INFORMATION TECHNOLOGY NEEDS ASSESSMENT

Town of Chapel Hill, North Carolina

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I. Executive Summary

RHJ Associates, Inc. (RHJA) has been engaged to conduct an Information Technology Needs Assessment for the Town of Chapel Hill. The scope of our assessment is the Town's usage of technology as it applies to its operating departments and the provision of services and information to both internal users and Town constituents alike.

Our recommendations identify short term projects which we categorize as those that offer operational improvements, exploit potential of existing technologies, and/or build a framework and foundation to enable and facilitate the success of downstream information technology initiatives. The cost of these projects is primarily in the engagement of vendor or consultant resources that have specific product expertise and temporary staff to assume routine tasks so Town employees have the time to devote to the various projects. Prioritization and implementation is at the discretion of the Town.

Development of a Strategic Technology Plan to cover the next five or so years is a logical next step. We have identified a number of important components that should be considered over this longer term.

The assessment encompasses the technology environment, not just the technology itself. This includes the organization, how information is collected and distributed, management of technology, technology related projects and issues, standards, policies and procedures, and resource allocation. Inter-disciplinary interactions to accomplish goals of multiple departments as well as the Town entity as a whole are also important components of the environment.

This report divides the technology environment into four areas. Governance, Enterprise Technology, Vocational Technology and Municipal Information Management. The Governance section deals with organizational issues. We define enterprise technologies as those that exist to serve Town operations at-large (e.g. Web, e-mail, network), vocational technologies as those that serve one or more operating departments in the Town (e.g. the MUNIS finance application), and municipal information which focuses on the delivery of content.

We obtained our information through a combination of Town provided documentation, questionnaires, interviews and on-site reviews. Appendix A lists those that participated in our assessment process.

In general, we found the Town to be well invested in both its enterprise and vocational technology. (A compilation of the latter is Appendix B.) But in some cases, this technology has not been fully implemented, left to stagnate, or is beyond its useful life. Our recommendations focus on these technologies, their administration and oversight, and emphasize the basics rather than the exotic. They seek to leverage the Town's investments to date by exploiting latent system

capabilities that improve efficiency and productivity. With very few exceptions, we discourage tackling new, complex and capital intensive projects at this time.

Our recommendations are included in the section to which they pertain and are summarized in Appendix E. The ones we deem most important are:

♦ Reorganize the governance of information technology. Formally define roles, responsibilities, accountabilities and authorities. Assign ownership. Develop a set of basic standards, policies and procedures. Augment staff where needed and particularly in the area of project management and coordination.

♦ Develop/enhance and publish database, GIS, network and enterprise technology architectures.

♦ Optimize use of the MUNIS financial system. Upgrade to the current version/release[1], implement automated data exchange with other departmental systems (subsidiary ledgers), provide enhanced user access and reporting capabilities, and streamline the time accounting and payroll functions.

♦ Streamline the various agenda processes. Receive items in appropriate soft copy format. Distribute the agenda packages via automated means such as CD, Web, and email

♦ Completely redesign and upgrade the Town's Web presence. Develop standards, policies, and procedures. Define functions, features and services to be provided. Invest in tools, services and training and acknowledge staff overhead in its support. Consider Web needs in all prospective technology projects and departmental application acquisitions.

♦ Implement a Town wide Work Order System. Define its overall objectives and those for each department. Limit initial roll-out to self contained applications in IT first, Public Works second and then deploy as a ubiquitous, full service Town wide operational tool.

♦ Hire a "Business Analyst" that brings critical, missing skills to facilitate and manage projects.

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[1] Finance has advised us that the current AIX release was installed in late May.

II. Governance

Staffing

We believe the Town, inclusive of the IT department, lacks the resources to appropriately support the broad base of its deployed technology. But for the most part, we believe adding staff in the absence of a well articulated technology governance structure would be premature.

Staffing needs will be better identified when a clear understanding of roles, responsibilities and accountabilities, and the assignment of ownership, are defined. It is likely that vocational technology support needs will be better served by vendor, consultant or external service provider resources on an as needed basis. We advance this opinion for two reasons. First, few vocational applications can justify a full time support position. Second, it is unrealistic to expect that one or two (or more) full time people, in the IT department or anywhere else, will have the broad base of business and operational (not technical) knowledge of the Town's portfolio of vocational systems. This knowledge vests with the individual department staff who regularly deliver services and use the systems, and more so with the systems' vendors.

While additional IT staff may be needed to support enterprise technology, maximizing the productivity and efficiency of the IT staff should be priority one. This can be accomplished through the development and articulation of department and staff objectives and work plans, a clear definition of its role, standards, policies and procedures, maximizing use of automated tools, having service level agreements between IT and its customers, and freeing the IT staff from mundane and unrelated tasks.

There is one position, however, that we believe is essential to any future Town technology endeavors that is missing from the complement of on board staff. This position begins to address the void in support of vocational applications. The short description of this resource is "Business Analyst". We have included an actual job description and work plan obtained from Orange County in Appendix C for reference. Its relevance to Chapel Hill is uncanny.

More specifically, the Business Analyst brings important skills to technology projects that "techies" or departmental staff either eschew or rarely have. Among them, project leadership and management, interpersonal communication, planning, resource coordination and management, and the ability to analyze business processes and re-engineer them as appropriate. The Business Analyst takes a Town wide rather than a parochial view of technology projects, coordinates multi-disciplinary issues, and is the glue that keeps projects on track. This perspective and energy are currently

missing from technology projects. We recommend assigning this position to a function where the Business Analyst can be a neutral party among a project's stakeholders.

Organization

Town Administration

The departments and functions discussed in this section are managed by Town Administration. Based on our findings, we are recommending organizational changes in the management of technology including reporting relationships and functional reassignments to foster improved outcomes and collaboration. Our view of the organization is discussed below and presented in Appendix D.

Technology Team

This team was formed in September, 2006 to provide a holistic view of Town Technology efforts. We heartily endorse this concept. The team has diverse representation, including the Town IT Director, and its members are quite capable of discerning Town needs, arbitrating priorities, and bringing resources to project participation.

We recommend that the Technology Team immediately develop a formal charter, become active in steering Town technology initiatives, and oversee development and implementation of standards, policies and procedures and a long term strategic technology plan.

Information Technology Department

The Town's Information Technology Department (IT) is staffed by a Director and six employees. Their attention is primarily directed to enterprise technology and we believe this is an appropriate mission for IT. IT is also expected to provide an unquantifiable level of vocational technology support as well. Even if its mission were limited to enterprise technology, we believe IT is understaffed for the breadth and depth of technology it supports. By contrast, the Police Department has three and one-half dedicated full time equivalents supporting its technologies.

But there is confusion as well as disagreement over what IT's role should be within the Town and there are no documents that clearly articulate the scope of outcomes or services that IT is to provide. As a result, we believe that a number of projects on IT's plate are misplaced and many expectations of IT are unrealistic. These expectations form the basis of some IT user dissatisfaction. Additionally, a very competent and skilled IT staff has been saddled with some mundane clerical tasks that not only

distract them from more important projects, but time spent on these is a waste of their skills and talent.

We noted that IT was spun off from Finance and designated as a separate, independent department. We sensed that neither Finance nor IT has fully acknowledged this as remnants of the former relationship are evident. This is further exacerbated by the proximity of the IT staff to Finance. It is clear to us that IT has been empowered to guide and influence (not dictate) Town technology programs but does not assert itself to do so. We believe this is a contributing factor to the lack of progress in clearing the Town technology backlog.

IT lacks a well defined support program. Help desk calls are handled informally and there are no procedures to resolve issues with external resources when specialized skills are needed outside of those on staff. Nor are there procedures for either requesting off hours support or being notified, either manually or automatically, when a critical system component fails. The backlog of projects consists mainly of a list that just keeps getting larger and we found no work plans that address this list.

IT needs a Work Order system (along with the rest of the Town departments) to log, triage, schedule, monitor, resolve and close issues. We also recommend that they implement tools and procedures to provide off-hours support for critical enterprise technology components and that they cull their backlog of projects to align the list with their scope of responsibilities, once defined.

Furthermore, IT needs to fully implement tools to assist in management of the environment. Among them, a formal asset management program to track hardware, software, warranties, maintenance, and contracts, and diagnostic and discovery programs via remote access.

Operating Departments

We identified three distinct departmental philosophies surrounding the support of their application systems. We summarize these as follows:

1. IT is responsible for the departmental system(s). Planning, acquisition, implementation, support and maintenance.

2. The department is responsible for decision making and IT is responsible for execution and on-going support.

3. The department assumes responsibility for its vocational technology and may or may not confer with IT.

We do not believe that any one of these approaches serves the Town well. Nor do we consider any of them "enlightened" as each frustrates a coherent,

consistent and sustainable technology environment. We believe there must be collaboration among IT and the departments, departments sharing common interests, and Town Administration. If this is to occur, and have a probability of success, the roles, responsibilities and authorities of the various participants must be well understood.

Additionally, the full benefits from technology systems cannot be realized unless there is a clearly defined "owner" of each. While IT has taken ownership of enterprise technology, there is neither understanding nor agreement on who owns departmental systems as evidenced by the different philosophies listed above.

In the case of a vocational technology, we believe that the using (or a lead using) department is the appropriate owner simply because it is the departments (staff) that know what the systems must deliver to support their day-to-day operations and service objectives, what functions and features are important to their operation, and it is the departments who must live with their choices for many years. This includes assuming the role and responsibility of "System Administrator". Otherwise, if a vocational system and its support are not priorities to its largest benefactor, it is unlikely to be important to anyone else.

But we are hardly suggesting that ownership means isolation. While the owner is the designated "project manager", participants from IT and relevant using departments need to be represented on the project team. And decisions should be guided by an umbrella of standards, policies and procedures that define the overall Town technology environment that facilitate consistency across systems.

The need for a Town vocational technology acquisition, evaluation and support methodology is somewhat acute given the size of the Town's applications investment and annual maintenance costs (Appendix B). That said, it is folly to think that departmental staff have the time or expertise to devote to the care and feeding of vocational systems. Nor do these support resources currently exist elsewhere in the Town government. This shortfall can be addressed through a combination of SWAT type vendor/consultant resources, temporarily back filling for staff assigned to technology projects, and augmenting staff as appropriate. But these projects and resources must be managed which is a key role of the Business Analyst.

Public Information

There are several government functions that serve up public information under the direction of Town Administration. The Town Information Officer (TIO) gathers municipal information to disseminate to the public regarding government events and policy actions taken by the Town Council, Mayor and Town Manager. This Office works with the CivicPlus Web software.

The Town Clerk's Office is responsible for facilitating the flow of information from the staff to the Council and other departments for eventual publication in various mediums and ultimately onto the Town's Website. This information includes preparation of the Council Agenda packet.

There are also a number of technologies that facilitate the support and management of this public information. We include GIS and Web Administration among them. In these cases, we believe the oversight of content rather than technology is more appropriate and should be managed by those responsible for the dissemination of this information. Further discussion on these topics are included in later sections.

Standards, Policies and Procedures

We did not find many documented standards, policies or procedures during our assessment discovery process. Development, approval, implementation and enforcement of a well chosen few would serve the Town well. These need to be created by the stakeholders so that various needs and concerns can be addressed. The Town's Technology Team seems like the appropriate body to be tasked with oversight of their development. Minimally we recommend the following:

Standards

♦   Enterprise technology architecture (e.g. network, database, inter-operability, document management).

♦   Server and desktop hardware and software configurations.

♦   Web development, integration, content formats and tools.

Policies

♦   Technology ownership.

♦   Enterprise and vocational technology acquisition.

♦   Enterprise technology security. Server, desktop, network, Web, database, and document management.

♦   Appropriate Town technology asset usage (e.g. PDA, cell phone, e-mail, internet).

♦   Web publishing.

♦   Records management and retention (Town needs and State requirements) including receiving information in electronic form.

Procedures

- ♦ Requesting IT technology support and services.

- ♦ Requesting non-standard technology.

Training

Training was the most often discussed topic in our focus groups. Some expressed the need for more Microsoft Office training, but the majority of concerns were clustered around MUNIS, Crystal Reports and Web support. We discuss these in more detail later in this report.

Governance Recommendations

Short Term Projects

- ♦ Formalize the governance, roles, responsibilities, authorities and accountabilities of IT and departments.

- ♦ Define and assign technology "ownership".

- ♦ Hire a Business Analyst.

- ♦ Publish an IT user manual.

- ♦ Implement service level agreements between IT and its customers.

- ♦ Develop, adopt and publish technology standards, policies and procedures.

- ♦ Implement a Town Intranet for sharing and posting of information for internal use.

Long Term Projects

- ♦ Develop a Town Strategic Technology Plan.

III. Enterprise Technology

We define enterprise technologies as those that are common across all Town departments and users. The most visible of these include servers, personal computers, wide and local area networks, and network appliances.

We believe that enterprise technology can benefit from multiple sources of support. Complex and sensitive issues such as server administration, network support, security, asset protection and core operational needs are best vested to Town IT staff. Routine tasks including computer installation, upgrades and retirement, and telephone moves, adds, and changes are strong candidates for outsourcing. The latter, when supported internally, are viewed as free services that can't help but stimulate demand. Especially in the absence of policies and Service Level Agreements. And at best, they invariably become high priority tasks that are a distraction for skilled personnel to the detriment of far more important enterprise technology support needs.

In general, we found that the Town's enterprise technology environment is both consistent and contemporary (at least to the local government community). The deployed ad-hoc enterprise standards as well as relevant extensions need to be codified in an overall Enterprise Technology Architecture.

Servers

The Town has sixty-five servers of which forty-three are in production and the remainder are in transition. File servers, print servers, database servers, Web servers, e-mail servers, and vocational application servers at various locations throughout the Town. Most enterprise servers run the Windows 2003 Server operating system. The remaining few run UNIX, Linux or earlier versions of Windows as dictated by software they support.

We believe that the Town need not subscribe to a specific server operating system with the following caveats: they are network compliant (published network standards are needed); vocational application servers are vendor supported; and they must support appropriate management and administration tools.

The Town's complement of servers is stable and reliable. System maintenance, however, lags. We attribute this to the sheer number of servers that must be supported by one person. Consolidation should be considered. Additional tools are needed to assist in the maintenance process. Complicating server maintenance is the <u>necessity</u> that it be performed outside of normal business hours. There is a need, even in local government, to accommodate off-hours support. Policies and procedures that establish and communicate times of server unavailability that is sensitive to both the user and IT communities is prudent.

Personal Computers

As with its servers, the Town has ad-hoc standards for its desktops. We recommend that formal standards and policies for desktop (laptops, peripherals, et al.) be developed, published and updated periodically. We have found that a few basic configurations are adequate for the majority of users. Procedures for requesting and obtaining approval for non-standard configurations need to accompany the standards.

As stated earlier, we do not consider allocation of Town staff to physically install, migrate or retire computers to be a productive use of these resources. We recommend that these tasks be included in the cost of acquisition and that IT should have procedures and documentation in place that facilitates the requesting, installation, scheduling and deployment by the "person on the street". Additionally, the Town should consistently use manufacturer resources to provide warranty services.

Computer support and maintenance chores can be time consuming and costly. In addition to configuration standards, the Town needs to articulate usage and access policies that can lessen the support burden and risk to Town assets surrounding these user appliances. These include:

♦ Preventing users from saving Town data on local media. It is rarely backed up.

♦ Limiting the modifications users can make on their own. Unmanaged changes are an unnecessary source of instability.

♦ Implementing a full complement of tools that remotely support and automate management of desktop configurations. The Town already does this to keep anti-virus definitions current.

♦ Providing mechanisms to support legitimate requests for exceptions to prevailing standards and policies. This could include granting users self-service rights with the user accepting the consequences that attach to those rights.

The standard Town desktop productivity suite is Microsoft Office for which the Town has entered into a three year Enterprise License Agreement with Microsoft. Interest in replacing the Microsoft Office programs with open source software has been advanced by members of the Town Council and community.

Over the years, we have been engaged in more than a few passionate debates about the virtues of one product suite versus another. But in assessment after assessment, we find it is not the features and functions of the programs that distinguish the virtues of one alternative from another, but

the consistency of what is installed, the ability to inter-operate among staff and external constituents, the level of investment and training available and provided in the use of the suite's components, and the staff's experience with them.

We recommend that the Town include an open source alternative as a long term planning item being mindful to the cost of exit. This means considering not only any savings in license and maintenance fees, but staff training and conversion demands, disruption to the operating environment that inevitably occurs as a result of systemic change, and to the opportunity cost of tackling this project at the expense of other priority projects.

Institutional Network

We are impressed with the Town's wide area and local area networks. They are well conceived, well documented and enable productivity across Town operations. Without this institutional network, many of the productivity and efficiency improvements we are recommending in this plan would not be viable. Specifically, inter-operability and automated data exchange between and among different vocational applications would be stifled. It also facilitates the development of Web related capabilities and services and allows the location of servers to be location independent.

The network and its security is supported by one Network and Telecommunications Analyst in the IT department. We believe that for a network of the Town's size and complexity, one full time resource can be adequate although cross training and back-up resources must be considered. We found, however, that the Network Analyst has other unrelated responsibilities that distract him from tending to the support and maintenance of the network. The two most pressing being telephone administrative chores and the time consuming process of analyzing phone bills every month so costs can be (re)allocated to each department. While RHJA is not responsible for determining policy for our clients, we question the business case that justifies the time spent on an exercise that redistributes what amounts to not so much money that does not impact the bottom line. Regardless of the Town's determination of the value of this exercise, it is counter-productive to waste the time of a highly skilled individual on clerical tasks when there are far more important projects on his plate.

As with the server and desktop technology, a full suite of tools available that make administration of the network less time consuming need to be deployed. These tools provide functions and features that perform important tasks that would be impractical without them. The primary tool we recommend is a comprehensive network management system that includes automated device management and discovery, remote configuration capabilities, service disruption detection and notification, utilization and

capacity measurement, and a robust set of security components that issue alerts on threats to the network and Town asset base. Selection of the tools is at the discretion of IT.

The wide area network consists of leased fiber of varying bandwidths mostly in the single megabit range from Town Hall to other Town locations. Robust measurement tools will reveal whether this bandwidth is adequate or not. In general, existing bandwidth is rarely enough. Co-mingling voice traffic with data adds to complexity of the bandwidth equation. The IT department, however, is mindful of this and expects both bandwidth and cost relief in the long term from its own fiber network as part of NCDOT's initiative to provide (vehicle) traffic control over a statewide fiber network. In the meantime, incremental bandwidth on an individual network segment may be needed.

Database Management and Administration

The Town has ten database servers for its many applications. We believe that a requisite database architecture needs to be defined with an emphasis on content, access, retrieval, application integration, and data normalization.

We use the term data normalization to describe a database has no duplicate data in it. Addresses, for example. This lofty goal becomes important as the Town develops its electronic service relationships with its customers as only one update becomes necessary to keep all serving departments current.

As the Town commits more and more of its public documents and records to electronic formats, an electronic document management system (EDMS) to store, access, search and mine this data is needed. We have identified a number areas where an EDMS will serve the Town well, but once installed its overall benefits extend to virtually all government functions.

We have stressed the importance of GIS and Web initiatives to the Town's operation. In the absence of a robust, contemporary data management architecture and implementation, we believe that the Town's return on its investment in these projects will be significantly less, and its desired services to the public impaired.

Enterprise Technology Recommendations

Short Term Projects

♦   Complete the definition and publish enterprise technology, network, GIS and database architectures.

♦   Implement a full complement of operational support tools.

♦ Develop database and EDMS strategies to support document and data retrieval, retrieval and mining. Implement these strategies.

Long Term Projects

♦ Be a major participant in the development of a Town Strategic Technology Plan.

♦ Deploy a multi-location (e.g. Town Hall and the TOC) storage area network to house, manage and backup the Town's many files and databases.

♦ Evaluate the benefits of Open Source Software including replacement of the Microsoft Office Suite.

IV. Vocational Technology

The Town has a large suite of vocational application products installed across its many departments. An enumeration of these is Appendix B. A number of important Issues surrounding the selection, acquisition, implementation and ongoing support of these require attention, discussion and collaboration.

One such issue concerns "build" vs. "buy". The Town has purchased virtually all of its vocational software, the Permit Tracking system and construction costing being notable exceptions. We recommend that the Town continue this "buy" practice and, as part of the over project cost/benefit analysis, seek a turnkey vocational solution which encompasses cradle-to-grave vendor support including installation, training, and ongoing maintenance and support. Integration between the "bought" application and current vocational and Web systems will unlikely be native to the "buy" and will need to be implemented as a separate, and optimally concurrent, Town project.

Analysis and selection become more complicated when comparing a "municipal management system" to a single purpose application. We define a municipal management system as an application that has a suite of modules that serves more than one (often many more) unrelated operations within the government. As an example, we cite a product suite that (say) has modules for finance, computer aided dispatch and records management modules for public safety, library service, and code enforcement for inspections. A single purpose application, however, does not necessarily imply a single using department. A comprehensive application that provides integrated planning, zoning, permitting, and inspections is such an example.

First, let us state we do not believe a viable municipal management system currently exists. The systems that lay claim to this designation rarely perform well in more than two areas and often only one. Their allure is that they offer (proprietary) data integration across the functions they provide. The strength of these systems is most often in the finance area and we include MUNIS as one of them. But we have found that, more often than not, what native data integration there may be does not compensate for the (at best) mediocre program modules that deny operating departments the ability to obtain productivity benefits and customer service options that best-practices solutions offer. This does not imply, however, that a common system for a group of departments may not be the optimal alternative.

Our experience has led us to be strong proponents of the "best-practices" model. We have found that it is the department(s) (Directors/owners) who know their business and are accountable for their operation and customer satisfaction, and therefore they ought to influence their own destiny. But automated, as opposed to manually transcribed and redundant data entry, inter-application data exchange is also important. We believe this is best accomplished through Town

wide enterprise and database architectures and planning with vendors for this integration as applications are deployed.

As we present our findings below, we note that the Town has generally adopted the single purpose application approach. We also note inter-operability issues that have resulted from this approach and their impact on productivity and efficiency.

Police Department

Generally speaking we believe the Chapel Hill Police Department (CHPD) has their technology house in order and we support the department keeping a dedicated Technical Services Unit (TSU) within the police department. This is truly a twenty-four hour, seven day-a-week operation and they currently have three and a half staff devoted to the support of technology. Although the CHPD has their own TSU team, there is a close working relationship with the town IT Department. An example of this working relationship is seen in the purchasing and installation of all desktop computers by the town's IT department's desktop computer replacement program.

The CHPD has invested in a comprehensive set of technologies to enhance their practice of community-based policing. Furthermore, they use this technology to enhance their partnerships with citizens and community organizations. CHPD had a comprehensive Web page in place prior to deployment of CivicPlus and they have since converted to CivicPlus.

Emergency 911 dispatching is handled by the Orange County Communications Center and police records are managed using the OSSI police records management package. The department has officers with a regular presence in ten buildings (headquarters, 4-full service sub-stations and 5- schools) and throughout the Chapel Hill community.

Of the 74 cars in the Police car fleet, 36 are used for patrol and of this patrol group 35 are equipped with mobile data terminals (MDT) that keep the officer in constant contact with various local state and national law enforcement database retrieval systems. RHJA supports the Police long term effort to install this technology in all police cars used in investigative situations although the expense of doing so is a consideration.

Due to the comprehensive use of this law enforcement technology, officers need to be current on its latest functions, features, and operation. We suggest including topics on these technologies as part of the periodic, required in-service training.

Short Term Projects

♦ Install MDTs in all police vehicles used for patrol and investigation.

Long Term Projects

♦ Deploy an Emergency Outbound Notification System (reverse 911). This can be shared with many other departments and leverage the Town's new telephone capacity.

Finance

MUNIS has been in use in Chapel Hill since 1993 and therefore a large body of understanding regarding this finance and human resources system now exists within the Town. MUNIS as a company has over 6,000 customers world wide and also has a number of local government customers within North Carolina. While MUNIS may be hosted on multiple hardware and operating software platforms, Chapel Hill has deployed IBM RISC 6000 hardware, the AIX operating system and the Informix database alternatives. IT maintains this server. The Town licenses MUNIS software for Finance, Human Resources, and permitting but not all functions, features and modules are activated and in use.

MUNIS has been sized to support 43 concurrent users. If MUNIS is taken off line for departmental access during the normal work day, it disrupts the operation of the using departments. Users would like a published schedule of unavailability to better plan their access activities and some non Finance departments are frustrated by the slowness of report generation and the cumbersome nature of the customer and data interface. We also received multiple departmental complaints regarding the difficulty of getting data into and out of MUNIS. (We note that perceptions regarding these issues differ between the MUNIS users and the Finance department.)

The migration to version 5 of MUNIS did not go well and the Finance group believes the support from the software vendor during this entire period was grossly inadequate. Financial deadlines needed to be extended and inaccurate information was produced in the early stages of the transition to version 5.[2] Due to the experience of the Town Finance Office staff these abnormalities were discovered before reports were released to the public. But this has eroded Finance's confidence in both the system and system vendor.

Finance believes that MUNIS has reached the end of its useful life and needs to be replaced.

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[2] Finance indicates that they experienced similar problems with the recent upgrade in late May.

Short Term Projects

♦   Finish a disaster recovery plan and test this plan with another local government MUNIS customer (Orange County?).

♦   Investigate and remediate the causes of the unsatisfactory MUNIS support relationship.

♦   Upgrade to the current version of MUNIS that is the focus of MUNIS internal development and support.[3] Consider migrating from AIX and Informix to Windows Server and SQL databases.

♦   Provide new and refresher training to MUNIS users.

♦   Publish and re-advertise a MUNIS unavailability schedule.

♦   Improve reporting capabilities for MUNIS by either investing in more Crystal reporting access licenses or consider going to another Informix database reporting tool. Train and retrain existing Town and Finance Department staff on the best practices needed to efficiently use Crystal Reports with MUNIS.

♦   Provide appropriately secured MUNIS access to more Town staff.

♦   Improve internal customer support processes by activating the modules for selected routine finance and HR department functions (e.g. purchasing procedures, fund transfers for departmental budgets, payroll processing).

Long Term Projects

♦   Charter and lead an inter-disciplinary task force to analyze the need and cost/benefit of replacing MUNIS.

Human Resources (HR)

Software in use by the HR team includes MUNIS Payroll, Crystal Report Writer, MSDS Advantage, and Keller-Soft. Our initial observation is that a number of HR applicable software tools are owned by the Town but are not deployed. Thus the Town is not realizing the full benefits of its investment.

Operating weekly payroll cycles as well as only having 80% of the employee base on direct deposit creates inefficiencies, rushes procedures and

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[3] Finance has advised us that the latest AIX/Informix version was installed in late May.

introduces a higher risk of payroll errors. We recommend that all new hires be required to use direct deposit and that existing employees not already using direct deposit be strongly encouraged to move to payroll direct deposit by some set date in the future. The Town may find that an arrangement with its local bank to provide (free) checking accounts to employees that do not have one would be beneficial.

In addition, payroll is using a paper based change process, (name, address, benefit adjustments) and a labor intensive time accounting procedure is adding to the payroll *'all-the-time'* syndrome.

The HR department has developed a comfortable working relationship with the MUNIS support team members, but freely admits that parts of MUNIS HR, including position control, have not been implemented. Activating these is a high priority and HR would benefit by moving to the current version of MUNIS to gain the added HR functionality that it offers.

The HR Office is making good use of the CivicPlus web page project, but an interactive employment application is a highly desirable enhancement that is not in place. Currently prospective applicants can download an application, print the form, complete it and then mail or hand deliver the completed form to Town Hall. We consider electronic application submission to be an example of a "marginal" enhancement to the Town Web site that need not wait until a new Web presence is implemented.

Short Term Projects

♦ Take steps necessary to move the employee base from 80% direct deposit to 100% direct deposit.

♦ Activate the MUNIS position control module to more easily provide reports on salary consumption rate vs. budget, open budgeted positions.

♦ Automate federally mandated OSHA records reporting.

♦ Automate submission of Personnel Action Forms on a Town Intranet.

Long Term Projects

♦ Participate in the MUNIS replacement analysis.

Department of Housing

The Department of Housing in compliance with the U.S. Department of Housing and Urban Development provides safe, affordable and sanitary housing for citizens of Chapel Hill and Orange County. In its operation, the

department uses MUNIS for finance, budgeting and purchasing and the Wright Computer Services, Inc. financial package to manage tenant accounts, rent billing and collection.

The Wright System modules in use by Housing are: Tenant Accounting, Management of Waiting List, Recertification of Eligibility, Managing and Processing Work Orders as well as Inventory and Preparation of HUD Reporting.

Housing is satisfied with the Wright System but there is a significant amount of Finance Department and Housing Department labor required to reconcile Wright information with MUNIS. Electronic formatting and transfer of data between systems to address monthly balancing and reconciliation requirements is recommended.

Although the Wright software package manages and bills customers accurately as well as produces required HUD reports, it lacks a viable inventory management module. We think that due to the extensive reconciliation issues and the lack of inventory management that a replacement of the Wright software should be considered.

The Department maintains and keeps available 336 housing units for Town citizens. The department is satisfied with the interface and functionality of their Web presence, but stated the need to get more timely financial management reports.

Short Term Projects

♦ Automate safety and maintenance inspections for housing units and the production of required federal reporting.

♦ Implement automated data exchange between the MUNIS and Wright systems.

Long Term Projects

♦ Evaluate replacing the Wright system .

Parks and Recreation

The Parks and Recreation (P&R) Department provides a comprehensive set of recreational activities and facilities to the citizens of Chapel Hill and its surrounding area. We noted that in the delivery of this set of activities P&R must organize over 600 volunteers. Communications to and from the customer and volunteer base is a labor intensive effort by the P&R management team. Using a list serve process could streamline the communications to and from customers and volunteers for P&R staff. We

also recommend piggybacking on a public safety reverse 911 system if one is deployed.

Software in place and used by P&R includes RecTrac (registration, reservation, and pass management modules), MUNIS, Sourcekit Web development, All American Sports Ware, Tournament Builder Pro, My Mailing Lists, and Virtual Scheduling Creator. P&R has developed their own web site which is hosted on a separate server rather than on the Chapel Hill Web server.

This office should move forward with the On-line Registration and Park Reservations system available as part of the RecTrac suite of software tools. A combination of financial and employee time constraints have hindered progress towards this planned goal.

As with other subsidiary ledgers, extensive manual procedures are required in order to exchange data between RecTrac and MUNIS. Another area of labor savings is in the entry of class schedules. An outside firm now publishes most of the printed material for the P&R department. This same information is posted on the P&R Web site. Currently P&R is double entering these class and park schedules; once for the publisher and once for the Web.

Short Term Projects

♦ Use list serve and e-mail to communicate with customers regarding last minute changes in schedules for parks, pool and class activities.

♦ Deploy the RecTrac module that permits Web browser access to register for classes and other recreational activities.

♦ Automate data exchange between RecTrac and MUNIS.

♦ Eliminate the double entry of schedule data.

Long Term Projects

♦ Utilize "Reverse 911" technology if available.

Inspections

This department provides inspections services within the Town limits and to its extraterritorial jurisdiction. They enforce State and Chapel Hill Building codes as well as Land Use Management Ordinances and Minimum Housing codes. The team of inspectors is scheduled daily and the results of these inspections need to be communicated back to the various building contractors and remodeling firms throughout the Town.

The Inspections office has approximately 2000 building permits active at any one time. All scheduling and communication regarding these permits is single threaded through this office using an in-house developed application based on the Alpha database software package.

Although this in-house application is a creative solution that serves the department better than a manual paper based system would, multiple enhancements are needed to bring it to contemporary industry standards. The current software only allows one person to query and run reports regarding the inspections process and status. Concurrent access to the inspections database is necessary to support timely entry and retrieval by both inspectors and its customers alike. Furthermore, a web portal for the application process that includes access to this database regarding the status of the application would greatly reduce Inspections office traffic. To enhance this application will require a considerable investment in staff time and the purchase of new Alpha software products.

We recommend that the current Alpha based system be frozen in favor of replacement. MUNIS has an inspections module that the Town owns, but we do not recommend its implementation. Orange County inspections uses the *Permits Plus* software product and the County has offered to share this application with the Town. We recommend that it be considered as an immediate alternative to Alpha.

More contemporary inspections software solutions exist in the market place and are built around industry best practices including Web support. Using a self service methodology via the Web diminishes the inspector's labor and involvement in the requesting of, scheduling for, and reporting of routine inspections. Regardless of the system that Inspections ultimately uses, deployment of field technology, eventually with wireless capabilities, is a must have component as it improves productivity from recordation of data to timeliness of reporting. Ultimate deployment of an integrated system with other development functions is a longer term goal.

Short Term Projects

♦ Examine the Orange County Permits Plus automated solution and determine if this product is worth using.

♦ Outfit inspectors with field computers to record data on-site. Initially transfer data via media and subsequently using wireless networking.

Long Term Projects

♦ Acquire an integrated Planning, Engineering, Inspections, Permitting and Code Enforcement system. Investigate common needs with Orange County.

Legal Department

As is the case with most Town Attorneys, this office is primarily responsible for protecting the legal interests of the Town of Chapel Hill. The Attorney serves as general counsel to the Town and provides advice to the Mayor and Council, Town Boards and Commissions, Town Administration and Town Departments. This office reviews agenda items prior to them being released for discussion to the Town council in a private or public forum. In addition, nearly 600 vendor contracts regarding government purchases are reviewed by this office each year.

The Attorney and his paralegal track legal and agenda documents manually and would benefit greatly from an electronic document management system. An EDMS would streamline the day-to-day workings of this team by reducing the time and labor that is currently required to locate and track agenda items, manager comments, vendor contracts, et al. as they circulate through the Town for comment and feedback.

Long Term Projects

♦ As part of the database architecture and Web project, extend document management capabilities to the Legal (and other) departments.

Engineering

The Town's Engineering Department is providing public project design and design review, construction inspection and supervision, land surveying, drafting, construction quantity and cost estimates, traffic engineering, storm water management, and administration of Town cemeteries.

As a part of the NCDOT fiber initiative, Traffic Engineering expects to deploy a fiber optic network that will connect all traffic signals in Town to the Town Operations Center (TOC). This fiber network and the Traconex signaling system software will form an automated traffic management system. The current traffic management system is based on copper wire connections and most components of this system have been pushed way beyond their designed life. The Town should consider adding additional conduit into the opened trenches when the fiber is run and investment in incremental fiber will yield large returns to the Town in reduced leased fiber costs now being paid to third party vendors.

Engineering was the catalyst for the Town's initial GIS program and Engineering and Planning are currently the major GIS users. And while we consider GIS to be a vocational technology, it is one that offers potential uses and information management capabilities to every department in the government enterprise. We believe that Engineering, while just one of many GIS stakeholders, is the best home for GIS management.

Extending the Town's GIS capabilities have been hampered by a lack of a dedicated resource and a GIS master plan. The former issue was recently remedied when the vacant GIS position in IT was filled. We recommend that this position be reassigned to Engineering.

In our discussion on vocational technology, we stated our belief that there is no killer application, that is, one integrated package or municipal management system that contains (rational) application "modules" for multiple government services be it finance, parks and recreation, public safety and others. It is our belief, however, that GIS can evolve into a municipal management system simply because of its inverted service model. That is functions and features are data driven rather than data being driven by functions and features. In short, GIS offers very robust data integration capabilities that single purpose applications do not.

Of course we are referring to the industry standard of GIS, the ESRI products that are in use in Chapel Hill, Orange County and other surrounding communities. The number of third party developed vocational applications for ESRI software is growing. Sharing the cost and benefits of GIS through inter-local agreements is common. In short, it is our opinion that GIS offers greater potential to the Town than any other information technology available today in both serving its internal needs and providing content to the community.

Thus, we are recommending that GIS become a strategic Town technology initiative. That GIS be included in capital, comprehensive and technology strategic planning and that this planning and implementation include both private and neighboring public jurisdictions.

Short Term Projects

♦   Define a comprehensive GIS program.

Long Term Projects

♦   Deploy the planned traffic light fiber optics network with excess conduit and fiber added.

♦   Participate in the planning and implementation of a Town Work Order system.

♦   Participate in the evaluation and acquisition of an integrated Planning, Engineering, Inspections, Permitting and Code Enforcement system.

♦   Lead implementation of the GIS program.

Planning

The Planning Department assists in managing growth, administering development regulations, capital improvement and transportation planning, and promoting affordable housing opportunities. Planning in collaboration with Engineering builds, maintains, and sells a series of official town maps using the ESRI GIS software products.

The Planning Department spends significant amounts of time reviewing and commenting on citizen applications for new development. The department and Town place a high value on public participation in the proposed new development and construction process. Because of this strong commitment to open dialogue with the citizenry, Planning posts most if not all development design documents onto their web page to facilitate review by the public prior to discussion by the Planning Commission, Council or other advisory boards.

During the development process, Planning routinely communicates and works cooperatively with the Orange and Durham County GIS departments, OWASA (Orange County Water and Sewer Association), and UNC. The Orange County GIS Web page provides real time address and parcel identification information that is essential to daily department operations. The digital photographs needed for the GIS system base mapping are updated every 36 months and the cost is shared by UNC, Carrboro, Orange County and Chapel Hill.

Planning has become a major GIS user and most new hires in Planning bring GIS expertise with them. We recommend providing supplemental training to staff and acquiring additional software licenses for GIS and AutoCAD for all Planning staff.

Local government planning departments in general always have multiple files regarding proposed and approved development designs and plans and Chapel Hill's Planning department is no exception. A significant manual file storage system is in place with over 12,000+ case files. Thus, Planning would be another beneficiary of a Town EDMS system.

While many new development designs are being produced and submitted digitally to the town, we found no evidence of any policies in place requiring digital submission. We believe standards, policies and procedures for the digital submission of data should be implemented. In the absence of these, Planning and Engineering must either maintain paper files or scan in the plans both of which are labor intensive.

In addition to the input necessary from Planning for the preparation of the Council Agenda, members of the Planning department regularly prepare additional agendas and information packets for over ten citizen boards and

commissions. Any software ultimately put into place by the Clerk to streamline the Council Agenda process should also be considered for use within this department to support these other venues.

Short Term Projects

♦ Participate in development of a Town GIS architecture, strategy and plan.

♦ Require all design and development plans be submitted in a standard digital format.

♦ Enhance the Planning Web presence and begin providing routinely requested maps to the community online

Long Term Projects

♦ Develop requirements for inclusion in Town document management strategies.

♦ Participate in the evaluation and acquisition of an integrated Planning, Engineering, Inspections, Permitting and Code Enforcement system.

Transit

Transit has three divisions; Administration, Operations and Maintenance. Transit is not using MUNIS as its primary financial system to manage its staff or fleet of buses because the MUNIS account structure does not permit reporting costs down to the individual bus level. A real time interface needs to be built to exchange the financial information between Transit's applications and MUNIS to eliminate the need to manually massage and reenter data.

Transit started to install the Kronos Workforce Management software product over a year ago, but as of mid-May the software was not yet in production. As nearly 75% of Transit employees are hourly, the full deployment of this time accounting and workforce management software system should be implemented as soon as possible. As part of this project, the automatic exportation of payroll information from Kronos to MUNIS is critical as it eliminates an enormous amount of manual payroll data entry. We recommend Finance and Transit elevate the priority of this important project component and engage external resources to assist in its implementation.

Bus, equipment, parts and fuel management for this fleet of buses is tracked using TMT, Inc.'s Transman's software system. The Transit management team is dissatisfied with TMT's support and wants to replace this product. This system was originally developed for the trucking industry and may not

be the proper management tool for managing Chapel Hill's fleet of buses. We noted that not all modules of Transman purchased by Chapel Hill are installed. We believe an in-depth analysis regarding the fate of Transman should be undertaken before any concrete action is taken to replace it.

Twice a year (August and January) route data regarding bus stop addresses and anticipated times of arrival at each stop is collected and published on paper and the Web. Printing is outsourced to a third party vendor. The route and stop information data is manually entered twice as it is needed in one format for Web publication and in another format for the printing. This duplicative, tedious and labor intensive process needs management's attention.

The StrateGen *Easy Rider* dispatching and route scheduling software tool was purchased by Chapel Hill over three years ago. *Easy Rider* is used to build customized routes for the pick-up and movement of citizens with special needs. Once the drivers' route schedules are established, real-time modifications are difficult to make or enter and therefore bus drivers are retracing or doubling back to areas of Chapel Hill more than once during a run. Although this scheduling tool only helps manage 10% of the Transit labor force, a review of the department's business processes used, the training levels of the staff assigned and the StrateGen designed functionality should be undertaken.

Since the vast majority of the labor is assigned to the fixed route bus runs, automating the design and updating of this side of the house will yield the biggest return. Management has secured a grant for FY2008 to purchase an automated run cutting software package. Researching and moving to new software products that refine scheduling and run cutting offer much potential for productivity improvements.

The program that places a GPS (Global Positioning System) transponder on each bus has been very successful. The NextBus software is then able to predict and announce times of arrival at each stop for each bus that carries a transponder. Transponder (bus) location information is sent to 14 remote real time screens throughout the town. Transit gets over 2,000 hits daily on the NextBus system.

Along similar lines, Automated Passenger Counters (APC) have been installed on 15 buses. New buses are being ordered with these APC units as well. Once delivered, 34 buses will begin operating with APC's. The APC system provides management information regarding passenger entrance and exit by stop and trip. Expanding the system will provide much needed rider statistical information that becomes the basis for bus and route adjustments to optimize service.

The value of the anticipated raw data generated by Transit's systems will depend upon the tools used to analyze it. GIS has proven to be very useful for transportation planning. We recommend that Transit become proficient in GIS and participate in the development of the Town's GIS program.

Short Term Projects

♦ Eliminate the double data entry now necessary in order to publish printed and Web schedules.

♦ Continue the NextBus rollout.

♦ Expand the Automated Passenger Counter rider analysis system in the bus fleet.

♦ Finish the activation of the Kronos time accounting software system and build automated data exchange processes with MUNIS.

Long Term Projects

♦ Purchase and install automated scheduling and run cutting software.

♦ Tap the potential of GIS in transportation planning.

♦ Develop a departmental technology plan that analyzes the efficacy of current applications and identifies new and replacement products.

Public Works

The Department of Public Works (DPW) is organized into four majors areas; Administration, Street and Construction Services, Facilities Management, and Solid Waste and Fleet Management.

Each major area has some unique and overlapping management and information reporting needs. During the past year, a great deal of time and energy have gone into the pressing issues of preparing for the move to the new Town Operations Center (TOC).

DPW needs to augment its suite of operational tools. Among them, comprehensive multi-user work order and construction management systems, the latter to include construction cost accounting capabilities. The Director discussed the potential of deploying commercial off-the-shelf facilities and inventory management tools within the division. Note that any (re)deployment of this genre of software carries with it the requirement to retire Faster, FCIS, MS Excel and other software tools now in use throughout DPW.

Software in use at DPW for building, construction, fleet and revenue management decisions contain the department's authoritative data, including construction costing. Project accounting data in MUNIS, although in place, is frequently weeks behind the real time data maintained in the DPW developed Excel spreadsheets kept for each building project. Considerable DPW and Finance time is spent each month reconciling DPW

and MUNIS records. We recommend that DPW export its data in a format compatible for MUNIS import.

Short Term Projects

♦   Develop automated data exchange processes between MUNIS and DPW Excel programs.

Long-Term Projects

♦   Participate in the evaluation and acquisition of an integrated Planning, Engineering, Inspections, Permitting and Code Enforcement system.

♦   Lead in the definition and deployment of a Town wide Work Order System.

Fire and Rescue

This department has five stations throughout the Town and ninety employees who answered over 4,000 emergency calls last year. The Fire Department completes new and existing building safety inspections, conducts public safety education, performs follow up inspections after an emergency is over, and is first responder for the e-911 calls sent to them by Orange County.

Orange County manages emergency calls and cases using the Sun Guard OSSI public safety software system. The Town on the other hand is using the FireHouse records management system (RMS). As a result, Town personnel must manually enter this case profile information. Automating the importation of this data would clearly improve productivity and information timeliness. A project request to automatically download call information from OSSI into FireHouse is pending.

Although FireHouse is a comprehensive RMS system that can be run updating a master database server, it is being used in a batch mode. This practice keeps the daily fire inspections information on individual laptop computers for up to sixty days before they are synchronized and backed-up onto the master FireHouse server. Operational policy requires that the laptop only be backed up monthly and this updating process is labor intensive, risky and prone to error. Furthermore, while on one inspector's laptop, data cannot be readily shared by other inspectors.

The Fire Department uses MUNIS as well. All purchases of products and releases of payment are channeled through one person within the department. This affords the department a strong central control but going to a more decentralized process could free up a substantial number of labor hours and disseminate financial status information throughout the department more rapidly.

We found that the Department has multiple four inch loose leaf notebooks in each fire truck, emergency vehicle and command car. These notebooks contain a variety of ever changing information such as the proper handling of hazardous materials and detailed street maps. This paper is only updated annually due to the cost and time involved with producing these notebooks. The Fire Department wants to replace these notebooks with mobile data terminals (eighteen) connected wirelessly to FireHouse, GIS and the OSSI dispatching system in Orange County. We endorse this planned direction.

Although wireless access could be the ultimate goal, we think an intermediate step that pays huge dividends is to simply replace the multiple loose leaf notebooks with a laptop computer without wireless. This laptop deployment will not only save a huge amount of space but enable data updates more frequently simply by burning a new CD or DVD.

Short Term Projects

♦ Develop a process to import data from OSSI to FireHouse.

♦ Revise the field inspections laptop computer synchronization and updating process.

♦ Purchase computers to replace notebooks used in department vehicles.

Long Term Projects

♦ Replace CD based vehicle information with online, wireless access.

♦ Participate in the evaluation and acquisition of a reverse 911 system.

Public Library

The Chapel Hill Public Library (CHPL) is housed in a modern 27,000 square feet facility and currently has 29,000+ patrons. The library hosts a comprehensive and well planned Web site separate from the Chapel Hill CivicPlus Web presence. The Library's public access technology is managed by one internal Public Library staff member. IT supports Library enterprise technology.

Within the library building, nineteen workstations are available for patrons to search the holdings and reserve books for check out via an on-line cataloging software system. In addition, twenty-four workstations are available for patrons to connect to the Internet for Web browsing. More recently demand for these workstations has grown to a point that all internet workstations are now limited to a maximum of a one hour session per patron.

The use of internet access to library resources and on-line cataloging has been well deployed by the library staff and CHPL Board. We feel that collectively this use of technology by the public library has reduced the amount of time a patron needs to remain in the building to pick up a book or do research.

RHJA is impressed with the Library's excellent technology program, but observed that the Public Library may have more technology installed than there are resources at the library to adequately support. The aggressive deployment of technologies originally outlined in the *Library Master Plan for Technology* Report may have underestimated the ongoing maintenance necessary as this in place technology continues to age.

Short Term Projects

♦ Although anyone with Internet access currently has access to many aspects of the public library, the installation of a wireless hot spot that extends beyond the current library building can reduce the amount of time a patron may need to spend in the building.

♦ Complete the RFID project already funded and included within the Town's CIP plan.

♦ Review the technology support contracts and business practices currently used and adjust these as needed to maintain the wide range of technology now in use throughout the Public Library.

Long Term Projects

♦ Extend access to the in-place Library computer systems for 3G/4G wireless devices.

♦ Form a working group to update the *Library's Master Plan for Technology* Report on a three to five year cycle.

V. Municipal Information Management

There are a number of areas that focus on information, rather than facilitate Town operations, that we believe deserve separate consideration. They're designed to deliver content as well as serve internal government functions. While these could be assigned to operating departments, they tend to be at the bottom of the resource receiving totem pole when they are. We refer to these areas as Municipal Information Management and believe a better home is in a "public information" function. This is also the organization in which the Business Analyst is assigned (See Appendix D).

Town Clerk

The Town Clerk's Office is responsible for managing and delivering parts of the Town's "municipal information". It prepares agendas, records actions of Town Council meetings, and makes this information available to the public via the Town's web site and other venues. This office also manages Granicus, the online, on-demand video streaming of Council meetings with annotated minutes, agendas and attachments; edits and prepares videos in house for release to the public; and maintains the permanent public record of council minutes, ordinances and all legal documents for the town.

The agenda preparation process is highly manual and requires input and review by all departments during its collation. The current process consumes large amounts of time from some of the busiest decision makers within the Town government. Anything that streamlines this process should be considered. Although templates for agenda submission are distributed to contributors, a large amount of review and frequent rewriting of these submissions are undertaken before every agenda package is distributed.

The Clerk uses the BLM Software, MUNIS, and CivicPlus software. Multiple e-mail lists are manually maintained for use when distributing public information to special interest groups. A more automated process of adding subscribers to mailing lists should be created and deployed.

The Office has experienced a decrease in the number of voice messages received and an increase in the number of e-mail communications over the past few years. The public has the opportunity to access public information by accessing the Town's web site. This enhanced Web presence has also resulted in reduced telephone calls and walk-in customers.

We expect this trend will continue and without planned procedures in the management of e-mail review and retention, communications are at risk of being misplaced and/or lost. We recommend that a business process and policy statement be developed and staff trained regarding preferred methods to catalog, store, archive and retrieve e-mail communications. A Town wide Work Order system (i.e. citizen issue tracking system) would be of much assistance here.

Town Information Officer (TIO)

The TIO provides "municipal information" to the public regarding government events and policy actions taken by the Town Council, Mayor and Town Manager. This Office manages the Government Access Channel and with works the CivicPlus Web software. Town departments pass wording and policy changes to this office for eventual publication in print, broadcast, and posting to the Town's Web site. This office spends much time redacting this material prior to publication.

The office uses the Adobe software suite of Illustrator, InDesign and Photoshop in addition to Microsoft's Publisher.

Web

It is the rare Needs Assessment where we find the most discussed topic of concern is not about training. In Chapel Hill, training wasn't even a close second to the Town's Web presence. Virtually everyone is dissatisfied with its capabilities, features, functions and user friendliness. A new, comprehensive and interactive direction is desired.

The current incarnation of Town Web services consists of a variety of different applications and presentations. While the main body of information is based on the much disrespected CivicPlus product, other departments including Parks and Recreation and the Library have their own separate programs.

This is clearly a high priority to the community and is relevant to our assessment as it provides a platform to the Town on which to concurrently enhance services delivery and become more productive. And although this is clearly a long term and resource consuming effort, we recommend pursuing it immediately.

Immediately, but with due diligence. Requirements definition, specification of objectives and outcomes, development tools and methodologies, resource allocation, and project planning among them. Consideration to underlying infrastructure components such as network and databases as well as the native web capabilities of the Town's vocational applications and the impact of integration with these applications is essential (e.g. accepting online payments).

While deployment of Web development and support components internally would give the Town the flexibility to choose these tools-of-the-trade, we recommend examining a hosting service as an alternative. There are a large number to choose from that offer more robust development suites that would ameliorate the CivicPlus experience and more than satisfy Town requirements. We believe this approach offers the advantages of 1)

accelerating deployment by eliminating the need to define, install and manage basic Web infrastructure components, and 2) leveraging available training.

We recommend assigning management of Web development and support to a "municipal information" function. It needs a strong emphasis on content and it requires commitment from all Town managers and participation of many front line staff. Our recommendation includes reassignment of the Town's webmaster who is an experienced, qualified and knowledgeable individual.

Municipal Information Recommendations

Short Term Projects

♦ Develop a Town wide cataloging index and retention/storage policy regarding citizen e-mail and staff replies.

♦ Use list serve capabilities and e-mail as another way to communicate with citizens wishing to have up-to-date information regarding Town business.

♦ Streamline the agenda processes and receive agenda input in soft rather than hard copy.

♦ Distribute the agenda in electronic format.

♦ Provide a permanent laptop computer at the Council's meeting table.

♦ Provide a (laptop) computer to each interested council member if necessary.

♦ Augment the current Web site with marginal improvements.

♦ Implement a Town Intranet for sharing and posting of information for internal use.

♦ Lead the Web redesign and site replacement project.

Long Term Projects

♦ Utilize reverse 911 technology if available.

♦ Participate in the planning and implementation of a Town Work Order system to among other things track citizen emails and the information citizens request.

♦ Develop and implement a redesigned Web presence while making marginal improvements to CivicPlus.

♦ Migrate and deposit Town records in a "data warehouse" (EDMS).

VI. Summary

This report identifies both short and long term needs that will make Town operations more efficient and improve services to the Public. The short term projects (Appendix E) can be accomplished at a relatively low cost whereas the long term needs tend to be capital intensive.

While a number of the operational improvements we are recommending are not new and have been discussed by Town management and staff, implementation has proven elusive. We attribute this to an absence of a well defined governance structure, lack of resources and a culture that has not embraced inter-disciplinary collaboration. Thus, we believe progress will continue to stymied until these issues are addressed.

We have presented a number of recommendations regarding technology governance, organization, and information management that we believe are essential pre-requisites to successful completion of both short and long term projects.

Next Steps

1. Recast the organization (Appendix D).

    a) Energize the Technology Team.

        i.   Develop an operating charter.

        ii. Define needed technology standards, policies and procedures. Facilitate their development, implementation and enforcement.

        iii. Prioritize short term projects. Assist in providing project resources as necessary.

        iv. Oversee development of a long term Strategic Technology Plan.

    b) Formalize a "Municipal Information Management" function.

    c) Articulate roles, responsibilities, authorities and accountabilities.

        i.   Information Technology.

        ii. Operating departments.

        iii. Municipal Information Management.

2. Information Technology

    a) Formalize department operation.

        i.   Develop annual work plans. Departmental and individual staff.

        ii.   Be the first to implement a work order system for Help Desk support and issue tracking and management.

        iii.   Implement and populate an asset management system for the Town's technology.

   b)   Develop and publish Enterprise Technology Architectures.

   c)   Develop Service Level Agreements with each department.

   d)   Complete deployment of operational productivity tools.

   e)   Develop, publish and implement Enterprise Technology security policies.

3.   Vocational Departments

   a)   Assume ownership of departmental application systems.

   b)   Implement the short term recommendations of this plan.

4.   Municipal Information Management.

   a)   Define and assign staff.

   b)   Hire a Business Analyst.

   c)   Build a Web redevelopment project plan. Implement the plan.

APPENDIX A
ASSESSMENT PARTICIPANTS

Interviews

Administration

Roger Stancil
Flo Miller
Bruce Heflin
Catherine Lazorko

Attorney

Ralph Karpinos
Toni Pendergraph

Council

Kevin Foy, Mayor
Bill Strom, Mayor pro tem
Laurin Easthom
Sally Greene
Ed Harrison
Cam Hill
Mark Kleinschmidt
Bill Thorpe
Jim Ward
Tim Dempsey – Council Liaison

Engineering

George Small
Deborah Squires

Finance

Kay Johnson
Amy Oland
Rich Shreve
Jeanne Tate

Fire

Dan Jones
Susanna Williams

Housing

Tina Vaughn

Human Resources

Pam Eastwood
Anissa Graham-Davis

Information Technology

Bob Avery
Chase Barnard
Scott Cantrell
Arek Kempinski
Mona Nazir
Bill Rehm

Inspections

Lance Norris
Louise Pettis

Library

Kathy Thompson
Mark Bayles

Parks and Recreation

Bill Webster
Andrea Judge

Planning

J. B. Culpepper
Scott Simmons

Police

Gregg Jarvies
Mary Powell
Robert Reynolds
Bryan Walker

Public Works

Bill Letteri
Harv Howard
Bill Terry

Town Clerk

Sabrina Oliver
Amy Harvey

Technology Team

Flo Miller
Bob Avery
Mark Bayles
Anissa Graham-Davis
Bill Letteri
Lance Norris
Sabrina Oliver
Bill Rehm

Transit

Steve Spade
Henry De Pietro
Kurt Neufang
Carl Rokos

Focus Groups

Group One

Carol Abernethy
David Bonk
Maggie Bowers
Matthew Bowles
Amy Harvey
Kelly Stokes
Jeanne Tate

Group Two

Sabrina Farrar
Brenda Jones
Andrea Judge
Doug Kelly
Karin Michel
Kurt Neufang
Wendy Smith
Bryan Walker

Group 3

Johnnie Britt
Robb English
Anissa Graham-Davis
Diana Harris
Marcia Margotta
Louise Pettis
Rhonda Sommer
Kay Tapp
Angie Turner

Group 4

Randy Ballard
Scott Beavers
Chris Blue
Vencelin Harris Jr.
Tim Logue

Bobby Pettiford
Nick Pittman
Bill Webster

GIS

Anna Biton
Jane Cousins
Katie Chalmers
Trish D'Arconte
Kai Monast
Scott Simmons
Deborah Squires

Open Meeting

John Ager
Steve Baker
Terri Buckner
Gregg Gerdau
Martha Hoylman
Chad Johnson
Bill Strom
Clay Whybark

Web

Mark Bayles
Katie Chalmers
Len Cone
Sabrina Farrar
Anissa Graham-Davis
Amy Harvey
Catherine Lazorko
Greg Ling
Melanie Miller
Louise Pettis
Bill Rehm
Wendy Smith
Susanna Williams

APPENDIX B
VOCATIONAL APPLICATIONS

Chapel Hill, NC
Application Inventory

Software Application	Vendor	Department	Function of and Status of software	Installed Version	Current Version	Under Maint?	Annual Maint Cost (as provided)
BLM ver 3.0.008	BLM Software, Inc.	Clerk	Board & commission action database	3.0.009	3.0.009	No	
Centre Ware	Xerox, Inc	Clerk	Monitors printing & holding of data	10.56.00		Yes	Bundled with copier contract
Fiery Remote Scan 5	Xerox, Inc	Clerk	Scanning software	5.0.27		Yes	Bundled with copier contract
FreeFlow Docu SP	Xerox, Inc	Clerk	Monitors printing & holding of data	50.61.12		Yes	Bundled with copier contract
Granicus	Granicus, Inc	Clerk	Video Stream of meetings & minutes	2	3.0.4.0	Yes	$ 8,400
AutoCAD 2004	AutoDesk	DPW	plan review, drafting & design	2004	2007	No	
Photo Deluxe 3.0	Adobe	DPW	Digital Photograph processing	Version 3.0	Version 4.0	No	
Faster Fleet	CCG Systems, Inc.	DPW	Work order tracking & account monitor	Version 5.58.164	Version 5.69	Yes	$ 3,090
Genisys	OTC, Inc.	DPW	Vehicle Diagonistics	N/A	Handheld Devices	N/A	
IHC diagnostics	IHC International, Cat & Cummings	DPW	Diesel Diagnostics	Version 4.82		No	
Detroit diesel & Allison Transmission	Detroit Diesel	DPW	Diesel Diagnostics & Transmissions	Version 6.3		No	
IDS diagnostics	Ford Motor Company	DPW	Engine Diagnostics software	Version IDS-43	Version 2007.3 - 48	Yes	$ 4,800
Gasboy	Gasboy International, Inc.	DPW	Monitors fuel consumption by vehicle	Obsolete	Will be replaced by Fuel Master at TOC	No	
MP2 Access 2000	Datastream, Inc.	DPW	CMMS computerized maintenance management	Version 3.0	Version 6.0	No	
FCIS -- Facilities Condition IS	Applied Management Engineering, Inc	DPW	Facilities Management software	Vers 3.5c		No	
ArcGIS	ESRI, Inc	Engineering	GIS Mapping	9.2	9.2	Yes	$ 10,000
CG Survey for DOS	Carlson Software, Inc.	Engineering	AutoCAD survey add on	DOS	CG Survey 8	No	
AutoCAD Civil 3D	AutoCad	Engineering	Construction design analysis	2007	2008	Yes	$ 1,325
FlowTracker	Sontek/YSI, Inc.	Engineering	Water Flow/Discharge Mgt.	2.11	2.11	No	
GPS Pathfinder	Trimble Navigation, Inc.	Engineering	Stormwater sturcture inventory	3	4	No	
Trimble GPS Correct	Trimble Navigation, Inc.	Engineering	Stormwater sturcture inventory	2	2	No	
HCS	McTRANS, FL	Engineering	Highway Capacity Analysis	HCS2000	HCS+ Release 5	No	
HI92000	Hanna Instruments, Inc.	Engineering	Water Quality measurement	4.8	4.8	No	
Intellicad 2001	CAD Manfacturing Solutions, Inc.	Engineering	Design CAD	5.60.010	6.3	No	

Chapel Hill, NC
Application Inventory

Software Application	Vendor	Department	Function of and Status of software	Installed Version	Current Version	Under Maint?	Annual Maint Cost (as provided)
PCWARRANTS	Jamar Technologies, Inc.	Engineering	Signal Warrant Analysis	1.14.0	1.14.4	No	
SignCAD	SignCAD Systems, Inc.	Engineering	Manfacturer Signs	not longer used		No	
Omega	Gerber Scientific Prodcuts	Engineering	Manfacturer Signs	2	2.5.1 (upgrade cost $495)	No	
Syncro	Trafficware, Ltd.	Engineering	Traffic Simulation	7	7	No	
Tgen	MicroTrans, Inc.	Engineering	Trip Generation	5	5	No	
Crystal Reports ver 9	Business Objectives, France	Finance	report writer software	9.2.0.448	11	Yes	Bundled with MUNIS
MUNIS Ver 2005.01	TylerTechnologies, Inc.	Finance	Town accounting and Finance reporting	2005.01	6.1	Yes	$ 44,000
SecureCheck	AcuPrint-AP Technologies, Inc.	Finance	Check Micr-Encoding software	4.7	4.7	Yes	$ 595
Cardinal Tracking	Cardinal Tracking Company	Finance	Parking Ticket Management	8	8	Yes	$ 4,815
FireHouse Software	ACS, Inc	Fire	Incident Reporting & fire station mgt.	6 Enterprise-Release 6.2.2	7 Enterprise	Yes	$ 1,490
Wright Ver 6.2	Wright Comp Serv, Inc	Housing	Tenant Accounting, Waiting List Management, Eligibility Certification, Work Order Processing, Inventory and HUD Reporting	6.2		Yes	$ 3,420
Crystal Reports ver 9	Business Objectives, France	Human Resources	report writer software	9.2.0.448	11	Yes	Bundled with MUNIS
Keller-Soft	J.J. Keller, Inc.	Human Resources	Safety Training - OSHA	8.1	8.1	No	
MSDS Advantage	MSDS OnLine	Human Resources	Chemical storage database - OSHA	6.5	7	Yes	$ 25
AL	Alpha Software, Inc.	Inspections	Custom written Inspections Program	6	8	No	
Easy Mail Plus	Home Plan Software, Inc.	Inspections	Printing of Contractor envelopes		2	No	
West Law	West Publishing Inc.	Legal	Legal Research	Online Subscription	Online Subscription	Yes	$ 3,000
Athletic Scheduling	All American Sportsware, Inc.	Parks & Recreation	Scheduling of games and tournaments	Game Time Scheduler 10.02.01 League Administrator 10.32	NA - company our of business	No	
		Parks & Recreation	Sports Scheduler 2003	1.9.9	1.9.9	Yes	$ 600

Chapel Hill, NC
Application Inventory

Software Application	Vendor	Department	Function of and Status of software	Installed Version	Current Version	Under Maint?	Annual Maint Cost (as provided)
Do 2 Learn	Not given by department	Parks & Recreation	Visual Schedule creation	web portal based	Y	Yes	$ 35
DX7000 Series	Pelco, Inc.	Parks & Recreation	Digital security camera system	ver: 1.2 (4-22-2003)	ver: 1.2 (4-22-2003)	No	
Publisher	Not given by department	Parks & Recreation	Produce flyers & brochures	2003	2007	Yes	Included in Microsoft Volume Licensing
RecTrac	Vermont Systems, Inc.	Parks & Recreation	Management of Parks in town	ver: 9.5.a5d	ver: 10.1	Yes	$ 2,628
Tournament Builder Pro	Not given by department	Parks & Recreation	Athletic Scheduling & Tournaments	ver: 1.2.2	NA - company out of business	No	
Tournament Scheduler 2005	League USA	Parks & Recreation	Tournament Scheduler	1.7.0		No	
ArcGIS	ESRI, Inc	Planning	Each employee in planning access	9.2	9.2	Yes	$ 4,000
Transcad ver 4.8	Caliper,Inc.	Planning	GIS for Transportation Professionals	4.8	4.8	No	
OSSI	SunGard Data Systems, Inc.	Police	Arrest records management system	Version 8	Version 8	Yes	$ 53,600
Victims -- Carolina Crisis Systems	CCSI -- Carolina Crisis Systems, Inc.	Police	Crisis Unit records management system		Version 4.2.6a	No	
Project Turn Around Database	Blue Lizard, Inc	Police	PTA records management system			No	
Live Scan	Crossmatch, Inc.	Police	Finger printing software			Yes	$ 900
IAFIS	Aware, Inc.	Police	FBI fingerprinting database	Version 2.51		No	
Forensics Toolkit	Access Data, Inc.	Police	Computerized forensics	Vers 1.62.1	Upgrade cost $1095	No	
Paraben	Paraben, Inc.	Police	Computerized forensics	Vers 2.0	Upgrade cost $600	No	
VNX digital security cameras	Pelco, Inc.	Police	security camera software			No	
EnCare	Guidance, Inc.	Police	Not proviced by department	Vers 6.3	Upgrade cost $1000	No	
Visio 2003	Microsoft, Inc.	Police	Collision / accident drawings	2003	2007	Yes	Included in Microsoft Volume Licensing
FrontPage 2002	Microsoft, Inc.	Police	Web page design and development	2002	2007	Yes	Included in Microsoft Volume Licensing
Computer Photo Fit	Sirce, Inc.	Police	Suspect composite drawing by computer	2.7	2.7	No	
Quicken	Intuit, Inc.	Police	Departmental financial management		2007	No	
Doors	Keri, Inc	Police	BuildingSecurity		Vers 4.55	Yes	Included in equipment contract

Chapel Hill, NC
Application Inventory

Software Application	Vendor	Department	Function of and Status of software	Installed Version	Current Version	Under Maint?	Annual Maint Cost (as provided)
ROCK	ROCIC	Police	Information sharing among law enforcement agencies			Yes	$ 300
E-Citation	Interplat Solutions, Inc.	Police	issuing traffic citations electronically	Vers 2.3		No	
Gang-net	Not given by department	Police	Share gang information within NC		version 7	No	
NCIC	Federal Division of Criminal Jutice	Police	Share state & national law enforcement information	1.31.1	1.31.1	Yes	$ 8,000
CenturionGuard & Cornerstone	Centurion Technologies, Inc	Public Library	Disk protection on public computers	Centurion Guard ver: 4.4 Centurion Cornerstone ver: 7.0.005	ver: 6.6 same	Yes	$ 179
Innovative Interfaces Millennium	Innovative Interfaces, Inc	Public Library	Manages check-in-out & cataloging	release 2006 ver: 1.2	same	Yes	$ 45,216
Jaws for Windows & Zoom Text	Freedom Scientific	Public Library	Screen Magnification	ver: 9.0	same	No	
PC Reservations and LPT 1	Envisionware, Inc.	Public Library	Workstation time/print management	PC Reservationists ver: 3.02 PC LPT1 Ver: 3.13	ver: 3.3 ver: 4.1	Yes	$ 715
Public Web Browser	Team Software Solutions, Inc.	Public Library	desktop management, catalog	ver: 2.09	ver: 2.10	Yes	$ 100
Transman	TMT, Inc.	Transit	Fleet Maintenance	Vers 8.10.30	Vers 8.20.53	Yes	$ 6,000
GFI V7 Data System	SPX, Inc. -- General Farebox Division	Transit	Operations management	Vers 1.35.57		No	
Strategen	StrageGen Systems, Inc.	Transit	On demand scheduling & pick-up	5.4.11	5.5.16	Yes	$ 12,000
Kronos	Kronos, Inc.	Transit	Time accounting & management	Workforce Central v5.1	Workforce Central v5.2	Yes	$ 8,261
All Data	All Data, LLC..	Transit	Digital shop manuals for fleet	Web based	NA	Yes	$ 2,225
Nextbus	Nextbus, Inc.	Transit	Bus location & expected arrival time	Contracted service	Contracted service	Yes	Multi-year equipment and service contract for approx. $900,000
Luminator	Luminator USA, Inc.	Transit	Head sign programming	IPS v3.3	IPS v3.6	No	
Twin Vision / Talking Bus	Digital Recorders, Inc.	Transit	Bus operations management	CRS v600 build 17 & Elya v0.46		No	
Automatic Passenger Counters	Digital Recorders, Inc.	Transit	passenger counts by stop and route			No	

APPENDIX C
BUSINESS ANALYST PROFILE

IT BUSINESS ANALYST

GENERAL DEFINITION:
Performs project management for complex local government IT projects.

TYPICAL TASKS:
- Engages county government personnel to determine technical requirements for automating business practices.
- Performs formal project management for large scale IT work
- Provides technical recommendations for county government solutions
- Devises information architectural models based on services provided to users of county services
- Creates scaleable yet consistent mechanisms for project initiation, planning, execution and closedown
- Creates systems for regular reporting of project status for management review
- Serves as project management prime and mentor for IT department.

KNOWLEDGES, SKILLS AND ABILITIES:
- Knowledge of project management methodologies, with a strong emphasis on requirements management
- Ability to perform project estimations of schedule, cost and quality
- Ability to self-direct, based on goals and high-level outcomes provided by CIO
- Ability to engage with a wide variety of county staff with varied technical backgrounds
- Ability to manage multiple tasks and concurrent deliverables
- Ability to research current technological offerings in market and analyze against user requirements
- Develop cost-benefit analyses of automation options
- Strong organizational skills
- Extensive familiarity with Internet technologies
- Strong oral and written communication skills
- Proven mentorship skills.

EDUCATION AND EXPERIENCE:
- Minimum of bachelor's degree in computer science, engineering, mathematics or related field
- 4 years experience in project management of large scale technical projects
- Familiarity with at least two project management methodologies, expertise in at least one
- PMI certification preferred
- Extensive MicroSoft Project experience required
- Experience in software engineering required
- Local Government experience preferred.

SPECIAL REQUIREMENTS:
Must possess an appropriate driver's license valid in the State of North Carolina.

Work Planning and Performance Review (WPPR) Work Plan

Employee: **Title:**   **Business Analyst**   **Dept/Div:**   **IT**

Supervisor   **Work Plan Period Begin Date:**   Jan 2006 **Work Plan Period End Date:**   **Jan 2007**

Initial Agreement	Final Review
Supervisor's **Signature:** **Date:**	**Supervisor's** **Signature:** **Date:**
Employee's **Signature:** **Date:**	**Employee's** **Signature:** **Date:**

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Lead Land Services Team in search for next generation systems	Coordinate Regular Group Meetings Monitor contracting agency performance Escalate critical issues to management Identify opportunities for inter-departmental synergy among various projects within LISP

Performance Notes:

- Continued to serve as primary IT contact for the Addressing Verification project, worked closely with project manager and other team members to identify and address project issues, including monitoring project progress, highlighting data quality issues, and worked with consultants to ensure that Orange County expectations were met. Project completed in summer, 2006 (approximately six months late) with significant data quality issues still being addressed by GIS/Land Records Department.

- Attended bi-monthly GIS working group meetings. The GIS working group members include representatives from Chapel Hill, Carrboro, UNC and OWASA who meet regularly to share information on GIS-related activities in their jurisdictions.

- Attended Orange County GIS working group meetings, sponsored by the LR/GIS Department. This working group includes representatives from county departments currently using or interested in using GIS; attending as the IT representative.

Work Planning and Performance Review (WPPR) Work Plan

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Lead Property Information Management System (PIMS) Requirements Analysis	Coordinate activities for PIMS requirements analysis Monitor contractor performance, escalate critical concerns in a timely fashion Maintain project documentation and ensure access to same for all participants

Performance Notes:

- Finalized PIMS requirements document and presented final conclusions and recommendations to the PIMS steering committee.

- Drafted PIMS request for proposal (RFP), taking into account all feedback gathered from sponsoring departments. Took over ownership of contractor's deliverables, thus preventing significant delays associated with shortcomings of the contractor.

- Led assessment of the NCACC-sponsored Revenue Collection/Tax Assessor package, NCPTS. Reviewed NCPTS features and functions; served as primary contact with IIS, the consulting firm developing NCPTS. Worked with steering committee to summarize findings of the review and to determine next steps. Pushed analysis conclusively toward a go/no-go decision regarding an RFP.

- Met with Forsyth County counterparts to assess their internally developed application for appropriateness in Orange County environment. Worked with CIO to devise an initial IT impact assessment of Forsyth system, thus eliminating it from serious consideration.

- Led data analysis workshop to document data requirements of the Billing and Revenue Collection functions.

Work Planning and Performance Review (WPPR) Work Plan

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Perform formal project management for large-scale IT projects	Maintain project plans, project documentation

Escalate high-priority items to management attention

Ensure project goals and objectives are clearly defined and ultimately met. |

Performance Notes:

During the work plan period, I managed the following notable IT projects:

- Groupwise to Outlook Email Conversion: Served as project manager for project to install MS Active Directory, Exchange and Outlook products, replacing the Novell networking software and Groupwise email product. Responsible for creating and maintaining project plan; coordinating schedules and resource needs with 4Front; identifying risks and developing mitigation plans; and highlighting problem areas to senior management as needed. Developed end-user survey for project; analyzed and summarized survey results.

- Active Directory Migration Project: Serving as project manager for project to remove Novell networking software, replace all Novell servers with Windows servers, reconcile drive mappings county-wide and implement Active Directory. Responsible for creating and maintaining project plan; coordinating schedules and resource needs; identifying risks and developing mitigation plans; and highlighting problem areas to senior management as needed. Serving as application contact for identifying impact of changes on end-user applications.

- Intranet: Responsible for creating and maintaining project status pages on the intranet IT center site for the following projects: PIMS, web template project, Active Directory Migration, Fatter Internet Pipe project.

- Application Inventory: Developed an application inventory listing applications in use in the county. Information concerning the application location, users, contacts, vendors, technology was also collected.

- Internet Pipe Upgrade: Served as project manager for project to increase capacity and speed of county internet connection. Responsible for creating and maintaining project plan; coordinating upgrade and testing schedules and resource needs with Time Warner, ITS, and user contacts; identifying risks and developing mitigation plans; and highlighting problem areas to senior management as needed. Developed end-user survey for project, analyzed and summarized survey results.

- Medware Replacement: Worked with Health Department to replace out-dated Medware application with an internally-developed mainframe application. Responsible for identifying requirements, discussing alternative approaches, developing recommendation and managing the replacement project. Solution recommended and implemented met Health Department's short term needs, streamlined Health Department's data entry requirements and was cost-effective.

Work Planning and Performance Review (WPPR) Work Plan

- <u>Pharmacy Software Installation</u>: Coordinated the successful installation of the QS/1 Pharmacy software on Franklin server. Communicated concerns to IT management and client.

Work Planning and Performance Review (WPPR) Work Plan

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Support Register of Deeds application	Act as an intermediary between vendor and Deeds office Escalate critical issues to RoD and IT management

Performance Notes:

- Leading project to install and deploy AmCad's newest release of RoD software, AiLIS5. Includes coordinating server, workstation, and monitor purchases with Operations staff, RoD and Purchasing; reviewing software requirements document and communicating Orange County specific needs to AmCad; developing project plan for the installation and testing of AiLIS5; working with RoD staff to develop acceptance test plans; consulting with Register of Deeds concerning contractual and planning issues related to this major release.

- Serving as IT contact during negotiations with vendor concerning services required to implement AiLIS5. Providing guidance and feedback to Register of Deeds and CIO concerning planning and management issues related to the contract.

- Served as primary liaison with vendor, including monitoring progress on outstanding issues. Continued regular conference calls with the vendor to address outstanding concerns. Client has provided strong positive feedback on performance

- Drafted IT responsibilities statement for supporting the RoD office; reviewed and agreed to by Register of Deeds.

Work Planning and Performance Review (WPPR) Work Plan

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Lead Information Architecture Analysis of Orange County Web Needs	Implement Smart Search question target first pass in time for Smart Search internal roll out Consult with Council of Webmasters on large scale structural issues

Performance Notes:

- Worked with Department on Aging staff to identify needs for an updated Transportation and Aging web sites. Developed draft sites for their review and comment, using the county template.

- Implemented the website for the Housing and Community Development department. Supporting web site until department identifies and trains a webmaster.

- Worked with Council of Webmasters to collect feedback on county template, use of Contribute as a web development tool and future enhancements. Prioritization efforts are currently underway.

Work Planning and Performance Review (WPPR) Work Plan

Work Objectives	Proficient Performance Level Standard (Time Schedule, Quality, Quantity)
Other Activities	

Performance Notes:

- <u>Chair of the Employee Relations Consortium:</u> Worked closed with county management, department heads and elected officials concerning issues of importance to county employees. Two notable examples are the communicating employee concerns regarding the anticipated parking restrictions at the GSA/GSC buildings and advocating for employee pay/benefit increases for FY 2005/2006. Instituted a communication strategy to raise the visibility of the Consortium including participating the Benefits Fair and writing a column for the Orange Alive employee newsletter. Stepped down as chair January, 2007. Chairing the Consortium gave me the opportunity to work directly with Department Heads on issues affecting employees and to raise my visibility within the organization.
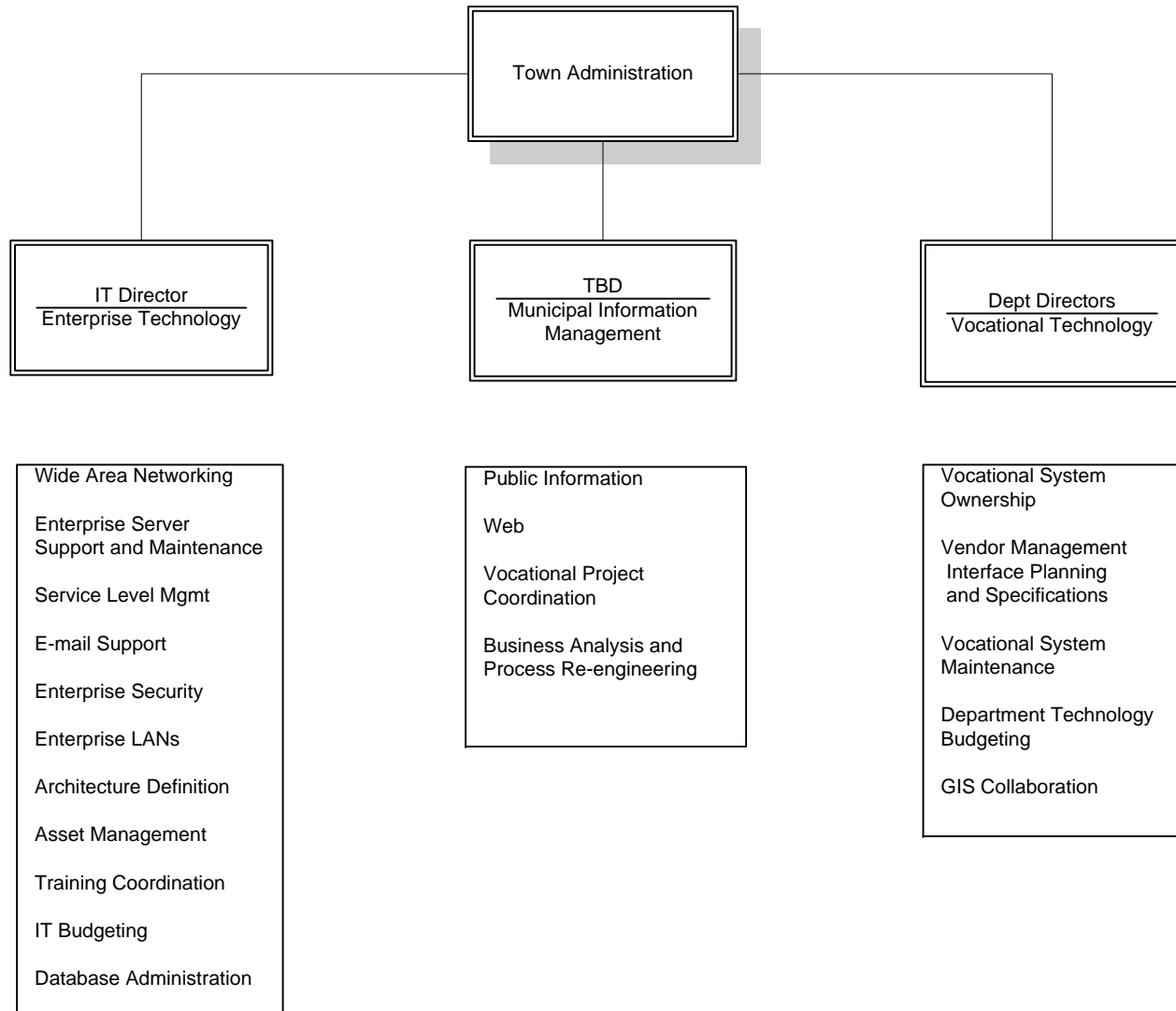
APPENDIX D
RECOMMENEDED TECHNOLOGY ORGANIZATION

Town of Chapel Hill, NC

Information Technology Management
Suggested Organization
Overview

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                        Town Administration
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IT Director	TBD	Dept Directors
Enterprise Technology	Municipal Information Management	Vocational Technology

IT Director — Enterprise Technology

Wide Area Networking

Enterprise Server
Support and Maintenance

Service Level Mgmt

E-mail Support

Enterprise Security

Enterprise LANs

Architecture Definition

Asset Management

Training Coordination

IT Budgeting

Database Administration

TBD — Municipal Information Management

Public Information

Web

Vocational Project
Coordination

Business Analysis and
Process Re-engineering

Dept Directors — Vocational Technology

Vocational System
Ownership

Vendor Management
Interface Planning
and Specifications

Vocational System
Maintenance

Department Technology
Budgeting

GIS Collaboration

Town of Chapel Hill, NC

Information Technology Management
Collaboration Model

June 18, 2007
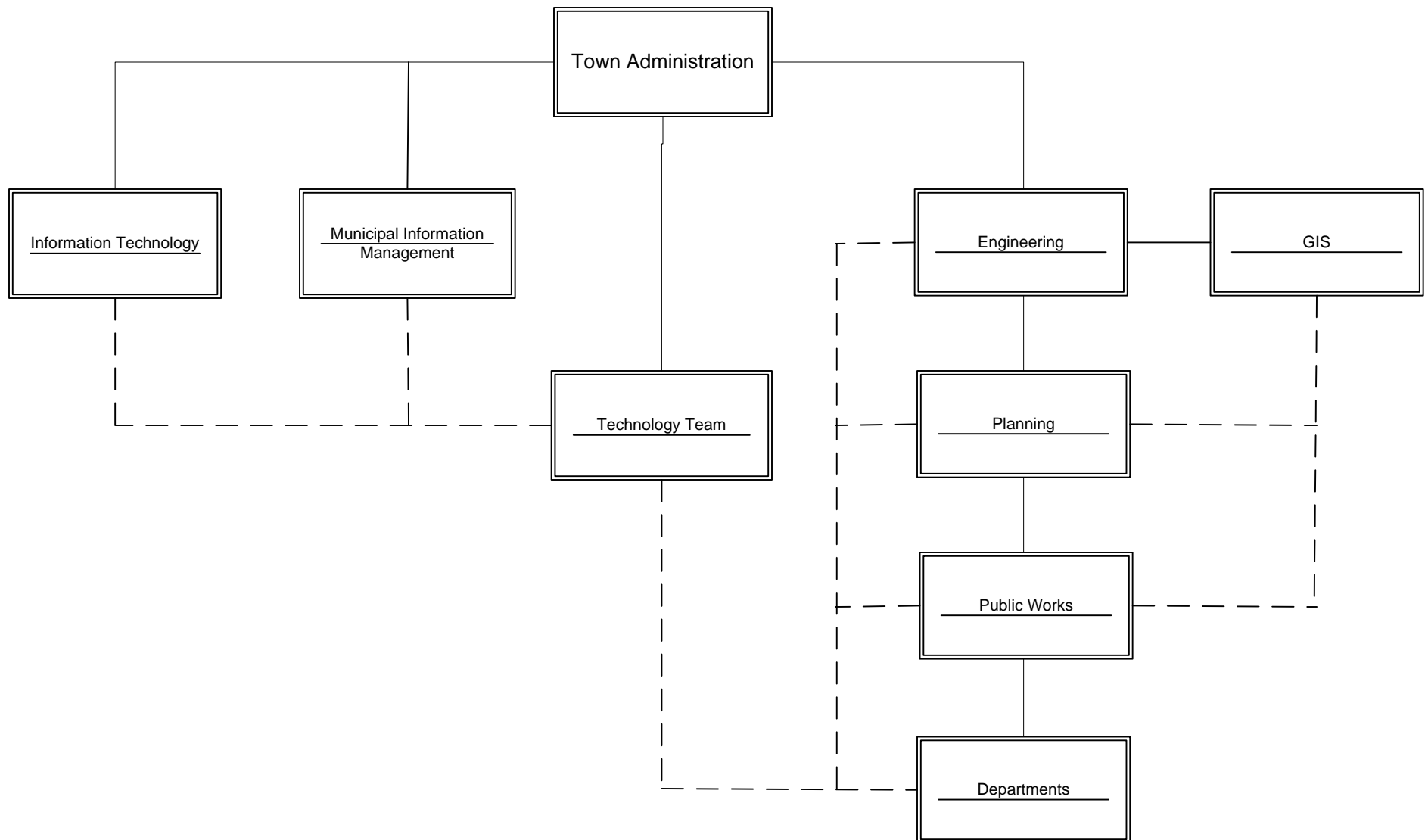
APPENDIX E
RECOMMENDED SHORT TERM INITITAIVES

Chapel Hill, NC
Short Term Vocational Projects

Project	Owner	Participants
Develop automated data exchange processes between MUNIS and DPW Excel programs.	DPW	Finance
Develop a comprehensive GIS strategy and direction.	Engineering	Planning IT Transit Others as interested
Finish a disaster recovery plan and test this plan with another local government MUNIS customer.	Finance	
Investigate and remediate the causes of the unsatisfactory MUNIS support relationship.	Finance	HR
Upgrade to the current version of MUNIS that is the focus of MUNIS internal development and support. Consider migrating from AIX and Informix to Windows Server and SQL databases.	Finance	HR MUNIS
Provide new and refresher training to MUNIS users.	Finance	MUNIS
Republish and advertise a MUNIS unavailability schedule.	Finance	
Improve reporting capabilities for MUNIS by either investing in more Crystal reporting access licenses or consider going to another Informix database reporting tool. Train and retrain existing Town and Finance Department staff on the best practices needed to efficiently use Crystal Reports with MUNIS.	Finance	External Trainer
Provide appropriately secured MUNIS access to more Town staff.	Finance	
Improve internal customer support processes by activating the modules for selected routine finance and HR department functions (e.g. purchasing procedures, fund transfers for departmental budgets, payroll processing).	Finance	HR
Develop a process to import data from OSSI to FireHouse.	Fire	Orange County
Revise the field inspections laptop computer synchronization and updating process.	Fire	
Purchase computers to replace loose-leaf notebooks used in department vehicles.	Fire	
Automate safety and maintenance inspections for housing units and the production of required federal reporting.	Housing	
Automate data exchange between Wright and MUNIS	Housing	Finance
Convert to 100% direct deposit payroll.	HR	Administration
Activate the MUNIS position control module to more easily provide reports on salary consumption rate vs. budget, open budgeted positions.	HR	Finance

Chapel Hill, NC
Short Term Vocational Projects

Project	Owner	Participants
Automate federally mandated OSHA records reporting.	HR	
Automate submission of Personnel Action Forms on a Town Intranet.	HR	MT
Examine the Orange County Permits Plus automated solution and determine if this product is worth using.	Inspections	IT Orange County
Outfit inspectors with field computers to record data on-site. Initially transfer data via media and subsequently using wireless networking.	Inspections	
Lead the development of Town database and electronic document management strategies.	IT	MIM
Publish an IT user manual.	IT	
Implement service level agreements between IT and its customers.	IT	All Departments
Implement IT productivity support tools.	IT	
Install a wireless hot spot that extends beyond the current library building .	Library	
Complete the RFID project.	Library	
Augment the current Web site with marginal improvements.	MIM	All Departments
Develop and distribute templates to streamline the Web publication process.	MIM	
Implement a Town Intranet for sharing and posting of information for internal use.	MIM	
Lead the Town Web site redesign.	MIM	All Departments
Develop a Town wide cataloging index and retention/storage policy regarding citizen e-mail and staff replies.	MIM	
Use list serve capabilities and e-mail as another way to communicate with citizens wishing to have up-to-date information regarding Town business.	MIM	IT
Streamline the agenda processes and receive agenda input in soft rather than hard copy.	MIM	
Distribute the agenda in electronic format.	MIM	IT
Provide a laptop to each interested Council member as necessary.	MIM	
Implement a Town Intranet for sharing and posting of information for internal use.	MIM	IT
Use list serve and e-mail to communicate with customers regarding last minute changes in schedules for parks, pool and class activities.	P&R	IT
Deploy the RecTrac module that permits Web browser access to register for classes and other recreational activities.	P&R	MIM Rec-Trac
Automate data exchange between RecTrac and MUNIS.	P&R	Finance
Eliminate the double entry of schedule data.	P&R	

Chapel Hill, NC
Short Term Vocational Projects

Project	Owner	Participants
Require all design and development plans be submitted in a standard digital format.	Planning	Administration Engineering
Enhance the Planning Web presence and begin providing routinely requested maps to the community online	Planning	MT
Install MDTs in all police vehicles used for patrol and investigation.	Police	
Formalize and energize the Technology Team	Town Administration	
Eliminate the double data entry now necessary in order to publish printed and Web schedules.	Transit	
Continue the NextBus rollout.	Transit	
Expand The Automated Passenger Counter rider analysis system to all buses in fleet	Transit	
Finish the activation of the Kronos time accounting software system and build an automated data exchange process with MUNIS.	Transit	Finance/ External Resources
Develop, adopt and publish technology standards, policies and procedures.	TT	