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## **Citywide Information Technology Risk Assessment**

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City of Milwaukee, Wisconsin

June 2018

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**Rocklan Wruck, CPA**  
Special Deputy Comptroller

June 26, 2018

Honorable Tom Barrett, Mayor  
The Members of the Common Council  
City of Milwaukee  
Milwaukee, WI 53202

Dear Mayor Barrett and Council Members:

As a component of Internal Audit's comprehensive audit work plan, the consulting firm Securance, LLC was engaged to conduct a citywide Information Technology (IT) risk assessment and formal report to City management. The risk assessment focused on identifying, evaluating and ranking the auditable technology units and processes in terms of high to low risk. Internal Audit recently received the enclosed final report detailing the results of the IT risk assessment performed by Securance, LLC.

The scope of the IT risk assessment included the City's critical technology departments and their systems including all significant applications, databases, network appliances, IT processes and platform/servers. The consultant interviewed a variety of the City's business users and IT personnel with the purpose of identifying, studying, evaluating, and reporting on IT risks at a detailed and summary level.

The objectives of the IT risk assessment were to:

1. Identify each member of the auditable IT risk universe.
2. Identify the functionality, inputs, processing, outputs and data security for each member of the risk universe.
3. Analyze and evaluate each member of the risk universe using a standardized risk assessment methodology to assign a combined numerical risk rating.
4. Rank each member of the risk universe numerically from high to low risk, including the category of asset, audit technology, department, asset description and final risk score.
5. Provide detail and summary reporting of risk assessment results.
6. Generate recommendations to management for an IT audit plan based on risk.
7. Generate recommendations to management to reduce IT risk, improve the City's security posture and promote best practice.



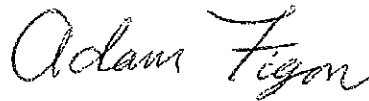
Honorable Tom Barrett, Mayor  
The Members of the Common Council  
Citywide Information Technology Risk Assessment

Securance, LLC has extensive experience and subject-matter expertise in all aspects of IT risk assessment and constructive management reporting. At a summary level, the report contains the names of the risk assessment participants interviewed, a multi-year suggested audit plan and IT risks by score, category and department. Page eight of the report presents a suggested five-year IT audit plan, and starting on page ten, the report presents the citywide, overall risk scores from high to low risk. 291 auditable technologies were evaluated with the vast majority scoring in the medium risk category.

While the consultant's report presents a five year suggested IT audit plan, Internal Audit continuously monitors the priorities of the City's IT risk environment and considers input from City management that may require audit plan adjustments. As a result, the audit plan provides the required flexibility to meet the continually changing needs of the City's IT environment. Internal Audit will make the final decision on the IT audit plan and adjust the plan, as necessary, going forward.

Appreciation is expressed for the cooperation extended to the auditors and the consultants by management and the staff of the City's data centers, departments and divisions.

Sincerely,

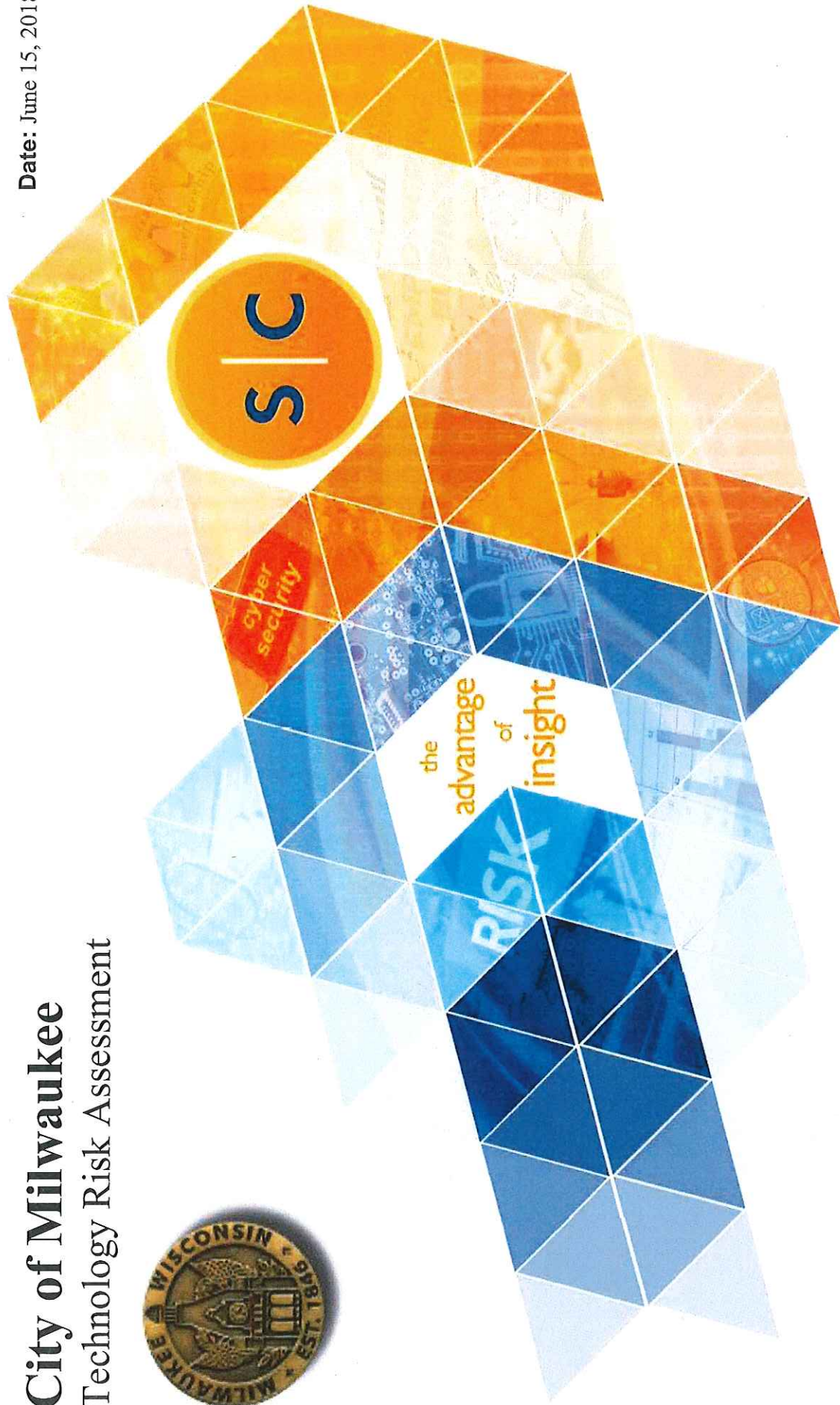
A handwritten signature in cursive script that reads "Adam Figon".

Adam Figon, MBA, CRMA  
Audit Manager

ACF:gl

# City of Milwaukee Technology Risk Assessment

Date: June 15, 2018



# SECURANCE CONSULTING

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# Risk-Based Planning

## RISK ASSESSMENT

The process of estimating risk associated with each auditable technology. Risk assessments are typically undertaken to focus attention on significant areas, to allocate scarce resources to the most important areas and to help with prioritizing decisions such as frequency, intensity and timing. The criteria used to assign risk scores are as follows:

ID	RISK CATEGORY NAME AND DEFINITION
1	<i>Commercial vs. Internally Developed</i> – is the application/technology a commercial product vs. one that was developed internally. Internally developed applications/technologies receive a higher risk rating.
2	<i>Internal Customer Impact</i> – what is the impact to internal users of the application/technology if the application/technology is taken off-line?
3	<i>External Customer Impact</i> – what is the impact to external users of the application/technology if the application/technology is taken off-line?
4	<i>Financial Exposure</i> – what is the financial impact to the organization if the application/technology is taken off-line due to a breach or unmanaged administration?
5	<i>Security Threat</i> – what is the level and type of security threat associated with the application/technology. For example, a network perimeter device such as a Firewall has a higher level of a security threat associated to it than an internal file server.
6	<i>Level of Admin Tasks</i> – what is the level of technical administration required to maintain the application/technology in production.
7	<i>Major Recent Change</i> – was there a recent (i.e. within 6 months) major upgrade to the application/technology. If so it may be riskier than if the application has been implemented and stable for a longer period of time.
8	<i>Technology Complexity</i> – in general terms how complex is the application/technology. For example, a SAN is typically more complex than a single member file server.
9	<i>Adequacy of IT Staff</i> – is the staff adequately trained in the technologies they managed, do they receive continual training, and is there adequate cross-training.
10	<i>Hosted by SP or Managed 100% Internally</i> – is the application/technology hosted or managed 100% or in part by a Service Provider. If a Service Provider is involved typically risk is transferred to the SP.

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This report is an opinion-based risk assessment. The scoring of auditable technologies is based on the opinions of the participants interviewed. In addition, the level of risk associated with each auditable technology is based on multiple factors. Risk scores alone may not be a sufficient basis for making an audit planning decision. It may be necessary to factor in the cost of carrying out the audit as it relates to the relative risk an organization is willing to assume.

The general opinion, with respect to **Audit Frequency**, is that the riskier technologies should be assessed more frequently. This matrix is a guide that should be used in conjunction with a conditional audit frequency approach. Under a conditional frequency approach, all key technologies are monitored for signs of major changes. Examples of major changes include significant upgrades, reconfigurations and/or the addition of a large number of users.

**Audit intensity** should be determined by assessing the qualifications of the resources and the complexity of the technology. Generally, the more complex the technology, given the same level of staff skills, the more detailed the audit.

**Audit timing** is another component to be considered during planning. Again, audit planning is heavily dependent upon resource availability. A variety of approaches have been used to determine when audits should be scheduled. Fixed time audits are based on the assumption that there are fixed times that are best suited to conduct the audit; whereas, random timing audits are more unpredictable and may be used to motivate IT personnel to maintain their controls and procedures at reasonable levels.

**Audit Frequency, intensity, timing and resources** are key components that should be considered when using the Technology Risk Matrix.

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# TECHNOLOGY RISK ASSESSMENT REPORT

## INTRODUCTION AND SCOPE

Securance Consulting has been engaged to perform an IT risk assessment of the auditable technologies and processes deployed and implemented to protect the City of Milwaukee's information assets. The objectives of the IT risk assessment were to: 1) better assess and understand the IT systems that store, process or transmit organizational information, and 2) enable management to make well-informed decisions related to implementing risk management techniques and processes, including IT audits.

## APPROACH AND METHODOLOGY

The approach and methodology for performing the IT risk assessment included gaining an understanding of the City of Milwaukee's diverse IT environment to identify auditable technologies and processes. IT Management selected applicable risk categories to assess each auditable technology/process against. Key personnel were interviewed independently to obtain risk ratings. Individual ratings were entered into a proprietary risk assessment engine for analysis.

Technologies/processes were prioritized based on the following scale:

- **High Risk** – score between **51 – 35**
- **Medium Risk** – score between **35 – 13**
- **Low Risk** – score of **13** or less

The remaining sections of the report include:

- Risk Assessment Participants
- A five (5) – year IT audit plan
- IT Risk by Score
- IT Risk by Category



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**RISK ASSESSMENT PARTICIPANTS**

The audit planning recommendations provided in the report are based on the results of the IT risk assessment analysis, our IT audit experience, and interviews of the following IT and business personnel:

No.	NAME, POSITION	No.	NAME, POSITION
<i>Assessor's Office</i>			
1	Steve Miner, Assessment Commissioner	14	Mark Rohlfing, Fire Chief
2	Jeffrey Arp, Business Systems Manager	15	Debbie Wilichowski, Fire IT Manager
<i>Office of the City Attorney</i>			
3	Jonathan Stechner, IT Support Specialist-Senior	16	John Pederson, Administrative Fire Captain
<i>City Clerk's Office</i>			
4	Jim Owczarski, City Clerk	17	Patricia McManus, Interim Health Commissioner
5	Andrew Van Natta, Business Systems Specialist	18	Sanjib Bhattacharyya, Public Health Lab Director
<i>Department of City Development</i>			
6	Amy Turim, Real Estate Development Service Manager	19	Carly Hegarty, Consumer Environment Health Supervisor
<i>ITMD</i>			
<i>Office of the City Treasurer</i>			
7	Robyn Malone, Financial Services Manager	20	Noah Leigh, Lab IS Specialist
8	Lee Matthias, Business Systems Coordinator		
<i>Office of the Comptroller</i>			
9	Jeannie Kolter, Functional Applications Manager	21	Nancy Olson, Chief Information Officer
10	Joann Bielinski, City Payroll Manager	22	Richard Watt, Policy and Administration Manager
<i>Election Commission</i>			
11	Neil Albrecht, Election Commissioner Executive Director		
<i>Department of Employee Relations</i>			
12	Kathy Verfurth, Test Administration Coordinator	23	Paula Kiely, Library Director
<i>Employees' Retirement System</i>			
13	Kelly Reid, Chief Technology Officer	24	Judy Pinger, Assistant Director-Library IT Services
		25	Corey Megal, Network Manager
		26	Kevin Cingatura, Senior Network Analyst
<i>Municipal Court</i>			
		27	Sheldyn Himle, Chief Court Administrator
		28	Jane Islo, Assistant Court Administrator
		29	Gary Jonardi, Project Manager-CATS Upgrade



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No.	NAME, POSITION	No.	NAME, POSITION
<b>Department of Neighborhood Services</b>			
30	Emily McKeown, Business Operations Manager	39	Jennifer Gonda, Superintendent of Water Works
31	Kim Madison, Permit Desk Supervisor	40	Eldon Gartzke, Water IT Manager
<b>Police Department</b>			
32	Alfonso Morales, Chief of Police	41	James Zimmer, Water IT Supervisor
33	Charles Burki, Police IS Director	42	Reed Maier, Senior Systems Analyst
<b>Department of Public Works</b>			
34	Brian White, Fleet Systems Manager		
35	Chuck Schumacher, Administrative Services Manager		
36	Grace Gates, Business Operations Manager		
37	Richard Dollhoph, Parking Enforcement Manager		
38	Tim Thur, Infrastructure Administrative Manager		

**SYSTEM GENERATED CONCLUSION**

The audit planning recommendations provided below are based on the results of the system generated risk assessment analysis, our IT audit experience, and interviews with managers from in-scope departments and information technology. Securance utilizes a proprietary system to generate the risk assessment results. The system is based on concepts from multiple globally accepted security and control frameworks, including National Institute of Standards and Technology (NIST), Control Objectives for Information and Related Technologies (CoBIT) and International Organization for Standardization (ISO).

In our opinion, during the year 1, the following technology audits should be scheduled and performed to reduce the greatest technology risk currently being assumed by the City of Milwaukee.

1. Perform a comprehensive application audit of ITMD's system development life cycle process.
2. Perform a comprehensive audit of the Disaster Recovery Plan managed and maintained by ITMD.
3. Perform a comprehensive audit of the database environment managed by ITMD.



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**SYSTEM GENERATED MULTI-YEAR INFORMATION TECHNOLOGY AUDIT PLAN**

ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE	Y1	Y2	Y3	Y4	Y5
1	IT Process	ITMD - SDLC	Application development life cycle methodology	37.0	1				
2	IT Process	ITMD - Disaster Recovery (IT)	IT disaster recovery	36.0	2				
3	Database	ITMD - Oracle all versions	Oracle database all versions	32.0	3				
4	IT Process	Water - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	31.0		1			
5	Application	Treasurer - MUNIS Tax Collection System	Tax Collection System	31.0		2			
6	IT Process	Municipal Court - Change Patch Management	Change management all systems	30.0		3			
7	Application	Assessors - CAMA - Computer Assisted Mass Appraisal System	CAMA - Computer Assisted Mass Appraisal System	30.0			1		
8	Platform/Servers	Police - Windows Server & Linux	Harris OpenSky LMR System	30.0			2		
9	Application	Dept Neighborhood Services - Land Management Services	Land Management Services	30.0			3		
10	Application	ERS - PeopleSoft Financials and HR	Financials and HR	30.0				1	
11	Application	Municipal Court - Case Automated Tracking System (CATS)	Case Tracking System	29.0				2	
12	Application	Police - Open Sky	Harris LMR System	28.0				3	
13	IT Process	ERS - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0					1
14	IT Process	Municipal Court - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0					2
15	IT Process	Municipal Court - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	28.0					3



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Based on the risk priorities, we have identified the recommended audits per audit year prioritized based on the definitions below. Where there are multiple technologies listed for an audit, it is our opinion that audit efficiencies can be gained and/or the technologies support each other and/or a process.

- 1: Recommended highest audit priority for the listed year.
- 2: Recommended second-highest audit priority for the listed year.
- 3: Recommended third-highest audit priority for the listed year.

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**INFORMATION TECHNOLOGY RISK BY SCORE**

No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
1	1	IT Process	ITMD - SDLC	Application development life cycle methodology	37.0
2	2	IT Process	ITMD - Disaster Recovery (IT)	IT disaster recovery	36.0
3	3	Database	ITMD - Oracle all versions	Oracle database all versions	32.0
4	4	IT Process	Water - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	31.0
5	5	Application	Treasurer - MUNIS Tax Collection System	Tax Collection System	31.0
6	6	IT Process	Municipal Court - Change Patch Management	Change management all systems	30.0
7	7	Application	Assessors - CAMA - Computer Assisted Mass Appraisal System	CAMA - Computer Assisted Mass Appraisal System	30.0
8	8	Platform/Services	Police - Windows Server & Linux	Harris OpenSky LMR System	30.0
9	9	Application	Dept Neighborhood Services - Land Management Services	Land Management Services	30.0
10	10	Application	ERS - PeopleSoft Financials and HR	Financials and HR	30.0
11	11	Application	Municipal Court - Case Automated Tracking System (CATS)	Case Tracking System	29.0
12	12	Application	Police - Open Sky	Harris LMR System	28.0
13	13	IT Process	ERS - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
14	14	IT Process	Municipal Court - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
15	15	IT Process	Municipal Court - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	28.0
16	16	IT Process	Water - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
17	17	IT Process	ERS - Asset Management	Manage HW	28.0
18	18	IT Process	Municipal Court - Configuration Management	Configuration management (network and systems)	27.0
19	19	Database	Municipal Court - Oracle	Supporting CATS and Query System	27.0
20	20	IT Process	ERS - User Administration	Network and application access management	27.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
21	21	IT Process	ERS - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	27.0
22	22	IT Process	Fire - Configuration Management	Configuration management (network and systems)	27.0
23	23	IT Process	Fire - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	27.0
24	24	IT Process	Health - Disaster Recovery (IT)	IT disaster recovery	27.0
25	25	IT Process	Health - SDLC	Application development life cycle methodology	27.0
26	26	IT Process	Municipal Court - Physical and Enviro Security	Physical and environment data center controls	27.0
27	27	IT Process	Municipal Court - SDLC	Application development life cycle methodology	27.0
28	28	IT Process	ITMD - User Administration	Network and application access management	26.0
29	29	Application	DPW - CityTime	City-Wide Timekeeping Application	26.0
30	30	Application	ERS - MERITS	Public Pension Administration System	26.0
31	31	IT Process	ERS - Virus Protection	Enterprise virus protection	26.0
32	32	IT Process	ERS - Workstation Configuration Management	Manage configuration of desktop and laptop systems	26.0
33	33	IT Process	Fire - Mobile Device Security	Blackberry Enterprise software	26.0
34	34	Operating System	Fire - VMWare 6.0	Virtual Hosting for Servers	26.0
35	35	IT Process	Fire - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	26.0
36	36	Operating System	Fire - Windows 2003 2008	Supports Aqua and other servers	26.0
37	37	IT Process	Health - Change Patch Management	Change management all systems	26.0
38	38	Operating System	ITMD - Hyper V Cluster	Hyper V Cluster	26.0
39	39	Operating System	ITMD - Hyper-V Cluster	Hyper-V Cluster	26.0
40	40	IT Process	ITMD - Mobile Device Security	Blackberry Enterprise software	26.0
41	41	Database	ITMD - MS SQL Server	MS SQL Server database all versions	26.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
42	42	Infrastructure Technologies	ITMD - Storage Area Network	SAN environment	26.0
43	43	IT Process	ITMD - Virus Protection	Enterprise virus protection	26.0
44	44	IT Process	ITMD - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	26.0
45	45	IT Process	Municipal Court - Disaster Recovery (IT)	IT disaster recovery	26.0
46	46	Application	Water - Ccure	Physical Security Software for Water Sites	26.0
47	47	Application	Water - EnQuesta	City Services Billing Application	26.0
48	48	Application	Water - SCADA (Supervisory Control and Data Acquisition)	Controls Water Plant Operations	26.0
49	49	IT Process	Water - SDLC	Application development life cycle methodology	26.0
50	50	Database	Water - SQL 2008 and 2012	Ccure	26.0
51	51	Application	Water - Symantec Endpoint	Anti-Virus Protection	26.0
52	52	IT Process	ITMD - Asset Management	Manage HW	25.0
53	53	Application	City Attorney - Thomson Reuters-Prolaw	Legal matter management software and used to publish calendar items like court dates	25.0
54	54	Application	DPW - ALPR - Parking Application	ALPR - Parking Application - city issued parking tickets	25.0
55	55	IT Process	ERS - Physical and Enviro Security	Physical and environment data center controls	25.0
56	56	Database	Fire - SQL	Supports New CAD RMS	25.0
57	57	IT Process	Health - Asset Management	Manage HW	25.0
58	58	IT Process	Health - Virus Protection	Enterprise virus protection	25.0
59	59	IT Process	Health - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	25.0
60	60	IT Process	ITMD - Change Patch Management	Change management all systems	25.0
61	61	IT Process	Water - Asset Management	Manage HW	25.0
62	62	IT Process	Water - Configuration Management	Configuration management (network and systems)	25.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
63	63	Network Device	Water - EquallLogic PS6210	SAN Storage for VMWare and Zerto	25.0
64	64	IT Process	Water - Virus Protection	Enterprise virus protection	25.0
65	65	IT Process	Water - Workstation Configuration Management	Manage configuration of desktop and laptop systems	25.0
66	66	IT Process	ITMD - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	25.0
67	67	IT Process	Library - SDLC	Application development life cycle methodology	24.0
68	68	IT Process	Municipal Court - Virus Protection	Enterprise virus protection.	24.0
69	69	IT Process	Municipal Court - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
70	70	Application	ERS - FTP	B2B Communication	24.0
71	71	Application	ERS - GPS SQL Server	Lump Payment Processing (Global Pensions)	24.0
72	72	Application	ERS - Group Life Insurance	GLI Application	24.0
73	73	IT Process	ERS - Helpdesk Management	End user support	24.0
74	74	IT Process	Fire - Change Patch Management	Change management all systems	24.0
75	75	IT Process	Fire - Virus Protection	Enterprise virus protection	24.0
76	76	IT Process	Health - Incident Management	Incident   event logging and automated audit trails	24.0
77	77	IT Process	Health - User Administration	Network and application access management	24.0
78	78	Operating System	Health - Windows 2003 2008 2012	Supporting File Servers	24.0
79	79	IT Process	Health - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
80	80	IT Process	ITMD - Incident Management	Incident   event logging and automated audit trails	24.0
81	81	Application	ITMD - Scheduling System	Scheduling of DPW staff	24.0
82	82	IT Process	Municipal Court - Backup Restore	Veritas Backup Exec	24.0
83	83	IT Process	Municipal Court - Incident Management	Incident   event logging and automated audit trails	24.0
84	84	IT Process	Water - Change Patch Management	Change management all systems	24.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
85	85	IT Process	Water - Physical and Enviro Security	Physical and environment data center controls	24.0
86	86	Operating System	Water - RS6000	Supporting EnQuesta	24.0
87	87	IT Process	ITMD - Software License Compliance	Software license compliance	23.0
88	88	Operating System	ERS - Windows 2003 2008 2012	Supporting ERS Applications	23.0
89	89	IT Process	Library - Configuration Management	Configuration management (network and systems)	23.0
90	90	Application	ERS - High Speed Printer	Payroll (Pension System)	23.0
91	91	IT Process	Municipal Court - Asset Management	Manage HW	23.0
92	92	Application	Dept Health - Health Space	Health Space - Food Inspection System	23.0
93	93	Application	Dept Neighborhood Services - Tokay	Database used to track fire sprinkler periodic inspections	23.0
94	94	IT Process	ERS - Disaster Recovery (IT)	IT disaster recovery	23.0
95	95	Application	ERS - ACCPAC	General Ledger	23.0
96	96	IT Process	ERS - Backup Restore	Veritas Backup Exec	23.0
97	97	IT Process	ERS - Change Patch Management	Change management all systems	23.0
98	98	IT Process	ERS - Incident Management	Incident   event logging and automated audit trails	23.0
99	99	IT Process	ERS - SDLC	Application development life cycle methodology	23.0
100	100	IT Process	Fire - Disaster Recovery (IT)	IT disaster recovery	23.0
101	101	Database	Fire - SQL Anywhere	Supports Telestaff	23.0
102	102	IT Process	Health - Configuration Management	Configuration management (network and systems)	23.0
103	103	IT Process	ITMD - Helpdesk Management	End user support	23.0
104	104	IT Process	Municipal Court - Helpdesk Management	End user support	23.0
105	105	IT Process	Municipal Court - Mobile Device Security	Blackberry Enterprise software	23.0
106	106	IT Process	Municipal Court - User Administration	Network and application access management	23.0
107	107	Application	Police - 911 System	includes freedom call check	23.0
108	108	Platform	Police - VMWare vSphere v6	Hypervisor for virtualization	23.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
	109	IT Process	Water - Backup Restore	Veritas Backup Exec	23.0
	110	IT Process	Water - Incident Management	Incident   event logging and automated audit trails	23.0
	111	Operating System	Water - VMWare 6.5	Dell R630 Blades for VMWare hosts in Municipal	23.0
	112	IT Process	ERS - Software License Compliance	Software license compliance	22.0
	113	IT Process	Library - User Administration	Network and application access management	22.0
	114	Operating System	Library - VMWare 6.0	HP DL380 Gen9 8SFF CTO Server - VMWare Server	22.0
	115	Operating System	Library - Windows 2003 2008 2012	Various hardware configurations - Security camera video storage	22.0
	116	Operating System	Library - SAMDATA4	Dell PowerEdge R430 - SAMSQL server	22.0
	117	Application	Dept Employee Relations - Job Apps Recruitment System	Job Application System	22.0
	118	IT Process	ERS - Configuration Management	Configuration management (network and systems)	22.0
	119	IT Process	ERS - Mobile Device Security	Blackberry Enterprise software	22.0
	120	IT Process	Fire - Asset Management	Manage HW	22.0
	121	Database	Fire - Oracle	Supports Old CAD RMS EIS	22.0
	122	Application	Fire - Paramount	911 Emergency Medical Triage	22.0
	123	IT Process	Fire - Physical and Enviro Security	Physical and environment data center controls	22.0
	124	IT Process	Fire - SDLC	Application development life cycle methodology	22.0
	125	IT Process	Fire - Workstation Configuration Management	Manage configuration of desktop and laptop systems	22.0
	126	Database	Health - Oracle	Supporting LIS	22.0
	127	IT Process	Municipal Court - Job Scheduling	Batch job scheduling	22.0
	128	Application	Municipal Court - Milwaukee Municipal Court Query System	Non-Confidential Case Information	22.0
	129	Application	Police - Intranet	Publishes information internally	22.0
	131	IT Process	Water - User Administration	Network and application access management	22.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
132	132	Operating System	Municipal Court - Windows 2003 2008 2012	Supporting CATS and Query System	21.0
133	133	Operating System	Library - VCB 2012 Server (vcb.mpl.pri)	Proliant DL360 Gen9 - Commvault	21.0
134	134	IT Process	Library - Virus Protection	Enterprise virus protection	21.0
135	135	IT Process	Library - Backup Restore	Veritas Backup Exec	21.0
136	136	IT Process	Municipal Court - Software License Compliance	Software license compliance	21.0
137	137	IT Process	Water - Software License Compliance	Software license compliance	21.0
138	138	IT Process	Fire - Software License Compliance	Software license compliance	21.0
139	139	IT Process	Library - Physical and Enviro Security	Physical and environment data center controls	21.0
140	140	Application	Dept Neighborhood Services - Jurisdiction Online	Inspection tracking tool created by Praeses which allows DNS to report boiler inspection data to the state	21.0
141	141	Application	ERS - Tracker	Change Management System	21.0
142	142	IT Process	Fire - Backup Restore	Veritas Backup Exec	21.0
143	143	Application	Fire - EIS	EMSI Fire Reporting System	21.0
144	144	IT Process	Fire - Incident Management	Incident   event logging and automated audit trails	21.0
145	145	IT Process	Fire - Job Scheduling	Batch job scheduling	21.0
146	146	Application	Fire - Telestaff	MFD Roster Payroll/HR Records App	21.0
147	147	IT Process	Health - Backup Restore	Veritas Backup Exec	21.0
148	148	Application	Health - LIS	Laboratory Information System	21.0
149	149	IT Process	Health - Physical and Enviro Security	Physical and environment data center controls	21.0
150	150	Network Device	ITMD - Firewalls Security and Management	Firewalls Security and Management	21.0
151	151	IT Process	ITMD - Physical and Enviro Security	Physical and environment data center controls	21.0
152	152	Application	Police - CAD	Includes AVL	21.0
153	153	Application	Police - RMS Records Management System - Tiburon	Tiburon Records Management System	21.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
154	154	Application	Police - TRACS	Mobile MDC access for citation and accident submission to State, MPD and courts (Municipal/Circuit)	21.0
155	155	Database	Police - FileMaker	SenCrimes	21.0
156	156	Application/Backup	Police - Unitrends Backup & Recovery System	Provides Backup & Recover to all MPD Systems while also providing Offsite Storage of Replicated Backups	21.0
157	157	Application	Police - NetMotion	Mobile VPN	21.0
158	158	Application	Police - Active Directory Manager Plus	Password Management Self Service	21.0
159	159	Application	Water - Asset Centre	Proprietary Change Management for PLC Programming	21.0
160	160	IT Process	Water - Disaster Recovery (IT)	IT disaster recovery	21.0
161	161	IT Process	Water - Helpdesk Management	End user support	21.0
162	162	Application	Water - Itron Meter Reading Software	Meter Reader	21.0
163	163	Application	Water - Veeam	Backup Software Application	21.0
164	164	Application	Water - Zerto	Disaster Recovery Software	21.0
165	165	IT Process	Library - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
166	166	IT Process	Library - Software License Compliance	Software license compliance	20.0
167	167	Application Infrastructure	All Divisions - Active Directory	Network Authentication	20.0
168	168	Application Infrastructure	All Divisions - File Server (All)	Internal File Servers	20.0
169	169	Application	Dept Neighborhood Services - Laredo	Allows access to records recorded with the Milwaukee County Register of Deeds	20.0
170	170	IT Process	ERS - Job Scheduling	Batch job scheduling	20.0
171	171	Operating System	Fire - RedHat Enterprise	Supports Nice Recording System	20.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
172	172	Operating System	Health - AIX	Supporting LIS	20.0
173	173	IT Process	Health - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	20.0
174	174	IT Process	Health - Mobile Device Security	Blackberry Enterprise software	20.0
175	175	IT Process	ITMD - Backup Restore	Veritas Backup Exec	20.0
176	176	IT Process	ITMD - Configuration Management	Configuration management (network and systems)	20.0
177	177	IT Process	ITMD - Job Scheduling	Batch job scheduling	20.0
178	178	Network Device	ITMD - Load Balancers	Internet load balancers	20.0
179	179	Network Device	ITMD - Wireless Controllers	Wireless Network	20.0
180	180	IT Process	ITMD - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
181	181	Application	Police - Intelinetics	Document Imaging System	20.0
182	182	Application	Police - WiWatch	Citizens recording events System	20.0
183	183	Application	Water - Bentley Microstation	Maintains design and GIS information	20.0
184	184	Application	Water - FT Vantagepoint	Reporting Portal access for SCADA	20.0
185	185	Database	Water - Oracle	Supporting Bentley	20.0
186	186	Database	Water - OSI Soft PI	Supporting Historical Data for SCADA	20.0
187	187	Application	Water - WebTMA	CMMS Work order system for Plants	20.0
188	188	IT Process	Health - Software License Compliance	Software license compliance	19.0
189	189	Application	City Attorney - Thomson Reuters-Case Notebook	Legal case management software	19.0
190	190	Application	Dept Neighborhood Services - Accurint	Online search tool run by LexisNexis that allows DNS employees to search for property owner contact information	19.0
191	191	Application	Dept Neighborhood Services - TransUnion	Credit reporting tool used by the Compliance Loan Program and Neighborhood Improvement Program (NIP)	19.0
192	192	Application	Election - Election Results Manager	Election Results Manager	19.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
193	193	Application	Election - ElectionWare	ElectionWare	19.0
194	194	Application	ERS - CMERS.COM	Access Portal	19.0
195	195	Application	ERS - Scanners Documents	Imaging System	19.0
196	196	Database	ERS - SQL Server 2000	MERITS	19.0
197	197	Application	Fire - Aqua	911 Call Taker Analysis	19.0
198	198	Database	Fire - Firebird	Supports Aqua & Paramount	19.0
199	199	IT Process	Fire - Helpdesk Management	End user support	19.0
200	200	Application	Fire - ManagerPlus	Inventory Management Workorder Scheduling	19.0
201	201	Application	Fire - Nice Recording System	Call Recording System	19.0
202	202	IT Process	Fire - User Administration	Network and application access management	19.0
203	203	IT Process	Health - Helpdesk Management	End user support	19.0
204	204	IT Process	Health - Job Scheduling	Batch job scheduling	19.0
205	205	Application	ITMD - Avaya Phone Recording System	Call Recording System	19.0
206	206	Network Device	ITMD - Avaya Routers Switches	Avaya layer 2 and 3 switches	19.0
207	207	Application	ITMD - CRM - Citizen Relationship Management System	Citizen Relationship Management System	19.0
208	208	Application	Municipal Court - Web Writ System	Writ Printing and Update System	19.0
209	209	Application	Police - WinAce	Evidence Management	19.0
210	210	Database	Police - Oracle	Supports CAD/RMS and Media Solve	19.0
211	211	Application	Police - evidence.com	Body Camera Video Management System for Axon	19.0
212	212	Application	Water - ExacqVision	Video Cameras for Water	19.0
213	213	Network Device	Water - PowerVault MD 1200 and 1400	Video Storage for Exacq Vision Servers	19.0
214	214	Application	Water - RSEnergy	Energy Monitoring and Reporting Software	19.0
215	215	Application	Water - Win 911	Sends out SMS System alerts for SCADA	19.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
216	216	Operating System	Water - Windows 2003 2008 2012	Supporting Bentley	19.0
217	217	Application Infrastructure	All Divisions - MS Exchange Server	Email	18.0
218	218	Application	Clerk - Granicus (old Legistar)	City Clerk's Office - Legislative Tracking Software	18.0
219	219	Application	DPW - Fleet Focus	Fleet Focus	18.0
220	220	Application	Health - Stellar	CDC Data Management System	18.0
221	221	Application	Police - AFIS	Fingerprint System, includes Fast ID	18.0
222	222	Application	Police - InCar Video	In Car Video System	18.0
223	223	Database	Police - SQL	911 System, AFIS, ALPR, Crimes, InCar Video, Intellinetics, SharePoint, TRACS, WinAce, iWatch	18.0
224	224	Application	Police - 2FA - Multi-factor Authentication	Multi Factor Authentication	18.0
225	225	IT Process	Library - Helpdesk Management	End user support	17.0
226	226	Application	ERS - Bloomberg	Investment Tool	17.0
227	227	Application	ERS - Legal Docs	Research Tool	17.0
228	228	Application	ERS - Northern Trust	Asset Custodian - Compliance Monitoring Tool	17.0
229	229	Application	ERS - Zyper Investment Research Tool	Investment Research Tool	17.0
230	230	Platform/Services	Police - Windows 2003	911 System, ALRP, Crimes, InCar Video, SharePoint, TRACS, iWatch	17.0
231	231	Application	Treasurer - Inovah	Cashier System to collect property tax payments	17.0
232	232	Application	Clerk - GovQA	Citizen Call Center application for complaint tracking and follow up	16.0
233	233	IT Process	Library - Disaster Recovery (IT)	IT disaster recovery	16.0
234	234	Application	Police - CCURE System - Toepfer	ID Card System - Employees and Photos for bartenders etc.	16.0
235	235	Application	Police - CCURE System - Toepfer	Door Security going to be replaced	16.0
236	236	Application	Police - SharePoint	SharePoint Servers	16.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
237	237	Application	Police - Media Solve	Citizen   Arrest Information Tracking System	16.0
238	238	Platform/Serve rs	Police - Windows 2000	CAD, RMS, Intellinetics, SenCrimes, WinAce	16.0
239	239	Network Appliance	Police - Cisco ASA 5510	Remote Access VPN	16.0
240	240	Application	Police - ExacqVision	District/Division Security Cameras	16.0
241	241	IT Process	Library - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	15.0
242	242	Application	Police - ALPR License Plate Recognition System	License plate recognition System	15.0
243	243	Application	Police - SenCrimes	Sensitive Crime Database	14.0
244	244	Database	Library - Microsoft SQL	Databases Ghost	13.0
245	245	Application	Police - KACE	Trouble Ticket and Asset Management System	13.0
246	246	IT Process	Library - Asset Management	Manage HW	12.0
247	247	Application	Library - BMC Trackit	Helpdesk management	11.0
248	248	IT Process	Library - Change Patch Management	Change management all systems	11.0
249	249	Network Device	Library - Cisco WLC - 5520 (2)	Wireless Lan Controllers	11.0
250	250	Application	Library - Faronics Anti-virus	Client AV	11.0
251	251	Network Device	Library - Firewall Palo Alto 3020	Firewall	11.0
252	252	Network Device	Library - Hitachi SAN	Storage Area Network	11.0
253	253	Application	Library - Hitachi Storage Navigator	Manages the Hitachi SAN	11.0
254	254	Network Device	Library - Hitachi Switch	Fiber Channel switch for SAN	11.0
255	255	IT Process	Library - Incident Management	Incident   event logging and automated audit trails	11.0
256	256	Application	Library - MetaSys SCT	HVAC management	11.0
257	257	Application	Library - Orion SolarWinds	Logging and reporting of network health	11.0
258	258	Application	Library - Proxy	Remote desktop	11.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
259	259	Application	Library - SAM	Smart Access Manager - Public computer login management	11.0
260	260	Application	Library - Sierra Desktop Application	Client connection to the MCFLS countycat server	11.0
261	261	Application	Library - Simpana Commvault	Manages server backups	11.0
262	262	Application	Library - Sophos Antivirus	Server AV	11.0
263	263	Application	Library - Symantec Ghost	Client Imaging	11.0
264	264	Application	Library - Universal Imaging Utility	Allows hardware agnostic imaging	11.0
265	265	IT Process	Library - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	11.0
266	266	Network Appliance	Police - Bomgar B510	Remote Support Device	11.0
267	267	Application	DPW - LUKE	Parking Pay Stations	9.0
268	268	Application	DPW - Parking Structures	Parking Structure Pay Stations	9.0
269	269	IT Process	Police - Disaster Recovery (IT)	IT disaster recovery	9.0
270	270	IT Process	Police - Software License Compliance	Software license compliance	9.0
271	271	IT Process	Police - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	8.0
272	272	IT Process	Police - Asset Management	Manage HW	7.0
273	273	IT Process	Police - Backup Restore	Veritas Backup Exec	7.0
274	274	IT Process	Police - Change Patch Management	Change management all systems	7.0
275	275	IT Process	Police - Configuration Management	Configuration management (network and systems)	7.0
276	276	IT Process	Police - Helpdesk Management	End user support	7.0
277	277	IT Process	Police - Incident Management	Incident   event logging and automated audit trails	7.0
278	278	IT Process	Police - Job Scheduling	Batch job scheduling	7.0
279	279	IT Process	Police - Mobile Device Security	Blackberry Enterprise software	7.0
280	280	IT Process	Police - Physical and Enviro Security	Physical and environment data center controls	7.0
281	281	IT Process	Police - User Administration	Network and application access management	7.0
282	282	IT Process	Police - Virus Protection	Enterprise virus protection	7.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
283	283	IT Process	Police - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	7.0
284	284	IT Process	Police - Workstation Configuration Management	Manage configuration of desktop and laptop systems	7.0
285	285	IT Process	Library - Job Scheduling	Batch job scheduling	6.0
286	286	IT Process	Library - Mobile Device Security	Blackberry Enterprise software	6.0
287	287	IT Process	Police - SDLC	Application development life cycle methodology	6.0
288	288	Network Device	Police - Firewall	N/A - Managed by ITMD	6.0
289	289	Network Device	Police - Core Switch	N/A - Core Switches are managed by ITMD	6.0
290	290	IT Process	Water - Job Scheduling	Batch job scheduling	6.0
291	291	IT Process	Water - Mobile Device Security	Blackberry Enterprise software	6.0

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**INFORMATION TECHNOLOGY RISK BY CATEGORY**

No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
1	7	Application	Assessors - CAMA - Computer Assisted Mass Appraisal System	CAMA - Computer Assisted Mass Appraisal System	30.0
2	189	Application	City Attorney - Thomson Reuters-Case Notebook	Legal case management software	19.0
3	53	Application	City Attorney - Thomson Reuters-Prolaw	Legal matter management software and used to publish calendar items like court dates	25.0
4	232	Application	Clerk - GovQA	Citizen Call Center application for complaint tracking and follow up	16.0
5	218	Application	Clerk - Granicus (old Legistar)	City Clerk's Office - Legislative Tracking Software	18.0
6	117	Application	Dept Employee Relations - Job Apps Recruitment System	Job Application System	22.0
7	92	Application	Dept Health - Health Space	Health Space - Food Inspection System	23.0
8	190	Application	Dept Neighborhood Services - Accurant	Online search tool run by LexisNexis that allows DNS employees to search for property owner contact information	19.0
9	93	Application	Dept Neighborhood Services - Tokay	Database used to track fire sprinkler periodic inspections	23.0
10	140	Application	Dept Neighborhood Services - Jurisdiction Online	Inspection tracking tool created by Praeses which allows DNS to report boiler inspection data to the state	21.0
11	9	Application	Dept Neighborhood Services - Land Management Services	Land Management Services	30.0
12	169	Application	Dept Neighborhood Services - Laredo	Allows access to records recorded with the Milwaukee County Register of Deeds	20.0
13	191	Application	Dept Neighborhood Services - TransUnion	Credit reporting tool used by the Compliance Loan Program and Neighborhood Improvement Program (NIP)	19.0
14	54	Application	DPW - ALPR - Parking Application	ALPR - Parking Application - city issued parking tickets	25.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
15	29	Application	DPW - CityTime	City-Wide Timekeeping Application	26.0
16	219	Application	DPW - Fleet Focus	Fleet Focus	18.0
17	267	Application	DPW - LUKE	Parking Pay Stations	9.0
18	268	Application	DPW - Parking Structures	Parking Structure Pay Stations	9.0
19	192	Application	Election - Election Results Manager	Election Results Manager	19.0
20	193	Application	Election - Election Ware	ElectionWare	19.0
21	95	Application	ERS - ACCPAC	General Ledger	23.0
22	226	Application	ERS - Bloomberg	Investment Tool	17.0
23	194	Application	ERS - CMERS.COM	Access Portal	19.0
24	70	Application	ERS - FTP	B2B Communication	24.0
25	71	Application	ERS - GPS SQL Server	Lump Payment Processing (Global Pensions)	24.0
26	72	Application	ERS - Group Life Insurance	GLI Application	24.0
27	90	Application	ERS - High Speed Printer	Payroll (Pension System)	23.0
28	227	Application	ERS - Legal Docs	Research Tool	17.0
29	30	Application	ERS - MERITS	Public Pension Administration System	26.0
30	228	Application	ERS - Northern Trust	Asset Custodian - Compliance Monitoring Tool	17.0
31	10	Application	ERS - PeopleSoft Financials and HR	Financials and HR	30.0
32	195	Application	ERS - Scanners Documents	Imaging System	19.0
33	141	Application	ERS - Tracker	Change Management System	21.0
34	229	Application	ERS - Zyper Investment Research Tool	Investment Research Tool	17.0
35	197	Application	Fire - Aqua	911 Call Taker Analysis	19.0
36	143	Application	Fire - EIS	EMSiFire Reporting System	21.0
37	200	Application	Fire - ManagerPlus	Inventory Management Workorder Scheduling	19.0
38	201	Application	Fire - Nice Recording System	Call Recording System	19.0
39	122	Application	Fire - Paramount	911 Emergency Medical Triage	22.0
40	146	Application	Fire - Telestaff	MFD Roster Payroll HR Records App	21.0
41	148	Application	Health - LIS	Laboratory Information System	21.0
42	220	Application	Health - Stellar	CDC Data Management System	18.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
43	205	Application	ITMD - Avaya Phone Recording System	Call Recording System	19.0
44	207	Application	ITMD - CRM - Citizen Relationship Management System	Citizen Relationship Management System	19.0
45	81	Application	ITMD - Scheduling System	Scheduling of DPW staff	24.0
46	247	Application	Library - BMC Trackit	Helpdesk management	11.0
47	250	Application	Library - Faronics Anti-virus	Client AV	11.0
48	253	Application	Library - Hitachi Storage Navigator	Manages the Hitachi SAN	11.0
49	256	Application	Library - MetaSys SCT	HVAC management	11.0
50	257	Application	Library - Orion SolarWinds	Logging and reporting of network health	11.0
51	258	Application	Library - Proxy	Remote desktop	11.0
52	259	Application	Library - SAM	Smart Access Manager - Public computer login management	11.0
53	260	Application	Library - Sierra Desktop Application	Client connection to the MCFLS countycat server	11.0
54	261	Application	Library - Simpana Commvault	Manages server backups	11.0
55	262	Application	Library - Sophos Antivirus	Server AV	11.0
56	263	Application	Library - Symantec Ghost	Client Imaging	11.0
57	264	Application	Library - Universal Imaging Utility	Allows hardware agnostic imaging	11.0
58	11	Application	Municipal Court - Case Automated Tracking System (CATS)	Case Tracking System	29.0
59	128	Application	Municipal Court - Milwaukee Municipal Court Query System	Non-Confidential Case Information	22.0
60	208	Application	Municipal Court - Web Writ System	Writ Printing and Update System	19.0
61	224	Application	Police - 2FA - Multi-factor Authentication	Multi Factor Authentication	18.0
62	107	Application	Police - 911 System	includes freedom call check	23.0
63	158	Application	Police - Active Directory Manager Plus	Password Management Self Service	21.0
64	221	Application	Police - AFIS	Fingerprint System, includes Fast ID	18.0
65	242	Application	Police - ALPR License Plate Recognition System	License plate recognition System	15.0
66	152	Application	Police - CAD	Includes AVL	21.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
67	234	Application	Police - CCURE System - Toepfer	ID Card System - Employees and Photos for bartenders etc.	16.0
68	235	Application	Police - CCURE System - Toepfer	Door Security going to be replaced	16.0
69	211	Application	Police - evidence.com	Body Camera Video Management System for Axon	19.0
70	240	Application	Police - ExacqVision	District/Division Security Cameras	16.0
71	222	Application	Police - InCar Video	In Car Video System	18.0
72	181	Application	Police - Intellinetics	Document Imaging System	20.0
73	129	Application	Police - Intranet	Publishes information internally	22.0
74	245	Application	Police - KACE	Trouble Ticket and Asset Management System	13.0
75	237	Application	Police - Media Solve	Citizen / Arrest Information Tracking System	16.0
76	157	Application	Police - NetMotion	Mobile VPN	21.0
77	12	Application	Police - Open Sky	Harris LMR System	28.0
78	153	Application	Police - RMS Records Management System - Tiburon	Tiburon Records Management System	21.0
79	243	Application	Police - SenCrimes	Sensitive Crime Databae	14.0
80	236	Application	Police - SharePoint	SharePoint Servers	16.0
81	154	Application	Police - TRACS	Mobile MDC access for citation and accident submission to State, MPD and courts (Municipal/Circuit)	21.0
82	209	Application	Police - WinAce	Evidence Management	19.0
83	182	Application	Police - WiWatch	Citizens recording events System	20.0
84	231	Application	Treasurer - Inovah	Cashier System to collect property tax payments	17.0
85	5	Application	Treasurer - MUNIS Tax Collection System	Tax Collection System	31.0
86	130	Application	Treasurer - US Bank Singlepoint	USBank electronic connection to City of Milwaukee for Treasury activity	22.0
87	159	Application	Water - Asset Centre	Proprietary Change Management for PLC Programming	21.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
88	183	Application	Water - Bentley Microstation	Maintains design and GIS information	20.0
89	46	Application	Water - Ccure	Physical Security Software for Water Sites	26.0
90	47	Application	Water - EnQuesta	City Services Billing Application	26.0
91	212	Application	Water - ExacqVision	Video Cameras for Water	19.0
92	184	Application	Water - FT Vantagepoint	Reporting Portal access for SCADA	20.0
93	162	Application	Water - Itron Meter Reading Software	Meter Reader	21.0
94	214	Application	Water - RSEnergy	Energy Monitoring and Reporting Software	19.0
95	48	Application	Water - SCADA (Supervisory Control and Data Acquisition)	Controls Water Plant Operations	26.0
96	51	Application	Water - Symantec Endpoint	Anti-Virus Protection	26.0
97	163	Application	Water - Veeam	Backup Software Application	21.0
98	187	Application	Water - WebTMA	CMMS Work order system for Plants	20.0
99	215	Application	Water - Win 911	Sends out SMS System alerts for SCADA	19.0
100	164	Application	Water - Zerto	Disaster Recovery Software	21.0
101	167	Application Infrastructure	All Divisions - Active Directory	Network Authentication	20.0
102	168	Application Infrastructure	All Divisions - File Server (All)	Internal File Servers	20.0
103	217	Application Infrastructure	All Divisions - MS Exchange Server	Email	18.0
104	156	Application/Backup	Police - Unitrends Backup & Recovery System	Provides Backup & Recover to all MPD Systems while also providing Offsite Storage of Replicated Backups	21.0
105	196	Database	ERS - SQL Server 2000	MERITS	19.0
106	198	Database	Fire - Firebird	Supports Aqua & Paramount	19.0
107	121	Database	Fire - Oracle	Supports Old CAD RMS EIS	22.0
108	56	Database	Fire - SQL	Supports New CAD RMS	25.0
109	101	Database	Fire - SQL Anywhere	Supports Telestaff	23.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
110	126	Database	Health - Oracle	Supporting LIS	22.0
111	41	Database	ITMD - MS SQL Server	MS SQL Server database all versions	26.0
112	3	Database	ITMD - Oracle all versions	Oracle database all versions	32.0
113	244	Database	Library - Microsoft SQL	Databases Ghost	13.0
114	19	Database	Municipal Court - Oracle	Supporting CATS and Query System	27.0
115	155	Database	Police - FileMaker	SenCrimes	21.0
116	210	Database	Police - Oracle	Supports CAD/RMS and Media Solve	19.0
117	223	Database	Police - SQL	911 System, AFIS, ALPR, Crimes, InCar Video, Intellinetics, Sharepoint, TRACS, WinAce, iWatch	18.0
118	185	Database	Water - Oracle	Supporting Bentley	20.0
119	186	Database	Water - OSI Soft PI	Supporting Historical Data for SCADA	20.0
120	50	Database	Water - SQL 2008 and 2012	Coure	26.0
121	42	Infrastructure Technologies	ITMD - Storage Area Network	SAN environment	26.0
122	17	IT Process	ERS - Asset Management	Manage HW	28.0
123	96	IT Process	ERS - Backup Restore	Veritas Backup Exec	23.0
124	97	IT Process	ERS - Change Patch Management	Change management all systems	23.0
125	118	IT Process	ERS - Configuration Management	Configuration management (network and systems)	22.0
126	94	IT Process	ERS - Disaster Recovery (IT)	IT disaster recovery	23.0
127	73	IT Process	ERS - Helpdesk Management	End user support	24.0
128	98	IT Process	ERS - Incident Management	Incident   event logging and automated audit trails	23.0
129	13	IT Process	ERS - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
130	170	IT Process	ERS - Job Scheduling	Batch job scheduling	20.0
131	119	IT Process	ERS - Mobile Device Security	Blackberry Enterprise software	22.0
132	55	IT Process	ERS - Physical and Enviro Security	Physical and environment data center controls	25.0
133	99	IT Process	ERS - SDLC	Application development life cycle methodology	23.0
134	112	IT Process	ERS - Software License Compliance	Software license compliance	22.0





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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
135	20	IT Process	ERS - User Administration	Network and application access management	27.0
136	31	IT Process	ERS - Virus Protection	Enterprise virus protection	26.0
137	21	IT Process	ERS - Vulnerability Management	Internal external vulnerability assessments and penetration tests	27.0
138	32	IT Process	ERS - Workstation Configuration Management	Manage configuration of desktop and laptop systems	26.0
139	120	IT Process	Fire - Asset Management	Manage HW	22.0
140	142	IT Process	Fire - Backup Restore	Veritas Backup Exec	21.0
141	74	IT Process	Fire - Change Patch Management	Change management all systems	24.0
142	22	IT Process	Fire - Configuration Management	Configuration management (network and systems)	27.0
143	100	IT Process	Fire - Disaster Recovery (IT)	IT disaster recovery	23.0
144	199	IT Process	Fire - Helpdesk Management	End user support	19.0
145	144	IT Process	Fire - Incident Management	Incident   event logging and automated audit trails	21.0
146	23	IT Process	Fire - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	27.0
147	145	IT Process	Fire - Job Scheduling	Batch job scheduling	21.0
148	33	IT Process	Fire - Mobile Device Security	Blackberry Enterprise software	26.0
149	123	IT Process	Fire - Physical and Enviro Security	Physical and environment data center controls	22.0
150	124	IT Process	Fire - SDLC	Application development life cycle methodology	22.0
151	138	IT Process	Fire - Software License Compliance	Software license compliance	21.0
152	202	IT Process	Fire - User Administration	Network and application access management	19.0
153	75	IT Process	Fire - Virus Protection	Enterprise virus protection	24.0
154	35	IT Process	Fire - Vulnerability Management	Internal external vulnerability assessments and penetration tests	26.0
155	125	IT Process	Fire - Workstation Configuration Management	Manage configuration of desktop and laptop systems	22.0
156	57	IT Process	Health - Asset Management	Manage HW	25.0
157	147	IT Process	Health - Backup Restore	Veritas Backup Exec	21.0
158	37	IT Process	Health - Change Patch Management	Change management all systems	26.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
159	102	IT Process	Health - Configuration Management	Configuration management (network and systems)	23.0
160	24	IT Process	Health - Disaster Recovery (IT)	IT disaster recovery	27.0
161	203	IT Process	Health - Helpdesk Management	End user support	19.0
162	76	IT Process	Health - Incident Management	Incident   event logging and automated audit trails	24.0
163	173	IT Process	Health - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	20.0
164	204	IT Process	Health - Job Scheduling	Batch job scheduling	19.0
165	174	IT Process	Health - Mobile Device Security	Blackberry Enterprise software	20.0
166	149	IT Process	Health - Physical and Enviro Security	Physical and environment data center controls	21.0
167	25	IT Process	Health - SDLC	Application development life cycle methodology	27.0
168	188	IT Process	Health - Software License Compliance	Software license compliance	19.0
169	77	IT Process	Health - User Administration	Network and application access management	24.0
170	58	IT Process	Health - Virus Protection	Enterprise virus protection	25.0
171	59	IT Process	Health - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	25.0
172	79	IT Process	Health - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
173	52	IT Process	ITMD - Asset Management	Manage HW	25.0
174	175	IT Process	ITMD - Backup Restore	Veritas Backup Exec	20.0
175	60	IT Process	ITMD - Change Patch Management	Change management all systems	25.0
176	176	IT Process	ITMD - Configuration Management	Configuration management (network and systems)	20.0
177	2	IT Process	ITMD - Disaster Recovery (IT)	IT disaster recovery	36.0
178	103	IT Process	ITMD - Helpdesk Management	End user support	23.0
179	80	IT Process	ITMD - Incident Management	Incident   event logging and automated audit trails	24.0
180	66	IT Process	ITMD - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	25.0
181	177	IT Process	ITMD - Job Scheduling	Batch job scheduling	20.0
182	40	IT Process	ITMD - Mobile Device Security	Blackberry Enterprise software	26.0
183	151	IT Process	ITMD - Physical and Enviro Security	Physical and environment data center controls	21.0
184	1	IT Process	ITMD - SDLC	Application development life cycle methodology	37.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
185	87	IT Process	ITMD - Software License Compliance	Software license compliance	23.0
186	28	IT Process	ITMD - User Administration	Network and application access management	26.0
187	43	IT Process	ITMD - Virus Protection	Enterprise virus protection	26.0
188	44	IT Process	ITMD - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	26.0
189	180	IT Process	ITMD - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
190	246	IT Process	Library - Asset Management	Manage HW	12.0
191	135	IT Process	Library - Backup Restore	Veritas Backup Exec	21.0
192	248	IT Process	Library - Change Patch Management	Change management all systems	11.0
193	89	IT Process	Library - Configuration Management	Configuration management (network and systems)	23.0
194	233	IT Process	Library - Disaster Recovery (IT)	IT disaster recovery	16.0
195	225	IT Process	Library - Helpdesk Management	End user support	17.0
196	255	IT Process	Library - Incident Management	Incident   event logging and automated audit trails	11.0
197	241	IT Process	Library - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	15.0
198	285	IT Process	Library - Job Scheduling	Batch job scheduling	6.0
199	286	IT Process	Library - Mobile Device Security	Blackberry Enterprise software	6.0
200	139	IT Process	Library - Physical and Enviro Security	Physical and environment data center controls	21.0
201	67	IT Process	Library - SDLC	Application development life cycle methodology	24.0
202	166	IT Process	Library - Software License Compliance	Software license compliance	20.0
203	113	IT Process	Library - User Administration	Network and application access management	22.0
204	134	IT Process	Library - Virus Protection	Enterprise virus protection	21.0
205	265	IT Process	Library - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	11.0
206	165	IT Process	Library - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
207	91	IT Process	Municipal Court - Asset Management	Manage HW	23.0
208	82	IT Process	Municipal Court - Backup Restore	Veritas Backup Exec	24.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
209	6	IT Process	Municipal Court - Change Patch Management	Change management all systems	30.0
210	18	IT Process	Municipal Court - Configuration Management	Configuration management (network and systems)	27.0
211	45	IT Process	Municipal Court - Disaster Recovery (IT)	IT disaster recovery	26.0
212	104	IT Process	Municipal Court - Helpdesk Management	End user support	23.0
213	83	IT Process	Municipal Court - Incident Management	Incident   event logging and automated audit trails	24.0
214	14	IT Process	Municipal Court - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
215	127	IT Process	Municipal Court - Job Scheduling	Batch job scheduling	22.0
216	105	IT Process	Municipal Court - Mobile Device Security	Blackberry Enterprise software	23.0
217	26	IT Process	Municipal Court - Physical and Enviro Security	Physical and environment data center controls	27.0
218	27	IT Process	Municipal Court - SDLC	Application development life cycle methodology	27.0
219	136	IT Process	Municipal Court - Software License Compliance	Software license compliance	21.0
220	106	IT Process	Municipal Court - User Administration	Network and application access management	23.0
221	68	IT Process	Municipal Court - Virus Protection	Enterprise virus protection	24.0
222	15	IT Process	Municipal Court - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	28.0
223	69	IT Process	Municipal Court - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
224	272	IT Process	Police - Asset Management	Manage HW	7.0
225	273	IT Process	Police - Backup Restore	Veritas Backup Exec	7.0
226	274	IT Process	Police - Change Patch Management	Change management all systems	7.0
227	275	IT Process	Police - Configuration Management	Configuration management (network and systems)	7.0
228	269	IT Process	Police - Disaster Recovery (IT)	IT disaster recovery	9.0
229	276	IT Process	Police - Helpdesk Management	End user support	7.0
230	277	IT Process	Police - Incident Management	Incident   event logging and automated audit trails	7.0
231	271	IT Process	Police - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	8.0
232	278	IT Process	Police - Job Scheduling	Batch job scheduling	7.0
233	279	IT Process	Police - Mobile Device Security	Blackberry Enterprise software	7.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
234	280	IT Process	Police - Physical and Enviro Security	Physical and environment data center controls	7.0
235	287	IT Process	Police - SDLC	Application development life cycle methodology	6.0
236	270	IT Process	Police - Software License Compliance	Software license compliance	9.0
237	281	IT Process	Police - User Administration	Network and application access management	7.0
238	282	IT Process	Police - Virus Protection	Enterprise virus protection	7.0
239	283	IT Process	Police - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	7.0
240	284	IT Process	Police - Workstation Configuration Management	Manage configuration of desktop and laptop systems	7.0
241	61	IT Process	Water - Asset Management	Manage HW	25.0
242	109	IT Process	Water - Backup Restore	Veritas Backup Exec	23.0
243	84	IT Process	Water - Change Patch Management	Change management all systems	24.0
244	62	IT Process	Water - Configuration Management	Configuration management (network and systems)	25.0
245	160	IT Process	Water - Disaster Recovery (IT)	IT disaster recovery	21.0
246	161	IT Process	Water - Helpdesk Management	End user support	21.0
247	110	IT Process	Water - Incident Management	Incident   event logging and automated audit trails	23.0
248	16	IT Process	Water - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
249	290	IT Process	Water - Job Scheduling	Batch job scheduling	6.0
250	291	IT Process	Water - Mobile Device Security	Blackberry Enterprise software	6.0
251	85	IT Process	Water - Physical and Enviro Security	Physical and environment data center controls	24.0
252	49	IT Process	Water - SDLC	Application development life cycle methodology	26.0
253	137	IT Process	Water - Software License Compliance	Software license compliance	21.0
254	131	IT Process	Water - User Administration	Network and application access management	22.0
255	64	IT Process	Water - Virus Protection	Enterprise virus protection	25.0
256	4	IT Process	Water - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	31.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
257	65	IT Process	Water - Workstation Configuration Management	Manage configuration of desktop and laptop systems	25.0
258	266	Network Appliance	Police - Bomgar B510	Remote Support Device	11.0
259	239	Network Appliance	Police - Cisco ASA 5510	Remote Access VPN	16.0
260	206	Network Device	ITMD - Avaya Routers Switches	Avaya layer 2 and 3 switches	19.0
261	150	Network Device	ITMD - Firewalls Security and Management	Firewalls Security and Management	21.0
262	178	Network Device	ITMD - Load Balancers	Internet load balancers	20.0
263	179	Network Device	ITMD - Wireless Controllers	Wireless Network	20.0
264	249	Network Device	Library - Cisco WLC - 5520 (2)	Wireless Lan Controllers	11.0
265	251	Network Device	Library - Firewall Palo Alto 3020	Firewall	11.0
266	252	Network Device	Library - Hitachi SAN	Storage Area Network	11.0
267	254	Network Device	Library - Hitachi Switch	Fiber Channel switch for SAN	11.0
268	63	Network Device	Water - EqualLogic PS6210	SAN Storage for VMWare and Zerto	25.0
269	213	Network Device	Water - PowerVault MD 1200 and 1400	Video Storage for ExacqVision Servers	19.0
270	289	Network Device	Police - Core Switch	N/A - Core Switches are managed by ITMD	6.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
271	288	Network Device	Police - Firewall	N/A - Managed by ITMD	6.0
272	88	Operating System	ERS - Windows 2003 2008	Supporting ERS Applications	23.0
273	171	Operating System	Fire - RedHat Enterprise	Supports Nice Recording System	20.0
274	34	Operating System	Fire - VMWare 6.0	Virtual Hosting for Servers	26.0
275	36	Operating System	Fire - Windows 2003 2008	Supports Aqua and other servers	26.0
276	172	Operating System	Health - AIX	Supporting LIS	20.0
277	78	Operating System	Health - Windows 2003 2008 2012	Supporting File Servers	24.0
278	38	Operating System	ITMD - Hyper V Cluster	Hyper V Cluster	26.0
279	39	Operating System	ITMD - Hyper-V Cluster	Hyper-V Cluster	26.0
280	116	Operating System	Library - SAMDATA4	Dell PowerEdge R430 - SAMSQL server	22.0
281	133	Operating System	Library - VCB 2012 Server (vcb.mpl.pri)	Proliant DL360 Gen9 - Commvault	21.0
282	114	Operating System	Library - VMWare 6.0	HP DL380 Gen9 8SFF CTO Server - VMWare Server	22.0
283	115	Operating System	Library - Windows 2003 2008 2012	Various hardware configurations - Security camera video storage	22.0
284	132	Operating System	Municipal Court - Windows 2003 2008 2012	Supporting CATS and Query System	21.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
285	86	Operating System	Water - RS6000	Supporting EnQuesta	24.0
286	111	Operating System	Water - VMWare 6.5	Dell R630 Blades for VMWare hosts in Municipal	23.0
287	216	Operating System	Water - Windows 2003 2008 2012	Supporting Bentley	19.0
288	108	Platform/Serve IS	Police - VMWare vSphere v6	Hypervisor for virtualization	23.0
289	238	Platform/Serve IS	Police - Windows 2000	CAD, RMS, Intellinetics, SenCrimes, WinAce	16.0
290	230	Platform/Serve IS	Police - Windows 2003	911 System, ALRP, Crimes, InCar Video, SharePoint, TRACS, iWatch	17.0
291	8	Platform/Serve IS	Police - Windows Server & Linux	Harris OpenSky LMR System	30.0

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**INFORMATION TECHNOLOGY RISK BY DEPARTMENT**

No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>All Divisions</i>					
1	79	Application Infrastructure	All Divisions – Active Directory	Network Authentication	20.0
2	80	Application Infrastructure	All Divisions – File Server (All)	Internal File Servers	20.0
3	81	Application Infrastructure	All Divisions – MS Exchange Server	Email	18.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>Assessor's Office</i>					
1	7	Application	Assessors - CAMA - Computer Assisted Mass Appraisal System	CAMA - Computer Assisted Mass Appraisal System	30.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>Office of the City Attorney</i>					
1	53	Application	City Attorney - Thomson Reuters-Prolaw	Legal matter management software and used to publish calendar items like court dates	25.0
2	189	Application	City Attorney - Thomson Reuters-Case Notebook	Legal case management software	19.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>City Clerk's Office</i>					
1	218	Application	Clerk - Granicus (old Legistar)	City Clerk's Office - Legislative Tracking Software	18.0
2	232	Application	Clerk - GovQA	Citizen Call Center application for complaint tracking and follow up	16.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>Office of the City Treasurer</i>					
1	5	Application	Treasurer - MUNIS Tax Collection System	Tax Collection System	31.0
2	130	Application	Treasurer - US Bank Singlepoint	USBank electronic connection to City of Milwaukee for Treasury activity	22.0
3	231	Application	Treasurer - Inovah	Cashier System to collect property tax payments	17.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>Election Commission</i>					
1	192	Application	Election - Election Results Manager	Election Results Manager	19.0
2	193	Application	Election - ElectionWare	ElectionWare	19.0

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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
1	117	Application	Dept Employee Relations - Job Apps Recruitment System	Job Application System	22.0

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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Employees' Retirement System</b>					
1	10	Application	ERS - PeopleSoft Financials and HR	Financials and HR	30.0
2	17	IT Process	ERS - Asset Management	Manage HW	28.0
3	13	IT Process	ERS - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
4	20	IT Process	ERS - User Administration	Network and application access management	27.0
5	21	IT Process	ERS - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	27.0
6	30	Application	ERS - MERITS	Public Pension Administration System	26.0
7	31	IT Process	ERS - Virus Protection	Enterprise virus protection	26.0
8	32	IT Process	ERS - Workstation Configuration Management	Manage configuration of desktop and laptop systems	26.0
9	55	IT Process	ERS - Physical and Enviro Security	Physical and environment data center controls	25.0
10	70	Application	ERS - FTP	B2B Communication	24.0
11	71	Application	ERS - GPS SQL Server	Lump Payment Processing (Global Pensions)	24.0
12	72	Application	ERS - Group Life Insurance	GLI Application	24.0
13	73	IT Process	ERS - Helpdesk Management	End user support	24.0
14	95	Application	ERS - ACCPAC	General Ledger	23.0
15	96	IT Process	ERS - Backup Restore	Veritas Backup Exec	23.0
16	97	IT Process	ERS - Change Patch Management	Change management all systems	23.0
17	94	IT Process	ERS - Disaster Recovery (IT)	IT disaster recovery	23.0
18	90	Application	ERS - High Speed Printer	Payroll (Pension System)	23.0
19	98	IT Process	ERS - Incident Management	Incident   event logging and automated audit trails	23.0
20	99	IT Process	ERS - SDLC	Application development life cycle methodology	23.0
21	88	Operating System	ERS - Windows 2003 2008 2012	Supporting ERS Applications	23.0
22	118	IT Process	ERS - Configuration Management	Configuration management (network and systems)	22.0
23	119	IT Process	ERS - Mobile Device Security	Blackberry Enterprise software	22.0
24	112	IT Process	ERS - Software License Compliance	Software license compliance	22.0





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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Employees' Retirement System</b>					
25	141	Application	ERS - Tracker	Change Management System	21.0
26	170	IT Process	ERS - Job Scheduling	Batch job scheduling	20.0
27	194	Application	ERS - CMERS.COM	Access Portal	19.0
28	195	Application	ERS - Scanners Documents	Imaging System	19.0
29	196	Database	ERS - SQL Server 2000	MERITS	19.0
30	226	Application	ERS - Bloomberg	Investment Tool	17.0
31	227	Application	ERS - Legal Docs	Research Tool	17.0
32	228	Application	ERS - Northern Trust	Asset Custodian - Compliance Monitoring Tool	17.0
33	229	Application	ERS - Zyper Investment Research Tool	Investment Research Tool	17.0

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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Fire Department</b>					
1	22	IT Process	Fire - Configuration Management	Configuration management (network and systems)	27.0
2	23	IT Process	Fire - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	27.0
3	33	IT Process	Fire - Mobile Device Security	BlackBerry Enterprise software	26.0
4	34	Operating System	Fire - VMWare 6.0	Virtual Hosting for Servers	26.0
5	35	IT Process	Fire - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	26.0
6	36	Operating System	Fire - Windows 2003 2008	Supports Aqua and other servers	26.0
7	56	Database	Fire - SQL	Supports New CAD RMS	25.0
8	74	IT Process	Fire - Change Patch Management	Change management all systems	24.0
9	75	IT Process	Fire - Virus Protection	Enterprise virus protection	24.0
10	100	IT Process	Fire - Disaster Recovery (IT)	IT disaster recovery	23.0
11	101	Database	Fire - SQL Anywhere	Supports Telestaff	23.0
12	120	IT Process	Fire - Asset Management	Manage HW	22.0
13	121	Database	Fire - Oracle	Supports Old CAD RMS EIS	22.0
14	122	Application	Fire - Paramount	911 Emergency Medical Triage	22.0
15	123	IT Process	Fire - Physical and Enviro Security	Physical and environment data center controls	22.0
16	124	IT Process	Fire - SDLC	Application development life cycle methodology	22.0
17	125	IT Process	Fire - Workstation Configuration Management	Manage configuration of desktop and laptop systems	22.0
18	142	IT Process	Fire - Backup Restore	Veritas Backup Exec	21.0
19	143	Application	Fire - EIS	EMSI Fire Reporting System	21.0
20	144	IT Process	Fire - Incident Management	Incident   event logging and automated audit trails	21.0
21	145	IT Process	Fire - Job Scheduling	Batch job scheduling	21.0
22	138	IT Process	Fire - Software License Compliance	Software license compliance	21.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
23	146	Application	Fire - Telestaff	MFD RosterPayrollHR Records App	21.0
24	171	Operating System	Fire - RedHat Enterprise	Supports Nice Recording System	20.0
25	197	Application	Fire - Aqua	911 Call Taker Analysis	19.0
26	198	Database	Fire - Firebird	Supports Aqua & Paramount	19.0
27	199	IT Process	Fire - Helpdesk Management	End user support	19.0
28	200	Application	Fire - ManagerPlus	Inventory Management Workorder Scheduling	19.0
29	201	Application	Fire - Nice Recording System	Call Recording System	19.0
30	202	IT Process	Fire - User Administration	Network and application access management	19.0

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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Health Department</b>					
1	24	IT Process	Health - Disaster Recovery (IT)	IT disaster recovery	27.0
2	25	IT Process	Health - SDLC	Application development life cycle methodology	27.0
3	37	IT Process	Health - Change Patch Management	Change management all systems	26.0
4	57	IT Process	Health - Asset Management	Manage HW	25.0
5	58	IT Process	Health - Virus Protection	Enterprise virus protection	25.0
6	59	IT Process	Health - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	25.0
7	76	IT Process	Health - Incident Management	Incident   event logging and automated audit trails	24.0
8	77	IT Process	Health - User Administration	Network and application access management	24.0
9	78	Operating System	Health - Windows 2003 2008 2012	Supporting File Servers	24.0
10	79	IT Process	Health - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
11	102	IT Process	Health - Configuration Management	Configuration management (network and systems)	23.0
12	92	Application	Dept Health - Health Space	Health Space - Food Inspection System	23.0
13	126	Database	Health - Oracle	Supporting LIS	22.0
14	147	IT Process	Health - Backup Restore	Veritas Backup Exec	21.0
15	148	Application	Health - LIS	Laboratory Information System	21.0
16	149	IT Process	Health - Physical and Enviro Security	Physical and environment data center controls	21.0
17	172	Operating System	Health - AIX	Supporting LIS	20.0
18	173	IT Process	Health - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	20.0
19	174	IT Process	Health - Mobile Device Security	Blackberry Enterprise software	20.0
20	203	IT Process	Health - Helpdesk Management	End user support	19.0
21	204	IT Process	Health - Job Scheduling	Batch job scheduling	19.0
22	188	IT Process	Health - Software License Compliance	Software license compliance	19.0
23	220	Application	Health - Stellar	CDC Data Management System	18.0



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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>ITMD</b>					
1	1	IT Process	ITMD - SDLC	Application development life cycle methodology	37.0
2	2	IT Process	ITMD - Disaster Recovery (IT)	IT disaster recovery	36.0
3	3	Database	ITMD - Oracle all versions	Oracle database all versions	32.0
4	38	Operating System	ITMD - Hyper V Cluster	Hyper V Cluster	26.0
5	39	Operating System	ITMD - Hyper-V Cluster	Hyper-V Cluster	26.0
6	40	IT Process	ITMD - Mobile Device Security	Blackberry Enterprise software	26.0
7	41	Database	ITMD - MS SQL Server	MS SQL Server database all versions	26.0
8	42	Infrastructure Technologies	ITMD - Storage Area Network	SAN environment	26.0
9	28	IT Process	ITMD - User Administration	Network and application access management	26.0
10	43	IT Process	ITMD - Virus Protection	Enterprise virus protection	26.0
11	44	IT Process	ITMD - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	26.0
12	52	IT Process	ITMD - Asset Management	Manage HW	25.0
13	60	IT Process	ITMD - Change Patch Management	Change management all systems	25.0
14	66	IT Process	ITMD - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	25.0
15	80	IT Process	ITMD - Incident Management	Incident   event logging and automated audit trails	24.0
16	81	Application	ITMD - Scheduling System	Scheduling of DPW staff	24.0
17	103	IT Process	ITMD - Helpdesk Management	End user support	23.0
18	87	IT Process	ITMD - Software License Compliance	Software license compliance	23.0
19	150	Network Device	ITMD - Firewalls Security and Management	Firewalls Security and Management	21.0
20	151	IT Process	ITMD - Physical and Enviro Security	Physical and environment data center controls	21.0
21	175	IT Process	ITMD - Backup Restore	Veritas Backup Exec	20.0
22	176	IT Process	ITMD - Configuration Management	Configuration management (network and systems)	20.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
23	177	IT Process	ITMD - Job Scheduling	Batch job scheduling	20.0
24	178	Network Device	ITMD - Load Balancers	Internet load balancers	20.0
25	179	Network Device	ITMD - Wireless Controllers	Wireless Network	20.0
26	180	IT Process	ITMD - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
27	205	Application	ITMD - Avaya Phone Recording System	Call Recording System	19.0
28	206	Network Device	ITMD - Avaya Routers Switches	Avaya layer 2 and 3 switches	19.0
29	207	Application	ITMD - CRM - Citizen Relationship Management System	Citizen Relationship Management System	19.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Library</b>					
1	67	IT Process	Library - SDLCL	Application development life cycle methodology	24.0
2	89	IT Process	Library - Configuration Management	Configuration management (network and systems)	23.0
3	116	Operating System	Library - SAMDATA4	Dell Poweredge R430 - SAMSQSQL server	22.0
4	113	IT Process	Library - User Administration	Network and application access management	22.0
5	114	Operating System	Library - VMWare 6.0	HP DL380 Gen9 8SFF CTO Server - VMWare Server	22.0
6	115	Operating System	Library - Windows 2003 2008 2012	Various hardware configurations - Security camera video storage	22.0
7	135	IT Process	Library - Backup Restore	Veritas Backup Exec	21.0
8	139	IT Process	Library - Physical and Enviro Security	Physical and environment data center controls	21.0
9	133	Operating System	Library - VCB 2012 Server (vcb.mpl.pri)	Proliant DL360 Gen9 - Commvault	21.0
10	134	IT Process	Library - Virus Protection	Enterprise virus protection	21.0
11	166	IT Process	Library - Software License Compliance	Software license compliance	20.0
12	165	IT Process	Library - Workstation Configuration Management	Manage configuration of desktop and laptop systems	20.0
13	225	IT Process	Library - Helpdesk Management	End user support	17.0
14	233	IT Process	Library - Disaster Recovery (IT)	IT disaster recovery	16.0
15	241	IT Process	Library - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	15.0
16	244	Database	Library - Microsoft SQL	Databases Ghost	13.0
17	246	IT Process	Library - Asset Management	Manage HW	12.0
18	247	Application	Library - BMC Trackit	Helpdesk management	11.0
19	248	IT Process	Library - Change Patch Management	Change management all systems	11.0
20	249	Network Device	Library - Cisco WLC - 5520 (2)	Wireless Lan Controllers	11.0
21	250	Application	Library - Faronics Anti-virus	Client AV	11.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
22	251	Network Device	Library - Firewall Palo Alto 3020	Firewall	11.0
23	252	Network Device	Library - Hitachi SAN	Storage Area Network	11.0
24	253	Application	Library - Hitachi Storage Navigator	Manages the Hitachi SAN	11.0
25	254	Network Device	Library - Hitachi Switch	Fiber Channel switch for SAN	11.0
26	255	IT Process	Library - Incident Management	Incident   event logging and automated audit trails	11.0
27	256	Application	Library - MetaSys SCT	HVAC management	11.0
28	257	Application	Library - Orion SolarWinds	Logging and reporting of network health	11.0
29	258	Application	Library - Proxy	Remote desktop	11.0
30	259	Application	Library - SAM	Smart Access Manager - Public computer login management	11.0
31	260	Application	Library - Sierra Desktop Application	Client connection to the MCFLS county server	11.0
32	261	Application	Library - Simpana Commvault	Manages server backups	11.0
33	262	Application	Library - Sophos Antivirus	Server AV	11.0
34	263	Application	Library - Symantec Ghost	Client Imaging	11.0
35	264	Application	Library - Universal Imaging Utility	Allows hardware agnostic imaging	11.0
36	265	IT Process	Library - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	11.0
37	285	IT Process	Library - Job Scheduling	Batch job scheduling	6.0
38	286	IT Process	Library - Mobile Device Security	Blackberry Enterprise software	6.0





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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Municipal Court</b>					
1	6	IT Process	Municipal Court - Change Patch Management	Change management all systems	30.0
2	11	Application	Municipal Court - Case Automated Tracking System (CATS)	Case Tracking System	29.0
3	14	IT Process	Municipal Court - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
4	15	IT Process	Municipal Court - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	28.0
5	18	IT Process	Municipal Court - Configuration Management	Configuration management (network and systems)	27.0
6	19	Database	Municipal Court - Oracle	Supporting CATS and Query System	27.0
7	26	IT Process	Municipal Court - Physical and Enviro Security	Physical and environment data center controls	27.0
8	27	IT Process	Municipal Court - SDLC	Application development life cycle methodology	27.0
9	45	IT Process	Municipal Court - Disaster Recovery (IT)	IT disaster recovery	26.0
10	82	IT Process	Municipal Court - Backup Restore	Veritas Backup Exec	24.0
11	83	IT Process	Municipal Court - Incident Management	Incident   event logging and automated audit trails	24.0
12	68	IT Process	Municipal Court - Virus Protection	Enterprise virus protection	24.0
13	69	IT Process	Municipal Court - Workstation Configuration Management	Manage configuration of desktop and laptop systems	24.0
14	91	IT Process	Municipal Court - Asset Management	Manage HW	23.0
15	104	IT Process	Municipal Court - Helpdesk Management	End user support	23.0
16	105	IT Process	Municipal Court - Mobile Device Security	Blackberry Enterprise software	23.0
17	106	IT Process	Municipal Court - User Administration	Network and application access management	23.0
18	127	IT Process	Municipal Court - Job Scheduling	Batch job scheduling	22.0
19	128	Application	Municipal Court - Milwaukee Municipal Court Query System	Non-Confidential Case Information	22.0
20	136	IT Process	Municipal Court - Software License Compliance	Software license compliance	21.0
21	132	Operating System	Municipal Court - Windows 2003 2008 2012	Supporting CATS and Query System	21.0
22	208	Application	Municipal Court - Web Writ System	Writ Printing and Update System	19.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<i>Department of Neighborhood Services</i>					
1	9	Application	Dept Neighborhood Services - Land Management Services	Land Management Services	30.0
2	93	Application	Dept Neighborhood Services - Tokay	Database used to track fire sprinkler periodic inspections	23.0
3	140	Application	Dept Neighborhood Services - Jurisdiction Online	Inspection tracking tool created by Praeses which allows DNS to report boiler inspection data to the state	21.0
4	169	Application	Dept Neighborhood Services - Laredo	Allows access to records recorded with the Milwaukee County Register of Deeds	20.0
5	190	Application	Dept Neighborhood Services - Accurint	Online search tool run by LexisNexis that allows DNS employees to search for property owner contact information	19.0
6	191	Application	Dept Neighborhood Services - TransUnion	Credit reporting tool used by the Compliance Loan Program and Neighborhood Improvement Program (NIP)	19.0

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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Police Department</b>					
1	8	Platform/Serve rs	Police - Windows Server & Linux	Harris OpenSky LMR System	30.0
2	12	Application	Police - Open Sky	Harris LMR System	28.0
3	107	Application	Police - 911 System	includes freedom call check	23.0
4	108	Platform/Serve rs	Police - VMWare vSphere v6	Hypervisor for virtualization	23.0
5	129	Application	Police - Intranet	Publishes information internally	22.0
6	158	Application	Police - Active Directory Manager Plus	Password Management Self Service	21.0
7	152	Application	Police - CAD	Includes AVL	21.0
8	155	Database	Police - FileMaker	SenCrimes	21.0
9	157	Application	Police - NetMotion	Mobile VPN	21.0
10	153	Application	Police - RMS Records Management System - Tiburon	Tiburon Records Management System	21.0
11	154	Application	Police - TRACS	Mobile MDC access for citation and accident submission to State, MPD and courts (Municipal/Circuit)	21.0
12	156	Application/Bakup	Police - Unitrends Backup & Recovery System	Provides Backup & Recover to all MPD Systems while also providing Offsite Storage of Replicated Backups	21.0
13	181	Application	Police - Intellinetics	Document Imaging System	20.0
14	182	Application	Police - WWatch	Citizens recording events System	20.0
15	211	Application	Police - evidence.com	Body Camera Video Management System for Axon	19.0
16	210	Database	Police - Oracle	Supports CAD/RMS and Media Solve	19.0
17	209	Application	Police - WinAce	Evidence Management	19.0
18	224	Application	Police - 2FA - Multi-factor Authentication	Multi Factor Authentication	18.0
19	221	Application	Police - AFIS	Fingerprint System, includes Fast ID	18.0



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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
20	222	Application	Police - InCar Video	In Car Video System	18.0
21	223	Database	Police - SQL	911 System, AFIS, ALPR, Crimes, InCar Video, Intellinetics, SharePoint, TRACS, WinAce, iWatch	18.0
22	230	Platform/Serve rs	Police - Windows 2003	911 System, ALRP, Crimes, InCar Video, SharePoint, TRACS, iWatch	17.0
23	234	Application	Police - CCURE System - Toepfer	ID Card System - Employees and Photos for bartenders etc.	16.0
24	235	Application	Police - CCURE System - Toepfer	Door Security going to be replaced	16.0
25	239	Network Appliaance	Police - Cisco ASA 5510	Remote Access VPN	16.0
26	240	Application	Police - ExacqVision	District/Division Security Cameras	16.0
27	237	Application	Police - Media Solve	Citizen I Arrest Information Tracking System	16.0
28	236	Application	Police - SharePoint	SharePoint Servers	16.0
29	238	Platform/Serve rs	Police - Windows 2000	CAD, RMS, Intellinetics, SenCrimes, WinAce	16.0
30	242	Application	Police - ALPR License Plate Recognition System	License plate recognition System	15.0
31	243	Application	Police - SenCrimes	Sensitive Crime Database	14.0
32	245	Application	Police - KACE	Trouble Ticket and Asset Management System	13.0
33	266	Network Appliaance	Police - Bomgar B510	Remote Support Device	11.0
34	269	IT Process	Police - Disaster Recovery (IT)	IT disaster recovery	9.0
35	270	IT Process	Police - Software License Compliance	Software license compliance	9.0
36	271	IT Process	Police - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	8.0
37	272	IT Process	Police - Asset Management	Manage HW	7.0
38	273	IT Process	Police - Backup Restore	Veritas Backup Exec	7.0
39	274	IT Process	Police - Change Patch Management	Change management all systems	7.0
40	275	IT Process	Police - Configuration Management	Configuration management (network and systems)	7.0



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NO	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
41	276	IT Process	Police - Helpdesk Management	End user support	7.0
42	277	IT Process	Police - Incident Management	Incident   event logging and automated audit trails	7.0
43	278	IT Process	Police - Job Scheduling	Batch job scheduling	7.0
44	279	IT Process	Police - Mobile Device Security	Blackberry Enterprise software	7.0
45	280	IT Process	Police - Physical and Enviro Security	Physical and environment data center controls	7.0
46	281	IT Process	Police - User Administration	Network and application access management	7.0
47	282	IT Process	Police - Virus Protection	Enterprise virus protection	7.0
48	283	IT Process	Police - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	7.0
49	284	IT Process	Police - Workstation Configuration Management	Manage configuration of desktop and laptop systems	7.0
50	289	Network Device	Police - Core Switch	N/A - Core Switches are managed by ITMD	6.0
51	288	Network Device	Police - Firewall	N/A - Managed by ITMD	6.0
52	287	IT Process	Police - SDLC	Application development life cycle methodology	6.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Department of Public Works</b>					
1	29	Application	DPW - CityTime	City-Wide Timekeeping Application	26.0
2	54	Application	DPW - ALPR - Parking Application	ALPR - Parking Application - city issued parking tickets	25.0
3	219	Application	DPW - Fleet Focus	Fleet Focus	18.0
4	267	Application	DPW - LUKE	Parking Pay Stations	9.0
5	268	Application	DPW - Parking Structures	Parking Structure Pay Stations	9.0

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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
<b>Department of Public Works – Water Works</b>					
1	4	IT Process	Water - Vulnerability Management	Internal   external vulnerability assessments and penetration tests	31.0
2	16	IT Process	Water - IT Governance - Policies & Procedures	IT governance (risk assessment and IT policies)	28.0
3	46	Application	Water - Ccure	Physical Security Software for Water Sites	26.0
4	47	Application	Water - EnQuesta	City Services Billing Application	26.0
5	48	Application	Water - SCADA (Supervisory Control and Data Acquisition)	Controls Water Plant Operations	26.0
6	49	IT Process	Water - SDLC	Application development life cycle methodology	26.0
7	50	Database	Water - SQL 2008 and 2012	Ccure	26.0
8	51	Application	Water - Symantec Endpoint	Anti-Virus Protection	26.0
9	61	IT Process	Water - Asset Management	Manage HW	25.0
10	62	IT Process	Water - Configuration Management	Configuration management (network and systems)	25.0
11	63	Network Device	Water - EquallLogic PS6210	SAN Storage for VMWare and Zerto	25.0
12	64	IT Process	Water - Virus Protection	Enterprise virus protection	25.0
13	65	IT Process	Water - Workstation Configuration Management	Manage configuration of desktop and laptop systems	25.0
14	84	IT Process	Water - Change Patch Management	Change management all systems	24.0
15	85	IT Process	Water - Physical and Enviro Security	Physical and environment data center controls	24.0
16	86	Operating System	Water - RS6000	Supporting EnQuesta	24.0
17	109	IT Process	Water - Backup Restore	Veritas Backup Exec	23.0
18	110	IT Process	Water - Incident Management	Incident   event logging and automated audit trails	23.0
19	111	Operating System	Water - VMWare 6.5	Dell R630 Blades for VMWare hosts in Municipal	23.0
20	131	IT Process	Water - User Administration	Network and application access management	22.0



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No	ID	CATEGORY	AUDIT TECHNOLOGY	DESCRIPTION	RISK SCORE
21	159	Application	Water - Asset Centre	Proprietary Change Management for PLC Programming	21.0
22	160	IT Process	Water - Disaster Recovery (IT)	IT disaster recovery	21.0
23	161	IT Process	Water - Helpdesk Management	End user support	21.0
24	162	Application	Water - Iron Meter Reading Software	Meter Reader	21.0
25	137	IT Process	Water - Software License Compliance	Software license compliance	21.0
26	163	Application	Water - Veeam	Backup Software Application	21.0
27	164	Application	Water - Zerto	Disaster Recovery Software	21.0
28	183	Application	Water - Bentley Microstation	Maintains design and GIS information	20.0
29	184	Application	Water - FT Vantagepoint	Reporting Portal access for SCADA	20.0
30	185	Database	Water - Oracle	Supporting Bentley	20.0
31	186	Database	Water - OSI Soft PI	Supporting Historical Data for SCADA	20.0
32	187	Application	Water - WebTMA	CMMS Work order system for Plants	20.0
33	212	Application	Water - ExacqVision	Video Cameras for Water	19.0
34	213	Network Device	Water - PowerVault MD 1200 and 1400	Video Storage for ExacqVision Servers	19.0
35	214	Application	Water - RSEnergy	Energy Monitoring and Reporting Software	19.0
36	215	Application	Water - Win 911	Sends out SMS System alerts for SCADA	19.0
37	216	Operating System	Water - Windows 2003 2008 2012	Supporting Bentley	19.0
38	290	IT Process	Water - Job Scheduling	Batch job scheduling	6.0
39	291	IT Process	Water - Mobile Device Security	Blackberry Enterprise software	6.0





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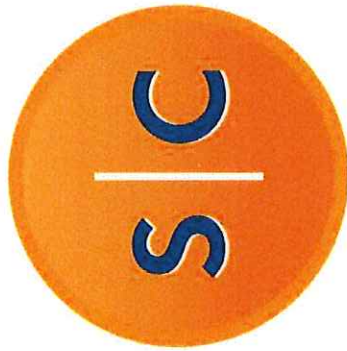
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**Martin Matson**  
Comptroller

**Aycha Sirvanci, CPA, CIA**  
Deputy Comptroller



Office of the Comptroller

**Toni Biscobing**  
Special Deputy Comptroller

**Rocklan Wruck, CPA**  
Special Deputy Comptroller

June 26, 2018

Honorable Tom Barrett, Mayor  
The Members of the Common Council  
City of Milwaukee  
Milwaukee, WI 53202

Dear Mayor and Council Members:

With this letter, the Office of the City Comptroller acknowledges receipt of the preceding report, which communicates the results of the vendor-assisted, citywide, IT Risk Assessment. I have read the report and support its conclusions.

As the City Comptroller, I was not involved in any portion of the work conducted in connection with this project. At all times, the Internal Audit Division and the Securance LLC consultants worked autonomously in order to maintain the integrity, objectivity, and independence of the project, both in fact and in appearance.

Sincerely,

A handwritten signature in black ink that reads "Martin Matson". The signature is written in a cursive style with a prominent initial "M".

Martin Matson,  
Comptroller