Community Inclusion in Colorado

A Mapping Project for Emergency Preparedness and Response

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“understanding that HUMAN ENERGY is the currency of social change...does not simply open the process of change to all; it also removes the prerequisites for action, meaning that productive change can begin anywhere, at any time.”

“Improving the quality of life for a community starts by strengthening successes already operating.”

- Taylor, Taylor & Taylor. Empowerment on an unstable planet: From seeds of human energy to a scale of global change

Human Energy
Community Inclusion in Colorado

Vulnerability → Inclusion

• Past Projects
• Understanding Barriers
• Culture Change
• New Data
• Recent Colorado Disasters

The Perfect Storm
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In 2006, maps and shapefiles were created using 2000 U.S. Census data and Colorado healthcare sources:

- Households below poverty level
- Race and ethnicity
- Refugee status by nationality, birth country, or language
- Primary language spoken other than English
- Language Isolation
- Households on public assistance
- Households using public transportation vs. car
- Location of healthcare facilities

Past Mapping Projects

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Limitations to early mapping of this kind of data:

- Difficult to share, bulky shapefiles
- Not interactive, PDFs to enable sharing
- Limited data available
- Interest in community mapping by broad groups not widespread.
- Lack of awareness or connection between different groups for sharing resources

Understanding Barriers
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- Whole Community Inclusion
- Access and Functional Needs (C-MIST) and Influencers (Economics, Isolation)
- Social Vulnerability Index (ATSDR - CDC)

Cultural Change in Emergency Planning

Socio-Demographic Data Utilization in Public Health
Community Inclusion in Colorado

- Map where things are
- Map quantities
- Map densities
- Find out what is inside
- Find out what is nearby
- Model change over time
- Disease Surveillance
- Risk Analysis
- Health Access and Planning
- Community Health Profiling
- Built Environment
- Crisis Management

GIS Connect People to Data and People to People

Community Inclusion in Colorado

Health Equity & Environmental Justice Collaborative (CDPHE)

- Inventory of Health Outcome, Socio-Demographic, and Environmental Facility Data to inform community-based activities
- Internal Map Viewer
- Inform Permitting and Grant Processes
- What data do we have that local health and environmental health agencies need?

Collaborative Efforts
### Community Inclusion in Colorado

- Jurisdictions
- Socio-Demographics Estimates
- Disability Rates
- Road Networks
- Fire Boundaries
- Flood Zones
- Emergency Responders
- Planning Policies
- Disease Tracking
- Health Agencies
- Health Care Facilities
- Physicians/Pharmacies
- Improve Resource and Information Communication
- Inform Emergency Planning
- Assess Community Inclusion Factors
- Inform Community Health Assessment
- Measure Health Burden
- Model Changes over Time
- Study Interaction with Environmental Exposures and Built Environment
- Inform Health and Planning Policies

Good Location Data Improves our Ability to Make Decisions

### Community Inclusion in Colorado

- American Community Survey functional data
- CDPHE Health Facilities
- Assistive Technology Partners’ Service Providers and Community Organizations

New Data for Functional Communities
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- 2007 Holly Tornado
- 2008 Salmonella Outbreak
- 2012 High Park and Waldo Canyon Wildfires
- 2012 Aurora Theater Shooting
- 2012 High Park and Waldo Canyon Wildfires
- 2013 Black Forest Wildfires
- 2013 Colorado Floods

Recent Colorado Disasters

Community Inclusion in Colorado

- A simple, easy-to-use, online tool of Colorado data
  - Complements current planning with people-centric information
  - Catalyzes conversations, then action, for Whole Community Inclusion

- Bonus – begins to compile a registry of statewide resources and community partners

Map Project Goals
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• Identifying Indicators
• Web-Maps can empower larger audience to connect with data
• Connect to map server and web map technology
• Data Dissemination
• Provides additional capabilities (Web-Map templates)
• Pushes data out as map services for other audiences to utilize
• Storymap and Briefing Book Application templates (Create context around data)

Developing the Maps

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- American FactFinder Website
- Data Queries and Download
- Organize Data from Census Into Spreadsheet

Geo-Enabling Socio-Demographic and Functional Indicators
Community Inclusion in Colorado

- ArcGIS: Join Spreadsheet to Existing Census Tract Map Layer
- Geodatabase Storage

Geo-Enabling Socio-Demographic and Functional Indicators

Community Inclusion in Colorado

- Symbolize each Indicator in Map Project File

Geo-Enabling Socio-Demographic and Functional Indicators
Community Inclusion in Colorado

- Resources Addresses and Contact Information Listed in Spreadsheet by Disability/Difficulty Type
- Resource “Districts” Identified (Single County, Multiple Counties or Statewide)
- Geocoding of Addresses (Centrus)
- Address Modification
- ArcGIS: Create Layers of Resource Addresses and Resource Districts
- Symbolize each Resource by Disability/Difficulty Type in Map Project File

Geo-Enabling Disability/Difficulty Resources

Publish Map Project Files as Map Services: ArcGIS Online
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- Customizable Template
- Connect each Page to Individual Disability/Difficulty StoryMap
- Table of Contents
- Add context for each map
- Images, Logos, URLs

Implementation using ArcGIS Online Briefing Book Template

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- Partner Feedback
  - SURPRISE!
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- UC Denver Assistive Technology Programs
  - Outreach
  - Statewide Independent Living Council
    - 3 year state plan
    - Data collection

Access and Functional Needs Resources

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- Identify disability population hubs in both rural and urban areas to allow for more targeted outreach and efficient use of resources.
- Identify and map information to create an understanding of service areas.
  - Existing services & support groups
  - Disability by type and by age
  - Homeless populations (Point in time survey)
- Work together to increase the capacity to provide services throughout catchment areas

State Independent Living Council Goals
### Community Inclusion in Colorado

- Compilation of information delineating existing populations of and services already in existence for Colorado’s citizens with significant disabilities
- Compile information to guide outreach to underserved communities in Colorado
- Use maps to identify potential collaborations with local support groups and service providers
- Provide educational and other events through collaborations with local agencies

### Outcomes

### Resources

- State AT Programs - [http://www.resnaprojects.org/allcontacts/statewidecontacts.html](http://www.resnaprojects.org/allcontacts/statewidecontacts.html)
- Assistive Technology Partners - [http://www.assistivetechnologypartners.org](http://www.assistivetechnologypartners.org)
The Community Inclusion in Colorado MapBook

- Welcome Page
- Navigation
- Map 1: General Indicators
- Map 2: Disabilities
- Map 3: Aging Difficulties and Resources
- Map 4: Cognitive Difficulties and Resources
- Map 5: Hearing Difficulties and Resources
- Map 6: Mobility Difficulties and Resources
- Map 7: Vision Difficulties and Resources
- History of Mapping Project
- Future Phases and Current Applications
- Additional Data and Resources

Table of Contents
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Click on individual census tracts to get more information through pop-up window

Zoom in and out with -/+ tabs. Pan around the map by clicking and holding mouse button down while dragging the map.

Pop-up window with disability and demographic information

Map Book

Select between indicator/resource tabs

Zoom in and out with -/+ tabs. Pan around the map by clicking and holding the mouse button down while moving around the map.

Map Book
Community Inclusion in Colorado

Click on individual symbols or regions to get more information through pop-up window

Panel updates with indicator/variables

Pop-up window with address and contact information

Map Book

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- Joint Risk Assessment Guidance
- PHEP/HPP application
- State Resilience Workgroup
- Other partners

Current Applications
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• Web map in ArcGIS Online connects to all map services and Authoritative map layers (flood and fire boundaries, etc)
• Turn layers on/off during activity or event

Utilizing Data in Emergency Preparedness Activities

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• Training
• Examining community changes over time
• Data update
• Additional areas of focus
• PLANNING and PARTNERSHIPS
• Accessibility...

What’s Next?

Community Inclusion Regional Opportunity Index Webmap
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- Develop data tables for download of the data found in each webmap

Making Visual Data Accessible

Community Inclusion in Colorado

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