CITY OF COLUMBIA, ILLINOIS

ORDINANCE NO. 3069

AN ORDINANCE TO AUTHORIZE THE CITY OF COLUMBIA, ILLINOIS, TO ENTER INTO A SERVER REFRESH ESTIMATE AGREEMENT WITH REJIS COMMISSION OF ST. LOUIS, MISSOURI, TO PROVIDE INCREASED RELIABILITY AND AN EXTENDED LIFE TO THE CITY'S INFORMATION TECHNOLOGY SERVERS

Adopted by the
City Council
of the
City of Columbia, Illinois
this 7th day of October, 2013

Published in pamphlet form by
authority of the City Council
of the City of Columbia,
Illinois, this 7th day
of October, 2013

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WHEREAS, the City Council of the City of Columbia, Illinois ("City") has found and determined and does hereby declare that it is in the City's best interests and appropriate to consult with a company providing Information Technology (IT) services and solutions for the City's IT hardware and software;

WHEREAS, the City Council of the City selected REJIS Commission of St. Louis, Missouri ("REJIS") as an appropriate company to provide such services pursuant to the adoption of Ordinance No. 3021 on April 15, 2013;

WHEREAS, REJIS has recommended a solution to refresh the city's IT servers to a platform that provides increased reliability and an extended life to such IT servers, and the City Council agrees that such recommended solution should be implemented; and

WHEREAS, it is necessary and appropriate that this Ordinance be enacted for the purpose of authorizing the City to enter into a Server Refresh Estimate Agreement to implement the IT Server Refresh Program recommended by REJIS.

NOW, THEREFORE, BE IT ORDAINED, by the City Council of the City of Columbia, Illinois, as follows:

Section 1.   The recitals contained above in the preamble of this Ordinance are hereby incorporated herein by reference, the same as if set forth in this Section of this Ordinance verbatim, as findings of the City Council of the City of Columbia, Illinois.

Section 2.   The City Council of the City of Columbia, Illinois, does hereby authorize and direct the City Administrator to execute and deliver a Server Refresh Estimate Agreement, substantially in the form attached hereto, allowing for the implementation of Solution Option #3 as detailed in such Server Refresh Estimate Agreement as prepared by REJIS (and dated September 23, 2013), in as many counterparts as said City Administrator shall determine.

Section 3.   This ordinance shall be in full force and effect following its passage and publication in pamphlet form, as provided by law.

Alderman <u>Niemietz</u> moved the adoption of the above and foregoing Ordinance; the motion was seconded by Alderman <u>Mathews,</u> and the roll call vote was as follows:

YEAS: <u>Aldermen Ebersohl, Agne, Niemietz, Roessler, Huch, Mathews, Reis and</u>

<u>Holtkamp.</u>

NAYS: <u>None.</u>

ABSENT: <u>None.</u>

ABSTENTIONS: <u>None.</u>

PASSED by the City Council and APPROVED by the Mayor this 7th day of October, 2013.

_____
KEVIN B. HUTCHINSON, Mayor

ATTEST:

_____
J. RONALD COLYER, City Clerk

(SEAL)

STATE OF ILLINOIS   )
) SS
COUNTY OF MONROE   )

CERTIFICATE OF PUBLICATION

I, J. Ronald Colyer, certify that I am the duly elected and acting City Clerk of the City of Columbia, Illinois.
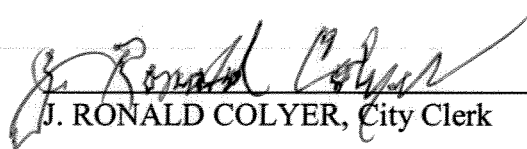
I further certify that on the 7th day of October, 2013, the Corporate Authorities of the City of Columbia, Illinois, passed and approved Ordinance No. 3069 entitled:

"AN ORDINANCE TO AUTHORIZE THE CITY OF COLUMBIA, ILLINOIS, TO ENTER INTO A SERVER REFRESH ESTIMATE AGREEMENT WITH REJIS COMMISSION OF ST. LOUIS, MISSOURI, TO PROVIDE INCREASED RELIABILITY AND AN EXTENDED LIFE TO THE CITY'S INFORMATION TECHNOLOGY SERVERS"

which provided by its terms that it should be published in pamphlet form.

The pamphlet form of Ordinance No. 3969, including the ordinance and a cover sheet thereof, was prepared, and a copy of such ordinance was posted in the Columbia City Hall, commencing on October 8, 2013 and continuing for at least ten (10) days thereafter. Copies of such ordinance were also made available for public inspection upon request in the office of the City Clerk.

DATED at Columbia, Illinois this 7th day of October, 2013.

J. RONALD COLYER, City Clerk

(SEAL)

STATE OF ILLINOIS   )
) SS

COUNTY OF MONROE   )
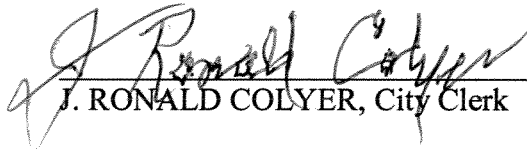
CERTIFICATE OF TRUE COPY

I, J. Ronald Colyer, hereby certify that I am the duly elected and acting City Clerk of the City of Columbia, Illinois, and as such I am the keeper of the books, records, files and corporate seal of said City.

I do further certify that Ordinance No. 3069, entitled:

"AN ORDINANCE TO AUTHORIZE THE CITY OF COLUMBIA, ILLINOIS, TO ENTER INTO A SERVER REFRESH ESTIMATE AGREEMENT WITH REJIS COMMISSION OF ST. LOUIS, MISSOURI, TO PROVIDE INCREASED RELIABILITY AND AN EXTENDED LIFE TO THE CITY'S INFORMATION TECHNOLOGY SERVERS"

to which this certificate is attached, is a true, perfect, complete and correct copy of said ordinance as adopted at a regular meeting of the Columbia, Illinois, City Council held on the 7th day of October, 2013.

IN WITNESS WHEREOF, I have made and delivered this certificate for the uses and purposes hereinabove set forth this 7th day of October, 2013.

J. RONALD COLYER, City Clerk

(SEAL)

REJIS

Connecting People and Information

City of Columbia
Server Refresh Estimate

Prepared For: City of Columbia

Prepared By: REJIS Commission
Date: September 23, 2013

Server Refresh for Columbia

Introduction

This is a proposal to provide Columbia with a solution to refresh servers to a platform that provides increased reliability and an extended life. In the IT world, many of Columbia's existing servers are considered outdated as compared to many corporations who implement refresh programs every 3 -5 years, some of Columbia's servers are 10 -11 years of age, current backup and disaster recovery solutions are antiquated, which present the potential for a catastrophic failure, one that may be unrecoverable.

The cost of this project may appear to have ballooned due to Columbia not having implemented a server refresh program along with not maintaining software maintenance contracts.

REJIS recommends that we leverage virtualization to help Columbia reconstruct their infrastructure to meet current IT standards.

In March of 2013, REJIS provided three (3) possible solutions for consideration. The City of Columbia has notified REJIS of their intent to pursue option # 3 below. (Replace servers using virtualization, implementing High Availability in a clustered environment consolidating servers at City Hall and the Police Department.)

Solution Option #1 (rejected)

- Replace servers 1 for 1 at City Hall and the Police Department. This is purely a physical solution, 1 server for 1 physical server.

Solution Option #2 (rejected)

- Replace severs using virtualization over a 2 – 3 year phased approach getting to Solution 3.

Solution Option #3 (approved)

- **Replace servers using virtualization, implementing High Availability in a clustered environment consolidating servers at City Hall and the Police Department. City of Columbia will improve Wide Area Network (WAN) Connectivity between sites (City Hall, Police and Public Works) to compliment this solution. The improvement of the WAN is a key component to the success of this project.**

Enclosed in this proposal are a list of benefits of virtualization, a diagram illustrating the network typology, complete pricing list of hardware and software required and a detailed explanation of man-hours to facilitate the above solution. **Pricing is based on quotes from different vendors and are subject to change based on availability and time of quotes.**

Benefits of Virtualization:

Server virtualization has been a game-changing technology for IT, providing efficiencies and capabilities that just aren't possible when constrained within a physical world. There are many benefits an IT organization or business when choosing to implement a server virtualization strategy.

1. **Extend the life of older applications:**
   Allows a stable platform for Legacy applications running on outdated hardware. By virtualizing and encapsulating the application and its environment, you can extend its life, maintain uptime, and finally get rid of the old Pentium machine hidden in the corner of the data center.

2. **Improve disaster recovery:**
   Virtualization offers an organization four important components when it comes to building out a disaster recovery solution.

   A. Virtualization removes the dependency on a particular hardware vendor or server model;

   B. A disaster recovery site no longer needs to keep identical hardware on hand to match the production environment;

   C. IT can save money by buying cheaper hardware in the DR site since it rarely gets used; and

   D. Consolidating servers down to fewer physical machines in production, an organization can more easily create an affordable replication site.

3. **Increase uptime:**
   Most server virtualization platforms now offer a number of advanced features that just aren't found on physical servers, which helps with business continuity and increased uptime. Though the vendor feature names may be different, they usually offer capabilities such as live migration, storage migration, fault tolerance, high availability, and distributed resource scheduling. These technologies keep virtual machines chugging along or give them the ability to quickly recover from unplanned outages. The ability to quickly and easily move a virtual machine from one server to another is perhaps one of the greatest single benefits of virtualization with far-reaching uses.

4. **Faster server provisioning**
   Server virtualization enables elastic capacity to provide system provisioning and deployment at a moment's notice. You can quickly clone a gold image, master template, or existing virtual machine to get a server up and running within minutes. Remember that the next time you have to fill out purchase orders, wait for shipping and receiving, and then rack, stack, and cable a physical machine only to spend additional hours waiting for the operating system and applications to complete their installations.

5. **Energy Saving**
   Migrating physical servers over to virtual machines and consolidating them onto far fewer physical servers means lowering monthly power and cooling costs in the data center.
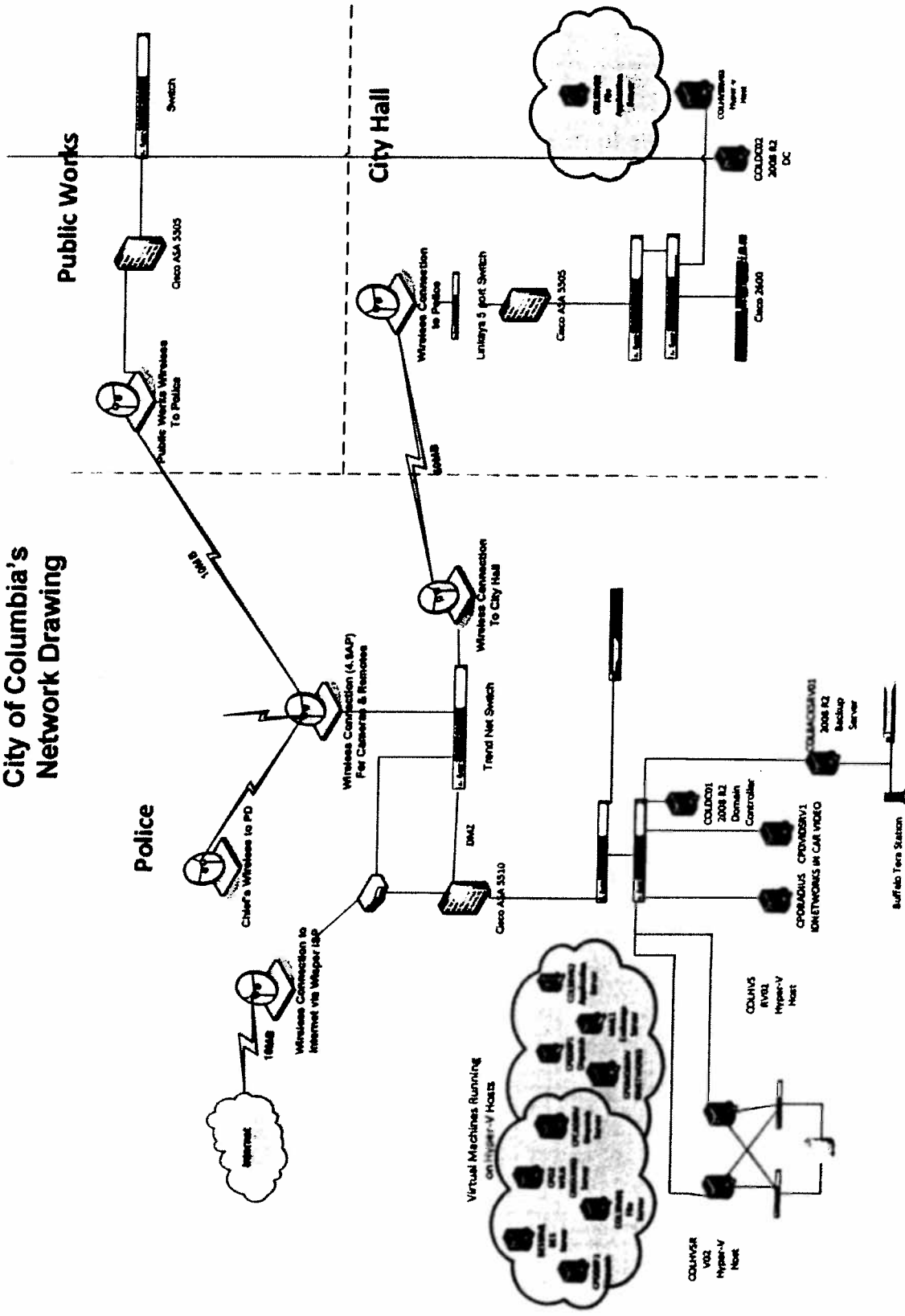
6. **Reduce the data center footprint:**
   Migrating physical servers over to virtual machines and consolidating them onto far fewer physical servers means reducing the physical data center footprint; therefore, enabling the reallocation of physical space resources.

City of Columbia's
Network Drawing

Public Works

Police

City Hall

Switch

Cisco ASA 5505

Public Works Wireless
To Police

Wireless Connection (4.9AP)
For Cameras & Remote

Chief's Wireless to PD

Wireless Connection to
Internet via Whisper HAP

Internet

Wireless Connection
To City Hall

Wireless Connection
to Data

Linksys 5 port Switch

Cisco ASA 5505

Cisco 2600

Trend Net Switch

DMZ

Cisco ASA 5510

COLDC02
2008 R2
DC

COLHYPERV4
Hyper-V
Host

COLDC01
2008 R2
Domain
Controller

CPDVIDSRV1
IONETWORKS IN CAR VIDEO

CPDRADIUS

COLBACKUPSRV01
2008 R2
Backup
Server

Buffalo Tera Station

Virtual Machines Running
on Hyper-V Hosts

COLHYV5
RV01
Hyper-V
Host

COLHYV5R
V02
Hyper-V
Host

Solution #3 Fix CH & PD Connection

ITEM	Description	Dell Quote #	Type	Pricing	Quantity	Total	Revised Total	Increase/Decrease	Quote#	Verified	Description
Backup and Disaster Recovery											
Backup Exec 2012	Backup Software	Estimate	Software	$4,282.16	1	$4,282.16	$5,159.88	($877.72)	218491	18-Sep	Paragon Micro
6Gb SAS HBA, Dual Port	HBA Card for Tape Library or DAS	644514997	Hardware	$163.99	1	$163.99	$0.00	$163.99			Included in Backup Server Quote
PowerVault 124T with 10 Tapes	Backup Library	643844983	Hardware	$4,987.45	1	$4,987.45	$5,233.81	($246.36)	662991108	18-Sep	LTO5 Tape Library
Iomega StorCenter	Backup to Disk	CDWG 2798096	Hardware	$300.00	1	$300.00	$651.18	($351.18)	663498021	18-Sep	Buffalo TeraStation
						$9,733.60	$11,044.87	($1,311.27)			
Storage and Storage Network											
MD3200i - SAN	iSCSI - SAN	644514962	Hardware	$10,539.05	1	$10,539.05	$11,892.47	($1,353.42)	663015055	18-Sep	Storage
PowerConnect 5524, 24 GbE Ports	iSCSI Storage Switches	644514992	Hardware	$1,319.45	2	$2,638.90	$4,819.10	($2,180.20)	663499214	18-Sep	Storage Switches 6224
	Ethernet Cables					$0.00	$500.00	($500.00)	Estimate		New item
						$13,177.95	$17,211.57	($4,033.62)			
Operating Software Licensing											
Microsoft CALS for Server 2008/2012	CALS for Server 2012	CDWG	Software	$29.92	100	$2,992.00	$3,042.00	($50.00)	663498021	18-Sep	100 Windows CALs
OS License (Windows Server 2012 Standard)	Server OS	644445368	Software	$643.42	5	$3,217.10	$1,930.26	$1,286.84	661228574	18-Sep	3 - WINSVRSTD
OS License (Windows Server 2012 Data Center)	Server OS	644515001	Software	$3,506.81	3	$10,520.43	$10,520.43	$0.00	661571498	18-Sep	3 - WINSRVDC
						$16,729.53	$15,492.69	$1,236.84			
New Hardware											
Server Rack Switches									All Dell Servers below comes with 5 year warranty		
PE R420 - New Backup Server	3 Year Pro Support, No OS	644514981	Hardware	$5,195.75	2	$0.00	$1,500.00	($1,500.00)	Dexon Computer		2 - Cisco WS-C2960G-24TC-L
PE R320 - DC	3 Year Pro Support, No OS	644514949	Hardware	$2,431.03	1	$5,195.75	$5,212.64	($16.89)	662991114	18-Sep	R420 - Backup Server
PE R320 - DC	3 Year Pro Support, No OS	644514949	Hardware	$2,431.03	1	$2,431.03	$2,487.83	($56.80)	662991111	18-Sep	T320 - DC at City Hall - Tower
PE R620 - Hyper-V Host	3 Year Pro Support, No OS	644445363	Hardware	$8,135.19	1	$2,431.03	$2,441.00	($9.97)	661228555	18-Sep	R320 - DC at PD
PE R620 - Hyper-V Host		644445363	Hardware	$8,135.19	1	$8,135.19	$8,205.89	($70.70)	663228613	18-Sep	R720 - Temp City Hall Host
					2	$16,270.38	$14,859.74	$1,410.64	663228608	18-Sep	R720 - Host for Cluster
						$34,463.38	$34,707.10	($243.72)			
					New Solution Cost	$74,104.46	$78,456.23	($4,351.77)			

Estimated New hardware solution = $78,456.23. Pricing has been refreshed as of 9/18/2013. Pricing is based on quotes from different vendors and are subject to changes based on availability, project design changes, market conditions and time of quotes. The City of Columbia intends to purchase all hardware through the Illinois state bid site, not through REJIS. Once the City of Columbia has made the purchases REJIS will ensure that hardware orders are correct.

Solution Option #3 – Manpower Estimates

The following is an estimated number of hours to replace the current physical servers with new virtualization technology, based on above hardware specifications, and the implementation of a High Availability solution that consolidates servers at City Hall and Police Department. The REJIS approach is comprised of three distinct steps:

- **Step 1** - Hours to receive, install, set up & test new equipment - **"Estimated"** 122 hrs. X $73.00 = **$8906.00**
- **Step 2** - Hours to virtualize (P2V) old servers to new – **"Estimated"** (8 hrs. per server) 11 X 8hrs = 88 hrs. X $73.00 = **$6424.00**
- **Step 3** - Hours to migrate servers, upgrade Operating Systems, etc. **"Estimated"** (35 hrs. per server) 11 X 35hrs = 385hrs. X $73.00 = **$28105.00**

Estimated Total Hours – to implement the new solution, virtualize most existing physical and migrate/upgrade system Operating Systems = **$43,435.00**. A complete Work Break-Down Structure (WBS) is available for more detailed justification of estimated hours.

Total cost for REJIS labor support assistance with Solution #3 = $43,435.00

"Disclaimer" – Again all hours are estimates only. REJIS will only bill for the exact number of hours used for implementation.

Assumptions:

- City of Columbia will improve Wide Area Network (WAN) Connectivity to a minimum 1Gig level connection speed between sites (City Hall, Police and Public Works) to compliment this solution. The improvement of the WAN is a key component to the success of this project.
- Microsoft Exchange Upgrade. The current Microsoft Exchange system will be migrated from physical to virtual as is. Exchange will remain the same version as currently installed. Future Exchange upgrades should be planned as a separate scope of work.
- Existing Systems (HTC telephone system, ID Networks, Spring Brook financial, ProQA, etc.) and new system upgrades, to newer versions (systems that have possibly been installed since the last site audit) are excluded from this scope of work and should be planned as a separate scopes of work.
- All work is assumed Monday – Friday, during normal business hours (8:00 AM – 5:00 PM) after hours or weekend work could result in additional hours or at increased rates.
- Some outages are expected during the virtualization process. Customer will be responsible for system notifications to end users. REJIS will work with the City of Columbia to minimize these outages and will assist with outage estimations and coordinate activities as requested.

Concerns, risk, exclusions to this project:

- Current Data Center or Server room capacity capabilities could limit progress or cause delays. (Example – inadequate power or cooling, inadequate space to install new equipment, access to areas as needed, etc.)

Proposal Agreement

This proposal is valid for forty-five days from the issuance date.

Albert Hudzik **City Administrator** **City of Columbia, IL**	**William Powell, Jr., Ph.D.** **General Manager** **REJIS**
Signature	_Signature_
Date	9-2 5-13 _Date_