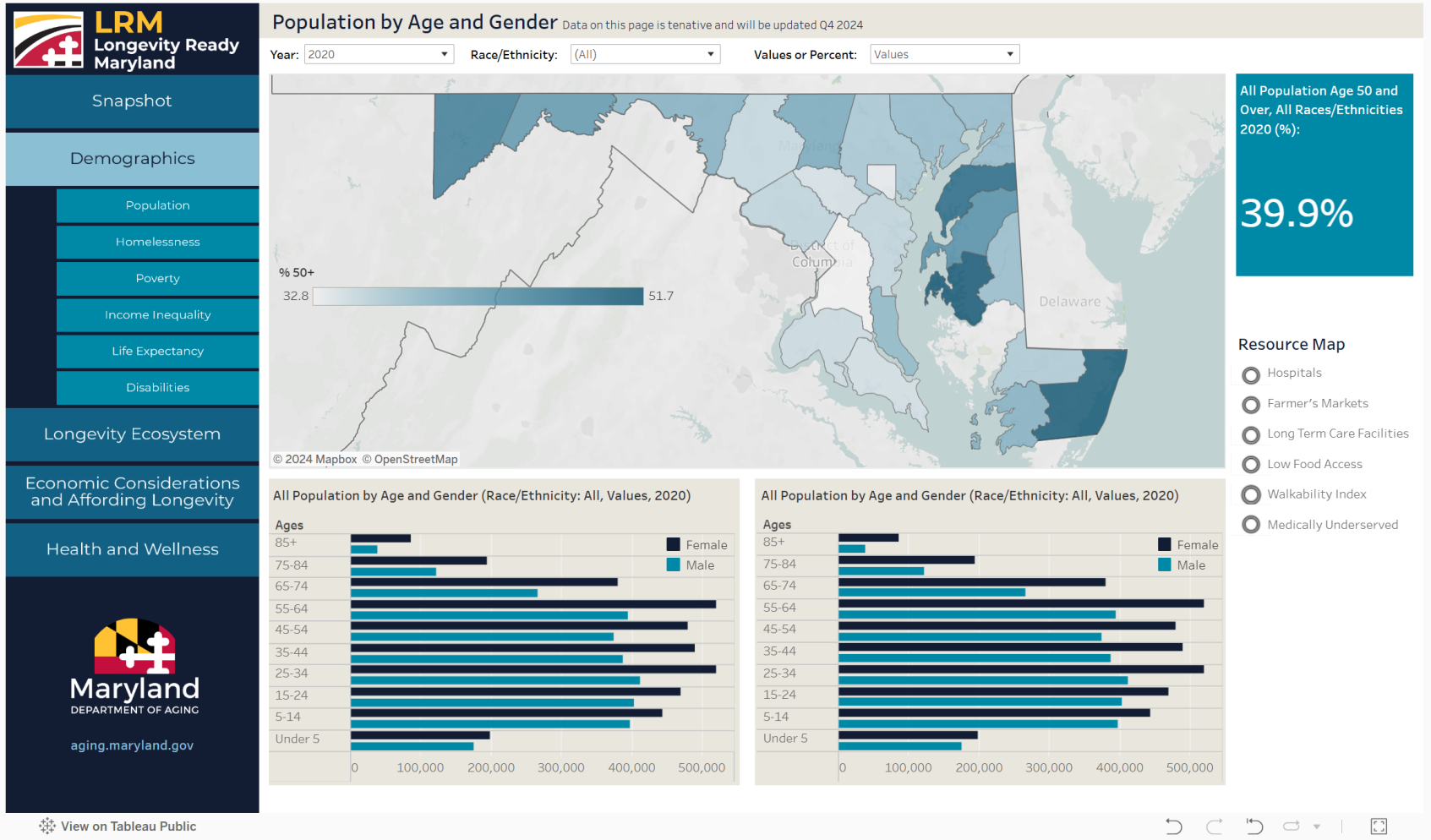
Data Driven Applications at SDAC

Creating New Utility for SDAC Products

Tyler Schlachter

SDAC is building Dashboards



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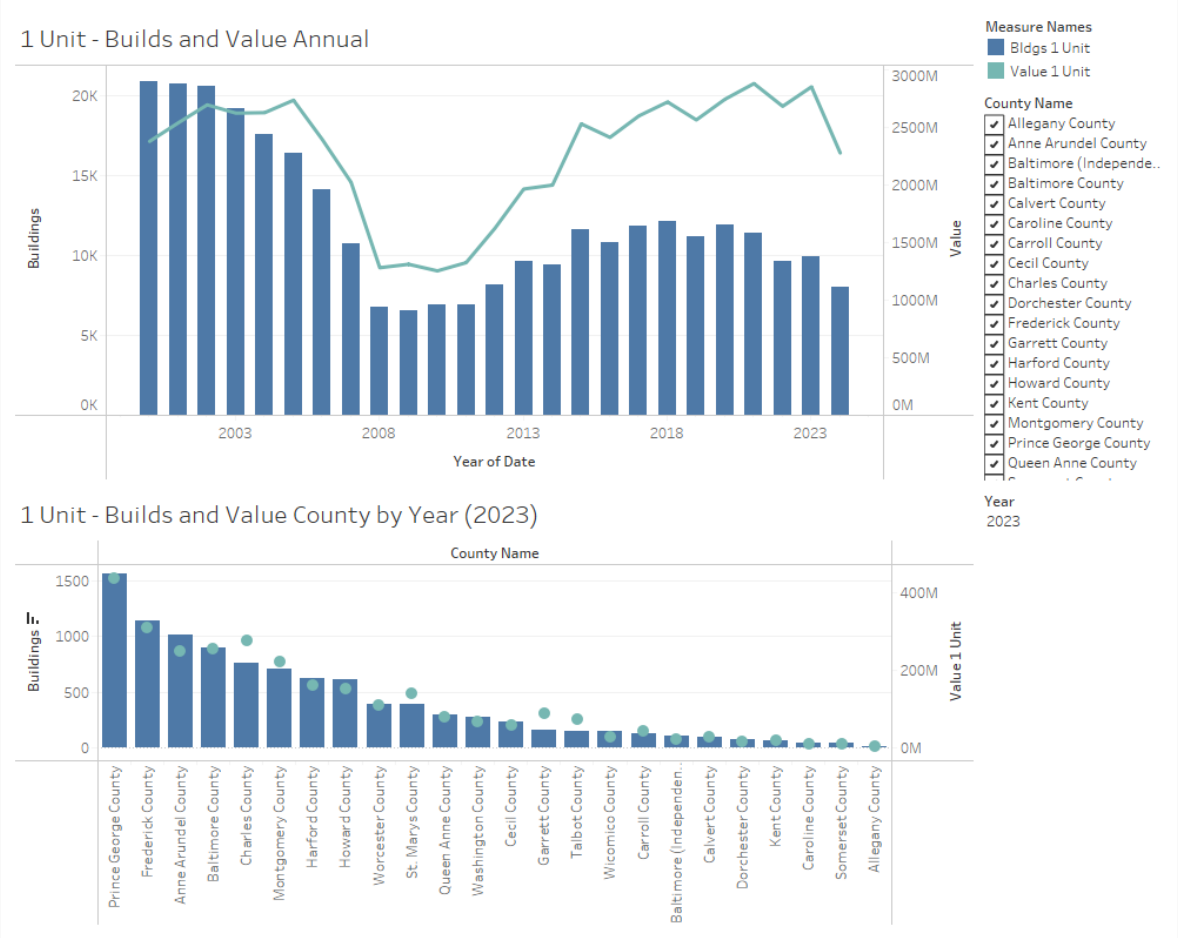
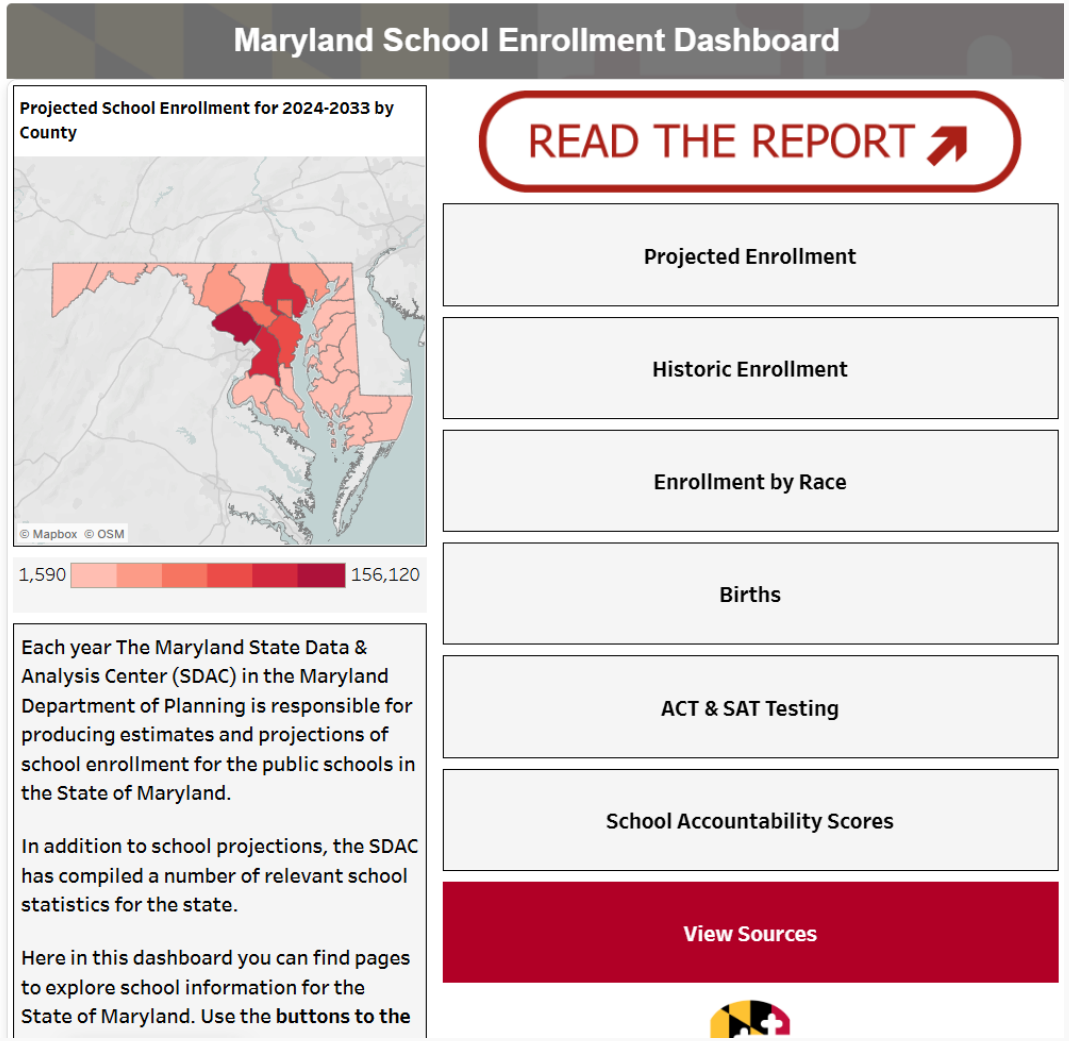
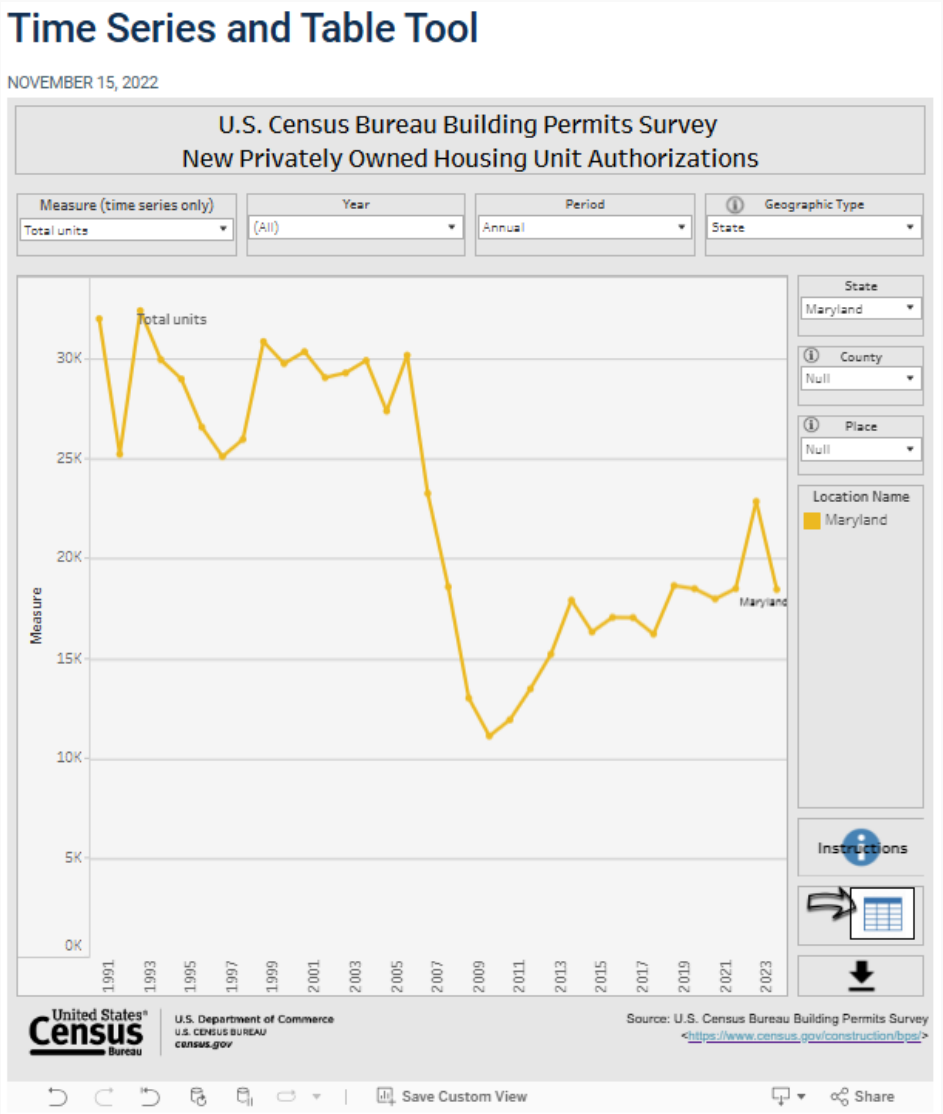




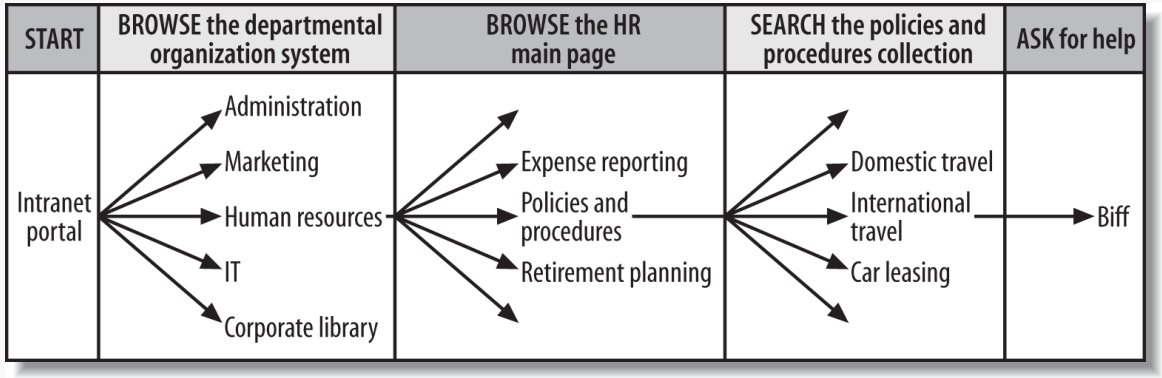
SDAC, Our Products and Our Audience

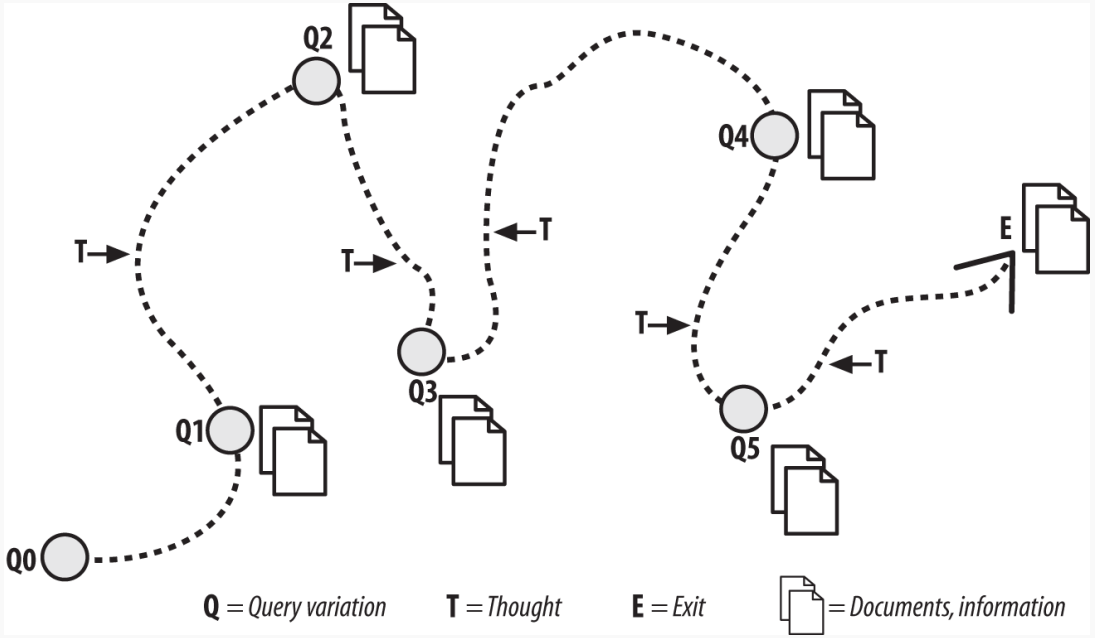
- SDAC provides data products based on Census Data
- Our responsibility is to our stakeholders and audience – to help them find and understand Census Data products
- Improvements in data transmission and data legibility for Census Data Products:
  - The Census API
  - Census Dashboards
- Building Permits Census Data
- SDAC Products lag somewhat – But we're making improvements, by using new tooling and embracing progress the Census Department has made in data transmission



Findability

- We can understand most user needs by modeling information seeking behavior
- Information-seeking behavior has not changed (the metaphor of ‘berry-picking’ is common in this domain)
- But tooling and information presentation have changed - that users expect a different experience from the process
  - Query variation is more rapid with modern tooling
- The medium affects the message
  - Query variation when looking at a table in a series of tables is different than query variation in a ‘dashboard’ visualization





Illustrations: Rosenfeld, L. B., Morville, P. & Arango, J. (2015). Information architecture for the Web and beyond.

What SDAC is Doing – An Example in School Enrollments

- Each year SDAC produces MD School Enrollment predictions and publishes:
  - Annual Report (293 pg.)
    - 14 tables
    - 20 charts
    - Hundreds of pages of Supplementary Tables
    - All available in PDF, tables available in xlsx
- The average user wants…
- Creating a dashboard to publish along side the report allows users to
  - *See* what they might find interesting in a report
  - Understand potential lines of inquiry more quickly
- The visualization should be the first stop – for many users it may be the only stop

Tables in Report :

1. Summary of Historical and Projected Public School Enrollment for Maryland	XLSX | PDF
2. Summary of Historical and Projected Total Public School Enrollment for Maryland's Jurisdictions	XLSX | PDF
3. Total Public School Enrollment (Grades K-12) by Jurisdiction, Actual (2023) and Projected (2024-2033)	XLSX | PDF
4. Annual Change in Total Public School Enrollment (Grades K-12) From Actual 2023, by Jurisdiction	XLSX | PDF
5. Annual Percent Change in Total Public School Enrollment (Grade K-12) From Actual 2023, by Jurisdiction	XLSX | PDF
6. Public Elementary School Enrollment (Grades K-5) by Jurisdiction, Actual (2023) and Projected (2024-2033)	XLSX | PDF
7. Annual Change in Public Elementary School Enrollment (Grades K-5) From Actual 2023, by Jurisdiction	XLSX | PDF
8. Annual Percent Change in Public Elementary School Enrollment (Grades K-5) From Actual 2023, by Jurisdiction	XLSX | PDF
9. Public Middle School Enrollment (Grades 6-8) by Jurisdiction, Actual (2023) and Projected (2024-2033)	XLSX | PDF
10. Annual Change in Public Middle School Enrollment (Grades 6-8) From Actual 2023, by Jurisdiction	XLSX | PDF
11. Annual Percent Change in Public Middle School Enrollment (Grades 6-8) From Actual 2023, by Jurisdiction	XLSX | PDF
12. Public High School Enrollment (Grades 9-12) by Jurisdiction, Actual (2023) and Projected (2024-2033)	XLSX | PDF
13. Annual Change in Public High School Enrollment (Grades 9-12) From Actual 2023, by Jurisdiction	XLSX | PDF
14. Annual Percent Change in High School Enrollment (Grades 9-12) From Actual 2023, by Jurisdiction	XLSX | PDF

Charts in Report :

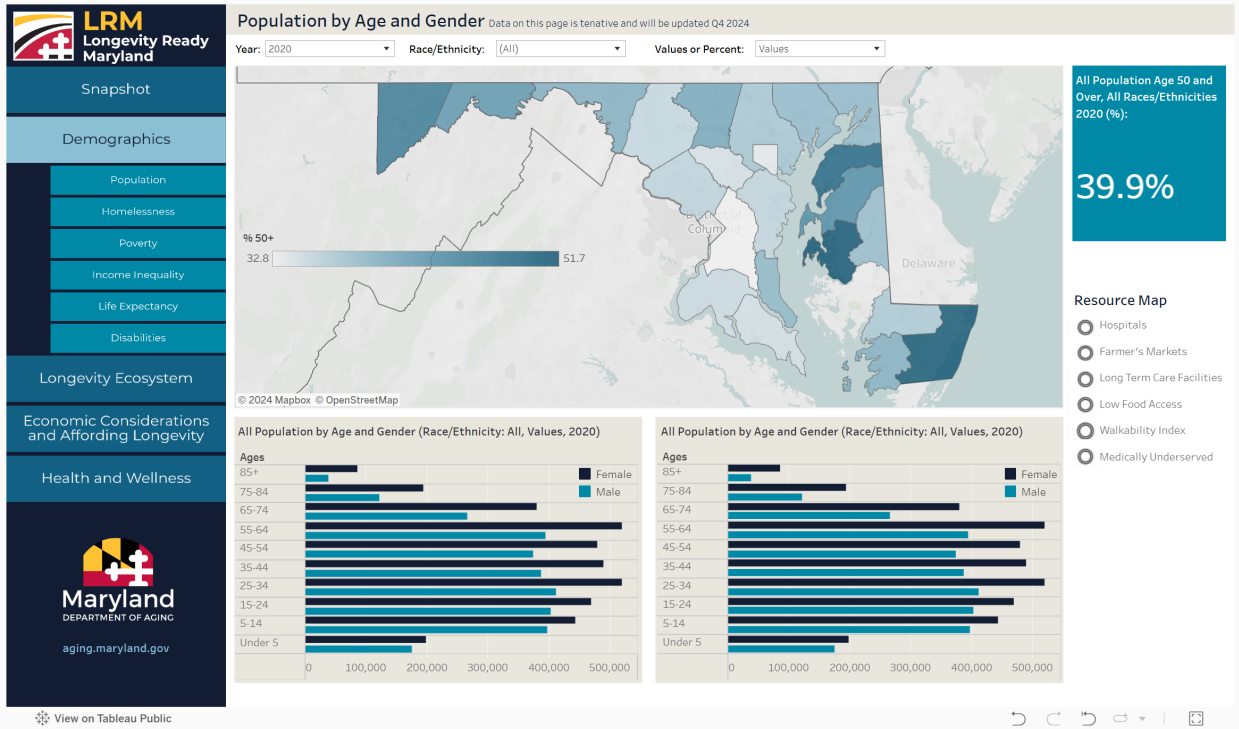
1. Historical Annual Change in Total Public School Enrollment in Maryland, 2013-2023
2. Projected Annual Change in Total Public School Enrollment in Maryland, 2024-2033
3. Projected Annual Change in Public Elementary School Enrollment in Maryland, 2024-2033
4. Projected Annual Change in Public Middle School Enrollment in Maryland, 2024-2033
5. Projected Annual Change in Public High School Enrollment in Maryland, 2024-2033
6. Total Public School Enrollment in Maryland, Historical & Projected, 1973-2033
7. Total Births in Maryland, Historical & Projected, 1941-2028
8. Cumulative Births by School Year in Maryland Historical & Projected, 1973-2033
9. Annual Change in Cumulative Births by School Year, Historical & Projected, 1973-2033

Tooling

- Creating Data-Driven applications requires a system – the visualization is one part of the system
  - Data ETL – DevOps – Hosting – Visualization
- Many tools sold by venders sell the system – results can be mixed
- Tool selection matters:
  - Tools cost time and resources ($$, human capital)
  - Learning new tools takes time - there are some economies of scale in learning
  - Systems are already in place – standards/norms – what do people like?
- Lower-level tools offer the most in customization (python, javascript, R)
- Higher-level tools offer a lower barrier to entry, can produce more polished results, but may not be as customizable (Tableau, PowerBI)
- A mix of both yields the best results

What SDAC Is Doing – An Example in The Department of Aging Dashboard

- Collaborators at the Maryland Department of Aging approached us to do the work of dashboard development for their Longevity Ready Maryland Initiative
- ACS 5-year survey data is a primary dataset, other datasets include:
  - In-house population projection figures
  - CDC BRFSS Health Data
  - AARP Cost-of-Care Data



What's Next?

- A more comprehensive look at our data offerings
  - Where can we simplify the user experience?
  - Where can we make our products more legible, more findable?
  - What can give our stakeholders the most value?
- More Tableau Dashboards
- More tooling

Thank you!

Questions?