

# Digital Data Standards Support Greater Transparency and Opportunity in the Municipal Bond Markets

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# Executive Summary

The Financial Data Transparency Act (FDTA), a bipartisan bill co-sponsored by Senators Mark Warner (D-Virginia) and Mike Crapo (R-Idaho), was officially signed into law on December 23, 2022, as an integral component of H.R. 7776 - James M. Inhofe National Defense Authorization Act for Fiscal Year 2023<sup>1</sup>. As outlined by Senators Warner and Crapo in a press release<sup>2</sup>, the primary objective of this act is to modernize the collection and dissemination of financial data by federal financial regulators, rendering this information more accessible, standardized, and more valuable to both investors and data consumers. Section 5823 of the legislation calls for data transparency related to municipal securities. Specifically, the FDTA will require that information disclosed to certain federal regulators, including the Municipal Securities Rulemaking Board, be reported in an open data format that is structured and machine-readable.

The FDTA impacts all municipal bond issuers, including states as well as local governments, special districts, and other entities. There are roughly 38,000 issuers registered in the Electronic Municipal Market Access (EMMA) system. Data transparency related to municipal securities has the potential to reduce friction and improve efficient functioning of the market, but perhaps more importantly, is an important driver to support trust in government reporting. Enhanced data transparency means that more stakeholders will have access to municipal data and the tools to analyze and interpret it.

Local governments, both general purpose and special district, have raised questions concerning the extent of effort and cost required to implement the FDTA, and whether the work required to increase transparency will lead to competition for limited resources. They also question whether data standards can accommodate the heterogeneity in types of municipal governments that report to the Municipal Securities Rulemaking Board (MSRB). Data standards requirements as described in the FDTA are to be implemented “to the extent practicable.” This language leaves the door open to flexibility on how stringently data standards are applied across reporting entities. Regulators can opt to phase in requirements, giving smaller entities more time to transition; they can phase in the types of data to be reported in standardized format as well.

To address these challenges, researchers from the University of Michigan, the University of Denver, and the nonprofit data-standards organization XBRL US have collaborated on a series of projects to design and evaluate machine-readable data standards that could appropriately represent the unique characteristics of U.S. government entities. This paper summarizes the lessons learned in designing a data standard and piloting it in multiple local governments. It demonstrates that data standards can be practically applied to all entities, and that a robust, competitive marketplace of software providers has many offerings to accommodate all issuers. A “one size fits all” approach is not appropriate, nor is it necessary given the flexibility of the standard and the expansive nature of the software market supporting it. These lessons can inform both

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

<sup>2</sup> “Warner & Crapo Introduce Legislation to Boost Transparency Around Financial Data,” May 25, 2022: <https://www.warner.senate.gov/public/index.cfm/2022/5/warner-crapo-introduce-legislation-to-boost-transparency-around-financial-data>

regulators and local governments as they work toward modernizing financial reporting and implementing the FDTA.

## Standards to Represent General Purpose Governments (Project 1)

Starting in 2021 the University of Michigan's Center for Local, State and Urban Policy (CLOSUP), along with its nonprofit partner XBRL US started a project to modernize and digitize Michigan local government financial reporting. The partnership set out to design and implement 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. Currently, the most important local government financial data, found in Annual Comprehensive Financial Reports (ACFRs), are provided to the public and to the State in an outdated PDF format that severely limits their accessibility, comparability, and usefulness. XBRL formatted financial statements are both human-readable and machine-readable, so that the underlying digital data can be easily searched, sorted, merged, compared, analyzed, and used. XBRL is currently under consideration, but not yet confirmed, to support the data standards requirements of the FDTA including municipal bond issuance data.

With funding from the Charles Stewart Mott Foundation, CLOSUP and XBRL US partnered with the City of Flint as the first local pilot location. Flint provided insight into the fiscal health of a mid-sized fiscally distressed city in Michigan. To better understand any differences or challenges smaller municipalities face compared to larger cities, CLOSUP expanded the project to include two small and/or rural municipalities from across the state through a grant funded by the University of Michigan Center of Academic Innovation. The criteria for the selection process for these two additional pilots captured a wide variety of factors such as municipality type, auditing firm, population, and location to ensure there was a robust analysis of how this digital transformation will affect diverse types of municipalities. From these criteria, Ogemaw County and Pine River Township were selected to become the next pilot locations for the project.

Over the next two years, this project accomplished three main tasks: developing an XBRL data standard taxonomy, creating and piloting test systems and processes to produce XBRL-formatted data, and evaluating lessons learned and planning for the next phase.

### Development of an ACFR Taxonomy

The first step was the development of an XBRL taxonomy to “tag” (render facts machine-readable) Flint's financial statements. This taxonomy would also serve as a template for other general-purpose governments in Michigan. A taxonomy is a digital dictionary of terms with corresponding definitions and characteristics that represent a specific type of reported data, along with related features such as internal data validation and quality checks. In this project, the taxonomy

corresponds to data included on local governments audited financial statements, which are prepared according to US Generally Accepted Accounting Principles (GAAP).

XBRL is an open data standard that is commonly used for digital business financial reporting, and is managed globally by a non-profit organization, XBRL International, and in the U.S. by its subsidiary, XBRL US. XBRL provides a common language and format that can be adapted to many different financial reporting contexts, and can be generated as an XML, CSV, JSON, or XHTML file. XHTML files, called “Inline XBRL” are both human- and machine-readable. An Inline XBRL file has a human-readable HTML layer, which looks just like a Word or PDF document, and has embedded, machine-readable “tags” that concretely define data so that computer systems can easily organize, store, manipulate, and report on them. A key goal of this project was to develop a professional grade taxonomy that could be used for the City of Flint, as well as other jurisdictions in Michigan and nationally.

The ACFR taxonomy for this project was created to reflect the most important parts of the typical content of local government Annual Comprehensive Financial Reports and was then further customized to fit the specific needs of Michigan local governments. It includes seven statements and four notes often found in ACFRs, as shown below

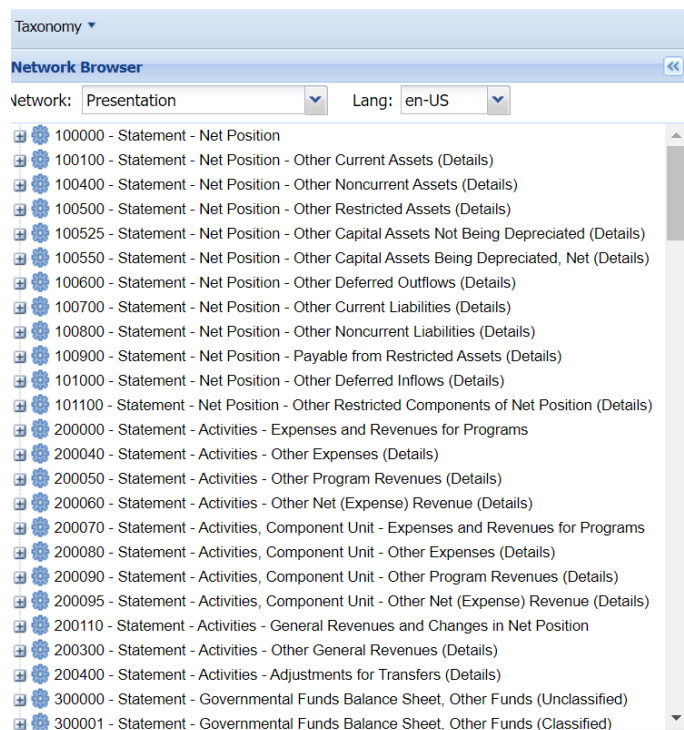
Government-wide Statements	Governmental Funds	Proprietary Funds	Notes
Statement of Net Position Statement of Activities	Balance Sheet Revenues, Expenditures, and Changes in Fund Balances	Statement of Net Position Revenues, Expenses and Changes in Fund Net Position Statement of Cash Flows	Pension OPEB Long-Term Debt Capital Assets

One of the goals of the project was to identify ways to eliminate duplicate reporting, and the taxonomy also includes all elements of the Michigan-specific Annual Form F65 MI and the form 5572 (pension/OPEB). Michigan, like many other states, requires governments to prepare separate reports, which contain many of the same data points found in an ACFR. Based on discussions with staff at the Michigan Department of Treasury, the taxonomy was further expanded to incorporate all data fields in the Michigan State Chart of Accounts (MI COA), along with references to account codes used in the MI COA. In effect, the taxonomy can serve as a “crosswalk” between the ACFR and Michigan-specific reports so that common elements need only be identified and “tagged” once.

The taxonomy has a modular design and can be expanded to accommodate reporting requirements of other states and special districts. Entry points for individual states or district types can be created to tailor navigation for reporting governments to facilitate ease of use. For example, the Michigan entry point contains only the concepts needed for Michigan-based governments.

Another benefit of using XBRL is that it includes validation rules and other checks to help ensure accuracy and completeness of tagging. Validation rules check for errors such as items that do not sum to the “total” or negative numbers, and other inconsistencies.

The taxonomy was developed based on an extensive review of ACFRs from local governments across the U.S., including over 1,000 ACFRs from Michigan local governments, to ensure that the taxonomy captures the account names, fund names, and other information Michigan local governments report. It expanded on an existing, partially developed taxonomy created by members of a working group established by XBRL US, the Standard Government Reporting (SGR) Working Group. The image below displays part of the taxonomy used in each pilot. Each statement line expands to display all necessary elements for tagging.



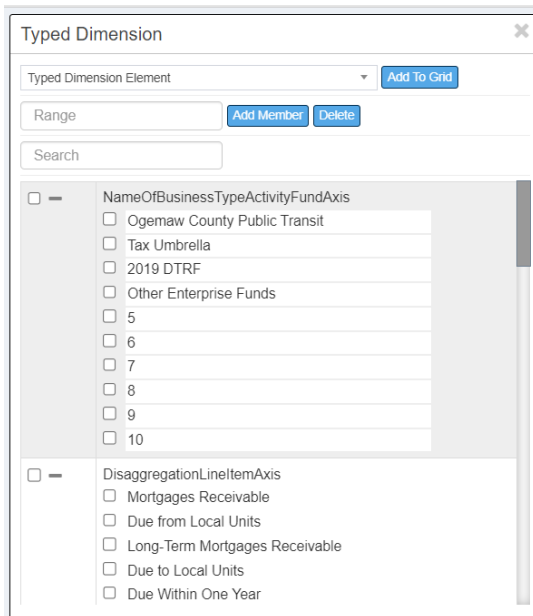
Before the taxonomy was used to tag Flint’s Fiscal Year (FY) 2021 financial statements, it was specifically evaluated against multiple years of ACFRs from the City of Flint. A draft of the taxonomy was also published for a public stakeholder review in summer 2022. Reviewers included software providers, government agency representatives, municipal analysts, and users of state and local government data, to ensure the taxonomy fits the needs for a broad range of state and local government financial reporting. This review process helped identify any inconsistencies or errors within the taxonomy before it was used in the pilot project to tag the City of Flint’s 2021 ACFR.

The taxonomy was developed to be suitable for all Michigan general purpose local government ACFRs. However, because many jurisdictions have specific line items that may be unique (or at least not common), the taxonomy is customizable to accommodate these unique items (using a feature of XBRL referred to as a “typed dimension”), which are then added to the taxonomy items available to a specific government for future use. Using typed dimensions is like filling out an “other - please specify” response in a survey.

As a result of these efforts, the ACFR taxonomy was well aligned with the City of Flint’s financial statements and could accommodate unique items such as the Hurley Medical Center Component Unit, and the American Rescue Plan Act Special Revenue Fund as shown below in the excerpt from Flint’s FY 21 Statement of Revenues, Expenditures, and Changes in Fund Balance.

	Special Revenue Funds					Totals
	General	Grants	Major Streets	American Rescue Plan Act	Nonmajor Governmental Funds	
<b>Assets</b>						
Cash and investments	\$ 22,374,094	\$ 1,993,363	\$ 14,725,224	\$ 47,363,332	\$ 31,019,328	\$ 117,475,341
Receivables:						
Accounts receivable, net	274,586				10,340	284,926
Property taxes receivable	104,670				158,177	262,847
Income taxes receivable, net	1,312,638					1,312,638
Loans receivable	—	5,171,000			6,534	5,177,534
Prepays	61,757	152,501				214,258
Due from other governments	4,417,783	6,639,384	3,230,652		685,568	14,973,387
Due from component unit	—				6,631,951	6,631,951
<b>Total assets</b>	<b>\$ 28,545,528</b>	<b>\$ 13,956,248</b>	<b>\$ 17,955,876</b>	<b>\$ 47,363,332</b>	<b>\$ 38,511,898</b>	<b>\$ 146,332,882</b>

The Michigan taxonomy was also used for two additional pilots funded by an internal University of Michigan grant. The goal of these pilots was to be able to understand the experiences of small and/or rural governments in using XBRL. The locations chosen were Ogemaw County and Pine River Township.



Because the taxonomy development included a review of ACFRs from many Michigan local governments, it was suitable for data from these additional pilot locations as well. Where needed, the use of typed dimensions allowed for additional customization. For example, Ogemaw County Public Transit Fund and Pine River Township’s Alma and St. Louis Sewer funds could be included as a specific business type activity fund. The image on the left shows a list of customized activity funds for Ogemaw County.

## XBRL Training, Tagging, and Reviewing

For the Flint pilot, responsibilities for generating the XBRL statements were divided among various project participants. CLOSUP staff coordinated across all participants and aided Flint throughout the process. The software company Workiva provided gratis the software WDesk, as well as training, and assistance with getting the financial statements into their software platform, and with uploading the taxonomy and tagging the financial statements. XBRL US staff assisted with coordination and training and took the lead on the tagging process. The City of Flint worked with Workiva to get the financial statements into their system, received training, and were responsible for the tag review process before finalizing the statements.

XBRL tagging capabilities are fully integrated into WDesk, as it is also used for preparing XBRL-formatted statements in the private sector. The City of Flint staff found the software to be well-developed and did not see the need for software enhancements.

To minimize the time burden on the City of Flint, particularly given unexpected staffing issues, the tagging was completed by a combination of staff from XBRL US and Workiva, with expertise in both the software interface and the structure of the taxonomy. This expertise made the tagging process go more quickly, and enhanced accuracy in some ways. On the other hand, they lacked familiarity with Flint-specific financial details. The image below shows a Flint Statement of Net Position being “XBRL tagged” in WDesk software.

	Governmental Activities	Business-type Activities	Totals	Component Units
<b>Assets</b>				
Cash and investments	\$ 142,774,529	\$ 54,416,999	\$ 197,191,528	\$ 169,033,296
Receivables, net	28,888,693	136,545,900	165,434,593	79,212,224
Internal balances	(2,558,565)	2,558,565	—	—
Other assets	1,191,959	7,337,624	8,529,583	10,522,809
Restricted cash and investments	—	7,721,016	7,721,016	172,608,982
Investment in joint venture	—	—	—	6,854,571
Capital assets not being depreciated	23,213,807	49,973,118	73,186,925	18,275,355
Capital assets being depreciated, net	70,893,109	163,671,460	234,564,569	108,726,230
Net OPEB asset	—	—	—	11,737,072
<b>Total assets</b>	<b>264,403,532</b>	<b>422,224,682</b>	<b>686,628,214</b>	<b>576,970,539</b>
<b>Deferred outflows of resources</b>				
Deferred charge on refunding	94,497	—	94,497	1,426,872
Deferred pension amounts	19,150,646	3,566,609	22,717,255	40,849,355
Deferred OPEB amounts	—	—	—	519,406
<b>Total deferred outflows of resources</b>	<b>19,245,143</b>	<b>3,566,609</b>	<b>22,811,752</b>	<b>42,795,633</b>
<b>Liabilities</b>				
Accounts payable and accrued liabilities	18,291,636	18,238,006	36,529,642	110,521,758
Unearned revenue	50,196,893	—	50,196,893	33,554,986
Long-term debt:	—	—	—	—

In addition to applying the built-in validation rules, XBRL tagging in WDesk included a manual review process, to make sure that the correct tags are applied to each data point. Flint city staff were responsible for reviewing the tags in each statement. No errors were identified during this review process.

Although the process of preparing and tagging the financial statements was designed to minimize any potential burden on Flint, a few organizational challenges became evident during this process.

The largest challenges were due to city staffing constraints, including the departure of the City’s Deputy CFO, and the interaction between the project timeline and the City’s mandatory activities and deadlines. Having an understaffed department decreased Flint’s ability to actively participate in training and tagging, and resulted in delays in responses to questions where their knowledge was critical, and a delay in finalizing the XBRL data once the initial tagging was completed.



According to Flint CFO Robert Widigan, “the largest issue was time; it does take some time to complete this process (depending on the size of your team). For us, we had many helping hands, as this is a pilot program. Administratively the major burden was double checking the tags to ensure everything tied out right, but that [was] just time.”

The Ogemaw County and Pine River Township pilots had similar experiences. For both pilots, responsibilities were split between CLOSUP staff and research assistants, Iris Business Services staff, and pilot-location government officials. Iris provided their XBRL software, Carbon, including training and technical support, throughout the project. Iris also uploaded the financial statements and completed the tagging. The CLOSUP staff assisted in recruiting and coordinating the pilots, and completed the review of the tags once the statements were fully tagged. Each pilot government was responsible for actively participating throughout the project, providing financial statements, and detailed assessments of their experience throughout the process.

The XBRL statements for these supplemental pilots were produced using Iris Carbon. As with WDesk, Iris Carbon has full XBRL tagging capabilities, although it currently has fewer advanced features. During training sessions, officials from the pilot locations noted that the software was intuitive, and like other interfaces they have used. CLOSUP student assistants who helped with the project agreed with this assessment.

As with Flint, the additional pilot locations required customized fields to be created. According to a CLOSUP student assistant, “the process of using a typed dimension is more complicated than using the tags that are already populated in the taxonomy, but as with many functions in this process, once the up-front work is completed, the functionality becomes much easier.”

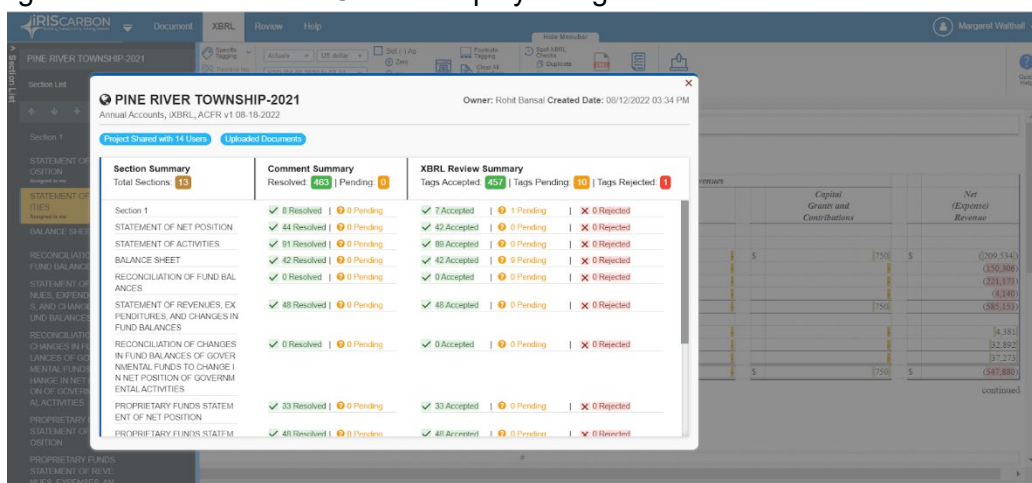
As with WDesk, Iris Carbon includes the automated validation checks built into the taxonomy. The image below shows the tagging process in Iris Carbon. The blue highlighted values on the left are being tagged with the “Cash and Cash Equivalent” element on the right.

The screenshot displays the IRISCARBON software interface. On the left, a financial statement for Pine River Township is shown for March 31, 2021. The statement is divided into Governmental Activities, Business-type Activities, and Total. The 'Cash and cash equivalents' line item is highlighted in blue in the original image, with a value of \$1,437,020. On the right, the Reference Taxonomy window is open, showing a list of elements under 'Cash and Cash Equivalents'. The 'Cash and Cash Equivalents' element is selected and highlighted in blue, indicating it is the tag being applied to the highlighted value in the financial statement.

	Governmental Activities	Business-type Activities	Total
<b>Assets:</b>			
Cash and cash equivalents	\$ 1,437,020	\$ 1,727,052	\$ 3,164,072
Receivables	51,491	17,687	69,178
Prepaid expenses	18,945		18,945
Capital assets not being depreciated	14,000		14,000
Capital assets being depreciated, net	158,362	276,460	434,822
Total assets	1,279,818	2,021,399	3,301,217
<b>Liabilities:</b>			
Accounts payable and accrued expenses	31,683	11,376	43,059
<b>Net position:</b>			
Investment in capital assets	172,362	276,460	448,822
Restricted for:			
Fire protection services	18,945		18,945
Future capital purchases	157,141		157,141
Unrestricted	899,687	1,733,563	2,633,250
Total net position	\$ 1,248,135	\$ 2,010,023	\$ 3,258,158

There was also a review process to ensure tags were applied appropriately. Due to staffing constraints within the government entities, CLOSUP staff including student assistants took the lead on reviewing each tag for these pilot locations. Each review identified a small number of errors, mostly related to fields that needed to be customized for individual jurisdictions, rather than using the standardized tags. For Ogemaw County, about ten of over 1,500 total tags were incorrect and for Pine River, about ten of over 450 total tags were incorrect. The errors identified show that while the review step adds another layer of work, it is a key step in ensuring accuracy.

The image below shows the Iris Carbon display of tags that need to be reviewed.



These additional pilot locations also experienced organizational challenges, particularly around staff availability and time commitment. In Pine River, the participants were the Township Supervisor, and the Treasurer, who holds a full-time job outside the township government, with no additional staff to assist.

Ogemaw County’s participants included the county administrator, clerk, and treasurer, as well as one staff member. However, they also faced significant constraints in available time. This presented a challenge for both pilots, in that there was limited time and resources they could commit throughout the project.

Iris Business Services provided training that was designed to be straightforward for government officials, and both pilot locations actively participated in the scheduled training. The training covered both tagging and reviewing the tags. The initial plan was for each pilot to review at least some of the tagged statements to ensure accuracy. However, due to the lack of available staffing hours and resources, neither pilot was able to review their statements. CLOSUP staff stepped in and assisted each pilot in reviewing each statement.

This experience showed the potential challenges with implementing XBRL on a larger scale, and the need for a careful roll-out plan that provides support and sufficient time for adoption among a

range of jurisdiction types and sizes. According to XBRL US staff, tagging and reviewing a financial statement without assistance in the first year could take 1-2 days depending on complexity of the financials. This front-loaded time commitment may present organizational challenges for small municipalities, even though a benefit of XBRL is that subsequent years will take significantly less time to tag than the first time, and the benefits of XBRL data would allow state oversight agencies to reduce other reporting burdens. At least in the first year, smaller local governments like Pine River may face challenges finding the time to manually tag their ACFRs, and additional resources or tools will need to be available to have XBRL tagging be feasible outside the context of a small number of pilots. One potential longer-term solution to these staff capacity challenges is for auditors to complete tagging during the ACFR production process.

One approach that would benefit many local governments would be for auditors' software systems to be updated to automatically apply XBRL tags, so most of the work is done by software developers rather than auditors or local government personnel. And for smaller auditors, free or low-cost Excel-to-XBRL conversion tools could be developed. Even without these kinds of software efficiencies, many auditors currently fill out Michigan's administrative data F65 form on behalf of their clients, and tagging should take about the same amount of time. Such an approach holds the possibility of removing the technology learning curve as well as significantly reducing reporting burdens for the local governments themselves if the state pursues reporting reforms.

## XBRL After the Pilot

A key goal of the Flint pilot was to have the city set up to continue generating XBRL data in the future. Many of the expected benefits of having XBRL-formatted financial statements increase with more years of data, and the costs (particularly required staff time) decrease.

The initial work with Workiva involved linking Excel spreadsheets provided by the City's auditor to the ACFR, which is intended to facilitate updating tagged data without needing to manually apply tags in the future. In order to further reduce the time burden of XBRL in future years, CFO Robert Widigan said that Flint would like to streamline the process and "bring the XBRL tagging process into our internal systems so that the tagging is conducted at the same time we're preparing the financials themselves rather than after the financials are completed." As one step in this process, Flint's Request for Proposal (RFP) for their FY 2023 ACFR includes XBRL tagging in the scope of work. Based on experience with the pilot, Widigan advises other local governments considering XBRL that "planning is critical, so when you sit down with your auditors or issue a new RFP for auditing services, add data standards to the scope of work. For example, for a fee, many auditors now generate our F-65 reports for us here in Michigan. When collaborating with your auditor, ask if they are willing to enter this data into an XBRL program."

In contrast to the optimism in Flint, experience in the other pilot locations was more mixed. In Ogemaw County, the administrator identified a staff member who could be responsible for XBRL tagging in the future, but also indicated the county did not want to invest the time until the output was more useful for them. Although Pine River was initially interested in using XBRL to prepare

their state-filed financial reports using XBRL in the future, they have not expressed interest in continuing with XBRL at this time. One factor that may have influenced this decision is uncertainty about whether the State of Michigan will adopt XBRL reporting, which would be a major determinant of whether they should invest in learning the process. For both Ogemaw County and Pine River Township, if they decide to use XBRL in the future, having one year of data in Carbon, as well as having received training, will make the process easier.

## Using XBRL-tagged financial statements within local governments

The motivation for the City of Flint to join this project was to promote transparency and better governance. Due to the novelty of the system, there are no specific plans to use the XBRL formatted data. However, Widigan stated “once the data are in a machine-readable format, you can easily use them in any number of transparency dashboards or applications (e.g., ClearGov), and researchers will be able to easily access data to produce analyses and reports. This will promote greater understanding of local government finances for all stakeholders.”

Since the process of uploading new financial data becomes easier after the first year of implementation, Flint anticipates this system becoming a time-saver for annual reporting to state and federal governments.

While this system will increase transparency and ease government resources over time, Widigan does caution other governments regarding the initial time commitment. Planning out the implementation of the XBRL reporting system with auditors as well as ensuring enough education and resources would benefit other local governments. Finally, Widigan urges local governments to “keep the bigger picture in mind... these proposed data standards would allow states, researchers, reporters, or really anyone to pull vital financial data points with the hit of a button.”

The other pilot locations expressed interest in using XBRL data to save time in preparing reports, and to conduct benchmarking with peer communities as well as track changes in their own financial situation over time.

For Pine River Township, the primary interest was in a system that could facilitate producing their annual F-65 report. This is a key priority for many stakeholders. However, Pine River, along with some other small jurisdictions in Michigan, is only required to produce an ACFR every other year but must complete the F-65 every year. This may present challenges for using the ACFR taxonomy for those purposes and will need to be addressed moving forward.

For Ogemaw County, the administrator identified two primary ways that using XBRL data could save time and create efficiencies within their government. The first was to prepare their F-65 reporting for the State of Michigan. The second was to extract relevant data into other reports (both for internal and external use) that include financial data. Additionally, to better understand

their fiscal health, they are interested in using XBRL to compare data elements from previous years as well as with other comparable jurisdictions.

## Lessons Learned, and Future Work

The successes and challenges during the pilot stage provide valuable insights into how XBRL could be used by local governments in Michigan and beyond.

### Local governments want to make use of their financial data, but they often lack the capacity or skills

#### Using output for data analysis and fiscal health monitoring

One motivation for all three pilot locations to participate was to have better access to their financial data. All three pilot locations were interested in using XBRL data to evaluate their own financial condition. This means that the value of XBRL financial statements increases as more governments adopt the standard, and as more years of data are tagged. Not only does it get easier for governments to continue entering data with each progressing year, but with more governments reporting in XBRL and increased automation in compiling and generating these reports, benchmarking against peers would significantly help governments and their stakeholders understand their own fiscal health better.

Currently there are hundreds of software applications that have XBRL capabilities that can assist governments in implementing XBRL standards, and with more demand from local governments, more products will be created to meet the demand. This increased demand would also likely increase innovation within the provider space, increasing the analysis capabilities as well as ease of use. Both Workiva and Iris Carbon released updates during this pilot, showing promise for additional innovations in the future.

Additional tools to specifically address questions of local government fiscal health could add value, including in general ledger and in various reporting and analysis systems provided by the private sector. XBRL's open-source approach makes entry into the field open to any interested parties.

#### Staffing capacity

One of the main challenges that the pilot locations faced was staffing constraints. While each of the pilots designated particular staff to this project, it was a significant challenge to ensure there was enough availability from staff to fully complete the project, especially for the smaller pilots. Given these constraints CLOSUP staff stepped in and assisted each pilot location. However, it is important to note that some of these staffing constraints could be since this was a pilot project, and the municipalities knew that CLOSUP staff would step in if needed. In addition, the governments may have been reluctant to commit resources to learning a new system when there was no guarantee that the State and/or federal government would adopt the standard.

There are multiple avenues to reduce or eliminate time spent on manual tagging, including:

1. Multiple stakeholders and pilot locations noted that it would simplify the process if XBRL tagging was integrated into their general ledger and other software systems.
2. Instead of individual governments needing to each implement XBRL financial reporting, auditing firms could offer XBRL tagging as a service. In addition to decreasing the burden on local governments themselves, auditors would be in a situation to increase efficiency. For example, the “linking” process in Workiva demonstrates that, if an auditor has standardized spreadsheets with data for preparing the ACFR, the same template could in theory be used for all local governments they are working with. Similarly, templates for tagged ACFRs might be able to be developed for jurisdictions with similar finances, decreasing how much manual work would be required for each one. And beyond manual tagging, auditors’ software systems could include automation for XBRL-export, just like Excel can export CSV files.
3. Another potential tool for decreasing the time and staffing burden of XBRL tagging would be the use of Artificial Intelligence (AI) to assist with the process. An AI engine could potentially review and extract data from multiple ACFRs to produce an initial machine-readable dataset. That dataset could be manually reviewed and corrected such that the AI engine could be re-run to “learn” from initial mistakes. However, AI has not progressed to the stage where it can produce dependable, consistent financial data. Work on using AI for extracting data from local government financial reports is currently being conducted, but it is very unlikely to be available as a short-term solution.

Standardizing and streamlining reporting will require cooperation (and ideally leadership) from states

Using XBRL to meet reporting requirements in Michigan

Most stakeholders involved in this project thought that the primary benefit of XBRL would be its potential to reduce state-imposed reporting burdens on local governments, and particularly, to eliminate reporting requirements such as the F-65 and Form 5572. To assist with this, the taxonomy developed for this project includes the ACFR elements as well as the F-65 and Form 5572 elements that are not in an ACFR. The image below shows the taxonomy that includes elements from the F65.

803000 - Annual Form F65 MI - Internal Service, Enterprise Funds - Statement of
803050 - Annual Form F65 MI - Internal Service, Enterprise Funds - Statement of
804000 - Annual Form F65 MI - Governmental Funds - Statement of Position
804050 - Annual Form F65 MI - Governmental Funds - Statement of Operations
805000 - Annual Form F65 MI - Component Unit - Statement of Position
805050 - Annual Form F65 MI - Component Unit - Statement of Operations
806000 - Annual Form F65 MI - Capital Outlay
807000 - Annual Form F65 MI - Other Supplementary Information
808000 - Annual Form F65 MI - Derivative Instruments, Non Pension Investment I
808500 - Annual Form F65 MI - Derivative Instruments, Pension Investment Portf
808535 - Annual Form F65 MI - Pension Plan Information and Totals
808545 - Annual Form F65 MI - OPEB Plan Information and Totals
808550 - Annual Form F65 MI - Debt Information
808700 - Form 5572 Michigan - Pension
808750 - Form 5572 Michigan - OPEB

There are two primary challenges with having XBRL eliminate reporting requirements such as the F-65. The first is that not all elements of the F-65 are in the ACFR, so simply tagging an ACFR does not provide the full range of data that must currently be reported. The second is uncertainty about how the Michigan Department of Treasury might accept data in XBRL format, and whether they would consider making changes to the elements of the current F-65.

To assess the extent of the first challenge, CLOSUP and XBRL US staff prepared a tagged “instance document” that included Flint’s FY21 ACFR as tagged for this pilot, with an additional section showing the F65 elements not included elsewhere in the ACFR. They also identified several data elements where there are discrepancies in reporting on the F-65 vs. reporting in the ACFR.

As a result of this analysis, as well as uncertainty around how Treasury might accept XBRL data, CLOSUP and XBRL US staff identified three scenarios for the Department of Treasury if they choose to move forward with implementation of XBRL-based ACFR reporting.

- 1. No changes to F65** - If Treasury opts to accept XBRL-based ACFRs but keep the F65 in its current format and level of detail, local units will need to submit two reports: a tagged ACFR plus a supplemental data source that includes data elements not included on ACFRs. These would look very similar to the [sample instance document](#) based on Flint’s FY21 ACFR and F65. The ACFR could be provided in XBRL format or automatically converted from XBRL to produce a PDF, to match current submission formats.
- 2. Streamlining of F65** - There are several options to streamline the F65 without eliminating any data points. For example, for governmental funds the F65 could conform to the ACFR convention of reporting all major funds separately and aggregating nonmajor funds. Any F65 data points not included anywhere in the ACFR (or calculable based on data in the ACFR) would need to be collected from a supplemental data source.
- 3. ACFR-based reporting** - In this option, preparers would submit a single report including a fully tagged ACFR, plus any supplemental schedules of non-ACFR data that Treasury requires (e.g., personnel statistics, derivative information). The Michigan Department of Treasury could also evaluate whether they still need to collect these additional data points if they have higher-quality data via the XBRL-tagged ACFR already.

Even without any implementation of XBRL at the state level, local governments could still easily use their tagged ACFR to generate a PDF to submit to Treasury. They could also export the data elements that do overlap with the F-65 and would manually enter the additional data not included in the ACFR. This is the type of system that Ogemaw County described at the conclusion of their pilot.

In addition to time-savings from automating production (or partial production) of F-65 reports, using XBRL would improve the accuracy of those reports. An analysis of Flint's 2021 F-65 compared to their ACFR identified some apparent errors/amounts that could not be reconciled between the ACFR and the F65. The researchers believe that most, if not all, of these errors would have been eliminated if the data were reported in XBRL format instead of hand-keyed into the F65 form.

## XBRL can work for local governments of many sizes and types, but needs differ

### Expanding the taxonomy

The Michigan Taxonomy addressed general purpose governments only. It was appropriate for tagging ACFRs for a mid-sized city, a small rural township, and a rural county, particularly with the ability to use customized typed dimensions. However, to expand the use of XBRL, the taxonomy will also need further development.

### Software

Pilots used a mix of high-end and more basic/affordable software, both of which worked well for the projects. These software solutions are already adding additional features to adapt to market needs. As XBRL reporting becomes more common in the public sector, additional software options for both tagging and using XBRL data will become available to meet the range of needs of diverse types of local governments, their auditors, and regulators.

While fully developed commercial software solutions provide many valuable features, purchasing software would place a cost burden on local governments either directly or through increased costs to their auditors if they were to use these tools. While those costs have been low in other countries that have adopted XBRL reporting, there is likely a need for an even more basic, free option that could work for smaller jurisdictions with simple financials.



# Standards to Represent Special District Governments (Project 2)

While the first project focused on general purpose governments and helped to prove that data standards can be developed to appropriately represent them, concerns often focus on considerations for special district governments such as school districts or water districts. Special districts are by nature, more specialized and often smaller than general purpose governments. Their size can result in resource constraints in funding and staffing. Their specialized nature suggests that they may have unique reporting needs that cannot be handled by a taxonomy that represents general purpose government financials.

This project centered on working with the financial statements of four special districts in Colorado, with the goal of creating a tailored taxonomy that can accommodate financial statements of these more unique entities. While it was anticipated that technical challenges might emerge during this process, the most unexpected hurdle proved to be the resistance from human participants, even though the pilot was provided to governmental entities free of charge.

The adoption of machine-readable financial statements in government operations holds the potential to streamline processes, bolster transparency, and enhance efficiency. Nonetheless significant human barriers impede the widespread adoption of this technology.

## Technical Build of Data Standards

The Annual Comprehensive Financial Report (ACFR) Special District Taxonomies developed through this grant are intended to assist government entities that represent School Districts, Colorado Metropolitan Districts, Hospital Districts, and Fire Districts. It is an extension of the ACFR Taxonomy which was released in 2022 (described above).

The Special District Taxonomies are the first release of data standards covering these government entity types and have not been published for a public exposure period to collect additional input. As such, they are intended as an initial release which can be expanded upon by further input from all stakeholders which may include government entities, accounting standards setters, auditors, municipal securities investors and analysts, and other users of special district data. The Special District Taxonomies were developed by identifying line items in a sample of special district ACFRs in Colorado, and by running an AI algorithm against a more complete set of Colorado special districts, to identify line items that were not yet included in the base ACFR Taxonomy. In addition, the Colorado Department of Education maintains its own Chart of Accounts which all school districts, district charter schools, institute charter schools, charter school collaboratives and networks, and the Board of Cooperative Educational Services must follow. It is defined in the Financial Policies and Procedures Handbook Chart of Accounts<sup>3</sup>. The

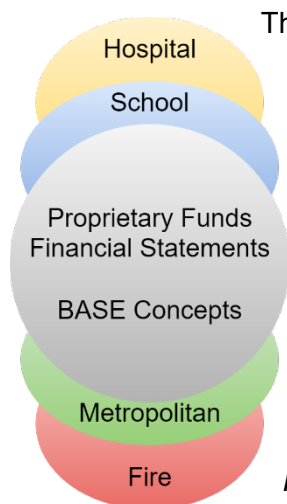
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<sup>3</sup> <https://www.cde.state.co.us/cdefinance/sfcoa>

School District Taxonomy incorporates this chart of accounts in addition to other line items identified on the sample of school district ACFRs evaluated.

## Scope

The Special District Taxonomies are an extension of the general-purpose Base ACFR Taxonomy. Special districts report many of the same line items as general purpose governments, like Assets and Revenues. Commonly used line items like these are re-used across all government types to ensure consistency and comparability.



The Special District Taxonomies augment the Base ACFR taxonomy with line items that are unlikely to appear on the financial statement of a general-purpose government but are specific to one of the four special districts covered. For example, as shown in the image to the left, the Proprietary Funds Financial Statements (Net Position; Revenues, Expenses; Cash Flows) have been enhanced to include concepts representing line items that may appear on the financial statement of a Hospital District, a School District, a Metropolitan District, or a Fire District.

Each Special District has its own “Entry Point” in the Taxonomy which contains concepts needed to represent its financial statement. The Hospital District entry point, for example, contains concepts such as *Patient Service Revenue, Net*, and *Medicaid Disproportionate Share (DSH) and Other Safety Net Reimbursements*. The School District entry point contains *Net Position Restricted for Nutrition Services* and *Expenses for Student Transportation Services*. These concepts will not appear in the Base ACFR Taxonomy because they are unlikely to be needed by a general-purpose government.

Special districts will also need to report more general concepts to represent other line items such as *Revenue from Interest and Dividends*. The Special District draws from the Base ACFR Taxonomy for these concepts. A commonly used concept is accessible to any government, from general purpose government to special district. This modular approach ensures that if a change is made to a concept because of changes in the accounting standard, or industry practice, the change will be reflected everywhere that this concept may be used regardless of reporting entity, ensuring consistent reporting.

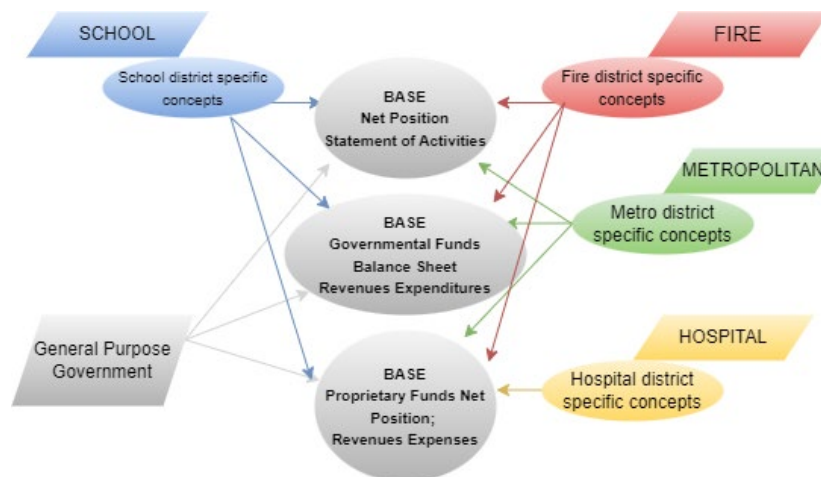
The entry point filters the set of concepts and is used by software applications to serve up to the reporting entity the concepts that they are most likely to need. The reporting government has the option to use other concepts that are in other entry points because it is all contained within a single digital set of terms.

The ACFR Taxonomy is designed to expand and change when there are revisions in accounting standards, industry needs, and even technology developments. These four Special District Entry Points provide a starting point to represent these additional areas and can be further enhanced with more input from the market.

## Basic Structure

With the addition of the four special districts, the ACFR Taxonomy now has five primary entry points which allow government entities to “enter” the taxonomy where it is most appropriate for their financial reporting.

As shown in the illustration below, a school district finance officer “enters” the school district entry point (blue) where he or she can access line items such as *Revenue from Tuition and Fees*, or *Instructional Expenses*. The finance officer accesses the Base Taxonomy (gray) for common line items that appear on many government financial statements like Revenues or Assets. There is a significant overlap between the base taxonomy concepts and what needs to be reported on a special district statement. Care has been taken not to duplicate line items that already existed in the Base Taxonomy.



This structure eliminates duplication and ensures that if the definition or characteristics of a concept need to change, that change will filter through to all the governments that may use it. It also assists when concepts are added or deleted, either commonly used concepts or those specific to a special district.

## Standards and Sources

The ACFR Taxonomy incorporates authoritative references from the Governmental Accounting Standards Board (GASB) where possible. The School District entry point also incorporates the Colorado Department of Education Financial Policies and Procedures Handbook Chart of Accounts. Program codes, for example, for Student Transportation Services, and Food Services Operations, are incorporated into the taxonomy such that a Colorado-based School District can search on an account code to find the concept needed for reporting.

Other states that may maintain their own School District Chart of Accounts (or chart of accounts for other special districts or general-purpose governments) could incorporate their own charts of account into the taxonomy for searching by those entities as well. The modular approach of the taxonomy enables granular searchability to make it as easy as possible for reporting entities to find what they need.

## Calculations

Concepts in the ACFR Special District Taxonomies are related mathematically through a calculation linkbase. Calculations express summation relationships as shown in the example below. The concept Property Taxes Receivable, Net of Allowance, appears on both the Statement of Net Position and the Proprietary Funds Statement of Net Position. Its relationship with two other concepts is described in the equation below and the relationship is embedded in the taxonomy.

<b>Property Taxes Receivable, Net of Allowance</b>	
<b>Calculations</b>	
<b>100000 - Statement - Net Position</b>	
	Property Taxes Receivable <i>Dr</i>
-	Property Taxes Receivable, Allowance <i>Cr</i>
	Property Taxes Receivable, Net of Allowance <i>Dr</i>
<b>500000 - Statement - Proprietary Funds Net Position - Type of Activities</b>	
	Property Taxes Receivable <i>Dr</i>
-	Property Taxes Receivable, Allowance <i>Cr</i>
	Property Taxes Receivable, Net of Allowance <i>Dr</i>

Weights can be applied to the values involved in the calculation to create subtraction results. Note that XBRL does not natively perform the mathematical operation but rather describes the relationship between the concepts. Software applications can leverage these relationships to alert government entities preparing their financials when a required relationship has not been met to help issuers resolve data quality problems. More complex validation rules can be built that check across financial statements and across time periods by using open-source processing languages. Validation rules can be established (by GASB, by states, by the SEC) that can be used across all entities to identify and resolve inconsistencies, improving data integrity.

## Extensibility

The ACFR Taxonomy is designed to cover most commonly used line items concepts for general purpose governments and each of the special districts included in this project. That said, there may be situations where governments need to report line items that are unique to their financials. For example, Douglas County School District reports Fund Balances Assigned in 11 distinct categories ranging from Extended Service Severance to Literacy Curricular Materials Reserve. To manage these custom line-items, the Taxonomy uses an XBRL feature called a “typed dimension” which allows the reporting entity to create a custom concept, for example, called “Fund Balance Assigned, Cash in Lieu.” This is shown in the visual below. The reported fact will be included in the calculation for the standard concept, Fund Balance Assigned. This approach

allows two school districts to be compared across the total values for Fund Balance Assigned, even though the components of Fund Balance Assigned for the two school districts may differ.

DOUGLAS COUNTY SCHOOL DISTRICT RE. 1						
Governmental Funds Balance Sheet June 30, 2022						
	Combined General	Governmental Designated Purpose Grants	Bond Redemption	Building	Non-Major Governmental	Total Governmental
<b>ASSETS</b>						
Cash and Investments	\$ 209,935,452	\$ -	\$ -	\$ -	\$ 18,383,606	\$ 228,319,058
Receivables:						
Property Taxes, Net of Allowance for Uncollectible Taxes	11,089,389	-	1,791,862	-	-	12,881,251
Leases	1,035,453	-	-	-	-	1,035,453
Other	900,090	4,829,737	162,192	199,785	2,814,931	8,906,735
Due from Other Funds	2,439,714	-	-	-	-	2,439,714
Prepaid Costs	819,171	-	-	-	-	819,171
Inventories, at Cost	1,658,901	-	-	-	-	1,658,901
Restricted Cash and Investments	-	-	-	-	-	-
<b>Total Assets</b>	<b>\$ 227,878,170</b>	<b>\$ 4,829,737</b>				
<b>LIABILITIES</b>						
Due to Other Funds	\$ 89,445	\$ 2,350,269				
Accounts Payable	15,693,486	688,486				
Accrued Compensation	38,930,241	1,309,037				
Unearned Revenues	479,328	281,945				
<b>Total Liabilities</b>	<b>55,212,500</b>	<b>4,829,737</b>				
<b>DEFERRED INFLOWS OF RESOURCES</b>						
Leases	1,000,330					
Unavailable Revenue - Property Taxes	3,091,796					
<b>Total Deferred Inflows of Resources</b>	<b>4,092,126</b>					
<b>FUND BALANCES</b>						
<b>Nonspendable:</b>						
Inventories & Prepaid Costs	2,478,072					
<b>Restricted:</b>						
TABOR Emergency Reserve	17,561,600					
Restricted Fund Balance	1,730,576					
<b>Committed:</b>						
3% Board Reserves	17,561,600					
<b>Assigned:</b>						
Extended Service Severance	77,054					
Facility Use Revenue Share	822,343					
Cash in Lieu	8,332,365					
2018 Mill Levy Override Carryover	7,522,341					
Security and Mental Health Reserve	2,904,570					

**Attributes**

**Fund Balance Assigned, Custom**

<b>Tag</b>	acfr:FundBalanceAssignedCustom
<b>Fact</b>	8,332,365
<b>Period</b>	As of 06/30/2022
<b>Axis</b>	ACFR Governmental Funds Axis ACFR Disaggregation Line Item Axis
<b>Member</b>	ACFR General Fund Member
<b>Typed Member</b>	Cash in Lieu [Typed Member]
<b>Explicit Member</b>	acfr:GeneralFundMember
<b>Measure</b>	USD
<b>Scale</b>	Zero
<b>Sign</b>	Positive

## Types of Data

The taxonomy can manage multiple data types including monetary, integer, string, and textblock for narrative passages that may provide explanatory information about the financials.

## Examples and Development of Individual Special Districts Documents

Inline XBRL reports representing four special districts: Douglas County School District, South Metro Fire Rescue Fire Protection District, Tall Grass Metropolitan District, and Denver Health were created as a proof of concept to illustrate how these government financials can be “XBRL-

tagged.” These reports were prepared and contributed to this project by DataTracks<sup>4</sup>, which provides cloud-based solutions for automated preparation of reports in HTML, XBRL and Inline XBRL formats. Visuals and live links to these reports can be found in the appendix.

## School District

As noted earlier, the taxonomy entry point for School Districts incorporates the Colorado School District chart of accounts (COA) and includes associated references for ease of use. In addition, individual school district financial statements were randomly selected and reviewed to identify other line items that may not appear in the COA but are included on the financial statements. These were included in the taxonomy as well.

## Fire, Hospital, and Metropolitan Districts

There appears to be no designated chart of accounts for the state of Colorado or for individual special districts for Fire, Metropolitan and Hospital. The approach taken to represent these financial statements was to pull multiple statements for each district type and conduct a detailed review of the line items represented on each of the seven statements.

Metropolitan districts are a type of Colorado special district that provides at least two types of services—fire, mosquito, parks and recreation, safety protection, sanitation, solid waste disposal, street improvement, television relay, transportation, or water. As such, concepts that are likely to fall into these categories were included in the Metropolitan District entry point as well.

Hospital Districts only report Proprietary Fund Statements. Therefore, only proprietary fund statements are included in the Hospital entry point.

## Primary human obstacles

Special district governments were reluctant to participate, stemming from a lack of trust in federal government initiatives like the FDFTA, skepticism about the necessity of machine-readable statements, and insufficient communication.

### Hesitation due to distrust of government

One of the primary barriers to the adoption of machine-readable statements in government is the widespread distrust of government institutions. Stakeholders were hesitant to embrace the new initiative. Even though the information that was used in this grant is public, government employees behaved as though it was proprietary.

To make the implementation of the FDFTA successful, there will need to be open and transparent communication to build trust. This may involve educating the public on the benefits of machine-readable statements and ensuring that stringent data protection measures are in place. By

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<sup>4</sup> DataTracks: <https://www.datatracks.com/>

demonstrating a commitment to protecting the interests of citizens, governments may begin to overcome this barrier.

## Skepticism concerning whether machine-readable statements will be required

Another barrier to the adoption of machine-readable statements is skepticism about their necessity. Some stakeholders question whether implementing such technology is essential and whether it will bring tangible benefits. They fear that the transition to machine-readable statements will be costly and time-consuming without providing significant advantages in return.

To address this skepticism, government bodies must provide clear, compelling use cases for machine-readable statements. Demonstrating how this retrieval and enhance data accuracy, streamline information retrieval, and improve decision-making processes can help convince skeptics of its value. Additionally, offering success stories from early adopters can illustrate the real-world benefits and build confidence in the technology. That is one way this study should help answer questions.

## Lack of communication from participants

Effective communication is essential for any major change or technological adoption. In the context of machine-readable statements, a lack of communication from participants, including government agencies and the private sector, hindered progress in fulfilling this grant. Without clear guidelines and standards, the implementation of machine-readable statements is fragmented and inconsistent.

To overcome this challenge, governments should proactively engage with stakeholders and foster collaboration. Establishing open forums, working groups, and committees to develop standards and share best practices can facilitate communication and build consensus. A coordinated effort ensures that everyone involved is on the same page and working towards a common goal.

## Final Thoughts and Reactions

In conclusion, the findings of our study have demonstrated that creating a taxonomy for governmental entities is possible. This research revealed valuable insights into the implementation of the FDTA from human and technical perspectives. We received limited reactions to the final product from the entities with whom we have worked, which is like the initial response we discussed in the beginning of the project.

The path forward includes further in-depth study, not just in our own locale, but by comparing these results with one or two other states. This comparative analysis will allow us to identify similarities and differences in both human acceptance and technical challenges.

This research is a steppingstone towards a better understanding of what it will take to successfully launch the FDTA. The need for broader support, further taxonomy development, and a collective effort is clear. With the backing of professional government organizations and ongoing, cross-state research, we can work towards meaningful solutions for all affected by this pressing mandate required by the FDTA. Access the taxonomies and sample reports: <https://xbrl.us/xbrl-taxonomy/2023-special/>



# Conclusions

Developing appropriate data standards for both general purpose and special district governments is challenging, given the complexity of the financial statements and variation in entity type, but it is far from insurmountable.

There are many common line-item captions used by most governments, and the data standard itself has features that can accommodate unique government fund names as well as line items on a financial statement. Furthermore, a taxonomy can allow separate entry points depending on the type of government reporting. An entry point used by a school district to prepare its financials in structured format for example, would reveal terms that can be used to capture information like “Charter School Revenues,” an entry point for a fire district would reveal different terms. This approach facilitates ease of data preparation.

While a school district, a fire district and a general-purpose government are likely to have some shared line-item captions (e.g., Total Assets), and some that are completely unique, all can be accommodated by a well-designed taxonomy.

Another important finding from these projects is that the software community has ready tools to support government preparation of their financials in structured format. These applications can range widely in cost and features, and many will be provided by the same providers working with government entities today. This is a suitable time for governments to reach out to their existing providers to gauge their readiness for the FDTA.

The most significant challenge identified through the pilots was a lack of awareness about data standards and the FDTA, confusion about what it may mean, and distrust among many local governments. There is skepticism about the value of machine-readable data and the ability of governments to efficiently comply. Questions remain about how FDTA compliance will be enforced and who will pay for implementation.

# Recommendations

The pilots and development work conducted through these two projects demonstrate that the technical aspects of building appropriate data standards to meet government financial reporting needs are manageable. In fact, the pilots conducted provide a strong prototype that can be expanded upon to meet reporting needs for all governments.

The bigger challenge lies in educating and engaging stakeholders to establish an effective, efficient program that limits the burden on reporting entities and at the same time, generates good quality, actionable data.

For the Financial Data Transparency Act (FDTA) to achieve its goals and effectively transform financial reporting and data accessibility, strong leadership from key organizations is paramount. Among these essential organizations are the Association of Government Accountants (AGA), the

Governmental Accounting Standards Board (GASB), the Government Finance Officers Association (GFOA), the Municipal Securities Rulemaking Board (MSRB), the National Association of Municipal Advisors (NAMA), the National Association of State Auditors, Comptrollers, and Treasurers (NASACT), the National Association of State Treasurers (NAST), State Debt Management Network (SDMN), and the National Federation of Municipal Analysts (NFMA). The collaboration and commitment of these influential entities are akin to the pivotal role played by the U.S. Securities and Exchange Commission (SEC) under the leadership of Christopher Cox during the transition to machine-readable data in the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system.

## Issuer-focused organizations

Organizations that represent government finance officers at the state and local level, such as GFOA, NASACT, NAMA, NAST, SDMN, and AGA must take the lead in guiding the implementation of the FDTA. Their involvement is crucial to:

- **Leverage marketplace expertise:** GFOA provides best practices and guidance, NASACT focuses on the importance of audit and accountability, NAMA advises on bond sales by state and local governments, NAST represents state treasurers and officials who perform state treasury functions, SDMN is a network of NAST formed for issuers and managers of state debt, and AGA is dedicated to government financial management. Their collective knowledge and experience can ensure that the FDTA adheres to sound financial and accounting principles and is implemented in such a way to limit cost and burden on governments.
- **Coordinate and advocate for an efficient and effective implementation:** These organizations can advocate for the FDTA principles and standards among their respective members and the wider financial community. These organizations can promote the adoption of structured, standardized financial data in the public sector.
- **Educate and train:** GFOA, NASACT, NAMA, NAST, SDMN, and AGA can play a vital role in educating public entities about the benefits and best practices of the FDTA. They can develop training programs and resources to help governments transition to machine-readable financial reporting.
- **Ensure data quality:** Much like the SEC's rigorous review of EDGAR filings, these organizations can establish quality assurance processes and guidelines for government financial data, which would instill confidence in the information provided.
- **Encourage innovation and the ability to adapt to change over time:** By working closely with key organizations, the implementation of the FDTA can be set up to be adaptable to evolving financial practices and technology. This flexibility is critical for long-term success.

## Regulators and standard setters

Successful FDTA implementation hinges on the pivotal roles played by the MSRB, the GASB and the SEC, within the standards, regulatory and self-regulatory organization (SRO) framework. These entities serve as the linchpins in ensuring that the regulatory landscape aligns with the

objectives and requirements of the FDTA. The MSRB, as an SRO, operates in a crucial capacity, overseeing municipal securities dealers and facilitating the development and enforcement of rules governing the municipal securities market. The SEC, as the primary federal regulator overseeing the securities industry, bears the responsibility of ensuring compliance with the FDTA. The SEC can provide flexibility to scale the implementation to minimize disruption and give issuers sufficient time to get up the learning curve. The GASB, as the standard-setting body for government accounting, brings unparalleled expertise in financial reporting standards and is responsible for setting comprehensive accounting standards. Work is already underway at the GASB to develop an XBRL Taxonomy to support municipal bond issuers.

## Investors and analysts

The influence of the investor and analyst community extends to the shaping of how data is provided, determining the need for reports prepared in machine-readable format that will be required, and the overall transparency and comprehensibility of financial information. Among these stakeholders, the NFMA and credit rating agencies are noteworthy due to their significant roles in assessing and interpreting municipal securities data. Their expertise and perspective are invaluable in developing meaningful and insightful reporting standards. They recently issued a letter of support to Dave A. Sanchez, Director, Office of Municipal Securities, Securities and Exchange Commission dated October 27, 2023. Their recommendation included the following language:

“Accordingly, the NFMA is providing these initial recommendations regarding the upcoming decisions involving the implementation of the FDTA relative to the municipal sector in the coming years, including:

- Development of the appropriate structured data presentation standards
- Appropriate data presentation format (e.g., XBRL, XML, CSV, or JSON) needed to support the wide variety of municipal credit/financial data
- Appropriate municipal issuer/entity identifiers
- Appropriate taxonomy”

This language is a positive step toward the implementation of machine-readable data.

## Software community

Software providers hold a crucial role as they work with government entities. These providers need to rapidly adapt their applications to generate machine-readable data that complies with FDTA standards. This adaptation is vital to ensure that issuers can easily transition to the new requirements and that the data they produce aligns with the FDTA's objectives. By facilitating this transition, software providers become essential facilitators, helping to ensure that the entire ecosystem seamlessly incorporates the new standards for enhanced transparency and efficiency in the municipal securities market.

In any adoption effort like the FDTA, it is essential to recognize and engage with a spectrum of key stakeholders, which typically include preparers, consumers (e.g., investors and analysts), regulators, software providers, and other support organizations. These stakeholders collectively contribute to the successful implementation of the FDTA, as they play diverse and interdependent roles in driving the adoption and adaptation of the new standards. These communities must be thoroughly engaged for the FDTA to move forward efficiently and effectively.

Governments owe it to themselves to invest in data standards and learn how they can best be used for FDTA implementation. There are many opportunities ahead for governments and the organizations that support bond issuers, including lawyers, accountants, underwriters, and municipal advisors to get engaged:

- Get educated today about the meaning behind open, nonproprietary data standards and legal entity identifiers
- When public exposure periods are conducted, provide feedback:
  - For the joint agency FDTA rule which is expected to be published Summer 2024
  - For the municipal reporting rule which is expected to be published in 2026
  - For taxonomies developed to support municipal bond issuer reporting
- Consider how the availability of government data in structured, machine-readable format can help stakeholders including governments, accountants, lawyers, underwriters, government associations, and the public; what new applications or offerings can be made available to assist policy-setters, bond issuers, researchers, association members?
- How can duplicate reporting be eliminated if financials are machine-readable and a single report can be used by multiple entities, e.g., Treasury, auditors, to extract *just* the data needed for a specific purpose?

The requirements of the FDTA are likely to change how governments format their financial statements, although it will not change what they report. The FDTA is a springboard towards better disclosure in the municipal marketplace. It represents a framework that can be used to collect, disseminate, and ingest the increased amount of information that the markets demand in the most efficient manner possible.

Findings from these two projects suggest that data standards can be effectively developed to accommodate a wide range of government types. Acceptance and efficient adoption represent a bigger challenge, which will require all stakeholders to play a role. The large and diverse community of organizations that support government bond issuance have an important opportunity to get involved and help governments modernize the reporting process efficiently.

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## Appendix - Terminology

Concept - XBRL components (items, domain members, dimensions, and so forth). The representation of a financial reporting concept, including line items in the face of the financial statements, important narrative disclosures, and rows and columns in tables. Abstract concepts are groupings of content and cannot be used to tag a reported fact.

Calculation - Additive relationships between numeric items expressed as parent-child hierarchies.

Data type - Data types (monetary, string, text block, share, decimal, and so forth) define the kind of data to be tagged with the element name.

Extensible - A taxonomy that allows users to add to a published taxonomy to define new elements or change element relationships and attributes (presentation, calculation, labels, and so forth) without altering the original. Regulators can use the XBRL specification to allow reporting entities to create custom line items by using extensions and/or typed dimensions. The ACFR taxonomies use the Dimensions specification to create unique line items for certain categories of facts such as a type of Current Asset or a type of Program Revenues which then roll up into parent line items. This approach was adopted to enable comparability across high level line-item categories.

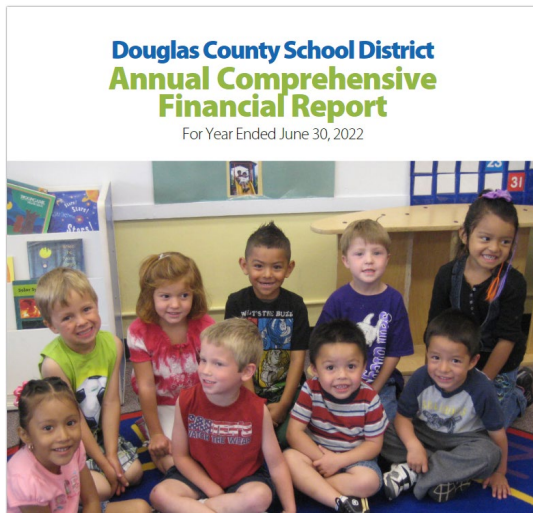
Tag (noun) - Identifying information that describes a unit of data in an instance document and encloses it in angle brackets (<> and). All facts in an instance document are enclosed by tags that identify the element of the fact.

Tag (verb) - To apply tags to an instance document.

Taxonomy - Electronic dictionary of business reporting elements used to report business data. A taxonomy is composed of an element names file (.xsd) and relationships files directly referenced by that schema. The taxonomy schema files together with the relationships files define the concepts (elements) and relationships that form the basis of the taxonomy. The set of related schemas and relationships files together constitute a taxonomy.

See [SEC XBRL Glossary of Terms](#) for more XBRL definitions.

# Appendix - Inline XBRL ACFR reports



Link to [Douglas County School District Report](#)

## DOUGLAS COUNTY SCHOOL DISTRICT RE 1

### Statement of Net Position June 30, 2022

	Primary Governmental Activities	Component Units Charter Schools
<b>ASSETS</b>		
Cash and Investments	\$ 233,242,078	\$ 74,302,961
Receivables:		
Property Taxes, Net of Allowance for Uncollectible Taxes	11,881,251	-
Lease	1,035,453	-
Other	8,906,735	1,607,400
Inventories	2,590,010	9,975
Prepaid Costs and Other Assets	1,788,720	1,893,929
Restricted Cash and Investments	110,028,347	30,072,538
Capital Assets:		
Non-Depreciable	145,102,870	36,206,583
Depreciable, Net	657,860,592	212,816,789
<b>Total Assets</b>	<b>1,173,435,856</b>	<b>376,910,175</b>



Link to [South Metro Fire Rescue Report](#)

### SOUTH METRO FIRE RESCUE FIRE PROTECTION DISTRICT STATEMENT OF ACTIVITIES FOR THE YEAR ENDED DECEMBER 31, 2022

FUNCTIONS/PROGRAMS	Program Revenue		Net (Expense) Revenue & Changes in Net Position		
	Charges for Services	Operating Grants and Contributions	Governmental Activities	Business Type Activities	Total
Governmental activities					
Operations	\$ (127,201,129)	\$ 12,218,071	\$ —	\$ (115,000,000)	\$ —
Administration	(24,256,225)	2,249,000	12,700	(21,910,225)	(21,910,225)
Fire Marshal	8,718,190	2,120,199	—	(7,004,290)	(7,004,290)
Dispatch	(2,262,125)	121,721	—	(2,020,108)	(2,020,108)
<b>Total governmental activities</b>	<b>(145,112,124)</b>	<b>14,708,991</b>	<b>12,700</b>	<b>(139,199,325)</b>	<b>(139,199,325)</b>

Tallgrass Metropolitan District

STATEMENT OF GOVERNMENTAL FUNDS REVENUE, EXPENDITURES AND  
CHANGE IN FUND BALANCE/STATEMENT OF ACTIVITIES

For the Year ended December 31, 2022

	Governmental Funds			Adjustments	Statement of Activities
	General Fund	Debt Service Fund	Total		
<b>Expenditures/Expenses</b>					
<b>Operating</b>					
Audit	\$ 7,818	\$ -	\$ 7,818	\$ -	\$ 7,818
Dues and fees	322	-	322	-	322
Directors' fees	300	-	300	-	300
Election	2,380	-	2,380	-	2,380
Insurance	3,088	-	3,088	-	3,088
Legal	6,430	-	6,430	-	6,430
Office	212	-	212	-	212
Management and accounting	13,800	-	13,800	-	13,800
Storage	330	-	330	-	330
Treasurer's fee	1,029	13,859	14,888	-	14,888
<b>Debt service</b>					
Principal payments	-	580,000	580,000	(580,000)	-
Interest expense	-	380,752	380,752	(1,298)	359,454
<b>Total expenditures/expenses</b>	<b>35,709</b>	<b>954,611</b>	<b>990,320</b>	<b>(581,298)</b>	<b>409,022</b>
<b>General Revenue</b>					
Property taxes	88,577	923,828	992,205	-	992,205
Specific ownership taxes	4,329	88,312	92,641	-	92,641
Interest	5,439	14,566	20,005	-	20,005
<b>Total general revenue</b>	<b>78,345</b>	<b>966,706</b>	<b>1,045,051</b>	<b>-</b>	<b>1,045,051</b>
<b>Change in Fund Balance</b>	<b>42,636</b>	<b>41,095</b>	<b>84,531</b>	<b>(84,531)</b>	<b>-</b>
<b>Change in Net Position</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>665,829</b>	<b>665,829</b>
<b>Fund balance/net position</b>					
Beginning of the year	252,387	543,114	795,501	(13,715,638)	(12,920,137)
End of the year	\$ 295,023	\$ 585,009	\$ 880,032	\$ (13,134,340)	\$ (12,254,308)

Link to [Tall Grass Report](#)



Link to [Denver Health Report](#)

**Denver Health and Hospital Authority**  
Statements of Revenues, Expenses and Changes in Net Position  
Years Ended December 31, 2022 and 2021

	2022	2021 *
<b>Operating Revenues:</b>		
Net patient service revenue	\$ 891,027,270	\$ 866,349,897
Capitation earned net of reinsurance expense	2,592,535	10,600,000
Medicaid disproportionate share and other safety net reimbursement	148,120,716	123,810,297
City and County of Denver payment for patient care services	29,700,000	27,700,000
Federal, state and other grants	95,209,369	87,345,995
City and County of Denver purchased services	30,007,574	27,153,245
Poison and drug center contracts	20,478,071	20,009,515
Other operating revenue	32,414,502	37,022,472
<b>Total operating revenues</b>	<b>1,283,760,087</b>	<b>1,219,996,423</b>
<b>Operating Expenses:</b>		
Salaries and benefits	773,970,388	746,396,637
Contracted services and nonmedical supplies	214,090,998	217,489,270
Medical supplies and pharmaceuticals	194,289,287	175,326,200
Depreciation and amortization	65,206,324	64,998,772
<b>Total operating expenses</b>	<b>1,307,556,997</b>	<b>1,229,189,029</b>
<b>Operating loss</b>	<b>(23,778,385)</b>	<b>(9,187,606)</b>