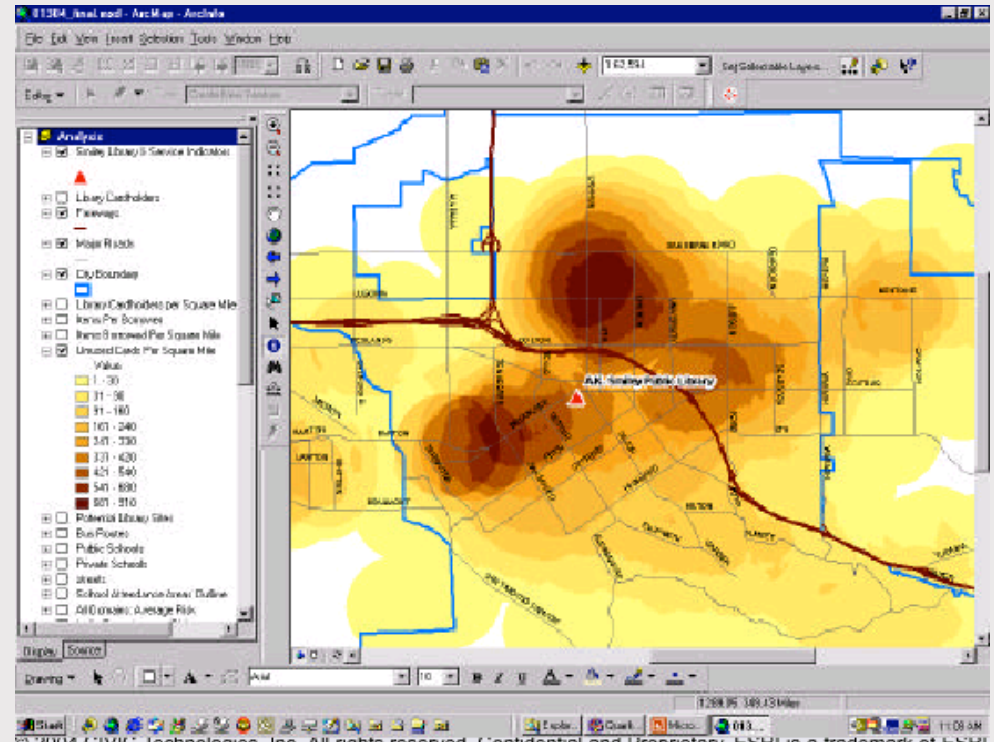
LibraryDecision

Some examples of what's possible

- **Web service: LibraryDecision**

  A web service that utilizes state of the art GIS to analyze and visualize the relationships between community needs and library resources in order to deliver more effective library services.

Empower directors and staff…

…with the information they need to:

- **Focus collections development**

- **Strengthen advocacy planning**

- **Improve community outreach**

- **Support grant applications**

- **Calculate service indicators**

- **Evaluate service delivery in relation to the organization's own planning guidelines**

- **Plan new facilities**

- **Identify and select potential library sites**

Features

- **State of the art GIS tool set**

- **Data and updates**

- **Unlimited number of simultaneous users**

- **Available almost 24/7 from any desktop computer running Internet Explorer**

- **Unlimited amount of use**

- **Easy to use interface**

- **Easy to get started**

- **Administrator and user training**

- **Technical support**

Types of users

- **Regular users**
  - **Access to all features and functions**
  - **Except those reserved for the Administrator**

- **Administrator**
  - **Only one**
  - **Manages LibraryDecision**
    - **Update data**
    - **Create service areas**
    - **Manage users (usernames and passwords)**
  - **Intermediary with CIVICTechnologies**

Logon

- **Go to www.librarydecision.com**

- **Type in username and password**

- **Click Login**

- **Delivered to the Welcome Page**

- *See your LibraryDecision Administrator for your logon credentials*
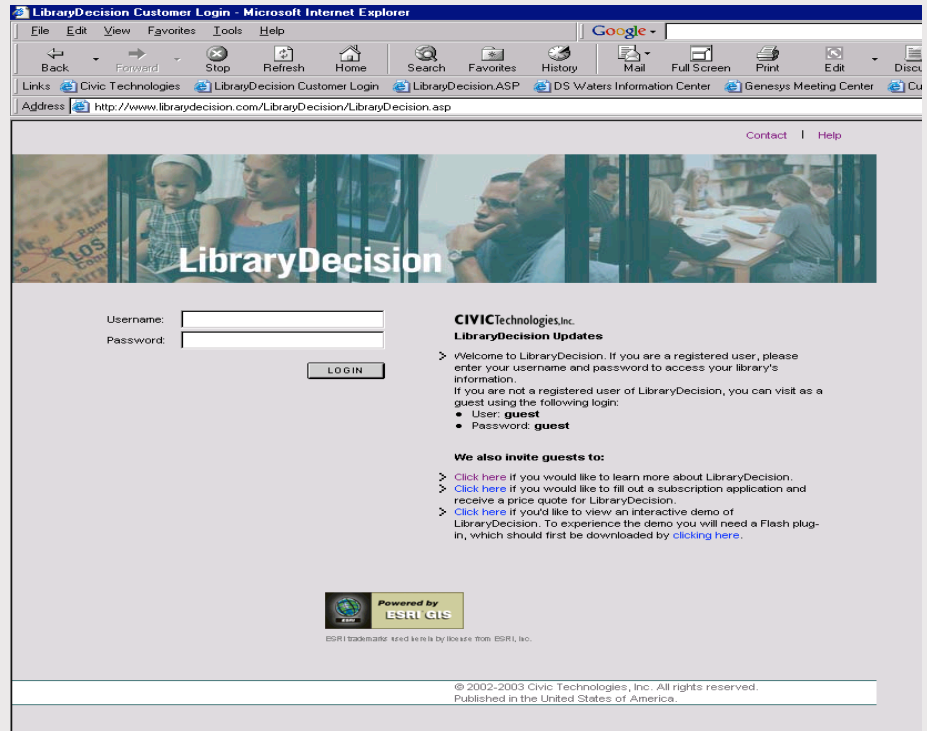
Welcome page

- **Customized**
  - **With the name of each user**

- **Messages**
  - **Posted by Administrator to communicate application issues with each user**

- **Contact your Administrator**
  - **Email access**

- **General information**
  - **Reporting period**
  - **Current year population estimates**
  - **Projection year population projection**

- **District statistics**
  - **Summary**
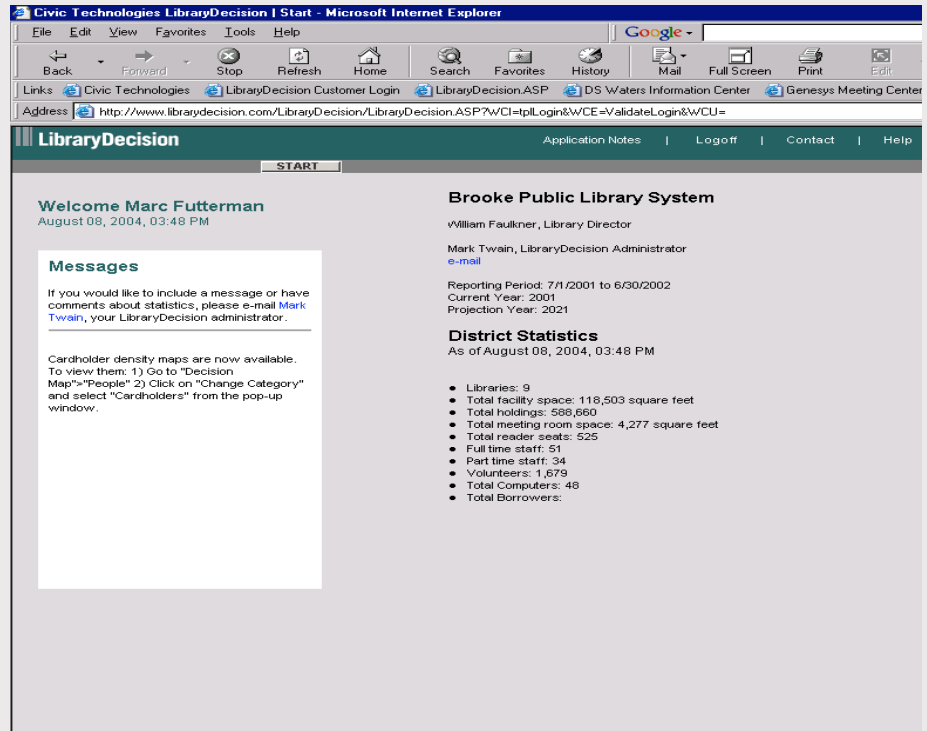
Map interface basics

- **My Library/Our Organization**

- **Map layers**

- **Map window**

- **Modules**

- **Map information**
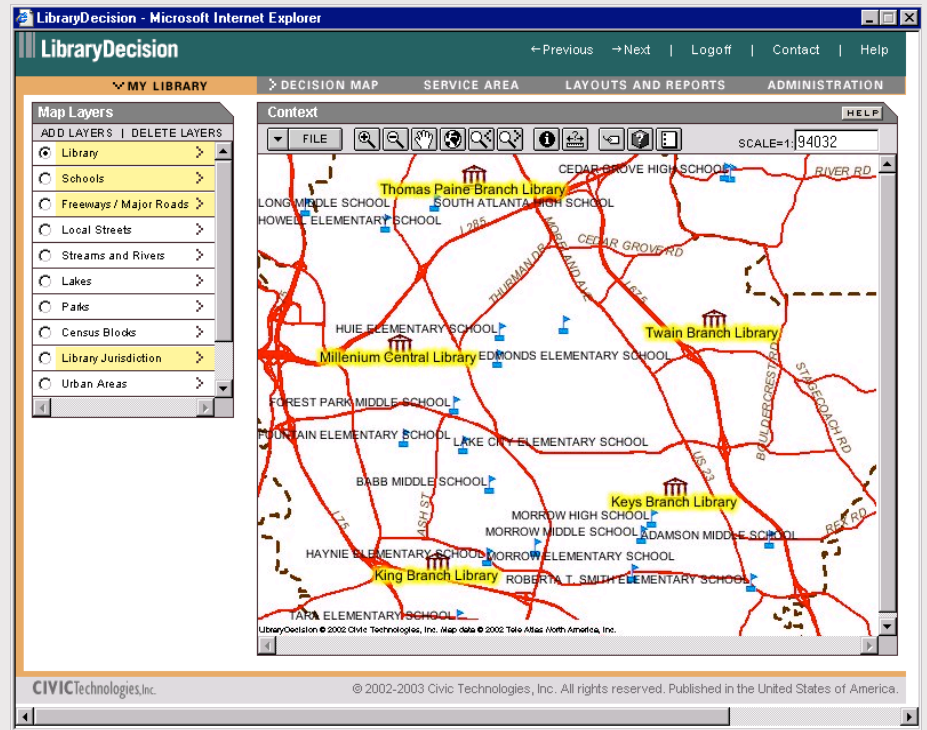
Modules

- **Functional groups or feature sets**
  - **Includes sub-modules**

- **Decision Map**
  - **Context**
  - **People**
  - **Measures**

- **Service Area**
  - **Characteristics**
  - **Service indicators**

- **Layouts and Reports**
  - **Map layout**
  - **Create report**

- **Administration**
  - **Feedback**
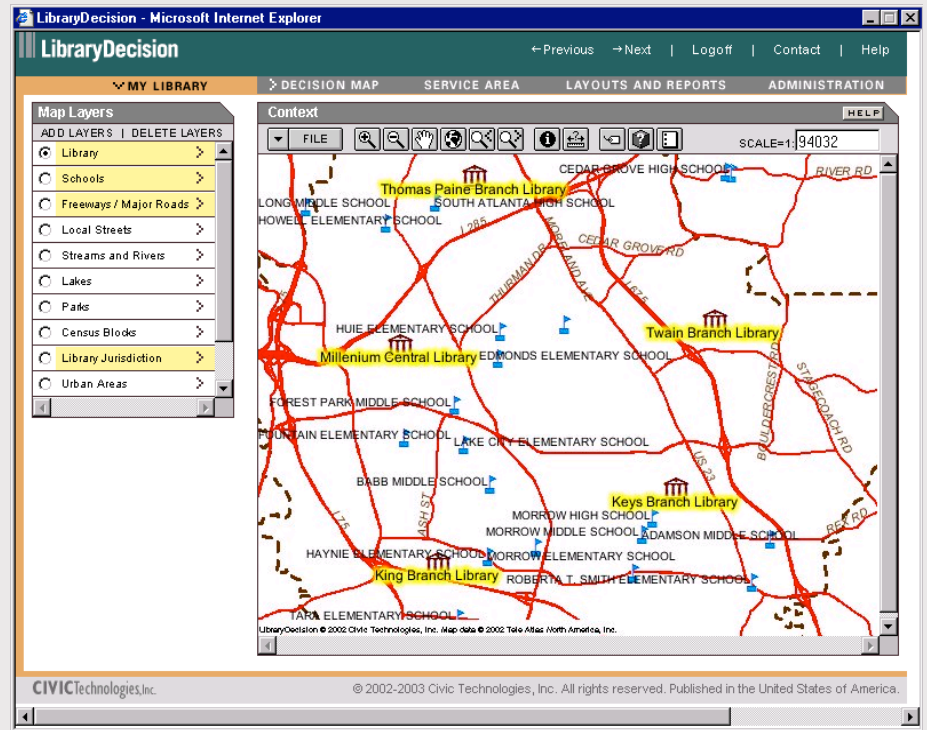
- **LibraryDecision Administrator has additional tools to:**
  - **Define service areas**
  - **Manage users**
  - **Update data**

Context Map: Stored Query feature

- **A tool to search census blocks for population characteristics**

- **Select the question mark** **button**

- **Choose a stored query**
  - Data can either be normalized (percent of the total population)   or the actual number
  - Up to three queries can be strung together
  - Example: "find blocks with more than 15% senior citizens 65+ from Census 2000"

- **LibraryDecision returns in blue the census blocks that meet your criteria**
  - In this case, there are more seniors living around the King, Keys, and Twain branch libraries
  - Where would you concentrate your senior materials and programs?

- **Select the Clear button   before going onto other things**
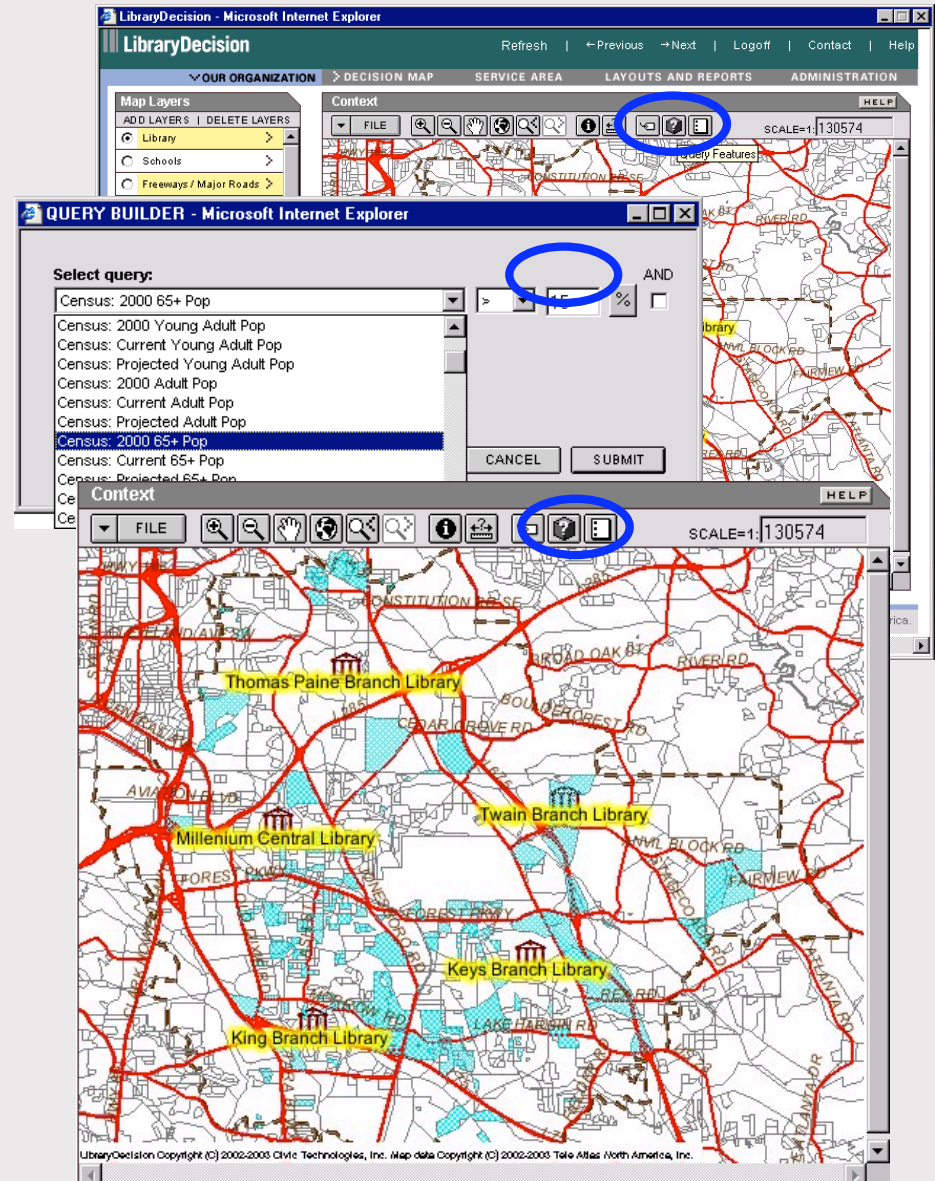
Service areas for quantifying existing conditions

- **The single most important feature in LibraryDecision**

  - Defines the spatial extent of the community that uses each outlet, and in doing so also define the demographic characteristics of those communities

- **Administrator interactively defines service areas with user input**

- **Each service area is produced by aggregating a group of adjacent census blocks into a single "polygon"**

  - Service area boundaries are always coincident with the boundaries of the census blocks they contain (cannot split a census block)

- **By selecting Identify Results and clicking on a service area, LibraryDecision automatically aggregates and reports all the census data for that service area**

Service indicator default values

- **Default values for each of the six indicators are set by the LibraryDecision Administrator under the Administration module**

- **These values can be changed on the fly by each individual user to understand the implications of changing guidelines**

- **Enter the new guideline and press Apply**

- **Press Default and Apply to return to the default value**

My Library service indicators

- **Because LibraryDecision knows the current and projected population, we calculate for each outlet for each of the six indicators the resources needed today and 20 years out**

- **For example**
  - **Keys library is 5,267 s.f., or 0.181 s.f. per capita**
  - **At the guideline of 0.65 square feet the library should have 18,953 s.f. today and more than 36,000 s.f. 20 years out**
  - **Testing an alternative, reducing the guideline to 0.5 s.f. per capita, the library should have 14,579 s.f. today and 27,700 s.f. 20 years out**

Log off

- **Congratulations on completing your first LibraryDecision session**

- **Come back often and let us know your questions and ideas for product improvements**

LibraryDecision

Marc Futterman has successfully logged off LibraryDecision
Click anywhere to close this window

May 27, 2003, 05:59 PM

I have always imagined that Paradise will be a kind of library.

--Jorge Luis Borges