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Traditional GIS

- **Decision support**
- **Asset management**
- **Planning and analysis**
- **Field mobility**
- **Situational awareness**
- **Public awareness**

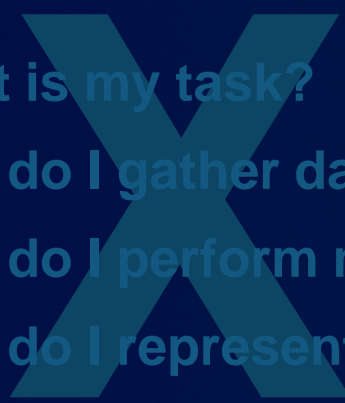
The New GIS

- Decision support
 - Asset management
 - Planning and analysis
 - Field mobility
 - Situational awareness
 - Public awareness
- and more...*
- Telling a story
 - Emancipating data
 - Briefing colleagues
 - Involving constituents
 - *Informing*
 - *Inspiring*
 - *Entertaining*

The Customary Way of Thinking

- What is my task?
- How do I gather data?
- How do I perform my analysis?
- How do I represent my data, model, analysis?

A Different Way of Thinking

- 
- What is my task?
 - How do I gather data?
 - How do I perform my analysis?
 - How do I represent my data, model, analysis?
 - What is the story I want to tell?
 - Who is my audience?
 - How do I tell my story?
 - How do I combine my maps with text, graphics, and other content?
 - How do I enable others to tell their own stories with my data?

Our Session

We will...

- 1. Show you how to compile and refine a Web map...**
- 2. Show you how Web maps can be used**
 - a. In a new atlas viewer app**
 - b. In a story map template**
- 3. Answer your questions!**

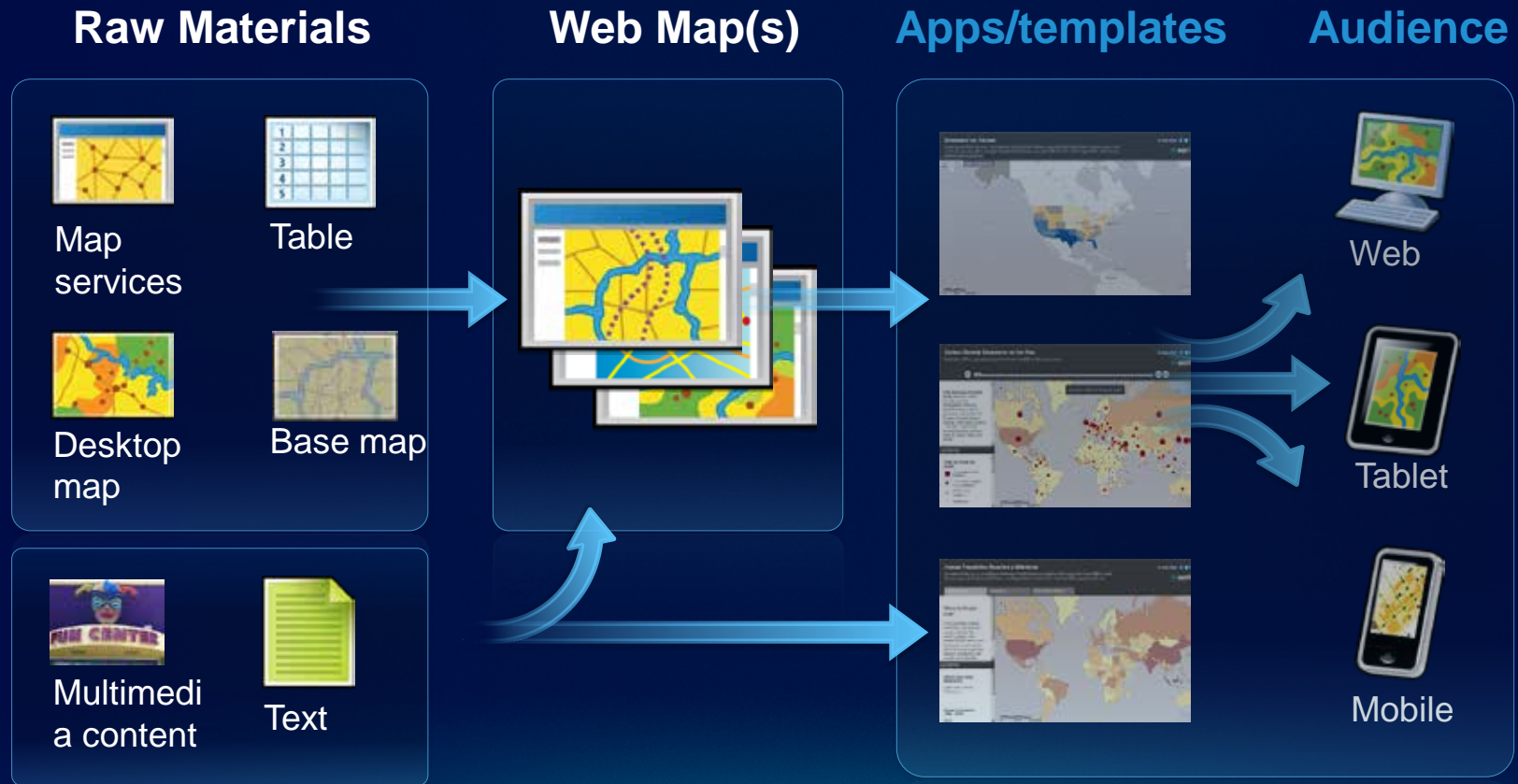


1. Building a Web Map

Allen and David



Building a web map



Building a Web Map

Case study:

Examining geography of income inequality

- Let's look at the 10 richest and 10 poorest zip codes

Process:

- Choose a basemap
- Add data from a table
- Put up an ArcGIS desktop map as a service
- Find existing map services and web maps
- Add and combine maps
- Save and share

DEMO: Building a web map

Refining CSVs

“First” etc.
for popup
titles

P.O. Name
for popup
titles

Data
for popups

Lat-Long
for location

WEALTH_RANK	rank	wealthiest	ZIP_CODE	POST_OFFICE_NAME	STATE	2010_POPULATION	MEDIAN_HOUSEHOLD_	PER_CAPITA_INCOME	MEDIAN_NET_WORTH	long	lat
1	first	wealthiest	99516	Anchorage	Alaska	19859	\$118,020	\$45,661	\$560,084	-149.68673	61.083541
2	second	wealthiest	99587	Girdwood	Alaska	2139	\$77,975	\$48,475	\$181,440	-148.8042	61.014877
3	third	wealthiest	99567	Chugiak	Alaska	8688	\$91,399	\$37,148	\$314,301	-149.36828	61.411194
4	fourth	wealthiest	99515	Anchorage	Alaska	21854	\$83,023	\$35,366	\$243,563	-149.8908	61.11759
5	fifth	wealthiest	99577	Eagle River	Alaska	25692	\$93,414	\$35,443	\$284,511	-149.03171	61.325844
6	sixth	wealthiest	99502	Anchorage	Alaska	23744	\$79,234	\$35,006	\$195,261	-149.98695	61.161713
7	seventh	wealthiest	99661	Sand Point	Alaska	964	\$65,777	\$28,164	\$120,016	-161.38674	55.770058
8	eighth	wealthiest	99507	Anchorage	Alaska	36238	\$78,336	\$34,896	\$163,684	-149.80019	61.151923
9	ninth	wealthiest	99712	Fairbanks	Alaska	13696	\$73,789	\$30,377	\$211,613	-146.41163	64.881423
10	tenth	wealthiest	99801	Juneau	Alaska	28476	\$76,646	\$34,368	\$173,607	-134.28573	58.616836
1	first	wealthiest	35223	Birmingham	Alabama	11154	\$90,440	\$57,088	\$554,444	-86.73704	33.479282
2	second	wealthiest	35176	Vandiver	Alabama	868	\$71,861	\$45,186	\$441,027	-86.503914	33.478153
3	third	wealthiest	35242	Birmingham	Alabama	47215	\$86,263	\$48,598	\$319,692	-86.667762	33.426204
4	fourth	wealthiest	35244	Birmingham	Alabama	31277	\$79,959	\$42,411	\$258,523	-86.823956	33.354451
5	fifth	wealthiest	35243	Birmingham	Alabama	18331	\$69,123	\$46,854	\$161,575	-86.740963	33.441556
6	sixth	wealthiest	35213	Birmingham	Alabama	13572	\$62,073	\$45,247	\$213,677	-86.742944	33.505763
7	seventh	wealthiest	35763	Owens Cross Roads	Alabama	12581	\$68,530	\$34,005	\$235,173	-86.486213	34.613201
8	eighth	wealthiest	35406	Tuscaloosa	Alabama	12957	\$61,281	\$38,416	\$209,271	-87.478145	33.332314
9	ninth	wealthiest	35080	Helena	Alabama	15891	\$79,242	\$36,225	\$218,669	-86.87117	33.290209
10	tenth	wealthiest	35741	Brownsboro	Alabama	3339	\$65,893	\$33,275	\$208,367	-86.47453	34.7266
1	first	wealthiest	72223	Little Rock	Arkansas	16522	\$93,723	\$52,237	\$511,202	-92.511913	34.782909
2	second	wealthiest	72212	Little Rock	Arkansas	12770	\$82,596	\$45,379	\$367,290	-92.425561	34.781681
3	third	wealthiest	72718	Cave Springs	Arkansas	1175	\$68,864	\$34,638	\$226,215	-94.220905	36.261189
4	fourth	wealthiest	72113	Maumelle	Arkansas	18239	\$74,521	\$35,290	\$252,754	-92.402906	34.858371
5	fifth	wealthiest	72207	Little Rock	Arkansas	11933	\$58,716	\$43,082	\$148,207	-92.344616	34.776958
6	sixth	wealthiest	72227	Little Rock	Arkansas	11675	\$58,743	\$37,818	\$157,740	-92.374864	34.779226
7	seventh	wealthiest	72135	Roland	Arkansas	2794	\$51,821	\$29,821	\$228,308	-92.550673	34.879496
8	eighth	wealthiest	72122	Paron	Arkansas	1374	\$57,712	\$29,119	\$265,911	-92.848143	34.783207
9	ninth	wealthiest	72758	Rogers	Arkansas	32755	\$60,899	\$27,462	\$151,818	-94.139316	36.297944
10	tenth	wealthiest	72908	Fort Smith	Arkansas	13693	\$60,119	\$30,252	\$132,906	-94.409011	35.30443
1	first	wealthiest	85253	Paradise Valley	Arizona	18699	\$139,071	\$77,862	\$808,289	-111.96267	33.545009
2	second	wealthiest	85262	Scottsdale	Arizona	10544	\$120,458	\$83,396	\$804,999	-111.63367	33.889043
3	third	wealthiest	85255	Scottsdale	Arizona	43540	\$123,782	\$67,412	\$646,958	-111.83089	33.679122
4	fourth	wealthiest	85266	Scottsdale	Arizona	11504	\$117,812	\$64,091	\$699,486	-111.90816	33.770239

From CSV to Map Layer & Popup

“First” etc.
for popup
titles

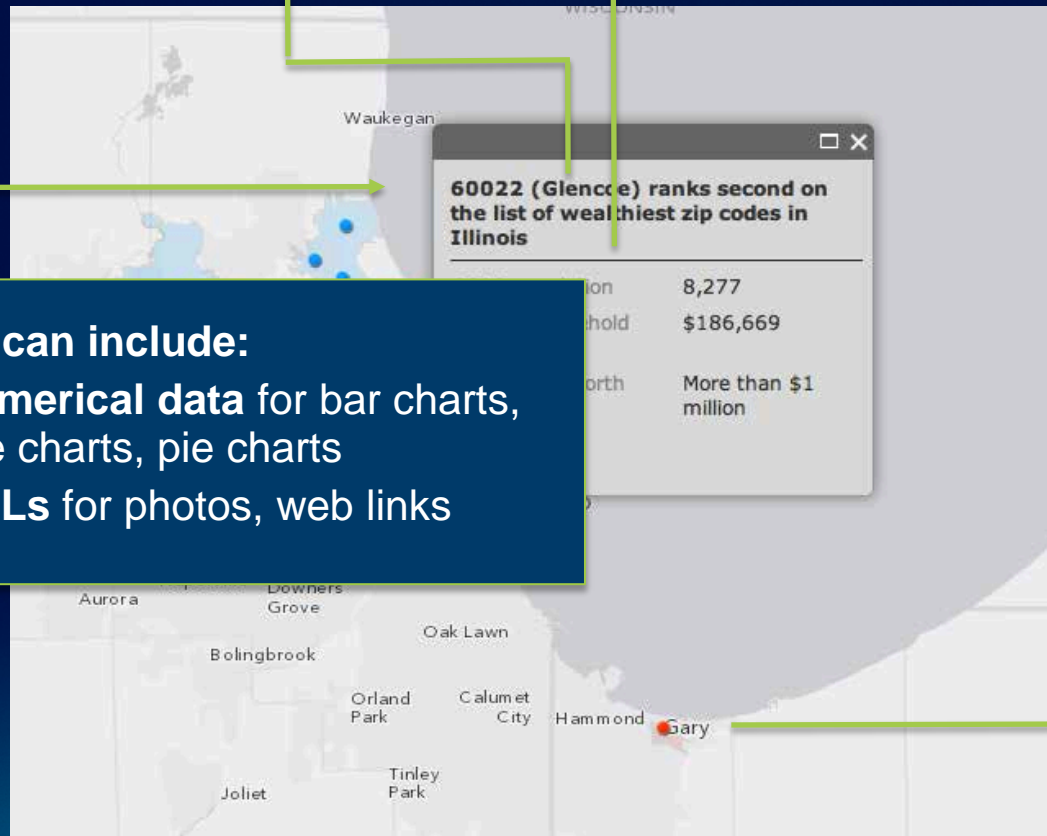
P.O. Name
for popup
titles

Data
for popups

Lat-Long
for location

CSVs can include:

- **Numerical data** for bar charts, line charts, pie charts
- **URLs** for photos, web links



2. Using Web Maps

A. Thematic Atlas Viewer

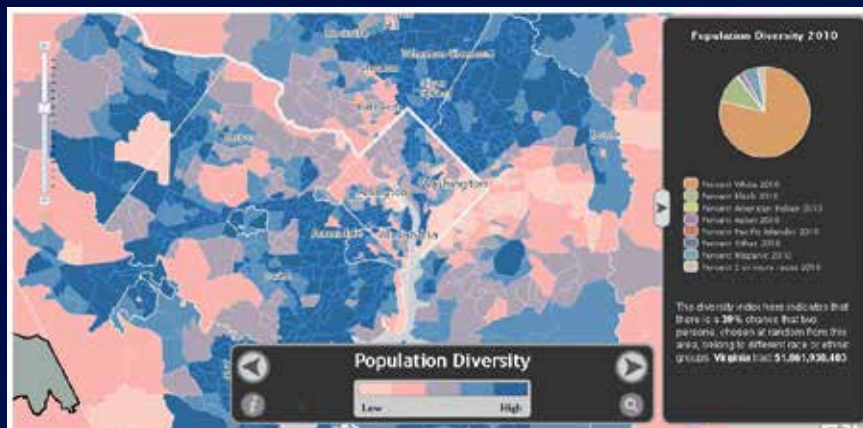
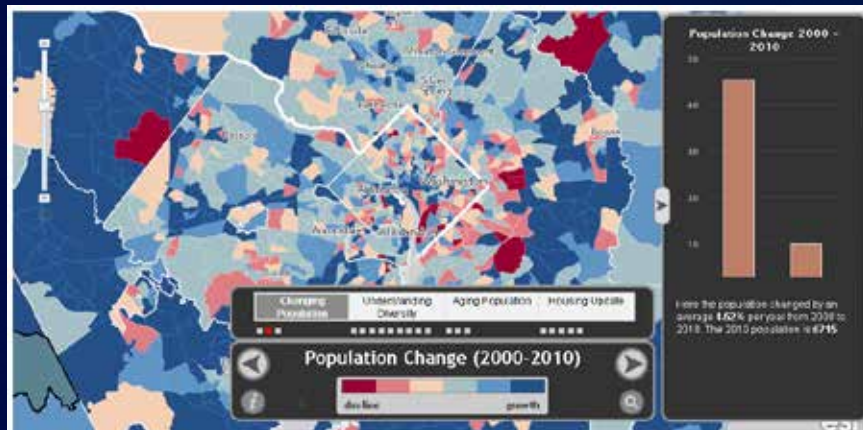
Jim



Good maps, good stories, good data

- Like fire, three ingredients are needed
 - a good story idea
 - data that supports the story idea
 - good maps illuminating the major points of the story
- Where does it start?
 - I have this story idea, is there data?
 - I have this data, is there a story?
 - Is additional analysis needed?

Maps for the public



Web maps for the public

- **Assume the reader**
 - knows where they live and work
 - does not know your story
 - wants the data in a context
- **Build a web map that:**
 - is focused
 - is clear
 - rewards curiosity
 - dovetails with a story or narrative
 - moves a conversation forward

Example: statistical web maps

- **Consistency helps your reader**
- **Examine the data**
- **Set break points, label them**
- **Apply color palettes, style file**
- **Document descriptions, tags, credits**
- **Follow a checklist**
- **Publish as service**
- **Create a popup**
- **Share the web map in an app**

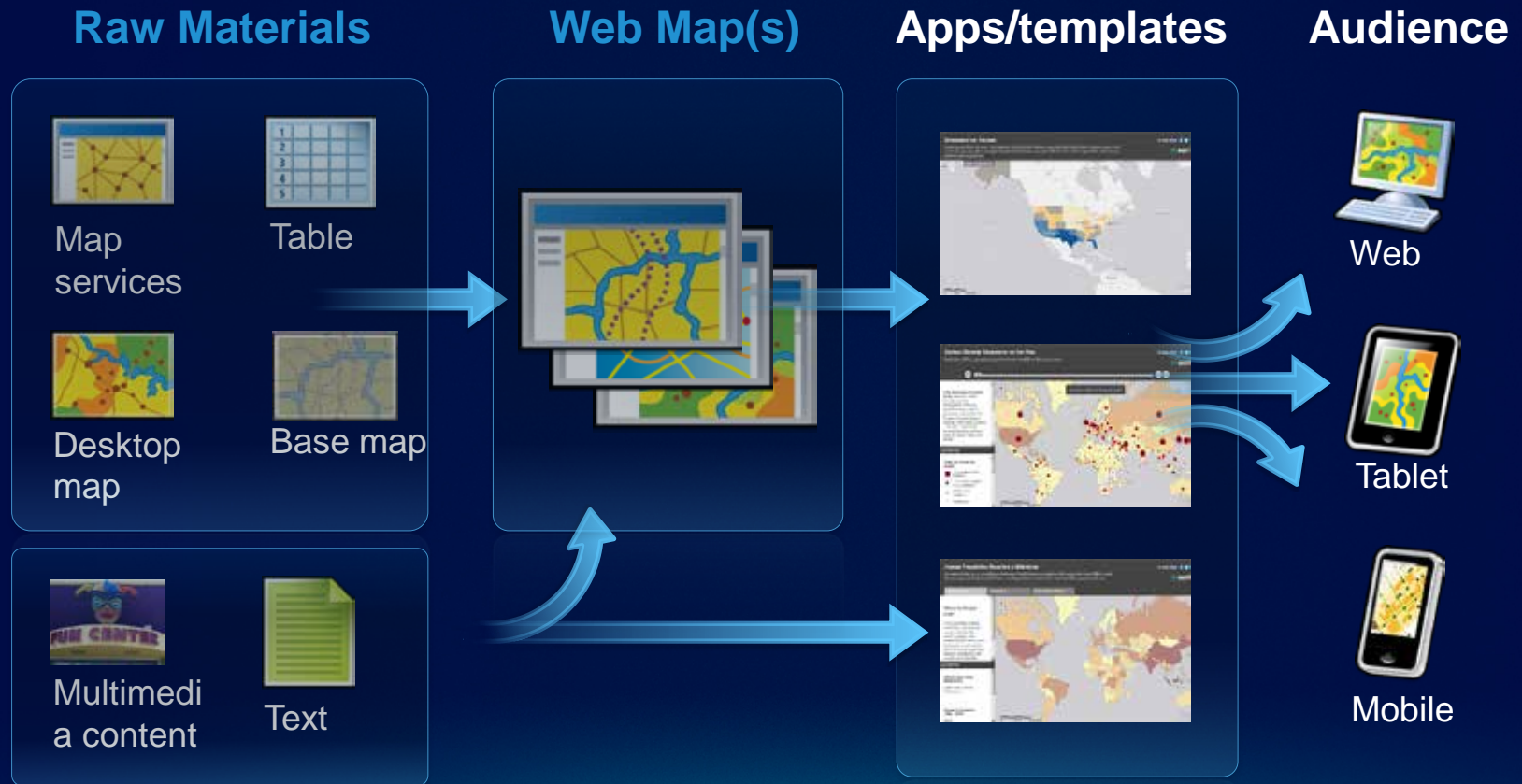
2. Using Web Maps

B. Building a Story Map

Allen and David



Building a story map



What do Templates Do?

Provide a frame and user experience

- **Title, text**
- **Map legend**
- **Ability to compare maps, put several together into a sequence, create narratives**

Some are configurable

Source code available for download

Javascript

Demo: Building a Story Map

Choosing a Template

Available in a public “Storytelling Templates” group on ArcGIS.com

Basic storytelling

Viewer with dropdown legend



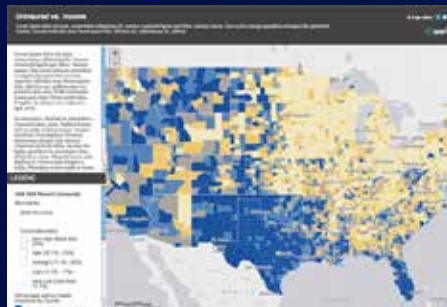
Swipe tool

User can compare two layers of a web map



Side panel

Text and legend in scrollable panel



Tabbed theme

Put 3-5 thematic maps into a narrative



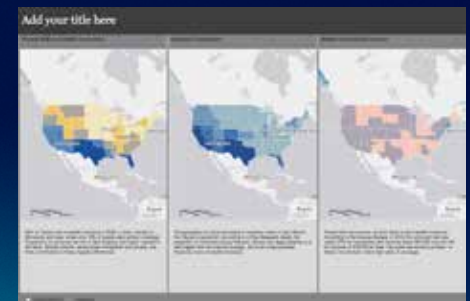
Time-enabled

Text and legend panel plus a time slider



Multiviewer

Put two or three maps next to one another



One Web Map, Several Stories

The wealthy live in relative isolation from the less affluent

A map of richest and poorest zip codes reveals suburban enclaves vs. inner cities and rural areas

An Esri Map Story

The ten richest (blue) and poorest (red) zip codes in the 50 states indicate that geographic differences may be as stark as societal features of class and privilege.

Most American cities share a pattern of wealthy suburbs surrounding less wealthy inner-city neighborhoods. Outside the metro areas, poorer zip codes are for the most part far from the nation's engines of economic activity. In Maine, Oregon, Vermont, and Virginia, for instance, nearly all the least wealthy zip codes are remote from urban markets.

Zip code rankings are calculated by weighing net worth, income, and other factors; note that rankings are

LEGEND

Ten wealthiest zip codes in each state

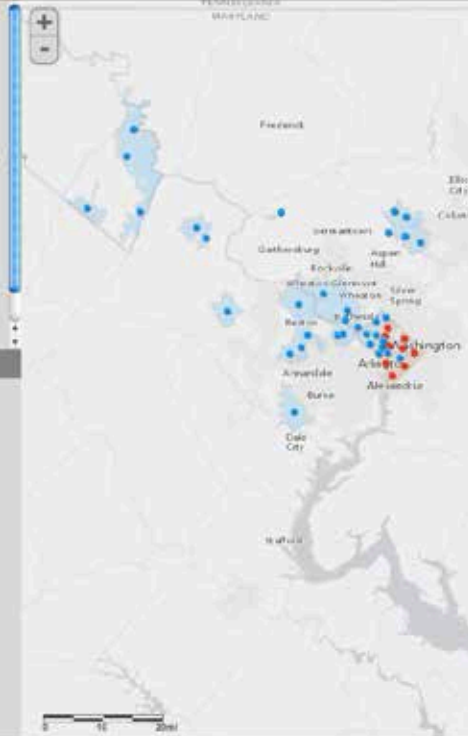
Ten least wealthy zip codes in each state

Zip code areas

Zip Code Areas

Wealthiest

Least Wealthy



Rich & poor zip codes
With text and legend panel

Rich & poor zip codes + Income
in side-by-side viewer



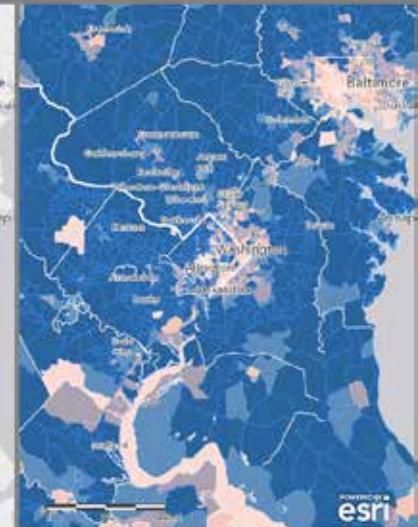
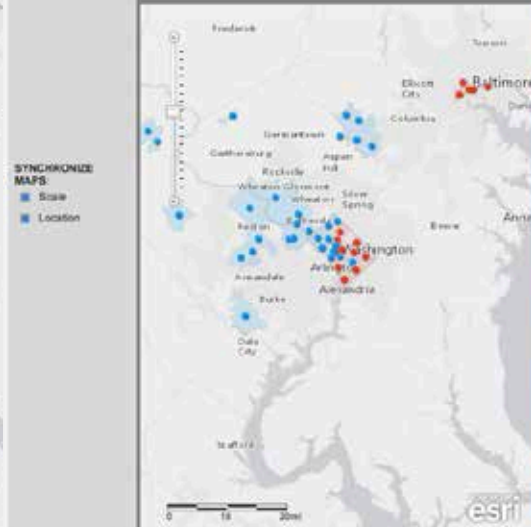
The geography of wealth and poverty

The gap between rich and poor is woven into the fabric of American life and etched on our maps, including these two views of the economic

An Esri Map Story

The wealthy live in relative isolation from the less affluent

Median Household Income



MAP INFORMATION:

- Description
- Content
- Legend

The ten richest (blue) and poorest (red) zip codes in the 50 states indicate that geographic differences may be as stark as societal features of class and privilege.

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Zip code rankings are calculated by weighing net worth, income, and other factors; note that rankings are individual to each state. Source: Esri Data.

Exploring the map of median household income in the U.S. in 2011 reveals geographic patterns that are revealed across the nation. As you zoom into the map, more detailed information, including U.S. Census tract and block-group data, is displayed.

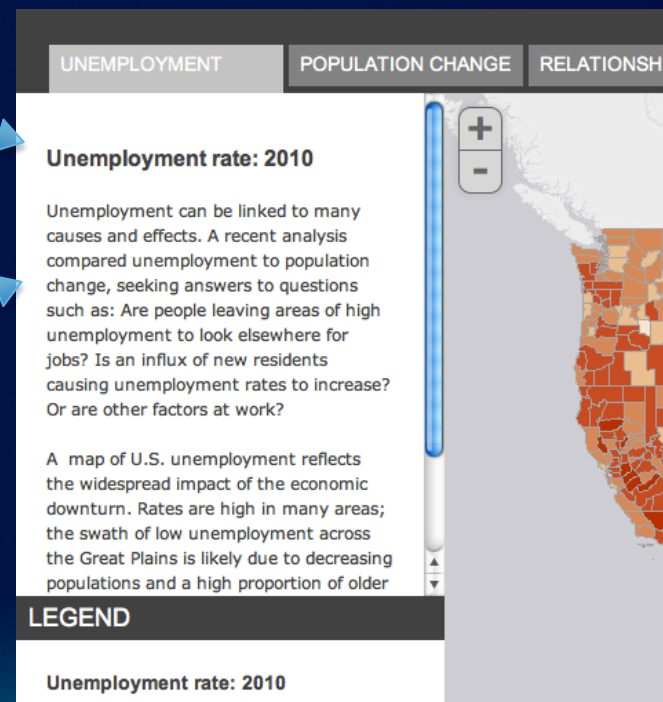
Despite a couple of decades of urban revival and gentrification, many U.S. cities, among them Minneapolis, Houston, Atlanta, and Denver, continue to show the "doughnut effect," with affluent suburbs surrounding less affluent urban cores.

Data is from Esri's 2011 Updated Demographics.

VIEW MORE MAP STORIES >

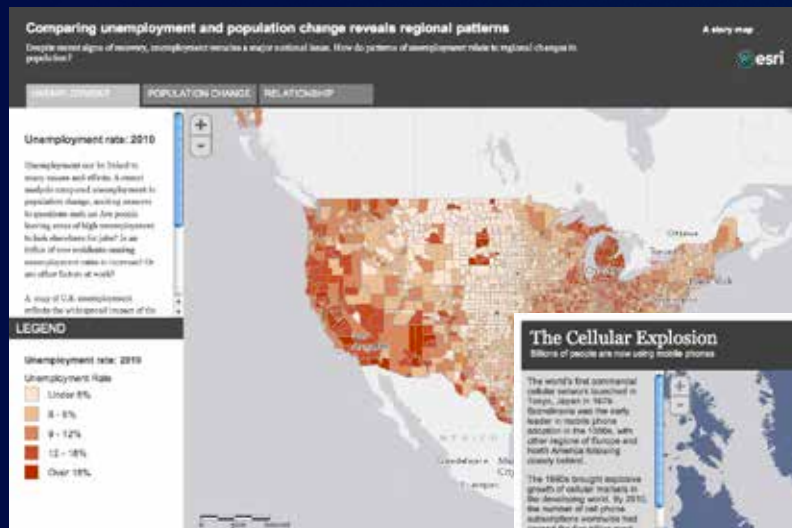
Titles and Text

- Your web map's “Description” page determines the title and text in your story map



Some Recent Story Maps

- <http://storymaps.esri.com>



Telling stories with maps

- Stay tuned for more templates
- Please let us know what you need
 - New templates and platforms
 - Functionalities
 - Basemaps and map services
- We want *you* to tell your stories...and to share them with us

Resources

- **ArcGIS.com**
- **Storymaps.esri.com**
 - **“Workflows and Best Practices”** document available via “What are story maps” page
 - **“Telling Stories with Maps”** white paper also available
- **How to reach us**
 - **Allen** acarroll@esri.com
 - **David** dasbury@esri.com
 - **Jim** jherries@esri.com

Join our email list

storymaps@esri.com

3. Answer Your Questions!

Allen, David, and Jim





esri

Upcoming Events (www.esri.com/events)

March 8 - MeetUp at Esri (Vienna, VA)

April 12 - MeetUp in DC area (location TBD)

Mar 24-27 – Esri Partner Conference (Palm Springs, CA)

Mar 26-27 – Esri Developer Summit (Palm Springs, CA)

July 21-24 – Esri Homeland Security Summit (San Diego, CA)

July 23-27 – Esri International User Conference (San Diego, CA)



Friday Closing Session and Hosted Lunch

- Join conference attendees for lunch and closing session
- 11:30 am – 1:30 pm
- Ballrooms A-C, Third Level
- Closing Speaker – Chris Smith, United States Department of Agriculture
- Wrap-up and request for feedback with Jack Dangermond



Thank You

Please complete session evaluation form

