



CITY OF KIRKLAND
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MEMORANDUM

To: Kurt Triplett, City Manager

From: Smitha Krishnan, IT Director
Xiaoning Jiang, IT Deputy Director

Date: 05/06/2021

Subject: IT Stabilization Implementation Update

RECOMMENDATION

It is recommended that the City Council receive a quarterly update on the Information Technology (IT) Stabilization Project, which has been in implementation since September 2019. As a reminder, the goals of this project are:

1. Improve reliability and reduce downtime in IT operations and services
2. Continue to shift towards a mature and proactive IT culture

In December 2020, Phase 1 of Implementation was completed.

BACKGROUND DISCUSSION

At the last update to City Council in January 2021, the IT Department provided an overview of the key areas of focus for IT Stabilization:

1. Risk Mitigation Activities
2. IT Service Management (ITSM) Solution
3. IT Security Strategy and Roadmap

In 2021, the above three areas (risk mitigation, IT Service Management and Security Strategy and Roadmap) are becoming part of the IT department's ongoing work plan. These are no longer "special projects" but rather part of every IT team's work plan. This memo is reflective of this shift and will provide an update on the following areas:

1. IT Service/Operations Management
2. IT Security Work Plan
3. IT Department Work Plan

IT Service/Operations Management

As part of the implementation of the IT Service Management solution in 2020, including the customer portal, the following targets were established for key operational performance indicators or KPIs. The actuals for these KPI's for the months of March and April are also recorded below.

Key Performance Indicator (KPI)	Target	March Actual	April Actual
Mean Time to Incident Resolution for P0 to P2	6 hours	122 min (2 hours)	65 min (1 hour)
Mean Time to Incident Resolution Target Met	80%	97.4%	97.0%
Mean Time to Service Resolution for P1 & P2	32 hours (4 Business Days)	6.5 hours	16.25 hours
Mean Time to Service Resolution Target Met	80%	97.3%	96.6%
P0 (Major) plus P1 (High Priority) Incidents	≤3 per month	1	3
First Call Resolution	50%	81%	87%

The actual numbers for March and April are indicative of the high service levels offered by IT to the organization. After gathering 3 months of reliable data, IT staff will further adjust the targets based on actuals to continually improve service levels and accountability of IT staff. The IT Service Management solution also provides increased visibility of the distribution of IT resources across departments. See **Attachment A**.

In April, the City experienced 3 High Priority incidents or disruption of IT services. All 3 incidents were related to hardware/software issues related to the Firewalls on the City's Network. The incidents were resolved within the agreed-upon service levels and mitigation steps were also taken to prevent future occurrences of this issue.

The second phase of this implementation was completed in the end of March, and included the deployment of the following modules:

1. Change Management
2. Configuration Management
3. Asset Management

Benefits of implementing these modules are:

- Standardized change management processes to control risk and minimize disruption of IT services
- Configuration management to allow staff to track and account for physical and virtual infrastructure assets
- Asset management to proactively track the lifecycle of hardware and software, reducing maintenance costs in the long term. Currently, the module has been deployed only for hardware assets, and will be expanded to include software license management this year.

IT Security Work Plan

In 2020, IT developed the Security Strategy and Roadmap. In 2021, the IT Security Work Plan is focused on the deployment of the right tools, processes and procedures to increase the City's security posture based on industry standards. On the following page are some highlights from the IT Security Work Plan:

Item #	Item Description	Status	Planned Schedule	Actual Schedule
1	Conduct annual penetration test by third-party. Status Update: <ul style="list-style-type: none"> Penetration test was conducted in March. No red flags were detected, which is indicative of a healthy and secure network. Corrective action plan developed for identified risks. Work to be completed by mid-June. 	In Progress	Q2, 2021	Q1 – Q2, 2021
2	Implementation of Security Incident and Event Management (SIEM) Solution <ul style="list-style-type: none"> Xiologix/FortiSIEM selected as “Apparently successful” vendor/solution. Contract negotiations in progress. Phase 1 will kick off in June with go-live in mid-September. Phase 2 will include implementation of IT Operations Management for improved monitoring of day-to-day IT Operations. 	In Progress	Q2 2021 to Q1 2022	Q1 – Q4, 2021
3	Update IT Policies to account for the “new normal” that has risen in the wake of the pandemic. Add SOPs to align with the policies.	In Progress	Year-long activity	
5	Implement quarterly TTXs for IT staff and key stakeholders	Not Started	Q2 & Q4	
6	Hire an Information Security Analyst to execute the security-related work plan items,	Complete	Q1	Q1
7	Create a cross-departmental security governance committee to keep the City’s Leadership informed of IT security risks	Complete	Q1	Q2 (First meeting in May 2021)

IT Department Work Plan for 2021

In March, IT finalized the 2021 work plan with approval from the IT Steering Team. The IT Steering Team is comprised of all Department Directors, Municipal Court Administrator and the Deputy City Manager. The Steering Team agreed on the prioritization of projects and allocation of IT staff resources across departments and recommended the adoption of the work plan to the City Manager. As per this plan, 97% of IT staff resources are committed for 2021 under two categories:

1. **Maintenance and Operations** of the City’s network and infrastructure, systems and applications.

2. **Technology Projects** including system/application upgrades, enhancement of existing services, and implementation of new services that align with Council priorities.

This does not include the management team unless specifically allocated for project management activities. The Management Team will continue to manage overall expectations of the work plan and help prioritize as unexpected priorities or workload items are identified. The 3% balance is being preserved as contingency for unplanned events or new priorities that may evolve through the year.

Attachment B provides a list of Medium to X-Large IT projects by quarter for 2021. **Attachment C** provides a brief description of these projects. Key work plan items by team are summarized below.

Enterprise Applications:

1. **Munis Upgrades and Implementations (X-Small to X-Large)** for 2021 accumulate to an estimated 1200 hours (0.75 FTE). This includes upgrades and the implementation of several new modules. The upgrades include the *first* major upgrade of the Munis System as well as ExecuTime, Tyler Content Manager (TCM) and Tyler Cashiering. In addition, IT will support HR's implementation of NeoGov to replace the Applicant Tracking module in Munis in Q2.
2. **Implementation of Microsoft Teams to Replace Skype for Business (Large):** Skype for Business will be discontinued this summer by Microsoft. The EA and NDS teams implemented Microsoft Teams citywide in April.
3. **EnerGov Upgrade to HTML5 version (Large):** This project will have a high customer impact due to the change in the "look and feel" of the application. Go-Live is planned in Q3.
4. **City Website Stabilization (Medium):** This is likely to continue through Q2 as more users adopt the new website. The new website needs to be migrated to an ongoing "Maintenance and Operations" mode with oversight by a Governance Board, which has been established.

Geographic Information Systems:

1. **CityHub GIS Platform Upgrade Phase 2 (Medium to Large):** CityHub is the City's new web-based solution to create, view, deploy, and share interactive maps, apps, data, and reports on a centralized hub. This project was launched in 2019 and closed out in Q1 of this year.
2. **Lucity (Enterprise Asset Management) Upgrade (Large):** This is the Lucity system's second major upgrade and includes new functionality such as a vehicle scheduling/reservation management.
3. **Community/Inclusion Data Dashboard (Small to Medium):** The GIS Team will provide technical and data services to CMO and other City Departments for the development of new public facing dashboards supporting the R-5434 initiative.
4. **Geo-Notification Application (Medium):** This is a new application enabling constituents to receive email notifications about new development activities in a defined area. A 3rd party solution from Tyler has been selected. Work on implementing this new application will begin in Q2.

Network and Desktop Services:

1. **City Network Refresh (X-Large):** This project was kicked off in 2020 and will be completed this year. This is the biggest IT project for 2021 and replaces all network and wireless equipment in all City buildings. This implementation will also improve Wi-Fi access for users. There is a high level of customer impact for this project. Service outages will be planned to minimize the impact as best as possible.
2. **Teams Implementation (Large):** Described above.
3. **Secondary Backup to MS Azure Cloud at KJC (Medium)** – This project was funded as a service package and was implemented in April. This implementation eliminates the secondary backup of the Azure Cloud environment to Texas and replaces it with an on-premise backup at the Kirkland Justice Center. This will yield a cost saving of approximately \$41,000 in 2021 and \$72,000 ongoing beginning in 2022.
4. **Streamlining weekly patching (Small):** The NDS team streamlined the weekly patching cycles to better align systems and applications with each other and reduce downtime for

customers. This has also reduced the load on IT staff weekly. This is a joint effort, across all teams in IT, and was also completed in April.

5. **Enhancements to data/system backups (Medium):** This has been completed. The initial results indicate an estimated annual savings of close to \$22,900. The improved backup solution allows us to restore from Azure, if there were a failure in hours/days rather than weeks/months.

Conclusion/Next Steps:

The IT Department will continue to provide quarterly updates to City Council with progress made in the following areas:

1. IT Service/Operations Management
2. IT Security Work Plan
3. IT Department Work Plan

Attachment A Incidents and Service Requests by Department

Definition of Incident

A disruption of IT Service that requires a fix

Definition of Service Request

A request for an IT service or product

Department	March Incidents	% Resolved within SLA	April Incidents	% Resolved within SLA
Boards and Commission	1	100.0%	1	100.0%
City Attorney's Office (CAO)	2	100.0%	1	0.0%
City Council	0	0.0%	6	100.0%
City Manager's Office (CMO)	10	100.0%	15	100.0%
Finance and Administration	46	93.5%	42	97.6%
Fire	17	95.0%	26	88.1%
Human Resources	14	100.0%	8	87.5%
Information Technology	31	100.0%	29	93.1%
Municipal Court	15	100.0%	27	100.0%
Parks and Community Services	15	100.0%	33	98.2%
Planning and Building Department	46	97.8%	76	100.0%
Police	32	96.9%	48	100.0%
Public Works	77	97.4%	89	96.6%
Total	307	97.4%	404	97.0%

Department	March Service Requests	% Resolved within SLA	April Service Requests	% Resolved within SLA
Boards and Commission	0	0	0	0.0%
City Attorney's Office	0	0	2	100.0%
City Council	0	0	1	100.0%
City Manager's Office	17	88.20%	27	77.80%
Finance and Administration	38	94.70%	34	97.10%
Fire	15	100.0%	10	100.0%
Human Resources	11	100.0%	18	100.0%
Information Technology	37	97.30%	49	95.90%
Municipal Court	9	100.0%	12	100.0%
Parks and Community Services	42	100.0%	29	100.0%
Planning and Building Department	38	94.70%	32	100.0%
Police	24	100.0%	23	100.0%
Public Works	64	98.40%	59	98.30%
Total	295	97.30%	297	96.60%

Project or Initiative		Estimated Hours	Team	FTE REQ	Budget Source	Type of Work	Level Of Effort (For IT)	Customer Impact (See Grid)
▼ Planned by Quarter Q1				Sum				
				5.62				
1	ArcGIS Enterprise City Hub Phase II		GIS	1.02	IT Operating	New Service	M	L
2	Backups		NDS	0.10	IT CIP	Maintenance/Patching/Upgrade	M	S
3	Electronic Signature		EA	0.20	Department CIP	New Service	M	M
4	ITSM Phase 2 - ITAM		IT	1.30	IT CIP	New Service	L	M
5	Laserfiche Implementation		EA	0.30	Department CIP	New Service	M	M
6	Munis Q1 SP		EA	0.00	IT Operating	Maintenance/Patching/Upgrade	M	M
7	Network Refresh Q1		NDS	1.13	IT CIP	Maintenance/Patching/Upgrade	XL	M
8	PC Replacements Q1		NDS	0.60	IT Operating	Enhancement	L	M
9	Penetration Testing		IT	0.15	IT CIP	Maintenance/Patching/Upgrade	M	XS
10	SIEM Solution Procurement		IT	0.63	IT CIP	Project/Planning	M	S
11	Telestaff PD Upgrade		EA	0.20	IT Operating	Maintenance/Patching/Upgrade	M	M
▼ Planned by Quarter Q2				Sum				
				8.36				
12	CMS Post-Implementation		EA	0.10	IT Operating	Enhancement	M	S
13	ArcGIS ArcMap / Pro Upgrade		GIS	0.25	IT Operating	Maintenance/Patching/Upgrade	M	M
14	ArcGIS Enterprise / Server Upgrade		GIS	0.63	IT Operating	Maintenance/Patching/Upgrade	L	S
15	Broadcast System Upgrade		DCOM	0.41	Other	Maintenance/Patching/Upgrade	M	L
16	Genetec Security Desk Upgrade		EA	0.10	IT Operating	Maintenance/Patching/Upgrade	M	S
17	Genetec Server Migrations		NDS	0.50	IT Operating	Maintenance/Patching/Upgrade	L	M
18	Geo-Notification App		IT	0.45	Department CIP	New Service	M	M
19	IFAS Sunset		EA	0.20	IT CIP	New Service	M	M
20	Lucity Upgrade		GIS	0.83	IT Operating	Maintenance/Patching/Upgrade	L	M
21	Migrate City to Teams		EA	1.05	IT Operating	New Service	L	L
22	Munis Q2 SP		EA	0.20	IT Operating	Maintenance/Patching/Upgrade	M	M
23	Network Refresh Q2		NDS	1.13	IT CIP	Maintenance/Patching/Upgrade	XL	M
24	PC Replacements Q2		NDS	0.60	IT Operating	Enhancement	L	M
25	Server OS Upgrades		NDS	0.38	IT Operating	Maintenance/Patching/Upgrade	M	L
26	SIEM Solution Implementation		IT	1.00	IT CIP	New Service	L	XS
27	VMWare 7 Upgrade		NDS	0.05	IT Operating	Maintenance/Patching/Upgrade	M	M
28	Vulnerability Assessment bi-annual		NDS	0.10	IT Operating	Maintenance/Patching/Upgrade	M	XS
29	Fuel App Replacement		EA	0.30	Department CIP	New Service	M	M
30	Zoom Direct to Granicus		EA	0.10	IT Operating	Enhancement	M	XS
▶ Planned by Quarter Q3				Sum				
				4.45				
31	ITSM Phase 3 - ITOM		IT	0.87	IT CIP	Enhancement	L	S
32	CIP Project Dashboard		GIS	0.18	IT Operating	Enhancement	M	M
33	AVL/Lucity		GIS	0.20	Department CIP	New Service	M	L
34	Fire Station 24 Onboarding		NDS	0.10	Other	New Service	M	XS
35	Fire Station 27 Design Phase		IT	0.10	Other	New Service	M	S
36	Lucity/GIS CityHub Integration		GIS	0.30	IT Operating	Maintenance/Patching/Upgrade	M	M
37	Munis Upgrade		EA	0.98	IT Operating	Maintenance/Patching/Upgrade	L	L
38	Network Refresh Q3		NDS	1.13	IT CIP	Maintenance/Patching/Upgrade	XL	M
39	PC Replacements Q3		NDS	0.60	IT Operating	Enhancement	L	M
▼ Planned by Quarter Q4				Sum				
				3.95				
40	Executime		EA	0.20	IT Operating	Maintenance/Patching/Upgrade	M	M
41	Energov Upgrade (All HTML)		EA	1.02	IT Operating	Maintenance/Patching/Upgrade	L	XL
42	Annual Risk Assessment		IT	0.25	IT CIP	Project/Planning	M	M
43	Energov GIS CityHub Integration		GIS	0.18	IT Operating	Enhancement	M	M
44	Geocortex Upgrade		GIS	0.43	IT Operating	Maintenance/Patching/Upgrade	M	M
45	Multifactor Authentication Project		IT	0.20	IT CIP	New Service	M	S
46	Munis Q4 SP		EA	0.25	IT Operating	Maintenance/Patching/Upgrade	M	M
47	Network Refresh Q4		NDS	1.13	IT CIP	Maintenance/Patching/Upgrade	XL	M
48	Tyler Cashiering SP		EA	0.20	IT Operating	Maintenance/Patching/Upgrade	M	M
49	Vulnerability Assessment bi-annual		NDS	0.10	IT Operating	Maintenance/Patching/Upgrade	M	XS

Size by Quarter

FTE Required

▼ Planned by Quarter	Sum
Q1	15.56
▶ Level Of Effort	Sum
XL	1.13
▶ Level Of Effort	Sum
L	1.90
▶ Level Of Effort	Sum
M	2.60
▶ Level Of Effort	Sum
S	0.50
▶ Level Of Effort	Sum
XS	0.19
▶ Level Of Effort	Sum
O&M	9.26
▼ Planned by Quarter	Sum
Q2	19.06
▶ Level Of Effort	Sum
XL	1.13
▶ Level Of Effort	Sum
L	4.60
▶ Level Of Effort	Sum
M	2.63
▶ Level Of Effort	Sum
S	1.26
▶ Level Of Effort	Sum
XS	0.19
▶ Level Of Effort	Sum
O&M	9.26
▼ Planned by Quarter	Sum
Q3	14.11
▶ Level Of Effort	Sum
XL	1.13
▶ Level Of Effort	Sum
L	2.44
▶ Level Of Effort	Sum
M	0.88
▶ Level Of Effort	Sum
S	0.33
▶ Level Of Effort	Sum
XS	0.08
▶ Level Of Effort	Sum
O&M	9.26
▼ Planned by Quarter	Sum
Q4	13.50
▶ Level Of Effort	Sum
XL	1.13
▶ Level Of Effort	Sum
L	1.02
▶ Level Of Effort	Sum
M	1.80
▶ Level Of Effort	Sum
S	0.23
▶ Level Of Effort	Sum
XS	0.07
▶ Level Of Effort	Sum
O&M	9.26

Planned IT Projects and Initiatives by Quarter

Project / Initiative	Brief Description	Customer
Quarter 1 2021		
Munis Q1 SP	Quarterly Service Package Upgrade for Munis	Enterprise
Telestaff PD Upgrade	Upgrade of Police module of Telestaff	Police
PC Replacements	Desktop and Laptop Replacements scheduled for Q1	Enterprise
LaserFiche Implementation	Implementation of SaaS Solution for Document Storage and Retrieval	Municipal Court
ITSM Phase 2 - ITAM	Implementation of module for IT Asset Management	IT
ArcGIS Enterprise City Hub Phase II	Final Configuration and Roll Out of Enterprise GIS Platform Upgrade	Enterprise
SIEM Solution Procurement	Procurement of Security Incident and Event Monitoring Solution	IT
Backups	Streamline backups and eliminate a secondary back of the Azure Environment in Texas	IT
Penetration Testing	Annual Penetration Test of external facing infrastructure and applications, and the City's website	IT
Network Refresh Q1	Replace aged equipment, increase performance and upgrade wireless	Enterprise
Electronic Signatures	Implementation of SaaS Solution for Electronic Signatures	Enterprise
Quarter 2 2021		
Genetec Server Upgrades	Upgrade of aged hardware at the KJC for the security system	Enterprise
Lucity Upgrade	Upgrade of Lucity Asset Management System	Enterprise
CMS Post Implementation	Stabilization and Governance of City's New Website	Enterprise
Vulnerability Assessment	Bi-annual assessment of known security vulnerabilities in the infrastructure	IT
Network Refresh Q2	Replace aged equipment, increase performance and upgrade wireless	Enterprise
SIEM Solution Implementation	Implementation of the Security Incident and Event Monitoring solution	IT
Geo-Notification App	Implementation of development/permit geo-notification application	Development Services
Broadcast System Upgrade	Upgrade of digital broadcast system components and software	IT
ArcGIS Enterprise / Server Upgrade	Upgrade of GIS Servers / and Enterprise Platform	Enterprise
Server OS Upgrades	Upgrades the operating systems on older servers to get current and secured	IT
Munis Q2 SP	Quarterly Service Package Upgrade for Munis	Enterprise
Microsoft Teams Migration	Migrations to Teams solution for Instant Messaging and Meeting	Enterprise
VMWare 7 Upgrade	Upgrade to current version. Provides security and feature enhancements	Enterprise
Genetec Security Desk Upgrade	Upgrade of version for Security Desk application	Facilities
IFAS Sunset	Archiving Data from deprecated application into reporting solution	Finance
PC Replacements Q2	Desktop and Laptop Replacements scheduled for Q2	Enterprise
ArcGIS ArcMap / Pro Upgrade	Upgrade of Desktop GIS clients	Enterprise
Fuel App Replacement	Replacing Phoenix Petrovend with new application	Public Works
Zoom Direct to Granicus	Record Council and Board Meetings directly to Granicus	Enterprise

Quarter 3 2021		
ITSM Phase 3 - ITOM	Implementation of software for IT day-to-day operations management	IT
PC Replacements Q3	Desktop and Laptop Replacements scheduled for Q3	Enterprise
Munis Upgrade	Major Version upgrade for Munis application	Enterprise
Network Refresh Q3	Replace aged equipment, increase performance and upgrade wireless	Enterprise
CIP Project Dashboard	Replaces current CIP suggest a project map with modern CityHub Dashboard	Public Works
Lucity/GIS CityHub Integration	Updating Lucity Map Views to use GIS City Hub maps	Enterprise
AVL/Lucity	Support AVL Program and integration with Lucity	Enterprise
Fire Station 24 Onboarding	New Fire Station technology needs	Public Safety
Fire Station 27 Design Phase	Fire Station 27 technology needs assessment	Public Safety
Quarter 4 2021		
Tyler Cashiering SP	End of Year Service Package for Tyler Cashiering application	Enterprise
Energov Upgrade (All HTML)	Major version upgrade for Energov moving from Silverlight to HTML 5	Enterprise
Network Refresh Q4	Replace aged equipment, increase performance and upgrade wireless	Enterprise
Munis Q4 SP	Quarterly Service Package Upgrade for Munis	Enterprise
Executime Upgrade	Upgrade of Executime version	Enterprise
Multifactor Authentication Pilot	Adding multi-level authentication at network login	Enterprise
Energov GIS CityHub Integration	Updating the Energov Webmap to use modern CityHub WebMaps	Enterprise
Geocortex Upgrade	Upgrade of GeoCortex Software and associated applications (GIS Browsers)	Enterprise
Vulnerability Assessment	Bi-annual assessment of known security vulnerabilities in the infrastructure	IT
Annual Risk Assessment	Annual Security and Risk Assessment based on industry standards	Enterprise