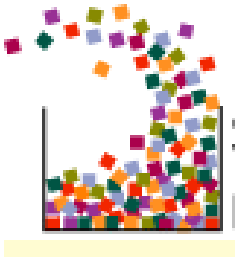
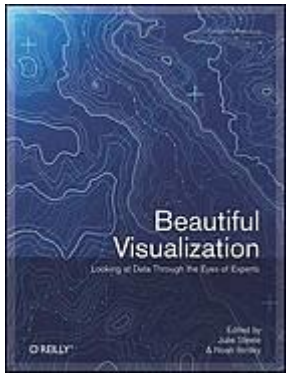
Trustee Training | August 17, 2018

Crafting your Library's Story with Data



Jody Hoesly
Data Services Consultant
South Central Library System
jhoesly@scls.info

What is a Data Story?



Shapiro, M. (2010). **Once Upon a Stacked Time Series. The Importance of Storytelling in Information Visualization**. *Beautiful Visualization.*

Story

=

Question + Visual Data + Context

Telling the Library Story

Jamie LaRue RIPL 2018

The Story

- Real person
- Problem
- Library intervention
- Happy ending
- One fact
- Phrase that pays

The Messages

- Libraries transform lives
- Libraries transform communities
- Librarians are passionate advocates for lifelong learning
- Libraries are a smart investment

Story Example

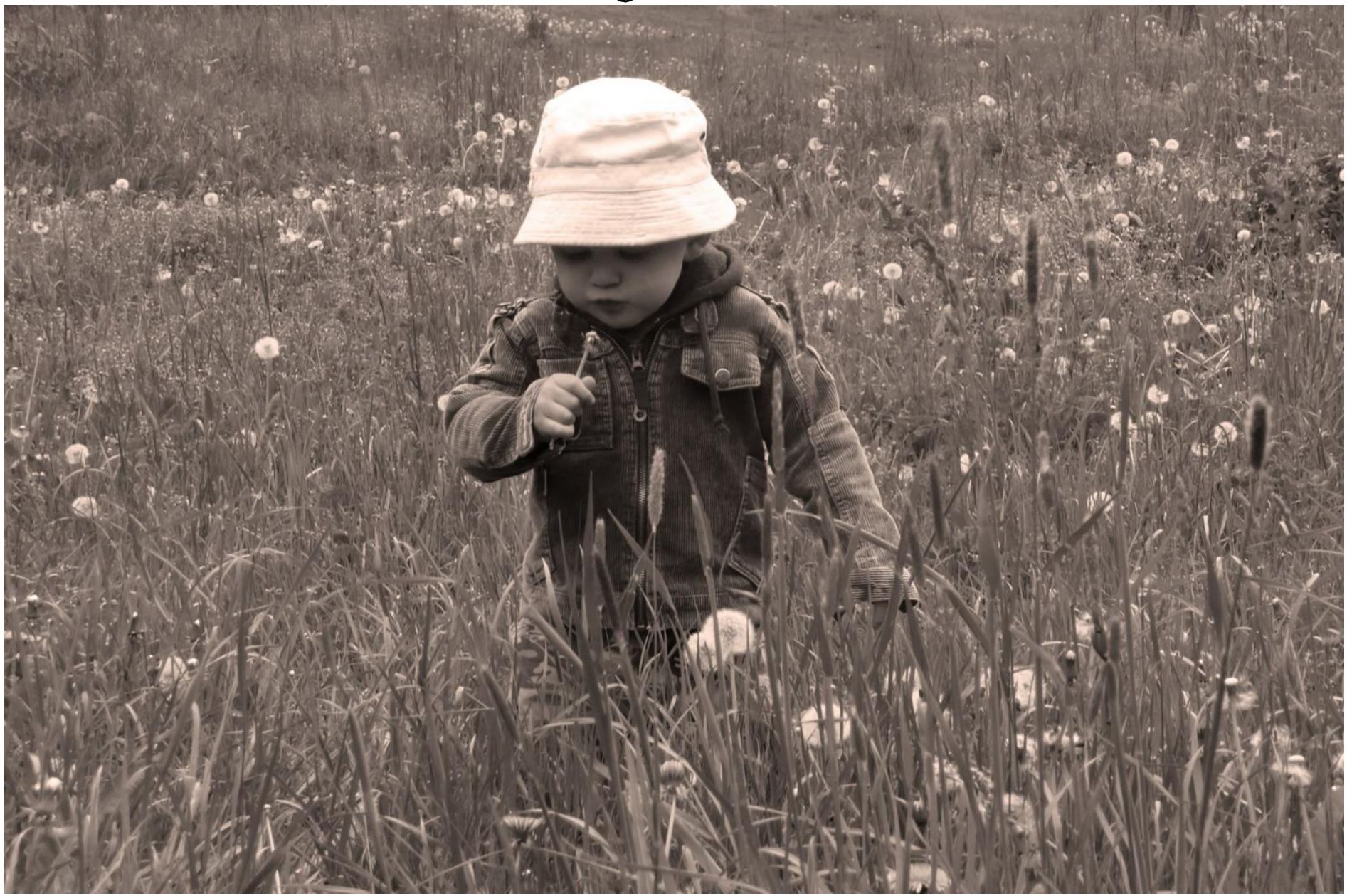
Today's Discussion

1. Questions (Problems)
2. Datasets (Facts)
3. Visual Data
4. Stories

Questions

https://pxhere.com/en/photo/1159236

What do you wish for?



https://pxhere.com/en/photo/1355159

What do you hope to change?

project OUTCOME
MEASURING THE TRUE IMPACT OF PUBLIC LIBRARIES

What are your Strategic Initiatives?

Inform – Enrich - Inspire Community

Dayton Metro Library

lib.calpoly.edu/news/2014/02/kennedy-library-wishes-you-good-luck-registering-for-spring-quarter

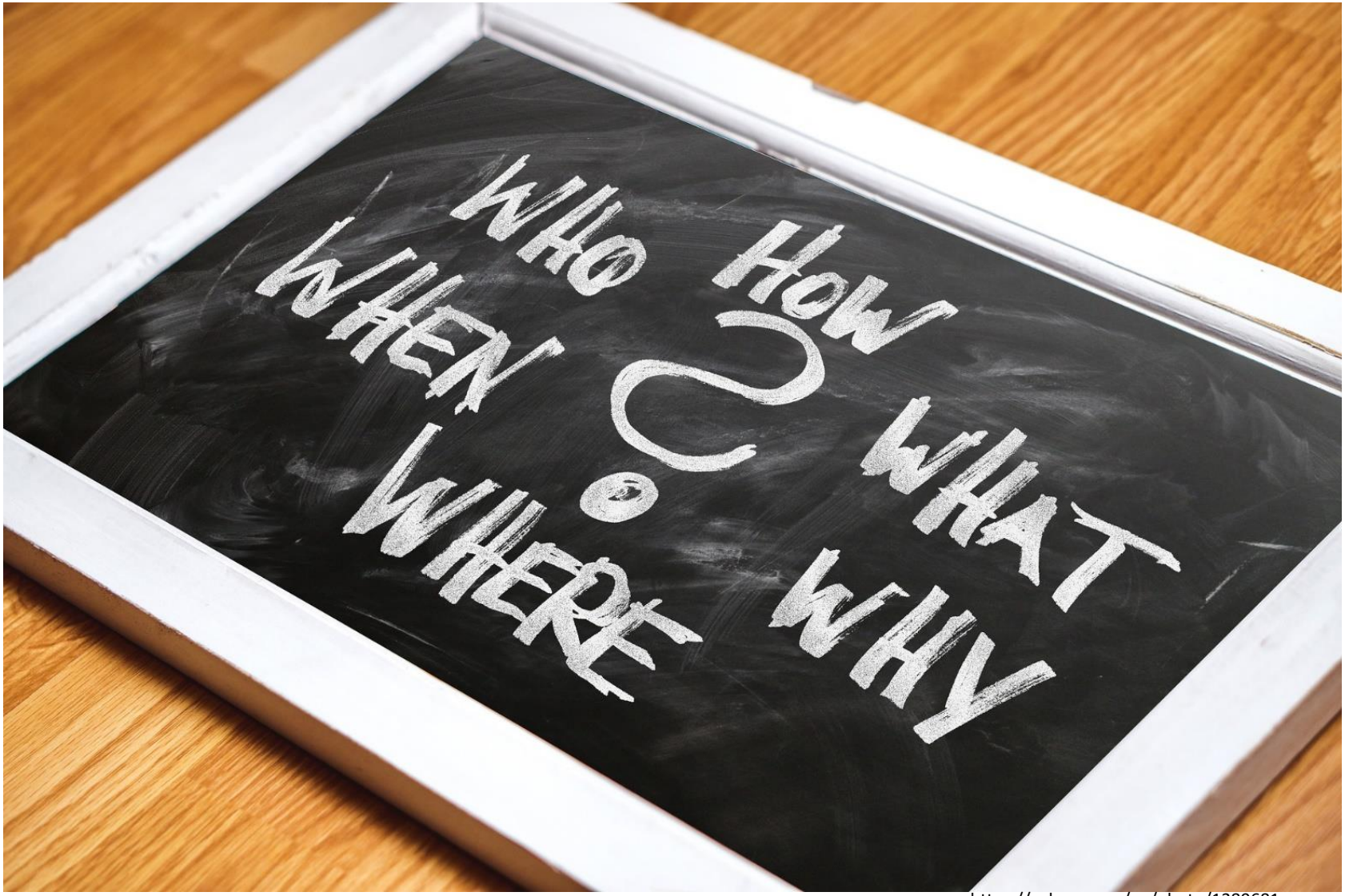
Embrace Culture - Ignite Curiosity - Connect Community

(Indian Trails Public Library District)

What are the obstacles?

https://pxhere.com/en/photo/1040881

What do you want to know to support your cause?



https://pxhere.com/en/photo/1389681

Datasets

https://pxhere.com/en/photo/916680

Data Formats

From File Folders

https://pxhere.com/en/photo/536212

To Free Datasets

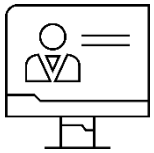
https://flic.kr/p/ddn4Pj

Library Data

Budgets

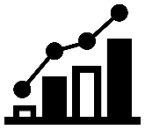
Demographic/Socioeconomic *

Electronic Resources



Service Data *

Technology Usage

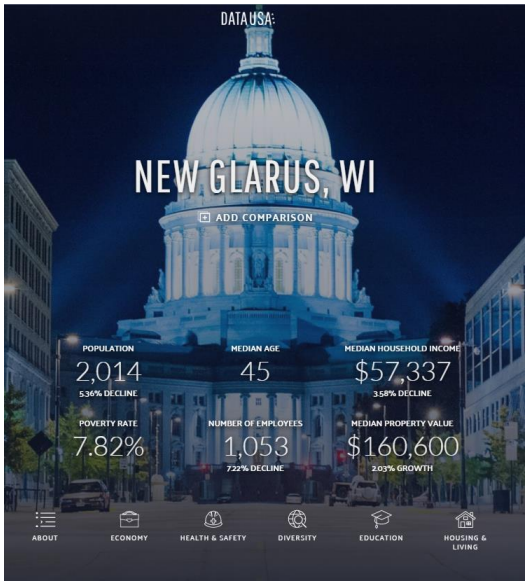


Survey Results *

Demographics/Socioeconomic

United States Census Bureau

getfacts.wisc.edu



datausa.io

STATE OF WISCONSIN DWD Department of Workforce Development

WisConomy

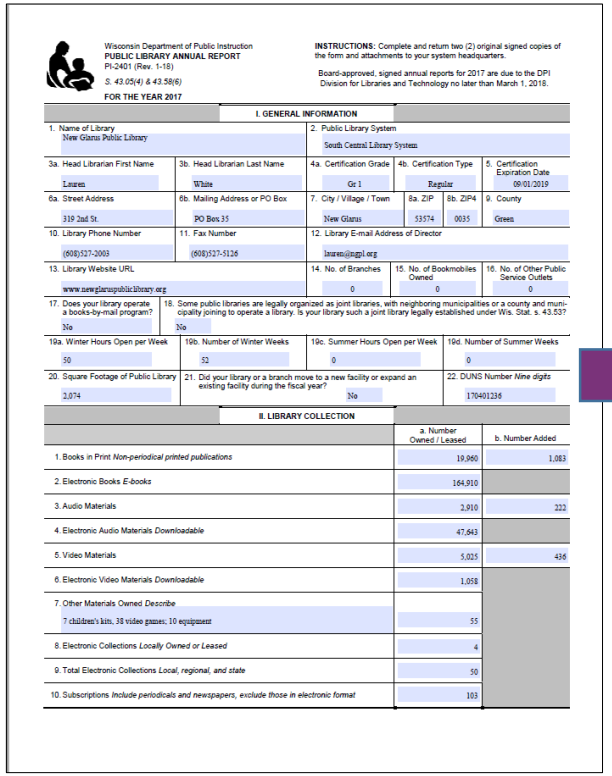
WISCONSIN FOOD SECURITY PROJECT

WISCONSIN DEPARTMENT of HEALTH SERVICES

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

Service Data

"The library collects the statistics and information required by the Division for Libraries and Technology and reports that information to the municipal governing body, the library system, and the Division, per Wis. Stat. § 43.58(6)."



Wisconsin Department of Public Instruction
PUBLIC LIBRARY ANNUAL REPORT
PI-2401 (Rev. 1-18)
S. 43.05(4) & 43.58(6)
FOR THE YEAR 2017

INSTRUCTIONS: Complete and return two (2) original signed copies of the form and attachments to your system headquarters.

Board-approved, signed annual reports for 2017 are due to the DPI Division for Libraries and Technology no later than March 1, 2018.

I. GENERAL INFORMATION

1. Name of Library	2. Public Library System				
New Glarus Public Library	South Central Library System				
3a. Head Librarian First Name	3b. Head Librarian Last Name	4a. Certification Grade	4b. Certification Type	5. Certification Expiration Date	
Lauren	White	Gr 1	Regular	09/01/2019	
6a. Street Address	6b. Mailing Address or PO Box	7. City / Village / Town	8a. ZIP	8b. ZIP4	9. County
319 2nd St	PO Box 35	New Glarus	53574	0035	Green
10. Library Phone Number	11. Fax Number	12. Library E-mail Address of Director			
(608)527-2003	(608)527-5126	lauren@ngpl.org			
13. Library Website URL		14. No. of Branches	15. No. of Bookmobiles Owned		16. No. of Other Public Service Outlets
www.newglaruspubliclibrary.org		0	0		0
17. Does your library operate a books-by-mail program?	18. Some public libraries are legally organized as joint libraries, with neighboring municipalities or a county and municipality joining to operate a library. Is your library such a joint library legally established under Wis. Stat. s. 43.53?				
No	No				
19a. Winter Hours Open per Week	19b. Number of Winter Weeks	19c. Summer Hours Open per Week	19d. Number of Summer Weeks		
50	52	0	0		
20. Square Footage of Public Library	21. Did your library or a branch move to a new facility or expand an existing facility during the fiscal year?		22. DUNS Number *Nine digits*		
2,074	No		170401236		

II. LIBRARY COLLECTION

	a. Number Owned / Leased	b. Number Added
1. Books in Print *Non-periodical printed publications*	19,960	1,083
2. Electronic Books *E-books*	164,910	
3. Audio Materials	2,910	222
4. Electronic Audio Materials *Downloadable*	47,643	
5. Video Materials	5,025	436
6. Electronic Video Materials *Downloadable*	1,058	
7. Other Materials Owned *Describe* 7 children's kits, 38 video games; 10 equipment	55	
8. Electronic Collections *Locally Owned or Leased*	4	
9. Total Electronic Collections *Local, regional, and state*	50	
10. Subscriptions *Include periodicals and newspapers, exclude those in electronic format*	103	

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

Search

Public Library Development

- Director Certification
- Coding Initiative
- Communications
- Data and Reports
  - Wisconsin Public Library Service Data
  - Economic Impact of Wisconsin Public Libraries
  - Public Library Annual Report
  - Wisconsin Public Library System Plans
  - Library Boards and Directors
  - Directories
  - Library Legislation - Funding
  - Library Services and Technology Act (LSTA)
  - Mission and Work Plan
  - Technology
  - Youth and Inclusive Services

Related links

- Division for Libraries and Technology
- Resources for Libraries and Lifelong Learning
- Wisconsin Libraries for Everyone
- School Libraries

PUBLIC LIBRARY DEVELOPMENT / DATA AND REPORTS / WISCONSIN PUBLIC LIBRARY SERVICE DATA: 1996-2015

Wisconsin Public Library Service Data: 1996-2015

The PRELIMINARY 2016 Wisconsin Public Library Service Data is now available. The Public Library Development Team will post a final version as soon as possible. Library directors are asked to review their library's data and send any questions to libraryreport@dpi.wi.gov. **Please note** that there is a known issue with Hours Open data.

The Division does not publish a print version of *Wisconsin Public Library Service Data*.

The Public Library Development Team annually collects statistics from the state's public libraries. Excel files of the statistics for 1996-2015 are listed below.

Note: For those seeking national library data, Public Libraries Survey data in online at the Institute of Museum and Library Services (IMLS) data catalog.

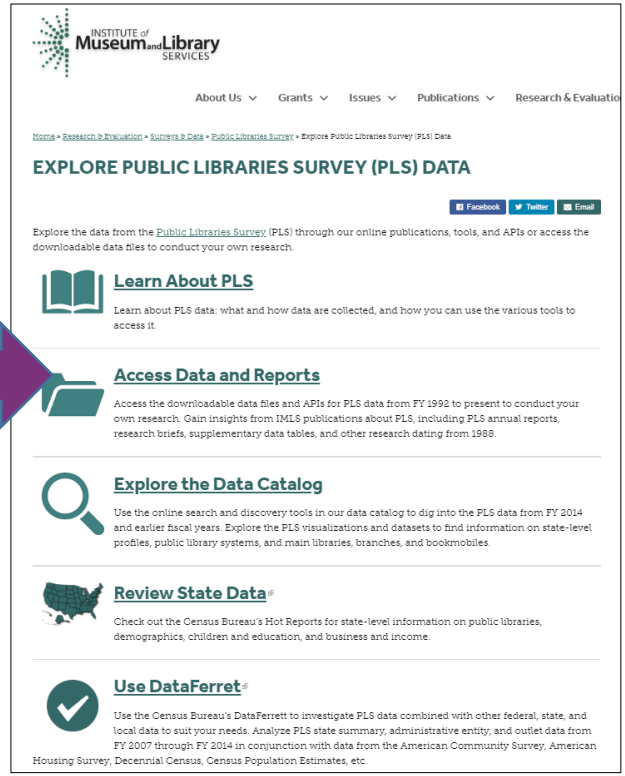
The Excel files of Wisconsin statistics include more than 115 data elements grouped by general categories. See the Wisconsin Public Library Annual Report Instructions for detailed definitions of the data elements.

See also

- *Wisconsin Public Library Service Trends 1990-2015*
- Public Library Population Estimates 2005-16
- Fast Facts about Wisconsin Public Libraries
- LibPAS Report Templates: Comparison Reports and Charts
- Where the Wild Things Are: Circulation Data Revealed
  - WAPL presentation slides
- Discovering Your Data: Where and How Libraries Can Use It
  - NWLS presentation slides
- Library and System Annual Report support documents
- Wisconsin Public Library Directories

Type of Statistics	Year			
Statistics at the State and System Level Includes state totals and averages along with system-wide statistics in order by system name.	1996 1997 1998 1999 2000	2001 2002 2003 2004 2005	2006 2007 2008 2009 2010	2011 2012 2013 2014 2015
Statistics at the County Level Includes county-wide statistics in order by county name.	1996 1997 1998 1999 2000	2001 2002 2003 2004 2005	2006 2007 2008 2009 2010	2011 2012 2013 2014 2015
Statistics at the Public Library Level Includes statistics for all public libraries in the state i order by municipality name.	1996 1997 1998 1999 2000	2001 2002 2003 2004 2005	2006 2007 2008 2009 2010	2011 2012 2013 2014 2015

https://dpi.wi.gov/pld/data-reports/service-data



INSTITUTE of Museum and Library SERVICES

About Us · Grants · Issues · Publications · Research & Evaluation

Home » Research & Evaluation » Surveys & Data » Public Libraries Survey » Explore Public Libraries Survey (PLS) Data

EXPLORE PUBLIC LIBRARIES SURVEY (PLS) DATA

Facebook Twitter Email

Explore the data from the Public Libraries Survey (PLS) through our online publications, tools, and APIs or access the downloadable data files to conduct your own research.

Learn About PLS

Learn about PLS data: what and how data are collected, and how you can use the various tools to access it.

Access Data and Reports

Access the downloadable data files and APIs for PLS data from FY 1992 to present to conduct your own research. Gain insights from IMLS publications about PLS, including PLS annual reports, research briefs, supplementary data tables, and other research dating from 1988.

Explore the Data Catalog

Use the online search and discovery tools in our data catalog to dig into the PLS data from FY 2014 and earlier fiscal years. Explore the PLS visualizations and datasets to find information on state-level profiles, public library systems, and main libraries, branches, and bookmobiles.

Review State Data

Check out the Census Bureau's Hot Reports for state-level information on public libraries, demographics, children and education, and business and income.

Use DataFerret

Use the Census Bureau's DataFerrett to investigate PLS data combined with other federal, state, and local data to suit your needs. Analyze PLS state summary, administrative entity, and outlet data from FY 2007 through FY 2014 in conjunction with data from the American Community Survey, American Housing Survey, Decennial Census, Census Population Estimates, etc.

https://www.imls.gov/research-evaluation/data-collection/public-libraries-survey/explore-pls-data

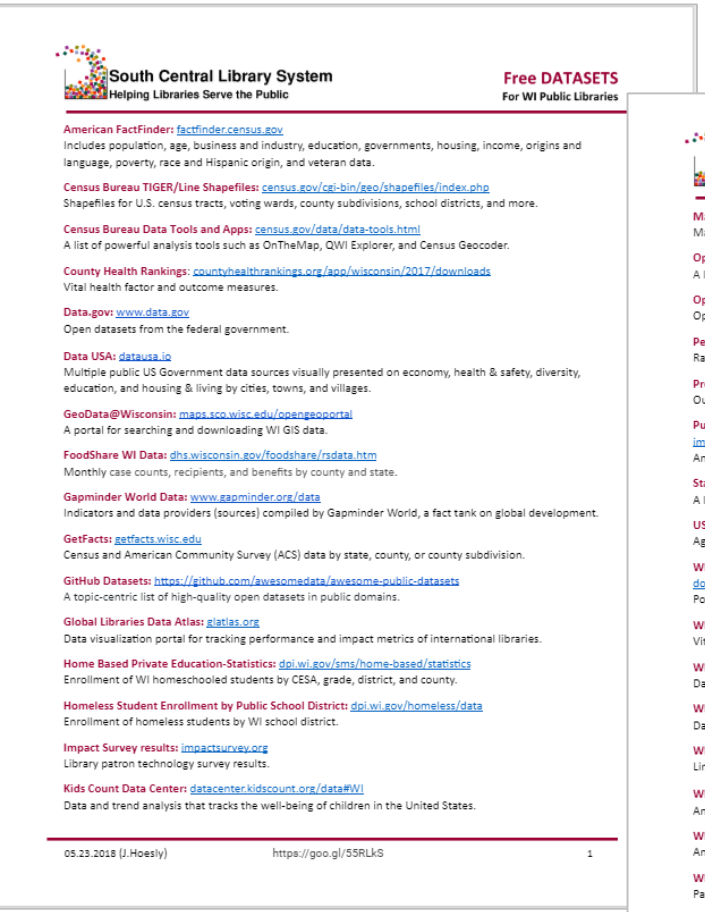
What is Valued?

	Very important	Important	Somewhat important	Not important	Don't know/NA
Borrowing materials	○	○	○	○	○
Downloadable e-books/audio books	○	○	○	○	○
Free children's programs	○	○	○	○	○
Free teen programs	○	○	○	○	○
Free adult programs	○	○	○	○	○
Computer and technology help	○	○	○	○	○
Classes and opportunities for hands-on learning	○	○	○	○	○
Finding information about jobs, services for myself, and services for my family	○	○	○	○	○
Reference/information services	○	○	○	○	○
Homework help	○	○	○	○	○
Library internet and wi-fi	○	○	○	○	○
Public meeting space	○	○	○	○	○

https://flic.kr/p/9n5DsE

Some rights reserved

Free Library DataSets



South Central Library System
Helping Libraries Serve the Public

Free DATASETS
For WI Public Libraries

American FactFinder: factfinder.census.gov
Includes population, age, business and industry, education, governments, housing, income, origins and language, poverty, race and Hispanic origin, and veteran data.

Census Bureau TIGER/Line Shapefiles: census.gov/cgi-bin/geo/shapefiles/index.php
Shapefiles for U.S. census tracts, voting wards, county subdivisions, school districts, and more.

Census Bureau Data Tools and Apps: census.gov/data/data-tools.html
A list of powerful analysis tools such as OnTheMap, QWI Explorer, and Census Geocoder.

County Health Rankings: countyhealthrankings.org/app/wisconsin/2017/downloads
Vital health factor and outcome measures.

Data.gov: www.data.gov
Open datasets from the federal government.

Data USA: datausa.io
Multiple public US Government data sources visually presented on economy, health & safety, diversity, education, and housing & living by cities, towns, and villages.

GeoData@Wisconsin: maps.sco.wisc.edu/opengeoportal
A portal for searching and downloading WI GIS data.

FoodShare WI Data: dhs.wisconsin.gov/foodshare/rsdata.htm
Monthly case counts, recipients, and benefits by county and state.

Gapminder World Data: www.gapminder.org/data
Indicators and data providers (sources) compiled by Gapminder World, a fact tank on global development.

GetFacts: getfacts.wisc.edu
Census and American Community Survey (ACS) data by state, county, or county subdivision.

GitHub Datasets: https://github.com/awesomedata/awesome-public-datasets
A topic-centric list of high-quality open datasets in public domains.

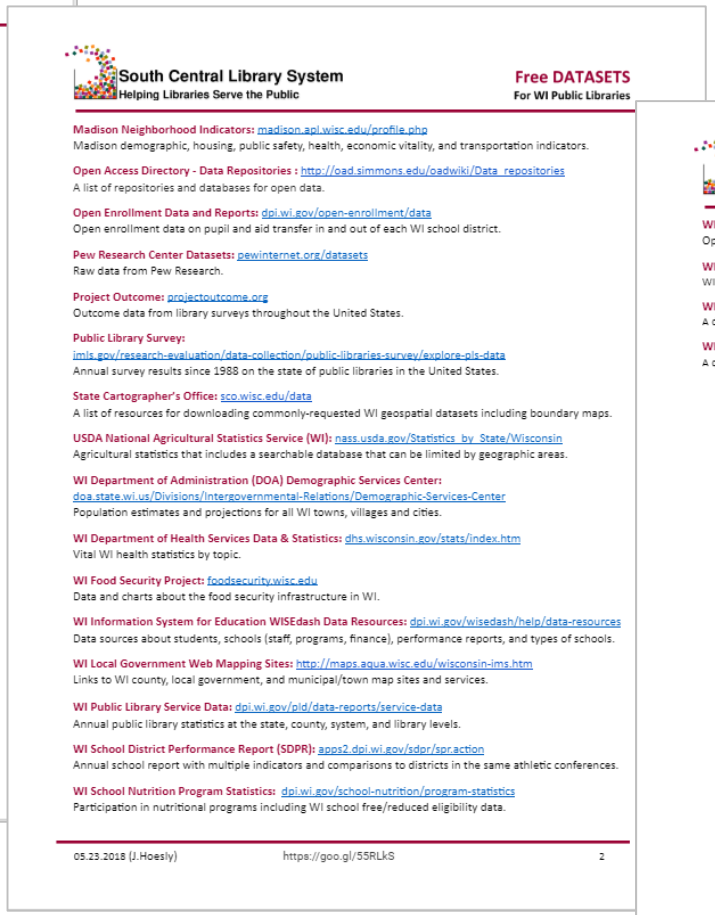
Global Libraries Data Atlas: glatlas.org
Data visualization portal for tracking performance and impact metrics of international libraries.

Home Based Private Education-Statistics: dpi.wi.gov/sms/home-based/statistics
Enrollment of WI homeschooled students by CESA, grade, district, and county.

Homeless Student Enrollment by Public School District: dpi.wi.gov/homeless/data
Enrollment of homeless students by WI school district.

Impact Survey results: impactsurvey.org
Library patron technology survey results.

Kids Count Data Center: datacenter.kidscount.org/data#WI
Data and trend analysis that tracks the well-being of children in the United States.



South Central Library System
Helping Libraries Serve the Public

Free DATASETS
For WI Public Libraries

Madison Neighborhood Indicators: madison.apl.wisc.edu/profile.php
Madison demographic, housing, public safety, health, economic vitality, and transportation indicators.

Open Access Directory - Data Repositories : http://oad.simmons.edu/oadwiki/Data_repositories
A list of repositories and databases for open data.

Open Enrollment Data and Reports: dpi.wi.gov/open-enrollment/data
Open enrollment data on pupil and aid transfer in and out of each WI school district.

Pew Research Center Datasets: pewinternet.org/datasets
Raw data from Pew Research.

Project Outcome: projectoutcome.org
Outcome data from library surveys throughout the United States.

Public Library Survey:
imls.gov/research-evaluation/data-collection/public-libraries-survey/explore-pls-data
Annual survey results since 1988 on the state of public libraries in the United States.

State Cartographer's Office: sco.wisc.edu/data
A list of resources for downloading commonly-requested WI geospatial datasets including boundary maps.

USDA National Agricultural Statistics Service (WI): nass.usda.gov/Statistics_by_State/Wisconsin
Agricultural statistics that includes a searchable database that can be limited by geographic areas.

WI Department of Administration (DOA) Demographic Services Center:
doa.state.wi.us/Divisions/Intergovernmental-Relations/Demographic-Services-Center
Population estimates and projections for all WI towns, villages and cities.

WI Department of Health Services Data & Statistics: dhs.wisconsin.gov/stats/index.htm
Vital WI health statistics by topic.

WI Food Security Project: foodsecurity.wisc.edu
Data and charts about the food security infrastructure in WI.

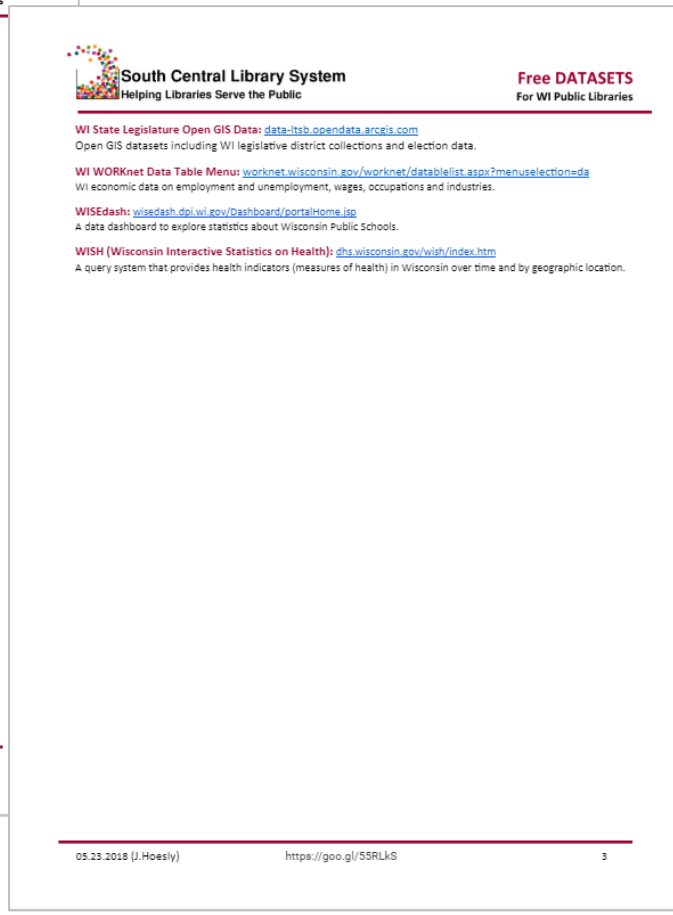
WI Information System for Education WISEdash Data Resources: dpi.wi.gov/wisedash/help/data-resources
Data sources about students, schools (staff, programs, finance), performance reports, and types of schools.

WI Local Government Web Mapping Sites: http://maps.aqua.wisc.edu/wisconsin-ims.htm
Links to WI county, local government, and municipal/town map sites and services.

WI Public Library Service Data: dpi.wi.gov/pld/data-reports/service-data
Annual public library statistics at the state, county, system, and library levels.

WI School District Performance Report (SDPR): apps2.dpi.wi.gov/sdpr/spr.action
Annual school report with multiple indicators and comparisons to districts in the same athletic conferences.

WI School Nutrition Program Statistics: dpi.wi.gov/school-nutrition/program-statistics
Participation in nutritional programs including WI school free/reduced eligibility data.



South Central Library System
Helping Libraries Serve the Public

Free DATASETS
For WI Public Libraries

WI State Legislature Open GIS Data: data-ltsb.opendata.arcgis.com
Open GIS datasets including WI legislative district collections and election data.

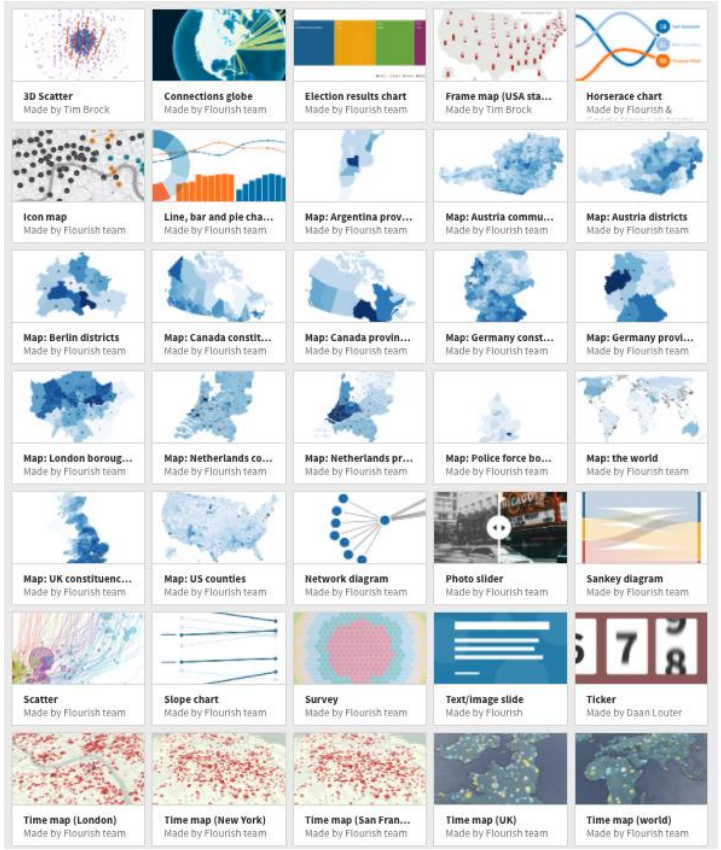
WI WORKnet Data Table Menu: worknet.wisconsin.gov/worknet/datablelist.aspx?menuselection=da
WI economic data on employment and unemployment, wages, occupations and industries.

WISEdash: wisedash.dpi.wi.gov/Dashboard/portalHome.jsp
A data dashboard to explore statistics about Wisconsin Public Schools.

WISH (Wisconsin Interactive Statistics on Health): dhs.wisconsin.gov/wish/index.htm
A query system that provides health indicators (measures of health) in Wisconsin over time and by geographic location.

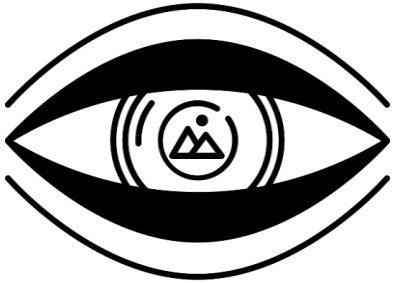
https://goo.gl/55RLkS

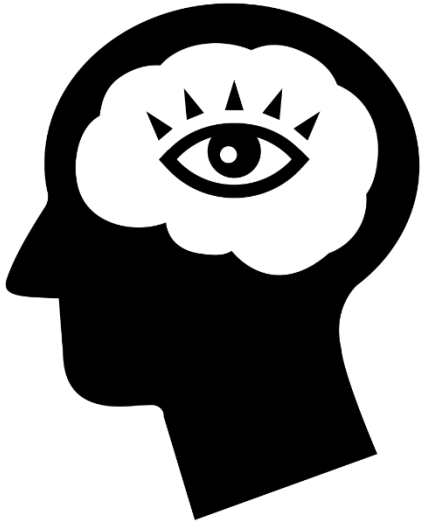
Visual Data

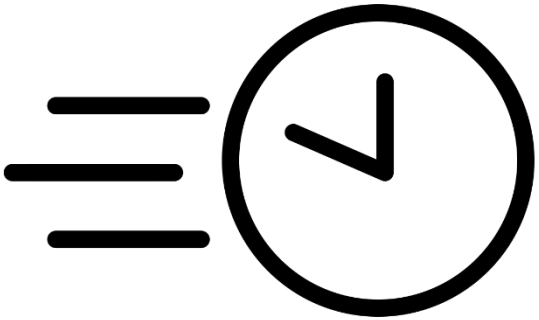


http://www.thefunctionalart.com/2018/02/a-new-data-visualization-tool-flourish.html

Is a picture worth a thousand words?







65%

of the population are visual learners

90%

of information transmitted to the brain is visual

60,000x

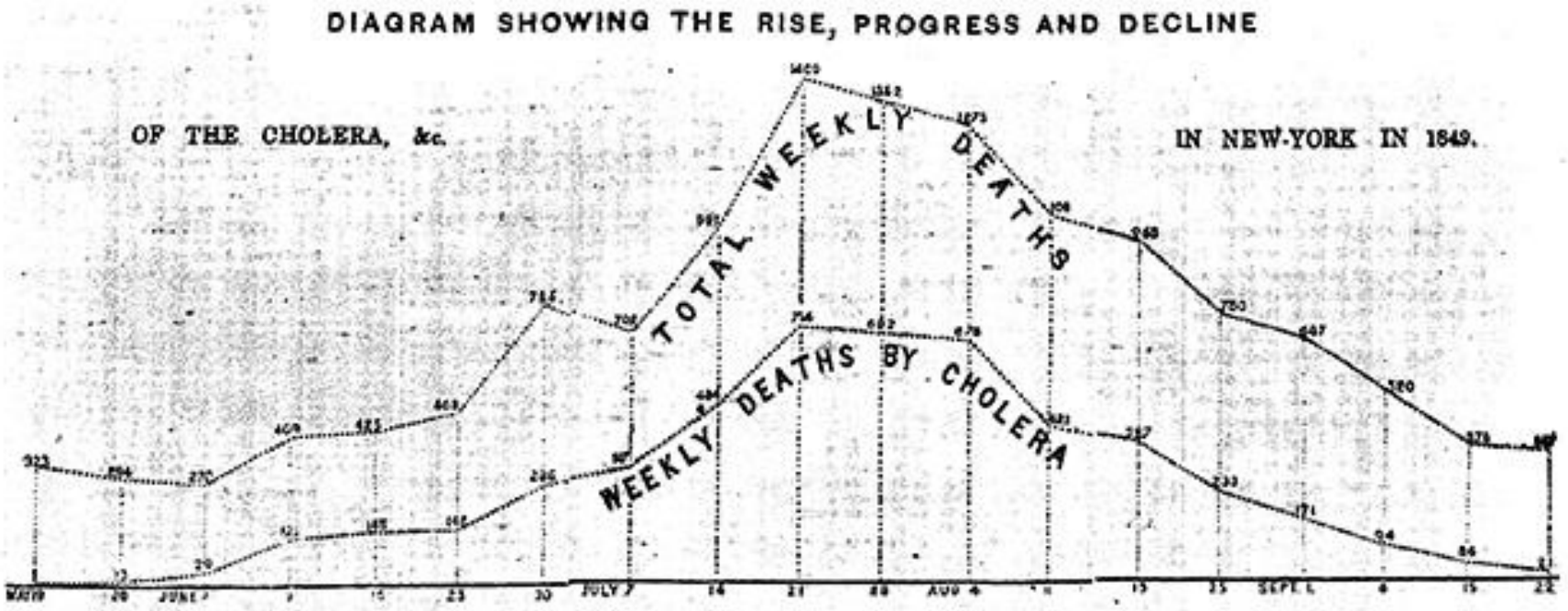
faster for the brain to process visuals than text

http://visualteachingalliance.com/ | http://3rd-force.org/pubs/meetingguide_pres.pd

Visualizations - Past

Infographics in the Time of Cholora by Scoltt Kein, March 16, 2016

https://www.propublica.org/nerds/infographics-in-the-time-of-cholera?utm_content=buffer9314e&utm_medium=social&utm_source=plus.google.com&utm_campaign=buffer



The above *Diagram, or Graphic Table*, (for which we are indebted to Professor GILLESPIE of Union College,) represents to the eye, in a very striking manner, the rise, progress, and decline of the *Cholera*, and other diseases in our City, during the last four months.

Each half-inch along the bottom line represents a week. The dates are placed under each. At the end of each half-inch, or week, are upright dotted lines, whose various lengths indicate the number of deaths by Cholera, and other causes, during that week; each inch on these upright lines corresponding to 500 deaths. The numbers are placed at the top of each. The zig-zag lines, which join the ends of these lines, show, by their upward or downward slopes, whether the deaths during those weeks have increased or decreased, rapidly or slowly.

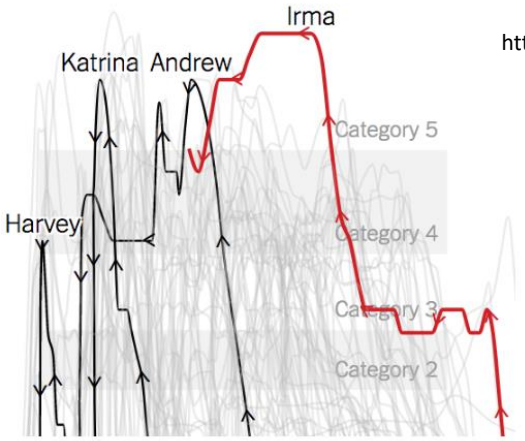
Some curious circumstances are apparent, on an inspection of this figure. We see that during the first two weeks of the Cholera, while it was increasing, as shown by the line sloping upward, the *total* deaths were decreasing, as shown by the line sloping downward. This was probably caused by the great care in diet, &c. then practiced, on the first alarm. In the week ending July 7, while the Cholera line goes up the "Total deaths'" line unaccountably goes down. Thence both lines go on ascending, and the corresponding number of deaths increasing, till in the week ending July 21, they reach their culminating point. Thence there is a constant and quite regular descent, excepting a sudden fall, from Aug. 4 to 11. This may have arisen from the diminution of population, consequent upon the custom of many persons to leave the city at the beginning of that month. The descent keeps on, till it brings up to our present normal condition.

If the average temperature, moisture, electrical state, &c. during these weeks were represented in the same manner, and added to this diagram, their comparison would show at a glance whether there has been any connection between them.

Visualization - Present

2017: the Year in Visual Stories and Graphics

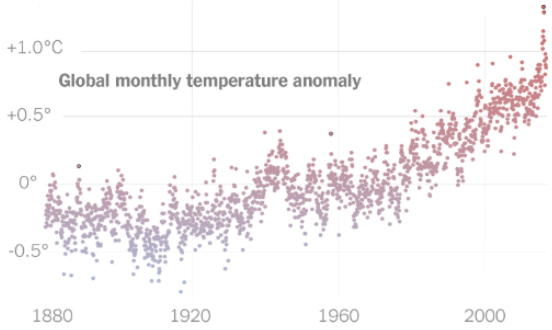
https://www.nytimes.com/interactive/2017/12/21/us/2017-year-in-graphics.html



Hurricane Irma Is One of the Strongest Storms In History

SEPTEMBER 9, 2017

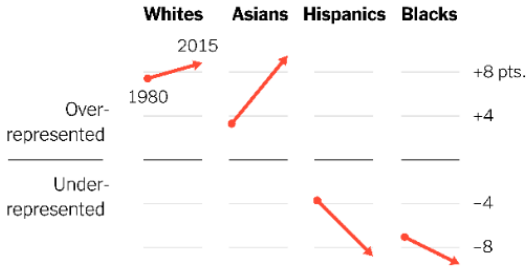
The hurricane has broken records for wind speed and number of days as a Category 5 storm.



How 2016 Became Earth's Hottest Year on Record

JANUARY 18, 2017

2016 is the hottest year on the historical record and the third consecutive record-breaking year, scientists say.



Even With Affirmative Action, Blacks and Hispanics Are More Underrepresented at Top Colleges Than 35 Years Ago

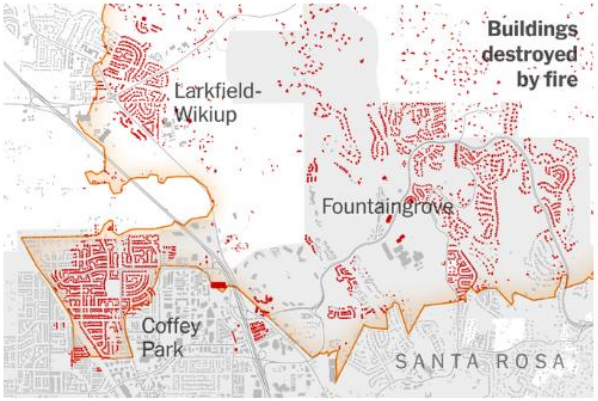
AUGUST 24, 2017

How 100 top U.S. schools compare.

Comparing the Las Vegas Attack With Daily Gun Deaths in U.S. Cities

OCTOBER 6, 2017

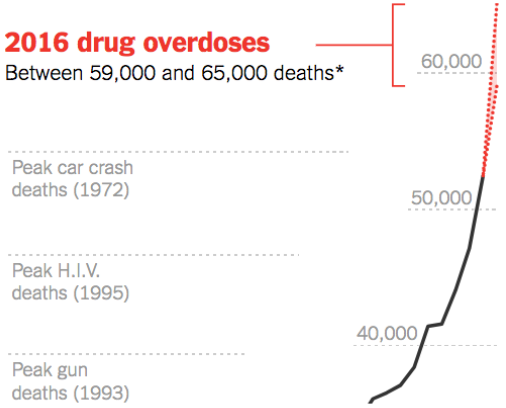
Fifty-eight people were killed in the Las Vegas massacre. The same number were killed by gun violence in 28 days in Chicago.



Northern California Fires Have Destroyed at Least 5,700 Buildings

OCTOBER 14, 2017

A New York Times analysis found that the Tubbs fire, which hit Santa Rosa, leveled what could be a record number of buildings for the state.



Drug Deaths in America Are Rising Faster Than Ever

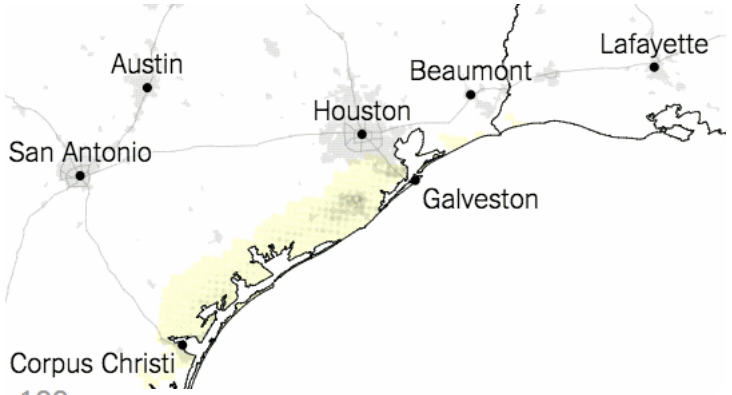
JUNE 5, 2017

New data compiled from hundreds of health agencies reveals the extent of the drug overdose epidemic last year. Our estimates show deaths rising faster than ever — up about 19 percent in 2016, and all evidence suggests they will rise again in 2017.

Visualization - Future

2017: the Year in Visual Stories and Graphics

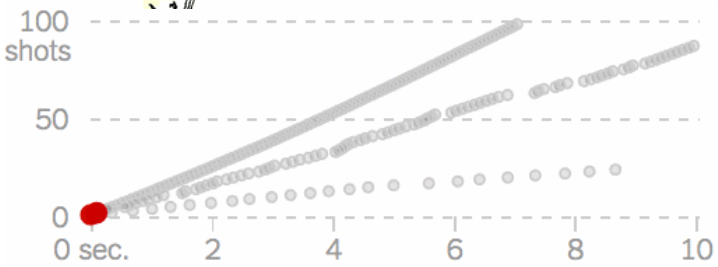
https://www.nytimes.com/interactive/2017/12/21/us/2017-year-in-graphics.html



Maps: Tracking Harvey's Destructive Path Through Texas and Louisiana

AUGUST 24, 2017

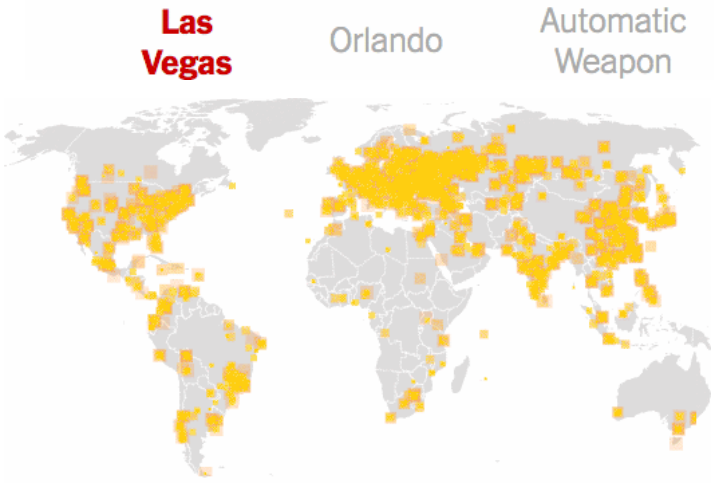
Maps and animated satellite imagery show the scale and reach of the storm.



Nine Rounds a Second: How the Las Vegas Gunman Outfitted a Rifle to Fire Faster

OCTOBER 2, 2017

Analysis of video shows that the gunman used rifles with rapid-fire capabilities, and an official reports of one modified with a "bump stock."



Animated Map of How Tens of Thousands of Computers Were Infected With Ransomware

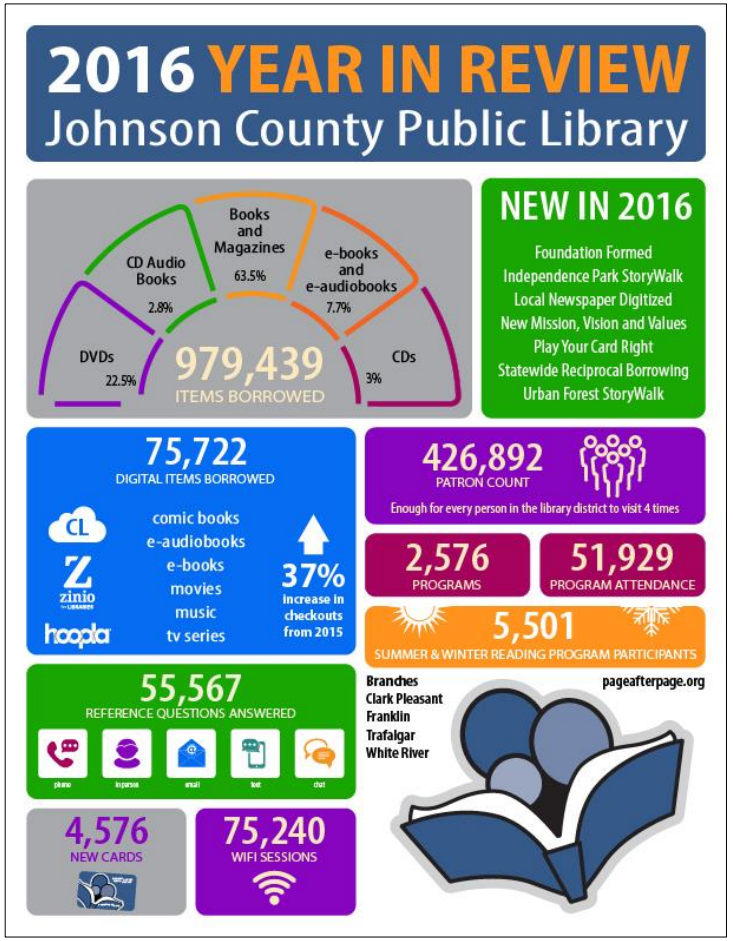
MAY 12, 2017

A new strain of ransomware spread rapidly around the world.

Common Visualization Types

Librarian Design Share
https://librariandesignshare.org

- Infographics
- Dashboards
- Handouts & Brochures
- Flyers & Advertisements
- Strategic Plans/Studies
- Posters
- Book Marks, etc.



Stories

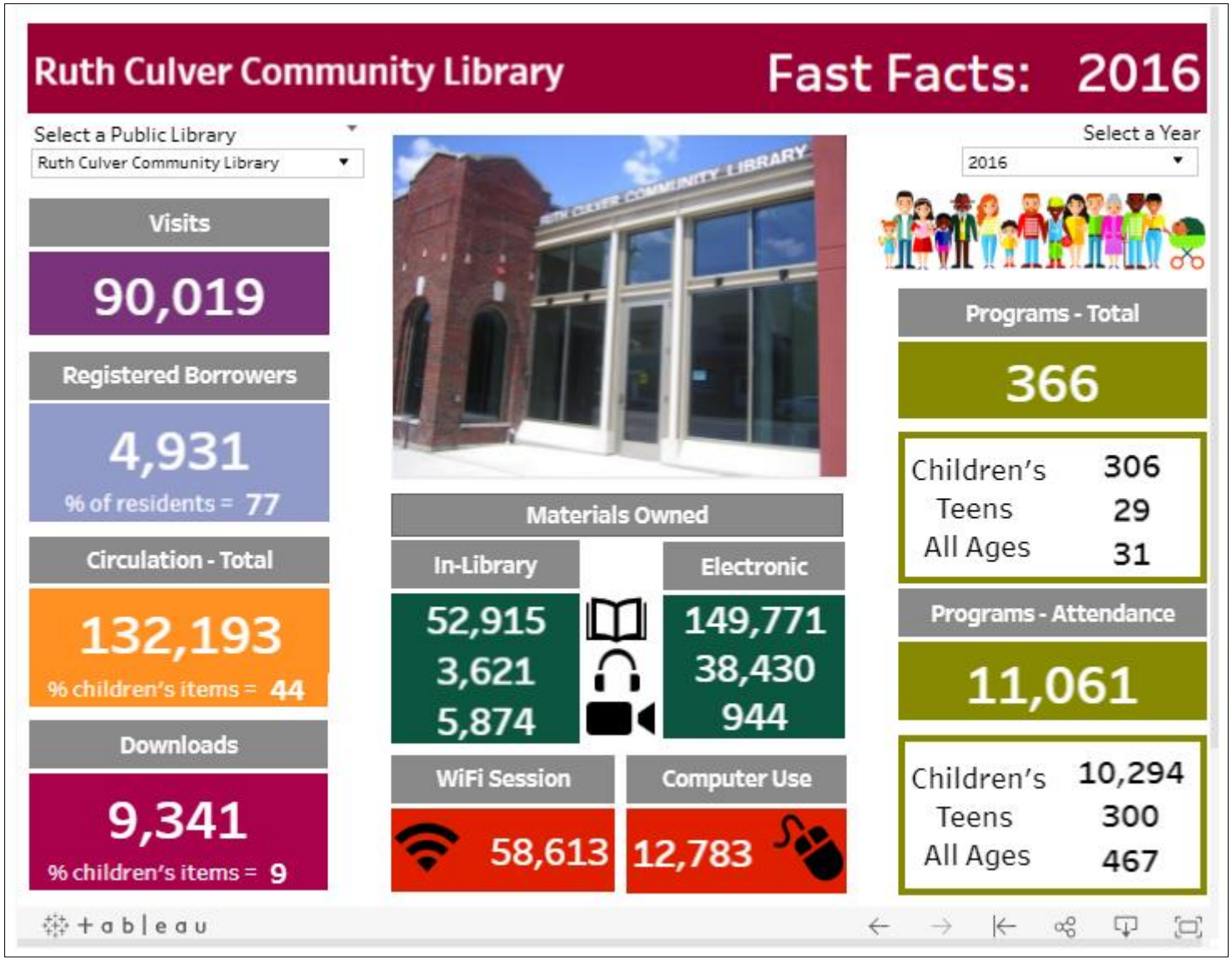
Question + Visual Data + Context

"Stories are remembered up to 22 times more than facts alone."

"And when data and story are used together, audiences are moved both intellectually and emotionally."

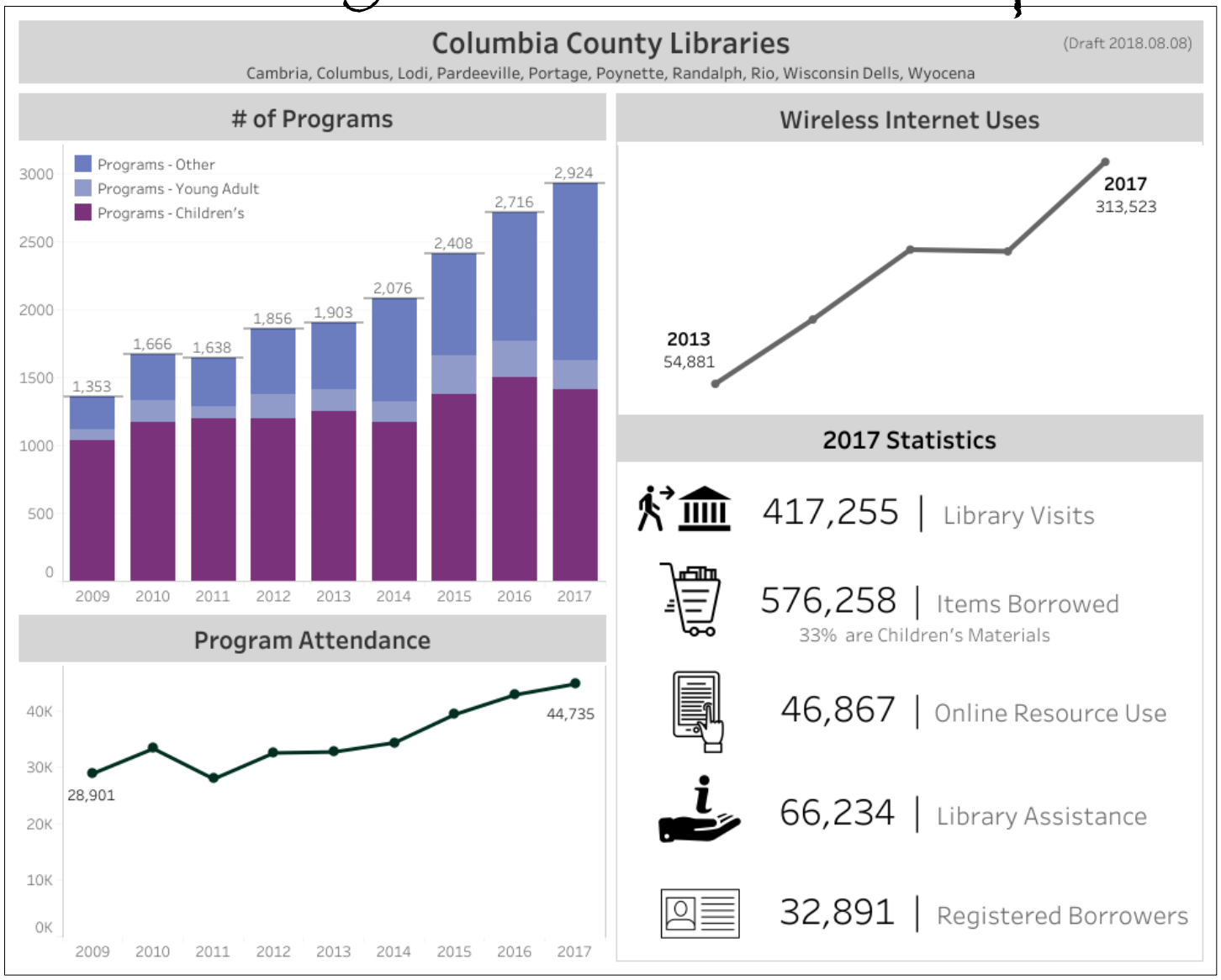
Harnessing the Power of Stories, Jennifer Aaker: https://womensleadership.stanford.edu/stories

How is our library being used?



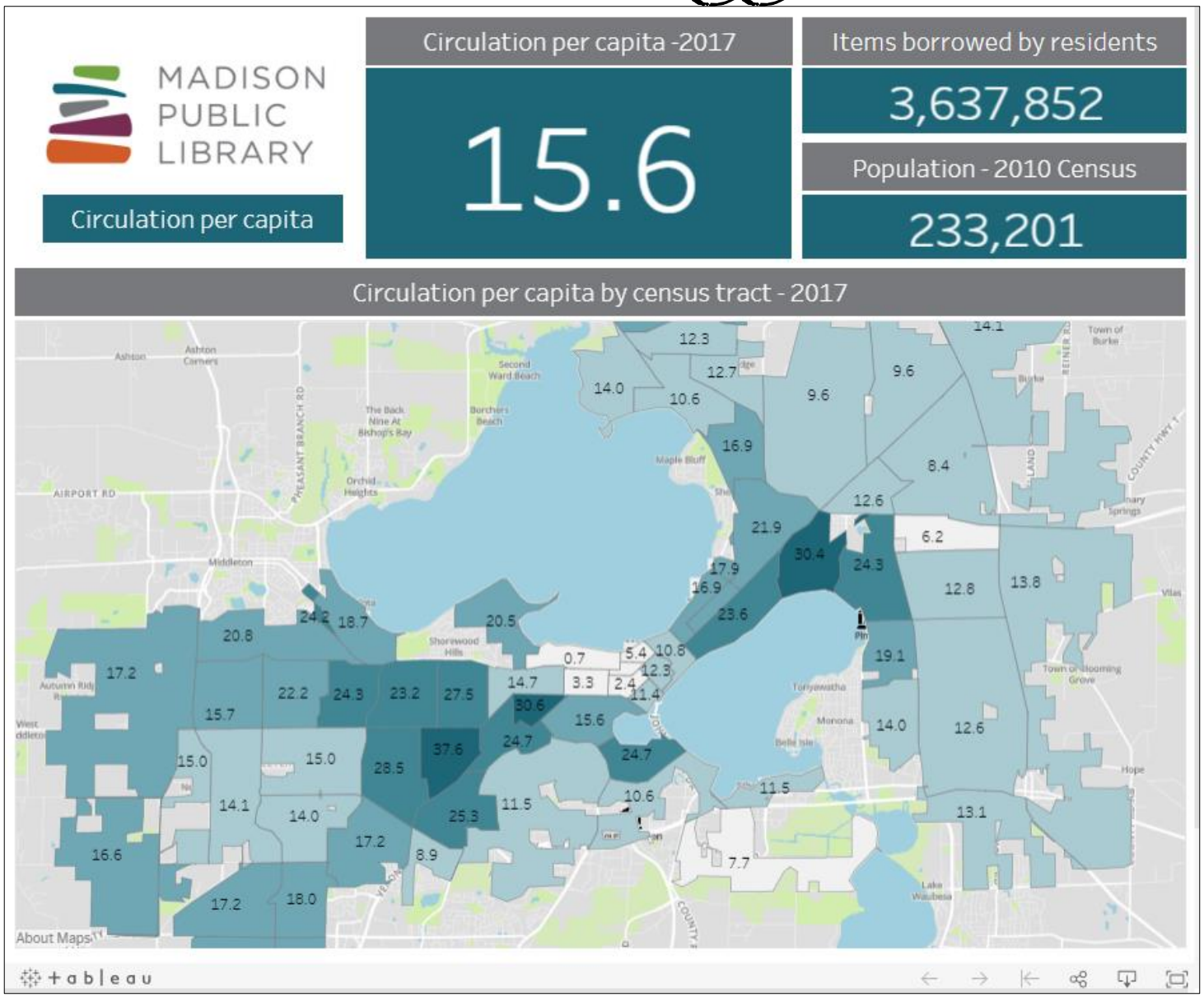
Annual Library Report | Fast Facts 2012-2016: https://public.tableau.com/shared/598TTNMGN?:display_count=yes
Dataset: Wisconsin Public Library Service Data: https://dpi.wi.gov/pld/data-reports/service-data

What library services are improving?



Columbia County Libraries: https://public.tableau.com/views/ColumbiaCountyLibraries/Stats?:embed=y&:display_count=yes
Dataset: Wisconsin Public Library Service Data: https://dpi.wi.gov/pld/data-reports/service-data

Where are the biggest users?



MPL-Circ per Capita: https://public.tableau.com/views/MPL-CircperCapita/Circpercapita?:embed=y&:display_count=yes
Datasets: Census Tract Shapefile | Census SF1 Population (MSN) | Total CKO by PSTAT 2017 | PSTAT Geocodes

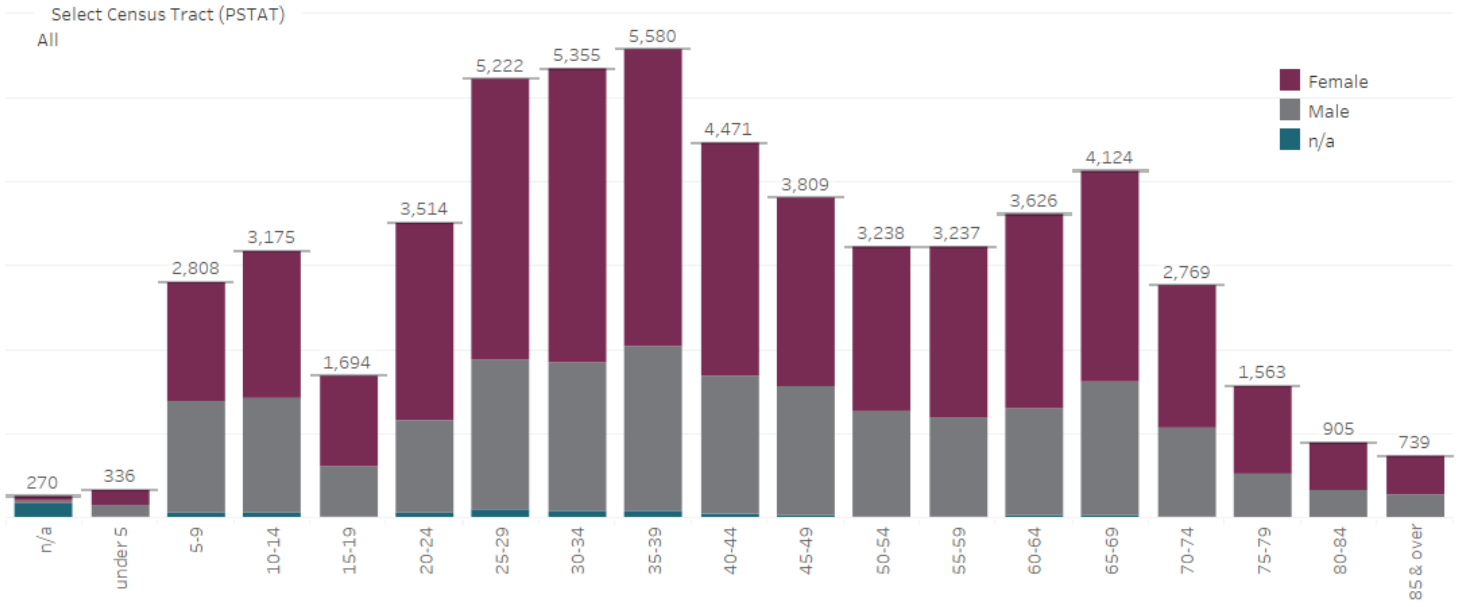
Who is using the library?

MADISON PUBLIC LIBRARY

Resident Users

% who used the collection - 2017	Residents with a library card
24.2%	160,657
	Residents that used their card
	56,435

Age and sex of residents who checked out materials - 2017

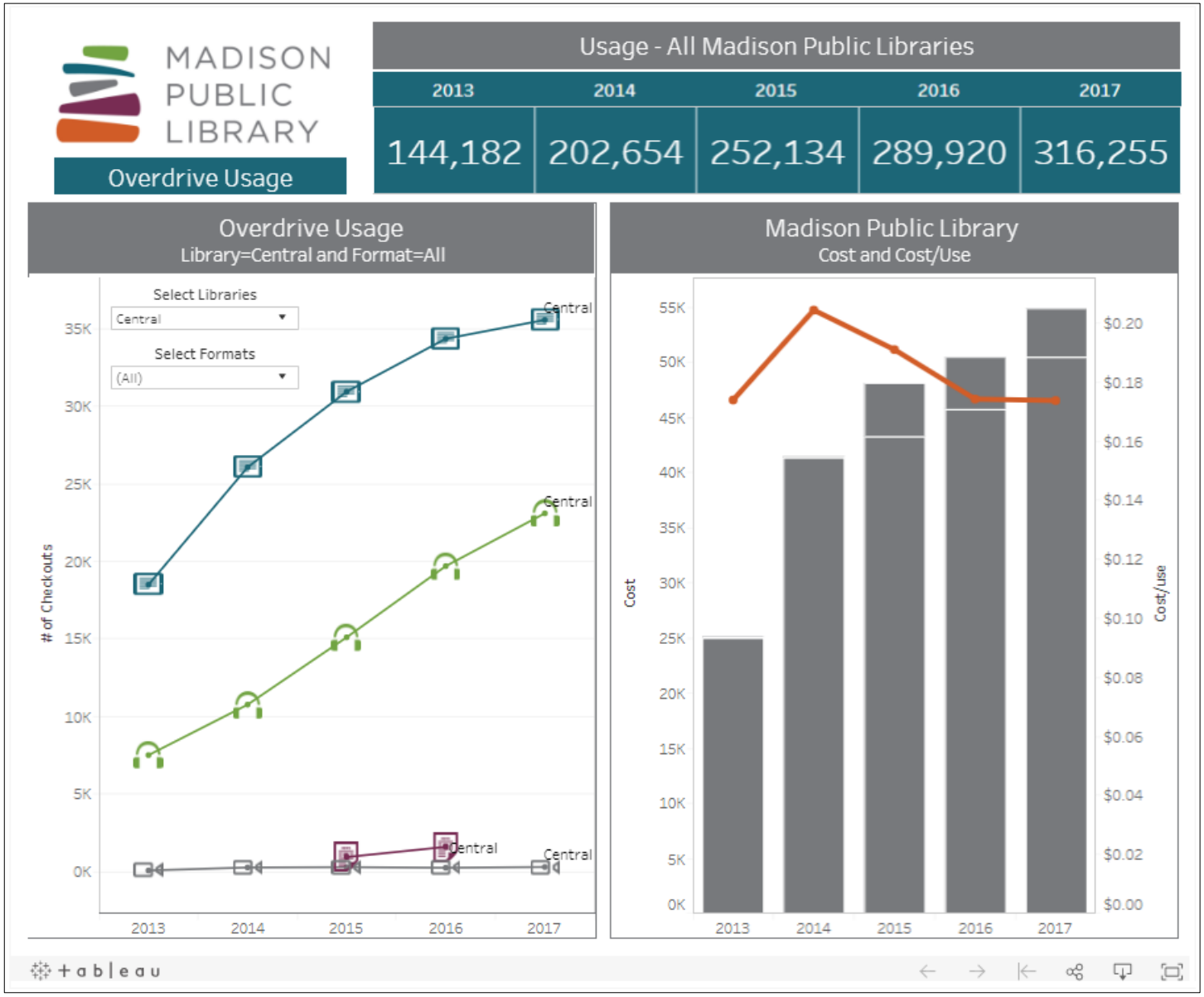


Number of residents who used their library card quarterly - 2017

Q1	Q2	Q3	Q4
38,764	40,744	41,558	37,370

MPL-Residents: https://public.tableau.com/views/MPL-Residents/DemographicsbyPstat?:embed=y&:display_count=yes
Dataset: LibLime KOHA via MySQL

Is Overdrive worth the cost?

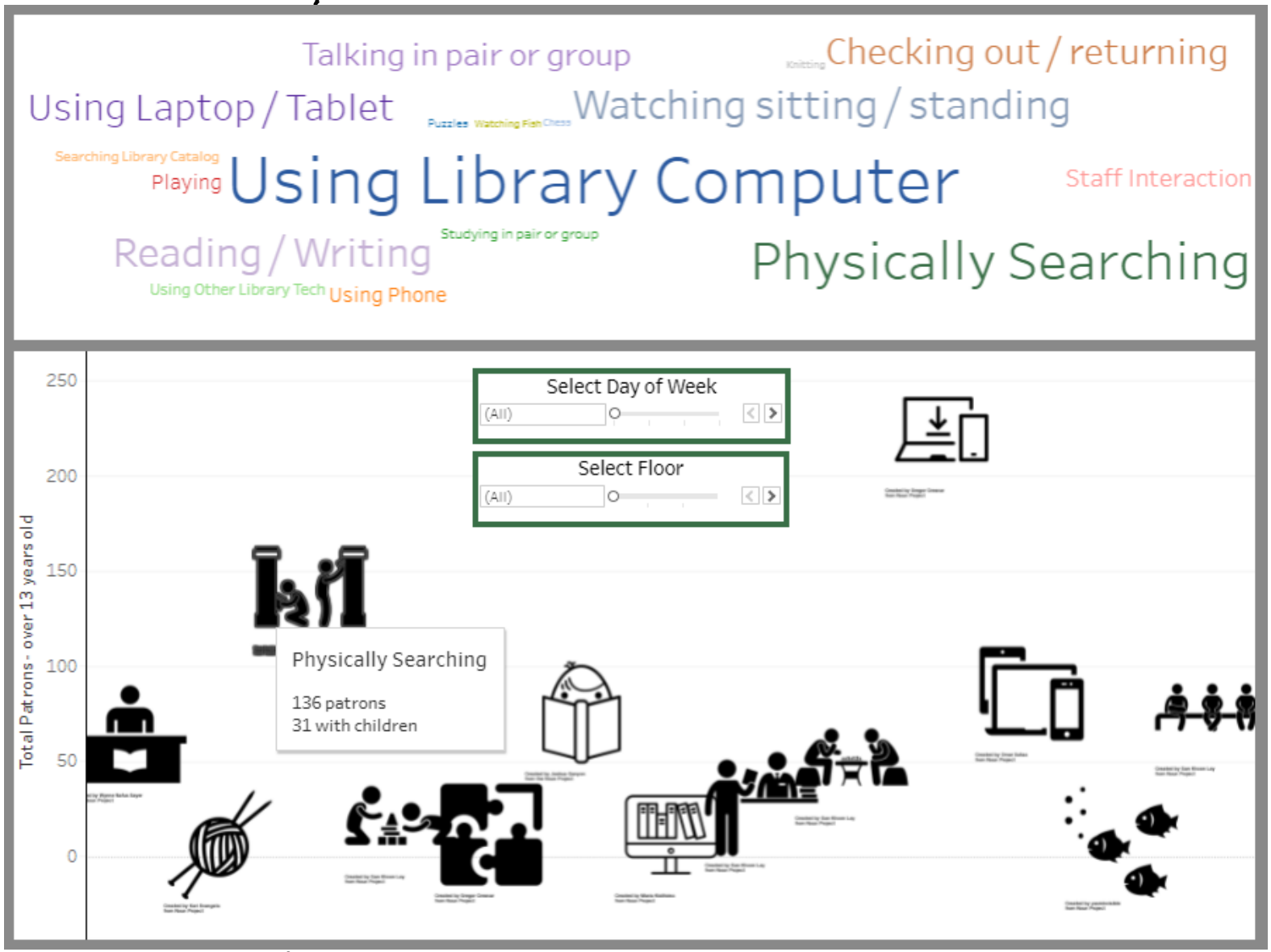


MPL-Overdrive Usage: https://public.tableau.com/views/2018_01_21MPLOverdrive/MPLOverdriveUse?:embed=y&:display_count=yes
Datasets: Overdrive Usage Statistics | Overdrive Cost Data

How long do patrons visit the library?

Portage County Library | Sweep 2017:
https://public.tableau.com/views/2017_08_21PortageSweep/PortageCountyLibrarySweep?:embed=y&:display_count=yes
Datasets: Portage County Library Sweep Study Data https://goo.gl/a2hKik

What are patrons doing in the library?



Portage County Library | Sweep 2017:
https://public.tableau.com/views/2017_08_21PortageSweep/PortageCountyLibrarySweep?:embed=y&:display_count=yes
Datasets: Portage County Library Sweep Study Data https://goo.gl/a2hKik

How are residents using the library?

Fall River, Village (C-FR-V)

Residents with library cards.

643

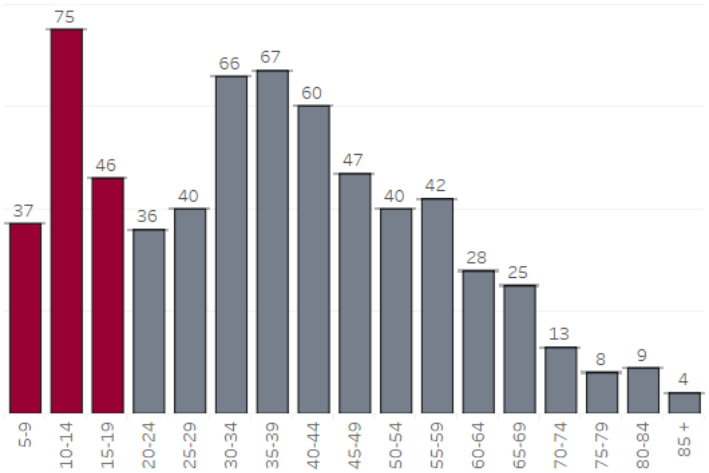
38% of residents

2016 Items checked out.

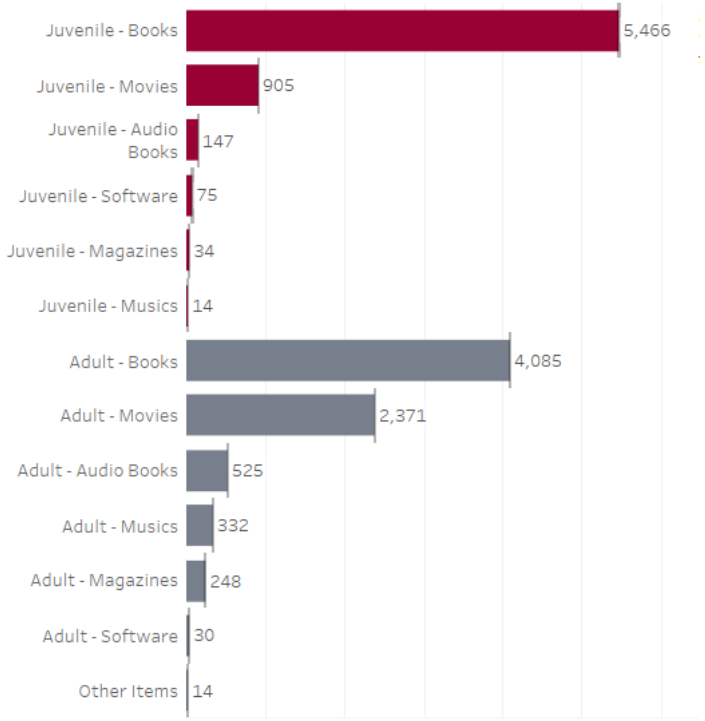
14,246

6,641 were children's materials

Residents with library card by age.



Types of materials checked out.

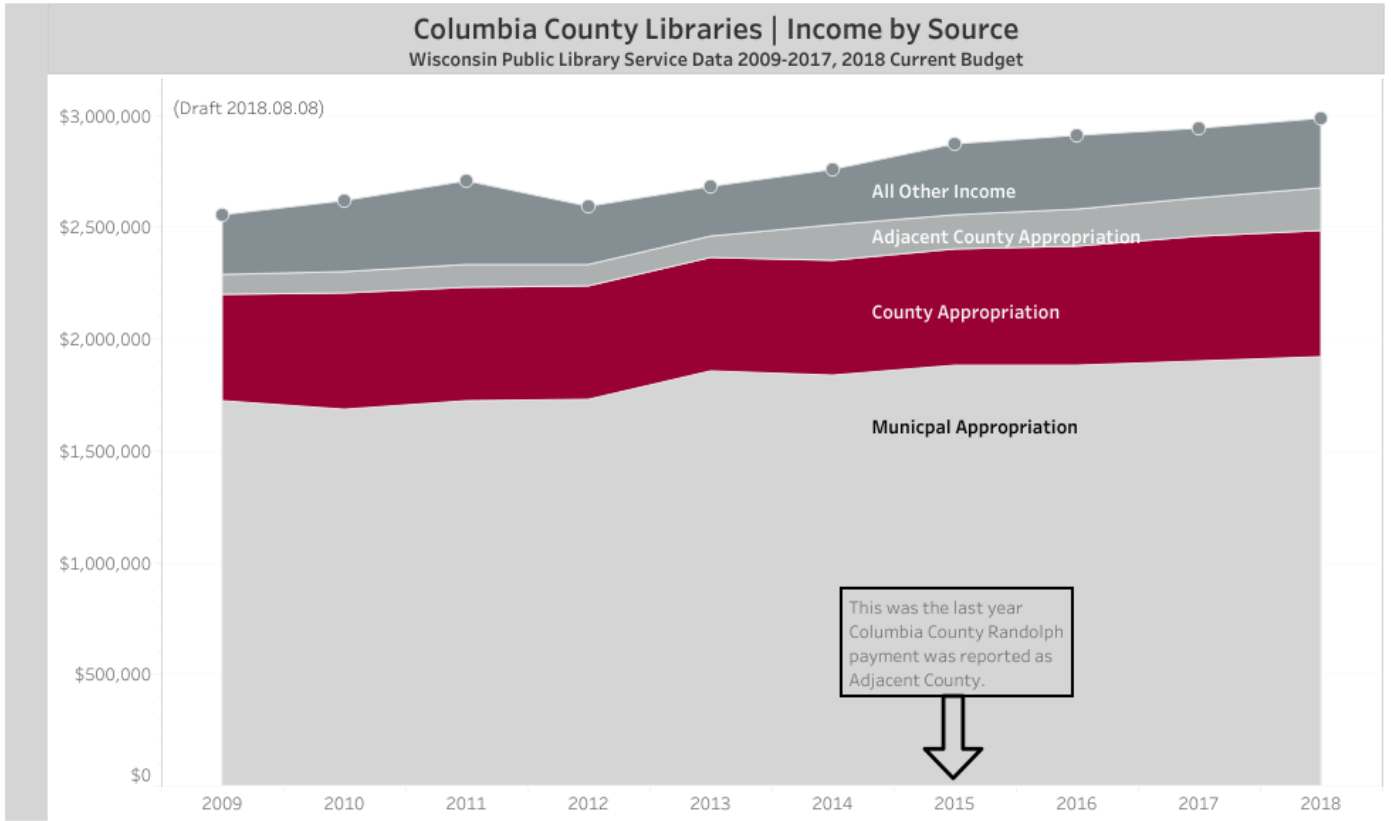


Top 5 libraries selected as home libraries.

Columbus	Sun Prairie	Portage	MPL-Pinney	Jane Morgan Memorial
595	16	9	4	3

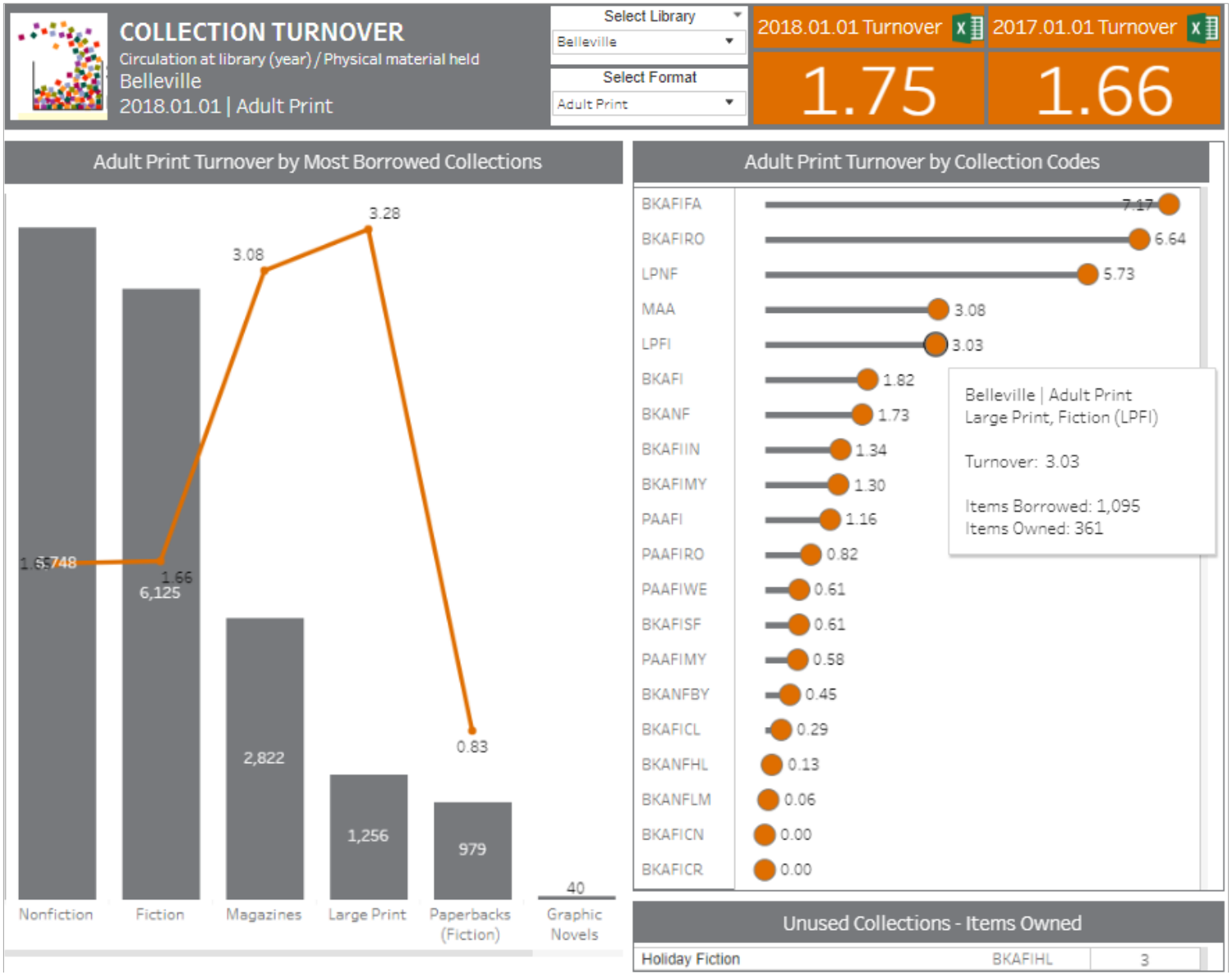
Fall River Patrons and Circulation: https://public.tableau.com/views/2017_12_01FallRiver/FallRiver1?:embed=y&:display_count=yes
Dataset: LibLime KOHA via MySQL

How much of the library budget comes from the County?



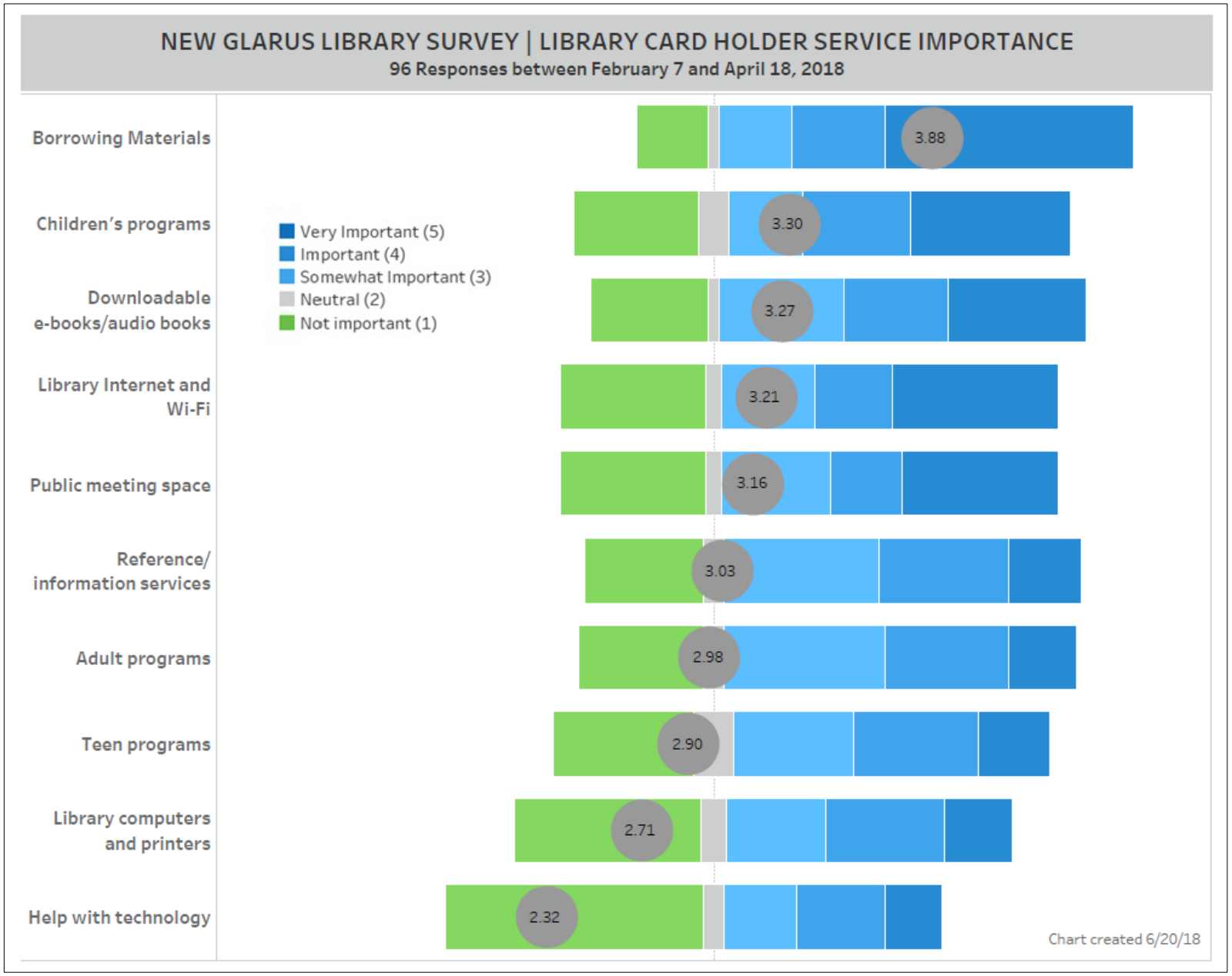
Revenue- All Other Income Calculated	$266,974	$321,057	$377,322	$257,203	$222,356	$250,309	$313,624	$330,775	$314,068	$310,959
Revenue - Adjacant Counties Payment	$92,404	$94,162	$97,734	$98,242	$93,565	$157,191	$157,714	$163,082	$168,435	$190,477
Revenue - County Appropriation	$476,339	$517,428	$506,070	$504,430	$509,404	$518,227	$518,687	$535,662	$561,497	$561,500
Revenue - Municipal Appropriation	$1,719,203	$1,685,831	$1,723,573	$1,730,414	$1,853,081	$1,832,998	$1,878,665	$1,877,559	$1,898,070	$1,920,032
Revenue - Total Income	$2,554,920	$2,618,478	$2,704,699	$2,590,289	$2,678,406	$2,758,725	$2,868,690	$2,907,078	$2,942,070	$2,982,968

Do we have books patrons want?



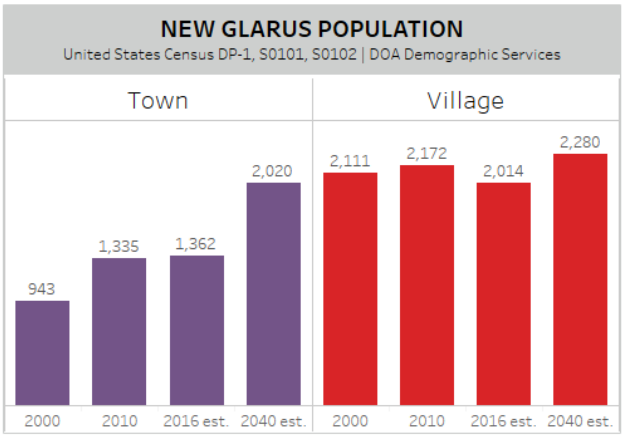
SCLS-Turnover: https://public.tableau.com/shared/Y24CG436Y?:display_count=yes
Datasets: items-owned and LINKcat-circs (monthly extracts) | Koha Collection Codes Split

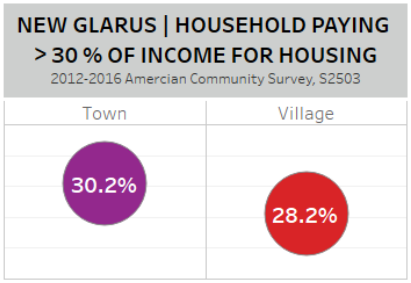
What services are most valued?

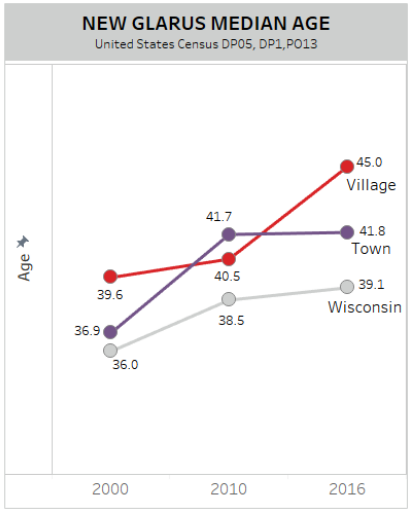


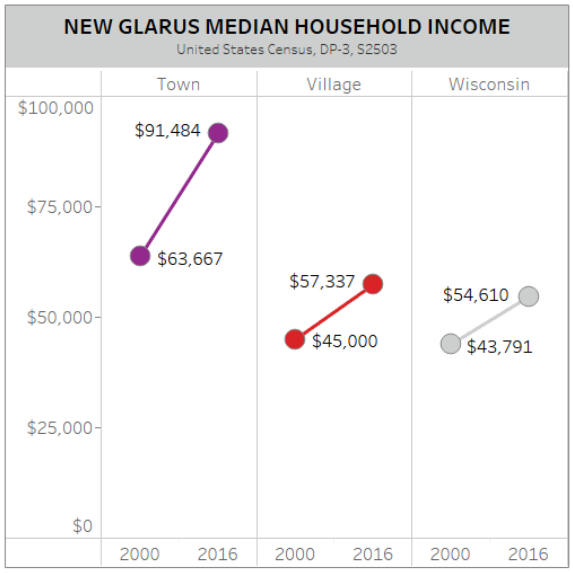
Datasets: 2018 New Glarus Public Library Community Survey

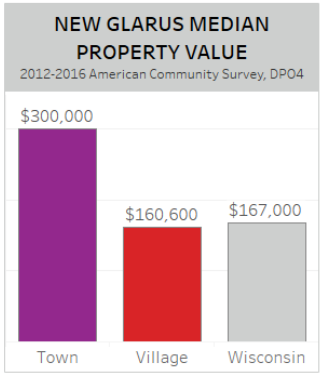
How is our community changing?

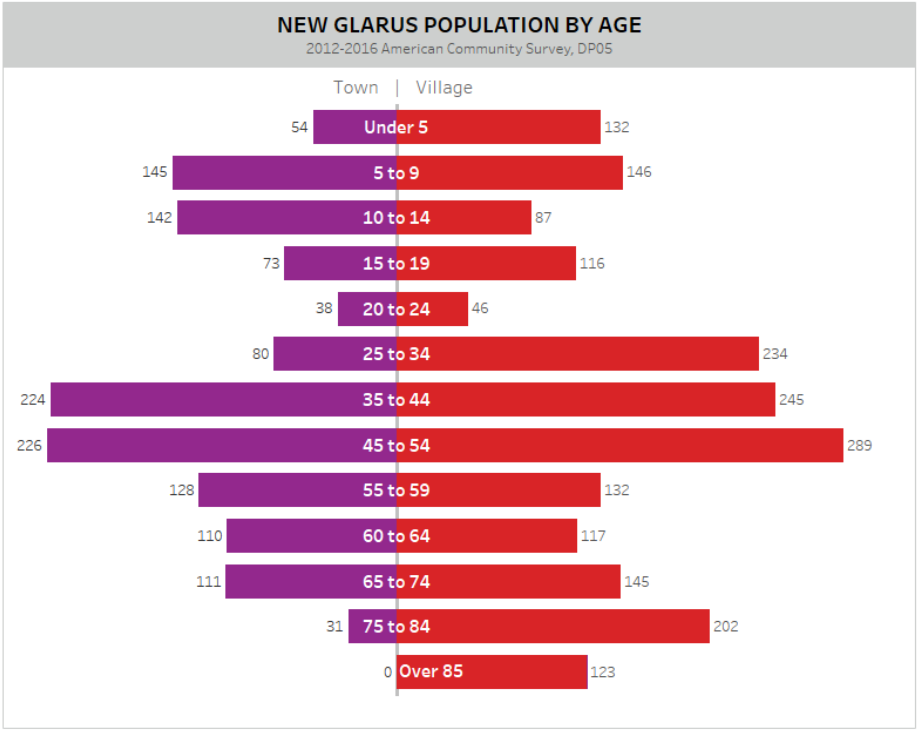




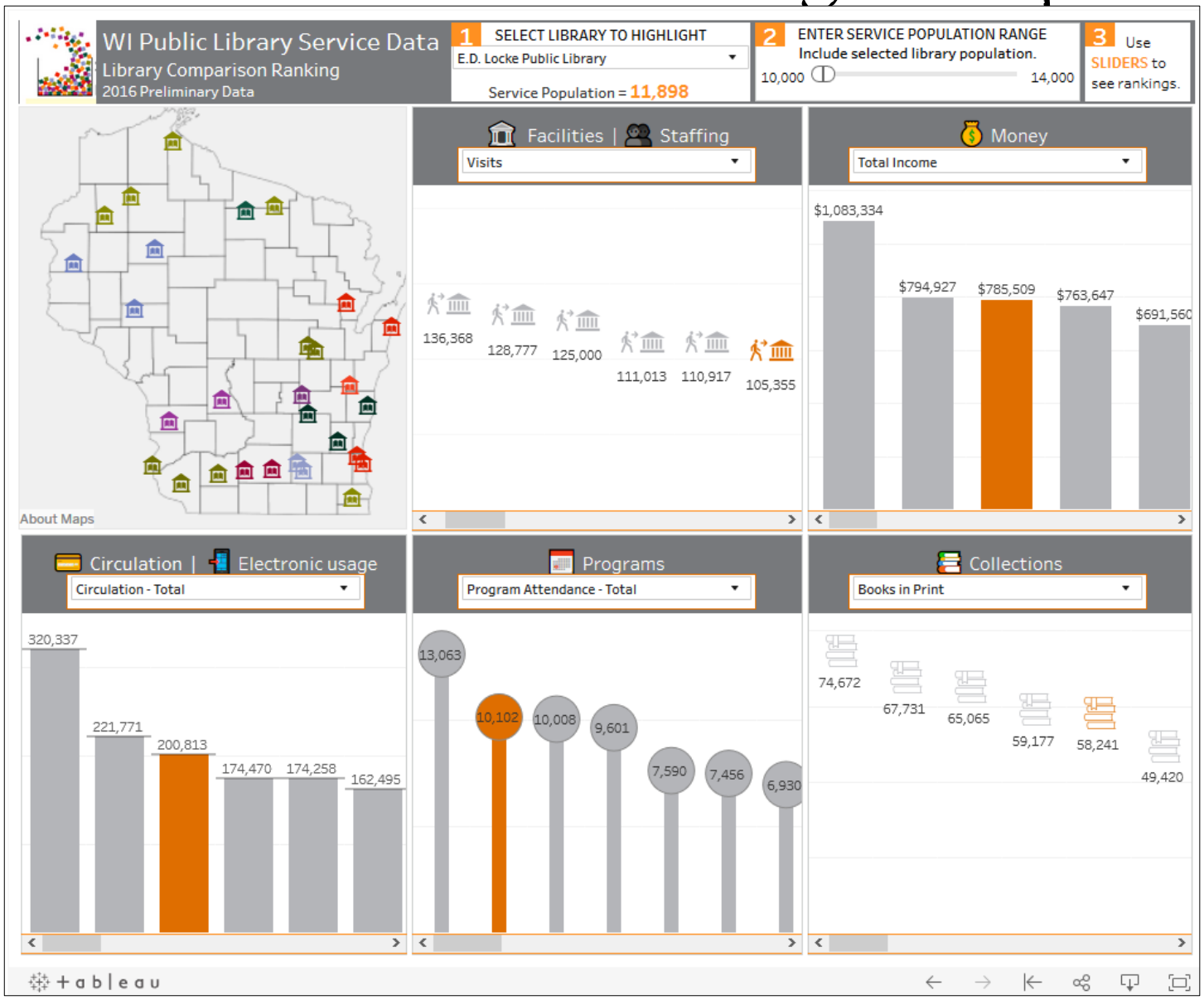








How does our library compare?



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Dataset: Wisconsin Public Library Service Data: https://dpi.wi.gov/pld/data-reports/service-data

More stories to create!

https://pixabay.com/en/books-spine-colors-pastel-1099067/

Story Example

Robert (Bob) Hoesly

Hoesly combines farming with chairmanship

Photo and information reproduced from the Panorama Publication.

How will you craft your libraries' story?

https://www.pexels.com/photo/paper-with-ideas-print-on-typewriter-1043510/

Numbers have an important story to tell. They rely on you to give them a voice. ~ Stephen Few

Be yourself!

Some rights reserved https://flic.kr/p/8FAVYu

Be creative!

Thank-you!

Questions by Nick Youngson CC BY-SA 3.0 ImageCreator