

**Planning is Needed to
Fully Implement Data Governance
at Milwaukee County**

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**Milwaukee County Office of the Comptroller
Audit Services Division**

**Scott B. Manske, CPA
Milwaukee County Comptroller**

**Jennifer L. Folliard, Director of Audits
Molly R. Pahl, Deputy Director of Audits**

Audit Team

Lolita Davis Spears
Diana Xiong
Sandra Swan
Jack Ceschin

Review Team

Paul A. Grant, CPA
Bruce Landrum, Jr.

Administrative Support

Cheryl A. Hosp

Planning is Needed to Fully Implement Data Governance at Milwaukee County

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Background

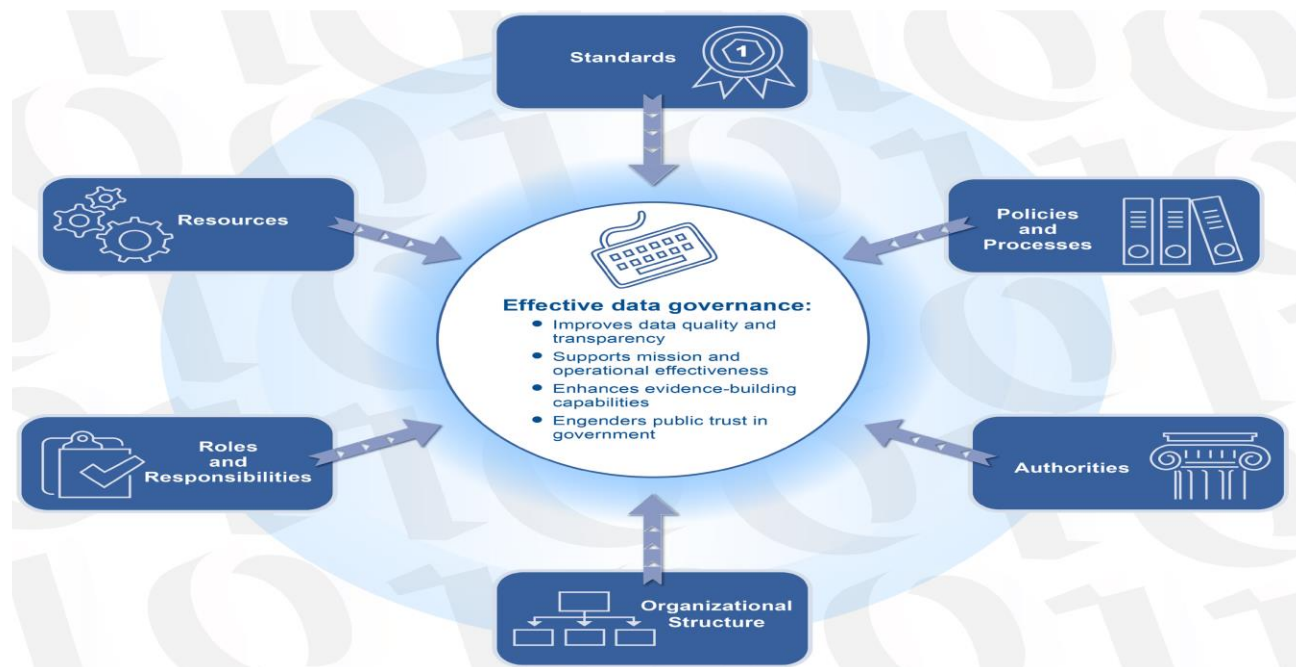
The U.S. Government Accountability Office (GAO) defines data governance as the framework or structure for ensuring that an agency's data assets are transparent, accessible, and of sufficient quality to support its mission, improve the efficiency and effectiveness of agency operations, and provide useful information to the public. Implementing an effective data governance framework requires participation and commitment from agency staff and officials that generate, analyze, and use the data to make decisions. Data governance activities include developing the authorities, roles, responsibilities, organizational structures, policies, processes, standards, and resources for the definition, stewardship, production, security, and use of data. The implementation of a data governance program has the added benefit of better data collection used to make decisions about citizens' needs and how services can be improved and provide cost-savings. It can also help with racial and ethnic equity to ensure the right individuals are eligible for programs and that those individuals are provided the appropriate services they need.

Data governance is different from data management. Governance refers to the roles, responsibilities, policies, and procedures for making decisions to ensure effective data management, while data management involves implementing those decisions. The GAO has four outcomes for effective data governance which are:

- Improves data quality and transparency.
- Supports mission and operations effectiveness.
- Enhances evidence-building capabilities.
- Engenders public trust in government.

The elements that lead to an effective data governance program are standards, policies and processes, authorities, organizational structure, roles and responsibilities, and resources. Figure 1 displays the GAO's data governance goals.

Figure 1



Source: U.S. Government Accountability Office (GAO) (December 2020), Publication 21-152.

Information Technology at Milwaukee County

Milwaukee County provides a wide variety of services to its citizens and within the County that there are a vast number of data systems in operation. Some of the systems are centralized with oversight via IMSD, but many of the systems and the data contained within them are managed within the relevant department. IMSD provided a list that included 235 software systems in use at the County. There are also County departments such as the Courts and the District Attorney that contain both County and State employees who operate on blended systems between the two entities. According to IMSD, at times staff in these offices require laptops issued from both the County and the State to access software required to complete their tasks.

While the County does not have a formal data governance program, there are several Federal, State and County laws that the County must comply with that relate to data. Remaining in compliance with these requirements provides some aspects of a data governance program. Three major areas that require this compliance are protection of social security numbers, open records, and record retention. Details about these programs include:

- The Social Security Number Protection Act prohibits the County from displaying the Social Security account number of any individual, or any derivative of such number, on any check

issued for any payment by the agency. There are several County departments that have data systems that contain social security numbers.

- Wisconsin State Statute 19.31 establishes the State's open records policy and requires the County to follow the statutes and provide the public access to records.
- Milwaukee County Code of Ordinance 56.29 Access to Public Records is based upon the Wisconsin State Statute for open records. Every unit's department head, or designee is the legal custodian of their records and should, under consultation with County Corporation Counsel, upon request and as soon as practicable and without delay, provide information that may be made public.
- Milwaukee County Ordinance 56.14 establishes the County's record retention policy and specifies which records are included and a destruction schedule for County records. Records are defined as any material upon which information is recorded or preserved be it written, drawn, printed, spoken, visual or electromagnetic. It also includes electronically generated or stored data.
- The County also has a corresponding Administrative Manual of Operating Procedures (AMOP) that details the record retention program at Milwaukee County. Included within the AMOP is the *Milwaukee County Records Retention and Disposition Schedule* which contains over 1,000 record types with different timelines and procedures for determining how long a record should be retained and how it should be disposed of.

At Milwaukee County, the County's technology is overseen primarily by the Department of Administrative Services - Information Management Services Division (IMSD). IMSD is comprised of 10 units with a 2023 tax levy cost of \$14.4 million for 81 full-time equivalent employees. In addition, IMSD oversees and has within its budget \$6.2 million in Technology Purchase Management. IMSD performs its centralized oversight role for IT via its 10 units. The ten units within IMSD are:

- Project Management - responsible for portfolio and project management of countywide Information Technology projects
- IT Governance and Business Solution - responsible for the oversight of IT administrative and strategic functions and working directly with departments and outside agencies
- Business Applications - responsible for the lifecycle management (governance, development, and maintenance) of multi-platform countywide and departmental application systems
- Enterprise Data Services - responsible for the data management and analytics services and to provide data expertise for Milwaukee County
- Data Center Services - provides research, acquisition, installation, maintenance, and support services for countywide data center infrastructure including servers, storage, backup, networking, and Office 365 environments

- Network and Telecom Services - provides research, acquisition, installation, maintenance, and support services for the countywide network and telecom infrastructure including routers, switches, access points, firewalls, phone systems, and phones
- End User and Device Support Services - provides a central point of contact between County technology users and the Information Technology Support Services Team
- Managed Printing – tasks include the oversight of the County's printing program including analyzing the County's costs to print, the deployment of printers and the secure printing program, and education of staff on the costs of printing
- IT Security - responsible for protecting County assets from cyber threats and defending the numerous attack surfaces with due diligence, intelligent risk decisions, and by developing and adopting a robust Information Security Management Program based on the National Institute of Standards Technology.
- Technology Purchase Management – provides centralizing oversight of the IT spend demands of various County departments and divisions

Open Data Initiative

In March of 2022, the County Board adopted a resolution calling for Milwaukee County to commit to the principles of open, accessible, efficient, and transparent government by supporting and expanding the pursuit of Open Data that promotes civic engagement. It was requested that IMSD prepare an informational report identifying the steps necessary to facilitate the effort. IMSD's response was provided in August of 2022 and identified responsible staff and resources needed which were to be requested as a part of the 2023 Adopted Budget. The 2023 Adopted Budget for IMSD included the creation of the Enterprise Data Services unit with four full-time equivalents transferred in from other areas of IMSD. Total tax levy costs are expected to be approximately \$435,000.

The Enterprise Data Services Strategic Program Area is responsible for the data management and analytics services, which encompasses:

- data governance.
- data architecture management.
- enterprise data integration.
- data strategic planning.
- data quality management.
- metadata management.
- business intelligence and analytics.

The Enterprise Data Services Strategic Program Area provides data expertise for Milwaukee County. This program area will provide elements of data governance through enterprise data management, data archiving, master data management, data architecture, and professional data analytical technical services.

In support of the Open Data initiative, the County strategy dashboard was created on the public website to assist the County towards its goal of achieving racial equity. The group provides support for departments by providing reporting, dashboarding, and data expertise. These workspaces provide the ability to link department specific data to enterprise data to deliver historical reporting, proactive decision making, and future opportunities.

We conducted this audit at the request of the Comptroller and our overall objective was to review what standards and best practices exist to guide government in establishing a data governance program, the status of policies and procedures that fall under the data governance umbrella at the County, and how the County compares to other governmental entities.

Section 1: While the composition of data governance models varies, we found common themes for the benefits and the general structure.

The National Institute of Standards Technology in the U.S. Department of Commerce's goal is to help organizations' data needs.

The National Institute of Standards Technology (NIST) is a non-regulatory federal agency within the U.S. Department of Commerce. One goal of NIST is to help organizations keep their data and information secure and safe and to protect critical infrastructure from both insider threats and attacks from the outside. According to the Director of IMSD, they use NIST guidelines.

The NIST information security framework consists of 5 core functions. Those are:

One of the goals of the National Institute of Standards Technology is to help organizations keep their data and information secure and safe.

- Identify – develop the organizational understanding to manage cybersecurity risk to systems, assets, data, and capabilities. Includes: asset management, business environment, governance, risk assessment, risk management strategy, and supply chain management.
- Protect – develop and implement the appropriate safeguards to ensure delivery of critical infrastructure services. Includes access control, awareness and training, data security, information protection process and procedures, maintenance, and protective technology.
- Detect – develop and implement the appropriate activities to identify the occurrence of a cyber security event. Includes anomalies and events, security continuous monitoring, and detection processes.
- Respond – develop and implement the appropriate activities to take action regarding a detected cybersecurity incident. Includes response planning, communications, analysis, mitigation, and improvements.
- Recover - develop and implement the appropriate activities to maintain plans for resilience and to restore any capabilities or

services that were impaired due to a cybersecurity incident. Includes recovery planning, improvements, and communications.

A 2012 audit of the U.S. Postal Service Data Governance conducted by the U.S. Postal Service Office of Inspector General provides a roadmap for implementing a data governance program.

In 2012, the U.S. Postal Service Office of Inspector General (OIG) issued an audit related to how the Postal Service uses data to manage its operations. In the audit, the OIG defined data governance as the management process ensuring important data assets are formally managed and fully utilized throughout the organization. OIG also stated that a successful data governance program has a clear delineation of roles and responsibilities of stakeholders, a visible and active leadership structure, and a defined strategic plan.

As a part of the audit work, OIG identified 148 data-related issues in prior reports that involved unreliable or inaccurate data or were caused by an absence of policies or the Postal Service not enforcing existing policies. In 2003, the Postal Service defined a framework for a data governance program, but full roles and responsibilities were not uniformly adopted. OIG also found that the Postal Service did not create formalized enterprise-wide data governance programs with structures, policies, and processes to govern data storage and use.

The U.S. Postal Service conducted an audit related to using data and found three phases of a data governance program and an estimated timeline of two to three and a half years.

Using research on six best in class companies, OIG identified in its audit best practices that the Postal Service might adopt to grow and institutionalize a strong culture and capability for a data governance program. The audit included a phased approach with an estimated timeline of two to three and a half years for implementation. The following phases were identified in the audit.

Phase I:

- Assess existing data management practices and policies.
- Develop an organizational structure to support the governance initiative.
- Appoint data stewards within each business unit.
- Secure buy-in from business units.

Phase II:

- Develop data performance measures.
- Take inventory of organizational data.
- Develop standardized data definitions.
- Initiate data quality assessments, beginning with top priority data assets.

Phase III:

- Develop and integrate risk management policies.
- Develop a data classification system.
- Develop best-in-class warehousing architecture and management policies.
- Enhance business user tools and support.

IMSD is a member of the Metropolitan Information eXchange (MIX) where they interact with other governmental IT directors.

IMSD is a member of the Metropolitan Information eXchange which is an association of Chief Information Officers from large local governments.

The Mission of the Metropolitan Information eXchange (MIX) was formed in 1966 as an association of East Coast cities. Its goal is to promote progress in the information technology profession by providing Chief Information Officers of large local governments, with similar interests, the means for learning and exchanging ideas and practices.

MIX has evolved into an organization that limits its membership to 65 CIOs and IT Directors. Membership is drawn from the most innovative cities and counties in the United States with populations of over 100,000. These leaders share ideas and experiences within government IT. An annual conference also allows for the exchange of best government IT practices.

Data governance maturity models have been developed to measure the development of entities' IT programs including data governance programs. These models assist in

determining next steps for full implementation of a data governance program.

According to the National Association of State Chief Information Officers, maturity models provide government a means for answering the question of what we are getting into. The higher levels of maturity present a vision or future state toward which government aspires and corresponds to not only a mature data governance program, but also describe a mature enterprise architecture discipline. A government will never be able to effectively respond to citizens without properly governing its information and knowledge assets.

Two of the most common data governance maturity models are Gartner and IBM. To achieve the highest maturity score at IBM, data governance becomes an enterprise-wide effort that improves productivity and efficacy.

Maturity models are used to determine aspects of data governance programs.

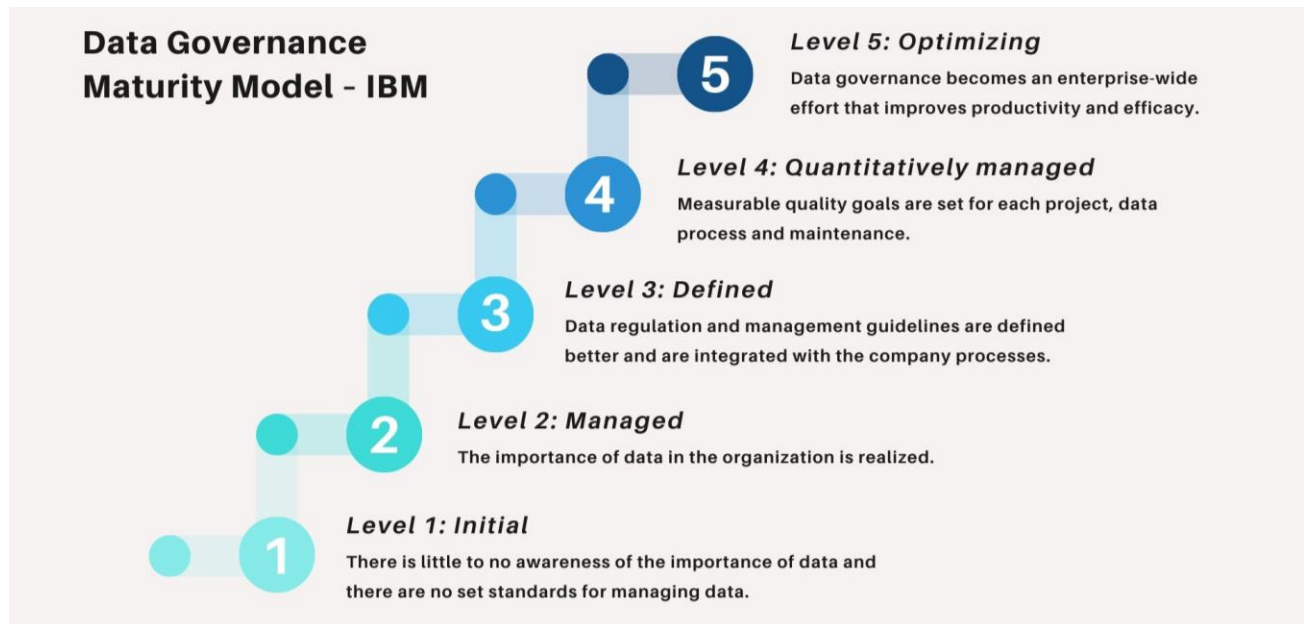
IBM defines its IT maturity models as a method to assist clients to understand quantitatively where they currently are and, based on their mission and goals, where they want to be. You can use the model to identify gaps between the current and future state which provides a guide to improvements over time required by your entity. The model provides an indication of strengths, weaknesses, opportunities, and threats. All maturity models present several levels against which different areas are assessed. Sometimes, the needs of the organization can be met with a lower level of maturity.

Two of the common maturity models are the IBM model developed in 2007 and the Gartner model developed in 2008.

We found there are multiple established maturity models that can be used to assess the status of an entity's data governance program. These models can help entities understand their data capabilities and identify vulnerabilities. Using the models can alert an entity to which area employees need to be trained for improvement. The model can also allow for comparison to peers. Choosing which maturity model to use depends on the organization's individual needs. The IBM model, developed in

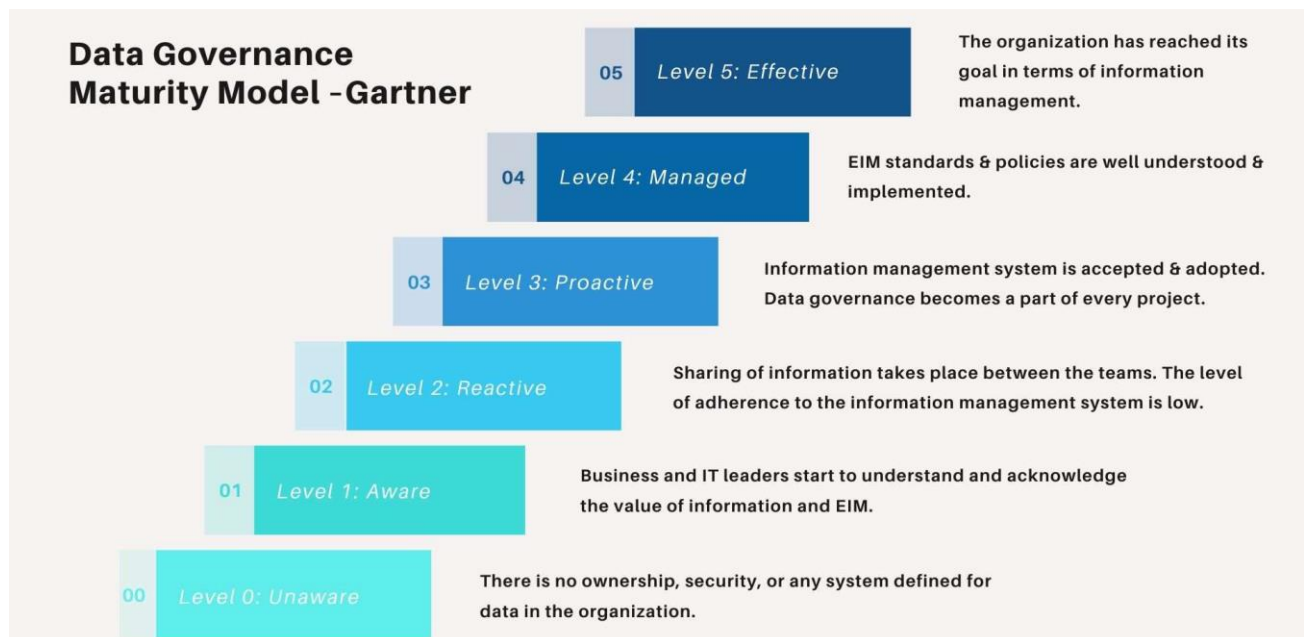
2007, and the Gartner model, developed in 2008, are often used to assess maturity. They measure similar items and their steps of maturity provide insight into the goals of most data governance programs. Figures 2 and 3 includes a visualization of the two models.

Figure 2



Source: Figure from article, *Data Governance Maturity Models – IBM & Gartner* by HiTechNectar

Figure 3



Source: Figure from article, *Data Governance Maturity Models – IBM & Gartner* by HiTechNectar

While aspects of a data governance plan are stated under several names and have variances, we found the following commonalities in the life span of a data governance program.

In our review of the literature regarding data governance programs, we were able to compile the common themes we found and craft the phases of a data governance program. We found there were three main phases: Initiation, Implementation and Outcomes.

We found three common phases of a data governance plan to include: initiation, implementation, and outcome.

Initiation of a data governance plan is the first step in the process and includes:

- Identifying an initial activation team and an Executive Sponsor.
- Creating vision and mission statements.
- Identifying budget needs.

Implementation of a data governance plan is the second step of the process and includes:

- Assigning roles and responsibilities.
- Development of data governance policy.
- Identify data and its owners.
- Identify project team/managers and cabinet/council for data governance.
- Identify stakeholders.
- Develop timeline and costs.
- Identify business and IT metrics.
- Review and approve program.

Outcome of a data governance plan is the final step of the process and includes:

- Creates data standards.
- Identifies priority data.
- Data quality assessment occurs.
- Data is located and warehoused.
- Establishes lifecycle management.
- Establishes data classification, data utilization, and best practices across the County for data.

Section 2: Currently, the County does not have a formal data governance program in place, but IMSD has contracted for assistance with development and some policies already exist at the County.

Over five years IMSD used Gartner, Inc. for 14 deliverables including the annual calculation of the IT Key Metrics Data which is the maturity score for the County.

IMSD entered into a services agreement with Gartner, Inc. to provide a variety of services including an annual maturity score for the County. The agreement ran from 2016 to 2022 with prepayments for the annual service to Gartner.

In the prior section we discussed how IT maturity models can help governments measure their data governance. In 2016, IMSD entered into a services agreement with Gartner, Inc. The agreement was subsequently renewed on an annual basis for five years until July of 2022. The total amount paid to Gartner during this period was \$626,434. The agreement provided for fourteen deliverables and included subscription-based research and related services.

One of the deliverables was the annual calculation of the IT Key Metrics Data which is the maturity score for the County. Gartner uses a self-assessment survey to score the progress of an entity's IT department and calculate an entity's maturity model. The score is ranked from level one where there is no ownership or security to any system defined for data within the organization to level five where the organization has reached its goal in terms of information management. The Gartner Score report provides a detailed roadmap for advancing levels, as well as resources and recommendations to an entity to improve its information management. It also includes a benchmark for peers for government IT departments.

The County's scores for 2018 – 2020 are in Table 1. In 2018, Gartner included decimals in its ratings. In 2019 and 2020, they transitioned to whole numbers with a + or – to provide additional

detail. The County's score was consistently in the 2 range. According to Gartner, level 2 is defined as an "emerging discipline" because this is the point where the organization decides that the uncertainty in level 1 is not sustainable, and the organization has chosen to begin focusing on progressing toward standardization. To achieve level 3, according to Gartner's model, an entity needs its information management system accepted and adopted and data governance to become a part of every project. The County's score was comparable to what Gartner reported as the government benchmark score for all three years.

Table 1 Gartner Annual Maturity Score for Milwaukee County and Government Benchmark 2018–2020		
<u>Year</u>	<u>Milwaukee County Score</u>	<u>Government Benchmark Score</u>
2018	2.5	2.6
2019	2	2
2020	2	2
Source: Audit Services Division table created with data from IMSD's annual budgets.		

The maturity score is calculated based on a self-survey completed by IMSD. The last year IMSD reported a score was for the year 2020.

Maturity models are calculated by a self-survey completed by the entity mid-year for the prior year. According to interviews with senior staff at IMSD, it was determined to discontinue using Gartner beginning in the summer of 2022 which resulted in the last maturity score being for the year ending December 31, 2020. Based on the data in the County's financial system, the County paid in full for the service agreement for 2021. In April of 2022, IMSD had not yet taken its IT self-survey, so they had not received a score. When we requested the score in September of 2022, we were told by IMSD that they could not provide it. The County would have had to complete the self-survey in the summer of 2022 to obtain a score for 2021.

IMSD has contracted with Info-Tech since 2020 for research and advisory services.

Gartner requires additional payments when entities are interested in additional services which IMSD reports is not currently feasible with IMSD's budget. Info-Tech allows staff access to items without an additional charge.

Beginning in 2020, IMSD entered into a service agreement with Info-Tech to provide research and advisory services to IMSD rather than continue with the Gartner's maturity model. IMSD is using its contract with Info-Tech to provide a pathway to a data governance program.

Milwaukee County IMSD entered into a one-year services agreement effective July 31, 2020 and again in 2021 and 2022 for two additional years, with Info-Tech Research Group to provide Research and Advisory Services to Milwaukee County. This agreement provides access to diagnostic tools and key research to help IMSD improve the County's IT performance. The contract covers the following products: Reference Seat, Executive Counselor Membership, and Workshop Membership. The total cost was \$63,772 for each year for 2020 and 2021. The cost increased to \$66,543 for 2022.

According to an interview with IMSD, it was envisioned that IMSD will work in partnership with Info-Tech to build some structure with the key areas of the County to start a framework on data governance. Using the workshops offered by Info-Tech should result in a roadmap to guide the implementation of data governance across the County as a whole. It was cautioned that this process will take time.

According to an interview with senior staff at IMSD, Gartner requires payments when entities are interested in additional services which is not currently feasible with IMSD's budget. Info-Tech allows staff access to items without an additional charge.

Another reason according to IMSD that they transitioned from Gartner was because Gartner is a self-assessment survey used to see how well things are going in your IT department. The IMSD staff believes the best thing is to have hard data. They have worked on actual spending with Info-Tech. IMSD focused on how much spending is used for applications and projects to support the County and compared that with other IT departments of a

similar size. They reported that not every government has the same size departments, number of staff, or pay, and there are contractor versus employee mixes.

Info-Tech provides an IT satisfaction scorecard. There was 68% satisfaction reported in the 2021 Adopted Budget.

An additional feature of the agreement with Info-Tech is the use of Info-Tech's IT Satisfaction scorecard to gauge the level of satisfaction and value of IMSD's delivery of services for IT. IMSD stated it is intended that this survey will take the place of Gartner IT Maturity Scores. The most recent version of the CIO Vision survey was deployed by IMSD in January of 2023. Table 2 shows the results that were included in the 2023 Adopted Budget.

Table 2 Annual Performance Measures in 2023 Adopted Budget			
Performance Measure	<u>2021 Actual</u>	<u>2022 Target</u>	<u>2023 Target</u>
Project business satisfaction and importance	68%	70%	72%
Project business satisfaction and importance benchmark to industry average	-2%	0%	+2%
IT satisfaction	72%	75%	80%
IT satisfaction – benchmark to industry averages	-4%	0%	+2%
IT value	72%	75%	80%
IT value – benchmark to industry standards	-3%	0%	+2%
Source: Audit Services Division table created with data from IMSD's annual budget.			

A workshop held in 2022 by Info-Tech provided IMSD with strategies to assist in its data governance program.

In April of 2022 a Data Strategy Workshop was held.

In April of 2022, a Data Strategy Workshop was held and run by Info-Tech Research Group. At the workshop data strategies which included data governance, data architecture, and enterprise integration were discussed. Key roles for data governance were identified as: a Data Governance Steering Committee, Data Governance Council, Data Governance Working Groups, Data Owners, and Data Custodians.

Table 3 describes the Critical Roles and Responsibilities for Data Governance.

Table 3 Info-Tech's Definition of Role and Responsibilities	
Data Governance Council	Data Governance Steering Committee
<ul style="list-style-type: none"> • Senior Executive representatives (examples: CIO, CEO, CFO) set direction for future data initiatives. • Provides guidelines around new data policies, procedures, and standards and authorizes changes and implementation of new policies. • Supports top-down approach to data governance and help to champion/socialize data governance and support adoption. 	<ul style="list-style-type: none"> • Creates tactical plans. • Manages data and practice related issues. • Monitors Data and Data Governance initiatives. • Oversees performance and management of working groups and serves as the liaison to the Governance council. • Should be comprised of data owners, departmental subject matter experts, departmental process owners, and data stewards.
Data Owners	Data Stewards
<ul style="list-style-type: none"> • Are organizational leaders whose teams are heavy users of data assets. • Review the permissions of the user groups to different data sets. • Accountable for the quality of the data and whether it enables employees to perform their jobs efficiently. • Determine the institutional impact of changing permission statutes. • Understand the lifecycle of the data. 	<ul style="list-style-type: none"> • Serve on an operational level addressing issues related to adherence to standards/procedures, monitoring data quality, raising issues identified, etc. • Responsible for managing access, quality, escalating issues, etc.
Data Governance Working Groups	Data Custodians
<ul style="list-style-type: none"> • Working-groups are cross-functional teams that deliver on Data Governance projects, initiatives, and ad hoc review committees. 	<ul style="list-style-type: none"> • Serve on an operational level addressing issues related to data and database administration. • Support the management of access, quality, escalating issues, etc. • Are subject matter experts from IT and database administration.

Source: Audit Services Division table created with data from Info-Tech provided by IMSD

The County has employee directives in place related to data. Based upon the Acceptable Use of Information Technology directive, employees agree to the use of data with each log into a County computer.

County employees are required to agree to the following statement upon starting County computers:

I understand that my violating the Administrative Directive – Acceptable Use of Information Technology may result in corrective action, including denial of my access or rights to technology resources and possible discharge from County Service.

Employees are reminded of their need to comply with the use of technology policy upon logging into their computer.

This requirement is based upon the Acceptable Use of Information Technology directive which was most recently updated in November of 2021. This directive sets out acceptable uses of the County's information system. Because all County systems are to be used for business purposes in serving the interests of the County during normal operations, it is the responsibility of every employee to know these guidelines. Inappropriate use exposes employees and the County to risks including but not limited to virus attacks, compromise of network systems and services, and legal issues. This policy applies to all users of the County's information system, including employees, contractors, consultants, temporary staff and other workers at Milwaukee County and its subsidiaries, who access the Internet through computing or networking resources.

The County is the sole owner of the information system and all of its data. All data even if personal is subject to the County's monitoring, review, deletion, or collection at any time without notice or permission.

According to the directive, everything on the information system, whether job-related or personal, belongs to the County. The County is the sole owner of the information system and all of its data. All data, whether "personal" or otherwise is subject to the County's monitoring, review, deletion, or collection at any time, without notice or permission, to ensure compliance with this directive, to comply with law enforcement requests, to complete an investigation, to defend the County in legal proceedings, to comply with open records requests or for any other reason consistent with the law. This includes documents, emails, texts, instant messages, graphics, photos, or any other items. In addition, any data or software created by a User in the scope of or related to the User's employment of work for the County becomes the property of the County upon creation.

The Employee Handbook also contains County policies regarding data.

The Milwaukee County Employee Handbook which was updated as of January 2023 includes guidance to employees on the

The Employee Handbook also includes guidance to employees on how to handle the County's information system.

handling of information systems while an employee. The handbook states that Milwaukee County employees are responsible for ensuring that all information is maintained in a highly confidential manner. Inappropriate use of information is prohibited. Examples in the handbook include:

- Accessing information in County systems, without a legitimate work-related business need.
- Sharing confidential information with others, inside or outside of Milwaukee County, who have no work-related business need to know the information.
- Providing any information to the public, unless release of the information was approved through the formal Open Records Request process.
- Utilizing information for one's own gain.
- Disclosing confidential medical information, violation of the Health Information Portability and Accountability Act.

In addition, the Employee Handbook contains a section discussing the Acceptable Use of Information Technology directive. It also includes guidelines for appropriate online conduct by employees to avoid the misuse of the internet. It warns that inappropriate use exposes employees and the County to risks including, but not limited to, virus attacks, compromise of network systems and services, and legal issues.

Challenges exist at the County which hinder the development of a data governance program. The large number of IT systems used at the County, and at times under departments outside of IMSD, is a large hurdle.

The County has 235 systems in place at the County. Not all the systems are under IMSD's jurisdiction.

We were provided a listing by IMSD of all systems in place at the County, which numbered 235. There are several large systems deployed and "owned" by individual departments. Each application listed showed which County Department utilizes that application system. There are six applications that all County Departments use including Outlook and Windows. In addition, the County has several major data systems including:

- INFOR – the County's financial system
- Ceridian Dayforce (for Human Resources)
- ProPhoenix (for public safety)

According to the County's CIO, every County worker is responsible for protecting County data.

- OnBase (document management)
- Scripts (used by DHHS and BHD)
- CCAP - Court system
- Vitech – County's retirement system

In an interview with the Chief Information Officer (CIO) for Milwaukee County, he explained that the various departments within the County are responsible for their data, and every County worker is responsible for protecting that data. He said it is a challenge at the County because departments don't understand what can be shared or the ad hoc rules in place. The CIO indicated that IMSD will be using the National Institute of Standards and Technology (NIST) Standards for best practices, laws, and regulation guidelines for data governance. The department is also part of Metropolitan Information eXchange (MIX) from whom they get additional best practices.

The County has a siloed IT system that also includes offices that blends State and County workers, hardware, and software. In addition, data ownership by a department versus a vendor seemed to cause some confusion.

We conducted interviews with seven members of IMSD's staff and five staff in other areas at the County. We were told there are multiple challenges to the implementation of data governance at Milwaukee County.

According to the CIO an issue at the County is that when you ask who owns the data the response is nobody.

According to the CIO, a key component of best practices is that data is not owned by IT and that the IT division is meant to be a support mechanism. In addition, there is a need for data to be recognized as County owned data, owned by the business-specific owners, and identify every data owner. He noted, however, currently at the County if you ask, "Who owns the data?" the response is nobody. He has found that staff at the County are resistant to change, and some departments don't want to share their information with IMSD. According to the CIO, the County is very siloed in its approach to IT and many departments operate on their own with minimal contact with IMSD. He added that the

various departments within the County are responsible for their data and every County worker is responsible for protecting that data.

There are several departments such as the Clerk of Circuit Court and the District Attorney that are on the State of Wisconsin's system rather than County owned or operated systems. Staff in the office at times have both County hardware and State hardware to access the necessary systems to perform their job duties.

The Airport, while a full County department, has its own staffing of seven employees to handle the Airport's IT area. In an interview with the IT Manager at Milwaukee Mitchell International Airport, he stated that he and his staff of six are responsible for all technology at the Airport and the protection of its data. The IT staff at the Airport follows National Institution of Standards and Technology. We were provided by the Airport a list of 50 applications in use at the airport. He also indicated that they are very involved in security and meet with IMSD twice weekly.

The major payroll system is managed by the Payroll Division but houses Human Resources data.

The major payroll system, Ceridian Dayforce, is managed by the Office of the Comptroller's Payroll Division, but it also houses human resources data that technically belongs to the Human Resources Department. In an interview with the Director of Payroll & HRIS she stated that the Payroll Division controls the data in Ceridian Dayforce and the travel function within County's financial system, Infor XM. As a part of their control of the Ceridian Dayforce system, they control the system access for County departments independent of IMSD.

The Director of Payroll & HRIS informs the Director of Human Resources prior to releasing HR data when needed.

According to the Director of Payroll & HRIS, she informs the Director of HR prior to releasing HR data when needed along with associated departments with outside data requests. The Payroll Division follows the County's Record Retention Policy. In addition, certain data is not shared such as social security numbers, addresses, phone numbers and birth dates although there is no formal documentation of this process nor countywide guidance. The Director of Payroll & HRIS expressed concern that there are no controls in place on who has access to data shared with IMSD dashboards once that data is no longer housed in Ceridian Dayforce. She stated that she does not contact IMSD for data assistance.

The Human Resources department works with their vendors who collect electronic records for them.

In an interview with the Department of Human Resources' Director of Benefits Administration he confirmed Ceridian Dayforce is owned and controlled by Payroll and data reports are provided upon request to Payroll. According to the Director of Benefits Administration, HR does not own or collect any data. HR keeps records of open record requests. HR does not give any personal identifiable information and follows the County's open records ordinance. All employee records are now electronic. The Director of Benefits Administration indicated he does not contact IMSD for assistance for any data purposes. According to the Director of Benefits Administration, HR has vendors who collect electronic records for them and while it is HR data, the vendors maintain it as part of the contract.

The County's retirement system uses the Vitech system and the RPS department did not seek IMSD's involvement with the recent upgrade.

The County uses the Vitech system to run its retirement system which is overseen by the Retirement Plan Services (RPS) division of the HR department. When conducting our field work, we were informed that RPS was working with counsel on understanding the distinction between the employee retirement pension system and Milwaukee County to ensure there is a clear separation of responsibilities. According to IMSD, the recent upgrade to the Vitech system was conducted by RPS without IMSD input or support.

IMSD held a data governance committee meeting with some County departments, but continuation appeared to falter due to a key staff departure.

According to our research, a formal Data Governance Steering Committee typically starts the planning process for an overall data governance program. It was mentioned by the Director of Payroll & HRIS that there was an informal meeting of a Governance Committee that she attended in April of 2022. Due to the departure of the organizer of the committee, there was only one meeting she attended. The committee had members from the Payroll Division, the Medical Examiner's Office, the Office of Emergency Management, and IMSD. The committee was formed due to concerns with the governance of dashboard data processes and Payroll's last attendance was in April of 2022. The Director of Payroll & HRIS would like to see the committee reestablished.

Based on the interviews conducted, we found that the staff member, the IT Manager, Data Management & Analytics, who was responsible for data strategies and building data governance left employment with Milwaukee County. When Audit staff interviewed him prior to his departure, he stated he was trying to work with business partners to come up with some sort of Data Governance Plan along with working with Info-Tech to plan a data governance strategy. He indicated that they had initiated the first

notification of a Data Council linked to data governance. This Council consists of people that are responsible for data.

The County's current fiscal environment adds a challenge for IMSD to balance all its roles at the County.

Another constraint at the County is the funding of staffing at IMSD.

The County Comptroller in March of 2023 projected an \$18.3 million structural deficit for 2024.

An additional challenge raised in the interviews with IMSD was budget constraints which may make it difficult to get funding for components of data governance. The County Comptroller is required to issue an annual five-year fiscal report. The five-year forecast for Milwaukee County is a tool for helping policymakers and the public understand the future challenges and opportunities of the County budget. The most recent report was issued in March of 2023 and found that the County will be facing a \$18.3 million structural deficit for 2024. The structural deficit is projected to be \$109.7 million over the forecast period when assuming one-time budgetary fixes.

According to staff at IMSD, staffing is always a challenge and at times IMSD lacks funds to hire contractors to assist on projects where IMSD does not have the expertise. In an interview, IMSD's IT Director of Governance and Business Solutions mentioned that there was concern about the ability to continue to fund the tasks assigned to the Enterprise Data Services Strategic Program Area.

IMSD, via its contracts with both Gartner and Info-Tech, have begun work on a data governance plan for the County but there is not currently a formal data governance plan in place nor a clear path toward a data governance plan they were able to share with us. While the County has some policies in place to support an overall data governance program, which is a good step, there are several missing pieces for the program. Given the County's siloed nature, state of data ownership, and blend of State and County employees moving beyond stand-alone policies is important. The County also currently lacks a policy direction from

policymakers to make data governance a priority, therefore, we recommend:

1. *IMSD present a documented plan to implement a data governance program at Milwaukee County including:*

- *roles and responsibilities*
- *the time frame and next steps*
- *feasibility within the County's IT structure*
- *projected fiscal impact*
- *staffing and related costs*

This plan should be presented to the County Board within six months.

According to IMSD, IT services agreements are often pre-paid based on industry standards; this conflicts with the County's current policies regarding prepayment of services although work on this item continues at the County.

We identified the pre-payment of services as currently prohibited by the County in a prior audit although resolution of this item continues.

We noted in our audit, *Former ROD's Willful Disregard for County Policies and Procedures and Cooperative Vendors Facilitated Development of a "Pot of Gold" for Improper Use of County Funds*, released in 2021, that pre-payment of services was an issue and recommended:

The Comptroller and the Department of Administrative Services:

- a. Update the current policies and procedures including any financial system instructional manuals to include a reminder to departments that the County does not pre-pay for services.
- b. Update any current and any new training on payment systems to include a reminder that the County does not pre-pay for services.
- c. Explore the possibility of adding a pop-up reminder to any new financial systems implemented at the County that the County does not pre-pay for services.

The County maintains on its website a forms library which provides both instructions and copies of necessary forms for staff at Milwaukee County. Under the contracts sections are

instructions for the completion of the form 1684 which is used to encumber contracts. Both within the instructions and on the form itself, are now reminders that the County does not pre-pay for services as shown in Figures 4 and 5.

Figure 4 – Contract Instructions on County Forms Library



Reminder: Milwaukee County does not pre-pay for services. Invoices should **not** be submitted for payment until services have been received as pre-payment of services is not allowed.

Source: Figure found in the County's Form library in its contract's instruction guidelines.

Figure 5 – Form 1684 Contract Encumbrance Form

Does this contract require payment before services are rendered? ☐ YES ☐ NO
The County does not prepay for services. Draft the contract to require the Contractor to invoice the County once services are provided.

Source: Figure found in the County's Form library in its instructions for Form 1684.

However, in the January 2023 Status Update Report for the ROD audit, the Comptroller noted:

The updated financial form to report and encumber contracts now includes this reminder: "*The County does not prepay for services. Draft the contract to require the Contractor to invoice the County once services are provided.*" Additionally, the Contracting Continuous Improvement (CI) Project's Work Group to Standardize Required Language is drafting a Master Agreement template to restrict prepayment....We know that there are instances where prepayments will have to be made. Any procedure will have to allow for exceptions to be approved by management.

The Comptroller noted that work on pre-payments is needed since it is known that exceptions may occur at times.

IMSD has used purchase orders to pre-pay for their service agreements with Gartner and Info-Tech. Milwaukee County Code of Ordinances contains language regarding the use of purchase orders and the prepayment for items. Chapter 15.02 Purchase Orders and Contracts states, "Purchase orders or contracts shall be issued in advance for all purchases where called for by the ordinance on purchasing." Prior to payment being issued by the Accounts Payable Division, invoices must be signed off as authorized to pay by departments who are responsible for determining if goods or services have been received.

According to staff within IMSD it is industry standard to prepay for services.

According to the IT Contract Manager at IMSD, it is industry standard within IT for most vendors to require entities to prepay for service agreements. The language included in the agreement with Gartner was that it was for subscription-based research and related services and was non-cancelable. The terms included that it may be terminated only for material breach by either party, upon 30 days prior written notice if the breach is not cured within the notice period.

The County has a policy of not prepaying for services and has a warning provided on its systems to remind users of this. A prohibition on prepayment is included as protection for the County in case of non-fulfillment of the contract. IMSD did not receive a final maturity score from its final agreement with Gartner but payment in full had already occurred. IMSD has stated that it is industry standard for prepayment on information technology type of agreements. There continues to be ongoing work at the County regarding prepayment for services whether the payment be via an encumbered contract or a purchase order. As a part of our monitoring of the other open audit recommendations, we will check to see that the issues found in this audit are included.

Section 3: We reviewed other governmental data governance programs and found a common theme that few government entities had fully formed data governance programs.

Interviews with multiple outside agencies and organizations provide insight into the trend within government for the establishment and implementation of data governance plans.

We conducted interviews with six outside entities and received a mix of answers regarding data governance implementation at their entity. The Wisconsin Department of Public Instruction has fully implemented data governance. The Minnesota Department of Transportation is on its second or third iteration of data governance and has established data governance policies and procedures for their agency/organization. The University of Wisconsin – Madison hired a Chief Data Officer in 2014 to get a formal data governance program implemented, but it has been a slow process due to staffing issues and the outbreak of Covid-19. The City of Milwaukee has a plan for data governance but is in the beginning stages of creating a formal framework. The University of Wisconsin – Milwaukee has not implemented data governance totally but does have personnel that participate on a Data Governance and Custodial Committee. Milwaukee Public Schools has no formal data governance program implemented nor do they have a data governance committee established.

Table 4 shows the status of data governance plans at the entities we reviewed.

Table 4 Status of Data Governance Plans at Select Outside Agencies					
Agency	Plan Adopted	Planning Stages	No Written Plan	Written plan	Some Elements implemented
Minnesota Department of Transportation				X	
WI Dept of Public Instruction	X			X	
Milwaukee Public Schools			X		
University of WI- Milwaukee			X		X
City of Milwaukee	X	X			
University of WI- Madison	X	X			

- **Plan Adopted:** The plan to proceed with data governance was formally adopted by the those in charge of funding.
- **Planning Stages:** A program is being developed.
- **No Written Plan:** No framework or plan in written form.
- **Written Plan:** A plan based on a best practice and/or framework.
- **Some elements implemented:** No plan/framework, but some policies & procedures and/or committee have been implemented.

Source: Audit Services Division table created with information collected from various governmental entities.

The Minnesota Department of Transportation (MNDOT) has had multiple iterations of data governance and found its biggest obstacles are money and staffing.

The Minnesota Department of Transportation (MNDOT) has a data governance program. In an interview with the Minnesota Department of Transportation Senior Legal Counsel and Data Practices Compliance Official, he mentioned organizations like the American Association of State Highway and Transportation Officials along with the Association of Records, Managers and Administrators help provide best practices used to help govern MNDOT's data governance program and processes.

Auditors interviewed the MNDOT Senior Legal Counsel and Data Practices Compliance Official to find their challenges to implementing data governance. He indicated that there were two significant challenges to their implementation of a data governance plan. The first was funding since it is difficult to get people excited when you are talking about spending money on something intangible. The second challenge they mentioned was

that getting people to care or be interested that this is important. Everyone thinks they can manage data and they think their way is best for them. However, the bottom line for MNDOT was that they needed to think of what works best for the entity/agency in the long run. MNDOT hired an independent consultant to recommend data governance roles and to help develop a plan to implement a data business catalog.

The Wisconsin Department of Public Instruction developed its data governance program due to the volume of data from throughout the State of Wisconsin.

The Data Governance Program began at the Wisconsin Department of Public Instruction (DPI) to get a handle on the large amount of data from all over the state. DPI has a Steering Committee which meets monthly. This committee consists of various directors from all educational organizations. They prioritize and make all the major decisions. There's an opportunity to review budgets, chargebacks from IT, discuss upcoming bigger projects, provide feedback and make major decisions.

DPI Data Stewards are in place to help with governing the data governance program. All staff must go through Confidentiality Training, and they go through an annual PII (Personal Identifiable Information) training as well. DPI has a process for data access and tracking and approval is part of each request.

Currently, one of the biggest challenges in implementing data governance is getting new people onboard with it, as well as getting the word out and educating staff on it. DPI stated that a snapshot of data quality over the years may be a way they can track the progress of their data governance program. DPI says students' personal information is kept safe through data governance with data sharing agreements and data access authority. A best practice that DPI uses is the National Center for

Education Statistics. Currently, DPI does not conduct risk or impact assessments, but they believe this is something they will need to look into doing. DPI says that having a formal data governance program helps with having policies and procedures in place that have consistency throughout the agency.

In 2020, the University of Wisconsin - Milwaukee (UWM) created a Data Governance and Custodial Committee to provide a data governance structure with representation from a wide variety of areas at UWM.

In 2020 the University of Wisconsin - Milwaukee created a Data Governance and Custodial Committee (DGCC) to provide a data governance structure for UWM where members of the committee are drawn from units on campus. The DGCC works with the Information Technology Advisory Council (ITAC). The goal of the DGCC is to provide a data governance structure for UWM, allowing the campus, via the committee's work, to prioritize and ensure consistency of data reporting, to provide guidance and oversight in developing campus-wide definitions of important data terms and ensuring their transparency in reports, and to develop actionable plans and priorities for the future of business intelligence at UWM—including the capital, personnel, technical, and political resources needed to realize these goals.

The membership of DGCC will be drawn from subject matter experts within business units with an understanding of current data needs and aspirational goals, central IT staff with a pragmatic understanding of the technical environment, and appropriate members from administrative units to provide a perspective of the mission and long-term institutional vision.

The members of the committee are drawn from units on campus who by the nature of their duties must produce reports and are involved in the support of the data warehouse or other sources of data on campus on the system level. Working with ITAC, the

committee membership is reviewed every two years. The following units are established as units with representation on the committee:

- Undergraduate Admissions
- Graduate Admissions
- Business and Financial Services
- Financial Aid
- Human Resources
- Office of Assessment and Institutional Research
- Registrar's Office
- School/College Representation in the form of members, no more than 3 total, each from different units
- Office of Research IT
- University Information Technology Services Information Security Office
- University Information Technology Services Information Systems Office
- University Information Technology Services Enterprise Data Management (ex officio)

The City of Milwaukee adopted a data governance plan in January of 2022. As of December 2022, the City of Milwaukee is in the process of implementation of the plan.

As of December 2022, the City of Milwaukee had progressed on the development of their data governance program with the approval of their data governance plan. The City is now in the process of implementation of the plan. The data governance plan was assembled by the Information Technology Management Division with the City Attorney and the Records Retention Department.

The data governance plan includes a data governance committee which would meet quarterly to set strategic priorities for data management. In addition, the committee reviews proposed data governance roles across the City of Milwaukee and promotes the importance of the principles of data governance in their areas of responsibility. When necessary, the committee resolves conflict and confusion around data ownership and accountability.

The Data Governance Plan states that this policy establishes a framework for the management of data as an asset across the City and applies to all information resources created and owned by the City and its departments. Elected officials, employees, consultants, and vendors working on behalf of the City of Milwaukee are responsible for adhering to this policy.

The data governance plan includes data governance roles and responsibilities, such as: the Chief Information Officer, Data Steward, Data Custodian, and Data Users. A Data Governance Committee will be selected. The plan includes details on a variety of areas:

- **RISK LEVELS** - All data must be classified into one of three classes: Low, Medium, or High.
- **DATA SECURITY** - All data must be classified into one of three classes: public, restricted, or confidential.
- **DATA SHARING** - All users must observe requirements for transferring or communicating information based on its sensitivity.
- **DATA ARCHIVE/DATA RETENTION** - To the extent that data and datasets are determined to be public records, as defined in *Wis Stat. §19.32(2)*, authorities must comply with all retention and disposition requirements.
- **DATA DISPOSAL** - All data must be classified into one of three classes: Low, Medium, or High to determine the method of disposal.
- **DATA QUALITY** - Data quality dimensions include accuracy, completeness, consistency, timeliness, validity, and uniqueness.
- **DATA PRIVACY** - the increasing volume of electronic transactions involving private information calls for robust privacy protection and data security practices to guard against unauthorized access, fraud, theft, and other misuses of such information.

In an interview with the City's IT Security & Audit Compliance Analyst, she indicated that forming a data governance committee

is one of the challenges that the City is facing due to finding people who are willing to give their time for being on the committee. In addition, identifying the true source of data was a big hurdle to get over and took a lot of time.

The University of Wisconsin – Madison data governance plan was originally formed in 2014 and they are still working toward complete implementation of it.

In 2014, the University of Wisconsin – Madison (UW) formed a data governance program and hired a Chief Data Officer. The impetus for the hire was that UW was having data definition and quality problems, so they decided to create a Chief Data Officer position. According to the current Chief Data Officer, without staff, not much could be done with one person. Since that time, however, UW has developed a Data Governance Charter, named data governance stewards, and developed a data governance council that met for a while.

The UW Data Stewards help with data-driven decision-making across the University. The Data Stewards go through a training program called the On-Board Program designed inhouse for them. UW has been working with EDUCAUSE which is a nonprofit association whose mission is to advance higher education using information technology. UW also used Hedge Education Consulting Group to help them develop data-related policies, procedures, and standards. UW has monthly meetings where they review their steps and new data.

The Chief Data Officer at UW said that one of the biggest challenges in implementing data governance at UW is leadership alignment, along with reaching the masses with information and demystifying the information. She found that something they need to do is get people to recognize there is a problem and the solution to the problem is data governance. Everyone needs to

commit time to the effort of data governance. The IT department needs to try to simplify the message because they use words that others do not understand. The source of the data is way up stream.

Several entities that have either initiated or implemented a data governance program at their governmental entity. This is a valuable resource for IMSD. We believe that as the County begins to plan its data governance program, that IMSD seek guidance from governmental entities who have successfully initiated or implemented data governance programs. We recommend:

2. *In developing the data governance plan, IMSD should seek guidance from governmental entities who have successfully initiated or implemented data governance programs.*

Section 4: With various departments using 235 software systems at Milwaukee County and decentralized contracting, IMSD should distribute guidance regarding the execution of contracts related to data.

The County has multiple sites that provide guidance to staff including AMOPs, the forms library and employee training.

Milwaukee County provides a wide variety of services to its citizens using a vast number of data systems, many of which are operating without centralized oversight. A lack of guidance for departments to use when executing a contract involving data is a concern.

According to IMSD, there are 235 software systems in use at Milwaukee County. Some of the systems are centralized with oversight by IMSD, but many of the systems and data contained within them are managed within the relevant departments. The County maintains multiple sites that provide guidance to departments including the online Administrative Manual of Operating Procedures (AMOP), the forms library, employee training and the tech tips offered by IMSD. The AMOP site is in the process of creating an electronic version of the Administrative Manual. We reviewed these options at the County and did not find readily available guidance for departments seeking to execute a contract with data involvement.

Our prior audit work found the County in need of work on its overall contract ordinance, policies, and procedures. There continues to be outstanding recommendations in this area from those audits.

In a prior audit on the Register of Deed's office, we recommended, and the Board approved a recommendation to update the AMOP related to contracts due to a variety of issues.

We noted in our audit, *Former ROD's Willful Disregard for County Policies and Procedures and Cooperative Vendors Facilitated Development of a "Pot of Gold" for Improper Use of County Funds*, released in 2021, issues with the County's contracting ordinances and policies and made two recommendations which are still incomplete. We recommended:

- I. The Department of Administrative Services, the Comptroller and the Office of Corporation Counsel form a workgroup to finalize and issue an updated AMOP that is accessible on

the AMOP website that includes current and accurate procedures to follow for purchasing contracts.

- II. The Comptroller work with the Office of Corporation Counsel and the Department of Administrative Services to update Chapter 56.30 of the Milwaukee County Code of Ordinances, where applicable, to reflect current statutory guidelines for contract approval at Milwaukee County. In addition, language that results in the inclusion of revenue contracts be added.

In addition, we noted in our audit, *Between The Rock and a Hard Place: Former Landfill Becomes Entertainment Center with Unresolved Community Concerns Beyond the County's Ability to Solve*, released in 2021, issues with the County's contracting as well and made one recommendation which is still incomplete. We recommended:

The Department of Administrative Services:

- When developing an updated AMOP for contracts ensure that the AMOP specifies that departments are responsible for the monitoring of all aspects of a contract and should identify who within a department is the responsible party.
- Clarify the role of service departments such as Risk Management, Office of Corporation Counsel, Office of the Comptroller and CBDP as aiding as needed rather than directly responsible for monitoring of contract requirements.
- Create a training program to be provided to all department heads and contract managers on an annual basis as to their responsibility in monitoring of contracts.
- Explore the establishment of a countywide software system to assist departments in their contract monitoring responsibilities.

County contracts deal with outside vendors who handle County data. IMSD has staff who handle contracts for their department and aid others as requested. In our interview they provided guidance on how IMSD protects the County in their contracts.

We interviewed IMSD staff who provided insight into how IMSD handles protections for the County in contracts that relate to data.

The Information Security Manager at IMSD indicated that her job involves reviewing contract language and clauses in the contracts that IMSD executes with vendors. She also indicated that some parts of the contracts are required by State Statutes. According to the Information Security Manager, there are no policies or procedures documented for Milwaukee County on the transmission of data internally or externally now, but policies and procedures are currently being worked on.

According to IMSD staff, retention of the ownership of County data is an important protection.

The IT Contract Manager stated that the County's data is always owned by the County and that any ownership of our data is not given away without careful consideration. She expressed a concern that if the County failed to retain ownership of its data, that would potentially give vendors the use of our data for other purposes. It could also lead to a vendor copying our data and developing something from it that could harm the County.

The IT Contract Manager stated that IMSD includes a clause in its master services agreements that states that vendors cannot patent, build, or trade what they may see in our system and that they would have to apply and request to use it. She stated that there are built-in provisions that allow the use of data, and they are carefully monitored, controlled, and limited. She stated it is standard language that in the event of termination, the data will all be returned to the County and that additional work is needed to add language to say the data needs to be destroyed or scrubbed once the contract is over.

We were provided by IMSD with a template that IMSD uses for Master Services Agreements that provides the County with appropriate data controls identified by IMSD.

IMSD has a Master Services Agreement template that they use for their data contracts.

The IMSD Master Service Agreement contract template includes Section 6 which is entitled "Ownership of Data." This section is intended to clearly establish the County as the sole owner of all data involved. The vendor acts as a data custodian only, having access to data but never ownership over it. Additionally, vendors must keep all data stored securely by all relevant industry/statutory standards and easily accessible by the County at no extra cost.

Subsections 6.1 thru 6.5 also indicate that the County shall have full access to all data provided to the vendor and has the right to have all data returned as soon as the contract has ended.

The Master Service Agreement includes clauses to provide access to all data for the County and minimum standards for security.

Section 8 of the Master Service Agreement relates to minimum standards of security that the vendor must meet. The vendor must establish and maintain safeguards to protect against destruction, loss, or unauthorized access of County data in the vendor's possession. Such safeguards must be "(a) no less rigorous than those maintained by vendor for its own information of a similar nature; (b) no less rigorous than generally accepted industry standard; and (c) no less rigorous than as required by applicable laws." Additionally, the vendor's security procedures must also include measures to limit access to only authorized users; they must also use strong encryption techniques for data both in transit and at rest, as well as physical security measures like ensuring their storage facility is secure.

The Master Service Agreement includes a right to audit clause and a separate record retention clause both of which require three years of record retention.

The Master Service Agreement includes both a records retention clause and an audit clause.

Included in the Master Service Agreement is the County's standard Right to Audit clause which requires the vendor to allow the County or its management access to records for up to three years. In addition, the Master Service Agreement has section 20 which states that records that are subject to the Wisconsin Public

Records Law shall be maintained for a period of three years after receipt of final payment under the Agreement.

We conducted a limited review of multiple contracts at the County to see if the language included regarding data was consistent with the language IMSD provided to us within its Master Service Agreement.

We obtained contracts and relevant materials that were included within the County's Docusign system which is used by the County to obtain all required signatures upon contracts. We were looking to see if the contracts included similar language and protections as we found in the IMSD Master Service Agreement. Some of the items we reviewed may not be in contracts due to the nature of the contract.

We reviewed the following contracts:

- INFOR - County's financial system
- Vitech - County's Pension Board to facilitate migration of data from one software base to another, updated version of the software base
- Ceridian Dayforce - HR Management, Payroll Processing, Learning Management, and Recruiting
- Bonfire – used by Procurement for the management of RFPs and by Parks, BHD, Procurement and IMSD for contract management
- ProPhoenix - to develop and deploy an Interface between the XCAD application at the Milwaukee Fire Department and the FATPOT CADfusion data integration platform currently hosted by OEM. Milwaukee County is investing in a system to integrate 911 call center data
- Vermont Systems - a Point-of-Sale Management System and related services
- LifeWorks Healthcare - Coaching and Leadership, Team, and Administrator Development
- Wellpath LLC - Inmate Health Care Vaccine Tracker
- Aramark – Inmate commissary
- Community Advocates/IDAP - monitoring and administration of the Interim Disability Assistance Program
- JPAY - debit card and media for HOC inmates

Our review of four main areas within the Master Service Agreement included the language regarding data security, data

ownership, and the County's access to data. We also looked for the required data retention period required by the contract. Some contracts included a stand-alone requirement while others rely upon the County's standard Right to Audit Clause which requires a three-year retention period. Table 5 shows the results of our review.

Table 5 IMSD Master Service Agreement Standards Found in Other County Contracts				
Contract	Data owned solely by County?	Data Security at Master Service Agreement Level?	County has access to data?	Data retained 3 years beyond use?
Infor	Yes	Yes	Yes	Yes (3 years)
Vitech	Yes	Yes, identifiable data will be scrambled and "de-identified"	Yes	Yes, for records subject to Public Records Law (3 years).
Ceridian Dayforce	Yes	Yes	Yes	Yes (3 years)
Bonfire	Yes	Yes	Yes	Yes (3 years)
ProPhoenix	Yes	No	Yes, only in the Acceptable Use of Information Technology form	Yes, for records subject to Public Records Law (3 years).
Vermont	Yes	No	N/A	Yes, for records subject to Public Records Law (3 years).
LifeWorks	Yes	Yes, per HIPAA standards	Yes	Yes (7 years)
Wellpath LLC Vaccine Tracker	Yes, vendor is the custodian of health records, but the property of the County.	Yes, per HIPAA standards	Yes	Yes, in audit clause and for Public Records purposes (3 years)
Aramark	Yes	Not mentioned	Yes	Yes (3 years)
Community Advocates/ IDAP	Yes, but protected health information shall remain the property of contractor but subject to audit.	Yes, per HIPAA standards	Yes, subject to HIPAA	Yes (7 years)
JPAY	Yes	Not mentioned	Yes	Yes (3 years)

Source: Audit Services Division table created with data from the County's DocuSign system.

Previously, IMSD had a directive entitled, *Acceptable Use of Information Technology for Vendors* that provides guidance and parameters for vendors accessing the County's

information systems. In addition, IMSD has a directive regarding remote network access.

In the latest version, IMSD includes vendors in its Acceptable Use of Information Technology directive.

Like the directive to employees regarding the use of technology, in 2017 IMSD had issued a directive titled, *Administrative Directive on Acceptable Use for Vendors*. The document's stated purpose is to set out acceptable uses of the County's information system for vendors and vendor-specific users

In 2021, an Acceptable Use of Information Technology directive was issued that defines users of the directive as employees, vendors, consultants, contractors, and agents authorized to use the County information system. The directive is accessible on the tech tips page maintained by IMSD and is linked in the Employee Handbook issued in January of 2022. We searched for the 2021 directive in numerous locations where vendor activity would be located. Our search included the Procurement Division's website, the IMSD Division's website, the Bids and RFPs page through DAS, the Administrative Manual of Operating Procedures page, the Forms Library, the Purchasing Cheat Sheet and the Tech Tips Library. We did not locate the directive on any of these sources.

The 2021 directive notes that vendors who utilize the County's information system must sign the directive.

The two directives, the 2017 vendor specific and the 2021 general, are virtually identical except for some minor changes in language. The general directive adds additional directives on prohibited activities and security concerns and expands in some other areas. Additionally, the 2021 directive notes in the Accountability and Enforcement section that Vendors who utilize the County's information system must sign this directive, just like employees and contractors.

IMSD also has a directive that vendors who need remote access must use a computer that meets IMSD's security requirements.

In April of 2020, IMSD issued an updated directive, *Administrative Directive on Remote Network Access*. This directive defines the requirements for remote access to County networks and systems from outside networks. The directive notes that remote access for vendor users must use a computer that meets IMSD security requirements and uses the IMSD-approved remote access software. Like the acceptable use directive, we could only locate this directive on IMSD's tech tips website and the Employee Handbook.

The two current directives are included as Exhibits 2 and 3 in IMSD's Master Service Agreement template.

We found a wide variety in the contracts regarding the inclusions of the Acceptable Use of Information Technology directive and the Remote Network Access directive.

IMSD has established detailed directives on its acceptable use of technology and remote network access to the County's systems and includes them as exhibits in its Master Service Agreement. We based our review on files within the County's contracting signature system, Docusign. The Docusign file requires documents necessary for the execution of the contract and a copy of the directives may have been executed separately from the Docusign file.

We found that three contracts we reviewed contained a copy of the directives. Two contracts referred to or included a hyperlink to the required directives, but copies were not included in the Docusign file. Five contracts did not mention either directive. One contract included a hyperlink to the Acceptable Use of Information Technology directive but was silent on the Remote Network Access directive.

We found that IMSD has developed tools to assist their department in executing contracts with protection of County data

in mind including their Master Service Agreement and their Acceptable Use of Information Technology and Remote Network Access directives that could be beneficial to other County departments, therefore we recommend:

3. *IMSD should evaluate items within its Master Service Agreement for countywide applicability and recommend to DAS Procurement for inclusion. Items recommended for review include:*
 - *Data protections*
 - *Acceptable Use of Information Technology directive*
 - *Remote Network Access directive*
 - *Access and ownership of data*

Given the decentralized nature of contracting and issues we found in our prior audit, the County is working on establishing contracting procedures to close out two prior audit recommendations. Therefore, we recommend:

4. *IMSD should present to the Director of the Department of Administrative Services any identified countywide items which should be included in the contract AMOP as work is continuing on the contract AMOP at the County.*

We found that there is a variance within County contracts on the inclusion of an independent record retention clause versus utilizing the general right to audit clause which has a record retention standard. Given the County has an obligation to public records law and the potential use of the IMSD Master Service Agreement as a guideline to other departments when drafting a contract that includes data provision, we recommend:

5. *IMSD should evaluate in consultation with the Office of the Corporation Counsel the need for a separate record retention clause in contracts data-related countywide beyond that of the Audit Clause and recommend changes to DAS Procurement as needed.*

Section 5: The creation of multiple committees to implement a data governance program affords the County an opportunity for inclusion and furthering its racial equity goal.

The County has established a goal of achieving racial equity.

The County established a goal of reaching racial equity by 2030 and has continued to emphasize racial equity across the County. It is well established that representation at all levels is an essential element of equity.

During the fall of 2019 an administrative strategic planning effort resulted in the development of three-year objectives for Milwaukee County including an objective category of a Diverse and Inclusive Workforce. This objective contained the following goals:

- A. Milwaukee County leadership, management, and staff will reflect the demographics (including but not exclusively racial) of Milwaukee County.
- B. Milwaukee County will have an inclusive workplace culture where differences are welcomed, where different perspectives are heard, and where individuals feel a sense of safety and belonging with no significant differences by race and gender.
- C. Employees will understand what skills and experience are expected to advance to the next level and will have opportunities to gain those skills and experiences.

In addition to the objectives of the strategic plan, Milwaukee County has a goal of achieving racial equity. These objectives were codified into Chapter 108 of the Milwaukee County Code of General Ordinances in April 2020.

According to the Government Alliance on Race & Equity (GARE), a national network of governments working to achieve racial equity and advance opportunities for all, government has the ability to implement policy change at multiple levels and across

GARE believes that the transformation of government is essential for the advancement of racial equity.

multiple sectors to drive larger systemic change. GARE's focus is on normalizing conversations about race, operationalizing new policies, practices, and organizational cultures, and organizing to achieve racial equity. GARE's belief is that the transformation of government is essential for us to advance racial equity and is critical to our success as a nation.

GARE says that while local governments may consider themselves fair and just, people of color fare worse than their white counterparts in every area: housing, employment, education, justice, and health. GARE says that because local governments have a unique responsibility to all residents, these racial inequities can and must be addressed. The public sector must be for the public good; current racial inequities are destructive. Additionally, GARE states that it is critical to address all areas of marginalization, and an institutional approach is necessary across the board.

In 2019, the Harvard Business Review published an article on diversity and inclusion entitled, *To Build an Inclusive Culture, Start with Inclusive Meetings*. The article concluded that meetings matter, and they are the forum where culture forms, grows, and takes hold within an organization. Based upon a study with feedback from over 1,000 female executives, the article discussed that women and men of color are often uncomfortable speaking up and are more than twice as likely to be interrupted.

The article notes that success for diversity requires inclusion. Inclusive behavior in meetings can be wide ranging from ensuring everyone is represented at the meeting and has a chance to speak. Included in their checklist for leading inclusive meetings is to review the list of attendees and ensure that you are not missing people who represent diverse or dissenting points of view.

We found several articles discussing the importance of not just representation but also inclusion.

In another article published by Harvard Business Review, *When and Why Diversity Improves Your Board's Performance*, they found that the benefits of board diversity cannot be realized unless the board is both socially diverse noting race, gender, and age diversity matters as well as professionally diverse with a variety of experience, expertise, and backgrounds. One interviewee noted that his current boards are undergoing a self-assessment process in which a board might periodically look at the skill sets they would want on the board, then look at the ones they currently have, and try to fill any identified gaps.

Forbes issued an article entitled, *The Truth About Diversity and Why It Matters*. In the article, they stated that diversity is not just about gender or race, it's also about diversity of background and mindset. They found that people tend to promote people who they feel comfortable with, and often that is people who are like them. Diversity and inclusivity will only be successful if everyone has a feeling of belonging in the workplace in everything you do and that everyone feels she or he belongs – regardless of gender, race, or sexuality. According to Forbes, research has found that employee's performance is increased when they feel they belong.

The computer and mathematical field is not as diverse by both gender and race/ethnicity when compared to the overall U.S. population. Given this reality it will require additional efforts by the County to be inclusive.

IMSD had 32% of its workforce identify as female versus the County workforce which is 51%.

According to 2022 data from the U.S. Census Bureau of Labor Statistics (BLS), 27% of all Computer and Mathematical occupations are held by employees who identify as female. The overall U.S. workforce in 2022 was comprised of 47% of employees who identified as female. According to the Milwaukee County workforce dashboard as of February 2023, IMSD had 32% of employees who identified as female while the overall County workforce had 51% of employees.

The BLS reported workforce numbers for the following four races and ethnicities for computer and mathematical occupations and overall workforce: Asian, Black or African American, Hispanic or Latino and White. Asians are overrepresented in the computer and mathematical occupation workforce, they are 7% of the American workforce, and 22% of the computer and mathematical occupation workforce. Black or African Americans are underrepresented in the computer and mathematical occupation workforce. They are 13% of the overall workforce compared to 9% of the computer and mathematical occupation workforce. Hispanic or Latinos are underrepresented in the computer and mathematical occupation workforce. They are 19% of the overall US workforce and 9% of the computer and mathematical occupation workforce. Whites are 77% of the total workforce and 65% of the computer and mathematical occupation workforce. Table 6 shows the data by race and ethnicity for the overall U.S. workforce and the U.S. computer and mathematical occupation workforce.

Table 6
Computer and Mathematical Occupation Workforce by Race and Ethnicity in the U.S. Compared to the U.S. Workforce Census in 2022

	<u>U.S. Over 16 Workforce*</u>	<u>U.S. Computer and Mathematical Workforce*</u>
Asian	7%	22%
Black or African American	13%	9%
Hispanic or Latino	19%	9%
White	77%	65%

Source: Audit Services Division table created with data from the Bureau of Labor Statistics.

*Estimates for the above race groups (White, Black or African American, and Asian) do not sum to totals because data are not presented for all races. Persons whose ethnicity is identified as Hispanic, or Latino may be of any race.

At Milwaukee County, the website includes an interactive strategy dashboard with workforce data for the County. The dashboard also includes the County's overall population demographics and

the ability to sort data by specific department or division. The County includes the following categories in its race and ethnicity charts: American Indian/Native Alaskan, Native Hawaiian, or Pacific Islander, Asian, Black or African American, Hispanic or Latino, Other, Two or More Races, White and Decline to Answer.

Using this tool, we found in March of 2023, that Asian employees are 2% of Milwaukee County employees and 9% of IMSD employees. Black or African American employees are 28% of Milwaukee County employees and 11% of the employees of IMSD. Hispanic or Latino employees are 8% of all Milwaukee County employees and 4% of IMSD employees overall. Employees who selected other are 5% of the County workforce and 12% of the workforce at IMSD. White employees are 53% of Milwaukee County employees and 60% of IMSD employees. Table 7 shows the breakdown by race and ethnicity for the County's population, the County's workforce, and the workforce in IMSD.

Table 7
IMSD Workforce by Race and Ethnicity Compared to the County Workforce and County Population in March 2023

<u>Race/Ethnicity</u>	<u>Milwaukee County Population</u>	<u>Milwaukee County Workforce</u>	<u>IMSD Workforce</u>
American Indian/Alaskan Native	0.5%	0.8%	1.3%
Native Hawaiian or Pacific Islander	0.02%	0.03%	0%
Asian	4%	2%	9%
Black or African American	26%	28%	11%
Hispanic or Latino	15%	8%	4%
Other/Not Reported	0.2%	5%	12%
Two or More Races	3%	1%	3%
White	51%	53%	60%
Decline to Answer	0%	1%	0%

Source: Audit Services Division table created with data from the Bureau of Labor Statistics and the County's Strategy Dashboard.

Milwaukee County has codified its commitment to racial equity across the County by having representation that reflects the demographics, including but not exclusively racial, of Milwaukee County. The County has adopted its commitment to an inclusive workplace culture where differences are welcomed, where different perspectives are heard, and where individuals feel a sense of safety. Research has shown that inclusion and representation going beyond hiring and retention of staff yields a positive and productive workplace and product, therefore, we recommend:

6. *IMSD create a plan to follow when making the selection of employee representatives for workgroups and committees it establishes to foster inclusion and representation that reflects the demographics, including but not exclusively racial, of Milwaukee County within six months.*

AUDIT SCOPE AND METHODOLOGY

An audit of Milwaukee County's data governance was requested by the Comptroller regarding concerns that the County does not have a formalized process to manage data governance leading to a potential risk that private/protected information is unintentionally shared.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit objectives included: What standards and best practices exist to guide government in Data Governance? What are other government jurisdictions' Data Governance practices, policies, and procedures? What are Milwaukee County's Data Governance practices and how do they compare to established standards and to other governments? Does Milwaukee County's approach expose the County to any risk?

We limited our review to the areas specified in this Scope and Methodology Section. During the course of the audit, we:

- Reviewed best practices and guides for developing and managing a data governance program from the IBM Data Governance and Gartner Data Governance Maturity Model, the U.S. Government Accountability Office, MIX, and the National Institute of Standards Technology.
- Analyzed and applied relevant topics on open records and record retention from the WI Dept. of Justice Office.
- Studied relevant regulations, policies, administrative procedures, budgets, resolutions, County Board and Committee minutes, and County Legislative Information Center data related to data governance.
- Conducted an analysis of applicable Federal regulations, State statutes and County ordinances, and administrative manual sections, AMOP, to ensure compliance with laws related to the handling of data.
- Reviewed audit by the U.S. Postal Service Office of Inspector General, and the Metropolitan Information eXchange regarding their data governance processes.
- Obtained and applied where appropriate financial information on IMSD contracts and deliverables as it relates to data from Infor, Advantage, and CAPFIN sites.
- Interviewed key Milwaukee County departmental staff and representatives from other agencies, and government entities, to gain an understanding of their data governance efforts.
- Analyzed the role that diversity, equity, and inclusion (DEI) has in data governance including a breakdown by race and gender of IT workers in the United States and the County's IMSD IT department.

- Researched, analyzed and interviewed numerous other governmental entities to assess the state of their data governance program. With the results we created a side-by-side table comparing Milwaukee County's data governance processes with other governments and agencies to identify specific processes and steps.
- Reviewed the Open Data Initiative resolution and informational report presented by DAS-IMSD regarding staffing and resources needed for the initiative.
- Obtained and analyzed numerous County contracts that contained data or software elements using the County Legislative Information System, DocuSign, and various County reports. We reviewed the contractual agreements relevant to the audit between Milwaukee County departments and vendors to compare contract language regarding data.
- Reviewed the Comptroller's five-year fiscal forecast to assess the County's fiscal future released in early 2023.
- Assessed internal controls relevant to the audit objectives. This included the review of policies, procedures and practices typically associated with a data governance program, directions and clauses included within County contracts regarding data, and the structure of IT at Milwaukee County in different departments.