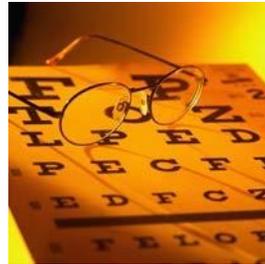


# Milwaukee, City Strategic Technology Plan

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December 2022



Draft completed for IT governance review  
Final review by City Wide Information Management Committee

October 2022  
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# EXECUTIVE SUMMARY

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## Introduction

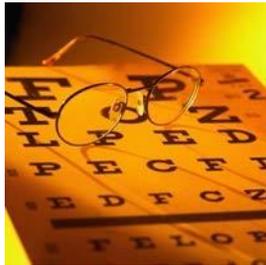
This Executive Summary provides an overview of the City of Milwaukee Strategic Technology Plan for 2022-2024. The City has developed this plan to describe how it intends to leverage technology for serving the public and achieving the City's business vision and objectives. The plan was developed by the Information Management and Technology Division (ITMD). While a strategic plan provides a business vision and objectives for an enterprise, a strategic technology plan describes how the enterprise intends to leverage technology toward achieving the business vision and objectives.

This plan attempts to describe current technology and forecasted technology needs. The CIO will be responsible for updating the plan annually and making the plan available to all departments and the general public through the City's website.

# VISION, GOALS, AND GUIDING PRINCIPLES

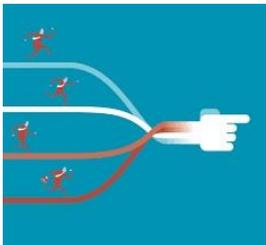
This section presents City of Milwaukee’s overarching vision, goals, and guiding principles for planning and implementing IT solutions for the City’s government.

## Vision



Vision	
<p><i>MILWAUKEE WILL BE A REGIONAL LEADER IN ENHANCING THE EXPERIENCE OF EVERY PERSON WHO LIVES, WORKS, VISITS, OR DOES BUSINESS IN THE CITY THROUGH THE EFFECTIVE USE OF TECHNOLOGY.</i></p>	<p>⌘ This vision defines the City’s strategic technology direction, unites the City’s stakeholders, provides ongoing direction, and defines an image of the future in terms of IT, functionality, structure, and use.</p>

## Mission



Mission	
<p><i>TO EMPOWER CITY OF MILWAUKEE GOVERNMENT AND ALL RESIDENTS, BUSINESSES, AND VISITORS BY DELIVERING SECURE, COST-EFFECTIVE, RELIABLE, EQUITABLE, AND TIMELY ACCESS TO DATA, TECHNOLOGY, TRAINING, AND SUPPORT.</i></p>	<p>⌘ This concise statement will continue to guide the City’s efforts related to how technology will be delivered and utilized in the best interests of the community.</p>

## Goals

Like the City's IT vision and mission statements, the City's IT goals are established, long-term values. The City's goals are presented and defined below.

### Efficiency

- Improve productivity and/or reduces future expenditures*
- Implement Enterprise applications shared by multiple departments*
- Effectively use "cloud" computing*
- Standardize project management methodology for information technology projects*

### Public Access and Customer Service

- Improve accessibility of public records*
- Improve accessibility to city services, resources, and/or officials*
- Provide ecommerce options*
- Expand and standardize social media program*
- Improve the quality and/or usability of internal and/or external city services*

### Transparency and Accountability

- Open the government to those it serves*
- Improve honesty, efficiency, and effectiveness in city operations*
- Expand and automate information available through the open data portal*
- Measure impact of policies*

### Risk Management

- Intended to improve security and provide legally mandated services and basic operations support*
- Respond quickly and effectively to internal and external audits*



## Guiding Principles

As the City increases its reliance on technology to support effective and efficient services/programs, there is a related and growing challenge to find an appropriate balance of value and risk. Principles act as a policy framework to promote a standard and cost-effective approach to delivering and operating IT.

Guiding Principles	
<b>Central Review and Coordination of IT</b>	<ul style="list-style-type: none"> <li>IT investments should be coordinated at a citywide level to leverage development efforts, reduce duplicative costs, and ensure compatibility of systems.</li> </ul>
<b>IT Enables Effective and Efficient Service Delivery</b>	<ul style="list-style-type: none"> <li>IT systems must be secure, reliable, and resilient to provide 24/7/365 accessible systems.</li> <li>When assessing new software solutions, commercial off-the-shelf software packages that adequately meet the business requirements of the City are preferable to custom developed applications. The City should determine requirements and analyze both operational and financial business cases when evaluating the alternatives of building or buying new software applications.</li> <li>Investments in legacy systems should be limited to mandated and essential changes that can demonstrate extending the useful life of the system.</li> </ul>
<b>IT Standards</b>	<ul style="list-style-type: none"> <li>Hardware, software, and methodologies for management and development should adhere to citywide standards.</li> </ul>
<b>Access to Information and Services</b>	<ul style="list-style-type: none"> <li>Information and services should be provided using web-based technology with standard navigation tools and interfaces where appropriate.</li> <li>A reliable and secure communication and computer infrastructure should be provided to ensure seamless self-service access to information and services.</li> <li>Solutions should improve information sharing (as appropriate and ensuring confidentiality) across the City</li> </ul>
<b>Business Process Improvement</b>	<ul style="list-style-type: none"> <li>Industry best practices should be applied to optimize business processes.</li> <li>When implementing commercial off-the-shelf software packages, the City should adopt and implement industry best practices, redesigning business processes as required in order to improve operations, minimize customization and speed the delivery of new business applications.</li> <li>Data should be captured once and shared to reduce cost, duplication of effort and potential for errors.</li> </ul>
<b>Privacy and Security</b>	<ul style="list-style-type: none"> <li>Reasonable, cost-effective measures should be implemented to protect data, hardware and software from inappropriate or unauthorized use, alteration, loss or destruction.</li> </ul>



## **BUSINESS ENVIRONMENT**

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This section presents an overview of the business environment that impacts and influences how the City of Milwaukee will use IT to conduct and operate its business, internally and externally, and provide services to the public.

### **Public Sector Market Trends**

There are several trends that government agencies need to consider as they use IT to support and deliver services to the public.

#### **Reengineering Technology**

The City should take positive steps to keep pace with innovation. To do so, first consider modernizing IT infrastructure to improve efficiency and deliver services in new ways. Next, streamline the processes of IT budgeting, organization, and delivery to help drive mission success.

#### **New Technology**

The City should watch technology trends that will expand innovation in our back-office systems such as Smart Cities and Internet of Things (IoT). As new technology is proven, the City should follow a “fast follower” approach to avoid the mistakes of others while adopting innovative best practices when opportunities arise to modernize back office systems like traffic control or lighting to support better constituent facing services.

#### **Access to Information and Services**

As customers of government, the public will not accept the old manual processes for obtaining government information and services. The public expects it to be easy to find information and conduct business with the City. Local governments will need to be innovative in developing e-Government applications and portals for managing processes and increasing the productivity and response to the public’s need for government services.

#### **Increased Cost Efficiency**

As is the case in other areas of government, the technology support services are finding savings by centralizing and consolidating IT resources to accrue savings through economies of scale.

### **Data Records Management and Information Exchange**

Technology advances have created the need for efficient means of storing, retrieving, and sharing of information between interested parties.

### **Communications and Virtual Computing**

While the recent rapid expansion of remote work and virtual interactions required deployment of new technology to meet short-term needs, the City of Milwaukee should look to how to best utilize these technologies for the long-term organizational needs. This includes communication from field personnel and remote workers to their in-office counterparts, as well as automated collection of field data and environmental status with back office systems.

### **City of Milwaukee Business Climate**

The high cost of securing and maintaining the City's computing environment and information assets has been identified as a large cost driver of City IT operations.

As departments struggle under reduced resources to deliver high-quality services, there can be a tendency to focus inward and exert control over their scarce resources rather than look outward to ways to leverage from the work of other City departments or to share service delivery resources with other City departments.

## STRATEGIC OBJECTIVES

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City of Milwaukee has made progress toward its long-term technology goals of efficiency, public access and customer service, transparency and accountability, and risk management. However, there is still significant work to be done in achieving the City's vision of a cost-effective, easily accessed, Web-based environment with appropriate security and privacy. The City has developed several strategic objectives that are driven by these technology goals.

Achieving strategic objectives transforms vision into reality. The next section represents a blueprint of the strategic objectives that will be completed during the period of this Strategic Technology Plan.

City of Milwaukee has identified and documented 18 strategic objectives that support attaining the four goals (Efficiency, Public Access, Transparency, and Risk Management).



## GOAL 1 – EFFICIENCY

### Strategic Objective 1.1 – Implement enterprise applications.

#### Description

This project streamlines and integrates core business processes and systems.

#### Reason

This effort will bring contemporary best practices to City of Milwaukee.

#### Importance

The current legacy systems and processes in City of Milwaukee result in poor integration, redundant data entry, time-wasting reconciliation, and high systems maintenance, staff support, and upgrade costs.

#### Accomplishments to Date

Accela LMS was implemented which decommissioned multiple servers, purchased software (Novell & Magic) and aging legacy in-house system Neighborhood Software System (NSS) and Department of City Development legacy applications

#### Future Projects (\* are in progress)

- Convert City Clerk Licenses to LMS\*
- Convert in-house apps to LMS\*
- Convert in-house apps to cloud-based solutions
- Create business requirements for financial/HR system replacement



## Strategic Objective 1.2 – Institutionalize IT project management

### Description

Project management includes the oversight activities required to mitigate, plan, execute, control, and close a project. This involves organizing, monitoring, and taking corrective action related to tasks, subtasks, roles and responsibilities, resources, communication, and documentation required to complete a project on time, on budget, and within scope, while meeting the quality desired by project owners, customers, and the public.

Project management maturity is one of the key attributes in being able to repeat project success across an organization's projects irrespective of the individuals working on those projects.

### Reason

This objective improves the framework and practices for all IT projects by:

- Continuing to develop and extend robust project management frameworks and methodologies.
- Increasing organizational knowledge about project management and expectations of project managers.
- Focusing efforts on development of project managers' resource through training, certification, productivity tools, and enhanced information sharing and value added services (such as quality reviews and peer audits).

### Importance

Projects with substantial technology components are becoming the primary means for City of Milwaukee to effect service levels and organizational changes. In this time of tight budgets, ensuring that each project has the highest probability of succeeding is imperative.

### Accomplishments to Date

Reclassification of ITMD legacy positions to create 4 Project Management positions  
Agile training for key staff members

### Future Projects (\* are in progress)

- Evaluation of Project Management tools and methodology
- Implement Information Technology Infrastructure Library (ITIL), including IT service management (ITSM) and IT asset management (ITAM)
- Implement a formal change management process for all IT projects



### Strategic Objective 1.3 – Standardize technology by managing IT assets

#### Description

A Technology Portfolio will provide City of Milwaukee with the ability to integrate, visualize, and analyze the effects of technology planning and investment control across multiple IT asset categories such as projects, applications, desktop hardware, and network components within the enterprise architecture. Once the portfolio management processes are developed and the portfolio repository is populated, the City will be able to:

- Coordinate technology assets and resources.
- Analyze the effects of funding changes.
- Analyze the effects of changes in architecture.
- Understand the interdependencies between initiatives.
- Manage the linkage between agency-level architecture and the City enterprise architecture.

#### Reason

The IT industry is beginning to manage assets and investments in portfolios to provide an improved level of visibility and effective management to systems and applications. By collecting and analyzing information across a portfolio, there is a better understanding and communication of overall portfolio results. This leads to improved decision making and timelier course corrections related to managing the portfolio.

City of Milwaukee has begun managing IT equipment and projects using a portfolio approach. This concept will be extended throughout all areas of IT in City of Milwaukee.

Overall improvement of:

- » Integration of applications and systems.
- » Management of desktop infrastructure and applications.
- » Management of networks, servers, and data centers.

#### Importance

Improved knowledge and understanding of the existing portfolio is needed to make better investment decisions.

#### Accomplishments to Date

Maintain PC inventory

Decommission systems no longer in use

Future Projects (\* are in progress)



- Utilize purchase of ManageEngine ServiceDesk Plus to track asset inventory lifecycle\*
- Establish a portfolio management framework that addresses application and computing platforms
- Capture portfolio information beginning with major projects

### **Strategic Objective 1.4 – Standardize data retrieval.**

#### Description

Today, much of the information the City creates is stored electronically, requiring search and making retrieval of documents more complex.

Data or information is stored on PCs in files, databases, documents, spreadsheets, e-mails, text, and social media, each typically requiring different search and retrieval techniques.

#### Reason

City of Milwaukee receives many public open record requests at the agency level each year.

#### Importance

Public open records requests for electronic information are increasing and becoming more complex.

An electronic solution is required in order to keep up with the demand using existing resources.

#### Accomplishments to Date

Maintain Email archiving

Establish Open Data portal

#### Future Projects (\* are in progress)

- Social media archiving\*
- Review options for redacting more efficiently
- Where applicable publish data on the Open Data portal to reduce records requests



## GOAL 2 – PUBLIC ACCESS

### **Strategic Objective 2.1 – Increase online options to the public for city services.**

#### Description

This objective involves bringing all City of Milwaukee agencies into compliance with new policies and expanding the use of e-Commerce into the agencies. City of Milwaukee has embarked on an initiative to shift a majority of its fee-based processes (licensing, permitting, etc.) from a paper-based or in-person process to an Internet-focused approach.

Enhance the capabilities on the City's website to help the public report and interact directly with the City.

Improve the tracking of the relationship between the City and the public. The outcomes identified in this strategic objective begin by improving the tracking of complaints followed by an opportunity analysis.

Continue to monitor and improve the ADA compliance of all our web applications and pages.

#### Reason

There are efficiency opportunities for the City in reduced process costs.

City of Milwaukee needs to be responsive to public expectations to go online, not stand in line.

#### Importance

The public has come to expect the same service opportunities from their government as they receive from private companies.

#### Accomplishments to Date

Payment utility implemented for citywide use

Online property tax payments, permit payments

Online property assessment appeals

Tool to check broken web links automatically

#### Future Projects (\* are in progress)

- Online scheduling of building inspectors\*
- Continue to work on ADA compliance issues\*
- Rework and Optimize Click4Action and mobile app\*
- Improve online translation services\*
- Enhance search capabilities on the City's Internet site



## GOAL 3 – TRANSPARENCY AND ACCOUNTABILITY

### Strategic Objective 3.1 – Optimize technology functions.

#### Description

- Reorganize technology functions on a city-wide basis.
- This objective involves reconfiguring how technology functions are managed and organized within the City of Milwaukee.

#### Reason

There exists potential opportunities for cost savings and services improvements, and the City needs to explore these opportunities. Standardizing IT operations can provide improved security and oversight.

#### Importance

IT is essential to business operations and needs to be efficient and effective. City budgets are increasing tight. IT spending needs to be efficient and well-understood.

#### Accomplishments to Date

Consolidation of multiple department IT operations into Department of Administration-ITMD  
Consolidation of multiple individual department applications into existing enterprise applications, such as Accela

#### Future Projects (\* are in progress)

- Consolidation of separate police and fire dispatch centers into single public-safety dispatch\*
- Consolidation of separate general-city and public safety telephony groups into single organization\*
- Reorganization of Deferred Compensation IT support from Comptroller to Department of Administration-ITMD\*
- Review existing common IT platforms City-wide for standardization
- Review IT operations City-wide for simplification and standardization



## GOAL 4 – RISK MANAGEMENT

### Strategic Objective 4.1 – Strengthen information security in the departments.

#### Description

Information security has the following three basic attributes that agency business goals and objectives must be balanced against:

- *Confidentiality* – Restrictions on the accessibility and dissemination of information.
- *Availability* – Accessibility of a system resource in a timely manner; for example, the measurement of a system’s uptime.
- *Integrity* – Quality of the data in terms of correctness, completeness, wholeness, soundness, and compliance with the intention of the creators of the data. It is achieved by preventing accidental or deliberate but unauthorized insertion, modification, or destruction of data in a database.

#### Reason

To improve and strengthen information security within the City, information security risks must be reduced, including fraudulent and mischievous use of systems by outsiders and employees.

#### Importance

Vulnerabilities and threats to information assets are increasing exponentially, and viruses and malware are creating larger financial and productivity impacts.

Studies still show that the greatest risk to information assets is the employee, either through malicious intent or accident.

Time for organizations to respond to new external threats has been reduced from weeks to days and in some cases hours.

City of Milwaukee needs to have a focused, coordinated, and sound information security program with technology, people, processes, and an ongoing budget in place to ensure strong security controls citywide.

#### Accomplishments to Date

- New position of security analyst was created and hired
- Regular information security vulnerability training has been established
- Materials have been added to Mint.milwaukee.gov
- Instituted 15 minute security awareness to new employees during Orientation training

#### Future Projects (\* are in progress)

Hire additional Security Analyst

Continue establishing citywide information security policies, standards, and guidelines

Implement new citywide information security monitoring, management and reporting system\*

Implement mandatory awareness testing and training\*



## **Strategic Objective 4.2 – Strengthen information privacy practices in the departments.**

### Description

Information privacy is the protection of personal information about citizens and employees, and the protection of sensitive, confidential City information. Information privacy requires strong information security.

### Reason

To strengthen information privacy in the agencies, information privacy risks and liabilities must be reduced. For example, as public records become more available on the Internet, private information contained in those records is accessible to anyone who has an Internet connection and desires to gather identity information. Personal information and other sensitive information contained in government records (not including court records, assessor records) need to be protected until disclosure is legally required. City employees must understand the requirements for information privacy, public disclosure, HIPAA, and Homeland Security, and follow practices and have the necessary tools to support these divergent objectives.

### Importance

Increases in identity theft have elevated public concerns about customer information privacy protections. The City must comply with federally mandated HIPAA and CJIS rules. Agencies do not have clear practices for balancing information privacy protections with open government records.

### Accomplishments to Date

Deployed Microsoft 365 security and compliance features to protect personal information

### Future Projects (\* are in progress)

- A citywide information privacy policy and a citywide privacy notice needs to be developed
- Start to provide information privacy training to City employees
- Monitor and Comply with federal security rules (HIPAA and CJIS), including policies, procedures, risk assessment, and technology changes
- Consider implementation of an external customer identity and access management (CIAM) platform to provide a secure and centralized source of information
- Establish a data governance committee with an initial focus on proper management of personally identifiable information (PII)

### **Strategic Objective 4.3 – Strengthen IT business continuity in City of Milwaukee government.**

#### Description

IT business continuity ensures effective service to the public of essential City business services that rely on the continuation of critical business functions, systems, and the infrastructure that sustains those systems.

#### Reason

To support the City of Milwaukee Emergency Management for critical IT applications to resume processing within a reasonable time period and be responsive to a disaster.

#### Importance

Without a plan to support the Emergency Management critical IT applications, lack of information or inability to manage information received could:

- Result in City of Milwaukee officials losing continuity and control of a disaster situation.
- Impair decisions on how best to protect life, public property, public safety and the public's health.

Most departments do not have business continuity plans.

Most departments have not identified and mitigated their business continuity risks.

Most departments have not defined and tested contingency plans.

#### Accomplishments to Date

Implemented off site cloud storage for system backup and files

Implemented immutable cyber-recovery vault for recovery in the event of a cyber attack

#### Future Projects (\* are in progress)

- Develop citywide IT business continuity recovery strategies and implementation plan
- Adopt citywide IT business continuity policy and guidelines. Address the IT needs to support Emergency Management and in support of City essential business services for critical IT applications
- Conduct a desktop IT Emergency exercise\*

## Strategic Objective 4.4 – Maintain voice, data, and video IP network.

### Description

Network infrastructure includes the technology used for transmitting voice, data, and video between systems or persons. The City currently has a substantial fiber plant asset

### Reason

All of the City's critical business processes depend on the network to some degree. It is therefore imperative to maintain the network in order to mitigate the associated risk to City of Milwaukee business. With a consolidated, centralized citywide comprehensive network design and plan, individual department should not implement quick solutions to meet immediate needs and, in doing so, may waste money, duplicate the efforts of other agencies, purchase products or services with a very short life span, or end up with a solution which cannot be integrated with other systems within the City. The network will not evolve to meet the long-term needs of the City without support to maintain it.

### Importance

Because the network is fundamental to and pervasive in City business, it is essential to resolve current deficiencies, while City of Milwaukee maintains support for emerging and future business needs. A reliable and secure network is a mandatory delivery tool for providing city services.

### Accomplishments to Date

Implemented the WiFi Public Access to provide wireless Internet access at selected City of Milwaukee facilities common areas  
Support various Smart Cities initiatives (traffic light remote monitoring and controls, etc)  
Implemented switch replacement cycle (7 years)

### Future Projects (\* are in progress)

- Identify issues and make recommendations to mitigate the unsupported equipment liability
- Continued implementation of the wireless infrastructure where appropriate
- Consider developing a master plan for a City of Milwaukee integrated voice, data, and video IP network, including: transition plan for shifting to VoIP
- Deploy public wireless services at selected sites
- Develop citywide network change management practices
- Establish network security standards