

CITY OF DELRAY BEACH
INFORMATION TECHNOLOGY DIVISION

ENTERPRISE TECHNOLOGY
PLAN
FY 2011-2015



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**ENTERPRISE TECHNOLOGY
PLAN
FY 2011-2015**

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CITY OF DELRAY BEACH



100 N.W. 1st AVENUE • DELRAY BEACH, FLORIDA 33444 • 561/243-7000



December 21, 2010

To The Honorable Mayor and City Commission
City Manager
City Staff and Employees
Citizens and Friends of Delray Beach

Ladies and Gentlemen:

The Information Technology (IT) Division is proud to present its Enterprise Technology Plan for Fiscal Years 2011-2015. The plan is unique as it is four plans brought together that creates the overall Enterprise Technology Plan. Within this plan, there are goals and objectives, observations and recommendations, along with schedules and list of figures. It covers IT processes and techniques. The plan is result orientated and directs our decision-making. It utilizes methods and processes that deliver a usable and stable plan with fewer problems and unforeseen complications. Furthermore, it gives insight about the IT Division's accomplishments, challenges, resolutions, and recommendations for the future to the senior executive team and the City Commission. This Enterprise Technology Plan consists of four individual plans that focus on and compliment the City goals and objectives as set forth by the City Commission and staff at their annual leadership and goal-setting sessions. These four plans are as follows:

1. Strategic Plan

This plan is a written statement to guide and direct our decision-making process as we balance the demands of our mission, our employees, and our customers. It is written to help forecast and anticipate the future growth and direction of technology. The plan provides a statement of our mission and ultimately of our vision, and describes the goals and objectives of our stated mission.

2. Tactical Plan

This plan is a detailed assessment of the current organization, facilities, infrastructure, hardware, software, website development and business interruption/continuity. This plan is necessary to determine the actions needed to meet the goals of the Strategic Plan. The evaluation process should be completed prior to the end of each calendar year so that the recommendations developed during the evaluations will be incorporated into the budgeting process of the forthcoming year. The Tactical Plan describes our observations and recommendations for the forthcoming budget year.

3. Business Interruption/Business Continuity Plan

The City provides many services that are vital to the health, safety and welfare of its citizens. It is therefore essential that IT systems be fault tolerant, with redundant networks that are capable of supporting critical services under even the most adverse conditions. Some conditions, such as power outages and equipment failures, are generally short term in duration and are addressed in the Business Interruption (Short-Term) Plan. Other conditions, including severe storms that could result in destruction of equipment and facilities, are generally longer in duration and are addressed in the Business Continuity (Long-Term) Plan.

4. Annual Project Work Plan

Each year, the IT Division prepares an annual time-phased schedule of all projects, with each project broken down into detailed tasks. This work plan enables management to convey a reasonable schedule of work to operating departments so that the department directors can anticipate when individual projects will be completed. Monthly updates to the plan keep management advised as to the status of each project.

EXECUTIVE SUMMARY

Fiscal Year 2009-2010 Accomplishments

The IT Division accomplished the following major projects in FY 2009-2010:

- Received 5th place in the 2009 Digital Cities Award from the Center for Digital Government and the National League of Cities (NLC) for cities with a population from 30,000 to 75,000 (National Recognition). In addition, we received first place in 2005, 2006, 3rd place in 2007, and 8th place in 2008.
- The City of Delray Beach CIO was featured on the cover of SC Magazine in July 2010 (a national technical publication), for an article on Virtual Reality. In addition, the CIO was featured in a full-page “On the Spot” article for the local newspaper in August 2010.
- Updated Exchange Server version to 2007.
- Updated VMware to version 4.0.

- Exchange 2007 now runs on VMware.
- Updated SQL version to 2010.
- Updated Window Server OS version to 2008.
- Upgraded SunGard Public Safety application software to Version 7.0.1.0.01 with no downtime registered by any department.
- Digitalized and archived over 100 years worth of the Delray Historical Society documents and photos.
- Implemented an IP camera solution for City Hall.
- Setup a live broadcast Beach Cam that is directly connected to our network.
- Updated the City Commission meeting system to allow live viewing of agenda items on Mac and Linux operating systems.
- We completed the non-public fiber loop from City Hall to the ESD complex. This loop enables us to keep the main ESD facilities running by automatically rerouting communications if one of the fiber optic lines in the loop is severed.
- Website improvements
 - Incorporated social media outlets for the City on Twitter, Blip, and YouTube.
- In conjunction with the Police Department, the IT Division has improved the scheduling of Police IT initiatives as they impact the IT Division work schedule.
- Replaced 61 PCs and 4 printers, procuring cost-effective solutions and kept the City's repair and replacement expenditures below budget.
- We purchased and implement a new archiving email search engine for public requests.
- We purchased and implement a new TriGeo Security Information & Event Management (SIEM) system. This solution encompasses both the physical and virtual environments from firewalls to anti-virus, basically the entire network.
- We have connected to the LambdaRail through Palm Beach County's fiber that increased our Internet access from 3.5 megabits to 100 megabits.

Major Projects in Process (FY 2009-2010)

- Implementing a new OSSI Public Safety environment with SAN unites at two locations (City Hall and the Police Department).
 - VMware failover
- We are developing a new website look and feel by utilizing Drupel software for the future needs of the City.
- We are evaluating the feasibility of switching our financial system from the IBM iSeries to a PC-based network system.

Major Improvement Recommendations (FY 2011-2015)

- **Network Transmission Projects:** We recommend continuing to upgrade the network backbone infrastructure with 10-gigabit switches and the rest of the network infrastructure with switches that will support 1 gigabit to the desktop. These improvements will prepare our systems for the future transmission of large GIS files and continuing e-government activity.
- **Cost Efficiency Projects:** We recommend an evaluation of the IBM hot-site back-up to determine the most cost-effective and efficient equipment solution for the City's back-up (disaster recovery) needs. In addition, we may be able to cut costs and have an effective Disaster Recovery plan in place by utilizing the LambdaRail system. Please see the **Disaster Recovery/System Redundancy Projects** bullet for more information.
- **Disaster Recovery/System Redundancy Projects:** We are looking into utilizing the Florida LambdaRail network (a fiber optic network that runs throughout Florida and that is connected to the national fiber optic network) as connectivity to a secondary redundant site that would be located in northern Florida or another state.
- **911 Operations:** We are currently implementing a new 911 operations to a PC-based network system. Once done, we could offer to our two neighboring cities (Boca Raton and Boynton Beach) the possibility of a tri-city effort, utilizing the South County Cooperative. Such an initiative would give the cities the significant advantage of being able to provide back-up operations for each other.

In addition, a PC-based 911 system should provide cost savings to the City, as it would enable us to replace our current IBM iSeries. The PC-based system should reduce or eliminate the need to re-key reports from officers, since they would be able to key in their own reports online using the PC-based network.
- **E-Government Initiatives:** We recommend undertaking the following e-government projects:
 - In conjunction with the Police Department, an evaluation of the feasibility of paying parking tickets through the Internet or by an Interactive Voice Response (IVR) system.

Acknowledgments

The IT Division would like to express its appreciation to the Finance Director, City Manager and City Commission for their continued input and support of the IT staff and the technological initiatives discussed in this report. This support has resulted in significant improvements in the overall state of our computer and network systems.

This report could not have been produced without the valuable input from other IT personnel, Telecommunications Manager, and the Engineering Department personnel. Their input was extremely useful in identifying current issues, enabling us to assess possible improvements and then to develop recommendations for resolution.

Respectfully Submitted,



Guy Buzzelli, CIO

STRATEGIC PLAN

STRATEGIC PLAN

The **Strategic Plan** is a written statement that helps guide our decision-making process as we balance the demands of our mission, our employees, and our customers. We must anticipate the future growth and direction of technology if we are to be successful in meeting forthcoming technical challenges.

1. VISION STATEMENT

The **Vision Statement** defines the image of what we want the Information Technology (IT) Division to be. Our Vision Statement is:

To become a model IT center that provides reliable, cost-effective and efficient services that consistently meet or exceed the expectations of user departments in maintaining their internal operations and their delivery of information and services to their customers.

2. MISSION STATEMENT

The **Mission Statement** is a statement of purpose. It identifies what we do, how we desire to do it, and for whom, in order to attain our ultimate vision. Our Mission Statement is:

To strive consistently to provide up-to-date, reliable, efficient and professional IT equipment and services to enable departments to operate at optimum efficiency and to promote both internal and external customer satisfaction.

3. GOALS AND OBJECTIVES

Goals are results-oriented and represent desired outcomes. Objectives define the tasks that are necessary to achieve the goals. The following paragraphs describe the IT Division's goals and objectives.

a. ORGANIZATION

Goal

To maintain an organization that promotes the highest level of technical expertise, provides at least one level of back-up for every critical task, and provides adequate resources for effective completion of project assignments within time limits acceptable to our customers.

Objectives

- Review the *current* organization chart of the IT Division.
- Review individual positions, salaries and benefits, technical training needs, individual employee performance, personnel inequities, restrictions, bottlenecks and other support needs or issues.
- Prepare recommendations based on observations.

- Prepare a *proposed* organization chart of the IT Division.

b. FACILITIES AND WORK ENVIRONMENT

Goal

To maintain facilities and work environment capable of (a) preserving, protecting and accommodating IT equipment, and (b) providing appropriate personnel workspace that facilitates efficient performance and promotes employee pride in the work environment, thus minimizing costly employee turnover and maintaining high morale within the division.

Objectives

- Review present facilities, support systems, workspace environment, work requirements, equipment requirements and turnover statistics.
- Prepare recommendations from observations.

c. HARDWARE INFRASTRUCTURE

Goal

To maintain a cost-effective hardware infrastructure with a reliable midrange computer combined with a reliable PC network that provides a high level of technical performance, security, effectiveness of operations and redundancy, and that has sufficient capacity to provide for realistic growth over the five-year plan period.

Objectives

- Prepare charts of the *current* design of the infrastructure system.
- Evaluate the infrastructure and identify problems or inefficiencies within the current system (these might include such items as system security defects, transmission bottlenecks or outdated technology, as well as the inability to handle projected needs).
- Prepare recommendations from observations.
- Prepare charts of the *proposed* design of the infrastructure system.

d. COMMUNICATIONS SYSTEM INFRASTRUCTURE

Goal

To maintain an effective and secure communications system infrastructure that is efficient; that includes reliable voice, video and data transmission; and that ensures adequate redundancy for emergency services.

Objectives

- In conjunction with the Telecommunications Manager, prepare a diagram of the *current* telecommunications infrastructure showing all internal and external voice, video and data transmission devices and media.

- In conjunction with the Telecommunications Manager, evaluate the current infrastructure and identify problems or inefficiencies within the system.
- Prepare recommendations from observations.
- Prepare a chart of the *proposed* design of the system infrastructure.

e. OPERATING SYSTEM SOFTWARE/USER APPLICATIONS SOFTWARE

Goal

To maintain operating system software and user applications software at the latest version and release level to provide the most reliable overall user technical performance, consistency, operational efficiency and customer satisfaction; to ensure that all user licenses are up to date; and to evaluate all proposed changes to our software inventory for the upcoming year.

Objectives

- Update the inventory listing of all operating system and user application software, noting the current version and release level, and verify compliance with appropriate licensing requirements.
- Evaluate the final inventory listing of all operating system and user application software.
- Prepare recommendations from observations.

f. WEBSITE PRESENCE

Goal

A quality web presence that facilitates public access, civic engagement, rapid and accurate dissemination of information, and execution of future e-government initiatives for the benefit of the general public, those who do business with the city, and city staff.

Objectives

- Adapt to ever-changing requirements through innovative application of all appropriate web technologies.
- Assure that content contributors are well trained and supported.
- Facilitate continuous improvement by providing superior design, development, analytic, editorial, and infrastructural resources.
- Prepare recommendations based on observations.

g. GEOGRAPHIC INFORMATION SYSTEM

Goal

To assist in the development of a Geographic Information System (GIS) Plan to bring together data and geographic components which serve the City's needs for location-based data and which increase the usefulness of existing applications.

Objectives

- In conjunction with the Engineering Department, evaluate and identify restrictions, bottlenecks and inefficiencies in the GIS system.
- Prepare recommendations based on observations.

h. BUSINESS INTERRUPTION PLAN/BUSINESS CONTINUITY PLAN

Goal

To maintain an up-to-date Business Interruption Plan (short-term disruption and recovery) and Business Continuity Plan (long-term disruption and recovery) to ensure that IT facilities, hardware, infrastructure, software systems and data files are physically protected and insured, and can be recovered or restored in a timely manner to the satisfaction of all customers and users of the system.

Objectives

- Evaluate possible short-term disruptions and develop a plan for prevention and IT responses to ensure recovery within acceptable timeframes.
- Evaluate possible severe long-term disruptions and develop a plan for prevention and priority responses to ensure recovery within acceptable timeframes.
- Prepare recommendations from observations.

i. ANNUAL WORK PLAN

Goal

To develop and maintain an Annual IT Project Work Plan to efficiently schedule projects and assign existing resources. This schedule will keep management informed of IT projects, including new hardware and software installations, and workstation as well as system replacements.

Objectives

- Prepare an IT Project Work Plan at the beginning of each fiscal year.
- Convey this schedule to City departments.
- Update the plan on a monthly basis.

TACTICAL PLAN

TACTICAL PLAN

The *Tactical Plan* carries out the tasks that are defined in the goals and objectives of the Strategic Plan. In addition, it describes our observations and recommendations for the succeeding five-year period. It examines in detail the current organization, hardware, software, website development and business interruption/continuity plans are required to determine the actions needed to meet the goals and objectives of the Strategic Plan. This evaluation process is completed prior to the end of each calendar year so that the recommendations developed during the evaluations can be incorporated into the budget process for the forthcoming budget year.

1. ORGANIZATION

Goal

To maintain an organization that promotes the highest level of technical expertise, provides at least one level of back-up for every critical task, and provides adequate resources for effective completion of project assignments within time limits acceptable to our customers.

Objectives

- Review the *current* organization chart of the IT Division (Figure 1).
- Review individual positions, salaries and benefits, technical training needs, individual employee performance, personnel inequities, restrictions, bottlenecks and other support needs or issues.
- Prepare recommendations based on observations.
- Prepare a *proposed* organization chart of the IT Division (Figure 2).

Observations

In reviewing the current IT organization, I have observed only two shortcomings. First, we have a definite staffing weakness for backing up the job function of one of the Senior Programmer/Analyst who is responsible for the City website. At this time, if something were to happen to this employee, we would probably need to outsource the website programming until we could train or hire a suitable person for this position. Furthermore, this employee will be eligible for retirement within the next four years. We realize that it would be more desirable to train the other Senior Programmer/Analyst, but given the current workload shared between these two positions, it is difficult to find the time to do so. The Senior Programmer/Analyst responsible for the website sometimes works more than 40 hours a week in order to keep up with his workload. With that said, the Technical Multimedia Specialist and the other Senior Programmer/Analyst have attempted to take on some of the technical programming of the website, but they will need much more time to develop the comprehensive skill set that would be needed to take over the development and programming tasks of the website.

In addition, we have more IT needs from our customers than what we can schedule for within the IT Annual Project Work Plan. The additional hours are required in part because of unscheduled projects (urgent unforeseen projects), as well as operating system administrative

and maintenance tasks. Due to these additional tasks and our scheduled IT workload, we have no choice, except to rollover some scheduled projects into the following fiscal year.

Secondly, our Administrative Assistant position has not been funded, due to budgetary constraints. The duties of this position include preparing documents, maintaining office records, creating purchase requisitions, scheduling meetings and training conferences, arranging training and travel, preparing agenda back-up materials, monitoring maintenance agreements and contracts, and performing other administrative duties in support of IT operations. In addition, this position absorbed the Help Desk duty of assigning tickets to IT technical staff.

Recommendations

There are no current staffing recommendations except for funding the Administrative Assistant position when funds are more readily available and the notes of awareness for the future, as mentioned above. Barring unforeseen conditions, the organization chart for 2011-2012 will remain the same as the 2010-2011 chart.

FIGURE 1

IT Organizational Chart

FY 2010-2011

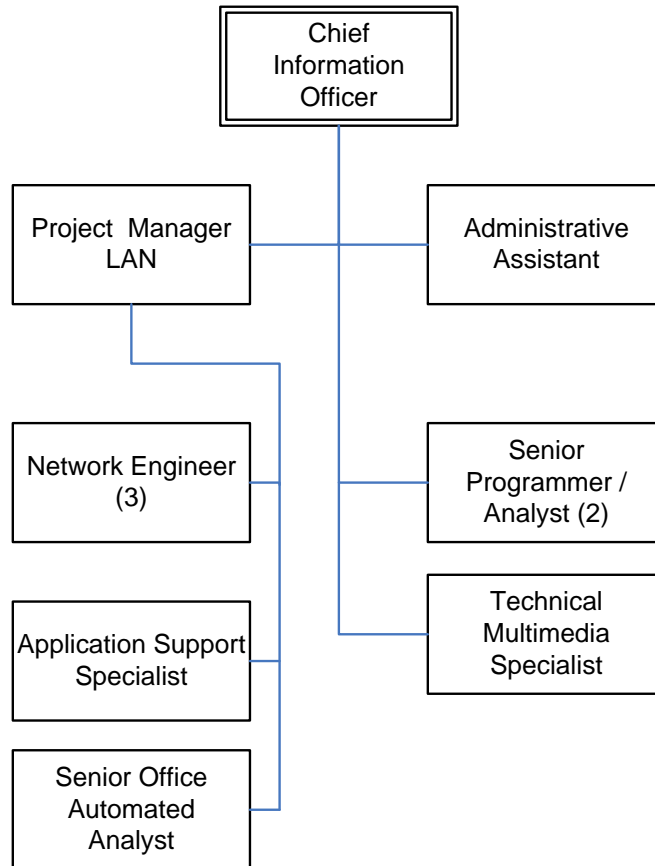
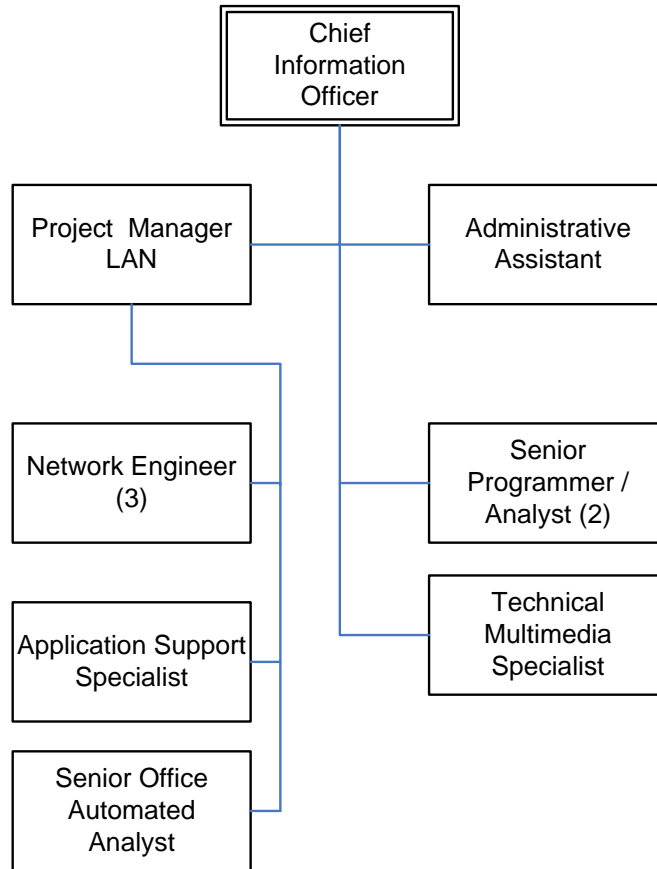


FIGURE 2

IT Organizational Chart

FY 2011-2012



2. FACILITIES AND WORK ENVIRONMENT

Goal

To maintain facilities and work environment capable of (a) preserving, protecting and accommodating IT equipment, and (b) providing appropriate personnel workspace that facilitates efficient performance and promotes employee pride in the work environment, thus minimizing costly employee turnover and maintaining high morale within the division.

Objectives

- Review present facilities, support systems, workspace environment, work requirements, equipment requirements and turnover statistics.
- Prepare recommendations from observations.

Observations

- The new IT facility addressed all the issues that were identified with the prior IT workspace and with the old computer room. The new IT facility has a sealed computer room with a state of the art fire suppression clean agent system. The overhead wiring offsets the need for a raised floor. The air conditioning system is built into the server racks. In addition, the computer room has a central air condition system as a backup. An uninterruptible power supply is built into the racks. The emergency back-up generator is housed outside next to the facility. There are suitable rooms within the facility for staff offices, workspace for multiple PC installations, conference room, kitchen, and additional room for potential growth, plus a modern security system.
- We have two computer racks still housed in the old IT computer room area.
- However, the old computer room at the police station has many deficiencies that were present in our old city hall computer room. For example: room is not sealed, walls are not fire rated, raised floor with water pipes and electrical wiring next to each other. The air conditioner would spread the halon gas to other parts of the building if halon were to be released in the computer room.
- Jim Sinopoli, industry-engineering expert on technology structures, was retained to evaluate the current police station computer room and to make recommendations. The recommendation was to build a new computer room facility using the building behind the Police station.

Recommendation

Our recommendations are as follows:

- Enclose the racks in the old IT area into its own room isolating it from other parts of City hall for security reasons when remodeling this area for additional city staff.

3. HARDWARE INFRASTRUCTURE

Goal

To maintain a cost-effective hardware infrastructure with a reliable midrange computer combined with a reliable PC network that provides a high level of technical performance, security, effectiveness of operations and redundancy, and that has sufficient capacity to provide for realistic growth over the five-year plan period.

Objectives

- Prepare charts of the *current* design of the infrastructure system for the entire City, for City Hall, and for the redundant system at the Police Department (Figures 3 through 5).
- Evaluate the infrastructure and identify problems and inefficiencies within the current system (these might include such items as system security defects, transmission bottlenecks, or outdated technology, as well as the inability to handle projected needs).
- Prepare recommendations from observations.
- Prepare charts of the *proposed* design of the infrastructure system for the entire City, for City Hall, and for the redundant system at the Police Department (Figures 6 through 8).

FIGURE 3

City of Delray Beach / Current
Logical Network Diagram

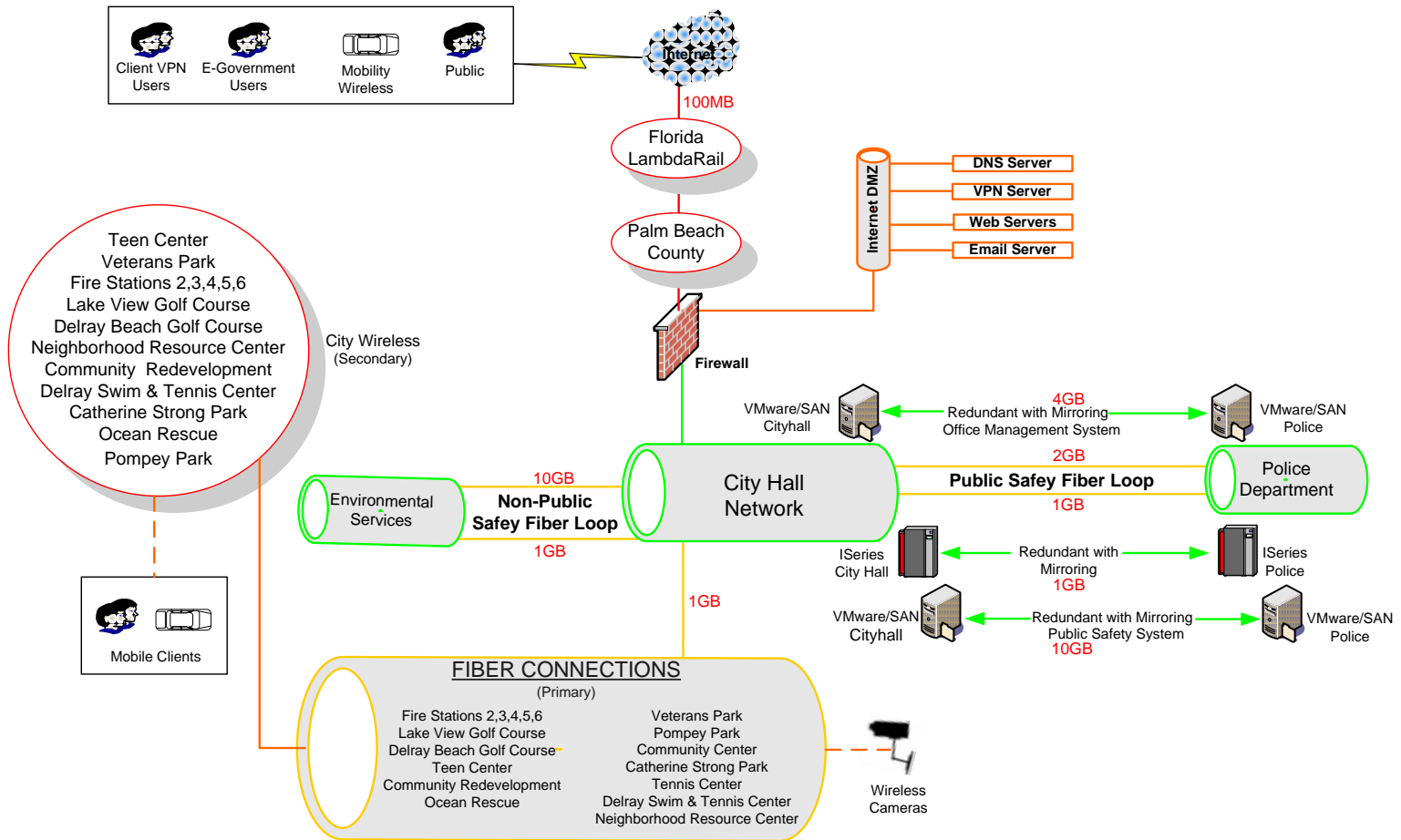
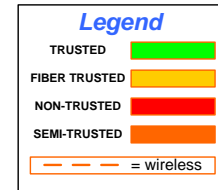




FIGURE 4

**City Hall / Current
Logical Network Diagram**

Legend	
TRUSTED	
FIBER TRUSTED	
NON-TRUSTED	
SEMI-TRUSTED	

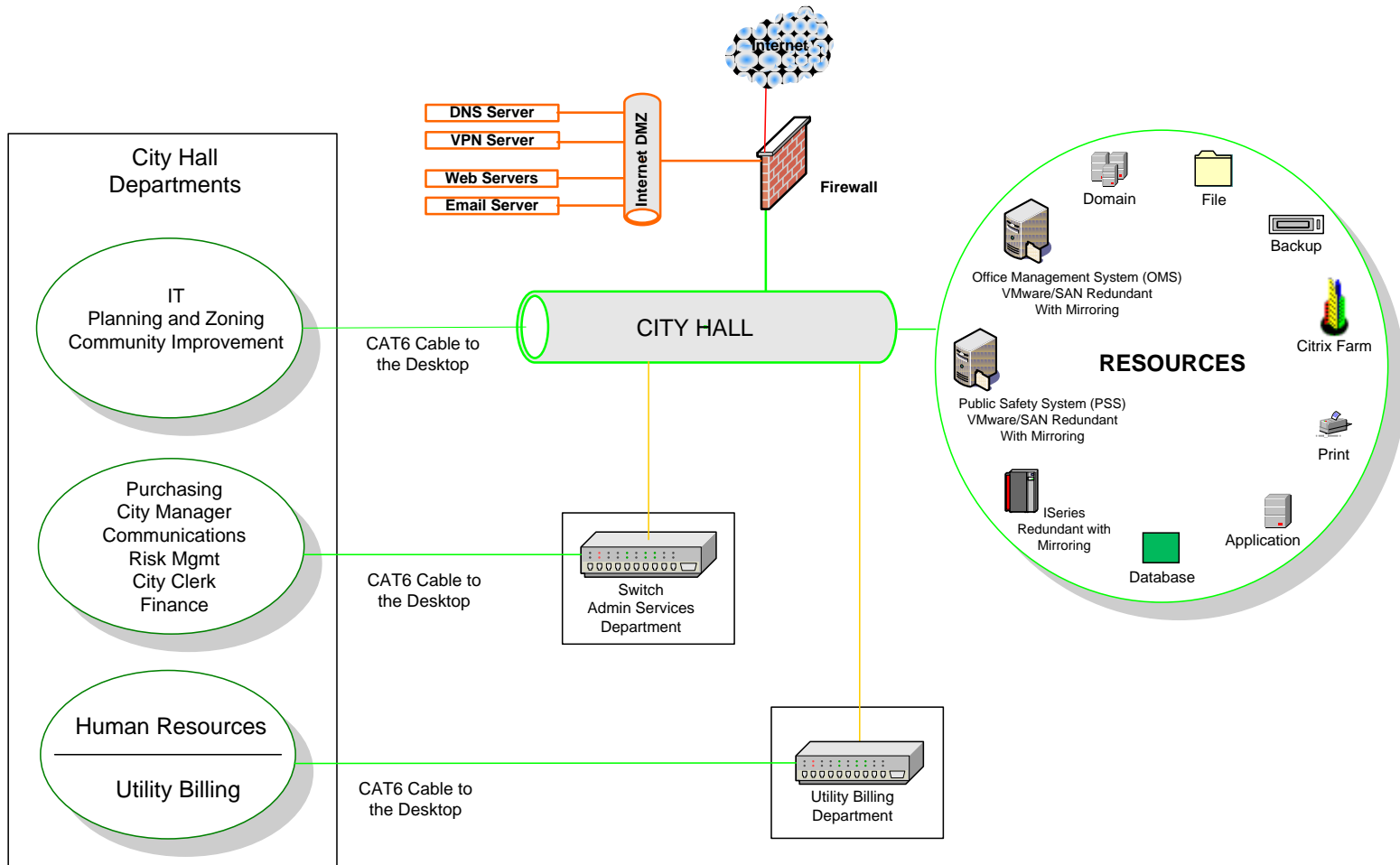
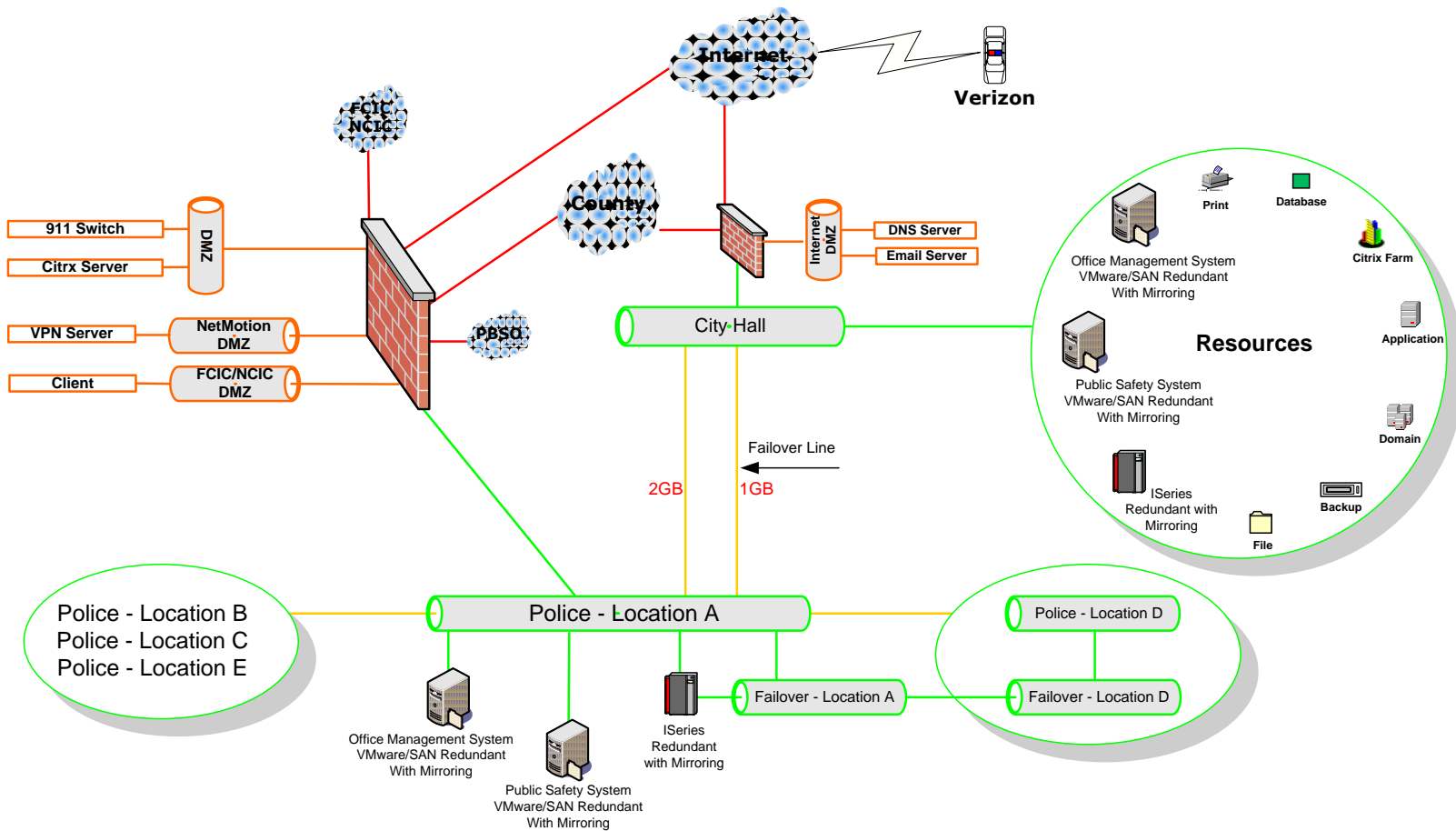




FIGURE 5
Police / Current
Logical Internal Network Diagram

Legend	
TRUSTED	
FIBER TRUSTED	
NON-TRUSTED	
SEMI-TRUSTED	



a. Infrastructure Connectivity and Transmission Speeds (Fiber Optic Lines)

Observations

The City currently has *underground fiber optic lines* between the following major buildings:

- City Hall
- City Attorney
- Community Redevelopment Agency (CRA)
- Environmental Services Complex
- Fire Headquarters
- Parks and Recreation Maintenance Compound
- Police Headquarters
- Parks and Recreation Community Center
- Tennis Center
- Water Plant

The Police Department has a fiber connection to the Palm Beach County Sheriff's Department in order to access data from the Florida Crime Information Center (FCIC) and the National Crime Information Center (NCIC). City Hall has a fiber connection to the Palm Beach County Appraiser's Office.

A couple of years ago as part of the 5th Avenue improvement project, we installed additional underground fiber optic cabling from the main Fire Department headquarters (Station 1) to the City Attorney's office to complete an underground *public safety loop* for redundancy. The public safety redundant loop enables us to maintain connectivity to our main public safety facilities and City Hall by automatically rerouting data communications if one of the fiber optic lines within the loop is severed.

In addition, as part of the Swinton Avenue project, we installed additional conduit for redundant underground fiber optic line between City Hall and the Environmental Services Department (ESD). IT has completed the underground loop from the new ESD administration building to SW 2nd Street and installed the fiber optic lines this last fiscal year of 2010. The redundant *non-public safety loop* enables IT to maintain connectivity to ESD by automatically rerouting data communications if one of the fiber optic lines within the loop is severed.

A dedicated franchise and I-Net Agreement was negotiated with Adelphia Cable (now Comcast) in 2005. Overhead fiber optic lines were added to improve the overall system capability, reliability and security, and to provide for redundancy to our remote sites, including:

- Fire Stations 2, 3, 4, 5, 6
- Delray Beach Golf Course
- Lakeview Golf Course
- Teen Center
- Ocean Rescue Headquarters
- Pompey Park
- Veterans Park

- Delray Swim & Tennis Center
- Catherine Strong Center
- Neighborhood Resource Center

The City already had a multi-mode fiber optic line from City Hall to the Police Department. We added an additional single-mode fiber optic line to accommodate the redundancy and mirroring of the Virtual Machines Software (VMware) and Storage Area Network (SAN) units that were installed within the last year at both City Hall and the Police Department.

The infrastructure backbone connectivity and transmission speeds to our main facilities and our remote sites are now at 1 gigabit (1 billion bits per second). Our remote sites are limited to 1 gigabit by our agreement with Adelphia (now Comcast), but the backbone infrastructure to our main buildings (City Hall, Police, Fire, and ESD) needs to be increased to 10 gigabits. In order to increase to 10 gigabits, we plan to upgrade our switches at both ends of our fiber optic lines in the near future.

Fiber optic transmission speeds are limited only by the speed of the equipment installed at each end of the fiber. These fiber optic connections are considered “trusted” because they are hard-wired within the City’s infrastructure systems. A switch is connected to each end of the fiber optic line within our buildings. The existing switches contain fiber ports that are rated at 1 gigabit, server ports that are also rated at 1 gigabit, and PC ports rated at 10/100 megabits (10 million/100 million bits per second). We have some switches that have ports that are rated at 10/100/1000 (10 million, 100 million, 1 gigabit). These PC ports are presently connected internally to individual desktops (PCs or printers) using CAT 6 cabling. Each of the desktop hardware devices contain network interface cards (NICs) which will allow up to 1-gigabit speeds. The cards are presently configured to run at either 10/100/1000 megabits.

We have converted the older CAT 3 cables to the newer CAT 6 cables, which are rated at 1 gigabit. We need to upgrade our remaining switches to 10/100/1000 at City Hall, the Police Department, Fire Headquarters and ESD in order to run 1 gigabit to the desktop.

We have eleven 50-foot wireless transmission towers that are connected to remote fiber optic lines at various sites throughout the City. This has given us an additional layer of redundancy. The data communications are rerouted through the wireless transmission towers to our network in case of a fiber optic line is severed.

Recommendations

We recommend that we continue to renovate the network infrastructure capacity for a minimum transmission speed of 1 gigabit to the desktop and 10 gigabits to the primary backbone (1 gigabit to remote sites and 10 gigabits to primary sites). These transmission speeds are sufficient to accommodate the handling of large files such as GIS, video streaming, video conferencing, kiosks and other interactive e-government applications.

To achieve this capability and provide improved redundancy, we recommend the following:

- Continue to replace the primary switches with newer switches that have Ethernet ports rated at 10/100/1000 (10 million, 100 million, 1 gigabit) and fiber backbone ports rated at 10 gigabits.
- As the need arises, replace older printers with new units that have 10/100/1000 NIC cards.

b. Network Server Systems and Desktop PCs

Observations

The IT Division replaced the single server environment and data storage operations with redundant and mirrored Virtual Machines Software (VMware) and Storage Area Network (SAN). This configuration allows us to do “*snapshot*” back-ups anytime during the day. The two systems are located at City Hall and the Police Department. Although most of the environment is now VMware/SAN, some critical servers could not be migrated to this environment because of special hardware and licensing issues. We continue to carry maintenance contracts on these servers and to perform tape back-ups separately from those for the SAN units.

After installing the SAN units, we observed that some departments have created new scanning projects that were never on the PC network. These additional large scan files will need more storage than we had previously anticipated. In addition, some user mailboxes are extremely large, and proper utilization of e-mails will need to be addressed.

The current LAN environment encompasses two complete VMware and SAN systems. The first system is the Office Management System (OMS) to distinguish it from the second system. The second system is the Public Safety System (PSS) as we move from the IBM iSeries platform to the VMware and SAN platform. The current Public Safety and Financial software currently reside on the IBM iSeries, but as we move forward with new software, we will use this second system for Public Safety and the later the third system for the Finance System (FS).

In addition, the IT Division is researching new technologies; virtual desktop computing and cloud computing to see if they are a good fit for our environment and a cost savings to the city while preserving a safe and secure network environment.

Recommendations

- Calculate the size of the third hardware system that will be needed to house new software for the new Finance System.
- Calculate the additional data storage and retrieval mechanisms that will be required. Some of the large files are for archival purposes only and could be put on slower and less expensive drives; other files, however, are needed on a daily basis and would need the faster SAN storage. After we complete our analysis of new storage needs, we will most likely recommend some combination of SAN drives with slower, less expensive drives.

c. **IBM Mid-Range Servers**

Observations

The City currently has two IBM iSeries mid-range servers. The primary server is located at Police Headquarters, and the failover server is located at City Hall. These servers are entirely compatible—they are at the same revision level and have the same hardware (e.g., memory, disk space, card configurations) and the same application software. The IBM mid-range server software (programs, data files, user profiles and system configuration objects) is mirrored continually from one server to the other.

These systems provide redundancy for each other. If there is an interruption of service to our primary IBM iSeries server during the workday, users are able to sign onto the secondary failover IBM iSeries server and continue to work. (This is part of our Business Interruption/Continuity Plan for short-term interruptions.) The one exception to this short-term interruption plan has to do with the 911 operation. The entire IBM iSeries redundancy is on the iTera solution except for the 911 operation, which must be on the Sungard Public Sector redundancy software. This causes a delay when switching over, as we must make sure the 911 operation is done first before the rest of the City can move over to the secondary server.

Because the two IBM iSeries servers are mirrored, tape back-ups are done from the secondary failover server without causing any interruptions to the 911 operation. Moreover, since the public safety fiber optic loop is completed, there will be no disruptions to service if one of the fiber optic lines is severed.

In addition, we are currently converting over the 911 system from the IBM iSeries to the Public Safety System (PSS) PC based system this fiscal year. Furthermore our current Financial IBM iSeries systems are old, and on the last Operating System Software. These old systems cannot handle the newer Operation System Software. The IBM iSeries should be replaced no later than the FY 2011-2012 budget to avoid additional issues.

Recommendations

We recommend converting over the financial systems to a PC-based network system. We would like to speak with our two neighboring cities (Boca Raton and Boynton Beach) to evaluate the possibility of a tri-city effort, utilizing the South County Cooperative. Such an initiative would give the cities the significant advantage of being able to provide back-up operations for each other. In addition, the new Finance should be more robust than the aging financial software that the city has been using for over 25 years.

Figures 6 through 8 show the proposed design of the infrastructure system for the City as a whole, for City Hall, and for the redundant system at the Police Department.

FIGURE 6



City of Delray Beach / Future
Logical Network Diagram

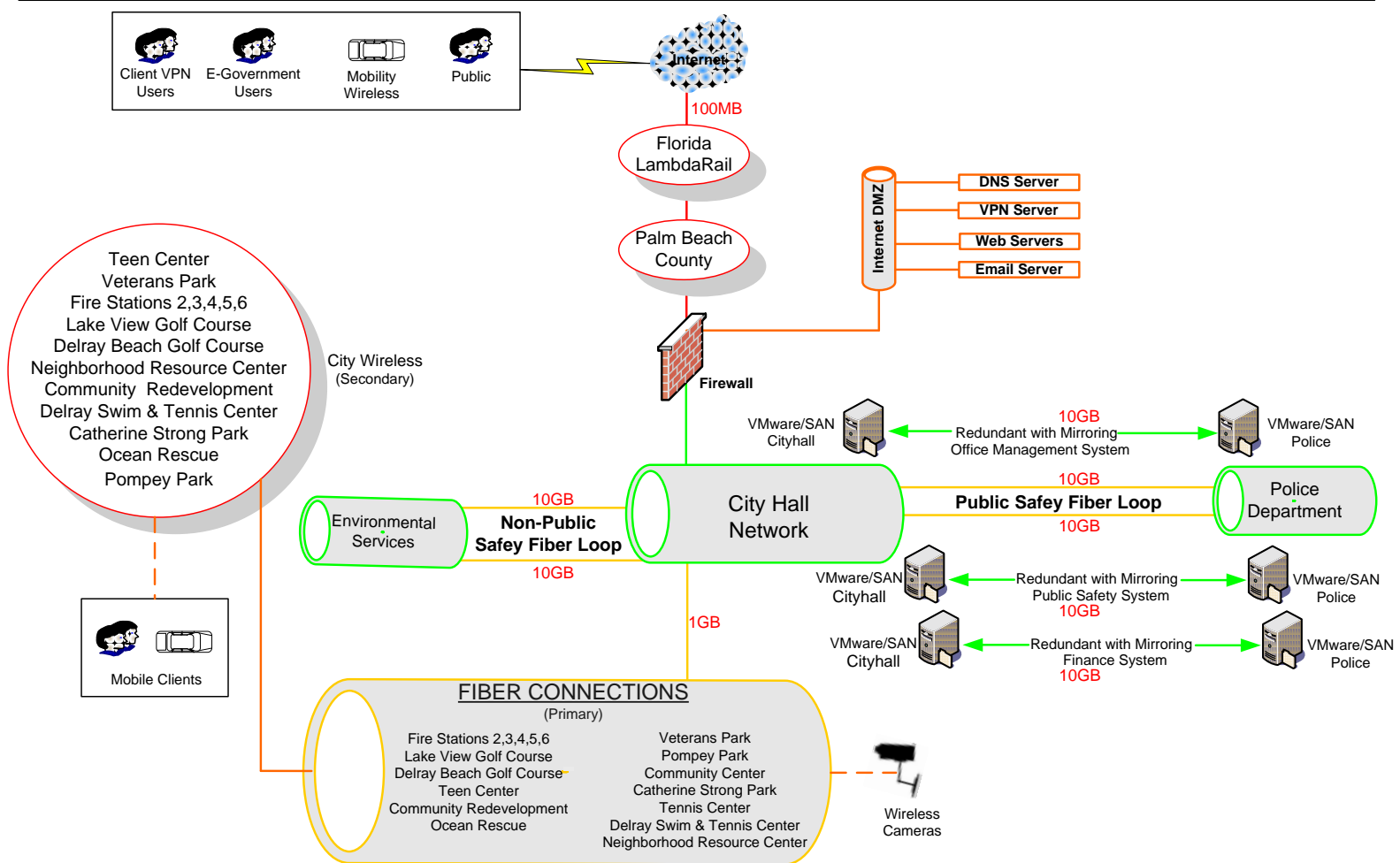
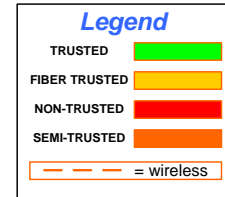




FIGURE 7
City Hall / Future
Logical Network Diagram

Legend	
TRUSTED	
FIBER TRUSTED	
NON-TRUSTED	
SEMI-TRUSTED	

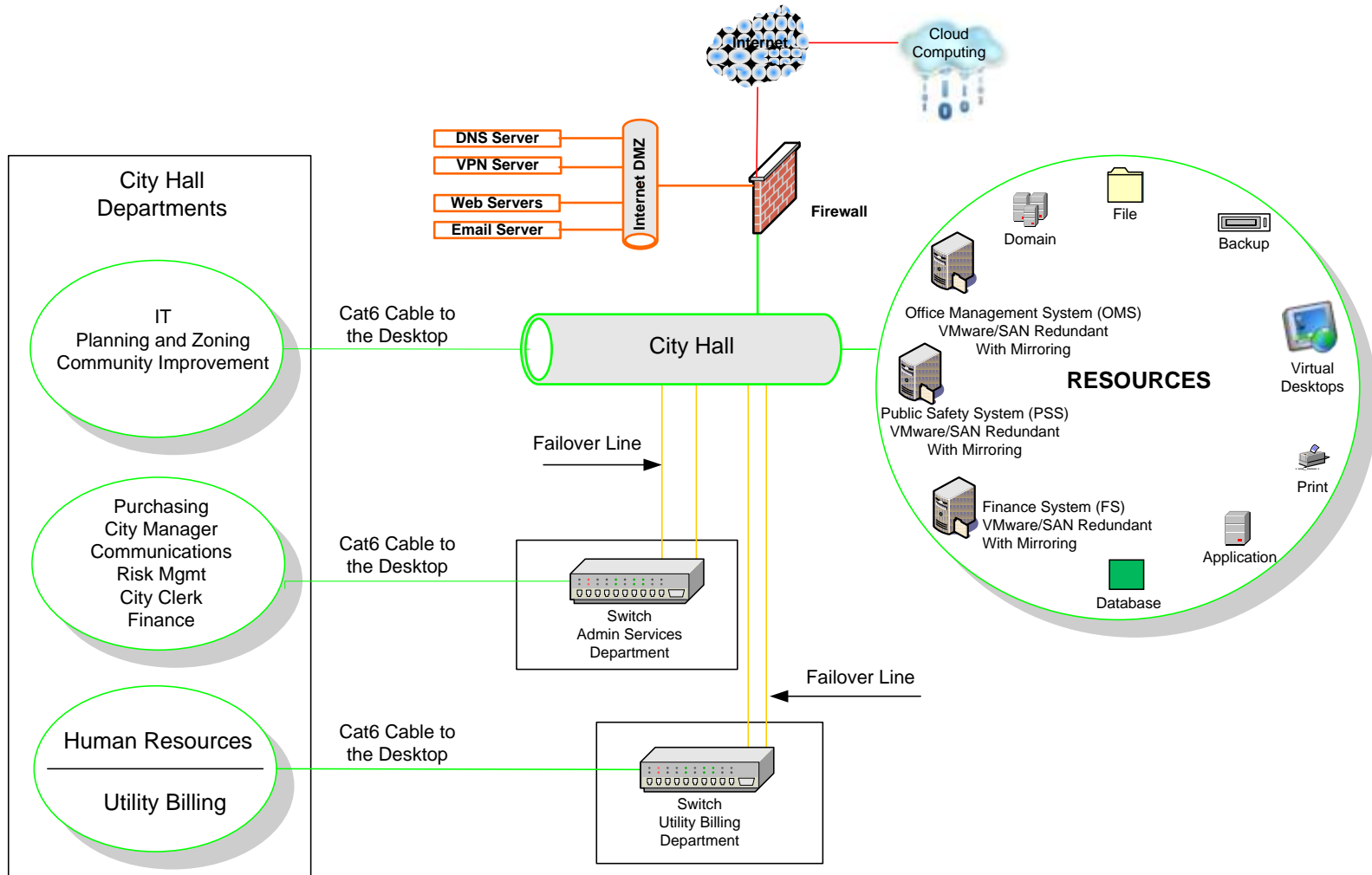
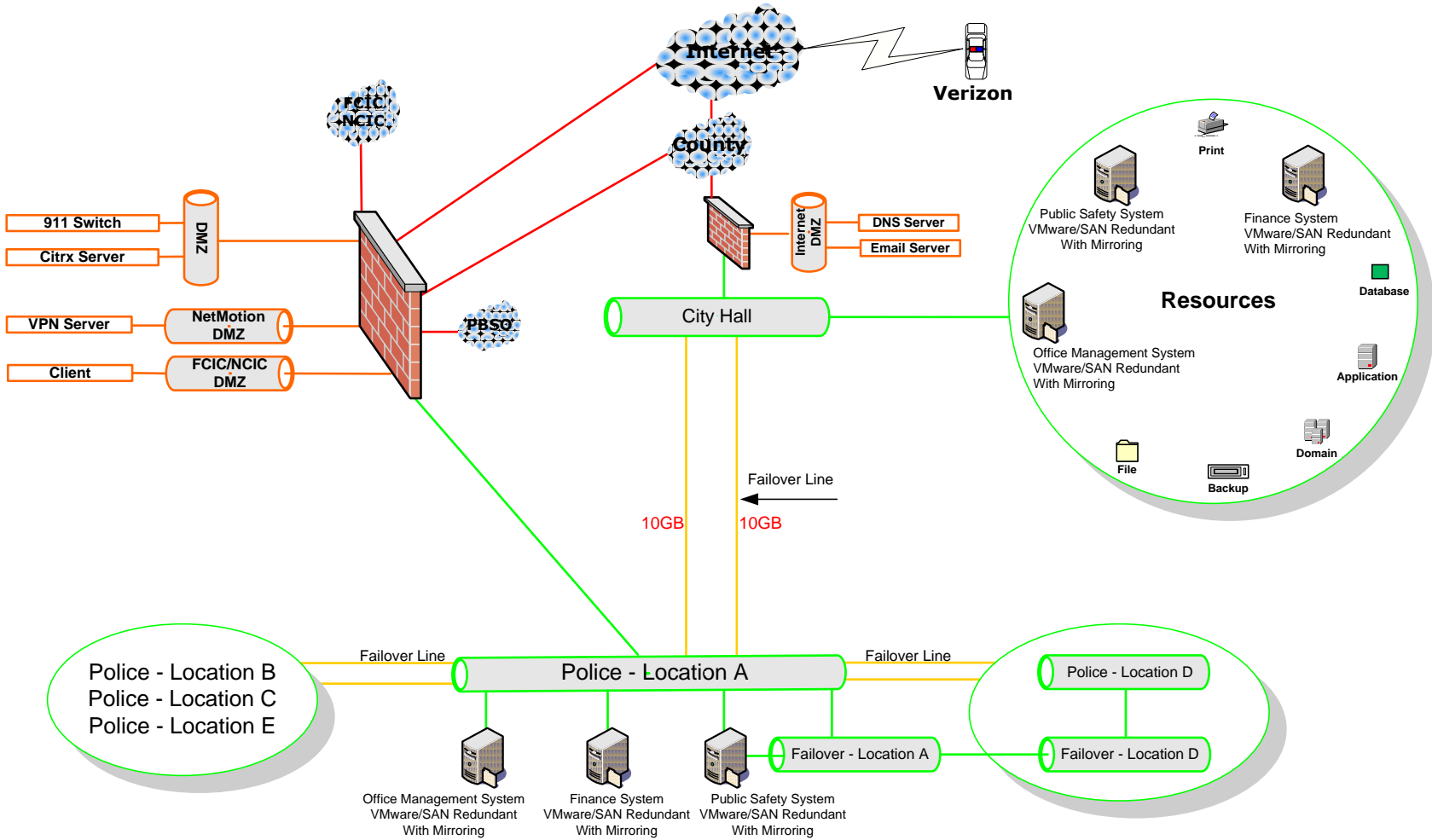




FIGURE 8

**Police / Future
Logical Internal Network Diagram**

Legend	
TRUSTED	
FIBER TRUSTED	
NON-TRUSTED	
SEMI-TRUSTED	



4. COMMUNICATIONS SYSTEM INFRASTRUCTURE

Goal

To maintain an effective and secure communications system infrastructure that is efficient; that includes reliable voice, video and data transmission; and that ensures adequate redundancy for emergency services.

Objectives

- In conjunction with the Telecommunications Manager, prepare a diagram of the *current* telecommunications infrastructure showing all internal and external voice, video and data transmission devices and media (Figures 9 and 10).
- In conjunction with the Telecommunications Manager, evaluate the current infrastructure and identify problems or inefficiencies within the system.
- Prepare recommendations from observations.
- Prepare a chart of the *proposed* design of the system infrastructure (Figure 11).

Observations

Telephone Systems (Voice Communications)

The City presently has four T-1 private access telephone lines for the following:

- 911 Emergency Line
- Palm Beach County Sheriff's Office
- EDGE (Enhanced Data rates for GSM Evolution) Line
- National Crime Information Center (NCIC) and Florida Crime Information Center (FCIC) also referred to as CJNET (Criminal Justice Network).

AT&T supports the primary Police/Fire 911 emergency dispatch telephone system. The agreement with AT&T stipulates that, in case of telephone outages, the 911 system must be the first system to be restored. The primary back-up system to our 911 emergency dispatch telephone system is the Palm Beach County Sheriff's Department 911 system. This system is a T-1 frame relay system with AT&T that reroutes any 911 calls from Delray Beach to the Palm Beach County Sheriff's Department, which in turn then dispatches the Delray Beach Police/Fire emergency units. In addition, the Police Department telephone system is now connected to the City Hall telephone system, creating a fully redundant system.

Radio Systems (Mobile or Portable Voice Communications)

Primary public-safety radio (voice) communications are conducted from the Police Dispatch Center radio console, through the radio tower located at the Police Department, and then transmitted to mobile radio units and portable radio units (Police or Fire) according to talk groups. The primary back-up to the communications system console is within the system itself; if the entire console is down, secondary back-up is provided by either the City of Boca Raton or Boynton Beach. The primary back-up to the tower is the Forest Hill tower (which consists of four T-1 direct lines). The secondary back-up is the tower located at Congress Avenue (which consists of one T-1 line).

- *Re-banding Project:* First responders, nation-wide, are in the process of changing the 800 MHz band due to interference from commercial wireless carriers. Public safety communications systems are located next to commercial systems (cell phones) in the 800 MHz wireless spectrum. These technologies are incompatible and cause interference in the public safety services in several areas. The commercial carriers will pay for the cost of this project.
- *800 MHz Replacement Project:* Motorola has notified the Police Department that they will no longer support our current radio configuration as of FY 2009. This technology will be replaced with radio systems that include both voice and data transmission. This project is in the current CIP for \$7 million; however, recent discussions with the Police Department indicate the cost may run from \$6 million to as high as \$12 million.

Cellular (Mobile Data Communications)

The primary Police method of data transmission to vehicles is through Verizon. The card is inserted into a laptop mobile digital terminal (MDT) or a trunk-mounted device. The trunk-mounted device plugs into the MDT and is more durable than the cards. We currently have 175 Verizon cards. This number of cards includes Police, Fire, Code Enforcement, Environmental Services and other departments.

FIGURE 9
INTERNAL/EXTERNAL VOICE AND DATA TRANSMISSION MEDIA

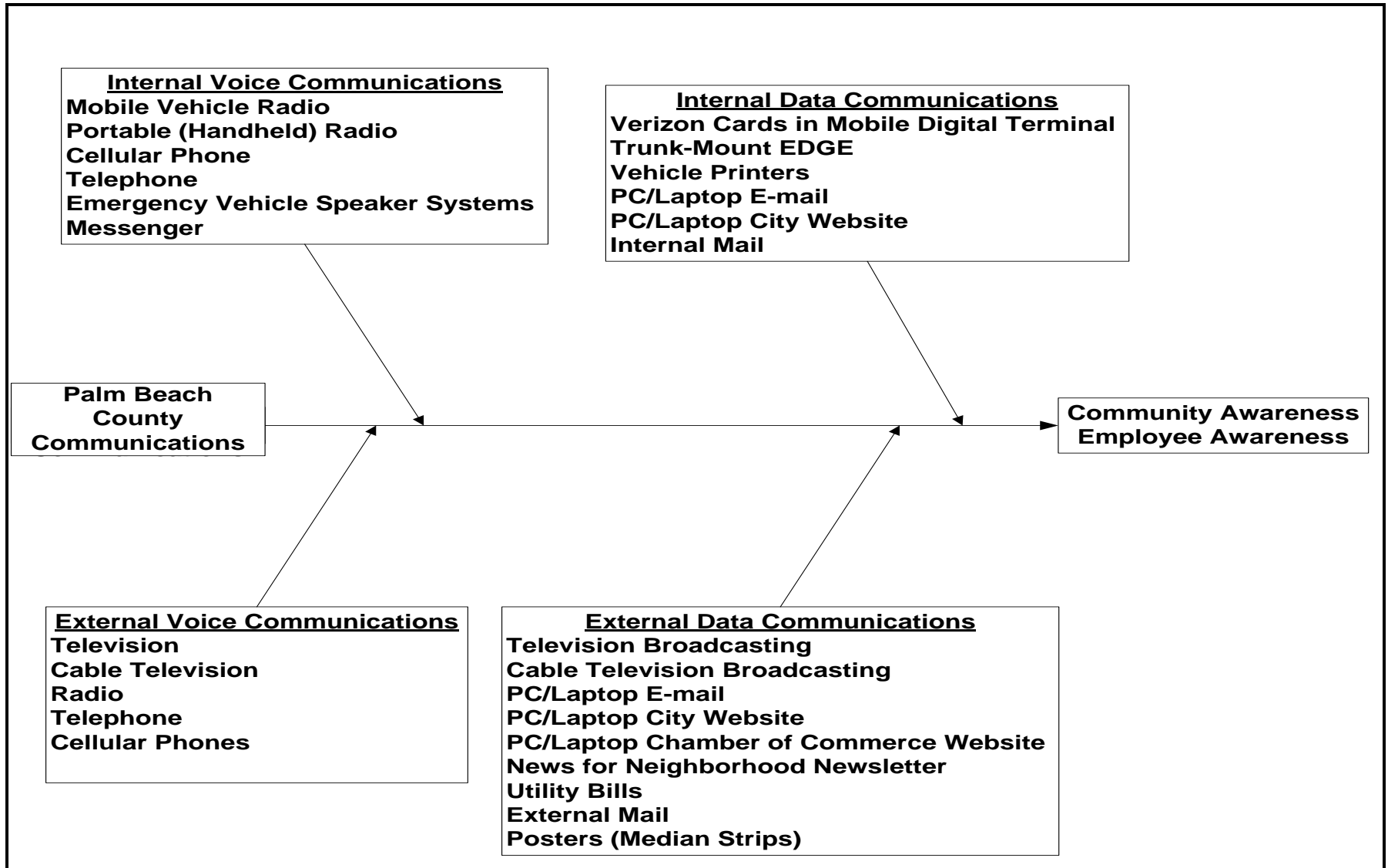




FIGURE 10
Delray Beach Phone Infrastructure / Current
Locational Connectivity Diagram

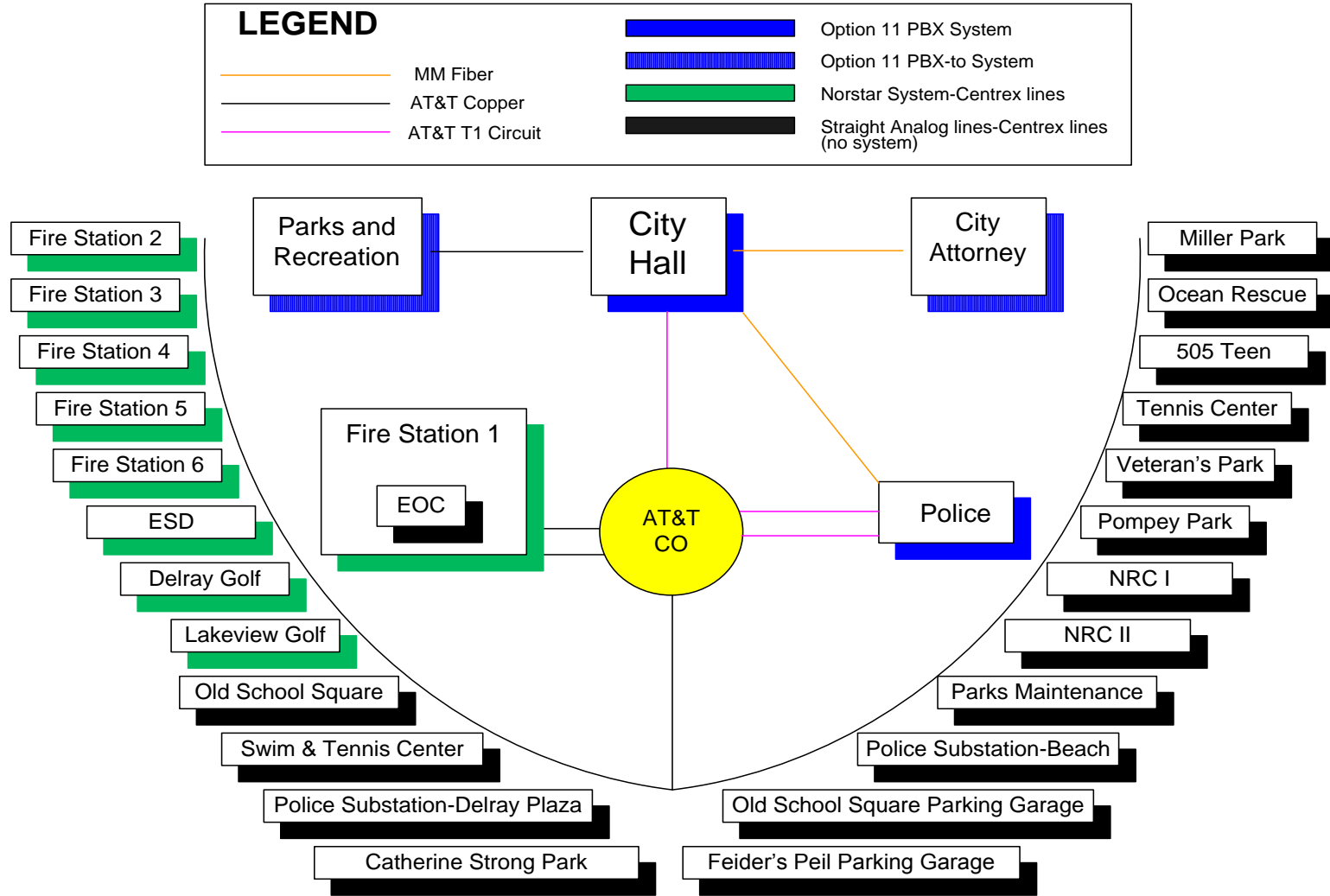
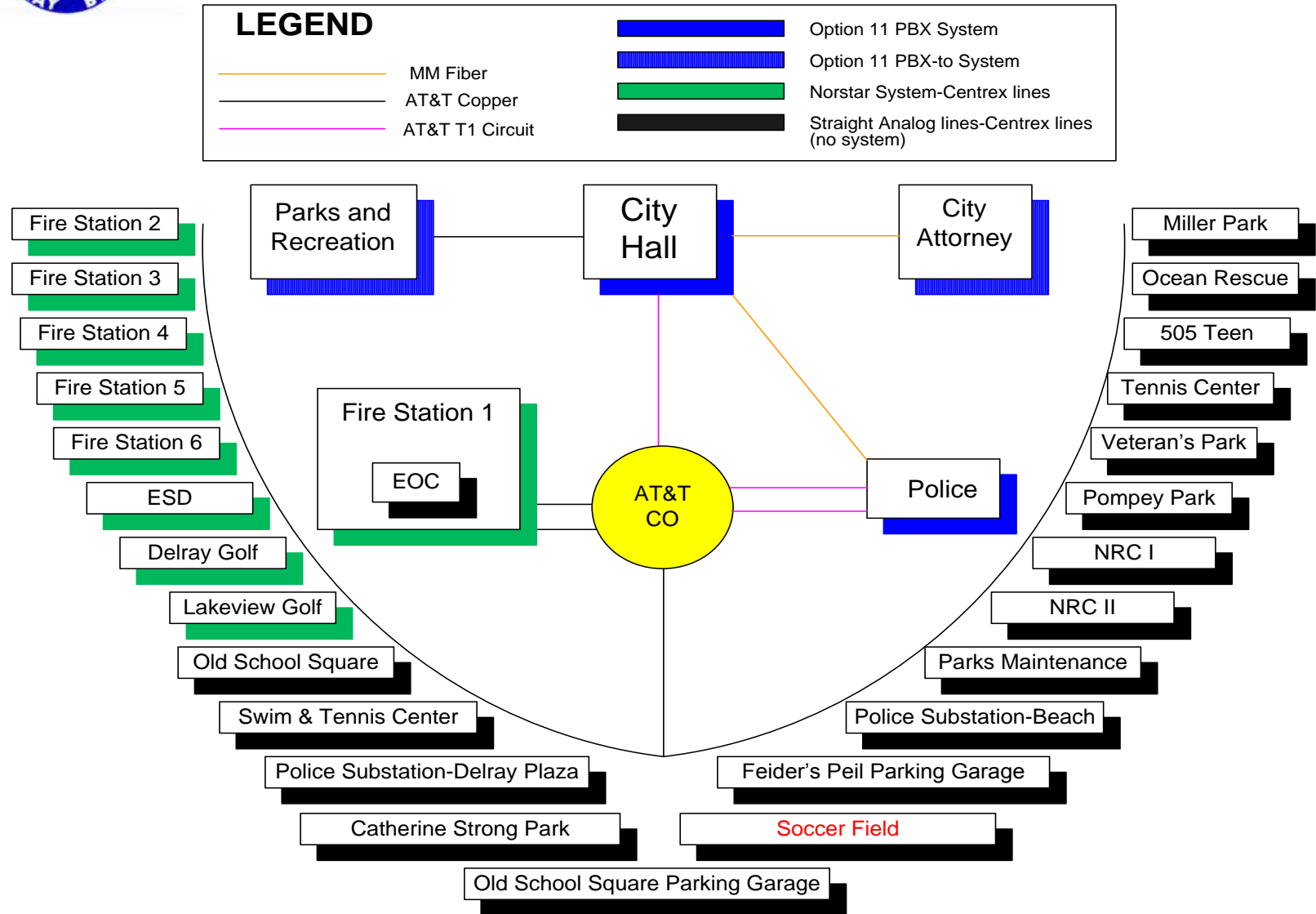




FIGURE 11
Delray Beach Phone Infrastructure / Future
Locational Connectivity Diagram



5. OPERATING SYSTEM SOFTWARE/USER APPLICATION SOFTWARE

Goal

To maintain operating system software and user application software at the latest version and release level to provide the most reliable overall user technical performance, consistency, operational efficiency and customer satisfaction; to ensure that all user licenses are up to date; and to evaluate all proposed changes to our software inventory for the upcoming year.

Objectives

- Update the inventory list of all operating system and user application software, noting the current version and release level, and verify compliance with appropriate licensing requirements.
- Evaluate the final inventory listing of all operating system and user application software.
- Prepare recommendations from observations.

Observations

The City's primary mission-critical user software is from Sungard Public Sector and runs on the IBM iSeries servers. Overall, the Sungard Public Sector applications software has been extremely reliable and stable and has worked well for the City. PC software and PC servers are based on Microsoft applications, and these applications are general extremely reliable and stable.

Recommendations

Even though the Sungard Public Sector software has been very reliable, the city has used the software since 1985, we realize there are newer, and more robust PC based systems in the market place. We would like to explore the possibility of changing the Financial and Public Safety Systems to a PC-based system. This is a major task and very time consuming. The undertaking of this task could take one or more years to implement after choosing new software.

6. WEBSITE PRESENCE

Goal

A quality web presence that facilitates public access, civic engagement, rapid and accurate dissemination of information, and execution of future e-government initiatives for the benefit of the general public, those who do business with the city, and city staff.

Objectives

- Adapt to ever-changing requirements through innovative application of all appropriate web technologies.
- Assure that content contributors are well trained and supported.
- Facilitate continuous improvement by providing superior design, development, analytic, editorial, and infrastructural resources.
- Prepare recommendations based on observations.

Observations

- The Internet is used by 82 percent of Americans.¹ With the pattern of adoption of the Internet following those of earlier communications technologies, such as radio and television, it is reasonable to expect that access will soon be at 90 percent, even though the costs of computer ownership and service subscription slow the rate of growth as the technology approaches ubiquity.²
- The Internet has become a primary information source — surpassing newspaper and, among younger adults, rivaling television.³ It is ranked as an important information source by more Internet users (78 percent) than either newspaper (56 percent) or television (68 percent).¹
- The Internet is a significant channel for communication and interaction between citizen and government. While confidence in news obtained online from established media sources continues to decline, more than 80 percent of Internet users consider government websites to be generally reliable and accurate.⁴
- Expectations have changed with the advent of social media and other so-called Web 2.0 technologies. Users have grown accustomed to a more interactive experience and are less interested in sites that offer only static content. As well, familiarity with the Internet has increased city staff's interest in the content provided by our site and made them feel more capable of contributing and managing content.
- While use of social networking among online young adults gradually nears universality (currently at 86 percent for ages 18-29), the rate of adoption by older users is accelerating—nearly doubling in the past year for those aged 50 or older.⁵
- Using social networking for news delivery both broadens a government's reach in disseminating information to the public and attracts users to the government's website.⁶
- During the twelve months prior to this writing the site received 500,000 visits, with at least 30 percent of these determined to have originated from Delray Beach.⁷

- The city is currently reaching about 1,600 subscribers through its email mailing list, another 850 via Twitter, and several hundred more on Facebook.^{8,9,10} (As the information provided through these channels are to some degree redundant, it is unlikely that the groups of subscribers greatly overlap.)
- All of the foregoing combine to afford opportunities for furthering citizen engagement; however, to take advantage of this, the underlying technology of our site is being updated.
- In selecting a solution, we determined that the technology must be flexible and scalable, provide a broad feature set, come at low cost, and afford protection from early obsolescence. The field was narrowed to a few open source products, with the final choice being the one among these having the greatest flexibility, popularity in the public and nonprofit sectors, a large and growing share of the market as a whole, and the most robust development community.
- The IT staff member primarily responsible for website development and maintenance is eligible to retire in four years.

Recommendations

- Implement the new website infrastructure.
- Inventory the current site content. Review the inventory with departments to determine what content, if any, should be abandoned; what should be added; and what can be improved.
- Reconsider the organization of all content with the aim of making it easier to locate, both for users navigating the site manually and for search engines.
- Adopt the research-based web design and usability guidelines developed by the U.S. Department of Health and Human Services Web Communications and New Media Division.¹¹
- Place emphasis on making forms available online.
- Expand the base of content authors and editors. Encourage departments to authorize more staff to author content. Provide additional training.
- Identify opportunities for adding new internet based applications. Continue to review the features of leading public and private sector sites. Survey internal and external users.
- A staged approach should be taken for all of the preceding recommendations: As each department's site is brought over to the new infrastructure, the content is analyzed and restructured, users are trained or retrained, new functionality is incorporated.
- Facilitate expansion of the city's Web 2.0 presence: provide departments with guidance, training, and assistance with design; make content accessible through our site by adding navigation, or incorporate the content directly using controls, widgets, or other interfaces made available by the provider.
- Increase cross-training of IT staff in web technologies and spread the responsibilities of design, development, content management, and user support and training.

- Establish a wiki for internal discussion of topics related to and publication of guidelines and training materials necessary for the effective development and management of website content.
 - Continue monitoring trends in Internet use.
-

- ¹ *2010 Digital Future Report*, USC Annenberg School for Communication (http://www.digitalcenter.org/pdf/2010_digital_future_final_release.pdf)
- ² *Clear Thinking on the Digital Divide*, Progressive Policy Institute (http://www.dlc.org/documents/digital_divide.pdf)
- ³ *Internet Overtakes Newspapers As News Outlet*, The Pew Research Center for the People & the Press (<http://people-press.org/report/479/internet-overtakes-newspapers-as-news-source>)
- ⁴ *2009 Digital Future Project*, USC Annenberg School for Communication (http://www.digitalcenter.org/pdf/2009_Digital_Future_Project_Release_Highlights.pdf)
- ⁵ *Older Adults and Social Media*, Pew Internet and American Life Project (<http://pewinternet.org/Reports/2010/Older-Adults-and-Social-Media/Report.aspx>)
- ⁶ *Governing as Social Networking*, Pew Internet and American Life Project (<http://pewinternet.org/Presentations/2009/12-Governing-as-Social-Networking.aspx>)
- ⁷ Google Analytics statistics for MyDelrayBeach.com, December 2009 through November 2010: 502,884 visits; 150,877 from Delray Beach.
- ⁸ Internal mail server statistics, City of Delray Beach Information Technology Division, as of November 2010
- ⁹ Twitter, as of November 2010 (<http://twitter.com/citydelraybeach/followers>)
- ¹⁰ Facebook, as of November 2010
- ¹¹ *Research-Based Web Design & Usability Guidelines*, U.S. Department of Health and Human Services (<http://usability.gov>)

7. GEOGRAPHIC INFORMATION SYSTEM

Goal

To assist in the development of a Geographic Information System (GIS) Plan to bring together data and geographic components which serve the City's needs for location-based data and which increase the usefulness of existing applications.

Objectives

- In conjunction with the Engineering Department, evaluate and identify restrictions, bottlenecks and inefficiencies in the GIS system.
- Prepare recommendations based on observations.

Observations

- Some feature data set accomplishments for this year are:
 - Sanitary Sewer System 95%
 - Traffic counter locations 100 %
 - Sidewalk inventory 100 %
 - Water distribution CAD Conversion 60 %
 - Storm water (all features) 25 %
 - City Parking Lot Information 100 %
 - CAD system layers for Fire Dept. 100%
 - CAD system layers for Police Dept. 100%

- System development continues on variety of items in the area of custom applications and program code that enables users to view, analyze, maintain data, maps, and generate report information. While some applications may be developed by in house staff from concept to completion, others require the help of outside consultants, or software purchase.
- System development continues on variety of items in the area of custom applications and program code that enables users to view, analyze, maintain data, maps, and generate report information. While some applications may be developed by in house staff from concept to completion, others require the help of outside consultants, or software purchase.

- GIS specific support for Public Safety needs are a paramount this year. The development of multiple agency specific boundary data sets was necessary for the projects' success. These data sets will be incorporated into the new CAD system enhancing abilities to efficiently dispatch public safety personal.

- Complete GPS location for:
 - Sewer Manholes 98%
 - All Storm Water Features 98%
 - Light Poles (consultant audit taking place) 90%
 - Sewer Cleanouts 03%
 - Water meters (consultant in progress) 15%
 - Sewer/Water Valves 05%

Recommendations

- Continue in the building of our GIS over the next five years in all areas. The overall goal will not change but focus on individual tasks will vary as budgetary and personnel availability fluctuates. By 2015 we hope to have completed the following data and system goals:
 1. City Address Data usable for GIS
 2. Purchase/Implement New Asset Management/Work order System
 3. Conversion of all CAD utility maps and data to GIS
 4. Traffic Count Locations and Mapping Application
 5. Parking Lot Information Application
 6. Sidewalk Inventory and Mapping Application
 7. CIP Application Enhancements to meet additional requests by users
 8. Purchase /Implement Utility Analysis software compatible with converted GIS data
 9. Water Distribution Model Update and Enhancement
 10. Provide Public Access via Internet to selected GIS applications
 11. Planning and Zoning conversion of CAD maps and data to GIS
 12. Create and Incorporate address based queries into GIS Applications
 13. Incorporate use of PBC Fiber-optic connection into GIS use and Applications
 14. Update the City's GIS Strategic Plan

**BUSINESS INTERRUPTION/
CONTINUITY PLANS**

BUSINESS INTERRUPTION/CONTINUITY PLANS

The City provides many services that are vital to the health, safety and welfare of its citizens. It is therefore essential that IT systems be fault tolerant, with redundancy networks that are capable of supporting critical services under even the most adverse conditions. Some conditions, such as power outages and equipment failures, are generally short term in duration and are addressed in the Business Interruption (Short-Term) Plan. Other conditions, including severe storms that could result in destruction of equipment and facilities, are generally longer in duration and are addressed in the Business Continuity (Long-Term) Plan.

Goal

To maintain an up-to-date Business Interruption Plan (short-term disruption and recovery) and Business Continuity Plan (long-term disruption and recovery) to ensure that IT facilities, hardware, infrastructure, software systems and data files are physically protected and insured, and can be recovered or restored in a timely manner to the satisfaction of all customers and users of the system.

Objectives

- Evaluate possible short-term disruptions and develop a plan for prevention and IT responses to ensure recovery within acceptable timeframes.
- Evaluate possible severe long-term disruptions and develop a plan for prevention and priority responses to ensure recovery within acceptable timeframes.
- Prepare recommendations from observations.

1. BUSINESS INTERRUPTION PLAN: SHORT-TERM

Observations

We continue to update the IT systems to minimize any possibility of a short-term interruption to the primary infrastructure.

The City Hall and the Police Department IBM iSeries servers are identical in hardware and operational software configurations, with application programs and data files mirrored in real time. In the event that the primary system goes down, the secondary system will continue operations. These redundant systems were connected by one Cisco 6509 switch that was assessed as a “single point of failure” in our Business Interruption/Continuity Plan. In addition, the fiber optic line from City Hall to the Police Department was a multi-mode 12-strand fiber optic line is not designed for distances from City Hall to the Police Department. Finally, when we analyzed the conduit (City Hall to the Police Department) to determine if we had the capacity to install a single mode 24-strand fiber optic cable, we found that the conduit was crushed underneath the Tennis Center parking lot and needed to be replaced.

We have replaced the single point of failure Cisco 6509 switch with four failover Cisco 4503 switches, two located at the Police Department and the other two at City Hall. We replaced the crushed conduit underneath the Tennis Center parking lot and ran a new single-mode 24-strand fiber optic cable from City Hall to the Police Department. In addition, we installed redundant Virtual Machines Software (VMware) and Storage Area Network (SAN) units

with new PC network servers clustered together to provide a fault-tolerant, redundant PC network system.

We have installed a public safety fiber optic loop connecting Police, Fire and City Hall. In addition, we have installed a second non-public safety fiber optic loop that connects ESD and City Hall. This second loop gives us continuous communications between all our major buildings, even if one fiber line is severed.

The IT and Police computer rooms have uninterruptible power supply (UPS) battery back-up systems that, in the event of a power outage, will allow priority units to continue operations until emergency generators are activated.

Full tape back-ups are done daily at City Hall for the IBM iSeries servers and the PC network servers. These full system back-ups are confirmed every morning, and the back-up tapes are stored at different locations outside City Hall (e.g., Fire Department, Police Department). Once a week the back-up tapes are picked up for storage in an off-site data vault.

Recommendations

- Maintain an up-to-date inventory of all hardware, software and cabling for insurance and recovery purposes. Have hard copies of the data, as well as copies on CDs for use on PCs.
- Store the inventory listings and insurance policies in a fireproof vault.
- Find and test alternative locations for operations in case access to City Hall or the Police Department is prevented by contamination, fire, explosive threat, etc.
- Work with the Emergency Operation Center (EOC) to ensure that IT services are available as needed.

2. BUSINESS CONTINUITY PLAN: LONG-TERM

IT management is committed to protecting the City's technological assets and being prepared to recover quickly and resume operations in the event of a significant business interruption. We are committed to allocating resources to the Long-Term Business Continuity Plan to ensure our ability to meet this commitment.

A disaster that destroys our computer operations center at City Hall or the Police Department would represent a long-term business interruption. The worst-case scenario would be that both facilities are destroyed. The Long-Term Business Continuity Plan must address how the City would re-establish operations following such a disaster. The plan must:

- Consider the impact of various types of potential long-term interruptions and provide an appropriate strategy for each.
- Provide methods for the complete recovery of our technology infrastructure and data.
- Provide strategies to enable the City to continue to perform its critical business functions and minimize the impact on our customers.

Recommendations

- Have written detailed recovery plans that identify specific actions to be taken, personnel requirements needed to undertake those actions, and other resources necessary to restore critical processes and resume business operations.
- Contract with vendors to provide or make available PC networks, communication infrastructure and workspace for personnel in the event that our facilities are unusable because of an incident.
- Annually test the effectiveness of our Long-Term Business Continuity Plan to ensure that we have the ability to continue to operate in the event of an incident.

ANNUAL PROJECT WORK PLAN

IT Project Work Plan

Fiscal Year 2010-2011

Detail

ID	Task Name	Start	Finish	Work	%	2011											
						Qtr 1, 2011			Qtr 2, 2011			Qtr 3, 2011			Qtr 4, 2011		
						Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	IT Projects			11,078.6 hrs	13%												
2																	
3	Capital Improvement Projects			1,320 hrs	25%												
4	Scheduled			1,320 hrs	25%												
5	OSSI	Fri 10/1/10	Fri 9/30/11	400 hrs	60%												
6	Cry Wolf	Mon 1/3/11	Thu 1/13/11	48 hrs	0%												
7	Order Replacement Switches - ESD	Thu 2/3/11	Mon 2/28/11	100 hrs	0%												
8	Tape Backup	Mon 5/2/11	Thu 5/26/11	100 hrs	0%												
9	New and R & R Computer Equipment	Sat 1/1/11	Tue 5/3/11	672 hrs	13%												
10	Police	Sat 1/1/11	Wed 2/9/11	192 hrs	45%												
11	Support Bureau	Sat 1/1/11	Fri 1/14/11	96 hrs	30%												
12	Dell Optiplex 960(Call Taker 911)	Sat 1/1/11	Tue 1/4/11	16 hrs	0%												
13	Dell Optiplex 960(Call Taker 911)	Mon 1/10/11	Tue 1/11/11	16 hrs	0%												
14	Dell Optiplex 960(Call Taker 911)	Mon 1/10/11	Tue 1/11/11	16 hrs	0%												
15	Dell Optiplex 960(PDAS005)	Mon 1/10/11	Wed 1/12/11	16 hrs	60%												
16	Dell Optiplex 960(Hartmann)	Mon 1/10/11	Thu 1/13/11	16 hrs	60%												
17	Dell Optiplex 960(Messer)	Mon 1/10/11	Fri 1/14/11	16 hrs	60%												
18	Operations Bureau	Mon 1/24/11	Wed 2/9/11	96 hrs	60%												
19	Dell Optiplex 960(PCPDJAIL)	Mon 1/24/11	Tue 1/25/11	16 hrs	60%												
20	Dell Optiplex 960(PCPDJAIL)	Thu 1/27/11	Tue 2/1/11	16 hrs	60%												
21	Dell Optiplex 960(PCPDJAIL)	Mon 1/31/11	Wed 2/2/11	16 hrs	60%												
22	Dell Optiplex 960(PCPDJAIL)	Tue 2/1/11	Thu 2/3/11	16 hrs	60%												
23	Dell Optiplex 960(PCPDJAIL)	Thu 2/3/11	Fri 2/4/11	16 hrs	60%												
24	Dell Optiplex 960(PCPDJAIL)	Tue 2/8/11	Wed 2/9/11	16 hrs	60%												
25	Community Improvement	Mon 2/14/11	Thu 2/17/11	32 hrs	0%												
26	Dell Optiplex 960(CI011)	Mon 2/14/11	Tue 2/15/11	16 hrs	0%												
27	HP Laserjet 4250(CI009)	Wed 2/16/11	Thu 2/17/11	16 hrs	0%												
28	Fire	Tue 2/8/11	Thu 3/3/11	128 hrs	0%												
29	Dell Optiplex 960(FS101)	Fri 2/18/11	Mon 2/21/11	32 hrs	0%												
30	Dell Optiplex 960(FS113)	Mon 2/21/11	Tue 2/22/11	32 hrs	0%												
31	Dell Optiplex 960(FS123)	Tue 2/8/11	Fri 2/25/11	32 hrs	0%												
32	Dell Optiplex 960(FS103)	Mon 2/28/11	Tue 3/1/11	16 hrs	0%												
33	Dell Optiplex 960(FS303)	Wed 3/2/11	Thu 3/3/11	16 hrs	0%												
34	Parks & Recreation	Fri 3/4/11	Thu 3/17/11	80 hrs	0%												
35	Pompey Park	Fri 3/4/11	Thu 3/17/11	80 hrs	0%												
36	Dell Optiplex 960 (PPTC008)	Fri 3/4/11	Mon 3/7/11	16 hrs	0%												
37	Dell Optiplex 960 (PPTC009)	Tue 3/8/11	Wed 3/9/11	16 hrs	0%												
38	Dell Optiplex 960 (PPTC010)	Thu 3/10/11	Fri 3/11/11	16 hrs	0%												
39	Dell Optiplex 960 (PPTC011)	Mon 3/14/11	Tue 3/15/11	16 hrs	0%												
40	Dell Optiplex 960 (PPTC012)	Wed 3/16/11	Thu 3/17/11	16 hrs	0%												
41	Finance	Fri 3/18/11	Thu 3/31/11	80 hrs	0%												
42	Admin	Fri 3/18/11	Tue 3/29/11	64 hrs	0%												
43	Dell Optiplex 960 (Luteran)	Fri 3/18/11	Mon 3/21/11	16 hrs	0%												
44	Dell Optiplex 960 (Walinkski)	Tue 3/22/11	Wed 3/23/11	16 hrs	0%												
45	Dell Optiplex 960 (Nadal)	Thu 3/24/11	Fri 3/25/11	16 hrs	0%												
46	Dell Optiplex 960 (Robinson)	Mon 3/28/11	Tue 3/29/11	16 hrs	0%												
47	IT	Wed 3/30/11	Thu 3/31/11	16 hrs	0%												
48	HP4320N(PRTMI003)	Wed 3/30/11	Thu 3/31/11	16 hrs	0%												

Scheduled Scheduled (duration) Progress Unscheduled Unscheduled (duration) Milestone

IT Project Work Plan

Fiscal Year 2010-2011

Detail

ID	Task Name	Start	Finish	Work	%	2011											
						Qtr 1, 2011			Qtr 2, 2011			Qtr 3, 2011			Qtr 4, 2011		
						Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
218	Installation and Configuration	Fri 10/29/10	Fri 2/18/11	40 hrs	25%												
219	Development	Fri 10/15/10	Mon 2/28/11	160 hrs	13%												
220	Develop Themes (Styling)	Fri 10/15/10	Mon 2/28/11	80 hrs	20%												
221	Develop Templates	Wed 12/1/10	Tue 2/15/11	80 hrs	5%												
222	Content	Mon 1/3/11	Wed 9/28/11	1,840 hrs	0%												
223	Content Analysis	Mon 1/3/11	Fri 4/1/11	160 hrs	0%												
224	Develop Taxonomic Structure	Mon 1/10/11	Fri 4/1/11	40 hrs	10%												
225	Develop Path Structure	Mon 1/17/11	Fri 4/1/11	40 hrs	5%												
226	Migrate Content (manual process)	Tue 2/8/11	Wed 9/28/11	1,600 hrs	0%												
227	Build Servers (production)	Tue 3/1/11	Fri 4/1/11	50 hrs	0%												
228	Build virtual servers	Tue 3/1/11	Tue 3/1/11	10 hrs	0%												
229	Install LAMP infrastructure	Mon 3/21/11	Mon 3/21/11	10 hrs	0%												
230	Enable web access	Mon 3/28/11	Mon 3/28/11	10 hrs	0%												
231	Enable Samba for Windows shares	Tue 3/29/11	Tue 3/29/11	10 hrs	0%												
232	Install Drupal	Fri 4/1/11	Fri 4/1/11	10 hrs	0%												
233	User Administration	Mon 4/4/11	Wed 4/13/11	80 hrs	3%												
234	Develop Roles	Mon 4/4/11	Wed 4/6/11	40 hrs	0%												
235	Enroll Users	Mon 4/11/11	Wed 4/13/11	40 hrs	5%												
236	Support and Training	Wed 6/1/11	Fri 9/30/11	600 hrs	0%												
237	User Training	Wed 6/1/11	Fri 7/29/11	200 hrs	0%												
238	General Support	Wed 6/1/11	Fri 9/30/11	400 hrs	0%												
239	Radio Station Training	Mon 12/6/10	Mon 12/13/10	15 hrs	0%												
240	IT Conference Room Upgrade	Tue 12/7/10	Wed 12/8/10	10 hrs	90%												
241	Communication Server Setup (Fire)	Wed 12/8/10	Wed 3/16/11	90 hrs	15%												
242	UTB Camera System	Mon 12/13/10	Fri 12/17/10	20 hrs	0%												
243	Credit Card System Update (AMEX/Discover)	Mon 12/13/10	Wed 12/22/10	20 hrs	0%												
244	Granicus Upgrade	Mon 12/13/10	Mon 2/28/11	30 hrs	0%												
245	ESD IP Cam Setup	Thu 4/21/11	Fri 9/30/11	300 hrs	0%												
246	Unscheduled			60 hrs	85%												
247	Employee Forum	Fri 10/1/10	Thu 12/30/10	60 hrs	85%												
248																	
249																	
277																	

Scheduled Scheduled (duration) Progress

Unscheduled Unscheduled (duration) Milestone