Digital Data Standards

Support Greater Transparency & Opportunity in Municipal Bond Markets

By Christine Kuglin, Natalie Fitzpatrick, Stephanie Leiser and Michelle Savage

The Financial Data Transparency Act (FDTA), a bipartisan bill co-sponsored by Senators Mark Warner (D-Virginia) and Mike Crapo (R-Idaho), was signed into law on Dec. 23, 2022, as part of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023.[1] Its primary objective is to modernize the collection and dissemination of financial data by federal financial regulators, rendering this information more accessible, standardized, and valuable to investors and data consumers.[2] The FDTA impacts all municipal bond issuers, including states, local governments, special districts, and other entities.[3]

FDTA Section 5823 calls for data transparency in municipal securities. Specifically, it will require information disclosed by government bond issuers to the Municipal Securities Rulemaking Board (MSRB) to be reported in an open data format that is structured and machine-readable.[4] It could reduce friction, improve market functions, and perhaps more importantly, increase ethics and trust in government reporting and grant more stakeholders access to municipal data and the tools to analyze and interpret it.

Data transparency in municipal securities could increase ethics and trust in government reporting.

Local governments, both general purpose and special district, have questioned the extent of the cost and effort to implement the FDTA and whether the work required to increase transparency will lead to competition for limited resources. They also questioned whether data standards can accommodate the various types of municipal governments that report to the MSRB. Yet another concern is the language used in the FDTA — that data standards requirements must be implemented "to the extent practicable," which leaves the door open to flexible application of data standards across reporting entities. Regulators may opt to phase in requirements and give smaller entities more time to transition, and they may phase in the types of data to be reported in a standardized format.

To address challenges in FDTA implementation, researchers at the universities of Michigan and Denver collaborated with XBRL US on a series of projects to design and evaluate machine-readable data standards that could appropriately represent the unique characteristics of government entities in the U.S.[5] Lessons learned in designing a data standard and piloting it with multiple local governments demonstrate the practical application of data standards for all entities. Moreover, the projects indicate the value of a robust, competitive marketplace of software providers for all issuers. A one-size-fits-all approach is neither appropriate nor necessary, given the flexibility of the standard and the expansive nature of the software market supporting it. These lessons can inform regulators and local governments as they modernize financial reporting and implement the FDTA.

PROJECT 1: STANDARDS TO REPRESENT GENERAL PURPOSE GOVERNMENTS

In 2021, the University of Michigan Center for Local, State, and Urban Policy (CLOSUP) and XBRL US launched a project to modernize and digitize local government financial reporting in Michigan. They designed and implemented a new open data standard based on eXtensible Business Language Reporting (XBRL) that local governments can use to share their financial information with the public, the state, and other stakeholders. With funding from the Charles Stewart Mott Foundation, they partnered with the City of Flint to develop the first local pilot, which provided insight into the fiscal health of a mid-sized, fiscally distressed city in Michigan.

To better understand challenges in smaller communities, CLOSUP expanded the project through a grant from the University of Michigan Center of Academic Innovation to include two small rural localities. The selection criteria included locality type, auditing firm, population, and location to ensure a robust analysis of the effect of digital transformation on diverse types of local governments. CLOSUP chose Ogemaw County and Pine River Township as pilot locations. Over the next two years, the team developed an XBRL data taxonomy, created and piloted test systems and processes to produce XBRL-formatted data, and evaluated lessons learned to plan for the next phase.

Developing the ACFR Taxonomy

The first step was developing an XBRL taxonomy, a digital dictionary of terms with corresponding definitions and characteristics to represent a specific type of reported data, plus related features, such as data validation. In this project, the taxonomy corresponds to data included in the audited financial statements of local governments, which are prepared according to U.S. Generally Accepted Accounting Principles (GAAP). The taxonomy would be used to "tag" Flint's financial statements, meaning to render the facts machine-readable. The taxonomy would also serve as a template for other general-purpose governments in Michigan.

XBRL provides a common language and format that can be adapted to many different financial reporting contexts. It includes a human-readable layer as well as machine-readable "tags" to concretely define data and allow computer systems to easily organize, store, manipulate, and report on

Figure 1. Customized Taxonomy for Local Governments in Michigan

GOVERNMENTWIDE STATEMENTS	GOVERNMENTAL FUNDS	PROPRIETARY FUNDS	NOTES
Statement of Net Position	Balance Sheet	Statement of Net Position	Pension
Statement of Activities	Revenues, Expenditures & Changes in Fund Balances	Revenues, Expenses & Changes in Fund Net Position	Other Post-Employment Benefits
		Statement of Cash Flows	Long-Term Debt
			Capital Assets

them. The Annual Comprehensive Financial Report (ACFR) taxonomy reflects the most important parts of a local government's ACFR. Further customized to fit the specific needs of local governments in Michigan, it includes seven statements and four notes often found in ACFRs, as shown in **Figure 1**.

The taxonomy also comprises all elements of the Michigan-specific Annual Form F-65 MI and Form 5572. Like many other states, Michigan requires governments to prepare separate reports that contain many of the same data points found in an ACFR. One project goal was to identify ways to eliminate duplicate reporting. The modular design of the taxonomy allows for its expansion to accommodate the reporting requirements of other states and special districts.

XBRL taxonomies also use validation rules to check for tagging accuracy and completeness, as well as errors, such as items that do not sum to the total, have incorrect signage, or have other inconsistencies. Validation rules can offer digital data of higher quality than available from current non-XBRL systems.

Implementing the Pilots

The pilots incorporated significant assets from software providers, who donated software with fully integrated XBRL tagging capabilities used in the private sector to prepare XBRL-formatted statements. The providers uploaded the taxonomy into their systems, conducted training sessions with employees in the pilot locations, and tagged the financial statements. Despite the support, staffing and time constraints presented a challenge for all three pilot locations.

In Flint, the most significant issues arose from city staffing constraints, including the departure of the City's Deputy CFO, and the demands of the city's regular activities and deadlines. Delays developed when personnel were unable to participate in training and tagging. The Ogemaw County and Pine River Township pilots experienced similar setbacks. During training sessions, community officials acknowledged the software's intuitiveness and similarity to other programs they had used; however, time constraints and insufficient staff for the pilots hindered the endeavor.

These experiences demonstrated the need for a careful roll-out plan that included support and sufficient time for adoption in a range of jurisdiction types and sizes. XBRL US staff estimated one to two days would be needed to tag and review a financial statement without assistance in the first year, depending on the complexity of the financials. Nonetheless, front-loading the time commitment could present organizational challenges for small municipalities.

XBRL After the Pilots

One motivation for the City of Flint to join the XBRL project was to promote transparency and better governance. The city wanted to

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organize data in a standardized, machine-readable format to facilitate transparency through dashboards or applications. Easier access to the data would promote understanding of local government finances among various stakeholders.

Many expected benefits of XBRL-formatted financial statements increase with the amount of tagged data, while costs, particularly required staff time, decrease. To further reduce time spent in the future, Flint officials suggested: 1) incorporating the XBRL tagging process into internal systems while preparing financials rather than afterward, and 2) planning its implementation with auditors to ensure adequate staff training and resources.

Since uploading new financial data becomes easier after the first year of implementation, Flint predicted a new system would save time spent on annual reporting to state and federal governments. The other pilot locations, however, shared uncertainty about future policy developments and resource restrictions that would affect implementation, even though they projected XBRL data would save time on report preparation, facilitate benchmarking with peer communities, and allow tracked changes in finances over time.

Lessons Learned

Through the taxonomy development and implementation process, results helped inform the next steps in XBRL adoption.

1. Local governments often cannot use their financial data for analysis or monitoring fiscal health.

All three pilot governments were interested in using XBRL data to evaluate their financial condition. The value of XBRL financial statements will increase as more governments adopt systems and tag more years of data. Over time, as more data becomes available, financials will become easier to report and easier to benchmark against peers over a broader historical period, which will increase understanding of fiscal health among governments and their stakeholders.

Additional tools that specifically address questions of fiscal health in local governments could add value, including a general ledger and various reporting and analysis systems used in the private sector. XBRL's open-source approach makes entry into the field open to any interested parties. Currently, 67 certified software systems with XBRL capabilities can help governments implement XBRL standards. Greater demand from local governments will increase innovation among providers, thereby boosting analysis capabilities and ease of reporting.

2. Staffing is a challenge.

Despite significant assistance from software providers, all three pilot locations were challenged by staffing constraints. Given the nature of pilots, however, the localities knew that CLOSUP and XBRL US staff would step in if needed. These governments also may have been reluctant to commit resources to learning a new system when adoption by state and federal regulators was not guaranteed.

Three steps could reduce tagging and staffing burdens:

a. Government general ledger and accounting software providers could integrate XBRL tagging into their offerings.

b. Audit firms could offer XBRL tagging services.

c. Governments could use AI to conduct a first pass on tagging. According to XBRL US, an AI engine could review and extract data from multiple ACFRs to produce an initial machine-readable data set. Humans could review it and correct mistakes to allow the AI to learn from its initial mistakes. However, the organization notes that AI has not progressed enough to produce dependable,

consistent financial data. Using AI to extract data from local government financial reports is under development, but it is very unlikely to be available as a short-term solution.

3. **Standardized, streamlined reporting will require state cooperation and leadership.**

Most Michigan stakeholders involved in this project expected the primary benefit of XBRL to be a reduction in state-imposed reporting burdens on local governments. They also projected it could eliminate state-specific reporting requirements, such as the F-65 and Form 5572. Using XBRL would save time and improve accuracy in state-mandated reports. For example, a comparison of Flint's 2021 F-65 and its ACFR showed discrepancies. Most, if not all, errors in the F-65 could have been eliminated by using an XBRL format rather than hand-keying data into the form. However, since all elements of the state-mandated report are not included in the ACFR, simply tagging an ACFR does not provide the full range of data needed. The potential benefits of XBRL reporting depend on the acceptance of data in XBRL format by the Michigan Department of Treasury and on changes in reporting requirements.

4. **XBRL can work for various local governments but requires different taxonomies and software.**

One key lesson from the project was realizing the need to develop expanded taxonomies to cover diverse local governments. The Michigan Taxonomy, which addressed general-purpose governments, was appropriate for tagging the ACFRs of a mid-sized city, small rural township, and rural county. Another important lesson concerned software. While fully developed commercial solutions are valuable, smaller jurisdictions with simple financials need basic, potentially free options that work. The pilot projects employed a mix of high-end and more basic yet affordable software, and both

worked well. Software providers have already begun to add features adapted to market needs. As XBRL reporting becomes more common in the public sector, more software options will emerge for diverse local governments, their auditors, and regulators.

PROJECT 2: STANDARDS TO REPRESENT SPECIAL DISTRICT GOVERNMENTS

The second project expanded the ACFR Taxonomy to cover four special districts in Colorado. The project confirmed the great potential of machine-readable financial statements in government operations to streamline processes, bolster transparency, and enhance efficiency. Although XBRL can apply to many types of governments, significant barriers impede adoption.

- **Lack of trust in the federal government.** Special district governments were reluctant to participate in the project because they lacked trust in federal government initiatives, such as the FDTA. They also expressed skepticism in the necessity of machine-readable statements and cited insufficient communication from regulators about the FDTA and its objectives. A primary barrier to the adoption of XBRL among state and local governments is widespread distrust of federal government institutions. Stakeholders were hesitant to embrace the new initiative.

- **Lack of clear communication.** Project researchers noted that state and local stakeholders behaved as if their reported data were proprietary. Open communication is critical to the success of XBRL solutions and may involve educating the public on the benefits of machine-readable statements. Given widespread distrust, the public must be assured that stringent data protection measures are in place before implementation begins. By demonstrating a commitment to protecting the interests of citizens, governments may begin to overcome this barrier.

- **Fear of the unknown.** Citizens' uncertainty about the need for standards and the tangible benefits of XBRL causes fear. People believe the transition to machine-readable statements will be costly and time-consuming, gaining no significant advantages. In response, government leaders must provide clear, compelling use cases for machine-readable statements to demonstrate how technology can enhance data accuracy, streamline information retrieval, and improve decision-making. Success stories from early adopters can illustrate the real-world benefits of machine-readable reporting and build confidence among citizens.

- **Lack of leadership engagement to develop clear standards.** Effective communication is essential for technological adoption. Governments must engage with their stakeholders to move XBRL adoption forward. Their interactions through open forums, working groups, and committees can foster collaborations to develop standards, share best practices, facilitate communication, and build consensus. However, without clear guidelines and standards, the implementation of machine-readable statements will be fragmented and inconsistent, limiting the potential benefits for all stakeholders.

CONCLUSIONS

Developing open data standards for general-purpose and special district governments is challenging but far from insurmountable. The most significant challenge identified through the pilots was a lack of awareness about the FDTA, confusion about what it may mean, and distrust among many local governments. Questions remain about the enforcement of compliance and who will pay for implementation.

RECOMMENDATIONS

Since technical aspects of data standards are manageable, these pilots provide a strong prototype that can be expanded to meet FDTA requirements. Education and market engagement can be achieved through strong leadership

from influential organizations, such as AGA, MSRB, the Governmental Accounting Standards Board (GASB), the Government Finance Officers Association (GFOA), the National Association of Municipal Advisors (NAMA), the National Association of State Auditors, Comptrollers, and Treasurers (NASACT), and the National Federation of Municipal Analysts.

Issuers: Organizations that represent government finance officers, such as AGA, GFOA, NASACT and NAMA, must take the lead to:

- Leverage marketplace expertise.

- Coordinate and advocate for an efficient and effective implementation.

- Educate and train.

- Ensure data quality.

- Encourage innovation and the ability to adapt to change over time.

- Articulate the benefits of increased data quality and accessibility

Regulators and standard setters: MSRB, GASB and the U.S. Securities and Exchange Commission (SEC) can safeguard regulatory landscape alignment with the objectives and requirements of the FDTA. Work is already underway at GASB to develop an XBRL taxonomy to support municipal bond issuers. The SEC has the flexibility to scale implementation to minimize disruption and give issuers sufficient time to master the learning curve.

Investors and analysts must provide input on how to provide data and which reports and data points to include.

Software providers must adapt applications to support the FDTA so that issuers can easily transition to meet new requirements. As essential facilitators, software providers will help ensure the seamless incorporation of new standards for greater transparency and efficiency. Inexpensive, intuitive applications will reassure local governments that new reporting requirements will not erode their already scarce time and resources.

Governments can offer two important components of XBRL adoption in the public sector. The first is education by state and other large governments on the meaning of open, nonproprietary data standards and legal entity identifiers. The second is feedback on a joint agency FDTA rule proposal, published Aug. 2, 2024,[6] and on the municipal reporting rule proposal, which is expected to be published in 2026. Separately, it is likely that GASB will publish the data standards taxonomy for municipal financials for public review and input as well in 2025 or 2026. Regulators and accounting standard setters welcome market input and often incorporate comments and suggestions in their final rule and taxonomies.

CALL TO ACTION

Ultimately, the FDTA aims to promote transparency and accountability. Its requirements can help governments uphold the ethical principles of honesty and integrity in financial reporting and deliver transparency and fairness that improves public trust. The FDTA, part of a broader goal of democratizing data, can ensure all stakeholders enjoy equal access to public financial information.

Findings from the two projects suggest data standards can be effectively developed to accommodate a wide range of government types. Acceptance and efficient adoption represent a bigger challenge, requiring all stakeholders to play a role. A valuable opportunity now awaits the large and diverse community of organizations that support government bond issuance. **J**

Endnotes

1. HR 7776. https://www.congress.gov/bill/117th-congress/house-bill/7776/text

2. Press release. "Warner & Crapo Introduce Legislation to Boost Transparency Around Financial Data," May 25, 2022. (https://www.warner.senate.gov)

3. About 38,000 issuers are registered in the Electronic Municipal Market Access system.

4. Machine-readable data is formatted in a standard computer language that can be read automatically and unambiguously understood without manual interpretation or rekeying.

5. XBRL, an open data standard that is commonly used for digital business financial reporting, is managed globally by a non-profit organization, XBRL International, and in the U.S. by its XBRL US jurisdiction.

6. Peirce, Hester M. "Data Beta: Statement on FDTA Joint Data Standards Proposal," *SEC*, Aug. 2, 2024.

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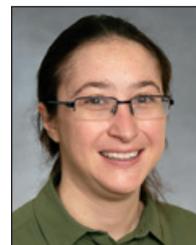
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