



City of Saco

Information Technology Plan

April 2002

Prepared by Berry, Dunn, McNeil & Parker

Robert Hamblen, AICP
City of Saco
300 Maine Street
Saco, ME 04072-1538
Phone: 207.282.3487
Fax: 207.282.8202
bhamblen@sacomaine.org

Table of Contents

	Page
Letter to City Council	
1.0 Introduction	1
1.1 Plan Overview	1
1.2 Planning Process	1
1.3 Vision and Goals	2
2.0 Needs Assessment	4
2.1 Organization Chart	4
2.2 Inventory	5
2.3 City-Wide Needs Assessment	6
3.0 Strategic Direction	7
3.1 e-Government	7
3.2 Management and Coordination	8
3.3 Increased Capital Investment	11
4.0 Enterprise Initiatives	12
4.1 Network Modernization	12
4.2 Enterprise Resource Planning	18
4.3 Information Management	20
4.4 Internet Architecture	24
5.0 Budget Summary	27
5.1 Planned Projects	27
6.0 Implementation Plan	29
Appendix A – City Council Goals for Fiscal Year 2002-2003	
Appendix B – Hardware and Software Inventory	

1.0 INTRODUCTION

1.1 Plan Overview

The pace of change in government, business, and technology is accelerating. The time for visionary and aggressive investments in information technology (IT) in local government is now. Municipalities are no longer isolated from the competitive nature of the global marketplace. Their success is measured by the quality of the services they provide to their constituents and the attainment of operational efficiencies. This necessitates an unparalleled evaluation of the City's investment in and deployment of information technology.

Presently, the City of Saco (City) is faced with major challenges. Many of these challenges are a direct result of the increasing expectations of the City's constituents and stakeholders (including citizens, local businesses, and employees) to use technology to increase effectiveness and efficiency in daily operations.

To ensure that the City can overcome these challenges, it must change its view of information technology as a line item in the budget to a critical enabler to improve government services and operations. Information technology is a part of the City's strategic and competitive advantage. Adequately funding IT projects will ultimately affect productivity, service delivery, and constituent satisfaction.

The City has taken the first step to aggressively plan, fund, and implement an Information Technology Plan designed to address the needs of its departments. New information technologies have provided an opportunity to level the playing field between large and small communities, but it will take vision, leadership, and capital investment.

This plan was developed to create a central repository of IT strategies and action items based on the City's resources and needs identified during the planning process.

1.2 Planning Process

The City retained Berry, Dunn, McNeil & Parker (consultants) to facilitate the planning process. The process began on February 8, 2002, leaving approximately thirty business days to complete the plan. Given the compressed time frame, the City's selection committee felt that meeting with representatives from each department and relying on their understanding of their customers' needs would be the best approach.

Each department was asked to complete a pre-work packet to assist with data collection. In addition to completing the written materials, interviews were conducted with each department and the City Administrator on multiple occasions to identify needs and confirm the strategic direction. These sessions provided information about City department needs and allowed department leaders to identify their constituents' needs and the technologies required to meet those needs.

Various information was collected and reviewed, including current budget data for information technology projects, information technology equipment inventories, existing and planned network infrastructure diagrams, department and city-wide applications, and previous planning documents and reports.

The information from internal and external stakeholders, research activities, and existing documentation was synthesized to create this plan. City representatives reviewed and commented on a draft of the plan prior to its finalization. The plan sets forth the strategies and action items for the City to focus on moving forward. Active involvement on the part of many administrative and department leaders will be necessary to continually update and refine this plan over the next three-to-five years.

1.3 Vision and Goals

It is important to closely link the City's information technology efforts to its overall City vision and community goals. The City Council's Goals for Fiscal Year 2002-2003 are included in Appendix A. Although only one of the twelve goals adopted on January 7, 2002, identified a specific investment in information technology (#11: Implement an Enterprise Resource Planning System) a majority of the City Council's goals can be managed or achieved more quickly and completely through the proper use of technology.

Vision Statement

Our vision is a high quality of life for Saco citizens. Central to this vision is a sustainable economy that offers an opportunity for everyone to have rewarding employment and for business to prosper, now and in the future. The people of Saco bring this vision into reality by working together and building on our tradition of hard work, dedication, and ingenuity.

Information technology is an enabler which, among other things, allows government to reduce errors, delays, and multiple face-to-face transactions. Ultimately, technology can increase overall productivity and allow government employees to better focus on serving their specific stakeholders. The vision statement requires investments in technology and gains in productivity to foster economic development and prosperity for its citizens and the local business community.

Providing the optimal level of technology to drive excess costs out of routine and redundant processes, while eliminating tasks that do not add value, should be the City's primary focus. Automating a bad business process and linking it to the Internet with new information technologies will not yield the desired results.

Technical challenges are often easier to overcome than those associated with vision, leadership, and capital investment when making the transition to an e-Government business model.

City Administrator's Goals

Provided below is a list of goals that were developed by the City Administrator which identify areas that require operational emphasis (time, energy, focus, and resources) in order to achieve the Vision.

Alignment: IT goals and projects will align with City Council goals. Technology is one tool to help achieve goals.

Service: All IT projects must have a direct service pay-off. Projects with a narrow technology focus will be avoided.

Cost/Benefit: IT project benefits will be weighed against costs.

Standardization: The City will have only one kind of everything. Simplicity will reduce the difficulties and costs of IT.

Custom Software Development: The City will avoid custom software development and use commercially-packaged software.

Leading Edge: The City will stay off the leading edge on new technology. Technology that has been proven to work will be used.

Functionality: The City will keep its technology current so that it provides the functionality users expect and does not require extensive conversion when migration to a system occurs. Technology investments will be retained for a reasonable lifetime.

Information Technology Staff and Contractors: A good team of internal IT staff will be complemented with an equally good team of outside contractors from preferred-provider firms.

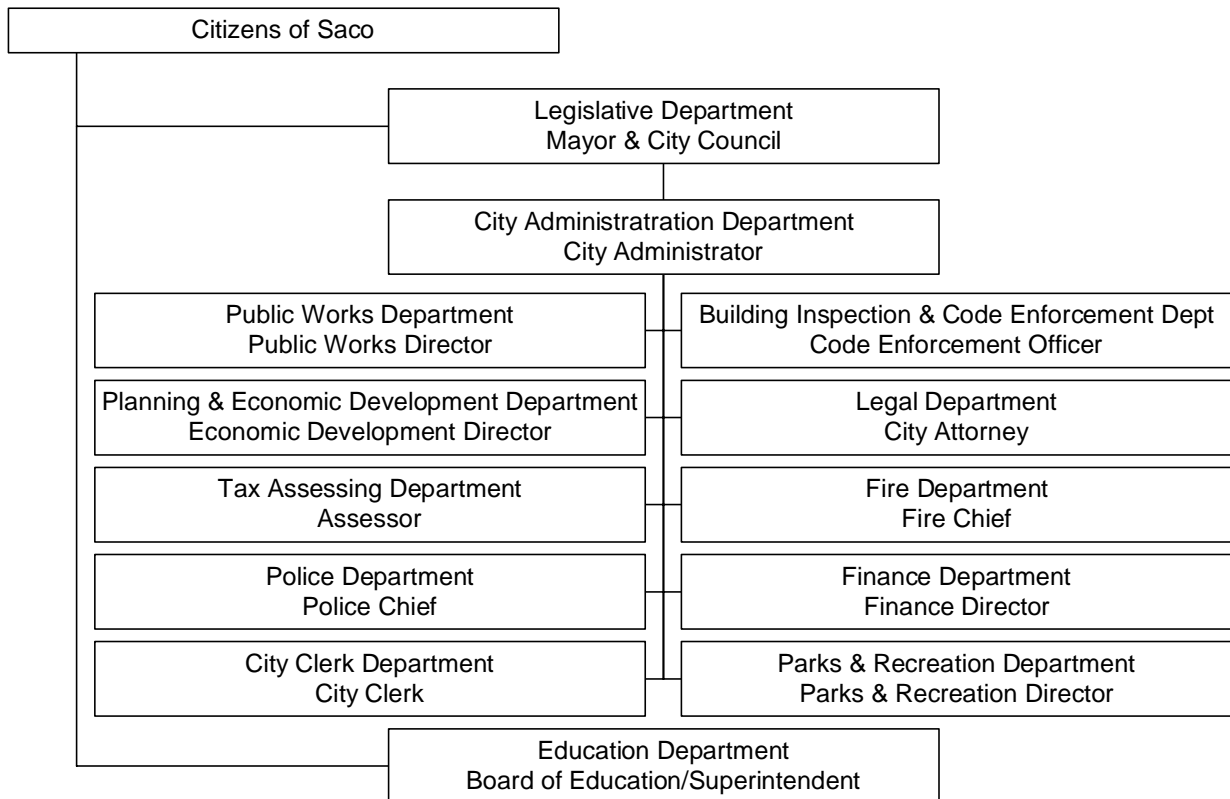
Purchasing: IT purchases will be grouped together with a preferred-provider identified for each category.

2.0 NEEDS ASSESSMENT

2.1 Organization Chart

The City of Saco’s operations are overseen by the City Council and Mayor. The City Administrator is responsible for the City’s overall operations on a daily basis. The City Administrator works closely with the City Council during meetings held twice a month. There are eleven departments including the City Administration Department. The department heads report directly to the City Administrator. Also reporting to the City Administrator are the City Solicitor, the Labor Consultant, the Executive Secretary, the Personnel Secretary, the Harbor Master, and the Emergency Management Director. The City’s organization chart can be seen below:

City of Saco
Organizational Chart



2.2 Inventory

During the planning process, the eleven City departments completed a worksheet identifying personal computers and workstations, network and application servers, printers, and application software. The table below shows the total hardware by department (See Appendix B for detailed specifications). This inventory will be used to identify a city-wide network configuration as well as hardware purchasing needs.

Department	PCs and Workstations	Network and Application Servers	Printers
Wastewater	8		7
Assessor	5	1	2
City Administration	3		3
Police Department	22	1	4
Fire Department	6	1	5
Parks and Recreation	3		4
Finance	8	1	11
City Clerk	6		5
Code Enforcement	4		4
Public Works	7		4
Economic Development and Planning	3		4
11 Departments	75	4	53

After collecting and compiling the inventory worksheets, the project team discovered that there is a proliferation of different hardware, software, and systems. For example:

- There are eight different brands of personal computers, all with a variety of hardware specifications.
- The servers consist of different brands. Three run a Windows operating system and one runs a UNIX operating system.
- There are seven different brands of printers.
- There is a variety of different Internet access methods throughout the City, from DSL connections to dial-up connections.
- There are two word processing applications in use.
- Multiple databases platforms are maintained throughout the City.

It appears that the City is not realizing the benefits of coordinated purchases, or of networked printers and peripherals. Ultimately, deploying a wide range of technology adds to the cost and complexity of providing adequate support, training, and maintenance.

It was noted that the lack of standardization is due to the legacy financial system implemented in the early 1980s. The City has started to improve in this area over the past few years by standardizing the purchasing of new software, such as their office automation software and operating systems.

2.3 City-Wide Needs Assessment

During the planning process, representatives from each of the eleven departments were interviewed to discuss current technology in use and future technology needs. The following table summarizes the needs identified by each department during the interviews.

Identified Needs	Finance Dept.	Economic Dev. & Planning	Wastewater	Assessor	Police Dept.	Fire Dept.	Public Works	City Admin.	Parks & Rec.	Code Enforcement	City Clerk
Network Infrastructure, Connectivity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IT Support	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GIS Application	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
e-Government Applications	✓	✓	✓	✓			✓	✓	✓	✓	✓
Access to Financial Information-NDS		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Telephone System Including Voicemail	✓	✓	✓	✓				✓	✓	✓	✓
Data Management	✓		✓	✓			✓	✓	✓	✓	
Document Management	✓	✓	✓	✓				✓	✓	✓	✓
Field Laptops			✓			✓	✓	✓	✓	✓	
City Technology Standards			✓	✓				✓	✓		
Website Portal		✓	✓	✓				✓	✓		
TV Monitoring of Flood Sites							✓	✓			
Road Temperature Monitoring							✓	✓			
Scheduling Software		✓						✓	✓	✓	
Technology Training		✓			✓		✓	✓	✓		
Electronic Purchase Ordering	✓		✓					✓	✓		
Fleet Management System								✓	✓		
Redundancy for SCADA Alarms			✓					✓			
Electronic Data Collection			✓				✓	✓			
Purchase New Billing System			✓					✓	✓		
Touch Screens for SCADA Operators			✓					✓			
PDAs for Pump Station Checks			✓					✓	✓		
Reliable Data Backup			✓				✓	✓			
Barcode System			✓					✓			
Link to School Sys. Acct. Software	✓							✓			
Enterprise Resource Planning Software	✓							✓			
Accepting Credit Cards or e-Checks	✓		✓					✓			
System for Vital Statistics								✓			✓
Digital Signatures	✓		✓					✓	✓		
Fire Computer Aided Dispatch Sys.						✓		✓			
Wireless to Field Apparatus			✓			✓		✓			
Automatic Control of Traffic Lights					✓	✓		✓			
Connection to Substations						✓		✓			
GPS Monitoring of Cruisers					✓			✓			
Police Application Software					✓			✓			

3.0 STRATEGIC DIRECTION

How government services its constituents will change more in the next ten years than it has in the past century, a direct result of the evolution of e-Government. Some government and business leaders believe there is a direct connection between technology and increased quality of life and economic development. It is time for the City of Saco to make the transition to e-Government in a way that preserves and protects the community's identity, culture, and values. Integrating and automating routine operations is a core requirement when making the transition to e-Government that requires proper management and coordination of IT resources and increased capital investment.

3.1 e-Government

Traditionally, government information and services are delivered to constituents through manual processes and one-to-one personal contact with government employees. The term e-Government describes a new channel for government interaction with constituents that is based on digital technology and can produce significant improvements in service levels and efficiency.

The Internet has progressed well beyond informational web pages; new technologies have the potential to be everywhere and empower everyone. Providing e-Government services requires investing in technology and infrastructure. The City will need to develop the proper network(s), databases, training resources, and skills prior to building specific e-Government applications. Making the transition to e-Government will require strong leadership, clear strategic and tactical plans, and comprehensive up-to-date community assessments to determine the most pressing needs. Once development begins, the City will need to actively market those services and make its stakeholders aware of the added value that can be derived from those services.

Adopting an e-Government strategy can produce significant benefits. Well-designed e-Government applications can enable department managers and City leaders to better understand City operations as a whole. Standardizing on a set of core technology tools and platforms will minimize the need to support disparate technology products at significant expense. This will also help to reduce the overall cost of ownership for each new computer software application. Working together, departments should implement solutions that will meet the needs of their stakeholders by streamlining existing manual processes. It is crucial that the City start small and earn the trust of its e-Government "customers" over time as each new application is developed and launched.

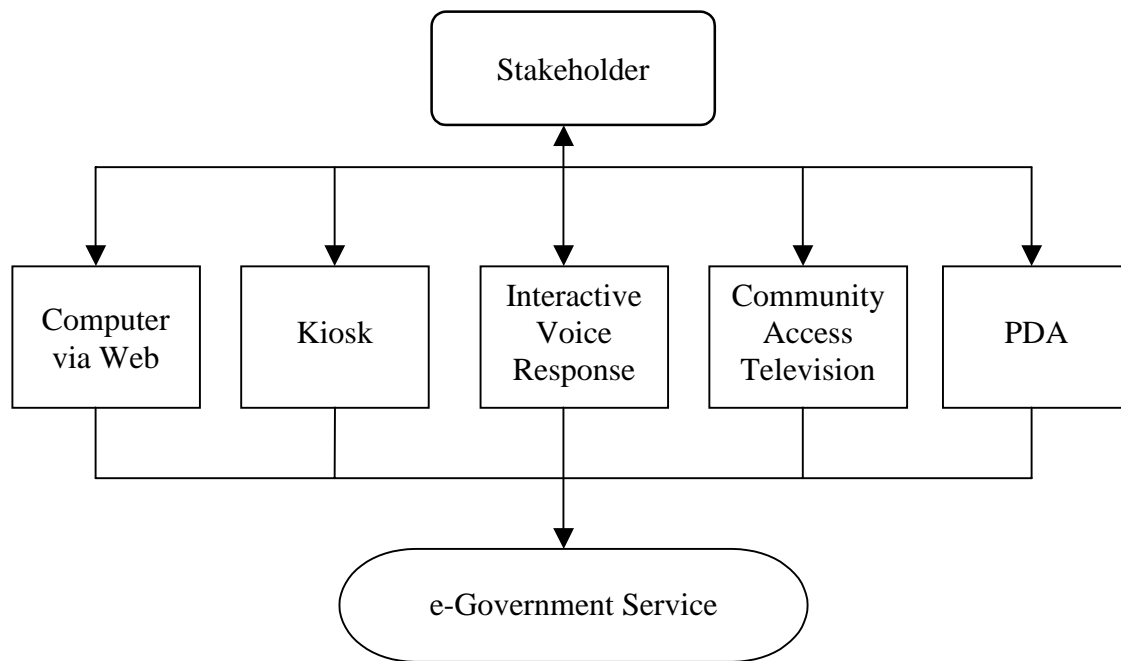
The rapid pace of technological innovation provides a large number of new opportunities for the City. Until recently, e-Government services have been provided predominantly through a web-based platform, requiring access to a personal computer and a connection to the Internet. Advances in handheld computers, mobile communications, and user-friendly computer interfaces have improved accessibility to new services and information.

Figure #1 illustrates the wide range of service delivery systems that are available for accessing e-Government services. Each system is in different stages of development, adoption, and distribution in various state and local government organizations across the country.

Providing services using these new technologies will require a varying degree of knowledge, skills, and proficiency. One of the most important things City leaders can do as they develop the City’s infrastructure and e-Government applications is to use open standards that will enable them to provide future services on many technology platforms.

There are successful e-Government models being deployed across the United States, and a majority of the risks associated with implementing e-Government services can be mitigated through proper management and coordination.

Figure #1 – Potential e-Government Service Delivery Systems¹



¹ A Kiosk is a small, self-standing structure, which dispenses public information via computer screens using either a keyboard or touch screen for data input.

3.2 Management and Coordination

Today, there isn't a single area of City government that remains untouched by technology. There have been significant investments in technology over the years by numerous departments that have resulted in a broad range of disparate systems running on different platforms.

In order to maximize the benefits of its technology investment, the City of Saco will centralize the management and coordination of all aspects of the selection, deployment, and maintenance of its information technology. IT standardization and integration are critical to maximizing the benefits of investing in new information technologies.

There are four areas the City will address through improved IT management and coordination:

- Promoting and maintaining an enterprise view
- Performing continuous planning and community assessments
- Working with an information technology advisory board
- Providing city-wide information technology support and training

Centralized management and coordination of the City's IT resources begins with promoting and maintaining an **enterprise view**. Thinking and acting as one large entity instead of individual departments is the first step to internal integration, seamless data sharing, and proper stewardship of the City's IT resources. The promulgation of an enterprise view will result in each department having a vested interest in the success of important initiatives.

Performing **continuous planning and regular community assessments** is an important task in properly managing the City's IT resources. Unfortunately, planning is not a single endeavor and the development of a plan is only the beginning of the planning process. Customarily, planning is initiated by a leadership group or office, but they typically can only succeed by gathering information from a diverse group of stakeholders and creating a sense of "ownership" by those involved.

The City should use this plan as a starting point to build consensus among various stakeholder groups in the community as to where and how the City should invest in information technology. Next, the City should allow its stakeholders to participate in the decision-making process which will create a sense of empowerment. Finally, ownership will evolve whereby the stakeholders will have a vested interest in the success of any enterprise initiative.

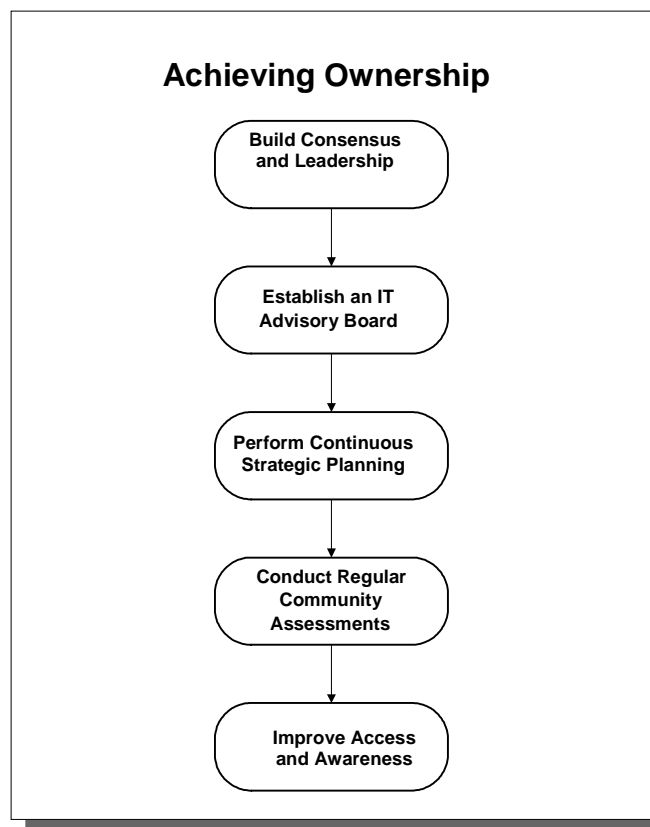
Many municipalities have created an **information technology advisory board** as a standing committee of the City Council to evaluate the benefits of related solutions that span multiple City service areas and cross departmental boundaries. The board should be populated with representatives from organizations that approximate the City's size and information technology needs. Creating an advisory board also provides a unique

opportunity to reach out to new partners as well as to redefine relationships with the school district and other local organizations.

Figure #2 illustrates that successfully making the transition to e-Government requires centralized management and coordination to oversee repeated cycles of strategic planning and community assessments, while stressing the importance of access and awareness.

Finally, as City employees are expected to meet the increasing demand to provide more effective and efficient services by deploying and adopting new technologies, they will need adequate **IT support and training**. There are 75 PC's, 4 servers, 53 printers, and at least 25 different software applications running throughout the City without any dedicated technical support staff.

Figure #2 – Management and Coordination



The City of Saco is an organization with technology users who typically adopt proven technologies to support critical operations. According to standard research metrics, typical ratios (IT staff to users) for organizations similar to Saco range from 1:40 to 1:80 for help desk IT support (level 1). During the needs assessment (summarized in Section 2.3), every department interviewed reported the need for increased IT support.

As technology and common applications are upgraded, organizational training is imperative to capture the full potential of the investment. In the area of department-specific applications, there is a high degree of institutional knowledge (operational information and processes that are known only by specific users) and limited documentation of business rules, policies, and procedures exists. Training is typically done within each department as needed.

This makes training new hires and transferring knowledge time intensive and inconsistent. When turnover occurs the City could potentially lose the knowledge that individual possesses in the cases where business and technical processes are not properly documented.

The biggest challenge facing the City of Saco today is where, when, and how much should it invest in technology to enable its workforce to provide better, faster services. Changes in technology are expensive and new, complex technologies must be selected, procured, and deployed through proper management and coordination.

3.3 Increased Capital Investment

Research conducted by various firms in recent years has identified a reasonable baseline to measure typical levels of investment in IT. When looking across all industry groups, total IT investment (including staffing costs) was found to range from 2-5% of an organization's total budget.

The City of Saco's next budget estimate (separate from school expenditures) will be approximately \$16.1 million, of which \$313,000 is tentatively allocated to IT expenditures. Although a drastic increase over the previous budget (\$194,000 spent on information technology), the City's planned IT expenditures in the next budget cycle will still only be 1.9% of the total budget.

Each department responds to their own needs for storing and retrieving data. Most departments operate on separate systems generating their own islands of data. The data exists in different databases, is written in different languages, and is accessible via different operating environments. Standards, policies, procedures, or guidelines that support data compatibility across platforms do not exist. A coordinated, enterprise plan for the collection, management, and protection of records, both old and new, also does not exist.

While the City's current pace of investment in information technology has provided tangible benefits, there are significant needs that remain unmet. Four key areas of need were identified in the planning process that affect all City departments and require additional investment. The four areas or enterprise initiatives are:

- Network Modernization
- Enterprise Resource Planning
- Information Management
- Internet Architecture

4.0 ENTERPRISE INITIATIVES

After synthesizing the results of the needs analysis interviews (summarized in Section 2.3) and meetings with City leaders, four enterprise initiatives were identified. The remainder of this section describes the current situation, identifies the desired outcome, and communicates the action items required to implement the four enterprise initiatives.

4.1 Network Modernization

The City's network architecture can be described as the communications infrastructure in place, either wired or wireless, that facilitates the transmission of data and telecommunications between office networks within a single building, commonly known as a Local Area Network (LAN), or between networks in different buildings throughout the City, known as a Wide Area Network (WAN).

Current Situation

The City of Saco consists of 11 departments located in buildings throughout the City. Administration, Finance, City Clerk, Economic Development, Planning, Assessor, and Code Enforcement are all located in City Hall. Two computer operating platforms exist in City Hall. The first is a UNIX platform used to run the City's financial application. Each computer in City Hall is directly connected to the UNIX server through a serial connection. City Hall contains a Windows NT network as well. A Windows NT Server acts as a file server for common files accessed by multiple departments and acts as a print server for the departments within City Hall. City Hall is connected to the Internet by a DSL line connected to a Sonic Wall firewall. The connection runs from the firewall to a 10 Mbps-based hub which sends a connection to each City Hall office through CAT 5 cabling. City Hall contains approximately 30 computers, each equipped with 10/100 Ethernet network cards.

The City's Wastewater Department is located at the wastewater treatment plant. The Department has seven computers on a peer-to-peer network connected through a 10/100 hub by CAT 5 cabling. The Wastewater Department connects to the Internet, when necessary, via dial-up. When the modem phone line is not used for connecting to the Internet, it is being used by the billing clerk who dials into the UNIX server in City Hall. The billing clerk needs the dial-up connection for data entry into the Northern Data Systems Financial software. The Allan-Bradley wastewater SCADA system is monitored by one computer, which is connected to the system by CAT 5 cabling. The same computer also monitors and receives data from the eight pump stations throughout the City. Five of the eight pump stations are connected to the computer by radio modems while the other three are connected by dial-up. The Wastewater Department reads the data from the City's other 20 pumps using a laptop computer.

The City's Parks and Recreation Department maintains three computers connected on a peer-to-peer network connected through a 10/100 hub with CAT 5 cabling. The peer-

to-peer network allows the users to share files and printer use. The users gain access to the Internet and e-mail through dial-up service.

The Police Department's network consists of an NT server and approximately 22 computers with switched 10/100 Ethernet connected by CAT 5 cabling. The server is used mainly for file and print sharing and connects the computers through a 100 Mb switch. The Police Department gains access to the Internet through a DSL line connected to a Sonic Wall firewall. They are also connected to the Fire Department by a 512 KB microwave link. The microwave link is used to access the Fire Department dispatch system.

The Fire Department's network consists of six computers connected to a Windows NT server. The Department gains access to the Internet through the Microwave connection to the Police Department's DSL connection.

The City's overall hardware inventory has been completed as part of this plan and can be found in Appendix B. The City will use this inventory to identify computer hardware that does not meet the City's technology standards.

Desired Outcome

The City's departments understand they each have a specific mission and rely on information to carry out that mission. The departments are currently receiving the information they need to carry out their mission; however, they are not receiving the data in the most efficient manner. Multiple departments are also maintaining the same information. The lack of a network between all City departments causes manual information transfer between departments and results in a duplication of effort.

The City should begin implementing a high-speed, city-wide network that provides better access to information technology resources. These resources include city-wide software applications, such as the Northern Data Systems Financial applications, department-specific applications, and computer devices such as personal computers, printers, network servers, and communications equipment. The network's backbone should be comprised of Gigabit Ethernet and should be designed with redundancy for citizen critical services, such as Police and Fire services. The desktop connection should be switched 10/100 Ethernet. The network backbone should have the ability to provide Internet Protocol (IP) Telephony and video transfer in the future in order to provide voice, data, and video traffic into a single network to all City departments.

The installation of a city-wide network will increase the productivity of each department by allowing the departments to share files and information as well as other network resources. Sharing files and maintaining information in common applications avoids the duplication of effort that takes place when multiple departments maintain the same information. It also allows the departments to perform their mission-critical tasks more efficiently. Increasing access to shared resources such as printers decreases hardware, support, maintenance, and supply costs and decreases paper-based communication costs.

An example of avoiding duplication of effort to become more efficient is the interdependency between the Code Enforcement Department and the Assessor. Code Enforcement currently copies the Assessor's database on a periodic basis to access information on buildings that need to be inspected. If a city-wide network were in place, the Code Enforcement Department would not have to take the time to copy the database because they could have instantaneous access to it through the network with an Open Database Connectivity (ODBC) connection. This instantaneous access increases the accuracy of the data. They could also keep any Code Enforcement information such as permit information in the same database, rather than maintaining their own version. Spending less time on accessing current data allows the Code Enforcement Department to more easily identify buildings that need to be inspected and would increase the number of inspections that could take place.

A city-wide network is the basis for implementing future technology initiatives such as those identified in Section 3.0 of this document. Many of the technology initiatives identified throughout the planning process rely on the ability to share information.

Network Modernization – Action Items

Negotiate Contract with Time Warner: The City will negotiate a contract with Time Warner for the installation of fiber optics. The negotiations will identify the speed of the fiber, the amount of fiber, and where Time Warner will install fiber. The City will negotiate with Time Warner to install the fiber to each City building.

Identify an Employee to Oversee Network Modernization: The City will identify an employee to oversee the installation of the network. We recommend the City should hire an experienced Network Administrator. The Network Administrator, or identified employee, will be involved in all decisions and steps during the network upgrade and will also be responsible for maintaining the network once it is installed. The Network Administrator will also implement and monitor security settings of the network.

Determine a Network Operating System: The City currently has Windows NT networks installed in multiple buildings and peer-to-peer networks running Windows 98/2000 at the desktop in the remaining locations. It is logical that the City will remain on a Windows platform running either the Windows 2000 or the XP operating system. The City will implement the network operating system as a city-wide standard.

Determine Hardware Standards: The City will determine appropriate minimum performance standards for hardware devices. Hardware devices include personal computers and workstations, firewall, file and application servers, network interface cards at the desktop, cabling to the desktop, hubs, switches, and routers. Each hardware device will have a different set of standards as each device has different performance measures. An example of a performance standard is that each personal computer purchased should contain at least a 1.0 GHz Pentium III processor with 256 MB of RAM and a 20 GB hard drive. Performance standards are set to ensure that the future performance of the network is maintained at a level high enough for City employees to perform their necessary job functions.

Decide on Server Arrangement: As the City moves toward a high-speed network, the reorganization of file and application servers will become an important task. The City will create a configuration plan that will include the physical location of each server and the server specifications such as processor speed, memory, and hard drive size. The specifications should comply with City standards. The City should look to consolidate servers to a centralized location to ease information technology administration and support tasks. Internet connectivity and e-mail can be consolidated city-wide to reduce information technology expenditures.

Undertake a Telecommunications Study: The City will undertake a telecommunications study to determine the connectivity of the wide area network (WAN). The study will identify a high-speed backbone, cabling to the desktop, network interface cards, and hubs, routers, and switches. The telecommunications study will consider the use of wireless technologies and the ability to integrate a city-wide telephone system using IP Telephony. Some of the services the City provides, such as Police and Fire services, use technology that must be running at all times; therefore, the redundancy needed to maintain public safety systems is a key aspect of the future network. As part of the study, the City will determine a network topology that will be the basis for connecting City departments to the network. The topology will either be a ring, a communications network that connects departments in a continuous loop, or a star, a communications network in which all terminals are connected to a central computer, controller, or hub. A ring topology is generally cheaper to install; however, it is much more difficult to troubleshoot if a problem exists. A star topology is more expensive, but easier to troubleshoot, and redundancy is inherent.

Upgrade Current Telephone System in City Hall:

The City will upgrade their current telephone system to include voicemail. This will be a temporary solution until a new telephone system is identified. The City has two different options for obtaining voicemail. They can purchase a newer version of Toshiba hardware and upgrade their current central processing unit to include voicemail. This would allow the City to maintain their current phones and phone cards and would allow each employee to receive voicemail. This solution also allows for extra lines for automatic responses, such as a general number that would give citizens the City's hours of operation. This does not include an automatic attendant. The second option is more expensive and involves purchasing new central hardware, phones, and phone cards for each employee. This would give the City more capabilities including an automatic attendant for all calls that enter City Hall.

Identify a Telephone System: Telephone systems are increasingly becoming interconnected with data communications. Recent technologies allow "voice over IP," or IP Telephony. This means that voice communications are being transferred over the same connections as data communications. The City will determine the need for a new telephone system with voicemail and, optionally, interactive voice response (IVR). IVR would be an advantage to both City employees and citizens because the more frequently requested extensions will be easier to access by the citizens and the employees will not answer as many phone calls. This would allow employees to be more efficient on the job, assisting more citizens in less time. When selecting a new

telephone system, the City will make a decision whether to pursue IP Telephony technology. The City should compare one-time and on-going telephone system costs for expanding use of its current Centrex telecommunication services.

Identify Opportunities for Wireless Technology: As wireless technology is enhanced, there will be many opportunities for the City to implement it into everyday tasks. Many departments currently have the ability to use wireless technology with hardware such as Personal Digital Assistants (PDAs), laptops, or cellular telephones. Reporting can be performed from the field to decrease the duplication of effort and increase the accuracy of the reports. The City should establish a consolidated commercial contract with one cellular provider in an attempt to reduce costs.

Install Telecommunications and Network: The City will install and configure the hardware devices associated with the telecommunications and network infrastructure. The installation will take place in the following three phases:

Phase 1: Build Network to City Hall, Police Department, and Fire Department

Procure and Install Telecommunication and Network Hardware – The Network Administrator, along with a third-party hardware provider, will identify, purchase, and install telecommunication and network hardware that meets the City's hardware performance standards. This hardware includes all the routers, hubs, switches, cabling, and network interface cards that are necessary to establish an operational network. The hardware purchase will consider the redundant connectivity between the Police and Fire Departments.

Procure and Install a Network File and Application Server – The City will purchase a file and application server that meets the City's performance standards. The City's office automation applications and files will be stored on the server to allow sharing of information to each department connected to the network.

Procure, Install, and Configure the Operating System on the Server – The City will install the selected network operating system on the server. The Network Administrator will configure the server by creating groups and users in each group and installing printers and other network peripherals. Appropriate security levels will be established after setting up the directory structure and identifying directories that will contain confidential information to allow City departments to secure their data.

Implement e-Mail and Office Automation Applications – The Network Administrator will implement a centralized e-mail service for the departments connected to the network. By combining Internet connections and e-mail service for all departments, the price of Internet connection services will be less. All office automation applications and databases used by City employees will be transferred to the file and application server, allowing access via the network. This provides easy access for employees using the applications and is more reliable since the file server will be backed up on a daily basis.

Provide Training for Department Employees – Training sessions will be held for all employees affected by the network upgrade. The employees will be trained so they are

aware of the functionality and features available from the new IT resources. The Network Administrator will provide support to the employees following the training sessions.

Phase 2: Build Network to the Wastewater Treatment Plant, Department of Public Works, and Parks and Recreation

Update Hardware Standards – Due to constantly changing technology, the Network Administrator will review established hardware performance standards and revise them as necessary.

Procure and Install the Telecommunication and Network Hardware – The Network Administrator, along with a third-party hardware provider, will identify, purchase, and install the telecommunication and network hardware that meets the City's hardware performance standards. This hardware includes all the routers, hubs, switches, cabling, and network interface cards that are necessary to expand the network to the additional departments.

Update Server Configuration – The Network Administrator will update the server configuration to include Wastewater, Public Works, and Parks and Recreation users. The configuration will include setting proper security roles for the new users.

Implement e-Mail and Office Automation Applications – The Network Administrator will update the centralized e-mail service to include new users from the additional departments. All office automation applications and databases used by the department employees will be transferred to the file and application server, allowing access via the network. This provides easy access for employees using the applications and is more reliable since the file server will be backed up on a daily basis.

Provide Training for Department Employees – Training sessions will be held for all employees affected by the network upgrade. The employees will be trained so they are aware of the functionality and features available from the new IT resources.

Phase 3: Build Network to the Library and Schools

Update Hardware Standards – Due to constantly changing technology, the Network Administrator will review established hardware performance standards and revise them as necessary.

Procure and Install the Telecommunication and Network Hardware – The Network Administrator, along with a third-party hardware provider, will identify, purchase, and install the telecommunication and network hardware that meets the City's hardware performance standards. This hardware includes all the routers, hubs, switches, cabling, and network interface cards that are necessary to expand the network to the additional departments.

Update Server Configuration – The Network Administrator will update the server configuration to include new users from the library and schools. The configuration will include setting proper security roles for the new users.

Provide Training for Department Employees – Training sessions will be held for all employees affected by the network upgrade. The employees will be trained so they are aware of the functionality and features available from the new IT resources.

4.2 Enterprise Resource Planning

Current Situation

The City of Saco currently utilizes modular financial application software from Northern Data Systems (NDS). The applications run on a UNIX server and connect, via serial port, to City Hall personal computers and workstations. Financial application modules include general ledger, accounts receivable, accounts payable, motor vehicle, voter registration, and tax assessment.

Since the NDS system is run on an older UNIX server with a data transmission protocol different from TCP/IP that is run on the Windows platform used by other department applications, other applications are not integrated into NDS. The lack of integration causes excessive data entry, which is a waste of time and resources.

The NDS system lacks some functionality that could streamline and improve the work performed by the Finance Department. Additionally, the Finance Department reported they frequently need to utilize NDS technical support and have not benefited from major enhancements to the existing software products.

Departments that are not located in City Hall, with the exception of Wastewater, do not have access to the financial information. The billing clerk at Wastewater receives customer water intake information from Biddeford/Saco Water Company. The billing clerk then dials into the UNIX server using a modem and enters the billing information into the NDS system.

Desired Outcome

Saco's City Council adopted a list of goals for the fiscal year 2002-2003. One goal is to implement an Enterprise Resource Planning (ERP) system. An ERP system typically includes the following:

- A single integrated database that spans all the system modules, ensuring that changes are instantly posted to all modules and avoiding the need for reentry of data.
- Flexible chart of accounts and account structure.
- Sophisticated relational database software, which eases ad hoc reporting.

- Windows graphical user interface with the ability to easily exchange data with office automation software.
- Drill down and audit trail capabilities, and advanced reporting and analysis support.
- Standards-based development tool sets to ease the development of special reports and custom features.

The Finance Department has been researching ERP vendors that provide the functionality they require. Finance requires an ERP system that integrates financial, planning, purchasing, asset management, human resources, project accounting, and contract management using one database that can be accessed and used to support e-Government and the reorganization of activities.

Other departments would also like access to the ERP system to view their department's financial information. The comparison of budget-to-actual information is an important part of running a department. It saves department management time if they can access the information they need online, rather than request a report from the finance department to be received at a later date. The City would need to set security roles based on access authority to ensure unauthorized users are not gaining access to sensitive information.

ERP – Action Items

Identify ERP Alternatives: The City will identify alternatives for implementing an ERP system. The City will analyze ERP solutions to determine what action to take. The City will determine the advantages of an ERP system and conduct a cost-benefit analysis. The City will also review in-depth technical requirements to determine if an ERP system can and should be implemented.

Identify ERP Requirements: The City will survey department leaders to identify each participant's needs for an ERP system and to develop a common set of requirements and functions the system will need to meet. Additional requirements that may pertain to each department, potential e-Government applications, and GASB 34 requirements that will need to be addressed in an ERP system will also be considered. The requirements definition will also identify the desired operating platform and back-end databases upon which the system must operate.

Identify ERP Vendors for Municipalities: The City will research local and county governments to determine what leading ERP systems they use and the functionality the systems offer. The City will identify accounting standards and reporting requirements and note which ERP systems have effectively met recent changes in those requirements.

Select an ERP System: A system selection process will be conducted to determine the government ERP solution that best fulfills the requirements defined by the City. The selection process will include the development of a request for proposal (RFP), gathering and reviewing the responses to the RFP viewing demonstrations of two or

three ERP systems, selecting a preferred ERP vendor, and calling references of the preferred ERP vendor. The selection process is essential in selecting an ERP system that best fits the needs of the City. The selection process should be conducted by a selection committee and a process for scoring the proposals should be developed.

Procure and Implement the New ERP System: The City will purchase and install the new ERP system. The implementation procedure will be based on the type of system modules that are being installed. City staff should be involved in the installation process to ensure knowledge transfer. Implementation costs include installation of the software, integration to other databases, customizations, data conversion, and support costs.

Train Users on the New System: The City will actively train new users on how to make the most effective use of the ERP system. Training should be conducted for all individuals who will use the system, as well as for department leaders who will access additional management reporting information. All relevant City employees should receive basic training on the system so they are aware of its functionality, additional modules, and other potential uses.

4.3 Information Management

Information management refers to where data is stored, how an application is designed, the platform the application is designed on, and the integration between applications. The goal of information management is to provide users with easy access to information they need to efficiently perform their job functions.

Current Situation

All City departments use the Microsoft Office 2000 suite for everyday word processing, spreadsheet, and e-mail functions. Department-specific applications were created in a “stove pipe” environment. This means that each department created or purchased an application that was very specific to their job duties, tracked their department’s information, was not available to other departments, and does not have the ability to integrate into other systems.

Some of these “stove piped” applications are Microsoft Access databases that have been developed by third-party contractors. Other database applications were created by department employees using Filemaker Pro, another database platform similar to Microsoft Access. Very few departments maintain commercially-produced information systems; however, most of the City’s applications run on the Windows platform.

The City’s largest application is the financial software provided by Northern Data Systems. The software runs on a UNIX server and is connected to the departments located in City Hall. Wastewater gains access to the billing module in the financial system by dialing up through a modem in order to enter billing information.

The Police Department uses a Computer Assisted Dispatch (CAD) application that is based on a UNIX platform. Along with CAD, the system manages files on people,

evidence, and property. The system was developed by a local programmer and is exclusively used by the Police Department.

The geographic information system (GIS) is an application that is currently being implemented by the Department of Public Works and the Assessor. This system will contain information that is useful to many City departments. The Assessor has obtained funding in the upcoming fiscal budget to create a parcel shape file that will allow the Assessor to view parcel information using the GIS. Currently, there are GIS workstations located at Public Works and in the Assessor's office. No other departments have access to information in the GIS.

Desired Outcome

Many departments discussed the necessity to migrate from their home-grown systems to commercially-available, off-the-shelf systems designed to better fulfill the requirements of the department. As City departments select and implement new systems, they should consider how their system will integrate with other applications used throughout the City, such as ERP or GIS.

Application integration can be accomplished by installing a central data warehouse that acts as a database designed to hold information from multiple applications and databases. The data warehouse is a repository of data that gets updated from the various databases that contain the source data. A report writing tool can be used to extract the information from the data warehouse and present the information in a format that is useful to the user.

The City will create development tool and language environment standards that will allow easier integration between systems. Integrating the systems will help facilitate the installation of an ERP system to allow all departments access to the information it needs to complete necessary job functions. It will also help give citizens access to public information, which will decrease the number of requests made to employees.

The Public Works and Assessor shape files will be combined in a geodatabase. Public Works and Assessor personnel will have the ability to update and view this information through their departments' GIS workstations. Other City departments will only have the ability to view the information, via the Intranet.

The vision of the GIS is not to be the main system in the City, but to be a source of information for other departments. The GIS should be kept simple and allow more people access to its basic functionality. If it is not user-friendly, the system would become difficult to implement, difficult to extract data from, and difficult to keep current.

Information Management – Action Items

Develop Application Standards: Prior to the City expanding its use of technology and identifying new systems, application standards need to be set. Some of these application standards consist of the programming languages, the operating system

platforms, the database management systems, and the network's security procedures. When new applications are purchased that follow City standards, they will be much easier to integrate into one city-wide system. The "stove piping" will no longer exist even though each department has its own specific applications.

Develop Application Policies and Procedures: Policies and procedures will be developed to control the development and purchase of software applications. The City will identify an individual who will act as a central technology purchasing agent. That individual will review each technology purchasing request to ensure the technology will comply with City standards and will have the authority to approve the request. The central purchaser will also track all requests and maintain a budget for technology purchases. The policies and procedures will also define the security standards of new software, such as user authorization and password requirements.

Identify a Central Technology Purchaser: The City will appoint a central technology purchaser who will receive all technology purchase requests, verify that all City specification standards are met, and approve the technology. The purchaser will not approve the purchase of the technology from a budget perspective, just the approval of the technology from a standards perspective. The central purchaser will need an understanding of technology and the technology in use throughout the City. This task can be added to the responsibilities of the new full-time employee identified in Section 3.2.

Implement Policies and Procedures: The central purchaser will develop a technology purchase request form that will help identify the technology being requested, the platform it runs on, its ability to integrate with other systems and all other information needed to ensure it complies with City standards. Through a brief training session, the City will educate each department about the new policies and procedures in place regarding technology purchasing requests. The training will cover the new City standards in place for technology and will give an overview of the approval process. The request form will be introduced and guidelines will be provided. Following the training, all requests will be sent to the central purchaser who will review the requests and ensure that all application requirements comply with City standards. The purchaser will then approve the requests and send them back to the requesting department.

Data Warehouse

Select a Database Platform: A database platform will be chosen that best fits the City's needs. The two leading database solutions are Microsoft SQL Server and Oracle. Both platforms are robust and will meet the needs of small and large organizations. Microsoft SQL Server is less expensive to purchase and most of the databases throughout the City are Microsoft Access databases; however, the Assessor's software is using an Oracle database. The final determination of which platform to purchase will be based on cost, ease of integration, and ease of support.

Specify Data Elements: The City will develop the data flow diagram, logical data model, and physical data model required to identify the structure of the system and the manner in

which information will be imported from the various applications. The City needs to determine what departments would like to share information with a centralized data warehouse. Security should be considered because certain information will need to be shared with some, but not necessarily with all, stakeholders.

Maintain Security and Control: Security should be considered and procedures should be enforced to protect the confidentiality rights of Saco citizens. This should include, but not be limited to: access being restricted by user depending on the data requested; displaying (exporting) non-identifying client data (when security should protect a citizen's identity, but provide access to data contained in the report); and changes to employee policy regarding City guidelines for online reporting and sharing of electronic or printed data. The extent to which a system is made secure should consider the type of data maintained within it. City, state, and federal laws and regulations regarding confidentiality, such as the Health Insurance Portability and Accountability Act of 1996 (HIPAA), will help determine the degree of information security necessary for each application.

Develop the Data Warehouse: The City should inform end users and City constituents that the goal of the initial database development project is to share a common set of data on its citizens using a central system. This data should be accessible by all City staff and incorporate the appropriate level of security determined during the previous steps. Access to centralized data should be provided by a city-wide reporting tool using an ODBC connection.

GIS

Integrate the GIS Data to the Data Warehouse: GIS data is stored in shape files, which represent the location of objects in the City. Each shape file will be stored in the geodatabase and integrated to the data warehouse. This will enable reporting capability via the Intranet.

Identify GIS Information Update Procedures: GIS information should be updated on a periodic basis. Updates will include changes to each of the shape files such as an addition of a road or drainage pipe. The City will identify certain users of the GIS as those authorized to make information updates and who will have the appropriate security. All other City employees will have access to report on the data. Procedures will be developed to ensure the GIS information is updated correctly and on a regular basis. The procedures will identify who will make changes, what kind of changes should be made, and how often the changes should be made.

Identify Primary Uses of the GIS: The City will identify the primary users of the GIS. The primary users will likely be Public Works personnel and the Assessor, who will need access to update the GIS with current information on a periodic basis.

Install GIS Software on Primary Users' PCs: ArcView is the City's GIS software. It is run on each workstation, rather than from an application server. The primary users need the

ability to update the GIS information. All other users will access the GIS through the Intranet, which provides reporting capabilities only.

Train Primary Users: The users of ArcView will be trained to gain an understanding of the system capabilities. They will also be trained on how to update GIS information that is stored in the shape files. Properly updating GIS information allows more accurate reporting for the departments.

Provide GIS Reporting Access Through the Intranet: During the creation of the Intranet (see the action item in Section 4.4), functionality should be created to allow querying and reporting of GIS information. A product called ArcIMS can be purchased to provide a foundation for disseminating GIS and mapping services through the City Intranet. This would give users the ability to run reports without needing full access to GIS data.

Train Users on the New System: The City should train staff and managers on how to use the GIS and the necessary reporting tools. Training should extend to those individuals who have a current need for the system, yet also be available to all employees in order to maximize use of the system.

4.4 Internet Architecture

Internet architecture refers to the infrastructure needed to provide information to City staff, citizens, and businesses and provides the ability to digitally conduct business with the City. The architecture defines the standards and technologies for conducting electronic business.

Current Situation

The City has started to build an Internet architecture by providing a web site that hosts information about the City and its departments. Each department has a link from the main page that contains contact information and its primary duties for the citizens of Saco. The City's web page is hosted on a web server by Mid-Maine Communications.

The City Assessor is in the process of converting all of the City's tax assessment cards to a new application which will allow users to access the information through an Internet connection.

The Department of Public Works maintains its own web site with a separate URL for the purpose of providing detailed information about the Department and its services. The site allows citizens to place a service request using a form that sends the information to a Public Works employee after the user submits the form.

Desired Outcome

The City is increasingly relying on the transmission of electronic data. Citizens are requesting the ability to perform transactions through the Internet, whether it is to make a payment online or to view the tax assessment of their home. Technology is constantly

changing and more people are becoming connected; therefore, online services will be essential.

Providing e-Government services requires the creation of a robust Internet architecture. This Internet architecture will provide access to a web portal, which will be the central web page that will provide citizens and businesses access to various e-Government applications, and an Intranet site, which will provide services to City employees. The City will add the DPW web site as a link from the City's main web site rather than maintaining two separate URL addresses

The Internet architecture will consist of a web server, a high-speed connection to the web server, an Intranet web server, an application server, and a secure connection between the application server and the application databases that store the information.

Internet Architecture – Action Items

Purchase an Internet Web Server: The City will purchase a web server to host the portal created for e-Government services. The web server is essential because it provides World Wide Web services on the Internet. The web server consists of a server, the operating system, web server software, TCP/IP protocols, and the web site content. A web server dedicated for the City will allow greater control over security parameters. The web server will also provide functions such as database searching. The City will host the server at the Police Station to allow the connection to the application server, also located at the Police Station.

Purchase High Speed Connection to the Web Server: The City will invest in a high-speed connection from the web server to the Internet to provide access to their e-Government services. The high-speed connection will also give City employees high-speed Internet access. The high-speed connection will be provided by the local cable or telephone company. The bandwidth of the line will depend on the community's and City personnel's demand for e-Government services.

Purchase an Intranet Web Server: The City will invest in an Intranet web server to host the web pages for the City's Intranet. The Intranet web server will perform the same tasks as the Internet web server, except that it will restrict access to City employees only. The Intranet will host information that is not available to the public, such as access to the City's GIS. The Intranet web server will restrict access to the Intranet to those employees who are logged into the city-wide network. Access to each application on the Intranet will then be determined by employee and passwords will be required to gain access to the applications.

Purchase an Application Server: The City will purchase an application server which will act as the gateway between the web servers and the application databases. The application server receives directions from the web server and accesses the appropriate database to gather information. The application server then formats the information and sends it to the web server to be sent back to the user. The application server also

provides additional security to ensure that only allowable information is sent to the web server.

Create Integration Between the Application Server and the Application Databases: The City will create an interface between the application server and the databases that contain requested information. The interface will allow the transfer of data between the application server and the database server in order for the user to view it.

Develop a Portal for e-Government Services: After the implementation of the hardware infrastructure, the City will develop the e-Government portal that will facilitate access to City information. The portal will be developed using HTML, JavaScript, Active Server Pages, or a combination of all three. The portal will allow access only to publicly available information, such as property tax information.

Develop a City-Wide Intranet: The City will develop a robust Intranet site that will provide information to City employees. Information provided on the Intranet will be core information, such as financial system information, calendars, directories, and policies and procedures manuals. The Intranet will also provide access to the GIS, enabling City employees to perform simple queries and produce reports.

5.0 BUDGET SUMMARY

The City of Saco has identified a number of technology projects to be performed during the next fiscal year. The projects identified are all important steps in beginning a technological upgrade and demonstrate the City's dedication to increasing the use of technology throughout the City.

5.1 Planned Projects

Assessor's Office – \$85,000 – The Assessor has a budgeted \$85,000 to complete the conversion of the City's tax assessment cards to the Vision Appraisal System (Vision). The budgeted amount also includes verifying each of the properties and adding digital pictures of the properties to the tax card. After the conversion to Vision, citizens will have the ability to view the tax assessment cards through the City's Internet site. This reduces the necessity for citizens to make phone calls and visits to City Hall to retrieve tax information. This is also the first step the City is making towards providing e-Government services.

Assessor's Office – \$70,000 – The Assessor has a budgeted \$70,000 to create a shape file containing the City's parcel map for the GIS. The parcel map shape file consists of all the parcels in the City and will be combined in the GIS with the sewer, drainage, and roadway shape files to be used for reporting. Other information, such as the tax card and property information, can be assigned to each parcel in the shape file. When other departments in the City receive access to the GIS, they will no longer need to phone the Assessor to find out tax and property information.

Finance – \$55,000 – The City will hire an IT Director with a budgeted \$55,000. The IT Director will manage the City's existing technology and make recommendations on any future technology purchases. Based on the action items identified in the network modernization section (Section 4.1) of this plan, the City should hire a person to oversee the installation of the network.

Police Department – \$17,000 – The Police Department will purchase a new Windows NT server with \$17,000 from the 2001 budget. This server will host the Department's new combined Police and Fire software that will be selected.

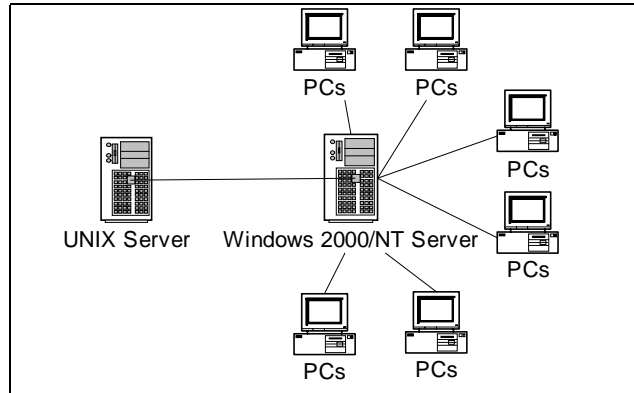
Police Department – \$102,000 – The Police Department has \$102,000 from the 2001 budget that will be used to purchase new combined Police and Fire software. The software will help the City increase its public service reputation through improved response times.

Economic Development and Planning – \$12,000 – The Economic Development and Planning Department has budgeted \$12,000 for regular maintenance and updates to the City's web site.

Finance – \$34,000 – The Finance Department has \$34,000 from the 2001 budget to purchase and install a new UNIX server and ODBC licenses for the City's financial

system. The new UNIX server should be connected to a Windows 2000/NT server using TCP/IP network protocol for transfer of information through CAT 5 connection. This will allow the City to eliminate all serial connections to the UNIX server. Figure #3 below shows the recommended relationship between the UNIX and Windows servers. The ODBC licenses will permit users to transfer financial information to any ODBC-compliant software, such as Microsoft Excel. As the City implements a network between buildings, the departments will receive access to the financial system.

Figure #3 – UNIX and Windows Server Relationship



6.0 IMPLEMENTATION PLAN

Note: replace this page with two page Gantt chart

APPENDIX A**CITY COUNCIL GOALS FOR FISCAL YEAR 2002-2003
ADOPTED JANUARY 7, 2002**

1. Implement the recommendations of the Camp Ellis Beach Erosion Study Report and Saco Bay Beach Management Report, which call for applying sand from the river to the beach and lowering, shortening, and roughening the jetty.
2. Comprehensively address solid waste issues including resolving issues with Maine Energy, increasing recycling efforts, and seeking alternative disposal methods.
3. Maintain roads, infrastructure and utilities to high standard and invest in downtown infrastructure improvements, York Hill parking, traffic improvements and installing new gateway and orientation signage in the downtown area.
4. Explore revenue sources that reduce reliance on property taxes, including seeking legislative action, review of fees, and creative financing techniques.
5. Continue implementation of Comprehensive Plan and complete 5-year recreation facilities plan.
6. Maintain a stable tax rate, in part by increasing the commercial-industrial tax base by marketing and constructing industrial parks and redeveloping Saco Island.
7. Provide all City Employees with proper training and equipment, as well as safe working environments so that each employee can fulfill the requirements of their positions and can respond pro-actively to the demands placed upon them by their customers.
8. Continue to develop multi-modal transportation available to residents and visitors to the City; Construct bike paths on Buxton Road, US Route One and Seaside Avenue and work to assess sidewalk and bike path needs.
9. Work collectively to keep the Saco taxpayers informed and involved in the business of the City through appointments to the various boards and committees of the City and by encouraging active citizen participation in all of its meetings.
10. Continue to work with the Saco School Committee to ensure that the school system establishes and maintains a high educational standard and to provide the students of Saco with excellent school facilities and appropriate staff and materials
11. Implement an enterprise resource planning system. An enterprise resource planning system typically includes:
 - a. A single integrated database that spans all the system modules, ensuring that changes are instantly posted to all modules and avoiding the need for reentry of data.

- b. Flexible chart of accounts and account structure.
 - c. Sophisticated relational database software, which eases ad hoc reporting.
 - d. Windows graphical user interface (GUI)
 - e. Drill down and audit trail capabilities, and advanced reporting and analysis support.
 - f. Powerful development tool sets to ease the development of special reports and custom features.
12. Provide a safe environment for residents and visitors.
- a. People can move in, out and within Saco safely, quickly and efficiently.
 - (i) Pedestrians can move in, out and within Saco safely, quickly & efficiently.
 - (ii) Vehicles can move in, out and within Saco safely, quickly and efficiently.
 - b. There is efficient and effective disposal of waste.
 - (i) Waste is collected and appropriately disposed of in a timely and cost-effective manner.
 - (ii) Recycling is appropriately utilized.
 - c. There is clean air.
 - (i) Air is of high quality.
 - (ii) Air quality is ensured into the future.
 - d. Residents and visitors are reasonably protected from emergency and natural disasters.
 - (i) There is a low crime rate.
 - (ii) There is a low loss due to fire.
 - (iii) There is a readiness for emergencies and natural disasters.
 - (iv) Citizens have protection from flooding.

APPENDIX B

Hardware and Software Inventory

Personal Computers and Workstations

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space	Operating System	Attached Peripherals	Purpose and/or Primary Application(s)
Wastewater											
1	Gateway	E3200	WWTP	1	Peer-to-Peer	Pentium II 300 MHz	96	4 GB	WIN 98	Printer/ CDRW	Superintendent data
2	Gateway	E3200	WWTP	1	Peer-to-Peer	Pentium II 300 MHz	96	4 GB	WIN 98	Printer	Lab data
3	Gateway	E1200	WWTP	1	Peer-to-Peer	Celeron 300 MHz	96	19 GB	WIN 98	Printer	Maintenance
4	Dell	4300s	WWTP	1	Peer-to-Peer	Pentium IV 1.6 GHz	128	128 GB	WIN XP	Printer	Maintenance
5	Gateway	E3000	WWTP	1	Peer-to-Peer	Pentium II 500 MHz	96	3 GB	WIN 98	Printer	Customer data
6	Gateway	E4200	WWTP	1	Peer-to-Peer	Pentium II 400 MHz	128	3 GB	WIN NT	Printer/ UPS	SCADA
7	Higgins		WWTP	1	Peer-to-Peer		128	9.5 GB	WIN 2000	Printer/ Tape Back Up	Plant data
8	Compaq	Laptop	WWTP	1							
Assessor											
9	Intralink	MS1	City Hall 1 st Floor	1	NT/UNIX	Pentium III 966 MHz	256	20 GB	WIN 2000	Network Printer	Workstation
10	Intralink	MS1	City Hall 1 st Floor	1	NT/UNIX	Pentium III 966 MHz	256	20 GB	WIN 2000	Network Printer	Workstation
11	Intralink	MSI	City Hall 1 st Floor	1	NT/UNIX	Pentium III 966 MHz	256	20 GB	WIN 2000	Network Printer	Workstation
12	Intralink	MS1	City Hall 3 rd Floor	1	NT	Pentium III 966 MHz	256	20 GB	WIN 2000	None	Workstation
13	Intralink	MS1	City Hall 3 rd Floor	1	NT	Pentium III 966 MHz	256	20 GB	WIN 2000	None	Workstation

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space	Operating System	Attached Peripherals	Purpose and/or Primary Application(s)
City Administration											
14	Intralink	NA	City Hall 2 nd Floor	3	NT/UNIX	Pentium IV 1.6 GHz	256	30 GB	WIN 2000	Tape Drive	Personnel Administration
Economic Development and Planning											
15	Intralink		City Hall 2 nd Floor	1	NT/UNIX	Pentium III 550 MHz	128	20 GB	WIN 2000		
16	Intralink		City Hall 2 nd Floor	2	NT/UNIX	Pentium III 866 MHz	128	20 GB	WIN 2000		
Police Department											
17	Gateway	500L2 PC	Dispatch 1 st	2	NT	Pentium IV 1.5 GHz	256	40 GB	WIN 98		Report Writing, DMV access, police data Research
18	Gateway	M800	Admin 2 nd CID 1 st	5	NT	Pentium III 800 MHz	128	20 GB	WIN NT		Report Writing, DMV access, police data Research
19	Gateway	E3000	Admin, 2 nd CID, 1 st fl PATROL 1 st	11	NT	Pentium II 233 MHz	32	660 MB	WIN NT		Report Writing, DMV access, police data Research
20	NEC		Booking & Report room	3	NT	5+ years old			WIN NT		Booking, Report writing
21	Gateway	500L2 PC	Basement	1	NT	Pentium IV 1.5 GHz	256	40 GB	WIN 98		Crime Reconstruction

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space	Operating System	Attached Peripherals	Purpose and/or Primary Application(s)
Fire Department											
22	Ultra		Admin 1st	1	NT	Pentium II 350 MHz	64	6.4 GB	WIN NT		Administration
23	Ultra		Admin 1 st	1	NT	Pentium II 350 MHz	64	6.4 GB	WIN NT		Administration
24	Ultra		Admin 1 st	1	NT	Pentium II 350 MHz	64	6.4 GB	WIN NT		Administration
25	Ultra		Central 1 st	1	NT	Pentium II 350 MHz	64	6.4 GB	WIN NT		Dispatch/Admin.
26	Ultra		Central 2 nd	1	NT	Pentium II 350 MHz	64	6.4 GB	WIN NT		Administration
27	Intralink		Admin 1 st	1	NT	Pentium III 1.0 GHz	128	20 GB	WIN 98	HP Scanner	Administration
Parks & Recreation											
28	Emachine	Etower 366i2/40 0ix	Rec. Center Directors Office	1	Peer-to-Peer	Celeron 366 MHz	128	28.5 GB	WIN 98	Keyboard, Mouse, Network Printer (canon), Speakers	Workstation
29	Compaq	Presario 2286	Rec. Center Reception	1	Peer-to-Peer	Cyrix 6x86MX 387	160	3 GB	WIN 98	Keyboard, Mouse, Network Printer (HP), Speakers	Workstation
30	Compaq	Presario 5600i	Rec. Center Directors Office	1	Peer-to-Peer	Pentium II 350 MHz	192	7.35 GB	WIN 98	Keyboard, Mouse, Network Printer (Compaq & Epson), Speakers	Workstation

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space	Operating System	Attached Peripherals	Purpose and/or Primary Application(s)
Finance											
31	HP	X86	City Hall 2 nd Floor	1	NT	Pentium III	128	3.9 GB	WIN 2000		MS & NDS
32	Intralink	52xMax	City Hall 1 st Floor	1	NT	Pentium III	128	9.5 GB	WIN 2000		MS & NDS
33	HP	X86	City Hall 1 st Floor	1	NT	Pentium III	128	3 GB	WIN 2000		MS, NDS, Dog & Dump permits
34	HP	X86	City Hall 1 st Floor	1	NT	Pentium III	128	3 GB	WIN 2000		MS, NDS, Dog & Dump permits
35	HP	X86	City Hall 1 st Floor	1	NT	Pentium III	128	3 GB	WIN 2000		MS, NDS, Dog & Dump permits
36	HP	X86	City Hall 1 st Floor	1	NT	Pentium III	128	3.33 GB	WIN 2000		MS & NDS
37	Versyss		City Hall 1 st Floor	1	UNIX	Dumb Terminal					NDS
38	Versyss		City Hall 1 st Floor	1	UNIX	Dumb Terminal					NDS
City Clerk											
39	Intralink		City Hall 1 st Floor	3	NT/UNIX	Pentium II 450 MHz	64	20 GB	WIN 2000		
40	Intralink		City Hall 1 st Floor	2	NT/UNIX	Pentium II 233 MHz	64	6 GB	WIN 2000		
41	Versyss		City Hall 1 st Floor	1	UNIX	Dumb Terminal					NDS
Code Enforcement											
42	Intralink		City Hall 1 st Floor	3	NT/ UNIX	Pentium III 866 MHz	128	20 GB	WIN 2000		
43	Intralink		City Hall 1 st Floor	1	NT/ UNIX	Pentium II 450 MHz	64	20 GB	WIN 2000		

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space	Operating System	Attached Peripherals	Purpose and/or Primary Application(s)
Public Works											
44	Custom		DPW	1	Peer-to-Peer	AMD 900 MHz	512	20 GB	WIN 98		Workstation
45	Gateway		DPW	1	Peer-to-Peer	Pentium III 500 MHz	512	10 GB	WIN 98		Workstation
46	Gateway		DPW	1	Peer-to-Peer	Pentium IV 1.4 GHz	512	40 GB	WIN 98		Workstation
47	Gateway		DPW	1	Peer-to-Peer	AMD 400 MHz	512	20 GB	WIN 98		Workstation
48	Gateway		DPW	1	Peer-to-Peer	Celeron 1.0 GHz	256	20 GB	WIN 98		Workstation
49	EMachine		DPW	1	Peer-to-Peer	Celeron 400 MHz	128	20 GB	WIN 98		Workstation
50	Dell		DPW	1	Peer-to-Peer	Pentium III 933 MHz	512	(2) 9 GB	WIN NT		GIS Workstation

Network and Application Servers

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Processor Type & Speed	RAM (MB)	Disk Space (MB)	Operating System/ # Users	Attached Peripherals	Purpose and/or Primary Application(s)
Assessor											
1	Custom	N/A	City Hall 3 rd Floor	1	NT Server	Pentium II 450 MHz	500	12 GB	NT 4.0 26 Users		City Hall Server
Police Department											
2	Gateway	ALR7200	PD, 2 ND Floor	1	NT Server	Pentium III 550 MHz	128	9.1 GB	NT 4.0 44 Users		Police Data Base & user files.
Fire Department											
3	Ultra	Business pro	Central 2 nd Floor	1	NT Server	Pentium II 450 MHz	128	(2) 9.1 GB	NT 4.0 9 users		Dispatch and fd administration
Finance											
4	Versyss		City Hall 1 st Floor	1	UNIX				Unix		Northern Data Systems

Printers

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Network operating system (if applicable)	Type (Laser, ink jet, color, etc.)	Accessories	Primary function or group served
Wastewater									
1	Hp	Lj100	WWTP	2	Peer-to-peer	98	Laser		Reports
2	Hp	648c	WWTP	2	Peer-to-peer	98	Inkjet		Reports
3	Epson	740c	WWTP	1	Peer-to-peer	98	Inkjet		Work orders
4	Xerox	Xd102f	WWTP	1	No	98	Work center		Billing
5	Hp	812c	WWTP	1	Peer-to-peer	98	Inkjet		Reports
Assessor									
6	HP	LASER 5	City Hall, 1 ST Floor	1	NT	NT	Laser	Duplex	Assessor's Office
7	HP	350C PLOTTE R	City Hall, 3 rd Floor	1	NT	NT	Inkjet		Assessor's Office
City Admin									
8	INKJETS		City Hall, 2 nd Floor	2			Inkjet		
9	LASER		City Hall, 2 nd Floor	1			Laser		
Economic Development and Planning									
10	HP	DeskJet 840C	City Hall, 1 st Floor	1	No		Inkjet, color	No	Prints at planners desk
11	Epson	Action Laser 1500	City Hall, 1 st Floor	1	No		Laser, color	No	Prints, Economic Development Director
12	HP	DeskJet 1120C	City Hall, 1 st Floor	1	No		Inkjet	No	Prints for admin. assts, Code and Planning
13	Texas Instruments	Omni 800 Model 855	City Hall, 1 st Floor	1	No		Dot Matrix	No	Labels

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Network operating system (if applicable)	Type (Laser, ink jet, color, etc.)	Accessories	Primary function or group served
Police Department									
14	HP Laserjet	5N	ADMIN. 2 nd floor	1	NT		Laser		Reports, Letters
15	HP Laserjet	4100N	Patrol Report Writing 1 st floor	1	NT		Laser		Reports
16	Okidata	Microline 320	Dispatch	1	NT		Dot Matrix		DMV Printouts
17	HP Deskjet	952C	CID	1	NT		Laser		Reports
Fire Department									
18	HP	890 c	Admin 1 st	1	No		Inkjet		Secretary
19	HP	940 c	Admin 1 st	1	No		Inkjet		Fire Chief
20	HP	895 Cse	Admin 1 st	1	No		Inkjet		Deputy Duross
21	HP	895 Cse	Admin 1 st	1	No		Inkjet		Deputy Dube
22	HP	932 c	Central 2 nd	1	NT	Windows NT	Inkjet		Captain's office And dispatch office
Parks & Recreation									
23	Compaq	A1000	Rec. Center	1	Peer-to-Peer		All in one ink jet, Color		Default printer to Compaq Presario 5600i
24	Epson	Action Laser 1500	Rec. Center	1	Peer-to-Peer		Laser		Attached to Compaq Presario 5600i
25	Canon	BJC 1000	Rec. Center	1	Peer-to-Peer		Inkjet, Color		Attached to Emachine 366i2
26	HP	DeskJet 660C	Rec. Center	1	Peer-to-Peer		Inkjet, Color		

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Network operating system (if applicable)	Type (Laser, ink jet, color, etc.)	Accessories	Primary function or group served
Finance Department									
27	HP	Laserjet 1100	City Hall 2 nd Floor	1			Laser		Finance
28	Printronix	P3040	City Hall 1 st Floor	1	UNIX		Dot Matrix		Finance & Clerk
29	Okidata	Pacemark 3410	City Hall 1 st Floor	1	UNIX		Dot Matrix		Finance & Clerk
30	Okidata	Microline 591	City Hall 1 st Floor	1			Dot Matrix		Finance
31	Xerox	Docuprint P8	City Hall 1 st Floor	1			Laser		Finance
32	Xerox	Docuprint P8	City Hall 1 st Floor	1			Laser		Finance
33	Okidata	Microline 590	City Hall 1 st Floor	2	UNIX		Dot Matrix		Finance & Clerk
34	Okidata	Microline 184	City Hall 1 st Floor	1	UNIX		Dot Matrix		Finance & Clerk
35	HP	Laserjet 1100	City Hall 1 st Floor	1	NT		Laser		Finance
36	Versyss		City Hall 1 st Floor	1			Dot Matrix		Finance
City Clerk									
37	Okidata	Microline 590	City Hall 1 st Floor	2	Unix		Dot Matrix		Motor Vehicles
38	Okidata	Microline 184	City Hall 1 st Floor	2	Unix				Receipts-General
39	HP	4050N	City Hall 1 st Floor	1	NT		Laser		Entire Dept.

#	Manufacturer	Model	Location (building, floor)	Quantity	Networked? Which network(s)?	Network operating system (if applicable)	Type (Laser, ink jet, color, etc.)	Accessories	Primary function or group served
Code Enforcement									
40	HP	PSC 500	City Hall 1 st Floor	1	NT		Inkjet, Copy, Scan		
41	HP	P1000	City Hall 1 st Floor	1	NT		Inkjet		
42	HP	1120c	City Hall 1 st Floor	1	NT		Inkjet		
43	Cannon	660 Image Runner	City Hall 1 st Floor	1	NT		Photocopier		
Public Works									
44	HP	Deskjet 895	DPW	2	Peer-to-Peer	WIN 98	Inkjet		Administrative
45	HP	Deskjet 900	DPW	1	Peer-to-Peer	WIN 98	Inkjet		Administrative
45	HP	Laserjet 1100	DPW	1	Peer-to-Peer	WIN 98	Laser		Administrative

Application Software

#	Department	Name of Application	Developed by: (vendor, internal, customized, etc.)	Application Function	# of Users	Used Since (MM/YY)	Operating System/ Computing Environment	Person(s) responsible for the program
Wastewater								
1	WWTP	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	6		98, NT, 2000, XP	
2	WWTP	Ops 32	Ops system	Process data	1	1994	98	Dana Ellis
3	WWTP	Rsview, rslinx	Rockwell software	SCADA	5	1998	NT	Howard Carter
4	WWTP	Kepserver	Kepware	SCADA	1	1998	NT	Howard Carter
5	WWTP	Mp2	Datastreams	Maintenance	2	1995	98	Ken Grace
Assessor								
6	Assessor	Vision	Appraisal Vision	Assessing	5	2002	Oracle Data Base	Dan Sanborn
7	Assessor	Autocadd	Soft Desk	Mapping	3	1998	Win Based	Dan Sanborn
8	Assessor	Arch View	ESRI	GIS	1	2001	Win Based	Dan Sanborn
9	Assessor	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	3	1998	98, NT, 2000, XP	Dan Sanborn
Economic Development and Planning								
10	Planning/Econ. Development	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	3		98, NT, 2000, XP	

#	Department	Name of Application	Developed by: (vendor, internal, customized, etc.)	Application Function	# of Users	Used Since (MM/YY)	Operating System/ Computing Environment	Person(s) responsible for the program
Police Department								
11	Police	Police Application Software CAD	CSH Inc.	Logs Calls for Service	Dept. Wide	1991 Updated in 1999	UNIX, Informix	Dep. Chief C. Labonte
12	Police	FileMaker Pro	CSH Inc.	Fire Department data storage	10	See FD		Deputy Chief John Duross
13	Police/Fire	SPatch Page & Air Messenger Pro	SPatch Air Messenger Pro	Sends pager messages	Dept. Wide Dispatch	1996 2002	From Police Application Software Internet	Dep. Chief C. Labonte
14	Police	Camedia	CSH Inc.	Photo storage	3-4	2001	Desktop	Dep. Chief C. Labonte
Fire Department								
15	Fire	Filemaker Pro	Fire department customized	Dispatch and administration	9	1999	Win Based	Chief Murphy Deputy Duross
16	Fire	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	9	1998	98, NT, 2000, XP	
Parks & Recreation								
17	Parks and Rec.	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	3	2000	98, NT, 2000, XP	Joe Hirsch
18	Parks and Rec.	Printshop 6.0	Broderbund	Desktop publication	3	1999	Win 98	Joe Hirsch
19	Parks and Rec.	Word Perfect 8	Corel	Word processing	1	1999	Win 98	Joe Hirsch
Finance Department								

#	Department	Name of Application	Developed by: (vendor, internal, customized, etc.)	Application Function	# of Users	Used Since (MM/YY)	Operating System/ Computing Environment	Person(s) responsible for the program
20	Finance & Clerk	Northern Data Systems	Northern Data Systems	Financial	17	1980s	UNIX	Lisa Parker
21	Finance & Clerk	Microsoft Office 2000					98, NT, 2000, XP	
Code Enforcement								
22	Code Enforcement	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	3	1998	98, NT, 2000, XP	
23	Code Enforcement	Pro 95	Unique Applications	Building Permit Tracking	3	1998	MS Excel	Dick Lambert
Public Works								
24	DPW	Microsoft Office 2000	Microsoft	Word Processing, Spreadsheet, Database, e-mail	7		98, NT, 2000, XP	
25	DPW	ArcView	ESRI	GIS	1	2001	WIN NT	
26	DPW	City Works	Aztecca Systems	Asset Mgt			WIN 98	
27	DPW	RSMS	State of Maine	Road Surface Management System		2001	WIN 98	