Research Brief

Policy Research Program
Project 0092-22-71
August 2023

WisDOT Data Governance, Phase II

Research Objectives

- Develop recommendations for WisDOT's Data Governance, including structure, personnel, and implementation
- Draft important documents related to Data Governance

Research Benefits

- Address gaps in data classification, identification, and labeling
- Minimize the risk of data breaches
- Ensure that WisDOT is prepared to handle increasingly large quantities of data, especially as the use of Connected Autonomous Vehicles (CAVs) rises
- Ensure WisDOT's data is consistent, accurate, and complies with all regulations

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Background

WisDOT's current data cataloging processes are fairly decentralized and may benefit from an overarching Data Governance Framework. The amount of data within WisDOT is growing exponentially, yet data is dispersed across multiple sources without a centralized repository. In addition, there are gaps in the data identification and labeling process.

These gaps have caused the agency to struggle to adequately identify and label all information assets. Without proper data governance, WisDOT is at higher risk of data breaches, which often result in substantial costs and reputational damage.

Creating a Data Governance Framework and data cataloging practices would include harmonizing data sources, implementing access controls, documenting ownership, and creating technical and descriptive information to address all components of WisDOT data.

Methodology

The research team first revisited a literature review from a previous project on Data Governance which included Data Governance practices. They then reviewed a previous survey sent to all 50 state DOTs, that asked about Data Governance implementation and software.

Researchers conducted phone interviews with DOTs in California, Florida, Indiana, Iowa, Ohio and South Carolina to discuss the progress they have made towards Data Governance. Researchers addressed the structure, documentation, rules, implementation, and technology requirements in those states. States also sent Data Governance documentations, such as visualizations of their Data Governance organizational structure, guiding principles, key considerations and implementation roadmaps.

Additionally, the research team met regularly with WisDOT's iCAV, a group devoted to CAV technology and deployment, research development, policy advice, and state coordination. Because the volume of CAV data is of interest, iCAV's insights were important to this research and they provided feedback on the Data Governance materials that were developed.

Results

The survey results and interviews with state DOTs provided several insights into best practices of Data Governance. First, it was repeatedly emphasized that the success of Data Governance initiatives hinge on departmental leadership. Making this a strategic priority ensures that it becomes an essential part of the

"This project has given us a roadmap for implementing Data Governance across WisDOT. It includes a governance framework, roles and responsibilities, process flows and other artifacts that help us prepare for the onslaught of data expected to come from Connected and Autonomous Vehicles (CAVs) as well as the rapid growth in video, imagery and other file types."

–Michael Kessenich, WisDOT

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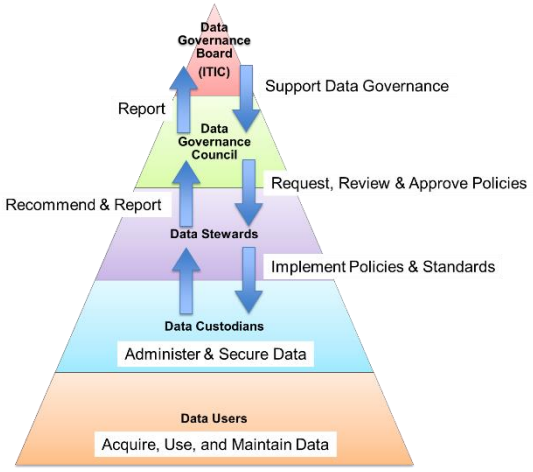
organization's operations. Leadership's support for Data Governance fosters employee buy-in and makes it more likely that resources will be allocated to the initiative.

Similarly, many DOTs emphasized that Data Governance should not be limited to the IT department; rather, it must be organization-wide. Collaboration from all departments ensures that diverse perspectives are brought to the table, and it also helps customize data practices to each division within the department. Having Data Governance officers with a variety of backgrounds (finance, engineering, policy, etc.) brings a wide range of expertise into the decision-making process. It generates buy-in so that all members of the department can engage in Data Governance practices.

Furthermore, change management is a key part of implementing data practices. Incorporating change management principles facilitates the adoption of Data Governance principles and practices.

Finally, the DOTs agreed that strong Data Governance procedures benefited their agency through improved data quality, increased efficiency, better resource allocation, policy compliance and cost savings.



Proposed structure designed for the WisDOT Data Governance program.

As a result of these discussions, the research team drafted several documents related to Data Governance, including a proposed structure, a board/council charter, a list of detailed roles and responsibilities for employees at various points in the structure, a process flow diagram for data intake, and a data intake form for capturing information about new data.

Recommendations for Implementation

The following recommendations are proposed:

1. Form a Data Governance board and council
2. Implement the developed documents
3. Promote Data Governance through organizational change management
4. Adopt technology for data catalog
5. Acquire the needed resources, especially several full-time positions dedicated to Data Governance