Why Access to Data Matters and What We Can Do to Improve Access and Reusability

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Abstract

The Flint, Michigan, water crisis began in 2014 after officials switched the water supply to the Flint River, which was highly corrosive to the city's pipes. Years later, the situation on the ground is still dire. Pipes are being replaced, but your average Flint citizen has no idea where the replacement is done. Citizens have such a history of tap water problems (pre-2014 and COVID) that they just continue to go and get (or buy) bottled water. . . for everything. Regaining trust in the viability/potability of their tap water is at odds with a local administration that doesn't want to spend any more money and can't wait for the situation to resolve itself. The Flint water crisis highlights the need for accessible and (re)usable data by all stakeholders. For example, if the officials who had originally switched the water supply had access to data in a way that was usable to them that showed how switching the water source without changing treatment would impact the infrastructure and water quality, they may have taken steps to prevent the crisis in the first place. Flint citizens should have access to data that shows water quality information and the status of infrastructure updates, in a way that is useful to them. Access to usable data is not just a nice thing to have; it can be a matter of life and death. We will outline the basic rights and responsibilities of researchers, data professionals, institutions, and others with regards to improving data access and reusability. For example, stakeholders and community members should have access to data that impacts their communities, and resources (such as access to researchers) to understand that data in a way that is useful for their situation.

Why access to data matters and what we can do to improve access and reusability

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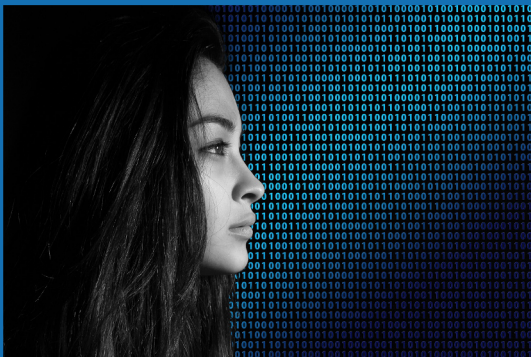[1]Geological Survey of Alabama, Energy Program
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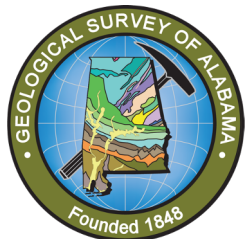
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Acknowledgments

Setting the Stage:
Flint, MI, Water Crisis
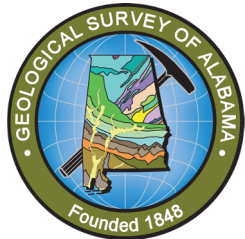
Flint Water Crisis - The Beginning

- Began in 2014, when Flint changed water source in a cost-saving move
- New water source, Flint River, was highly corrosive to existing pipes
- 100,000 residents including 6-12,000 children exposed to lead in drinking water

Flint Water Crisis - The Middle

- City switched back to the Detroit water system in 2015
- Pres. Obama declared a federal state of emergency in 2016, authorizing additional help from FEMA and others
- Lead service pipe replacement effort began in 2016 and is ongoing

Flint Water Crisis - Ongoing

- Crisis considered "over" in early 2019 - but not all pipes replaced yet, nor even located
- Still major distrust in the community, as there is a long history of water issues
- Lack of access to data that is useful to residents contributes to ongoing distrust
- ESIP Community Data Cluster, CODATA IDAR Task Group, and others working with community members to make data accessible and usable

Motivation and Inspiration
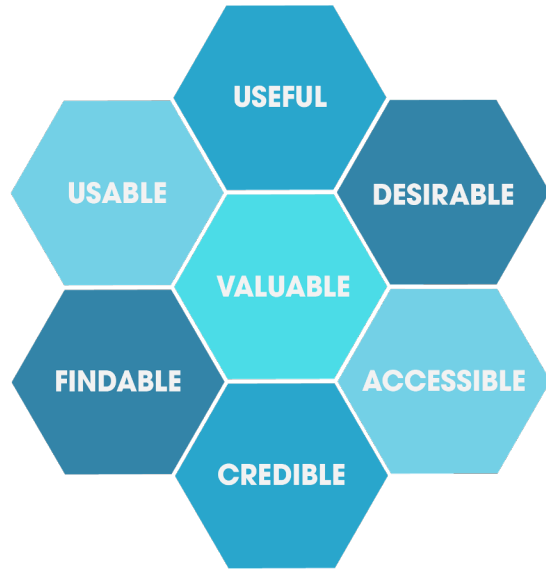
- Increased demand for open, accessible, and (re)usable data for multiple uses and a variety of stakeholders
- Accessibility and (re)usability of data can be a matter of life and death
- Guidelines and Codes of Conduct have been implemented broadly for ethical *professional* conduct, but generally lack explicit mention of data management, conservation, and reuse

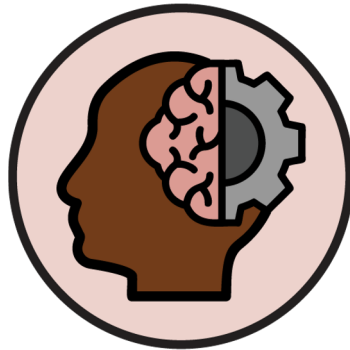# *Stakeholder Groups Currently Addressed*

Researchers

Institutions

Community Members

Data Professionals

Funders

Responsibilities and Rights - Researchers Should:

- Have access to data that is as open and FAIR as ethically possible
- Develop, use, and update as needed data management plans for their research data
- Work with data professionals throughout the data life cycle to ensure appropriate data storage and management
- Clearly communicate any restrictions (e.g., ethical considerations) on access to their data
- Be aware of and implement leading practices for their specific types of data

Responsibilities and Rights - Data Professionals Should:

- Be acknowledged for the critical role they play in ensuring data access and reusability throughout the data life cycle
- Proactively reach out to researchers to ensure appropriate data management plans are in place and are followed
- Help researchers identify appropriate repositories for their data
- Assist as needed in identifying leading practices for various types of data
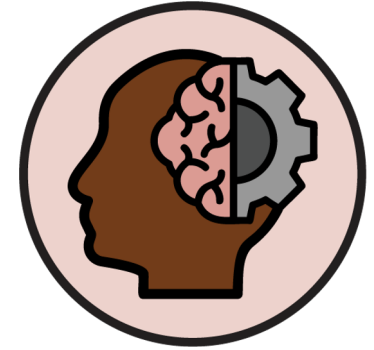
Responsibilities and Rights - Institutions Should:

- Have access to data generated from researchers and projects that they support
- Recognize the long-term value of research data
- Support researchers and data professionals in the appropriate data practices through financial and other resources

Responsibilities and Rights - Funders Should:

- Have access to data generated from researchers and projects that they support
- Assist researchers in developing appropriate data management plans and in implementing those data management plans
- Ensure that repositories are supported for long-term sustainability
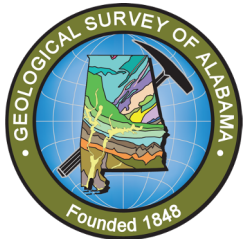
Responsibilities and Rights - Community Members Should:

- Have access to data that impacts their community in a way that is useful for them
- Be able to connect with researchers, data professionals, and institutions to utilize data for resiliency

What's Next?
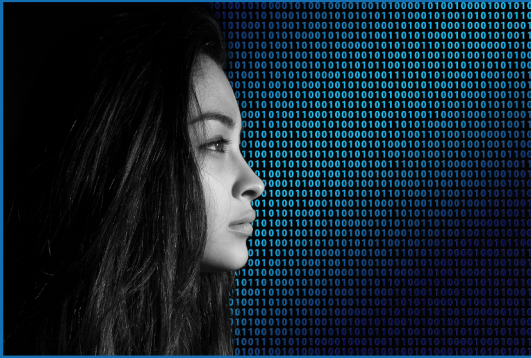
Currently We Are:

- Collaborating with various data and research groups to develop these Guidelines
- Presenting our ideas to solicit feedback
- Working with communities to learn more about their needs
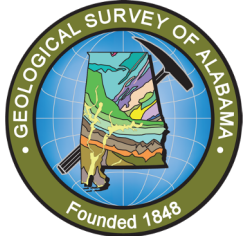
How You Can Engage:

- Consider how you are already practicing these guidelines
- Advocate when possible for policies and leading practices that enable improved data access and reusability
- Get involved with ESIP, particularly the Community Data cluster
- Get involved with the CODATA IDAR Task Group
- Give us feedback! What's missing? What have we gotten right or wrong?
  - Fill out our survey! https://bit.ly/IDAR_RR

Thank You!

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