

EDGEWATER

Infrastructure Review for



JONESBORO
Arkansas

September 15, 2015



AGENDA

- Introductions
- Presentation
 - Project Objectives
 - Project Approach
 - Summary of Major Findings
- Next Steps



Project Objectives

- Review technology landscape for potential issues (e.g., Telephony, infrastructure, and general infrastructure security).
- Assess The City's infrastructure against best practices as they pertain to the architecture and overall security.
- Assess people, policies, and procedures within the IT department.

Conflicting Information

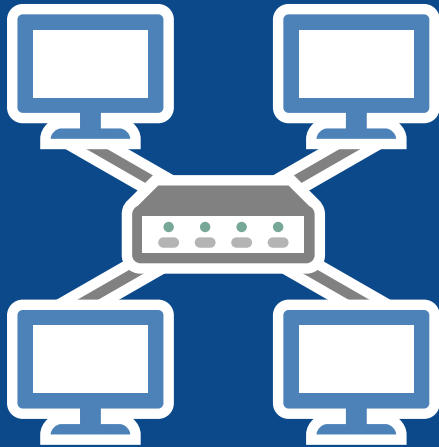
- Documentation, interviews, and observations were cross checked with each other
- Some of the information gathered is simply anecdotal and could not be validated; however, it was included if those observations were consistent across departments



Project Approach

Tasks	Steps
Assess enterprise infrastructure	<ul style="list-style-type: none">• Review current and planned IT and business projects• Provide a review of the setup and configuration of the infrastructure including:<ul style="list-style-type: none">– Random review of up to 10 servers (6 physical and 4 virtual)– Random review of up to 10 workstations and 10 laptops– Random review of up to 5 networking devices– Sampling of the existing Telephony system (Edgewater will review contractual Service Level Agreements (SLA's), End users devices (up to ten (10)), and associated design and setup)• Review the methodology for remote access and authentication• Review IT policies and procedures
Survey the business needs and how IT systems and tools support them	<ul style="list-style-type: none">• Enables a clearer understanding of how the business is supported by technology, and where that support is delivered both from a city and end user perspective. This will include IT staffing levels and skill sets.

IT Infrastructure Review



- **Overall Impressions**

- High User to IT ratio
 - Great system availability for that ratio
- IT knowledge is imbedded in individuals rather than in policies and procedures
- Inexperienced IT employees with an aptitude to learn
- Lack of planning for projects and training
- Heavy reliance on 3rd party for application and phone system management

- **Recommendations**

- Detailed findings and recommendations were provided to the city
- IT began addressing the items listed in the detailed findings immediately
- This presentation is a summary only



Legend

The following slides are categorized by priority of risks and functional groups.

Risk	Risk Definition
Red	High risk – requires immediate remediation
Yellow	Medium risk – less urgent requirement for improvement
Green	No risk – current state is sufficient to support the business

Area	Description
Physical	Anything that relates to the physical aspect of the datacenter and IT facilities. For example, IT closets, door locks, cabling, fire suppression, alarms, etc...
Administrative	Items related to running of the IT environment and IT organization. For example, licensing, processes, warranty, etc...
Technical	Items related to the technical side of the IT environment. These items can be broken down into the following categories: networking, systems, backups, operating system versions, storage, etc. For example, the network device configuration, monitoring server, etc...



Executive Summary - Physical

Description	Status	Notes
Security	Green	The physical security of the main city server room is good, and there is video monitoring of the main city server room and the Disaster Recovery (DR) Site
Equipment	Green	Cisco is a good choice for routers and switches, and the PCs are being refreshed on an appropriate lifecycle
Networking Equipment	Yellow	Some of the Cisco networking equipment is old / End of Life (EoL) <u>This has been addressed since our review.</u>
Business Continuity / Disaster Recovery	Yellow	The UPS systems at the DR site are not connected to the network. No orderly shutdown would occur in the event of a power failure; however, there is a generator to supply power <u>This has been addressed since our review.</u>
Disaster Recovery Site	Red	The server room in the DR site is protected from potential water leaks by a piece of plywood <u>This has been addressed since our review.</u>



Executive Summary - Administrative

Description	Status	Notes
System Availability	Green	Despite having a small group and a high user to IT ratio, IT does keep mission critical systems available
Computer Usage Policies	Green	New users do go through an orientation process that exposes them to computer and phone usage policies
Remote Connectivity	Yellow	Remote users report recurring phone/network issues. This highlights a dependency on the communications vender (Ritter)
User Training	Yellow	Many departments would like more training on various systems, including Fax, Relativity, RecTrack, MS Office, and website
After hours support	Yellow	Some users (fire department, etc.) report that after hours tickets wait until next business day even on Friday evenings
Help Desk	Red	Having the ticket system is good, but users want to be able to call IT. For instance, when a PC won't boot, they have to have another user submit a ticket on their behalf. <u>This has been addressed since our review.</u>
Relativity	Red	The dependence on the Relativity suite is a serious concern given that the organization is very small



Executive Summary - Administrative

Description	Status	Notes
Policies and Procedures	Red	<p>There are few policies and no formal procedures in the IT department.</p> <ul style="list-style-type: none">• Equipment operating system update schedule• Change control process• Enterprise software update (MS Office, Relativity, etc.)• Help Desk (triage, after hours, service level, remote access)• Server update and security settings• Active Directory (AD) setup and user security• PC setup• Etc.
IT Staff Training	Red	<p>The IT department employees are inexperienced; therefore, they need appropriate training classes to enhance their skillset to support the city. <u>This is currently being addressed. Training has begun.</u></p>
Planning	Red	<p>There is a list of projects, but no plan, timeframe, cost, etc. There should also be a plan for IT staff development. Policies and procedures will help with this process, because there will be a standard schedule to use when planning projects and training</p>



Executive Summary - Technical

Description	Status	Notes
Enterprise Software Updates	Yellow	Fax, Relativity, RecTrack, Microsoft Office, etc. Some of these systems have not been upgraded in quite some time.
WSUS	Red	The Windows Server Update Services (WSUS) is not proactively monitored. 252 systems present in the domain were not present in the WSUS console <u>This has been addressed since our review.</u>
Antivirus	Red	215 systems present in the domain were not present in the AV console
Backup System	Red	Backup system does not have open file option nor SQL agent. Some PST and SQL MDF/LDF files are skipped. There are also Volume Shadow Copy Service (VSS) errors. <u>This is currently being addressed.</u>
FAX Server	Red	The configuration of the current fax systems is not following best practices
AVL	Red	Automatic Vehicle Location (AVL) system issues need to be addressed
Network Security	Red	Security issues were detailed to IT, and they are working on the issues. These could be exploited, so they are not detailed here

Next Steps



Next Steps

- **Begin training IT staff now**
 - Establish base knowledge to accept knowledge transfer during remediation
- **Create a remediation plan for the network**
 - Secure the network
 - Align the city with industry best practices
 - Upgrade hardware that is at the end of life
 - Upgrade network equipment operating software to the latest version
 - Configure IDS/IPS
- **Ensure all systems are in the Antivirus console and WSUS**
 - Actively monitor the systems
- **Correct backup errors and configuration issues**
- **Create IT policies and procedures**
- **Evaluate moving to the latest version of Microsoft Office**



Thank You & Next Steps

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